Low Voltage
Catalogue | 2016

Complementary technical information

Schneider Electric

General Contents

Contents

Contents

Discrimination table

Contents

Using the tables

Two circuit breakers offer total discrimination when the corresponding box in the discrimination table is shaded or contains the letter T. When discrimination is partial for the combination, the corresponding box indicates the maximum value of the fault current for which discrimination is provided. For fault currents above this value, the two circuit breakers trip simultaneously.

Coordination between circuit breakers

Discrimination (Selectivity)

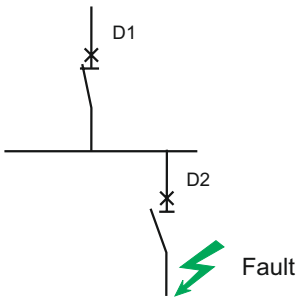
E002487-37.eps

IEC/EN 60947-2

What is discrimination?

It is the coordination of automatic cut-off devices for a fault that occurs at any point in the network to be eliminated by the upstream circuit breaker, the circuit breaker that is immediately upstream of the fault and by that circuit breaker alone!

DB421201.eps



D1 and D2 in series.

Continuity of service

Discrimination is an essential element that must be taken into account as early as in the design of a low voltage installation to enable continuity of the electricity service.

Production and safety

Discrimination provides much convenience for all users, but it is an essential requirement when continuity of service is of utmost importance.

Discrimination means that only the part with the fault is disconnected. It enables:
- continuity of supply for adjacent circuits,
- localization of the faulty circuit.

For some installations or installation parts:
- operating theatre in clinics and hospitals,
- marine,
- safety equipment,
- production site.

The requirements for continuous electricity often make it necessary to verify the discrimination between upstream and downstream protection devices.
If there is a total lack of discrimination, it will be necessary to try to achieve partial discrimination. Likewise, if there is a limit to the level of discrimination and this proves satisfactory in the majority of cases, it can still be attempted to make it total.
Of course, any modification must be made while observing the following main parameters:
- protection of personnel,
- are the thermal stresses I^2t of the cables always taken into account?
- are the breaking capacities of the devices higher than the prospective Isc?

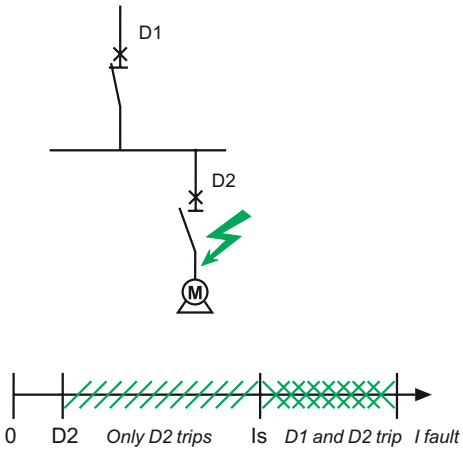
Finally, when it is not possible to achieve discrimination and it is essential for the correct operation of the installation, the installation of uninterruptible power supplies (UPS) must be considered. Generator units, inverters, etc. are then used.

There are several types of discrimination that can be used separately or together. For protection against overcurrent, this generally concerns current discrimination and time discrimination.
The principle is as follows.

Coordination between circuit breakers

Discrimination (Selectivity)

DB421202.eps



Current and energy discrimination

Discrimination involves ensuring coordination between two circuit breakers in series, so that, in the event of a fault, only one circuit breaker, located immediately upstream of the fault, trips. A discrimination current Is is defined so that:

- Ifault < Is: only D2 eliminates the fault, discrimination is ensured,
- Ifault > Is: both circuit breakers may trip, discrimination is not ensured.

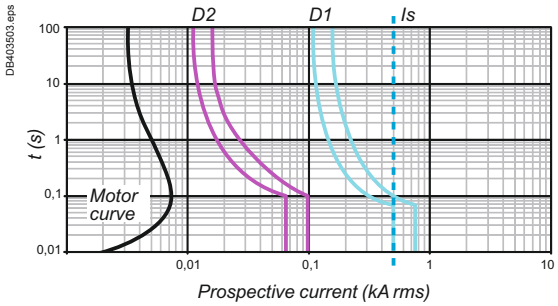
Slight overcurrent or overload

Under the effect of an abnormal inrush current, for example an increase in the resistive torque of a motor, the current going through the circuit is higher than the rated current. These currents may damage the installation (risk of an electrical fire). Devices to protect against overcurrent can be characterized by their operating curves as a function of prospective current Ip:

- the operating curve is time-based when the breaking time is greater than 50 ms (curve t = f (Ip). Discrimination is achieved if the In upstream / In downstream operation threshold ratio is > 1.3 and if the current offset of the magnetic curves is observed.

This is current discrimination

DB403503.eps



The greater the difference between the ratings of the upstream and downstream circuit breakers, the more “extensive” the discrimination.

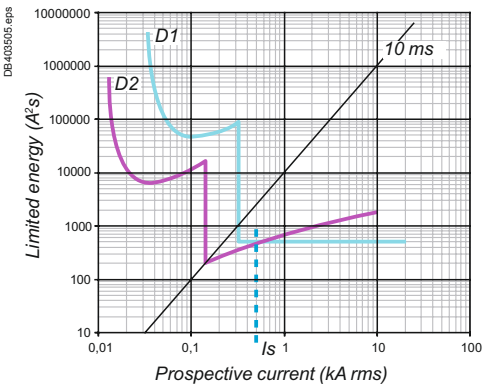
Short circuit

For example when there is contact between two phases we are faced with a full insulation fault which risks damaging the installation.
The function that makes it possible to protect against this type of fault is magnetic protection.
To ensure discrimination, we must maintain a ratio between the upstream and downstream protection devices. This is energy discrimination.

- Energy: when the intervention time is less than 50 ms and more particularly less than the time of one half wave (10 ms) of current with limiting circuit breakers.

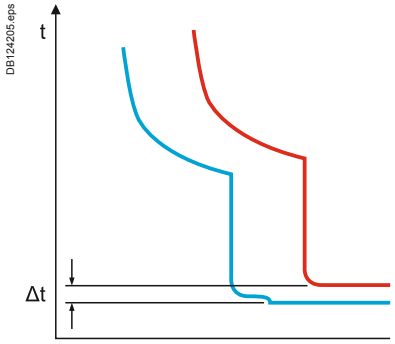
This is energy discrimination

DB403505.eps



Coordination between circuit breakers

Discrimination (Selectivity)



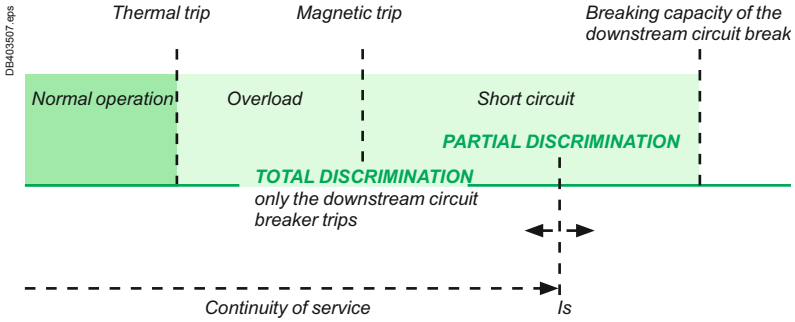
Time discrimination

The principle is based on the time difference (Δt) of the upstream magnetic curve.

To achieve this, it is necessary to have an upstream circuit breaker with time-delay bands.
The delay introduced must make it possible to improve discrimination without endangering the cable or busbars which would then have to withstand the overcurrent for longer (greater thermal effects I^2t and electrodynamic stresses).

Total or partial discrimination

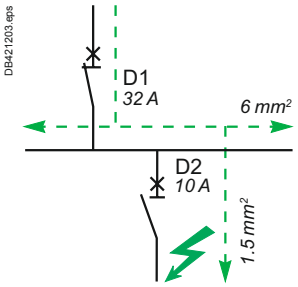
Discrimination may be partial or total, up to the breaking capacity of the downstream circuit breaker. For total discrimination, the characteristics of the upstream device must be higher than those of the downstream device (higher than the breaking capacity of the downstream circuit breaker MCCB).



Standard IEC 60947-2 on industrial circuit breakers, and in particular Appendix A, deals with coordination between a circuit-breaker and another device to protect against short circuits combined in the same circuit.
This protection device may be a fuse or another circuit breaker.

Coordination between circuit breakers

Discrimination (Selectivity)



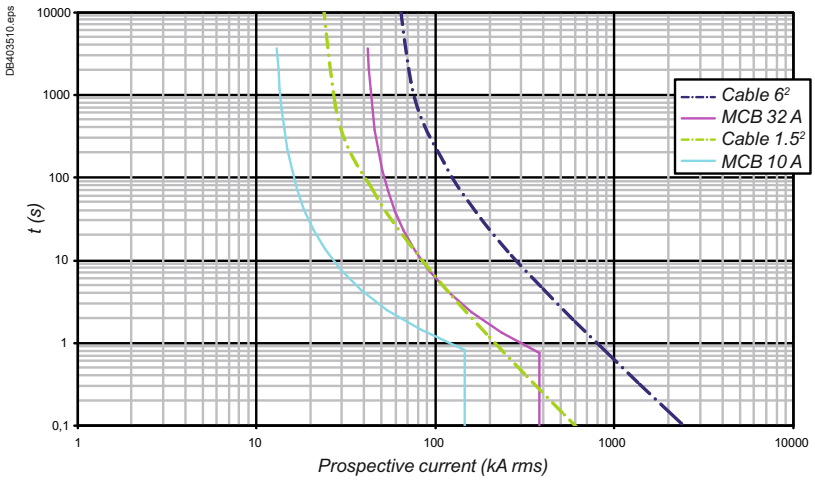
Discrimination between modular circuit breakers

We use two types of discrimination when these circuit breakers are combined:
- current discrimination,
- energy discrimination.

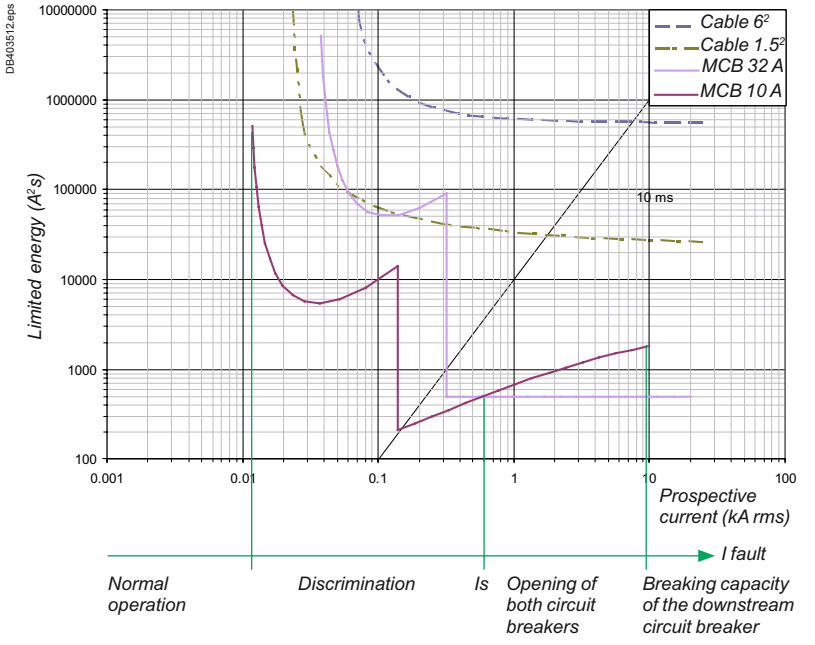
For discrimination to be ensured whatever the prospective fault current, 3 conditions have to be fulfilled:
- the upstream and downstream circuit breakers must have different ratings (ratio > 1.3),
- the envelope of their magnetic curves must be different,
- the energy allowed to pass through the downstream circuit breaker when it cuts off must still be less than the operating energy of the upstream trip.

Example

- Let us take the example of a single phase network where we have a 32 A curve D circuit breaker in series with a 10 A curve D circuit breaker:
  - the 32 A circuit breaker protects the 6^2 cables and the 10 A circuit breaker protects the 1.5^2 cables. This combination allows discrimination, but up to what threshold?
  - if current discrimination is considered (t = f (Ip)) it can be seen that the tripping curve of the downstream circuit breaker is well below the non-tripping curve of the upstream circuit breaker,
  - furthermore, each circuit breaker is well below the maximum stress permitted by the cables.



When considering energy discrimination, it is necessary to compare the maximum stresses characterized by the integrals ft relative to the development of the arc in the downstream device and by the sensitivity of the trip unit, still in ft, of the upstream device (curves $I^2t = f(Ip)$).



Coordination between circuit breakers

Discrimination (Selectivity)

Discrimination between Compact NSX upstream and modular circuit breakers downstream

Compact NSX circuit breakers have been designed to ensure total discrimination with Acti9 range.

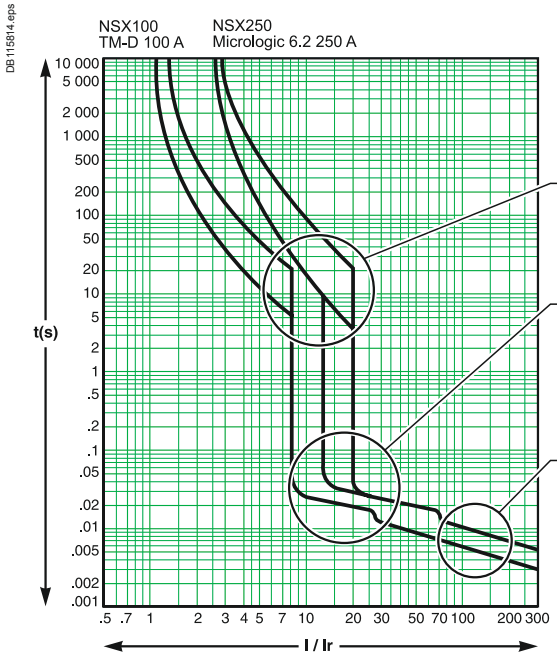
- Total discrimination between Compact NSX 100 A with electronic trip unit and Acti9 circuit breaker up to 40 A.
- Total discrimination between Compact NSX ≥ 160 A with TMD trip unit ≥125 A or electronic trip unit and Acti9 up to 63 A.

Discrimination between Compact NSX circuit breakers

Thanks to the Roto-Active breaking principle in the Compact NSX, a combination of Schneider Electric circuit breakers provides an exceptional level of discrimination between protection devices.

This performance is due to the combination and optimization of 3 principles:

- current discrimination,
- energy discrimination,
- time discrimination.



Protection against overloads: current discrimination

The protection is selective if the ratio between the setting thresholds is higher than 1.6 (in the case of two distribution circuit breakers).

Protection against weak short circuits: time discrimination

Tripping of the upstream device has a slight time delay; tripping of the downstream device is faster.

The protection is selective if the ratio between the short-circuit protection thresholds is no less than 1.5.

Protection against high short circuits: energy discrimination

This principle combines the exceptional limiting power of the Compact NSX devices and reflex release, sensitive to the energy dissipated by the short circuit in the device.

When a short circuit is high, if it is seen by two devices, the downstream device limits it greatly. The energy dissipated in the upstream device is insufficient to cause it to trip: there is discrimination whatever the value of the short circuit.

The range has been designed to ensure energy discrimination between NSX630/NSX250/ NSX100 or NSX400/NSX160.

Discrimination between Masterpact or Compact NS ≥ 630 A upstream and Compact NSX downstream

Thanks to their high-performance control units and a very innovative design, Masterpact and Compact NS ≥ 630 A devices offer, as standard, a very high level of discrimination with downstream Compact NSX up to 630 A

Respect the basic rules of discrimination for overload and short-circuit, or check that curves do not overlap with Ecodial software.

Check the discrimination limit in tables for high short-circuit current or when using limiter circuit breakers (Masterpact NT L1 or Compact NS L or LB) upstream.

Discrimination between Masterpact or Compact NS ≥ 630 A upstream and downstream

The utilization category of these devices (excepted limiters ones) is B according to IEC 60947 standard. Discrimination is ensured by a combination of current discrimination and time discrimination.

Respect the basic rules of discrimination for overload and short-circuit, or check that curves do not overlap with Ecodial software.

Check the discrimination limit in tables for high short-circuit current or when using limiter circuit breakers (Masterpact NT L1 or Compact NS L or LB).

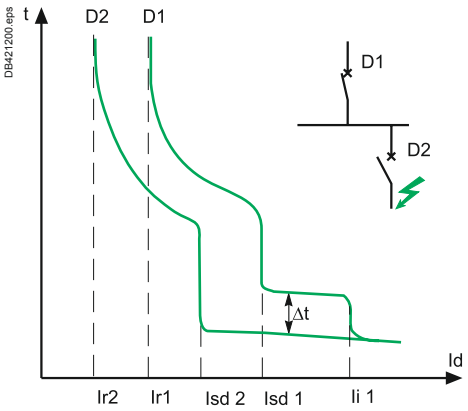
Basic rules of discrimination for overload and short-circuit

Upstream	Downstream	Thermal protection	Magnetic protection
		Ir upstream / Ir downstream	Im upstream / Im downstream
TM	TM or MCB	≥ 1.6	≥ 2
	Micrologic	≥ 1.6	≥ 1.5
Micrologic	TM or MCB	≥ 1.6	≥ 1.5
	Micrologic	≥ 1.3	≥ 1.5 (1)

(1) See "Additional conditions according to the trip units".

Coordination between circuit breakers

Discrimination (Selectivity)



Additional conditions according to the trip units

Short time trip pickup current (Isd)

The tables show the limit of discrimination assuming the short time trip pickup current Isd = 10 x Ir.

In many cases, when discrimination is total, a different adjustment may be used provided that the ratio between the magnetic thresholds indicated above is observed.

When downstream breaker is a Compact NSX:

■ upstream circuit breaker magnetic setting shall be higher than downstream instantenous protection:

NSX 2.2 ou 2.3	Mic 2.2 40	Mic 2.2 100	Mic 2.2 160	Mic 2.2 250	Mic 2.3 400	Mic 2.3 630
Inst.	600 A	1500 A	2400 A	3000 A	4800 A	6900 A

■ or upstream circuit breaker shall be equipped with micrologic type 5 with tsd ⩾ 0.1.

When downstream circuit breaker is a Masterpact with micrologic 2, upstream circuit breaker shall be equipped with micrologic type 5 and tsd ⩾ 0,1 and Ii Off.

When the limit of discrimination indicated in the table is 10 x Ir, the limit of discrimination is in fact the upstream magnetic threshold Isd.

Instantaneous trip pickup current (Ii)

The tables show the limit of discrimination assuming the instantaneous trip pickup current set to its maximum value and when it is inhibited (category B circuit breaker only).

■ When the limit of discrimination indicated in the table is 15 x In of the upstream device, the limit of discrimination is in fact the instantaneous trip pickup current of the upstream device.

■ When the upstream device is a type B circuit breaker and the downstream device is type A, the instantaneous trip pickup current of the upstream device may be set to below 15 x In as long as it remains higher than the reflex release threshold of the downstream device.

Short time tripping delay (Tsd)

When the upstream and downstream circuit breakers are fitted with a Micrologic 5.x, 6.x, 7.x: trip unit, the minimum non-tripping time of the upstream device must be greater than the maximum tripping time of the downstream device.

Tsd D1 > Tsd D2 (One band)

I^2t Off / On

The tables show the limit of discrimination assuming function I^2t OFF. If this is not the case, the user must verify that the curves do not overlap.

Ground Fault Protection (GFP) (Ig, Tg)

When the upstream and downstream circuit breakers are fitted with a Micrologic 6.x trip unit, the user must verify current and time discrimination:

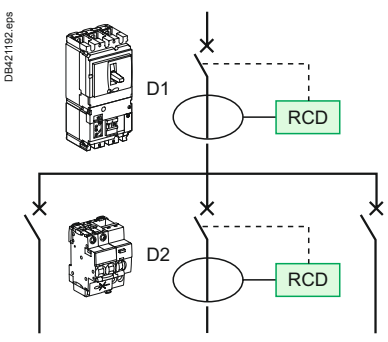
current discrimination

The setting of the tripping threshold of the upstream GFP is greater than that of the downstream GFP. Because of the tolerances on the settings, a difference of 30 % between the upstream threshold and the downstream threshold is sufficient.

time discrimination

The intentional time-delay setting for the upstream GFP is higher than the opening time of the downstream protection device. Furthermore, it is essential that the intentional time-delay applied to the upstream protection device observes the maximum insulation fault elimination time defined by NEC § 230.95 (i.e. 1 s for 3000 A).

Ig D1 ⩾ 1.3 Ig D2 Tg D1 > Tg D2 (One band)



Circuit breaker with vigi module (Add-On Residual Current Device - RCD):

When circuit breakers are equipped with vigi module, discrimination tables are valid for short-circuit. To ensure discrimination in case of earth fault, upstream and downstream vigi modules shall satisfy the following conditions:

■ the sensitivity of the upstream residual current device must be at least equal to three times the sensitivity of the downstream residual current device (IΔn D1 ⩾ 3 x IΔn D2),

■ the upstream residual current device must be:

□ of the selective (S) type (or setting) if the downstream residual current device is an instantaneous type,

□ of the delayed (R) type (or setting) if the downstream residual current device is a selective type.

The minimum non-tripping time of the upstream device will therefore be greater than the maximum tripping time of the downstream device for all current values (Δt (D1) > Δt (D2)).

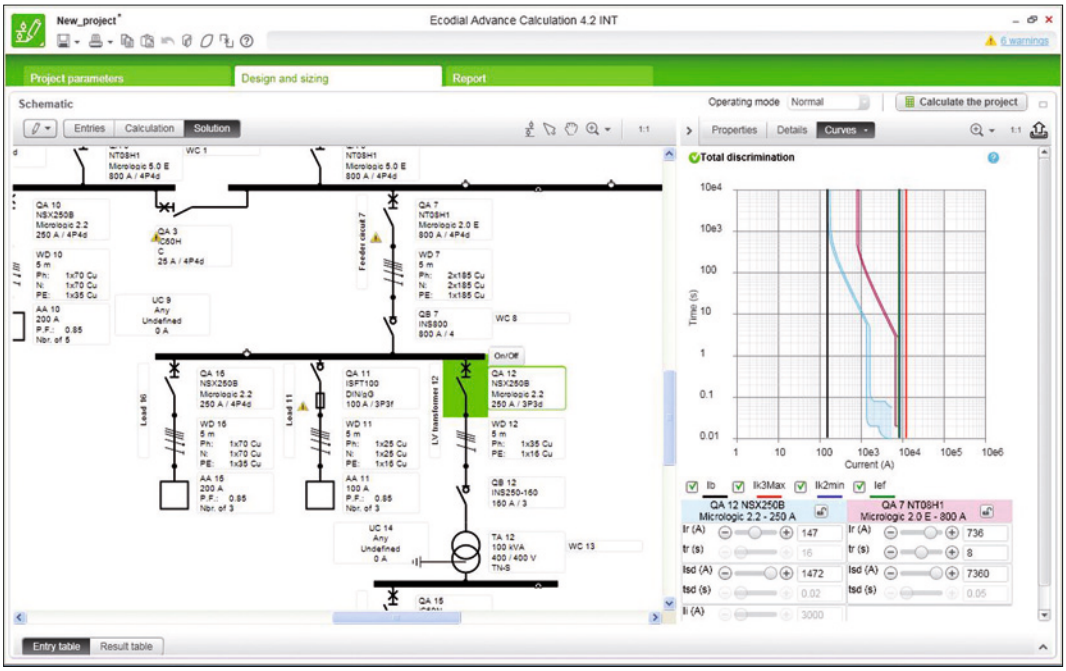
TOOLS

Ecodial

Ecodial software is dedicated to LV electrical installation calculation in accordance with the IEC60364 international standard or national standards.

This 4th generation, "Ecodial Advance Calculation 4", offers a new ergonomic and new features:

- operating mode that allows easy calculation in case of installation with different type of sources (parallel transformers, back-up generators...)
- discrimination analysis associating curves checking and discrimination tables
- direct access to protection settings including residual current protections
- easy selection of alternate solutions or manual selection of a product.



Coordination between circuit breakers

Discrimination of modular circuit breakers

Contents

Discrimination between circuit breakers

In the following tables we show the level of discrimination between two LV circuits that are protected by circuit breakers.
This discrimination will be either:

- total: represented by a T (up to the breaking capacity of the downstream device),
- partial: discrimination limit current (Is) indicated. Below this value discrimination is ensured, above this value the upstream device is also involved in breaking,
- zero: no discrimination ensured.

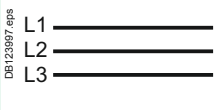
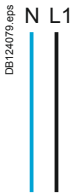
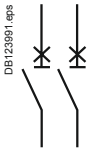
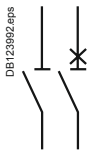
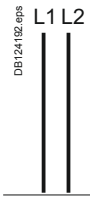
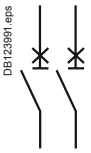
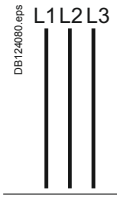
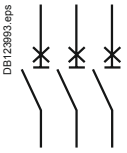
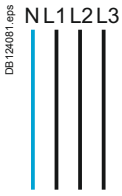
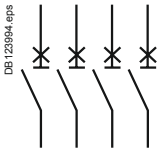
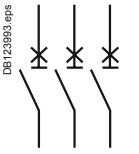
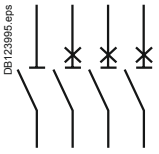
Coordination between circuit breakers

Discrimination of modular circuit breakers

Using the discrimination tables

Depending on the network and the type of downstream circuit breaker, the selection table below indicates which table should be consulted to find out the discrimination value.
The discrimination values are given in colour-coded tables.
■ For 220-240 V/380-415 V 50/60 Hz systems:
□ in the case of a 2P downstream circuit breaker in a single-phase network (220-240 V), refer to the light green tables,
□ in the case of 1P, 1P+N, 3P, 3P+N, 4P and 2P circuit breakers in a two-phase network (380-415 V), refer to the dark green tables.

Selection table

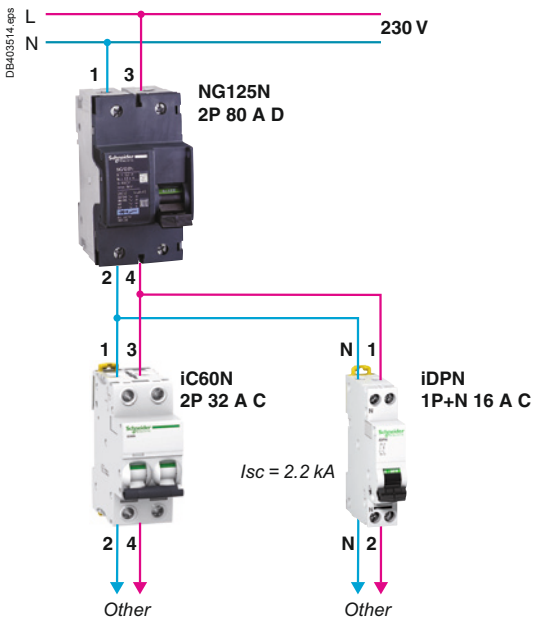
		Upstream network		
				
Type of Downstream network	**Type of Downstream protection device**	**Ph/N 220-240 V**	**Ph/N 220-240 V** **Ph/Ph 380-415 V**	**Ph/Ph 380-415 V**
	 2P			
	 1P  1P+N			
	 2P			
	 3P			
	 4P			
	 3P  3P+N			

Note: *this selection table shows you the colour.*
By taking your downstream protection device, the type of upstream network and its voltage you can refer to the corresponding discrimination table.

Coordination between circuit breakers

Discrimination of modular circuit breakers

Example: solution diagram



Upstream we have a NG125N 80 A 2P curve D and downstream an iC60N 32 A 2P curve C. The network is 230 V between phase and neutral.
By referring to the light green table on the discrimination page for NG125N curve D with iC60 downstream, we find 2200 A.

If the downstream product is replaced by an iDPN 1P+N curve C, you will use the dark green table for NG125N curve D and iDPN1P+N downstream.
The discrimination level is 2400 A for a 16 A.

Specifications

We want to achieve continuity of service in the event of a fault downstream of the NG125N 80 A. This circuit has an Isc of 2.2 kA under a voltage of 230 V.
By referring to the table for 230 V, 1P+N network, we find that for an upstream NG125N curve D with a rating of 80 A, we can have total discrimination up to 16 A if we use an iC60N 1P+N and up to 32 A with an iC60N 2P.

Upstream		**NG125N/H/L** Curve D										
In (A)		**10**	**16**	**20**	**25**	**32**	**40**	**50**	**63**	**80**	**100**	**125**
Downstream	**2P (220-240 V) single-phase network**											
Discrimination limit (A)												
iC60N/H/L Curve C	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	T	T	T	T	T	T	T	T	T	T	T
	2	1200	T	T	T	T	T	T	T	T	T	T
	3	21	3400	3400	T	T	T	T	T	T	T	T
	4	18	1200	1300	5800	5600	T	T	T	T	T	T
	6	15	700	720	1900	1900	6000	11000	T	T	T	T
	10		22	480	1200	1200	2200	4200	10000	T	T	T
	13			28	51	900	1800	3000	7300	8000	T	T
	16				35	740	1300	2200	4700	5400	T	T
	20					46	88	1700	3500	3500	6900	T
	25						56	600	2500	2500	4600	6800
	32							80	2000	2200	3400	4400
	40								756	1900	2900	3500
	50									960	2300	2800
	63										2300	2800

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Is > Isc
Total discrimination

Discrimination table

Upstream: iDPN, iDPN N curve B
Downstream: iDPN/iDPN N curves B, C, D

220-240/380-415 V AC

Upstream		iDPN, iDPN N Curve B										
In (A)		1	2	3	4	6	10	16	20	25	32	40
Downstream	**1P+N 3P, 3P+N**											
Discrimination limit (A)												
iDPN iDPN N Curve B	**1**		8	12	20	30	70	150	250	350	610	980
	2			12	16	30	60	110	180	240	340	450
	3					30	40	64	140	190	280	350
	4					10	40	64	120	160	220	280
	6						40	64	80	100	130	160
	10							64	80	100	130	160
	16									100	130	160
	20										130	160
	25											160
Discrimination limit (A)												
iDPN iDPN N Curve C	**1**		6	12	20	30	70	150	250	350	610	980
	2				12	30	60	110	180	240	340	450
	3					13	40	64	140	190	280	350
	4						32	64	120	160	220	280
	6							51	80	100	130	160
	10								64	80	130	160
	16										102	128
	20											128
Discrimination limit (A)												
iDPN iDPN N Curve D	**1**				12	30	70	150	250	350	610	980
	2					19	60	110	180	240	340	450
	3						32	64	140	190	280	350
	4							51	120	160	220	280
	6								64	80	130	160
	10										102	128
	16											128

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

No discrimination.

Discrimination table

Upstream: iDPN, iDPN N curve C
Downstream: iDPN/iDPN N curves B, C, D

220-240/380-415 V AC

Upstream		iDPN, iDPN N Curve C										
In (A)		1	2	3	4	6	10	16	20	25	32	40
Downstream	**1P+N 3P, 3P+N**											
Discrimination limit (A)												
iDPN iDPN N Curve B	**1**		16	24	32	70	180	400	630	1200	T	T
	2			24	32	48	140	270	350	510	820	830
	3				32	48	80	210	290	380	630	650
	4					48	80	130	240	320	480	510
	6						80	130	160	200	320	380
	10							130	160	200	260	320
	16								160	200	260	320
	20										260	320
	25											320
	32											
Discrimination limit (A)												
iDPN iDPN N Curve C	**1**		16	24	32	70	180	400	630	1200	T	T
	2			24	32	48	140	270	350	510	820	830
	3				9	48	80	210	290	380	630	650
	4					10	80	130	240	320	480	510
	6						80	130	160	200	320	380
	10							130	160	200	260	320
	16								45	200	260	320
	20										260	320
	25											320
Discrimination limit (A)												
iDPN iDPN N Curve D	**1**		16	24	32	70	180	400	630	1200	T	T
	2				25	48	140	270	350	510	820	830
	3					13	80	210	290	380	630	650
	4						80	130	240	320	480	510
	6							128	160	200	320	380
	10								128	200	260	320
	16									141	153	320
	20											256

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: iDPN, iDPN N curve D
Downstream: iDPN/iDPN N curves B, C, D

220-240/380-415 V AC

Upstream		iDPN, iDPN N Curve D										
In (A)		1	2	3	4	6	10	16	20	25	32	40
Downstream	**1P+N**											
	3P, 3P+N											
Discrimination limit (A)												
iDPN	**1**		24	36	70	170	380	1200	T	T	T	T
iDPN N	**2**			36	48	130	250	490	780	1100	1600	2300
Curve B	**3**				48	72	210	410	640	890	1400	1900
	4					72	120	330	500	670	970	1400
	6						120	190	390	520	740	1000
	10							190	240	300	580	810
	16									300	380	480
	20										380	480
	25											480
	32											480
	40											
Discrimination limit (A)												
iDPN	**1**		24	36	70	170	380	1200	T	T	T	T
iDPN N	**2**			36	48	130	250	490	780	1100	1600	2300
Curve C	**3**				9	72	210	410	640	890	1400	1900
	4					10	120	330	500	670	970	1400
	6							190	390	520	740	1000
	10							190	240	300	580	810
	16									300	380	480
	20										380	480
	25											480
Discrimination limit (A)												
iDPN	**1**		24	36	70	170	380	1200	T	T	T	T
iDPN N	**2**			36	48	130	250	490	780	1100	1600	2300
Curve D	**3**					14	210	410	640	890	1400	1900
	4					10	120	330	500	670	970	1400
	6						120	190	390	520	740	1000
	10							190	240	300	580	810
	16									300	380	480
	20										380	480
	25											480

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: iC60N/H/L curve B
Downstream: iDPN/iDPN N curves B, C, D

220-240/380-415 V AC

Upstream		iC60N/H/L Curve B												
In (A)		2	3	4	6	10	13	16	20	25	32	40	50	63
Downstream	**1P+N** **3P, 3P+N**													
Discrimination limit (A)														
iDPN **iDPN N** Curve B	**1**	8	12	16	30	60	80	110	130	150	270	410	450	620
	2		12	16	24	40	50	90	80	100	220	300	330	440
	3				24	40	50	64	80	100	210	270	300	410
	4				14	40	50	64	80	100	190	270	300	380
	6					40	50	64	80	100	130	240	250	250
	10							64	80	100	130	160	200	250
	16									100	130	160	200	250
	20										130	160	200	250
	25											160	200	250
	32												200	250
	40													250
Discrimination limit (A)														
iDPN **iDPN N** Curve C	**1**		12	16	30	60	80	110	130	150	270	410	450	620
	2			5	24	40	50	90	80	100	220	300	330	440
	3				17	40	50	64	80	100	210	270	300	410
	4					34	50	64	80	100	190	270	300	380
	6							47	80	100	130	240	250	250
	10								64	80	130	160	200	250
	16										102	128	200	250
	20											128	160	250
	25												160	201
	32													201
Discrimination limit (A)														
iDPN **iDPN N** Curve D	**1**			12	30	60	80	110	130	150	270	410	450	620
	2				19	40	50	90	80	100	220	300	330	440
	3					32	50	64	80	100	210	270	300	410
	4							51	80	100	190	270	300	380
	6								59	78	130	240	250	250
	10										102	128	200	250
	16											128	160	201
	20												160	201
	25													201

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

No discrimination.

Discrimination table

Upstream: iC60N/H/L curve C
Downstream: iDPN/iDPN N curves B, C, D

220-240/380-415 V AC

Upstream		iC60N/H/L Curve C													
In (A)		1	2	3	4	6	10	13	16	20	25	32	40	50	63
Downstream	**1P+N**														
	3P, 3P+N														
Discrimination limit (A)															
iDPN	**1**		16	24	32	48	80	100	210	270	390	540	790	1500	1600
iDPN N	**2**			24	32	48	80	100	130	160	300	410	540	910	930
Curve B	**3**				5	48	80	100	130	160	200	260	510	750	760
	4					48	80	100	130	160	200	260	480	720	760
	6						80	100	130	160	200	260	320	400	500
	10							100	130	160	200	260	320	400	500
	16										200	260	320	400	500
	20											260	320	400	500
	25												320	400	500
	32													400	500
	40														500
Discrimination limit (A)															
iDPN	**1**		16	24	32	48	80	100	210	270	390	540	790	1500	1600
iDPN N	**2**			24	32	48	80	100	130	160	300	410	540	910	930
Curve C	**3**					48	80	100	130	160	200	260	510	750	760
	4					14	80	100	130	160	200	260	480	720	760
	6						80	100	130	160	200	260	320	400	500
	10								130	160	200	260	320	400	500
	16										83	260	320	400	500
	20											260	320	400	500
	25												124	400	500
	32													163	500
	40														186
Discrimination limit (A)															
iDPN	**1**		16	24	32	48	80	100	210	270	390	540	790	1500	1600
iDPN N	**2**				25	48	80	100	130	160	300	410	540	910	930
Curve D	**3**						80	100	130	160	200	260	510	750	760
	4						80	100	130	160	200	260	480	720	760
	6							100	130	160	200	260	320	400	500
	10										200	260	320	400	500
	16										83	165	320	400	500
	20												151	400	500
	25													176	500
	32														255

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

No discrimination.

Discrimination table

Upstream: iC60N/H/L curve D
Downstream: iDPN/iDPN N curves B, C, D

220-240/380-415 V AC

Upstream		iC60N/H/L Curve D													
In (A)		1	2	3	4	6	10	13	16	20	25	32	40	50	63
Downstream	**1P+N**														
	3P, 3P+N														
Discrimination limit (A)															
iDPN **iDPN N** Curve B	**1**		30	50	70	72	120	260	350	540	700	1100	1500	2000	2000
	2			36	48	72	120	160	190	390	510	700	960	1500	2000
	3				5	72	120	160	190	360	450	580	840	1200	1500
	4					72	120	160	190	240	450	580	780	1100	1400
	6						120	160	190	240	300	380	720	1000	1200
	10							160	190	240	300	380	480	600	760
	16										300	380	480	600	760
	20											380	480	600	760
	25												480	600	760
	32													600	760
	40														760
Discrimination limit (A)															
iDPN **iDPN N** Curve C	**1**		30	50	70	72	120	260	350	540	700	1100	1500	2000	2000
	2			36	48	72	120	160	190	390	510	700	960	1500	2000
	3				5	72	120	160	190	360	450	580	840	1200	1500
	4					14	120	160	190	240	450	580	780	1100	1400
	6						120	160	190	240	300	380	720	1000	1200
	10							34	190	240	300	380	480	600	760
	16										300	380	480	600	760
	20											380	480	600	760
	25												124	600	760
	32													163	760
	40														186
Discrimination limit (A)															
iDPN **iDPN N** Curve D	**1**		30	50	70	72	120	260	350	540	700	1100	1500	2000	2000
	2			36	48	72	120	160	190	390	510	700	960	1500	2000
	3					17	120	160	190	360	450	580	840	1200	1500
	4					14	120	160	190	240	450	580	780	1100	1400
	6						120	160	190	240	300	380	720	1000	1200
	10								57	240	300	380	480	600	760
	16										83	380	480	600	760
	20											155	151	600	760
	25												124	180	760
	32													163	760
	40														186

Note: *if you cannot find your combination, refer to the selection table on page 2.*

4000 *Discrimination limit = 4 kA.*

No discrimination.

Discrimination table

Upstream: iC60N/H/L curve B
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		iC60N/H/L Curve B													
In (A)		1	2	3	4	6	10	13	16	20	25	32	40	50	63
Downstream	**1P, 1P+N 2P (380-415 V) two-phase network 3P, 3P+N 4P**														
Discrimination limit (A)															
iC60N/H/L Curve B	**0.5**	4	10	40	60	T	T	T	T	T	T	T	T	T	T
	1		10	12	16	40	70	120	170	210	300	780	1300	1700	4000
	2			12	16	30	60	90	130	140	200	370	520	630	960
	3					30	40	70	90	120	150	250	380	460	670
	4					30	40	52	90	80	100	250	310	380	470
	6						40	52	64	80	100	190	290	300	440
	10								64	80	100	130	240	200	380
	13									80	100	130	240	200	250
	16										100	130	160	200	250
	20											130	160	200	250
	25												160	200	250
	32													200	250
	40														250
	50														
Discrimination limit (A)															
iC60N/H/L Curve C	**0.5**		10	40	60	T	T	T	T	T	T	T	T	T	T
	1				16	30	70	120	170	210	300	780	1300	1700	4000
	2				16	18	60	90	130	160	200	370	520	630	960
	3					15	40	70	90	120	150	250	380	460	670
	4						27	52	90	80	100	250	310	380	470
	6								51	80	100	190	290	300	440
	10									64	80	130	240	200	250
	13											102	160	200	250
	16											102	128	200	250
	20												128	160	250
	25													160	200
	32														200
Discrimination limit (A)															
iC60N/H/L Curve D	**0.5**			30	50	T	T	T	T	T	T	T	T	T	T
	1				12	30	60	120	170	210	300	780	1300	1700	4000
	2					19	40	70	110	140	180	370	520	630	860
	3						31	41	90	120	150	250	380	460	670
	4								48	80	100	220	310	340	470
	6									64	80	190	240	300	380
	10											100	128	200	250
	13												128	160	250
	16												128	160	200
	20													160	200
	25														200

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: iC60N/H/L curve B
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		iC60N/H/L Curve B													
In (A)		1	2	3	4	6	10	13	16	20	25	32	40	50	63
Downstream	**2P (220-240 V) single-phase network**														
Discrimination limit (A)															
iC60N/H/L Curve B	**0.5**	4	210	T	T	T	T	T	T	T	T	T	T	T	T
	1		10	20	20	60	110	260	530	790	2000	T	T	T	T
	2			12	16	30	70	140	200	250	400	880	1700	2500	5300
	3					30	40	90	130	160	250	550	800	1100	1400
	4						40	70	110	120	180	370	520	630	960
	6						40	52	64	80	100	270	380	460	630
	10								64	80	100	190	290	300	440
	13									80	100	130	240	200	380
	16										100	130	240	200	250
	20											130	160	200	250
	25												160	200	250
	32													200	250
	40														250
	50														
Discrimination limit (A)															
iC60N/H/L Curve C	**0.5**		170	T	T	T	T	T	T	T	T	T	T	T	T
	1				20	60	110	260	530	790	2000	T	T	T	T
	2				16	18	70	140	200	250	400	880	1700	2500	5300
	3					15	40	90	130	160	230	550	800	1100	1400
	4						27	70	90	120	180	370	520	630	860
	6								51	80	100	230	380	410	630
	10									64	80	130	240	300	440
	13											102	240	200	380
	16											102	128	200	250
	20												128	160	250
	25													160	200
	32														200
Discrimination limit (A)															
iC60N/H/L Curve D	**0.5**			T	T	T	T	T	T	T	T	T	T	T	T
	1				12	50	110	260	530	790	2000	T	T	T	T
	2					19	60	120	200	250	350	1100	1700	2500	5300
	3						31	41	110	140	230	490	800	960	1400
	4								48	80	150	310	450	630	860
	6									64	80	230	330	410	500
	10											100	128	200	380
	13												128	160	250
	16												128	160	200
	20													160	200
	25														200

Note: *the discrimination limits given in the table must be compared to the phase/neutral fault current (Ik1). If the max. phase/earth fault current (If) is high, the discrimination of this fault current should also be verified by referring to the limits given in the dark green part of the table.*

Discrimination table

Upstream: iC60N/H/L curve C
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		iC60N/H/L Curve C													
In (A)		1	2	3	4	6	10	13	16	20	25	32	40	50	63
Downstream	**1P, 1P+N 2P (380-415 V) two-phase network 3P, 3P+N 4P**														
Discrimination limit (A)															
iC60N/H/L Curve B	**0.5**	8	60	T	T	T	T	T	T	T	T	T	T	T	T
	1		16	24	32	70	180	210	370	590	1100	2400	7000	T	T
	2			24	32	48	140	160	220	310	460	780	1200	2000	2000
	3				5	48	120	104	190	280	380	580	820	1400	1400
	4					14	80	104	130	240	300	430	590	1000	1100
	6						80	104	130	160	200	380	480	770	850
	10							104	130	160	200	260	320	680	500
	13									160	200	260	320	600	500
	16										200	260	320	600	500
	20											260	320	400	500
	25												320	400	500
	32													400	500
	40														500
	50														
Discrimination limit (A)															
iC60N/H/L Curve C	**0.5**	8	50	T	T	T	T	T	T	T	T	T	T	T	T
	1		16	24	32	70	180	210	370	590	1100	2400	7900	T	T
	2			24	32	48	120	160	220	310	460	780	1200	2000	2000
	3					16	80	104	190	280	380	480	820	1400	1400
	4					14	80	104	130	160	300	430	590	1000	1100
	6						80	104	130	160	200	380	480	770	850
	10								130	160	200	260	320	680	500
	13									55	200	260	320	600	500
	16										71	260	320	400	500
	20											260	320	400	500
	25												127	400	500
	32													168	500
	40														500
	50														
Discrimination limit (A)															
iC60N/H/L Curve D	**0.5**		50	T	T	T	T	T	T	T	T	T	T	T	T
	1			24	32	70	180	210	370	590	1100	2400	7900	T	T
	2				25	48	120	160	220	310	460	680	1200	2000	2000
	3					15	80	104	130	240	380	480	710	1400	1400
	4						28	100	130	160	300	430	590	1000	910
	6								130	160	200	260	480	770	760
	10									73	200	260	320	600	500
	13										79	260	320	600	500
	16										71	194	320	400	500
	20												135	400	500
	25													174	500
	32														277
	40														

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: iC60N/H/L curve C
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		iC60N/H/L Curve C													
In (A)		1	2	3	4	6	10	13	16	20	25	32	40	50	63
Downstream	**2P (220-240 V) single-phase network**														
Discrimination limit (A)															
iC60N/H/L Curve B	**0.5**	20	T	T	T	T	T	T	T	T	T	T	T	T	T
	1		20	40	50	120	540	940	2700	T	T	T	T	T	T
	2			24	32	70	210	260	430	800	1500	3600	7900	52000	53000
	3				5	48	140	180	250	450	710	1200	2100	11000	9800
	4					14	120	160	220	310	460	680	940	2000	2000
	6						80	104	130	240	350	510	770	1300	1100
	10							104	130	160	200	380	550	930	950
	13									160	200	260	480	770	760
	16										200	260	320	400	500
	20											260	320	400	500
	25												320	400	500
	32													400	500
	40														500
	50														
Discrimination limit (A)															
iC60N/H/L Curve C	**0.5**	20	T	T	T	T	T	T	T	T	T	T	T	T	T
	1		20	40	50	120	540	940	2700	T	T	T	T	T	T
	2			24	32	70	210	260	430	660	1500	3600	7900	60000	53000
	3					16	140	180	250	380	710	1200	2100	11000	9800
	4					14	120	104	190	310	460	680	940	2000	2000
	6						80	104	130	160	350	510	620	1300	1100
	10								130	160	200	260	480	770	850
	13									55	200	260	480	770	760
	16										78	260	320	400	500
	20											260	320	400	500
	25												127	400	500
	32													168	500
	40														500
	50														
Discrimination limit (A)															
iC60N/H/L Curve D	**0.5**		T	T	T	T	T	T	T	T	T	T	T	T	T
	1			30	50	120	540	940	2700	T	T	T	T	T	T
	2				25	48	210	260	430	800	1500	3600	7900	60000	53000
	3					15	120	160	250	380	630	1200	2100	11000	9800
	4						28	100	190	280	460	680	940	2000	2000
	6								130	160	300	450	620	1100	1100
	10									73	200	260	480	770	850
	13										79	260	320	680	760
	16										71	194	320	400	500
	20												135	400	500
	25													174	500
	32														277
	40														

Note: *the discrimination limits given in the table must be compared to the phase/neutral fault current (Ik1). If the max. phase/earth fault current (If) is high, the discrimination of this fault current should also be verified by referring to the limits given in the dark green part of the table.*

Discrimination table

Upstream: iC60N/H/L curve D
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		iC60N/H/L Curve D													
In (A)		1	2	3	4	6	10	13	16	20	25	32	40	50	63
Downstream	**1P, 1P+N 2P (380-415 V) two-phase network 3P, 3P+N 4P**														
Discrimination limit (A)															
iC60N/H/L Curve B	**0.5**	20	T	T	T	T	T	T	T	T	T	T	T	T	T
	1		30	50	70	150	290	510	770	2000	3900	T	T	T	T
	2			36	48	110	210	300	450	730	890	1400	2300	5000	6800
	3				5	72	180	230	330	550	670	1100	1300	2800	4300
	4					72	120	160	290	410	560	840	1000	2000	2400
	6						120	160	190	360	450	660	910	1300	1600
	10							28	190	240	300	380	720	1100	1400
	13									240	300	380	480	900	1100
	16										300	380	480	900	1100
	20											380	480	600	760
	25												480	600	760
	32													600	760
	40														760
	50														
Discrimination limit (A)															
iC60N/H/L Curve C	**0.5**	20	T	T	T	T	T	T	T	T	T	T	T	T	T
	1		30	50	70	150	290	510	770	2000	3900	T	T	T	T
	2			36	48	110	210	300	450	730	890	1600	2300	5000	6800
	3				5	15	120	230	330	550	670	1100	1300	2800	4300
	4					13	120	160	290	410	560	710	1000	2000	2400
	6						120	160	190	360	450	660	910	1300	1600
	10							28	49	240	300	380	720	1100	1100
	13									52	300	380	480	900	1100
	16										71	380	480	900	760
	20											380	480	600	760
	25												105	600	760
	32													153	760
	40														760
	50														
Discrimination limit (A)															
iC60N/H/L Curve D	**0.5**	20	T	T	T	T	T	T	T	T	T	T	T	T	T
	1		30	50	70	150	290	510	770	2000	3900	T	T	T	T
	2			36	48	110	210	300	370	640	890	1600	2300	5000	6800
	3					15	120	230	330	450	670	970	1300	2800	3800
	4					13	28	160	190	410	560	710	1000	1600	2400
	6						32	160	190	240	450	580	810	1300	1600
	10								49	73	300	380	480	1100	1100
	13									52	80	380	480	900	1100
	16										71	380	480	900	760
	20											105	135	600	760
	25												105	174	760
	32													153	760
	40														245
	50														

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: iC60N/H/L curve D
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		iC60N/H/L Curve D													
In (A)		1	2	3	4	6	10	13	16	20	25	32	40	50	63
Downstream	**2P (220-240 V) single-phase network**														
Discrimination limit (A)															
iC60N/H/L Curve B	**0.5**	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	1		50	100	130	340	1600	10000	T	T	T	T	T	T	T
	2			50	80	150	350	650	1100	2600	5800	16000	45000	T	T
	3				5	110	240	370	530	920	1600	3800	9500	T	T
	4					72	180	270	370	640	890	1400	2300	7100	12000
	6						120	160	290	480	590	900	1300	2200	2600
	10							28	190	360	450	660	910	1500	1900
	13									240	450	580	810	1300	1600
	16										300	380	720	1100	1400
	20											380	480	900	1100
	25												480	900	760
	32													600	760
	40														760
	50														
Discrimination limit (A)															
iC60N/H/L Curve C	**0.5**	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	1		50	100	130	340	1600	10000	T	T	T	T	T	T	T
	2			50	70	150	350	580	1100	2600	5800	16000	45000	T	T
	3				5	15	240	370	530	920	1600	3800	9500	T	T
	4					13	180	270	370	640	890	1400	1900	7100	12000
	6						120	160	290	480	590	900	1300	2200	2600
	10							28	190	360	450	660	910	1500	1900
	13									52	300	580	810	1300	1600
	16										71	380	720	1100	1400
	20											380	480	900	1100
	25												105	600	760
	32													153	760
	40														760
	50														
Discrimination limit (A)															
iC60N/H/L Curve D	**0.5**	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	1		40	80	130	340	1600	10000	T	T	T	T	T	T	T
	2			50	70	150	350	650	1200	2600	5800	16000	45000	T	T
	3					15	210	300	530	920	1600	3800	9500	T	T
	4					13	28	230	370	640	890	1400	1900	7100	12000
	6						32	160	190	420	590	900	1100	2200	2600
	10								49	73	450	660	910	1500	1900
	13									52	300	380	720	1300	1600
	16										71	380	480	1100	1400
	20											105	480	900	1100
	25												105	174	760
	32													153	760
	40														245
	50														

Note: *the discrimination limits given in the table must be compared to the phase/neutral fault current (Ik1).*
If the max. phase/earth fault current (If) is high, the discrimination of this fault current should also be verified by referring to the limits given in the dark green part of the table.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve B
Downstream: iDPN curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve B										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P+N 3P, 3P+N**											
Discriminaation limit (A)												
iDPN Curve B	**1**	300	500	700	1000	1500	2000	2500	T	T	T	T
	2	150	300	500	700	1000	1500	2000	T	T	T	T
	3	40	64	300	500	700	1000	1500	T	T	T	T
	4	40	64	80	400	500	700	800	3000	T	T	T
	6	40	64	80	400	500	700	800	3000	T	T	T
	10		64	80	100	130	500	600	1800	3000	T	T
	16				100	130	160	200	1000	2000	3300	3750
	20					52	160	200	1000	1600	2500	3700
	25						59	200	800	1300	2100	3700
	32							200	600	1000	1800	2700
	40								112	320	1600	2400
Discriminaation limit (A)												
iDPN Curve C	**1**	300	500	700	1000	1500	2000	2500	T	T	T	T
	2	150	300	500	700	1000	1500	2000	T	T	T	T
	3	40	64	300	500	700	1000	1500	T	T	T	T
	4	40	64	80	400	500	700	800	3000	T	T	T
	6		51	80	100	500	700	800	3000	T	T	T
	10				80	130	500	600	1800	3000	4000	T
	16					98	128	200	1000	2000	3300	3700
	20						128	160	1000	1600	2500	3700
	25							160	201	1300	2100	3700
	32								201	256	1800	2700
	40									255	320	2400
Discriminaation limit (A)												
iDPN Curve D	**1**	300	500	700	1000	1500	2000	2500	T	T	T	T
	2	150	300	500	700	1000	1500	2000	T	T	T	T
	3		64	300	500	700	1000	1500	T	T	T	T
	4			80	400	500	700	800	3000	T	T	T
	6					500	700	800	3000	T	T	T
	10							600	1800	3000	4000	T
	16								201	2000	3300	3700
	20								201	256	2500	3700
	25								201	256	320	3700
	32									256	320	400
	40										320	400

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve B
Downstream: iDPN N curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve B										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P+N 3P, 3P+N**											
Discriminaation limit (A)												
iDPN N Curve B	**1**	300	500	700	1000	1500	2000	2500	T	T	T	T
	2	150	300	500	700	1000	1500	2000	T	T	T	T
	3	40	64	300	500	700	1000	1500	T	T	T	T
	4	40	64	80	400	500	700	800	3000	T	T	T
	6	40	64	80	400	500	700	800	3000	T	T	T
	10		64	80	100	130	500	600	1800	3000	T	T
	16				100	130	160	200	1000	2000	3300	3750
	20					52	160	200	1000	1600	2500	3700
	25						59	200	800	1300	2100	3700
	32							200	600	1000	1800	2700
	40								112	320	1600	2400
Discriminaation limit (A)												
iDPN N Curve C	**1**	300	500	700	1000	1500	2000	2500	T	T	T	T
	2	150	300	500	700	1000	1500	2000	T	T	T	T
	3	40	64	300	500	700	1000	1500	T	T	T	T
	4	40	64	80	400	500	700	800	3000	T	T	T
	6		51	80	100	500	700	800	3000	T	T	T
	10				80	130	500	600	1800	3000	4000	T
	16					98	128	200	1000	2000	3300	3700
	20						128	160	1000	1600	2500	3700
	25							160	201	1300	2100	3700
	32								201	256	1800	2700
	40									255	320	2400
Discriminaation limit (A)												
iDPN N Curve D	**1**	300	500	700	1000	1500	2000	2500	T	T	T	T
	2	150	300	500	700	1000	1500	2000	T	T	T	T
	3		64	300	500	700	1000	1500	T	T	T	T
	4			80	400	500	700	800	3000	T	T	T
	6					500	700	800	3000	T	T	T
	10							600	1800	3000	4000	T
	16								201	2000	3300	3700
	20								201	256	2500	3700
	25								201	256	320	3700
	32									256	320	400
	40										320	400

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve C
Downstream: iDPN curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve C										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P+N 3P, 3P+N**											
Discrimination limit (A)												
iDPN Curve B	**1**	300	500	700	1000	T	T	T	T	T	T	T
	2	150	300	500	700	1000	1500	T	T	T	T	T
	3	120	200	300	500	700	1000	1500	T	T	T	T
	4	80	130	170	400	500	700	800	3000	T	T	T
	6	80	130	170	400	500	700	800	3000	T	T	T
	10		130	160	200	350	500	600	1800	3000	T	T
	16				200	270	340	450	1250	2000	3300	3700
	20					52	320	400	1000	1600	2500	3700
	25						59	400	800	1300	2100	3700
	32							95	600	1000	1800	2700
	40								112	700	1600	2400
Discrimination limit (A)												
iDPN Curve C	**1**	300	500	700	1000	T	T	T	T	T	T	T
	2	150	300	500	700	1000	1500	T	T	T	T	T
	3	120	200	300	500	700	1000	1500	T	T	T	T
	4	21	200	170	400	500	700	800	3000	4500	4500	T
	6	18	200	170	400	500	700	800	3000	4500	4500	T
	10		25	160	200	350	500	600	1800	3000	4500	4500
	16				200	270	340	450	1250	2000	3300	3700
	20					52	320	400	1000	1600	2500	3700
	25						59	400	800	1300	2100	3700
	32							95	800	1000	1800	2700
	40								112	257	1600	2400
Discrimination limit (A)												
iDPN Curve D	**1**	300	500	700	1000	T	T	T	T	T	T	T
	2	150	300	500	700	1000	1500	T	T	T	T	T
	3	120	200	300	500	700	1000	1500	T	T	T	T
	4	21	200	170	400	500	700	800	3000	4500	4500	T
	6				400	500	700	800	3000	4500	4500	T
	10				200	450	500	600	1800	3000	4500	4500
	16							450	1000	2000	3300	3700
	20								1000	1600	2500	3700
	25								800	1300	2100	3700
	32										1800	2700
	40											2400

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve C
Downstream: iDPN N curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve C										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P+N 3P, 3P+N**											
Discrimination limit (A)												
iDPN N Curve B	**1**	300	500	700	1000	T	T	T	T	T	T	T
	2	150	300	500	700	1000	1500	T	T	T	T	T
	3	120	200	300	500	700	1000	1500	T	T	T	T
	4	80	130	170	400	500	700	800	3000	T	T	T
	6	80	130	170	400	500	700	800	3000	T	T	T
	10		130	160	200	350	500	600	1800	3000	T	T
	16				200	270	340	450	1250	2000	3300	3700
	20					52	320	400	1000	1600	2500	3700
	25						59	400	800	1300	2100	3700
	32							95	600	1000	1800	2700
	40								112	700	1600	2400
Discrimination limit (A)												
iDPN N Curve C	**1**	300	500	700	1000	T	T	T	T	T	T	T
	2	150	300	500	700	1000	1500	T	T	T	T	T
	3	120	200	300	500	700	1000	1500	T	T	T	T
	4	21	200	170	400	500	700	800	3000	4500	4500	T
	6	18	200	170	400	500	700	800	3000	4500	4500	T
	10		25	160	200	350	500	600	1800	3000	4500	4500
	16				200	270	340	450	1000	2000	3300	3700
	20					52	320	400	1000	1600	2500	3700
	25						59	400	800	1300	2100	3700
	32							95	800	1000	1800	2700
	40								112	257	1600	2400
Discrimination limit (A)												
iDPN N Curve D	**1**	300	500	700	1000	T	T	T	T	T	T	T
	2	150	300	500	700	1000	1500	T	T	T	T	T
	3	120	200	300	500	700	1000	1500	T	T	T	T
	4	21	200	170	400	500	700	800	3000	4500	4500	T
	6				400	500	700	800	3000	4500	4500	T
	10				200	450	500	600	1800	3000	4500	4500
	16							450	1000	2000	3300	3700
	20								1000	1600	2500	3700
	25								800	1300	2100	3700
	32										1800	2700
	40											2400

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve D
Downstream: iDPN curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve D										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P+N 3P, 3P+N**											
Discrimination limit (A)												
iDPN Curve B	**1**	350	T	T	T	T	T	T	T	T	T	T
	2	240	770	830	2000	2200	4800	T	T	T	T	T
	3	180	610	640	1600	1700	3800	T	T	T	T	T
	4	120	450	500	1000	1100	1900	4600	T	T	T	T
	6	120	340	360	730	740	1200	2600	4700	T	T	T
	10		192	240	550	580	860	1600	2800	3500	5600	T
	16				300	380	480	1200	1900	2400	3600	4200
	20					380	480	1000	1500	2000	2900	3300
	25						59	950	1400	1700	2600	2900
	32							600	1100	1600	2200	2600
	40								756	1400	2100	2400
Discrimination limit (A)												
iDPN Curve C	**1**	350	T	T	T	T	T	T	T	T	T	T
	2	240	770	830	2000	2200	4800	T	T	T	T	T
	3	180	610	640	1600	1700	3800	T	T	T	T	T
	4	120	450	500	1000	1100	1900	4600	T	T	T	T
	6	18	192	360	730	740	1200	2600	4700	T	T	T
	10		29	240	550	580	860	1600	2800	3500	5600	T
	16				49	380	480	1200	1900	2400	3600	4200
	20					52	480	1000	1500	2000	2900	3300
	25						59	600	1400	1700	2600	2900
	32							95	1100	1600	2200	2600
	40								756	960	2100	2400
Discrimination limit (A)												
iDPN Curve D	**1**	350	T	T	T	T	T	T	T	T	T	T
	2	240	770	830	2000	2200	4800	T	T	T	T	T
	3	120	610	640	1600	1700	3800	T	T	T	T	T
	4	21	450	500	1000	1100	1900	4600	T	T	T	T
	6	18	192	360	730	740	1200	2600	4700	T	T	T
	10		25	240	300	580	860	1600	2800	3500	5600	T
	16				49	380	480	1200	1900	2400	3600	4200
	20					52	480	1000	1500	2000	2900	3300
	25						59	600	756	1700	2600	2900
	32							95	756	1600	2200	2600
	40								756	960	2100	2400

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve D
Downstream: iDPN N curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve D										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P+N 3P, 3P+N**											
Discrimination limit (A)												
iDPN N Curve B	1	350	T	T	T	T	T	T	T	T	T	T
	2	240	770	830	2000	2200	4800	T	T	T	T	T
	3	180	610	640	1600	1700	3800	T	T	T	T	T
	4	120	450	500	1000	1100	1900	4600	T	T	T	T
	6	120	340	360	730	740	1200	2600	4700	6200	T	T
	10		192	240	550	580	860	1600	2800	3500	5600	7300
	16				300	380	480	1200	1900	2400	3600	4200
	20					380	480	1000	1500	2000	2900	3300
	25						59	950	1400	1700	2600	2900
	32							600	1100	1600	2200	2600
	40								756	1400	2100	2400
Discrimination limit (A)												
iDPN N Curve C	1	350	T	T	T	T	T	T	T	T	T	T
	2	240	770	830	2000	2200	4800	T	T	T	T	T
	3	180	610	640	1600	1700	3800	T	T	T	T	T
	4	120	450	500	1000	1100	1900	4600	T	T	T	T
	6	18	192	360	730	740	1200	2600	4700	6200	T	T
	10		29	240	550	580	860	1600	2800	3500	5600	7300
	16				49	380	480	1200	1900	2400	3600	4200
	20					52	480	1000	1500	2000	2900	3300
	25						59	600	1400	1700	2600	2900
	32							95	1100	1600	2200	2600
	40								756	960	2100	2400
Discrimination limit (A)												
iDPN N Curve Da	1	350	T	T	T	T	T	T	T	T	T	T
	2	240	770	830	2000	2200	4800	T	T	T	T	T
	3	120	610	640	1600	1700	3800	T	T	T	T	T
	4	21	450	500	1000	1100	1900	4600	T	T	T	T
	6	18	192	360	730	740	1200	2600	4700	6200	T	T
	10		25	240	300	580	860	1600	2800	3500	5600	7300
	16				49	380	480	1200	1900	2400	3600	4200
	20					52	480	1000	1500	2000	2900	3300
	25						59	600	756	1700	2600	2900
	32							95	756	1600	2200	2600
	40								756	960	2100	2400

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve B
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve B										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P, 1P+N 2P (380-415 V) two-phase network 3P, 3P+N 4P**											
Discrimination limit (A)												
iC60N/H/L Curve B	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	70	150	210	350	550	2000	2500	T	T	T	T
	2	60	110	140	230	310	590	630	1200	2100	3900	9700
	3	40	90	120	180	220	380	460	770	1400	2000	5300
	4	40	64	80	150	190	310	380	570	940	1400	2400
	6	15	64	80	100	130	290	300	440	620	930	1700
	10		22	80	100	130	200	200	380	550	770	1300
	13			28	100	130	160	200	380	480	680	1100
	16				35	130	160	200	250	320	600	940
	20					46	160	200	250	320	400	850
	25						56	200	250	320	400	750
	32							80	250	320	400	500
	40								250	320	400	500
	50									320	400	500
	63											500
Discrimination limit (A)												
iC60N/H/L Curve C	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	70	150	210	350	550	2000	2500	T	T	T	T
	2	40	110	140	230	250	590	630	1200	2100	3900	9700
	3	30	64	120	180	220	380	460	770	1400	2000	5300
	4		64	80	150	190	310	340	570	940	1400	2400
	6			80	100	130	290	300	440	620	930	1700
	10					130	160	200	380	550	770	1100
	13						160	200	250	480	680	940
	16							200	250	320	600	940
	20									320	400	850
	25									320	400	750
	32											500
	40											500
Discrimination limit (A)												
iC60N/H/L Curve D	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	60	150	210	350	550	2000	2500	T	T	T	T
	2	40	90	140	200	250	520	630	1200	2100	3900	9700
	3		64	80	180	220	380	380	770	1200	2000	5300
	4			80	150	190	310	340	570	820	1100	2400
	6					130	240	200	440	620	930	1700
	10							200	380	480	770	1100
	13								250	480	680	940
	16									320	600	940
	20										400	750
	25											500
	32											

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve B
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve B										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**2P (220-240 V) single-phase network**											
Discrimination limit (A)												
iC60N/H/L Curve B	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	120	490	T	T	T	T	T	T	T	T	T
	2	60	160	350	500	1200	4200	8100	T	T	T	T
	3	40	110	170	250	520	1300	1900	6700	T	T	T
	4	40	64	80	190	280	630	750	1400	2700	6200	T
	6	15	64	80	150	150	350	430	810	1400	2100	6100
	10		22	80	100	130	160	200	500	840	1300	2500
	13			28	100	130	240	200	440	770	1100	1900
	16				35	130	160	200	380	520	770	1400
	20					46	160	200	250	320	600	1000
	25						56	200	250	320	400	890
	32							80	250	320	400	840
	40								250	320	400	790
	50									320	400	750
	63											500
Discrimination limit (A)												
iC60N/H/L Curve C	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	120	490	T	T	T	T	T	T	T	T	T
	2	60	160	350	500	1200	4200	8100	T	T	T	T
	3	30	110	170	250	520	1300	1900	6700	T	T	T
	4		64	80	190	280	630	750	1400	2700	6200	T
	6			80	150	150	350	430	810	1400	2100	6100
	10					130	160	200	500	840	1300	2500
	13						160	200	440	620	1100	1900
	16							200	380	520	770	1400
	20									320	600	1000
	25									320	400	890
	32											840
	40											500
Discrimination limit (A)												
iC60N/H/L Curve D	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	120	490	T	T	T	T	T	T	T	T	T
	2	60	160	350	500	1200	4200	8100	T	T	T	T
	3		110	170	250	520	1300	1900	6700	T	T	T
	4			80	190	280	630	750	1400	2700	6200	T
	6					150	350	430	810	1400	2100	6100
	10							200	500	840	1300	2500
	13								380	620	930	1900
	16									520	770	1400
	20										600	1000
	25											890
	32											

Note: *the discrimination limits given in the table must be compared to the phase/neutral fault current (Ik1). If the max. phase/earth fault current (If) is high, the discrimination of this fault current should also be verified by referring to the limits given in the dark green part of the table.*

Discrimination table

Upstream: NG125N/H/L, C120N/H curve C
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L Curve C										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P, 1P+N 2P (380-415 V) two-phase network 3P, 3P+N 4P**											
Discrimination limit (A)												
iC60N/H/L Curve B	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	140	490	920	2300	T	T	T	T	T	T	T
	2	80	250	380	550	1800	2400	8800	10000	13000	T	T
	3	80	190	280	380	1200	1400	4600	8000	8500	14000	T
	4	80	130	240	300	800	820	2000	2300	3400	7000	13000
	6	15	130	160	200	610	650	1400	2300	2300	3600	6400
	10		22	160	200	500	510	1100	1300	1600	2200	3600
	13			28	200	460	470	930	1100	1400	2000	2600
	16				35	380	430	770	950	1200	1700	2300
	20					46	320	680	850	960	1500	2100
	25						56	600	760	960	1200	1800
	32							80	500	640	1200	1500
	40								130	640	800	1500
	50									640	800	1500
	63										800	1000
Discrimination limit (A)												
iC60N/H/L Curve C	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	140	490	920	2300	T	T	T	T	T	T	T
	2	80	250	380	550	2100	2400	8800	10000	13000	T	T
	3	80	190	280	380	1200	1400	4600	8000	8500	14000	T
	4	18	130	160	300	800	820	2000	2300	3400	6000	13000
	6	15	130	160	200	610	650	1400	2300	2300	3600	5500
	10		22	160	200	500	510	930	1300	1400	2200	3100
	13			28	51	420	430	770	1100	1200	2000	2600
	16				35	256	400	770	950	1200	1700	2300
	20					46	320	680	850	960	1500	1800
	25						56	400	760	960	1200	1800
	32							80	500	640	1200	1500
	40								500	640	800	1500
	50									640	800	1000
	63											1000
Discrimination limit (A)												
iC60N/H/L Curve D	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	140	490	920	2300	T	T	T	T	T	T	T
	2	80	250	380	550	1800	2400	8800	10000	13000	T	T
	3	21	190	280	380	1200	1200	4600	8000	8500	14000	T
	4	18	130	160	300	740	740	2000	2300	3400	6000	13000
	6		130	160	200	570	600	1400	1900	1800	3600	5500
	10				200	450	480	930	1300	1400	2200	3100
	13					256	430	770	950	1200	1700	2600
	16						320	770	950	960	1500	2300
	20							400	760	960	1200	1800
	25									640	1200	1500
	32									640	800	1500
	40											1000
	50											

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve C
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L Curve C										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**2P (220-240 V) single-phase network**											
Discrimination limit (A)												
iC60N/H/L Curve B	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	950	T	T	T	T	T	T	T	T	T	T
	2	210	1900	4200	10000	T	T	T	T	T	T	T
	3	120	780	1300	4700	T	T	T	T	T	T	T
	4	80	310	590	1100	4000	13000	T	T	T	T	T
	6	15	190	330	510	1500	2700	7200	9000	9000	T	T
	10		22	160	300	1000	1400	2700	3500	3500	7400	T
	13			28	200	760	910	2000	2700	2700	4900	8100
	16				35	620	620	1600	2700	2700	3600	5500
	20					46	480	1100	1600	1600	2200	3600
	25						56	930	1200	1200	2000	2600
	32							80	930	960	1700	2300
	40								130	960	1400	2000
	50									640	1200	1900
	63										1200	1700
Discrimination limit (A)												
iC60N/H/L Curve C	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	950	T	T	T	T	T	T	T	T	T	T
	2	210	1900	3500	10000	T	T	T	T	T	T	T
	3	80	670	1300	4700	T	T	T	T	T	T	T
	4	18	310	590	1100	3600	13000	T	T	T	T	T
	6	15	190	290	510	1500	2700	7200	9000	9000	T	T
	10		22	160	200	890	1200	2700	3700	3700	6600	T
	13			28	51	760	770	2000	2700	2700	4000	7200
	16				35	256	620	1600	2700	2700	3600	4600
	20					46	320	1100	1400	1400	2200	3600
	25						56	400	1100	1200	2000	2600
	32							80	500	960	1400	2300
	40								500	640	1200	2000
	50									640	800	1700
	63											1000
Discrimination limit (A)												
iC60N/H/L Curve D	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	950	T	T	T	T	T	T	T	T	T	T
	2	210	1700	3500	10000	T	T	T	T	T	T	T
	3	21	550	1300	4700	T	T	T	T	T	T	T
	4	18	310	520	960	3600	13000	T	T	T	T	T
	6		190	240	460	1500	2700	6400	9000	9000	T	T
	10				200	890	1100	2700	3700	3700	6600	T
	13					256	620	2000	2300	2300	4000	7200
	16						320	1400	2300	2300	3100	4600
	20							400	1400	1400	2200	3100
	25									960	1700	2600
	32									640	1400	2000
	40											1800
	50											

Note: *the discrimination limits given in the table must be compared to the phase/neutral fault current (Ik1). If the max. phase/earth fault current (If) is high, the discrimination of this fault current should also be verified by referring to the limits given in the dark green part of the table.*

Discrimination table

Upstream: NG125N/H/L, C120N/H curve D
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve D										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P, 1P+N 2P (380-415 V) two-phase network 3P, 3P+N 4P**											
Discrimination limit (A)												
iC60N/H/L Curve B	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	410	3800	5200	T	T	T	T	T	T	T	T
	2	240	770	920	2600	2700	7400	14000	T	T	T	T
	3	180	610	640	1300	1600	3600	11000	T	T	T	T
	4	120	450	450	890	1100	1900	4100	11000	13000	T	T
	6	15	340	360	730	740	1300	2600	4700	6200	T	T
	10		22	240	590	660	910	1700	2600	3500	T	T
	13			28	300	580	810	1500	2100	2500	4600	T
	16				35	380	720	1300	1900	2400	3600	T
	20					46	480	1100	1600	2000	3000	3600
	25						56	900	1400	1700	2400	2900
	32							83	1100	1700	2400	2600
	40								1100	1400	2100	2300
	50									1400	2000	2300
	63										2000	2300
Discrimination limit (A)												
iC60N/H/L Curve C	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	410	3800	5200	T	T	T	T	T	T	T	T
	2	240	770	920	2600	2700	7400	T	T	T	T	T
	3	21	530	640	1300	1600	3600	11000	T	T	T	T
	4	18	450	450	890	1100	1900	4100	11000	13000	T	T
	6	15	340	360	730	740	1300	2200	4700	6200	T	T
	10		22	240	590	580	910	1700	2600	3500	T	T
	13			28	51	580	720	1300	2100	2500	4100	T
	16				35	380	480	1100	1900	2400	3600	T
	20					46	88	1100	1600	2000	2700	2900
	25						56	600	1400	1700	2400	2900
	32							80	1100	1400	2400	2600
	40								756	1400	2100	2300
	50									960	2000	2300
	63										1800	2300
Discrimination limit (A)												
iC60N/H/L Curve D	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	410	3800	5200	T	T	T	T	T	T	T	T
	2	240	770	920	2600	2700	6300	T	T	T	T	T
	3	21	530	550	1300	1600	3600	11000	T	T	T	T
	4	18	370	450	890	970	1600	3700	11000	13000	T	T
	6	15	340	360	730	740	1100	2200	4700	5400	T	T
	10		22	240	520	580	810	1500	2600	3000	T	T
	13			28	51	380	720	1300	2100	2500	4100	T
	16				35	380	480	1100	1900	2400	3600	T
	20					46	480	900	1400	1700	2700	2900
	25						56	600	1400	1700	2400	2600
	32							80	1100	1400	2100	2600
	40								756	1400	2100	2300
	50									960	1800	1500
	63										1800	1500

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

T *Total discrimination.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve D
Downstream: iC60N/H/L curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve D										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**2P (220-240 V) single-phase network**											
Discrimination limit (A)												
iC60N/H/L Curve B	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	T	T	T	T	T	T	T	T	T	T	T
	2	1200	T	T	T	T	T	T	T	T	T	T
	3	520	3400	3400	T	T	T	T	T	T	T	T
	4	120	1200	1300	5800	5600	T	T	T	T	T	T
	6	15	700	720	1900	1900	6000	11000	T	T	T	T
	10		22	540	1200	1200	2600	4200	10000	T	T	T
	13			28	300	900	1800	3400	7300	8000	T	T
	16				35	740	1500	2200	4700	5400	T	T
	20					46	910	1700	3500	3500	6900	T
	25						56	1500	2500	2500	5200	6800
	32							83	2000	2400	3400	4400
	40								1800	1900	2900	4000
	50									1900	2800	3300
	63										2300	2800
Discrimination limit (A)												
iC60N/H/L Curve C	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	T	T	T	T	T	T	T	T	T	T	T
	2	1200	T	T	T	T	T	T	T	T	T	T
	3	21	3400	3400	T	T	T	T	T	T	T	T
	4	18	1200	1300	5800	5600	T	T	T	T	T	T
	6	15	700	720	1900	1900	6000	11000	T	T	T	T
	10		22	480	1200	1200	2200	4200	10000	T	T	T
	13			28	51	900	1800	3000	7300	8000	T	T
	16				35	740	1300	2200	4700	5400	T	T
	20					46	88	1700	3500	3500	6900	T
	25						56	600	2500	2500	4600	6800
	32							80	2000	2200	3400	4400
	40								756	1900	2900	3500
	50									960	2300	2800
	63										2300	2800
Discrimination limit (A)												
iC60N/H/L Curve D	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	1	T	T	T	T	T	T	T	T	T	T	T
	2	1200	T	T	T	T	T	T	T	T	T	T
	3	21	3000	3400	T	T	T	T	T	T	T	T
	4	18	1100	1300	5800	4500	T	T	T	T	T	T
	6	15	600	600	1600	1600	5300	11000	T	T	T	T
	10		22	420	1000	1100	2200	3400	10000	T	T	T
	13			28	51	900	1700	2600	6400	7100	T	T
	16				35	380	1300	2200	3900	4500	T	T
	20					46	480	1500	3000	3500	6000	T
	25						56	600	2100	2500	4100	5900
	32							80	1800	2200	3400	4400
	40								756	1700	2400	2900
	50									960	2300	2800
	63										2000	2300

Note: *the discrimination limits given in the table must be compared to the phase/neutral fault current (Ik1). If the max. phase/earth fault current (If) is high, the discrimination of this fault current should also be verified by referring to the limits given in the dark green part of the table.*

Discrimination table

Upstream: NG125N/H/L, C120N/H curve B
Downstream: C120, NG125 curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve B										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P, 1P+N 2P (380-415 V) two-phase network 3P, 3P+N 4P**											
Discrimination limit (A)												
C120, NG125 Curve B	**10**			80	100	130	160	200	250	320	400	800
	16				100	130	160	200	250	320	400	750
	20					65	160	200	250	320	400	750
	25						160	200	250	320	400	500
	32							200	250	320	400	500
	40								250	320	400	500
	50									320	400	500
	63										400	500
	80											400
Discrimination limit (A)												
C120, NG125 Curve C	**10**					130	160	200	250	320	400	750
	16							200	250	320	400	500
	20								250	320	400	500
	25									320	400	500
	32										400	500
	40											500
Discrimination limit (A)												
C120, NG125 Curve D	**10**							200	250	320	400	750
	16									320	400	500
	20										400	500
	25											500
	32											

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

No discrimination.

Discrimination table

Upstream : NG125N/H/L, C120N/H curve B
Downstream: C120, NG125 curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve B										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**2P (220-240 V) single-phase network**											
Discrimination limit (A)												
C120, NG125 Curve B	**10**			80	100	130	260	200	400	540	670	1100
	16				100	130	240	200	250	480	630	910
	20					65	160	200	250	320	600	830
	25						160	200	250	320	400	830
	32							200	250	320	400	750
	40								250	320	400	750
	50									320	400	500
	63										400	500
	80											400
Discrimination limit (A)												
C120, NG125 Curve C	**10**					130	240	200	250	480	670	980
	16							200	250	320	400	830
	20								250	320	400	830
	25									320	400	750
	32										400	500
	40											500
Discrimination limit (A)												
C120, NG125 Curve D	**10**							200	250	320	630	980
	16									320	400	750
	20										400	750
	25											500
	32											

Note: *the discrimination limits given in the table must be compared to the phase/neutral fault current (Ik1).*
If the max. phase/earth fault current (If) is high, the discrimination of this fault current should also be verified by referring to the limits given in the dark green part of the table.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve C
Downstream: C120, NG125 curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve C										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P, 1P+N 2P (380-415 V) two-phase network 3P, 3P+N 4P**											
Discrimination limit (A)												
C120, NG125 Curve B	**10**		130	160	200	260	320	650	820	960	1300	1700
	16				200	260	320	600	760	800	900	1500
	20					65	320	400	500	640	800	1500
	25						320	400	500	640	800	1000
	32							400	500	640	800	1000
	40								500	640	800	1000
	50									640	800	1000
	63										800	1000
	80											1000
	100											
Discrimination limit (A)												
C120, NG125 Curve C	**10**		39	160	200	260	320	650	760	900	1200	1700
	16				70	110	320	400	500	640	800	1500
	20					65	124	400	500	640	800	1000
	25						89	149	500	640	800	1000
	32							123	240	640	800	1000
	40								181	269	800	1000
	50									227	800	1000
	63										800	1000
	80											1000
Discrimination limit (A)												
C120, NG125 Curve D	**10**					260	320	600	760	900	1200	1600
	16						320	400	500	640	800	1000
	20							400	500	640	800	1000
	25								500	640	800	1000
	32										800	1000
	40											1000
	50											

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve C
Downstream: C120, NG125 curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve C										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**2P (220-240 V) single-phase network**											
Discrimination limit (A)												
C120, NG125 Curve B	**10**		130	160	200	480	510	930	1100	1200	1700	2500
	16				200	260	320	800	990	1100	1400	2000
	20					65	320	730	910	1100	1400	1900
	25						320	730	830	960	1200	1600
	32							400	830	960	1200	1600
	40								500	640	800	1500
	50									640	800	1500
	63										800	1000
	80											1000
	100											
Discrimination limit (A)												
C120, NG125 Curve C	**10**		39	160	200	260	480	870	1100	1200	1700	2500
	16				70	110	320	730	910	1100	1400	2000
	20					65	124	670	830	960	1300	1700
	25						89	149	500	640	1200	1600
	32							123	240	640	800	1500
	40								181	269	800	1000
	50									227	800	1000
	63										800	1000
	80											1000
Discrimination limit (A)												
C120, NG125 Curve D	**10**					260	320	800	1100	1100	1600	2200
	16						320	630	830	960	1300	1900
	20							400	760	960	1300	1700
	25								500	640	800	1500
	32										800	1500
	40											1000
	50											

Note: *the discrimination limits given in the table must be compared to the phase/neutral fault current (Ik1).*
If the max. phase/earth fault current (If) is high, the discrimination of this fault current should also be verified by referring to the limits given in the dark green part of the table.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve D
Downstream: C120, NG125 curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve D										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**1P, 1P+N 2P (380-415 V) two-phase network 3P, 3P+N 4P**											
Discrimination limit (A)												
C120, NG125 Curve B	**10**		190	240	300	380	480	970	1300	1600	2200	2500
	16				300	380	480	600	1100	1400	2000	2300
	20					65	480	600	1100	1400	2000	2300
	25						480	600	760	960	1200	1500
	32							600	760	960	1200	1500
	40								760	960	1200	1500
	50									960	1200	1500
	63										1200	1500
	80											1500
	100											
Discrimination limit (A)												
C120, NG125 Curve C	**10**		190	240	300	380	480	970	1300	1600	2200	2500
	16				70	110	480	600	1100	1400	2000	2300
	20					65	124	600	1100	1400	2000	2300
	25						89	149	760	960	1200	1500
	32							123	240	960	1200	1500
	40								181	269	1200	1500
	50									227	1200	1500
	63										1200	1500
	80											1500
	100											
Discrimination limit (A)												
C120, NG125 Curve D	**10**		39	240	300	380	480	970	1300	1600	2200	2500
	16				70	110	480	600	1100	1400	2000	2300
	20					65	124	193	1100	1400	2000	2300
	25						89	149	236	960	1200	1500
	32							123	240	960	1200	1500
	40								181	269	1200	1500
	50									227	1200	1500
	63										1200	1500
	80											1500
	100											

Note: *if you cannot find your combination, refer to the selection table on page 14.*

4000 *Discrimination limit = 4 kA.*

No discrimination.

Discrimination table

Upstream: NG125N/H/L, C120N/H curve D
Downstream: C120, NG125 curves B, C, D

220-240/380-415 V AC

Upstream		NG125N/H/L, C120N/H Curve D										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**2P (220-240 V) single-phase network**											
Discrimination limit (A)												
C120, NG125 Curve B	**10**		190	240	250	380	720	1300	2000	2400	3700	4800
	16				300	380	480	1100	1600	1900	2600	3200
	20					65	480	1100	1500	1800	2600	2900
	25						480	600	1200	1400	2100	2400
	32							600	1200	1400	2100	2400
	40								760	960	1200	1500
	50									960	1200	1500
	63										1200	1500
	80											1500
	100											
Discrimination limit (A)												
C120, NG125 Curve C	**10**		190	240	250	380	720	1300	2000	2400	3700	4800
	16				70	110	480	1100	1600	1900	2600	3200
	20					65	124	1100	1500	1800	2600	2900
	25						89	149	1200	1400	2100	2400
	32							123	240	1400	2100	2400
	40								181	269	1200	1500
	50									227	1200	1500
	63										1200	1500
	80											1500
	100											
Discrimination limit (A)												
C120, NG125 Curve D	**10**		39	240	250	380	720	1300	2000	2400	3700	4800
	16				70	110	480	1100	1600	1900	2600	3200
	20					65	124	193	1500	1800	2600	2900
	25						89	149	236	1400	2100	2400
	32							123	240	1400	2100	2400
	40								181	269	1200	1500
	50									227	1200	1500
	63										1200	1500
	80											1500
	100											

Note: *the discrimination limits given in the table must be compared to the phase/neutral fault current (Ik1).*
If the max. phase/earth fault current (If) is high, the discrimination of this fault current should also be verified by referring to the limits given in the dark green part of the table.

Discrimination table
Discrimination of circuit breakers

Ue ⩽ 440 V AC

Contents

Discrimination between circuit breakers

In the following tables we show the level of discrimination between two LV circuits that are protected by circuit breakers up to 440 V, 50/60 Hz systems.
This discrimination will be either:

- total: represented by a T (up to the breaking capacity of the downstream device),
- partial: discrimination limit current (Is) indicated. Below this value discrimination is ensured, above this value the upstream device is also involved in breaking,
- zero: no discrimination ensured.

Discrimination table

Upstream: NG160E/N/H
Downstream: iDPN, iC60, C120, NG125

Ue ⩽ 440 V AC

Upstream		NG160E/N/H									
In (A)		16	25	32	40	50	63	80	100	125	160
Downstream											
Discrimination limit (kA)											
iDPN	**⩽ 10**	5	5	5	5	5	T	T	T	T	T
Curves B, C	**16**			3	3	3	T	T	T	T	T
	20				3	3	T	T	T	T	T
	25					3	T	T	T	T	T
	32						4	4	T	T	T
	40							4	T	T	T
Discrimination limit (kA)											
iDPNN	**⩽ 10**	5	5	5	5	5	T	T	T	T	T
Curves C, D	**16**			3	3	3	T	T	T	T	T
	20				3	3	T	T	T	T	T
	25					3	6	6	T	T	T
	32						4	4	7	T	T
	40							4	7	8	8
Discrimination limit (kA)											
iC60N/H	**⩽ 10**	5	5	5	5	5	10	T	T	T	T
Curves B, C, D	**16**			3	3	3	10	T	T	T	T
	20				3	3	10	T	T	T	T
	25					3	6	6	T	T	T
	32						4	4	7	T	T
	40							4	7	8	8
	50								5	8	8
	63									6	6
iC60L	**⩽ 10**	5	5	5	5	5	10	15	T	T	T
Curves B-C-D-K-Z	**16**			3	3	3	10	15	T	T	T
	20				3	3	10	15	T	T	T
	25					3	6	6	T	T	T
	32						4	4	7	T	T
	40							4	7	8	8
	50								5	8	8
	63									6	6
Discrimination limit (kA)											
C120N/H	**63**									1.25	1.25
Curves B, C, D	**80**										1.25
	100										1.25
	125										
Discrimination limit (kA)											
NG125N/H/L	**10**	0.6	0.6	0.6	0.6	0.6	0.8	0.8	1	1.25	1.25
Curves B, C, D	**16**			0.6	0.6	0.6	0.8	0.8	1	1.25	1.25
	20			0.6	0.6	0.6	0.8	0.8	1	1.25	1.25
	25				0.6	0.6	0.8	0.8	1	1.25	1.25
	32						0.8	0.8	1	1.25	1.25
	40							0.8	1	1.25	1.25
	50							0.8	1	1.25	1.25
	63									1.25	1.25
	80										1.25
	100 (N)										1.25
	125 (N)										

4 *Discrimination limit = 4 kA.*

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6.*

Discrimination table

Upstream: Compact NSX100-250 TM-D
Downstream: iDPN, iC60, C120, NG125-160

Ue ⩽ 440 V AC

Upstream		NSX100B/F/N/H/S/L/R								NSX160B/F/N/H/S/L				NSX250B/F/N/H/S/L/R		
Trip unit		TM-D								TM-D				TM-D		
In (A)		16	25	32	40	50	63	80	100	80	100	125	160	160	200	250
Downstream																
Discrimination limit (kA)																
iDPN Curves B, C	**⩽ 10**	0.19	0.3	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	16		0.3	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	20			0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	25					0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	32						0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	40						0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
Discrimination limit (kA)																
iDPNN Curves C, D	**⩽ 10**	0.19	0.3	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	16		0.3	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	20			0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	25					0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	32						0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	40						0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
Discrimination limit (kA)																
iC60N/H Curves B, C, D	**⩽ 10**	0.19	0.3	0.4	0.9	0.9	0.9	1.3	3	1.3	3	T	T	T	T	T
	16		0.3	0.4	0.5	0.5	0.5	1	2	1	2	T	T	T	T	T
	20			0.4	0.5	0.5	0.5	0.63	1.5	0.63	1.5	T	T	T	T	T
iC60L Curves B-C-D-K-Z	**25**				0.5	0.5	0.5	0.63	1.5	0.63	1.5	T	T	T	T	T
	32						0.5	0.63	1	0.63	1	T	T	T	T	T
	40						0.5	0.63	1	0.63	1	T	T	T	T	T
	50							0.63	0.8	0.63	0.8	T	T	T	T	T
	63								0.8		0.8	T	T	T	T	T
Discrimination limit (kA)																
C120N/H Curves B, C, D	**63**								0.8		0.8	2.4	2.4	2.4	T	T
	80												2.4	2.4	T	T
	100														T	T
	125															T
Discrimination limit (kA)																
NG125N/H/L Curves B, C, D	**10**	0.19	0.3	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	16		0.3	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	20			0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
	25					0.5	0.5	0.63	0.8	0.63	0.8	2.4	2.4	2.4	T	T
	32						0.5	0.63	0.8	0.63	0.8	2.4	2.4	2.4	T	T
	40							0.63	0.8	0.63	0.8	2.4	2.4	2.4	T	T
	50							0.63	0.8	0.63	0.8	2.4	2.4	2.4	T	T
	63								0.8		0.8	2.4	2.4	2.4	T	T
	80												2.4	2.4	T	T
	100 (N)														T	T
	125 (N)															T
Discrimination limit (kA)																
NG160E/N/H	**16**			0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	2	2	2	T	T
	25				0.5	0.5	0.5	0.63	0.8	0.63	0.8	2	2	2	T	T
	32						0.5	0.63	0.8	0.63	0.8	2	2	2	T	T
	40							0.63	0.8	0.63	0.8	2	2	2	T	T
	50							0.63	0.8	0.63	0.8	2	2	2	T	T
	63								0.8		0.8	2	2	2	T	T
	80											2	2	2	T	T
	100												2	2	T	T
	125														T	T
	160															T

4 *Discrimination limit = 4 kA.*

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6.*

Discrimination table

Upstream: Compact NSX100-250 Micrologic
Downstream: iDPN, iC60, C120, NG125-160

Ue ⩽ 440 V AC

Upstream		NSX100B/F/N/H/S/L/R								NSX160B/F/N/H/S/L				NSX250B/F/N/H/S/L/R		
Trip unit		Micrologic								Micrologic				Micrologic		
Downstream	**Rating (A)**	**40**				**100**				**160**				**250**		
	Setting Ir	**16**	**25**	**32**	**40**	**40**	**63**	**80**	**100**	**80**	**100**	**125**	**160**	**160**	**200**	**250**
Discrimination limit (kA)																
iDPN Curves B, C	**⩽ 10**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	16		T	T	T	T	T	T	T	T	T	T	T	T	T	T
	20			T	T	T	T	T	T	T	T	T	T	T	T	T
	25				T	T	T	T	T	T	T	T	T	T	T	T
	32						T	T	T	T	T	T	T	T	T	T
	40						T	T	T	T	T	T	T	T	T	T
Discrimination limit (kA)																
iDPNN Curves C, D	**⩽ 10**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	16		T	T	T	T	T	T	T	T	T	T	T	T	T	T
	20			T	T	T	T	T	T	T	T	T	T	T	T	T
	25				T	T	T	T	T	T	T	T	T	T	T	T
	32						T	T	T	T	T	T	T	T	T	T
	40						T	T	T	T	T	T	T	T	T	T
Discrimination limit (kA)																
iC60N/H Curves B, C, D	**⩽ 10**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	16		T	T	T	T	T	T	T	T	T	T	T	T	T	T
	20			T	T	T	T	T	T	T	T	T	T	T	T	T
iC60L Curves B-C-D-K-Z	**25**				T	T	T	T	T	T	T	T	T	T	T	T
	32						T	T	T	T	T	T	T	T	T	T
	40						T	T	T	T	T	T	T	T	T	T
	50							6	6	T	T	T	T	T	T	T
	63								6		T	T	T	T	T	T
Discrimination limit (kA)																
C120N/H Curves B, C, D	**63**								1.5		2.4	2.4	2.4	T	T	T
	80											2.4	2.4	T	T	T
	100												2.4	T	T	T
	125														T	T
Discrimination limit (kA)																
NG125N/H/L Curves B, C, D	**10**	0.6	0.6	0.6	0.6	1.5	1.5	1.5	1.5	T	T	T	T	T	T	T
	16		0.6	0.6	0.6	1.5	1.5	1.5	1.5	T	T	T	T	T	T	T
	20			0.6	0.6	1.5	1.5	1.5	1.5	T	T	T	T	T	T	T
	25				0.6	1.5	1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	32						1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	40						1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	50							1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	63								1.5		2.4	2.4	2.4	T	T	T
	80											2.4	2.4	T	T	T
	100 (N)												2.4	T	T	T
	125 (N)														T	T
Discrimination limit (kA)																
NG160E/N/H	**16**				0.6	1.5	1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	25					1.5	1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	32						1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	40							1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	50							1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	63								1.5		2.4	2.4	2.4	T	T	T
	80											2.4	2.4	T	T	T
	100												2.4	T	T	T
	125														T	T
	160															T

4 *Discrimination limit = 4 kA.*

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6.*

Discrimination table

Upstream: Compact NSX100-250 TM-D
Downstream: Compact NSX100-250 TM-D - Micrologic

Ue ⩽ 440 V AC

Upstream		NSX100B/F/N/H/S/L/R								NSX160B/F/N/H/S/L				NSX250B/F/N/H/S/L/R		
Trip unit		TM-D								TM-D				TM-D		
In (A)		16	25	32	40	50	63	80	100	80	100	125	160	160	200	250
Downstream																
Discrimination limit (kA)																
Compact NSX100 B/F TM-D	**16**				0.5	0.5	0.5	0.63	0.8	0.63	0.8	1.25	1.25	1.25	T	T
	25					0.5	0.5	0.63	0.8	0.63	0.8	1.25	1.25	1.25	T	T
	32						0.5	0.63	0.8	0.63	0.8	1.25	1.25	1.25	T	T
	40							0.63	0.8	0.63	0.8	1.25	1.25	1.25	T	T
	50							0.63	0.8	0.63	0.8	1.25	1.25	1.25	T	T
	63								0.8		0.8	1.25	1.25	1.25	T	T
	80											1.25	1.25	1.25	T	T
	100												1.25	1.25	T	T
Discrimination limit (kA)																
Compact NSX100 N/H/S/L/R TM-D	**16**				0.5	0.5	0.5	0.63	0.8	0.63	0.8	1.25	1.25	1.25	T	T
	25					0.5	0.5	0.63	0.8	0.63	0.8	1.25	1.25	1.25	T	T
	32						0.5	0.63	0.8	0.63	0.8	1.25	1.25	1.25	36	36
	40							0.63	0.8	0.63	0.8	1.25	1.25	1.25	36	36
	50							0.63	0.8	0.63	0.8	1.25	1.25	1.25	36	36
	63								0.8		0.8	1.25	1.25	1.25	36	36
	80											1.25	1.25	1.25	36	36
	100												1.25	1.25	36	36
Discrimination limit (kA)																
Compact NSX160 B/F/N/H/S/L TM-D	**⩽ 63**											1.25	1.25	1.25	4	5
	80											1.25	1.25	1.25	4	5
	100												1.25	1.25	4	5
	160															5
Discrimination limit (kA)																
Compact NSX250 B/F/N/H/S/L/R TM-D	**⩽ 100**													1.25	2	2.5
	125														2	2.5
	160															2.5
	200															
Discrimination limit (kA)																
Compact NSX100 B/F/N/H/S/L/R Micrologic	**40**						0.5	0.63	0.8	0.63	0.8	1.25	1.25	1.25	2	2.5
	100												1.25	1.25	2	2.5
Discrimination limit (kA)																
Compact NSX160 B/F/N/H/S/L Micrologic	**40**						0.5	0.63	0.8	0.63	0.8	1.25	1.25	1.25	2	2.5
	100												1.25	1.25	2	2.5
	160															2.5
Discrimination limit (kA)																
Compact NSX250 B/F/N/H/S/L/R Micrologic	**⩽ 100**													1.25	2	2.5
	160															2.5
	250															

4 *Discrimination limit = 4 kA.*

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6.*

Discrimination table
Upstream: Compact NSX100-250 Micrologic
Downstream: Compact NSX100-250 TM-D - Micrologic

Ue ⩽ 440 V AC

Upstream		NSX100B/F/N/H/S/L/R								NSX160B/F/N/H/S/L				NSX250B/F/N/H/S/L/R		
Trip unit		Micrologic								Micrologic				Micrologic		
Downstream	**Rating (A)**	**40**				**100**				**160**				**250**		
	Setting Ir	**16**	**25**	**32**	**40**	**40**	**63**	**80**	**100**	**80**	**100**	**125**	**160**	**160**	**200**	**250**
Discrimination limit (kA)																
Compact NSX100 B/F TM-D	**16**					1.5	1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	25					1.5	1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	32						1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	40							1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	50								1.5	2.4	2.4	2.4	2.4	T	T	T
	63										2.4	2.4	2.4	T	T	T
	80											2.4	2.4	T	T	T
	100												2.4	T	T	T
Discrimination limit (kA)																
Compact NSX100 N/H/S/L/R TM-D	**16**					1.5	1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	25					1.5	1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	32						1.5	1.5	1.5	2.4	2.4	2.4	2.4	36	36	36
	40							1.5	1.5	2.4	2.4	2.4	2.4	36	36	36
	50								1.5	2.4	2.4	2.4	2.4	36	36	36
	63										2.4	2.4	2.4	36	36	36
	80											2.4	2.4	36	36	36
	100												2.4	36	36	36
Discrimination limit (kA)																
Compact NSX160 B/F/N/H/S/L TM-D	**⩽ 63**										2.4	2.4	2.4	3	3	3
	80											2.4	2.4	3	3	3
	100												2.4	3	3	3
	160															3
Discrimination limit (kA)																
Compact NSX250 B/F/N/H/S/L/R TM-D	**⩽ 100**													3	3	3
	125														3	3
	160															3
	200															
Discrimination limit (kA)																
Compact NSX100 B/F Micrologic	**40**						1.5	1.5	1.5	2.4	2.4	2.4	2.4	T	T	T
	100												2.4	T	T	T
Compact NSX100 N/H/S/L/R Micrologic	**40**						1.5	1.5	1.5	2.4	2.4	2.4	2.4	36	36	36
	100												2.4	36	36	36
Discrimination limit (kA)																
Compact NSX160 B/F/N/H/S/L Micrologic	**40**									2.4	2.4	2.4	2.4	3	3	3
	100												2.4	3	3	3
	160															3
Discrimination limit (kA)																
Compact NSX250 B/F/N/H/S/L/R Micrologic	**⩽ 100**													3	3	3
	160															3
	250															

4 *Discrimination limit = 4 kA.*

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6.*

Discrimination table

Upstream: Compact NSX400-630 Micrologic
Downstream: iDPN, iC60, C120, NG125-160, Compact NSX100-400

Ue ⩽ 440 V AC

Upstream		NSX400F/N/H/S/L/R					NSX630F/N/H/S/L/R				
Trip unit		Micrologic					Micrologic				
Downstream	**Rating (A)**	**400**					**630**				
	Setting Ir	**160**	**200**	**250**	**320**	**400**	**250**	**320**	**400**	**500**	**630**
Discrimination limit (kA)											
iDPN		T	T	T	T	T	T	T	T	T	T
iDPNN		T	T	T	T	T	T	T	T	T	T
iC60N/H/L		T	T	T	T	T	T	T	T	T	T
Discrimination limit (kA)											
C120N/H	**⩽ 80**	T	T	T	T	T	T	T	T	T	T
	100		T	T	T	T	T	T	T	T	T
	125			T	T	T	T	T	T	T	T
Discrimination limit (kA)											
NG125N/H/L	**⩽ 80**	T	T	T	T	T	T	T	T	T	T
	100		T	T	T	T	T	T	T	T	T
	125			T	T	T	T	T	T	T	T
Discrimination limit (kA)											
NG160E/N/H	**⩽ 80**	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T
	125		T	T	T	T	T	T	T	T	T
	160			T	T	T	T	T	T	T	T
Discrimination limit (kA)											
Compact NSX100 B/F/N/H/S/L/R TM-D	**⩽ 80**	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T
Discrimination limit (kA)											
Compact NSX160 B/F/N/H/S/L TM-D	**⩽ 100**	T	T	T	T	T	T	T	T	T	T
	125		T	T	T	T	T	T	T	T	T
	160			T	T	T	T	T	T	T	T
Discrimination limit (kA)											
Compact NSX250 B/F/N/H/S/L/R TM-D	**⩽ 100**	4.8	4.8	4.8	4.8	4.8	T	T	T	T	T
	125		4.8	4.8	4.8	4.8	T	T	T	T	T
	160			4.8	4.8	4.8	T	T	T	T	T
	200				4.8	4.8		T	T	T	T
	250					4.8			T	T	T
Discrimination limit (kA)											
Compact NSX100 B/F/N/H/S/L/R Micrologic	**40**	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T
Discrimination limit (kA)											
Compact NSX160 B/F/N/H/S/L Micrologic	**40**	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T
	160			T	T	T	T	T	T	T	T
Discrimination limit (kA)											
Compact NSX250 B/F/N/H/S/L/R Micrologic	**⩽ 100**	4.8	4.8	4.8	4.8	4.8	T	T	T	T	T
	160			4.8	4.8	4.8	T	T	T	T	T
	250					4.8			T	T	T
Discrimination limit (kA)											
Compact NSX400 F/N/H/S/L/R Micrologic	**160**						6.9	6.9	6.9	6.9	6.9
	200							6.9	6.9	6.9	6.9
	250								6.9	6.9	6.9
	320									6.9	6.9
	400										6.9

4 *Discrimination limit = 4 kA.*

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6.*

Discrimination table

Upstream: Compact NS630b-1600N/H Micrologic
Downstream: iDPN, iC60, C120, NG125-160, Compact NSX100-630

Ue ⩽ 440 V AC

Upstream		Compact NS630b/800/1000/1250/1600N/H																				
Trip unit		Micrologic 2.0							Micrologic 5.0 - 6.0 - 7.0 Inst 15 In								Micrologic 5.0 - 6.0 - 7.0 Inst OFF						
Downstream	**Rating (A)**	**630**			**800**	**1000**	**1250**	**1600**	**630**			**800**	**1000**	**1250**	**1600**	**630**			**800**	**1000**	**1250**	**1600**
	Setting Ir	**250**	**400**	**630**	**800**	**1000**	**1250**	**1600**	**250**	**400**	**630**	**800**	**1000**	**1250**	**1600**	**250**	**400**	**630**	**800**	**1000**	**1250**	**1600**
Discrimination limit (kA)																						
iDPN, iDPNN		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C120N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125L		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG160E/N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX100 B/F/N/H/S/L/R TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/N/H/S/L TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX250 B/F/N/H/S/L/R TM-D	**⩽ 125**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	200		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	250		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
Compact NSX100 B/F/N/H/S/L/R Micrologic	**40**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/N/H/S/L Micrologic	**40**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX250 B/F/N/H/S/L/R Micrologic	**⩽ 100**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	250		T	T	T	T	T	T	T	T	T	T	T	T	T		T	T	T	T	T	T
Compact NSX400 F/N/H Micrologic	**160**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	200		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	250		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	320			T	T	T	T	T			T	T	T	T	T			T	T	T	T	T
	400			T	T	T	T	T			T	T	T	T	T			T	T	T	T	T
Compact NSX400 S/L/R Micrologic	**160**	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
	200		90	90	90	90	90	90		90	90	90	90	90	90		90	90	90	90	90	90
	250		90	90	90	90	90	90		90	90	90	90	90	90		90	90	90	90	90	90
	320			90	90	90	90	90			90	90	90	90	90			90	90	90	90	90
	400			90	90	90	90	90			90	90	90	90	90			90	90	90	90	90
Compact NSX630 F/N Micrologic	**250**		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	320			T	T	T	T	T			T	T	T	T	T			T	T	T	T	T
	400			T	T	T	T	T			T	T	T	T	T			T	T	T	T	T
	500				T	T	T	T				T	T	T	T				T	T	T	T
	630					T	T	T					T	T	T					T	T	T
Compact NSX630 H/S/L/R Micrologic	**250**		65	65	65	65	65	65		65	65	65	65	65	65		65	65	65	65	65	65
	320			65	65	65	65	65			65	65	65	65	65			65	65	65	65	65
	400			65	65	65	65	65			65	65	65	65	65			65	65	65	65	65
	500				65	65	65	65				65	65	65	65				65	65	65	65
	630					65	65	65					65	65	65					65	65	65

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6.*

Discrimination table

Upstream: Compact NS630b-1600N/H Micrologic
Downstream: Compact NS630b-1600

Ue ⩽ 440 V AC

Upstream	Compact NS630b/800/1000/1250/1600N/H																		
Trip unit	Micrologic 2.0							Micrologic 5.0 - 6.0 - 7.0 Inst 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst OFF					
Downstream	**Rating (A)**	**630**		**800**	**1000**	**1250**	**1600**	**630**		**800**	**1000**	**1250**	**1600**	**630**		**800**	**1000**	**1250**	**1600**
	Setting Ir	**400**	**630**	**800**	**1000**	**1250**	**1600**	**400**	**630**	**800**	**1000**	**1250**	**1600**	**400**	**630**	**800**	**1000**	**1250**	**1600**
Discrimination limit (kA)																			
Compact NS630bN/H Micrologic	**250**	4	6.3	8	10	12.5	16	9.4	9.4	12	15	18	18	18	18	18	18	18	18
	320		6.3	8	10	12.5	16		9.4	12	15	18	18		18	18	18	18	18
	400		6.3	8	10	12.5	16		9.4	12	15	18	18		18	18	18	18	18
	500			8	10	12.5	16			12	15	18	18			18	18	18	18
	630				10	12.5	16				15	18	18				18	18	18
Compact NS800N/H Micrologic	**320**		6.3	8	10	12.5	16		9.4	12	15	18	18		18	18	18	18	18
	400		6.3	8	10	12.5	16		9.4	12	15	18	18		18	18	18	18	18
	500			8	10	12.5	16			12	15	18	18			18	18	18	18
	630				10	12.5	16				15	18	18			18	18	18	18
	800					12.5	16					18	18				18	18	18
Compact NS1000N/H Micrologic	**400**		6.3	8	10	12.5	16		9.4	12	15	18	18		18	18	18	18	18
	500			8	10	12.5	16			12	15	18	18			18	18	18	18
	630				10	12.5	16				15	18	18				18	18	18
	800					12.5	16					18	18					18	18
	1000						16						18						18
Compact NS1250N/H Micrologic	**500**			8	10	12.5	16			12	15	18	18			18	18	18	18
	630				10	12.5	16				15	18	18				18	18	18
	800					12.5	16					18	18					18	18
	1000						16						18						18
	1250																		
Compact NS1600N/H Micrologic	**630**				10	12.5	16				15	18	18				18	18	18
	800					12.5	16					18	18					18	18
	960						16						18						18
	1250																		
	1600																		
Compact NS630bL/LB Micrologic	**250**	4	6.3	8	10	12.5	16	9.4	9.4	12	15	18.7	24	30	30	30	30	30	30
	320		6.3	8	10	12.5	16		9.4	12	15	18.7	24		30	30	30	30	30
	400		6.3	8	10	12.5	16		9.4	12	15	18.7	24		30	30	30	30	30
	500			8	10	12.5	16			12	15	18.7	24			30	30	30	30
	630				10	12.5	16				15	18.7	24				30	30	30
Compact NS800L/LB Micrologic	**320**		6.3	8	10	12.5	16		9.4	12	15	18.7	24		30	30	30	30	30
	400		6.3	8	10	12.5	16		9.4	12	15	18.7	24		30	30	30	30	30
	500			8	10	12.5	16			12	15	18.7	24			30	30	30	30
	630				10	12.5	16				15	18.7	24				30	30	30
	800					12.5	16					18.7	24					30	30
Compact NS1000L Micrologic	**400**		6.3	8	10	12.5	16		9.4	12	15	18.7	24		30	30	30	30	30
	500			8	10	12.5	16			12	15	18.7	24			30	30	30	30
	630				10	12.5	16				15	18.7	24				30	30	30
	800					12.5	16					18.7	24					30	30
	1000						16						24						30

4 *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6.*

Discrimination table

Upstream: Compact NS1600b-3200N Micrologic
Downstream: iDPN, iC60, C120, NG125-160, Compact NSX100-630, NS630b-3200

Ue ⩽ 440 V AC

Upstream		Compact NS1600b/2000/2500/3200N											
Trip unit		Micrologic 2.0				Micrologic 5.0 - 6.0 - 7.0 Inst 15In				Micrologic 5.0 - 6.0 - 7.0 Inst OFF			
Downstream	**Rating (A)**	**1600**	**2000**	**2500**	**3200**	**1600**	**2000**	**2500**	**3200**	**1600**	**2000**	**2500**	**3200**
Discrimination limit (kA)													
iDPN, iDPNN		T	T	T	T	T	T	T	T	T	T	T	T
iC60N/H/L		T	T	T	T	T	T	T	T	T	T	T	T
C120N/H		T	T	T	T	T	T	T	T	T	T	T	T
NG125N/H		T	T	T	T	T	T	T	T	T	T	T	T
NG125L		T	T	T	T	T	T	T	T	T	T	T	T
NG160E/N/H		T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX B/F/N/H/S/L/R TM-D	**NSX100**	T	T	T	T	T	T	T	T	T	T	T	T
	NSX250	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/N/H/S/L TM-D		T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX B/F/N/H/S/L/R Micrologic	**NSX100**	T	T	T	T	T	T	T	T	T	T	T	T
	NSX250	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/N/H/S/L Micrologic		T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX F/N/H/S/L/R	**NSX400**	T	T	T	T	T	T	T	T	T	T	T	T
	NSX630	T	T	T	T	T	T	T	T	T	T	T	T
Compact NS N	**NS630b**	16	20	25	32	24	30	37.5	48	T	T	T	T
	NS800	16	20	25	32	24	30	37.5	48	T	T	T	T
	NS1000	16	20	25	32	24	30	37.5	48	T	T	T	T
	NS1250		20	25	32		30	37.5	48		T	T	T
	NS1600			25	32			37.5	48			T	T
Compact NS H	**NS630b**	16	20	25	32	24	30	37.5	48	60	60	60	60
	NS800	16	20	25	32	24	30	37.5	48	60	60	60	60
	NS1000	16	20	25	32	24	30	37.5	48	60	60	60	60
	NS1250		20	25	32		30	37.5	48		60	60	60
	NS1600			25	32			37.5	48			60	60
Compact NS N/H	**NS1600b**			25	32			37.5	48			60	60
	NS2000				32				48				60
	NS2500												
	NS3200												
Compact NS L/LB	**NS630bL/LB**	T	T	T	T	T	T	T	T	T	T	T	T
	NS800L/LB	T	T	T	T	T	T	T	T	T	T	T	T
	NS1000L	T	T	T	T	T	T	T	T	T	T	T	T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6.*

Discrimination table

Upstream: Compact NS1600b-3200H Micrologic
Downstream: iDPN, iC60, C120, NG125-160, Compact NSX100-630, NS630b-3200

Ue ⩽ 440 V AC

Upstream		Compact NS1600b/2000/2500/3200H											
Trip unit		Micrologic 2.0				Micrologic 5.0 - 6.0 - 7.0 Inst 15 In				Micrologic 5.0 - 6.0 - 7.0 Inst OFF			
Downstream	**Rating (A)**	**1600**	**2000**	**2500**	**3200**	**1600**	**2000**	**2500**	**3200**	**1600**	**2000**	**2500**	**3200**
Discrimination limit (kA)													
iDPN, iDPNN		T	T	T	T	T	T	T	T	T	T	T	T
iC60N/H/L		T	T	T	T	T	T	T	T	T	T	T	T
C120N/H		T	T	T	T	T	T	T	T	T	T	T	T
NG125N/H		T	T	T	T	T	T	T	T	T	T	T	T
NG125L		40	40	40	40	40	40	40	40	40	40	40	40
NG160E/N/H		T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX B/F TM-D	**NSX100**	T	T	T	T	T	T	T	T	T	T	T	T
	NSX160	T	T	T	T	T	T	T	T	T	T	T	T
	NSX250	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX B/F Micrologic	**NSX100**	T	T	T	T	T	T	T	T	T	T	T	T
	NSX160	T	T	T	T	T	T	T	T	T	T	T	T
	NSX250	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX F	**NSX400**	T	T	T	T	T	T	T	T	T	T	T	T
	NSX630	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX N/H/S/L/R TM-D	**NSX100**	40	40	40	40	40	40	40	40	40	40	40	40
	NSX250	40	40	40	40	40	40	40	40	40	40	40	40
Compact NSX160 N/H/S/L TM-D		40	40	40	40	40	40	40	40	40	40	40	40
Compact NSX N/H/S/L/R Micrologic	**NSX100**	40	40	40	40	40	40	40	40	40	40	40	40
	NSX250	40	40	40	40	40	40	40	40	40	40	40	40
Compact NSX160 N/H/S/L Micrologic		40	40	40	40	40	40	40	40	40	40	40	40
Compact NSX N/H/S/L/R	**NSX400**	40	40	40	40	40	40	40	40	40	40	40	40
	NSX630	40	40	40	40	40	40	40	40	40	40	40	40
Compact NS N	**NS630b**	16	20	25	32	24	30	37.5	40	40	40	40	40
	NS800	16	20	25	32	24	30	37.5	40	40	40	40	40
	NS1000	16	20	25	32	24	30	37.5	40	40	40	40	40
	NS1250		20	25	32		30	37.5	40		40	40	40
	NS1600			25	32			37.5	40			40	40
Compact NS H	**NS630b**	16	20	25	32	24	30	37.5	40	40	40	40	40
	NS800	16	20	25	32	24	30	37.5	40	40	40	40	40
	NS1000	16	20	25	32	24	30	37.5	40	40	40	40	40
	NS1250		20	25	32		30	37.5	40		40	40	40
	NS1600			25	32			37.5	40			40	40
Compact NS N/H	**NS1600b**			25	32			37.5	40			40	40
	NS2000				32				40				40
	NS2500												
	NS3200												
Compact NS L/LB	**NS630bL/LB**	T	T	T	T	T	T	T	T	T	T	T	T
	NS800L/LB	T	T	T	T	T	T	T	T	T	T	T	T
	NS1000L	T	T	T	T	T	T	T	T	T	T	T	T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6.*

Discrimination table

Upstream: Compact NS630b-1000L,
Compact NS630b-800LB Micrologic
Downstream: iDPN, iC60, C120, NG125-160,
Compact NSX100-630

Ue ⩽ 440 V AC

Upstream		Compact NS630b/800/1000L Compact NS630b/800LB														
Trip unit		Micrologic 2.0					Micrologic 5.0 - 6.0 - 7.0 Inst 15 In					Micrologic 5.0 - 6.0 - 7.0 Inst OFF				
Downstream	**Rating (A)**	**630**			**800**	**1000**	**630**			**800**	**1000**	**630**			**800**	**1000**
	Setting Ir	**250**	**400**	**630**	**800**	**1000**	**250**	**400**	**630**	**800**	**1000**	**250**	**400**	**630**	**800**	**1000**
Discrimination limit (kA)																
iDPN, iDPNN		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C120N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125L		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG160		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX100 B/F/N/H/S/L/R TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 N/H/S/L TM-D		36	36	36	T	T	36	36	36	T	T	36	36	36	T	T
Compact NSX250 B/F/N/H/S/L/R TM-D	**⩽ 125**	20	20	20	T	T	20	20	20	T	T	20	20	20	T	T
	160	20	20	20	T	T	20	20	20	T	T	20	20	20	T	T
	200		20	20	T	T		20	20	T	T		20	20	T	T
	250		20	20	T	T		20	20	T	T		20	20	T	T
Compact NSX100 B/F/N/H/S/L/R Micrologic	**40**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F Micrologic	**40**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T		T	T	T	T
Compact NSX160 N/H/S/L Micrologic	**40**	36	36	36	T	T	36	36	36	T	T	36	36	36	T	T
	100	36	36	36	T	T	36	36	36	T	T	36	36	36	T	T
	160	36	36	36	T	T	36	36	36	T	T	36	36	36	T	T
Compact NSX250 B/F/N/H/S/L/R Micrologic	**⩽ 100**	20	20	20	T	T	20	20	20	T	T	20	20	20	T	T
	160		20	20	T	T		20	20	T	T		20	20	T	T
	250		20	20	T	T		20	20	T	T		20	20	T	T
Compact NSX400 F/N/H/S/L/R Micrologic	**160**	6.3	6.3	6.3	10	15	6.3	6.3	6.3	10	15	6.3	6.3	6.3	10	15
	200		6.3	6.3	10	15		6.3	6.3	10	15		6.3	6.3	10	15
	250		6.3	6.3	10	15		6.3	6.3	10	15		6.3	6.3	10	15
	320		6.3	6.3	10	15			6.3	10	15			6.3	10	15
	400			6.3	10	15			6.3	10	15			6.3	10	15
Compact NSX630 F/N/H/S/L/R Micrologic	**250**		6.3	6.3	8	10		6.3	6.3	8	10		6.3	6.3	8	10
	320			6.3	8	10			6.3	8	10			6.3	8	10
	400			6.3	8	10			6.3	8	10			6.3	8	10
	500				8	10				8	10				8	10
	630					10					10					10

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6.*

Discrimination table

Upstream: Compact NS630b-1000L, Compact NS630b-800LB Micrologic
Downstream: Compact NS630b-1000

Ue ⩽ 440 V AC

Upstream		Compact NS630b/800/1000L Compact NS630b/800LB														
Trip unit		Micrologic 2.0					Micrologic 5.0 - 6.0 - 7.0 Inst 15 In					Micrologic 5.0 - 6.0 - 7.0 Inst OFF				
Downstream	**Rating (A)**	**630**			**800**	**1000**	**630**			**800**	**1000**	**630**			**800**	**1000**
	Setting Ir	**250**	**400**	**630**	**800**	**1000**	**250**	**400**	**630**	**800**	**1000**	**250**	**400**	**630**	**800**	**1000**
Discrimination limit (kA)																
Compact NS630b N/H Micrologic	**250**		6.3	6.3	8	10		6.3	6.3	8	10		6.3	6.3	8	10
	320			6.3	8	10			6.3	8	10			6.3	8	10
	400			6.3	8	10			6.3	8	10			6.3	8	10
	500				8	10				8	10				8	10
	630					10					10					10
Compact NS800 N/H Micrologic	**320**			6.3	8	10			6.3	8	10			6.3	8	10
	400			6.3	8	10			6.3	8	10			6.3	8	10
	500				8	10				8	10				8	10
	630					10					10					10
	800															
Compact NS1000 N/H Micrologic	**400**			6.3	8	10			6.3	8	10			6.3	8	10
	500				8	10				8	10				8	10
	630					10					10					10
	800															
	1000															
Compact NS630b L/LB Micrologic	**250**		6.3	6.3	8	10		6.3	6.3	8	10		6.3	6.3	8	10
	320			6.3	8	10			6.3	8	10			6.3	8	10
	400			6.3	8	10			6.3	8	10			6.3	8	10
	500				8	10				8	10				8	10
	630					10					10					10
Compact NS800 L/LB Micrologic	**320**			6.3	8	10			6.3	8	10			6.3	8	10
	400			6.3	8	10			6.3	8	10			6.3	8	10
	500				8	10				8	10				8	10
	630					10					10					10
	800															
Compact NS1000 L Micrologic	**400**			6.3	8	10			6.3	8	10			6.3	8	10
	500				8	10				8	10				8	10
	630					10					10					10
	800															
	1000															

4 *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6.*

Discrimination table

Upstream: Masterpact NT06-16 H1/H2 Micrologic
Downstream: iDPN, iC60, C120, NG125-160,
Compact NSX100-630

Ue ⩽ 440 V AC

Upstream		Masterpact NT06/08/12/16 H1/H2																				
Trip unit		Micrologic 2.0							Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In							Micrologic 5.0 - 6.0 - 7.0 Inst : OFF						
Downstream	**Rating (A)**	**630**			**800**	**1000**	**1250**	**1600**	**630**			**800**	**1000**	**1250**	**1600**	**630**			**800**	**1000**	**1250**	**1600**
	Setting Ir	**250**	**400**	**630**	**800**	**1000**	**1250**	**1600**	**250**	**400**	**630**	**800**	**1000**	**1250**	**1600**	**250**	**400**	**630**	**800**	**1000**	**1250**	**1600**
Discrimination limit (kA)																						
iDPN, iDPNN		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C120N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125L		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG160E/N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX100 B/F/N/H/S/L/R TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/N/H/S/L TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX250 B/F/N/H/S/L/R TM-D	**⩽ 125**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	200		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	250		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
Compact NSX100 B/F/N/H/S/L/R Micrologic	**40**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/N/H/S/L Micrologic	**40**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX250 B/F/N/H/S/L/R Micrologic	**⩽ 100**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	250		T	T	T	T	T	T	T	T	T	T	T	T	T		T	T	T	T	T	T
Compact NSX400 F/N/H/S/L/R Micrologic	**160**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	200		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	250		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	320			T	T	T	T	T			T	T	T	T	T			T	T	T	T	T
	400			T	T	T	T	T			T	T	T	T	T			T	T	T	T	T
Compact NSX630 F/N/H/S/L/R Micrologic	**250**		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	320			T	T	T	T	T			T	T	T	T	T			T	T	T	T	T
	400			T	T	T	T	T			T	T	T	T	T			T	T	T	T	T
	500				T	T	T	T				T	T	T	T				T	T	T	T
	630					T	T	T					T	T	T					T	T	T

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NT06-16 H1
Micrologic
Downstream: Compact NS630b-1600

Ue ⩽ 440 V AC

Upstream	Masterpact NT06/08/12/16 H1																	
Trip unit	Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	**Rating (A)**	**630**		**800**	**1000**	**1250**	**1600**	**630**		**800**	**1000**	**1250**	**1600**	**630**		**800**	**1000**	**1250**	**1600**
	Setting Ir	**400**	**630**	**800**	**1000**	**1250**	**1600**	**400**	**630**	**800**	**1000**	**1250**	**1600**	**400**	**630**	**800**	**1000**	**1250**	**1600**
Discrimination limit (kA)																			
Compact NS630b N/H Micrologic	**250**	4	6.3	8	10	12.5	16	9.4	9.4	12	15	18.7	24	T	T	T	T	T	T
	320		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	400		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	500			8	10	12.5	16			12	15	18.7	24			T	T	T	T
	630				10	12.5	16				15	18.7	24				T	T	T
Compact NS800 N/H Micrologic	**320**		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	400		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	500			8	10	12.5	16			12	15	18.7	24			T	T	T	T
	630				10	12.5	16				15	18.7	24			T	T	T	T
	800					12.5	16					18.7	24				T	T	T
Compact NS1000 N/H Micrologic	**400**		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	500			8	10	12.5	16			12	15	18.7	24			T	T	T	T
	630				10	12.5	16				15	18.7	24				T	T	T
	800					12.5	16					18.7	24					T	T
	1000						16						24						T
Compact NS1250 N/H Micrologic	**500**			8	10	12.5	16			12	15	18.7	24			T	T	T	T
	630				10	12.5	16				15	18.7	24				T	T	T
	800					12.5	16					18.7	24					T	T
	1000						16						24						T
	1250																		
Compact NS1600 N/H Micrologic	**630**				10	12.5	16				15	18.7	24				T	T	T
	800					12.5	16					18.7	24					T	T
	960						16						24						T
	1250																		
	1600																		
Compact NS630b L/LB Micrologic	**250**	4	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320		6.3	8	T	T	T		T	T	T	T	T		T	T	T	T	T
	400		6.3	8	T	T	T		T	T	T	T	T		T	T	T	T	T
	500			8	T	T	T			T	T	T	T			T	T	T	T
	630				T	T	T				T	T	T				T	T	T
Compact NS800 L/LB Micrologic	**320**		6.3	8	10	T	T		9.4	T	T	T	T		T	T	T	T	T
	400		6.3	8	10	T	T		9.4	T	T	T	T		T	T	T	T	T
	500			8	10	T	T			T	T	T	T			T	T	T	T
	630				10	T	T				T	T	T				T	T	T
	800					12.5	T					T	T					T	T
Compact NS1000 L Micrologic	**400**		6.3	8	10	12.5	T		9.4	12	T	T	T		T	T	T	T	T
	500			8	10	12.5	T			12	T	T	T			T	T	T	T
	630				10	12.5	T				T	T	T				T	T	T
	800					12.5	T					T	T					T	T
	1000						T						T						T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NT06-16 H1 Micrologic
Downstream: Masterpact NT06-16

Ue ⩽ 440 V AC

Upstream		Masterpact NT06/08/12/16 H1																	
Trip unit		Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	Rating (A)	630		800	1000	1250	1600	630		800	1000	1250	1600	630		800	1000	1250	1600
	Setting Ir	400	630	800	1000	1250	1600	400	630	800	1000	1250	1600	400	630	800	1000	1250	1600
Discrimination limit (kA)																			
Masterpact NT06 H1/H2 Micrologic	**250**	4	6.3	8	10	12.5	16	9.4	9.4	12	15	18.7	24	T	T	T	T	T	T
	320		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	400		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	500			8	10	12.5	16			12	15	18.7	24			T	T	T	T
	630				10	12.5	16				15	18.7	24				T	T	T
Masterpact NT08 H1/H2 Micrologic	**320**		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	400		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	500			8	10	12.5	16			12	15	18.7	24			T	T	T	T
	630				10	12.5	16				15	18.7	24			T	T	T	T
	800					12.5	16					18.7	24				T	T	T
Masterpact NT10 H1/H2 Micrologic	**400**		6.3	8	10	12.5	16		9.4	12	15	18.7	24		T	T	T	T	T
	500			8	10	12.5	16			12	15	18.7	24			T	T	T	T
	630				10	12.5	16				15	18.7	24				T	T	T
	800					12.5	16					18.7	24					T	T
	1000						16						24						T
Masterpact NT12 H1/H2 Micrologic	**500**			8	10	12.5	16			12	15	18.7	24			T	T	T	T
	630				10	12.5	16				15	18.7	24				T	T	T
	800					12.5	16					18.7	24					T	T
	1000						16						24						T
	1250																		
Masterpact NT16 H1/H2 Micrologic	**630**				10	12.5	16				15	18.7	24				T	T	T
	800					12.5	16					18.7	24					T	T
	960						16						24						T
	1250																		
	1600																		
Masterpact NT06 L1 Micrologic	**250**	4	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320		6.3	8	T	T	T		T	T	T	T	T		T	T	T	T	T
	400		6.3	8	T	T	T		T	T	T	T	T		T	T	T	T	T
	500			8	T	T	T			T	T	T	T			T	T	T	T
	630				T	T	T				T	T	T				T	T	T
Masterpact NT08 L1 Micrologic	**320**		6.3	8	10	T	T		9.4	T	T	T	T		T	T	T	T	T
	400		6.3	8	10	T	T		9.4	T	T	T	T		T	T	T	T	T
	500			8	10	T	T			T	T	T	T			T	T	T	T
	630				10	T	T				T	T	T				T	T	T
	800					T	T					T	T					T	T
Masterpact NT10 L1 Micrologic	**400**		6.3	8	10	12.5	T		9.4	12	T	T	T		T	T	T	T	T
	500			8	10	12.5	T			12	T	T	T			T	T	T	T
	630				10	12.5	T				T	T	T				T	T	T
	800					12.5	T					T	T					T	T
	1000						T						T						T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NT06-16 H2 Micrologic
Downstream: Compact NS630b-1600

Ue ⩽ 440 V AC

Upstream	Masterpact NT06/08/12/16 H2																	
Trip unit	Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					

Downstream	Rating (A)	630		800	1000	1250	1600	630		800	1000	1250	1600	630		800	1000	1250	1600
	Setting Ir	400	630	800	1000	1250	1600	400	630	800	1000	1250	1600	400	630	800	1000	1250	1600
Discrimination limit (kA)																			
Compact NS630b N/H Micrologic	**250**	4	6.3	8	10	12.5	16	9.4	9.4	12	15	18.7	24	42	42	42	42	42	42
	320		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	400		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	500			8	10	12.5	16			12	15	18.7	24			42	42	42	42
	630				10	12.5	16				15	18.7	24				42	42	42
Compact NS800 N/H Micrologic	**320**		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	400		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	500			8	10	12.5	16			12	15	18.7	24			42	42	42	42
	630				10	12.5	16				15	18.7	24			42	42	42	42
	800					12.5	16					18.7	24				42	42	42
Compact NS1000 N/H Micrologic	**400**		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	500			8	10	12.5	16			12	15	18.7	24			42	42	42	42
	630				10	12.5	16				15	18.7	24				42	42	42
	800					12.5	16					18.7	24					42	42
	1000						16						24						42
Compact NS1250 N/H Micrologic	**500**			8	10	12.5	16			12	15	18.7	24			42	42	42	42
	630				10	12.5	16				15	18.7	24				42	42	42
	800					12.5	16					18.7	24					42	42
	1000						16						24						42
	1250																		
Compact NS1600 N/H Micrologic	**630**				10	12.5	16				15	18.7	24				42	42	42
	800					12.5	16					18.7	24					42	42
	960						16						24						42
	1250																		
	1600																		
Compact NS630b L/LB Micrologic	**250**	4	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320		6.3	8	T	T	T		T	T	T	T	T		T	T	T	T	T
	400		6.3	8	T	T	T		T	T	T	T	T		T	T	T	T	T
	500			8	T	T	T			T	T	T	T			T	T	T	T
	630				T	T	T				T	T	T				T	T	T
Compact NS800 L/LB Micrologic	**320**		6.3	8	10	T	T		9.4	T	T	T	T		T	T	T	T	T
	400		6.3	8	10	T	T		9.4	T	T	T	T		T	T	T	T	T
	500			8	10	T	T			T	T	T	T			T	T	T	T
	630				10	T	T				T	T	T				T	T	T
	800					T	T					T	T					T	T
Compact NS1000 L Micrologic	**400**		6.3	8	10	12.5	T		9.4	12	T	T	T		T	T	T	T	T
	500			8	10	12.5	T			12	T	T	T			T	T	T	T
	630				10	12.5	T				T	T	T				T	T	T
	800					12.5	T					T	T					T	T
	1000						T						T						T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NT06-16 H2 Micrologic
Downstream: Masterpact NT06-16

Ue ⩽ 440 V AC

Upstream		Masterpact NT06/08/12/16 H2																	
Trip unit		Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	Rating (A)	630		800	1000	1250	1600	630		800	1000	1250	1600	630		800	1000	1250	1600
	Setting Ir	400	630	800	1000	1250	1600	400	630	800	1000	1250	1600	400	630	800	1000	1250	1600
Discrimination limit (kA)																			
Masterpact NT06 H1/H2 Micrologic	**250**	4	6.3	8	10	12.5	16	9.4	9.4	12	15	18.7	24	42	42	42	42	42	42
	320		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	400		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	500			8	10	12.5	16			12	15	18.7	24			42	42	42	42
	630				10	12.5	16				15	18.7	24				42	42	42
Masterpact NT08 H1/H2 Micrologic	**320**		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	400		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	500			8	10	12.5	16			12	15	18.7	24			42	42	42	42
	630				10	12.5	16				15	18.7	24			42	42	42	42
	800					12.5	16					18.7	24				42	42	42
Masterpact NT10 H1/H2 Micrologic	**400**		6.3	8	10	12.5	16		9.4	12	15	18.7	24		42	42	42	42	42
	500			8	10	12.5	16			12	15	18.7	24			42	42	42	42
	630				10	12.5	16				15	18.7	24				42	42	42
	800					12.5	16					18.7	24					42	42
	1000						16						24						42
Masterpact NT12 H1/H2 Micrologic	**500**			8	10	12.5	16			12	15	18.7	24			42	42	42	42
	630				10	12.5	16				15	18.7	24				42	42	42
	800					12.5	16					18.7	24					42	42
	1000						16						24						42
	1250																		
Masterpact NT16 H1/H2 Micrologic	**630**				10	12.5	16				15	18.7	24				42	42	42
	800					12.5	16					18.7	24					42	42
	960						16						24						42
	1250																		
	1600																		
Masterpact NT06 L1 Micrologic	**250**	4	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320		6.3	8	T	T	T		T	T	T	T	T		T	T	T	T	T
	400		6.3	8	T	T	T		T	T	T	T	T		T	T	T	T	T
	500			8	T	T	T			T	T	T	T			T	T	T	T
	630				T	T	T				T	T	T				T	T	T
Masterpact NT08 L1 Micrologic	**320**		6.3	8	10	T	T		9.4	T	T	T	T		T	T	T	T	T
	400		6.3	8	10	T	T		9.4	T	T	T	T		T	T	T	T	T
	500			8	10	T	T			T	T	T	T			T	T	T	T
	630				10	T	T				T	T	T				T	T	T
	800					T	T					T	T					T	T
Masterpact NT10 L1 Micrologic	**400**		6.3	8	10	12.5	T		9.4	12	T	T	T		T	T	T	T	T
	500			8	10	12.5	T			12	T	T	T			T	T	T	T
	630				10	12.5	T				T	T	T				T	T	T
	800					12.5	T					T	T					T	T
	1000						T						T						T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NT06-10 L1 Micrologic
Downstream: iDPN, iC60, C120, NG125-160, Compact NSX100-630

Ue ⩽ 440 V AC

Upstream		Masterpact NT06/08/10 L1														
Trip unit		Micrologic 2.0					Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In					Micrologic 5.0 - 6.0 - 7.0 Inst : OFF				
Downstream	**Rating (A)**	**630**			**800**	**1000**	**630**			**800**	**1000**	**630**			**800**	**1000**
	Setting Ir	**250**	**400**	**630**	**800**	**1000**	**250**	**400**	**630**	**800**	**1000**	**250**	**400**	**630**	**800**	**1000**
Discrimination limit (kA)																
iDPN, iDPNN		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C120N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125L		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG160		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX100 B/FN/H/S/L/R TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 N/H/S/L TM-D		36	36	36	T	T	36	36	36	T	T	36	36	36	T	T
Compact NSX250 B/F/N//H/S/L/R TM-D	**⩽ 125**	20	20	20	T	T	20	20	20	T	T	20	20	20	T	T
	160	20	20	20	T	T	20	20	20	T	T	20	20	20	T	T
	200		20	20	T	T		20	20	T	T		20	20	T	T
	250		20	20	T	T		20	20	T	T		20	20	T	T
Compact NSX100 B/F/N/H/S/L/R Micrologic	**40**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F Micrologic	**40**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T		T	T	T	T
Compact NSX160 N/H/S/L Micrologic	**40**	36	36	36	T	T	36	36	36	T	T	36	36	36	T	T
	100	36	36	36	T	T	36	36	36	T	T	36	36	36	T	T
	160	36	36	36	T	T	36	36	36	T	T	36	36	36	T	T
Compact NSX250 B/F/N/H/S/L/R Micrologic	**⩽ 100**	20	20	20	T	T	20	20	20	T	T	20	20	20	T	T
	160		20	20	T	T		20	20	T	T		20	20	T	T
	250		20	20	T	T		20	20	T	T		20	20	T	T
Compact NSX400 F/N/H/S/L/R Micrologic	**160**	6.3	6.3	6.3	10	15	6.3	6.3	6.3	10	15	6.3	6.3	6.3	10	15
	200		6.3	6.3	10	15		6.3	6.3	10	15		6.3	6.3	10	15
	250		6.3	6.3	10	15		6.3	6.3	10	15		6.3	6.3	10	15
	320		6.3	6.3	10	15			6.3	10	15			6.3	10	15
	400			6.3	10	15			6.3	10	15			6.3	10	15
Compact NSX630 F/N/H/S/L/R Micrologic	**250**		6.3	6.3	8	10		6.3	6.3	8	10		6.3	6.3	8	10
	320			6.3	8	10			6.3	8	10			6.3	8	10
	400			6.3	8	10			6.3	8	10			6.3	8	10
	500				8	10				8	10				8	10
	630					10					10					10

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NT06-10 L1 Micrologic
Downstream: Compact NS630b-1000, Masterpact NT06-10

Ue ⩽ 440 V AC

Upstream		Masterpact NT06/08/10 L1														
Trip unit		Micrologic 2.0					Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In					Micrologic 5.0 - 6.0 - 7.0 Inst : OFF				
Downstream	Rating (A)	630			800	1000	630			800	1000	630			800	1000
	Setting Ir	250	400	630	800	1000	250	400	630	800	1000	250	400	630	800	1000
Discrimination limit (kA)																
Compact NS630b N/H/L/LB Micrologic	250		6.3	6.3	8	10		6.3	6.3	8	10		6.3	6.3	8	10
	320			6.3	8	10			6.3	8	10			6.3	8	10
	400			6.3	8	10			6.3	8	10			6.3	8	10
	500				8	10				8	10				8	10
	630					10					10					10
Compact NS800 N/H/L/LB Micrologic	320			6.3	8	10			6.3	8	10			6.3	8	10
	400			6.3	8	10			6.3	8	10			6.3	8	10
	500				8	10				8	10				8	10
	630					10					10					10
	800															
Compact NS1000 N/H/L Micrologic	400					10					10			6.3	10	10
	500					10					10				10	10
	630					10					10					10
	800															
	1000															
Masterpact NT06 H1/H2/L1 Micrologic	250		6.3	6.3	8	10		6.3	6.3	8	10		6.3	6.3	8	10
	320			6.3	8	10			6.3	8	10			6.3	8	10
	400			6.3	8	10			6.3	8	10			6.3	8	10
	500				8	10				8	10				8	10
	630					10					10					10
Masterpact NT08 H1/H2/L1 Micrologic	320			6.3	8	10			6.3	8	10			6.3	8	10
	400			6.3	8	10			6.3	8	10			6.3	8	10
	500				8	10				8	10				8	10
	630					10					10					10
	800															
Masterpact NT10 H1/H2/L1 Micrologic	400					10					10			6.3	10	10
	500					10					10				10	10
	630					10					10					10
	800															
	1000															

4 *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW08-20 N1/H1/H2/L1 Micrologic
Downstream: iDPN, iC60, C120, NG125-160, Compact NSX100-630

Ue ⩽ 440 V AC

Upstream	Masterpact NW08/12/16/20 N1/H1/H2/L1																				
Trip unit	Micrologic 2.0							Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In								Micrologic 5.0 - 6.0 - 7.0 Inst : OFF						
Downstream	Rating (A)	800			1000	1250	1600	2000	800			1000	1250	1600	2000	800			1000	1250	1600	2000
	Setting Ir	320	630	800	1000	1250	1600	2000	320	630	800	1000	1250	1600	2000	320	630	800	1000	1250	1600	2000
Discrimination limit (kA)																						
iDPN, iDPNN		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C120N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125L		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG160E/N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX100 B/F/N/H/S/L/R TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/N/H/S/L TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX250 B/F/N/H/S/L/R TM-D	⩽ 125	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	200	T	T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	250		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
Compact NSX100 B/F/N/H/S/L/R Micrologic	40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/N/H/S/L Micrologic	40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX250 B/F/N/H/S/L/R Micrologic	⩽ 100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	250		T	T	T	T	T	T	T	T	T	T	T	T	T		T	T	T	T	T	T
Compact NSX400 F/N/H/S/L/R Micrologic	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	200	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	400		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
Compact NSX630 F/N/H/S/L/R Micrologic	250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	400		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	500			T	T	T	T	T			T	T	T	T	T			T	T	T	T	T
	630				T	T	T	T				T	T	T	T				T	T	T	T

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW08-20 N1/H1/H2
Micrologic
Downstream: Compact NS630b-1600

Ue ⩽ 440 V AC

Upstream		Masterpact NW08/12/16/20 N1/H1/H2																	
Trip unit		Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	**Rating (A)**	**800**		**1000**	**1250**	**1600**	**2000**	**800**		**1000**	**1250**	**1600**	**2000**	**800**		**1000**	**1250**	**1600**	**2000**
	Setting Ir	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**630**	**800**	**1000**	**1250**	**1600**	**2000**
Discrimination limit (kA)																			
Compact NS630bN/H Micrologic	**250**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	320	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
Compact NS800N/H Micrologic	**320**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
Compact NS1000N/H Micrologic	**400**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
Compact NS1250N/H Micrologic	**500**		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
Compact NS1600N/H Micrologic	**630**			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	960					16	20					24	30					T	T
	1250						20						30						T
	1600																		
Compact NS630bL/LB Micrologic	**250**	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	400	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	500		8	T	T	T	T		T	T	T	T	T		T	T	T	T	T
	630			T	T	T	T			T	T	T	T			T	T	T	T
Compact NS800 L/LB Micrologic	**320**	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	400	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	500		8	10	T	T	T		T	T	T	T	T		T	T	T	T	T
	630			10	T	T	T			T	T	T	T			T	T	T	T
	800				T	T	T				T	T	T				T	T	T
Compact NS1000L Micrologic	**400**	6.3	8	10	12.5	T	T	12	12	T	T	T	T	T	T	T	T	T	T
	500		8	10	12.5	T	T		12	T	T	T	T		T	T	T	T	T
	630			10	12.5	T	T			T	T	T	T			T	T	T	T
	800				12.5	T	T				T	T	T				T	T	T
	1000					T	T					T	T					T	T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW08-20 N1/H1/H2
Micrologic
Downstream: Masterpact NT06-16

Ue ⩽ 440 V AC

Upstream	Masterpact NW08/12/16/20 N1/H1/H2																	
Trip unit	Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	Rating (A)	800		1000	1250	1600	2000	800		1000	1250	1600	2000	800		1000	1250	1600	2000
	Setting Ir	630	800	1000	1250	1600	2000	630	800	1000	1250	1600	2000	630	800	1000	1250	1600	2000
Discrimination limit (kA)																			
Masterpact NT06 H1/H2 Micrologic	**250**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	320	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
Masterpact NT08 H1/H2 Micrologic	**320**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
Masterpact NT10 H1/H2 Micrologic	**400**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
Masterpact NT12 H1/H2 Micrologic	**500**		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
Masterpact NT16 H1/H2 Micrologic	**630**			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	960					16	20					24	30					T	T
	1250						20						30						T
	1600																		
Masterpact NT06L Micrologic	**250**	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	400	6.3	8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	500		8	T	T	T	T		T	T	T	T	T		T	T	T	T	T
	630			T	T	T	T			T	T	T	T			T	T	T	T
Masterpact NT08L Micrologic	**320**	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	400	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	500		8	10	T	T	T		T	T	T	T	T		T	T	T	T	T
	630			10	T	T	T			T	T	T	T			T	T	T	T
	800				T	T	T				T	T	T				T	T	T
Masterpact NT10L Micrologic	**400**	6.3	8	10	12.5	T	T	12	12	T	T	T	T	T	T	T	T	T	T
	500		8	10	12.5	T	T		12	T	T	T	T		T	T	T	T	T
	630			10	12.5	T	T			T	T	T	T			T	T	T	T
	800				12.5	T	T				T	T	T				T	T	T
	1000					T	T					T	T					T	T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW08-20 N1/H1 Micrologic
Downstream: Masterpact NW08-20

Ue ⩽ 440 V AC

Upstream		Masterpact NW08/12/16/20 N1/H1																	
Trip unit		Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	Rating (A)	800		1000	1250	1600	2000	800		1000	1250	1600	2000	800		1000	1250	1600	2000
	Setting Ir	630	800	1000	1250	1600	2000	630	800	1000	1250	1600	2000	630	800	1000	1250	1600	2000
Discrimination limit (kA)																			
Masterpact NW08 N1/H1/L1 Micrologic	320	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
Masterpact NW10 N1/H1/L1 Micrologic	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
Masterpact NW12 N1/H1/L1 Micrologic	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
Masterpact NW16 N1/H1/L1 Micrologic	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	960					16	20					24	30					T	T
	1250						20						30						T
	1600																		
Masterpact NW20 N1/H1/L1 Micrologic	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
	1600																		
Masterpact NW08 H2 Micrologic	320	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
Masterpact NW1 0H2 Micrologic	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
Masterpact NW12 H2 Micrologic	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
Masterpact NW16 H2 Micrologic	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	960					16	20					24	30					T	T
	1250						20						30						T
	1600																		
Masterpact NW20 H2 Micrologic	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
	1600																		

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW08-20 H2 Micrologic
Downstream: Masterpact NW08-20

Ue ⩽ 440 V AC

Upstream	Masterpact NW08/12/16/20 H2																		
Trip unit	Micrologic 2.0							Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	**Rating (A)**	**800**		**1000**	**1250**	**1600**	**2000**	**800**		**1000**	**1250**	**1600**	**2000**	**800**		**1000**	**1250**	**1600**	**2000**
	Setting Ir	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**630**	**800**	**1000**	**1250**	**1600**	**2000**
Discrimination limit (kA)																			
Masterpact NW08 N1/H1/L1 Micrologic	**320**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
Masterpact NW10 N1/H1/L1 Micrologic	**400**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
Masterpact NW12 N1/H1/L1 Micrologic	**500**		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
Masterpact NW16 N1/H1/L1 Micrologic	**630**			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	960					16	20					24	30					T	T
	1250						20						30						T
	1600																		
Masterpact NW20 N1/H1/L1 Micrologic	**800**				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
	1600																		
Masterpact NW08 H2 Micrologic	**320**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	82	82	82	82	82	82
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	82	82	82	82	82	82
	500		8	10	12.5	16	20		12	15	18.75	24	30		82	82	82	82	82
	630			10	12.5	16	20			15	18.75	24	30			82	82	82	82
	800				12.5	16	20				18.75	24	30				82	82	82
Masterpact NW10 H2 Micrologic	**400**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	82	82	82	82	82	82
	500		8	10	12.5	16	20		12	15	18.75	24	30		82	82	82	82	82
	630			10	12.5	16	20			15	18.75	24	30			82	82	82	82
	800				12.5	16	20				18.75	24	30				82	82	82
	1000					16	20					24	30					82	82
Masterpact NW12 H2 Micrologic	**500**		8	10	12.5	16	20		12	15	18.75	24	30		82	82	82	82	82
	630			10	12.5	16	20			15	18.75	24	30			82	82	82	82
	800				12.5	16	20				18.75	24	30				82	82	82
	1000					16	20					24	30					82	82
	1250						20						30						82
Masterpact NW16 H2 Micrologic	**630**			10	12.5	16	20			15	18.75	24	30			82	82	82	82
	800				12.5	16	20				18.75	24	30				82	82	82
	960					16	20					24	30					82	82
	1250						20						30						82
	1600																		
Masterpact NW20 H2 Micrologic	**800**				12.5	16	20				18.75	24	30				82	82	82
	1000					16	20					24	30					82	82
	1250						20						30						82
	1600																		

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW08-20 L1 Micrologic
Downstream: Compact NS630b-1600

Ue ⩽ 440 V AC

Upstream		Masterpact NW08/12/16/20 L1																	
Trip unit		Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	Rating (A)	800		1000	1250	1600	2000	800		1000	1250	1600	2000	800		1000	1250	1600	2000
	Setting Ir	630	800	1000	1250	1600	2000	630	800	1000	1250	1600	2000	630	800	1000	1250	1600	2000
Discrimination limit (kA)																			
Compact NS630bN/H Micrologic	**250**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	320	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	500		8	10	12.5	16	20		12	15	18.75	24	30		37	37	37	37	37
	630			10	12.5	16	20			15	18.75	24	30			37	37	37	37
Compact NS800N/H Micrologic	**320**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	500		8	10	12.5	16	20		12	15	18.75	24	30		37	37	37	37	37
	630			10	12.5	16	20			15	18.75	24	30			37	37	37	37
	800				12.5	16	20				18.75	24	30				37	37	37
Compact NS1000N/H Micrologic	**400**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	500		8	10	12.5	16	20		12	15	18.75	24	30		37	37	37	37	37
	630			10	12.5	16	20			15	18.75	24	30			37	37	37	37
	800				12.5	16	20				18.75	24	30				37	37	37
	1000					16	20					24	30					37	37
Compact NS1250N/H Micrologic	**500**		8	10	12.5	16	20		12	15	18.75	24	30		37	37	37	37	37
	630			10	12.5	16	20			15	18.75	24	30			37	37	37	37
	800				12.5	16	20				18.75	24	30				37	37	37
	1000					16	20					24	30					37	37
	1250						20						30						37
Compact NS1600N/H Micrologic	**630**			10	12.5	16	20			15	18.75	24	30			37	37	37	37
	800				12.5	16	20				18.75	24	30				37	37	37
	960					16	20					24	30					37	37
	1250						20						30						37
	1600																		
Compact NS630bL/LB Micrologic	**250**	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	400	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	500		8	10	T	T	T		T	T	T	T	T		T	T	T	T	T
	630			10	T	T	T			T	T	T	T			T	T	T	T
Compact NS800L/LB Micrologic	**320**	6.3	8	10	12.5	T	T	12	12	T	T	T	T	T	T	T	T	T	T
	400	6.3	8	10	12.5	T	T	12	12	T	T	T	T	T	T	T	T	T	T
	500		8	10	12.5	T	T		12	T	T	T	T		T	T	T	T	T
	630			10	12.5	T	T			T	T	T	T			T	T	T	T
	800				12.5	T	T				T	T	T				T	T	T
Compact NS1000L Micrologic	**400**	6.3	8	10	12.5	T	T	12	12	T	T	T	T	T	T	T	T	T	T
	500		8	10	12.5	T	T		12	T	T	T	T		T	T	T	T	T
	630			10	12.5	T	T			T	T	T	T			T	T	T	T
	800				12.5	T	T				T	T	T				T	T	T
	1000					T	T					T	T					T	T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW08-20 H2 Micrologic
Downstream: Masterpact NW08-20

Ue ⩽ 440 V AC

Upstream	Masterpact NW08/12/16/20 H2																		
Trip unit	Micrologic 2.0							Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	**Rating (A)**	**800**		**1000**	**1250**	**1600**	**2000**	**800**		**1000**	**1250**	**1600**	**2000**	**800**		**1000**	**1250**	**1600**	**2000**
	Setting Ir	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**630**	**800**	**1000**	**1250**	**1600**	**2000**
Discrimination limit (kA)																			
Masterpact NW08 N1/H1/L1 Micrologic	**320**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
Masterpact NW10 N1/H1/L1 Micrologic	**400**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	T	T	T	T	T	T
	500		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
Masterpact NW12 N1/H1/L1 Micrologic	**500**		8	10	12.5	16	20		12	15	18.75	24	30		T	T	T	T	T
	630			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
Masterpact NW16 N1/H1/L1 Micrologic	**630**			10	12.5	16	20			15	18.75	24	30			T	T	T	T
	800				12.5	16	20				18.75	24	30				T	T	T
	960					16	20					24	30					T	T
	1250						20						30						T
	1600																		
Masterpact NW20 N1/H1/L1 Micrologic	**800**				12.5	16	20				18.75	24	30				T	T	T
	1000					16	20					24	30					T	T
	1250						20						30						T
	1600																		
Masterpact NW08 H2 Micrologic	**320**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	82	82	82	82	82	82
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	82	82	82	82	82	82
	500		8	10	12.5	16	20		12	15	18.75	24	30		82	82	82	82	82
	630			10	12.5	16	20			15	18.75	24	30			82	82	82	82
	800				12.5	16	20				18.75	24	30				82	82	82
Masterpact NW10 H2 Micrologic	**400**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	82	82	82	82	82	82
	500		8	10	12.5	16	20		12	15	18.75	24	30		82	82	82	82	82
	630			10	12.5	16	20			15	18.75	24	30			82	82	82	82
	800				12.5	16	20				18.75	24	30				82	82	82
	1000					16	20					24	30					82	82
Masterpact NW12 H2 Micrologic	**500**		8	10	12.5	16	20		12	15	18.75	24	30		82	82	82	82	82
	630			10	12.5	16	20			15	18.75	24	30			82	82	82	82
	800				12.5	16	20				18.75	24	30				82	82	82
	1000					16	20					24	30					82	82
	1250						20						30						82
Masterpact NW16 H2 Micrologic	**630**			10	12.5	16	20			15	18.75	24	30			82	82	82	82
	800				12.5	16	20				18.75	24	30				82	82	82
	960					16	20					24	30					82	82
	1250						20						30						82
	1600																		
Masterpact NW20 H2 Micrologic	**800**				12.5	16	20				18.75	24	30				82	82	82
	1000					16	20					24	30					82	82
	1250						20						30						82
	1600																		

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW08-20 L1 Micrologic
Downstream: Compact NS630b-1600

Ue ⩽ 440 V AC

Upstream		Masterpact NW08/12/16/20 L1																	
Trip unit		Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	Rating (A)	800		1000	1250	1600	2000	800		1000	1250	1600	2000	800		1000	1250	1600	2000
	Setting Ir	630	800	1000	1250	1600	2000	630	800	1000	1250	1600	2000	630	800	1000	1250	1600	2000
Discrimination limit (kA)																			
Compact NS630bN/H Micrologic	**250**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	320	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	500		8	10	12.5	16	20		12	15	18.75	24	30		37	37	37	37	37
	630			10	12.5	16	20			15	18.75	24	30			37	37	37	37
Compact NS800N/H Micrologic	**320**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	400	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	500		8	10	12.5	16	20		12	15	18.75	24	30		37	37	37	37	37
	630			10	12.5	16	20			15	18.75	24	30			37	37	37	37
	800				12.5	16	20				18.75	24	30				37	37	37
Compact NS1000N/H Micrologic	**400**	6.3	8	10	12.5	16	20	12	12	15	18.75	24	30	37	37	37	37	37	37
	500		8	10	12.5	16	20		12	15	18.75	24	30		37	37	37	37	37
	630			10	12.5	16	20			15	18.75	24	30			37	37	37	37
	800				12.5	16	20				18.75	24	30				37	37	37
	1000					16	20					24	30					37	37
Compact NS1250N/H Micrologic	**500**		8	10	12.5	16	20		12	15	18.75	24	30		37	37	37	37	37
	630			10	12.5	16	20			15	18.75	24	30			37	37	37	37
	800				12.5	16	20				18.75	24	30				37	37	37
	1000					16	20					24	30					37	37
	1250						20						30						37
Compact NS1600N/H Micrologic	**630**			10	12.5	16	20			15	18.75	24	30			37	37	37	37
	800				12.5	16	20				18.75	24	30				37	37	37
	960					16	20					24	30					37	37
	1250						20						30						37
	1600																		
Compact NS630bL/LB Micrologic	**250**	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	320	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	400	6.3	8	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	500		8	10	T	T	T		T	T	T	T	T		T	T	T	T	T
	630			10	T	T	T			T	T	T	T			T	T	T	T
Compact NS800L/LB Micrologic	**320**	6.3	8	10	12.5	T	T	12	12	T	T	T	T	T	T	T	T	T	T
	400	6.3	8	10	12.5	T	T	12	12	T	T	T	T	T	T	T	T	T	T
	500		8	10	12.5	T	T		12	T	T	T	T		T	T	T	T	T
	630			10	12.5	T	T			T	T	T	T			T	T	T	T
	800				12.5	T	T				T	T	T				T	T	T
Compact NS1000L Micrologic	**400**	6.3	8	10	12.5	T	T	12	12	T	T	T	T	T	T	T	T	T	T
	500		8	10	12.5	T	T		12	T	T	T	T		T	T	T	T	T
	630			10	12.5	T	T			T	T	T	T			T	T	T	T
	800				12.5	T	T				T	T	T				T	T	T
	1000					T	T					T	T					T	T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW25-40 H1/H2, Masterpact NW40b-63 H1 Micrologic
Downstream: iDPN, iC60, C120, NG125-160, Compact NSX100-630, NS630b-3200

Ue ⩽ 440 V AC

Upstream	Masterpact NW25/32/40 H1/H2	Masterpact NW40b 50/63 H1	Masterpact NW25/32/40 H1/H2	Masterpact NW40b 50/6 3H1	Masterpact NW25/32/40 H1/H2	Masterpact NW40b 50/63 H1
Trip unit	Micrologic 2.0		Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In		Micrologic 5.0 - 6.0 - 7.0 Inst : OFF	

Downstream	Rating (A)	2500	3200	4000	4000	5000	6300	2500	3200	4000	4000	5000	6300	2500	3200	4000	4000	5000	6300
Discrimination limit (kA)																			
iDPN, iDPNN		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C120N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125N/H/L		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG160E/N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX B/F/H/N/S/L/R TM-D	**NSX100**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NSX250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/H/N/S/L TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX B/F/H/N/S/L/R Micrologic	**NSX100**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NSX250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
F/H/N/S/L/R Micrologic	**NSX400**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NSX630	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/H/N/S/L Micrologic		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NS N Micrologic	**NS630b**	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
	NS800	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
	NS1000	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
	NS1250	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
	NS1600	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
Compact NS H Micrologic	**NS630b**	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NS800	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NS1000	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NS1250	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NS1600	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
Compact NS N Micrologic	**NS1600b**	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NS2000	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NS2500	25 (1)	32	40	40	50	63	37,5 (1)	48	60	60	T	T	T (1)	T	T	T	T	T
	NS3200		32 (1)	40	40	50	63		48 (1)	60	60	T	T		T (1)	T	T	T	T
Compact NS H Micrologic	**NS1600b**	25	32	40	40	50	63	37,5	48	60	60	75	T	T	T	T	T	T	T
	NS2000	25	32	40	40	50	63	37,5	48	60	60	75	T	T	T	T	T	T	T
	NS2500	25 (1)	32	40	40	50	63	37,5 (1)	48	60	60	75	T	T (1)	T	T	T	T	T
	NS3200		32 (1)	40	40	50	63		48 (1)	60	60	75	T		T (1)	T	T	T	T
Compact NS L Micrologic	**NS630b**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NS800	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NS1000	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NS LB Micrologic	**NS630b**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NS800	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T

(1) With Ir upstream > 1,3 Ir downstream.

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW25-40 H1 Micrologic
Downstream: Masterpact NT06-16, Masterpact NW08-20

Ue ⩽ 440 V AC

Upstream		Masterpact NW25/32/40 H1								
Trip unit		Micrologic 2.0			Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In			Micrologic 5.0 - 6.0 - 7.0 Inst : OFF		
Downstream	**Rating (kA)**	**2500**	**3200**	**4000**	**2500**	**3200**	**4000**	**2500**	**3200**	**4000**
Discrimination limit (A)										
Masterpact NT H1 Micrologic	**NT06**	25	32	40	37.5	T	T	T	T	T
	NT08	25	32	40	37.5	T	T	T	T	T
	NT10	25	32	40	37.5	T	T	T	T	T
	NT12	25	32	40	37.5	T	T	T	T	T
	NT16	25	32	40	37.5	T	T	T	T	T
Masterpact NT H2 Micrologic	**NT06**	25	32	40	37.5	48	T	T	T	T
	NT08	25	32	40	37.5	48	T	T	T	T
	NT10	25	32	40	37.5	48	T	T	T	T
	NT12	25	32	40	37.5	48	T	T	T	T
	NT16	25	32	40	37.5	48	T	T	T	T
Masterpact NW N1 Micrologic	**NW08**	25	32	40	37.5	T	T	T	T	T
	NW10	25	32	40	37.5	T	T	T	T	T
	NW12	25	32	40	37.5	T	T	T	T	T
	NW16	25	32	40	37.5	T	T	T	T	T
Masterpact NW H1 Micrologic	**NW08**	25	32	40	37.5	48	60	T	T	T
	NW10	25	32	40	37.5	48	60	T	T	T
	NW12	25	32	40	37.5	48	60	T	T	T
	NW16	25	32	40	37.5	48	60	T	T	T
	NW20	25	32	40	37.5	48	60	T	T	T
	NW25	25 (1)	32	40	37,5 (1)	48	60	T (1)	T	T
	NW32		32 (1)	40		48 (1)	60		T (1)	T
Masterpact NW H2 Micrologic	**NW08**	25	32	40	37,5	48	60	T	T	T
	NW10	25	32	40	37,5	48	60	T	T	T
	NW12	25	32	40	37,5	48	60	T	T	T
	NW16	25	32	40	37,5	48	60	T	T	T
	NW20	25	32	40	37,5	48	60	T	T	T
	NW25	25 (1)	32	40	37,5 (1)	48	60	T (1)	T	T
	NW32		32 (1)	40		48 (1)	60		T (1)	T
Masterpact NW H3 Micrologic	**NW20**	25	32	40	37,5	48	60	T	T	T
	NW25	25 (1)	32	40	37,5 (1)	48	60	T (1)	T	T
	NW32		32 (1)	40		48 (1)	60		T (1)	T
Masterpact NT L1 Micrologic	**NT06**	T	T	T	T	T	T	T	T	T
	NT08	T	T	T	T	T	T	T	T	T
	NT10	T	T	T	T	T	T	T	T	T
Masterpact NW L1 Micrologic	**NW08**	25	32	40	37.5	48	60	T	T	T
	NW10	25	32	40	37.5	48	60	T	T	T
	NW12	25	32	40	37.5	48	60	T	T	T
	NW16	25	32	40	37.5	48	60	T	T	T
	NW20	25	32	40	37.5	48	60	T	T	T

(1) With Ir upstream > 1,3 Ir downstream.

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW25-40 H2, Masterpact NW40b-63 H1 Micrologic
Downstream: Masterpact NT06-16, Masterpact NW08-50

Ue ⩽ 440 V AC

Upstream		Masterpact NW25/32/40 H2			Masterpact NW40b 50/63 H1			Masterpact NW25/32/40 H2			Masterpact NW40b 50/63 H1			Masterpact NW25/32/40 H2			Masterpact NW40b 50/63 H1		
Trip unit		Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst : OFF					
Downstream	**Rating (A)**	**2500**	**3200**	**4000**	**4000**	**5000**	**6300**	**2500**	**3200**	**4000**	**4000**	**5000**	**6300**	**2500**	**3200**	**4000**	**4000**	**5000**	**6300**
Discrimination limit (kA)																			
Masterpact NT H1 Micrologic	**NT06**	25	32	40	40	T	T	37.5	T	T	T	T	T	T	T	T	T	T	T
	NT08	25	32	40	40	T	T	37.5	T	T	T	T	T	T	T	T	T	T	T
	NT10	25	32	40	40	T	T	37.5	T	T	T	T	T	T	T	T	T	T	T
	NT12	25	32	40	40	T	T	37.5	T	T	T	T	T	T	T	T	T	T	T
	NT16	25	32	40	40	T	T	37.5	T	T	T	T	T	T	T	T	T	T	T
Masterpact NT H2 Micrologic	**NT06**	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
	NT08	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
	NT10	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
	NT12	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
	NT16	25	32	40	40	T	T	37.5	48	T	T	T	T	T	T	T	T	T	T
Masterpact NW N1 Micrologic	**NW08**	25	32	40	40	T	T	37.5	T	T	T	T	T	T	T	T	T	T	T
	NW10	25	32	40	40	T	T	37.5	T	T	T	T	T	T	T	T	T	T	T
	NW12	25	32	40	40	T	T	37.5	T	T	T	T	T	T	T	T	T	T	T
	NW16	25	32	40	40	T	T	37.5	T	T	T	T	T	T	T	T	T	T	T
Masterpact NW H1 Micrologic	**NW08**	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NW10	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NW12	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NW16	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NW20	25	32	40	40	50	63	37.5	48	60	60	T	T	T	T	T	T	T	T
	NW25	25 (1)	32	40	40	50	63	37,5 (1)	48	60	60	T	T	T (1)	T	T	T	T	T
	NW32		32 (1)	40	40	50	63		48 (1)	60	60	T	T		T (1)	T	T	T	T
	NW40			40 (1)	40 (1)	50	63			60 (1)	60	T	T			T (1)	T (1)	T	T
Masterpact NW H2 Micrologic	**NW08**	25	32	40	40	50	63	37,5	48	60	60	75	94	82	82	82	T	T	T
	NW10	25	32	40	40	50	63	37,5	48	60	60	75	94	82	82	82	T	T	T
	NW12	25	32	40	40	50	63	37,5	48	60	60	75	94	82	82	82	T	T	T
	NW16	25	32	40	40	50	63	37,5	48	60	60	75	94	82	82	82	T	T	T
	NW20	25	32	40	40	50	63	37,5	48	60	60	75	94	82	82	82	T	T	T
	NW25	25 (1)	32	40	40	50	63	37,5 (1)	48	60	60	75	94	82 (1)	82	82	T	T	T
	NW32		32 (1)	40	40	50	63		48 (1)	60	60	75	94		82 (1)	82	T	T	T
	NW40			40 (1)	40 (1)	50	63			60 (1)	60	75	94			82 (1)	T (1)	T	T
Masterpact NW H1	**NW40b**			40 (1)	40 (1)	50	63			60 (1)	60 (1)	75	94			T (1)	T (1)	T	T
	NW50					50 (1)	63					75 (1)	94					T (1)	T
Masterpact NW H3 Micrologic	**NW20**	25	32	40	40	50	63	37,5	48	60	60	75	94	82	82	82	T	T	T
	NW25	25 (1)	32	40	40	50	63	37,5 (1)	48	60	60	75	94	82 (1)	82	82	T	T	T
	NW32		32 (1)	40	40	50	63		48 (1)	60	60	75	94		82 (1)	82	T	T	T
	NW40			40 (1)	40 (1)	50	63			60 (1)		75	94			82 (1)	T (1)	T	T
Masterpact NW H2	**NW40b**				40 (1)	50	63			60 (1)	60 (1)	75	94			T (1)	T (1)	T	T
	NW50					50 (1)	63					75 (1)	94					T (1)	T
Masterpact NT L1 Micrologic	**NT06**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NT08	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NT10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Masterpact NW L1 Micrologic	**NW08**	25	32	40	40	50	63	37.5	48	60	60	75	94	T	T	T	T	T	T
	NW10	25	32	40	40	50	63	37.5	48	60	60	75	94	T	T	T	T	T	T
	NW12	25	32	40	40	50	63	37.5	48	60	60	75	94	T	T	T	T	T	T
	NW16	25	32	40	40	50	63	37.5	48	60	60	75	94	T	T	T	T	T	T
	NW20	25	32	40	40	50	63	37.5	48	60	60	75	94	T	T	T	T	T	T

(1) With Ir upstream > 1,3 Ir downstream.

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW20-40 H3, Masterpact NW40b-63 H2 Micrologic
Downstream: iDPN, iC60, C120, NG125-160, Compact NSX100-630, NS630b-3200

Ue ⩽ 440 V AC

Upstream		Masterpact NW20/25/32/40 H3				Masterpact NW40b 50/63 H2			Masterpact NW20/25/32/40 H3				Masterpact NW40b 50/63 H2			Masterpact NW20/25/32/40 H3				Masterpact NW40b 50/63 H2		
Trip unit		Micrologic 2.0							Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In							Micrologic 5.0 - 6.0 - 7.0 Inst : OFF						
Downstream	**Rating (A)**	2000	2500	3200	4000	4000	5000	6300	2000	2500	3200	4000	4000	5000	6300	2000	2500	3200	4000	4000	5000	6300
Discrimination limit (kA)																						
iDPN, iDPNN		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C120N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125N/H/L		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG160E/N/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact B/F/H/N/S/L/R TM-D	**NSX100**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NSX250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/H/N/S/L TM-D		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact B/F/H/N/S/L/R Micrologic	**NSX100**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NSX250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact NSX160 B/F/H/N/S/L Micrologic		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact F/H/N/S/L/R	**NSX400**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NSX630	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact N Micrologic	**NS630b**	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
	NS800	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
	NS1000	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
	NS1250	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
	NS1600	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
Compact H Micrologic	**NS630b**	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	65	65	65	65	T	T	T
	NS800	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	65	65	65	65	T	T	T
	NS1000	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	65	65	65	65	T	T	T
	NS1250	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	65	65	65	65	T	T	T
	NS1600	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	65	65	65	65	T	T	T
Compact N Micrologic	**NS1600b**	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	65	65	65	65	T	T	T
	NS2000	20 (1)	25	32	40	40	50	63	30 (1)	37,5	48	60	60	T	T	65 (1)	65	65	65	T	T	T
	NS2500		25 (1)	32	40	40	50	63		37,5 (1)	48	60	60	T	T		65 (1)	65	65	T	T	T
	NS3200			32 (1)	40	40	50	63			48 (1)	60	60	T	T			65 (1)	65	T	T	T
Compact H Micrologic	**NS1600b**	20	25	32	40	40	50	63	30	37,5	48	60	60	75	T	65	65	65	65	T	T	T
	NS2000	20 (1)	25	32	40	40	50	63	30 (1)	37,5	48	60	60	75	T	65 (1)	65	65	65	T	T	T
	NS2500		25 (1)	32	40	40	50	63		37,5 (1)	48	60	60	75	T		65 (1)	65	65	T	T	T
	NS3200			32 (1)	40	40	50	63			48 (1)	60	60	75	T			65 (1)	65	T	T	T
Compact L Micrologic	**NS630b**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NS800	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NS1000	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Compact LB Micrologic	**NS630b**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NS800	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T

(1) With Ir upstream > 1,3 Ir downstream.

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.*

Discrimination table

Upstream: Masterpact NW20-40 H3, Masterpact NW40b-63 H2 Micrologic
Downstream: Masterpact NT06-16, Masterpact NW08-50

Ue ⩽ 440 V AC

Upstream	Masterpact NW20/25/32/40 H3				Masterpact NW40b 50/63 H2			Masterpact NW20/25/32/40 H3				Masterpact NW40b 50/63 H2			Masterpact NW20/25/32/40 H3				Masterpact NW40b 50/63 H2		
Trip unit	Micrologic 2.0							Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In							Micrologic 5.0 - 6.0 - 7.0 Inst : OFF						
Downstream	**Rating (A)**	**2000**	**2500**	**3200**	**4000**	**4000**	**5000**	**6300**	**2000**	**2500**	**3200**	**4000**	**4000**	**5000**	**6300**	**2000**	**2500**	**3200**	**4000**	**4000**	**5000**	**6300**
Discrimination limit (kA)																						
Masterpact NT H1 Micrologic	**NT06**	20	25	32	40	40	T	T	30	37.5	T	T	T	T	T	T	T	T	T	T	T	T
	NT08	20	25	32	40	40	T	T	30	37.5	T	T	T	T	T	T	T	T	T	T	T	T
	NT10	20	25	32	40	40	T	T	30	37.5	T	T	T	T	T	T	T	T	T	T	T	T
	NT12	20	25	32	40	40	T	T	30	37.5	T	T	T	T	T	T	T	T	T	T	T	T
	NT16	20	25	32	40	40	T	T	30	37.5	T	T	T	T	T	T	T	T	T	T	T	T
Masterpact NT H2 Micrologic	**NT06**	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
	NT08	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
	NT10	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
	NT12	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
	NT16	20	25	32	40	40	T	T	30	37.5	48	T	T	T	T	T	T	T	T	T	T	T
Masterpact NW N1 Micrologic	**NW08**	20	25	32	40	40	T	T	30	37.5	T	T	T	T	T	T	T	T	T	T	T	T
	NW10	20	25	32	40	40	T	T	30	37.5	T	T	T	T	T	T	T	T	T	T	T	T
	NW12	20	25	32	40	40	T	T	30	37.5	T	T	T	T	T	T	T	T	T	T	T	T
	NW16	20	25	32	40	40	T	T	30	37.5	T	T	T	T	T	T	T	T	T	T	T	T
Masterpact NW H1 Micrologic	**NW08**	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	T	T	T	T	T	T	T
	NW10	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	T	T	T	T	T	T	T
	NW12	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	T	T	T	T	T	T	T
	NW16	20	25	32	40	40	50	63	30	37.5	48	60	60	T	T	T	T	T	T	T	T	T
	NW20	20 (1)	25	32	40	40	50	63	30 (1)	37,5	48	60	60	T	T	T (1)	T	T	T	T	T	T
	NW25		25 (1)	32	40	40	50	63		37,5 (1)	48	60	60	T	T		T (1)	T	T	T	T	T
	NW32			32 (1)	40	40	50	63			48 (1)	60	60	T	T			T (1)	T	T	T	T
	NW40				40 (1)	40 (1)	50	63				60 (1)	60	T	T				T (1)	T (1)	T	T
Masterpact NW H2 Micrologic	**NW08**	20	25	32	40	40	50	63	30	37,5	48	60	60	75	94	65	65	65	65	T	T	T
	NW10	20	25	32	40	40	50	63	30	37,5	48	60	60	75	94	65	65	65	65	T	T	T
	NW12	20	25	32	40	40	50	63	30	37,5	48	60	60	75	94	65	65	65	65	T	T	T
	NW16	20	25	32	40	40	50	63	30	37,5	48	60	60	75	94	65	65	65	65	T	T	T
	NW20	20 (1)	25	32	40	40	50	63	30 (1)	37,5	48	60	60	75	94	65 (1)	65	65	65	T	T	T
	NW25		25 (1)	32	40	40	50	63		37,5 (1)	48	60	60	75	94		65 (1)	65	65	T	T	T
	NW32			32 (1)	40	40	50	63			48 (1)	60	60	75	94			65 (1)	65	T	T	T
	NW40				40 (1)	40 (1)	50	63				60 (1)	60	75	94				65 (1)	T (1)	T	T
Masterpact NW H1	**NW40b**				40 (1)	40 (1)	50	63				60 (1)	75	94	94				65 (1)	T (1)	T	T
	NW50						50 (1)	63					75 (1)	94	94						T (1)	T
Masterpact NW H3 Micrologic	**NW20**	20 (1)	25	32	40	40	50	63	30 (1)	37,5	48	60	60	75	94	65 (1)	65	65	65	120	120	120
	NW25		25 (1)	32	40	40	50	63		37,5 (1)	48	60	60	75	94		65 (1)	65	65	120	120	120
	NW32			32 (1)	40	40	50	63			48 (1)	60	60	75	94			65 (1)	65	120	120	120
	NW40				40 (1)	40 (1)	50	63				60 (1)	60	75	94				65 (1)	120 (1)	120	120
Masterpact NW H2	**NW40b**				40 (1)	40 (1)	50	63				60 (1)	75	75	94				65 (1)	120 (1)	120	120
	NW50						50 (1)	63					75 (1)		94					120 (1)	120
Masterpact NT L1 Micrologic	**NT06**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NT08	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	NT10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Masterpact NW L1 Micrologic	**NW08**	20	25	32	40	40	50	63	30	37.5	48	60	60	75	94	100	100	100	100	T	T	T
	NW10	20	25	32	40	40	50	63	30	37.5	48	60	60	75	94	100	100	100	100	T	T	T
	NW12	20	25	32	40	40	50	63	30	37.5	48	60	60	75	94	100	100	100	100	T	T	T
	NW16	20	25	32	40	40	50	63	30	37.5	48	60	60	75	94	100	100	100	100	T	T	T
	NW20	20	25	32	40	40	50	63		37.5	48	60	60	75	94		100	100	100	T	T	T

(1) With Ir upstream > 1,3 Ir downstream.

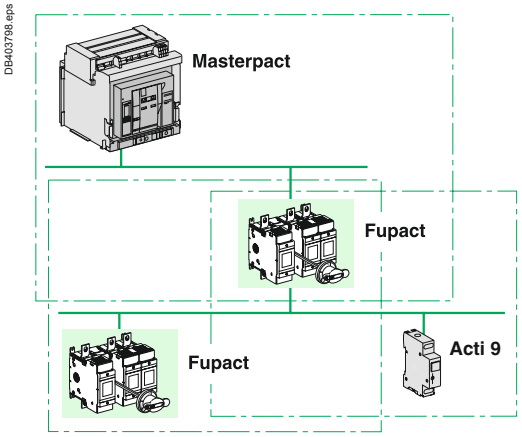
T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6, or check curves with Curve Direct software.

Protection discrimination with fuses



Principle

Schneider Electric offers a coordinated protection system

In an electrical installation, protection fuses are never used alone and must always be integrated in a system comprising circuit breakers.
Coordination is required between:
- upstream and downstream fuses
- upstream circuit breakers and downstream fuses
- upstream fuses and downstream circuit breakers.

Upstream fuse / Downstream fuse

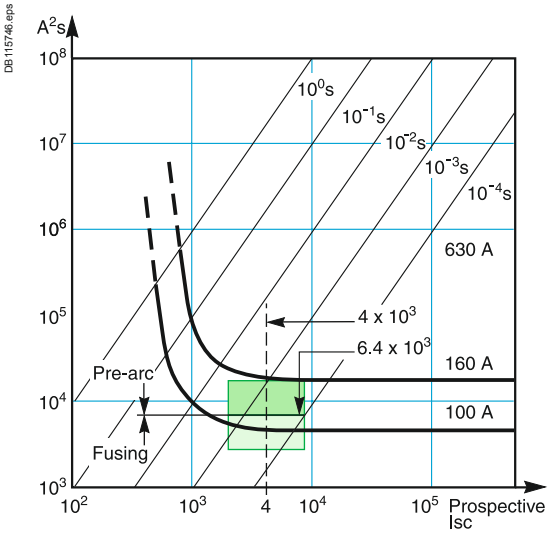
Discrimination is ensured when

Total energy of downstream fuse (Etav) < Pre-arcing energy of upstream fuse (Epam)

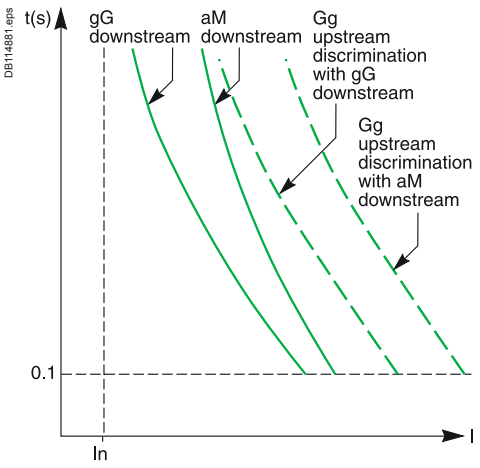
Note: *If Etav is higher than 80 % of Epam, the upstream fuse may be derated.*

■ **Upstream gG fuse-link / downstream gG fuse-link**

Standard IEC 60269-2-1 indicates limit values for pre-arcing and total energies for operation of gG and gM fuse-links, where the operating current is approximately 30 In.



Curves E = f (I) superimposed.



I = f(t) curves.

I²t limit and test currents for verification of discrimination

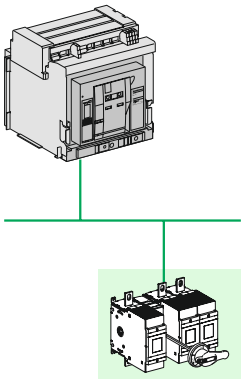
I_n (A)	Minimum values of pre-arcing I²t		Maximum values of operating I²t	
	Rms values of I prospective (kA)	I²t (A^2s)	Rms values of I prospective (kA)	I²t (A^2s)
16	0.27	291	0.55	1 210
20	0.40	640	0.79	2 500
25	0.55	1 210	1.00	4 000
32	0.79	2 500	1.20	5 750
40	1.00	4 000	1.50	9 000
50	1.20	5 750	1.85	13 700
63	1.50	9 000	2.30	21 200
80	1.85	13 700	3.00	36 000
100	2.30	21 200	4.00	64 000
125	3.00	36 000	5.10	104 000
160	4.00	64 000	6.80	185 000
200	5.10	104 000	8.70	302 000
250	6.80	185 000	11.80	557 000
315	8.70	302 000	15.00	900 000
400	11.80	557 000	20.00	1 600 000
500	15.00	900 000	26.00	2 700 000
630	20.00	1 600 000	37.00	5 470 000
800	26.00	2 700 000	50.00	10 000 000
1000	37.00	5 470 000	66.00 66,00	17 400 000
1250	50.00	10 000 000	90,00	33 100 000

■ **Upstream gG fuse-link / downstream aM fuse-link**

The I = f (t) curve for an aM fuse-link is steeper. aM fuse-links are just as fast as gG fuse-links for short-circuit currents, but slower for low overloads.
That is why the discrimination ratio between gG and aM fuse-links is approximately 2.5 to 4.

Protection discrimination with fuses

DB125650.eps



Upstream circuit breaker / Downstream fuse

Upstream circuit breaker with delayed ST (short time) protection function

This is the situation for a MLVS (main low-voltage switchboard) or sub-distribution switchboard protected by an incoming circuit breaker.
The upstream circuit breaker has an electrodynamic withstand capacity Icw and ensures time discrimination.

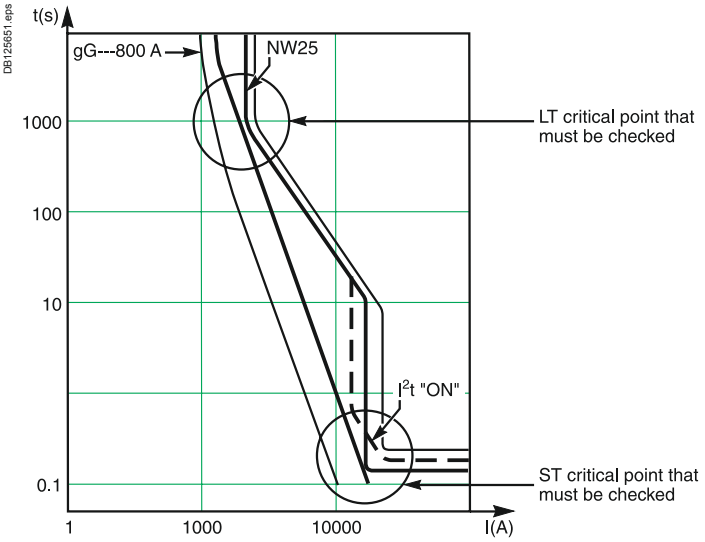
Rule

Examination of discrimination at the critical points on the LT (long time) and ST (short time) curves results in a discrimination table.
Analysis of the LT critical point indicates whether discrimination between the protection devices is possible or not.
Analysis of the ST (or Icw) critical point indicates whether the discrimination limit is greater than or equal to the ST (or Icw) value.

Note:

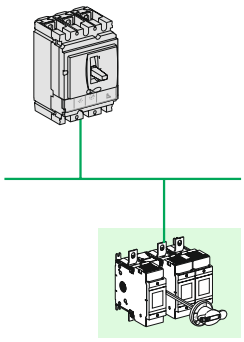
■ *the LT critical point is the most restrictive*
■ *for circuit breakers with a Icw value that is high and/or equal to Icu, the ST critical point is almost never a problem, i.e. discrimination is total.*■ ■ ■

DB125651.eps



Time-current curves and critical points that must be checked.

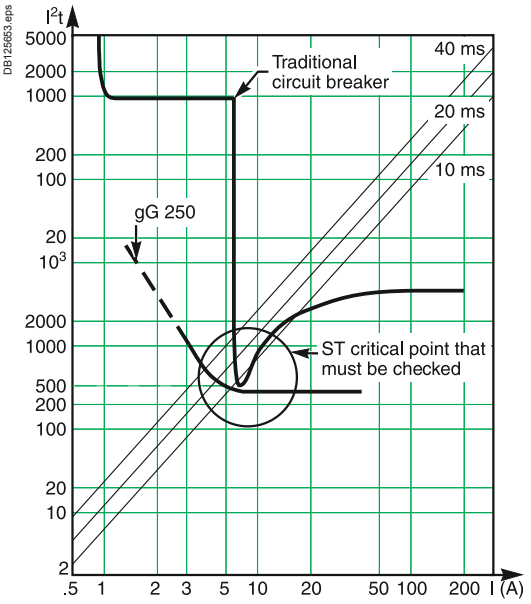
DB125652.eps



Upstream circuit breaker with non-delayed ST (short time) protection and/or current-limiting function

To make sure the ST critical point is OK, it is necessary to compare:
■ the energy curves of the protection devices
■ the non-tripping curves of the upstream circuit breaker and the fusing curves of the downstream fuse, and to run tests for the critical values.

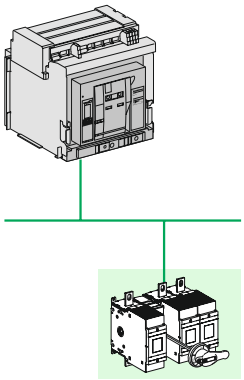
DB125653.eps



Energy curves and critical points that must be checked.

Protection discrimination with fuses

DB126650.eps

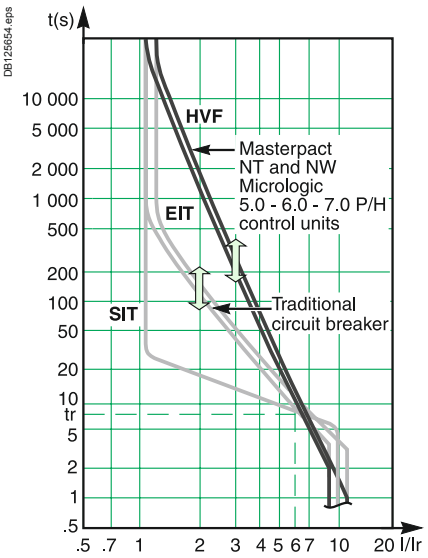


Feature exclusive to Schneider Electric

Masterpact NT or NW upstream of a Fupact equipped with a gG fuse-link

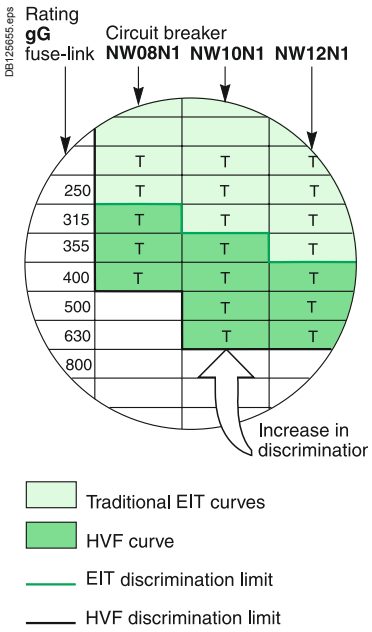
The new Micrologic control unit has a special LT delay setting for HVF very inverse time applications.
This curve is ideal for discrimination when fuse-based protection devices are installed downstream (LV distribution) or upstream (HV).

DB126654.eps



IDMTL curve.

DB126655.eps



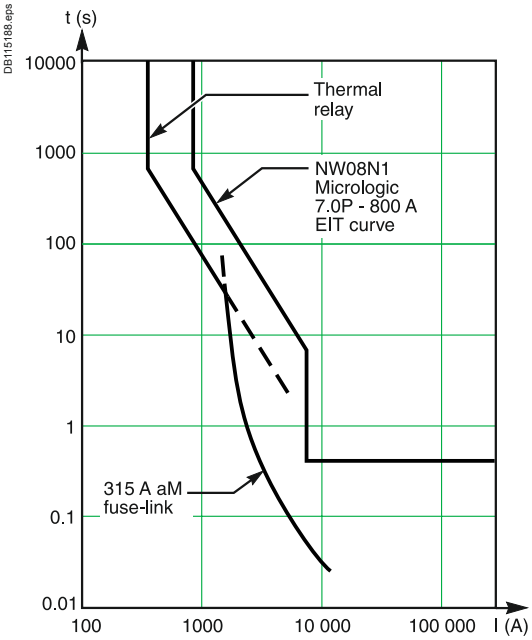
Increase in discrimination.

The new Micrologic 5.0 - 6.0 - 7.0 P / H control units are equipped as standard with four settings for LT inverse-time curves with adjustable slopes.
SIT: standard inverse time.
VIT: very inverse time.
EIT: extremely inverse time (traditional LT curve).
HVF: high-voltage fuse, inverse-time curve that follows the fuse thermal curve.

Protection discrimination with fuses

Masterpact NT or NW upstream of an aM fuse-link

The upstream protection circuit breaker must be coordinated with the thermal relay and the short-circuit protection aM fuse-link.



■ **Overload zone - coordination between Masterpact and the thermal relay**
Masterpact offers an EIT long-time setting that is totally coordinated with the curves of the thermal relay. Discrimination is ensured as long as the setting ratio is greater than 1.6.

■ **Short-circuit zone - coordination between Masterpact and the aM fuse-link**
Under short-circuit conditions > 10 In, the I = f (t) characteristic of an aM fuse-link is very similar to that of a gG fuse-link with the same rating.

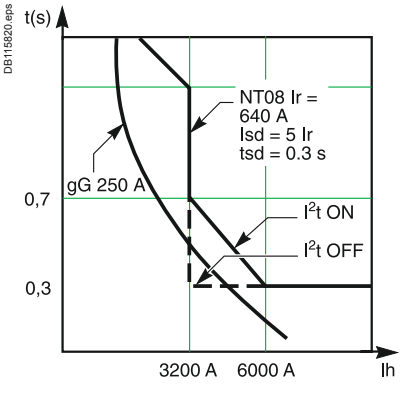
Given the above and using the EIT long-time setting, Masterpact offers the same discrimination ratios for both gG and aM downstream fuse-links. This ratio is very similar to that for gG fuse-links installed upstream of aM fuse-links.

Note: *if there are motor feeders protected by aM fuse-links and distribution lines protected by gG fuse-links downstream of a Masterpact circuit breaker, selection of HVF long-time curves is the means to ensure identical discrimination for both types of circuit.*

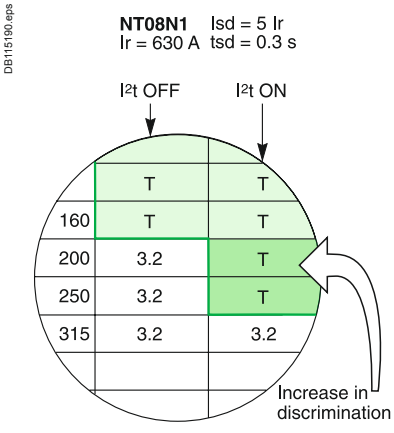
See pages 85 to 88 for the discrimination tables.

I²t ON setting

To significantly limit the stresses exerted on the installation (cables installed on trays, power supplied by an engine generator set, etc.), it may be necessary to set the ST protection function to a low value.
The I²t ON function, a constant-energy tripping curve, maintains the level of discrimination performance and facilitates total discrimination.



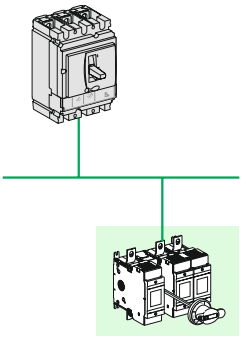
I²t ON curve.



Increase in the discrimination limit.

Protection discrimination with fuses

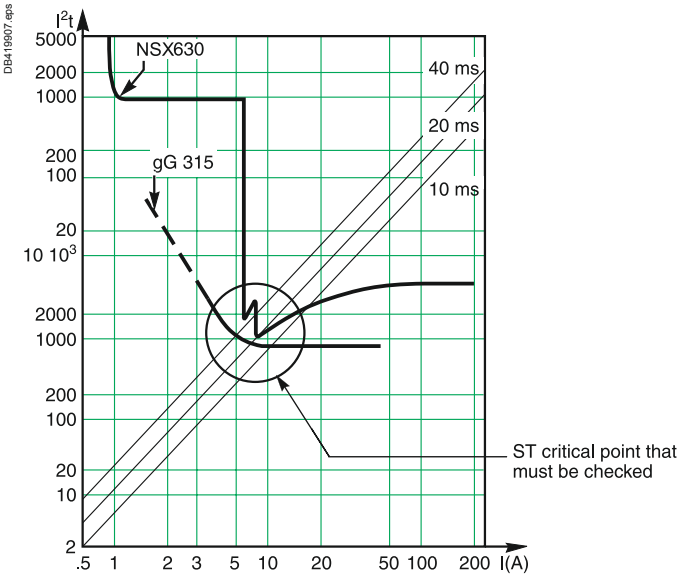
DB125652.eps



Compact NSX upstream of gG or aM fuse-links

Compact NSX is a current-limiting circuit breaker. Even without an ST (short time) delay setting, discrimination at the ST critical point is significantly improved because Compact NSX has a mini-delay that considerably increases curve values at the ST critical point.

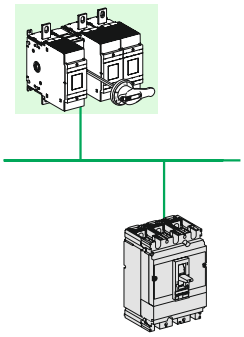
DB419907.eps



I²t curve for Compact NSX and a fuse.

See pages 90 and 92 for the discrimination tables.

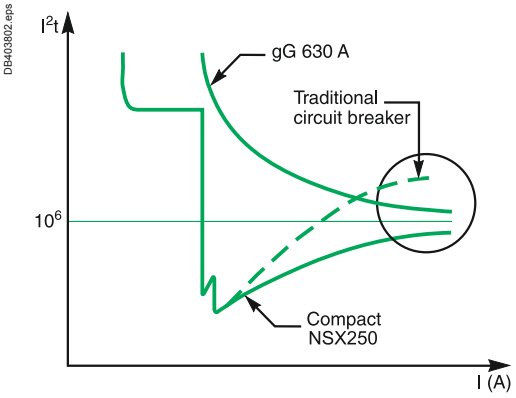
DB125657.eps



Compact NSX downstream of gG or aM fuse-links

Compact NSX offers an extremely high level of current-limiting performance due to the piston-based reflex tripping system. Again, discrimination is significantly improved with an upstream fuse.

DB403802.eps

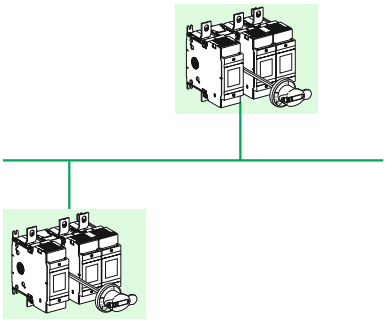


See page 92 for the discrimination tables.

Discrimination tables

Upstream: Fupact (gG fuse-link)
Downstream: Fupact (gG or aM fuse-link)

DB125659.eps



The tables below indicate the necessary ratings for the upstream and downstream fuse-links to achieve **total discrimination**. They take into account the standardised values stipulated in IEC 60269-1 and IEC 60269-2-1 for:
- the pre-arcing energies of the upstream fuse-links
- the total fusing energies of the downstream fuse-links.

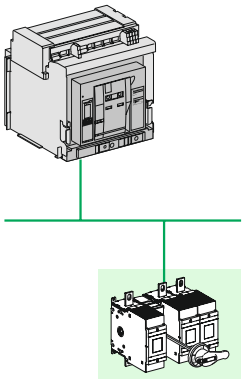
Upstream fuse-link gG (In) / gM (Ich)	Downstream fuse-link gG (In) / gM (Ich)	aM (In)
Rating (A)		
16	6	4
20	10	6
25	16	8
32	20	10
40	25	12
50	32	16
63	40	20
80	50	25
100	63	32
125	80	40
160	100	63
200	125	80
250	160	125
315	200	125
400	250	160
500	315	200
630	400	250
800	500	315
1000	630	400
1250	8000	500

Examples:
- an upstream 125 A gG fuse-link ensures total discrimination with an 80 A gG fuse-link and/or a 40 A aM fuse-link situated downstream
- an upstream 125 A gG fuse-link ensures total discrimination with a 63 A gG 63M80 fuse-link (with an 80 A characteristic) situated downstream.

Discrimination tables

Upstream: Masterpact NT/NW (HVF long-time curve) Downstream: Fupact (gG or aM fuse-link)

DB126650.eps



The Masterpact circuit breaker is equipped with a Micrologic 5.0 - 6.0 - 7.0 P / H control unit with the following settings:
- LT setting: HVF curve with Tld = 24 seconds
- ST setting: instantaneous OFF / Tsd = 0.4 seconds.

Upstream	Masterpact NTH1 / NWH1/H2/H3 Micrologic 5.0-6.0-7.0 P/H																
	NT08 H1	NT08 H1	NT08 H1	NT08 H1	NT08 H1	NT08 H1	NT08 H1	NT08 H1	NT10 H1	NT12 H1	NT16 H1						
	NW08 N1 H1/H2	NW08 N1 H1/H2	NW08 N1 H1/H2	NW08 N1 H1/H2	NW08 N1 H1/H2	NW08 N1 H1/H2	NW08 N1 H1/H2	NW08 N1 H1/H2	NW10 N1 H1/H2	NW12 N1 H1/H2	NW16 N1 H1/H2	NW20 H1/H2 H3	NW25 H1/H2 H3	NW32 H1/H2 H3	NW40 H1/H2 H3	NW50 H1/H2	NW63 H1/H2

Down-stream	Rating (A)	400	400	400	630	800	800	800	800	1000	1200	1600	2000	2500	3200	4000	5000	6300
	Ir setting	160	200	240	315	400	480	630	800	1000	1200	1600	2000	2500	3200	4000	5000	6300
gG/aM Fuse-link	32	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	50	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	63	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	80	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	125		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160			T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	200				T	T	T	T	T	T	T	T	T	T	T	T	T	T
	250					T	T	T	T	T	T	T	T	T	T	T	T	T
	315						5	T	T	T	T	T	T	T	T	T	T	T
	355							T	T	T	T	T	T	T	T	T	T	T
	400							6	T	T	T	T	T	T	T	T	T	T
	500								8	T	T	T	T	T	T	T	T	T
	630									T	T	T	T	T	T	T	T	T
	800										12	T	T	T	T	T	T	T
	1000											16	T	T	T	T	T	T
	1250												20	T	T	T	T	T

Note: for Masterpacts rated 2500 A and above, with identical settings, discrimination is always total.

Table key

T	*Total discrimination*
16	*Discrimination limit in kA*
	No discrimination

Circuit breaker characteristics

NT08 to 16
H1 / Icu = Icw = 42 kA
L1 / Icu = 150 kA Icw = 10 kA

NW08 to NW16
N1 / Icu = Icw = 42 kA
H1 / Icu = Icw = 65 kA
H2 / Icu = 100 Icw = 85 kA

NW08 to NW20
L1 / Icu = 150 kA Icw = 30 kA

NW20 to NW40
H1 / Icu = Icw = 65 kA
H2 / Icu = 100 Icw = 85 kA
H3 / Icu = 150 Icw = 65 kA

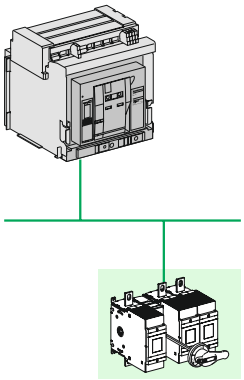
NW40b to NW63
H1 / Icu = Icw = 100 kA
H2 / Icu = 150 Icw = 100 kA

Note: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.

Discrimination tables

Upstream: Masterpact NT/NW (HVF long-time curve)
Downstream: Fupact (gG or aM fuse-link)

DB125650.eps



The Masterpact circuit breaker is equipped with a Micrologic 5.0 - 6.0 - 7.0 P / H control unit with the following settings:
- LT setting: HVF curve with Tld = 24 seconds
- ST setting: instantaneous OFF / Tsd = 0.4 seconds.

Upstream		Masterpact NT L1 Micrologic 5.0-6.0-7.0 P/H								
		NT08	NT08	NT08	NT08	NT08	NT08	NT08	NT08	NT10
Down-stream	Rating (A)	400	400	400	630	630	630	630	800	1000
	Ir setting	160	200	240	315	400	480	630	800	1000
gG/aM Fuse-link	32	T	T	T	T	T	T	T	T	T
	40	T	T	T	T	T	T	T	T	T
	50	T	T	T	T	T	T	T	T	T
	63	T	T	T	T	T	T	T	T	T
	80	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T
	125		T	T	T	T	T	T	T	T
	160			16	16	16	16	16	16	16
	200				10	10	10	10	10	10
	250					10	10	10	10	10
	315						5	10	10	10
	355							10	10	10
	400							6	10	10
	500								8	10
	630									10
	800									
	1000									
	1250									

Upstream		Masterpact NW L1 Micrologic 5.0-6.0-7.0 P/H											
		NW08	NW08	NW08	NW08	NW08	NW08	NW08	NW08	NW10	NW12	NW16	NW20
Downstream	Rating (A)	400	400	400	630	630	630	630	800	1000	1200	1600	2000
	Ir setting	160	200	240	315	400	480	630	800	1000	1200	1600	2000
gG/aM Fuse-link	32	T	T	T	T	T	T	T	T	T	T	T	T
	40	T	T	T	T	T	T	T	T	T	T	T	T
	50	T	T	T	T	T	T	T	T	T	T	T	T
	63	T	T	T	T	T	T	T	T	T	T	T	T
	80	T	T	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T	T	T
	125		T	T	T	T	T	T	T	T	T	T	T
	160			T	T	T	T	T	T	T	T	T	T
	200				T	T	T	T	T	T	T	T	T
	250					T	T	T	T	T	T	T	T
	315						5	T	T	T	T	T	T
	355							100	100	100	100	100	100
	400							6	83	83	83	83	83
	500								8	43	43	43	43
	630										30	30	30
	800										12	30	30
	1000											16	30
	1250												20

Table key

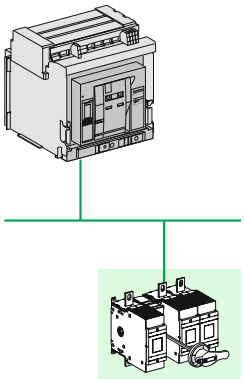
T	*Total discrimination*
16	*Discrimination limit in kA*
	No discrimination

Note: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.

Discrimination tables

Upstream: Masterpact NT/NW
Downstream: Fupact (gG or aM fuse-link)

DB126650.eps



The Masterpact circuit breaker is equipped with a Micrologic 5.0 - 6.0 - 7.0 control unit with the following settings:
- LT setting: Tr = 24 seconds
- ST setting: instantaneous OFF / Tsd = 0.4 seconds.

Upstream		Masterpact NT H1 / NW H1/H2/H3 Micrologic 5.0-6.0-7.0																
		NT08 H1	NT08 H1	NT08 H1	NT08 H1	NT08 H1	NT08 H1	NT08 H1	NT08 H1	NT10 H1	NT12 H1	NT16 H1						
		NW08 N1 H1/H2	NW08 N1 H1/H2	NW08 N1 H1/H2	NW08 N1 H1/H2	NW08 N1 H1/H2	NW08 N1 H1/H2	NW08 N1 H1/H2	NW08 N1 H1/H2	NW10 N1 H1/H2	NW12 N1 H1/H2	NW16 N1 H1/H2	NW20 H1/H2 H3	NW25 H1/H2 H3	NW32 H1/H2 H3	NW40 H1/H2 H3	NW50 H1/H2	NW63 H1/H2
Down-stream	Rating (A)	400	400	400	630	800	800	800	800	1000	1200	1600	2000	2500	3200	4000	5000	6300
	Ir setting	160	200	240	315	400	480	630	800	1000	1200	1600	2000	2500	3200	4000	5000	6300
gG/aM Fuse-link	32	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	50	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	63	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	80		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100			T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	125				T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160					T	T	T	T	T	T	T	T	T	T	T	T	T
	200						T	T	T	T	T	T	T	T	T	T	T	T
	250							T	T	T	T	T	T	T	T	T	T	T
	315								T	T	T	T	T	T	T	T	T	T
	355									T	T	T	T	T	T	T	T	T
	400									T	T	T	T	T	T	T	T	T
	500										T	T	T	T	T	T	T	T
	630											T	T	T	T	T	T	T
	800												T	T	T	T	T	T
	1000													T	T	T	T	T
	1250														T	T	T	T

Table key

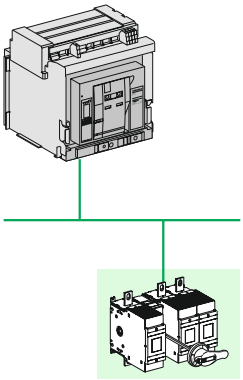
T	*Total discrimination*
16	*Discrimination limit in kA*
	No discrimination

***Note**: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.*

Discrimination tables

Upstream: Masterpact NT/NW
Downstream: Fupact (gG or aM fuse-link)

DB125650.eps



The Masterpact circuit breaker is equipped with a Micrologic 5.0 - 6.0 - 7.0 control unit with the following settings:
- LT setting: HVF curve with Tld = 24 seconds
- ST setting: instantaneous OFF / Tsd = 0.4 seconds.

Upstream		Masterpact NT L1 Micrologic 5.0-6.0-7.0								
		NT08	NT08	NT08	NT08	NT08	NT08	NT08	NT08	NT10
Down-stream	Rating (A)	400	400	400	630	630	630	630	800	1000
	Ir setting	160	200	240	315	400	480	630	800	1000
gG/aM	32	T	T	T	T	T	T	T	T	T
Fuse-link	40	T	T	T	T	T	T	T	T	T
	50	T	T	T	T	T	T	T	T	T
	63	T	T	T	T	T	T	T	T	T
	80		T	T	T	T	T	T	T	T
	100			T	T	T	T	T	T	T
	125				T	T	T	T	T	T
	160					16	16	16	16	16
	200						10	10	10	10
	250							10	10	10
	315								10	10
	355									10
	400									10
	500									
	630									
	800									
	1000									
	1250									

Upstream		Masterpact NW L1 Micrologic 5.0-6.0-7.0											
		NW08	NW08	NW08	NW08	NW08	NW08	NW08	NW08	NW10	NW12	NW16	NW20
Downstream	Calibre (A)	400	400	400	630	630	630	630	800	1000	1200	1600	2000
	Réglage Ir	160	200	240	315	400	480	630	800	1000	1200	1600	2000
gG/aM	32	T	T	T	T	T	T	T	T	T	T	T	T
Fuse-link	40	T	T	T	T	T	T	T	T	T	T	T	T
	50	T	T	T	T	T	T	T	T	T	T	T	T
	63	T	T	T	T	T	T	T	T	T	T	T	T
	80		T	T	T	T	T	T	T	T	T	T	T
	100			T	T	T	T	T	T	T	T	T	T
	125				T	T	T	T	T	T	T	T	T
	160					T	T	T	T	T	T	T	T
	200						T	T	T	T	T	T	T
	250							T	T	T	T	T	T
	315								T	T	T	T	T
	355									100	100	100	100
	400									83	83	83	83
	500											43	43
	630											30	30
	800												30
	1000												
	1250												

Table key

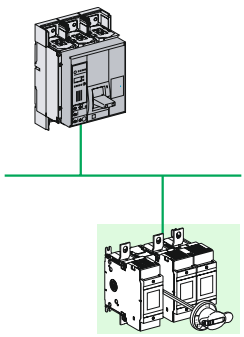
T	*Total discrimination*
16	*Discrimination limit in kA*
	No discrimination

Note: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.

Discrimination tables

Upstream: Compact NS630b to 3200
Downstream: Fupact (gG fuse-link)

DB125660.eps



The Compact NS630b to 3200 circuit breaker is equipped with a Micrologic 5.0-6.0-7.0 control unit with the following settings:
- LT setting: Tr = 24 seconds
- ST setting: instantaneous OFF / Tsd = 0.4 seconds.

Upstream		Compact NS L Micrologic 5.0-6.0-7.0								
		NS630b	NS630b	NS630b	NS630b	NS630b	NS630b	NS630b	NS800	NS1000
Down-stream	Rating (A) Ir setting	400 160	400 200	400 240	630 315	630 400	630 500	630 630	800 800	1000 1000
gG Fuse-link	32	T	T	T	T	T	T	T	T	T
	40	T	T	T	T	T	T	T	T	T
	50	T	T	T	T	T	T	T	T	T
	63	T	T	T	T	T	T	T	T	T
	80	T	T	T	T	T	T	T	T	T
	100		74	74	74	74	74	74	74	74
	125			41	41	41	41	41	41	41
	160				16	16	16	16	16	16
	200					10	10	10	10	10
	250						10	10	10	10
	315								10	10
	355								10	10
	400									10
	500									
	630									
	800									
	1000									
	1250									

Upstream		Compact NS N/H Micrologic 5.0-6.0-7.0													
		NS630b	NS630b	NS630b	NS630b	NS630b	NS630b	NS630b	NS800	NS1000	NS1250	NS1600	NS1600b	NS2000	NS2500	NS3200
Down-stream	Rating (A) Ir setting	400 160	400 200	400 240	630 315	630 400	630 500	630 630	800 800	1000 1000	1200 1200	1600 1600	1600 1600	2000 2000	2500 2500	3200 3200
gG Fuse-link	32	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	50	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	63	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	80	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100		T	T	T	T	T	T	T	T	T	T	T	T	T	T
	125			T	T	T	T	T	T	T	T	T	T	T	T	T
	160				T	T	T	T	T	T	T	T	T	T	T	T
	200					T	T	T	T	T	T	T	T	T	T	T
	250						T	T	T	T	T	T	T	T	T	T
	315								T	T	T	T	T	T	T	T
	355								44	44	44	44	T	T	T	T
	400									35	35	35	T	T	T	T
	500										25	25	T	T	T	T
	630											25	40	40	40	40
	800													40	40	40
	1000														40	40
	1250															40

Table key

T	*Total discrimination*
41	*Discrimination limit in kA*
	No discrimination

Circuit breaker characteristics

NS630b/400 to 1000
L / Icu = 150 kA Icw = 10 kA / 0.5

NS630b to NS1600
N / Icu = 50 kA, Icw = 25 kA
H / Icu = 70 kA, Icw = 25 kA

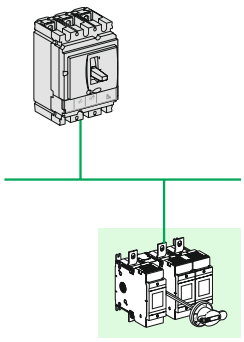
NS1600b to NS3200
N / Icu = 70 kA, Icw = 40 kA
H / Icu = 85 kA, Icw = 40 kA
H3 / Icu = 150 Icw = 65 kA

Note: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.

Discrimination tables

Upstream: Compact NSX100 to 630
Downstream: Fupact (gG fuse-link)

DB125652.eps



The Compact NSX100 to 630 circuit breaker is equipped with a thermal-magnetic or electronic trip unit without a delayed short-time setting.

***Note**: The discrimination rules are the same for a Compact NSX with a delayed short-time setting.*

Upstream		NSX100B/F/N/H/S/L								NSX160B/F/N/H/S/L				NSX250B/F/N/H/S/L		
	Trip unit	TM-D								TM-D				TM-D		
Down-stream		16	25	32	40	50	63	80	100	80	100	125	160	160	200	250
	Im (kA)	0.19	0.3	0.4	0.5	0.5	0.5	0.63	0.8	1	1	1	1	1	2	2.5
gG Fuse-link	2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	16				T	T	T	T	T	T	T	T	T	T	T	T
	20				T	T	T	T	T	T	T	T	T	T	T	T
	25				T	T	T	T	T	T	T	T	T	T	T	T
	32							T	T	T	T	T	T	T	T	T
	35											T	T	T	T	T
	40											T	T	T	T	T
	50											T	T	T	T	T
	63											T	T	T	T	T
	80														T	T
	100														T	T
	125														T	T
	160															T

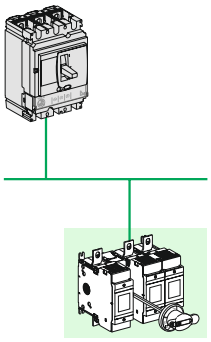
Upstream		NSX100B/F/N/H/S/L								NSX160B/F/N/H/S/L			NSX250B/F/N/H/S/L			NSX400F/N/H/S/L			NSX630F/N/H/S/L		
	Trip unit	Micrologic 2, 5, 6								Micrologic 2, 5, 6			Micrologic 2, 5, 6			Micrologic 2, 5, 6			Micrologic 2, 5, 6		
		Isd = 10 Ir								Isd = 10 Ir			Isd = 10 Ir			Isd = 10 Ir			Isd = 10 Ir		
Down-stream	Rating (A)	40			100				160			250			400			630		
	Ir setting	18	25	40	40	63	80	100	100	125	160	160	200	250	250	320	400	400	500	630
	Im (kA)		0.25	0.4	0.4	0.63	0.8	1	1	1.25	1.6	1.6	2	2.5	2.5	3.2	4	4	5	6.3
gG Fuse-link	2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	10		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	16			T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	20					T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	25					T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	32						T	T	T	T	T	T	T	T	T	T	T	T	T	T
	35							T	T	T	T	T	T	T	T	T	T	T	T	T
	40							T	T	T	T	T	T	T	T	T	T	T	T	T
	50									T	T	T	T	T	T	T	T	T	T	T
	63											T	T	T	T	T	T	T	T	T
	80												T	T	T	T	T	T	T	T
	100													T	T	T	T	T	T	T
	125															T	T	T	T	T
	160																T	T	T	T
	200																		T	T
	250																			T

***Note**: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.*

Discrimination tables

Upstream: Compact NSX100 to 630
Downstream: Fupact (aM fuse-link)

DB125661.eps



The Compact NSX100 to 630 circuit breaker is equipped with a thermal-magnetic or electronic trip unit without a delayed short-time setting.

***Note**: The discrimination rules are the same for a Compact NSX with a delayed short-time setting.*

Compact NSX / aM fuse-link discrimination

Upstream		NSX100B/F/N/H/S/L								NSX160B/F/N/H/S/L				NSX250B/F/N/H/S/L		
Trip unit		TM-D								TM-D				TM-D		
Down-stream	Rating (A)	16	25	32	40	50	63	80	100	80	100	125	160	160	200	250
	Im (kA)	0.19	0.3	0.4	0.5	0.5	0.5	0.63	0.8	1	1	1	1	1	2	2.5
aM Fuse-link	2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	10				T	T	T	T	T	T	T	T	T	T	T	T
	16						T	T	T	T	T	T	T	T	T	T
	20							T	T	T	T	T	T	T	T	T
	32											T	T	T	T	T
	35														T	T
	40														T	T
	50														T	T
	63														T	T

Upstream		NSX100B/F/N/H/S/L							NSX160B/F/N/H/S/L					NSX250B/F/N/H/S/L				
Trip unit		Micrologic							Micrologic					Micrologic				
Down-stream	Rating (A)	40			100				160					250				
		18	25	40	40	63	80	100	63	80	100	125	160	100	125	160	200	250
	Im (kA)		0.25	0.4	0.4	0.63	0.8	1	0.63	0.8	1	1.25	1.6	1	1.25	1.6	2	2.5
aM Fuse-link	2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	6		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	10			T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	16					T	T	T	T	T	T	T	T	T	T	T	T	T
	20						T	T		T	T	T	T	T	T	T	T	T
	32											T	T		T	T	T	T
	35															T	T	T
	40															T	T	T
	50																T	T
	63																	T

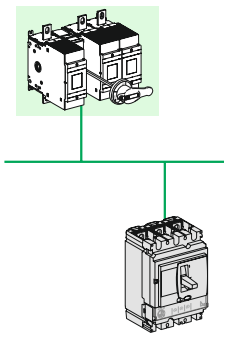
Upstream		NSX400F/N/H/S/L					NSX630F/N/H/S/L				
Trip unit		Micrologic					Micrologic				
Down-stream	Rating (A)	400					630				
		160	200	250	320	400	250	320	400	500	630
	Im (kA)	1.6	2	2.5	3.2	4	2.5	3.2	4	5	6.3
aM Fuse-link	2	T	T	T	T	T	T	T	T	T	T
	4	T	T	T	T	T	T	T	T	T	T
	6	T	T	T	T	T	T	T	T	T	T
	10	T	T	T	T	T	T	T	T	T	T
	16	T	T	T	T	T	T	T	T	T	T
	20	T	T	T	T	T	T	T	T	T	T
	32	T	T	T	T	T	T	T	T	T	T
	35	T	T	T	T	T	T	T	T	T	T
	40	T	T	T	T	T	T	T	T	T	T
	50		T	T	T	T	T	T	T	T	T
	63			T	T	T	T	T	T	T	T
	80				T	T		T	T	T	T
	100					T			T	T	T

***Note**: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.*

Discrimination tables

Upstream: Fupact (gG fuse-link)
Downstream: Compact NSX100 to 630

DB125662.eps



The Compact NSX100 to 630 circuit breaker is equipped with a thermal-magnetic or electronic trip unit without a delayed short-time setting.

gG fuse-link / Compact NSX discrimination

Upstream	gG																
Downstream	**Rating (A)**	**160**	**200**	**250**	**315**	**355**	**400**	**450**	**500**	**560**	**630**	**670**	**710**	**750**	**800**	**1000**	**1250**
NSX100 TM-D	**16**	2.5	4	7	15	T	T	T	T	T	T	T	T	T	T	T	T
	25	2.5	4	7	15	T	T	T	T	T	T	T	T	T	T	T	T
	32	2.5	4	7	15	T	T	T	T	T	T	T	T	T	T	T	T
	40	2.5	4	7	15	T	T	T	T	T	T	T	T	T	T	T	T
	50	2.5	4	7	15	T	T	T	T	T	T	T	T	T	T	T	T
	63	2.5	4	7	15	T	T	T	T	T	T	T	T	T	T	T	T
	80		4	7	15	T	T	T	T	T	T	T	T	T	T	T	T
	100			7	15	T	T	T	T	T	T	T	T	T	T	T	T
	≤ 63			7	15	T	T	T	T	T	T	T	T	T	T	T	T
NSX160 TM-D	**80**			7	15	T	T	T	T	T	T	T	T	T	T	T	T
	100					T	T	T	T	T	T	T	T	T	T	T	T
	125						T	T	T	T	T	T	T	T	T	T	T
	160						T	T	T	T	T	T	T	T	T	T	T
	≤ 100						T	T	T	T	T	T	T	T	T	T	T
NSX250 TM-D	**125**						T	T	T	T	T	T	T	T	T	T	T
	160						T	T	T	T	T	T	T	T	T	T	T
	200							T	T	T	T	T	T	T	T	T	T
	250							T	T	T	T	T	T	T	T	T	T
NSX100 Micrologic	**40**			4	10	T	T	T	T	T	T	T	T	T	T	T	T
	100			4	10	T	T	T	T	T	T	T	T	T	T	T	T
NSX160 Micrologic	**40**				7	8	T	T	T	T	T	T	T	T	T	T	T
	100				7	8	T	T	T	T	T	T	T	T	T	T	T
	160				7	8	T	T	T	T	T	T	T	T	T	T	T
NSX250 Micrologic	**100**						10	T	T	T	T	T	T	T	T	T	T
	160						10	T	T	T	T	T	T	T	T	T	T
	250							T	T	T	T	T	T	T	T	T	T
NSX400 Micrologic	**160**								6	7	9	10	T	T	T	T	T
	200								6	7	9	10	T	T	T	T	T
	250								6	7	9	10	T	T	T	T	T
	320								6	7	9	10	T	T	T	T	T
	400								6	7	9	10	T	T	T	T	T
NSX630 Micrologic	**400**												12	15	30	T	T
	630												12	15	30	T	T

Table key

T	*Total discrimination*
16	*Discrimination limit in kA*
	No discrimination

Note: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.

Cascading
Contents

Downstream	Upstream							
Type	**iDPN**	**iC60**	**C120**	**NG125**	**NG160**	**NSX100**	**NSX160**	**NSX250**
380-415 V (Ph/N 220-240 V)								
iDPN 230 Ph/N	page 98	page 98	page 98	page 98	page 98	page 99	page 99	page 100
iC60	page 98	page 98	page 98	page 98	page 98	page 99	page 99	page 100
C120	page 98	page 98	page 98	page 98	page 98	page 99	page 99	page 100
NG125	-	-	-	page 98	page 98	page 99	page 99	page 100
NG160	-	-	-	-	-	page 99	page 99	page 100
NSX100	-	-	-	-	-	page 99	page 99	page 100
NSX160	-	-	-	-	-	-	page 99	page 100
NSX250	-	-	-	-	-	-	-	page 100
440 V								
iC60	-	page 105	-	page 105	-	page 105	page 105	-
NG125	-	page 105	-	page 105	-	page 105	page 105	page 106
NG160	-	-	-	-	-	-	page 105	page 106
NSX100	-		-	-	-	page 105	page 105	page 106
NSX160	-	-	-	-	-	-	page 105	page 106
NSX250	-	-	-	-	-	-	-	page 106
220-240 V (Ph/N 110-130 V)								
iDPN 130 Ph/N	page 110	page 110	page 110	page 110	page 110	page 110	page 111	page 112
iC60	page 110	page 110	page 110	page 110	page 110	page 110	page 111	page 112
C120	page 110	page 110	page 110	page 110	page 110	page 110	page 111	page 112
NG125	page 110	page 110	page 110	page 110	page 110	page 110	page 111	page 112
NG160	-	-	-	-	page 110	page 110	page 111	page 112
NSX100	-	-	-	-	page 110	page 110	page 111	page 112
NSX160	-	-	-	-	-	-	page 111	page 112
NSX250	-	-	-	-	-	-	-	page 112

Discrimination enhanced by cascading

Downstream	Upstream			
Type	**NG160**	**NSX100**	**NSX160**	**NSX250**
380-415 V (Ph/N 220-240 V)				
iC60	page 117	page 119	page 118-119	page 118-120
C120	-	-	-	page 118-120
NG125	-	-	page 118	page 118-120
NG160	-	-	-	page 120
NSX100	-	-	-	page 120
440 V				
iC60	-	page 124	page 123	-
NG125	-	page 124	page 123	page 123
NSX100	-	page 124	-	page 123
220-240 V (Ph/N 110-130 V)				
iC60	-	page 128	page 127-128	page 127-129
C120	-	-	-	page 127-129
NG125	-	-	page 127	page 127-129
NG160	-	-	-	page 130
NSX100	-	-	-	page 130

Cascading
Contents

Downstream	Upstream							
Type	NSX400	NSX630	NS630b	NS800	NS1000 H/L	NS1250 NS1600 H	NS2000 NS2500 NS3200	Masterpact
380-415 V (Ph/N 220-240 V)								
NG160	page 101	page 102	page 103	-	-	-	-	-
NSX100	page 101	page 102	page 103	page 103	page 104	page 104	page 104	page 104
NSX160	page 101	page 102	page 103	page 103	page 104	page 104	page 104	page 104
NSX250	page 101	page 102	page 103	page 103	page 104	page 104	page 104	page 104
NSX400	page 101	page 102	page 103	page 103	page 104	page 104	page 104	page 104
NSX630	-	page 102	page 103	page 103	page 104	page 104	page 104	page 104
NS630b	-	-	page 103	page 103	page 104	page 104	page 104	page 104
NS800	-	-	page 103	page 103	page 104	page 104	page 104	page 104
NS1000	-	-	page 103	page 103	page 104	page 104	page 104	page 104
NS1250	-	-	-	-	page 104	page 104	page 104	page 104
NS1600	-	-	-	-	page 104	page 104	page 104	page 104
440 V								
NG160	page 106	page 107	-	-	-	-	-	-
NSX100	page 106	page 107	page 108	page 108	page 109	page 109	page 109	page 109
NSX160	page 106	page 107	page 108	page 108	page 109	page 109	page 109	page 109
NSX250	page 106	page 107	page 108	page 108	page 109	page 109	page 109	page 109
NSX400	page 106	page 107	page 108	page 108	page 109	page 109	page 109	page 109
NSX630	-	page 107	page 108	page 108	page 109	page 109	page 109	page 109
NS630b	-	-	page 108	page 108	page 109	page 109	page 109	page 109
NS800	-	-	page 108	page 108	page 109	page 109	page 109	page 109
NS1000	-	-	-	-	page 109	page 109	page 109	page 109
NS1250	-	-	-	-	page 109	page 109	page 109	page 109
NS1600	-	-	-	-	page 109	page 109	page 109	page 109
220-240 V (Ph/N 110-130 V)								
NG160	page 113	page 114	-	-	-	-	-	-
NSX100	page 113	page 114	page 115	page 115	page 115	-	-	page 115
NSX160	page 113	page 114	page 115	page 115	page 115	-	-	page 115
NSX250	page 113	page 114	page 115	page 115	page 115	-	-	page 115
NSX400	page 113	page 114	page 115	page 115	page 115	-	-	page 115
NSX630	-	page 114	page 115	page 115	page 115	-	-	page 115

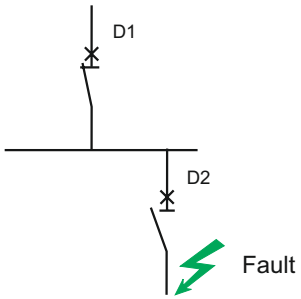
Discrimination enhanced by cascading

Downstream	Upstream					
Type	NSX400	NSX630	NS800	NS1000	NS1250	NS1600
380-415 V (Ph/N 220-240 V)						
NG160	page 121	page 121	-	-	-	-
NSX100	page 121	page 121	page 122	page 122	page 122	page 122
NSX160	page 121	page 121	page 122	page 122	page 122	page 122
NSX250	page 121	page 121	page 122	page 122	page 122	page 122
NSX400	-	-	page 122	page 122	page 122	page 122
NSX630	-	-	page 122	page 122	page 122	page 122
440 V						
NSX100	page 125	page 125	page 126	page 126	page 126	page 126
NSX160	page 125	page 125	page 126	page 126	page 126	page 126
NSX250	page 125	page 125	page 126	page 126	page 126	page 126
NSX400	-	-	page 126	page 126	page 126	page 126
NSX630	-	-	page 126	page 126	page 126	page 126
220-240 V (Ph/N 110-130 V)						
NG160	page 131	page 131	page 131	page 131	-	-
NSX100	page 131	page 131	page 131	page 131	-	-
NSX160	page 131	page 131	page 131	page 131	-	-
NSX250	page 131	page 131	page 131	page 131	-	-
NSX400	page 131	page 131	page 131	page 131	-	-
NSX630	page 131	page 131	page 131	page 131	-	-

Cascading

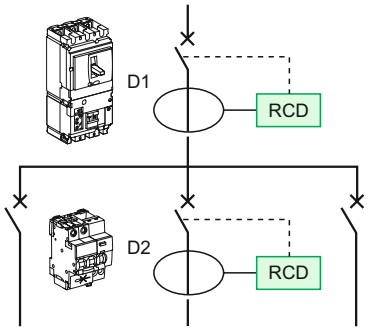
E002487-37.eps

DB421201.eps

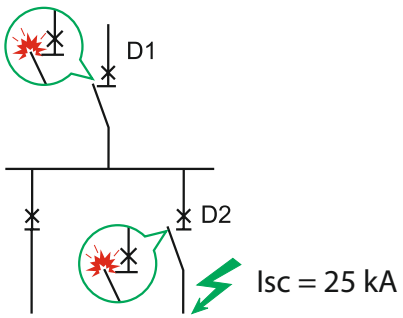


D1 and D2 in series.

DB421192.eps



DB421193.eps



IEC 60947-2, Annex A
IEC 60364-4-43 § 434.5.1

What is cascading?

Cascading is the use of the current limiting capacity of circuit breakers at a given point to permit installation of lower-rated and therefore lower-cost circuit breakers downstream.
The upstream Compact circuit breakers acts as a barrier against short-circuit currents. In this way, downstream circuit breakers with lower breaking capacities than the prospective short-circuit (at their point of installation) operate under their normal breaking conditions.
Since the current is limited throughout the circuit controlled by the limiting circuit breaker, cascading applies to all switchgear downstream. It is not restricted to two consecutive devices.

General use of cascading

With cascading, the devices can be installed in different switchboards. Thus, in general, cascading refers to any combination of circuit breakers where a circuit breaker with a breaking capacity less than the prospective Isc at its point of installation can be used. Of course, the breaking capacity of the upstream circuit breaker must be greater than or equal to the prospective short-circuit current at its point of installation.
The combination of two circuit breakers in cascading configuration is covered by the following standards of:
- design and manufacture of circuit breakers (IEC 60947-2, Annex A),
- electrical distribution networks (IEC 60364-4-43 § 434.5.1).

Coordination between circuit breakers

The use of a protective device possessing a breaking capacity less than the prospective short-circuit current at its installation point is permitted as long as another device is installed upstream with at least the necessary breaking capacity.
In this case, the characteristics of the two devices must be coordinated in such a way that the energy let through by the upstream device is not more than that which can be withstood by the downstream device and the cables protected by these devices without damage.
Cascading can only be checked by laboratory tests and the possible combinations can be specified only by the circuit breaker manufacturer.

Cascading and protection discrimination

In cascading configurations, due to the Roto-active breaking technique, discrimination is maintained and, in some cases, even enhanced. Consult the enhanced discrimination tables on page 116 for data on discrimination limits.

Cascading tables

Schneider Electric cascading tables are:
- drawn up on the basis of calculations (comparison between the energy limited by the upstream device and the maximum permissible thermal stress for the downstream device)
- verified experimentally in accordance with IEC standard 60947-2.

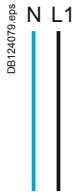
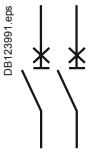
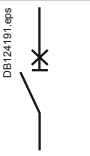
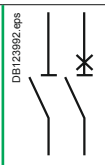
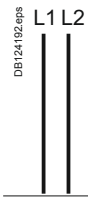
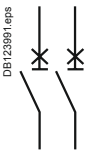
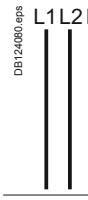
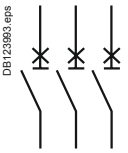
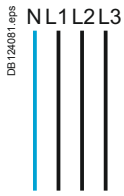
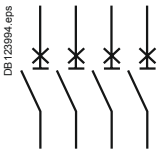
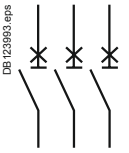
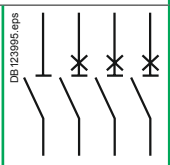
For 50/60 Hz distribution systems with 220-240 V, 380-415 V and 440 V between phases, the tables of the following pages indicate cascading possibilities between upstream Compact and downstream Acti 9 and Compact circuit breakers as well as between upstream Masterpact and downstream Compact circuit breakers.
Circuit breaker with Vigi module (Add-On Residual Current Device - RCD):
When circuit breakers are equipped with Vigi module, the following cascading tables are still applicable.

Cascading

Using the cascading tables

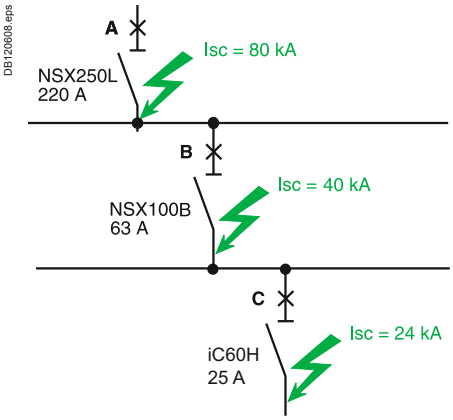
This table takes in account all types of faults: between phases, phase and neutral, phase and earth in all earthing systems.
In IT the following cascading tables can not be used to improve performances in case of "double fault" between two different phases and earth in two different locations of the installation. Each breaker shall comply to IEC60947-2 Annex H to be used in such a system.
Depending on the network and the type of downstream circuit breaker, the selection table below indicates which table should be consulted to find out the cascading value.

Selection table

		Upstream network					
							
Type of Downstream network	**Type of Downstream protection device**	**Type of circuit breaker upstream device: 1P, 2P, 3P or 4P circuit breaker**					
		Ph/N 110-130 V	**Ph/N 220-240 V**	**Ph/N 110-130 V Ph/Ph 220-240 V**	**Ph/N 220-240 V Ph/Ph 380-415 V**	**Ph/Ph 220-240 V**	**Ph/Ph 380-415 V**
	 *2P*	*See table Ue: 220-240 V*	*(1)* *See table Ue: 380-415 V*	*See table Ue: 220-240 V*	*(1)* *See table Ue: 380-415 V*		
	 *1P*  *1P + N*	*See table Ue: 220-240 V*	*(2)* *See table Ue: 380-415 V*	*See table Ue: 220-240 V*	*(2)* *See table Ue: 380-415 V*		
	 *2P*			*See table Ue: 220-240 V*	*See table Ue: 380-415 V*	*See table Ue: 220-240 V*	*See table Ue: 380-415 V*
	 *3P*			*See table Ue: 220-240 V*	*See table Ue: 380-415 V*	*See table Ue: 220-240 V*	*See table Ue: 380-415 V*
	 *4P*			*See table Ue: 220-240 V*	*See table Ue: 380-415 V*		
	 *3P*  *3P+N*			*See table Ue: 220-240 V*	*See table Ue: 380-415 V*		

(1) For fault phase-neutral with upstream protection of neutral, please consult the table Ue: 220-240 V.
(2) For iC60 1P+N circuit breaker connected between phase and neutral under 220-240 V, consult the table Ue: 220-240 V (only for faults between phase and neutral).

Cascading



Example of three level cascading

Consider three circuit breakers A, B and C connected in series. The criteria for cascading are fulfilled in the following two cases:

- the upstream device A is coordinated for cascading with both devices B and C (even if the cascading criteria are not fulfilled between B and C). It is simply necessary to check that the combinations A + B and A + C have the required breaking capacity
- each pair of successive devices is coordinated, i.e. A with B and B with C (even if the cascading criteria are not fulfilled between A and C). It is simply necessary to check that the combinations A + B and B + C have the required breaking capacity.

The upstream breaker A is a NSX250L (breaking capacity 150 kA) for a prospective Isc of 80 kA across its output terminals.

A NSX100B (breaking capacity 25 kA) can be used for circuit breaker B for a prospective Isc of 40 kA across its output terminals, since the "reinforced" breaking capacity provided by cascading with the upstream NSX250L is 50 kA.

A C60H (breaking capacity 15 kA) can be used for circuit breaker C for a prospective Isc of 24 kA across its output terminals since the "reinforced" breaking capacity provided by cascading with the upstream NSX250L is 25 kA.

Note that the "reinforced" breaking capacity of the C60H with the NSX100B upstream is only 20 kA, but:

- A + B = 50 kA
- A + C = 25 kA.

Cascading

Upstream: iDPN, iC60, C120, NG125, NG160, NSX100

Downstream: iDPN, iC60, C120, NG125, NG160, NSX100

Upstream	iDPN	iC60					C120		NG125		
	iDPN N	iC60N	iC60H	iC60L			C120N	C120H	NG125N	NG125H	NG125L
				≤ 25 A	32/40 A	50/63 A					
Breaking capacity (kA)	10	10	15	25	20	15	10	15	25	36	50

Downstream													
	In Max (A)	Icu (kA)	Reinforced breaking capacity (kA)										
iDPN	16	6	10	10	10	20	15	10	10	10	10	16	20
	40	6	10	10	10	15	10	10	10	10	10	16	20
iDPNN	16	10			15	25	20	15		15	20	20	25
	40	10			15	20	15	15		15	16	20	25
iC60N	25	10			15	25	20	15		15	25	25	25
	40	10			15		20	15		15	25	25	25
	63	10			15			15		15	25	25	25
iC60H	25	15				25	20				25	36	36
	40	15					20				25	36	36
	63	15									25	36	36
iC60L	25	25										36	50
	40	20									25	36	50
	63	15									25	36	36
C120N	125	10								15	25	25	36
C120H	125	15									25	25	36
NG125N	125	25										36	36
NG125H	80	36											50

Upstream	NG160			NSX100					
	NG160E	NG160N	NG160H	NSX100B	NSX100F	NSX100N	NSX100H	NSX100S	NSX100L
Breaking capacity (kA)	16	25	36	25	36	50	70	100	150

Downstream											
	In Max (A)	Icu (kA)	Reinforced breaking capacity (kA)								
iDPN	40	6	10	10	10	10	10	10	10	10	10
iDPNN	16	10	16	20	20	20	20	20	20	20	20
	40	10	16	16	16	16	16	16	16	16	16
iC60N	63	10	16	20	25	20	25	30	30	30	30
iC60H	40	15	16	25	25	25	36	40	40	40	40
	63	15	16	25	25	25	36	36	36	36	36
iC60L	25	25					36	40	40	40	40
	40	20		25	25	25	36	40	40	40	40
	63	15	16	25	25	25	36	36	36	36	36
C120N	125	10	16	25	25	25	25	25	25	25	25
C120H	125	15	16	25	25	25	25	25	25	25	25
NG125N	125	25			36		36	36	36	50	70
NG125H	80	36					36	40	50	70	100
NG125L	80	50							70	100	150
NSX100B		25					36	36	50	50	50
NSX100F		36						50	70	100	150
NSX100N		50							70	100	150
NSX100H		70								100	150
NSX100S		100									150

Cascading

Upstream: NSX160

Downstream: iDPN, iC60, C120, NG125, NG160, NSX100, NSX160

Upstream	NSX160					
	NSX160B	NSX160F	NSX160N	NSX160H	NSX160S	NSX160L
Breaking capacity (kA)	25	36	50	70	100	150

Downstream								
	In Max (A)	Icu (kA)	Reinforced breaking capacity (kA)					
iDPN	40	6	10	10	10	10	10	10
iDPNN	16	10	20	20	20	20	20	20
	40	10	16	16	16	16	16	16
iC60N	63	10	20	25	30	30	30	30
iC60H	40	15	25	36	40	40	40	40
	63	15	25	30	30	30	30	30
iC60L	25	25		36	40	40	40	40
	40	20	25	36	40	40	40	40
	63	15	25	30	36	36	36	36
C120N	125	10	25	25	25	25	25	25
C120H	125	15	25	25	25	25	25	25
NG125N	125	25		36	36	36	50	70
NG125H	80	36			40	50	70	100
NG125L	80	50				70	100	150
NG160E		16	25	25	30	30	30	30
NG160N		25		36	36	50	50	50
NG160H		36			50	50	50	50
NSX100B		25		36	36	50	50	50
NSX100F		36			50	70	100	150
NSX100H		70					100	150
NSX100S		100						150
NSX160B		25		36	36	50	50	50
NSX160F		36			50	70	100	150
NSX160N		50				70	100	150
NSX160H		70					100	150
NSX160S		100						150

Cascading

Upstream: NSX250
Downstream: iDPN, iC60, C120, NG125, NG160, NSX100, NSX160, NSX250

Upstream	NSX250					
	NSX250B	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA)	25	36	50	70	100	150

Downstream								
	In Max (A)	Icu (kA)	Reinforced breaking capacity (kA)					
iDPN	40	6	10	10	10	10	10	10
iDPNN	16	10	20	20	20	20	20	20
	40	10	16	16	16	16	16	16
iC60N	40	10	20	25	30	30	30	30
	63	10	20	25	25	25	25	25
iC60H	40	15	25	30	30	30	30	30
	63	15	25	25	25	25	25	25
iC60L	25	25		30	30	30	30	30
	40	20	25	30	30	30	30	30
	63	15	25	25	25	25	25	25
C120N	125	10	25	25	25	25	25	25
C120H	125	15	25	25	25	25	25	25
NG125N	125	25		36	36	36	50	70
NG125H	80	36			40	50	70	100
NG125L	80	50				70	100	150
NG160E		16	25	25	30	30	30	30
NG160N		25		36	36	50	50	50
NG160H		36			50	50	50	50
NSX100B		25		36	36	50	50	50
NSX100F		36			50	70	100	150
NSX100N		50				70	100	150
NSX100H		70					100	150
NSX100S		100						150
NSX160B		25		36	36	50	50	50
NSX160F		36			50	70	100	150
NSX160N		50				70	100	150
NSX160H		70					100	150
NSX160S		100						150
NSX250B		25		36	36	50	50	50
NSX250F		36			50	70	100	150
NSX250N		50				70	100	150
NSX250H		70					100	150
NSX250S		100						150

Cascading

Upstream: NSX400
Downstream: NG160, NSX100, NSX160, NSX250, NSX400

Upstream	NSX400				
	NSX400F	NSX400N	NSX400H	NSX400S	NSX400L
Breaking capacity (kA)	36	50	70	100	150

Downstream						
	Breaking capacity (kA)	Reinforced breaking capacity (kA)				
NG160E	16	25	25	30	30	30
NG160N	25		36	50	50	50
NG160H	36		50	50	50	50
NSX100B	25	36	36	50	50	50
NSX100F	36		50	70	100	150
NSX100N	50			70	100	150
NSX100H	70				100	150
NSX100S	100					150
NSX160B	25	36	36	50	50	50
NSX160F	36		50	70	100	150
NSX160N	50			70	100	150
NSX160H	70				100	150
NSX160S	100					150
NSX250B	25	36	36	50	50	50
NSX250F	36		50	70	100	150
NSX250N	50			70	100	150
NSX250H	70				100	150
NSX250S	100					150
NSX400F	36		50	70	100	150
NSX400N	50			70	100	150
NSX400H	70				100	150
NSX400S	100					150

Cascading

Upstream: NSX630
Downstream: NG160, NSX100, NSX160, NSX250, NSX400, NSX630

Upstream	NSX630				
	NSX630F	NSX630N	NSX630H	NSX630S	NSX630L
Breaking capacity (kA)	36	50	70	100	150

Downstream						
	Breaking capacity (kA)	Reinforced breaking capacity (kA)				
NG160E	16	25	25	30	30	30
NG160N	25		36	50	50	50
NG160H	36		50	50	50	50
NSX100B	25	36	36	50	50	50
NSX100F	36		50	70	100	150
NSX100N	50			70	100	150
NSX100H	70				100	150
NSX100S	100					150
NSX160B	25	36	36	50	50	50
NSX160F	36		50	70	100	150
NSX160N	50			70	100	150
NSX160H	70				100	150
NSX160S	100					150
NSX250B	25	36	36	50	50	50
NSX250F	36		50	70	100	150
NSX250N	50			70	100	150
NSX250H	70				100	150
NSX250S	100					150
NSX400F	36		50	70	100	150
NSX400N	50			70	100	150
NSX400H	70				100	150
NSX400S	100					150
NSX630F	36		50	70	100	150
NSX630N	50			70	100	150
NSX630H	70				100	150
NSX630S	100					150

Cascading

Upstream: NS630bN to NS1600N, NS630b, NS800
Downstream: NSX100, NSX160, NSX250, NSX400, NSX630, NS630b, NS800, NS1000

Upstream	NS630bN to NS1600N	NS630b			NS800		
		H	L	LB	H	L	LB
Breaking capacity (kA)	50	70	150	200	70	150	200
Downstream							
	Breaking capacity (kA)	Reinforced breaking capacity (kA)					
NSX100B	25	50	50	50	50	50	50	50
NSX100F	36	50	70	150	150	70	150	150
NSX100N	50		70	150	150	70	150	150
NSX100H	70			150	150		150	150
NSX100S	100			150	200		150	200
NSX100L	150				200			200
NSX160B	25	50	50	50	50	50	50	50
NSX160F	36	50	70	150	150	70	150	150
NSX160N	50		70	150	150	70	150	150
NSX160H	70			150	150		150	150
NSX160S	100			150	200		150	200
NSX160L	150				200			200
NSX250B	25	50	50	50	50	50	50	50
NSX250F	36	50	70	150	150	70	150	150
NSX250N	50		70	150	150	70	150	150
NSX250H	70			150	150		150	150
NSX250S	100			150	200		150	200
NSX250L	150				200			200
NSX400F	36	50	70	150	150	70	150	150
NSX400N	50		70	150	150	70	150	150
NSX400H	70			150	150		150	150
NSX400S	100			150	200		150	200
NSX400L	150				200			200
NSX630F	36	50	70	150	150	70	150	150
NSX630N	50		70	150	150	70	150	150
NSX630H	70			150	150		150	150
NSX630S	100			150	200		150	200
NSX630L	150				200			200
NS630bN	50		70	150	200	70	150	200
NS630bH	70			150	200		150	200
NS800N	50					70	150	200
NS800H	70						150	200
NS1000N	50							200
NS1000H	70							200

Cascading

Upstream: NS1000, NS1250, NS1600, NS2000, NS2500, NS3200, Masterpact
Downstream: NSX100-160-250-400-630, NS630b, NS800-1000-1250-1600

Upstream	NS1000		NS1250H NS1600H	NS2000N NS2500N NS3200N	Masterpact	
	H	L			NT L1	NW L1
Breaking capacity (kA)	70	150	70	70	150	150
Downstream						
	Breaking capacity (kA)	Reinforced breaking capacity (kA)				
NSX100B	25	50	50	50	50	
NSX100F	36	70	150	70	150	
NSX100N	50	70	150	70	150	
NSX100H	70		150		150	
NSX100S	100		150		150	
NSX100L	150					
NSX160B	25	50	50	50	50	
NSX160F	36	70	150	70	150	
NSX160N	50	70	150	70	150	
NSX160H	70		150		150	
NSX160S	100		150		150	
NSX160L	150					
NSX250B	25	50	50	50	50	
NSX250F	36	70	150	70	150	
NSX250N	50	70	150	70	150	
NSX250H	70		150		150	
NSX250S	100		150		150	
NSX250L	150					
NSX400F	36	70	150	70	150	
NSX400N	50	70	150	70	150	
NSX400H	70		150		150	
NSX400S	100		150		150	
NSX400L	150					
NSX630F	36	70	150	70	150	
NSX630N	50	70	150	70	150	
NSX630H	70		150		150	
NSX630S	100		150		150	
NSX630L	150					
NS630bN	50	70	150	70	150	65
NS630bH	70		150		150	
NS800N	50		150	70	150	65
NS800H	70		150		150	
NS1000N	50		150	70	150	65
NS1000H	70		150		150	
NS1250N	50			70		65
NS1600N	50			70		65

Cascading

Upstream: iC60, NG125, NSX100, NSX160
Downstream: iC60, C120, NG125, NSX100, NSX160

Ue: 440 V AC

Upstream		iC60					NG125		
		iC60N	iC60H	iC60L			NG125N	NG125H	NG125L
Breaking capacity (kA)		6	10	20	15	10	20	30	40
Downstream									
		Breaking capacity (kA)	Reinforced breaking capacity (kA)						
iC60N		6		10	20	15	10	20	20	20
iC60H		10			20	15		20	25	25
iC60L	≤ 25 A	20							30	40
	32-40 A	15						20	30	30
	50-63 A	10						20	25	25
NG125N		20							30	40
NG125H		30								40
NG125L		40								

Upstream		NSX100					
		NSX100B	NSX100F	NSX100N	NSX100H	NSX100S	NSX100L
Breaking capacity (kA)		20	35	50	65	90	130
Downstream							
		Breaking capacity (kA)	Reinforced breaking capacity (kA)				
iC60N		6	15	15	20	20	20	20
iC60H		10	20	20	25	25	25	25
iC60L	≤ 25 A	20			25	25	25	25
	32-40 A	15	20	20	25	25	25	25
	50-63 A	10						
NG125N		20		35	35	35	50	65
NG125H		30		35	40	50	65	90
NG125L		40			50	65	90	130
NSX100B		20		35	35	50	50	50
NSX100F		35			50	65	90	130
NSX100N		50				65	90	130
NSX100H		65					90	130
NSX100S		90						130

Upstream		NSX160					
		NSX160B	NSX160F	NSX160N	NSX160H	NSX160S	NSX160L
Breaking capacity (kA)		20	35	50	65	90	130
Downstream							
		Breaking capacity (kA)	Reinforced breaking capacity (kA)				
iC60N		6	15	15	20	20	20	20
iC60H		10	20	20	25	25	25	25
iC60L	≤ 25 A	20			25	25	25	25
	32-40 A	15	20	20	25	25	25	25
	50-63 A	10						
NG125N		20		35	35	35	50	65
NG125H		30		35	40	50	65	90
NG125L		40			50	65	90	130
NG160E		16	20	20	30	30	30	30
NG160N		25		35	35	50	50	50
NG160H		30			50	50	50	50
NSX100B		20		35	35	50	50	50
NSX100F		35			50	65	90	130
NSX100N		50				65	90	130
NSX100H		65					90	130
NSX100S		90						130
NSX160B		20		35	35	50	50	50
NSX160F		35			50	65	90	130
NSX160N		50				65	90	130
NSX160H		65					90	130
NSX160S		90						130

Cascading

Upstream: NSX250, NSX400
Downstream: NG125, NG160, NSX100, NSX160, NSX250, NSX400

Ue: 440 V AC

Upstream	NSX250					
	NSX250B	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA)	20	35	50	65	90	130

Downstream							
	Breaking capacity (kA)	Reinforced breaking capacity (kA)					
NG125N	20		35	35	35	50	65
NG125H	30		35	40	50	65	90
NG125L	40			50	65	90	130
NG160E	16	20	20	30	30	30	30
NG160N	25		35	35	50	50	50
NG160H	30			50	50	50	50
NSX100B	20		35	35	50	50	50
NSX100F	35			50	65	90	130
NSX100N	50				65	90	130
NSX100H	65					90	130
NSX100S	90						130
NSX160B	20		35	35	50	50	50
NSX160F	35			50	65	90	130
NSX160N	50				65	90	130
NSX160H	65					90	130
NSX160S	90						130
NSX250B	20		35	35	50	50	50
NSX250F	35			50	65	90	130
NSX250N	50				65	90	130
NSX250H	65					90	130
NSX250S	90						130

Upstream	NSX400				
	NSX400F	NSX400N	NSX400H	NSX400S	NSX400L
Breaking capacity (kA)	30	42	65	90	130

Downstream						
	Breaking capacity (kA)	Reinforced breaking capacity (kA)				
NG160E	16	20	30	30	30	30
NG160N	25	30	30	50	50	50
NG160H	30		42	50	50	50
NSX100B	20	30	30	50	50	50
NSX100F	35		42	65	90	130
NSX100N	50			65	90	130
NSX100H	65				90	130
NSX100S	90					130
NSX160B	20	30	30	50	50	50
NSX160F	35		42	65	90	130
NSX160N	50			65	90	130
NSX160H	65				90	130
NSX160S	90					130
NSX250B	20	30	30	50	50	50
NSX250F	35		42	65	90	130
NSX250N	50			65	90	130
NSX250H	65				90	130
NSX250S	90					130
NSX400F	30		42	65	90	130
NSX400N	42			65	90	130
NSX400H	65				90	130
NSX400S	90					130

Cascading

Upstream: NSX630
Downstream: NG160, NSX100, NSX160, NSX250, NSX400, NSX630

Ue: 440 V AC

Upstream	NSX630				
	NSX630F	NSX630N	NSX630H	NSX630S	NSX630L
Breaking capacity (kA)	30	42	65	90	130

Downstream						
	Breaking capacity (kA)	Reinforced breaking capacity (kA)				
NG160E	16	20	30	30	30	30
NG160N	25	30	30	50	50	50
NG160H	30		42	50	50	50
NSX100B	20	30	30	50	50	50
NSX100F	35		42	65	90	130
NSX100N	50			65	90	130
NSX100H	65				90	130
NSX100S	90					130
NSX160B	20	35	30	50	50	50
NSX160F	35		42	65	90	130
NSX160N	50			65	90	130
NSX160H	65				90	130
NSX160S	90					130
NSX250B	20	35	30	50	50	50
NSX250F	35		42	65	90	130
NSX250N	50			65	90	130
NSX250H	65				90	130
NSX250S	90					130
NSX400F	30		42	65	90	130
NSX400N	42			65	90	130
NSX400H	65				90	130
NSX400S	90					130
NSX630F	30		42	65	90	130
NSX630N	42			65	90	130
NSX630H	65				90	130
NSX630S	90					130

Cascading

Upstream: NS630bN to NS1600N, NS630b, NS800
Downstream: NSX100, NSX160, NSX250, NSX400, NSX630, NS630b, NS800

Ue: 440 V AC

Upstream	NS630bN	NS630b			NS800		
	to NS1600N	H	L	LB	H	L	LB
Breaking capacity (kA)	50	65	130	200	65	130	200
Downstream							
	Breaking capacity (kA)	Reinforced breaking capacity (kA)						
NSX100B	20	50	50	50	50	50	50	50
NSX100F	35	50	65	130	130	65	130	130
NSX100N	50		65	130	130	65	130	130
NSX100H	65			130	130		130	130
NSX100S	90			130	200		130	200
NSX100L	130				200			200
NSX160B	20	50	50	50	50	50	50	50
NSX160F	35	50	65	130	130	65	130	130
NSX160N	50		65	130	130	65	130	130
NSX160H	65			130	130		130	130
NSX160S	90			130	200		130	200
NSX160L	130				200			200
NSX250B	20	50	50	50	50	50	50	50
NSX250F	35	50	65	130	130	65	130	130
NSX250N	50		65	130	130	65	130	130
NSX250H	65			130	130		130	130
NSX250S	90			130	200		130	200
NSX250L	130				200			200
NSX400F	30	50	65	130	130	65	130	130
NSX400N	42		65	130	130	65	130	130
NSX400H	65			130	130		130	130
NSX400S	90			130	200		130	200
NSX400L	130				200			200
NSX630F	30	50	65	130	130	65	130	130
NSX630N	42		65	130	130	65	130	130
NSX630H	65			130	130		130	130
NSX630S	90			130	200		130	200
NSX630L	130				200			200
NS630bN	50		65	130	200	65	130	200
NS630bH	65			130	200		130	200
NS800N	50					65	130	200
NS800H	65						130	200

Cascading

Upstream: NS1000, NS1250, NS1600, NS2000, NS2500, NS3200, Masterpact
Downstream: NSX100, NSX160, NSX250, NSX400, NSX630, NS630b, NS800-1000-1250-1600

Ue: 440 V AC

Upstream	NS1000		NS1250H NS1600H	NS2000N NS2500N NS3200N	Masterpact	
	H	L			NT L1	NW L1
Breaking capacity (kA)	65	130	65	65	130	150

Downstream							
	Breaking capacity (kA)	Reinforced breaking capacity (kA)					
NSX100B	20	50	50	50		50	
NSX100F	35	65	130	65		130	
NSX100N	50	65	130	65		130	
NSX100H	65		130			130	
NSX100S	90		130			130	
NSX100L	130						
NSX160B	20	50	50	50		50	
NSX160F	35	65	130	65		130	
NSX160N	50	65	130	65		130	
NSX160H	65		130			130	
NSX160S	90		130			130	
NSX160L	130						
NSX250B	20	50	50	50		50	
NSX250F	35	65	130	65		130	
NSX250N	50	65	130	65		130	
NSX250H	65		130			130	
NSX250S	90		130			130	
NSX250L	130						
NSX400F	30	65	130	65		130	
NSX400N	42	65	130	65		130	
NSX400H	65		130			130	
NSX400S	90		130			130	
NSX400L	130						
NSX630F	30	65	130	65		130	
NSX630N	42	65	130	65		130	
NSX630H	65		130			130	
NSX630S	90		130			130	
NSX630L	130						
NS630bN	50	65	130	65	65	130	65
NS630bH	65		130			130	
NS800N	50	65	130	65	65	130	65
NS800H	65		130			130	
NS1000N	50	65	130	65	65	130	65
NS1000H	65		130			130	
NS1250N	50			65	65		65
NS1600N	50						65

Cascading

Upstream: iDPN, iC60, C120, NG125, NG160, NSX100

Downstream: iDPN, iC60, C120, NG125, NG160 , NSX100

Upstream	iDPN	iC60					C120		NG125		
	iDPNN	iC60N	iC60H	iC60L			C120N	C120H	NG125N	NG125H	NG125L
				≤ 25 A	32/40 A	50/63 A					
Breaking capacity (kA)	15	20	30	50	36	30	20	30	50	70	100

Downstream													
	In Max (A)	Icu (kA)	Reinforced breaking capacity (kA)										
iDPN	40	10	10	15	20	30	25	20	15	20	20	40	50
iDPNN	40	15		20	30	50	36	30	20	30	30	40	50
iC60N	25	20			30	50	36	30		30	50	50	50
	40	20			30		36	30		30	50	50	50
	63	20			30			30		30	50	50	50
iC60H	25	30				50	36				50	70	70
	40	30					36				50	70	70
	63	30									50	70	70
iC60L	25	50										70	100
	40	36									50	70	100
	63	30									50	70	70
C120N	125	20								30	50	70	70
C120H	125	30									50	70	70
NG125N	125	50										70	70
NG125H	80	70											100

Upstream	NG160			NSX100					
	NG160E	NG160N	NG160H	NSX100B	NSX100F	NSX100N	NSX100H	NSX100S	NSX100L
Breaking capacity (kA)	25	40	50	40	85	90	100	120	150

Downstream											
	In Max (A)	Icu (kA)	Reinforced breaking capacity (kA)								
iDPN	16	10	20	20	20	20	20	20	20	20	20
	40	10	10	10	10	20	20	20	20	20	20
iDPNN	16	15	30	30	30	30	30	30	30	30	30
	40	15	15	15	15	30	30	30	30	30	30
iC60N	63	20	25	40	50	40	40	60	60	60	60
iC60H	63	30		40	50	40	50	80	80	80	80
iC60L	25	50		40	50		65	80	80	80	80
	40	36		40	50	40	65	80	80	80	80
	63	30		40	50	40	65	80	80	80	80
C120N	125	20	25	40	40	40	40	50	50	70	70
C120H	125	30		40	40	40	40	50	50	70	70
NG125N	125	50					60	70	70	85	85
NG125H	80	70					85	85	85	100	100
NG125L	80	100								120	150
NG160E		25			50						
NG160N		40									
NG160H		50									
NSX100B		40					85	90	90	100	100
NSX100F		85						90	100	120	150
NSX100N		90							100	120	150
NSX100H		100								120	150
NSX100S		120									150

Cascading

Upstream: NSX160
Downstream: iDPN, iC60, C120, NG125, NG160, NSX100, NSX160

Upstream			NSX160					
			NSX160B	NSX160F	NSX160N	NSX160H	NSX160S	NSX160L
Breaking capacity (kA)			40	85	90	100	120	150
Downstream								
	In Max (A)	Icu (kA)	Reinforced breaking capacity (kA)					
iDPN	40	10	20	20	20	20	20	20
iDPNN	40	15	30	30	30	30	30	30
iC60N	63	20	40	40	60	60	60	60
iC60H	63	30	40	50	80	80	80	80
iC60L	25	50		65	80	80	80	80
	40	36	40	65	80	80	80	80
	63	30	40	65	80	80	80	80
C120N	125	20	40	40	50	50	70	70
C120H	125	30	40	40	50	50	70	70
NG125N	125	50		60	70	70	85	85
NG125H	80	70		85	85	85	100	100
NG125L	80	100					120	150
NG160E		25	40	50	50	50	60	60
NG160N		40		85	90	100	100	100
NG160H		50		85	90	100	100	100
NSX100B		40		85	90	90	100	100
NSX100F		85			90	100	120	150
NSX100N		90				100	120	150
NSX100H		100					120	150
NSX100S		120						150
NSX160B		40		85	90	90	100	100
NSX160F		85			90	100	120	150
NSX160N		90				100	120	150
NSX160H		100					120	150
NSX160S		120						150

Cascading

Upstream: NSX250

Downstream: iDPN, iC60, C120, NG125, NG160, NSX100, NSX160, NSX250

Upstream	NSX250					
	NSX250B	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA)	40	85	90	100	120	150

Downstream								
	In Max (A)	Icu (kA)	Reinforced breaking capacity (kA)					
iDPN	40	10	20	20	20	20	20	20
iDPNN	40	15	30	30	30	30	30	30
iC60N	63	20	40	40	60	60	60	60
iC60H	63	30	40	50	65	65	65	65
iC60L	25	50		65	80	80	80	80
	40	36	40	65	80	80	80	80
	63	30	40	50	65	65	65	65
C120N	125	20	40	40	50	50	70	70
C120H	125	30	40	40	50	50	70	70
NG125N	125	50		60	70	70	85	85
NG125H	80	70		85	85	85	100	100
NG125L	80	100					120	150
NG160E		25	40	50	50	50	60	60
NG160N		40		85	90	100	100	100
NG160H		50		85	90	100	100	100
NSX100B		40		85	90	90	100	100
NSX100F		85			90	100	120	150
NSX100N		90				100	120	150
NSX100H		100					120	150
NSX100S		120						150
NSX160B		40		85	90	90	100	100
NSX160F		85			90	100	120	150
NSX160N		90				100	120	150
NSX160H		100					120	150
NSX160S		120						150
NSX250B		40		85	90	90	100	100
NSX250F		85			90	100	120	150
NSX250N		90				100	120	150
NSX250H		100					120	150
NSX250S		120						150

Cascading

Upstream: NSX400
Downstream: NG160, NSX100, NSX160, NSX250, NSX400

Upstream	NSX400				
	NSX400F	NSX400N	NSX400H	NSX400S	NSX400L
Breaking capacity (kA)	40	85	100	120	150

Downstream						
	Breaking capacity (kA)	Reinforced breaking capacity (kA)				
NG160E	25	40	50	50	60	60
NG160N	40		85	90	100	100
NG160H	50		85	90	100	100
NSX100B	40		85	90	100	100
NSX100F	85			100	120	150
NSX100N	90			100	120	150
NSX100H	100				120	150
NSX100S	120					150
NSX160B	40		85	90	100	100
NSX160F	85			100	120	150
NSX160N	90			100	120	150
NSX160H	100				120	150
NSX160S	120					150
NSX250B	40		85	90	100	100
NSX250F	85			100	120	150
NSX250N	90			100	120	150
NSX250H	100				120	150
NSX250S	120					150
NSX400F	40		85	100	120	150
NSX400N	85			100	120	150
NSX400H	100				120	150
NSX400S	120					150

Cascading

Upstream: NSX630
Downstream: NG160, NSX100, NSX160, NSX250, NSX400, NSX630

Upstream	NSX630				
	NSX630F	NSX630N	NSX630H	NSX630S	NSX630L
Breaking capacity (kA)	40	85	100	120	150

Downstream						
	Breaking capacity (kA)	Reinforced breaking capacity (kA)				
NG160E	25	40	50	50	60	60
NG160N	40	40	85	90	100	100
NG160H	50	40	85	90	100	100
NSX100B	40		85	90	100	100
NSX100F	85			100	120	150
NSX100N	90			100	120	150
NSX100H	100				120	150
NSX100S	120					150
NSX160B	40		85	90	100	100
NSX160F	85			100	120	150
NSX160N	90			100	120	150
NSX160H	100				120	150
NSX160S	120					150
NSX250B	40		85	90	100	100
NSX250F	85			100	120	150
NSX250N	90			100	120	150
NSX250H	100				120	150
NSX250S	120					150
NSX400F	40		85	100	120	150
NSX400N	85			100	120	150
NSX400H	100			100	120	150
NSX400S	120				120	150
NSX630F	40		85	100	120	150
NSX630N	85			100	120	150
NSX630H	100			100	120	150
NSX630S	120				120	150

Cascading

Upstream: NS630, NS800, NS1000, Masterpact
Downstream: NSX100-160-250-400-630

Upstream	NS630		NS800-1000			Masterpact	
	NS630bL	NS630LB	NS800L	NS800LB	NS1000L	NT L1	NW L1
Breaking capacity (kA)	150	200	150	200	150	150	150

Downstream								
	Breaking capacity (kA)	Reinforced breaking capacity (kA)						
NSX100B	40	50	50	50	50	50	50	
NSX100F	85	150	150	150	150	150	150	
NSX100N	90	150	150	150	150	150	150	
NSX100H	100	150	150	150	150	150	150	
NSX100S	120	150	200	150	200	150	150	
NSX100L	150		200		200			
NSX160B	40	50	50	50	50	50	50	
NSX160F	85	150	150	150	150	150	150	
NSX160N	90	150	150	150	150	150	150	
NSX160H	100	150	150	150	150	150	150	
NSX160S	120	150	200	150	200	150	150	
NSX160L	150		200		200			
NSX250B	40	50	50	50	50	50	50	
NSX250F	85	150	150	150	150	150	150	
NSX250N	90	150	150	150	150	150	150	
NSX250H	100	150	150	150	150	150	150	
NSX250S	120	150	200	150	200	150	150	
NSX250L			200		200			
NSX400F	40	150	150	150	150	150	150	
NSX400N	85	150	150	150	150	150	150	100
NSX400H	100	150	150	150	150	150	150	
NSX400S	120	150	200	150	200	150	150	
NSX400L	150		200		200			
NSX630F	40	150	150	150	150	150	150	
NSX630N	85	150	150	150	150	150	150	100
NSX630H	100	150	150	150	150	150	150	
NSX630S	120	150	200	150	200	150	150	
NSX630L	150		200		200			

Discrimination enhanced by cascading

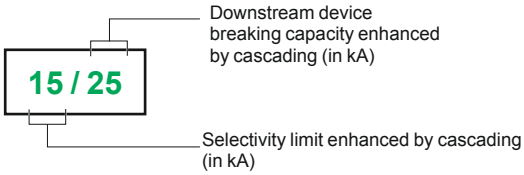
With traditional circuit breakers, cascading between two devices generally results in the look of discrimination.
With Compact circuit breakers, the discrimination characteristics in the tables remain applicable and are in some cases even enhanced. Protection discrimination is ensured for short-circuit currents greater than the rated breaking capacity of the circuit breaker and even, in some cases, for its enhanced breaking capacity. In the later case, **protection discrimination is total**, i.e. only the downstream device trips for any and all possible faults at its point in the installation.

Example
Consider a combination between:
- a Compact NSX250H with trip unit TM250D
- a Compact NSX100F with trip unit TM25D.

The discrimination tables indicate total discrimination. Protection discrimination is therefore ensured up to the breaking capacity of the NSX100F, i.e. **36 kA**.
The cascading tables indicate an enhanced breaking capacity of **70 kA**.
The enhanced discrimination tables indicate that in a cascading configuration, discrimination is ensured up to **70 kA**, i.e. for any and all possible faults at that point in the installation.

Enhanced discrimination tables - 380-415 V

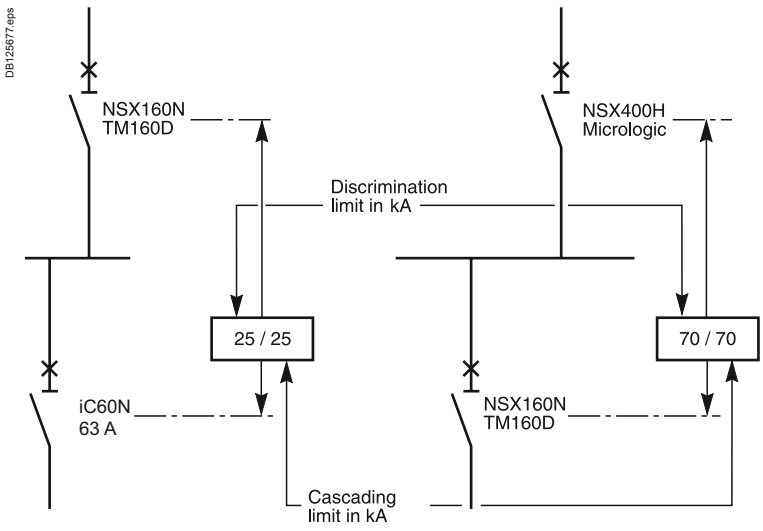
For each combination of two circuit breakers, the tables indicate the:



In a table, a box containing two equal values indicates that discrimination is provided up to the reinforced breaking capacity of the downstream device.
These tables apply only to cases with combined discrimination and cascading between two devices. For all other cases, refer to the normal cascading and discrimination tables.

Technical principle

Enhanced discrimination is the result of the exclusive Compact NSX Roto-active breaking technique which operates as follows:
- due to the short-circuit current (electrodynamic forces), the contacts in both devices simultaneously separate. The result is major limitation of the short-circuit current
- the dissipated energy provokes the reflex tripping of the downstream device, but is insufficient to trip the upstream device.



Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see pages 6 and 14.

Discrimination enhanced by cascading

Upstream: NG160, TM-D
Downstream: iC60

Upstream	NG160 NG160E	NG160N
Breaking capacity (kA)	16	25
Trip unit	TM-D	TM-D

Downstream											
Rating (A)			63	80	100	125	160	63	80	100	125	160
		Breaking capacity (kA)	Reinforced breaking capacity (kA)									
iC60N	≤ 20 A	10	10/16	16/16	16/16	16/16	16/16	10/20	16/20	20/20	20/20	20/20
	25 A	10	6/16	6/16	16/16	16/16	16/16	6/20	6/20	20/20	20/20	20/20
	32 A	10	4/16	4/16	7/16	16/16	16/16	4/20	4/20	7/20	20/20	20/20
	40 A	10		4/16	7/16	8/16	8/16		4/20	7/20	8/20	8/20
	50 A	10			5/16	8/16	8/16			5/20	8/20	8/20
	63 A	10				6/16	6/16				6/20	6/20
iC60H	≤ 20 A	15	10/16	16/16	16/16	16/16	16/16	10/25	15/25	25/25	25/25	25/25
	25 A	15	6/16	6/16	16/16	16/16	16/16	6/25	6/25	25/25	25/25	25/25
	32 A	15	4/16	4/16	7/16	16/16	16/16	4/25	4/25	7/25	25/25	25/25
	40 A	15		4/16	7/16	8/16	8/16		4/25	7/25	8/25	8/25
	50 A	15			5/16	8/16	8/16			5/25	8/25	8/25
	63 A	15				6/16	6/16				6/25	6/25
iC60L	≤ 20 A	25						10/25	15/25	25/25	25/25	25/25
	25 A	25						6/25	6/25	25/25	25/25	25/25
	32 A	20						4/25	4/25	7/25	25/25	25/25
	40 A	20							4/25	7/25	8/25	8/25
	50 A	15			5/16	8/16	8/16			5/25	8/25	8/25
	63 A	15				6/16	6/16				6/25	6/25

Upstream	NG160H
Breaking capacity (kA)	36
Trip unit	TM-D

Downstream							
Rating (A)			63	80	100	125	160
		Breaking capacity (kA)	Reinforced breaking capacity (kA)				
iC60N	≤ 20 A	10	10/25	15/25	20/25	20/25	20/25
	25 A	10	6/25	6/25	20/25	20/25	20/25
	32 A	10	4/25	4/25	7/25	20/25	20/25
	40 A	10		4/25	7/25	8/25	8/25
	50 A	10			5/25	8/25	8/25
	63 A	10				6/25	6/25
iC60H	≤ 20 A	15	10/25	15/25	25/25	25/25	25/25
	25 A	15	6/25	6/25	25/25	25/25	25/25
	32 A	15	4/25	4/25	7/25	25/25	25/25
	40 A	15		4/25	7/25	8/25	8/25
	50 A	15			5/25	8/25	8/25
	63 A	15				6/25	6/25
iC60L	≤ 20 A	25	10/25	15/25	25/25	25/25	25/25
	25 A	25	6/25	6/25	25/25	25/25	25/25
	32 A	20	4/25	4/25	7/25	25/25	25/25
	40 A	20		4/25	7/25	8/25	8/25
	50 A	15			5/25	8/25	8/25
	63 A	15				6/25	6/25

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see pages 6 and 14.*

Discrimination enhanced by cascading

Upstream: NSX160, NSX250, TM-D
Downstream: iC60, C120, NG125

Upstream		NSX160					
		NSX160B	NSX160F	NSX160N	NSX160H	NSX160S	NSX160L
Breaking capacity (kA)		25	36	50	70	100	150
Trip unit		TM-D	TM-D	TM-D	TM-D	TM-D	TM-D
Downstream							
Rating (A)		80-100	125-160	80-100	125-160	80-100	125-160	80-100	125-160	80-100	125-160	80-100	125-160
		Breaking capacity (kA)	Reinforced breaking capacity (kA)										
iC60N		10		20/20		25/25		30/30		30/30		30/30		30/30
iC60H	⩽ 40 A	15		25/25		36/36		40/40		40/40		40/40		40/40
	50-63 A	15		25/25		30/30		30/30		30/30		30/30		30/30
iC60L	⩽ 25 A	25				36/36		40/40		40/40		40/40		40/40
	32-40 A	20		25/25		36/36		40/40		40/40		40/40		40/40
	50-63 A	15		25/25		30/30		36/36		36/36		36/36		36/36
NG125N	⩽ 20 A	25				36/36		36/36		36/36		50/50		70/70
	25 to 125 A	25												
NG125H	⩽ 20 A	36						40/40		50/50		70/70		100/100
	25 to 80 A	36												
NG125L	⩽ 20 A	50								70/70		100/100		150/150
	25 to 80 A	50												

Upstream		NSX250					
		NSX250B	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA)		25	36	50	70	100	150
Trip unit		TM-D	TM-D	TM-D	TM-D	TM-D	TM-D
Downstream							
Rating (A)		200-250	200-250	200-250	200-250	200-250	200-250
		Breaking capacity (kA)	Reinforced breaking capacity (kA)				
iC60N	⩽ 40 A	10	20/20	25/25	30/30	30/30	30/30	30/30
	50-63 A	10	20/20	25/25	25/25	25/25	25/25	25/25
iC60H	⩽ 40 A	15	25/25	30/30	30/30	30/30	30/30	30/30
	50-63 A	15	25/25	25/25	25/25	25/25	25/25	25/25
iC60L	⩽ 25 A	25		30/30	30/30	30/30	30/30	30/30
	32-40 A	20	25/25	30/30	30/30	30/30	30/30	30/30
	50-63 A	15	25/25	25/25	25/25	25/25	25/25	25/25
C120N/H		10/15	25/25	25/25	25/25	25/25	25/25	25/25
NG125N		25		36/36	36/36	36/36	50/50	70/70
NG125H		36			40/40	50/50	70/70	100/100
NG125L		50				70/70	100/100	150/150
NG160E		16		25/25	30/30	30/30	30/30	30/30
NG160N		25		36/36	36/36	50/50	50/50	50/50
NG160H		36			50/50	50/50	50/50	50/50
NSX100B, TM-D	⩽ 25 A	25		36/36	36/36	50/50	50/50	50/50
	40-100 A	25		36/36	36/36	36/50	36/50	36/50
NSX100F, TM-D	⩽ 25 A	36			50/50	70/70	100/100	150/150
	40-100 A	36			36/50	36/70	36/100	36/150
NSX100N, TM-D	⩽ 25 A	50				70/70	100/100	150/150
	40-100 A	50				36/70	36/100	36/150
NSX100H, TM-D	⩽ 25 A	70					100/100	150/150
	40-100 A	70					36/100	36/150
NSX100S, TM-D	⩽ 25 A	100						150/150
	40-100 A	100						36/150
NSX100B	Micrologic	25		2/36	2/36	2/50	2/50	2/50
NSX100F	Micrologic	36			2/50	2/70	2/100	2/150
NSX100N	Micrologic	50				2/70	2/100	2/150
NSX100H	Micrologic	70					2/100	2/150
NSX100S	Micrologic	100						2/150

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see pages 6 and 14.

Discrimination enhanced by cascading

Upstream: NSX100, NSX160, Micrologic
Downstream: iC60

Upstream			NSX100											
			NSX100B		NSX100F		NSX100N		NSX100H		NSX100S		NSX100L	
Breaking capacity (kA)			25		36		50		70		100		150	
Trip unit			Micrologic		Micrologic		Micrologic		Micrologic		Micrologic		Micrologic	
Downstream														
Rating (A)			40	100	40	100	40	100	40	100	40	100	40	100
		Breaking capacity (kA)	Reinforced breaking capacity (kA)											
iC60N	≤ 25 A	10	20/20	20/20	25/25	25/25	30/30	30/30	30/30	30/30	30/30	30/30	30/30	30/30
	32-40 A	10		20/20		25/25		30/30		30/30		30/30		30/30
	50-63 A	10												
iC60H	≤ 25 A	15	25/25	25/25	36/36	36/36	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40
	32-40 A	15		25/25		36/36		36/36		36/36		36/36		36/36
	50-63 A	15												
iC60L	≤ 25 A	25			36/36	36/36	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40
	32-40 A	20		25/25		36/36		40/40		40/40		40/40		40/40
	50-63 A	15												

Upstream			NSX160											
			NSX160B		NSX160F		NSX160N		NSX160H		NSX160S		NSX160L	
Breaking capacity (kA)			25		36		50		70		100		150	
Trip unit			Micrologic		Micrologic		Micrologic		Micrologic		Micrologic		Micrologic	
Downstream														
Rating (A)			80	160	80	160	80	160	80	160	80	160	80	160
		Breaking capacity (kA)	Reinforced breaking capacity (kA)											
iC60N	≤ 50 A	10	20/20	20/20	25/25	25/25	25/25	30/30	25/25	30/30	25/25	30/30	25/25	30/30
	63 A	10		20/20		25/25		30/30		30/30		30/30		30/30
iC60H	≤ 40 A	15	25/25	25/25	36/36	36/36	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40
	50 A	15	25/25	25/25	30/30	30/30	30/30	30/30	30/30	30/30	30/30	30/30	30/30	30/30
	63 A	15		25/25		30/30		30/30		30/30		30/30		30/30
iC60L	≤ 25 A	25			36/36	36/36	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40
	32-40 A	20	25/25	25/25	36/36	36/36	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40
	50 A	15	25/25	25/25	30/30	30/30	30/30	36/36	30/30	36/36	30/30	36/36	30/30	36/36
	63 A	15		25/25		30/30		36/36		36/36		36/36		36/36

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see pages 6 and 14.

Discrimination enhanced by cascading

Upstream: NSX250, Micrologic
Downstream: iC60, C120, NG125, NG160, NSX100

Upstream		NSX250					
		NSX250B	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA)		25	36	50	70	100	150
Trip unit		Micrologic	Micrologic	Micrologic	Micrologic	Micrologic	Micrologic
Downstream							
Rating (A)		250	250	250	250	250	250
		Breaking capacity (kA)	Reinforced breaking capacity (kA)				
iC60N	≤ 40 A	10	20/20	25/25	30/30	30/30	30/30	30/30
	50-63 A	10	20/20	25/25	25/25	25/25	25/25	25/25
iC60H	≤ 40 A	15	25/25	30/30	30/30	30/30	30/30	30/30
	50-63 A	15	25/25	25/25	25/25	25/25	25/25	25/25
iC60L	≤ 25 A	25		30/30	30/30	30/30	30/30	30/30
	32-40 A	20	25/25	30/30	30/30	30/30	30/30	30/30
	50-63 A	15	25/25	25/25	25/25	25/25	25/25	25/25
C120N/H		10/15	25/25	25/25	25/25	25/25	25/25	25/25
NG125N		25		36/36	36/36	36/36	50/50	70/70
NG125H		36			40/40	50/50	70/70	100/100
NG125L NG125LMA		50				70/70	100/100	150/150
NG160E		16		25/25	30/30	30/30	30/30	30/30
NG160N		25		36/36	36/36	50/50	50/50	50/50
NG160H		36			50/50	50/50	50/50	50/50
NSX100B, TM-D	≤ 25 A	25		36/36	36/36	50/50	50/50	50/50
	40-100 A	25		36/36	36/36	36/50	36/50	36/50
NSX100F, TM-D	≤ 25 A	36			50/50	70/70	100/100	150/150
	40-100 A	36			36/50	36/70	36/100	36/150
NSX100N, TM-D	≤ 25 A	50				70/70	100/100	150/150
	40-100 A	50				36/70	36/100	36/150
NSX100H, TM-D	≤ 25 A	70					100/100	150/150
	40-100 A	70					36/100	36/150
NSX100S, TM-D	≤ 25 A	100						150/150
	40-100 A	100						36/150
NSX100B	Micrologic	25		36/36	36/36	36/50	36/50	36/50
NSX100F	Micrologic	36			36/50	36/70	36/100	36/150
NSX100N	Micrologic	50				36/70	36/100	36/150
NSX100H	Micrologic	70					36/100	36/150
NSX100S	Micrologic	100						36/150

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see pages 6 and 14.

Discrimination enhanced by cascading

Upstream: NSX400-630, Micrologic
Downstream: NG160, NSX100-250

Upstream		NSX400					NSX630				
		F	N	H	S	L	F	N	H	S	L
Breaking capacity (kA)		36	50	70	100	150	36	50	70	100	150
Trip unit		Micrologic					Micrologic				
Downstream											
Rating (A)		400	400	400	400	400	630	630	630	630	630
	Breaking capacity (kA)	Reinforced breaking capacity (kA)									
NG160E	16	25/25	30/30	30/30	30/30	30/30	25/25	30/30	30/30	30/30	30/30
NG160N	25	36/36	36/36	50/50	50/50	50/50	36/36	36/36	50/50	50/50	50/50
NG160H	36		50/50	50/50	50/50	50/50		50/50	50/50	50/50	50/50
NSX100B, TM-D	25	36/36	36/36	50/50	50/50	50/50	36/36	36/36	50/50	50/50	50/50
NSX100F, TM-D	36		50/50	70/70	100/100	150/150		50/50	70/70	100/100	150/150
NSX100N, TM-D	50			70/70	100/100	150/150			70/70	100/100	150/150
NSX100H, TM-D	70				100/100	150/150				100/100	150/150
NSX100S, TM-D	100					150/150					150/150
NSX160B, TM-D	25	36/36	36/36	50/50	50/50	50/50	36/36	36/36	50/50	50/50	50/50
NSX160F, TM-D	36		50/50	70/70	100/100	150/150		50/50	70/70	100/100	150/150
NSX160N, TM-D	50			70/70	100/100	150/150			70/70	100/100	150/150
NSX160H, TM-D	70				100/100	150/150				100/100	150/150
NSX160S, TM-D	100					150/150					150/150
NSX250B, TM-D	25						36/36	36/36	50/50	50/50	50/50
NSX250F, TM-D	36							50/50	70/70	100/100	150/150
NSX250N, TM-D	50								70/70	100/100	150/150
NSX250H, TM-D	70									100/100	150/150
NSX250S, TM-D	100										150/150
NSX100B Micrologic	25	36/36	50/50	50/50	50/50	50/50	36/36	50/50	50/50	50/50	50/50
NSX100F Micrologic	36		50/50	70/70	100/100	150/150		50/50	70/70	100/100	150/150
NSX100N Micrologic	50			70/70	100/100	150/150			70/70	100/100	150/150
NSX100H Micrologic	70				100/100	150/150				100/100	150/150
NSX100S Micrologic	100					150/150					150/150
NSX160B Micrologic	25	36/36	50/50	50/50	50/50	50/50	36/36	50/50	50/50	50/50	50/50
NSX160F Micrologic	36		50/50	70/70	100/100	150/150		50/50	70/70	100/100	150/150
NSX160N Micrologic	50			70/70	100/100	150/150			70/70	100/100	150/150
NSX160H Micrologic	70				100/100	150/150				100/100	150/150
NSX160S Micrologic	100					150/150					150/150
NSX250B Micrologic	25						36/36	50/50	50/50	50/50	50/50
NSX250F Micrologic	36							50/50	70/70	100/100	150/150
NSX250N Micrologic	50								70/70	100/100	150/150
NSX250H Micrologic	70									100/100	150/150
NSX250S Micrologic	100										150/150

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see pages 6 and 14.

Discrimination enhanced by cascading

Ue: 380-415 V AC (Ph/N 220-240 V AC)

Upstream: NS800-1000-1250-1600, Micrologic
Downstream: NSX100-630

Upstream	NS800				NS1000			NS1250		NS1600	
	N	H	L	LB	N	H	L	N	H	N	H
Breaking capacity (kA)	50	70	150	200	50	70	150	50	70	50	70
Trip unit	Micrologic				Micrologic			Micrologic		Micrologic	

Downstream												
Rating (A)		800	800	800	800	1000	1000	1000	1250	1250	1600	1600
	Breaking capacity (kA)	Reinforced breaking capacity (kA)										
NSX100B, **TM-D/**Micrologic	**25**	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
NSX100F, **TM-D/**Micrologic	**36**	50/50	70/70	150/150	150/150	50/50	70/70	150/150	50/50	70/70	50/50	70/70
NSX100N, **TM-D/**Micrologic	**50**		70/70	150/150	150/150		70/70	150/150		70/70		70/70
NSX100H, **TM-D/**Micrologic	**70**			150/150	150/150			150/150				
NSX100S, **TM-D/**Micrologic	**100**			150/150	200/200			150/150				
NSX100L, **TM-D/** Micrologic	**150**				200/200							
NSX160B, **TM-D/** Micrologic	**25**	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
NSX160F, **TM-D/**Micrologic	**36**	50/50	70/70	150/150	150/150	50/50	70/70	150/150	50/50	70/70	50/50	70/70
NSX160N, **TM-D/**Micrologic	**50**		70/70	150/150	150/150		70/70	150/150		70/70		70/70
NSX160H, **TM-D/**Micrologic	**70**			150/150	150/150			150/150				
NSX160S, **TM-D/**Micrologic	**100**			150/150	200/200			150/150				
NSX160L, **TM-D/**Micrologic	**150**				200/200							
NSX250B, **TM-D/**Micrologic	**25**	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
NSX250F, **TM-D/** Micrologic	**36**	50/50	70/70	150/150	150/150	50/50	70/70	150/150	50/50	70/70	50/50	70/70
NSX250N, **TM-D/**Micrologic	**50**		70/70	150/150	150/150		70/70	150/150		70/70		70/70
NSX250H, **TM-D/** Micrologic	**70**			150/150	150/150			150/150				
NSX250S, **TM-D/**Micrologic	**100**			150/150	200/200			150/150				
NSX250L, **TM-D/**Micrologic	**150**				200/200							
NSX400F Micrologic	**36**	50/50	70/70	10/150	10/150	50/50	70/70	15/150	50/50	70/70	50/50	70/70
NSX400N Micrologic	**50**		70/70	10/150	10/150		70/70	15/150		70/70		70/70
NSX400H Micrologic	**70**			10/150	10/150			15/150				
NSX400S Micrologic	**100**			10/150	10/200			15/150				
NSX400L Micrologic	**150**				10/200							
NSX630F Micrologic	**36**					50/50	65/70	10/150	50/50	65/70	50/50	65/70
NSX630N Micrologic	**50**						65/70	10/150		65/70		65/70
NSX630H Micrologic	**70**							10/150				
NSX630S Micrologic	**100**							10/150				

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see pages 6 and 14.

Discrimination enhanced by cascading

Upstream: NSX160, NSX250, TM-D
Downstream: iC60, NG125, NSX100

Ue: 440 V AC

Upstream		NSX160 NSX160B		NSX160F		NSX160N		NSX160H		NSX160S		NSX160L	
Breaking capacity (kA)		25		36		50		70		100		150	
Trip unit		TM-D		TM-D		TM-D		TM-D		TM-D		TM-D	
Downstream													
Rating (A)		80-100	125/160	80-100	125/160	80-100	125/160	80-100	125/160	80-100	125/160	80-100	125/160
		Reinforced breaking capacity (kA)											
iC60N	≤ 40 A		15/15		15/15		20/20		20/20		20/20		20/20
	50-63 A		15/15		15/15		20/20		20/20		20/20		20/20
iC60H	≤ 40 A		20/20		20/20		25/25		25/25		25/25		25/25
	50-63 A		20/20		20/20		25/25		25/25		25/25		25/25
iC60L	≤ 40 A		20/20		20/20		25/25		25/25		25/25		25/25
	50-63 A		20/20		20/20		25/25		25/25		25/25		25/25
NG125N	≤ 20 A				35/35		35/35		35/35		50/50		65/65
	> 20 A												
NG125H	≤ 20 A				35/25		40/40		50/50		65/65		90/90
	> 20 A												
NG125L	≤ 20 A						50/50		65/65		90/90		130/130
	>20 A												

Upstream		NSX250 NSX250F		NSX250N		NSX250H		NSX250S		NSX250L	
Breaking capacity (kA)		35		50		65		90		130	
Trip unit		TM-D		TM-D		TM-D		TM-D		TM-D	
Downstream											
Rating (A)		200	250	200	250	200	250	200	250	200	250
	Breaking capacity (kA)	Reinforced breaking capacity (kA)									
NG125N	20	35/35	35/35	35/35	35/35	35/35	35/35	50/50	50/50	65/65	65/65
NG125H	30	35/35	35/35	40/40	40/40	50/50	50/50	65/65	65/65	90/90	90/90
NG125L	40			50/50	50/50	65/65	65/65	90/90	90/90	130/130	130/130
NSX100B, TM-D ≤ 25 A	20	35/35	35/35	35/35	35/35	50/50	50/50	50/50	50/50	50/50	50/50
NSX100B, TM-D 40-100 A	20	35/35	35/35	35/35	35/35	35/50	35/50	35/50	35/50	35/50	35/50
NSX100F, TM-D ≤ 25 A	35			35/35	35/35	65/65	65/65	90/90	90/90	130/130	130/130
NSX100F, TM-D 40-100 A	35			35/35	35/35	35/65	35/65	35/90	35/90	35/130	35/130
NSX100N, TM-D ≤ 25 A	50					65/65	65/65	90/90	90/90	130/130	130/130
NSX100N, TM-D 40-100 A	50					35/65	35/65	35/90	35/90	35/130	35/130
NSX100H, TM-D ≤ 25 A	65							90/90	90/90	130/130	130/130
NSX100H, TM-D 40-100 A	65							35/90	35/90	35/130	35/130
NSX100S, TM-D ≤ 25 A	90									130/130	130/130
NSX100S, TM-D 40-100 A	90									35/130	35/130
NSX100B Micrologic	20	2/35	2/35	2/35	2/35	2/50	2/50	2/50	2/50	2/50	2/50
NSX100F Micrologic	35			2/50	2/50	2/50	2/50	2/50	2/50	2/50	2/50
NSX100N Micrologic	50					2/65	2/65	2/90	2/90	2/130	2/130
NSX100H Micrologic	65							2/90	2/90	2/130	2/130
NSX100S Micrologic	90									2/130	2/130

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see pages 6 and 14.

Discrimination enhanced by cascading

Upstream: NSX100-250, Micrologic
Downstream: iC60, NG125, NSX100

Ue: 440 V AC

Upstream		NSX100					
		NSX100B	NSX100F	NSX100N	NSX100H	NSX100S	NSX100L
Breaking capacity (kA)		25	36	50	70	100	150
Trip unit		Micrologic	Micrologic	Micrologic	Micrologic	Micrologic	Micrologic
Downstream							
Rating (A)		160	160	160	160	160	160
		Reinforced breaking capacity (kA)					
iC60N	≤ 40 A	15/15	15/15	20/20	20/20	20/20	20/20
	50-63 A	6/15	6/15	6/20	6/20	6/20	6/20
iC60H	≤ 40 A	20/20	20/20	25/25	25/25	25/25	25/25
	50-63 A	6/20	6/20	6/25	6/25	6/25	6/25
iC60L	≤ 40 A	20/20	20/20	25/25	25/25	25/25	25/25
	50-63 A	6/20	6/20	6/25	6/25	6/25	6/25

Upstream		NSX160					
		NSX160B	NSX160F	NSX160N	NSX160H	NSX160S	NSX160L
Breaking capacity (kA)		25	36	50	70	100	150
Trip unit		Micrologic	Micrologic	Micrologic	Micrologic	Micrologic	Micrologic
Downstream							
Rating (A)		160	160	160	160	160	160
iC60N	≤ 40 A	15/15	15/15	20/20	20/20	20/20	20/20
	50-63 A	15/15	15/15	20/20	20/20	20/20	20/20
iC60H	≤ 40 A	20/20	20/20	25/25	25/25	25/25	25/25
	50-63 A	20/20	20/20	25/25	25/25	25/25	25/25
iC60L	≤ 40 A	20/20	20/20	25/25	25/25	25/25	25/25
	50-63 A	20/20	20/20	25/25	25/25	25/25	25/25
NG125N	≤ 20 A		35/35	35/35	35/35	50/50	65/65
	>20 A						
NG125H	≤ 20 A		35/25	40/40	50/50	65/65	90/90
	>20 A						
NG125L	≤ 20 A			50/50	65/65	90/90	130/130
	>20 A						

Upstream			NSX250				
			NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA)			35	50	65	90	130
Trip unit			Micrologic	Micrologic	Micrologic	Micrologic	Micrologic
Downstream							
Rating (A)			250	250	250	250	250
		Breaking capacity (kA)	Reinforced breaking capacity (kA)				
NG125N		20	35/35	35/35	35/35	50/50	65/65
NG125H		30	35/35	40/40	50/50	65/65	90/90
NG125L		40		50/50	65/65	90/90	130/130
NSX100B, TM-D	≤ 25 A	20	35/35	35/35	50/50	50/50	50/50
	40-100 A	20	35/35	35/35	35/50	35/50	35/50
NSX100F, TM-D	≤ 25 A	35		35/35	65/65	90/90	130/130
	40-100 A	35		35/35	35/65	35/90	35/130
NSX100N, TM-D	≤ 25 A	50			65/65	90/90	130/130
	40-100 A	50			35/65	35/90	35/130
NSX100H, TM-D	≤ 25 A	65				90/90	130/130
	40-100 A	65				35/90	35/130
NSX100S, TM-D	≤ 25 A	90					130/130
	40-100 A	90					35/130
NSX100B	Micrologic	20	35/35	35/35	35/50	35/50	35/50
NSX100F	Micrologic	35		35/50	35/50	35/50	35/50
NSX100N	Micrologic	50			35/65	35/90	35/130
NSX100H	Micrologic	65				35/90	35/130
NSX100S	Micrologic	90					35/130

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see page 6.

Discrimination enhanced by cascading

Upstream: NSX400-630, Micrologic
Downstream: NSX100-250

Ue: 440 V AC

Upstream		NSX400					NSX630				
		F	N	H	S	L	F	N	H	S	L
Breaking capacity (kA)		30	42	65	90	130	30	42	65	90	130
Trip unit		Micrologic					Micrologic				
Downstream											
Rating (A)		400	400	400	400	400	630	630	630	630	630
	Breaking capacity (kA)	Reinforced breaking capacity (kA)									
NSX100B	Micrologic	**20**	30/30	30/30	50/50	50/50	50/50	30/30	30/30	50/50	50/50	50/50
NSX100F	Micrologic	**35**		42/42	65/65	90/90	130/130		42/42	65/65	90/90	130/130
NSX100N	Micrologic	**50**			65/65	90/90	130/130			65/65	90/90	130/130
NSX100H	Micrologic	**65**				90/90	130/130				90/90	130/130
NSX100S	Micrologic	**90**					130/130					130/130
NSX160B	Micrologic	**20**	30/30	30/30	50/50	50/50	50/50	30/30	30/30	50/50	50/50	50/50
NSX160F	Micrologic	**35**		42/42	65/65	90/90	130/130		42/42	65/65	90/90	130/130
NSX160N	Micrologic	**50**			65/65	90/90	130/130			65/65	90/90	130/130
NSX160H	Micrologic	**65**				90/90	130/130				90/90	130/130
NSX160S	Micrologic	**90**					130/130					130/130
NSX250B	Micrologic	**20**						35/35	30/30	50/50	50/50	50/50
NSX250F	Micrologic	**35**							42/42	65/65	90/90	130/130
NSX250N	Micrologic	**50**								65/65	90/90	130/130
NSX250H	Micrologic	**65**									90/90	130/130
NSX250S	Micrologic	**90**										130/130

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see pages 6 and 14.*

Discrimination enhanced by cascading

Upstream: NS800-1000-1600, Micrologic
Downstream: NSX100-630

Ue: 440 V AC

Upstream		NS800				NS1000			NS1250		NS1600	
		N	H	L	LB	N	H	L	N	H	N	H
Breaking capacity (kA)		50	65	130	200	50	65	130	50	65	50	65
Trip unit		Micrologic				Micrologic			Micrologic		Micrologic	
Downstream												
Rating (A)		800	800	800	800	1000	1000	1000	1250	1250	1600	1600
	Breaking capacity (kA)	Reinforced breaking capacity (kA)										
NSX100B, TM-D/Micrologic	**20**	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
NSX100F, TM-D/Micrologic	**35**	50/50	65/65	130/130	130/130	50/50	65/65	130/130	50/50	65/65	50/50	65/65
NSX100N, TM-D/Micrologic	**50**		65/65	130/130	130/130		65/65	130/130		65/65		65/65
NSX100H, TM-D/Micrologic	**65**			130/130	130/130			130/130				
NSX100S, TM-D/Micrologic	**90**			130/130	200/200			130/130				
NSX100L, TM-D/Micrologic	**130**				200/200							
NSX160B, TM-D/Micrologic	**20**	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
NSX160F, TM-D/Micrologic	**35**	50/50	65/65	130/130	130/130	50/50	65/65	130/130	50/50	65/65	50/50	65/65
NSX160N, TM-D/Micrologic	**50**		65/65	130/130	130/130		65/65	130/130		65/65		65/65
NSX160H, TM-D/Micrologic	**65**			130/130	130/130			130/130				
NSX160S, TM-D/Micrologic	**90**			130/130	200/200			130/130				
NSX160L, TM-D/Micrologic	**130**				200/200							
NSX250B, TM-D/Micrologic	**20**	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
NSX250F, TM-D/Micrologic	**35**	50/50	65/65	130/130	130/130	50/50	65/65	130/130	50/50	65/65	50/50	65/65
NSX250N, TM-D/Micrologic	**50**		65/65	130/130	130/130		65/65	130/130		65/65		65/65
NSX250H, TM-D/Micrologic	**65**			130/130	130/130			130/130				
NSX250S, TM-D/Micrologic	**90**			130/130	200/200			130/130				
NSX250L, TM-D/Micrologic	**130**				200/200							
NSX400F Micrologic	**30**	50/50	65/65	10/130	10/200	50/50	65/65	15/130	50/50	65/65	50/50	65/65
NSX400N Micrologic	**42**		65/65	10/130	10/200		65/65	15/130		65/65		65/65
NSX400H Micrologic	**65**			10/130	10/200			15/130				
NSX400S Micrologic	**90**			10/130	10/200			15/130				
NSX400L Micrologic	**130**				10/200							
NSX630F Micrologic	**30**					50/50	65/65	10/130	50/50	65/65	50/50	65/65
NSX630N Micrologic	**42**						65/65	10/130		65/65		65/65
NSX630H Micrologic	**65**							10/130				
NSX630S Micrologic	**90**							10/130				

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see pages 6 and 14.

Discrimination enhanced by cascading

Upstream: NSX160, NSX250, TM-D
Downstream: iC60, C120, NG125

Upstream			NSX160											
			NSX160B		NSX160F		NSX160N		NSX160H		NSX160S		NSX160L	
Breaking capacity (kA)			40		85		90		100		120		150	
Trip unit			TM-D		TM-D		TM-D		TM-D		TM-D		TM-D	
Downstream														
Rating (A)			80-100	125-160	80-100	125-160	80-100	125-160	80-100	125-160	80-100	125-160	80-100	125-160
		Breaking capacity (kA)	Reinforced breaking capacity (kA)											
iC60N		20		30/30		40/40		60/60		60/60		60/60		60/60
iC60H		30		40/40		50/50		80/80		80/80		80/80		80/80
iC60L	≤ 25 A	50				65/65		80/80		80/80		80/80		80/80
	32-40 A	36		40/40		65/65		80/80		80/80		80/80		80/80
	50-63 A	30		40/40		65/65		80/80		80/80		80/80		80/80
NG125N	≤ 20 A	50				60/60		70/70		70/70		85/85		85/85
	25 to 125 A	50												
NG125H	≤ 20 A	70				85/85		85/85		85/85		100/100		100/100
	25 to 80 A	70												

Upstream			NSX250					
			NSX250B	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA)			40	85	90	100	120	150
Trip unit			TM-D	TM-D	TM-D	TM-D	TM-D	TM-D
Downstream								
Rating (A)			200-250	200-250	200-250	200-250	200-250	200-250
		Breaking capacity (kA)	Reinforced breaking capacity (kA)					
iC60N		20	30/30	40/40	60/60	60/60	60/60	60/60
iC60H		30	40/40	50/50	65/65	65/65	65/65	65/65
iC60L	≤ 25 A	50		65/65	80/80	80/80	80/80	80/80
	32-40 A	36	40/40	65/65	80/80	80/80	80/80	80/80
	50-63 A	30	40/40	40/40	65/65	65/65	65/65	65/65
C120N/H	≤ 100 A	20/30	40/40	40/40	50/50	50/50	70/70	70/70
	125 A	20/30						
NG125N	≤ 100 A	50		60/60	70/70	70/70	85/85	85/85
	125 A	50						
NG125H		70		85/85	85/85	85/85	100/100	100/100

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see pages 6 and 14.

Discrimination enhanced by cascading

Upstream: NSX100, NSX160, Micrologic
Downstream: iC60

Upstream			NSX100											
			NSX100B		NSX100F		NSX100N		NSX100H		NSX100S		NSX100L	
Breaking capacity (kA)			40		85		90		100		120		150	
Trip unit			Micrologic		Micrologic		Micrologic		Micrologic		Micrologic		Micrologic	
Downstream														
Rating (A)			40	100	40	100	40	100	40	100	40	100	40	100
		Breaking capacity (kA)	Reinforced breaking capacity (kA)											
iC60N	≤ 25 A	20	40/40	40/40	40/40	40/40	60/60	60/60	60/60	60/60	60/60	60/60	60/60	60/60
	32-40 A	20		40/40		40/40		60/60		60/60		60/60		60/60
	50-63 A	20												
iC60H	≤ 25 A	30	40/40	40/40	50/50	50/50	80/80	80/80	80/80	80/80	80/80	80/80	80/80	80/80
	32-40 A	30		40/40		50/50		80/80		80/80		80/80		80/80
	50-63 A	30												
iC60L	≤ 25 A	50			65/65	65/65	80/80	80/80	80/80	80/80	80/80	80/80	80/80	80/80
	32-40 A	36				65/65		80/80		80/80		80/80		80/80
	50-63 A	30												

Upstream			NSX160											
			NSX160B		NSX160F		NSX160N		NSX160H		NSX160S		NSX160L	
Breaking capacity (kA)			40		85		90		100		120		150	
Trip unit			Micrologic		Micrologic		Micrologic		Micrologic		Micrologic		Micrologic	
Downstream														
Rating (A)			80	160	80	160	80	160	80	160	80	160	80	160
		Breaking capacity (kA)	Reinforced breaking capacity (kA)											
iC60N	≤ 50 A	20	40/40	40/40	40/40	40/40	60/60	60/60	60/60	60/60	60/60	60/60	60/60	60/60
	63 A	20		40/40		40/40		60/60		60/60		60/60		60/60
iC60H	≤ 50 A	30	40/40	40/40	50/50	50/50	80/80	80/80	80/80	80/80	80/80	80/80	80/80	80/80
	63 A	30		40/40		50/50		80/80		80/80		80/80		80/80
iC60L	≤ 40 A	36			65/65	65/65	80/80	80/80	80/80	80/80	80/80	80/80	80/80	80/80
	50 A	30	40/40	40/40	65/65	65/65	80/80	80/80	80/80	80/80	80/80	80/80	80/80	80/80
	63 A	30		40/40		65/65		80/80		80/80		80/80		80/80

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see pages 6 and 14.

Discrimination enhanced by cascading

Upstream: NSX250, Micrologic
Downstream: iC60, C120, NG125

Upstream		NSX250					
		NSX250B	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA)		40	85	90	100	120	150
Trip unit		Micrologic	Micrologic	Micrologic	Micrologic	Micrologic	Micrologic
Downstream							
Rating (A)		250	250	250	250	250	250
	Breaking capacity (kA)	Reinforced breaking capacity (kA)					
iC60N	20	40/40	40/40	60/60	60/60	60/60	60/60
iC60H	30	40/40	50/50	65/65	65/65	65/65	65/65
iC60L ≤ 25 A	50		65/65	80/80	80/80	80/80	80/80
32-40 A	36		65/65	80/80	80/80	80/80	80/80
50-63 A	30	40/40	65/65	65/65	65/65	65/65	65/65
C120N/H	20/30	40/40	40/40	50/50	50/50	70/70	70/70
NG125N	50		60/60	70/70	70/70	85/85	85/85
NG125H	70		85/85	85/85	85/85	100/100	100/100

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see pages 6 and 14.

Discrimination enhanced by cascading

Upstream: NSX250, TM-D-Micrologic
Downstream: NG160, NSX100

Upstream	NSX250				
	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA)	85	90	100	120	150
Trip unit	TM-D	TM-D	TM-D	TM-D	TM-D

Downstream												
Rating (A)			160	200-250	160	200-250	160	200-250	160	200-250	160	200-250
		Breaking capacity (kA)	Reinforced breaking capacity (kA)									
NG160E		25		40/40		50/50		50/50		60/60		60/60
NG160N/H		50		85/85		90/90		100/100		100/100		100/100
NSX100B, TM-D	≤ 25 A	40		85/85		90/90		100/100		100/100		100/100
	40-100 A	40		36/85		36/90		36/100		36/120		36/150
NSX100F, TM-D	≤ 25 A	85				90/90		100/100		120/120		150/150
	40-100 A	85				36/90		36/100		36/120		36/150
NSX100N, TM-D	≤ 25 A	90						100/100		120/120		150/150
	40-100 A	90						36/100		36/120		36/150
NSX100H, TM-D	≤ 25 A	100								120/120		150/150
	40-100 A	100								36/120		36/150
NSX100S, TM-D	≤ 25 A	120										150/150
	40-100 A	120										36/150
NSX100B	Micrologic	40		2/85		2/90		2/100		2/120		2/100
NSX100F	Micrologic	85				2/90		2/100		2/120		2/150
NSX100N	Micrologic	90						2/100		2/120		2/150
NSX100H	Micrologic	100								2/120		2/150
NSX100S	Micrologic	120										2/150

Upstream	NSX250				
	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA)	85	90	100	120	150
Trip unit	Micrologic	Micrologic	Micrologic	Micrologic	Micrologic

Downstream												
Rating (A)			160	200-250	160	200-250	160	200-250	160	200-250	160	200-250
		Breaking capacity (kA)	Reinforced breaking capacity (kA)									
NG160E		25	40/40	40/40	50/50	50/50	50/50	50/50	60/60	60/60	60/60	60/60
NG160N/H		50	85/85	85/85	90/90	90/90	100/100	100/100	100/100	100/100	100/100	100/100
NSX100B, TM-D	≤ 25 A	40	85/85	85/85	90/90	90/90	100/100	100/100	100/100	100/100	100/100	100/100
	40-100 A	40	36/85	36/85	36/90	36/90	36/100	36/100	36/120	36/120	36/150	36/150
NSX100F, TM-D	≤ 25 A	85			90/90	90/90	100/100	100/100	120/120	120/120	150/150	150/150
	40-100 A	85			36/90	36/90	36/100	36/100	36/120	36/120	36/150	36/150
NSX100N, TM-D	≤ 25 A	90					100/100	100/100	120/120	120/120	150/150	150/150
	40-100 A	90					36/100	36/100	36/120	36/120	36/150	36/150
NSX100H, TM-D	≤ 25 A	100							120/120	120/120	150/150	150/150
	40-100 A	100							36/120	36/120	36/150	36/150
NSX100S, TM-D	≤ 25 A	120									150/150	150/150
	40-100 A	120									36/150	36/150
NSX100B	Micrologic	40	36/85	36/85	36/90	36/90	36/100	36/100	36/100	36/100	36/100	36/100
NSX100F	Micrologic	85			36/90	36/90	36/100	36/100	36/120	36/120	36/150	36/150
NSX100N	Micrologic	90					36/100	36/100	36/120	36/120	36/150	36/150
NSX100H	Micrologic	100							36/120	36/120	36/150	36/150
NSX100S	Micrologic	120									36/150	36/150

Note: respect the basic rules of discrimination, in terms of overload, short-circuit, see pages 6 and 14.

Discrimination enhanced by cascading

Ue: 220-240 V AC (Ph/N 110-130 V AC)

Upstream: NSX400-630, NS800-1000, Micrologic
Downstream: NG160, NSX100-630

Upstream		NSX400				NSX630				NS800		NS1000
		N	H	S	L	N	H	S	L	L	LB	L
Breaking capacity (kA)		85	100	120	150	85	100	120	150	150	200	150
Trip unit		Micrologic				Micrologic				Micrologic		Micrologic
Downstream												
Rating (A)		400	400	400	400	630	630	630	630	800		1000
	Breaking capacity (kA)	Reinforced breaking capacity (kA)										
NG160E	25	50/50	50/50	60/60	60/60	50/50	50/50	60/60	60/60			
NG160N/H	50	85/85	90/90	100/100	100/100	85/85	90/90	100/100	100/100			
NSX100B, TM-D	40	85/85	90/90	100/100	100/100	85/85	90/90	100/100	100/100	50/50	50/50	50/50
NSX100F, TM-D	85		90/90	120/120	150/150		90/90	120/120	150/150	150/150	150/150	150/150
NSX100N, TM-D	90		100/100	120/120	150/150		100/100	120/120	150/150	150/150	150/150	150/150
NSX100H, TM-D	100			120/120	150/150			120/120	150/150	150/150	150/150	150/150
NSX100S, TM-D	120				150/150				150/150	150/150	200/200	150/150
NSX100L, TM-D	150										200/200	
NSX160B, TM-D	40	85/85	90/90	100/100	100/100	85/85	90/90	100/100	100/100	50/50	50/50	50/50
NSX160F, TM-D	85		90/90	120/120	150/150		90/90	120/120	150/150	150/150	150/150	150/150
NSX160N, TM-D	90		100/100	120/120	150/150		100/100	120/120	150/150	150/150	150/150	150/150
NSX160H, TM-D	100			120/120	150/150			120/120	150/150	150/150	150/150	150/150
NSX160S, TM-D	120				150/150				150/150	150/150	200/200	150/150
NSX160L, TM-D	150										200/200	
NSX250B, TM-D	40					85/85	90/90	100/100	100/100	50/50	50/50	50/50
NSX250F, TM-D	85						90/90	120/120	150/150	150/150	150/150	150/150
NSX250N, TM-D	90						100/100	120/120	150/150	150/150	150/150	150/150
NSX250H, TM-D	100							120/120	150/150	150/150	150/150	150/150
NSX250S, TM-D	120								150/150	150/150	200/200	150/150
NSX250L, TM-D	150										200/200	
NSX100B Micrologic	40	85/85	90/90	100/100	100/100	85/85	90/90	100/100	100/100	50/50	50/50	50/50
NSX100F Micrologic	85		90/90	120/120	150/150		90/90	120/120	150/150	150/150	150/150	150/150
NSX100N Micrologic	90		100/100	120/120	150/150		100/100	120/120	150/150	150/150	150/150	150/150
NSX100H Micrologic	100			120/120	150/150			120/120	150/150	150/150	150/150	150/150
NSX100S Micrologic	120				150/150				150/150	150/150	200/200	150/150
NSX100L Micrologic	150										200/200	
NSX160B Micrologic	40	85/85	90/90	100/100	100/100	85/85	90/90	100/100	100/100	50/50	50/50	50/50
NSX160F Micrologic	85		90/90	120/120	150/150		90/90	120/120	150/150	150/150	150/150	150/150
NSX160N Micrologic	90		100/100	120/120	150/150		100/100	120/120	150/150	150/150	150/150	150/150
NSX160H Micrologic	100			120/120	150/150			120/120	150/150	150/150	150/150	150/150
NSX160S Micrologic	120				150/150				150/150	150/150	200/200	150/150
NSX160L Micrologic	150										200/200	
NSX250B Micrologic	40					85/85	90/90	100/100	100/100	50/50	50/50	50/50
NSX250F Micrologic	85						90/90	120/120	150/150	150/150	150/150	150/150
NSX250N Micrologic	90						100/100	120/120	150/150	150/150	150/150	150/150
NSX250H Micrologic	100							120/120	150/150	150/150	150/150	150/150
NSX250S Micrologic	120								150/150	150/150	200/200	150/150
NSX250L Micrologic	150										200/200	
NSX400F Micrologic	40									10/150	10/150	15/150
NSX400N Micrologic	85									10/150	10/150	15/150
NSX400H Micrologic	100									10/150	10/150	15/150
NSX400S Micrologic	120									10/150	10/200	15/150
NSX400L Micrologic	150										10/200	
NSX630F Micrologic	40											10/150
NSX630N Micrologic	85											10/150
NSX630H Micrologic	100											10/150
NSX630S Micrologic	120											10/150

Note: *respect the basic rules of discrimination, in terms of overload, short-circuit, see pages 6 and 14.*

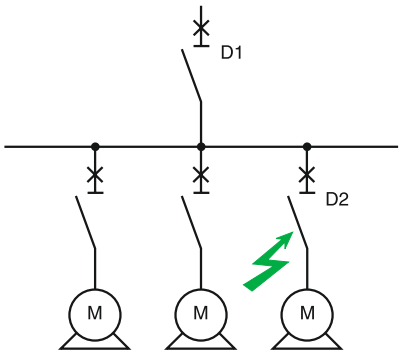
Motor protection discrimination

Contents

Using the tables

Two circuit breakers offer total discrimination when the corresponding box in the discrimination table is shaded or contains the letter T.
When discrimination is partial for the combination, the corresponding box indicates the maximum value of the fault current for which discrimination is provided.
For fault currents above this value, the two circuit breakers trip simultaneously.

DB115197.eps



Discrimination between circuit breakers used for motor protection.

How to use the discrimination tables

■ **For discrimination between a circuit breaker and a motor control and protection assembly**

If discrimination is partial, the table indicates the maximum fault current value for which discrimination is ensured. For fault currents above this value, the 2 devices trip simultaneously.

Requisite conditions

The values indicated in the tables (for 220, 380, 415 and 440 V) are guaranteed if the following conditions are respected:

Upstream	Downstream	Thermal protection Ir up/Ir down	Magnetic protection Im up/Im down
TM	MA + separate therm. relay	≥ 3	≥ 2
	Thermal-magnetic motor type	≥ 3	≥ 2
Micrologic	MA + separate therm. relay	≥ 3	≥ 1.5
	Thermal-magnetic motor type	≥ 3	≥ 1.5

Motor protection discrimination

Upstream: NSX100 to 250
Downstream: GV2, GV3, LUB12, LUB32, Integral 63

Ue ⩽ 440 V AC

Upstream			NSX100B/F/N/H/S/L/R								NSX160B/F/N/H/S/L				NSX250B/F/N/H/S/L/R		
Trip unit			TM-D								TM-D				TM-D		
Downstream	Trip unit or th. relay	Rating (A) Setting Ir	16	25	32	40	50	63	80	100	80	100	125	160	160	200	250
Discrimination limit (kA)																	
GV2 ME01	Integrated	0.1/0.16	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME02	Integrated	0.16/0.25	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME03	Integrated	0.25/0.40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME04	Integrated	0.40/0.63	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME05	Integrated	0.63/1	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME06	Integrated	1/1.6	0.19	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME07	Integrated	1.6/2.5	0.19	0.25	0.4	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME08	Integrated	2.5/4	0.19	0.25	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 ME10	Integrated	4/6.3		0.25	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 ME14	Integrated	6/10			0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 ME16	Integrated	9/14					0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 ME20	Integrated	13/18							0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 ME21	Integrated	17/23							0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 ME22	Integrated	20/25							0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 ME32	Integrated	24/32								0.8		0.8	T	T	T	T	T
GV2 P01	Integrated	0.1/0.16	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P02	Integrated	0.16/0.25	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P03	Integrated	0.25/0.40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P04	Integrated	0.40/0.63	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P05	Integrated	0.63/1	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P06	Integrated	1/1.6	0.19	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P07	Integrated	1.6/2.5	0.19	0.25	0.4	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P08	Integrated	2.5/4	0.19	0.25	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 P10	Integrated	4/6.3		0.25	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 P14	Integrated	6/10			0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 P16	Integrated	9/14					0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 P20	Integrated	13/18							0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 P21	Integrated	17/23							0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 P22	Integrated	20/25							0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 P32	Integrated	24/32								0.8		0.8	T	T	T	T	T
GV2 L03	LRD 03	0.25/0.40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L04	LRD 04	0.40/0.63	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L05	LRD 05	0.63/1	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L06	LRD 06	1/1.6	0.19	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L07	LRD 07	1.6/2.5	0.19	0.25	0.4	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L08	LRD 08	2.5/4	0.19	0.25	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 L10	LRD 10	4/6.3		0.25	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 L14	LRD 14	7/10			0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 L16	LRD 16	9/13					0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 L20	LRD 21	12/18							0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 L22	LRD 22	17/25							0.63	0.8	0.63	0.8	T	T	T	T	T
GV2 L32	LRD 32	23/32								0.8		0.8	T	T	T	T	T
GV3 P13	Integrated	9/13														T	T
GV3 P18	Integrated	12/18														T	T
GV3 P25	Integrated	17/25														T	T
GV3 P32	Integrated	23/32														T	T
GV3 P40	Integrated															T	T
GV3 P50	Integrated															T	T
GV3 P65	Integrated																T
GV3 L25	LRD 22	20/25														T	T
GV3 L32	LRD 32	23/32														T	T
GV3 L40	LRD 340	30/40														T	T
GV3 L50	LRD 350	37/50														T	T
GV3 L65	LRD 365	48/65															T
LUB12	LUC*X6	0.15…0.6	0.19	0.3	0.4	0.5	0.5	0.5	0.7	0.8	0.7	0.8	T	T	T	T	T
	LUC*1X	0.35…1.4	0.19	0.3	0.4	0.5	0.5	0.5	0.7	0.8	0.7	0.8	T	T	T	T	T
	LUC*05	1.25…5	0.19	0.3	0.4	0.5	0.5	0.5	0.7	0.8	0.7	0.8	T	T	T	T	T
	LUC*12	3…12				0.5	0.5	0.5	0.7	0.8	0.7	0.8	T	T	T	T	T
LUB32	LUC*X6	0.15…0.6	0.19	0.3	0.4	0.5	0.5	0.5	0.7	0.8	0.7	0.8	5	5	5	T	T
	LUC*1X	0.35…1.4	0.19	0.3	0.4	0.5	0.5	0.5	0.7	0.8	0.7	0.8	5	5	5	T	T
	LUC*05	1.25…5	0.19	0.3	0.4	0.5	0.5	0.5	0.7	0.8	0.7	0.8	5	5	5	T	T
	LUC*12	3…12				0.5	0.5	0.5	0.7	0.8	0.7	0.8	5	5	5	T	T
	LUC*18	4.5…18						0.5	0.7	0.8	0.7	0.8	5	5	5	T	T
	LUC*32	8…32								0.8		0.8	5	5	5	T	T
Integral 63	LB1-LD03M16	10/13				0.5	0.5	0.5	0.63	0.8	0.63	0.8	1	1	1	T	T
	LB1-LD03M21	13/18						0.5	0.63	0.8	0.63	0.8	1	1	1	T	T
	LB1-LD03M22	18/25							0.63	0.8	0.63	0.8	1	1	1	T	T
	LB1-LD03M53	23/32								0.8		0.8	1	1	1	T	T
	LB1-LD03M55	28/40											1	1	1	T	T
	LB1-LD03M57	35/50												1	1	T	T
	LB1-LD03M61															T	T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

***Note**: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.*

Motor protection discrimination

Upstream: NSX100 to 160
Downstream: GV2, GV3, LUB12, LUB32, Integral 63

Ue ⩽ 440 V AC

Upstream			NSX100B/F/N/H/S/L/R							NSX160B/F/N/H/S/L				
Trip unit			Micrologic							Micrologic				
Downstream	Trip unit or th. relay	Rating (A) Setting Ir	40 16	40 25	40 40	100 40	100 63	100 80	100 100	160 63	160 80	160 100	160 125	160 160
Discrimination limit (kA)														
GV2 ME01	Integrated	0.1/0.16	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME02	Integrated	0.16/0.25	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME03	Integrated	0.25/0.40	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME04	Integrated	0.40/0.63	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME05	Integrated	0.63/1	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME06	Integrated	1/1.6	0.6	0.6	0.6	T	T	T	T	T	T	T	T	T
GV2 ME07	Integrated	1.6/2.5	0.6	0.6	0.6	T	T	T	T	T	T	T	T	T
GV2 ME08	Integrated	2.5/4	0.6	0.6	0.6	T	T	T	T	T	T	T	T	T
GV2 ME10	Integrated	4/6.3		0.6	0.6	T	T	T	T	T	T	T	T	T
GV2 ME14	Integrated	6/10			0.6	T	T	T	T	T	T	T	T	T
GV2 ME16	Integrated	9/14					T	T	T	T	T	T	T	T
GV2 ME20	Integrated	13/18					T	T	T	T	T	T	T	T
GV2 ME21	Integrated	17/23						T	T		T	T	T	T
GV2 ME22	Integrated	20/25						T	T		T	T	T	T
GV2 ME32	Integrated	24/32							T			T	T	T
GV2 P01	Integrated	0.1/0.16	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P02	Integrated	0.16/0.25	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P03	Integrated	0.25/0.40	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P04	Integrated	0.40/0.63	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P05	Integrated	0.63/1	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P06	Integrated	1/1.6	0.6	0.6	0.6	T	T	T	T	T	T	T	T	T
GV2 P07	Integrated	1.6/2.5	0.6	0.6	0.6	T	T	T	T	T	T	T	T	T
GV2 P08	Integrated	2.5/4	0.6	0.6	0.6	T	T	T	T	T	T	T	T	T
GV2 P10	Integrated	4/6.3		0.6	0.6	T	T	T	T	T	T	T	T	T
GV2 P14	Integrated	6/10			0.6	T	T	T	T	T	T	T	T	T
GV2 P16	Integrated	9/14					T	T	T	T	T	T	T	T
GV2 P20	Integrated	13/18					T	T	T	T	T	T	T	T
GV2 P21	Integrated	17/23						T	T		T	T	T	T
GV2 P22	Integrated	20/25						T	T		T	T	T	T
GV2 P32	Integrated	24/32							T			T	T	T
GV2 L03	LRD 03	0.25/0.40	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L04	LRD 04	0.40/0.63	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L05	LRD 05	0.63/1	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L06	LRD 06	1/1.6	0.6	0.6	0.6	T	T	T	T	T	T	T	T	T
GV2 L07	LRD 07	1.6/2.5	0.6	0.6	0.6	T	T	T	T	T	T	T	T	T
GV2 L08	LRD 08	2.5/4	0.6	0.6	0.6	T	T	T	T	T	T	T	T	T
GV2 L10	LRD 10	4/6.3		0.6	0.6	T	T	T	T	T	T	T	T	T
GV2 L14	LRD 14	7/10			0.6	T	T	T	T	T	T	T	T	T
GV2 L16	LRD 16	9/13					T	T	T	T	T	T	T	T
GV2 L20	LRD 21	12/18						T	T	T	T	T	T	T
GV2 L22	LRD 22	17/25						T	T	T	T	T	T	T
GV2 L32	LRD 32	23/32							T	T	T	T	T	T
GV3 P13	Integrated	9/13			0.6	1.5	1.5	1.5	1.5	T	T	T	T	T
GV3 P18	Integrated	12/18					1.5	1.5	1.5	T	T	T	T	T
GV3 P25	Integrated	17/25						1.5	1.5		T	T	T	T
GV3 P32	Integrated	23/32							1.5			T	T	T
GV3 P40	Integrated	30/40											2.4	2.4
GV3 P50	Integrated	37/50												2.4
GV3 P65	Integrated	48/65												
GV3 L25	LRD 22	20/25						1.5	1.5		T	T	T	T
GV3 L32	LRD 32	23/32							1.5			T	T	T
GV3 L40	LRD 340	30/40											2.4	2.4
GV3 L50	LRD 350	37/50												2.4
GV3 L65	LRD 365	48/65												
LUB12	LUC*X6	0.15…0.6	0.6	0.6	0.6	1.5	1.5	1.5	1.5	T	T	T	T	T
	LUC*1X	0.35…1.4	0.6	0.6	0.6	1.5	1.5	1.5	1.5	T	T	T	T	T
	LUC*05	1.25…5	0.6	0.6	0.6	1.5	1.5	1.5	1.5	T	T	T	T	T
	LUC*12	3…12			0.6	1.5	1.5	1.5	1.5	T	T	T	T	T
LUB32	LUC*X6	0.15…0.6	0.6	0.6	0.6	1.5	1.5	1.5	1.5	T	T	T	T	T
	LUC*1X	0.35…1.4	0.6	0.6	0.6	1.5	1.5	1.5	1.5	T	T	T	T	T
	LUC*05	1.25…5	0.6	0.6	0.6	1.5	1.5	1.5	1.5	T	T	T	T	T
	LUC*12	3…12			0.6	1.5	1.5	1.5	1.5	T	T	T	T	T
	LUC*18	4.5…18					1.5	1.5	1.5	T	T	T	T	T
	LUC*32	8…32							1.5			T	T	T
Integral 63	LB1-LD03M16	10/13			0.6	1.5	1.5	1.5	1.5	2.4	2.4	2.4	2.4	2.4
	LB1-LD03M21	13/18					1.5	1.5	1.5	2.4	2.4	2.4	2.4	2.4
	LB1-LD03M22	18/25						1.5	1.5		2.4	2.4	2.4	2.4
	LB1-LD03M53	23/32							1.5			2.4	2.4	2.4
	LB1-LD03M55	28/40											2.4	2.4
	LB1-LD03M57	35/50												2.4
	LB1-LD03M61	45/63												

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.*

Motor protection discrimination

Upstream: NSX250 to 630
Downstream: GV2, GV3, LUB12, LUB32, Integral 63

Ue ⩽ 440 V AC

Upstream			NSX250B/F/N/H/S/L/R					NSX400F/N/H/S/L/R					NSX630F/N/H/S/L/R				
Trip unit			Micrologic					Micrologic					Micrologic				
Downstream	Trip unit or th. relay	Rating (A) Setting Ir	250					400					630				
			100	125	160	200	250	160	200	250	320	400	250	320	400	500	630
Discrimination limit (kA)																	
GV2 ME01	Integrated	0.1/0.16	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME02	Integrated	0.16/0.25	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME03	Integrated	0.25/0.40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME04	Integrated	0.40/0.63	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME05	Integrated	0.63/1	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME06	Integrated	1/1.6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME07	Integrated	1.6/2.5	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME08	Integrated	2.5/4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME10	Integrated	4/6.3	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME14	Integrated	6/10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME16	Integrated	9/14	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME20	Integrated	13/18	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME21	Integrated	17/23	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME22	Integrated	20/25	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 ME32	Integrated	24/32	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P01	Integrated	0.1/0.16	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P02	Integrated	0.16/0.25	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P03	Integrated	0.25/0.40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P04	Integrated	0.40/0.63	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P05	Integrated	0.63/1	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P06	Integrated	1/1.6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P07	Integrated	1.6/2.5	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P08	Integrated	2.5/4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P10	Integrated	4/6.3	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P14	Integrated	6/10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P16	Integrated	9/14	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P20	Integrated	13/18	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P21	Integrated	17/23	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P22	Integrated	20/25	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P32	Integrated	24/32	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L03	LRD 03	0.25/0.40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L04	LRD 04	0.40/0.63	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L05	LRD 05	0.63/1	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L06	LRD 06	1/1.6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L07	LRD 07	1.6/2.5	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L08	LRD 08	2.5/4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L10	LRD 10	4/6.3	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L14	LRD 14	7/10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L16	LRD 16	9/13	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L20	LRD 21	12/18	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L22	LRD 22	17/25	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L32	LRD 32	23/32	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 P13	Integrated	9/13	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 P18	Integrated	12/18	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 P25	Integrated	17/25	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 P32	Integrated	23/32	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 P40	Integrated	30/40		T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 P50	Integrated	37/50			T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 P65	Integrated	48/65				T	T	T	T	T	T	T	T	T	T	T	T
GV3 L25	LRD 22	20/25	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 L32	LRD 32	23/32	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 L40	LRD 340	30/40		T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 L50	LRD 350	37/50			T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 L65	LRD 365	48/65				T	T	T	T	T	T	T	T	T	T	T	T
LUB12	LUC*X6	0.15…0.6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	LUC*1X	0.35…1.4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	LUC*05	1.25…5	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	LUC*12	3…12	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
LUB32	LUC*X6	0.15…0.6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	LUC*1X	0.35…1.4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	LUC*05	1.25…5	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	LUC*12	3…12	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	LUC*18	4.5…18	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	LUC*32	8…32	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Integral 63	LB1-LD03M16	10/13	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	LB1-LD03M21	13/18	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	LB1-LD03M22	18/25	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	LB1-LD03M53	23/32	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	LB1-LD03M55	28/40		T	T	T	T	T	T	T	T	T	T	T	T	T	T
	LB1-LD03M57	35/50			T	T	T	T	T	T	T	T	T	T	T	T	T
	LB1-LD03M61	45/63				T	T	T	T	T	T	T	T	T	T	T	T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

***Note**: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.*

Motor protection discrimination

Upstream: NSX100 to 250
Downstream: iC60L MA, NG125L MA, NS80H-MA, NSX100 to 250

Ue ⩽ 440 V AC

Upstream			NSX100B/F/N/H/S/L/R								NSX160B/F/N/H/S/L				NSX250B/F/N/H/S/L/R		
Trip unit			TM-D								TM-D				TM-D		
Downstream	**Trip unit or th. relay**	**Rating (A) Setting Ir**	**16**	**25**	**32**	**40**	**50**	**63**	**80**	**100**	**80**	**100**	**125**	**160**	**160**	**200**	**250**
Discrimination limit (kA)																	
iC60L MA 1.6	LRD 06	1/1.6	0.19	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60L MA 2.5	LRD 07	1.6/2.5	0.19	0.3	0.4	T	T	T	T	T	T	T	T	T	T	T	T
iC60L MA 4	LRD 08	2.5/4	0.19	0.3	0.4	0.5	0.5	0.5	0.63	T	0.63	T	T	T	T	T	T
iC60L MA 6.3	LRD 10	4/6.3		0.3	0.4	0.5	0.5	0.5	0.63	5	0.63	5	T	T	T	T	T
iC60L MA 10	LRD 12	5.5/8		0.3	0.4	0.5	0.5	0.5	0.63	2	0.63	2	T	T	T	T	T
iC60L MA 10	LRD 14	7/10			0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
iC60L MA 12.5	LRD 16	9/13				0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
iC60L MA 16	LRD 21	12/18						0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
iC60L MA 25	LRD 22	17/25							0.63	0.8	0.63	0.8	T	T	T	T	T
iC60L MA 40	LRD 32	23/32								0.8		0.8	T	T	T	T	T
iC60L MA 40	LRD 33 55	30/40								0.8		0.8	T	T	T	T	T
NG125L MA 1.6	LRD 06	1/1.6	0.19	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125L MA 2.5	LRD 07	1.6/2.5	0.19	0.3	0.4	T	T	T	T	T	T	T	T	T	T	T	T
NG125L MA 4	LRD 08	2.5/4	0.19	0.3	0.4	0.5	0.5	0.5	0.63	T	0.63	T	T	T	T	T	T
NG125L MA 6.3	LRD 10	4/6.3		0.3	0.4	0.5	0.5	0.5	0.63	5	0.63	5	T	T	T	T	T
NG125L MA 10	LRD 12	5.5/8		0.3	0.4	0.5	0.5	0.5	0.63	2	0.63	2	T	T	T	T	T
NG125L MA 10	LRD 14	7/10			0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
NG125L MA 12.5	LRD 16	9/13				0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
NG125L MA 16	LRD 21	12/18						0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
NG125L MA 25	LRD 22	17/25							0.63	0.8	0.63	0.8	T	T	T	T	T
NG125L MA 40	LRD 32	23/32								0.8		0.8	T	T	T	T	T
NG125L MA 40	LRD 33 55	30/40								0.8		0.8	T	T	T	T	T
NG125L MA 63	LRD 33 57	37/50												T	T	T	T
NG125L MA 63	LRD 33 59	48/65														T	T
NS80H-MA 2.5	LRD 06	1/1.6	0.19	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS80H-MA 2.5	LRD 07	1.6/2.5	0.19	0.3	0.4	T	T	T	T	T	T	T	T	T	T	T	T
NS80H-MA 6.3	LRD 08	2.5/4	0.19	0.3	0.4	0.5	0.5	0.5	0.63	T	0.63	T	T	T	T	T	T
NS80H-MA 6.3	LRD 10	4/6.3		0.3	0.4	0.5	0.5	0.5	0.63	5	0.63	5	T	T	T	T	T
NS80H-MA 12.5	LRD 12	5.5/8		0.3	0.4	0.5	0.5	0.5	0.63	2	0.63	2	T	T	T	T	T
NS80H-MA 12.5	LRD 14	7/10			0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
NS80H-MA 12.5	LRD 16	9/13				0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
NS80H-MA 25	LRD 21	12/18						0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
NS80H-MA 25	LRD 22	17/25							0.63	0.8	0.63	0.8	T	T	T	T	T
NS80H-MA 50	LRD 32	23/32								0.8		0.8	1	1	1	T	T
NS80H-MA 50	LRD 33 55	30/40								0.8		0.8	1	1	1	T	T
NS80H-MA 50	LRD 33 57	37/50											1	1	1	T	T
NS80H-MA 80	LRD 33 59	48/65												1	1	T	T
NSX100 F/N/H/S/L MA 2.5	LRD 06	1/1.6	0.19	0.3	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L MA 2.5	LRD 07	1.6/2.5	0.19	0.3	0.4	0.5	0.5	0.5	T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L MA 6.3	LRD 08	2.5/4	0.19	0.3	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
NSX100 F/N/H/S/L MA 6.3	LRD 10	4/6.3		0.3	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	T	T	T	T	T
NSX100 F/N/H/S/L/R MA 12.5	LRD 12	5.5/8		0.3	0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	1	1	1	T	T
NSX100 F/N/H/S/L/R MA 12.5	LRD 14	7/10			0.4	0.5	0.5	0.5	0.63	0.8	0.63	0.8	1	1	1	T	T
NSX100 F/N/H/S/L/R MA 12.5	LRD 16	9/13				0.5	0.5	0.5	0.63	0.8	0.63	0.8	1	1	1	T	T
NSX100 F/N/H/S/L/R MA 25	LRD 21	12/18						0.5	0.63	0.8	0.63	0.8	1	1	1	T	T
NSX100 F/N/H/S/L/R MA 25	LRD 22	17/25							0.63	0.8	0.63	0.8	1	1	1	T	T
NSX100 F/N/H/S/L/R MA 50	LRD 32	23/32								0.8		0.8	1	1	1	36	36
NSX100 F/N/H/S/L/R MA 50	LRD 340	30/40											1	1	1	36	36
NSX100 F/N/H/S/L/R MA 50	LRD 350	37/50												1	1	36	36
NSX100 F/N/H/S/L/R MA 100	LRD 365	48/65														36	36
NSX100 F/N/H/S/L/R MA 100	LRD 33 63	63/80														36	36
NSX100F	Micrologic 2.2 M or 6.2 E-M	25/50								0.8		0.8	1	1	1	T	T
		100															T
NSX100N/H/S/L/R	Micrologic 2.2 M or 6.2 E-M	25/50								0.8		0.8	1	1	1	36	36
		100															36
NSX160F	Micrologic 2.2 M or 6.2 E-M	⩽ 100											1	1	1	2	2.5
		150												1	1		2.5
NSX160N/H/S/L	Micrologic 2.2 M or 6.2 E-M	⩽ 100											1	1	1	2	2.5
		150												1	1		2.5
NSX250F	Micrologic 2.2 M or 6.2 E-M	⩽ 150															2.5
		220															
NSX250N/H/S/L/R	Micrologic 2.2 M or 6.2 E-M	⩽ 150															2.5
		220															

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.*

Motor protection discrimination

Upstream: NSX100 to 250
Downstream: iC60L MA, NG125L MA, NS80H-MA, NSX100 to 250

Ue ⩽ 440 V AC

Upstream			NSX100B/F/N/H/S/L/R								NSX160B/F/N/H/S/L					NSX250B/F/N/H/S/L/R				
Trip unit			Micrologic								Micrologic					Micrologic				
Downstream	**Trip unit or th. relay**	**Rating (A) Setting Ir**	**40**				**100**				**160**					**250**				
			16	**25**	**32**	**40**	**40**	**63**	**80**	**100**	**63**	**80**	**100**	**125**	**160**	**100**	**125**	**160**	**200**	**250**
Discrimination limit (kA)																				
iC60L MA 1.6	**LRD 06**	**1/1.6**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60L MA 2.5	**LRD 07**	**1.6/2.5**	1	1	1	1	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60L MA 4	**LRD 08**	**2.5/4**	0.6	0.6	0.6	0.6	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60L MA 6.3	**LRD 10**	**4/6.3**	0.6	0.6	0.6	0.6	5	5	5	5	T	T	T	T	T	T	T	T	T	T
iC60L MA 10	**LRD 12**	**5.5/8**		0.6	0.6	0.6	2	2	2	2	T	T	T	T	T	T	T	T	T	T
iC60L MA 10	**LRD 14**	**7/10**			0.6	0.6	1.5	1.5	1.5	1.5	T	T	T	T	T	T	T	T	T	T
iC60L MA 12.5	**LRD 16**	**9/13**				0.6	1.5	1.5	1.5	1.5	T	T	T	T	T	T	T	T	T	T
iC60L MA 16	**LRD 21**	**12/18**						1.5	1.5	1.5	T	T	T	T	T	T	T	T	T	T
iC60L MA 25	**LRD 22**	**17/25**							1.5	1.5	T	T	T	T	T	T	T	T	T	T
iC60L MA 40	**LRD 32**	**23/32**								1.5			T	T	T	T	T	T	T	T
iC60L MA 40	**LRD 33 55**	**30/40**											T	T	T	T	T	T	T	T
NG125L MA 1.6	**LRD 06**	**1/1.6**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125L MA 2.5	**LRD 07**	**1.6/2.5**	1	1	1	1	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125L MA 4	**LRD 08**	**2.5/4**	0.6	0.6	0.6	0.6	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125L MA 6.3	**LRD 10**	**4/6.3**	0.6	0.6	0.6	0.6	5	5	5	5	T	T	T	T	T	T	T	T	T	T
NG125L MA 10	**LRD 12**	**5.5/8**		0.6	0.6	0.6	2	2	2	2	T	T	T	T	T	T	T	T	T	T
NG125L MA 10	**LRD 14**	**7/10**			0.6	0.6	1.5	1.5	1.5	1.5	T	T	T	T	T	T	T	T	T	T
NG125L MA 12.5	**LRD 16**	**9/13**				0.6	1.5	1.5	1.5	1.5	T	T	T	T	T	T	T	T	T	T
NG125L MA 16	**LRD 21**	**12/18**						1.5	1.5	1.5	T	T	T	T	T	T	T	T	T	T
NG125L MA 25	**LRD 22**	**17/25**							1.5	1.5	T	T	T	T	T	T	T	T	T	T
NG125L MA 40	**LRD 32**	**23/32**								1.5			T	T	T	T	T	T	T	T
NG125L MA 40	**LRD 33 55**	**30/40**											T	T	T	T	T	T	T	T
NG125L MA 63	**LRD 33 57**	**37/50**												T	T		T	T	T	T
NG125L MA 63	**LRD 33 59**	**48/65**													T			T	T	T
NS80H-MA 2.5	**LRD 06**	**1/1.6**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS80H-MA 2.5	**LRD 07**	**1.6/2.5**	1	1	1	1	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS80H-MA 6.3	**LRD 08**	**2.5/4**	0.6	0.6	0.6	0.6	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS80H-MA 6.3	**LRD 10**	**4/6.3**	0.6	0.6	0.6	0.6	5	5	5	5	T	T	T	T	T	T	T	T	T	T
NS80H-MA 12.5	**LRD 12**	**5.5/8**		0.6	0.6	0.6	2	2	2	2	T	T	T	T	T	T	T	T	T	T
NS80H-MA 12.5	**LRD 14**	**7/10**			0.6	0.6	1.5	1.5	1.5	1.5	T	T	T	T	T	T	T	T	T	T
NS80H-MA 12.5	**LRD 16**	**9/13**				0.6	1.5	1.5	1.5	1.5	T	T	T	T	T	T	T	T	T	T
NS80H-MA 25	**LRD 21**	**12/18**						1.5	1.5	1.5	T	T	T	T	T	T	T	T	T	T
NS80H-MA 25	**LRD 22**	**17/25**							1.5	1.5	T	T	T	T	T	T	T	T	T	T
NS80H-MA 50	**LRD 32**	**23/32**								1.5			T	T	T	T	T	T	T	T
NS80H-MA 50	**LRD 33 55**	**30/40**											T	T	T	T	T	T	T	T
NS80H-MA 50	**LRD 33 57**	**37/50**												T	T		T	T	T	T
NS80H-MA 80	**LRD 33 59**	**48/65**													T			T	T	T
NSX100 F/N/H/S/L MA 2.5	**LRD 06**	**1/1.6**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L MA 2.5	**LRD 07**	**1.6/2.5**	1	1	1	1	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L MA 6.3	**LRD 08**	**2.5/4**	0.6	0.6	0.6	0.6	1.5	1.5	1.5	1.5	T	T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L MA 6.3	**LRD 10**	**4/6.3**	0.6	0.6	0.6	0.6	1.5	1.5	1.5	1.5	T	T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L/R MA 12.5	**LRD 12**	**5.5/8**		0.6	0.6	0.6	1.5	1.5	1.5	1.5	2.4	2.4	2.4	2.4	2.4	T	T	T	T	T
NSX100 F/N/H/S/L/R MA 12.5	**LRD 14**	**7/10**			0.6	0.6	1.5	1.5	1.5	1.5	2.4	2.4	2.4	2.4	2.4	T	T	T	T	T
NSX100 F/N/H/S/L/R MA 12.5	**LRD 16**	**9/13**				0.6	1.5	1.5	1.5	1.5	2.4	2.4	2.4	2.4	2.4	T	T	T	T	T
NSX100 F/N/H/S/L/R MA 25	**LRD 21**	**12/18**						1.5	1.5	1.5	2.4	2.4	2.4	2.4	2.4	T	T	T	T	T
NSX100 F/N/H/S/L/R MA 25	**LRD 22**	**17/25**							1.5	1.5		2.4	2.4	2.4	2.4	T	T	T	T	T
NSX100 F/N/H/S/L/R MA 50	**LRD 32**	**23/32**								1.5			2.4	2.4	2.4	36	36	36	36	36
NSX100 F/N/H/S/L/R MA 50	**LRD 340**	**30/40**												2.4	2.4	36	36	36	36	36
NSX100 F/N/H/S/L/R MA 50	**LRD 350**	**37/50**													2.4		36	36	36	36
NSX100 F/N/H/S/L/R MA 100	**LRD 365**	**48/65**																	36	36
NSX100 F/N/H/S/L/R MA 100	**LRD 33 63**	**63/80**																	36	36
NSX100 F/N/H/S/L	**MA**	**100**																		36
NSX100F	**Micrologic 2.2 M or 6.2 E-M**	**25/50**								1.5			2.4	2.4	2.4	T	T	T	T	T
		100																		T
NSX100N/H/S/L/R	**Micrologic 2.2 M or 6.2 E-M**	**25/50**								1.5			2.4	2.4	2.4	36	36	36	36	36
		100																		36
NSX160F	**Micrologic 2.2 M or 6.2 E-M**	**⩽ 100**											2.4	2.4	2.4	3	3	3	3	3
		150																		3
NSX160N/H/S/L	**Micrologic 2.2 M or 6.2 E-M**	**⩽ 100**											2.4	2.4	2.4	3	3	3	3	3
		150																		3
NSX250F	**Micrologic 2.2 M or 6.2 E-M**	**⩽ 150**																		3
		220																		
NSX250N/H/S/L/R	**Micrologic 2.2 M or 6.2 E-M**	**⩽ 150**																		3
		220																		

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

***Note**: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.*

Motor protection discrimination

Upstream: NSX400 to 630
Downstream: iC60L MA, NG125L MA, NS80H-MA, NSX100 to 250

Ue ⩽ 440 V AC

Upstream			NSX400F/N/H/S/L/R					NSX630F/N/H/S/L/R				
Trip unit			Micrologic					Micrologic				
Downstream	Trip unit or th. relay	Rating (A)	400					630				
		Setting Ir	160	200	250	320	400	250	320	400	500	630
Discrimination limit (kA)												
iC60L MA 1.6	LRD 06	1/1.6	T	T	T	T	T	T	T	T	T	T
iC60L MA 2.5	LRD 07	1.6/2.5	T	T	T	T	T	T	T	T	T	T
iC60L MA 4	LRD 08	2.5/4	T	T	T	T	T	T	T	T	T	T
iC60L MA 6.3	LRD 10	4/6.3	T	T	T	T	T	T	T	T	T	T
iC60L MA 10	LRD 12	5.5/8	T	T	T	T	T	T	T	T	T	T
iC60L MA 10	LRD 14	7/10	T	T	T	T	T	T	T	T	T	T
iC60L MA 12.5	LRD 16	9/13	T	T	T	T	T	T	T	T	T	T
iC60L MA 16	LRD 21	12/18	T	T	T	T	T	T	T	T	T	T
iC60L MA 25	LRD 22	17/25	T	T	T	T	T	T	T	T	T	T
iC60L MA 40	LRD 32	23/32	T	T	T	T	T	T	T	T	T	T
iC60L MA 40	LRD 33 55	30/40	T	T	T	T	T	T	T	T	T	T
NG125L MA 1.6	LRD 06	1/1.6	T	T	T	T	T	T	T	T	T	T
NG125L MA 2.5	LRD 07	1.6/2.5	T	T	T	T	T	T	T	T	T	T
NG125L MA 4	LRD 08	2.5/4	T	T	T	T	T	T	T	T	T	T
NG125L MA 6.3	LRD 10	4/6.3	T	T	T	T	T	T	T	T	T	T
NG125L MA 10	LRD 12	5.5/8	T	T	T	T	T	T	T	T	T	T
NG125L MA 10	LRD 14	7/10	T	T	T	T	T	T	T	T	T	T
NG125L MA 12.5	LRD 16	9/13	T	T	T	T	T	T	T	T	T	T
NG125L MA 16	LRD 21	12/18	T	T	T	T	T	T	T	T	T	T
NG125L MA 25	LRD 22	17/25	T	T	T	T	T	T	T	T	T	T
NG125L MA 40	LRD 32	23/32	T	T	T	T	T	T	T	T	T	T
NG125L MA 40	LRD 33 55	30/40	T	T	T	T	T	T	T	T	T	T
NG125L MA 63	LRD 33 57	37/50	T	T	T	T	T	T	T	T	T	T
NG125L MA 63	LRD 33 59	48/65	T	T	T	T	T	T	T	T	T	T
NS80H-MA 2.5	LRD 06	1/1.6	T	T	T	T	T	T	T	T	T	T
NS80H-MA 2.5	LRD 07	1.6/2.5	T	T	T	T	T	T	T	T	T	T
NS80H-MA 6.3	LRD 08	2.5/4	T	T	T	T	T	T	T	T	T	T
NS80H-MA 6.3	LRD 10	4/6.3	T	T	T	T	T	T	T	T	T	T
NS80H-MA 12.5	LRD 12	5.5/8	T	T	T	T	T	T	T	T	T	T
NS80H-MA 12.5	LRD 14	7/10	T	T	T	T	T	T	T	T	T	T
NS80H-MA 12.5	LRD 16	9/13	T	T	T	T	T	T	T	T	T	T
NS80H-MA 25	LRD 21	12/18	T	T	T	T	T	T	T	T	T	T
NS80H-MA 25	LRD 22	17/25	T	T	T	T	T	T	T	T	T	T
NS80H-MA 50	LRD 32	23/32	T	T	T	T	T	T	T	T	T	T
NS80H-MA 50	LRD 33 55	30/40	T	T	T	T	T	T	T	T	T	T
NS80H-MA 50	LRD 33 57	37/50	T	T	T	T	T	T	T	T	T	T
NS80H-MA 80	LRD 33 59	48/65		T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L MA 2.5	LRD 06	1/1.6	T	T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L MA 2.5	LRD 07	1.6/2.5	T	T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L MA 6.3	LRD 08	2.5/4	T	T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L MA 6.3	LRD 10	4/6.3	T	T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L/R MA 12.5	LRD 12	5.5/8	T	T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L/R MA 12.5	LRD 14	7/10	T	T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L/R MA 12.5	LRD 16	9/13	T	T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L/R MA 25	LRD 21	12/18	T	T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L/R MA 25	LRD 22	17/25	T	T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L/R MA 50	LRD 32	23/32	T	T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L/R MA 50	LRD 340	30/40	T	T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L/R MA 50	LRD 350	37/50	T	T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L/R MA 100	LRD 365	48/65		T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L/R MA 100	LRD 33 63	63/80		T	T	T	T	T	T	T	T	T
NSX100 F/N/H/S/L/R	MA	100			T	T	T	T	T	T	T	T
NSX160 F/N/H/S/L	MA	150					T			T	T	T
NSX250 F/N/H/S/L/R	MA	220										T
NSX100F	Micrologic 2.2 M	25/50	T	T	T	T	T	T	T	T	T	T
	or 6.2 E-M	100			T	T	T	T	T	T	T	T
NSX100N/H/S/L/R	Micrologic 2.2 M	25/50	T	T	T	T	T	T	T	T	T	T
	or 6.2 E-M	100			T	T	T	T	T	T	T	T
NSX160F	Micrologic 2.2 M	⩽ 100	T	T	T	T	T	T	T	T	T	T
	or 6.2 E-M	150					T			T	T	T
NSX160N/H/S/L	Micrologic 2.2 M	⩽ 100	T	T	T	T	T	T	T	T	T	T
	or 6.2 E-M	150					T			T	T	T
NSX250F	Micrologic 2.2 M	⩽ 150			4.8	4.8	4.8	T	T	T	T	T
	or 6.2 E-M	220										T
NSX250N/H/S/L/R	Micrologic 2.2 M	⩽ 150			4.8	4.8	4.8	T	T	T	T	T
	or 6.2 E-M	220										T
NSX400F/N/H/S/L/R	Micrologic 2.3 M	160					4.8			6.9	6.9	6.9
	or 6.3 E-M	220									6.9	6.9

Motor protection discrimination

Upstream: NS630b - 1600 N/H
Downstream: GV2, GV3, TeSys U, iC60 L MA, NG125 L MA, NS80H MA, NSX100 - 630

Ue ⩽ 440 V AC

Upstream		NS630b 800 1000 1250 1600 N/H							NS630b 800 1000 1250 1600 N/H							NS630b 800 1000 1250 1600 N/H						
Trip Unit		Micrologic 2.0							Micrologic 5.0 - 6.0 - 7.0 Inst...In							Micrologic 5.0 - 6.0 - 7.0 Inst OFF						
Downstream	Rating	630			800	1000	1250	1600	630			800	1000	1250	1600	630			800	1000	1250	1600
	Setting Ir	250	400	630	800	1000	1250	1600	250	400	630	800	1000	1250	1600	250	400	630	800	1000	1250	1600
Discrimination limit (kA)																						
GV2 ME01..ME32		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P01...P32		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L03..L32 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
LUB12 + LUCx6..12		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
LUB32 + LUCx6..32		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 P13...P65		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 L25..L65 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60 L MA1.6... MA40 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125L MA2.5... MA63 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS80 H MA1.5...80 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX100B/F/N/H/S/L MA 2.5...MA6.3 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX100B/F/N/H/S/ L/R MA12.5...MA100 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX160B/F/N/H/S/L MA150 + LR9D/F	150		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX250B/F/N/H/S/ L/R MA220 + LR9D/F	220			T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX400F/N/H/S/L/R Micrologic 1.3M +LR9F	320					T	T	T					T	T	T					T	T	T
NSX630 F/N Micrologic 1.3M +LR9F	500							T							T							T
NSX630 H/S/L/R Micrologic 1.3M +LR9F	500							65							65							65
NSX100 B/ FN/H/S/L/R	25	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	50	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Micrologic 2.2M 6.2M	100 (80)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX160 B/F/N/H/S/L	⩽ 100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Micrologic 2.2M 6.2M	150		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
NSX250 B/F/N/H/S/L/R	⩽ 150		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
Micrologic 2.2M 6.2M	220			T	T	T	T	T			T	T	T	T	T			T	T	T	T	T
NSX400F/N/H/S/L/R Micrologic 2.3M 6.3M	320					T	T	T					T	T	T					T	T	T
NSX630F/N Micrologic 2.3M 6.3M	500							T							T							T
NSX630H/S/L/R Micrologic 2.3M 6.3M	500							65							65							65

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

***Note**: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.*

Motor protection discrimination

Upstream: NS630b - 1000 L
Downstream: GV2, GV3, TeSys U, iC60 L MA, NG125L MA, NS80H MA, NSX100-630

Ue ⩽ 440 V AC

Upstream		NS630b 800 1000 L														
Trip Unit		Micrologic 2.0					Micrologic 5.0 - 6.0 - 7.0 Inst 15 In					Micrologic 5.0 - 6.0 - 7.0 Inst OFF				
Downstream	Rating	630			800	1000	630			800	1000	630			800	1000
	Setting Ir	250	400	630	800	1000	250	400	630	800	1000	250	400	630	800	1000
Discrimination limit (kA)																
GV2 ME01..ME32		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P01 .. P32		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L03..L32 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
LUB12 + LUCx6..12		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
LUB32 + LUCx6..32		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 P13 .. P65		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 L25..L65 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60 L MA1.6 ... MA40 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125L MA2.5 .. MA63 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS80 H MA1.5 .. 80 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX100B/F/N/H/S/L MA 2.5 .. MA6.3 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX100B/F/N/H/S/L/R MA12.5 .. MA100 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX160B/F MA150 + LR9D/F	150		T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX160N/H/S/L MA150 + LR9D/F	150		36	36	T	T		36	36	T	T		36	36	T	T
NSX250B/F/N/H/S/L/R MA220 + LR9D/F	220			20	T	T	20	20	20	T	T	20	20	20	T	T
NSX400F/N/H/S/L/R Micrologic 1.3M +LR9F	320					15										15
NSX630 F/N/H/S/L/R Micrologic 1.3M +LR9F	500															
NSX100 B/FN/H/S/L/R Micrologic 2.2M 6.2M	25	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	50	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100 (80)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX160 B/F/N/H/S/L	⩽ 100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Micrologic 2.2M 6.2M	150		T	T	T	T		T	T	T	T		T	T	T	T
NSX250 B/F/N/H/S/L/R	⩽ 150		20	20	T	T		20	20	T	T		20	20	T	T
Micrologic 2.2M 6.2M	220			20	T	T			20	T	T			20	T	T
NSX400F/N/H/S/L/R Micrologic 2.3M 6.3M	320				15	15				15	15				15	15
NSX630F/N/H/S/L/R Micrologic 2.3M 6.3M	500					10					10					10

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

No discrimination.

***Note**: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.*

Motor protection discrimination

Upstream: NS1600b - 3200 N
Downstream: GV2, GV3, TeSys U, iC60 L MA, NG125 L MA, NS80H MA, NSX100 - 630

Ue ⩽ 440 V AC

Upstream		NS1600 2000 2500 3200 N											
Trip Unit		Micrologic 2.0				Micrologic 5.0 - 6.0 - 7.0 Inst 15In				Micrologic 5.0 - 6.0 - 7.0 Inst OFF			
Downstream	Rating	1600	2000	2500	3200	1600	2000	2500	3200	1600	2000	2500	3200
Discrimination limit (kA)													
GV2 ME01..ME32		T	T	T	T	T	T	T	T	T	T	T	T
GV2 P01 .. P32		T	T	T	T	T	T	T	T	T	T	T	T
GV2 L03..L32 + LRD		T	T	T	T	T	T	T	T	T	T	T	T
LUB12 + LUCx6..12		T	T	T	T	T	T	T	T	T	T	T	T
LUB32 + LUCx6..32		T	T	T	T	T	T	T	T	T	T	T	T
GV3 P13 .. P65		T	T	T	T	T	T	T	T	T	T	T	T
GV3 L25..L65 + LRD		T	T	T	T	T	T	T	T	T	T	T	T
iC60 L MA1.6 … MA40 + LRD		T	T	T	T	T	T	T	T	T	T	T	T
NG125L MA2.5 .. MA63 + LRD		T	T	T	T	T	T	T	T	T	T	T	T
NS80 H MA1.5 .. 80 + LRD		T	T	T	T	T	T	T	T	T	T	T	T
NSX100B/F/N/H/S/L MA 2.5 .. MA6.3 + LRD		T	T	T	T	T	T	T	T	T	T	T	T
NSX100B/F/N/H/S/L/R MA12.5 .. MA100 + LRD		T	T	T	T	T	T	T	T	T	T	T	T
NSX160B/F/N/H/S/L MA150 + LR9D/F	150	T	T	T	T	T	T	T	T	T	T	T	T
NSX250B/F/N/H/S/L/R MA220 + LR9D/F	220	T	T	T	T	T	T	T	T	T	T	T	T
NSX400F/N/H/S/L/R Micrologic 1.3M +LR9F	320	T	T	T	T	T	T	T	T	T	T	T	T
NSX630 F/N/H/S/L/R Micrologic 1.3M +LR9F	500	T	T	T	T	T	T	T	T	T	T	T	T
NSX100 B/FN/H/S/L/R Micrologic 2.2M 6.2M	25	T	T	T	T	T	T	T	T	T	T	T	T
	50	T	T	T	T	T	T	T	T	T	T	T	T
	100 (80)	T	T	T	T	T	T	T	T	T	T	T	T
NSX160 B/F/N/H/S/L	⩽ 100	T	T	T	T	T	T	T	T	T	T	T	T
Micrologic 2.2M 6.2M	150	T	T	T	T	T	T	T	T	T	T	T	T
NSX250 B/F/N/H/S/L/R	⩽ 150	T	T	T	T	T	T	T	T	T	T	T	T
Micrologic 2.2M 6.2M	220	T	T	T	T	T	T	T	T	T	T	T	T
NSX400F/N/H/S/L/R Micrologic 2.3M 6.3M	320	T	T	T	T	T	T	T	T	T	T	T	T
NSX630F/N/H/S/L/R	320	T	T	T	T	T	T	T	T	T	T	T	T
Micrologic 2.3M 6.3M	500	T	T	T	T	T	T	T	T	T	T	T	T

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

No discrimination.

***Note**: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.*

Motor protection discrimination

Upstream: Masterpact NT06 - 16 H1/H2
Downstream: GV2, GV3, TeSys U, iC60 L MA, NG125 L MA, NS80H MA, NSX100 - 630

Ue ⩽ 440 V AC

Upstream		Masterpact NT06 08 12 16 H1/H2																				
Trip Unit		Micrologic 2.0							Micrologic 5.0 - 6.0 - 7.0 Inst 15 In								Micrologic 5.0 - 6.0 - 7.0 Inst OFF						
Downstream	Rating	630			800	1000	1250	1600	630			800	1000	1250	1600	630			800	1000	1250	1600
	Setting Ir	250	400	630	800	1000	1250	1600	250	400	630	800	1000	1250	1600	250	400	630	800	1000	1250	1600
Discrimination limit (kA)																						
GV2 ME01...ME32		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P01...P32		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L03...L32 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
LUB12 + LUCx6...12		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
LUB32 + LUCx6...32		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 P13...P65		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 L25...L65 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60 L MA1.6…MA40 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125L MA2.5...MA63 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS80 H MA1.5...80 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX100B/F/N/H/S/L MA 2.5...MA6.3 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX100B/F/N/H/S/L/R MA12.5...MA100 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX160B/F/N/H/S/L MA150 + LR9D/F	150		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
NSX250B/F/N/H/S/L/R MA220 + LR9D/F	220			T	T	T	T	T			T	T	T	T	T			T	T	T	T	T
NSX400F/N/H/S/L/R Micrologic 1.3M +LR9F	320					T	T	T					T	T	T					T	T	T
NSX630 F/N/H/S/L/R Micrologic 1.3M +LR9F	500																					T
NSX100 B/FN/H/S/L/R Micrologic 2.2M 6.2M	25	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	50	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100 (80)		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
NSX160 B/F/N/H/S/L Micrologic 2.2M 6.2M	⩽ 100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	150		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
NSX250 B/F/N/H/S/L/R Micrologic 2.2M 6.2M	⩽ 150	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	220		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
NSX400F/N/H/S/L/R Micrologic 2.3M 6.3M	320						T	T						T	T						T	T
NSX630F/N/H/S/L/R Micrologic 2.3M 6.3M	400						T	T						T	T						T	T
	500							T							T							T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

Note: *respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.*

Motor protection discrimination

Upstream: Masterpact NT06 - 10 L1
Downstream: GV2, GV3, TeSys U, iC60 L MA, NG125 L MA, NS80H MA, NSX100 - 630

Ue ⩽ 440 V AC

Upstream		Masterpact NT06 08 10 L1														
Trip Unit		Micrologic 2.0					Micrologic 5.0 - 6.0 - 7.0 Inst 15 In					Micrologic 5.0 - 6.0 - 7.0 Inst OFF				
Downstream	Rating	630			800	1000	630			800	1000	630			800	1000
	Setting Ir	250	400	630	800	1000	250	400	630	800	1000	250	400	630	800	1000
Discrimination limit (kA)																
GV2 ME01...ME32		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P01...P32		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L03...L32 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
LUB12 + LUCx6...12		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
LUB32 + LUCx6...32		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 P13...P65		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 L25...L65 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60 L MA1.6…MA40 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125L MA2.5... MA63 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS80 H MA1.5...80 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX100B/F/N/H/S/L MA 2.5...MA6.3 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX100B/F/N/H/S/L/R MA12.5...MA100 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX160B/F MA150 + LR9D/F	150		T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX160N/H/S/L MA150 + LR9D/F	150		36	36	T	T		36	36	T	T		36	36	T	T
NSX250B/F/N/H/S/L/R MA220 + LR9D/F	220			20	T	T			20	T	T			20	T	T
NSX400F/N/H/S/L/R Micrologic 1.3M + LR9F	320					15					15					15
NSX630 F/N/H/S/L/R Micrologic 1.3M +LR9F	500															
NSX100 B/FN/H/S/L/R Micrologic 2.2M 6.2M	25	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	50	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100 (80)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX160 B/F Micrologic 2.2M 6.2M	⩽ 100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	150		T	T	T	T		T	T	T	T		T	T	T	T
NSX160 N/H/S/L Micrologic 2.2M 6.2M	⩽ 100	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
	150		36	36	36	36		36	36	36	36		36	36	36	36
NSX250 B/F/N/H/S/L/R Micrologic 2.2M 6.2M	⩽ 150		20	20	T	T		20	20	T	T		20	20	T	T
	220			20	T	T			20	T	T			20	T	T
NSX400F/N/H/S/L/R Micrologic 2.3M 6.3M	320				15	15				15	15				15	15
NSX630F/N/H/S/L/R Micrologic 2.3M 6.3M	500					10					10					10

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

***Note**: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.*

Motor protection discrimination

Upstream: Masterpact NW08 - 20 N1/H1/H2/L1
Downstream: GV2, GV3, TeSys U, iC60 L MA, NG125 L MA, NS80H MA, NSX100 - 630

Ue ⩽ 440 V AC

Upstream	Masterpact NW 08 12 16 20 N1 / H1 / H2 / L1																					
Trip Unit	Micrologic 2.0								Micrologic 5.0 - 6.0 - 7.0 Inst 15 In								Micrologic 5.0 - 6.0 - 7.0 Inst OFF							
Downstream	Rating	800			1000	1250	1600	2000	800			1000	1250	1600	2000	800			1000	1250	1600	2000
	Setting Ir	320	630	800	1000	1250	1600	2000	320	630	800	1000	1250	1600	2000	320	630	800	1000	1250	1600	2000
Discrimination limit (kA)																						
GV2 ME01...ME32		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P01...P32		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L03...L32 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
LUB12 + LUCx6...12		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
LUB32 + LUCx6...32		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 P13...P65		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 L25...L65 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60 L MA1.6…MA40 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125L MA2.5...MA63 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS80 H MA1.5...80 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX100B/F/N/H/S/L MA 2.5 .. MA6.3 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX100B/F/N/H/S/L/R MA12.5 .. MA100 + LRD		T	T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
NSX160B/F/N/H/S/L MA150 + LR9D/F	150	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX250B/F/N/H/S/L/R MA220 + LR9D/F	220		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
NSX400F/N/H/S/L/R Micrologic 1.3M +LR9F	320				T	T	T	T				T	T	T	T				T	T	T	T
NSX630 F/N/H/S/L/R Micrologic 1.3M +LR9F	500						T	T						T	T						T	T
NSX100 B/FN/H/S/L/R Micrologic 2.2M 6.2M	25	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	50	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100 (80)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX160 B/F/N/H/S/L Micrologic 2.2M 6.2M	⩽ 100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	150		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
NSX250 B/F/N/H/S/L/R Micrologic 2.2M 6.2M	⩽ 150		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
	220		T	T	T	T	T	T		T	T	T	T	T	T		T	T	T	T	T	T
NSX400F/N/H/S/L/R Micrologic 2.3 6.3M	320				T	T	T	T				T	T	T	T				T	T	T	T
NSX630F/N/H/S/L/R Micrologic 2.3 6.3M	500						T	T						T	T						T	T

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 *Discrimination limit = 4 kA.*

No discrimination.

***Note**: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.*

Motor protection discrimination

Upstream: Masterpact NW25 - 40 H1/H2, NW40b - 63 H1
Downstream: GV2, GV3, TeSys U, iC60 L MA, NG125 L MA, NS80H MA, NSX100 - 630

Ue ⩽ 440 V AC

Upstream		NW25 32 40 H1/H2			NW40b 50 63 H1			NW25 32 40 H1/H2			NW40b 50 63 H1			NW25 32 40 H1/H2			NW40b 50 63 H1		
Trip Unit		Micrologic 2.0						Micrologic 5.0 - 6.0 - 7.0 Inst 15 In						Micrologic 5.0 - 6.0 - 7.0 Inst OFF					
Downstream	Rating	2500	3200	4000	4000	5000	6300	2500	3200	4000	4000	5000	6300	2500	3200	4000	4000	5000	6300
Discrimination limit (kA)																			
GV2 ME01...ME32		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P01...P32		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L03...L32 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
LUB12 + LUCx6...12		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
LUB32 + LUCx6...32		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 P13...P65		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 L25...L65 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60 L MA1.6…MA40 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125L MA2.5...MA63 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS80 H MA1.5...80 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX100B/F/N/H/S/L MA 2.5 .. MA6.3 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX100B/F/N/H/S/L/R MA12.5 .. MA100 + LRD		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX160B/F/N/H/S/L MA150 + LR9D/F	150	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX250B/F/N/H/S/L/R MA220 + LR9D/F	220	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX400F/N/H/S/L/R Micrologic 1.3M +LR9F	320	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX630 F/N/H/S/L/R Micrologic 1.3M +LR9F	500	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX100 B/FN/H/S/L/R Micrologic 2.2M 6.2M	25/50/100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX160 B/F/N/H/S/L Micrologic 2.2M 6.2M	150	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX250 B/F/N/H/S/L/R Micrologic 2.2M 6.2M	⩽ 150	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	220	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX400F/N/H/S/L/R Micrologic 2.3 6.3M	320	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX630F/N/H/S/L/R Micrologic 2.3 6.3M	500	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T

T *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

***Note**: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.*

Motor protection discrimination

Upstream: Masterpact NW20 - 40 H3, NW40b - 63 H2
Downstream: GV2, GV3, TeSys U, iC60 L MA, NG125 L MA, NS80H MA, NSX100 - 630

Ue ⩽ 440 V AC

Upstream	NW20 25 32 40				NW40b 50 63			NW20 25 32 40				NW40b 50 63			NW20 25 32 40				NW40b 50 63		
	H3				H2			H3				H2			H3				H2		
Trip Unit	Micrologic 2.0							Micrologic 5.0 - 6.0 - 7.0 Inst 15 In							Micrologic 5.0 - 6.0 - 7.0 Inst OFF						
Downstream	2000	2500	3200	4000	4000	5000	6300	2000	2500	3200	4000	4000	5000	6300	2000	2500	3200	4000	4000	5000	6300
Discrimination limit (kA)																					
GV2 ME01...ME32	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 P01...P32	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L03...L32 + LRD	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
LUB12 + LUCx6...12	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
LUB32 + LUCx6...32	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 P13...P65	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 L25...L65 + LRD	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iC60 L MA1.6…MA40 + LRD	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125L MA2.5...MA63 + LRD	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS80 H MA1.5...80 + LRD	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX100B/F/N/H/S/L MA 2.5...MA6.3 + LRD	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX100B/F/N/H/S/L/R MA12.5...MA100 + LRD	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX160B/F/N/H/S/L MA150 + LR9D/F	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX250B/F/N/H/S/L/R MA220 + LR9D/F	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX400F/N/H/S/L/R Micrologic 1.3M + LR9F	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX630 F/N/H/S/L/R Micrologic 1.3M + LR9F	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX100 B/FN/H/S/L/R Micrologic 2.2M 6.2M	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX160 B/F/N/H/S/L Micrologic 2.2M 6.2M	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX250 B/F/N/H/S/L/R Micrologic 2.2M 6.2M	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX400F/N/H/S/L/R Micrologic 2.3 6.3M 320	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSX630F/N/H/S/L/R Micrologic 2.3 6.3M 500	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T

T — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

4 — *Discrimination limit = 4 kA.*

No discrimination.

***Note**: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.*

Motor protection cascading

Upstream: NG125, NG160, Compact NSX
Downstream: iC60, NG125, Compact NS, LUB, GV, Integral

Network 220/240 V

Upstream			NG125N	NG125H	NG125L	NG160N	NG160H	NSX100B NSX160B NSX250B	NSX100F	NSX100N	NSX100H	NSX100S	NSX100L NSX160L
Breaking capacity (kA rms)			50	70	100	40	50	40	85	90	100	120	150
Downstream			**Breaking capacity (kA rms)**										
	Rating (A)	Icu (kA)											
iC60L MA	16	40	50	70	100		50		65	80	80	80	80
	40	30	50	70	70	40	50	40	65	80	80	80	80
NG125L	80	100										120	150
NG125L MA	80	100										120	150
NS80H-MA												120	150
LUB12											100	120	150
LUB22											100	120	150
GV2 ME ≥ 23 A									85	90	100	120	100
Integral 63 ≥ 32 A									85	90	100		150

Upstream			NSX160F	NSX160N	NSX160H	NSX160S	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L	
Breaking capacity (kA rms)			85	90	100	120	85	90	100	120	150	
Downstream			**Breaking capacity (kA rms)**									
	Rating (A)	Icu (kA)										
iC60L MA	16	40	65	80	80	80	65	80	80	80	80	
	40	30	65	80	80	80	50	65	65	65	65	
NG125L MA	80	100				120				120	150	
NG125L MA	80	100				120				120	150	
NS80H-MA						120				120	150	
LUB12					100	120			100	120	150	
LUB22					100	120			100	120	150	
GV2 ME ≥ 23 A			85	90	100	100	85	90	100	100	100	
Integral 63 ≥ 32 A				85	90	100	85		90	100	150	

Upstream			NSX400F NSX630F	NSX400N NSX630N	NSX400H NSX630H	NSX400S	NSX400L	NSX630S	NSX630L	
Breaking capacity (kA rms)			40	85	100	120	150	120	150	
Downstream			**Breaking capacity (kA rms)**							
NS80H-MA						120	150		150	
LUB12										
LUB22										
GV2 ME ≥ 23 A										
Integral 63 ≥ 32 A							150			

Note: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.

Motor protection cascading

Upstream: NG125, NG160, Compact NSX
Downstream: iC60, NG125, Compact NS, LUB, GV, Integral

Network 380/415 V

Upstream			NG125N	NG125H	NG125L	NG160E	NG160N	NG160H	NSX100B NSX160B NSX250B	NSX100F	NSX160F
Breaking capacity (kA rms)			25	36	50	16	25	36	25	36	36
Downstream			**Breaking capacity (kA rms)**								
	Rating (A)	Icu (kA)									
iC60L MA	16	20	25	36	50		25	36	25	36	36
	40	15	25	36	36	16	25	25	25	36	30
NG125L	80	50									
NG125L MA	80	50									
NS80H-MA											
LUB12											
LUB22											
GV2 ME ≥ 14 A									25	36	36
GV2 L ≥ 18 A											
GV2 P ≥ 18 A											
GV3 M											
Integral 63 ≥ 32 A											

Upstream			NSX100N NSX160N	NSX100H NSX160H	NSX100S NSX160S	NSX100L NSX160L	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
Breaking capacity (kA rms)			50	70	100	150	36	50	70	100	150
Downstream			**Breaking capacity (kA rms)**								
	Rating (A)	Icu (kA)									
iC60L MA	16	20	40	40	40	40	30	30	30	30	30
	40	15	36	36	36	36	25	25	25	25	25
NG125L	80	50		70	100	150			70	100	150
NG125L MA	80	50		70	100	150			70	100	150
NS80H-MA					100	150				100	150
LUB12				70	100	150			70	100	150
LUB22				70	100	150			70	100	150
GV2 ME ≥ 14 A			40	50	50	50	36	40	50	50	50
GV2 L ≥ 18 A				70	100	150			70	100	150
GV2 P ≥ 18 A				70	100	150			70	100	150
GV3 M			50	70		150		50	70		150
Integral 63 ≥ 32 A				70		150			70		150

Upstream	NSX400F NSX630F	NSX400N NSX630N	NSX400H	NSX400S NSX630S	NSX400L	NSX630F	NSX630N	NSX630H	NSX630S	NSX630L
Breaking capacity (kA rms)	36	50	70	100	150	36	50	70	100	150
Downstream	**Breaking capacity (kA rms)**									
NS80H-MA				100	150				100	150
Integral 63 ≥ 32 A			70		150					

Network 440 V

Upstream	NSX100B NSX160B NSX250B	NSX100F NSX160F NSX250F	NSX100N NSX160N NSX250N	NSX100H NSX160H NSX250H	NSX100S NSX160S NSX250S	NSX100L NSX160L NSX250L
Breaking capacity (kA rms)	20	35	50	65	90	130
Downstream	**Breaking capacity (kA rms)**					
NS80H-MA					90	130
LUB12				65	90	130
LUB32				65	90	130
Integral 63 ≥ 25 A			50	65		130

Upstream	NSX400F NSX630F	NSX400N NSX630N	NSX400H NSX630H	NSX400S NSX630S	NSX400L	NSX630L
Breaking capacity (kA rms)	35	50	65	90	130	130
Downstream	**Breaking capacity (kA rms)**					
NS80H-MA				90	90	90
Integral 63 ≥ 25 A			65		130	

Note: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.

Discrimination enhanced by cascading

Upstream: NSX160 to 400
Downstream: LUB, Integral

Ue: 380-415 V AC

Upstream			NSX160H		NSX160S		NSX160L		NSX250H		NSX250S		NSX250L	
Breaking capacity			70 kA		100 kA		150 kA		70 kA		100 kA		150 kA	
Trip unit			TM-D		TM-D		TM-D		TM-D		TM-D		TM-D	
Downst.	**Thermal relay**	**Rating (A)**	**80/100**	**125/160**	**80/100**	**125/160**	**80/100**	**125/160**	**160**	**200/250**	**160**	**200/250**	**160**	**200/250**
Tesys U	**LUC*X6**	**0.15/0.6**		70/70		100/100		150/150	70/70	70/70	100/100	100/100	100/100	100/100
LUB12	**LUC*1X**	**0.35/1.4**		70/70		100/100		150/150	70/70	70/70	100/100	100/100	100/100	100/100
	LUC*05	**1.25/5**		70/70		100/100		150/150	70/70	70/70	100/100	100/100	100/100	100/100
	LUC*12	**3/12**		70/70		100/100		150/150	70/70	70/70	100/100	100/100	100/100	100/100
Tesys U	**LUC*X6**	**0.15/0.6**		5/70		5/100		5/150	5/70	70/70	5/100	100/100	5/100	100/100
LUB32	**LUC*1X**	**0.35/1.4**		5/70		5/100		5/150	5/70	70/70	5/100	100/100	5/100	100/100
	LUC*05	**1.25/5**		5/70		5/100		5/150	5/70	70/70	5/100	100/100	5/100	100/100
	LUC*12	**3/12**		5/70		5/100		5/150	5/70	70/70	5/100	100/100	5/100	100/100
	LUC*18	**4.5/18**		5/70		5/100		5/150	5/70	70/70	5/100	100/100	5/100	100/100
	LUC*32	**8/32**		5/70		5/100		5/150	5/70	70/70	5/100	100/100	5/100	100/100
Integral 63	**LB1-LD03M16**	**10/13**								70/70		100/100		150/150
LD1-LD030	**LB1-LD03M21**	**11/18**								70/70		100/100		150/150
LD4-LD130	**LB1-LD03M22**	**18/25**								70/70		100/100		150/150
LD4-LD030	**LB1-LD03M53**	**23/32**								70/70		100/100		150/150
	LB1-LD03M55	**28/40**								70/70		100/100		150/150
	LB1-LD03M57	**35/ 50**								70/70		100/100		150/150
	LB1-LD03M61	**45/63**								70/70		100/100		150/150

Upstream			NSX160H	NSX160L	NSX160L	NSX250H	NSX250S	NSX250L	NSX400H	NSX400S	NSX400L
Breaking capacity			70 kA	100 kA	150 kA	70 kA	100 kA	150 kA	70 kA	100 kA	150 kA
Trip unit			Micrologic								
Downst.	**Thermal relay**	**Rating (A)**	**160**	**160**	**160**	**250**	**250**	**250**	**400**	**400**	**400**
Tesys U	**LUC*X6**	**0.15/0.6**	70/70	100/100	150/150	70/70	100/100	100/100			
LUB12	**LUC*1X**	**0.35/1.4**	70/70	100/100	150/150	70/70	100/100	100/100			
	LUC*05	**1.25/5**	70/70	100/100	150/150	70/70	100/100	100/100			
	LUC*12	**3/12**	70/70	100/100	150/150	70/70	100/100	100/100			
Tesys U	**LUC*X6**	**0.15/0.6**	5/70	5/100	5/150	70/70	100/100	100/100			
LUB32	**LUC*1X**	**0.35/1.4**	5/70	5/100	5/150	70/70	100/100	100/100			
	LUC*05	**1.25/5**	5/70	5/100	5/150	70/70	100/100	100/100			
	LUC*12	**3/12**	5/70	5/100	5/150	70/70	100/100	100/100			
	LUC*18	**4.5/18**	5/70	5/100	5/150	70/70	100/100	100/100			
	LUC*32	**8/32**	5/70	5/100	5/150	70/70	100/100	100/100			
Integral 63	**LB1-LD03M16**	**10/13**	70/70	100/100	150/150	70/70	100/100	150/150	70/70	100/100	150/150
LD1-LD030	**LB1-LD03M21**	**11/18**				70/70	100/100	150/150	70/70	100/100	150/150
LD4-LD130	**LB1-LD03M22**	**18/25**				70/70	100/100	150/150	70/70	100/100	150/150
LD4-LD030	**LB1-LD03M53**	**23/32**				70/70	100/100	150/150	70/70	100/100	150/150
	LB1-LD03M55	**28/40**				70/70	100/100	150/150	70/70	100/100	150/150
	LB1-LD03M57	**35/50**				70/70	100/100	150/150	70/70	100/100	150/150
	LB1-LD03M61	**45/63**				70/70	100/100	150/150	70/70	100/100	150/150

Note: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.

Discrimination enhanced by cascading

Upstream: NSX160
Downstream: GV2 ME

Ue: 380-415 V AC

Upstream			NSX160B								NSX160F								
Breaking capacity			25 kA								36 kA								
Trip unit			TM-D								TM-D								
Downst.	**Thermal relay**	**Rating (A)**	**16**	**25**	**40**	**63**	**80**	**100**	**125**	**160**	**16**	**25**	**32**	**40/50**	**63**	**80**	**100**	**125**	**160**
GV2 ME01	Integrated	0.1/0.16	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	36/36	36/36	36/36	36/36	36/36	36/36	36/36	36/36	36/36
GV2 ME02	Integrated	0.16/0.25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	36/36	36/36	36/36	36/36	36/36	36/36	36/36	36/36	36/36
GV2 ME03	Integrated	0.25/0.40	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	36/36	36/36	36/36	36/36	36/36	36/36	36/36	36/36	36/36
GV2 ME04	Integrated	0.40/0.63	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	36/36	36/36	36/36	36/36	36/36	36/36	36/36	36/36	36/36
GV2 ME05	Integrated	0.63/1	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	36/36	36/36	36/36	36/36	36/36	36/36	36/36	36/36	36/36
GV2 ME06	Integrated	1/1.6		25/25	25/25	25/25	25/25	25/25	25/25	25/25		36/36	36/36	36/36	36/36	36/36	36/36	36/36	36/36
GV2 ME07	Integrated	1.6/2.5			25/25	25/25	25/25	25/25	25/25	25/25			36/36	36/36	36/36	36/36	36/36	36/36	36/36
GV2 ME08	Integrated	2.5/4							25/25	25/25								36/36	36/36
GV2 ME10	Integrated	4/6.3							25/25	25/25								36/36	36/36
GV2 ME14	Integrated	6/10							25/25	25/25								36/36	36/36
GV2 ME16	Integrated	9/14							25/25	25/25								36/36	36/36
GV2 ME20	Integrated	13/18							25/25	25/25								36/36	36/36
GV2 ME21	Integrated	17/23							25/25	25/25								36/36	36/36
GV2 ME22	Integrated	20/25							25/25	25/25								36/36	36/36
GV2 ME32	Integrated	24/32							25/25	25/25								36/36	36/36

Upstream			NSX160N/H/S/L									
Breaking capacity			50/70/100/150 kA									
Trip unit			TM-D									
Downst.	**Thermal relay**	**Rating (A)**	**16**	**25**	**32**	**40**	**50**	**63**	**80**	**100**	**125**	**160**
GV2 ME01	Integrated	0.1/0.16	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 ME02	Integrated	0.16/0.25	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 ME03	Integrated	0.25/0.40	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 ME04	Integrated	0.40/0.63	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 ME05	Integrated	0.63/1	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 ME06	Integrated	1/1.6		50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 ME07	Integrated	1.6/2.5			50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 ME08	Integrated	2.5/4									50/50	50/50
GV2 ME10	Integrated	4/6.3									50/50	50/50
GV2 ME14	Integrated	6/10									50/50	50/50
GV2 ME16	Integrated	9/14									50/50	50/50
GV2 ME20	Integrated	13/18									50/50	50/50
GV2 ME21	Integrated	17/23									50/50	50/50
GV2 ME22	Integrated	20/25									50/50	50/50
GV2 ME32	Integrated	24/32									50/50	50/50

Upstream			NSX160B	NSX160F	NSX160F
Breaking capacity			25 kA	36 kA	50/70/100/150 kA
Trip unit			Micrologic	Micrologic	Micrologic
Downst.	**Thermal relay**	**Rating (A)**	**160**	**160**	**160**
GV2 ME01	Integrated	0.1/0.16	25/25	36/36	50/50
GV2 ME02	Integrated	0.16/0.25	25/25	36/36	50/50
GV2 ME03	Integrated	0.25/0.40	25/25	36/36	50/50
GV2 ME04	Integrated	0.40/0.63	25/25	36/36	50/50
GV2 ME05	Integrated	0.63/1	25/25	36/36	50/50
GV2 ME06	Integrated	1/1.6	25/25	36/36	50/50
GV2 ME07	Integrated	1.6/2.5	25/25	36/36	50/50
GV2 ME08	Integrated	2.5/4	25/25	36/36	50/50
GV2 ME10	Integrated	4/6.3	25/25	36/36	50/50
GV2 ME14	Integrated	6/10	25/25	36/36	50/50
GV2 ME16	Integrated	9/14	25/25	36/36	50/50
GV2 ME20	Integrated	13/18	25/25	36/36	50/50
GV2 ME21	Integrated	17/23	25/25	36/36	50/50
GV2 ME22	Integrated	20/25	25/25	36/36	50/50
GV2 ME32	Integrated	24/32	25/25	36/36	50/50

Note: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.

Discrimination enhanced by cascading

Upstream: NSX160
Downstream: GV2 P

Ue: 380-415 V AC

Upstream			NSX160H				NSX160S			
Breaking capacity			70 kA				100 kA			
Trip unit			TM-D				TM-D			
Downst.	**Thermal relay**	**Rating (A)**	**80**	**100**	**125**	**160**	**80**	**100**	**125**	**160**
GV2 P01	Integrated	0.1/0.16	70/70	70/70	70/70	70/70	100/100	100/100	100/100	100/100
GV2 P02	Integrated	0.16/0.25	70/70	70/70	70/70	70/70	100/100	100/100	100/100	100/100
GV2 P03	Integrated	0.25/0.40	70/70	70/70	70/70	70/70	100/100	100/100	100/100	100/100
GV2 P04	Integrated	0.40/0.63	70/70	70/70	70/70	70/70	100/100	100/100	100/100	100/100
GV2 P05	Integrated	0.63/1	70/70	70/70	70/70	70/70	100/100	100/100	100/100	100/100
GV2 P06	Integrated	1/1.6	70/70	70/70	70/70	70/70	100/100	100/100	100/100	100/100
GV2 P07	Integrated	1.6/2.5	70/70	70/70	70/70	70/70	100/100	100/100	100/100	100/100
GV2 P08	Integrated	2.5/4			70/70	70/70	100/100	100/100	100/100	100/100
GV2 P10	Integrated	4/6.3			70/70	70/70	100/100	100/100	100/100	100/100
GV2 P14	Integrated	6/10			70/70	70/70	100/100	100/100	100/100	100/100
GV2 P16	Integrated	9/ 14			70/70	70/70	100/100	100/100	100/100	100/100
GV2 P20	Integrated	13/18			70/70	70/70	100/100	100/100	100/100	100/100
GV2 P21	Integrated	17/23			70/70	70/70	100/100	100/100	100/100	100/100
GV2 P22	Integrated	20/25			70/70	70/70	100/100	100/100	100/100	100/100

Upstream			NSX160L				NSX160H	NSX160S	NSX160L
Breaking capacity			150 kA				70 kA	100 kA	150 kA
Trip unit			TM-D				Micrologic	Micrologic	Micrologic
Downst.	**Thermal relay**	**Rating (A)**	**80**	**100**	**125**	**160**	**160**	**160**	**160**
GV2 P01	Integrated	0.1/0.16	150/150	150/150	150/150	150/150	70/70	100/100	150/150
GV2 P02	Integrated	0.16/0.25	150/150	150/150	150/150	150/150	70/70	100/100	150/150
GV2 P03	Integrated	0.25/0.40	150/150	150/150	150/150	150/150	70/70	100/100	150/150
GV2 P04	Integrated	0.40/0.63	150/150	150/150	150/150	150/150	70/70	100/100	150/150
GV2 P05	Integrated	0.63/1	150/150	150/150	150/150	150/150	70/70	100/100	150/150
GV2 P06	Integrated	1/1.6	150/150	150/150	150/150	150/150	70/70	100/100	150/150
GV2 P07	Integrated	1.6/2.5	150/150	150/150	150/150	150/150	70/70	100/100	150/150
GV2 P08	Integrated	2.5/4			150/150	150/150	70/70	100/100	150/150
GV2 P10	Integrated	4/6.3			150/150	150/150	70/70	100/100	150/150
GV2 P14	Integrated	6/10			150/150	150/150	70/70	100/100	150/150
GV2 P16	Integrated	9/14			150/150	150/150	70/70	100/100	150/150
GV2 P20	Integrated	13/18			150/150	150/150	70/70	100/100	150/150
GV2 P21	Integrated	17/23			150/150	150/150	70/70	100/100	150/150
GV2 P22	Integrated	20/25			150/150	150/150	70/70	100/100	150/150

Note: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.

Discrimination enhanced by cascading

Upstream: NSX160
Downstream: GV2 L

Ue: 380-415 V AC

Upstream			NSX160H				NSX160S			
Breaking capacity			70 kA				100 kA			
Trip unit			TM-D				TM-D			
Downst.	**Thermal relay**	**Rating (A)**	**80**	**100**	**125**	**160**	**80**	**100**	**125**	**160**
GV2 L03	**LR2 D13 03**	**0.25/0.40**	70/70	70/70	70/70	70/70	100/100	100/100	100/100	100/100
GV2 L04	**LR2 D13 04**	**0.40/0.63**	70/70	70/70	70/70	70/70	100/100	100/100	100/100	100/100
GV2 L05	**LR2 D13 05**	**0.63/1**	70/70	70/70	70/70	70/70	100/100	100/100	100/100	100/100
GV2 L06	**LR2 D13 06**	**1/1.6**	70/70	70/70	70/70	70/70	100/100	100/100	100/100	100/100
GV2 L07	**LR2 D13 07**	**1.6/2.5**	70/70	70/70	70/70	70/70	100/100	100/100	100/100	100/100
GV2 L08	**LR2 D13 08**	**2.5/4**			70/70	70/70	100/100	100/100	100/100	100/100
GV2 L10	**LR2 D13 10**	**4/6.3**			70/70	70/70	100/100	100/100	100/100	100/100
GV2 L14	**LR2 D13 14**	**7/10**			70/70	70/70	100/100	100/100	100/100	100/100
GV2 L16	**LR2 D13 16**	**9/13**			70/70	70/70	100/100	100/100	100/100	100/100
GV2 L20	**LR2 D13 21**	**12/18**			70/70	70/70	100/100	100/100	100/100	100/100
GV2 L22	**LR2 D13 22**	**17/25**			70/70	70/70	100/100	100/100	100/100	100/100

Upstream			NSX160L				NSX160H	NSX160S	NSX160L
Breaking capacity			150 kA				70 kA	100 kA	150 kA
Trip unit			TM-D				Micrologic	Micrologic	Micrologic
Downst.	**Thermal relay**	**Rating (A)**	**80**	**100**	**125**	**160**	**160**	**160**	**160**
GV2 L03	**LR2 D13 03**	**0.25/0.40**	150/150	150/150	150/150	150/150	70/70	100/100	150/150
GV2 L04	**LR2 D13 04**	**0.40/0.63**	150/150	150/150	150/150	150/150	70/70	100/100	150/150
GV2 L05	**LR2 D13 05**	**0.63/1**	150/150	150/150	150/150	150/150	70/70	100/100	150/150
GV2 L06	**LR2 D13 06**	**1/1.6**	150/150	150/150	150/150	150/150	70/70	100/100	150/150
GV2 L07	**LR2 D13 07**	**1.6/2.5**	150/150	150/150	150/150	150/150	70/70	100/100	150/150
GV2 L08	**LR2 D13 08**	**2.5/4**			150/150	150/150	70/70	100/100	150/150
GV2 L10	**LR2 D13 10**	**4/6.3**			150/150	150/150	70/70	100/100	150/150
GV2 L14	**LR2 D13 14**	**7/10**			150/150	150/150	70/70	100/100	150/150
GV2 L16	**LR2 D13 16**	**9/13**			150/150	150/150	70/70	100/100	150/150
GV2 L20	**LR2 D13 21**	**12/18**			150/150	150/150	70/70	100/100	150/150
GV2 L22	**LR2 D13 22**	**17/25**			150/150	150/150	70/70	100/100	150/150

Note: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.

Discrimination enhanced by cascading

Upstream: NSX160 to 400
Downstream: LUB12 to LUB32

Ue: 440 V AC

Upstream			NSX160H		NSX160S		NSX160L		NSX250H		NSX250S		NSX250L	
Breaking capacity			65 kA		90 kA		130 kA		65 kA		90 kA		130 kA	
Trip unit			TM-D		TM-D		TM-D		TM-D		TM-D		TM-D	
Downst.	**Thermal relay**	**Rating (A)**	**80/100**	**125/160**	**80/100**	**125/160**	**80/100**	**125/160**	**160**	**200/250**	**160**	**200/250**	**160**	**200/250**
Tesys U LUB12	**LUC*X6**	**0.15/0.6**		65/65		90/90		130/130	65/65	65/65	90/90	90/90	100/100	100/100
	LUC*1X	**0.35/1.4**		65/65		90/90		130/130	65/65	65/65	90/90	90/90	100/100	100/100
	LUC*05	**1.25/5**		65/65		90/90		130/130	65/65	65/65	90/90	90/90	100/100	100/100
	LUC*12	**3/12**		65/65		90/90		130/130	65/65	65/65	90/90	90/90	100/100	100/100
Tesys U LUB32	**LUC*X6**	**0.15/0.6**		5/65		5/90		5/130	5/65	65/65	5/90	90/90	5/100	100/100
	LUC*1X	**0.35/1.4**		5/65		5/90		5/130	5/65	65/65	5/90	90/90	5/100	100/100
	LUC*05	**1.25/5**		5/65		5/90		5/130	5/65	65/65	5/90	90/90	5/100	100/100
	LUC*12	**3/12**		5/65		5/90		5/130	5/65	65/65	5/90	90/90	5/100	100/100
	LUC*18	**4.5/18**		5/65		5/90		5/130	5/65	65/65	5/90	90/90	5/100	100/100
	LUC*32	**8/32**		5/65		5/90		5/130	5/65	65/65	5/90	90/90	5/100	100/100

Upstream			NSX160H	NSX160S	NSX160L	NSX250H	NSX250S	NSX250L	NSX400H	NSX400L
Breaking capacity			65 kA	90 kA	130 kA	65 kA	90 kA	130 kA	65 kA	90 kA
Trip unit			Micrologic	Micrologic	Micrologic	Micrologic	Micrologic	Micrologic	Micrologic	Micrologic
Downst.	**Thermal relay**	**Rating (A)**	**160**	**160**	**160**	**250**	**250**	**250**	**400**	**400**
Tesys U LUB12	**LUC*X6**	**0.15/0.6**	65/65	90/90	130/130	65/65	90/90	100/100		
	LUC*1X	**0.35/1.4**	65/65	90/90	130/130	65/65	90/90	100/100		
	LUC*05	**1.25/5**	65/65	90/90	130/130	65/65	90/90	100/100		
	LUC*12	**3/12**	65/65	90/90	130/130	65/65	90/90	100/100		
Tesys U LUB32	**LUC*X6**	**0.15/0.6**	5/65	5/90	5/130	65/65	90/90	100/100		
	LUC*1X	**0.35/1.4**	5/65	5/90	5/130	65/65	90/90	100/100		
	LUC*05	**1.25/5**	5/65	5/90	5/130	65/65	90/90	100/100		
	LUC*12	**3/12**	5/65	5/90	5/130	65/65	90/90	100/100		
	LUC*18	**4.5/18**	5/65	5/90	5/130	65/65	90/90	100/100		
	LUC*32	**8/32**	5/65	5/90	5/130	65/65	90/90	100/100		

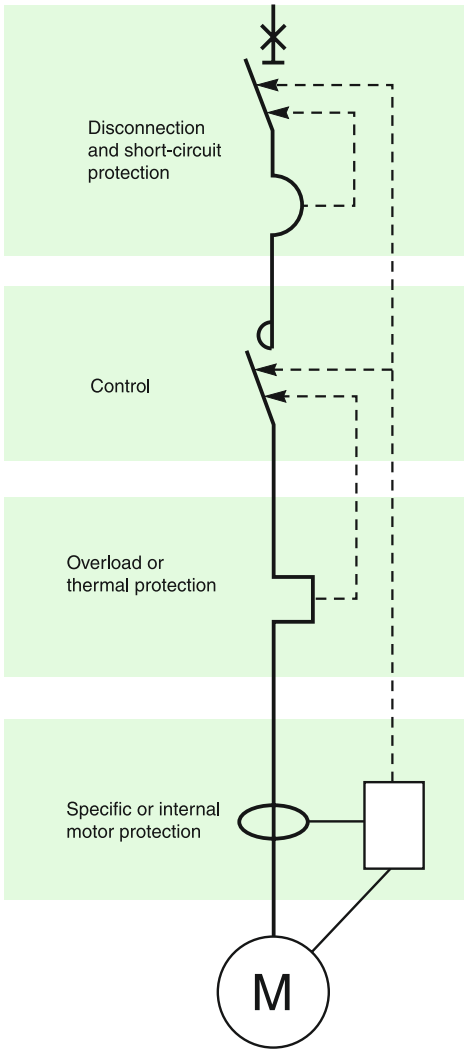
Note: respect the basic rules of discrimination, in terms of overcurrent, short-circuit, see page 6, or check curves with curve direct software.

Protection of motor circuits
Circuit breaker/contactor coordination

A circuit supplying a motor may include one, two, three or four switchgear or controlgear devices fulfilling one or more functions.

When a number of devices are used, they must be coordinated to ensure optimum operation of the motor.
Protection of a motor circuit involves a number of parameters that depend on:
- the application (type of machine driven, operating safety, starting frequency, etc.)
- the level of service continuity imposed by the load or the application
- the applicable standards to ensure protection of life and property.

The necessary electrical functions are of very different natures:
- protection (motor-dedicated for overloads)
- control (generally with high endurance levels)
- isolation.



Protection functions

Disconnection functions:
- Isolate a motor circuit prior to maintenance operations.

Short-circuit protection:
Protect the starter and the cables against major overcurrents (> 10 In).

Control:
Start and stop the motor, and, if applicable:
- gradual acceleration
- speed control.

Overload protection:
Protect the starter and the cables against minor overcurrents (< 10 In).

Additional specific protection:
- limitative fault protection (while the motor is running)
- preventive fault protection (monitoring of motor insulation with motor off).

Overloads (I < 10 In).
An overload may be caused by:
- an electrical problem, for instance on the mains (loss of a phase, voltage outside tolerances, etc.)
- a mechanical problem, for instance excessive torque due to abnormally high demands by the process or motor damage (bearing vibrations, etc.)

A further consequence of these two origins is excessively long starting.

Impedant short-circuit (10 < I < 50 In)
Deterioration of motor-winding insulation is the primary cause.

Short-circuit (I > 50 In)
This type of fault is relatively rare. A possible cause may be a connection error during maintenance.

Overload protection
Thermal relays provide protection against this type of fault. They may be:
- integrated in the short-circuit protective device
- separate.

Short-circuit protection
This type of protection is provided by a circuit breaker.

Protection against insulation faults
This type of protection may be provided by:
- a residual current device (RCD)
- an insulation monitoring device (IMD).

Protection of motor circuits
Circuit breaker/contactor coordination

Applicable standards
A circuit supplying a motor must comply with the general rules set out in IEC standard 60947-4-1 and in particular with those concerning contactors, motor starters and their protection as stipulated in IEC 60947-4-1, notably:
- coordination of the components of the motor circuit
- trip class for thermal relays
- contactor utilisation categories
- coordination of insulation.

Coordination of the components of the motor circuit
Two types of coordination
The standard defines tests at different current levels. The purpose of these tests is to place the switchgear and controlgear in extreme conditions. Depending on the state of the components following the tests, the standard defines two types of coordination:
- **type 1:**

Deterioration of the contactor and the relay is acceptable under two conditions:
- no danger to operating personnel
- no danger to any components other than the contactor and the relay

- **type 2:**

Only minor welding of the contactor or starter contacts is permissible and the contacts must be easily separated.
- following type-2 coordination tests, the switchgear and controlgear functions must be fully operational.

Which type of coordination is needed?
Selection of a type of coordination depends on the operating conditions encountered.
The goal is to achieve the best balance between the user's needs and the cost of the installation.
- **type 1:**
  - qualified maintenance service
  - low cost of switchgear and controlgear
  - continuity of service is not imperative or may be ensured by simply replacing the faulty motor drawer
- **type 2:**
  - continuity of service is imperative
  - limited maintenance service
  - specifications stipulating type 2.

Protection of motor circuits
Circuit breaker/contactor coordination

The different test currents

"Ic", "r" and "Iq" test currents
To qualify for type-2 coordination, the standard requires three fault-current tests to check that the switchgear and controlgear operates correctly under overload and short-circuit conditions.

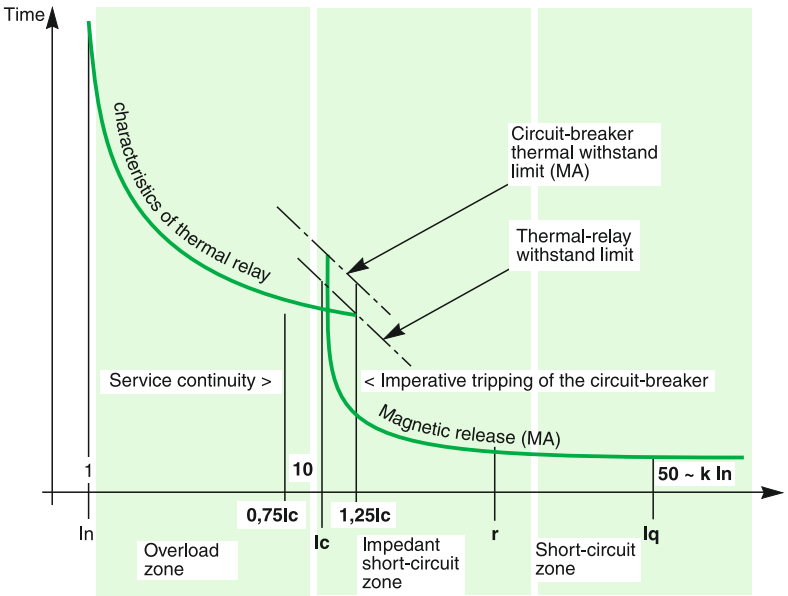
"Ic" current (overload I < 10 In)
The thermal relay provides protection against this type of fault, up to the Ic value (a function of Im or Isd) defined by the manufacturer.
IEC standard 60947-4-1 stipulates two tests that must be carried out to guarantee coordination between the thermal relay and the short-circuit protective device:
- at 0.75 Ic, only the thermal relay reacts
- at 1.25 Ic, the short-circuit protective device reacts.

Following the tests at 0.75 and 1.25 Ic, the trip characteristics of the thermal relay must be unchanged. Type-2 coordination thus enhances continuity of service. The contactor may be closed automatically following clearing of the faul.

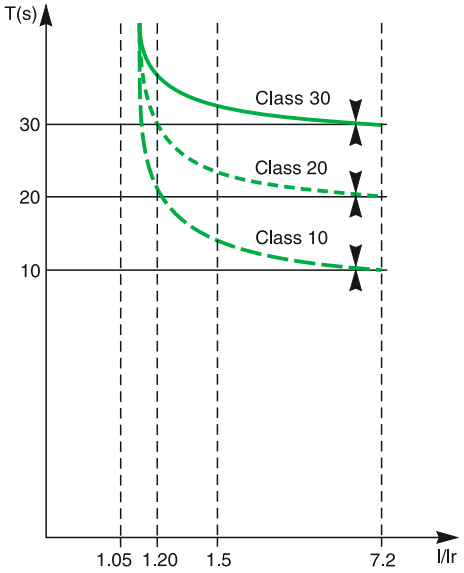
"r" current
(Impedant short-circuit 10 < I < 50 In)
The primary cause of this type of fault is the deterioration of insulation. IEC standard 60947-4-1 defines an intermediate short-circuit current “r”. This test current is used to check that the protective device provides protection against impedant short-circuits.
There must be no modification in the original characteristics of the contactor and the thermal relay following the test.
The circuit breaker must trip in ⩽ 10 ms for a fault current ⩾ 15 In.

Operational current Ie (AC3) of the motor (in A)	"r" current (kA)
Ie ⩽ 16	1
16 < Ie ⩽ 63	3
63 < Ie ⩽ 125	5
125 < Ie ⩽ 315	10
315 < Ie < 630	18

“Iq” current
(short-circuit I > 50 In)
This type of fault is relatively rare. A possible cause may be a connection error during maintenance.
Short-circuit protection is provided by devices that open quickly.
IEC standard 60947-4-1 defines the “Iq” current as generally ⩾ 50 kA.
The “Iq” current is used to check the coordination of the switchgear and controlgear installed on a motor supply circuit.
Following this test under extreme conditions, all the coordinated switchgear and controlgear must remain operational.



Protection of motor circuits
Circuit breaker/contactor coordination



Trip class of a thermal relay.

Trip class of a thermal relay

The four trip class of a thermal relay are 10 A, 10, 20 and 30 (maximum tripping times at 7.2 Ir).
Classes 10 and 10 A are the most commonly used. Classes 20 and 30 are reserved for motors with difficult starting conditions.
The diagram and the table opposite can be used to select a thermal relay suited to the motor starting time.

Class	1.05 Ir	1.2 Ir	1.5 Ir	7.2 Ir
10 A	t > 2 h	t < 2 h	t < 2 min.	2 ≤ t ≤ 10 s
10	t > 2 h	t < 2 h	t < 4 min.	4 ≤ t ≤ 10 s
20	t > 2 h	t < 2 h	t < 8 min.	6 ≤ t ≤ 20 s
30	t > 2 h	t < 2 h	t < 12 min.	9 ≤ t ≤ 30 s

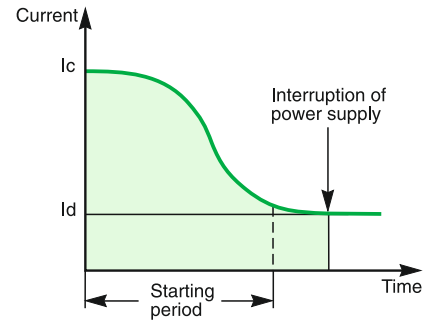
Protection of motor circuits
Circuit breaker/contactor coordination

The four utilisation categories of contactors (AC1 to AC4)

The four utilisation categories of contactors (AC1 to AC4)The utilisation category determines the operating frequency and endurance of a contactor. The category depends on the type of load. If the load is a motor; the category also depends on the service classification.

Main characteristics of the controlled electrical circuits and applications

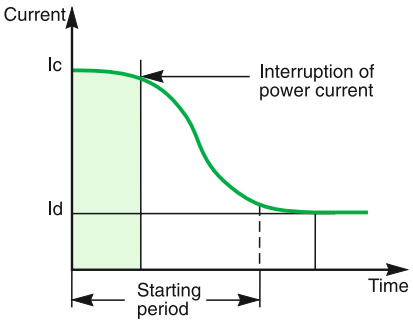
Category	Type of load	Contactor usage	Typical applications
AC1	No-inductive (cos φ 0.8)	Energisation	Heating, distribution
AC2	Slip-ring motors (cos φ 0.65)	Starting Switching off during running Regenerative braking Inching	Wire drawing machines
AC3	Squirrel-cage motors (cos φ 0.45 for Ie ⩽ 100A) (cos φ 0.35 for Ie > 100A)	Starting Switching off during running	Compressors, lifts, mixing Pumps, escalators, fans, Conveyers, air-conditioning
AC4	Squirrel-cage motors (cos φ 0.45 for Ie ⩽ 100A) (cos φ 0.35 for Ie > 100A)	Starting Switching off during running Regenerative braking	Printing machines, wire
		Plugging Inching	



AC3 utilisation category. The contactor interrupts the rated current of the motor.

AC3 utilisation category

This category covers asynchronous squirrel-cage motors that are switched off during running. This is the most common situation (85 % of all cases).
The control device establishes the starting current and interrupts the rated current at a voltage equal to approximately one-sixth of the rated value.
Current interruption is carried out with no difficulty.



AC4 utilisation category. The contactor must be capable of interrupting the starting current id.

AC4 utilisation category

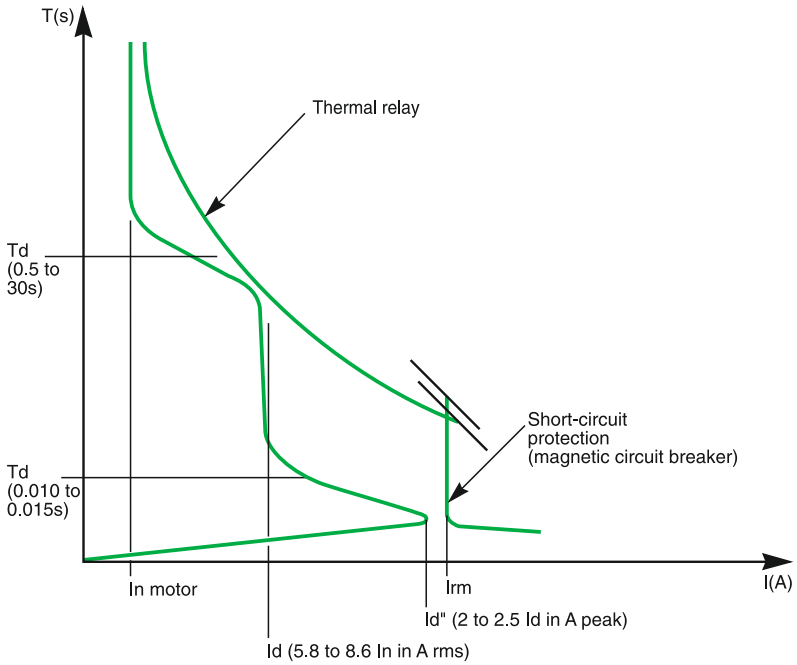
This category covers asynchronous squirrel-cage or slip-ring motors capable of operating under regenerative-braking or inching (jogging) conditions.
The control device establishes the starting current and is capable of interrupting the starting current at a voltage that may be equal to that of the mains.
Such difficult conditions require oversizing of the control and protective devices with respect to category AC3.

Protection of motor circuits
Using the circuit breaker/contactor

Subtransient phenomena related to direct on-line starting of asynchronous motors

Subtransient phenomena occurring when starting squirrel-cage motors:
A squirrel-cage motor draws a high inrush current during starting. This current is related to the combined influence of two parameters:
- the high inductance of the copper stator winding
- the magnetisation of the iron core of the stator.

In motor: current drawn by the motor at full rated load (in A rms)
Id: current drawn by the motor during starting (in A ms)
Id'': subtransient current generated by the motor when it is energised. This very short subtransient phenomenon is expressed as k x Id x r 2 (in A peak).
td: motor starting time, from 0.5 to 30 seconds depending on the application.
td'': duration of the subtransient current, from 0.010 to 0.015 seconds when the motor is energised.
Irm: magnetic setting of the circuit breakers.



Typical upper and lower limits for these subtransient currents:
These values, not covered by standards, also depend on the type of motor technology used:
- ordinary motors Id'' = 2 Id to 2.1 Id (in A peak)
- high-efficiency motors Id'' = 2.2 Id to 2.5 Id (in A peak).
- variation of Id'' as a function of Id:

Type of motor	d (in A rms)	Id'' (in A peak)
Ordinary motor	5.8 to 8.6 In motor	Id'' = 2 Id = 11.5 In (A peak) to Id'' = 2.1 Id = 18 In (A peak)
High-efficiency motor	5.8 to 8.6 In motor	Id'' = 2.2 Id = 12.5 In (A peak) to Id'' = 2.5 Id = 21.5 In (A peak)

Example: *Upon energisation, a high-efficiency motor with an Id of 7.5 In produces a subtransient current with a value between (depending on its characteritics):*
- *minimum = 16.5 In (in A peak)*
- *maximum = 18.8 In (in A peak).*

Protection of motor circuits
Using the circuit breaker/contactor coordination tables

Subtransient currents and protection settings:
■ as illustrated in the above table, subtransient currents can be very high.
■ If they approach their upper limits, they can trip short-cicuit protection devices (nuisance tripping)
■ circuit breakers are rated to provide optimum short-circuit protection for motor starters (type 2 coordination with thermal relay and contactor)
■ combinations made up of circuit breakers and contactors and thermal relays are designed to allow starting of motors generating high subtransient currents (up to 19 In motor peak)
■ the tripping of short-circuit protective devices when starting with a combination listed in the coordination tables means:
□ the limits of certain devices may be reached
□ the use of the starter under type 2 coordination conditions on the given motor may lead to premature wear of one of the components of the combination.

In event of such a problem, the ratings of the starter and the associated protective devices must be redesigned.

Using the coordination tables for circuit breaker and contactors:

■ **ordinary motor:**
The starter components can be selected directly from the coordination tables, whatever the values of the starting current (Id from 5.8 to 8.6 In) and the subtransient current
■ **high-efficiency motors with Id ≤ 7.5 In:**
The starter components can be selected directly from the coordination tables, whatever the values of the starting current and the subtransient current
■ **high-efficiency motors with Id > 7.5 In:**
When circuit breakers are used for motor currents in the neighbourhood of their rated current, they are set to provide minimum short-circuit protection at **19 In motor (A peak)**.
There are two possibilities:
■ the subtransient starting current is known (indicated by the motor manufacturer) and is less than **19 In motor (A peak)**.
In this case, the starter components can be selected directly from the coordination tables, whatever the value of the starting current (for Id > 7.5 In).
Example: for a 110 kW 380/415 V 3-phase motor, the selected components are: NSX250-MA220/LC1-F225/LR9-F5371.
■ the subtransient starting current is unknown or greater than 19 In motor (A peak).
In this case, the value used for the motor power in the coordination tables should be increased by 20 % to satisfy optimum starting and coordination conditions.
Example: for a 110 kW 380/415 V 3-phase motor, the selected components are those for a motor power of 110 + 20 % = 132 kW:
NSX400 Micrologic 4.3M/LC1-F265/LR9-F5371

Reversing starters and coordination

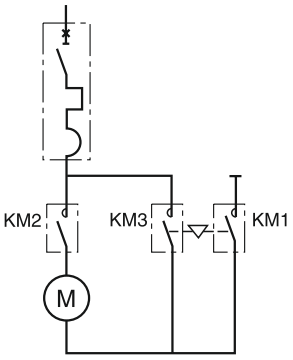
The starter components can be selected using the tables for direct-on-line starting. Replace contactors LC1 by LC2.

Star-delta starting and coordination

■ the components should be sized according to the current flowing in the motor windings
■ the mounting locations and connections of the various components of star-delta starters should be selected according to the type of coordination required and the protective devices implemented.

Protection of motor circuits

Using the circuit breaker/contactor coordination tables



Solution with thermal-magnetic motor circuit breaker.

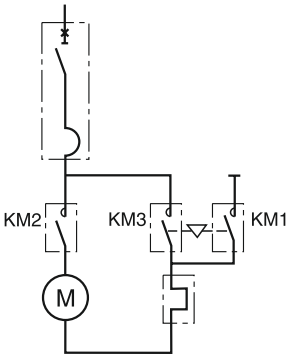
Star-delta starting and type 1 coordination

Contactors KM2 and KM3 are sized for the line current divided by e KM1 can be sized for the line current divided by 3, however, for the sake of homogeneity, it is often identical to contactors KM2 and KM3.

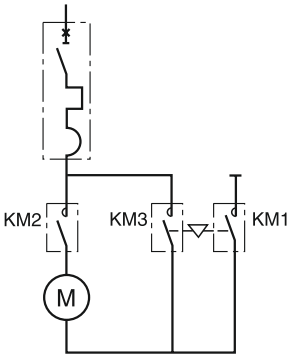
The starter components are selected from the special star-delta type 1 coordination tables.

Example: consider the following case:
- 45 kW motor supplied at 380 V
- star-delta starting
- separate thermal relay
- short-circuit current of 20 kA at the starter
- type 1 coordination.

The starter components are selected using the table on page 557E4505.indd/8:
- circuit breaker: NSX100N-MA 100
- contactor: LC3-D50
- thermal relay: LR2-D3357.



Solution with magnetic motor circuit breaker.



Solution with thermal-magnetic motor circuit breaker.

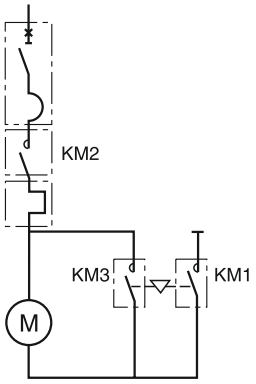
Star-delta starting and type 2 coordination

Contactors KM1, KM2 and KM3 are sized for the line current.

The starter components are selected from the direct-on-line type 2 coordination tables.

Example: consider the following case:
- 55 kW motor supplied at 415 V
- star-delta starting
- thermal protection built into the circuit breaker providing short-circuit protection
- short-circuit current of 45 kA at the starter
- type 2 coordination.

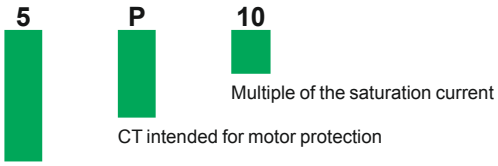
The starter components are selected using the table on page 557E4505.indd/8:
- circuit breaker: NSX160H with Micrologic 6.2
- starter: LC1-F115 to be replaced by LC3-F115.



Solution with magnetic motor circuit breaker.

Protection of motor circuits
Circuit breaker/contactor coordination

The characteristics of the current transformers are the following (as defined by IEC 44-1/44-3):



The current transformer ratings must be 5 VA per phase.

Starting class and thermal relays

The following tables correspond to “normal” motor starting times. The associated thermal relays are either class 10 or 10 A (tripping time < 10 s).

■ for motors with long starting times, the class 10 or 10 A thermal relays must be replaced with class 20 thermal relays as indicated in the correspondence table opposite (for type 1 and type 2 coordination)

■ long starting times requiring a class 30 relay:

□ apply a derating coefficient (K = 0.8) to the circuit breaker and the contactor

■ coordination tables with the multifunction protective relay LT6-P

□ three types of multifunction relays (see the corresponding catalogue for detailed characteristics) are available. They may be connected:

- directly to the motor power supply line
- to the secondary winding of the current transformer.

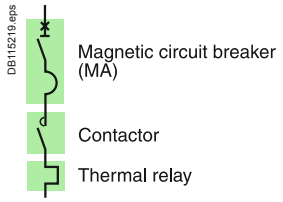
Relay		Rating Direct	Connecting Using current trans.
LTM R08	0.4 to 8 A	■	■
LTM R27	1.35 to 27 A	■	
LTM R100	5 to 100 A	■	

Correspondence table class 10 A and class 20 relay

Contactor series D	Thermal relay Class10/10 A	Class 20	Setting range
LC1-D09-D38	LRD-05	LRD-05L	0.63…1
	LRD-06	LRD-06L	1…1.6
	LRD-07	LRD-07L	1.6…2.5
	LRD-08	LRD-08L	2.5…4
	LRD-10	LRD-10L	4…6
	LRD-12	LRD-12L	5.5…8
	LRD-14	LRD-14L	7…10
LC1-D12-D38	LRD-16	LRD-16L	9…13
LC1-D18-D38	LRD-21	LRD-21L	12…18
LC1-D25-D38	LRD-22	LRD-22L	17…25
	LRD-32	LRD-32L	23…32
LC1-D32-D38	LRD-35		30…38
D40-D95	LRD-3308	LRD-08L (1)	2.5…4
	LRD-3310	LRD-10L (1)	4…6
	LRD-3312	LRD-12L (1)	5.5…8
	LRD-3314	LRD-14L (1)	7…10
	LRD-3316	LRD-16L (1)	9…13
	LRD-3321	LRD-21L (1)	12…18
	LRD-3322	LR2-D35 22	17…25
	LRD-3353	LR2-D35 53	23…32
	LRD-3355	LR2-D35 55	30…40
	LRD-3357	LR2-D35 57	37…50
D50-D95	LRD-3359	LR2-D35 59	48…65
	LRD-3361	LR2-D35 61	55…70
D65-D95	LRD-3363	LR2-D35 63	63…80
D40A-D65A	LRD-313	LRD-313L	9…13
	LRD-318	LRD-318L	12…18
	LRD-325	LRD-325L	17…25
	LRD-332	LRD-332L	23…32
	LRD-340	LRD-340L	30…40
	LRD-350	LRD-350L	37…50
	LRD-365	LRD-365L	38…65
D80-D95	LRD-3365		80…104
	LR9-D53 57	LR9-D55 57	30…50
	LR9-D53 63	LR9-D55 63	48…80
	LR9-D53 67	LR9-D55 67	60…100
	LR9-D53 69	LR9-D55 69	90…150
F115-F185	LR9-F53 57	LR9-F55 57	30…50
	LR9-F53 63	LR9-F55 63	48…80
	LR9-F53 67	LR9-F55 67	60…100
	LR9-F53 69	LR9-F55 69	90…150
F185-F400	LR9-F53 71	LR9-F55 71	132…220
F225-F500	LR9-F73 75	LR9-F75 75	200…330
	LR9-F73 79	LR9-F75 79	300…500
F400-F800	LR9-F73 81	LR9-F75 81	380…630

(1) Independant mounting with LAD 7B105.

Type 2 coordination (IEC 60947-4-1) 220/240 V



Circuit breakers, contactors and thermal relays

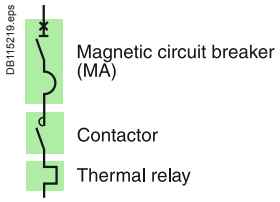
Performance: Ue = 220/240 V			
Circuit breakers	**N**	**H**	**L**
NS80-MA	-	100 kA	-

Starting (1)**:** normal, LRD2 class 10 A, LR9 class 10.

Motors				Circuit breakers			Contactors (2)	Thermal o/l relays	
P (kW)	**I (A) 220 V**	**I (A) 240 V**	**Ie max (A)**	**Type**	**Rating (A)**	**Irm (A)**	**Type**	**Type**	**Irth (A)** (1)
0.09	0.7	0.6	1	NS80H-MA	1.5	13.5	LC1 D09	LRD 05	0.63/1
0.12	0.9	0.8	1	NS80H-MA	1.5	13.5	LC1 D09	LRD 05	0.63/1
0.18	1.2	1.1	1.6	NS80H-MA	2.5	22.5	LC1 D09	LRD 06	1/1.6
0.25	1.5	1.4	2.5	NS80H-MA	2.5	32.5	LC1 D09	LRD 07	1.6/2.5
0.37	2	1.8	2.5	NS80H-MA	2.5	32.5	LC1 D09	LRD 07	1.6/2.5
0.55	2.8	2.6	4	NS80H-MA	6.3	57	LC1 D32	LRD 08	2.5/4
0.75	3.5	3.2	4	NS80H-MA	6.3	57	LC1 D32	LRD 08	2.5/4
1.1	5	4.5	6	NS80H-MA	6.3	82	LC1 D32	LRD 10	4/6
1.5	6.5	6	8	NS80H-MA	12.5	113	LC1 D40	LRD 33 12	5.5/8
2.2	9	8	10	NS80H-MA	12.5	138	LC1 D40	LRD 33 14	7/10
3	12	11	12.5	NS80H-MA	12.5	163	LC1 D40	LRD 33 16	9/13
4	15	14	18	NS80H-MA	25	250	LC1 D40	LRD 33 21	12/18
5.5	21	19	25	NS80H-MA	25	325	LC1 D40	LRD 33 22	17/25
6.3	24	22	25	NS80H-MA	25	325	LC1 D40	LRD 33 22	17/25
7.5	28	25	32	NS80H-MA	50	450	LC1 D40	LRD 33 53	23/32
10	36	33	40	NS80H-MA	50	550	LC1 D50	LRD 33 55	30/40
11	39	36	50	NS80H-MA	50	650	LC1 D50	LRD 33 57	37/50
15	52	48	65	NS80H-MA	80	880	LC1 D65	LRD 33 59	48/65
18.5	63	59	65	NS80H-MA	80	880	LC1 D65	LRD 33 59	48/65
22	75	70	80	NS80H-MA	80	1040	LC1 D80	LRD 33 63	63/80

(1) For long starting (class 20), see the correspondence table for thermal relay.
(2) Reversers: replace LC1 with LC2; start-delta starter: replace LC1 with LC3.

Type 2 coordination (IEC 60947-4-1) 220/240 V



Circuit breakers, contactors and thermal relays

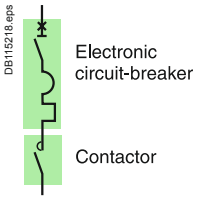
Performance: Ue = 220/240 V						
Circuit breakers	**B**	**F**	**N**	**H**	**S**	**L**
NSX100/160/250-MA	40 kA	85 kA	90 kA	100 kA	120 kA	150 kA
NSX400/630 Micrologic 1.3 M	40 kA	85 kA	90 kA	100 kA	120 kA	150 kA
NS800L/NS1000L Micrologic 5.0	-	-	-	-	-	150 kA

Starting (1)**:** normal, LRD class 10 A, LR9 class 10.

Motors				Circuit breakers			Contactors (2)	Thermal o/l relays	
P (kW)	**I (A) 220 V**	**I (A) 240 V**	**Ie max (A)**	**Type**	**Rating (A)**	**Irm (A)**	**Type**	**Type**	**Irth (A)** (1)
0.18	1.2	1.1	1.6	NSX100-MA	2.5	22.5	LC1 D09	LRD 06	1/1.6
0.25	1.5	1.4	2.5	NSX100-MA	2.5	32.5	LC1 D09	LRD 07	1.6/2.5
0.37	2	1.8	2.5	NSX100-MA	2.5	32.5	LC1 D09	LRD 07	1.6/2.5
0.55	2.8	2.6	4	NSX100-MA	6.3	57	LC1 D32	LRD 08	2.5/4
0.75	3.5	3.2	4	NSX100-MA	6.3	57	LC1 D32	LRD 08	2.5/4
1.1	5	4.5	6	NSX100-MA	6.3	82	LC1 D32	LRD 10	4/6
1.5	6.5	6	8	NSX100-MA	12.5	113	LC1 D80	LRD 33 12	5.5/8
2.2	9	8	10	NSX100-MA	12.5	138	LC1 D80	LRD 33 14	7/10
3	12	11	12.5	NSX100-MA	12.5	163	LC1 D80	LRD 33 16	9/13
4	15	14	18	NSX100-MA	25	250	LC1 D80	LRD 33 21	12/18
5.5	21	19	25	NSX100-MA	25	325	LC1 D80	LRD 33 22	17/25
6.3	24	22	25	NSX100-MA	25	325	LC1 D80	LRD 33 22	17/25
7.5	28	25	32	NSX100-MA	50	450	LC1 D80	LRD 33 53	23/32
10	36	33	40	NSX100-MA	50	550	LC1 D80	LRD 33 55	30/40
11	39	36	40	NSX100-MA	50	550	LC1 D80	LRD 33 55	30/40
15	52	48	63	NSX100-MA	100	700	LC1 D80	LRD 33 59	48/65
18.5	63	59	63	NSX100-MA	100	900	LC1 D80	LRD 33 59	48/65
22	75	70	80	NSX100-MA	100	1100	LC1 D80	LRD 33 63	63/80
30	100	95	100	NSX100-MA	100	1300	LC1 D115	LR9 D53 67	60/100
							LC1 F115	LR9 F53 67	
37	125	115	150	NSX160-MA	150	1950	LC1 D150	LR9 D53 69	90/150
							LC1 F150	LR9 F53 69	
45	150	140	150	NSX160-MA	150	1950	LC1 D150	LR9 D53 69	90/150
							LC1 F150	LR9 F53 69	
55	180	170	185	NSX250-MA	220	2420	LC1 F185	LR9 F53 71	132/220
			220	NSX400 - Micrologic 1.3 M	320	2880	LC1 F265		
75	250	235	265	NSX400 - Micrologic 1.3 M	320	3500	LC1 F265	LR9 F73 75	200/330
90	300	270	320	NSX400 - Micrologic 1.3 M	320	4160	LC1 F330	LR9 F73 75	200/330
110	360	330	400	NSX630 - Micrologic 1.3 M	500	5700	LC1 F400	LR9 F73 79	300/500
132	430	400	500	NSX630 - Micrologic 1.3 M	500	6500	LC1 F500	LR9 F73 79	300/500
150	460	450	500	NSX630 - Micrologic 1.3 M	500	6500	LC1 F500	LR9 F73 79	300/500
160	520	480	630	NS800L - Micrologic 5.0 - LR off	800	8000	LC1 F630	LR9 F73 81	380/630
200	630	580	630	NS800L - Micrologic 5.0 - LR off	800	8000	LC1 F630	LR9 F73 81	380/630
220	700	640	700	NS800L - Micrologic 5.0 - LR off	800	9600	LC1 F780	TC800/5 + LRD 10	630/1000
250	800	730	800	NS1000L - Micrologic 5.0 - LR off	1000	10000	LC1 F780	TC800/5 + LRD 10	630/1000

(1) For long starting (class 20), see the correspondence table for thermal relay.
(2) Reversers: replace LC1 with LC2; start-delta starter: replace LC1 with LC3.

Type 2 coordination (IEC 60947-4-1) 220/240 V



Circuit breakers, contactors

Performance: Ue = 220/240 V						
Circuit breakers	**B**	**F**	**N**	**H**	**S**	**L**
NSX100/160/250 Micrologic 2.2 M/6.2 M	40 kA	85 kA	90 kA	100 kA	120 kA	150 kA
NSX400/630 Micrologic 2.3 M/6.3 M	40 kA	85 kA	90 kA	100 kA	120 kA	150 kA
NS800L/NS1000L Micrologic 5.0	-	-	-	-	-	150 kA

Starting	**Standard IEC 60947-4-1**		
Micrologic	2.2 M/2.3 M	6.2 M/6.3 M	5.0
Normal (class)	5, 10	5, 10	10
Long (class)	20	20, 30 (1)	20

Motors				**Circuit breakers**				**Contactors** (2)
P (kW)	**I (A) 220 V**	**I (A) 240 V**	**Ie max (A)**	**Type**	**Trip unit**	**Irth (A)**	**Irm (A)** (3)	**Type**
3	12	11	25	NSX100	Micrologic 2.2 or 6.2	12/25	13 Irth	LC1 D80
4	15	14	25	NSX100	Micrologic 2.2 or 6.2	12/25	13 Irth	LC1 D80
5.5	21	19	25	NSX100	Micrologic 2.2 or 6.2	12/25	13 Irth	LC1 D80
6.3	24	22	25	NSX100	Micrologic 2.2 or 6.2	12/25	13 Irth	LC1 D80
7.5	28	25	50	NSX100	Micrologic 2.2 or 6.2	25/50	13 Irth	LC1 D80
10	36	33	50	NSX100	Micrologic 2.2 or 6.2	25/50	13 Irth	LC1 D80
11	39	36	50	NSX100	Micrologic 2.2 or 6.2	25/50	13 Irth	LC1 D80
15	52	48	80	NSX100	Micrologic 2.2 or 6.2	50/100	13 Irth	LC1 D80
18.5	63	59	80	NSX100	Micrologic 2.2 or 6.2	50/100	13 Irth	LC1 D80
22	75	70	100	NSX100	Micrologic 2.2 or 6.2	50/100	13 Irth	LC1 D115 or LC1 F115
30	100	95	100	NSX100	Micrologic 2.2 or 6.2	50/100	13 Irth	LC1 D115 or LC1 F115
37	125	115	150	NSX160	Micrologic 2.2 or 6.2	70/150	13 Irth	LC1 D150 or LC1 F150
45	150	140	150	NSX160	Micrologic 2.2 or 6.2	70/150	13 Irth	LC1 D150 or LC1 F150
55	180	170	185	NSX250	Micrologic 2.2 or 6.2	100/220	13 Irth	LC1 F185
				NSX400	Micrologic 2.3 or 6.3	160/320	13 Irth	LC1 F185
75	250	235	265	NSX400	Micrologic 2.3 or 6.3	160/320	13 Irth	LC1 F265
90	300	280	320	NSX400	Micrologic 2.3 or 6.3	160/320	13 Irth	LC1 F330
110	360	330	400	NSX630	Micrologic 2.3 or 6.3	250/500	13 Irth	LC1 F400
132	430	400	500	NSX630	Micrologic 2.3 or 6.3	250/500	13 Irth	LC1 F500
150	460	420	500	NSX630	Micrologic 2.3 or 6.3	250/500	13 Irth	LC1 F500
160	520	480	630	NS800L	Micrologic 5.0	320/800	8000	LC1 F630
200	630	580	630	NS800L	Micrologic 5.0	320/800	8000	LC1 F630
220	700	640	700	NS800L	Micrologic 5.0	320/800	9600	LC1 F780
250	800	730	800	NS1000L	Micrologic 5.0	400/1000	10000	LC1 F780

(1) For class 30 the contactor rating shall be checked according to 30 s thermal withstand (F range).
(2) Reversers: replace LC1 with LC2; start-delta starter: replace LC1 with LC3.
(3) Ii for Micrologic 5.0 control unit.

Type 2 coordination (IEC 60947-4-1) 380/400/415 V

DB115219.eps

Magnetic circuit breaker (MA)

Contactor

Thermal relay

Circuit breakers, contactors and thermal relays

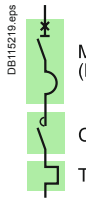
Performance: Ue = 380/400/ 415 V	
Circuit breakers	**H**
NS80-MA	70 kA

Starting [1]**:** normal, LRD class 10 A, LR9 class 10.

Motors					Circuit breakers			Contactors [2]	Thermal o/l relays	
P (kW)	I (A) 380 V	I (A) 400 V	I (A) 415 V	Ie max (A)	Type	Rating (A)	Irm (A)	Type	Type	Irth [1]
0.18	0.7	0.6	0.6	1	NS80H-MA	1.5	13.5	LC1 D09	LRD 05	0.63/1
0.25	0.9	0.8	0.8	1	NS80H-MA	1.5	13.5	LC1 D09	LRD 05	0.63/1
0.37	1.2	1.1	1.1	1.6	NS80H-MA	2.5	22.5	LC1 D09	LRD 06	1/1.6
0.55	1.6	1.5	1.5	2.5	NS80H-MA	2.5	32.5	LC1 D09	LRD 07	1.6/2.5
0.75	2	1.9	1.8	2.5	NS80H-MA	2.5	32.5	LC1 D09	LRD 07	1.6/2.5
1.1	2.8	2.7	2.6	4	NS80H-MA	6.3	57	LC1 D32	LRD 08	2.5/4
1.5	3.7	3.6	3.4	4	NS80H-MA	6.3	57	LC1 D32	LRD 08	2.5/4
2.2	5.3	4.9	4.8	6	NS80H-MA	6.3	82	LC1 D32	LRD 10	4/6
3	7	6.5	6.2	8	NS80H-MA	12.5	113	LC1 D40	LRD 33 12	5.5/8
4	9	8.5	8.2	10	NS80H-MA	12.5	138	LC1 D40	LRD 33 14	7/10
5.5	12	11.5	11	12.5	NS80H-MA	12.5	163	LC1 D40	LRD 33 16	9/13
7.5	16	15.5	14	16	NS80H-MA	25	250	LC1 D40	LRD 33 21	12/18
10	21	20	19	25	NS80H-MA	25	325	LC1 D40	LRD 33 22	17/25
11	23	22	21	25	NS80H-MA	25	325	LC1 D40	LRD 33 22	17/25
15	30	29	28	32	NS80H-MA	50	450	LC1 D40	LRD 33 53	23/32
18.5	37	35	34	40	NS80H-MA	50	550	LC1 D50	LRD 33 55	30/40
22	43	41	40	50	NS80H-MA	50	650	LC1 D50	LRD 33 57	37/50
30	59	55	53	63	NS80H-MA	80	880	LC1 D65	LRD 33 59	48/65
37	72	70	66	80	NS80H-MA	80	1040	LC1 D80	LRD 33 63	63/80

(1) Heavy starting (class 20), see thermal o/l chart of equivalence.
(2) Reversers: replace LC1 with LC2; start-delta starter: replace LC1 with LC3.

Type 2 coordination (IEC 60947-4-1) 380/400/415 V



Circuit breakers, contactors and thermal relays

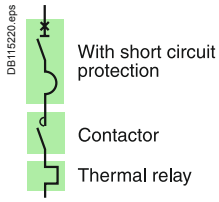
Performance: Ue = 380/400/415 V	
Circuit breakers	**H**
NS80-MA	70 kA

Starting (1): adjustable class 10 A to 30.

Motors					Circuit breakers			Contactors (2)	Thermal o/l relays	
P (kW)	I (A) 380 V	I (A) 400 V	I (A) 415 V	Ie max (A)	Type	Trip unit	Irth (A)	Irm (A)	Type	Irth (1)
0.18	0.7	0.6	0.6	1	NS80H-MA	1.5	13.5	LC1 D40	LTM R08	0.4/8
0.25	0.9	0.8	0.8	1	NS80H-MA	1.5	13.5	LC1 D40	LTM R08	0.4/8
0.37	1.2	1.1	1.1	2.5	NS80H-MA	2.5	32.5	LC1 D40	LTM R08	0.4/8
0.55	1.6	1.5	1.5	2.5	NS80H-MA	2.5	32.5	LC1 D40	LTM R08	0.4/8
0.75	2	1.9	1.8	2.5	NS80H-MA	2.5	32.5	LC1 D40	LTM R08	0.4/8
1.1	2.8	2.7	2.6	5	NS80H-MA	6.3	70	LC1 D40	LTM R08	0.4/8
1.5	3.7	3.6	3.4	5	NS80H-MA	6.3	70	LC1 D40	LTM R08	0.4/8
2.2	5.3	4.9	4.8	6.3	NS80H-MA	6.3	82	LC1 D40	LTM R08	0.4/8
3	7	6.5	6.2	12.5	NS80H-MA	12.5	163	LC1 D40	LTM R27	1.35/27
4	9	8.5	8.2	12.5	NS80H-MA	12.5	163	LC1 D40	LTM R27	1.35/27
5.5	12	11.5	11	12.5	NS80H-MA	12.5	163	LC1 D40	LTM R27	1.35/27
7.5	16	15.5	14	25	NS80H-MA	25	325	LC1 D40	LTM R27	1.35/27
10	21	20	19	25	NS80H-MA	25	325	LC1 D40	LTM R27	1.35/27
11	23	22	21	25	NS80H-MA	25	325	LC1 D40	LTM R27	1.35/27
15	30	29	28	50	NS80H-MA	50	650	LC1 D80	LTM R100	5/100
18.5	37	35	34	50	NS80H-MA	50	650	LC1 D80	LTM R100	5/100
22	43	41	40	50	NS80H-MA	50	650	LC1 D80	LTM R100	5/100
30	59	55	53	80	NS80H-MA	80	1040	LC1 D80	LTM R100	5/100
37	72	70	66	80	NS80H-MA	80	1040	LC1 D80	LTM R100	5/100

(1) For installations with a class 30 relay, a derating of 20 % must be apply on circuit breakers.
(2) Reversers: replace LC1 with LC2; start-delta starter: replace LC1 with LC3.

Type 2 coordination (IEC 60947-4-1) 380/400 V



Circuit breakers, contactors and thermal relays

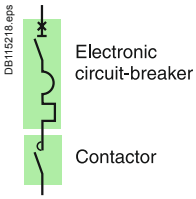
Performance "Iq": Ue = 380/400 V						
Circuit breakers	**B**	**F**	**N**	**H**	**S**	**L**
NSX100/160/250-MA	25 kA	36 kA	50 kA	70 kA	100 kA	130 kA
NSX400/630 Micrologic 1.3 M	25 kA	36 kA	50 kA	70 kA	100 kA	130 kA
NS800L/NS1000L Micrologic 5.0	-	-	-	-	-	130 kA

Starting (1)**:** normal, LRD class 10 A, LR9 class 10.

Motors				Circuit breakers			Contactors (2)	Thermal o/l relays	
P (kW)	**I (A) 380 V**	**I (A) 400 V**	**Ie max (A)**	**Type**	**Rating (A)**	**Irm (A) (3)**	**Type**	**Type**	**Irth (1)**
0.37	1.2	1.1	1.6	NSX100-MA	2.5	22.5	LC1 D09	LRD 06 (4)	1/1.6
0.55	1.6	1.5	2.5	NSX100-MA	2.5	32.5	LC1 D09	LRD 07 (4)	1.6/2.5
0.75	2	1.9	2.5	NSX100-MA	2.5	32.5	LC1 D09	LRD 07 (4)	1.6/2.5
1.1	2.8	2.7	4	NSX100-MA	6.3	57	LC1 D32	LRD 08 (5)	2.5/4
1.5	3.7	3.6	4	NSX100-MA	6.3	57	LC1 D32	LRD 08 (5)	2.5/4
2.2	5.3	4.9	6	NSX100-MA	6.3	82	LC1 D32	LRD 10 (5)	4/6
3	7	6.5	8	NSX100-MA	12.5	113	LC1 D80	LRD 3312 (5)	5.5/8
4	9	8.5	10	NSX100-MA	12.5	138	LC1 D80	LRD 3314 (5)	7/10
5.5	12	11.5	12.5	NSX100-MA	12.5	163	LC1 D80	LRD 3316 (5)	9/13
7.5	16	15.5	18	NSX100-MA	25	250	LC1 D80	LRD 3321	12/18
10	21	20	25	NSX100-MA	25	325	LC1 D80	LRD 3322	17/25
11	23	22	25	NSX100-MA	25	325	LC1 D80	LRD 3322	17/25
15	30	29	32	NSX100-MA	50	450	LC1 D80	LRD 33 53	23/32
18.5	37	35	40	NSX100-MA	50	550	LC1 D80	LRD 33 55	30/40
22	43	41	50	NSX100-MA	50	650	LC1 D80	LRD 33 57	37/50
30	59	55	63	NSX100-MA	100	900	LC1 D80	LRD 33 59	48/65
37	70	66	80	NSX100-MA	100	1100	LC1 D80	LRD 33 63	63/80
45	85	80	100	NSX100-MA	100	1300	LC1 D115	LR9 D53 67	60/100
							LC1 F115	LR9 F53 67	
55	105	97	115	NSX160-MA	150	1500	LC1 D115	LR9 D53 69	90/150
							LC1 F115	LR9 F53 69	
75	140	132	150	NSX160-MA	150	1950	LC1 D150	LR9 D53 69	90/150
							LC1 F150	LR9 F53 69	
90	170	160	185	NSX250-MA	220	2420	LC1 F185	LR9 F53 71	132/220
110	205	195	220	NSX250-MA	220	2860	LC1 F225	LR9 F53 71	132/220
			265	NSX400 - Micrologic 1.3 M	320	3500	LC1 F265	LR9 F73 75	200/330
132	250	230	265	NSX400 - Micrologic 1.3 M	320	3500	LC1 F265	LR9 F73 75	200/330
160	300	280	320	NSX400 - Micrologic 1.3 M	320	4160	LC1 F330	LR9 F73 75	200/330
200	370	350	400	NSX630 - Micrologic 1.3 M	500	5700	LC1 F400 (70 kA)	LR9 F73 79	300/500
							LC1 F500 (130 kA)		
220	408	380	500	NSX630 - Micrologic 1.3 M	500	6500	LC1 F500	LR9 F73 79	300/500
250	460	430	500	NSX630 - Micrologic 1.3 M	500	6500	LC1 F500	LR9 F73 79	300/500
300	565	500	630	NS800L - Micrologic 5.0 - LR off	800	8000	LC1 F630	LR9 F73 81	380/630
335	620	560	630	NS800L - Micrologic 5.0 - LR off	800	8000	LC1 F630	LR9 F73 81	380/630
375	670	620	780	NS1000L - Micrologic 5.0 - LR off	1000	10000	LC1 F780	TC800/1 + LRD 05	500/800
400	710	690	780	NS1000L - Micrologic 5.0 - LR off	1000	10000	LC1 F780	TC800/1 + LRD 05	500/800
450	800	750	780	NS1000L - Micrologic 5.0 - LR off	1000	10000	LC1 F780	TC800/1 + LRD 05	500/800

(1) Heavy starting (class 20), see thermal o/l chart of equivalence.
(2) Reversers: replace LC1 with LC2; start-delta starter: replace LC1 with LC3.
(3) Ii for Micrologic 5.0 control unit.
(4) Iq ⩽ 50 kA.
(5) Type 1 for thermal relay.

Type 2 coordination (IEC 60947-4-1) 380/400 V



Circuit breakers, contactors

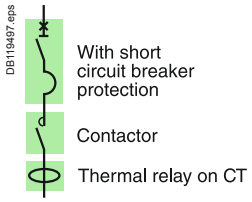
Performance: Ue = 380/400 V						
Circuit breakers	**B**	**F**	**N**	**H**	**S**	**L**
NSX100/160/250 Micrologic 2.2 M/6.2 M	25 kA	36 kA	50 kA	70 kA	100 kA	130 kA
NSX400/630 Micrologic 2.3 M/6.3 M	25 kA	36 kA	50 kA	70 kA	100 kA	130 kA
NS800L/NS1000L Micrologic 5.0	-	-	-	-	-	130 kA

Starting	**Standard IEC 60947-4-1**		
Micrologic	2.2 M/2.3 M	6.2 M/6.3 M	5.0
Normal (class)	5, 10	5, 10	10
Long (class)	20	20, 30 (1)	20

Motors				**Circuit breakers**				**Contactors** (2)
P (kW)	**I (A) 380 V**	**I (A) 400 V**	**Ie max**	**Type**	**Trip unit**	**Irth (A)**	**Irm (A)** (3)	**Type**
7.5	16	15.5	25	NSX100	Micrologic 2.2 M or 6.2 M	12/25	13 Irth	LC1 D80
10	21	20	25	NSX100	Micrologic 2.2 M or 6.2 M	12/25	13 Irth	LC1 D80
11	23	22	25	NSX100	Micrologic 2.2 M or 6.2 M	12/25	13 Irth	LC1 D80
15	30	29	50	NSX100	Micrologic 2.2 M or 6.2 M	25/50	13 Irth	LC1 D80
18.5	37	35	50	NSX100	Micrologic 2.2 M or 6.2 M	25/50	13 Irth	LC1 D80
22	44	41	50	NSX100	Micrologic 2.2 M or 6.2 M	25/50	13 Irth	LC1 D80
30	60	55	80	NSX100	Micrologic 2.2 M or 6.2 M	50/100 (80)	13 Irth	LC1 D80
37	72	66	80	NSX100	Micrologic 2.2 M or 6.2 M	50/100 (80)	13 Irth	LC1 D80
45	85	80	100	NSX100	Micrologic 2.2 M	50/100	13 Irth	LC1 D115 or LC1 F115
55	105	97	115	NSX160	Micrologic 2.2 M or 6.2 M	70/150	13 Irth	LC1 D115 or LC1 F115
75	138	132	150	NSX160	Micrologic 2.2 M or 6.2 M	70/150	13 Irth	LC1 D150 or LC1 F150
90	170	160	185	NSX250	Micrologic 2.2 M or 6.2 M	100/220	13 Irth	LC1 F185
110	205	195	220	NSX250	Micrologic 2.2 M or 6.2 M	100/220	13 Irth	LC1 F225
			265	NSX400	Micrologic 2.3 M or 6.3 M	160/320	13 Irth	LC1 F265
132	250	230	265	NSX400	Micrologic 2.3 M or 6.3 M	160/320	13 Irth	LC1 F265
160	300	280	320	NSX400	Micrologic 2.3 M or 6.3 M	160/320	13 Irth	LC1 F330
200	370	350	400/500	NSX630	Micrologic 2.3 M or 6.3 M	250/500	13 Irth	LC1 F400 (70 kA)
								LC1 F500 (130 kA)
220	408	380	500	NSX630	Micrologic 2.3 M or 6.3 M	250/500	13 Irth	LC1 F500
250	460	430	500	NSX630	Micrologic 2.3 M or 6.3 M	250/500	13 Irth	LC1 F500
			630	NS800L	Micrologic 5.0	320/800	8000	LC1 F630
300	565	500	630	NS800L	Micrologic 5.0	320/800	8000	LC1 F630
335	620	560	630	NS800L	Micrologic 5.0	320/800	8000	LC1 F630
375	670	620	780	NS1000L	Micrologic 5.0	400/1000	10000	LC1 F780
400	710	690	780	NS1000L	Micrologic 5.0	400/1000	10000	LC1 F780
450	800	750	780	NS1000L	Micrologic 5.0	400/1000	10000	LC1 F780

(1) For class 30 the contactor rating shall be checked according to 30 s thermal withstand (F range).
(2) Reversers: replace LC1 with LC2; start-delta starter: replace LC1 with LC3.
(3) Ii for Micrologic 5.0 control unit.

Type 2 coordination (IEC 60947-4-1) 380/400 V



Circuit breakers, contactors and thermal relays

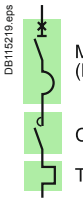
Performance "Iq": Ue = 380/400 V						
Circuit breakers	**B**	**F**	**N**	**H**	**S**	**L**
NSX100/160/250-MA	25 kA	36 kA	50 kA	70 kA	100 kA	130 kA
NSX400/630-MA	25 kA	36 kA	50 kA	70 kA	100 kA	130 kA
NS800L/NS1000L Micrologic 5.0	-	-	-	-	-	130 kA

Starting (1): adjustable class 10 A to 30.

Motors				**Circuit breakers**			**Contactors** (2)	**Thermal o/l relays**	
P (kW)	**I (A) 380 V**	**I (A) 400 V**	**Ie max**	**Type**	**Rating (A)**	**Irm (A)** (3)	**Type**	**Type**	**Irth** (1)
0.37	1.2	1.1	2.5	NSX100-MA	2.5	32.5	LC1 D40A (4)	LTM R08	0.4/8
0.55	1.6	1.5	2.5	NSX100-MA	2.5	32.5	LC1 D40A (4)	LTM R08	0.4/8
0.75	2	1.9	2.5	NSX100-MA	2.5	32.5	LC1 D40A (4)	LTM R08	0.4/8
1.1	2.8	2.7	5	NSX100-MA	6.3	70	LC1 D65A	LTM R08	0.4/8
1.5	3.7	3.6	5	NSX100-MA	6.3	70	LC1 D65A	LTM R08	0.4/8
2.2	5.3	4.9	6.3	NSX100-MA	6.3	82	LC1 D65A	LTM R08	0.4/8
3	7	6.5	12.5	NSX100-MA	12.5	163	LC1 D80	LTM R27	1.35/27
4	9	8.5	12.5	NSX100-MA	12.5	163	LC1 D80	LTM R27	1.35/27
5.5	12	11.5	12.5	NSX100-MA	12.5	163	LC1 D80	LTM R27	1.35/27
7.5	16	15.5	25	NSX100-MA	25	325	LC1 D80	LTM R27	1.35/27
10	21	20	25	NSX100-MA	25	325	LC1 D80	LTM R27	1.35/27
11	23	22	25	NSX100-MA	25	325	LC1 D80	LTM R27	1.35/27
15	30	29	50	NSX100-MA	50	650	LC1 D80	LTM R100	5/100
18.5	37	35	50	NSX100-MA	50	650	LC1 D80	LTM R100	5/100
22	43	41	50	NSX100-MA	50	650	LC1 D80	LTM R100	5/100
30	59	55	80	NSX100-MA	100	1100	LC1 D80	LTM R100	5/100
37	72	66	80	NSX100-MA	100	1100	LC1 D80	LTM R100	5/100
45	85	80	100	NSX100-MA	100	1300	LC1 D115	LTM R100	5/100
							LC1 F115		
55	105	97	115	NSX160-MA	150	1500	LC1 D115	LTM R08	On CT
							LC1 F115		
75	140	132	150	NSX160-MA	150	1950	LC1 D150	LTM R08	On CT
							LC1 F150		
90	170	160	185	NSX250-MA	220	2420	LC1 F185	LTM R08	On CT
110	210	195	220	NSX250-MA	220	2860	LC1 F225	LTM R08	On CT
			265	NSX400 - Micrologic 1.3 M	320	3500	LC1 F265		
132	250	230	265	NSX400 - Micrologic 1.3 M	320	3500	LC1 F265	LTM R08	On CT
160	300	280	320	NSX400 - Micrologic 1.3 M	320	4000	LC1 F330	LTM R08	On CT
200	380	350	400/500	NSX630 - Micrologic 1.3 M	500	5700	LC1 F400 (70 kA)	LTM R08	On CT
							LC1 F500 (130 kA)		
220	420	380	500	NSX630 - Micrologic 1.3 M	500	6300	LC1 F500	LTM R08	On CT
250	460	430	500	NSX630 - Micrologic 1.3 M	500	6300	LC1 F500	LTM R08	On CT
			630	NS800L - Micrologic 5.0 - LR off	800	8000	LC1 F630	LTM R08	On CT
300	565	500	630	NS800L - Micrologic 5.0 - LR off	800	8000	LC1 F630	LTM R08	On CT
335	620	560	630	NS800L - Micrologic 5.0 - LR off	800	8000	LC1 F630	LTM R08	On CT
375	670	620	780	NS1000L - Micrologic 5.0 - LR off	1000	10000	LC1 F780	LTM R08	On CT
400	710	690	780	NS1000L - Micrologic 5.0 - LR off	1000	10000	LC1 F780	LTM R08	On CT
450	800	750	780	NS1000L - Micrologic 5.0 - LR off	1000	10000	LC1 F780	LTM R08	On CT

(1) For installations with a class 30 relay, a derating of 20 % must be apply on circuit breakers and the contactor rating shall be checked according to 30 s thermal withstand (F range).
(2) Reversers: replace LC1 with LC2; start-delta starter: replace LC1 with LC3.
(3) Ii for Micrologic 5.0 control unit.
(4) Iq < 50 kA.

Type 2 coordination (IEC 60947-4-1) 415 V



Circuit breakers, contactors and thermal relays

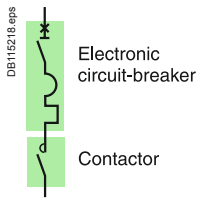
Performance: Ue = 415 V						
Circuit breakers	**B**	**F**	**N**	**H**	**S**	**L**
NSX100/160/250-MA	25 kA	36 kA	50 kA	70 kA	100 kA	130 kA
NSX400/630 Micrologic 1.3 M	25 kA	36 kA	50 kA	70 kA	100 kA	130 kA
NS800L/NS1000L Micrologic 5.0	-	-	-	-	-	130 kA

Starting (1)**:** normal, LRD class 10 A, LR9 class 10.

Motors			Circuit breakers			Contactors (2)	Thermal relays	
P (kW)	**I (A) 415 V**	**Ie max**	**Type**	**Rating (A)**	**Irm (A)** (3)	**Type**	**Type**	**Irth** (1)
0.37	1.1	1.6	NSX100-MA	2.5	22.5	LC1 D09	LRD 06 (4)	1/1.6
0.55	1.5	2.5	NSX100-MA	2.5	32.5	LC1 D09	LRD 07 (4)	1.6/2.5
0.75	1.8	2.5	NSX100-MA	2.5	32.5	LC1 D09	LRD 07 (4)	1.6/2.5
1.1	2.6	4	NSX100-MA	6.3	57	LC1 D32	LRD 08 (5)	2.5/4
1.5	3.4	4	NSX100-MA	6.3	57	LC1 D32	LRD 08 (5)	2.5/4
2.2	4.8	6	NSX100-MA	6.3	82	LC1 D32	LRD 10 (5)	4/6
3	6.2	8	NSX100-MA	12.5	113	LC1 D80	LRD 33 12 (5)	5.5/8
4	8.2	10	NSX100-MA	12.5	138	LC1 D80	LRD 33 14 (5)	7/10
5.5	11	12.5	NSX100-MA	12.5	163	LC1 D80	LRD 33 16 (5)	9/13
7.5	14	18	NSX100-MA	25	250	LC1 D80	LRD 33 21	12/18
10	19	25	NSX100-MA	25	325	LC1 D80	LRD 33 22	17/25
11	21	25	NSX100-MA	25	325	LC1 D80	LRD 33 22	17/25
15	28	32	NSX100-MA	50	450	LC1 D80	LRD 33 53	23/32
18.5	34	40	NSX100-MA	50	550	LC1 D80	LRD 33 55	30/40
22	40	40	NSX100-MA	50	650	LC1 D80	LRD 33 55	30/40
30	53	63	NSX100-MA	100	900	LC1 D80	LRD 33 59	48/65
37	66	80	NSX100-MA	100	1100	LC1 D80	LRD 33 63	63/80
45	77	80	NSX100-MA	100	1100	LC1 D80	LRD 33 63	63/80
55	94	150	NSX160-MA	150	1950	LC1 D150	LR9 D53 69	90/150
						LC1 F150	LR9 F53 69	
75	127	150	NSX160-MA	150	1950	LC1 D150	LR9 D53 69	90/150
						LC1 F150	LR9 F53 69	
90	154	185	NSX250-MA	220	2420	LC1 F185	LR9 F53 71	132/220
110	188	220	NSX250-MA	220	2860	LC1 F225	LR9 F53 71	132/220
132	230	265	NSX400 - Micrologic 1.3 M	320	3500	LC1 F265	LR9 F73 75	200/330
160	270	320	NSX400 - Micrologic 1.3 M	320	4160	LC1 F330	LR9 F73 75	200/330
200	340	400/500	NSX630 - Micrologic 1.3 M	500	5700	LC1 F400 (70 kA)	LR9 F73 79	300/500
						LC1 F500 (130 kA)		
220	366	400/500	NSX630 - Micrologic 1.3 M	500	6500	LC1 F400 (70 kA)	LR9 F73 79	300/500
						LC1 F500 (130 kA)		
250	415	500	NSX630 - Micrologic 1.3 M	500	6500	LC1 F500	LR9 F73 79	300/500
300	500	630	NS800L - Micrologic 5.0 - LR off	800	8000	LC1 F630	LR9 F73 81	380/630
335	560	630	NS800L - Micrologic 5.0 - LR off	800	8000	LC1 F630	LR9 F73 81	380/630
375	620	630	NS800L - Micrologic 5.0 - LR off	800	8000	LC1 F630	LR9 F73 81	380/630
400	660	780	NS1000L - Micrologic 5.0 - LR off	1000	9600	LC1 F780	TC800/1 + LRD 05	500/800
450	750	780	NS1000L - Micrologic 5.0 - LR off	1000	10000	LC1 F780	TC800/1 + LRD 05	500/800

(1) Heavy starting (class 20), see thermal o/l chart of equivalence.
(2) Reversers: replace LC1 with LC2; start-delta starter: replace LC1 with LC3.
(3) Ii for Micrologic 5.0 control unit.
(4) Ig ≤ 50 kA.
(5) Type 1 for thermal relay.

Type 2 coordination (IEC 60947-4-1) 415 V



Circuit breakers, contactors

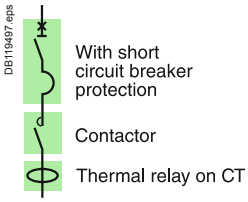
Performance: Ue = 415 V						
Circuit breakers	**B**	**F**	**N**	**H**	**S**	**L**
NSX100/160/250 Micrologic 2.2 M/6.2 M	25 kA	36 kA	50 kA	70 kA	100 kA	130 kA
NSX400/630 Micrologic 2.3 M/6.3 M	25 kA	36 kA	50 kA	70 kA	100 kA	130 kA
NS800L/NS1000L Micrologic 5.0	-	-	-	-	-	130 kA

Starting	**Standard IEC 60947-4-1**		
Micrologic	2.2 M/2.3 M	6.2 M/6.3 M	5.0
Normal (class)	5, 10	5, 10	10
Long (class)	20	20, 30 (1)	20

Motors			**Circuit breakers**				**Contactors** (2)
P (kW)	**I (A) 415 V**	**Ie max**	**Type**	**Trip unit**	**Irth (A)**	**Irm (A)** (3)	**Type**
7.5	14	25	NSX100	Micrologic 2.2 M or 6.2 M	12/25	13 Irth	LC1 D80
10	19	25	NSX100	Micrologic 2.2 M or 6.2 M	12/25	13 Irth	LC1 D80
11	21	25	NSX100	Micrologic 2.2 M or 6.2 M	12/25	13 Irth	LC1 D80
15	28	50	NSX100	Micrologic 2.2 M or 6.2 M	25/50	13 Irth	LC1 D80
18.5	34	50	NSX100	Micrologic 2.2 M or 6.2 M	25/50	13 Irth	LC1 D80
22	40	50	NSX100	Micrologic 2.2 M or 6.2 M	25/50	13 Irth	LC1 D80
30	53	80	NSX100	Micrologic 2.2 M or 6.2 M	50/100 (80)	13 Irth	LC1 D80
37	66	80	NSX100	Micrologic 2.2 M or 6.2 M	50/100 (80)	13 Irth	LC1 D80
45	77	100	NSX100	Micrologic 2.2 M	50/100	13 Irth	LC1 D115 or LC1 F115
55	94	150	NSX160	Micrologic 2.2 M or 6.2 M	70/150	13 Irth	LC1 D150 or LC1 F150
75	127	150	NSX160	Micrologic 2.2 M or 6.2 M	70/150	13 Irth	LC1 D150 or LC1 F150
90	154	185	NSX250	Micrologic 2.2 M or 6.2 M	100/220	13 Irth	LC1 F225
110	188	220	NSX250	Micrologic 2.2 M or 6.2 M	100/220	13 Irth	LC1 F225
132	230	265	NSX400	Micrologic 2.3 M or 6.3 M	160/320	13 Irth	LC1 F265
160	270	320	NSX400	Micrologic 2.3 M or 6.3 M	160/320	13 Irth	LC1 F330
200	340	400/500	NSX630	Micrologic 2.3 M or 6.3 M	250/500	13 Irth	LC1 F400 (70 kA)
							LC1 F500 (130 kA)
220	366	400/500	NSX630	Micrologic 2.3 M or 6.3 M	250/500	13 Irth	LC1 F400 (70 kA)
							LC1 F500 (130 kA)
250	415	500	NSX630	Micrologic 2.3 M or 6.3 M	250/500	13 Irth	LC1 F500
300	500	630	NS800L	Micrologic 5.0	320/800	8000	LC1 F630
335	560	630	NS800L	Micrologic 5.0	320/800	8000	LC1 F630
375	620	780	NS1000L	Micrologic 5.0	400/1000	10000	LC1 F780
400	660	780	NS1000L	Micrologic 5.0	400/1000	10000	LC1 F780
450	750	780	NS1000L	Micrologic 5.0	400/1000	10000	LC1 F780

(1) For class 30 the contactor rating shall be checked according to 30 s thermal withstand (F range).
(2) Reversers: replace LC1 with LC2; start-delta starter: replace LC1 with LC3.
(3) Ii for Micrologic 5.0 control unit.

Type 2 coordination (IEC 60947-4-1) 415 V



Circuit breakers, contactors and thermal relays

Performance: Ue = 415 V						
Circuit breakers	**B**	**F**	**N**	**H**	**S**	**L**
NSX100/160/250-MA	25 kA	36 kA	50 kA	70 kA	100 kA	130 kA
NSX400/630-MA	25 kA	36 kA	50 kA	70 kA	100 kA	130 kA
NS800L/NS1000L Micrologic 5.0	-	-	-	-	-	130 kA

Starting (1): adjustable class 10 A to 30.

Motors			Circuit breakers			Contactors (2)	Thermal o/l relays	
P (kW)	**I (A) 415 V**	**Ie max**	**Type**	**Rating (A)**	**Irm (A) (3)**	**Type**	**Type**	**Irth (1)**
0.37	1.1	2.5	NSX100-MA	2.5	32.5	LC1 D40A (4)	LTM R08	0.4/8
0.55	1.5	2.5	NSX100-MA	2.5	32.5	LC1 D40A (4)	LTM R08	0.4/8
0.75	1.8	2.5	NSX100-MA	2.5	32.5	LC1 D40A (4)	LTM R08	0.4/8
1.1	2.6	5	NSX100-MA	6.3	70	LC1 D65A	LTM R08	0.4/8
1.5	3.4	5	NSX100-MA	6.3	70	LC1 D65A	LTM R08	0.4/8
2.2	4.8	6.3	NSX100-MA	6.3	82	LC1 D65A	LTM R08	0.4/8
3	6.2	12.5	NSX100-MA	12.5	163	LC1 D80	LTM R27	1.35/27
4	8.2	12.5	NSX100-MA	12.5	163	LC1 D80	LTM R27	1.35/27
5.5	11	12.5	NSX100-MA	12.5	163	LC1 D80	LTM R27	1.35/27
7.5	14	25	NSX100-MA	25	325	LC1 D80	LTM R27	1.35/27
10	19	25	NSX100-MA	25	325	LC1 D80	LTM R27	1.35/27
11	21	25	NSX100-MA	25	325	LC1 D80	LTM R27	1.35/27
15	28	50	NSX100-MA	50	650	LC1 D80	LTM R100	5/100
18.5	34	50	NSX100-MA	50	650	LC1 D80	LTM R100	5/100
22	40	50	NSX100-MA	50	650	LC1 D80	LTM R100	5/100
30	53	80	NSX100-MA	100	1100	LC1 D80	LTM R100	5/100
37	66	80	NSX100-MA	100	1100	LC1 D80	LTM R100	5/100
45	77	100	NSX100-MA	100	1100	LC1 D115	LTM R100	5/100
						LC1 F115		
55	94	150	NSX160-MA	150	1950	LC1 D150	LTM R08	On CT
						LC1 F150		
75	127	150	NSX160-MA	150	1950	LC1 D150	LTM R08	On CT
						LC1 F150		
90	154	185	NSX250-MA	220	2420	LC1 F185	LTM R08	On CT
110	188	220	NSX250-MA	220	2860	LC1 F225	LTM R08	On CT
132	230	265	NSX400 - Micrologic 1.3 M	320	3500	LC1 F265	LTM R08	On CT
160	270	320	NSX400 - Micrologic 1.3 M	320	4000	LC1 F330	LTM R08	On CT
200	340	400/500	NSX630 - Micrologic 1.3 M	500	5700	LC1 F400 (70 kA)	LTM R08	On CT
						LC1 F500 (130 kA)		
220	366	400/500	NSX630 - Micrologic 1.3 M	500	6300	LC1 F400 (70 kA)	LTM R08	On CT
						LC1 F500 (130 kA)		
250	415	500	NSX630 - Micrologic1.3 M	500	6300	LC1 F500	LTM R08	On CT
300	500	630	NS800L - Micrologic 5.0 - LR off	800	8000	LC1 F630	LTM R08	On CT
335	560	630	NS800L - Micrologic 5.0 - LR off	800	8000	LC1 F630	LTM R08	On CT
375	620	780	NS1000L - Micrologic 5.0 - LR off	1000	10000	LC1 F780	LTM R08	On CT
400	660	780	NS1000L - Micrologic 5.0 - LR off	1000	10000	LC1 F780	LTM R08	On CT
450	750	780	NS1000L - Micrologic 5.0 - LR off	1000	10000	LC1 F780	LTM R08	On CT

(1) For installations with a class 30 relay, a derating of 20 % must be apply on circuit breakers and the contactor rating shall be checked according to 30 s thermal withstand (F range).
(2) Reversers: replace LC1 with LC2; start-delta starter: replace LC1 with LC3.
(3) Ii for Micrologic 5.0 control unit.
(4) Iq ≤ 50 kA.

Type 2 coordination (IEC 60947-4-1) 440 V

DB115219.eps

Magnetic circuit breaker (MA)

Contactor

Thermal relay

Circuit breakers, contactors and thermal relays

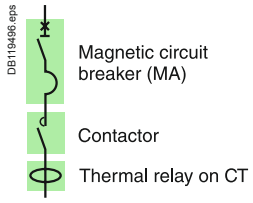
Performance [2]: Ue = 440 V	
Circuit breakers	**H**
NS80-MA	65 kA

Starting [1]**:** normal, LRD class 10 A, LR9 class 10.

Motors			Circuit breakers			Contactors [3]	Thermal o/l relays	
P (kW)	I (A) 440 V	Ie max	Type	Rating (A)	Irm (A)	Type	Type	Irth [1]
0.25	0.7	1	NS80H-MA	1.5	13.5	LC1 D09	LRD 05	0.63/1
0.37	1	1.6	NS80H-MA	2.5	22.5	LC1 D09	LRD 06	1/1.6
0.55	1.4	1.6	NS80H-MA	2.5	22.5	LC1 D09	LRD 06	1/1.6
0.75	1.7	2.5	NS80H-MA	2.5	32.5	LC1 D09	LRD 07	1.6/2.5
1.1	2.4	2.5	NS80H-MA	2.5	32.5	LC1 D09	LRD 07	1.6/2.5
1.5	3.1	4	NS80H-MA	6.3	57	LC1 D32	LRD 08	2.5/4
2.2	4.5	6	NS80H-MA	6.3	82	LC1 D32	LRD 10	4/6
3	5.8	6	NS80H-MA	6.3	82	LC1 D32	LRD 10	4/6
4	8	8	NS80H-MA	12.5	113	LC1 D40	LRD 33 12	5.5/8
5.5	10.5	12.5	NS80H-MA	12.5	163	LC1 D40	LRD 33 16	9/13
7.5	13.7	16	NS80H-MA	25	250	LC1 D40	LRD 33 21	12/18
10	19	25	NS80H-MA	25	325	LC1 D40	LRD 33 22	17/25
11	20	25	NS80H-MA	25	325	LC1 D40	LRD 33 22	17/25
15	26.5	32	NS80H-MA	50	450	LC1 D40	LRD 33 53	23/32
18.5	33	40	NS80H-MA	50	550	LC1 D50	LRD 33 55	30/40
22	39	40	NS80H-MA	50	550	LC1 D50	LRD 33 55	30/40
30	52	63	NS80H-MA	80	880	LC1 D65	LRD 33 59	48/65
37	63	63	NS80H-MA	80	880	LC1 D65	LRD 33 59	48/65
45	76	80	NS80H-MA	80	1040	LC1 D80	LRD 33 63	63/80

(1) For long starting (class 20), see the correspondence table for thermal relay.
(2) Valid for 480 V NEMA.
(3) Reversers: replace LC1 with LC2; start-delta starter: replace LC1 with LC3.

Type 2 coordination (IEC 60947-4-1) 440 V



Circuit breakers, contactors and thermal relays

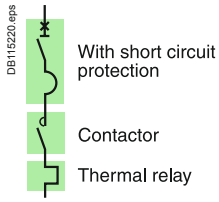
Performance [2]: Ue = 440 V	
Circuit breakers	**H**
NS80-MA	65 kA

Starting [1]: adjustable class 10 A to 30.

Motors			Circuit breakers			Contactors [3]	Thermal o/l relays	
P (kW)	**I (A) 440 V**	**Ie max**	**Type**	**Rating (A)**	**Irm (A)**	**Type**	**Type**	**Irth [1]**
0.25	0.7	1	NS80H-MA	1.5	13.5	LC1 D40	LTM R08	0.4/8
0.37	1	2.5	NS80H-MA	2.5	32.5	LC1 D40	LTM R08	0.4/8
0.55	1.4	2.5	NS80H-MA	2.5	32.5	LC1 D40	LTM R08	0.4/8
0.75	1.7	2.5	NS80H-MA	2.5	32.5	LC1 D40	LTM R08	0.4/8
1.1	2.4	2.5	NS80H-MA	2.5	32.5	LC1 D40	LTM R08	0.4/8
1.5	3.1	6.3	NS80H-MA	6.3	82	LC1 D40	LTM R08	0.4/8
2.2	4.5	6.3	NS80H-MA	6.3	82	LC1 D40	LTM R08	0.4/8
3	5.8	6.3	NS80H-MA	6.3	82	LC1 D40	LTM R08	0.4/8
4	8	12.5	NS80H-MA	12.5	163	LC1 D40	LTM R27	1.35/27
5.5	10.5	12.5	NS80H-MA	12.5	163	LC1 D40	LTM R27	1.35/27
7.5	13.7	25	NS80H-MA	25	325	LC1 D40	LTM R27	1.35/27
10	19	25	NS80H-MA	25	325	LC1 D40	LTM R27	1.35/27
11	20	25	NS80H-MA	25	325	LC1 D40	LTM R27	1.35/27
15	26.5	50	NS80H-MA	50	550	LC1 D80	LTM R100	5/100
18.5	33	50	NS80H-MA	50	550	LC1 D80	LTM R100	5/100
22	39	50	NS80H-MA	50	550	LC1 D80	LTM R100	5/100
30	52	80	NS80H-MA	80	1040	LC1 D80	LTM R100	5/100
37	63	80	NS80H-MA	80	1040	LC1 D80	LTM R100	5/100
45	76	80	NS80H-MA	80	1040	LC1 D80	LTM R100	5/100

(1) For installations with a class 30 relay, a derating of 20 % must be apply on circuit breakers.
(2) Valid for 480 V NEMA.
(3) Reversers: replace LC1 with LC2; start-delta starter: replace LC1 with LC3.

Type 2 coordination (IEC 60947-4-1) 440 V



Circuit breakers, contactors and thermal relays

Performance "Iq": Ue = 440 V (2)					
Circuit breakers	**F**	**N**	**H**	**S**	**L**
NSX100/160/250-MA	35 kA	50 kA	65 kA	90 kA	130 kA
NSX400/630 Micrologic 1.3 M	30 kA	42 kA	65 kA	90 kA	130 kA
NS630bL/800L/1000L Micrologic 5.0	-	-	-	-	130 kA

Starting (1)**:** normal, LRD class 10 A, LR9 class 10.

Motors			Circuit breakers			Contactors (3)	Thermal o/l relays	
P (kW)	**I (A) 440 V**	**Ie max (A)**	**Type**	**Rating (A)**	**Irm (A) (4)**	**Type**	**Type**	**Irth (1)**
0.37	1	1.6	NSX100-MA	2.5	22.5	LC1 D09	LRD 06 (5)	1/1.6
0.55	1.4	1.6	NSX100-MA	2.5	22.5	LC1 D09	LRD 06 (5)	1/1.6
0.75	1.7	2.5	NSX100-MA	2.5	32.5	LC1 D09	LRD 07 (5)	1.6/2.5
1.1	2.4	2.5	NSX100-MA	2.5	32.5	LC1 D09	LRD 07 (5)	1.6/2.5
1.5	3.1	4	NSX100-MA	6.3	57	LC1 D32	LRD 08 (6)	2.5/4
2.2	4.5	6	NSX100-MA	6.3	82	LC1 D32	LRD 10 (6)	4/6
3	5.8	6	NSX100-MA	6.3	82	LC1 D32	LRD 10 (6)	4/6
4	8	8	NSX100-MA	12.5	113	LC1 D80	LRD 33 12 (6)	5.5/8
5.5	10.5	12.5	NSX100-MA	12.5	163	LC1 D80	LRD 33 16 (6)	9/13
7.5	13.7	18	NSX100-MA	25	250	LC1 D80	LRD 33 21	12/18
10	19	25	NSX100-MA	25	325	LC1 D80	LRD 33 22	17/25
11	20	25	NSX100-MA	25	325	LC1 D80	LRD 33 22	17/25
15	26.5	32	NSX100-MA	50	450	LC1 D80	LRD 33 53	23/32
18.5	33	40	NSX100-MA	50	550	LC1 D80	LRD 33 55	30/40
22	39	40	NSX100-MA	50	550	LC1 D80	LRD 33 55	30/40
30	52	63	NSX100-MA	100	900	LC1 D80	LRD 33 59	48/65
37	63	63	NSX100-MA	100	900	LC1 D80	LRD 33 59	48/65
45	76	80	NSX100-MA	100	1100	LC1 D80	LRD 33 63	63/80
55	90	100	NSX100-MA	100	1300	LC1 D115	LR9 D53 67	60/100
						LC1 F115	LR9 F53 67	
75	125	150	NSX160-MA	150	1950	LC1 D150	LR9 D53 69	90/150
						LC1 F150	LR9 F53 69	
90	140	150	NSX160-MA	150	1950	LC1 D150	LR9 D53 69	90/150
						LC1 F150	LR9 F53 69	
110	178	185	NSX250-MA	220	2420	LC1 F185	LR9 F53 71	132/220
132	210	265	NSX400 - Micrologic 1.3 M	320	3500	LC1 F265	LR9 F53 71	132/220
160	256	265	NSX400 - Micrologic 1.3 M	320	3500	LC1 F265	LR9 F73 75	200/330
200	310	320	NSX400 - Micrologic 1.3 M	320	4160	LC1 F330	LR9 F73 75	200/330
220	353	400	NSX630 - Micrologic 1.3 M	500	5500	LC1 F400 (70 kA)	LR9 F73 79	300/500
						LC1 F500 (130 kA)		
250	400	500	NSX630 - Micrologic 1.3 M	500	6500	LC1 F500	LR9 F73 79	300/500
300	460	500	NSX630 - Micrologic 1.3 M	500	6500	LC1 F500	LR9 F73 79	300/500
		630	NS800L - Micrologic 5.0 - LR off	800	8000	LC1 F630	LR9 F73 81	380/630
335	540	630	NS800L - Micrologic 5.0 - LR off	800	8000	LC1 F630	LR9 F73 81	380/630
375	575	630	NS800L - Micrologic 5.0 - LR off	800	8000	LC1 F630	LR9 F73 81	380/630
400	611	720	NS800L - Micrologic 5.0 - LR off	800	9600	LC1 F780	TC800/1 + LRD 05	500/800
450	720	720	NS800L - Micrologic 5.0 - LR off	800	9600	LC1 F780	TC800/1 + LRD 05	500/800
500	800	780	NS1000L - Micrologic 5.0 - LR off	1000	10000	LC1 F780	TC800/1 + LRD 05	500/800

(1) For long starting (class 20), see the correspondence table for thermal relay.
(2) Valid for 480 V NEMA.
(3) Reversers: replace LC1 with LC2; start-delta starter: replace LC1 with LC3.
(4) Ii for Micrologic 5.0 control unit.
(5) Iq ≤ 50 kA.
(6) Type 1 only for thermal relay.

Type 2 coordination (IEC 60947-4-1) 440 V

Circuit breakers, contactors

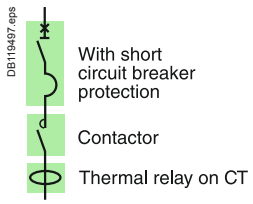
Performance "Iq": Ue = 440 V (2)					
Circuit breakers	**F**	**N**	**H**	**S**	**L**
NSX100/160/250-MA	35 kA	50 kA	65 kA	90 kA	130 kA
NSX400/630-MA	30 kA	42 kA	65 kA	90 kA	130 kA
NS630bL/800L/1000L Micrologic 5.0	-	-	-	-	130 kA

Starting	**Standard IEC 60947-4-1**		
Micrologic	2.2 M/2.3 M	6.2 M/6.3 M	5.0
Normal (class)	5, 10	5, 10	10
Long (class)	20	20, 30 (1)	20

Motors			**Circuit breakers**				**Contactors** (3)
P (kW)	**I (A) 440 V**	**Ie max**	**Type**	**Trip unit**	**Irth (A)**	**Irm (A)** (4)	**Type**
7.5	13.7	20	NSX100	Micrologic 2.2 / 6.2 M	12/20	13 Irth	LC1 D80
10	19	25	NSX100	Micrologic 2.2 / 6.2 M	15/25	13 Irth	LC1 D80
11	20	25	NSX100	Micrologic 2.2 / 6.2 M	15/25	13 Irth	LC1 D80
15	26.5	40	NSX100	Micrologic 2.2 / 6.2 M	24/40	13 Irth	LC1 D80
18.5	33	40	NSX100	Micrologic 2.2 / 6.2 M	24/40	13 Irth	LC1 D80
22	39	40	NSX100	Micrologic 2.2 / 6.2 M	24/40	13 Irth	LC1 D80
30	51	80	NSX100	Micrologic 2.2 / 6.2 M	48/80	13 Irth	LC1 D80
37	64	80	NSX100	Micrologic 2.2 / 6.2 M	48/80	13 Irth	LC1 D80
45	76	80	NSX100	Micrologic 2.2 / 6.2 M	48/80	13 Irth	LC1 D80
55	90	100	NSX100	Micrologic 2.2 / 6.2 M	60/100	13 Irth	LC1 D115 or LC1 F115
75	125	150	NSX160	Micrologic 2.2 / 6.2 M	90/150	13 Irth	LC1 D150 or LC1 F150
90	146	150	NSX160	Micrologic 2.2 / 6.2 M	90/150	13 Irth	LC1 D150 or LC1 F150
110	178	185	NSX250	Micrologic 2.2 / 6.2 M	131/220	13 Irth	LC1 F185
132	215	265	NSX400	Micrologic 2.3 / 6.3 M	160/320	13 Irth	LC1 F265
160	256	265	NSX400	Micrologic 2.3 / 6.3 M	160/320	13 Irth	LC1 F265
200	320	320	NSX400	Micrologic 2.3 / 6.3 M	160/320	13 Irth	LC1 F330
220	353	400	NSX630	Micrologic 2.3 / 6.3 M	250/500	13 Irth	LC1 F400 (70 kA) LC1 F500 (130 kA)
250	400	400	NSX630	Micrologic 2.3 / 6.3 M	250/500	13 Irth	LC1 F500
300	460	500	NSX630	Micrologic 2.3 / 6.3 M	250/500	13 Irth	LC1 F500
		630	NS800L	Micrologic 5.0	320/800	8000	LC1 F630
335	540	630	NS800L	Micrologic 5.0	320/800	8000	LC1 F630
375	575	630	NS800L	Micrologic 5.0	320/800	8000	LC1 F630
400	611	720	NS800L	Micrologic 5.0	320/800	9600	LC1 F780
450	720	720	NS800L	Micrologic 5.0	320/800	9600	LC1 F780
500	800	800	NS1000L	Micrologic 5.0	400/1000	10000	LC1 F780

(1) Valid for 480 V NEMA.
(2) For class 30 the contactor rating shall be checked according to 30 s thermal withstand (F range).
(3) Reversers: replace LC1 with LC2; start-delta starter: replace LC1 with LC3.
(4) Ii for Micrologic 5.0 control unit.

Type 2 coordination (IEC 60947-4-1) 440 V



Circuit breakers, contactors and thermal relays

Performance "Iq" (kA): Ue = 440 V (1)

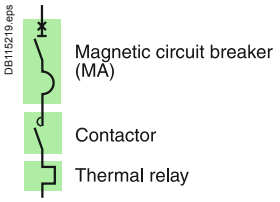
Circuit breakers	F	N	H	S	L
NSX100/160/250-MA	35 kA	50 kA	65 kA	90 kA	130 kA
NSX400/630 Micrologic 1.3 M	30 kA	42 kA	65 kA	90 kA	130 kA
NS630bL/800L/1000L Micrologic 5.0	-	-	-	-	130 kA

Starting (1): adjustable class 10 A - 30.

Motors			Circuit breakers			Contactors (3)	Thermal o/l relays	
P (kW)	I (A) 440 V	Ie max	Type	Rating (A)	Irm (A) (4)	Type	Type	Irth
0.37	1	2.5	NSX100-MA	2.5	32.5	LC1 D40A (4)	LTM R08	0.4/8
0.55	1.4	2.5	NSX100-MA	2.5	32.5	LC1 D40A (4)	LTM R08	0.4/8
0.75	1.7	2.5	NSX100-MA	2.5	32.5	LC1 D40A (4)	LTM R08	0.4/8
1.1	2.4	2.5	NSX100-MA	2.5	32.5	LC1 D40A (4)	LTM R08	0.4/8
1.5	3.1	6.3	NSX100-MA	6.3	82	LC1 D65A	LTM R08	0.4/8
2.2	4.5	6.3	NSX100-MA	6.3	82	LC1 D65A	LTM R08	0.4/8
3	5.8	6.3	NSX100-MA	6.3	82	LC1 D65A	LTM R08	0.4/8
4	8	12.5	NSX100-MA	12.5	163	LC1 D80	LTM R27	1.35/27
5.5	10.5	12.5	NSX100-MA	12.5	163	LC1 D80	LTM R27	1.35/27
7.5	13.7	25	NSX100-MA	25	325	LC1 D80	LTM R27	1.35/27
10	19	25	NSX100-MA	25	325	LC1 D80	LTM R27	1.35/27
11	20	25	NSX100-MA	25	325	LC1 D80	LTM R27	1.35/27
15	26.5	50	NSX100-MA	50	550	LC1 D80	LTM R100	5/100
18.5	33	50	NSX100-MA	50	550	LC1 D80	LTM R100	5/100
22	39	50	NSX100-MA	50	550	LC1 D80	LTM R100	5/100
30	52	80	NSX100-MA	100	1100	LC1 D80	LTM R100	5/100
37	63	80	NSX100-MA	100	1100	LC1 D80	LTM R100	5/100
45	76	80	NSX100-MA	100	1100	LC1 D80	LTM R100	5/100
55	90	100	NSX100-MA	100	1300	LC1 D115	LTM R100	5/100
						LC1 F115		
75	125	150	NSX160-MA	150	1950	LC1 D150	LTM R08	On CT
						LC1 F150		
90	140	150	NSX160-MA	150	1950	LC1 D150	LTM R08	On CT
						LC1 F150		
110	178	185	NSX250-MA	220	2420	LC1 F185	LTM R08	On CT
132	210	265	NSX400 - Micrologic 1.3 M	320	3500	LC1 F265	LTM R08	On CT
160	256	265	NSX400 - Micrologic 1.3 M	320	3500	LC1 F265	LTM R08	On CT
200	310	320	NSX400 - Micrologic 1.3 M	320	4000	LC1 F330	LTM R08	On CT
220	353	400	NSX630 - Micrologic 1.3 M	500	5500	LC1 F400 (70 kA)	LTM R08	On CT
						LC1 F500 (130 kA)		
250	400	500	NSX630 - Micrologic 1.3 M	500	6500	LC1 F500	LTM R08	On CT
300	460	500	NSX630 - Micrologic 1.3 M	500	6500	LC1 F500	LTM R08	On CT
		630	NS800L - Micrologic 5.0 - LR off	800	8000	LC1 F630	LTM R08	On CT
335	540	630	NS800L - Micrologic 5.0 - LR off	800	8000	LC1 F630	LTM R08	On CT
375	575	630	NS800L - Micrologic 5.0 - LR off	800	8000	LC1 F630	LTM R08	On CT
400	611	720	NS800L - Micrologic 5.0 - LR off	800	9600	LC1 F780	LTM R08	On CT
450	720	720	NS800L - Micrologic 5.0 - LR off	800	9600	LC1 F780	LTM R08	On CT
500	800	800	NS1000L -Micrologic 5.0 - LR off	1000	10000	LC1 F780	LTM R08	On CT

(1) Valid for 480 V NEMA.
(2) For installations with a class 30 relay, a derating of 20 % must be apply on circuit breakers and the contactor rating shall be checked according to 30 s thermal withstand (F range).
(3) Reversers: replace LC1 with LC2; start-delta starter: replace LC1 with LC3.
(4) Iq ≤ 50 kA.

Type 2 coordination (IEC 60947-4-1) 690 V



Circuit breakers, contactors and thermal relays

Performance "Iq": Ue = 690 V	
Circuit breaker	**iq**
GV2 < L06 or GV2 ⩾ L07 + LA9 LB920	50 kA
GV2 < P06 or GV2 ⩾ P07 + LA9 LB920	50 kA

Starting (1): normal LRD class 10 A.

GV2L

Motors			Circuit breaker			Contactors (3)	Thermal o/l relays	
P (kW)	I (A) 690 V	Ie max	Type	Rating (A)	Irm (A)	Type	Type	Irth (1)
0.37	0.64	0.64	GV2-L04	0.63	8	LC1-D09	LRD05	0.63...1
0.55	0.87	1	GV2-L05	1	13	LC1-D09	LRD05	0.63...1
0.75	1.1	1.6	GV2-L06	1.6	21	LC1-D09	LRD06	1...1.6
1.1	1.6	2.5	LA9LB920 (2) + GV2-L07	2.5	33	LC1-D25	LRD07	1.6...2.5
1.5	2.1	2.5	LA9LB920 (2) + GV2-L07	2.5	33	LC1-D25	LRD07	1.6...2.5
2.2	2.8	4	LA9LB920 (2) + GV2-L08	4	52	LC1-D25	LRD08	2.5...4
3	3.8	4	LA9LB920 (2) + GV2-L08	4	52	LC1-D25	LRD08	2.5...4
4	4.9	6	LA9LB920 (2) + GV2-L10	6.3	82	LC1-D25	LRD10	4...6
5.5	6.7	8	LA9LB920 (2) + GV2-L14	10	130	LC1-D25	LRD12	5.5...8
7.5	8.9	10	LA9LB920 (2) + GV2-L14	10	130	LC1-D25	LRD14	7...10
10	11.5	13	LA9LB920 (2) + GV2-L16	14	182	LC1-D25	LRD16	9...13
15	17	18	LA9LB920 (2) + GV2-L20	18	234	LC1-D32	LRD21	12...18
18.5	21	21	LA9LB920 (2) + GV2-L22	25	325	LC1-D40A	LRD325	16...24
22	24	32	LA9LB920 (2) + GV2-L32	32	416	LC1-D40A	LRD332	23...32

GV2P

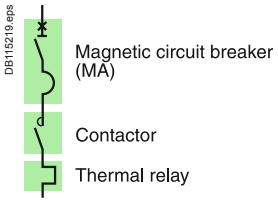
Motors			Circuit breaker			Contactors (3)
P (kW)	I (A) 690 V	Ie max	Type	Irth (A)	Irm (A)	Type
0.37	0.63	0.63	GV2-P04	0.63		LC1-D09
0.55	0.87	1	GV2-P05	1		LC1-D09
0.75	1.1	1.6	GV2-P06	1.6		LC1-D09
1.1	1.6	2.5	LA9LB920 (2) + GV2-P07	2.5		LC1-D25
1.5	2.1	2.5	LA9LB920 (2) + GV2-P07	2.5		LC1-D25
2.2	2.8	4	LA9LB920 (2) + GV2-P08	4		LC1-D25
3	3.8	4	LA9LB920 (2) + GV2-P08	4		LC1-D25
4	4.9	6.3	LA9LB920 (2) + GV2-P10	6.3		LC1-D25
5.5	6.7	10	LA9LB920 (2) + GV2-P14	10		LC1-D25
7.5	8.9	10	LA9LB920 (2) + GV2-P14	10		LC1-D25
10	12	14	LA9LB920 (2) + GV2-P16	14		LC1-D25
11	12.8	14	LA9LB920 (2) + GV2-P16	14		LC1-D32
15	17	18	LA9LB920 (2) + GV2-P20	18		LC1-D32
18.5	21	23	LA9LB920 (2) + GV2-P21	23		LC1-D32
22	24	32	LA9LB920 (2) + GV2-P32	32		LC1-D40A

Starting: adjustable

Motors			Circuit breaker			Contactors (3)	Thermal o/l relays	
P (kW)	I (A) 690 V	Ie max	Type	Rating (A)	Irm (A)	Type	Type	Irth (1)
0.37	0.64	0.64	GV2-L04	0.63	8	LC1-D09	LTM R08	0.4/8
0.55	0.87	1	GV2-L05	1	13	LC1-D09	LTM R08	0.4/8
0.75	1.1	1.6	GV2-L06	1.6	21	LC1-D09	LTM R08	0.4/8
1.1	1.6	2.5	LA9LB920 (2) + GV2-L07	2.5	33	LC1-D25	LTM R08	0.4/8
1.5	2.1	2.5	LA9LB920 (2) + GV2-L07	2.5	33	LC1-D25	LTM R08	0.4/8
2.2	2.8	4	LA9LB920 (2) + GV2-L08	4	52	LC1-D25	LTM R08	0.4/8
3	3.8	4	LA9LB920 (2) + GV2-L08	4	52	LC1-D25	LTM R08	0.4/8
4	4.9	6	LA9LB920 (2) + GV2-L10	6.3	82	LC1-D25	LTM R08	0.4/8
5.5	6.7	8	LA9LB920 (2) + GV2-L14	10	130	LC1-D25	LTM R08	0.4/8
7.5	8.9	10	LA9LB920 (2) + GV2-L14	10	130	LC1-D25	LTM R27	1.35/27
11	12.8	14	LA9LB920 (2) + GV2-L16	14	182	LC1-D25	LTM R27	1.35/27
15	17	18	LA9LB920 (2) + GV2-L20	18	234	LC1-D32	LTM R27	1.35/27
18.5	21	21	LA9LB920 (2) + GV2-L22	25	325	LC1-D40A	LTM R27	1.35/27
22	24	27	LA9LB920 (2) + GV2-L32	32	416	LC1-D40A	LTM R27	1.35/27

(1) For long starting (class 20), see the correspondence table for thermal relay.
(2) One LA9LB920 limitor (on the supply side of the breaker) can be used for several starter up to 32 A.
Connections between limitor and GV2 breaker shall be done in such a way to minimizae the risk of short circuit.
(3) Reversers : replace LC1 with LC2 ; start-delta starter : replace LC1 with LC3.

Type 2 coordination (IEC 60947-4-1) 690 V



Circuit breakers, contactors and thermal relays

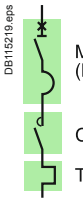
Performance "Iq": Ue = 690 V	
Circuit breaker	**iq**
LUALB1	70 kA
LA9LB920	35 kA

Starting : adjustable.

Motors			TeSys U		Limitor	Control unit	
P (kW)	I (A) 690V	Ie max	type (2)	Im		type (1)	Irth
0.37	0.64	0.64	LUB12	14.2 In	LUALB1	LUC●01	0.35...1.4
			LUB12	14.2 In	LA9LB920	LUC●01	0.35...1.4
0.55	0.87	1	LUB12	14.2 In	LUALB1	LUC●01	0.35...1.4
			LUB12	14.2 In	LA9LB920	LUC●01	0.35...1.4
0.75	1.1	1.6	LUB12	14.2 In	LUALB1	LUC●01	0.35...1.4
			LUB12	14.2 In	LA9LB920	LUC●01	0.35...1.4
1.1	1.6	2.5	LUB12	14.2 In	LUALB1	LUC●05	1.25...5
			LUB12	14.2 In	LA9LB920	LUC●05	1.25...5
1.5	2.1	2.5	LUB12	14.2 In	LUALB1	LUC●05	1.25...5
			LUB12	14.2 In	LA9LB920	LUC●05	1.25...5
2.2	2.8	4	LUB12	14.2 In	LUALB1	LUC●05	1.25...5
			LUB12	14.2 In	LA9LB920	LUC●05	1.25...5
3	3.8	4	LUB12	14.2 In	LUALB1	LUC●05	1.25...5
			LUB12	14.2 In	LUALB1	LUC●05	1.25...5
4	4.9	6	LUB12	14.2 In	LUALB1	LUC●12	3...12
			LUB12	14.2 In	LA9LB920	LUC●12	3...12
5.5	6.7	8	LUB12	14.2 In	LUALB1	LUC●12	3...12
			LUB12	14.2 In	LA9LB920	LUC●12	3...12
7.5	8.9	10	LUB12	14.2 In	LUALB1	LUC●12	3...12
			LUB12	14.2 In	LA9LB920	LUC●12	3...12
11	12.8	18	LUB32	14.2 In	LUALB1	LUC●18	4.5...18
			LUB32	14.2 In	LA9LB920	LUC●18	4.5...18
15	17	18	LUB32	14.2 In	LUALB1	LUC●18	4.5...18
			LUB32	14.2 In	LA9LB920	LUC●18	4.5...18
18.5	21	25	LUB32	14.2 In	LUALB1	LUC●32	8...32
			LUB32	14.2 In	LA9LB920	LUC●32	8...32

(1) ● to be replaced by A, B, D or CM according to protection and monitoring needs.
(2) For Reversing replace LUB12 by LU2B12 and LUB32 by LU2B32.

Type 2 coordination (IEC 60947-4-1) 690 V



Circuit breakers, contactors and thermal relays

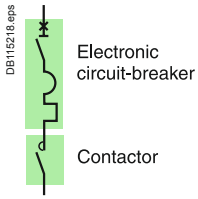
Performance "Iq": Ue = 690 V			
Circuit breakers	**HB1**	**HB2**	**LB**
NSX100/160/250 MA	75 kA	100 kA	-
NSX400/630 Micrologic 1.3 M	75 kA	100 kA	-
NS800 Micrologic 5.0x	-	-	75 kA

Starting: normal, LRD class 10 A, LR9 class 10.

Motors			**Circuit breakers**			**contactors** [2]	**Thermal o/l relays**	
P (kW)	**I (A) 690 V**	**Ie max**	**Type**	**Rating (A)**	**Irm (A)** [5]	**Type**	**Type**	**Irth** [1]
0.37	0.64	1	NSX100-MA	12.5 [3]	75	LC1-D80	CT 1 A + LRD05	0.63...1
0.55	0.87	1	NSX100-MA	12.5 [3]	75	LC1-D80	CT 1 A + LRD05	0.63...1
0.75	1.1	1.5	NSX100-MA	12.5 [3]	75	LC1-D80	CT 1.5 A + LRD05	0.95...1.5
1.1	1.6	2.5	NSX100-MA	12.5 [3]	75	LC1-D80	CT 2 A + LRD05	1.26...2
1.5	2.1	2.5	NSX100-MA	12.5 [3]	75	LC1-D80	CT 2.5 A + LRD05	1.6...2.5
2.2	2.8	4	NSX100-MA	12.5 [3]	75	LC1-D80	CT 4 A + LRD05	2.5...4
3	3.8	4	NSX100-MA	12.5 [3]	75	LC1-D80	CT 4 A + LRD05	2.5...4
4	4.9	6	NSX100-MA	12.5 [3]	112	LC1-D80	CT 6 A + LRD05	3.8...6
5.5	6.7	7.5	NSX100-MA	12.5	112	LC1-D80	CT 7.5 A + LRD05	4.7...7.5
7.5	8.9	12.5	NSX100-MA	12.5	162	LC1-D80	CT 10 A + LRD05	6.3...10
10	11.5	12.5	NSX100-MA	12.5	162	LC1-D80	CT 12.5 A + LRD05	7.8...12.5
15	17	20	NSX100-MA	25	300	LC1-D80	CT 20 A + LRD05	12.6...20
18.5	21	25	NSX100-MA	25	325	LC1-D80	CT 24 A + LRD05	15...24
22	24	25	NSX100-MA	25	325	LC1-D80	CT 30 A + LRD05	19...30
30	32	40	NSX100-MA	50	550	LC1-D80	LRD-33 55 [4]	30...40
						LC1-D150	CT 40 A + LRD05	25...40
37	39	50	NSX100-MA	50	650	LC1-D80	LRD-33 57 [4]	37...50
						LC1-D150	CT 50 A + LRD05	31.5...50
45	47	50	NSX100-MA	50	650	LC1-D80	LRD-33 57 [4]	37...50
						LC1-D150	CT 50 A + LRD05	31.5...50
55	57	63	NSX100-MA	100	900	LC1-D150	LR9-F53 63 or CT 50 A + LRD05	48...80
						LC1-F115	LR9-F53 63 or CT 50 A + LRD05	48...80
75	77	80	NSX100-MA	100	1100	LC1-D150	LR9-F53 63 or CT 100 A + LRD05	48...80
						LC1-F115	LR9-F53 63 or CT 100 A + LRD05	48...80
90	93	100	NSX250-MA	150	1350	LC1-F150	LR9-F53 67 or CT 100 A + LRD05	60...100
110	113	115	NSX250-MA	150	1500	LC1-F185	LR9-F53 69 or CT 125 A + LRD 05	90...150
132	134	150	NSX250-MA	150	1950	LC1-F330	LR9-F53 71 or CT 160 A + LRD05	132...220
160	162	220	NSX250-MA	220	2860	LC1-F330	LR9-F53 71 or CT 200 A + LRD05	132...220
200	203	220	NSX250-MA	220	2860	LC1-F330	LR9-F53 71 or CT 250 A + LRD05	132...220
220	223	225	NSX400-Micrologic 1.3M	320	3200	LC1-F400 45 kA	LR9-F73 75 or CT 320 A + LRD05	200...330
						LC1-F500 100 kA		
250	250	280	NSX400-Micrologic 1.3M	320	3840	LC1-F400 45 kA	LR9-F73 75 or CT 320 A + LRD05	200...330
						LC1-F500 100 kA		
315	313	330	NSX630-Micrologic 1.3M	500	4500	LC1-F500	LR9-F73 75 or CT 320 A + LRD05	200...330
335	335	340	NSX630-Micrologic 1.3M	500	4500	LC1-F500	LR9-F73 79 or CT 400 A+LRD05	300...500
355	354	460	NSX630-Micrologic 1.3M	500	6000	LC1-F630	LR9-F73 79 or CT 400 A+LRD05	300...500
375	374	460	NSX630-Micrologic 1.3M	500	6000	LC1-F630	LR9-F73 79 or CT 400 A+LRD05	300...500
400	400	460	NSX630-Micrologic 1.3M	500	6000	LC1-F630	LR9-F73 81 or CT 500 A+LRD05	380...630
450	455	460	NSX630-Micrologic 1.3M	500	6000	LC1-F630	LR9-F73 81 or CT 500 A+LRD05	380...630
475	475	480	NS800LB - Micrologic 5.0 LR Off	800	6400	LC1-F780	LR9-F73 81 or CT 500 A+LRD05	380...630

(1) CT: Current transformer for motor thermal relay, for instance S11 range from RS ISOLSEC
(2) Reversers: replace LC1 with LC2; start-delta starter: replace LC1 with LC3
(3) Designer shall check that minim fault (or short-circuit) current at the end of protected cable is higher than magnetic threshold.
As cross section of cables feeding motor with a rating ⩽ 7.5 kW is the same for all motors, the minimum short-circuit current is not influenced by the rating of the motor.
(4) Risk of damage of OL relay after short-circuit
(5) Ii for Micrologic 5.0 control unit.

Type 2 coordination (IEC 60947-4-1) 690 V



Circuit breakers, contactors

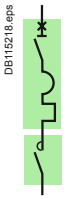
Performance "Iq": Ue = 690 V				
Circuit breakers	**H**	**HB1**	**HB2**	**LB**
LA9 LB920 + NS80H MA	75 kA	-	-	-
NSX100/160/250 Micrologic 2.2 M/6.2 M	-	75 kA	100 kA	-
NSX400/630 Micrologic 2.2 M/6.2 M	-	75 kA	100 kA	-
NS800 Micrologic 5.0x	-	-	-	75 kA

Starting	**Standard IEC 60947-4-1**		
Micrologic	2.2 M/2.3 M	6.2 M/6.3 M	5.0
Normal (class)	5, 10	5, 10	10
Long (class)	20	20, 30	20

Motors			**Circuit breakers**				**Contactors** [1]
P (kW)	**I (A) 690 V**	**Ie max**	**Type**	**Trip unit**	**Irth (A)**	**Irm (A)** [2]	**Type**
10	11.6	25	NSX100	Micrologic 2.2 M or 6.2 M	12/25	13 Irth	LC1 D80
11	12.8	25	NSX100	Micrologic 2.2 M or 6.2 M	12/25	13 Irth	LC1 D80
15	17	25	NSX100	Micrologic 2.2 M or 6.2 M	12/25	13 Irth	LC1 D80
18.5	22	25	NSX100	Micrologic 2.2 M or 6.2 M	12/25	13 Irth	LC1 D80
22	24	25	NSX100	Micrologic 2.2 M or 6.2 M	12/25	13 Irth	LC1 D80
30	32	50	NSX100	Micrologic 2.2 M or 6.2 M	25/50	13 Irth	LC1 D150 / F115
37	39	50	NSX100	Micrologic 2.2 M or 6.2 M	25/50	13 Irth	LC1 D150 / F115
45	47	50	NSX100	Micrologic 2.2 M or 6.2 M	25/50	13 Irth	LC1 D150 / F115
55	57	63	NSX100	Micrologic 2.2 M or 6.2 M	50/100	13 Irth	LC1 D150 / F115
75	77	80	NSX100	Micrologic 2.2 M or 6.2 M	50/100	13 Irth	LC1 D150 / F115
90	93	100	NSX250	Micrologic 2.2 M or 6.2 M	70/150	13 Irth	LC1 F150
110	113	125	NSX250	Micrologic 2.2 M or 6.2 M	70/150	13 Irth	LC1 F185
132	134	150	NSX250	Micrologic 2.2 M or 6.2 M	70/150	13 Irth	LC1 F330
160	162	220	NSX250	Micrologic 2.2 M or 6.2 M	100/220	13 Irth	LC1 F330
200	203	220	NSX250	Micrologic 2.3 M or 6.3 M	100/220	13 Irth	LC1 F330
220	223	280	NSX400	Micrologic 2.3 M or 6.3 M	160/320	13 Irth	LC1 F400 (45 kA) LC1 F500 (100 kA)
250	250	280	NSX400	Micrologic 2.3 M or 6.3 M	160/320	13 Irth	LC1 F400 (45 kA) LC1 F500 (100 kA)
315	313	340	NSX630	Micrologic 2.3 M or 6.3 M	250/500	13 Irth	LC1 F500
335	335	340	NSX630	Micrologic 2.3 M or 6.3 M	250/500	13 Irth	LC1 F500
355	354	460	NSX630	Micrologic 2.3 M or 6.3 M	250/500	13 Irth	LC1 F630
375	374	460	NSX630	Micrologic 2.3 M or 6.3 M	250/500	13 Irth	LC1 F630
400	400	460	NSX630	Micrologic 2.3 M or 6.3 M	250/500	13 Irth	LC1 F630
450	455	460	NSX630	Micrologic 2.3 M or 6.3 M	250/500	13 Irth	LC1 F630
475	475	480	NS800LB	Micrologic 5.0	320/800	13 Irth	LC1 F780

(1) Reversers: replace LC1 with LC2; start-delta starter: replace LC1 with LC3.
(2) Ii for Micrologic 5.0 control unit.

Type 2 coordination (IEC 60947-4-1) 690 V



Circuit breakers, contactors

Performance "Iq": Ue = 690 V				
Circuit breakers	**H**	**HB1**	**HB2**	**LB**
LA9 LB920 + NS80H MA	75 kA	-	-	-
NSX100/250 MA	-	75 kA	100 kA	-
NSX400/630 Micrologic 1.3 M	-	75 kA	100 kA	-
NS800 Micrologic 5.0x	-	-	-	75 kA

Starting: adjustable.

Motors			**Circuit breakers**			**Contactors** (2)	**Thermal o/l relays**	
P (kW)	**I (A) 690 V**	**Ie max**	**Type**	**Rating (A)**	**Irm (A)**	**Type**	**Type**	**Irth** (1)
0.37	0.64	8	NSX100-MA	12.5 (3)	75	LC1-D80	LTM R08	0.4/8
0.55	0.87	8	NSX100-MA	12.5 (3)	75	LC1-D80	LTM R08	0.4/8
0.75	1.1	8	NSX100-MA	12.5 (3)	75	LC1-D80	LTM R08	0.4/8
1.1	1.6	8	NSX100-MA	12.5 (3)	75	LC1-D80	LTM R08	0.4/8
1.5	2.1	8	NSX100-MA	12.5 (3)	75	LC1-D80	LTM R08	0.4/8
2.2	2.8	8	NSX100-MA	12.5 (3)	75	LC1-D80	LTM R08	0.4/8
3	3.8	8	NSX100-MA	12.5 (3)	75	LC1-D80	LTM R08	0.4/8
4	4.9	8	NSX100-MA	12.5 (3)	112	LC1-D80	LTM R08	0.4/8
5.5	6.7	8	NSX100-MA	12.5	112	LC1-D80	LTM R08	0.4/8
7.5	8.9	12.5	NSX100-MA	12.5	162	LC1-D80	LTM R27	1.35/27
11	12.8	25	NSX100-MA	25	325	LC1-D80	LTM R27	1.35/27
15	17	25	NSX100-MA	25	325	LC1-D80	LTM R27	1.35/27
18.5	21	25	NSX100-MA	25	325	LC1-D80	LTM R27	1.35/27
22	24	25	NSX100-MA	25	400	LC1-D80	LTM R27	1.35/27
30	32	50	NSX100-MA	50	650	LC1-D150/F115	LTM R100	5/100
37	39	50	NSX100-MA	50	650	LC1-D150/F115	LTM R100	5/100
45	47	50	NSX100-MA	50	650	LC1-D150/F115	LTM R100	5/100
55	57	63	NSX100-MA	100	1100	LC1-D150/F115	LTM R100	5/100
75	77	80	NSX100-MA	100	1100	LC1-D150/F115	LTM R100	5/100
90	93	100	NSX250-MA	150	1350	LC1-F150	LTM R100	5/100
110	113	115	NSX250-MA	150	1500	LC1-F185	LTM R08	on TC
132	134	150	NSX250-MA	150	1950	LC1-F330	LTM R08	on TC
160	162	220	NSX250-MA	220	2420	LC1-F330	LTM R08	on TC
200	203	220	NSX250-MA	220	2420	LC1-F330	LTM R08	on TC
220	223	225	NSX400-Micrologic 1.3M	320	3200	LC1-F400 45 kA	LTM R08	on TC
						LC1-F500 100 kA		
250	250	280	NSX400-Micrologic 1.3M	320	3840	LC1-F400 45 kA	LTM R08	on TC
						LC1-F500 100 kA		
315	313	340	NSX630-Micrologic 1.3M	500	4500	LC1-F500	LTM R08	on TC
335	335	340	NSX630-Micrologic 1.3M	500	4500	LC1-F500	LTM R08	on TC
355	354	460	NSX630-Micrologic 1.3M	500	6000	LC1-F630	LTM R08	on TC
375	374	460	NSX630-Micrologic 1.3M	500	6000	LC1-F630	LTM R08	on TC
400	400	460	NSX630-Micrologic 1.3M	500	6000	LC1-F630	LTM R08	on TC
450	455	460	NSX630-Micrologic 1.3M	500	6000	LC1-F630	LTM R08	on TC
475	475	480	NS800LB Micrologic 5 LR Off		6400	LC1-F780	LTM R08	on TC

(1) Check contactor and circuit breaker thermal withstand for installations with a class 30 relay.
(2) Reversers: replace LC1 with LC2; start-delta starter: replace LC1 with LC3.
(3) Designer shall check that minim fault (or short-circuit) current at the end of protected cable is higher than magnetic threshold.
As cross section of cables feeding motor with a rating ⩽ 7,5 kW is the same for all motors, the minimum short-circuit current is not influenced by the rating of the motor.

Type 1 coordination (IEC 60947-4-1)

DB115219.eps

Magnetic circuit breaker (MA)

Contactor

Thermal relay

NS80H-MA circuit breakers, contactor and thermal relay

Direct-on-line starting

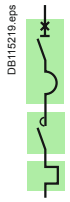
Reverser

"Iq" breaking performance: equal to the breaking capacity of the circuit breaker alone.
Starting (1): Direct on line normal start Class 10A/10.

Motors 220/230 V		380 V		415 V		440 V (2)		500/525 V		660/690 V		Circuit breakers		Contactors (3)	Thermal relays	
P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	Type	Rating (A)	Type	Type	Irth (1) (A)
		0.37	1.2	**0.37**	1.1	**0.37**	1	**0.55**	1.2	**0.75**	1.2	NS80H-MA	2.5	LC1 D09	LRD 06	1/1.6
		0.55	1.6	**0.55**	1.5	**0.55**	1.4	**0.75**	1.5	**1**	1.5	NS80H-MA	2.5	LC1 D09	LRD 06	1/1.6
0.37	1.8	**0.75**	2	**0.75**	1.8	**0.75**	1.7					NS80H-MA	2.5	LC1 D09	LRD 07	1.6/2.5
						1.1	2.4	**1.1**	2	**1.5**	2	NS80H-MA	2.5	LC1 D09	LRD 07	1.6/2.5
0.55	2.8	**1.1**	2.8	**1.1**	2.5			**1.5**	2.6	**2.2**	2.8	NS80H-MA	6.3	LC1 D09	LRD 08	2.5/4
		1.5	3.7	**1.5**	3.5	**1.5**	3.1			**3**	3.8	NS80H-MA	6.3	LC1 D09	LRD 08	2.5/4
1.1	4.4	**2.2**	5	**2.2**	4.8	**2.2**	4.5	**3**	5	**4**	4.9	NS80H-MA	6.3	LC1 D09	LRD 10	4/6
1.5	6.1	**3**	6.6	**3**	6.5	**3**	5.8	**4**	6.5	**5.5**	6.6	NS80H-MA	12.5	LC1 D09	LRD 12	5.5/8
2.2	8.7	**4**	8.5	**4**	8.2	**4**	7.9	**5.5**	9			NS80H-MA	12.5	LC1 D09	LRD 14	7/10
										7.5	8.9	NS80H-MA	12.5	LC1 D12	LRD 14	7/10
3	11.5	**5.5**	11.5	**5.5**	11	**5.5**	10.4	**7.5**	12			NS80H-MA	12.5	LC1 D12	LRD 16	9/13
4	14.5	**7.5**	15.5	**7.5**	14	**7.5**	13.7	**9**	14			NS80H-MA	25	LC1 D18	LRD 21	12/18
				9	17	**9**	16.9	**10**	15			NS80H-MA	25	LC1 D18	LRD 21	12/18
										10	11.5	NS80H-MA	25	LC1 D18	LRD 16	9/13
5.5	20	**11**	22	**11**	21	**11**	20.1	**11**	18.4			NS80H-MA	25	LC1 D25	LRD 22	16/24
										15	17	NS80H-MA	25	LC1 D25	LRD 21	12/18
										18.5	21.3	NS80H-MA	50	LC1 D32	LRD 22	16/24
7.5	28	**15**	30	**15**	28	**15**	26.5	**18.5**	28.5			NS80H-MA	50	LC1 D32	LRD 32	23/32
								22	33	**30**	34.6	NS80H-MA	50	LC1 D40A	LRD 340	30/40
11	39	**18.5**	37	**22**	40	**22**	39					NS80H-MA	50	LC1 D40A	LRD 350	37/50
		22	44	**25**	47			**30**	45	**33**	39	NS80H-MA	50	LC1 D50A	LRD 350	37/50
15	52					**30**	51.5					NS80H-MA	50	LC1 D65A	LRD 365	48/65
										37	42	NS80H-MA	50	LC1 D65A	LRD 350	37/50
18.5	64	**30**	59	**30**	55	**37**	64	**37**	55			NS80H-MA	80	LC1 D65A	LRD 350	48/65
				37	66							NS80H-MA	80	LC1 D80	LRD 35 61	55/70
										45	49	NS80H-MA	80	LC1 D80	LRD 33 57	37/50
22	75	**37**	72	**45**	80	**45**	76	**55**	80			NS80H-MA	80	LC1 D80	LRD 33 63	63/80
										55	60	NS80H-MA	80	LC1 D115	LR9 D53 67	60/100
										75	80			LC1 F115	LR9 F53 63	48/80

(1) For long starting (class 20), see the correspondence table for thermal relay.
(2) Valid for 480 V NEMA.
(3) Reversers: replace LC1 with LC2.
***Note:** where more than one association is possible for a rated power, if the motor starting current is high or unknown, the highest association should be applied.*

Type 1 coordination (IEC 60947-4-1)



NSX100 circuit breakers, contactors and thermal relays

Direct-on-line starting

Reverser

"Iq" breaking performance: equal to the breaking capacity of the circuit breaker alone.
Starting (1): normal class 10A/10.

Motors 220/230 V		380 V		415 V		440 V (2)		500/525 V		660/690 V		Circuit breakers		Contactors (3)	Thermal relays	
P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	Type	Rating (A)	Type	Type	Irth (1) (A)
		0.37	1.2	**0.37**	1.1	**0.37**	1	**0.55**	1.2	**0.75**	1.2	NSX100B/F/N/H/S/L MA	2.5	LC1 D09	LRD 06	1/1.6
		0.55	1.6	**0.55**	1.5	**0.55**	1.4	**0.75**	1.5	**1**	1.5	NSX100B/F/N/H/S/L MA	2.5	LC1 D09	LRD 06	1/1.6
0.37	1.8	**0.75**	2	**0.75**	1.8	**0.75**	1.7					NSX100B/F/N/H/S/L MA	2.5	LC1 D09	LRD 07	1.6/2.5
						1.1	2.4	**1.1**	2	**1.5**	2	NSX100B/F/N/H/S/L MA	2.5	LC1 D09	LRD 07	1.6/2.5
0.55	2.8	**1.1**	2.8	**1.1**	2.5			**1.5**	2.6	**2.2**	2.8	NSX100B/F/N/H/S/L MA	6.3	LC1 D09	LRD 08	2.5/4
		1.5	3.7	**1.5**	3.5	**1.5**	3.1			**3**	3.8	NSX100B/F/N/H/S/L MA	6.3	LC1 D09	LRD 08	2.5/4
1.1	4.4	**2.2**	5	**2.2**	4.8	**2.2**	4.5	**3**	5	**4**	4.9	NSX100B/F/N/H/S/L MA	6.3	LC1 D09	LRD 10	4/6
1.5	6.1	**3**	6.6	**3**	6.5	**3**	5.8	**4**	6.5	**5.5**	6.6	NSX100B/F/N/H/S/L MA	12.5	LC1 D09	LRD 12	5.5/8
2.2	8.7	**4**	8.5	**4**	8.2	**4**	7.9	**5.5**	9			NSX100B/F/N/H/S/L MA	12.5	LC1 D09	LRD 14	7/10
										7.5	8.9	NSX100B/F/N/H/S/L MA	12.5	LC1 D12	LRD 14	7/10
										7.5	8.9	NSX100HB1/HB2 MA	12,5	LC1 D40A	LRD 14	7/10
3	11.5	**5.5**	11.5	**5.5**	11	**5.5**	10.4	**7.5**	12			NSX100B/F/N/H/S/L MA	12.5	LC1 D12	LRD 16	9/13
4	14.5	**7.5**	15.5	**7.5**	14	**7.5**	13.7	**9**	14			NSX100B/F/N/H/S/L MA	25	LC1 D18	LRD 21	12/18
				9	17	**9**	16.9	**10**	15			NSX100B/F/N/H/S/L MA	25	LC1 D18	LRD 21	12/18
										10	11.5	NSX100B/F/N/H/S/L MA	25	LC1 D18	LRD 16	9/13
										10	11.5	NSX100HB1/HB2 MA	25	LC1 D40A	LRD 313	9/13
5.5	20	**11**	22	**11**	21	**11**	20.1	**11**	18.4			NSX100B/F/N/H/S/L MA	25	LC1 D25	LRD 22	17/25
										15	17	NSX100B/F/N/H/S/L MA	25	LC1 D25	LRD 21	12/18
										18.5	21.3	NSX100B/F/N/H/S/L MA	50	LC1 D32	LRD 22	17/25
										18.5	21.3	NSX100HB1/HB2 MA	25	LC1 D40A	LRD 325	17/25
7.5	28	**15**	30	**15**	28	**15**	26.5	**18.5**	28.5			NSX100B/F/N/H/S/L MA	50	LC1 D32	LRD 32	23/32
								22	33	**30**	34.6	NSX100B/F/N/H/S/L MA	50	LC1 D40A	LRD 340	30/40
										30	34.6	NSX100HB1/HB2 MA	50	LC1 D80	LRD 33 55	30/40
11	39	**18.5**	37	**22**	40	**22**	39					NSX100B/F/N/H/S/L MA	50	LC1 D40A	LRD 350	37/50
		22	44	**25**	47			**30**	45			NSX100B/F/N/H/S/L MA	50	LC1 D50A	LRD 350	37/50
										37	42	NSX100B/F/N/H/S/L MA	50	LC1 D65A	LRD 350	37/50
										37	42	NSX100HB1/HB2 MA	50	LC1 D80	LRD 33 57	37/50
15 **18.5**	52 64	**30**	59	**30**	55	**30** **37**	51.5 64	**37**	55			NSX100B/F/N/H/S/L MA	100	LC1 D65A	LRD 365	48/65
										45	49	NSX100B/F/N/H/S/L/HB1/HB2 MA	100	LC1 D80	LRD 33 57	37/50
22	75	**37**	72	**37** **45**	72 80	**45**	76	**55**	80			NSX100B/F/N/H/S/L MA	100	LC1 D80	LRD 33 63	63/80
25	85	**45**	85									NSX100B/F/N/H/S/L MA	100	LC1 D95	LRD 33 65	80/104
										55	60	NSX100B/F/N/H/S/L/HB1/HB2 MA	100	LC1 D115	LR9 D53 67	60/100
30	100			**55**	100	**55**	96			**75**	80	NSX100B/F/N/H/S/L/HB1/HB2 MA	100	LC1 D115	LR9 D53 67	60/100

(1) For long starting (class 20), see the correspondence table for thermal relay.
(2) Valid for 480V NEMA.
(3) Reversers: replace LC1 with LC2.
***Note:** where more than one association is possible for a rated power, if the motor starting current is high or unknown, the highest association should be applied.*

Type 1 coordination (IEC 60947-4-1)

DB115220.eps

With short circuit protection

Contactor

Thermal relay

Schneider Electric NSX160 to NS1250 circuit breakers, Telemecanique contactors and thermal relays

Direct-on-line starting

Reverser

"Iq" breaking performance: equal to the breaking capacity of the circuit breaker alone.
Starting (1): normal, class 10.

Motors 220/230 V		380 V		415 V		440 V (2)		500/525 V		660/690 V		Circuit breakers		Contactors (3)	Thermal relays (1)	
P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	Type	Rating (A)	Type	Type	Irth (A)
37	125	**55**	105	**75**	135	**75**	124	**75**	110	**90**	100	NSX160B/F/N/H/S/L MA	150	LC1 D150	LR9 D53 69	90/150
45	150	**75**	140					**90**	130	**110**	120	NSX250HB1/HB2 MA		LC1 F150	LR9 F53 69	100/160
55	180	**90**	170	**90**	160	**90**	156	**110**	156			NSX250B/F/N/H/S/L/HB1/HB2 MA	220	LC1 F185	LR9 F53 71	132/220
						110	180									
		110	210	**110**	200	**132**	215					NSX250B/F/N/H/S/L/HB1/HB2 MA	220	LC1 F225	LR9 F53 71	132/220
								132	190	**132**	140	NSX250B/F/N/H/S/L/HB1/HB2 MA	220	LC1 F265	LR9 F53 71	132/220
										160	175					
75	250	**132**	250	**132**	230	**160**	256	**160**	228			NSX400F/N/H/S/L/HB1/HB2 Micrologic 1.3 M	320	LC1 F265	LR9 F73 75	200/330
90	312	**160**	300	**160**	270			**200**	281	**200**	220	NSX400F/N/H/S/L/HB1/HB2 Micrologic 1.3 M	320	LC1 F330	LR9 F73 75	200/330
										220	240					
110	360	**200**	380	**220**	380	**220**	360	**220**	310			NSX630F/N/H/S/L/HB1/HB2 Micrologic 1.3 M	500	LC1 F400	LR9 F73 79	300/500
										250	270	NSX630F/N/H/S/L/HB1/HB2 Micrologic 1.3 M	500	LC1 F400	LR9 F73 75	200/330
		220	420			**250**	401			**335**	335	NSX630F/N/H/S/L/HB1/HB2 Micrologic 1.3 M	500	LC1 F500	LR9 F73 79	300/500
150	480	**250**	480	**250**	430			**315**	445			NSX630F/N/H/S/L/HB1/HB2 Micrologic 1.3 M	500	LC1 F500	LR9 F73 79	300/500
								335	460							
						300	480			**375**	400	NSX630F/N/H/S/L/HB1/HB2 Micrologic 1.3 M	500	LC1 F630	LR9 F73 81	380/630
										450	480					
160	520	**300**	570	**300**	510	**335**	540	**355**	500			NS800N/H-NS1000L Micrologic 5.0 - LR off	800 1000	LC1 F630	LR9 F73 81	380/630
								375	530							
								400	570							
200	630	**335**	630	**335**	580	**375**	590	**450**	630			NS800N/H-NS1000L Micrologic 5.0 - LR off	800 1000	LC1 F630	LR9 F73 81	380/630
220	700	**375**	700	**375**	650	**400**	650					NS800N/H-NS1000L Micrologic 5.0 - LR off	800 1000	LC1 F800	LR2 F83 83	500/800
		400	750	**400**	690	**450**	720					NS800N/H-NS1000L Micrologic 5.0 - LR off	800 1000	LC1 F800 LC1 BL33	LR2 F83 83	500/800
										500	530	NS800N/H-NS1000L Micrologic 5.0 - LR off	800 1000	LC1 BL33	LR2 F83 83	500/800
										560	580					
250	800	**450**	800	**450**	750			**500**	700			NS1000N/H Micrologic 5.0 - LR off	1000	LC1 BM33	LR2 F83 83	500/800
								560	760							
		500	900	**500**	830	**500**	800	**600**	830			NS1000N/H Micrologic 5.0 - LR off	1000	LC1 BM33	LR2 F83 85	630/1000
						560	900									
300	970	**560**	1000	**560**	920	**600**	960	**670**	920			NS1250N/H Micrologic 5.0 - LR off	1250	LC1 BP33	LR2 F83 85	630/1000
		600	1100	**600**	1000	**670**	1080	**750**	1020							

(1) For long starting (class 20), see the correspondence table for thermal relay.
(2) Valid for 480V NEMA.
(3) Reversers: replace LC1 with LC2.
***Note:** where more than one association is possible for a rated power, if the motor starting current is high or unknown, the highest association should be applied.*

Type 1 coordination (IEC 60947-4-1)

NSX100 to NS1250 circuit breakers

Direct-on-line starting

Reverser

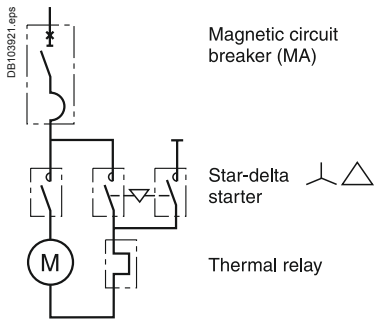
"Iq" breaking performance: equal to the breaking capacity of the circuit breaker seul.

Starting	Standard IEC 60947-4-1		
Micrologic	2.2 M/2.3 M	6.2 M/6.3 M	5.0
Normal (class)	5, 10	5, 10	10
Long (class)	20	20, 30 (3)	20

Motors 220/230 V		380 V		415 V		440 V (1)		500/525 V		660/690 V		Circuit breakers			Contactors (2)
P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	Type	Trip unit	Irth (A)	Type
7.5	28	**15**	30	**15**	28	**15**	26.5	**18.5**	28.5			NSX100B/F/N/H/S/L	Micrologic 2.2 or 6.2	25/50	LC1 D32
11	39	**18.5**	37	**22**	40	**22**	39	**22**	33	**30**	34.6	NSX100B/F/N/H/S/L/HB1/HB2	Micrologic 2.2 or 6.2	25/50	LC1 D40A
		22	44	**25**	47			**30**	45	**33**	39	NSX100B/F/N/H/S/L/HB1/HB2	Micrologic 2.2 or 6.2	25/50	LC1 D50A
15	52	**30**	59	**30**	55	**30**	51.5			**37**	42	NSX100B/F/N/H/S/L	Micrologic 2.2 or 6.2	48/80	LC1 D65A
										37	42	NSX100HB1/HB2	Micrologic 2.2 or 6.2	48/80	LC1 D80
18.5	64					**37**	64	**37**	55			NSX100B/F/N/H/S/L	Micrologic 2.2 or 6.2	48/80	LC1 D65A
22	75	**37**	72	**37**	72	**45**	76	**55**	80	**45**	49	NSX100B/F/N/H/S/L/HB1/HB2	Micrologic 2.2 or 6.2	48/80	LC1 D80
25	85	**45**	85									NSX100B/F/N/H/S/L/HB1/HB2	Micrologic 2.2 or 6.2	50/100	LC1 D95
										55	60	NSX100B/F/N/H/S/L/HB1/HB2	Micrologic 2.2 or 6.2	50/100	LC1 D115 or LC1 F115
30	100			**55**	100	**55**	96			**75**	80	NSX100B/F/N/H/S/L/HB1/HB2	Micrologic 2.2 or 6.2	50/100	LC1 D115 or LC1 F115
37 **45**	125 150	**55** **75**	105 140	**75**	135	**75**	124	**75** **90**	110 130	**90** **110**	100 120	NSX160B/F/N/H/S/L NSX160HB1/HB2	Micrologic 2.2 or 6.2	70/150	LC1 D150 or LC1 F150
55	180	**90**	170	**90**	160	**90** **110**	156 180	**110**	156			NSX250B/F/N/H/S/L/HB1/HB2	Micrologic 2.2 or 6.2	100/220	LC1 F185
		110	210	**110**	200	**132**	215					NSX250B/F/N/H/S/L/HB1/HB2	Micrologic 2.2 or 6.2	100/220	LC1 F225
								132	190	**132** **160**	140 175	NSX250B/F/N/H/S/L/HB1/HB2	Micrologic 2.2 or 6.2	100/220	LC1 F265
75	250	**132**	250	**132**	230	**160**	256	**160**	228			NSX400F/N/H/S/L/HB1/HB2	Micrologic 2.3 or 6.3	160/320	LC1 F265
90	312	**160**	300	**160**	270			**200**	281	**200** **220**	220 240	NSX400F/N/H/S/L/HB1/HB2	Micrologic 2.3 or 6.3	160/320	LC1 F330
110	360	**200**	380	**220**	380	**220**	360	**220**	310	**250**	270	NSX630F/N/H/S/L/HB1/HB2	Micrologic 2.3 or 6.3	250/500	LC1 F400
		220	420			**250**	401	**315**	445	**335**	335	NSX630F/N/H/S/L/HB1/HB2	Micrologic 2.3 or 6.3	250/500	LC1 F500
150	480	**250**	480	**250**	430			**335**	460			NSX630F/N/H/S/L/HB1/HB2	Micrologic 2.3 or 6.3	250/500	LC1 F500
						300	480	**355** **375**	500 530	**375** **450**	400 480	NSX630F/N/H/S/L/HB1/HB2	Micrologic 2.3 or 6.3	250/500	LC1 F630
160	520	**300**	570	**300**	510	**335**	540	**400**	570			NS800N/H NS1000L	Micrologic 5.0	320/800 400/1000	LC1 F630
200	630	**335**	630	**335**	580	**375**	590	**450**	630			NS800N/H NS1000L	Micrologic 5.0	320/800 400/1000	LC1 F630
220	700	**375**	700	**375**	650	**400**	650					NS800N/H NS1000L	Micrologic 5.0	320/800 400/1000	LC1 F800
		400	750	**400**	690	**450**	720					NS800N/H NS1000L	Micrologic 5.0	320/800 400/1000	LC1 F800 LC1 BL33
										500 **560**	530 580	NS800N/H NS1000L	Micrologic 5.0	320/800 400/1000	LC1 BL33
250	800	**450**	800	**450**	750			**500** **560**	700 760			NS1000N/H	Micrologic 5.0	400/1000	LC1 BM33
		500	900	**500**	830	**500** **560**	800 900	**600**	830			NS1000N/H	Micrologic 5.0	400/1000	LC1 BM33
300	970	**560**	1000	**560**	920	**600**	960	**670**	920			NS1250N/H	Micrologic 5.0	630/1250	LC1 BP33
		600	1100	**600**	1000	**670**	1080	**750**	1020			NS1250N/H	Micrologic 5.0	630/1250	LC1 BP33

(1) Valid for 480 V NEMA.
(2) Reversers: replace LC1 with LC2.
(3) For class 30 the contacteur rating shall be checked according to 30 s thermal withstand (F range).
***Note:** where more than one association is possible for a rated power, if the motor starting current is high or unknown, the highest association should be applied.*

Type 1 coordination (IEC 60947-4-1)



NS80H-MA and NSX100 circuit breakers, contactors and thermal relays

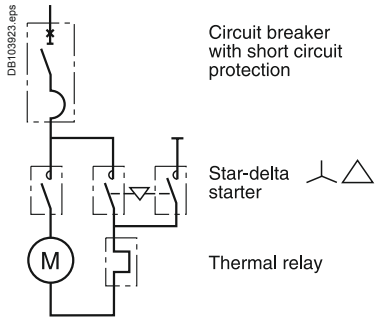
Star-delta starting

"Iq" breaking performance: equal to the breaking capacity of the circuit breaker alone.
Starting: normal.

Motors 220/230 V		380 V		415 V		440 V (1)		Circuit breakers		Contactors	Thermal relays	
P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	Type	Rating (A)	Type	Type	Irth (A)
0.55	2.8	**1.5**	3.7	**1.5**	3.5	**1.5**	3.1	NS80H-MA	6.3	LC3 D09	LRD 07	1.6/2.5
1.1	4.4	**2.2**	5	**2.2**	4.8	**2.2**	4.5	NS80H-MA	6.3	LC3 D09	LRD 08	2.5/4
1.5	6.1	**3**	6.6	**3**	6.5	**3**	5.8	NS80H-MA	12.5	LC3 D09	LRD 08	2.5/4
2.2	8.7	**4**	8.5	**4**	8.2	**4**	7.9	NS80H-MA	12.5	LC3 D09	LRD 10	4/6
3	11.5	**5.5**	11.5	**5.5**	11	**5.5**	10.4	NS80H-MA	12.5	LC3 D09	LRD 12	5.5/8
4	14.5	**7.5**	15.5	**7.5**	14	**7.5**	13.7	NS80H-MA	25	LC3 D09	LRD 14	7/10
5.5	20			**9**	17	**9**	16.9	NS80H-MA	25	LC3 D12	LRD 16	9/13
		11	22	**11**	21	**11**	20.1	NS80H-MA	25	LC3 D12	LRD 16	9/13
7.5	28	**15**	30	**15**	28	**15**	26.5	NS80H-MA	50	LC3 D18	LRD 21	12/18
11	39	**18.5**	37	**22**	40	**22**	39	NS80H-MA	50	LC3 D18	LRD 22	17/25
		22	44	**25**	47			NS80H-MA	50	LC3 D32	LRD 32	23/32
15	52					**30**	51.5	NS80H-MA	80	LC3 D32	LRD 32	23/32
				30	55			NS80H-MA	80	LC3 D32	LRD 32	23/32
18.5	64	**30**	59	**37**	66	**37**	64	NS80H-MA	80	3 x LC1 D40A	LRD 340	30/40
		37	72					NS80H-MA	80	3 x LC1 D40A	LRD 350	37/50
22	75			**45**	80	**45**	76	NS80H-MA	80	3 x LC1 D50A	LRD 350	37/50
0.55	2.8	**1.5**	3.7	**1.5**	3.5	**1.5**	3.1	NSX100B/F/N/H/S/L MA	6.3	LC3 D09	LRD 07	1.6/2.5
1.1	4.4	**2.2**	5	**2.2**	4.8	**2.2**	4.5	NSX100B/F/N/H/S/L MA	6.3	LC3 D09	LRD 08	2.5/4
1.5	6.1	**3**	6.6	**3**	6.5	**3**	5.8	NSX100B/F/N/H/S/L MA	12.5	LC3 D09	LRD 08	2.5/4
2.2	8.7	**4**	8.5	**4**	8.2	**4**	7.9	NSX100B/F/N/H/S/L MA	12.5	LC3 D09	LRD 10	4/6
3	11.5	**5.5**	11.5	**5.5**	11	**5.5**	10.4	NSX100B/F/N/H/S/L MA	12.5	LC3 D09	LRD 12	5.5/8
4	14.5	**7.5**	15.5	**7.5**	14	**7.5**	13.7	NSX100B/F/N/H/S/L MA	25	LC3 D09	LRD 14	7/10
5.5	20			**9**	17	**9**	16.9	NSX100B/F/N/H/S/L MA	25	LC3 D12	LRD 16	9/13
		11	22	**11**	21	**11**	20.1	NSX100B/F/N/H/S/L MA	25	LC3 D12	LRD 16	9/13
7.5	28	**15**	30	**15**	28	**15**	26.5	NSX100B/F/N/H/S/L MA	50	LC3 D18	LRD 21	12/18
11	39	**18.5**	37	**22**	40	**22**	39	NSX100B/F/N/H/S/L MA	50	LC3 D18	LRD 22	17/25
		22	44	**25**	47			NSX100B/F/N/H/S/L MA	100	LC3 D32	LRD 32	23/32
15	52					**30**	51.5	NSX100B/F/N/H/S/L MA	100	LC3 D32	LRD 32	23/32
				30	55			NSX100B/F/N/H/S/L MA	100	LC3 D32	LRD 32	23/32
18.5	64	**30**	59	**37**	66	**37**	64	NSX100B/F/N/H/S/L MA	100	3 x LC1 D40A	LRD 340	30/40
		37	72					NSX100B/F/N/H/S/L MA	100	2 x LC1 D50A + 1 x LC1 D40A	LRD 350	37/50
22	75			**45**	80	**45**	76	NSX100B/F/N/H/S/L MA	100	2 x LC1 D50A + 1 x LC1 D40A	LRD 350	37/50
25	85	**45**	85					NSX100B/F/N/H/S/L MA	100	2 x LC1 D50A + 1 x LC1 D40A	LRD 350	37/50
30	100			**55**	100	**55**	96	NSX100B/F/N/H/S/L MA	100	2 x LC1 D65A + 1 x LC1 D40A	LRD 365	48/65

(1) Valid for 480 V NEMA.

Type 1 coordination (IEC 60947-4-1)



NSX160 to NS1000 circuit breakers, contactors and thermal relays

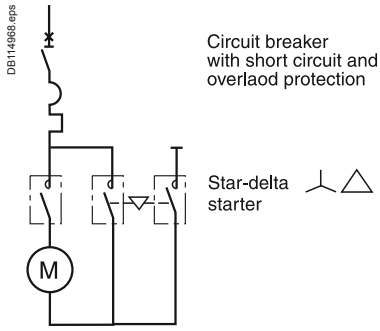
Star-delta starting

"Iq" breaking performance: equal to the breaking capacity of the circuit breaker alone.
Starting: normal.

Motors 220/230 V		380 V		415 V		440 V (1)		Circuit breakers		Contactors	Thermal relays	
P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	Type	Rating (A)	Type	Type	Irth (A)
		55	105					NSX160B/F/N/H/S/L MA	150	LC3 D80	LRD 33 59	48/65
37	125			**75**	135	**75**	124	NSX160B/F/N/H/S/L MA	150	LC3 D80	LRD 33 63	63/80
45	150	**75**	140					NSX160B/F/N/H/S/L MA	150	LC3 D115 LC3 F115	LR9 D53 67 LR9 F53 67	60/100
		90	170	**90**	160	**90**	156	NSX250B/F/N/H/S/L MA	220	LC3 D115 LC3 F115	LR9 D53 67 LR9 F53 67	60/100
55	180					**110**	180	NSX250B/F/N/H/S/L MA	220	LC3 D115 LC3 F115	LR9 D53 69 LR9 F53 69	90/150
		110	210	**110**	200			NSX250B/F/N/H/S/L MA	220	LC3 D115 LC3 F115	LR9 D53 69 LR9 F53 69	90/150
						132	215	NSX250B/F/N/H/S/L MA	220	LC3 D150 LC3 F150	LR9 D53 69 LR9 F53 69	90/150
75	250	**132**	250	**132**	230			NSX400F/N/H/S/L Micrologic 1.3 M	320	LC3 D150 LC3 F150	LR9 D53 69 LR9 F53 69	90/150
90	312	**160**	300	**160**	270	**160**	256	NSX400F/N/H/S/L Micrologic 1.3 M	320	LC3 F185	LR9 F53 71	132/220
110	360	**200**	380	**220**	380	**220**	360	NSX630F/N/H/S/L Micrologic 1.3 M	500	LC3 F265	LR9 F73 75	200/330
		220	420			**250**	401	NSX630F/N/H/S/L Micrologic 1.3 M	500	LC3 F265	LR9 F73 75	200/330
150	480	**250**	480	**250**	430			NSX630F/N/H/S/L Micrologic 1.3 M	500	LC3 F330	LR9 F73 75	200/330
						300	480	NSX630F/N/H/S/L Micrologic 1.3 M	500	LC3 F330	LR9 F73 75	200/330
160	520	**300**	570	**300**	510	**335**	540	NS800N/H-NS1000L Micrologic 5.0 - LR off	800 1000	LC3 F400	LR9 F73 75	200/330
				335	580	**375**	590	NS800N/H-NS1000L Micrologic 5.0 - LR off	800 1000	LC3 F400	LR9 F73 79	300/500

(1) Valid for 480 V NEMA.
Note: *where more than one association is possible for a rated power, if the motor starting current is high or unknown, the highest association should be applied.*

Type 1 coordination (IEC 60947-4-1)



NSX100 to NS1000 circuit breakers, contactors

Star-delta starting

"Iq" breaking performance: equal to the breaking capacity of the circuit breaker alone.
Starting: normal.

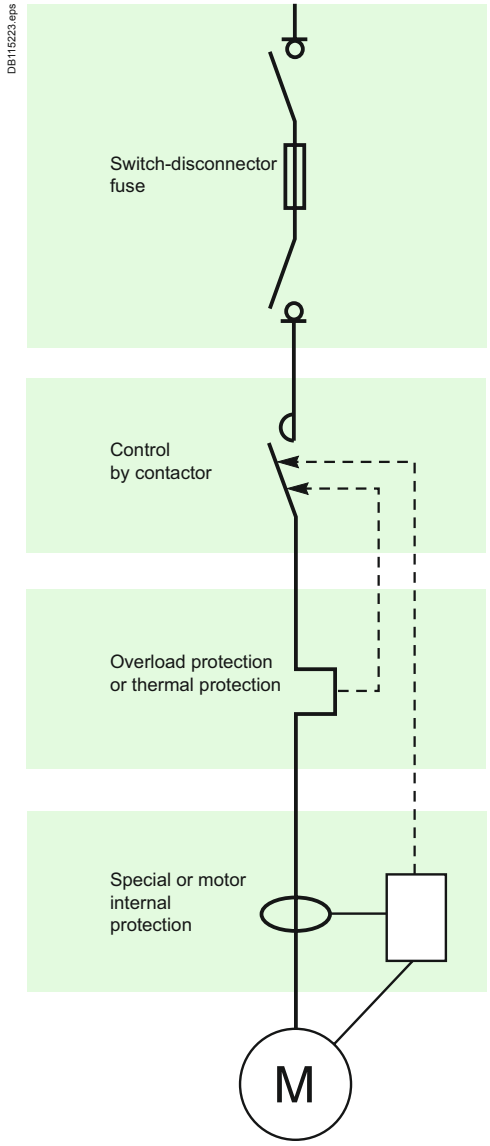
Motors 220/230 V		380 V		415 V		440 V (1)		Circuit breakers			Contactors
P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)	Type	Trip unit	Irth (A)	Type
7.5	28	**15**	30	**15**	28	**15**	26.5	NSX100B/F/N/H/S/L	Micrologic 2.2 M or 6.2 E-M	25/50	LC3 D18
11	39	**18.5**	37	**22**	40	**22**	39	NSX100B/F/N/H/S/L	Micrologic 2.2 M or 6.2 E-M	25/50	LC3 D18
		22	44	**25**	47			NSX100B/F/N/H/S/L	Micrologic 2.2 M or 6.2 E-M	25/50	LC3 D32
15	52					**30**	51.5	NSX100B/F/N/H/S/L	Micrologic 2.2 M or 6.2 E-M	50/100	LC3 D32
				30	55			NSX100B/F/N/H/S/L	Micrologic 2.2 M or 6.2 E-M	50/100	LC3 D32
18.5	64	**30**	59	**37**	66	**37**	64	NSX100B/F/N/H/S/L	Micrologic 2.2 M or 6.2 E-M	50/100	3 x LC1 D40A
		37	72					NSX100B/F/N/H/S/L	Micrologic 2.2 M or 6.2 E-M	50/100	2 x LC1 D50A + 1 x LC1 D40A
22	75			**45**	80	**45**	76	NSX100B/F/N/H/S/L	Micrologic 2.2 M or 6.2 E-M	50/100	2 x LC1 D50A + 1 x LC1 D40A
25	85	**45**	85					NSX100B/F/N/H/S/L	Micrologic 2.2 M or 6.2 E-M	50/100	2 x LC1 D50A + 1 x LC1 D40A
30	100			**55**	100	**55**	96	NSX100B/F/N/H/S/L	Micrologic 2.2 M or 6.2 E-M	50/100	2 x LC1 D65A + 1 x LC1 D40A
		55	105					NSX160B/F/N/H/S/L	Micrologic 2.2 M or 6.2 E-M	70/150	LC3 D80
37	125	**75**	140	**75**	135	**75**	124	NSX160B/F/N/H/S/L	Micrologic 2.2 M or 6.2 E-M	70/150	LC3 D80
45	150	**75**	140					NSX160B/F/N/H/S/L	Micrologic 2.2 M or 6.2 E-M	70/150	LC3 D115 or LC3 F115
		90	170	**90**	160	**90**	156	NSX250B/F/N/H/S/L	Micrologic 2.2 M or 6.2 E-M	100/220	LC3 D115 or LC3 F115
55	180	**110**	210	**110**	200	**110**	180	NSX250B/F/N/H/S/L	Micrologic 2.2 M or 6.2 E-M	100/220	LC3 D115 or LC3 F115
						132	215	NSX250B/F/N/H/S/L	Micrologic 2.2 M or 6.2 E-M	100/220	LC3 D150 or LC3 F150
75	250	**132**	250	**132**	230			NSX400F/N/H/S/L	Micrologic 2.3 M or 6.3 E-M	160/320	LC3 D150 or LC3 F150
90	312	**160**	300	**160**	270	**160**	256	NSX400F/N/H/S/L	Micrologic 2.3 M or 6.3 E-M	160/320	LC3 F185
110	360	**200**	380	**220**	380	**220**	360	NSX630F/N/H/S/L	Micrologic 2.3 M or 6.3 E-M	250/500	LC3 F265
		220	420			**250**	401	NSX630F/N/H/S/L	Micrologic 2.3 M or 6.3 E-M	250/500	LC3 F265
150	480	**250**	480	**250**	430			NSX630F/N/H/S/L	Micrologic 2.3 M or 6.3 E-M	250/500	LC3 F330
						300	480	NSX630F/N/H/S/L	Micrologic 2.3 M or 6.3 E-M	250/500	LC3 F330
160	520	**300**	570	**300**	510	**335**	540	NS800N/H NS1000L	Micrologic 5.0	320/800 400/1000	LC3 F400
				335	580	**375**	590	NS800N/H NS1000L	Micrologic 5.0	320/800 400/1000	LC3 F400

(1) Valid for 480 V NEMA.
***Note:** where more than one association is possible for a rated power, if the motor starting current is high or unknown, the highest association should be applied.*

Protection of motor circuits with fuses: general

Example:
An INF●160 can receive BS fuse-links in sizes A2, A3 or A4, which correspond to the following ratings:
- ■ A2 size:
  - □ 2 to 32 A for gG fuse-links
  - □ 32M35 to 32M63 for gM fuse-links
- ■ A3 size:
  - □ 35 to 63 A for gG fuse-links
  - □ 63M80 to 63M100 for gM fuse-links
- ■ A4 size:
  - □ 80 to 100 A for gG fuse-links
  - □ 100M125 to 100M200 for gM fuse-links.

The tables on page 192 to page 196 directly indicate the correct selection of fuse-links and Fupact switches depending on the distribution circuit rating and the motor rating (for direct-on-line starting).



Fuse size table

The table below indicates the minimum and maximum fuse sizes depending on the rating of the switch and the applicable reference standard.

	BS		DIN		NFC	
	min.	max.	min.	max.	min.	max.
INF●32	A1	A2			10 x 38	14 x 51
INFD40			000	000		
INFC50					14 x 51	14 x 51
INF●63	A2	A3	000	000	22 x 58	22 x 58
INF●100	A2	A4				
INFC125					22 x 58	22 x 58
INF●160	A2	A4	000	00		
INF●200	B1	B2	0	0		
INF●250	B1	B3	0	1		
INF●400	B1	B4	0	2		
INF●630	C1	C3	3	3		
INF●800	C1	C3	3	3		
ISFT100N			000	000		
ISFT100			000	000		
ISF●160			000	00		
ISF●250			1	1		
ISF●400			2	2		
ISF●630			3	3		

Protection of motor feeders

A motor feeder is generally made up of:
- ■ a control contactor
- ■ a thermal relay for overcurrent protection
- ■ a short-circuit protection device
- ■ a disconnection device capable of interrupting load currents.

Fupact switch-disconnector fuses are ideally suited to perform the last two functions in the list. What is more, Fupact devices are totally compatible with the IEC 60204 machine directive.

Additional specific protection:
- ■ fault limiting protection (while the motor is running)
- ■ fault prevention (monitoring of motor insulation with motor off).

Fupact characteristics

The local emergency-off switch must have the AC23 characteristic for the rated motor current.
Motor starting characteristics are the following:
- ■ peak current: 8 to 10 In
- ■ duration of peak current: 20 to 30 ms
- ■ starting current Id: 4 to 8 In
- ■ starting time td: 2 to 4 seconds.

Short-circuit protection of motors is ensured by aM or gM (1) fuse-links that are sized to take into account the above characteristics.
Fupact offers a wide range of fuse utilisations, whatever the applicable reference standard.
(1) A gM fuse-link is in fact simply a derated gG fuse-link.

Coordination of devices on the motor feeder

- ■ Thermal protection of:
  - □ motor
  - □ conductors
  - □ switch
  - □ fuse

is ensured by the thermal relay on the contactor.
- ■ Overload (or short-circuit) protection of:
  - □ motor
  - □ conductors
  - □ switch
  - □ thermal relay

is ensured by the fuse.
To ensure a high level of operational quality, it is important to ensure **coordination of the devices** on the motor feeder in compliance with standard IEC 60947-4.
The equipment manufacturers provide type-1 and type-2 coordination tables between fuse-links, contactors and thermal relays.

NOTE : Proposed fuses are based on 4 poles 50 Hz induction motors direct on line start Id/In ≤ 7 for 10 sec. The choice of fuses and overload relay shall be checked according to the actual motor's caracteristic.

Protection of motor circuits with BS fuses

Selection tables for Fupact devices and associated BS fuse-links

Example:
A 37 kW motor supplied at 415 V is protected by 160 A gM fuse-links.
This type of fuse-link may be mounted on a Fupact INFB100 or higher.
See the grey section in the table opposite.

230/240 V				
P(kW)	**(HP)**	**In (A)**	**Fupact**	**gG/gM**
0.37	0.5	**1.9**	**INFB32**	**gG 6**
1	0.7	**2.7**	**INFB32**	**gG 10**
0.8	1	**3.6**	**INFB32**	**gG 16**
1.1	1.5	**4.5**	**INFB32**	**gG 16**
1.5	2	**6.3**	**INFB32**	**gG 20**
2.2	2.9	**9**	**INFB32**	**20M25**
3	4	**11.7**	**INFB32**	**20M32**
4	5.3	**15.2**	**INFB32**	**32M40**
5.5	7.3	**19.8**	**INFB32**	**32M50**
7.5	10	**26**	**INFB32**	**32M50**
10	13	**34**	**INFB32**	**63M80**
11	15	**38**	**INFB63**	**63M80**
15	20	**51**	**INFB63**	**63M100**
18.5	25	**63**	**INFB100**	**100M160**
22	29	**74**	**INFB100**	**100M160**
30	40	**99**	**INFB200**	**gG 200**
37	49	**125**	**INFB200**	**200M250**
45	60	**144**	**INFB200**	**200M250**
55	73	**177**	**INFB250**	**315M400**
75	100	**245**	**INFB250**	**315M400**
90	120	**296**	**INFB400**	**400M450**
110	147	**354**	**INFB630**	**gG 630**
132	176	**408**	**INFB800**	**gG 800**
150	200	**484**	**INFB800**	**gG 800**
160	213	**496**	**INFB800**	**gG 800**

415V				
P(kW)	**(HP)**	**In (A)**	**Fupact**	**gG/gM**
0.37	0.5	**1.1**	**INFB32**	**gG 4**
1	0.7	**1.5**	**INFB32**	**gG 6**
0.8	1	**2**	**INFB32**	**gG 10**
1.1	1.5	**2.5**	**INFB32**	**gG 10**
1.5	2	**3.5**	**INFB32**	**gG 16**
2.2	2.9	**5**	**INFB32**	**gG 16**
3	4	**6.5**	**INFB32**	**gG 20**
4	5.3	**8.4**	**INFB32**	**20M25**
5.5	7.3	**11**	**INFB32**	**20M32**
7.5	10	**14.4**	**INFB32**	**32M40**
10	13.3	**19.1**	**INFB32**	**32M50**
11	15	**21**	**INFB32**	**32M50**
15	20	**28**	**INFB32**	**32M63**
18.5	25	**35**	**INFB63**	**63M80**
22	29	**41**	**INFB63**	**63M80**
30	40	**55**	**INFB63**	**63M100**
37	49	**69**	**INFB100**	**100M160**
45	60	**80**	**INFB100**	**100M160**
55	73	**98**	**INFB200**	**gG 200**
75	100	**136**	**INFB200**	**200M250**
90	120	**164**	**INFB200**	**200M315**
110	147	**196**	**INFB250**	**315M400**
132	176	**226**	**INFB250**	**315M400**
150	200	**268**	**INFB400**	**400M500**
160	213	**275**	**INFB400**	**400M500**
200	267	**358**	**INFB630**	**gG 630**
240	320	**428**	**INFB800**	**gG 800**
280	373	**488**	**INFB800**	**gG 800**

Protection of motor circuits with NFC fuses

Selection tables for Fupact devices and associated NFC fuse-links

Example:
A 30 kW motor supplied at 690 V is protected by:
- 80 A gG fuse-links
- 32 A aM fuse-links.

Both types of fuse-links may be mounted on a Fupact INFC63 (1) or higher.
See the grey section in the table on following page.

(1) Fupact is designed to allow overrated protection.

230/240 V

P(kW)	(HP)	In (A)	Fupact	gG	Fupact	aM
0.37	0.49	**1.9**	INFC32	6	INFC32	2
0.55	0.73	**2.7**	INFC32	10	INFC32	4
0.75	1	**3.6**	INFC32	16	INFC32	4
1.1	1.5	**4.5**	INFC32	16	INFC32	6
1.5	2	**6.3**	INFC32	20	INFC32	8
2.2	2.9	**9**	INFC32	25	INFC32	10
3	4	**11.7**	INFC32	32	INFC32	12
4	5.3	**15.2**	INFC32	40	INFC32	16
5.5	7.3	**19.8**	INFC32	50	INFC32	20
7.5	10	**26**	INFC50	50	INFC32	32
10	13	**34**	INFC63	80	INFC50	40
11	15	**38**	INFC63	80	INFC50	40
15	20	**51**	INFC63	100	INFC63	63
18.5	25	**63**	-	160	INFC125	80
22	29	**74**	-	160	INFC125	80
30	40	**99**	-	200	INFC125	100
37	49	**125**	-	250	INFC125	125

380/400V

P(kW)	(HP)	In (A)	Fupact	gG	Fupact	aM
0.37	0.49	**1.1**	INFC32	4	INFC32	2
0.55	0.73	**1.6**	INFC32	6	INFC32	2
0.75	1	**2.2**	INFC32	10	INFC32	4
1.1	1.5	**2.7**	INFC32	10	INFC32	4
1.5	2	**3.8**	INFC32	16	INFC32	4
2.2	2.9	**5.5**	INFC32	16	INFC32	6
3	4	**7.1**	INFC32	20	INFC32	8
4	5.3	**9.2**	INFC32	25	INFC32	10
5.5	7.3	**12**	INFC32	32	INFC32	12
7.5	10	**16**	INFC32	40	INFC32	16
10	13	**21**	INFC32	50	INFC32	25
11	15	**23**	INFC32	50	INFC32	25
15	20	**31**	INFC63	80	INFC32	32
18.5	25	**38**	INFC63	80	INFC50	40
22	29	**45**	INFC63	100	INFC50	50
30	40	**60**	INFC63	125	INFC63	63
37	49	**75**	-	160	INFC125	80
45	60	**87**	-	200	INFC125	100
55	73	**107**	-	200	INFC125	125

415 V

P(kW)	(HP)	In (A)	Fupact	gG	Fupact	aM
0.37	0.49	**1.1**	INFC32	4	INFC32	2
0.55	0.73	**1.5**	INFC32	6	INFC32	2
0.75	1	**2**	INFC32	6	INFC32	2
1.1	1.5	**2.5**	INFC32	10	INFC32	4
1.5	2	**3.5**	INFC32	16	INFC32	4
2.2	2.9	**5**	INFC32	16	INFC32	6
3	4	**6.5**	INFC32	20	INFC32	8
4	5.3	**8.4**	INFC32	25	INFC32	10
5.5	7.3	**11**	INFC32	32	INFC32	12
7.5	10	**14**	INFC32	40	INFC32	16
10	13	**19**	INFC32	50	INFC32	25
11	15	**21**	INFC32	50	INFC32	25
15	20	**28**	INFC63	63	INFC32	32
18.5	25	**35**	INFC63	80	INFC50	40
22	29	**41**	INFC63	80	INFC50	50
30	40	**55**	INFC63	100	INFC63	63
37	49	**69**	-	160	INFC125	80
45	60	**80**	-	160	INFC125	80
55	73	**98**	-	200	INFC125	100

440 V

P(kW)	(HP)	In (A)	Fupact	gG	Fupact	aM
0.37	0.49	**1**	INFC32	4	INFC32	2
0.55	0.73	**1.4**	INFC32	6	INFC32	2
0.75	1	**1.9**	INFC32	6	INFC32	2
1.1	1.5	**2.4**	INFC32	10	INFC32	4
1.5	2	**3.3**	INFC32	10	INFC32	4
2.2	2.9	**4.7**	INFC32	16	INFC32	6
3	4	**6.1**	INFC32	16	INFC32	6
4	5.3	**7.9**	INFC32	20	INFC32	8
5.5	7.3	**10.4**	INFC32	25	INFC32	10
7.5	10	**14**	INFC32	40	INFC32	16
10	13	**18**	INFC50	50	INFC32	20
11	15	**20**	INFC50	50	INFC32	20
15	20	**26**	INFC63	63	INFC32	32
18.5	25	**33**	INFC63	80	INFC50	40
22	29	**39**	INFC63	80	INFC50	40
30	40	**52**	INFC63	100	INFC50	50
37	49	**65**	-	160	INFC125	80
45	60	**75**	-	160	INFC125	80
55	73	**92**	-	200	INFC125	100

Protection of motor circuits with NFC fuses

500 V						
P(kW)	(HP)	In (A)	Fupact	gG	Fupact	aM
0.37	0.49	**0.9**	INFC32	4	INFC32	2
0.55	0.73	**1.2**	INFC32	4	INFC32	2
0.75	1	**1.5**	INFC32	6	INFC32	2
1.1	1.5	**2.2**	INFC32	6	INFC32	2
1.5	2	**2.9**	INFC32	10	INFC32	4
2.2	2.9	**3.9**	INFC32	10	INFC32	4
3	4	**5.2**	INFC32	16	INFC32	6
4	5.3	**6.8**	INFC32	20	INFC32	8
5.5	7.3	**9.2**	INFC32	25	INFC32	10
7.5	10	**12**	INFC32	32	INFC32	12
10	13	**16**	INFC32	32	INFC32	16
11	15	**18**	INFC32	40	INFC32	20
15	20	**23**	INFC63	50	INFC32	25
18.5	25	**28**	INFC63	63	INFC50	32
22	29	**33**	INFC63	80	INFC50	40
30	40	**45**	INFC63	100	INFC63	50
37	49	**53**	INFC63	100	INFC63	63
45	60	**64**	-	160	INFC125	80
55	73	**78**	-	160	INFC125	80

525/550 V						
P(kW)	(HP)	In (A)	Fupact	gG	Fupact	aM
0.37	0.49	**0.8**	INFC63	4	INFC32	2
0.55	0.73	**1.1**	INFC63	4	INFC32	2
0.75	1	**1.4**	INFC63	6	INFC32	2
1.1	1.5	**2.1**	INFC63	6	INFC32	2
1.5	2	**2.8**	INFC63	10	INFC32	4
2.2	2.9	**3.7**	INFC63	10	INFC32	4
3	4	**4.9**	INFC63	16	INFC32	6
4	5.3	**6.5**	INFC63	20	INFC32	8
5.5	7.3	**8.7**	INFC63	25	INFC32	10
7.5	10	**12**	INFC63	32	INFC32	12
10	13	**15**	INFC63	32	INFC32	16
11	15	**17**	INFC63	40	INFC32	20
15	20	**22**	INFC63	50	INFC32	25
18.5	25	**27**	INFC63	63	INFC63	32
22	29	**31**	INFC63	80	INFC63	40
30	40	**43**	-	100	INFC63	50
37	49	**50**	-	100	INFC63	63
45	60	**61**	-	125	INFC63	63
55	73	**74**	-	160	INFC125	80

660/690V						
P(kW)	(HP)	In (A)	Fupact	gG	Fupact	aM
0.37	0.49	**0.7**	INFC63	2	INFC32	2
0.55	0.73	**0.9**	INFC63	4	INFC32	2
0.75	1	**1.1**	INFC63	4	INFC32	2
1.1	1.5	**1.6**	INFC63	6	INFC32	2
1.5	2	**2.2**	INFC63	6	INFC32	4
2.2	2.9	**2.8**	INFC63	10	INFC32	4
3	4	**3.8**	INFC63	10	INFC32	6
4	5.3	**4.9**	INFC63	16	INFC32	6
5.5	7.3	**6.7**	INFC63	20	INFC32	8
7.5	10	**9**	INFC63	25	INFC32	10
10	13	**12**	INFC63	32	INFC32	12
11	15	**13**	INFC63	32	INFC32	16
15	20	**17**	INFC63	40	INFC32	20
18.5	25	**22**	INFC63	50	INFC32	25
22	29	**24**	INFC63	50	INFC63	25
30	40	**32**	INFC63	80	INFC63	32
37	49	**39**	INFC63	80	INFC63	40
45	60	**47**	-	100	INFC63	50
55	73	**57**	-	125	INFC63	63
75	100	**77**	-	160	INFC125	80

Protection of motor circuits with DIN fuses

Selection tables for Fupact devices and associated DIN fuse-links

Example:
A 75 kW motor supplied at 500 V is protected by:
- 200 A gG fuse-links
- 125 A aM fuse-links.

Both types of fuse-links may be mounted on a Fupact INFD200 or higher.
See the grey section in the table below.

230/240 V

P(kW)	(HP)	In (A)	Fupact	gG	Fupact	aM
0.37	0.49	**1.9**	INFD40	6	INFD40	2
0.55	0.73	**2.7**	INFD40	10	INFD40	4
0.75	1	**3.6**	INFD40	16	INFD40	4
1.1	1.5	**4.5**	INFD40	16	INFD40	6
1.5	2	**6.3**	INFD40	20	INFD40	8
2.2	2.9	**9.0**	INFD40	25	INFD40	10
3	4	**11.7**	INFD40	32	INFD40	12
4	5.3	**15.2**	INFD40	40	INFD40	16
5.5	7.3	**19.8**	INFD40	50	INFD40	20
7.5	10	**26**	INFD40	50	INFD40	32
10	13	**34**	INFD40	80	INFD40	40
11	15	**38**	INFD40	80	INFD40	40
15	20	**51**	INFD63	100	INFD63	63
18.5	25	**63**	INFD160	160	INFD160	80
22	29	**74**	INFD160	160	INFD160	80
30	40	**99**	INFD200	200	INFD160	100
37	49	**125**	INFD200	250	INFD160	125
45	60	**144**	INFD200	250	INFD160	160
55	73	**177**	INFD250	355	INFD200	200
75	100	**245**	INFD400	400	INFD400	250
90	120	**296**	INFD400	450	INFD400	315
110	147	**354**	INFD630	630	INFD400	355
132	176	**408**	INFD630	800	INFD630	450
150	200	**484**	INFD630	800	INFD630	500
160	213	**496**	INFD630	800	INFD630	500
200	267	**646**	-	-	INFD800	800

380/400V

P(kW)	(HP)	In (A)	Fupact	gG	Fupact	aM
0.37	0.49	**1.1**	INFD40	4	INFD40	2
0.55	0.73	**1.6**	INFD40	6	INFD40	2
0.75	1	**2.2**	INFD40	10	INFD40	4
1.1	1.5	**2.7**	INFD40	10	INFD40	4
1.5	2	**3.8**	INFD40	16	INFD40	4
2.2	2.9	**5.55,5**	INFD40	16	INFD40	6
3	4	**7.1**	INFD40	20	INFD40	8
4	5.3	**9.2**	INFD40	25	INFD40	10
5.5	7.3	**12**	INFD40	32	INFD40	12
7.5	10	**16**	INFD40	40	INFD40	16
10	13	**21**	INFD40	50	INFD40	25
11	15	**23**	INFD40	50	INFD40	25
15	20	**31**	INFD40	80	INFD40	32
18.5	25	**38**	INFD40	80	INFD40	40
22	29	**45**	INFD63	100	INFD63	50
30	40	**60**	INFD63	125	INFD63	63
37	49	**75**	INFD160	160	INFD160	80
45	60	**87**	INFD200	200	INFD160	100
55	73	**107**	INFD200	200	INFD160	125
75	100	**149**	INFD200	250	INFD160	160
90	120	**179**	INFD250	355	INFD200	200
110	147	**214**	INFD400	400	INFD250	250
132	176	**247**	INFD400	450	INFD250	250
150	200	**293**	INFD400	500	INFD400	315
160	213	**300**	INFD630	630	INFD400	315
200	267	**391**	INFD630	800	INFD400	400
240	320	**467**	INFD630	800	INFD630	500
280	373	**533**	-	-	INFD630	630
300	400	**573**	-	-	INFD630	630
320	427	**588**	-	-	INFD630	630

415 V

P(kW)	(HP)	In (A)	Fupact	gG	Fupact	aM
0.37	0.49	**1.1**	INFD40	4	INFD40	2
0.55	0.73	**1.5**	INFD40	6	INFD40	2
0.75	1	**2**	INFD40	10	INFD40	2
1.1	1.5	**2.5**	INFD40	10	INFD40	4
1.5	2	**3.5**	INFD40	16	INFD40	4
2.2	2.9	**5**	INFD40	16	INFD40	6
3	4	**6.5**	INFD40	20	INFD40	8
4	5.3	**8.4**	INFD40	25	INFD40	10
5.5	7.3	**11**	INFD40	32	INFD40	12
7.5	10	**14**	INFD40	40	INFD40	16
10	13	**19**	INFD40	50	INFD40	25
11	15	**21**	INFD40	50	INFD40	25
15	20	**28**	INFD40	63	INFD40	32
18.5	25	**35**	INFD40	80	INFD40	40
22	29	**41**	INFD63	80	INFD63	50
30	40	**55**	INFD63	100	INFD63	63
37	49	**69**	INFD160	160	INFD160	80
45	60	**80**	INFD160	160	INFD160	80
55	73	**98**	INFD200	200	INFD160	100
75	100	**136**	INFD200	250	INFD160	160
90	120	**164**	INFD250	315	INFD200	200
110	147	**196**	INFD250	355	INFD200	200
132	176	**226**	INFD400	400	INFD250	250
150	200	**268**	INFD400	450	INFD400	315
160	213	**275**	INFD400	500	INFD400	315
200	267	**358**	INFD630	630	INFD400	400
240	320	**428**	INFD630	800	INFD630	450
280	373	**488**	INFD630	800	INFD630	500
300	400	**525**	-	-	INFD630	630
320	427	**538**	-	-	INFD630	630
355	473	**605**	-	-	INFD630	630
375	500	**610**	-	-	INFD630	630

440 V

P(kW)	(HP)	In (A)	Fupact	gG	Fupact	aM
0.37	0.49	**1**	INFD40	4	INFD40	2
0.55	0.73	**1.4**	INFD40	6	INFD40	2
0.75	1	**1.9**	INFD40	6	INFD40	2
1.1	1.5	**2.4**	INFD40	10	INFD40	4
1.5	2	**3.3**	INFD40	10	INFD40	4
2.2	2.9	**4.7**	INFD40	16	INFD40	6
3	4	**6.1**	INFD40	16	INFD40	6
4	5.3	**7.9**	INFD40	20	INFD40	8
5.5	7.3	**10.4**	INFD40	25	INFD40	10
7.5	10	**14**	INFD40	40	INFD40	16
10	13	**18**	INFD40	50	INFD40	20
11	15	**20**	INFD40	50	INFD40	20
15	20	**26**	INFD40	63	INFD40	32
18.5	25	**33**	INFD40	80	INFD40	40
22	29	**39**	INFD40	80	INFD40	40
30	40	**52**	INFD63	100	INFD63	50
37	49	**65**	INFD160	160	INFD160	80
45	60	**75**	INFD160	160	INFD160	80
55	73	**92**	INFD160	200	INFD160	100
75	100	**128**	INFD200	250	INFD160	125
90	120	**155**	INFD250	315	INFD160	160
110	147	**185**	INFD250	355	INFD200	200
132	176	**213**	INFD400	400	INFD250	250
150	200	**253**	INFD400	450	INFD400	250
160	213	**259**	INFD400	500	INFD400	315
200	267	**338**	INFD630	630	INFD400	355
240	320	**404**	INFD630	800	INFD630	400
280	373	**460**	INFD630	800	INFD630	450
300	400	**495**	INFD630	800	INFD630	500
320	427	**507**	-	-	INFD630	500
355	473	**560**	-	-	INFD630	630
375	500	**575**	-	-	INFD630	630
400	533	**611**	-	-	INFD630	630

500 V

P(kW)	(HP)	In (A)	Fupact	gG	Fupact	aM
0.37	0.49	**0.9**	INFD40	4	INFD40	2
0.55	0.73	**1.2**	INFD40	4	INFD40	2
0.75	1	**1.5**	INFD40	6	INFD40	2
1.1	1.5	**2.2**	INFD40	6	INFD40	2
1.5	2	**2.9**	INFD40	10	INFD40	4
2.2	2.9	**3.9**	INFD40	10	INFD40	4
3	4	**5.2**	INFD40	16	INFD40	6
4	5.3	**6.8**	INFD40	20	INFD40	8
5.5	7.3	**9.2**	INFD40	25	INFD40	10
7.5	10	**12**	INFD40	32	INFD40	12
10	13	**16**	INFD40	32	INFD40	16
11	15	**18**	INFD40	40	INFD40	20
15	20	**23**	INFD40	50	INFD40	25
18.5	25	**28**	INFD40	63	INFD40	32
22	29	**33**	INFD40	80	INFD40	40
30	40	**45**	INFD63	100	INFD63	50
37	49	**53**	INFD63	100	INFD160	63
45	60	**64**	INFD160	160	INFD160	80
55	73	**78**	INFD160	160	INFD160	80
75	100	**106**	INFD200	200	INFD160	125
90	120	**130**	INFD200	250	INFD160	160
110	147	**155**	INFD250	315	INFD200	160
132	176	**187**	INFD250	355	INFD250	200
150	200	**211**	INFD400	400	INFD400	250
160	213	**225**	INFD400	400	INFD400	250
200	267	**280**	INFD400	450	INFD400	315
240	320	**338**	INFD630	630	INFD630	355
280	373	**386**	INFD630	800	INFD630	400
300	400	**415**	INFD630	800	INFD630	450
320	427	**435**	INFD630	800	INFD630	450
355	473	**488**	INFD630	800	INFD630	500
375	500	**515**	-	-	INFD630	500
400	533	**552**	-	-	INFD630	630
450	600	**630**	-	-	INFD630	630

Protection of motor circuits with DIN fuses

525/550 V						
P(kW)	(HP)	In (A)	Fupact	gG	Fupact	aM
0.37	0.49	**0.8**	**INFD40**	**4**	**INFD40**	**2**
0.55	0.73	**1.1**	**INFD40**	**4**	**INFD40**	**2**
0.75	1	**1.4**	**INFD40**	**6**	**INFD40**	**2**
1.1	1.5	**2.1**	**INFD40**	**6**	**INFD40**	**2**
1.5	2	**2.8**	**INFD40**	**10**	**INFD40**	**4**
2.2	2.9	**3.7**	**INFD40**	**10**	**INFD40**	**4**
3	4	**4.9**	**INFD40**	**16**	**INFD40**	**6**
4	5.3	**6.5**	**INFD40**	**20**	**INFD40**	**8**
5.5	7.3	**8.7**	**INFD40**	**25**	**INFD40**	**10**
7.5	10	**12**	**INFD40**	**32**	**INFD40**	**12**
10	13	**15**	**INFD40**	**32**	**INFD40**	**16**
11	15	**17**	**INFD40**	**40**	**INFD40**	**20**
15	20	**22**	**INFD40**	**50**	**INFD40**	**25**
18.5	25	**27**	**INFD40**	**63**	**INFD40**	**32**
22	29	**31**	**INFD63**	**80**	**INFD40**	**40**
30	40	**43**	**INFD160**	**100**	**INFD63**	**50**
37	49	**50**	**INFD160**	**100**	**INFD63**	**63**
45	60	**61**	**INFD160**	**125**	**INFD63**	**63**
55	73	**74**	**INFD200**	**160**	**INFD160**	**80**
75	100	**101**	**INFD250**	**200**	**INFD160**	**100**
90	120	**123**	**INFD400**	**250**	**INFD160**	**125**
110	147	**147**	**INFD400**	**250**	**INFD250**	**160**
132	176	**178**	**INFD630**	**355**	**INFD250**	**200**
150	200	**200**	**INFD630**	**400**	**INFD250**	**200**
160	213	**214**	**INFD630**	**400**	**INFD250**	**250**
200	267	**266**	**INFD630**	**450**	**INFD400**	**315**
240	320	**321**	**-**	**-**	**INFD400**	**355**
280	373	**366**	**-**	**-**	**INFD400**	**400**
300	400	**394**	**-**	**-**	**INFD400**	**400**
320	427	**413**	**-**	**-**	**INFD630**	**450**
355	473	**464**	**-**	**-**	**INFD630**	**500**
375	500	**490**	**-**	**-**	**INFD630**	**500**

660/690V						
P(kW)	(HP)	In (A)	Fupact	gG	Fupact	aM
0.37	0.49	**0.7**	**INFD40**	**2**	**INFD40**	**2**
0.55	0.73	**0.9**	**INFD40**	**4**	**INFD40**	**2**
0.75	1	**1.1**	**INFD40**	**4**	**INFD40**	**2**
1.1	1.5	**1.6**	**INFD40**	**6**	**INFD40**	**2**
1.5	2	**2.2**	**INFD40**	**6**	**INFD40**	**4**
2.2	2.9	**2.8**	**INFD40**	**10**	**INFD40**	**4**
3	4	**3.8**	**INFD40**	**10**	**INFD40**	**6**
4	5.3	**4.9**	**INFD40**	**16**	**INFD40**	**6**
5.5	7.3	**6.7**	**INFD40**	**20**	**INFD40**	**8**
7.5	10	**9**	**INFD40**	**25**	**INFD40**	**10**
10	13	**12**	**INFD40**	**32**	**INFD40**	**12**
11	15	**13**	**INFD40**	**32**	**INFD40**	**16**
15	20	**17**	**INFD40**	**40**	**INFD40**	**20**
18.5	25	**22**	**INFD40**	**50**	**INFD40**	**25**
22	29	**24**	**INFD40**	**50**	**INFD40**	**25**
30	40	**32**	**INFD63**	**80**	**INFD40**	**32**
37	49	**39**	**INFD63**	**80**	**INFD63**	**40**
45	60	**47**	**INFD160**	**100**	**INFD63**	**50**
55	73	**57**	**INFD160**	**125**	**INFD63**	**63**
75	100	**77**	**INFD200**	**160**	**INFD160**	**80**
90	120	**93**	**INFD250**	**200**	**INFD160**	**100**
110	147	**113**	**INFD250**	**250**	**INFD160**	**125**
132	176	**134**	**INFD250**	**250**	**INFD250**	**160**
150	200	**152**	**INFD400**	**315**	**INFD250**	**160**
160	213	**162**	**INFD400**	**315**	**INFD250**	**160**
200	267	**203**	**INFD630**	**400**	**INFD250**	**200**
240	320	**244**	**INFD630**	**450**	**INFD250**	**250**
280	373	**284**	**INFD630**	**500**	**INFD400**	**315**
300	400	**305**	**INFD630**	**500**	**INFD400**	**315**
320	427	**325**	**-**	**-**	**INFD630**	**355**
355	473	**354**	**-**	**-**	**INFD630**	**355**
375	500	**374**	**-**	**-**	**INFD630**	**400**
400	533	**400**	**-**	**-**	**INFD630**	**400**
450	600	**455**	**-**	**-**	**INFD630**	**450**

Type 2 coordination (IEC 60947-4-1) 380/415 V

Schneider Electric switch-disconnector fuses and contactors

Performance: Ue = 380/415 V - "Iq" 100 kA

Starting Class 10 A/10

Motors				Switch-fuse [1]	Fuse-link type		Contactors [2]	Thermal relays	
P (kW)	I (A) 380 V	I (A) 415 V	Ie Max (A)	Type	gG rating (A)	aM rating (A)	Type	Type	Irth (A)
0.37	1.2	1.1	1.6	INFC32 or INFD40	4	2	LC1-D09	LRD 06	1/1.6
0.55	1.6	1.5	1.6	INFC32 or INFD40	6	2	LC1-D09	LRD 06	1/1.6
0.75	2	1.8	2.5	INFC32 or INFD40	10	4	LC1-D09	LRD 07	1.6/2.5
1.1	2.8	2.6	2.5	INFC32 or INFD40	10	4	LC1-D09	LRD 07	1.6/2.5
1.5	3.7	3.4	4	INFC32 or INFD40	16	4	LC1-D09	LRD 08	2.5/4
2.2	5.3	4.8	6	INFC32 or INFD40	16	6	LC1-D09	LRD 10	4/6
3	7	6.5	8	INFC32 or INFD40	20	8	LC1-D09	LRD 12	5.5/8
4	9	8.2	10	INFC32 or INFD40	25	10	LC1-D12	LRD 14	7/10
5.5	12	11	12	INFC32 or INFD40	32	12	LC1-D12	LRD 16	9/13
7.5	16	14	16	INFC32 or INFD40	40	16	LC1-D18	LRD 21	12/18
10	21	19	24	INFC32 or INFD40	50	25	LC1-D25	LRD 22	16/24
11	23	21	24	INFC32 or INFD40	50	25	LC1-D25	LRD 22	16/24
15	30	28	32	INFC32 or INFD40 INFC63 or INFD40	- 63	32 -	LC1-D32	LRD 32	23/32
18.5	37	34	40	INFC50 or INFD40 INFC63 or INFD40	- 80	40 -	LC1-D40A	LRD 340	30/40
22	43	40	50	INFC50 or INFD63 INFC63 or INFD63	- 100	50 -	LC1-D50A	LRD 350	37/50
30	59	55	63	INFC63 or INFD63	125	63	LC1-D65A	LRD 365	48/65
37	72	66	80	INFC125 or INFD160	160	80	LC1-D80	LRD 3363	63/80
45	85	80	100	INFC125 or INFD160 INFD200	- 200	100 -	LC1-D115	LR9-D53 67	60/100
55	105	100	115	INFC125 or INFD160 INFD200	- 200	125 -	LC1-D115	LR9-D53 69	90/150
75	140	135	150	INFD160 INFD200	- 250	160 -	LC1-D150	LR9-D53 69	90/150
90	170	160	185	INFD200 INFD250	- 355	200 -	LC1-F265	LR9-F53 71	132/220
110	210	200	220	INFD250 INFD400	- 400	250 -	LC1-F330	LR9-F53 71	132/220
132	250	230	250	INFD250 INFD400	- 450	250 -	LC1-F330	LR9-F73 75	200/330
160	300	270	265	INFD400 INFD630	- 630	315 -	LC1-F400	LR9-F73 75	200/330
200	380	361	400	INFD400 INFD630	- 800	400 -	LC1-F500	LR9-F73 79	300/500
250	460	430	500	INFD630	800	500	LC1-F500	LR9-F73 79	300/500
280	520	475	630	INFD630	800	630	LC1-F630	LR9-F73 81	380/630
300	565	500	630	INFD630	-	630	LC1-F630	LR9-F73 81	380/630
335	610	560	630	INFD630	-	630	LC1-F630	LR9-F73 81	380/630
355	630	590	630	INFD630	-	800	LC1-F630	LR9-F73 81	380/630

(1) INFC for NFC cylindrical ferrule / INFD for NH DIN type fuse-link.
(2) Reversers: replace LC1 with LC2; star-delta starter: replace LC1 with LC3.

Type 2 coordination (IEC 60947-4-1) 380/415 V

Schneider Electric switch-disconnector fuses and contactors

Performance: Ue = 380/415 V - "Iq" 100 kA

Starting Adjustable class 10 A to 30 (4)

Motors				Switch-fuse (1)	Fuse-link type		Contactors (2)	Thermal relays	
P (kW)	I (A) 380 V	I (A) 415 V	Ie Max (A)	Type	gG rating (A)	aM rating (A)	Type	Type	Irth (A)
0.37	1.2	1.1	2	INFC32 or INFD40	4	2	LC1-D09	LTM R08	0.4/8 (3)
0.55	1.6	1.5	2	INFC32 or INFD40	6	2	LC1-D09	LTM R08	0.4/8 (3)
0.75	2	1.8	4	INFC32 or INFD40	10	4	LC1-D09	LTM R08	0.4/8 (3)
1.1	2.8	2.6	4	INFC32 or INFD40	10	4	LC1-D09	LTM R08	0.4/8 (3)
1.5	3.7	3.4	4	INFC32 or INFD40	16	4	LC1-D09	LTM R08	0.4/8 (3)
2.2	5.3	4.8	6	INFC32 or INFD40	16	6	LC1-D09	LTM R08	0.4/8 (3)
3	7	6.5	8	INFC32 or INFD40	20	8	LC1-D09	LTM R08	0.4/8 (3)
4	9	8.2	10	INFC32 or INFD40	25	10	LC1-D12	LTM R27	1.35/27 (3)
5.5	12	11	12	INFC32 or INFD40	32	12	LC1-D18	LTM R27	1.35/27 (3)
7.5	16	14	16	INFC32 or INFD40	40	16	LC1-D25	LTM R27	1.35/27 (3)
10	21	19	25	INFC32 or INFD40	50	25	LC1-D32	LTM R27	1.35/27 (3)
11	23	21	25	INFC32 or INFD40	50	25	LC1-D32	LTM R27	1.35/27 (3)
15	30	28	32	INFC32 or INFD40 INFC63 or INFD40	- 80	32 -	LC1-D40A	LTM R100	5/100 (3)
18.5	37	34	40	INFC50 or INFD40 INFC63 or INFD40	- 80	40 -	LC1-D40A	LTM R100	5/100 (3)
22	43	40	50	INFC50 or INFD63 INFC63 or INFD63	- 100	50 -	LC1-D50A	LTM R100	5/100 (3)
30	59	55	63	INFC63 or INFD63	125	63	LC1-D65A	LTM R100	5/100 (3)
37	72	66	80	INFC125 or INFD160	160	80	LC1-D80	LTM R100	5/100 (3)
45	85	80	80	INFC125 or INFD160 INFD200	- 200	100 -	LC1-D115	LTM R100	5/100 (3)
55	105	100	115	INFC125 or INFD160 INFD200	- 200	125 -	LC1-D115	LTM R08	On CT
75	140	135	150	INFD160 INFD200	- 250	160 -	LC1-D150	LTM R08	On CT
90	170	160	185	INFD200 INFD250	- 355	200 -	LC1-D265	LTM R08	On CT
110	210	200	225	INFD250 INFD400	- 400	250 -	LC1-F330	LTM R08	On CT
132	250	230	250	INFD250 INFD400	- 450	250 -	LC1-F330	LTM R08	On CT
160	300	270	315	INFD400 INFD630	- 630	315 -	LC1-F400	LTM R08	On CT
200	380	361	400	INFD400 INFD630	- 800	400 -	LC1-F500	LTM R08	On CT
250	460	430	500	INFD630	800	500	LC1-F500	LTM R08	On CT
280	520	475	630	INFD630	800	630	LC1-F630	LTM R08	On CT
300	565	500	630	INFD630	-	630	LC1-F630	LTM R08	On CT
335	610	560	630	INFD630	-	630	LC1-F630	LTM R08	On CT
355	630	590	630	INFD630	-	800	LC1-F630	LTM R08	On CT

(1) INFC for NFC cylindric ferrule / INFD for NH DIN type fuse-link.
(2) Reversers: replace LC1 with LC2; star-delta starter: replace LC1 with LC3.
(3) Currents transformers built-in electronic relays.
(4) For use with overload relay setted in class 20 and 30, apply respectively a derating of 20 % and 37 %.

Type 2 coordination (IEC 60947-4-1) 440 V

Schneider Electric switch-disconnector fuses and contactors

Performance: Ue = 440 V [3] - "Iq" 100 kA

Starting Class 10 A/10

Motors			Switch-fuse [1]	Fuse-link type		Contactors [2]	Thermal relays	
P (kW)	I (A) 440 V	Ie Max (A)	Type	gG rating (A)	aM rating (A)	Type	Type	Irth (A)
0.37	1	1.6	INFC32 or INFD40	4	2	LC1-D09	LRD 06	1/1.6
0.55	1.4	1.6	INFC32 or INFD40	6	2	LC1-D09	LRD 06	1/1.6
0.75	1.9	2.5	INFC32 or INFD40	6	2	LC1-D09	LRD 07	1.6/2.5
1.1	2.4	2.5	INFC32 or INFD40	10	4	LC1-D09	LRD 07	1.6/2.5
1.5	3.3	4	INFC32 or INFD40	10	4	LC1-D09	LRD 08	2.5/4
2.2	4.7	6	INFC32 or INFD40	16	6	LC1-D09	LRD 10	4/6
3	6.1	6	INFC32 or INFD40	16	6	LC1-D09	LRD 10	4/6
4	7.9	8	INFC32 or INFD40	20	8	LC1-D09	LRD 12	5.5/8
5.5	10.4	10	INFC32 or INFD40	25	10	LC1-D12	LRD 16	9/13
7.5	14	16	INFC32 or INFD40	40	16	LC1-D18	LRD 21	12/18
11	20	20	INFC32 or INFD40 INFC50 or INFD40	- 50	20 -	LC1-D25	LRD 22	16/24
15	26	32	INFC32 or INFD40 INFC63 or INFD40	- 63	32 -	LC1-D32	LRD 32	23/32
18.5	33	40	INFC50 or INFD40 INFC63 or INFD40	- 80	40 -	LC1-D40A	LRD 340	30/40
22	39	50	INFC50 or INFD63 INFC63 or INFD63	- 100	50 -	LC1-D50A	LRD 340	30/40
30	52	63	INFC50 or INFD63 INFC63 or INFD63	- 125	63 -	LC1-D65A	LRD 365	48/65
37	65	65	INFC125 or INFD160 INFD160	- 160	80 -	LC1-D80	LRD 3359	48/65
45	75	80	INFC125 or INFD160 INFD160	- 160	80 -	LC1-D80	LRD 3363	63/80
55	92	100	INFC125 or INFD160 INFD160	- 200	100 -	LC1-D115	LR9-D53 67	60/100
75	128	125	INFD160 INFD200	- 250	125 -	LC1-D150	LR9-D53 69	90/150
90	155	150	INFD160 INFD250	- 315	160 -	LC1-D185	LR9-D53 69	90/150
110	185	200	INFD200 INFD250	- 355	200 -	LC1-F265	LR9-F53 71	132/220
132	213	220	INFD250 INFD400	- 400	250 -	LC1-F265	LR9-F53 71	132/220
160	259	315	INFD400	500	315	LC1-F330	LR9-F73 75	200/330
200	338	330	INFD400 INFD630	- 630	355 -	LC1-F400	LR9-F73 75	200/330
250	423	400	INFD630	800	400	LC1-F500	LR9-F73 79	300/500
280	460	450	INFD630	800	450	LC1-F500	LR9-F73 79	300/500
300	495	500	INFD630	800	500	LC1-F500	LR9-F73 79	300/500
355	560	630	INFD630	-	630	LC1-F630	LR9-F73 81	380/630
375	575	630	INFD630	-	630	LC1-F630	LR9-F73 81	380/630
400	611	630	INFD630	-	800	LC1-F630	LR9-F73 81	380/630

(1) INFC for NFC cylindric ferrule / INFD for NH DIN type fuse-link.
(2) Reversers: replace LC1 with LC2; star-delta starter: replace LC1 with LC3.
(3) Valid for 480V NEMA network.

Type 2 coordination (IEC 60947-4-1) 440 V

Schneider Electric switch-disconnector fuses and contactors

Performance: Ue = 440 V [5] - "Iq" 100 kA

Starting Adjustable class 10 A to 30 [4]

Motors			Switch-fuse [1]	Fuse-link type		Contactors [2]	Thermal relays	
P (kW)	I (A) 440 V	Ie Max (A)	Type	gG rating (A)	aM rating (A)	Type	Type	Irth (A)
0.37	1	2	INFC32 or INFD40	4	2	LC1-D09	LTM R08	0.4/8 [3]
0.55	1.4	2	INFC32 or INFD40	6	2	LC1-D09	LTM R08	0.4/8 [3]
0.75	1.8	2	INFC32 or INFD40	6	2	LC1-D09	LTM R08	0.4/8 [3]
1.1	2.4	4	INFC32 or INFD40	10	4	LC1-D09	LTM R08	0.4/8 [3]
1.5	3.3	4	INFC32 or INFD40	10	4	LC1-D09	LTM R08	0.4/8 [3]
2.2	4.7	6	INFC32 or INFD40	16	6	LC1-D09	LTM R08	0.4/8 [3]
3	6.1	6	INFC32 or INFD40	16	6	LC1-D09	LTM R08	0.4/8 [3]
4	7.9	8	INFC32 or INFD40	20	8	LC1-D09	LTM R08	0.4/8 [3]
5.5	10.4	10	INFC32 or INFD40	25	10	LC1-D12	LTM R27	1.35/27 [3]
7.5	14	16	INFC32 or INFD40	40	16	LC1-D18	LTM R27	1.35/27 [3]
11	20	20	INFC32 or INFD40 INFC50 or INFD40	- 50	20 -	LC1-D25	LTM R27	1.35/27 [3]
15	26	27	INFC32 or INFD40 INFC63 or INFD40	- 63	32 -	LC1-D32	LTM R27	1.35/27 [3]
18.5	33	40	INFC50 or INFD40 INFC63 or INFD40	- 80	40 -	LC1-D40A	LTM R100	5/100 [3]
22	39	50	INFC50 or INFD63 INFC63 or INFD63	- 100	50 -	LC1-D50A	LTM R100	5/100 [3]
30	52	63	INFC50 or INFD63 INFC63 or INFD63	- 125	63 -	LC1-D63A	LTM R100	5/100 [3]
37	65	80	INFC125 or INFD160 INFD160	- 160	80 -	LC1-D80	LTM R100	5/100 [3]
45	75	80	INFC125 or INFD160 INFD160	- 160	80 -	LC1-D80	LTM R100	5/100 [3]
55	92	100	INFC125 or INFD160 INFD160	- 200	100 -	LC1-D115	LTM R100	5/100 [3]
75	128	125	INFD160 INFD200	- 250	125 -	LC1-D150	LTM R08	On CT
90	155	160	INFD160 INFD250	- 315	160 -	LC1-F185	LTM R08	On CT
110	185	200	INFD200 INFD250	- 355	200 -	LC1-F265	LTM R08	On CT
132	213	250	INFD250 INFD400	- 400	250 -	LC1-F265	LTM R08	On CT
160	259	315	INFD400	500	315	LC1-F330	LTM R08	On CT
200	338	355	INFD400 INFD630	- 630	355 -	LC1-F400	LTM R08	On CT
250	423	400	INFD630	800	400	LC1-F500	LTM R08	On CT
280	460	450	INFD630	800	450	LC1-F500	LTM R08	On CT
300	495	500	INFD630	800	500	LC1-F500	LTM R08	On CT
355	560	630	INFD630	-	630	LC1-F630	LTM R08	On CT
375	575	630	INFD630	-	630	LC1-F630	LTM R08	On CT
400	611	630	INFD630	-	800	LC1-F630	LTM R08	On CT

(1) INFC for NFC cylindric ferrule / INFD for NH DIN type fuse-link.
(2) Reversers: replace LC1 with LC2; star-delta starter: replace LC1 with LC3.
(3) Currents transformers built-in electronic relays.
(4) For use with overload relay setted in class 20 and 30, apply respectively a derating of 20 % and 37 %.
(5) Valid for 480 V NEMA network.

Type 2 coordination (IEC 60947-4-1) 500 V

Schneider Electric switch-disconnector fuses and contactors

Performance: Ue = 500 V - "Iq" 100 kA

Starting Class 10 A/10

Motors			Switch-fuse [1]	Fuse-link type		Contactors [2]	Thermal relays	
P (kW)	I (A) 500 V	Ie Max (A)	Type	gG rating (A)	aM rating (A)	Type	Type	Irth (A)
0.37	0.8	1	INFC32 or INFD40	4	2	LC1-D09	LRD 05	0.63/1
0.55	1.2	1.6	INFC32 or INFD40	4	2	LC1-D09	LRD 06	1/1.6
0.75	1.5	1.6	INFC32 or INFD40	6	2	LC1-D09	LRD 06	1/1.6
1.1	2	2	INFC32 or INFD40	6	2	LC1-D09	LRD 07	1.6/2.5
1.5	2.8	4	INFC32 or INFD40	10	4	LC1-D09	LRD 08	2.5/4
2.2	3.8	4	INFC32 or INFD40	10	4	LC1-D09	LRD 08	2.5/4
3	5	6	INFC32 or INFD40	16	6	LC1-D09	LRD 10	4/6
4	6.5	8	INFC32 or INFD40	20	8	LC1-D09	LRD 12	5.5/8
5.5	9	10	INFC32 or INFD40	25	10	LC1-D12	LRD 16	9/13
7.5	12	12	INFC32 or INFD40	32	12	LC1-D18	LRD 16	9/13
10	15	16	INFC32 or INFD40	32	16	LC1-D25	LRD 21	12/18
11	18.4	20	INFC32 or INFD40	40	20	LC1-D25	LRD 22	16/24
15	23	24	INFC32 or INFD40 INFC63 or INFD40	- 50	25 -	LC1-D32	LRD 22	16/24
18.5	28.5	32	INFC50 or INFD40 INFC63 or INFD40	- 63	32 -	LC1-D32	LRD 32	23/32
22	33	40	INFC50 or INFD40 INFC63 or INFD40	- 80	40 -	LC1-D40A	LRD 340	30/40
30	45	50	INFC63 or INFD63	100	50	LC1-D50A	LRD 350	37/50
37	55	63	INFC63 or INFD63	100	63	LC1-D65A	LRD 365	48/65
45	65	70	INFC125 or INFD160 INFD160	- 160	80 -	LC1-D80	LRD 3361	55/70
55	75	80	INFC125 or INFD160 INFD160	- 160	80 -	LC1-D115	LRD 3363	63/80
75	105	115	INFD160 INFD200	- 200	125 -	LC1-D115	LR9-D53 69	90/150
90	130	150	INFD160 INFD200	 250	160	LC1-D150	LR9-D53 69	90/150
110	156	160	INFD200 INFD250	- 315	160 -	LC1-F185	LR9-F53 71	132/220
132	187	200	INFD250	355	200	LC1-F265	LR9-F53 71	132/220
160	230	250	INFD400	400	250	LC1-F265	LR9-F73 75	200/330
200	280	315	INFD400	450	315	LC1-F400	LR9-F73 75	200/330
240	338	355	INFD630	630	355	LC1-F400	LR9-F73 79	300/500
280	386	400	INFD630	800	400	LC1-F500	LR9-F73 79	300/500
300	415	450	INFD630	800	450	LC1-F500	LR9-F73 79	300/500
320	425	450	INFD630	800	450	LC1-F500	LR9-F73 79	300/500
355	478	500	INFD630	800	500	LC1-F500	LR9-F73 79	300/500
375	482	500	INFD630	-	500	LC1-F630	LR9-F73 81	380/630
400	534	500	INFD630	-	630	LC1-F630	LR9-F73 81	380/630
450	630	630	INFD630	-	630	LC1-F630	LR9-F73 81	380/630

(1) INFC for NFC cylindric ferrule / INFD for NH DIN type fuse-link.
(2) Reversers: replace LC1 with LC2 ; start-delta starter: replace LC1 with LC3.

***Note:** proposed fuses are based on 4 poles 50 Hz induction motors direct on line start Id/In ≤ 7 for 10 sec.*
The choice of fuses and overload relay shall be checked according to the actual motor's caracteristic.

Type 2 coordination (IEC 60947-4-1) 500 V

Schneider Electric switch-disconnector fuses and contactors

Performance: Ue = 500 V - "Iq" 100 kA

Starting Adjustable class 10 A to 30 (4)

Motors			Switch-fuse (1)	Fuse-link type		Contactors (2)	Thermal relays	
P (kW)	I (A) 500 V	Ie Max (A)	Type	gG rating (A)	aM rating (A)	Type	Type	Irth (A)
0.37	0.8	1	INFC32 or INFD40	4	2	LC1-D09	LTM R08	0.4/8 (3)
0.55	1.2	1.6	INFC32 or INFD40	4	2	LC1-D09	LTM R08	0.4/8 (3)
0.75	1.5	1.6	INFC32 or INFD40	6	2	LC1-D09	LTM R08	0.4/8 (3)
1.1	2	2	INFC32 or INFD40	6	2	LC1-D09	LTM R08	0.4/8 (3)
1.5	2.8	4	INFC32 or INFD40	10	4	LC1-D09	LTM R08	0.4/8 (3)
2.2	3.8	4	INFC32 or INFD40	10	4	LC1-D09	LTM R08	0.4/8 (3)
3	5	6	INFC32 or INFD40	16	6	LC1-D09	LTM R08	0.4/8 (3)
4	6.5	8	INFC32 or INFD40	20	8	LC1-D09	LTM R08	0.4/8 (3)
5.5	9	10	INFC32 or INFD40	25	10	LC1-D25	LTM R27	1.35/27 (3)
7.5	12	12	INFC32 or INFD40	32	12	LC1-D25	LTM R27	1.35/27 (3)
10	15	16	INFC32 or INFD40	32	16	LC1-D25	LTM R27	1.35/27 (3)
11	18.4	20	INFC32 or INFD40	40	20	LC1-D25	LTM R27	1.35/27 (3)
15	23	24	INFC32 or INFD40 INFC63 or INFD40	- 50	25 -	LC1-D32	LTM R27	1.35/27 (3)
18.5	28.5	32	INFC50 or INFD40 INFC63 or INFD40	- 63	32 -	LC1-D32	LTM R100	5/100 (3)
22	33	40	INFC50 or INFD40 INFC63 or INFD40	- 80	40 -	LC1-D40A	LTM R100	5/100 (3)
30	45	50	INFC63 or INFD63	100	50	LC1-D50A	LTM R100	5/100 (3)
37	55	63	INFC63 or INFD63	100	63	LC1-D65A	LTM R100	5/100 (3)
45	65	70	INFC125 or INFD160 INFD160	- 160	80 -	LC1-D80	LTM R100	5/100 (3)
55	75	80	INFC125 or INFD160 INFD160	- 160	80 -	LC1-D115	LTM R100	5/100 (3)
75	105	115	INFD160 INFD200	- 200	125 -	LC1-D115	LTM R08	On CT
90	130	150	INFD160 INFD200	- 250	160 -	LC1-D150	LTM R08	On CT
110	156	160	INFD200 INFD250	- 315	160 -	LC1-F185	LTM R08	On CT
132	187	200	INFD250	355	200	LC1-F265	LTM R08	On CT
160	230	250	INFD400	400	250	LC1-F265	LTM R08	On CT
200	280	315	INFD400	450	315	LC1-F400	LTM R08	On CT
240	338	355	INFD630	630	355	LC1-F400	LTM R08	On CT
280	386	400	INFD630	800	400	LC1-F500	LTM R08	On CT
300	415	450	INFD630	800	450	LC1-F500	LTM R08	On CT
320	425	450	INFD630	800	450	LC1-F500	LTM R08	On CT
355	478	500	INFD630	800	500	LC1-F500	LTM R08	On CT
375	482	500	INFD630	-	500	LC1-F630	LTM R08	On CT
400	534	500	INFD630	-	630	LC1-F630	LTM R08	On CT
450	630	630	INFD630	-	630	LC1-F630	LTM R08	On CT

(1) INFC for NFC cylindric ferrule / INFD for NH DIN type fuse-link.
(2) Reversers: replace LC1 with LC2; star-delta starter: replace LC1 with LC3.
(3) Currents transformers built-in electronic relays.
(4) For use with overload relay setted in class 20 and 30, apply respectively a derating of 20 % and 37 %.

Type 2 coordination (IEC 60947-4-1) 525/550 V

Schneider Electric switch-disconnector fuses and contactors

Performance: Ue = 525/550 V - "Iq" 80/100 kA (1)

Starting Class 10 A/10

Motors				Switch-fuse (1)	Fuse-link type		Contactors (2)	Thermal relays	
P (kW)	I (A) 525 V	I (A) 550 V	Ie Max (A)	Type	gG rating (A)	aM rating (A)	Type	Type	Irth (A)
0.37	0.8	0.8	1	INFC32 or INFD40	-	2	LC1-D09	LRD 05	0.63/1
				INFC63 or INFD40	4	-			
0.55	1.2	1.1	1.6	INFC32 or INFD40	-	2	LC1-D09	LRD 06	1/1.6
				INFC63 or INFD40	4	-			
0.75	1.5	1.4	1.6	INFC32 or INFD40	-	2	LC1-D09	LRD 06	1/1.6
				INFC63 or INFD40	6	-			
1.1	2	2.1	2.5	INFC32 or INFD40	-	2	LC1-D09	LRD 07	1.6/2.5
				INFC63 or INFD40	6	-			
1.5	2.8	2.8	4	INFC32 or INFD40	-	4	LC1-D09	LRD 08	2.5/4
				INFC63 or INFD40	10	-			
2.2	3.8	3.7	4	INFC32 or INFD40	-	4	LC1-D09	LRD 08	2.5/4
				INFC63 or INFD40	10	-			
3	5	4.9	6	INFC32 or INFD40	-	6	LC1-D09	LRD 10	4/6
				INFC63 or INFD40	16	-			
4	6.5	6.5	8	INFC32 or INFD40	-	8	LC1-D09	LRD 12	5.5/8
				INFC63 or INFD40	20	-			
5.5	9	8.7	10	INFC32 or INFD40	-	10	LC1-D25	LRD 16	9/13
				INFC63 or INFD40	25	-			
7.5	12	11.8	12	INFC32 or INFD40	-	12	LC1-D25	LRD 16	9/13
				INFC63 or INFD40	32	-			
10	15	15.2	16	INFC32 or INFD40	-	16	LC1-D25	LRD 21	12/18
				INFC63 or INFD40	32	-			
11	18.4	16.7	24	INFC32 or INFD40	-	20	LC1-D25	LRD 22	16/24
				INFC63 or INFD40	40	-			
15	23	21.9	24	INFC32 or INFD40	-	25	LC1-D32	LRD 22	16/24
				INFC63 or INFD40	50	-			
18.5	28.5	26.6	32	INFC63 or INFD40	63	32	LC1-D32	LRD 32	23/32
22	33	31	40	INFC63 or INFD40	-	40	LC1-D40A	LRD 340	30/40
				INFC63 or INFD63	80	-			
30	45	43	50	INFC63 or INFD63	-	50	LC1-D50A	LRD 350	37/50
				INFD160	100	-			
37	55	50	63	INFC63 or INFD63	-	63	LC1-D65A	LRD 365	48/65
				INFD160	100	-			
45	65	61	70	INFC63 or INFD63	-	63	LC1-D80	LRD 3361	55/70
				INFD160	125	-			
55	75	74	80	INFC63 or INFD160	-	80	LC1-D115	LRD 3363	63/80
				INFD200	160	-			
75	105	101	115	INFD160	-	100	LC1-D115	LR9-D53 69	90/150
				INFD250	200	-			
90	130	123	125	INFD160	-	125	LC1-D150	LR9-D53 69	90/150
				INFD400	250	-			
110	156	147	160	INFD250	-	160	LC1-F185	LR9-F53 71	132/220
				INFD400	250	-			
132	187	178	200	INFD250	-	200	LC1-F265	LR9-F53 71	132/220
				INFD630	355	-			
160	214	204	250	INFD250	-	250	LC1-F265	LR9-F73 75	200/330
				INFD630	400	-			
200	266	254	315	INFD400	-	315	LC1-F400	LR9-F73 75	200/330
				INFD630	450	-			
240	321	307	355	INFD400	-	355	LC1-F400	LR9-F73 79	300/500
280	366	350	400	INFD400	-	400	LC1-F500	LR9-F73 79	300/500
300	394	376	400	INFD400	-	400	LC1-F500	LR9-F73 79	300/500
320	413	394	450	INFD630	-	450	LC1-F500	LR9-F73 79	300/500
355	464	443	500	INFD630	-	500	LC1-F500	LR9-F73 79	300/500
375	490	467	500	INFD630	-	500	LC1-F630	LR9-F73 81	380/630

(1) Coordination chart built with 690 V fuse-links (80 kA for NFC fuse-links, 100 kA for DIN fuse-link).
(2) INFC for NFC cylindric ferrule / INFD for NH DIN type fuse-link.
(3) Reversers: replace LC1 with LC2; star-delta starter: replace LC1 with LC3.

Type 2 coordination (IEC 60947-4-1) 525/550 V

Schneider Electric switch-disconnector fuses and contactors

Performance: Ue = 525/550 V - "Iq" 80/100 kA (1)

Starting Adjustable class 10 A to 30 (4)

Motors				Switch-fuse (1)	Fuse-link type		Contactors (2)	Thermal relays	
P (kW)	I (A) 525 V	I (A) 550 V	Ie Max (A)	Type	gG rating (A)	aM rating (A)	Type	Type	Irth (A)
0.37	0.8	0.8	2	INFC32 or INFD40	-	2	LC1-D09	LTM R08	0.4/8 (5)
				INFC63 or INFD40	4	-			
0.55	1.2	1.1	2	INFC32 or INFD40	-	2	LC1-D09	LTM R08	0.4/8 (5)
				INFC63 or INFD40	4	-			
0.75	1.5	1.4	2	INFC32 or INFD40	-	2	LC1-D09	LTM R08	0.4/8 (5)
				INFC63 or INFD40	6	-			
1.1	2	2.1	2	INFC32 or INFD40	-	2	LC1-D09	LTM R08	0.4/8 (5)
				INFC63 or INFD40	6	-			
1.5	2.8	2.8	4	INFC32 or INFD40	-	4	LC1-D09	LTM R08	0.4/8 (5)
				INFC63 or INFD40	10	-			
2.2	3.8	3.7	4	INFC32 or INFD40	-	4	LC1-D09	LTM R08	0.4/8 (5)
				INFC63 or INFD40	10	-			
3	5	4.9	6	INFC32 or INFD40		6	LC1-D09	LTM R08	0.4/8 (5)
				INFC63 or INFD40	16	-			
4	6.5	6.5	8	INFC32 or INFD40	-	8	LC1-D09	LTM R08	0.4/8 (5)
				INFC63 or INFD40	20	-			
5.5	9	8.7	10	INFC32 or INFD40	-	10	LC1-D25	LTM R27	1.35/27 (5)
				INFC63 or INFD40	25	-			
7.5	12	11.8	12	INFC32 or INFD40	-	12	LC1-D25	LTM R27	1.35/27 (5)
				INFC63 or INFD40	32	-			
10	15	15.2	16	INFC32 or INFD40	-	16	LC1-D25	LTM R27	1.35/27 (5)
				INFC63 or INFD40	32	-			
11	18.4	16.7	20	INFC32 or INFD40	-	20	LC1-D25	LTM R27	1.35/27 (5)
				INFC63 or INFD40	40	-			
15	23	21.9	25	INFC32 or INFD40	-	25	LC1-D32	LTM R27	1.35/27 (5)
				INFC63 or INFD40	50	-			
18.5	28.5	26.6	32	INFC63 or INFD40	63	32	LC1-D32	LTM R100	5/100 (5)
22	33	31	40	INFC63 or INFD40	-	40	LC1-D40A	LTM R100	5/100 (5)
				INFC63 or INFD63	80	-			
30	45	43	50	INFC63 or INFD63	-	50	LC1-D50A	LTM R100	5/100 (5)
				INFD160	100	-			
37	55	50	63	INFC63 or INFD63	-	63	LC1-D65A	LTM R100	5/100 (5)
				INFD160	100	-			
45	65	61	63	INFC63 or INFD63	-	63	LC1-D80	LTM R100	5/100 (5)
				INFD160	125	-			
55	75	74	80	INFC63 or INFD160	-	80	LC1-D115	LTM R100	5/100 (5)
				INFD200	160	-			
75	105	101	100	INFD160	-	100	LC1-D115	LTM R08	On CT
				INFD250	200	-			
90	130	123	125	INFD160	-	125	LC1-D150	LTM R08	On CT
				INFD400	250	-			
110	156	147	160	INFD250	-	160	LC1-F185	LTM R08	On CT
				INFD400	250	-			
132	187	178	200	INFD250	-	200	LC1-F265	LTM R08	On CT
				INFD630	355	-			
160	214	204	250	INFD250	-	250	LC1-F265	LTM R08	On CT
				INFD630	400	-			
200	266	254	315	INFD400	-	315	LC1-F400	LTM R08	On CT
				INFD630	450	-			
240	321	307	355	INFD400	-	355	LC1-F400	LTM R08	On CT
280	366	350	400	INFD400	-	400	LC1-F500	LTM R08	On CT
300	394	376	400	INFD400	-	400	LC1-F500	LTM R08	On CT
320	413	394	450	INFD630	-	450	LC1-F500	LTM R08	On CT
355	464	443	500	INFD630	-	500	LC1-F500	LTM R08	On CT
375	490	467	500	INFD630	-	500	LC1-F630	LTM R08	On CT

(1) Coordination chart built with 690 V fuse-links (80 kA for NFC fuse-links, 100 kA for DIN fuse-link).
(2) INFC for NFC cylindric ferrule / INFD for NH DIN type fuse-link.
(3) Reversers: replace LC1 with LC2; star-delta starter: replace LC1 with LC3.
(4) For use with overload relay setted in class 20 and 30, apply respectively a derating of 20 % and 37 %.
(5) Currents transformers built-in electronic relays.

Type 2 coordination (IEC 60947-4-1) 660/690 V

Schneider Electric switch-disconnector fuses and contactors

Performance: Ue = 660/690 V - "Iq" 80/100 kA (1)

Starting Class 10 A/10

Motors			Switch-fuse (1)	Fuse-link type		Contactors (2)	Thermal relays	
P (kW)	I (A) 690 V	Ie Max (A)	Type	gG rating (A)	aM rating (A)	Type	Type	Irth (A)
0.75	1.1	1.6	INFC32 or INFD40 INFC63 or INFD40	- 4	2 -	LC1-D09	LRD 06	1/1.6
1	1.6	1.6	INFC32 or INFD40 INFC63 or INFD40	- 6	2 -	LC1-D09	LRD 06	1/1.6
1.5	2.2	2.5	INFC32 or INFD40 INFC63 or INFD40	- 6	4 -	LC1-D09	LRD 07	1.6/2.5
2.2	2.8	4	INFC32 or INFD40 INFC63 or INFD40	- 10	4 -	LC1-D09	LRD 08	2.5/4
3	3.8	4	INFC32 or INFD40 INFC63 or INFD40	- 10	6 -	LC1-D09	LRD 08	2.5/4
4	4.9	6	INFC32 or INFD40 INFC63 or INFD40	- 16	6 -	LC1-D09	LRD 10	4/6
5.5	6.7	8	INFC32 or INFD40 INFC63 or INFD40	- 20	8 -	LC1-D09	LRD 12	5.5/8
7.5	8.9	10	INFC32 or INFD40 INFC63 or INFD40	- 25	10 -	LC1-D25	LRD 16	9/13
11	12.8	13	INFC32 or INFD40 INFC63 or INFD40	- 32	16 -	LC1-D25	LRD 16	9/13
15	17	20	INFC32 or INFD40 INFC63 or INFD40	- 40	20 -	LC1-D25	LRD 22	16/24
18.5	22	24	INFC32 or INFD40 INFC63 or INFD40	- 50	25 -	LC1-D32	LRD 22	16/24
22	24	32	INFC32 or INFD40 INFC63 or INFD40	- 50	25 -	LC1-D40A	LRD 332	23/32
30	32	32	INFC63 or INFD40 INFC63 or INFD63	- 80	32 -	LC1-D40A	LRD 340	30/40
37	39	40	INFC63 or INFD63	80	40	LC1-D65A	LRD 365	37/50
45	47	50	INFC63 or INFD63 INFD160	- 100	50 -	LC1-D80	LRD 3357	37/50
55	57	63	INFC63 or INFD63 INFD160	- 125	63 -	LC1-D115	LRD 3359	48/65
75	77	80	INFC125 or INFD160 INFD200	- 160	80 -	LC1-D115	LRD 3363	63/80
90	93	100	INFD160 INFD250	- 200	100 -	LC1-D150	LR9-D53 69	90/150
110	113	125	INFD160 INFD250	- 250	125 -	LC1-F185	LR9-D53 69	90/150
132	134	160	INFD250	250	160	LC1-F265	LR9-F53 71	132/220
160	162	160	INFD250 INFD400	- 315	160 -	LC1-F265	LR9-F53 71	132/220
200	203	200	INFD250 INFD630	- 400	200 -	LC1-F400	LR9-F73 75	200/330
220	223	250	INFD250 INFD630	- 450	250 -	LC1-F400	LR9-F73 75	200/330
250	253	315	INFD400 INFD630	- 500	315 -	LC1-F400	LR9-F73 75	200/330
315	320	355	INFD630	-	355	LC1-F500	LR9-F73 79	300/500
355	354	400	INFD630	-	400	LC1-F630	LR9-F73 79	300/500
400	400	450	INFD630	-	450	LC1-F630	LR9-F73 79	300/500
450	455	500	INFD630	-	500	LC1-F630	LR9-F73 79	300/500

(1) Coordination chart built with 690 V fuse-links (80 kA for NFC fuse-links, 100 kA for DIN fuse-link).
(2) INFC for NFC cylindric ferrule / INFD for NH DIN type fuse-link.
(3) Reversers: replace LC1 with LC2; star-delta starter: replace LC1 with LC3.

Type 2 coordination (IEC 60947-4-1) 660/690 V

Schneider Electric switch-disconnector fuses and contactors

Performance: Ue = 660/690 V - "Iq" 80/100 kA (1)

Starting Adjustable class 10 A to 30 (4)

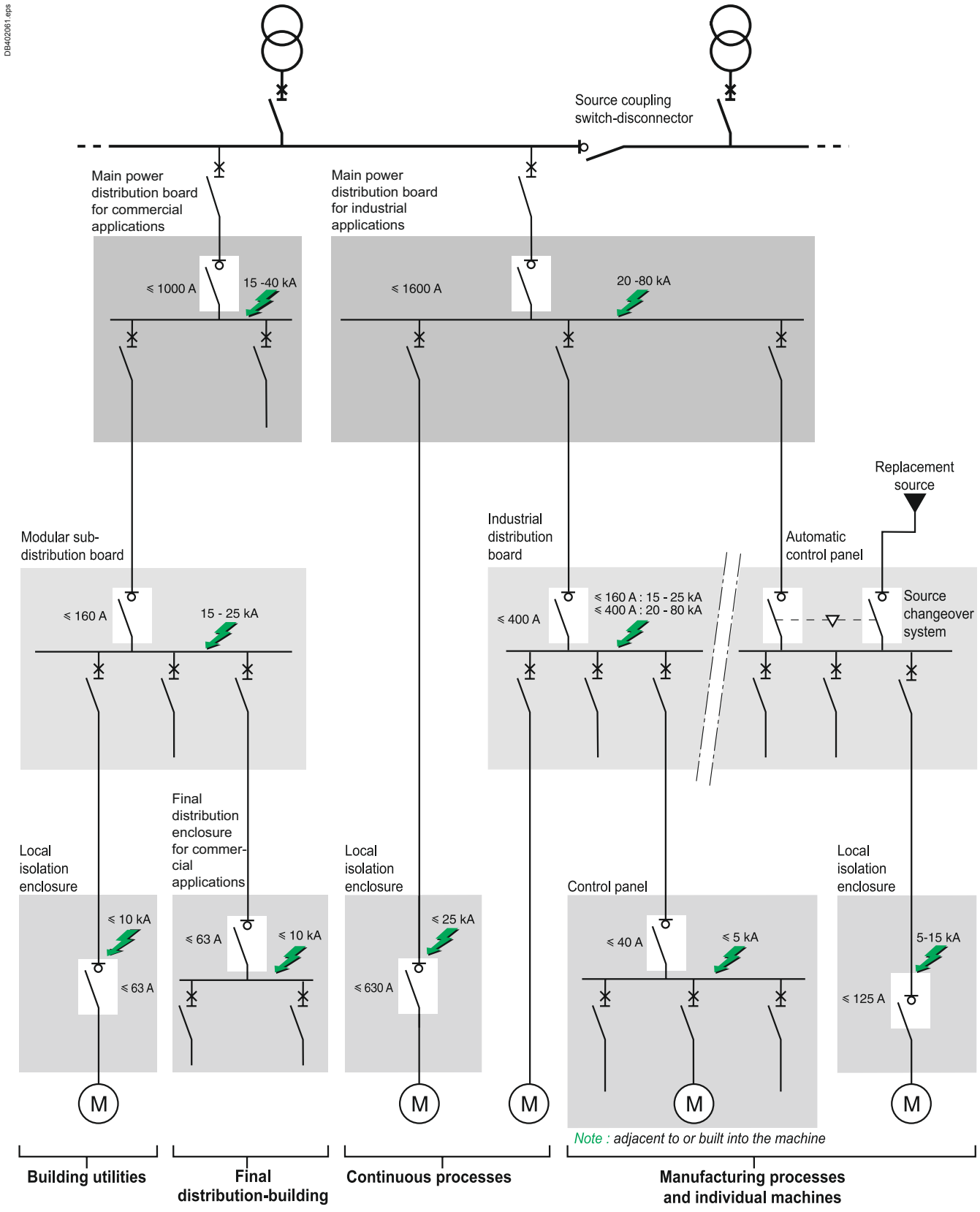
Motors			Switch-fuse (1)	Fuse-link type		Contactors (2)	Thermal relays	
P (kW)	I (A) 690 V	Ie Max (A)	Type	gG rating (A)	aM rating (A)	Type	Type	Irth (A)
0.75	1.1	2	INFC32 or INFD40 INFC63 or INFD40	- 4	2 -	LC1-D09	LTM R08	0.4/8 (5)
1	1.6	2	INFC32 or INFD40 INFC63 or INFD40	- 6	2 -	LC1-D09	LTM R08	0.4/8 (5)
1.5	2.2	4	INFC32 or INFD40 INFC63 or INFD40	- 6	4 -	LC1-D09	LTM R08	0.4/8 (5)
2.2	2.8	4	INFC32 or INFD40 INFC63 or INFD40	- 10	4 -	LC1-D09	LTM R08	0.4/8 (5)
3	3.8	6	INFC32 or INFD40 INFC63 or INFD40	- 10	6 -	LC1-D09	LTM R08	0.4/8 (5)
4	4.9	6	INFC32 or INFD40 INFC63 or INFD40	- 16	6 -	LC1-D09	LTM R08	0.4/8 (5)
5.5	6.7	8	INFC32 or INFD40 INFC63 or INFD40	- 20	8 -	LC1-D09	LTM R08	0.4/8 (5)
7.5	8.9	10	INFC32 or INFD40 INFC63 or INFD40	- 25	10 -	LC1-D25	LTM R27	1.35/27 (5)
11	12.8	16	INFC32 or INFD40 INFC63 or INFD40	- 32	16 -	LC1-D25	LTM R27	1.35/27 (5)
15	17	20	INFC32 or INFD40 INFC63 or INFD40	- 40	20 -	LC1-D25	LTM R27	1.35/27 (5)
18.5	22	25	INFC32 or INFD40 INFC63 or INFD40	- 50	25 -	LC1-D32	LTM R27	1.35/27 (5)
22	24	25	INFC32 or INFD40 INFC63 or INFD40	- 50	25 -	LC1-D40A	LTM R27	1.35/27 (5)
30	32	32	INFC63 or INFD40 INFC63 or INFD63	- 80	32 -	LC1-D40A	LTM R100	5/100 (5)
37	39	40	INFC63 or INFD63	80	40	LC1-D65A	LTM R100	5/100 (5)
45	47	50	INFC63 or INFD63 INFD160	- 100	50 -	LC1-D80	LTM R100	5/100 (5)
55	57	63	INFC63 or INFD63 INFD160	- 125	63 -	LC1-D115	LTM R100	5/100 (5)
75	77	80	INFC125 or INFD160 INFD200	- 160	80 -	LC1-D115	LTM R100	5/100 (5)
90	93	100	INFD160 INFD250	- 200	100 -	LC1-D150	LTM R100	5/100 (5)
110	113	125	INFD160 INFD250	- 250	125 -	LC1-F185	LTM R08	On CT
132	134	160	INFD200 INFD250	- 250	160 -	LC1-F265	LTM R08	On CT
160	162	160	INFD200 INFD400	- 315	160 -	LC1-F265	LTM R08	On CT
200	203	200	INFD200 INFD630	- 400	200 -	LC1-F400	LTM R08	On CT
220	223	250	INFD250 INFD630	- 450	250 -	LC1-F400	LTM R08	On CT
250	253	315	INFD400 INFD630	- 500	315 -	LC1-F400	LTM R08	On CT
315	320	355	INFD400	-	355	LC1-F500	LTM R08	On CT
355	354	400	INFD400	-	400	LC1-F630	LTM R08	On CT
400	400	450	INFD630	-	450	LC1-F630	LTM R08	On CT
450	455	500	INFD630	-	500	LC1-F630	LTM R08	On CT

(1) Coordination chart built with 690 V fuse-links (80 kA for NFC fuse-links, 100 kA for DIN fuse-link).
(2) INFC for NFC cylindric ferrule / INFD for NH DIN type fuse-link.
(3) Reversers: replace LC1 with LC2; star-delta starter: replace LC1 with LC3.
(4) For use with overload relay setted in class 20 and 30, apply respectively a derating of 20 % and 37 %.
(5) Currents transformers built-in electronic relays.

Use of LV switches

Use of LV switches
Presentation

Functions performed by switch



Use of LV switches
Presentation

Functions and positions of LV switches
The switch is therefore essentially a control device, (generally manual, possibly electrical on opening - termed a free tripping switch) capable of breaking and closing a normal service circuit. It does not use any electricity to remain open or closed (2 stable positions).
For safety reasons, in the majority of cases is suitable for isolation.
It must always be used in association with a device which protects against overloads and short-circuits.

6 applications have thus been identified:
- coupling and insolating switch in a power switchboard
- insulating switch in an industrial switchboard and automation cabinets
- insulating switch in a modular switchboard
- insulating switch in proximity units
- insulating switch in small commercial distribution units
- automation unit switch.

DB414421.eps

Suitable for isolation
Switch-disconnector
Isolation permits a circuit or a device to be disconnected from the rest of the electrical installation, in order to guarantee the safety of those who have to achieve repairs or maintenance.
Normally, all circuits in an electrical installation must be capable of being isolated. In practice, to ensure optimal continuity of service, an isolating device is installed at the start of every circuit distribution.
Certain switches allow this function to be achieved in addition to their circuit control function.
Therefore a switch-disconnector must display the symbol (illustrated opposite), visibly on the front face of the installed device.

Isolating function
Installation standards stipulate the requirements which must be respected in order for a device to carry out its isolating function.
It must:
- be with equipped with omnipolar isolation, that is to say that the live conductors, including the neutral (with the exception of the PEN conductor which must never be isolated) must be isolated simultaneously
- be lockable in the “open” position so as to prevent any risk of unvolontary reclosing this is imperative for industrial devices
- conform to a standard which guarantees its suitability for isolation
- It must also meet overvoltage withstand requirements. However, if the isolation is explicitly recognized by a manufacturing standard, for example IEC 60947-1/3 for industrial switch-disconnectors, a device which complies with this isolation standard is judged to comply fully with the conditions required by installation standards. The manufacturing standard guarantees its use for isolation suitability for the user.

Use of LV switches

Switch standards and characteristics

Switch standards

Standard define:

- ■ the frequency of operation cycles (with a maximum of 120 per hour)
- ■ mechanical and electrical endurance
- ■ operating breaking and making capacity
- □ normal
- □ occasional (closing on short-circuit for example)
- ■ utilization categories.

The IEC standards 60947-3 (1) and 60669-1 (2) thus define the principal values which are given below.

Utilization category

Depending on the rated operating current and the A or B mechanical endurance, standards define the utilization categories shown in the table below.

Example:

A switch with a rating of 125 A, from the AC23 category must be able to:

- ■ make a 10 In (1250 A) current with a cos φ of 0.35
- ■ break a 8 In (1000 A) current with a cos φ of 0.35.

Its other characteristics are:

- ■ to withstand a 12 In - 1 s short-circuit current, which defines the Icw = 1500 A r.m.s. thermal withstand during 1 s
- ■ Icm (peak A) short-circuit making capacity which corresponds to the electrodynamic loads.

Utilization category		Characteristic applications
Frequent operations	Non frequent operations	
AC-21A	AC-21B	Resistive loads including moderate overloads (cos φ = 0.95)
AC-22A	AC-22B	Mixed resistive and inductive loads including moderate overloads (cos φ = 0.65)
AC-23A	AC-23B	Motors with cage winding or orther loads which are very inductive (cos φ = 0.45 or 0.35)

(1) The industrial type of switch is defined by the IEC standard 60947-3.
(2) The domestic type of switch is defined by the IEC standard 60669-1.

Choosing a Schneider Electric switch

The switch must be chosen according to:
■ the characteristics of the network on which it is installed,
■ the location and the application,
■ coordination with the upstream protection devices (in particular overload and short-circuit).

Choice criteria

Network characteristics
Nominal voltage, nominal frequency and nominal current are determined in the same way as for a circuit-breaker:
■ nominal voltage = nominal voltage of the network
■ frequency = network frequency
■ nominal current = rated current of a value immediately higher than the downstream load current. Note that the rated current is defined for a given ambient temperature and that a derating may have to be taken into account.

Location and application
This determines the type and characteristics or main functions that the switch must possess. There are 3 function levels (see table opposite):
■ basic functions, virtually common to all switch types:
□ isolation, control, padlocking, safety.
■ additional characteristic functions
□ direct formulation of the needs of the user and of the switch environment, i.e.:
- industrial type performance
- need for emergency stopping
- Isc level
- type of interlocking
- type of control
- utilization category
- mounting system.

■ specific functions
□ linked to operation and to installation requirements, i.e.:
- earth leakage protection
- motor mechanisms
- remote opening (“emergency stop” function)
- withdrawability.

The following table enables choice of switch according to requirements.
■ choice table
Comparison of the application table K (see page 212) and the switch technical data table M (see page 214) lets you specify which switch range should be used.

Coordination
All switches must be protected by an overcurrent protection device placed upstream. The "additional technical information" tables below give the SCPD (circuit breaker or fuse) guaranteeing proper coordination with switches in event of a downstream short-circuit, according to the electrodynamic withstand or the short-circuit making capacity of the device.

Choosing a Schneider Electric switch

Location and application table

Switch technical data according to location and application.

		Power distribution switchboards	Industrial switchboards and automation cubicles	Subdistribution switchboards (modular products)	Small tertiary distribution enclosures	Automation enclosures	Local isolation enclosures
Current range		400 to 6300 A	40 to 630 A	20 to 160 A	≤ 125 A	≤ 40/125 A	10 to 630 A
LV switch basic functions							
Circuit on-load control		Yes	Yes	Yes	Yes	Yes	Yes
Isolation		■	■	■	■	■	■
Padlocking the isolated status		By isolation with positive break indication or visible isolation					
Padlocking		■	■	■	■	■	■
Additional functions / technical data							
Maximum short-circuit level		20 to 80 kA	■ I ≤ 160 A: 15 to 25 kA	■ I ≤ 63 A: 15 kA	10 kA	3 to 5 kA	■ I ≤ 63 A: 10 kA
			■ I ≤ 400 A: 20 to 80 kA	■ I ≤ 160 A: 25 kA			■ I ≤ 630 A: 25 kA
Motor mechanism technical data	AC21A			■	■		
	AC22A	■	■	□	□		
	AC23		□			■	■
	AC3						■ I ≤ 63 A
Handle	Rotary	■	■	■		■	■
	Direct front	■	□	■	■	■	□
	Front extended	□	□	□			■
	Side extended		□				■
Mounting	On plate	■	□	□		■	□
	Symmetrical rail						
	(45 mm tip)	□	■	■		□	
Specific functions							
Earth leakage protection		□	□	□	□		
Other	Draw-out, auxiliary switches, auxiliary releases, remote control	■	■	□			□
	Emergency stop		□	□	□		□

Table K
■ compulsory.
□ possible.

Choosing a Schneider Electric switch

The switches available in the Schneider Electric offer

Schneider Electric offers its customers several ranges of switches.
Choice depends on:
- the application
- the additional functions to be implemented (safety level, convenience, etc.).

The following table summarises the possibilities offered by all the Schneider Electric ranges according to the applications described above.

Applications / Products	Incoming switches for						Local isolation switches
	Main distribution switchboards 400-6300 A	Industrial power switchboards 400-630 A	Automation cubicles 400-630 A	Subdistribution switchboards 20-160 A	Small tertiary distribution enclosures ⩽ 125 A	Automation enclosures ⩽ 40/125 A	Local isolation enclosures 10-630 A
Vario						■	■
Acti 9 I/ID (modular profile)					■		□
Acti 9 I-NA (modular profile)					□		■
Compact INS ⩽ 160 (modular profile)		■	□ (1)	■	■		■
NG125 NA (modular profile)				■	■		■
Compact INS (industrial)	■	■	□ (1)				■
Compact NSX-NA (industrial)	□	■	□ (1)	□			■
Masterpact NA/HA/HF (industrial)	■						

Table L
■ *very common*
□ *fairly common.*
(1) Fairly common, but totally suitable for these application types.

Choosing a Schneider Electric switch

Switch range technical data

Table M below lists the main technical data of the switches in the Schneider Electric ranges.

Range		Vario	Acti 9				Compact				Masterpact		
			I	I-NA	ID	NG125NA	INS	INV	NS-NA	NSX-NA	NA	HA	HF
Performance type	Industrial	■		■		■	■	■	■	■	■	■	■
	Tertiary		■	■	■	■	■	■	■	■	■	■	■
Clip-on on rail			■	■	■	■	■ (3)	■ (3)					
Main functions	Isolation	■	■ (5)	■	■ (5)	■	■	■	■	■	■	■	■
	Positive break indication	■		■		■	■	■	■	■	■	■	■
	Visible isolation							■					
Emergency stop	Manual (7)	■					■ (4)	■ (4)					
	Remote			■ (6)	■ (6)	■ (6)			■	■	■	■	■
Other functions	Residual current				■	■ (8)			■	■	■ (8)	■ (8)	■ (8)
	Remote control								■	■	■	■	■
	Fuse/switches		■										
Fixed/drawout	Fixed	■	■			■	■	■	■	■			
	Drawout								■	■	■	■	■
Auxiliary range available		■ (1)		■ (1)	■ (1)	■ (1)	■ (2)	■ (2)	■	■	■	■	
	12	■											
	16				■								
	20	■	■										
	25	■			■								
	32	■	■										
	40	■	■	■	■		■						
	63	■	■	■	■	■	■						
	80	■			■	■	■						
	100		■		■	■	■	■	■	■			
	125	■	■			■	■		■	■			
	160	■					■	■	■	■			
	175	■											
	250						■	■	■	■			
	320						■	■					
	400						■	■					
	500						■	■					
	630						■	■	■	■			
	800								■	■	■	■	■
	1000										■	■	■
	1250								■	■	■	■	■
	1600										■	■	■
	2000										■	■	■
	2500										■	■	■
	3200										■	■	■
	4000										■	■	
	5000										■	■	
	6300											■	

Table M

(1) OF contact on switches - OF contact and MX, MN coil on residual current circuit-breakers.
(2) OF contact and CAO or CAF.
(3) Only 40 to 160 A (modular profile).
(4) Specific INS/INV emergency stop switches.
(5) Only on ratings 40/63/100/125.
(6) With MN auxiliaries.
(7) Yellow front plate/red handle.
(8) Associated Vigi bloc.

Use of LV switches

Switch-disconnectors protection
NG160NA

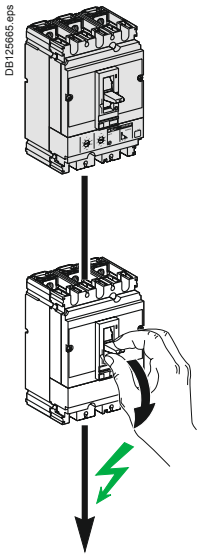
Compact NSA type NA switch-disconnectors Upstream protection		NG160NA
By Compact NSX		
Type/maximum rating(A)		NSX160F/160
Isc max. (380/415 V)	kA rms	36
Making capacity (380/415 V)	kA peak	75
Type/maximum rating(A)		NSX160N/160
Isc max. (380/415 V)	kA rms	50
Making capacity (380/415 V)	kA peak	105
Type/maximum rating(A)		NG160N/160
Isc max. (380/415 V)	kA rms	25
Making capacity (380/415 V)	kA peak	52
By fuse		
Type aM (1) maximum rating(A)		160
Isc max. (500 V)	kA rms	33
Making capacity (500 V)	kA peak	69
Type gl (2) maximum rating(A)		125
Isc max. (500 V)	kA rms	100
Making capacity (500 V)	kA peak	220
Type gl (1) maximum rating(A)		160
Isc max. (500 V)	kA rms	100
Making capacity (500 V)	kA peak	220
Type BS (2) maximum rating(A)		125 and 100M125
Isc max. (500 V)	kA rms	80
Making capacity (500 V)	kA peak	176
Type BS (1) maximum rating(A)		160 and 100M160
Isc max. (500 V)	kA rms	80
Making capacity (500 V)	kA peak	176

(1) Protection by external thermal relay obligatory.
(2) Without extandernal thermal relay.

Use of LV switches

Switch-disconnectors protection

Compact NSX - NA



Compact NS type NA switch-disconnectors
Upstream protection by circuit breaker

Compact NSX		
By 380/415 V circuit breaker	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By 440/480 V (1) circuit breaker	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By 500 V circuit breaker	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak

(1) Suitable for NEMA 480 V voltage.

Use of LV switches

Switch-disconnectors protection

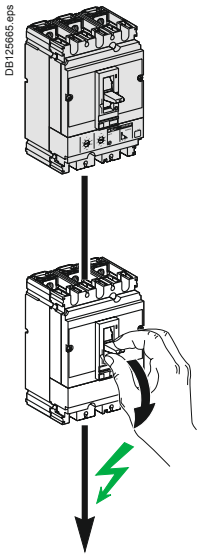
Compact NSX - NA

	NSX100NA	NSX160NA	NSX250NA	NSX400NA	NSX630NA
	NSX100B/100 25 53	NSX160B/160 25 53	NSX250B/250 25 53	-	-
	NSX100F/100 36 76	NSX160F/160 36 76	NSX250F/250 36 76	NSX400F/400 36 76	NSX630F/630 36 76
	NSX100N/100 50 105	NSX160N/160 50 105	NSX250N/250 50 105	NSX400N/400 50 105	NSX630N/630 50 105
	NSX100H/100 70 154	NSX160H/160 70 154	NSX250H/250 70 154	NSX400H/400 70 154	NSX630H/630 70 154
	NSX100S/100 100 220	NSX160S/160 100 220	NSX250S/250 100 220	NSX400S/400 100 220	NSX630S/630 100 220
	NSX100L/100 150 330	NSX160L/160 150 330	NSX250L/250 150 330	NSX400L/400 150 330	NSX630L/630 150 330
	NSX100B/100 20 40	NSX160B/160 20 40	NSX250B/250 20 40	-	-
	NSX100F/100 35 74	NSX160F/160 35 74	NSX250F/250 35 74	NSX400F/400 35 74	NSX630F/630 35 74
	NSX100N/100 50 105	NSX160N/160 50 105	NSX250N/250 50 105	NSX400N/400 50 105	NSX630N/630 50 105
	NSX100H/100 65 143	NSX160H/160 65 143	NSX250H/250 65 143	NSX400H/400 65 143	NSX630H/630 65 143
	NSX100S/100 90 198	NSX160S/160 90 198	NSX250S/250 90 198	NSX400S/400 90 198	NSX630S/630 90 198
	NSX100L/100 130 286	NSX160L/160 130 286	NSX250L/250 130 286	NSX400L/400 130 286	NSX630L/630 130 286
	NSX100B/100 15 30	NSX160B/160 15 30	NSX250B/250 15 30	-	-
	NSX100F/100 25 52	NSX160F/160 30 63	NSX250F/250 30 63	NSX400F/400 25 52	NSX630F/630 25 52
	NSX100N/100 36 76	NSX160N/160 36 76	NSX250N/250 36 76	NSX400N/400 30 63	NSX630N/630 30 63
	NSX100H/100 50 105	NSX160H/160 50 105	NSX250H/250 50 105	NSX400H/400 50 105	NSX630H/630 50 105
	NSX100S/100 65 143	NSX160S/160 65 143	NSX250S/250 65 143	NSX400S/400 65 143	NSX630S/630 65 143
	NSX100L/100 70 154	NSX160L/160 70 154	NSX250L/250 70 154	NSX400L/400 70 154	NSX630L/630 70 154

Use of LV switches

Switch-disconnectors protection

Compact NSX - NA



Compact NSX type NA switch-disconnectors Upstream protection by circuit breaker		
Compact NSX		
By 525 V circuit breaker	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By 690 V circuit breaker	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
Upstream protection by fuse		
By 500 V fuse	Type aM (2)/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type gG (3)/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type gG (2)/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type BS (3)/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type BS (2)/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak

(2) Protection by external thermal relay obligatory.
(3) Without external thermal relay.

Use of LV switches

Switch-disconnectors protection

Compact NSX - NA

	NSX100NA	NSX160NA	NSX250NA	NSX400NA	NSX630NA
	NSX100F/100 22 46	NSX160F/160 22 46	NSX250F/250 22 46	NSX400F/400 20 42	NSX630F/630 20 42
	NSX100N/100 35 74	NSX160N/160 22 46	NSX250N/250 22 46	NSX400N/400 22 46	NSX630N/630 22 46
	NSX100H/100 35 74	NSX160H/160 22 46	NSX250H/250 22 46	NSX400H/400 22 46	NSX630H/630 22 46
	NSX100S/100 40 85	NSX160S/160 22 46	NSX250S/250 22 46	NSX400S/400 22 46	NSX630S/630 22 46
	NSX100L/100 50 105	NSX160L/160 22 46	NSX250L/250 22 46	NSX400L/400 22 46	NSX630L/630 22 46
	NSX100F/100 8 14	NSX160F/160 8 14	NSX250F/250 8 14	NSX400F/400 10 17	NSX630F/630 10 17
	NSX100N/100 10 17	NSX160N/160 10 17	NSX250N/250 10 17	NSX400N/400 20 42	NSX630N/630 20 42
	NSX100S/100 15 30	NSX160S/160 15 30	NSX250S/250 15 30	NSX400S/400 25 52	NSX630S/630 25 52
	NSX100L/100 20 40	NSX160L/160 20 40	NSX250L/250 20 40	NSX400L/400 35 74	NSX630L/630 35 74
	100 100 220	160 100 220	250 100 220	400 100 220	630 100 220
	80 100 220	125 100 220	200 100 220	315 100 220	500 100 220
	100 100 220	160 100 220	250 100 220	400 100 220	630 100 220
	80 and 63M80 80 176	125 and 100M125 80 176	160 and 100M160 80 176	315 and 200M315 80 176	500 80 176
	160 and 100M160 80 176	160 and 100M160 80 176	250 and 200M250 80 176	355 and 315M355 80 176	450 and 400M450 80 176

Use of LV switches
Switch-disconnectors protection
Compact NS - NA

Compact NS type NA switch-disconnectors Upstream protection by circuit breaker			
Compact NS			
By 380/415 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
By 440/480 V (1) **circuit breaker**	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
By 500/525 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
By 690 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
Masterpact NT H1			
By 220/690 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (2)
	Making capacity	kA peak	INST off/INST on (2)
Masterpact NT L1			
By 220/525 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
By 690 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
Masterpact NW N1-H1-H2-H3			
By 220/440-480 V (1) **circuit breaker**	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
By 500/525 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
By 690 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
Masterpact NW L1			
By 220/690 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	

(1) Suitable for NEMA 480 V voltage.
(2) Maximum setting position 15.
(3) INST on:
- *maximum setting position 15 (In ⩽ 2000).*
- *maximum setting position 12 (In = 2500).*
- *maximum setting position 8 (In = 3200).*

Use of LV switches

Switch-disconnectors protection

Compact NS - NA

NS630bNA	NS800NA	NS1000NA	NS1250NA	NS1600NA
NS630bN/630 50 105	NS800N/800 50 105	NS1000N/1000 50 105	NS1250N/1250 50 105	NS1600N-bN/1600 50 105
NS630bH/630 70 154	NS800H/800 70 154	NS1000H/1000 70 154	NS1250H/1250 70 154	NS1600H-bH/1600 70 154
NS630bL/630 150 330	NS800L/800 150 330	NS1000L/1000 150 330	-	-
NS630bN/630 50 105	NS800N/800 50 105	NS1000N/1000 50 105	NS1250N/1250 50 105	NS1600N-bN/1600 50 105
NS1600H-bH/1600 65 143	NS1600H-bH/1600 65 143	NS2000H/2000 65 143	NS2500H/2500 65 143	NS3200H/3200 65 143
NS630bL/630 130 286	NS800L/800 130 286	NS1000L/1000 130 286	-	-
NS630bN/630 40 84	NS800N/800 40 84	NS1000N/1000 40 84	NS1250N/1250 40 84	NS1600N-bN/1600 40 84
NS630bH/630 50 105	NS800H/800 50 105	NS1000H/1000 50 105	NS1250H/1250 50 105	NS1600H-bH/1600 50 105
NS630bL/630 100 220	NS800L/800 100 220	NS1000L/1000 100 220	-	-
NS630bN/630 30 63	NS800N/800 30 63	NS1000N/1000 30 63	NS1250N/1250 30 63	NS1600N-bN/1600 30 63
NS630bH/630 42 88	NS800H/800 42 88	NS1000H/1000 42 88	NS1250H/1250 42 88	NS1600H-bH/1600 42 88
NS630bLB/630 75 165	NS800LB/800 75 165	-	-	-
NT06H1/630 25/42 53/88	NT08H1/800 25/42 53/88	NT10H1/1000 25/42 53/88	NT12H1/1000 25/42 53/88	NT16H1/1600 25/42 53/88
NT06L1/630 100 220	NT08L1/800 100 220	NT10L1/1000 100 220	-	-
NT06L1/630 25 53	NT08L1/800 25 53	NT10L1/1000 25 53	-	-
NW08N1/630 25/42 53/88	NW08N1/800 25/42 53/88	NW10N1/1000 25/42 53/88	NW12N1/1250 25/42 53/88	NW16N1/1600 25/42 53/88
NW08H1/630 25/50 53/105	NW08H1/800 25/50 53/105	NW10H1/1000 25/50 53/105	NW12H1/1250 25/50 53/105	NW16H1/1600 25/50 53/105
NW08H2/630 25/50 53/105	NW08H2/800 25/50 53/105	NW10H2/1000 25/50 53/105	NW12H2/1250 25/50 53/105	NW16H2/1600 25/50 53/105
NW08N1/630 25/40 53/84	NW08N1/800 25/40 53/84	NW10N1/1000 25/40 53/84	NW12N1/1250 25/40 53/84	NW16N1/1600 25/40 53/84
NW08H1/630 25/40 53/84	NW08H1/800 25/40 53/84	NW10H1/1000 25/40 53/84	NW12H1/1250 25/40 53/84	NW16H1/1600 25/40 53/8
NW08H2/630 25/40 53/84	NW08H2/800 25/40 53/84	NW10H2/1000 25/40 53/84	NW12H2/1250 25/40 53/84	NW16H2/1600 25/40 53/84
NW08N1/630 25/30 53/63	NW08N1/800 25/30 53/63	NW10N1/1000 25/30 53/63	NW12N1/1250 25/30 53/63	NW16N1/1600 25/30 53/63
NW08H1/630 25/30 53/63	NW08H1/800 25/30 53/63	NW10H1/1000 25/30 53/63	NW12H1/1250 25/30 53/63	NW16H1/1600 25/30 53/63
NW08H2/630 25/30 53/63	NW08H2/800 25/30 53/63	NW10H2/1000 25/30 53/63	NW12H2/1250 25/30 53/63	NW16H2/1600 25/30 53/63
NW08L1/630 25 53	NW08L1/800 25 53	NW10L1/1000 25 53	NW12L1/1250 25 53	NW16L1/1600 25 53

Use of LV switches
Switch-disconnectors protection
Compact NS - NA

Compact NS type NA switch-disconnectors Upstream protection by circuit breaker			
Compact NS			
By 380/415 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
By 440/480 V (1) circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
By 500/525 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
By 690 V circuit breaker	Type/maximum rating(A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
Masterpact NT H1			
By 220/690 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (2)
	Making capacity	kA peak	INST off/INST on (2)
Masterpact NW N1-H1-H2-H3			
By 220/440-480 V (1) circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
By 500/525 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
By 690 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	INST off/INST on (3)
	Making capacity	kA peak	INST off/INST on (3)
Masterpact NW L1			
By 220/690 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	

(1) Suitable for NEMA 480 V voltage.
(2) Maximum setting position 15.
(3) INST on:
- *maximum setting position 15 (In ⩽ 2000).*
- *maximum setting position 12 (In = 2500).*
- *maximum setting position 8 (In = 3200).*

Use of LV switches

Switch-disconnectors protection

Compact NS - NA

	NS1600bNA	NS2000NA	NS2500NA	NS3200NA
	NS1600bN/1600 50/70 105/154	NS2000N/2000 70 154	NS2500N/2500 70 154	NS3200N/3200 70 154
	NS1600bH/1600 70/85 154/187	NS2000H/2000 85 187	NS2500H/2500 85 187	NS3200H/320 85 187
	NS1600bN/1600 50/65 105/143	NS2000N/2000 65 143	NS2500N/2500 65 143	NS3200N/3200 65 143
	NS1600bH/1600 65/85 143/187	NS2000H/2000 85 187	NS2500H/2500 85 187	NS3200H/3200 85 187
	NS1600bN/1600 40/65 84/143	NS2000N/2000 65 143	NS2500N/2500 65 143	NS3200N/3200 65 143
	NS1600bH/1600 50/65 105/143	NS2000H/2000 65 143	NS2500H/2500 65 143	NS3200H/3200 65 143
	NS1600bN/1600 30/65 63/143	NS2000N/2000 65 143	NS2500N/2500 65 143	NS3200N/3200 65 143
	NS1600bH/1600 42/65 88/143	NS2000H/2000 65 143	NS2500H/2500 65 143	NS3200H/3200 65' 143
	NT16H1/1600 30/42 63/88	-	-	-
	NW16N1/1600 50 / 88 50 / 88	-	-	-
	NW16H1/1600 65 143	NW20H1/2000 65 143	NW25H1/2500 65 143	NW32H1/3200 65 143
	NW16H2/1600 70 154	NW20H2/2000 70 154	NW25H2/2500 70 154	NW32H2/3200 70 154
	-	NW20H3/2000 70 154	NW25H3/2500 70 154	NW32H3/3200 70 154
	NW16N1/1600 50 / 88 50 / 88	-	-	-
	NW16H1/1600 65 143	NW20H1/2000 65 143	NW25H1/2500 65 143	NW32H1/3200 65 143
	NW16H2/1600 70 154	NW20H2/2000 65 143	NW25H2/2500 65 143	NW32H2/3200 65 143
	-	NW20H3/2000 65 143	NW25H3/2500 65 143	NW32H3/3200 65 143
	NW16N1/1600 42 88	-	-	-
	NW16H1/1600 65 143	NW20H1/2000 65 143	NW25H1/2500 65 143	NW32H1/3200 65 143
	NW16H2/1600 65 143	NW20H2/2000 65 143	NW25H2/2500 65 143	NW32H2/3200 65 143
	-	NW20H3/2000 65 143	NW25H3/2500 65 143	NW32H3/3200 65 143
	NW16L1/1600 100 220	NW20L1/2000 100 220	-	

Use of LV switches

Switch-disconnectors protection

Masterpact NT - HA

Masterpact NT type HA switch-disconnectors Upstream protection by circuit breaker		
Masterpact NT H1/H2		
By 220/690 V circuit breaker	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
Masterpact NT L1		
By 220/525 V circuit breaker	Type/maximum rating(A)	
	Isc max.	kA rms
	Making capacity	kA peak
By 690 V	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
Masterpact NW N1-H1-H2-H3-L1		
By 220/440/690 V circuit breaker (1)	Type/maximum rating(A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak

(1) Suitable for NEMA 480 V voltage.

Masterpact NT HA can be used as a circuit-brekaer with external protection relay (Icu =36 kA) with maximum short-circuit protection delay = 350 ms.
The external relay protection curves shall be lower or equal than Micrologic 5 curves with maximum settings.

Use of LV switches

Switch-disconnectors protection

Masterpact NT - HA

	NT06 HA	NT08 HA	NT10 HA	NT12 HA	NT16 HA
	NT06H1/630 36 75	NT08H1/800 36 75	NT10H1/1000 36 75	NT12H1/1000 36 75	NT16H1/1600 36 75
	NT06L1/630 100 220	NT08L1/800 100 220	NT10L1/1000 100 220	-	-
	NT06L1/630 25 53	NT08L1/800 25 53	NT10L1/1000 25 53	-	-
	NW08N1/630 36 75	NW08N1/800 36 75	NW10N1/1000 36 75	NW12N1/1250 36 75	NW16N1/1600 36 75
	NW08H1/630 36 75	NW08H1/800 36 75	NW10H1/1000 36 75	NW12H1/1250 36 75	NW16H1/1600 36 75
	NW08H2/630 36 75	NW08H2/800 36 75	NW10H2/1000 36 75	NW12H2/1250 36 75	NW16H2/1600 36 75
	NW08HL1/630 36 75	NW08L1/800 36 75	NW10L1/1000 36 75	NW12L1/1250 36 75	NW16L1/1600 36 75

Use of LV switches
Switch-disconnectors protection
Masterpact NW - NA/HA/HF

Masterpact NW type NA switch-disconnectors Upstream protection by circuit breaker		
Masterpact NW N1-H1-H2-H3-L1		
By 220/440/690 V circuit breaker	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak

Masterpact NW type HA switch-disconnectors Upstream protection by circuit breaker		
Masterpact NW N1-H1-H2-H3-L1		
By 220/440/690 V circuit breaker	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak

Masterpact NW type HF switch-disconnectors Upstream protection by circuit breaker		
Masterpact NW N1-H1-H2-H3		
By 220/440/690 V circuit breaker	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
Masterpact NW L1		
By 220/440 V circuit breaker	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
Masterpact NW L1		
By 690 V circuit breaker	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak

Masterpact NW HA/HF can be used as a circuit-brekaer with external protection relay (Icu =36 kA) with maximum short-circuit protection delay = 350 ms.
The external relay protection curves shall be lower or equal than Micrologic 5 curves with maximum settings.

(1) Consult us.

Use of LV switches

Switch-disconnectors protection

Masterpact NW - NA/HA/HF

	NW08 NA	NW10 NA	NW12 NA
	NW08N1/800 42 88	NW10N1/1000 42 88	NW12N1/1250 42 88
	NW08H1/800 42 88	NW10H1/1000 42 88	NW12H1/1250 42 88
	NW08H2/800 42 88	NW10H2/1000 42 88	NW12H2/1250 42 88
	NW08L1/800 42 88	NW10L1/1000 42 88	NW12L1/1250 42 88

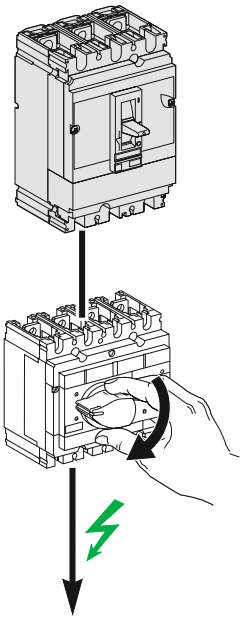
	NW08 HA	NW10 HA	NW12 HA	NW16 HA	NW20 HA	NW25 HA	NW32 HA	NW40 HA
	NW08H1/800 50 105	NW10H1/1000 50 105	NW12H1/1250 50 105	NW16H1/1600 50 105	NW20H1/1250 50 105	NW25H1/2500 50 105	NW32H1/3200 50 105	NW20H1/4000 50 105
	NW08H2/800 50 105	NW10H2/1000 50 105	NW12H2/1250 50 105	NW16H2/1600 50 105	NW20H2/2000 50 105	NW25H2/2500 50 105	NW32H2/3200 50 105	NW20H2/4000 50 105
	- - -	- - -	- - -	- - -	NW20/H3/2000 50 105	NW25/H3/2500 50 105	NW32/H3/3200 50 105	NW20/H3/4000 50 105
	NW08L1/800 50 105	NW10L1/1000 50 105	NW12L1/1250 50 105	NW16L1/1600 50 105	NW20L1/2000 50 105	- -		

	NW08 HF	NW10 HF	NW12 HF	NW16 HF	NW20 HF	NW25 HF	NW32 HF	NW40 HF
	NW08H1/800 85 187	NW10H1/1000 85 187	NW12H1/1250 85 187	NW16H1/1600 85 187	NW20H1/1250 85 187	NW25H1/2500 85 187	NW32H1/3200 85 187	NW20H1/4000 85 187
	NW08H2/800 85 187	NW10H2/1000 85 187	NW12H2/1250 85 187	NW16H2/1600 85 187	NW20H2/2000 85 187	NW25H2/2500 85 187	NW32H2/3200 85 187	NW20H2/4000 85 187
	- - -	- - -	- - -	- - -	NW20/H3/2000 85 187	NW25/H3/2500 85 187	NW32/H3/3200 85 187	NW20/H3/4000 85 187
	NW08L1/800 (1) (1)	NW10L1/1000 (1) (1)	NW12L1/1250 (1) (1)	NW16L1/1600 (1) (1)	NW20L1/2000 (1) (1)	- - -	- - -	- - -
	NW08L1/800 (1) (1)	NW10L1/1000 (1) (1)	NW12L1/1250 (1) (1)	NW16L1/1600 (1) (1)	NW20L1/2000 (1) (1)	- - -	- - -	- - -

Protection of switch-disconnectors

INS40 to INS160 by Compact NSX circuit breaker

DB125666.eps



Compact INS switch-disconnectors Upstream protection		
By Compact NSX		
By circuit breaker 380/415 V	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak

Protection of switch-disconnectors

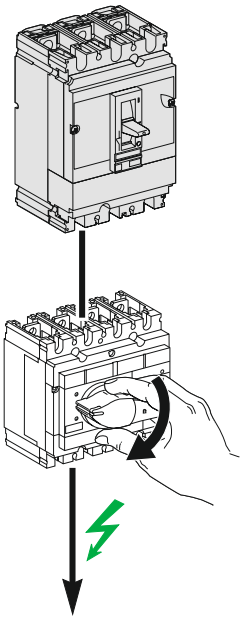
INS40 to INS160 by Compact NSX circuit breaker

	INS40	INS63	INS80	INS100	INS125	INS160
	NSX100B/40 25 52	NSX100B/63 25 52	NSX100B/80 25 52	NSX100B/100 25 52	-	-
	NSX100F/40 36 75	NSX100F/63 36 75	NSX100F/80 36 75	NSX100F/100 36 75	-	-
	NSX100N/40 36 75	NSX100N/63 36 75	NSX100N/80 36 75	NSX100N/100 36 75	-	-
	NSX100H/S/L/40 36 75	NSX100H/S/L/63 36 75	NSX100H/S/L/80 36 75	NSX100H/S/L/100 36 75	-	-
	NSX160B/40 25 52	NSX160B/63 25 52	NSX160B/80 25 52	NSX160B/100 25 52	NSX160B/125 25 52	NSX160B/160 25 52
	NSX160F/40 25 52	NSX160F/63 25 52	NSX160F/80 25 52	NSX160F/100 36 75	NSX160F/125 36 75	NSX160F/160 36 75
	NSX160N/40 25 52	NSX160N/63 25 52	NSX160N/80 25 52	NSX160N/100 50 105	NSX160N/125 50 105	NSX160N/160 50 105
	NSX160H/S/L/40 25 52	NSX160H/S/L/63 25 52	NSX160H/S/L/80 25 52	NSX160H/S/L/100 70 154	NSX160H/S/L/125 70 154	NSX160H/S/L/160 70 154
	-	-	-	NSX250B/100 25 52	NSX250B/125 25 52	NSX250B/160 25 52
	-	-	-	NSX250F/100 36 75	NSX250F/125 36 75	NSX250F/160 36 75
	-	-	-	NSX250N/100 50 105	NSX250N/125 50 105	NSX250N/160 50 105
	-	-	-	NSX250H/S/L/100 70 154	NSX250H/S/L/125 70 154	NSX250H/S/L/160 70 154
	NG125N/40 25 52	NG125N/63 25 52	NG125N/80 25 52	NG125N/100 25 52	NG125N/125 25 52	-
	NG125H/40 36 75	NG125H/63 36 75	NG125H/80 36 75	-	-	-
	NG125L/40 50 105	NG125L/63 50 105	NG125L/80 50 105	-	-	-
	NG160N/40 25 52	NG160N/63 25 52	NG160N/80 25 52	NG160N/100 25 52	NG160N/125 25 52	NG160N/160 25 52

Protection of switch-disconnectors

INS40 to INS160 by Compact NSX circuit breaker

DB125666.eps



Compact INS switch-disconnectors Upstream protection		
By Compact NSX		
By circuit breaker 440/480 V (1)	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By circuit breaker 500/525 V	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak

(1) Applicable for 480 NEMA.

Protection of switch-disconnectors

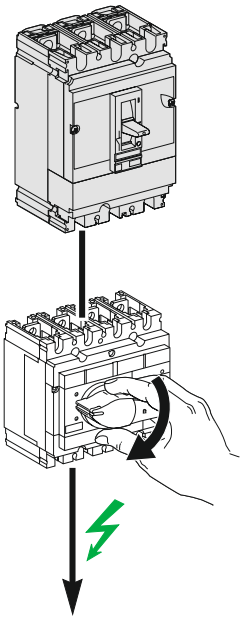
INS40 to INS160 by Compact NSX circuit breaker

	INS40	INS63	INS80	INS100	INS125	INS160
	NSX100B/40 20 40	NSX100B/63 20 40	NSX100B/80 20 40	NSX100B/100 20 40	-	-
	NSX100F/40 35 73	NSX100F/63 35 73	NSX100F/80 35 73	NSX100F/100 35 73	-	-
	NSX100N/40 35 73	NSX100N/63 35 73	NSX100N/80 35 73	NSX100N/100 35 73	-	-
	NSX100H/S/L/40 35 73	NSX100H/S/L/63 35 73	NSX100H/S/L/80 35 73	NSX100H/S/L/100 65 143	-	-
	NSX160B/40 20 40	NSX160B/63 20 40	NSX160B/80 20 40	NSX160B/100 20 40	NSX160B/125 20 40	NSX160B/160 20 40
	NSX160F/40 25 52	NSX160F/63 25 52	NSX160F/80 25 52	NSX160F/100 35 73	NSX160F/125 35 73	NSX160F/160 35 73
	NSX160N/40 25 52	NSX160N/63 25 52	NSX160N/80 25 52	NSX160N/100 35 73	NSX160N/125 35 73	NSX160N/160 35 73
	NSX160H/S/L/40 25 52	NSX160H/S/L/63 25 52	NSX160H/S/L/80 25 52	NSX160H/S/L/100 65 143	NSX160H/S/L/125 65 143	NSX160H/S/L/160 65 143
	-	-	-	NSX250B/100 20 40	NSX250B/125 20 40	NSX250B/160 20 40
	-	-	-	NSX250F/100 35 73	NSX250F/125 35 73	NSX250F/160 35 73
	-	-	-	NSX250N/100 35 73	NSX250N/125 35 73	NSX250N/160 35 73
	-	-	-	NSX250H/S/L/100 65 143	NSX250H/S/L/125 65 143	NSX250H/S/L/160 65 143
	NSX100F/40 18 36	NSX100F/63 18 36	NSX100F/80 18 36	NSX100F/100 18 36	-	-
	NSX100N/40 18 36	NSX100N/63 18 36	NSX100N/80 18 36	NSX100N/100 18 36	-	-
	NSX100H/S/L/40 25 53	NSX100H/S/L/63 25 53	NSX100H/S/L/80 25 53	NSX100H/S/L/100 25 53	-	-
	NSX160F/40 15 30	NSX160F/63 15 30	NSX160F/80 15 30	NSX160F/100 15 30	NSX160F/125 22 46	NSX160F/160 22 46
	NSX160N/40 15 30	NSX160N/63 15 30	NSX160N/80 15 30	NSX160N/100 15 30	NSX160N/125 22 46	NSX160N/160 22 46
	NSX160H/S/L/40 15 30	NSX160H/S/L/63 15 30	NSX160H/S/L/80 15 30	NSX160H/S/L/100 22 46	NSX160H/S/L/125 22 46	NSX160H/S/L/160 22 46
	-	-	-	NSX250F/100 15 30	NSX250F/125 22 46	NSX250F/160 22 46
	-	-	-	NSX250N/100 15 30	NSX250N/125 22 46	NSX250N/160 22 46
	-	-	-	NSX250H/S/L/100 22 46	NSX250H/S/L/125 22 46	NSX250H/S/L/160 22 46

Protection of switch-disconnectors

INS40 to INS160 by Compact NSX circuit breaker or fuses

DB125666.eps



Compact INS switch-disconnectors		
Upstream protection		
By Compact NSX		
By circuit breaker 690 V	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
Upstream protection by fuse		
By 500 V fuse	Type aM [2]/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type gG [3]/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type gG [2]/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type BS [3]/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type BS [2]/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By 690 V fuse	Type aM [2]/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type gG [3]/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type gG [2]/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak

(2) Protection by external thermal relay obligatory.
(3) Without external thermal relay.

Protection of switch-disconnectors

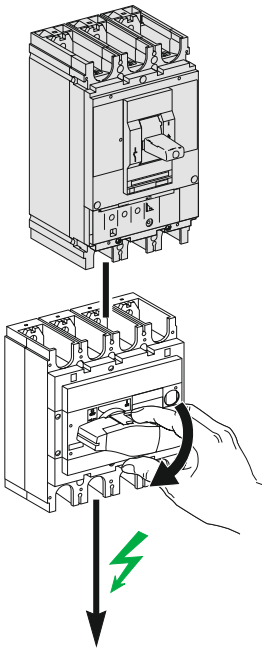
INS40 to INS160 by Compact NSX circuit breaker or fuses

	INS40	INS63	INS80	INS100	INS125	INS160
	-	-	-	NSX100F/100 8 14	-	-
	-	-	-	NSX100N/100 10 17	-	-
	-	-	-	NSX100H/S/L/100 10 17	-	-
	-	-	-	NSX160F/100 8 14	NSX160F/125 8 14	NSX160F/160 8 14
	-	-	-	NSX160N/100 10 17	NSX160N/125 10 17	NSX160N/160 10 17
	-	-	-	NSX160H/S/L/100 10 17	NSX160H/S/L/125 10 17	NSX160H/S/L/160 10 17
	-	-	-	NSX250F/100 8 14	NSX250F/125 8 14	NSX250F/160 8 14
	-	-	-	NSX250N/100 10 17	NSX250N/125 10 17	NSX250N/160 10 17
	-	-	-	NSX250H/S/L/100 10 17	NSX250H/S/L/125 10 17	NSX250H/S/L/160 10 17
	125 100 220	125 100 220	125 100 220	200 100 220	200 100 220	200 100 220
	32 100 120	50 100 120	50 100 120	80 100 220	100 100 220	125 100 220
	100 100 220	100 100 220	100 100 220	125/160 100/50 220/105	125/160 100/50 220/105	125/160 100/50 220/105
	32 80 176	50 and 32M50 80 176	63 and 32M63 80 176	80 and 63M80 80 176	100 and 63M100 80 176	125 and 100M125 80 176
	125 and 100M125 80 176	125 and 100M125 80 176	125 and 100M125 80 176	160 and 100M160 80 176	160 and 100M160 80 176	160 and 100M160 80 176
	-	-	-	125 100 220	125 100 220	125 100 220
	-	-	-	80 100 220	100 100 220	125 100 220
	-	-	-	125 100 220	125 100 220	125 100 220

Protection of switch-disconnectors

INS/INV100 to INS/INV630 by Compact NSX circuit breaker

DB125667.eps



Compact INS switch-disconnectors Upstream protection			INS250-100 / INV100	INS250-160 / INV160
By Compact NSX				
By circuit breaker 380/415 V	Type/maximum rating (A)		NSX100-160-250B/100	NSX160-250B/160
	Isc max.	kA rms	25	25
	Making capacity	kA peak	52	52
	Type/maximum rating (A)		NSX100-160-250F/100	NSX160-250F/160
	Isc max.	kA rms	36	36
	Making capacity	kA peak	75	75
	Type/maximum rating (A)		NSX100-160-250N/100	NSX160-250N/160
	Isc max.	kA rms	50	50
	Making capacity	kA peak	105	105
	Type/maximum rating (A)		NSX100-160-250H/100	NSX160-250H/160
	Isc max.	kA rms	70	70
	Making capacity	kA peak	154	154
	Type/maximum rating (A)		NSX100-160-250S/100	NSX160-250S/160
	Isc max.	kA rms	100	100
	Making capacity	kA peak	220	220
	Type/maximum rating (A)		NSX100-160-250L/100	NSX160-250L/160
	Isc max.	kA rms	150	150
	Making capacity	kA peak	330	330
By circuit breaker 440/480 V (1)	Type/maximum rating (A)		NSX100-160-250B/100	NSX160-250B/160
	Isc max.	kA rms	20	20
	Making capacity	kA peak	40	40
	Type/maximum rating (A)		NSX100-160-250F/100	NSX160-250F/160
	Isc max.	kA rms	35	35
	Making capacity	kA peak	73	73
	Type/maximum rating (A)		NSX100-160-250N/100	NSX160-250N/160
	Isc max.	kA rms	50	50
	Making capacity	kA peak	105	105
	Type/maximum rating (A)		NSX100-160-250H/100	NSX160-250H/160
	Isc max.	kA rms	65	65
	Making capacity	kA peak	143	143
	Type/maximum rating (A)		NSX100-160-250S/100	NSX160-250S/160
	Isc max.	kA rms	90	90
	Making capacity	kA peak	198	198
	Type/maximum rating (A)		NSX100-160-250L/100	NSX160-250L/160
	Isc max.	kA rms	130	130
	Making capacity	kA peak	286	286
By circuit breaker 500 V	Type/maximum rating (A)		NSX100-160-250B/100	NSX160-250B/160
	Isc max.	kA rms	15	15
	Making capacity	kA peak	30	30
	Type/maximum rating (A)		NSX100F/100	-
	Isc max.	kA rms	25	
	Making capacity	kA peak	52	
	Type/maximum rating (A)		NSX160-250F/100	NSX160-250H/160
	Isc max.	kA rms	30	30
	Making capacity	kA peak	63	63
	Type/maximum rating (A)		NSX100-160-250N/100	NSX160-250N/160
	Isc max.	kA rms	36	36
	Making capacity	kA peak	75	75
	Type/maximum rating (A)		NSX100-160-250H/100	NSX160-250H/160
	Isc max.	kA rms	50	50
	Making capacity	kA peak	105	105
	Type/maximum rating (A)		NSX100-160-250S/100	NSX160-250S/160
	Isc max.	kA rms	65	65
	Making capacity	kA peak	143	143
	Type/maximum rating (A)		NSX100-160-250L/100	NSX160-250L/160
	Isc max.	kA rms	70	70
	Making capacity	kA peak	154	154

(1) Applicable for 480 NEMA.

Protection of switch-disconnectors

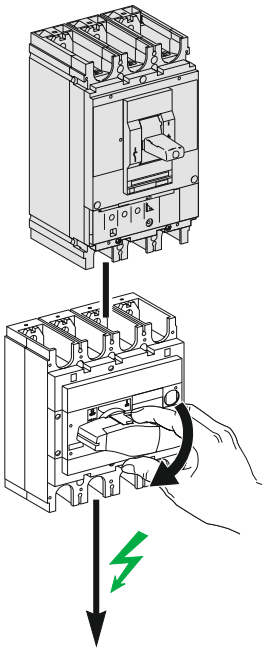
INS/INV100 to INS/INV630 by Compact NSX circuit breaker

	INS250-200 / INV200	INS/INV250	INS/INV320	INS/INV400	INS/INV500	INS/INV630
	NSX250B/200 25 52	NSX250N/250 25 52	-	-	-	-
	NSX250F/200 36 75	NSX250F/250 36 75	NSX400-630F/320 36 75	NSX400-630F/400 36 75	NSX630F/500 36 75	NSX630F/630 36 75
	NSX250N/200 50 105	NSX250N/250 50 105	NSX400-630N/320 50 105	NSX400-630N/400 50 105	NSX630N/500 50 105	NSX630N/630 50 105
	NSX250H/200 70 154	NSX250H/250 70 154	NSX400-630H/320 70 154	NSX400-630H/400 70 154	NSX630H/500 70 154	NSX630H/630 70 154
	NSX250S/200 100 220	NSX250S/250 100 220	NSX400-630S/320 100 220	NSX400-630S/400 100 220	NSX630S/500 100 220	NSX630S/630 100 220
	NSX250L/200 150 330	NSX250L/250 150 330	NSX400-630L/320 150 330	NSX400-630L/400 150 330	NSX630L/500 150 330	NSX630L/630 150 330
	NSX250B/200 20 40	NSX250B/250 20 40	-	-	-	-
	NSX250F/200 35 73	NSX250F/250 35 73	NSX400-630F/320 35 73	NSX400-630F/400 35 73	NSX630F/500 35 73	NSX630F/630 35 73
	NSX250N/200 50 105	NSX250N/250 50 105	NSX400-630N/320 50 105	NSX400-630N/400 50 105	NSX630N/500 50 105	NSX630N/630 50 105
	NSX250H/200 65 143	NSX250H/250 65 143	NSX400-630H/320 65 143	NSX400-630H/400 65 143	NSX630H/500 65 143	NSX630H/630 65 143
	NSX250S/200 90 198	NSX250S/250 90 198	NSX400-630S/320 90 198	NSX400-630S/400 90 198	NSX630S/500 90 198	NSX630S/630 90 198
	NSX250L/200 130 286	NSX250L/250 130 286	NSX400-630L/320 130 286	NSX400-630L/400 130 286	NSX630L/500 130 286	NSX630L/630 130 286
	NSX250B/200 15 30	NSX250B/250 15 30	-	-	-	-
	-	-	-	-	-	-
	NSX250F/200 30 63	NSX250F/250 30 63	NSX400-630F/320 25 52	NSX400-630F/400 25 52	NSX630F/500 25 52	NSX630F/630 25 52
	NSX250N/200 36 75	NSX250N/250 36 75	NSX400-630N/320 30 63	NSX400-630N/400 30 63	NSX630N/500 30 63	NSX630N/630 30 63
	NSX250H/200 50 105	NSX250H/250 50 105	NSX400-630H/320 50 105	NSX400-630H/400 50 105	NSX630H/500 50 105	NSX630H/630 50 105
	NSX250S/200 65 143	NSX250S/250 65 143	NSX400-630S/320 65 143	NSX400-630S/400 65 143	NSX630S/500 65 143	NSX630S/630 65 143
	NSX250L/200 70 154	NSX250L/250 70 154	NSX400-630L/320 70 154	NSX400-630L/400 70 154	NSX630L/500 70 154	NSX630L/630 70 154

Protection of switch-disconnectors

INS/INV100 to INS/INV630 by Compact NSX circuit breaker or fuses

DB125667.eps



Compact INS switch-disconnectors Upstream protection			INS250-100 / INV100	INS250-160 / INV160
By Compact NSX				
By circuit breaker 525 V	Type/maximum rating (A)		NSX100-160-250F/100	NSX160-250F/160
	Isc max.	kA rms	22	22
	Making capacity	kA peak	47	47
	Type/maximum rating (A)		NSX100-160-250N/100	NSX160-250N/160
	Isc max.	kA rms	35	35
	Making capacity	kA peak	73	73
	Type/maximum rating (A)		NSX100-160-250H/100	NSX160-250H/160
	Isc max.	kA rms	35	35
	Making capacity	kA peak	73	73
	Type/maximum rating (A)		NSX100-160-250S/100	NSX160-250S/160
	Isc max.	kA rms	40	40
	Making capacity	kA peak	81	81
	Type/maximum rating (A)		NSX100-160-250L/100	NSX160-250L/160
	Isc max.	kA rms	50	50
	Making capacity	kA peak	105	105
By circuit breaker 690 V	Type/maximum rating (A)		NSX100-160-250F/100	NSX160-250F/160
	Isc max.	kA rms	8	8
	Making capacity	kA peak	14	14
	Type/maximum rating (A)		NSX100-160-250N/100	NSX160-250N/160
	Isc max.	kA rms	10	10
	Making capacity	kA peak	17	17
	Type/maximum rating (A)		NSX100-160-250H/100	NSX160-250H/160
	Isc max.	kA rms	10	10
	Making capacity	kA peak	17	17
	Type/maximum rating (A)		NSX100-160-250S/100	NSX160-250S/160
	Isc max.	kA rms	15	15
	Making capacity	kA peak	30	30
	Type/maximum rating (A)		NSX100-160-250L/100	NSX160-250L/160
	Isc max.	kA rms	20	20
	Making capacity	kA peak	40	40
Upstream protection by fuse				
By 500 V fuse	Type aM [2]/maximum rating (A)		315	315
	Isc max.	kA rms	100	100
	Making capacity	kA peak	220	220
	Type gG [3]/maximum rating (A)		80	125
	Isc max.	kA rms	100	100
	Making capacity	kA peak	220	220
	Type gG [2]/maximum rating (A)		225/355	225/355
	Isc max.	kA rms	100/50	100/50
	Making capacity	kA peak	220/105	220/105
	Type BS [3]/maximum rating (A)		80 and 63M80	125 and 100M125
	Isc max.	kA rms	80	80
	Making capacity	kA peak	176	176
	Type BS [2]/maximum rating (A)		250 and 200M250	250 and 200M250
	Isc max.	kA rms	80	80
	Making capacity	kA peak	176	176
By 690 V fuse	Type aM [2]/maximum rating (A)		250	250
	Isc max.	kA rms	100	100
	Making capacity	kA peak	220	220
	Type gG [3]/maximum rating (A)		80	125
	Isc max.	kA rms	100	100
	Making capacity	kA peak	220	220
	Type gG [2]/maximum rating (A)		200	200
	Isc max.	kA rms	100	100
	Making capacity	kA peak	220	220

(2) Protection by external thermal relay obligatory.
(3) Without external thermal relay.

Protection of switch-disconnectors

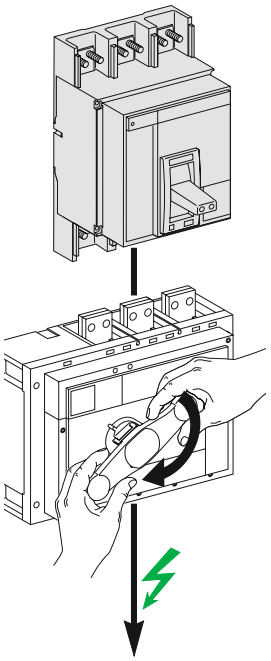
INS/INV100 to INS/INV630 by Compact NSX circuit breaker or fuses

	INS250-200 / INV200	INS/INV250	INS/INV320	INS/INV400	INS/INV500	INS/INV630
	NSX250F/200 22 47	NSX250F/250 22 47	NSX400-630F/320 22 47	NSX400-630F/400 22 47	NSX630F/500 22 47	NSX630F/630 22 47
	NSX250N/200 35 73	NSX250N/250 35 73	NSX400-630N/320 22 47	NSX400-630N/400 22 47	NSX630N/500 22 47	NSX630N/630 22 47
	NSX250H/200 35 73	NSX250H/250 35 73	NSX400-630H/320 35 73	NSX400-630H/400 35 73	NSX630H/500 35 73	NSX630H/630 35 73
	NSX250S/200 40 81	NSX250S/250 40 81	NSX400-630S/320 40 81	NSX400-630S/400 40 81	NSX630S/500 40 81	NSX630S/630 40 81
	NSX250L/200 50 105	NSX250L/250 50 105	NSX400-630L/320 50 105	NSX400-630L/400 50 105	NSX630L/500 50 105	NSX630L/630 50 105
	NSX250F/200 8 14	NSX250F/250 8 14	NSX400-630F/320 8 14	NSX400-630F/400 8 14	NSX630F/500 8 14	NSX630F/630 8 14
	NSX250N/200 10 17	NSX250N/250 10 17	NSX400-630N/320 10 17	NSX400-630N/400 10 17	NSX630N/500 10 17	NSX630N/630 10 17
	NSX250H/200 10 17	NSX250H/250 10 17	NSX400-630H/320 10 17	NSX400-630H/400 10 17	NSX630H/500 10 17	NSX630H/630 10 17
	NSX250S/200 15 30	NSX250S/250 15 30	NSX400-630S/320 15 30	NSX400-630S/400 15 30	NSX630S/500 15 30	NSX630S/630 15 30
	NSX250L/200 20 40	NSX250L/250 20 40	NSX400-630L/320 20 40	NSX400-630L/400 20 40	NSX630L/500 20 40	NSX630L/630 20 40
	315 100 220	315 100 220	630 50 105	630 50 105	630 50 105	630 50 105
	160 100 220	200 100 220	250 100 220	315 100 220	400 100 220	500 100 220
	225/355 100/50 220/105	225/355 100/50 220/105	630 50 105	630 50 105	630 50 105	500/630 100/50 220/105
	160 and 100M160 80 176	200 and 100M200 80 176	250 and 200M250 80 176	315 and 200M250 80 176	400 80 176	450 and 400M450 80 176
	250 and 200M250 80 176	250 and 200M250 80 176	355 and 315M355 80 176	355 and 315M355 80 176	450 and 400M450 80 176	450 and 400M450 80 176
	250 100 220	250 100 220	630 50 105	630 50 105	630 50 105	630 50 105
	160 100 220	200 100 220	250 100 220	315 100 220	400 100 220	500 100 220
	200 100 220	200 100 220	630 50 105	630 50 105	630 50 105	500/630 100/50 220/105

Protection of switch-disconnectors

INS/INV630b to INS/INV2500 by Compact NS, Masterpact NT circuit breaker

DB125668.eps



Compact INS switch-disconnectors Upstream protection		
By Compact NS		
By circuit breaker 380/415 V	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By circuit breaker 440/480 V (1)	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By circuit breaker 500/525 V	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By circuit breaker 690 V	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By Masterpact NT H1		
By circuit breaker 220/690 V	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By Masterpact NT H2		
By circuit breaker 220/690 V	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By Masterpact NT L1		
By circuit breaker 220/690 V	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By circuit breaker 690 V	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak

(1) Applicable for 480 NEMA.

Protection of switch-disconnectors

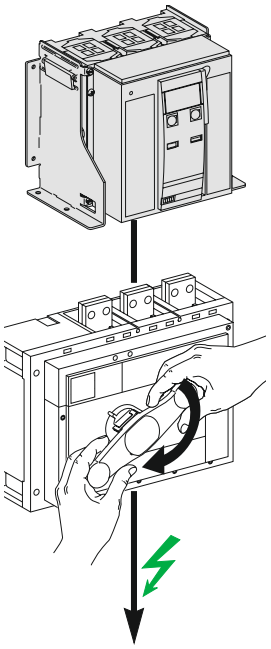
INS/INV630b to INS/INV2500 by Compact NS, Masterpact NT circuit breaker

	INS/INV630b	INS/INV800	INS/INV1000	INS/INV1250	INS/INV1600	INS/INV2000	INS/INV2500
	NS630bN/630 35 75	NS800N/800 35 75	NS1000N/1000 35 75	NS1250N/1250 35 75	NS1600N - NS1600bN/1600 35 75	NS2000N/2000 50 105	NS2500N/2500 50 105
	NS630bH/630 35 75	NS800H/800 35 75	NS1000H/1000 35 75	NS1250H/1250 35 75	NS1600H - NS1600bH/1600 35 75	NS2000H/2000 50 105	NS2500H/2500 50 105
	NS630bL/630 150 330	NS800L/800 150 330	NS1000L/1000 150 330	-	-	-	-
	NS630bN/630 35 75	NS800N/800 35 75	NS1000N/1000 35 75	NS1250N/1250 35 75	NS1600N - NS1600bN/1600 35 75	NS2000N/2000 50 105	NS2500N/2500 50 105
	NS630bH/630 35 75	NS800H/800 35 75	NS1000H/1000 35 75	NS1250H/1250 35 75	NS1600H - NS1600bH/1600 35 75	NS2000H/2000 50 105	NS2500H/2500 50 105
	NS630bL/630 130 286	NS800L/800 130 286	NS1000L/1000 130 286	-	-	-	-
	NS630bN/630 35 75	NS800N/800 35 75	NS1000N/1000 35 75	NS1250N/1250 35 75	NS1600N - NS1600bN/1600 35 75	NS2000N/2000 50 105	NS2500N/2500 50 105
	NS630bH/630 35 75	NS800H/800 35 75	NS1000H/1000 35 75	NS1250H/1250 35 75	NS1600H - NS1600bH/1600 35 75	NS2000H/2000 50 105	NS2500H/2500 50 105
	NS630bL/630 100 220	NS800L/800 100 220	NS1000L/1000 100 220	-	-	-	-
	NS630bN/630 30 63	NS800N/800 30 63	NS1000N/1000 30 63	NS1250N/1250 30 63	NS1600bN/1600 30 63	NS2000N/2000 50 105	NS2500N/2500 50 105
	NS630bH/630 35 75	NS800H/800 35 75	NS1000H/1000 35 75	NS1250H/1250 35 75	NS1600bH/1600 35 75	NS2000H/2000 50 105	NS2500H/2500 50 105
	NS630bLB/630 75 165	NS800LB/800 75 165	-	-	-	-	-
	NT06H1/630 35 75	NT08H1/800 35 75	NT10H1/1000 35 75	NT12H1/1250 35 75	NT16H1/1600 35 75	-	-
	NT06H2/630 35 75	NT08H2/800 35 75	NT10H2/1000 35 75	NT12H2/1250 35 75	NT16H2/1600 35 75	-	-
	NT06L1/630 100 220	NT08L1/800 100 220	NT10L1/1000 100 220	-	-	-	-
	NT06L1/630 25 53	NT08L1/800 25 53	NT10L1/1000 25 53	-	-	-	-

Protection of switch-disconnectors

INS/INV630b to INS/INV2500 by Masterpact NW circuit breakers or fuses

DB125669.eps



Compact INS switch-disconnectors
Upstream protection

By Masterpact NW N1- H1- H2- H3		
By circuit breaker 220/440-480 V (1)	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By circuit breaker 500/525 V	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By circuit breaker 690 V	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By Masterpact NW L1		
By circuit breaker 220/690 V	Type/maximum rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By fuse		
By 500 V fuse	Type aM (2) / maxi. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type gG (3) / maxi. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type gG (2) / maxi. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type BS (3) / maxi. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type BS (2) / maxi. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By 690 V fuse	Type aM (2) / maxi. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type gG (3) / maxi. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type gG (2) / maxi. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak

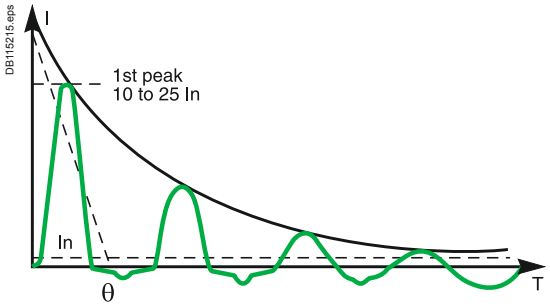
(1) Applicable for 480 NEMA.
(2) Mandatory protection by an external thermal relay.
(3) No external thermal relay.

Protection of switch-disconnectors

INS/INV630b to INS/INV2500 by Masterpact NW circuit breakers or fuses

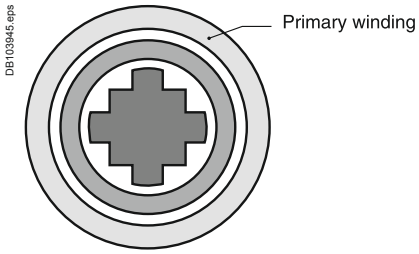
INS/INV630b	INS/INV800	INS/INV1000	INS/INV1250	INS/INV1600	INS/INV2000	INS/INV2500
NW08N1/630 35 75	NW08N1/800 35 75	NW10N1/1000 35 75	NW12N1/1250 35 75	NW16N1/1600 35 75	-	-
NW08H1/630 35 75	NW08H1/800 35 75	NW10H1/1000 35 75	NW12H1/1250 35 75	NW16H1/1600 35 75	NW20H1/2000 50 105	NW25H1/2500 50 105
NW08H2/630 35 75	NW08H2/800 35 75	NW10H2/1000 35 75	NW12H2/1250 35 75	NW16H2/1600 35 75	NW20H2/2000 50 105	NW25H2/2500 50 105
-	-	-	-	-	NW20H3/2000 50 105	NW25H3/2500 50 105
NW08N1/630 35 75	NW08N1/800 35 75	NW10N1/1000 35 75	NW12N1/1250 35 75	NW16N1/1600 35 75	-	-
NW08H1/630 35 75	NW08H1/800 35 75	NW10H1/1000 35 75	NW12H1/1250 35 75	NW16H1/1600 35 75	NW20H1/2000 50 105	NW25H1/2500 50 105
NW08H2/630 35 75	NW08H2/800 35 75	NW10H2/1000 35 75	NW12H2/1250 35 75	NW16H2/1600 35 75	NW20H2/2000 50 105	NW25H2/2500 50 105
-	-	-	-	-	NW20H3/2000 50 105	NW25H3/2500 50 105
NW08N1/630 35 75	NW08N1/800 35 75	NW10N1/1000 35 75	NW12N1/1250 35 75	NW16N1/1600 35 75	-	-
NW08H1/630 35 75	NW08H1/800 35 75	NW10H1/1000 35 75	NW12H1/1250 35 75	NW16H1/1600 35 75	NW20H1/2000 50 105	NW25H1/2500 50 105
NW08H2/630 35 75	NW08H2/800 35 75	NW10H2/1000 35 75	NW12H2/1250 35 75	NW16H2/1600 35 75	NW20H2/2000 50 105	NW25H2/2500 50 105
-	-	-	-	-	NW20H3/2000 50 105	NW25H3/2500 50 105
NW08L1/630 35 75	NW08L1/800 35 75	NW10L1/1000 35 75	NW12L1/1250 35 75	NW16L1/1600 35 75	NW20L1/2000 50 105	-
1000/1250 100 220	1000/1250 100 220	1000/1250 100 220	1000/1250 100 220	1000/1250 100 220	-	-
500 100 220	630 100 220	800 100 220	1000 80 176	1000/1250 80/50 176/105	-	-
1000/1250 80/50 176/105	1000/1250 80/50 176/105	1000/1250 80/50 176/105	1000/1250 80/50 176/105	1000/1250 80/50 176/105	-	-
500 80 176	630 80 176	800 80 176	1000 80 176	1000/1250 80/50 176/105	-	-
1000/1250 80/50 176/105	1000/1250 80/50 176/105	1000/1250 80/50 176/105	1000/1250 80/50 176/105	1000/1250 80/50 176/105	-	-
1000/1250 100 220	1000/1250 100 220	1000/1250 100 220	1000/1250 100 220	1000/1250 100 220	-	-
500 100 220	630 100 220	800 100 220	1000 80 176	1000/1250 80/50 176/105	-	-
1000/1250 80/50 176/105	1000/1250 80/50 176/105	1000/1250 80/50 176/105	1000/1250 80/50 176/105	1000/1250 80/50 176/105	-	-

Protection of LV/LV transformers and capacitors



Inrush currents

When LV/LV transformers are switched on, very high inrush currents are produced which must be taken into account when choosing overcurrent protection devices. The peak value of the first current wave often reaches 10 to 15 times the rated rms current of the transformer and may reach values of 20 to 25 times the rated current even for transformers rated less than 50 kVA.



Selecting the protection

Schneider Electric has conducted an extensive test programme to optimise the protection of LV/LV transformers.
The Compact and Masterpact circuit breakers detailed in the following tables offer the following advantages:

- protection of the transformer in the event of abnormal overloads
- no nuisance tripping when the primary winding is energised
- unimpaired electrical endurance of the circuit breaker.

The transformers used for the tests are standard. The values in the tables have been calculated for a crest factor of 25. These tables indicate the circuit breaker and trip unit to be used depending on:

- the primary supply voltage (230 V or 400 V)
- the type of transformer (single-phase or three-phase).

They correspond to the most frequent case in which the primary is wound externally [(1)].
The type of circuit breaker to be used (i.e. N, H or L) depends on the breaking capacity required at the point of installation.

Protection using a Compact circuit breaker (1st peak ≤ 25 In)

Compact NSX100 to NSX250 equipped with TM-D thermal-magnetic trip unit					
Transformer rating (kVA)			Protective device		
230/240 V 1-phase	230/240 V 3-phases 400/415 V 1-phase	400/415 V 3-phases	Circuit breakers	Trip unit	Ir max setting
3	5 to 6	9 to 12	NSX100B/F/N/H/S/L	TM16D	1
5	8 to 9	14 to 16	NSX100B/F/N/H/S/L	TM25D	1
7 to 9	13 to 16	22 to 28	NSX100B/F/N/H/S/L/R	TM40D	1
12 to 15	20 to 25	35 to 44	NSX100B/F/N/H/S/L/R	TM63D	1
16 to 19	26 to 32	45 to 56	NSX100B/F/N/H/S/L/R	TM80D	1
18 to 23	32 to 40	55 to 69	NSX160B/F/N/H/S/L	TM100D	1
23 to 29	40 to 50	69 to 87	NSX160B/F/N/H/S/L	TM125D	1
29 to 37	51 to 64	89 to 111	NSX250B/F/N/H/S/L/R	TM160D	1
37 to 46	64 to 80	111 to 139	NSX250B/F/N/H/S/L/R	TM200D	1

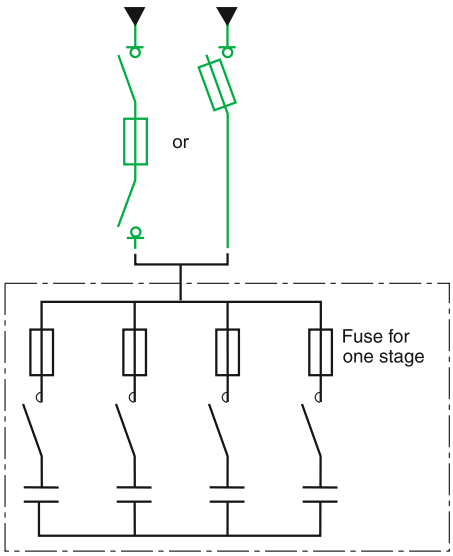
Compact NSX100 to NS1600 / Masterpact equipped with Micrologic trip unit

Transformer rating (kVA)			Protective device		
230/240 V 1-phase	230/240 V 3-phases 400/415 V 1-phase	400/415 V 3-phases	Circuit breakers	Trip unit	Ir max setting
4 to 7	6 to 13	11 to 22	NSX100B/F/N/H/S/L/R	Micrologic 2.2 or 6.2 40	0.8
9 to 19	16 to 30	27 to 56	NSX100B/F/N/H/S/L/R	Micrologic 2.2 or 6.2 100	0.8
15 to 30	05 to 50	44 to 90	NSX160B/F/N/H/S/L	Micrologic 2.2 or 6.2 160	0.8
23 to 46	40 to 80	70 to 139	NSX250B/F/N/H/S/L/R	Micrologic 2.2 or 6.2 250	0.8
37 to 65	64 to 112	111 to 195	NSX400F/N/H/S/L/R	Micrologic 2.3 or 6.3 400	0.7
58 to 83	100 to 144	175 to 250	NSX630F/N/H/S/L/R	Micrologic 2.3 or 6.3 630	0.6
58 to 150	100 to 250	175 to 436	NS630bN/bH-NT06H1	Micrologic 5.0/6.0/7.0	1
74 to 184	107 to 319	222 to 554	NS800N/H-NT08H1-NW08N1/H1	Micrologic 5.0/6.0/7.0	1
90 to 230	159 to 398	277 to 693	NS1000N/H-NT10H1-NW10N1/H1	Micrologic 5.0/6.0/7.0	1
115 to 288	200 to 498	346 to 866	NS1250N/H-NT12H1-NW12N1/H1	Micrologic 5.0/6.0/7.0	1
147 to 368	256 to 640	443 to 1108	NS1600N/H-NT16H1-NW16N1/H1	Micrologic 5.0/6.0/7.0	1
184 to 460	320 to 800	554 to 1385	NW20N1/H1	Micrologic 5.0/6.0/7.0	1
230 to 575	400 to 1000	690 to 1730	NW25H2/H3	Micrologic 5.0/6.0/7.0	1
294 to 736	510 to 1280	886 to 2217	NW32H2/H3	Micrologic 5.0/6.0/7.0	1

(1) For other windings, please consult us.
If a circuit breaker upstream of a transformer with a transformation ratio of 1 and a rated power of less than 5 kVA is subject to nuisance tripping, before choosing a circuit breaker with a higher rating, invert the input and the output of the transformer (the inrush current may be doubled if the primary is wound internally rather than externally).

Protection of LV/LV transformers and capacitors

DB115216.eps



Capacitor-bank protection.

056639A-30.eps

Rectimat 2 capacitor bank.

Protection of capacitors

It is necessary to take into account:

■ permissible variations in the fundamental voltage and in harmonic content

The increase in the current rating for the protection device may reach 30 %.

■ variations due to capacitor tolerances.

The increase in the current rating for the protection device may reach 15 % (but only 5 % for Rectiphase capacitors).

Given the above, the generally required correction factor ranges from 1.6 to 2.

For Rectiphase capacitor banks, an optimised factor of only 1.4 may be used for standard banks.

Protection table for fixed or automatic capacitor banks

400/415 V Capacitor (kVAR)	gG fuse-link rating	Fupact
10 kVAR	20 A	INF●32 / INFD40
20 kVAR	40 A	INF●63 / INFD40
30 kVAR	63 A	INF●63
50 kVAR	100 A	INF●125
60 kVAR	125 A	INF●125
80 kVAR	160 A	INF●250
105 kVAR	250 A	INF●250
150 kVAR	315 A	INF●400
210 kVAR	450 A	INF●630
315 kVAR	670 A	INF●800

690 V Capacitor (kVAR)	gG fuse-link rating	Fupact
10 kVAR	16 A	INF●32 / INFD40
20 kVAR	32 A	INF●32 / INFD40
30 kVAR	40 A	INF●63 / INFD40
50 kVAR	63 A	INF●63
60 kVAR	80 A	INF●125
80 kVAR	100 A	INF●125
105 kVAR	125 A	INF●160
150 kVAR	200 A	INF●250
210 kVAR	250 A	INF●400
315 kVAR	400 A	INF●400
405 kVAR	500 A	INF●630
450 kVAR	560 A	INF●630
495 kVAR	630 A	INF●800
540 kVAR	670 A	INF●800

Coordination tables between circuit breaker and Canalis electrical busbar trunking

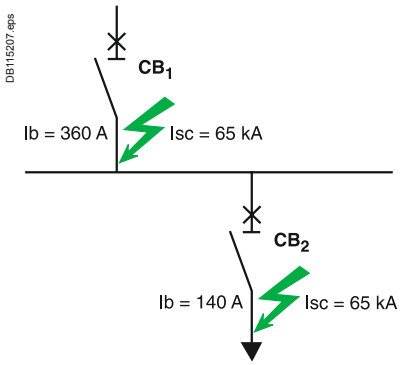
When chosing a circuit breaker to protect a busbar trunking system, it is necessary to take into account:
■ the usual rules concerning the circuit breaker current settings:
Ib ⩽ Ir ⩽ Inc where:
Ib = maximum load current
Ir = circuit breaker current setting
Inc = current rating of the busbar trunking
■ the electrodynamic withstand of the busbar trunking: the peak current Î limited by the circuit breaker must be less than the electrodynamic withstand capacity (or rated peak current) of the busbar trunking.

Coordination tables
The tables for coordinating Schneider Electric.

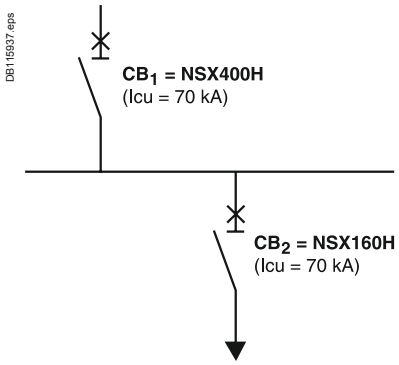
Traditional circuit breaker selection method

The circuit breaker used to protect a distribution circuit is chosen according to two fundamental criteria:
■ the maximum load current Ib flowing in the supply circuit
■ the prospective short-circuit current Isc at a point where the circuit breaker is to be installed.
The circuit breaker is choosen such that:
□ In circuit breaker ⩾ Ib
□ breaking capacity of the circuit breaker ⩾ Isc.

Installation example at 380/415 V



Application for Compact NSX range at 380/415 V

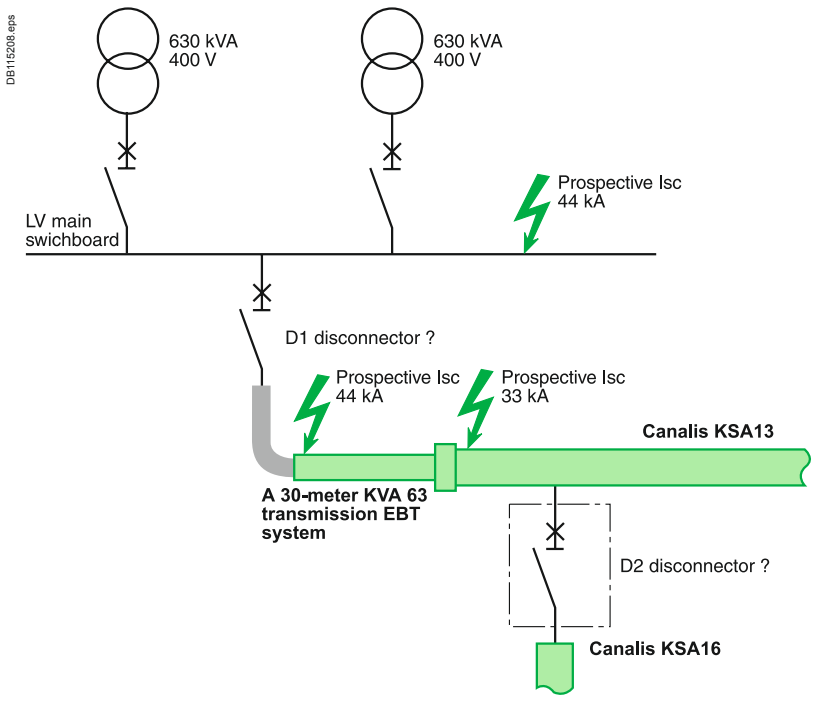


Coordination tables between circuit breaker and Canalis electrical busbar trunking

Example
Consider two 630 kVA/400 V transformer (Usc 4 %) supplying a main LV switchboard for which the prospective short-circuit current on the busbars is 44 kA.
From the switchboard, a 30-metre long Canalis KVA63 transmission electrical busbar trunking system (630 A) supplies a Canalis KSA63 trunking system (630A) for distribution with high-density tap-offs.
A tap-off on the KSA63 trunking supplies a Canalis KSA16 trunking system.
The short-circuit level are respectively:
■ 44 kA downstream of circuit-breaker CB1 and at the upstream connection of the KVA63 trunking
■ 33 kA at the junction between the KVA63 transmission trunking and the KSA63 trunking for high-density tap-offs.

What circuit breakers should be chosen for CB1 and CB2 to protect the installation against short-circuits?

	CB1	CB2
Prospective Isc	44 kA	33 kA
Circuit breakers	NSX630N (50 kA breaking capacity)	NSX160F (36 kA breaking capacity)
Isc protection level for KVA63 trunking	50 kA	
Isc protection level for KVA63 trunking	50 kA	
Isc protection level for KSA16 trunking		35 kA



Coordination tables between circuit breaker and Canalis electrical busbar trunking

Voltage: 220/240 V

Type of Canalis busbar trunking KDP20						
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**		
Type of circuit breaker	C60	C60N 10/16/20	C60H 10/16/20	C60L 10/16/20		
Isc max. in kA rms	iC60	iC60N 10/16/20	iC60H 10/16/20	iC60L 10/16/20		
	NG	NG125N 10/16/20				
Type of Canalis busbar trunking KBA25						
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**	**25 kA**	
Type of circuit breaker	C60	C60N 10/.../25	C60H 10/.../25	C60L 10/.../25	C60L 10/.../25	
Isc max. in kA rms	iC60	iC60N 10/.../25	iC60H 10/.../25	iC60L 10/.../25	iC60L 10/.../25	
	NG	NG125N 10/.../25				
Type of Canalis busbar trunking KBB25						
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**	**25 kA**	
Type of circuit breaker	C60	C60N 10/.../25	C60H 10/.../25	C60L 10/.../25	C60L 10/.../25	
Isc max. in kA rms	iC60	iC60N 10/.../25	iC60H 10/.../25	iC60L 10/.../25	iC60L 10/.../25	
	NG	NG125N 10/.../25				
Type of Canalis busbar trunking KBA40						
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**	**25 kA**	**50 kA**
Type of circuit breaker	C60	C60N 10/.../40	C60H 10/.../40	C60L 40	C60L 10/.../25	
Isc max. in kA rms	iC60	iC60N 10/.../40	iC60H 10/.../40	iC60L 40	iC60L 10/.../25	
	NG	NG125N 10/.../40	NG125N 10/.../40	NG125N 10/.../40	NG125N 10/.../40	NG125L 10/.../40
Type of Canalis busbar trunking KBB40						
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**	**25 kA**	**50 kA**
Type of circuit breaker	C60	C60N 10/.../40	C60H 10/.../40	C60L 40	C60L 10/.../25	
Isc max. in kA rms	iC60	iC60N 10/.../40	iC60H 10/.../40	iC60L 40	iC60L 10/.../25	
	NG	NG125N 10/.../40	NG125N 10/.../40	NG125N 10/.../40	NG125N 10/.../40	NG125L 10/.../40

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Voltage: 380/415 V

Type of Canalis busbar trunking KDP20							
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**			
Type of circuit breaker	C60	C60N 10/16/20	C60H 10/16/20	C60L 10/16/20			
	iC60	iC60N 10/16/20	iC60H 10/16/20	iC60L 10/16/20			
	NG125	NG125N 10/16/20					
Type of Canalis busbar trunking KBA25							
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**	**25 kA**		
Type of circuit breaker	C60	**C60N 10/.../25**	**C60H 10/.../25**	**C60L 10/.../25**	**C60L 10/.../25**		
	iC60	**iC60N 10/.../25**	**iC60H 10/.../25**	**iC60L 10/.../25**	**iC60L 10/.../25**		
	NG125	NG125N 10/.../25					
Type of Canalis busbar trunking KBB25							
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**	**25 kA**		
Type of circuit breaker	C60	**C60N 10/.../25**	**C60H 10/.../25**	**C60L 10/.../25**	**C60L 10/.../25**		
	iC60	**iC60N 10/.../25**	**iC60H 10/.../25**	**iC60L 10/.../25**	**iC60L 10/.../25**		
	NG125	NG125N 10/.../25					
Type of Canalis busbar trunking KBA40							
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**	**25 kA**	**36 kA**	**50 kA**
Type of circuit breaker	C60	**C60N 10/.../40**	**C60H 10/.../40**	**C60L 40**	**C60L 10/.../25**		
	iC60	**iC60N 10/.../40**	**iC60H 10/.../40**	**iC60L 40**	**iC60L 10/.../25**		
	NG125	NG125N 10/.../40	NG125N 10/.../40	NG125N 10/.../40	NG125N 10/.../40	**NG125H 10/.../40**	**NG125L 10/.../40**
Type of Canalis busbar trunking KBB40							
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**	**25 kA**	**36 kA**	**50 kA**
Type of circuit breaker	C60	**C60N 10/.../40**	**C60H 10/.../40**	**C60L 40**	**C60L 10/.../25**		
	iC60	**iC60N 10/.../40**	**iC60H 10/.../40**	**iC60L 40**	**iC60L 10/.../25**		
	NG125	NG125N 10/.../40	NG125N 10/.../40	NG125N 10/.../40	NG125N 10/.../40	**NG125H 10/.../40**	**NG125L 10/.../40**

Type of Canalis busbar trunking KNA40							
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**	**25 kA**		
Type of circuit breaker	C60	**C60N 40**	**C60H 40**	**C60L 40**			
	iC60	**iC60N 40**	**iC60H 40**	**iC60L 40**			
	NG125	NG125N 10/…/40					
	Compact NSX				NSX100B/F/N/H/S/L 40 A		
Type of Canalis busbar trunking KNA63							
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**	**25 kA**	**36 kA**	**50 kA**
Type of circuit breaker	C60	**C60N 63**	**C60H 63**				
	iC60	**iC60N 63**	**iC60H 63**				
	C120	C120N	C120H				
	NG125				**NG125N 63**	**NG125H 63**	**NG125L 63**
	Compact NSX				**NSX100B/F/N/H/S/L**		
Type of Canalis busbar trunking KNA100							
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**	**25 kA**		
Type of circuit breaker	C120	C120N	C120H				
	NG125				NG125N 100		
	Compact NSX			**NSX100B/F/N/H/S/L** NSX160B/F/N/H/S/L	**NSX100B/F/N/H/S/L** NSX160B/F/N/H/S/L		
Type of Canalis busbar trunking KNA160							
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**	**25 kA**	**36 kA**	**50 kA**
Type of circuit breaker	NG125	NG125N 125	NG125N 125	NG125N 125	NG125N 125		
	Compact NSX				NSX100B/F/N/H/S/L	NSX100F/N/H/S/L	NSX100N/H/S/L
					NSX160B/F/N/H/S/L	**NSX160F/N/H/S/L**	**NSX160N/H/S/L**
					NSX250B/F/N/H/S/L	NSX250F/N/H/S/L	NSX250N/H/S/L

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Voltage: 380/415 V

Type of Canalis busbar trunking KSA100							
Isc max. in kA rms		**25 kA**	**36 kA**				
Type of circuit breaker	NG125	**NG125N 100**	**NG125H 100**				
	Compact NSX	**NSX100B/F/N/H/S/L**					
Type of Canalis busbar trunking KSA160							
Isc max. in kA rms		**25 kA**	**36 kA**	**50 kA**	**70 kA**	**90 kA**	
Type of circuit breaker	Compact NSX	NSX100B/F/N/H/S/L **NSX160B/F/N/H/S/L** NSX250B/F/N/H/S/L	NSX100F/N/H/S/L **NSX160F/N/H/S/L** NSX250F/N/H/S/L	NSX100N/H/S/L **NSX160N/H/S/L** NSX250N/H/S/L	NSX100H/S/L **NSX160H/S/L**	NSX100S/L	
Type of Canalis busbar trunking KSA250							
Isc max. in kA rms		**25 kA**	**36 kA**	**50 kA**	**70 kA**	**100 kA**	**150 kA**
Type of circuit breaker	Compact NSX	NSX160B/F/N/H/S/L **NSX250B/F/N/H/S/L** NSX400F/N/H/S/L	NSX160F/N/H/S/L **NSX250F/N/H/S/L** NSX400F/N/H/S/L	NSX160N/H/S/L **NSX250N/H/S/L** NSX400N/H/S/L	NSX160H/S/L **NSX250H/S/L**	NSX160S/L **NSX250S/L**	NSX160L **NSX250L**
Type of Canalis busbar trunking KSA400							
Isc max. in kA rms		**25 kA**	**36 kA**	**50 kA**	**70 kA**	**100 kA**	**150 kA**
Type of circuit breaker	Compact NSX	NSX250B/F/N/H/S/L **NSX400F/N/H/S/L** NSX630F/N/H/S/L	NSX250F/N/H/S/L **NSX400F/N/H/S/L** NSX630F/N/H/S/L	NSX250N/H/S/L **NSX400N/H/S/L** NSX630N/H/S/L	NSX250H/S/L **NSX400H/S/L** NSX630H/S/L	NSX250S/L **NSX400S/L** NSX630S/L	NSX250L **NSX400L** NSX630L
	Compact NS	NS630bN/H/L/LB	NS630bL/LB	NS630bL/LB	NS630bLB		
Type of Canalis busbar trunking KSA500							
Isc max. in kA rms		**25 kA**	**36 kA**	**50 kA**	**70 kA**	**100 kA**	**150 kA**
Type of circuit breaker	Compact NSX	NSX400F **NSX630F**	NSX400F **NSX630F**	NSX400N **NSX630N**	NSX400H **NSX630H**	NSX400S **NSX630S**	NSX400L **NSX630L**
	Compact NS	NS630bN	NS630bN/L/LB	NS630bL/LB	NS630bLB	NS630bLB	
Type of Canalis busbar trunking KSA630							
Isc max. in kA rms		**≤ 32 kA**	**36 kA**	**50 kA**	**70 kA**	**100 kA**	**150 kA**
Type of circuit breaker	Compact NSX	NSX400F **NSX630F**	NSX400F **NSX630F**	NSX400N **NSX630N**	NSX400H **NSX630H**	NSX400S **NSX630S**	NSX400L **NSX630L**
	Compact NS	NS630bN NS800N	NS630bL NS800L	NS630bL NS800L	NS630bL NS800L	NS630bL NS800L	NS630bLB NS800LB
	Masterpact NT	NT06H1 NT08H1	NT06L1 NT08L1	NT06L1 NT08L1	NT06L1 NT08L1	NT06L1 NT08L1	
Type of Canalis busbar trunking KSA800							
Isc max. in kA rms			**36 kA**	**50 kA**	**70 kA**	**100 kA**	**150 kA**
Type of circuit breaker	Compact NSX		NSX630F	NSX630N	NSX630H	NSX630S	NSX630L
	Compact NS		NS630bN **NS800N** NS1000N	NS630bL **NS800L** NS1000L	NS630bL **NS800L** NS1000L	NS630bL **NS800L** NS1000L	NS630bL **NS800L** NS1000L
	Masterpact NT		NT06H1 **NT08H1** NT10H1	NT06L1 **NT08L1** NT10L1	NT06L1 **NT08L1** NT10L1	NT06L1 **NT08L1** NT10L1	NT06L1 **NT08L1** NT10L1
Type of Canalis busbar trunking KSA1000							
Isc max. in kA rms			**36 kA**	**50 kA**	**70 kA**	**100 kA**	**150 kA**
Type of circuit breaker	Compact NS		NS800N **NS1000N** NS1250N	NS800L **NS1000L**	NS800L **NS1000L**	NS800L **NS1000L**	NS800L **NS1000L**
	Masterpact NT		NT08H1 **NT10H1** NT12H1	NT08L1 **NT10L1**	NT08L1 **NT10L1**	NT08L1 **NT10L1**	NT08L1 **NT10L1**

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Voltage: 380/415 V

Type of Canalis busbar trunking KTA0800

Isc max. in kA rms		≤ 30 kA	50 kA	65 kA	85 kA	100 kA	150 kA
Type of circuit breaker	Compact NSX	NSX630F (≥ 36 kA)	NSX630N/H/S/L	NSX630H/S/L	NSX630S/L	NSX630S/L	NSX630L
	Compact NSX	NS630bN **NS800N** NS1000N			NS630bL **NS800L** NS1000L		NS630bLB **NS800LB**
	Masterpact NT	NT06 H1 **NT08 H1** NT10 H1			NT06 L1 **NT08 L1** NT10 L1		
	Masterpact NW	**NW08H1** NW10H1					

Type of Canalis busbar trunking KTA0800 reinforced short-circuit level

Isc max. in kA rms		≤ 30 kA	50 kA	65 kA	85 kA	100 kA	150 kA
Type of circuit breaker	Compact NSX	NSX630F (≥ 36 kA)	NSX630N/H/S/L	NSX630H/S/L	NSX630S/L	NSX630S/L	NSX630L
	Compact NSX	NS630bN **NS800N** NS1000N				NS630bL **NS800L** NS1000L	NS630bLB **NS800LB**
	Masterpact NT	NT06 H1 **NT08 H1** NT10 H1				NT06 L1 **NT08 L1** NT10 L1	
	Masterpact NW	**NW08H1** NW10H1					

Type of Canalis busbar trunking KTA1000 / KTC1000

Isc max. in kA rms		42 kA	50 kA	65 kA	85 kA	100 kA	150 kA
Type of circuit breaker	Compact NS		NS800N **NS1000N** NS1250N				NS800L **NS1000L**
	Masterpact NT	NT08H1 **NT10H1** NT12H1	NT08H2 **NT10H2** NT12H2				NT08L1 **NT10L1**
	Masterpact NW	NW08N1 **NW10N1** NW12N1	NW08H1 **NW10H1** NW12H1				

Type of Canalis busbar trunking KTC1000 / KTC1000 reinforced short-circuit level

Isc max. in kA rms		42 kA	50 kA	65 kA	85 kA	100 kA	150 kA
Type of circuit breaker	Compact NS		NS800N **NS1000N**	NS800H **NS1000H** NS1250H			NS800L **NS1000L**
	Masterpact NT	NT08H1 **NT10H1** NT12H1	NT08H2 **NT10H2** NT12H2				NT08L1 **NT10L1**
	Masterpact NW	NW08N1 **NW10N1** NW12N1		NW08H1 **NW10H1** NW12H1	NW08L1 **NW10L1** NW12L1		

Type of Canalis busbar trunking KTA1250 / KTC1350

Isc max. in kA rms		42 kA	50 kA	65 kA	85 kA	100 kA	150 kA
Type of circuit breaker	Compact NS		NS1000N **NS1250N** **NS1600N**				NS1000L
	Masterpact NT	NT10H1 **NT12H1** **NT16H1**	NT10H2 **NT12H2** **NT16H2**				NT10L1
	Masterpact NW	NW10N1 **NW12N1** **NW16N1**	NW10H1 **NW12H1** **NW16H1**				

Type of Canalis busbar trunking KTA1250 / KTC1350 reinforced short-circuit level

Isc max. in kA rms		42 kA	50 kA	65 kA	85 kA	100 kA	150 kA
Type of circuit breaker	Compact NS		NS1000N **NS1250N** **NS1600N**	NS1000H **NS1250H** **NS1600H**			NS1000L
	Masterpact NT	NT10H1 **NT12H1** **NT16H1**	NT10H2 **NT12H2** **NT16H2**				NT10L1
	Masterpact NW	NW10N1 **NW12N1** **NW16N1**		NW10H1 **NW12H1** **NW16H1**	NW10L1 **NW12L1** **NW16L1**		

Type of Canalis busbar trunking KTA1600 / KTC1600

Isc max. in kA rms		42 kA	50 kA	65 kA	85 kA	100 kA	150 kA
Type of circuit breaker	Compact NS		NS1250N **NS1600N**	NS1250H **NS1600H** **NS1600bN** NS2000N			
	Masterpact NT	NT12H1 **NT16H1**	NT12H2 **NT16H2**				
	Masterpact NW	NW12N1 **NW16N1** NW20H1		NW12H1 **NW16H1** NW20H1	NW12L1 **NW16L1** NW20L1		

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Voltage: 380/415 V

Type of Canalis busbar trunking KTA1600 / KTC1600 reinforced short-circuit level							
Isc max. in kA rms		**42 kA**	**50 kA**	**65 kA**	**85 kA**	**100 kA**	**150 kA**
Type of circuit breaker	Compact NS		NS1250N	NS1250H NS1600H **NS1600bN** NS2000N	 **NS1600bH** NS2000H		
	Masterpact NT	NT12H1 **NT16H1**	NT12H2 **NT16H2**				
	Masterpact NW	NW12N1 **NW16N1**		NW12H1 **NW16H1** NW20H1	NW12H2 **NW16H2** NW20H2		NW12L1 **NW16L1** NW20L1
Type of Canalis busbar trunking KTA2000 / KTC2000							
Isc max. in kA rms		**42 kA**	**50 kA**	**65 kA**	**85 kA**	**100 kA**	**150 kA**
Type of circuit breaker	Compact NS			NS1600bN **NS2000N**			
	Masterpact NT	NT16H1	NT16H2				
	Masterpact NW	NW16N1 **NW20H1** NW25H1		NW16H1 **NW20H1** NW25H1		NW16 L1 **NW20L1**	
Type of Canalis busbar trunking KTA2000 / KTC2000 reinforced short-circuit level							
Isc max. in kA rms		**42 kA**	**50 kA**	**65 kA**	**85 kA**	**100 kA**	**150 kA**
Type of circuit breaker	Compact NS			NS1600bN **NS2000N**	NS1600bH **NS2000H**		
	Masterpact NT	NT16H1	NT16H2				
	Masterpact NW	NW16N1 **NW20H1** NW25H1		NW16H1 **NW20H1** NW25H1		NW16H2 **NW20H2** NW25H2	NW16L1 **NW20L1**
Type of Canalis busbar trunking KTA2500 / KTC2500							
Isc max. in kA rms				**65 kA**	**80 kA**	**100 kA**	**150 kA**
Type of circuit breaker	Masterpact NW			NW20H1 **NW25H1** NW32H1	NW20H2 **NW25H2** NW32H2	NW20L1	NW20L1
Type of Canalis busbar trunking KTA2500 / KTC2500 reinforced short-circuit level							
Isc max. in kA rms				**65 kA**	**80 kA**	**100 kA**	**110 kA**
Type of circuit breaker	Masterpact NW			NW20H1 **NW25H1** NW32H1		NW20H2 **NW25H2** NW32H2	NW20L1 (150 kA) **NW25H3** NW32H3
Type of Canalis busbar trunking KTA3200 / KTC3200							
Isc max. in kA rms				**65 kA**	**85 kA**	**100 kA**	**110 kA**
Type of circuit breaker	Masterpact NW			NW25H1 **NW32H1** NW40H1	NW25H2 **NW32H2** NW40H2 NW40bH1		
Type of Canalis busbar trunking KTA3200 / KTC3200 reinforced short-circuit level							
Isc max. in kA rms				**65 kA**		**100 kA**	**110 kA**
Type of circuit breaker	Masterpact NW			NW25H1 **NW32H1** NW40H1		NW25H2 **NW32H2** NW40H2 NW40bH1	 **NW32H3** NW40H3 NW40bH2
Type of Canalis busbar trunking KTA4000 / KTC4000							
Isc max. in kA rms				**65 kA**	**90 kA**	**100 kA**	**110 kA**
Type of circuit breaker	Masterpact NW			NW32H1 **NW40H1** NW40bH1 NW50H1	NW32H2 **NW40H2** NW40bH1 NW50H1		
Type of Canalis busbar trunking KTA4000 / KTC4000 reinforced short-circuit level							
Isc max. in kA rms				**65 kA**		**100 kA**	**120 kA**
Type of circuit breaker	Masterpact NW			NW32H1 **NW40H1** NW40bH1 NW50H1		NW32H2 **NW40H2** NW40bH1 NW50H1	NW32H3 **NW40H3** NW40bH2 NW50H2
Type of Canalis busbar trunking KTC5000							
Isc max. in kA rms				**65 kA**		**95 kA**	
Type of circuit breaker	Masterpact NW			NW40H1		NW40H2 NW40bH1 **NW50H1** NW63H1	
Type of Canalis busbar trunking KTC5000 reinforced short-circuit level							
Isc max. in kA rms				**65 kA**		**95 kA**	**120 kA**
Type of circuit breaker	Masterpact NW			NW40H1 NW40bH1 **NW50H1** NW63H1		NW40H2 NW40bH1 **NW50H1** NW63H1	NW40H3 NW40bH2 **NW50H2** NW63H2

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Voltage: 660/690 V

Type of Canalis busbar trunking KSA100							
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**			
Type of circuit breaker	Compact NSX	**NSX100N/H/S/L** NSX160N/H/S/L NSX250N/H/S/L	**NSX100S/L** NSX160S/L NSX250S/L	**NSX100L**			
	Compact NS						
Type of Canalis busbar trunking KSA160							
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**	**45 kA**		
Type of circuit breaker	Compact NSX	NSX100N/H/S/L **NSX160N/H/S/L** NSX250N/H/S/L	NSX100S/L **NSX160S/L** NSX250S/L	NSX100L **NSX160L** NSX250L	NSX100R		
	Compact NS						
Type of Canalis busbar trunking KSA250							
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**	**45kA**	**75 kA**	**100 kA**
Type of circuit breaker	Compact NSX	NSX160N/H/S/L **NSX250N/H/S/L** NSX400F/N/H/S/L	NSX160S/L **NSX250S/L** NSX400H/S/L	NSX160L **NSX250L** NSX400/S/L	**NSX250R**	**NSX250HB1**	**NSX250HB2**
	Compact NS						
Type of Canalis busbar trunking KSA400							
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**	**45kA**	**75 kA**	**100 kA**
Type of circuit breaker	Compact NSX	NSX250N/H/S/L **NSX400F/N/H/S/L** NSX630F/N/H/S/L	NSX250S/L	NSX250L **NSX400H/S/L** NSX630H/S/L	**NSX400R** NSX630R	**NSX400HB1**	**NSX400HB2**
	Compact NS			NS630bN		NS630bLB	
Type of Canalis busbar trunking KSA500							
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**	**45 kA**	**75 kA**	**100 kA**
Type of circuit breaker	Compact NSX	NSX400F/N/H/S/L **NSX630F/N/H/S/L**		NSX400H/S/L **NSX630H/S/L**	NSX400R **NSX630R**	NSX400HB1 **NSX630HB1**	NSX400HB2 NSX630HB2
	Compact NS			NS630bN NS800N		**NS630bLB** NS800LB	
Type of Canalis busbar trunking KSA630							
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**	**45 kA**	**75 kA**	**100 kA**
Type of circuit breaker	Compact NSX	NSX400F/N/H/S/L **NSX630F/N/H/S/L**	NSX400H/S/L **NSX630H/S/L**	NSX400/S/L **NSX630/S/L**	NSX400R **NSX630R**	NSX400HB1 **NSX630HB1**	NSX400HB2 NSX630HB2
	Compact NS			NS630bN NS800N		NS630bLB NS800LB	
Type of Canalis busbar trunking KSA800							
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**	**30 kA**	**35 kA**	**75 kA**
Type of circuit breaker	Compact NSX	**NSX630F/N/H/S/L**	**NSX630H/S/L**	**NSX630/S/L**	NSX630R	NSX630R	NSX630HB1
	Compact NS				**NS630bN** NS800N NS1000N	**NS630bH** NS800H NS1000H	**NS630bLB** NS800LB
Type of Canalis busbar trunking KSA1000							
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**	**30 kA**	**35 kA**	**75 kA**
Type of circuit breaker	Compact NS				NS800N **NS1000N** NS1250N	NS800H **NS1000H** NS1250H	NS800LB
	Masterpact NT					NT08H1/H2 NT10H1/H2 NT12H1/H2	
	Masterpact NW					NW08N1 **NW10N1** NW12N1	

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Voltage: 660/690 V

Type of Canalis busbar trunking KTA1000 / KTC1000							
Isc max. in kA rms		**30 kA**	**42 kA**	**50 kA**	**65 kA**	**75 kA**	**100 kA**
Type of circuit breaker	Compact NS	NS800N **NS1000N** NS1250N	NS800H **NS1000H** NS1250H			NS800LB	
	Masterpact NT		NT08H1/H2 **NT10H1/H2** NT12H1/H2				
	Masterpact NW		NW08N1 **NW10N1** NW12N1	NW08H1 **NW10H1** NW12H1			
Type of Canalis busbar trunking KTA1000 / KTC1000 reinforced short-circuit level							
Isc max. in kA rms		**30 kA**	**42 kA**	**50 kA**	**65 kA**	**75 kA**	**100 kA**
Type of circuit breaker	Compact NS	NS800N **NS1000N** NS1250N	NS800H **NS1000H** NS1250H			NS800LB	
	Masterpact NT		NT08H1/H2 NT10H1/H2 NT12H1/H2				
	Masterpact NW		NW08N1 **NW10N1** NW12N1		NW08H1 **NW10H1** NW12H1		
Type of Canalis busbar trunking KTA1250 / KTC1350							
Isc max. in kA rms		**30 kA**	**42 kA**	**50 kA**	**65 kA**	**75 kA**	**100 kA**
Type of circuit breaker	Compact NS	NS1000N NS1250N NS1600N	NS1000H NS1250H NS1600H	NS1600bN			
	Masterpact NT		NT10H1/H2 NT12H1/H2 NT16H1/H2				
	Masterpact NW		NW10N1 NW12N1 NW16N1	NW10H1 NW12H1 NW16H1			
Type of Canalis busbar trunking KTA1250 / KTC1350 reinforced short-circuit level							
Isc max. in kA rms		**30 kA**	**42 kA**	**50 kA**	**65 kA**	**75 kA**	**100 kA**
Type of circuit breaker	Compact NS	NS1000N NS1250N NS1600N	NS1000H NS1250H NS1600H	NS1600bN	NS1600bN		
	Masterpact NT		NT10H1/H2 NT12H1/H2 NT16H1/H2				
	Masterpact NW		NW10N1 NW12N1 NW16N1	NW10H1 NW12H1 NW16H1	NW10H1 NW12H1 NW16H1	NW10L1 NW12L1 NW16L1	
Type of Canalis busbar trunking KTA1600 / KTC1600							
Isc max. in kA rms		**30 kA**	**42 kA**	**50 kA**	**65 kA**	**75 kA**	**100 kA**
Type of circuit breaker	Compact NS	NS1250N NS1600N	NS1250H NS1600H		NS1600bN NS2000N		
	Masterpact NT		NT12H1/H2 **NT16H1/H2**				
	Masterpact NW		NW12N1 **NW16N1**		NW12H1 **NW16H1** NW20H1	NW12L1 **NW16L1** NW20 L1	
Type of Canalis busbar trunking KTA1600 / KTC1600 reinforced short-circuit level							
Isc max. in kA rms		**30 kA**	**42 kA**	**50 kA**	**65 kA**	**75 kA**	**100 kA**
Type of circuit breaker	Compact NS	NS1250N NS1600N	NS1250H NS1600H		NS1600bN NS2000N		
	Masterpact NT		NT12H1/H2 **NT16H1/H2**				
	Masterpact NW		NW12N1 **NW16N1**		NW12H1 **NW16H1** NW20H1	NW12H2 **NW16H2** NW20H2	NW12L1 **NW16L1** NW20L1

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Voltage: 660/690 V

Type of Canalis busbar trunking KTA2000 / KTC2000							
Isc max. in kA rms		**30 kA**	**42 kA**	**50 kA**	**65 kA**	**75 kA**	**100 kA**
Type of circuit breaker	Compact NS	NS1600N	NS1600H		NS1600bN NS2000N NS2500N		
	Masterpact NT		NT16H1/H2				
	Masterpact NW		NW16N1		NW16H1 **NW20H1** NW25H1		NW16L1 **NW20L1**
Type of Canalis busbar trunking KTA2000 / KTC2000 reinforced short-circuit level							
Isc max. in kA rms		**30 kA**	**42 kA**	**50 kA**	**65 kA**	**85 kA**	**100 kA**
Type of circuit breaker	Compact NS	NS1600N	NS1600H		NS1600bN NS2000N NS2500N		
	Masterpact NT		NT16H1/H2				
	Masterpact NW		NW16N1		NW16H1 **NW20H1** NW25H1	NW16H2 **NW20H2** NW25H2	NW16L1 **NW20H3** NW25H3
Type of Canalis busbar trunking KTA2500 / KTC2500							
Isc max. in kA rms		**30 kA**	**42 kA**	**50 kA**	**65 kA**	**85 kA**	**100 kA**
Type of circuit breaker	Compact NS				NS2000N NS2500N NS3200N		
	Masterpact NT		NT16H1/H2				
	Masterpact NW				NW20H1 **NW25H1** NW32H1	NW20H2 **NW25H2** NW32H2	NW20L1
Type of Canalis busbar trunking KTA2500 / KTC2500 reinforced short-circuit level							
Isc max. in kA rms		**30 kA**	**42 kA**	**50 kA**	**65 kA**	**80 kA**	**100 kA**
Type of circuit breaker	Compact NS				NS2000N NS2500N NS3200N		
	Masterpact NT		NT16H1/H2				
	Masterpact NW				NW20H1 **NW25H1** NW32H1	NW20H2 **NW25H2** NW32H2	NW20H3 **NW25H3** NW32H3
Type of Canalis busbar trunking KTA3200 / KTC3200							
Isc max. in kA rms		**30 kA**	**42 kA**	**50 kA**	**65 kA**	**85 kA**	**100 kA**
Type of circuit breaker	Compact NS				NS2500N NS3200N		
	Masterpact NW				NW25H1 **NW32H1** NW40H1	NW25H2 **NW32H2** NW40H2 NW40b H1/H2	
Type of Canalis busbar trunking KTA3200 / KTC3200 reinforced short-circuit level							
Isc max. in kA rms		**30 kA**	**42 kA**	**50 kA**	**65 kA**	**85 kA**	**100 kA**
Type of circuit breaker	Compact NS				NS2500N NS3200N		
	Masterpact NW				NW25H1 **NW32H1** NW40H1	NW25H2 **NW32H2** NW40H2	NW25H3 **NW32H3** NW40H3 NW40bH1/2
Type of Canalis busbar trunking KTA4000 / KTC4000							
Isc max. in kA rms		**30 kA**	**42 kA**	**50 kA**	**65 kA**	**85 kA**	**100 kA**
Type of circuit breaker	Compact NS				NS3200N		
	Masterpact NW				NW32H1 **NW40H1**	NW32H2 **NW40H2** **NW40bH1/H2** NW50H1/H2	
Type of Canalis busbar trunking KTA4000 / KTC4000 reinforced short-circuit level							
Isc max. in kA rms		**30 kA**	**42 kA**	**50 kA**	**65 kA**	**85 kA**	**100 kA**
Type of circuit breaker	Compact NS				NS3200N		
	Masterpact NW				NW32H1 **NW40H1**	NW32H2 **NW40H2**	NW32H3 **NW40H3** **NW40bH1/H2** NW50H1/H2
Type of Canalis busbar trunking KTC5000							
Isc max. in kA rms		**30 kA**	**42 kA**	**50 kA**	**65 kA**	**85 kA**	**95 kA**
Type of circuit breaker	Masterpact NW				NW40H1	NW40H2	NW40H3 NW40bH1/H2 **NW50H1/H2** NW63H1/H2
Type of Canalis busbar trunking KTC5000 reinforced short-circuit level							
Isc max. in kA rms		**30 kA**	**42 kA**	**50 kA**	**65 kA**	**85 kA**	**100 kA**
Type of circuit breaker	Masterpact NW				NW40H1	NW40H2	NW40H3 NW40bH1/H2 **NW50H1/H2** NW63H1/H2

Notes

Notes

Schneider Electric Industries SAS

35, rue Joseph Monier
CS 30323
92506 Rueil Malmaison Cedex
France

RCS Nanterre 954 503 439
Capital social 896 313 776 €
www.schneider-electric.com

As standards, specifications and designs change from time to time, please ask for confirmation of the information given in this publication.

Publication: Schneider Electric Industries SAS
Photos: Schneider Electric
Publishing: Altavia St Etienne

This document has been printed on ecological paper.