Low Voltage

Complementary technical information

Catalogue

2007

Merlin Gerin
Square D
Telemecanique

Schneider Electric

General contents

Contents

Protection discrimination

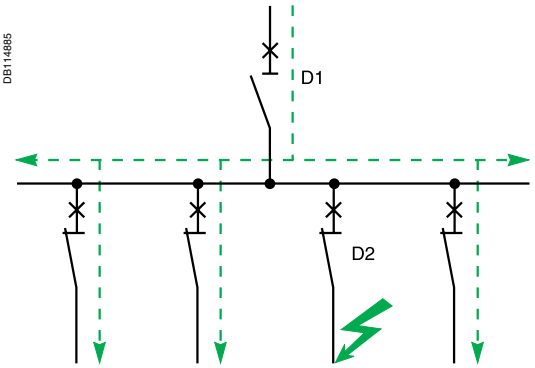
Contents

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.

Protection discrimination

Protection discrimination is an essential element that must be taken into account starting at the design stage of a low voltage installation to ensure the highest level of availability for users.
Discrimination is important in all installations for the comfort of users, however it is fundamental in installations requiring a high level of service continuity, e.g. industrial manufacturing processes.
Industrial installations without discrimination run a series of risks of varying importance including:
- production deadline overruns
- interruption in manufacturing, entailing:
  - production or finished-product losses
  - risk of damage to production machines in continuous processes
- restarting of machines, one by one, following a general power outage
- shutdown of vital safety equipment such as lubrification pumps, smoke fans, etc.



What is discrimination?

Discrimination, also called selectivity, is the coordination of automatic protection devices in such a manner that a fault appearing at a given point in a network is cleared by the protection device installed immediately upstream of the fault, and by that device alone.

- **total discrimination**

Discrimination is said to be total if, for all fault current values, from overloads up to the non-resistive short-circuit current, circuit breaker D2 opens and D1 remains closed.

- **partial discrimination**

Discrimination is partial if the above condition is not respected up to the full short-circuit current, but only to a lesser value termed the selectivity limit current (Is).

- **no discrimination**

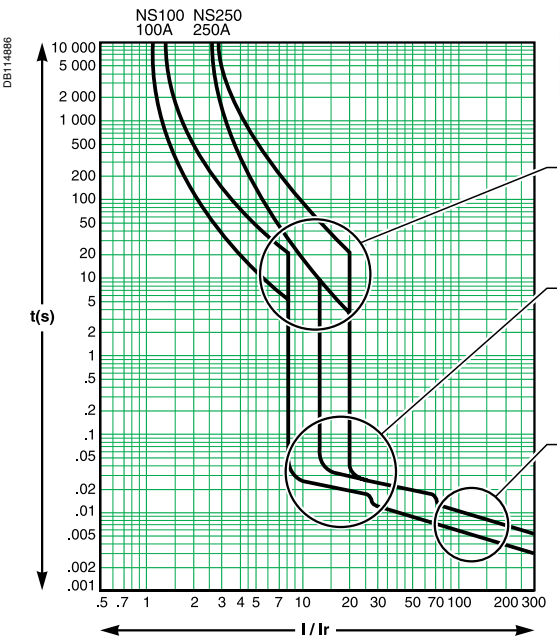
In the event of a fault, both circuit breakers D1 and D2 open.

Total discrimination as standard with the new Masterpact NT/NW circuit breakers

Thanks to their highly innovative design and the exeptional performance of their control units, the new Masterpact NT and NW circuit breakers offer total discrimination with downstream Compact NS devices up to 630 A as standard (1).

Natural discrimination with Compact NS circuit breakers

Due to the Roto-active breaking technique employed by the Compact NS, the combined use of Merlin Gerin circuit breakers provides an exceptional level of protection discrimination.
This is the result of the implementation and optimisation of three different techniques:
- current discrimination
- time discrimination
- energy discrimination.



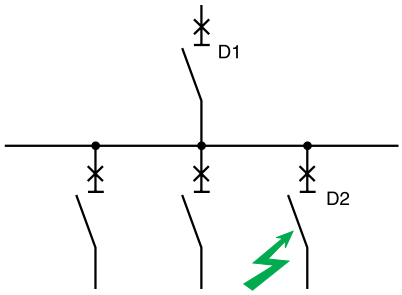
Overload protection: current discrimination
Discrimination is ensured if the ratio between setting thresholds is greater than 1.6 (for distribution circuit breakers).
Low short-circuit protection: current discrimination

Tripping of the upstream device is slightly delayed to ensure that the downstream device trips first.
Discrimination is ensured if the ratio between the short-circuit thresholds is greater than 1.5.
High short-circuit protection: time discrimination

***This protection system combines the exceptional** current limiting capacity of the Compact NS and the advantages of reflex tripping, sensitive to the energy dissipated in the device by the short-circuit. In the event of a high short-circuit detected by two circuit breakers, the downstream device limits it sharply. The energy dissipated in the upstream device is not sufficient to trip it, i.e. discrimination is total for all short-circuit currents.*
Discrimination is ensured if the ratio between the circuit breaker ratings is greater than 2.

***(1)** Except for the L1 performance level on Masterpact NT and subject to the discrimination rules on page 7.*

Protection discrimination



Discrimination between two distribution circuit breakers.

How to use the discrimination tables

■ **for discrimination between 2 distribution circuit breakers**

Combinations providing full discrimination are indicated by the symbol T.
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 circuit breakers 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:

D1	Application	D2	Ratio between upstream and downstream settings	
			Thermal protection Ir up/Ir down	Magnetic protection Im up/Im down
TM…D	Distribution	TM…D or Multi9	⩾ 1.6	⩾ 2
		STR…SE/GE	⩾ 1.6	⩾ 1.5
STR2.. or 3.. fixed long time delay	Distribution	TM…D or Multi9	⩾ 2.5	⩾ 1.5
		STR…SE/GE	⩾ 1.6	⩾ 1.5
Micrologic 2/5/6/7.0 STR5.. or 6. with adjustable long time delay (1)	Distribution	TM…D or Multi9	⩾ 1.6	⩾ 1.5
		STR…SE/GE Micrologic 2/5/6/7.0	⩾ 1.3	⩾ 1.5

(1) *When upstream and/or downstream control units have adjustable long time delays, adjustement must be such as upstream delay is longer than downstream delay (1 step difference).*

Protection discrimination

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

Upstream		**iDPN** B curve										
In (A)		**1**	**2**	**3**	**4**	**6**	**10**	**16**	**20**	**25**	**32**	**40**
Downstream	**Rating**											
Discrimination limit (A)												
iDPN B curve	**1**		8	12	16	25	40	63	80	100	125	160
	2			12	16	25	40	63	80	100	125	160
	3					25	40	63	80	100	125	160
	4					25	40	63	80	100	125	160
	6						40	63	80	100	125	160
	10							63	80	100	125	160
	16									100	125	160
	20										125	160
	25											160
	32											
	40											
Discrimination limit (A)												
iDPN C curve	**1**		8	12	16	25	40	63	80	100	125	160
	2				16	25	40	63	80	100	125	160
	3					25	40	63	80	100	125	160
	4						40	63	80	100	125	160
	6							63	80	100	125	160
	10								80	100	125	160
	16										125	160
	20											160
	25											
	32											
	40											
Discrimination limit (A)												
iDPN D curve	**1**				16	25	40	63	80	100	125	160
	2					25	40	63	80	100	125	160
	3						40	63	80	100	125	160
	4							63	80	100	125	160
	6								80	100	125	160
	10										125	160
	16											160
	20											
	25											
	32											
	40											

400 *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

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

Upstream		iDPN C curve										
In (A)		1	2	3	4	6	10	16	20	25	32	40
Downstream	**Rating**											
Discrimination limit (A)												
iDPN B curve	**1**		16	25	32	50	80	125	160	200	250	320
	2			25	32	50	80	125	160	200	250	320
	3				32	50	80	125	160	200	250	320
	4					50	80	125	160	200	250	320
	6						80	125	160	200	250	320
	10							125	160	200	250	320
	16								160	200	250	320
	20										250	320
	25											320
	32											
	40											
Discrimination limit (A)												
iDPN C curve	**1**		16	25	32	50	80	125	160	200	250	320
	2			25	32	50	80	125	160	200	250	320
	3				32	50	80	125	160	200	250	320
	4					50	80	125	160	200	250	320
	6						80	125	160	200	250	320
	10							125	160	200	250	320
	16								160	200	250	320
	20										250	320
	25											320
	32											
	40											
Discrimination limit (A)												
iDPN D curve	**1**		16	25	32	50	80	125	160	200	250	320
	2				32	50	80	125	160	200	250	320
	3					50	80	125	160	200	250	320
	4						80	125	160	200	250	320
	6							125	160	200	250	320
	10								160	200	250	320
	16									200	250	320
	20											320
	25											
	32											
	40											

400 *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

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

Upstream		iDPN D curve										
In (A)		1	2	3	4	6	10	16	20	25	32	40
Downstream	**Rating**											
Discrimination limit (A)												
iDPN B curve	**1**	12	24	40	50	72	125	200	250	300	400	500
	2			40	50	72	125	200	250	300	400	500
	3					72	125	200	250	300	400	500
	4					72	125	200	250	300	400	500
	6						125	200	250	300	400	500
	10							200	250	300	400	500
	16									300	400	500
	20										400	500
	25											500
	32											
	40											
Discrimination limit (A)												
iDPN C curve	**1**	12	24	40	50	72	125	200	250	300	400	500
	2			40	50	72	125	200	250	300	400	500
	3					72	125	200	250	300	400	500
	4					72	125	200	250	300	400	500
	6						125	200	250	300	400	500
	10							200	250	300	400	500
	16									300	400	500
	20										400	500
	25											500
	32											
	40											
Discrimination limit (A)												
iDPN D curve	**1**	12	24	40	50	72	125	200	250	300	400	500
	2			40	50	72	125	200	250	300	400	500
	3					72	125	200	250	300	400	500
	4					72	125	200	250	300	400	500
	6						125	200	250	300	400	500
	10							200	250	300	400	500
	16									300	400	500
	20										400	500
	25											500
	32											
	40											

400 *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

Upstream: C60N/H/L, B curve
Downstream: iDPN, C60, B, C, D curves

Upstream		C60N/H/L B curve											
In (A)		**2**	**3**	**4**	**6**	**10**	**16**	**20**	**25**	**32**	**40**	**50**	**63**
Downstream	**Rating**												
Discrimination limit (A)													
iDPN, C60 B curve	**1**			16	25	40	63	80	100	125	160	200	250
	2			16	25	40	63	80	100	125	160	200	250
	3				25	40	63	80	100	125	160	200	250
	4				25	40	63	80	100	125	160	200	250
	6					40	63	80	100	125	160	200	250
	10						63	80	100	125	160	200	250
	16								100	125	160	200	250
	20									125	160	200	250
	25										160	200	250
	32											200	250
	40												250
	50/63												
Discrimination limit (A)													
iDPN, C60 C curve	**1**			16	25	40	63	80	100	125	160	200	250
	2			16	25	40	63	80	100	125	160	200	250
	3				25	40	63	80	100	125	160	200	250
	4					40	63	80	100	125	160	200	250
	6						63	80	100	125	160	200	250
	10							80	100	125	160	200	250
	16									125	160	200	250
	20										160	200	250
	25											200	250
	32												250
	40												
	50/63												
Discrimination limit (A)													
iDPN, C60 D curve	**1**			16	25	40	63	80	100	125	160	200	250
	2				25	40	63	80	100	125	160	200	250
	3					40	63	80	100	125	160	200	250
	4						63	80	100	125	160	200	250
	6							80	100	125	160	200	250
	10									125	160	200	250
	16										160	200	250
	20											200	250
	25												250
	32												
	40												
	50/63												

400 *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

Upstream: C60N/H/L, C curve
Downstream: iDPN, C60, B, C, D curves

Upstream		C60N/H/L C curve											
In (A)		2	3	4	6	10	16	20	25	32	40	50	63
Downstream	**Rating**												
Discrimination limit (A)													
iDPN, C60 B curve	**1**			32	50	80	125	160	200	250	320	400	500
	2			32	50	80	125	160	200	250	320	400	500
	3				50	80	125	160	200	250	320	400	500
	4				50	80	125	160	200	250	320	400	500
	6					80	125	160	200	250	320	400	500
	10						125	160	200	250	320	400	500
	16								200	250	320	400	500
	20									250	320	400	500
	25										320	400	500
	32											400	500
	40												500
	50/63												
Discrimination limit (A)													
iDPN, C60 C curve	**1**			32	50	80	125	160	200	250	320	400	500
	2			32	50	80	125	160	200	250	320	400	500
	3				50	80	125	160	200	250	320	400	500
	4				50	80	125	160	200	250	320	400	500
	6					80	125	160	200	250	320	400	500
	10						125	160	200	250	320	400	500
	16								200	250	320	400	500
	20									250	320	400	500
	25										320	400	500
	32											400	500
	40												500
	50/63												
Discrimination limit (A)													
iDPN, C60 D curve	**1**			32	50	80	125	160	200	250	320	400	500
	2			32	50	80	125	160	200	250	320	400	500
	3				50	80	125	160	200	250	320	400	500
	4					80	125	160	200	250	320	400	500
	6						125	160	200	250	320	400	500
	10							160	200	250	320	400	500
	16								200	250	320	400	500
	20										320	400	500
	25											400	500
	32												500
	40												
	50/63												

400 *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

Upstream: C60N/H D curve, C60L K curve
Downstream: iDPN, C60, B, C, D curves

Upstream		**C60N/H** D curve **C60L** K curve											
In (A)		**2**	**3**	**4**	**6**	**10**	**16**	**20**	**25**	**32**	**40**	**50**	**63**
Downstream	**Rating**												
Discrimination limit (A)													
iDPN, C60 B curve	**1**			50	72	125	200	250	300	400	500	630	800
	2			50	72	125	200	250	300	400	500	630	800
	3				72	125	200	250	300	400	500	630	800
	4				72	125	200	250	300	400	500	630	800
	6					125	200	250	300	400	500	630	800
	10						200	250	300	400	500	630	800
	16								300	400	500	630	800
	20									400	500	630	800
	25										500	630	800
	32											630	800
	40												800
	50/63												
Discrimination limit (A)													
iDPN, C60 C curve	**1**			50	72	125	200	250	300	400	500	630	800
	2			50	72	125	200	250	300	400	500	630	800
	3				72	125	200	250	300	400	500	630	800
	4				72	125	200	250	300	400	500	630	800
	6					125	200	250	300	400	500	630	800
	10						200	250	300	400	500	630	800
	16								300	400	500	630	800
	20									400	500	630	800
	25										500	630	800
	32											630	800
	40												800
	50/63												
Discrimination limit (A)													
iDPN, C60 D curve	**1**			50	72	125	200	250	300	400	500	630	800
	2			50	72	125	200	250	300	400	500	630	800
	3				72	125	200	250	300	400	500	630	800
	4				72	125	200	250	300	400	500	630	800
	6					125	200	250	300	400	500	630	800
	10						200	250	300	400	500	630	800
	16								300	400	500	630	800
	20									400	500	630	800
	25										500	630	800
	32											630	800
	40												800
	50/63												

400 *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

Upstream: C120N/H, B curve
Downstream: iDPN, C60, B, C, D curves

Upstream		C120N/H B curve										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**Rating**											
Discrimination limit (A)												
iDPN B curve	**6**		63	80	400	500	700	800	3000	T	T	T
	10			80	100	100	500	600	1800	3000	T	T
	16				100	125	160	200	1000	2000	3300	3750
	20					125	160	200	1000	1600	2500	3700
	25						160	200	800	1300	2100	3700
	32							200	600	1000	1800	2700
	40								250	320	1600	2400
Discrimination limit (A)												
iDPN C curve	**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	63	300	500	700	1000	1500	T	T	T	T
	6		63	80	400	500	700	800	3000	T	T	T
	10				100	350	500	600	1800	3000	4000	T
	16					125	340	450	1000	2000	3300	3700
	20						160	200	1000	1600	2500	3700
	25							200	800	1300	2100	3700
	32								600	1000	1800	2700
	40									320	1600	2400
Discrimination limit (A)												
iDPN, C60 D curve	**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	63	300	500	700	1000	1500	T	T	T	T
	6		63	80	400	500	700	800	3000	T	T	T
	10				100	350	500	600	1800	3000	4000	T
	16						340	450	1000	2000	3300	3700
	20							200	1000	1600	2500	3700
	25								800	1300	2100	3700
	32									1000	1800	2700
	40										1600	2400

400 *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

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

Upstream		C120N/H B curve										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**Rating**											
Discrimination limit (A)												
C120N/H B curve	**10**			80	100	125	160	200	250	320	400	500
	16					125	160	200	250	320	400	500
	20						160	200	250	320	400	500
	25							200	250	320	400	500
	32								250	320	400	500
	40									320	400	500
	50										400	500
	63											500
	80											
	100											
	125											
Discrimination limit (A)												
C120N/H C curve	**10**					125	160	200	250	320	400	500
	16								250	320	400	500
	20								250	320	400	500
	25										400	500
	32											500
	40											
	50											
	63											
	80											
	100											
	125											
Discrimination limit (A)												
C120N/H D curve	**10**							200	250	320	400	500
	16									320	400	500
	20										400	500
	25											500
	32											
	40											
	50											
	63											
	80											
	100											
	125											

400 *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

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

Upstream		C120N/H C curve										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**Rating**											
Discrimination limit (A)												
iDPN B curve	**6**		125	170	400	500	700	800	3000	T	T	T
	10			160	200	350	500	600	1800	3000	T	T
	16				200	270	340	450	1250	2000	3300	3700
	20					250	320	400	1000	1600	2500	3700
	25						320	400	800	1300	2100	3700
	32							400	600	1000	1800	2700
	40								500	700	1600	2400
Discrimination limit (A)												
iDPN C curve	**1**	300	500	700	1000	1500	2000	2500	4500	4500	4500	4500
	2	150	300	500	700	1000	1500	2000	4500	4500	4500	4500
	3	120	200	300	500	700	1000	1500	4500	4500	4500	4500
	6	120	200	240	400	500	700	800	3000	4500	4500	4500
	10		200	240	300	400	500	600	1800	3000	4500	4500
	16				300	400	500	600	1000	2000	3300	3700
	20						500	600	1000	1600	2500	3700
	25							600	800	1300	2100	3700
	32								800	1000	1800	2700
	40								800	1000	1600	2400
Discrimination limit (A)												
iDPN D curve	**1**	300	500	700	1000	1500	2000	2500	4500	4500	4500	4500
	2	150	300	500	700	1000	1500	2000	4500	4500	4500	4500
	3	120	200	300	500	700	1000	1500	4500	4500	4500	4500
	6				400	500	700	800	3000	4500	4500	4500
	10						500	600	1800	3000	4500	4500
	16								1000	2000	3300	3700
	20								1000	1600	2500	3700
	25									1300	2100	3700
	32										1800	2700
	40											2400

400 *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

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

Upstream		C120N/H C curve										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**Rating**											
Discrimination limit (A)												
C120N/H B curve	**10**			160	200	250	320	400	500	630	800	1000
	16				200	250	320	400	500	630	800	1000
	20					250	320	400	500	630	800	1000
	25							400	500	630	800	1000
	32								500	630	800	1000
	40								500	630	800	1000
	50									630	800	1000
	63											1000
	80											
	100											
	125											
Discrimination limit (A)												
C120N/H C curve	**10**				200	250	320	400	500	630	800	1000
	16					250	320	400	500	630	800	1000
	20						320	400	500	630	800	1000
	25							400	500	630	800	1000
	32								500	630	800	1000
	40									630	800	1000
	50										800	1000
	63											1000
	80											
	100											
	125											
Discrimination limit (A)												
C120N/H D curve	**10**					250	320	400	500	630	800	1000
	16							400	500	630	800	1000
	20								500	630	800	1000
	25									630	800	1000
	32										800	1000
	40											1000
	50											
	63											
	80											
	100											
	125											

400 *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

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

Upstream		C120N/H D curve										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**Rating**											
Discrimination limit (A)												
iDPN B curve	**6**	125	250	250	400	500	630	800	3000	T	T	T
	10		250	250	200	500	630	800	1800	3000	T	T
	16			250	400	500	630	800	1250	2000	3300	3700
	20				400	500	630	800	1000	1600	2500	3700
	25					500	630	800	1000	1250	2100	3700
	32						630	800	1000	1250	1800	2700
	40								1000	1250	1600	2400
Discrimination limit (A)												
iDPN C curve	**1**	300	500	700	1000	1500	2000	2500	4500	4500	4500	4500
	2	150	300	500	700	1000	1500	2000	4500	4500	4500	4500
	3	125	200	250	400	500	700	800	3000	4500	4500	4500
	6	125	250	250	400	500	630	800	3000	4500	4500	4500
	10		250	250	200	500	630	800	1800	3000	4500	4500
	16			250	400	500	630	800	1250	2000	3300	3700
	20				400	500	630	800	1000	1600	2500	3700
	25					500	630	800	1000	1250	2100	3700
	32						630	800	1000	1250	1800	2700
	40								1000	1250	1600	2400
Discrimination limit (A)												
iDPN D curve	**1**	300	500	700	1000	1500	2000	2500	4500	4500	4500	4500
	2	150	300	500	700	1000	1500	2000	4500	4500	4500	4500
	3	120	200	300	500	700	1000	1500	4500	4500	4500	4500
	6		250	240	400	500	630	800	3000	4500	4500	4500
	10			240	200	500	630	800	1800	3000	4500	4500
	16				400	500	630	800	1250	2000	3300	3700
	20					500	630	800	1000	1600	2500	3700
	25						630	800	1000	1250	2100	3700
	32							800	1000	1250	1800	2700
	40								1000	1250	1600	2400

400 *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

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

Upstream		C120N/H D curve										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**Rating**											
Discrimination limit (A)												
C120N/H B curve	**10**		192	240	300	384	480	600	756	960	1200	1500
	16				300	384	480	600	756	960	1200	1500
	20					384	480	600	756	960	1200	1500
	25							600	756	960	1200	1500
	32								756	960	1200	1500
	40									960	1200	1500
	50									960	1200	1500
	63										1200	1500
	80											1500
	100											
	125											
Discrimination limit (A)												
C120N/H C curve	**10**				300	384	480	600	756	960	1200	1500
	16					384	480	600	756	960	1200	1500
	20						480	600	756	960	1200	1500
	25							600	756	960	1200	1500
	32								756	960	1200	1500
	40									960	1200	1500
	50									960	1200	1500
	63											1500
	80											1500
	100											
	125											
Discrimination limit (A)												
C120N/H D curve	**10**				300	384	480	600	756	960	1200	1500
	16							600	756	960	1200	1500
	20							600	756	960	1200	1500
	25								756	960	1200	1500
	32								756	960	1200	1500
	40								756	960	1200	1500
	50									960	1200	1500
	63											1500
	80											1500
	100											
	125											

400 *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

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

Upstream		NG125N/H/L B curve										
In (A)		**10**	**16**	**20**	**25**	**32**	**40**	**50**	**63**	**80**	**100**	**125**
Downstream	**Rating**											
Discrimination limit (A)												
iDPN B curve	**6**		63	80	400	500	700	800	3000	T	T	T
	10			80	100	100	500	600	1800	3000	T	T
	16				100	125	160	200	1000	2000	3300	3750
	20					125	160	200	1000	1600	2500	3700
	25						160	200	800	1300	2100	3700
	32							200	600	1000	1800	2700
	40									320	1600	2400
Discrimination limit (A)												
iDPN C curve	**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	63	300	500	700	1000	1500	T	T	T	T
	6		63	80	400	500	700	800	3000	T	T	T
	10				100	350	500	600	1800	3000	4000	T
	16					125	340	450	1000	2000	3300	3700
	20						160	200	1000	1600	2500	3700
	25							200	800	1300	2100	3700
	32								600	1000	1800	2700
	40									320	1600	2400
Discrimination limit (A)												
C120N/H B curve	**10**			80	100	125	160	200	250	320	400	500
	16				100	125	160	200	250	320	400	500
	20					125	160	200	250	320	400	500
	25							200	250	320	400	500
	32								250	320	400	500
	40								250	320	400	500
	50									320	400	500
	63											500
	80											500
	100											
	125											
Discrimination limit (A)												
C120N/H C curve	**10**					125	160	200	250	320	400	500
	16							200	250	320	400	500
	20								250	320	400	500
	25									320	400	500
	32										400	500
	40											
	50											
	63											
	80											
	100											
	125											
Discrimination limit (A)												
C120N/H D curve	**10**							200	250	320	400	500
	16									320	400	500
	20										400	500
	25											500
	32											
	40											
	50											
	63											
	80											
	100											
	125											

400 *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

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

Upstream		NG125N/H/L C curve										
In (A)		**10**	**16**	**20**	**25**	**32**	**40**	**50**	**63**	**80**	**100**	**125**
Downstream	**Rating**											
Discrimination limit (A)												
iDPN B curve	**6**			170	400	500	700	800	3000	T	T	T
	10				200	350	500	600	1800	3000	T	T
	16					270	340	450	1250	2000	3300	3700
	20						320	400	1000	1600	2500	3700
	25							400	800	1300	2100	3700
	32								600	1000	1800	2700
	40									700	1600	2400
Discrimination limit (A)												
iDPN C curve	**1**	300	500	700	1000	1500	2000	2500	4500	4500	4500	4500
	2	150	300	500	700	1000	1500	2000	4500	4500	4500	4500
	3	120	200	300	500	700	1000	1500	4500	4500	4500	4500
	6	120	200	240	400	500	700	800	3000	4500	4500	4500
	10		200	240	300	400	500	600	1800	3000	4500	4500
	16				300	400	500	600	1000	2000	3300	3700
	20						500	600	1000	1600	2500	3700
	25							600	800	1300	2100	3700
	32								800	1000	1800	2700
	40								800	1000	1600	2400
Discrimination limit (A)												
iDPN D curve	**1**	300	500	700	1000	1500	2000	2500	4500	4500	4500	4500
	2	150	300	500	700	1000	1500	2000	4500	4500	4500	4500
	3	120	200	300	500	700	1000	1500	4500	4500	4500	4500
	6				400	500	700	800	3000	4500	4500	4500
	10						500	600	1800	3000	4500	4500
	16								1000	2000	3300	3700
	20								1000	1600	2500	3700
	25									1300	2100	3700
	32										1800	2700
	40											2400
Discrimination limit (A)												
C120N/H B curve	**10**			170	212	272	340	425	535	680	850	1062
	16				212	272	340	425	535	680	850	1062
	20					272	340	425	535	680	850	1062
	25							425	535	680	850	1062
	32								535	680	850	1062
	40								535	680	850	1062
	50									680	850	1062
	63										850	1062
	80											1062
	100											
	125											
Discrimination limit (A)												
C120N/H C curve	**10**				212	272	340	425	535	680	850	1062
	16				212	272	340	425	535	680	850	1062
	20					272	340	425	535	680	850	1062
	25							425	535	680	850	1062
	32								535	680	850	1062
	40								535	680	850	1062
	50									680	850	1062
	63										850	1062
	80											1062
	100											
	125											
Discrimination limit (A)												
C120N/H D curve	**10**					272	340	425	535	680	850	1062
	16						340	425	535	680	850	1062
	20							425	535	680	850	1062
	25								535	680	850	1062
	32									680	850	1062
	40										850	1062
	50											1062
	63											
	80											
	100											
	125											

400 *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

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

Upstream		NG125N/H/L D curve										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**Rating**											
Discrimination limit (A)												
iDPN B curve	**6**	125	250	250	400	500	630	800	3000	T	T	T
	10		250	250	200	500	630	800	1800	3000	T	T
	16			250	400	500	630	800	1250	2000	3300	3700
	20				400	500	630	800	1000	1600	2500	3700
	25					500	630	800	1000	1250	2100	3700
	32						630	800	1000	1250	1800	2700
	40								1000	1250	1600	2400
Discrimination limit (A)												
iDPN C curve	**1**	300	500	700	1000	1500	2000	2500	4500	4500	4500	4500
	2	150	300	500	700	1000	1500	2000	4500	4500	4500	4500
	3	125	200	250	400	500	700	800	3000	4500	4500	4500
	6	125	250	250	400	500	630	800	3000	4500	4500	4500
	10		250	250	200	500	630	800	1800	3000	4500	4500
	16			250	400	500	630	800	1250	2000	3300	3700
	20				400	500	630	800	1000	1600	2500	3700
	25					500	630	800	1000	1250	2100	3700
	32						630	800	1000	1250	1800	2700
	40								1000	1250	1600	2400
Discrimination limit (A)												
iDPN D curve	**1**	300	500	700	1000	1500	2000	2500	4500	4500	4500	4500
	2	150	300	500	700	1000	1500	2000	4500	4500	4500	4500
	3	120	200	300	500	700	1000	1500	4500	4500	4500	4500
	6		250	240	400	500	630	800	3000	4500	4500	4500
	10			240	200	500	630	800	1800	3000	4500	4500
	16				400	500	630	800	1250	2000	3300	3700
	20						630	800	1000	1600	2500	3700
	25							800	1000	1250	2100	3700
	32							800	1000	1250	1800	2700
	40								1000	1250	1600	2400
Discrimination limit (A)												
C120N/H B curve	**10**			240	300	384	480	600	756	960	1200	1500
	16				300	384	480	600	756	960	1200	1500
	20						480	600	756	960	1200	1500
	25							600	756	960	1200	1500
	32								756	960	1200	1500
	40								756	960	1200	1500
	50									960	1200	1500
	63											1500
	80											
	100											
	125											
Discrimination limit (A)												
C120N/H C curve	**10**				300	384	480	600	756	960	1200	1500
	16					384	480	600	756	960	1200	1500
	20						480	600	756	960	1200	1500
	25							600	756	960	1200	1500
	32								756	960	1200	1500
	40								756	960	1200	1500
	50									960	1200	1500
	63											1500
	80											
	100											
	125											
Discrimination limit (A)												
C120N/H D curve	**10**				300	384	480	600	756	960	1200	1500
	16					384	480	600	756	960	1200	1500
	20						480	600	756	960	1200	1500
	25							600	756	960	1200	1500
	32								756	960	1200	1500
	40								756	960	1200	1500
	50										1200	1500
	63											1500
	80											
	100											
	125											

400 *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

Upstream: NG125, C120, B curve
Downstream: C60, B, C, D, Z, K, MA curves

Upstream		NG125N/H/L, C120N/H B curve										
In (A)		**10**	**16**	**20**	**25**	**32**	**40**	**50**	**63**	**80**	**100**	**125**
Downstream	**Rating**											
Discrimination limit (A)												
C60N B, C curves	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	0.75	T	T	T	T	T	T	T	T	T	T	T
	1	550	700	1500	2200	3100	3500	4000	T	T	T	T
	2	300	450	700	1500	2100	2500	2800	4500	T	T	T
	3	150	300	300	950	1500	1600	1800	4000	T	T	T
	4		150	200	600	1200	1300	1400	3400	T	T	T
	6			150	400	950	1000	1000	2800	5000	T	T
	10					600	600	750	2500	4000	5500	T
	16							600	2100	3500	4500	5500
	20									2500	3500	4500
	25									1600	2500	3500
	32											2800
	40											2500
	50											
	63											
Discrimination limit (A)												
C60H/L B, C, Z curves	**0.5**	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
	0.75	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
	1	550	700	1500	2200	3100	3500	4000	6000	7000	10000	10000
	2	300	450	700	1500	2100	2500	2800	4500	6000	8000	10000
	3	150	300	300	950	1500	1600	1800	4000	6000	7000	10000
	4		150	200	600	1200	1300	1400	3400	6000	6000	8000
	6			150	400	950	1000	1000	2800	5000	6000	6500
	10					600	600	750	2500	4000	5500	6000
	16							600	2100	3500	4500	5500
	20									2500	3500	4500
	25									1600	2500	3500
	32											2800
	40											2500
	50											
	63											
Discrimination limit (A)												
C60N D curve	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	0.75	T	T	T	T	T	T	T	T	T	T	T
	1	550	700	1500	2200	3100	3500	4000	T	T	T	T
	2		450	700	1500	2100	2500	2800	4500	T	T	T
	3			300	950	1500	1600	1800	4000	T	T	T
	4					1200	1300	1400	3400	T	T	T
	6							1000	2800	5000	T	T
	10									4000	5500	T
	16									3500	4500	5500
	20											4500
	25											3500
	32											
	40											
	50											
	63											
Discrimination limit (A)												
C60H/L D, K, MA curves	**1**	550	700	1500	2200	3100	3500	4000	6000	7000	10000	10000
	2		450	700	1500	2100	2500	2800	4500	6000	8000	10000
	3			300	950	1500	1600	1800	4000	6000	7000	10000
	4					1200	1300	1400	3400	6000	6000	8000
	6							1000	2800	5000	6000	6500
	10									4000	5500	6000
	16									3500	4500	5500
	20											4500
	25											3500
	32											
	40											
	50											
	63											

The above tables indicate the discrimination limits in the following cases:

- phase-to-neutral short-circuit on a 230 V single-phase distribution network, downstream of a 3 Ph + N or single-phase network.

- short-circuit between two phases on a three-phase distribution network with a nominal voltage of 230 V.

T	*Total discrimination, up to the breaking capacity of the downstream circuit breaker.*
400	*Discrimination limit = 400 A.*
	No discrimination.

Protection discrimination

Upstream: NG125, C120, C curve
Downstream: C60, B, C, D, Z, K, MA curves

Upstream		NG125N/H/L, C120N/H C curve										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**Rating**											
Discrimination limit (A)												
C60N B, C curves	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	0.75	T	T	T	T	T	T	T	T	T	T	T
	1	800	1000	2000	3000	4500	T	T	T	T	T	T
	2	400	600	1000	2000	3000	3500	4000	T	T	T	T
	3	200	400	400	1300	2100	2300	2500	T	T	T	T
	4		200	300	900	1600	1800	2000	T	T	T	T
	6			200	500	1300	1400	1500	4000	T	T	T
	10				300	800	900	1000	3500	T	T	T
	16					500	650	800	3000	5000	T	T
	20						400	700	2000	3600	5500	T
	25							500	1000	2200	3500	5000
	32								700	1500	2500	4000
	40									1300	1800	3600
	50										1500	2500
	63											2100
Discrimination limit (A)												
C60H/L B, C, Z curves	**0.5**	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
	0.75	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
	1	800	1000	2000	3000	4500	5500	7000	10000	10000	10000	10000
	2	400	600	1000	2000	3000	3500	4000	6000	10000	10000	10000
	3	200	400	400	1300	2100	2300	2500	6000	10000	10000	10000
	4		200	300	900	1600	1800	2000	5000	8000	10000	10000
	6			200	500	1300	1400	1500	4000	6500	8500	10000
	10				300	800	900	1000	3500	6000	6500	8000
	16					500	650	800	3000	5000	6000	7000
	20						400	700	2000	3600	5500	6000
	25							500	1000	2200	3500	5000
	32								700	1500	2500	4000
	40									1300	1800	3600
	50										1500	2500
	63											2100
Discrimination limit (A)												
C60N D curve	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	0.75	T	T	T	T	T	T	T	T	T	T	T
	1	800	1000	2000	3000	4500	T	T	T	T	T	T
	2		600	1000	2000	3000	3500	4000	T	T	T	T
	3			400	1300	2100	2300	2500	T	T	T	T
	4				900	1600	1800	2000	T	T	T	T
	6					1300	1400	1500	4000	T	T	T
	10						900	1000	3500	T	T	T
	16							800	3000	5000	T	T
	20								2000	3600	5500	T
	25									2200	3500	5000
	32										2500	4000
	40											3600
	50											
	63											
Discrimination limit (A)												
C60H/L D, K, MA curves	**1**	800	1000	2000	3000	4500	5500	7000	10000	10000	10000	10000
	2		600	1000	2000	3000	3500	4000	8000	10000	10000	10000
	3			400	1300	2100	2300	2500	7000	10000	10000	10000
	4				900	1600	1800	2000	5000	8000	10000	10000
	6					1300	1400	1500	4000	6500	8500	10000
	10						900	1000	3500	5500	6500	8000
	16							800	3000	5000	6000	7000
	20								2000	3600	5500	6000
	25									2200	3500	5000
	32										2500	4000
	40											3600
	50											
	63											

The above tables indicate the discrimination limits in the following cases:

- phase-to-neutral short-circuit on a 230 V single-phase distribution network, downstream of a 3 Ph + N or single-phase network.

- short-circuit between two phases on a three-phase distribution network with a nominal voltage of 230 V.

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

400 — *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

Upstream: NG125, C120, D curve
Downstream: C60, B, C, D, Z, K, MA curves

Upstream		NG125N/H/L, C120N/H D curve										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**Rating**											
Discrimination limit (A)												
C60N B, C curves	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	0.75	T	T	T	T	T	T	T	T	T	T	T
	1	900	1100	2300	3400	5000	6000	T	T	T	T	T
	2	450	700	1100	2300	3400	4000	4500	6000	T	T	T
	3	250	450	450	1500	2400	2600	2800	6000	T	T	T
	4		200	350	1000	1800	2000	2300	6000	T	T	T
	6			250	600	1500	1600	1700	4500	6000	T	T
	10				350	900	1000	1200	4000	6000	T	T
	16					600	750	900	3400	5600	6000	T
	20						500	800	2300	4000	6000	T
	25							600	1200	2500	4000	5500
	32								800	1700	2800	4500
	40								600	1500	2200	4000
	50										1700	2800
	63											2300
Discrimination limit (A)												
C60H/L B, C, Z curves	**0.5**	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
	0.75	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
	1	900	1100	2300	3400	5000	6000	7000	10000	10000	10000	10000
	2	450	700	1100	2300	3400	4000	4500	8000	10000	10000	10000
	3	250	450	450	1500	2400	2600	2800	7000	8000	10000	10000
	4		200	350	1000	1800	2000	2300	6000	6500	10000	10000
	6			250	600	1500	1600	1700	4500	6000	8500	10000
	10				350	900	1000	1200	4000	6000	6500	10000
	16					600	750	900	3400	5600	6000	8000
	20						500	800	2300	4000	6000	7000
	25							600	1200	2500	4000	5500
	32								800	1700	2800	4500
	40								600	1500	2200	4000
	50										1700	2800
	63											2300
Discrimination limit (A)												
C60N D curve	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	0.75	T	T	T	T	T	T	T	T	T	T	T
	1	900	1100	2300	3400	5000	6000	T	T	T	T	T
	2		700	1100	2300	3400	4000	4500	6000	T	T	T
	3			450	1500	2400	2600	2800	6000	T	T	T
	4				1000	1800	2000	2300	6000	T	T	T
	6					1500	1600	1700	4500	6000	T	T
	10						1000	1200	4000	6000	T	T
	16							900	3400	5600	6000	T
	20								2300	4000	6000	T
	25								1200	2500	4000	5500
	32										2800	4500
	40											4000
	50											
	63											
Discrimination limit (A)												
C60H/L D, K, MA curves	**1**	900	1100	2300	3400	5000	6000	10000	10000	10000	10000	10000
	2		700	1100	2300	3400	4000	4500	8000	10000	10000	10000
	3			450	1500	2400	2600	2800	7000	8000	10000	10000
	4				1000	1800	2000	2300	6000	6500	10000	10000
	6					1500	1600	1700	4500	6000	8500	10000
	10						1000	1200	4000	6000	6500	10000
	16							900	3400	5600	6000	8000
	20								2300	4000	6000	7000
	25								1200	2500	4000	5500
	32										2800	4500
	40											4000
	50											
	63											

The above tables indicate the discrimination limits in the following cases:

- phase-to-neutral short-circuit on a 230 V single-phase distribution network, downstream of a 3 Ph + N or single-phase network.

- short-circuit between two phases on a three-phase distribution network with a nominal voltage of 230 V.

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

400 — *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

Upstream: NG125, C120, B curve
Downstream: C60, B, C, D, Z, K, MA curves

Upstream		NG125N/H/L, C120N/H B curve										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	**Rating**											
Discrimination limit (A)												
C60N B, C curves	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	0.75	T	T	T	T	T	T	T	T	T	T	T
	1	200	300	450	700	1000	1300	1600	2800	3500	5000	T
	2	100	220	300	450	550	900	1260	2500	3000	4500	T
	3	60	150	220	350	450	700	1150	2300	2600	4000	4500
	4		100	150	250	400	650	1000	2000	2300	3300	4000
	6			120	200	300	500	700	1750	2000	3000	3500
	10					200	300	600	1100	1500	2600	3300
	16							450	700	1000	2300	2900
	20									800	1900	2500
	25									700	1700	2200
	32											1550
	40											1100
	50											
	63											
Discrimination limit (A)												
C60H/L B, C, Z curves	**0.5**	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
	0.75	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
	1	200	300	450	700	1000	1300	1600	2800	3500	5000	6000
	2	100	220	300	450	550	900	1260	2500	3000	4500	6000
	3	60	150	220	350	450	700	1150	2300	2600	4000	4500
	4		100	150	250	400	650	1000	2000	2300	3300	4000
	6			120	200	300	500	700	1750	2000	3000	3500
	10					200	300	600	1100	1500	2600	3300
	16							450	700	1000	2300	2900
	20									800	1900	2500
	25									700	1700	2200
	32											1550
	40											1100
	50											
	63											
Discrimination limit (A)												
C60N D curve	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	0.75	T	T	T	T	T	T	T	T	T	T	T
	1	200	300	450	700	1000	1300	1600	2800	3500	5000	T
	2		220	300	450	550	900	1260	2500	3000	4500	T
	3			220	350	450	700	1150	2300	2600	4000	4500
	4					400	650	1000	2000	2300	3300	4000
	6							700	1750	2000	3000	3500
	10									1500	2600	3300
	16									1000	2300	2900
	20											2500
	25											2200
	32											
	40											
	50											
	63											
Discrimination limit (A)												
C60H/L D, K, MA curves	**1**	200	300	450	700	1000	1300	1600	2800	3500	5000	6000
	2		220	300	450	550	900	1260	2500	3000	4500	6000
	3			220	350	450	700	1150	2300	2600	4000	4500
	4					400	650	1000	2000	2300	3300	4000
	6							700	1750	2000	3000	3500
	10									1500	2600	3300
	16									1000	2300	2900
	20											2500
	25											2200
	32											
	40											
	50											
	63											

The above tables indicate the discrimination limits in the following cases:
- short-circuit between two phases on a three-phase 230/400 V distribution network.

T	*Total discrimination, up to the breaking capacity of the downstream circuit breaker.*
400	*Discrimination limit = 400 A.*
	No discrimination.

Protection discrimination

Upstream: NG125, C120, C curve
Downstream: C60, B, C, D, Z, K, MA curves

Upstream		NG125N/H/L, C120N/H C curve										
In (A)		**10**	**16**	**20**	**25**	**32**	**40**	**50**	**63**	**80**	**100**	**125**
Downstream	**Rating**											
Discrimination limit (A)												
C60N B, C curves	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	0.75	T	T	T	T	T	T	T	T	T	T	T
	1	300	450	600	1000	1600	2000	2500	T	T	T	T
	2	150	300	450	600	800	1300	2000	T	T	T	T
	3	80	200	300	450	600	1000	1600	5000	T	T	T
	4		160	250	350	500	1000	1600	4000	5000	T	T
	6			170	300	400	800	1200	2500	4000	T	T
	10				210	270	500	800	1000	3200	5000	T
	16					270	400	600	1000	1600	3600	5500
	20						340	500	800	1200	3000	4000
	25							420	600	1000	2500	3200
	32								530	1000	1600	2500
	40									680	1000	1600
	50										850	1300
	63											1200
Discrimination limit (A)												
C60H/L B, C, Z curves	**0.5**	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
	0.75	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
	1	300	450	600	1000	1600	2000	2500	6000	6000	6000	6000
	2	150	300	450	600	800	1300	2000	6000	6000	6000	6000
	3	80	200	300	450	600	1000	1600	5000	6000	6000	6000
	4		160	250	350	500	1000	1600	4000	5000	6000	6000
	6			170	300	400	800	1200	2500	4000	6000	6000
	10				210	270	500	800	1000	3200	5000	6000
	16					270	400	600	1000	1600	3600	5500
	20						340	500	800	1200	3000	4000
	25							420	600	1000	2500	3200
	32								530	1000	1600	2500
	40									680	1000	1600
	50										850	1300
	63											1200
Discrimination limit (A)												
C60N D curve	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	0.75	T	T	T	T	T	T	T	T	T	T	T
	1	300	450	600	1000	1600	2000	2500	T	T	T	T
	2		300	450	600	800	1300	2000	T	T	T	T
	3			300	450	600	1000	1600	5000	T	T	T
	4				350	500	1000	1600	4000	5000	T	T
	6					400	800	1200	2500	4000	T	T
	10						500	800	1000	3200	5000	T
	16							600	1000	1600	3600	5500
	20								800	1200	3000	4000
	25									1000	2500	3200
	32										1600	2500
	40											1600
	50											
	63											
Discrimination limit (A)												
C60H/L D, K, MA curves	**1**	300	450	600	1000	1600	2000	2500	6000	6000	6000	6000
	2		300	450	600	800	1300	2000	6000	6000	6000	6000
	3			300	450	600	1000	1600	5000	6000	6000	6000
	4				350	500	1000	1600	4000	5000	6000	6000
	6					400	800	1200	2500	4000	6000	6000
	10						500	800	1000	3200	5000	6000
	16							600	1000	1600	3600	5500
	20								800	1200	3000	4000
	25									1000	2500	3200
	32										1600	2500
	40											1600
	50											
	63											

The above tables indicate the discrimination limits in the following cases:
- short-circuit between two phases on a three-phase 230/400 V distribution network.

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

400 — *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

Upstream: NG125, C120, D curve
Downstream: C60, B, C, D, Z, K, MA curves

Upstream		NG125N/H/L, C120N/H D curve										
In (A)		**10**	**16**	**20**	**25**	**32**	**40**	**50**	**63**	**80**	**100**	**125**
Downstream	**Rating**											
Discrimination limit (A)												
C60N B, C curves	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	0.75	T	T	T	T	T	T	T	T	T	T	T
	1	400	550	900	1400	1900	2400	3000	T	T	T	T
	2	200	400	550	900	1200	1600	2100	T	T	T	T
	3	130	250	350	650	900	1300	1900	T	T	T	T
	4		140	270	450	700	1100	1700	4000	T	T	T
	6			220	400	600	900	1300	3000	4300	T	T
	10				260	500	600	900	2000	3300	T	T
	16					370	500	700	1400	2000	4300	T
	20						450	600	1100	1800	3500	4500
	25							500	1000	1300	3000	3600
	32								800	1300	1800	2600
	40								500	1000	1300	2200
	50										1100	1800
	63											1500
Discrimination limit (A)												
C60H/L B, C, Z curves	**0.5**	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
	0.75	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
	1	400	550	900	1400	1900	2400	3000	6000	6000	6000	6000
	2	200	400	550	900	1200	1600	2100	6000	6000	6000	6000
	3	130	250	350	650	900	1300	1900	6000	6000	6000	6000
	4		140	270	450	700	1100	1700	4000	6000	6000	6000
	6			220	400	600	900	1300	3000	4300	6000	6000
	10				260	500	600	900	2000	3300	6000	6000
	16					370	500	700	1400	2000	4300	6000
	20						450	600	1100	1800	3500	4500
	25							500	1000	1300	3000	3600
	32								800	1300	1800	2600
	40								500	1000	1300	2200
	50										1100	1800
	63											1500
Discrimination limit (A)												
C60N D curve	**0.5**	T	T	T	T	T	T	T	T	T	T	T
	0.75	T	T	T	T	T	T	T	T	T	T	T
	1	400	550	900	1400	1900	2400	3000	T	T	T	T
	2	200	400	550	900	1200	1600	2100	T	T	T	T
	3		250	350	650	900	1300	1900	4000	T	T	T
	4			270	450	700	1100	1700	3000	4300	T	T
	6				400	600	900	1300	2000	3300	T	T
	10					500	600	900	1400	2000	4300	T
	16						500	700	1100	1800	3500	4500
	20								1000	1300	3000	3600
	25									1300	1800	2600
	32										1300	2200
	40											1800
	50											
	63											
Discrimination limit (A)												
C60H/L D, K, MA curves	**1**	400	550	900	1400	1900	2400	3000	6000	6000	6000	6000
	2	200	400	550	900	1200	1600	2100	6000	6000	6000	6000
	3		250	350	650	900	1300	1900	6000	6000	6000	6000
	4			270	450	700	1100	1700	4000	6000	6000	6000
	6				400	600	900	1300	3000	4300	6000	6000
	10					500	600	900	2000	3300	6000	6000
	16						500	700	1400	2000	4300	6000
	20								1100	1800	3500	4500
	25								1000	1300	3000	3600
	32									1300	1800	2600
	40										1300	2200
	50											1800
	63											

The above tables indicate the discrimination limits in the following cases:
- short-circuit between two phases on a three-phase 230/400 V distribution network.

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

400 — *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

Upstream: NG125, C120, B, C curves
Downstream: NG125, C120, B, C, D curves

Upstream		NG125N/H/L, C120N/H B curve										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	Rating											
Discrimination limit (A)		40	64	80	100	128	160	200	252	320	400	500
NG125, C120 B curve	10	T	T	T	T	T	T	T	T	T	T	T
	16				T	T	T	T	T	T	T	T
	20					T	T	T	T	T	T	T
	25						T	T	T	T	T	T
	32							T	T	T	T	T
	40								T	T	T	T
	50									T	T	T
	63										T	T
	80											T
	100											
Discrimination limit (A)						128	160	200	252	320	400	500
NG125, C120 C curve	10					T	T	T	T	T	T	T
	16							T	T	T	T	T
	20								T	T	T	T
	25									T	T	T
	32										T	T
	40											T
	50											
	63											
Discrimination limit (A)								200	252	320	400	500
NG125, C120 D curve	10							T	T	T	T	T
	16									T	T	T
	20										T	T
	25											T
	32											
	40											
	50											
	63											

Upstream		NG125N/H/L, C120N/H C curve										
In (A)		10	16	20	25	32	40	50	63	80	100	125
Downstream	Rating											
Discrimination limit (A)		80	128	160	200	256	320	400	504	640	800	1000
NG125, C120 B curve	10		T	T	T	T	T	T	T	T	T	T
	16				T	T	T	T	T	T	T	T
	20					T	T	T	T	T	T	T
	25						T	T	T	T	T	T
	32							T	T	T	T	T
	40								T	T	T	T
	50									T	T	T
	63											T
	80											
	100											
Discrimination limit (A)		80	128	160	200	256	320	400	504	640	800	1000
NG125, C120 C curve	10		T	T	T	T	T	T	T	T	T	T
	16				T	T	T	T	T	T	T	T
	20					T	T	T	T	T	T	T
	25						T	T	T	T	T	T
	32							T	T	T	T	T
	40								T	T	T	T
	50									T	T	T
	63										T	T
	80											T
	100											
Discrimination limit (A)						256	320	400	504	640	800	1000
NG125, C120 D curve	10					T	T	T	T	T	T	T
	16						T	T	T	T	T	T
	20								T	T	T	T
	25									T	T	T
	32										T	T
	40											T
	50											
	63											
	80											
	100											

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

Protection discrimination

Upstream: NG125, C120, D curve
Downstream: NG125, C120, B, C, D curves

Upstream		**NG125N/H/L, C120N/H** D curve										
In (A)		**10**	**16**	**20**	**25**	**32**	**40**	**50**	**63**	**80**	**100**	**125**
Downstream	**Rating**											
Discrimination limit (A)			**192**	**240**	**300**	**384**	**480**	**600**	**756**	**960**	**1200**	**1500**
NG125, C120 B curve	**10**		T	T	T	T	T	T	T	T	T	T
	16				T	T	T	T	T	T	T	T
	20					T	T	T	T	T	T	T
	25						T	T	T	T	T	T
	32							T	T	T	T	T
	40								T	T	T	T
	50									T	T	T
	63										T	T
	80											T
	100											
Discrimination limit (A)			**192**	**240**	**300**	**384**	**480**	**600**	**756**	**960**	**1200**	**1500**
NG125, C120 C curve	**10**		T	T	T	T	T	T	T	T	T	T
	16				T	T	T	T	T	T	T	T
	20					T	T	T	T	T	T	T
	25						T	T	T	T	T	T
	32							T	T	T	T	T
	40								T	T	T	T
	50									T	T	T
	63										T	T
	80											T
	100											
Discrimination limit (A)			**192**	**240**	**300**	**384**	**480**	**600**	**756**	**960**	**1200**	**1500**
NG125, C120 D curve	**10**		T	T	T	T	T	T	T	T	T	T
	16				T	T	T	T	T	T	T	T
	20					T	T	T	T	T	T	T
	25						T	T	T	T	T	T
	32							T	T	T	T	T
	40								T	T	T	T
	50									T	T	T
	63										T	T
	80											T
	100											

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

Protection discrimination

Upstream: C60, D, K curves
Downstream: C60, D, K curves
iDPN, iDPN Vigi, B, C curves

Upstream		**C60L** K curve											
Downstream	**In (A)**	**2**	**3**	**4**	**6**	**10**	**16**	**20**	**25**	**32**	**40**	**50**	**63**
Discrimination limit (A)													
C60N/H	**0.5/0.75**	24	36	48	72	120	192	240	300	384	480	600	756
D curve	**1**	24	36	48	72	120	192	240	300	384	480	600	756
C60L	**1.6**			48	72	120	192	240	300	384	480	600	756
K curve	**2**			48	72	120	192	240	300	384	480	600	756
	3				72	120	192	240	300	384	480	600	756
	4					120	192	240	300	384	480	600	756
	6							240	300	384	480	600	756
	10								300	384	480	600	756
	16									384	480	600	756
	20										480	600	756
	25											600	756
	32												756
	40												

Upstream		**C60** Curves D or K											
Downstream	**In (A)**	**2**	**3**	**4**	**6**	**10**	**16**	**20**	**25**	**32**	**40**	**50**	**63**
Discrimination limit (A)													
iDPN	**6/10**						192	240	300	384	480	600	756
B curve	**16**									384	480	600	756
	20										480	600	756
	25										480	600	756
	32												756
	40												
Discrimination limit (A)													
iDPN/	**1**	24	36	48	72	120	192	240	300	384	480	600	756
iDPN Vigi	**2**			48	72	120	192	240	300	384	480	600	756
C curve	**3**				72	120	192	240	300	384	480	600	756
	4				72	120	192	240	300	384	480	600	756
	5					120	192	240	300	384	480	600	756
	6						192	240	300	384	480	600	756
	10							240	300	384	480	600	756
	16									384	480	600	756
	20										480	600	756
	25											600	756
	32												756

400 *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

Upstream: C60L, B, C, K, Z curves
Downstream: C60L, Z curve

Upstream		C60L B curve													
Downstream	**In (A)**	**2**	**3**	**4**	**6**	**10**	**16**	**20**	**25**	**32**	**40**	**50**	**63**		
Discrimination limit (A)															
C60L	**1**	8	12	16	24	40	64	80	100	128	160	200	240		
Z curve	**1.6**		12	16	24	40	64	80	100	128	160	200	240		
	2			16	24	40	64	80	100	128	160	200	240		
	3				24	40	64	80	100	128	160	200	240		
	4				24	40	64	80	100	128	160	200	240		
	6					40	64	80	100	128	160	200	240		
	8						64	80	100	128	160	200	240		
	10						64	80	100	128	160	200	240		
	16								100	128	160	200	240		
	20									128	160	200	240		
	25										160	200	240		
	32											200	240		
	40												240		
	50														

Upstream		C60L C curve													
Downstream	**In (A)**	**2**	**3**	**4**	**6**	**10**	**16**	**20**	**25**	**32**	**40**	**50**	**63**		
Discrimination limit (A)															
C60L	**1**	15	23	30	45	75	120	150	188	240	300	375	450		
Z curve	**1.6**		23	30	45	75	120	150	188	240	300	375	450		
	2			30	45	75	120	150	188	240	300	375	450		
	3				45	75	120	150	188	240	300	375	450		
	4				45	75	120	150	188	240	300	375	450		
	6					75	120	150	188	240	300	375	450		
	8						120	150	188	240	300	375	450		
	10						120	150	188	240	300	375	450		
	16								188	240	300	375	450		
	20									240	300	375	450		
	25										300	375	450		
	32											375	450		
	40												450		
	50														

Upstream		C60L K curve													
Downstream	**In (A)**	**2**	**3**	**4**	**6**	**10**	**16**	**20**	**25**	**32**	**40**	**50**	**63**		
Discrimination limit (A)															
C60L	**1**	24	36	48	72	120	192	240	300	384	480	600	720		
Z curve	**1.6**		36	48	72	120	192	240	300	384	480	600	720		
	2			48	72	120	192	240	300	384	480	600	720		
	3				72	120	192	240	300	384	480	600	720		
	4				72	120	192	240	300	384	480	600	720		
	6					120	192	240	300	384	480	600	720		
	8						192	240	300	384	480	600	720		
	10						192	240	300	384	480	600	720		
	16								300	384	480	600	720		
	20									384	480	600	720		
	25										480	600	720		
	32											600	720		
	40												720		
	50														

Upstream		C60L Z curve													
Downstream	**In (A)**	**1.6**	**2**	**3**	**4**	**6**	**8**	**10**	**16**	**20**	**25**	**32**	**40**	**50**	**63**
Discrimination limit (A)															
C60L	**1**	4	8.6	9	12	18	24	30	48	60	75	96	120	150	189
Z curve	**1.6**		8.6	9	12	18	24	30	48	60	75	96	120	150	189
	2					18	24	30	48	60	75	96	120	150	189
	3					18	24	30	48	60	75	96	120	150	189
	4					18	24	30	48	60	75	96	120	150	189
	6						24	30	48	60	75	96	120	150	189
	8							30	48	60	75	96	120	150	189
	10									60	75	96	120	150	189
	16										75	96	120	150	189
	20											96	120	150	189
	25												120	150	189
	32													150	189
	40/5														

400 *Discrimination limit = 400 A.*

No discrimination.

Protection discrimination

Upstream: NSC100N, NSA160N/E, NS125E
Downstream: iDPN, iDPN N, C60
B, C, D, L, U curves

Upstream		NSC100N									NSA160N/E										NS125E Trip unit TM-D		
Downstream	**Rating (A) Setting Ir**	**16**	**25**	**32**	**40**	**50**	**63**	**70**	**80**	**100**	**16**	**25**	**32**	**40**	**50**	**63**	**80**	**100**	**125**	**160**	**80**	**100**	**125**
Discrimination limit (kA)																							
iDPN B, C curves	⩽ **10**	0.6	0.6	0.6	0.6	T	T	T	T	T	0.6	0.6	0.6	0.6	T	T	T	T	T	T	0.63	0.8	1
	16			0.6	0.6	T	T	T	T	T			0.6	0.6	T	T	T	T	T	T	0.63	0.8	1
	20			0.6	0.6	T	T	T	T	T			0.6	0.6	T	T	T	T	T	T	0.63	0.8	1
	25				0.6	T	T	T	T	T				0.6	T	T	T	T	T	T	0.63	0.8	1
	32					T	T	T	T	T					T	T	T	T	T	T	0.63	0.8	1
	40							T	T	T							T	T	T	T	0.63	0.8	1
iDPN N C, D curves	⩽ **10**	0.6	0.6	0.6	0.6	T	T	T	T	T	0.6	0.6	0.6	0.6	T	T	T	T	T	T	0.63	0.8	1
	16			0.6	0.6	T	T	T	T	T			0.6	0.6	T	T	T	T	T	T	0.63	0.8	1
	20			0.6	0.6	T	T	T	T	T			0.6	0.6	T	T	T	T	T	T	0.63	0.8	1
	25				0.6	T	T	T	T	T				0.6	T	T	T	T	T	T	0.63	0.8	1
	32					T	T	T	T	T					T	T	T	T	T	T	0.63	0.8	1
	40							T	T	T							T	T	T	T	0.63	0.8	1
C60N B, C, D curves	⩽ **10**	0.6	0.6	0.6	0.6	T	T	T	T	T	0.6	0.6	0.6	0.6	T	T	T	T	T	T	0.63	0.8	1
	16			0.6	0.6	T	T	T	T	T			0.6	0.6	T	T	T	T	T	T	0.63	0.8	1
	20			0.6	0.6	T	T	T	T	T			0.6	0.6	T	T	T	T	T	T	0.63	0.8	1
	25				0.6	T	T	T	T	T				0.6	T	T	T	T	T	T	0.63	0.8	1
	32						6	6	6	8						6	6	8	8	8	0.63	0.8	1
	40							6	6	8							6	8	8	8	0.63	0.8	1
	50									6								6	6	6		0.8	1
	63									6								6	6	6		0.8	1
C60H C curve	⩽ **10**	0.6	0.6	0.6	0.6	T	T	T	T	T	0.6	0.6	0.6	0.6	T	T	T	T	T	T	0.63	0.8	1
	16			0.6	0.6	T	T	T	T	T			0.6	0.6	T	T	T	T	T	T	0.63	0.8	1
	20			0.6	0.6	T	T	T	T	T			0.6	0.6	T	T	T	T	T	T	0.63	0.8	1
	25				0.6	T	T	T	T	T				0.6	T	T	T	T	T	T	0.63	0.8	1
	32						6	6	6	8						6	6	8	8	8	0.63	0.8	1
	40							6	6	8							6	8	8	8	0.63	0.8	1
	50									6								6	6	6		0.8	1
	63									6								6	6	6		0.8	1
C60L L, U curves B, C curves	⩽ **10**	0.6	0.6	0.6	0.6	T	T	T	T	T	0.6	0.6	0.6	0.6	15	15	15	T	T	T	0.63	0.8	1
	16			0.6	0.6	T	T	T	T	T			0.6	0.6	15	15	15	T	T	T	0.63	0.8	1
	20			0.6	0.6	T	T	T	T	T			0.6	0.6	15	15	15	T	T	T	0.63	0.8	1
	25				0.6	T	T	T	T	T				0.6	15	15	15	T	T	T	0.63	0.8	1
	32						6	6	6	8						6	6	8	8	8	0.63	0.8	1
	40							6	6	8							6	8	8	8	0.63	0.8	1
	50									6								6	6	6		0.8	1
	63									6								6	6	6		0.8	1

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: NR/NS100 to 250 - Trip unit TMD
Downstream: iDPN, iDPN N, C60
B, C, D, L, U, K, Z curves

Upstream		NR/NS100N/SX/H/L								NR/NS160N/SX/H/L				NS250N/H/L		
Trip unit		TM-D								TM-D				TM-D		
Downstream	**Rating (A) Setting Ir**	**16**	**25**	**32**	**40**	**50**	**63**	**80**	**100**	**80**	**100**	**125**	**160**	**160**	**200**	**250**
Discrimination limit (kA)																
iDPN B, C curves	⩽ **10**	0.19	0.3	0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	16		0.3	0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	20			0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	25					0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	32						0.5	0.63	0.8	T	T	T	T	T	T	T
	40						0.5	0.63	0.8	T	T	T	T	T	T	T
iDPN N C, D curves	⩽ **10**	0.19	0.3	0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	16		0.3	0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	20			0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	25					0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	32						0.5	0.63	0.8	T	T	T	T	T	T	T
	40						0.5	0.63	0.8	T	T	T	T	T	T	T
C60N B, C, D curves	⩽ **10**	0.19	0.3	0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	16		0.3	0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	20			0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	25				0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	32						0.5	0.63	0.8	T	T	T	T	T	T	T
	40						0.5	0.63	0.8	T	T	T	T	T	T	T
	50							0.63	0.8	T	T	T	T	T	T	T
	63								0.8		T	T	T	T	T	T
C60H C curve	⩽ **10**	0.19	0.3	0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	16		0.3	0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	20			0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	25				0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	32						0.5	0.63	0.8	T	T	T	T	T	T	T
	40						0.5	0.63	0.8	T	T	T	T	T	T	T
	50							0.63	0.8	T	T	T	T	T	T	T
	63								0.8		T	T	T	T	T	T
C60L B, C curves K, Z curves	⩽ **10**	0.19	0.3	0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	16		0.3	0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	20			0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	25				0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	32						0.5	0.63	0.8	15	T	T	T	T	T	T
	40						0.5	0.63	0.8	15	T	T	T	T	T	T
	50							0.63	0.8	15	T	T	T	T	T	T
	63								0.8		T	T	T	T	T	T

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: NR/NS100 to 250 - Trip unit TMD
Downstream: C120N/H, NG125, B, C, D curves

Upstream Trip unit		NR/NS100N/SX/H/L TM-D								NR/NS160N/SX/H/L TM-D				NS250N/H/L TM-D		
Downstream	**Rating (A) Setting Ir**	**16**	**25**	**32**	**40**	**50**	**63**	**80**	**100**	**80**	**100**	**125**	**160**	**160**	**200**	**250**
Discrimination limit (kA)																
C120N/H	**16**									T	T	T	T	T	T	T
B, C curves	**20**									T	T	T	T	T	T	T
	25									T	T	T	T	T	T	T
	32									T	T	T	T	T	T	T
	40									T	T	T	T	T	T	T
	50									2.5	2.5	2.5	2.5	T	T	T
	63										2.5	2.5	2.5	T	T	T
	80												2.5	T	T	T
	100												2.5	T	T	T
	125														T	T
C120N/H	**16**									T	T	T	T	T	T	T
D curve	**20**									T	T	T	T	T	T	T
	25									T	T	T	T	T	T	T
	32									T	T	T	T	T	T	T
	40									T	T	T	T	T	T	T
	50									2.5	2.5	2.5	2.5	T	T	T
	63										2.5	2.5	2.5	T	T	T
	80												2.5	T	T	T
	100														T	T
	125														T	T
NG125N/S/H	**⩽ 20**			0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
B, C curves	**25, 32**						0.5	0.63	0.8	T	T	T	T	T	T	T
	40							0.63	0.8	T	T	T	T	T	T	T
	50							0.63	0.8	2.5	2.5	2.5	2.5	T	T	T
	63								0.8		2.5	2.5	2.5	T	T	T
	80												2.5	T	T	T
	100												2.5	T	T	T
	125														T	T
NG125N/S/H	**⩽ 20**			0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
D curve	**25, 32**						0.5	0.63	0.8	T	T	T	T	T	T	T
	40							0.63	0.8	T	T	T	T	T	T	T
	50								0.8	2.5	2.5	2.5	2.5	T	T	T
	63										2.5	2.5	2.5	T	T	T
	80												2.5	T	T	T
	100														T	T
	125														T	T
NG125L	**⩽ 16**		0.3	0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
B, C curves	**20**			0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	25, 32						0.5	0.63	0.8	T	T	T	T	T	T	T
	40							0.63	0.8	T	T	T	T	T	T	T
	50							0.63	0.8	2.5	2.5	2.5	2.5	T	T	T
	63								0.8		2.5	2.5	2.5	T	T	T
	80												2.5	T	T	T
NG125L	**⩽ 16**		0.3	0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
D curve	**20**			0.4	0.5	0.5	0.5	0.63	0.8	T	T	T	T	T	T	T
	25, 32						0.5	0.63	0.8	T	T	T	T	T	T	T
	40							0.63	0.8	T	T	T	T	T	T	T
	50								0.8	2.5	2.5	2.5	2.5	T	T	T
	63										2.5	2.5	2.5	T	T	T
	80												2.5	T	T	T

Protection discrimination

Upstream: NR/NS100 to 160 - Trip unit STR
Downstream: iDPN, iDPN N, C60, B, C, D, K, L, U, Z curves

Upstream		**NR/NS100N/SX/H/L**							**NR/NS160N/SX/H/L**									
Trip unit		**STR22SE**							**STR22SE**									
Downstream	**Rating (A)**	**40**			**100**				**80**					**160**				
	Setting Ir	**16**	**25**	**40**	**40**	**63**	**80**	**100**	**32**	**40**	**50**	**63**	**80**	**63**	**80**	**100**	**125**	**160**
Discrimination limit (kA)																		
iDPN	**⩽ 10**		0.4	0.4	1.2	1.2	1.2	1.2	T	T	T	T	T	T	T	T	T	T
B, C curves	**16**			0.4	1.2	1.2	1.2	1.2		T	T	T	T	T	T	T	T	T
	20					1.2	1.2	1.2			T	T	T	T	T	T	T	T
	25					1.2	1.2	1.2				T	T	T	T	T	T	T
	32						1.2	1.2					T		T	T	T	T
	40							1.2								T	T	T
iDPN N	**⩽ 10**		0.4	0.4	1.2	1.2	1.2	1.2	T	T	T	T	T	T	T	T	T	T
C, D curves	**16**			0.4	1.2	1.2	1.2	1.2		T	T	T	T	T	T	T	T	T
	20					1.2	1.2	1.2			T	T	T	T	T	T	T	T
	25					1.2	1.2	1.2				T	T	T	T	T	T	T
	32						1.2	1.2					T		T	T	T	T
	40							1.2								T	T	T
C60N	**⩽ 10**		0.4	0.4	1.2	1.2	1.2	1.2	T	T	T	T	T	T	T	T	T	T
B, C, D curves	**16**			0.4	1.2	1.2	1.2	1.2		T	T	T	T	T	T	T	T	T
	20					1.2	1.2	1.2			T	T	T	T	T	T	T	T
	25					1.2	1.2	1.2				T	T	T	T	T	T	T
	32						1.2	1.2					T		T	T	T	T
	40							1.2								T	T	T
	50																T	T
	63																	T
C60H	**⩽ 10**		0.4	0.4	1.2	1.2	1.2	1.2	T	T	T	T	T	T	T	T	T	T
C curve	**16**			0.4	1.2	1.2	1.2	1.2		T	T	T	T	T	T	T	T	T
	20					1.2	1.2	1.2			T	T	T	T	T	T	T	T
	25						1.2	1.2				T	T	T	T	T	T	T
	32						1.2	1.2					T		T	T	T	T
	40							1.2								T	T	T
	50																T	T
	63																	T
C60L	**⩽ 10**		0.4	0.4	1.2	1.2	1.2	1.2	T	T	T	T	T	T	T	T	T	T
B, C curves	**16**			0.4	1.2	1.2	1.2	1.2		T	T	T	T	T	T	T	T	T
K, Z curves	**20**					1.2	1.2	1.2			T	T	T	T	T	T	T	T
	25					1.2	1.2	1.2				T	T	T	T	T	T	T
	32						1.2	1.2					T		T	T	T	T
	40							1.2								T	T	T
	50																T	T
	63																	T

T	*Total discrimination, up to the breaking capacity of the downstream circuit breaker.*
400	*Discrimination limit = 400 kA.*
	No discrimination.

Protection discrimination

Upstream: NR/NS250 to 630 - Trip unit STR
Downstream: iDPN, iDPN N, C60, B, C, D, K, L, U, Z curves

Upstream		NR/NS250N/SX/H/L					NR/NS400N/H/L					NR/NS630N/H/L				
Trip unit		STR22SE					STR23SE/53UE					STR23SE/53UE				
Downstream	**Rating (A)**	**250**					**400**					**630**				
	Setting Ir	**100**	**125**	**160**	**200**	**250**	**160**	**200**	**250**	**320**	**400**	**250**	**320**	**400**	**500**	**630**
Discrimination limit (kA)																
iDPN B, C curves	**⩽ 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	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	T
	40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iDPN N C, D curves	**⩽ 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	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	T
	40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C60N B, C, D curves	**⩽ 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	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	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
	63			T	T	T	T	T	T	T	T	T	T	T	T	T
C60H C curve	**⩽ 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	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	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
	63			T	T	T	T	T	T	T	T	T	T	T	T	T
C60L B, C curves K, Z curves	**⩽ 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	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	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
	63			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.*

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: NR/NS100 to 160 - Trip unit STR
Downstream: C120N/H, NG125, B, C, D curves

Upstream		NR/NS100N/SX/H/L							NR/NS160N/SX/H/L									
Trip unit		STR22SE							STR22SE									
Downstream	**Rating (A)**	**40**			**100**				**80**					**160**				
	Setting Ir	**16**	**25**	**40**	**40**	**63**	**80**	**100**	**32**	**40**	**50**	**63**	**80**	**63**	**80**	**100**	**125**	**160**
Discrimination limit (kA)																		
C120N/H B, C curves	**16**					0.63	0.8	1						T	T	T	T	T
	20					0.63	0.8	1						T	T	T	T	T
	25					0.63	0.8	1						T	T	T	T	T
	32						0.8	1						T	T	T	T	T
	40							1							T	T	T	T
	50															T	T	T
	63																2.5	2.5
	80																	2.5
	100																	
	125																	
C120N/H D curve	**16**					0.63	0.8	1						T	T	T	T	T
	20					0.63	0.8	1						T	T	T	T	T
	25					0.63	0.8	1						T	T	T	T	T
	32						0.8	1						T	T	T	T	T
	40							1							T	T	T	T
	50															T	T	T
	63																2.5	2.5
	80																	2.5
	100																	
	125																	
NG125N/S/H B, C curves	**≤ 20**					0.63	0.8	1						T	T	T	T	T
	25, 32						0.8	1							T	T	T	T
	40							1								T	T	T
	50																2.5	2.5
	63																	2.5
	80																	
	100																	
	125																	
NG125N/S/H D curve	**≤ 20**					0.63	0.8	1						T	T	T	T	T
	25, 32						0.8	1							T	T	T	T
	40							1								T	T	T
	50																2.5	2.5
	63																	2.5
	80																	
	100																	
	125																	
NG125L B, C curves	**≤ 16**					0.63	0.8	1						T	T	T	T	T
	20						0.8	1						T	T	T	T	T
	25, 32							1							T	T	T	T
	40															T	T	T
	50																2.5	2.5
	63																	2.5
	80																	
NG125L D curve	**≤ 16**					0.63	0.8	1						T	T	T	T	T
	20						0.8	1						T	T	T	T	T
	25, 32							1							T	T	T	T
	40															T	T	T
	50																2.5	2.5
	63																	2.5
	80																	

Protection discrimination

Upstream: NR/NS250 to 630 - Trip unit STR
Downstream: C120N/H, NG125 B, C, D curves

Upstream		NR/NS250N/SX/H/L					NR/NS400N/H/L					NR/NS630N/H/L				
Trip unit		STR22SE					STR23SE - STR53UE					STR23SE - STR53UE				
Downstream	**Rating (A)**	250					400					630				
	Setting Ir	100	125	160	200	250	160	200	250	320	400	250	320	400	500	630
Discrimination limit (kA)																
C120N/H	**16**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
B, C curves	**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	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
	63			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
	100					T			T	T	T	T	T	T	T	T
	125									T	T		T	T	T	T
C120N/H	**16**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
D curve	**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	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
	63			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
	100					T			T	T	T	T	T	T	T	T
	125									T	T		T	T	T	T
NG125N/S/H	**⩽ 20**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
B, C curves	**25, 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
	63			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
	100					T			T	T	T	T	T	T	T	T
	125									T	T		T	T	T	T
NG125N/S/H	**⩽ 20**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
D curve	**25, 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
	63			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
	100					T			T	T	T	T	T	T	T	T
	125									T	T		T	T	T	T
NG125L	**⩽ 16**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
B, C curves	**20**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	25, 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
	63			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
NG125L	**⩽ 16**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
D curve	**20**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	25, 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
	63			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

Protection discrimination

Upstream: NR/NS100 to 250 - Trip unit TMD
Downstream: NR/NS100 to 250

Upstream Trip unit		NR/NS100N/SX/H/L TM-D								NR/NS160N/SX/H/L TM-D				NS250N/H/L TM-D		
Downstream	**Rating (A) Setting Ir**	**16**	**25**	**32**	**40**	**50**	**63**	**80**	**100**	**80**	**100**	**125**	**160**	**160**	**200**	**250**
Discrimination limit (kA)																
NR100F **NS100N** TM-D	**16**			0.4	0.5	0.5	0.5	0.63	0.8	1	2	2	2	T	T	T
	25				0.5	0.5	0.5	0.63	0.8	1	2	2	2	T	T	T
	32						0.5	0.63	0.8	1	2	2	2	T	T	T
	40							0.63	0.8	1	2	2	2	T	T	T
	50							0.63	0.8	1	2	2	2	T	T	T
	63								0.8		2	2	2	T	T	T
	80											2	2	T	T	T
	100												2	T	T	T
NS100SX/H TM-D	**16**				0.5	0.5	0.5	0.63	0.8	1	2	2	2	T	T	T
	25					0.5	0.5	0.63	0.8	1	2	2	2	T	T	T
	32						0.5	0.63	0.8	1	2	2	2	36	36	36
	40							0.63	0.8	1	2	2	2	36	36	36
	50							0.63	0.8	1	2	2	2	36	36	36
	63								0.8		2	2	2	36	36	36
	80											2	2	36	36	36
	100												2	36	36	36
NS100L TM-D	**16**				0.5	0.5	0.5	0.63	0.8	1	2	2	2	T	T	T
	25					0.5	0.5	0.63	0.8	1	2	2	2	T	T	T
	32						0.5	0.63	0.8	1	2	2	2	36	36	36
	40							0.63	0.8	1	2	2	2	36	36	36
	50							0.63	0.8	1	2	2	2	36	36	36
	63								0.8		2	2	2	36	36	36
	80											2	2	36	36	36
	100												2	36	36	36
NR160F **NS160N/NE** TM-D	**⩽ 63**											2	2	2.6	4	5
	80											2	2	2.6	4	5
	100												2	2.6	4	5
	125														4	5
	160															5
NS160SX/H TM-D	**⩽ 63**											2	2	2.6	4	5
	80											2	2	2.6	4	5
	100												2	2.6	4	5
	125														4	5
	160															5
NS160L TM-D	**⩽ 63**											2	2	2.6	4	5
	80											2	2	2.6	4	5
	100												2	2.6	4	5
	125														4	5
	160															5
NR250F **NS250N** TM-D	**⩽ 100**													1.6	2	2.5
	125														2	2.5
	160															2.5
	200															
	250															
NS250SX/H/L TM-D	**⩽ 100**													1.6	2	2.5
	125														2	2.5
	160															2.5
	200															
	250															
NR/NS100F/N STR22SE	**40**							0.63	0.8	1	1	1	1	T	T	T
	100												1	T	T	T
NS100SX/H/L STR22SE	**40**							0.63	0.8	1	1	1	1	36	36	36
	100												1	36	36	36
NR160F **NS160N** STR22SE	**40**							0.63	0.8	1	1	1	1	1.6	2	2.5
	80															
	100												1	1.6	2	2.5
	160															2.5
NS160SX/H/L STR22SE	**40**							0.63	0.8	1	1	1	1	1.6	2	2.5
	100												1	1.6	2	2.5
	160															2.5
NR250F **NS250N** STR22SE	**⩽ 100**													1.6	2	2.5
	160															2.5
	250															
NS250SX/H/L STR22SE	**⩽ 100**													1.6	2	2.5
	160															2.5
	250															

Protection discrimination

Upstream: NR/NS100 to 250 - Trip unit TMD
Downstream: NSC100N, NS125E, NSA160N, NB250

Upstream Trip unit		NR/NS100N/SX/H/L TM-D								NNR/S160N/SX/H/L TM-D				NS250N/H/L TM-D		
Downstream	**Rating (A) Setting Ir**	**16**	**25**	**32**	**40**	**50**	**63**	**80**	**100**	**80**	**100**	**125**	**160**	**160**	**200**	**250**
Discrimination limit (kA)																
NSC100N	**15**		0.3	0.4	0.5	0.5	0.5	0.63	0.8	2	2	2	2	T	T	T
	20			0.4	0.5	0.5	0.5	0.63	0.8	2	2	2	2	T	T	T
	25					0.5	0.5	0.63	0.8	2	2	2	2	T	T	T
	32						0.5	0.63	0.8	2	2	2	2	T	T	T
	40							0.63	0.8	2	2	2	2	T	T	T
	50							0.63	0.8		2	2	2	T	T	T
	63								0.8		2	2	2	T	T	T
	70											2	2	T	T	T
	80											2	2	T	T	T
	100												2		T	T
NS125E	**16**									1	2	2	2	T	T	T
	25									1	2	2	2	T	T	T
	40									1	2	2	2	T	T	T
	63										2	2	2	T	T	T
	80											2	2	T	T	T
	100												2	T	T	T
	125														4	5
NSA160N	**16**			0.4	0.5	0.5	0.5	0.63	0.8	2	2	2	2	T	T	T
	25				0.5	0.5	0.5	0.63	0.8	2	2	2	2	T	T	T
	32						0.5	0.63	0.8	2	2	2	2	T	T	T
	40							0.63	0.8	2	2	2	2	T	T	T
	50							0.63	0.8	2	2	2	2	T	T	T
	63								0.8		2	2	2	T	T	T
	80											2	2	T	T	T
	100												2	T	T	T
	125														T	T
	160															T
NB250	**100**															
	125															
	150															
	175															
	200															
	225															

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: NR/NS100 to 160 - Trip unit STR
Downstream: NR/NS100 to 160

Upstream		NR/NS100N/SX/H/L STR22SE							NR/NS160N/SX/H/L STR22SE									
Trip unit																		
Downstream	**Rating (A)**	**40**			**100**				**80**					**160**				
	Setting Ir	**16**	**25**	**40**	**40**	**63**	**80**	**100**	**32**	**40**	**50**	**63**	**80**	**63**	**80**	**100**	**125**	**160**
Discrimination limit (kA)																		
NR100F **NS100N** TM-D	**16**					1.2	1.2	1.2						2	2	2	2	2
	25					1.2	1.2	1.2						2	2	2	2	2
	32						1.2	1.2							2	2	2	2
	40							1.2								2	2	2
	50							1.2									2	2
	63																	2
	80																	
	100																	
NS100SX/H TM-D	**16**					1.2	1.2	1.2						2	2	2	2	2
	25					1.2	1.2	1.2						2	2	2	2	2
	32						1.2	1.2							2	2	2	2
	40							1.2									2	2
	50							1.2									2	2
	63																	2
	80																	
	100																	
NS100L TM-D	**16**					1.2	1.2	1.2						2	2	2	2	2
	25					1.2	1.2	1.2						2	2	2	2	2
	32						1.2	1.2							2	2	2	2
	40							1.2									2	2
	50							1.2									2	2
	63																	2
	80																	
	100																	
NR160F **NS160N/NE** TM-D	**⩽ 63**																	
	80																	
	100																	
	125																	
	160																	
NS160SX/H TM-D	**⩽ 63**																	
	80																	
	100																	
	125																	
	160																	
NS160L TM-D	**⩽ 63**																	
	80																	
	100																	
	125																	
	160																	
NR/NS100F/N STR22SE	**40**					1.2	1.2	1.2						2	2	2	2	2
	100																	2
NS100SX/H/L STR22SE	**40**					1.2	1.2	1.2						2	2	2	2	2
	100																	2
NR160F **NS160N** STR22SE	**40**					1.2	1.2	1.2						2	2	2	2	2
	80																	
	100																	2
	160																	
NS160SX/H/L STR22SE	**40**					1.2	1.2	1.2						2	2	2	2	2
	100																2	2
	160																	

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: NR/NS250 to 630 - Trip unit STR
Downstream: NR/NS100 to 250

Upstream		NR/NS250N/SX/H/L					NR/NS400N/H/L					NR/NS630N/H/L				
Trip unit		STR22SE					STR23SE - STR53UE					STR23SE - STR53UE				
Downstream	**Rating (A)**	250					400					630				
	Setting Ir	100	125	160	200	250	160	200	250	320	400	250	320	400	500	630
Discrimination limit (kA)																
NR100F	**16**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS100N	**25**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
TM-D	**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
	63			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
	100					T			T	T	T	T	T	T	T	T
NS100SX/H	**16**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
TM-D	**25**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	32	36	36	36	36	36	T	T	T	T	T	T	T	T	T	T
	40	36	36	36	36	36	T	T	T	T	T	T	T	T	T	T
	50		36	36	36	36	T	T	T	T	T	T	T	T	T	T
	63			36	36	36	T	T	T	T	T	T	T	T	T	T
	80				36	36		T	T	T	T	T	T	T	T	T
	100					36			T	T	T	T	T	T	T	T
NS100L	**16**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
TM-D	**25**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	32	36	36	36	36	36	T	T	T	T	T	T	T	T	T	T
	40	36	36	36	36	36	T	T	T	T	T	T	T	T	T	T
	50		36	36	36	36	T	T	T	T	T	T	T	T	T	T
	63			36	36	36	T	T	T	T	T	T	T	T	T	T
	80				36	36		T	T	T	T	T	T	T	T	T
	100					36			T	T	T	T	T	T	T	T
NR160F	**⩽ 63**			3	3	3	T	T	T	T	T	T	T	T	T	T
NS160N/NE	**80**				3	3		T	T	T	T	T	T	T	T	T
TM-D	**100**					3			T	T	T	T	T	T	T	T
	125									T	T		T	T	T	T
	160										T		T	T	T	T
NS160SX/H	**⩽ 63**			3	3	3	T	T	T	T	T	T	T	T	T	T
TM-D	**80**				3	3		T	T	T	T	T	T	T	T	T
	100					3			T	T	T	T	T	T	T	T
	125									T	T		T	T	T	T
	160										T		T	T	T	T
NS160L	**⩽ 63**			3	3	3	T	T	T	T	T	T	T	T	T	T
TM-D	**80**				3	3		T	T	T	T	T	T	T	T	T
	100					3			T	T	T	T	T	T	T	T
	125									T	T		T	T	T	T
	160										T		T	T	T	T
NR250F	**⩽ 100**					3			5	5	5	T	T	T	T	T
NS250N	**125**									5	5		T	T	T	T
TM-D	**160**										5			T	T	T
	200														T	T
	250															T
NS250SX/H/L	**⩽ 100**					3			5	5	5	T	T	T	T	T
TM-D	**125**									5	5		T	T	T	T
	160										5			T	T	T
	200														T	T
	250															T
NR/NS100F/N	**40**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR22SE	**100**			T	T	T	T	T	T	T	T	T	T	T	T	T
NS100SX/H/L	**40**	36	36	36	36	36	T	T	T	T	T	T	T	T	T	T
STR22SE	**100**			36	36	36	T	T	T	T	T	T	T	T	T	T
NS160F/N	**40**	3	3	3	3	3	T	T	T	T	T	T	T	T	T	T
STR22SE	**80**						T	T	T	T	T	T	T	T	T	T
	100			3	3	3	T	T	T	T	T	T	T	T	T	T
	160					3		T	T	T	T	T	T	T	T	T
NS160SX/H/L	**40**	3	3	3	3	3	T	T	T	T	T	T	T	T	T	T
STR22SE	**100**			3	3	3	T	T	T	T	T	T	T	T	T	T
	160					3		T	T	T	T	T	T	T	T	T
NR250F	**⩽ 100**			3	3	3	5	5	5	5	5	T	T	T	T	T
NS250N	**160**				3	3			5	5	5	T	T	T	T	T
STR22SE	**250**										5		T	T	T	T
NS250SX/H/L	**⩽ 100**				3	3	5	5	5	5	5	T	T	T	T	T
STR22SE	**160**				3	3			5	5	5	T	T	T	T	T
	250										5		T	T	T	T

Protection discrimination

Upstream: NR/NS100 to 160 - Trip unit STR
Downstream: NSC100N, NS125E, NSA160N

Upstream		NR/NS100N/SX/H/L							NR/NS160N/SX/H/L									
Trip unit		STR22SE							STR22SE									
Downstream	**Rating (A)**	**40**			**100**				**80**					**160**				
	Setting Ir	**16**	**25**	**40**	**40**	**63**	**80**	**100**	**32**	**40**	**50**	**63**	**80**	**63**	**80**	**100**	**125**	**160**
Discrimination limit (kA)																		
NSC100N	**15**			0.4	0.4	0.63	0.8	1						2	2	2	2	2
	20					0.63	0.8	1						2	2	2	2	2
	25					0.63	0.8	1						2	2	2	2	2
	32						0.8	1							2	2	2	2
	40							1								2	2	2
	50																2	2
	63																	2
	70																	
	80																	
	100																	
NS125E	**16**																	
	25																	
	40																	
	63																	
	80																	
	100																	
	125																	
NSA160N	**16**			0.4	0.4	0.63	0.8	1						2	2	2	2	2
	25					0.63	0.8	1						2	2	2	2	2
	32						0.8	1							2	2	2	2
	40							1								2	2	2
	50																2	2
	63																	2
	80																	
	100																	
	125																	
	160																	

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: NR/NS250 to 630 - Trip unit STR
Downstream: NR/NS400 to 630, NSC100N, NS125E, NSA160N, NB250 to 600

Upstream		NR/NS250N/SX/H/L					NR/NS400N/H/L					NR/NS630N/H/L				
Trip unit		STR22SE					STR23SE - STR53UE					STR23SE - STR53UE				
Downstream	**Rating (A)**	**250**					**400**					**630**				
	Setting Ir	**100**	**125**	**160**	**200**	**250**	**160**	**200**	**250**	**320**	**400**	**250**	**320**	**400**	**500**	**630**
Discrimination limit (kA)																
NR400F	**160**											8	8	8	8	8
NS400N	**200**												8	8	8	8
STR23SE	**250**													8	8	8
STR53UE	**330**														8	8
	400															8
NS400H	**160**											8	8	8	8	8
STR23SE	**200**												8	8	8	8
STR53UE	**250**													8	8	8
	320														8	8
	400															8
NS400L	**160**											8	8	8	8	8
STR23SE	**200**												8	8	8	8
STR53UE	**250**													8	8	8
	320														8	8
	400															8
NR630F	**250**															
NS630N	**320**															
STR23SE	**400**															
STR53UE	**500**															
	630															
NS630H	**250**															
STR23SE	**320**															
STR53UE	**400**															
	500															
	630															
NS630L	**250**															
STR23SE	**320**															
STR53UE	**400**															
	500															
	630															
NSC100N	**15**	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	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
	70		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
	100			T	T	T			T	T	T	T	T	T	T	T
NS125E	**16**	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
	40	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
	80				T	T	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
NSA160N	**16**	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	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
	63			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
	100					T			T	T	T	T	T	T	T	T
	125									T	T		T	T	T	T
	160										T			T	T	T
NB250	**100**								5	5	5	T	T	T	T	T
	125									5	5		T	T	T	T
	150										5			T	T	T
	175														T	T
	200															T
	225															T
NB400	**250**															
	300															
	350															
	400															
NB600	**500**															
	600															

Protection discrimination

Upstream: NS630b to 1600N/H
Downstream: Multi 9, NR/NS100 to 250

Upstream		NS630b/NS800/NS1000/NS1250/1600N/H																		
Trip unit		Micrologic 2.0 - Isd : 10 Ir									Micrologic 5.0 - 6.0 - 7.0 - Inst : OFF									
	Rating (A)	630					800	1000	1250	1600	630					800	1000	1250	1600
Downstream	Setting Ir	250	320	400	500	630	800	1000	1250	1600	250	320	400	500	630	800	1000	1250	1600
Discrimination limit (kA)																			
iDPN		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
iDPN N		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
NG125L		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125N/S/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NR100F **NS100N** TM-D	16	T	T	T	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	T	T	T
	32	T	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	T
	50	T	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	T
	80	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
NS100SX/H TM-D	16	T	T	T	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	T	T	T
	32	T	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	T
	50	T	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	T
	80	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
NS100L TM-D	16	T	T	T	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	T	T	T
	32	T	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	T
	50	T	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	T
	80	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
NR160F **NS160N/NE** TM-D	⩽ 63	T	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	T
	100	T	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
NS160SX/H TM-D	⩽ 63	T	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	T
	100	T	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
NS160L TM-D	⩽ 63	T	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	T
	100	T	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
NR250F **NS250N** TM-D	⩽ 100	T	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
	200				T	T	T	T	T	T				T	T	T	T	T	T
	250					T	T	T	T	T					T	T	T	T	T
NS250SX/H/L TM-D	⩽ 100	T	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
	200				T	T	T	T	T	T				T	T	T	T	T	T
	250					T	T	T	T	T					T	T	T	T	T
NR/NS100F/N STR22SE	40	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
NS100SX/H/L STR22SE	40	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
NR160F **NS160N** STR22SE	40	T	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	T
	100	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
NS160SX/H/L STR22SE	40	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
	160	T	T	T	T	T	T	T	T	T		T	T	T	T	T	T	T	T
NR250F **NS250N** STR22SE	⩽ 100	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
	250			T	T	T	T	T	T	T			T	T	T	T	T	T	T
NS250SX/H/L STR22SE	⩽ 100	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
	250			T	T	T	T	T	T	T			T	T	T	T	T	T	T

Protection discrimination

Upstream: NS630b to 3200
Downstream: Multi 9, NR/NS100 to 250

Upstream		NS630b/NS800/NS1000L							NS1600/NS2000/NS2500/NS3200N							
Trip unit		Micrologic 5.0 - 6.0 - 7.0							Micrologic 2.0				Micrologic 5.0 - 6.0 - 7.0			
		Inst : OFF							Isd : 10 Ir				Inst : OFF			
	Rating (A)	630					800	1000	1600	2000	2500	3200	1600	2000	2500	3200
Downstream	Setting Ir	250	320	400	500	630	800	1000	1600	2000	2500	3200	1600	2000	2500	3200
Discrimination limit (kA)																
C120N/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
NG125N/S/H		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NR100F NS100N TM-D	16	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	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	T
NS100SX/H TM-D	16	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	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	T
NS100L TM-D	16	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	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	T
NR160F NS160N/NE TM-D	⩽ 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	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
NS160SX/H TM-D	⩽ 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	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
NS160L TM-D	⩽ 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	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
NR250F NS250N TM-D	⩽ 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
NS250SX/H/L TM-D	⩽ 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
NR/NS100F/N STR22SE	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
NS100SX/H/L STR22SE	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
NR160F NS160N STR22SE	40	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	T
	160		T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS160SX/H/L STR22SE	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
NR250F NS250N STR22SE	⩽ 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
	250				T	T	T	T	T	T	T	T	T	T	T	T
NS250SX/H/L STR22SE	⩽ 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
	250			T	T	T	T	T	T	T	T	T	T	T	T	T

Protection discrimination

Upstream: NS1600 to 3200
Downstream: Multi 9, NR/NS100 to 250

Upstream		NS1600/NS2000/NS2500/NS3200H							
Trip unit		Micrologic 2.0 - Isd : 10 Ir				Micrologic 5.0 - 6.0 - 7.0 - Inst : OFF			
	Rating (A)	1600	2000	2500	3200	1600	2000	2500	3200
Downstream	Setting Ir	1600	2000	2500	3200	1600	2000	2500	3200
Discrimination limit (kA)									
C120N/H		T	T	T	T	T	T	T	T
NR100F NS100N TM-D	16	T	T	T	T	T	T	T	T
	25	T	T	T	T	T	T	T	T
	32	T	T	T	T	T	T	T	T
	40	T	T	T	T	T	T	T	T
	50	T	T	T	T	T	T	T	T
	63	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	T
NS100SX/H/L TM-D	16	40	40	40	40	40	40	40	40
	25	40	40	40	40	40	40	40	40
	32	40	40	40	40	40	40	40	40
	40	40	40	40	40	40	40	40	40
	50	40	40	40	40	40	40	40	40
	63	40	40	40	40	40	40	40	40
	80	40	40	40	40	40	40	40	40
	100	40	40	40	40	40	40	40	40
NR160F NS160N/NE TM-D	⩽ 63	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	T
	125	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T
NS160SX/H/L TM-D	⩽ 63	40	40	40	40	40	40	40	40
	80	40	40	40	40	40	40	40	40
	100	40	40	40	40	40	40	40	40
	125	40	40	40	40	40	40	40	40
	160	40	40	40	40	40	40	40	40
NR250F NS250N TM-D	⩽ 100	T	T	T	T	T	T	T	T
	125	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	T
	250	T	T	T	T	T	T	T	T
NS250SX/H/L TM-D	⩽ 100	40	40	40	40	40	40	40	40
	125	40	40	40	40	40	40	40	40
	160	40	40	40	40	40	40	40	40
	200	40	40	40	40	40	40	40	40
	250	40	40	40	40	40	40	40	40
NR/NS100F/N STR22SE	40	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T
NS100SX/H/L STR22SE	40	40	40	40	40	40	40	40	40
	100	40	40	40	40	40	40	40	40
NR160F NS160N STR22SE	40	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	T
	160	T	T	T	T	T	T	T	T
NS160SX/H/L STR22SE	40	40	40	40	40	40	40	40	40
	100	40	40	40	40	40	40	40	40
	160	40	40	40	40	40	40	40	40
NR250F NS250N STR22SE	⩽ 100	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T
	250	T	T	T	T	T	T	T	T
NS250SX/H/L STR22SE	⩽ 100	40	40	40	40	40	40	40	40
	160	40	40	40	40	40	40	40	40
	250	40	40	40	40	40	40	40	40

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: NS630b to 1600N/H
Downstream: NR/NS400 to 630, NSC100N, NS125E, NSA160N, NB250 à 600

Upstream		NS630b/NS800/NS1000/NS1250/1600N/H																	
Trip unit		Micrologic 2.0 - Isd : 10 Ir									Micrologic 5.0 - 6.0 - 7.0 - Inst : OFF								
	Rating (A)	630					800	1000	1250	1600	630					800	1000	1250	1600
Downstream	Setting Ir	250	320	400	500	630	800	1000	1250	1600	250	320	400	500	630	800	1000	1250	1600
Discrimination limit (kA)																			
NR400F	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS400N	200		T	T	T	T	T	T	T	T		T	T	T	T	T	T	T	T
STR23SE	250			T	T	T	T	T	T	T			T	T	T	T	T	T	T
STR53UE	320				T	T	T	T	T	T				T	T	T	T	T	T
	400					T	T	T	T	T					T	T	T	T	T
NS400H	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR23SE	200		T	T	T	T	T	T	T	T		T	T	T	T	T	T	T	T
STR53UE	250			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
	400					T	T	T	T	T					T	T	T	T	T
NS400L	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR23SE	200		T	T	T	T	T	T	T	T		T	T	T	T	T	T	T	T
STR53UE	250			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
	400					T	T	T	T	T					T	T	T	T	T
NR630F	250			T	T	T	T	T	T	T			T	T	T	T	T	T	T
NS630N	320				T	T	T	T	T	T				T	T	T	T	T	T
STR23SE	400					T	T	T	T	T					T	T	T	T	T
STR53UE	500						T	T	T	T						T	T	T	T
	630							T	T	T							T	T	T
NS630H	250			T	T	T	T	T	T	T			T	T	T	T	T	T	T
STR23SE	320				T	T	T	T	T	T				T	T	T	T	T	T
STR53UE	400					T	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
NS630L	250			T	T	T	T	T	T	T			T	T	T	T	T	T	T
STR23SE	320				T	T	T	T	T	T				T	T	T	T	T	T
STR53UE	400					T	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
NSC100N	15	T	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	T	T	T
	25	T	T	T	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	T	T	T	T
	40	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
	63	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	70	T	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	T
	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS125E	16	T	T	T	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	T	T	T
	40	T	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	T
	80	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
	125		T	T	T	T	T	T	T	T		T	T	T	T	T	T	T	T
NSA160N	16	T	T	T	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	T	T	T
	32	T	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	T
	50	T	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	T
	80	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
	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
NB250	100	T	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
	150			T	T	T	T	T	T	T			T	T	T	T	T	T	T
	175			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
	225					T	T	T	T	T					T	T	T	T	T
NB400	250			T	T	T	T	T	T	T			T	T	T	T	T	T	T
	300			T	T	T	T	T	T	T			T	T	T	T	T	T	T
	350				T	T	T	T	T	T				T	T	T	T	T	T
	400					T	T	T	T	T					T	T	T	T	T
NB600	500						T	T	T	T						T	T	T	T
	600							T	T	T						T	T	T	T

Protection discrimination

Upstream: NS630b to 3200
Downstream: NR/NS400 to 630, NSC100N, NS125E, NSA160N, NB250 to 600

Upstream		NS630b/NS800/NS1000L							NS1600/NS2000/NS2500/NS3200N							
Trip unit		Micrologic 5.0 - 6.0 - 7.0 - Inst : OFF							Micrologic 2.0 - Isd : 10 Ir				Micrologic 5.0 - 6.0 - 7.0 - Inst : OFF			
	Rating (A)	630					800	1000	1700	2000	2500	3200	1600	2000	2500	3200
Downstream	Setting Ir	250	320	400	500	630	800	1000	1600	2000	2500	3200	1600	2000	2500	3200
Discrimination limit (kA)																
NR400F	**160**	18	18	18	18	18	18	18	T	T	T	T	T	T	T	T
NS400N	**200**		18	18	18	18	18	18	T	T	T	T	T	T	T	T
STR23SE	**250**			18	18	18	18	18	T	T	T	T	T	T	T	T
STR53UE	**320**				18	18	18	18	T	T	T	T	T	T	T	T
	400					18	18	18	T	T	T	T	T	T	T	T
NS400H	**160**	18	18	18	18	18	18	18	T	T	T	T	50	50	50	50
STR23SE	**200**		18	18	18	18	18	18	T	T	T	T	50	50	50	50
STR53UE	**250**			18	18	18	18	18	T	T	T	T	50	50	50	50
	320				18	18	18	18	T	T	T	T	50	50	50	50
	400					18	18	18	T	T	T	T	50	50	50	50
NS400L	**160**	30	30	30	30	30	30	30	T	T	T	T	50	50	50	50
STR23SE	**200**		30	30	30	30	30	30	T	T	T	T	50	50	50	50
STR53UE	**250**			30	30	30	30	30	T	T	T	T	50	50	50	50
	320				30	30	30	30	T	T	T	T	50	50	50	50
	400					30	30	30	T	T	T	T	50	50	50	50
NR630F	**250**			12	12	12	12	12	T	T	T	T	T	T	T	T
NS630N	**320**				12	12	12	12	T	T	T	T	T	T	T	T
STR23SE	**400**					12	12	12	T	T	T	T	T	T	T	T
STR53UE	**500**						12	12	T	T	T	T	T	T	T	T
	630							12	T	T	T	T	T	T	T	T
NS630H	**250**			12	12	12	12	12	T	T	T	T	50	50	50	50
STR23SE	**320**				12	12	12	12	T	T	T	T	50	50	50	50
STR53UE	**400**					12	12	12	T	T	T	T	50	50	50	50
	500						12	12	T	T	T	T	50	50	50	50
	630							12		T	T	T	50	50	50	50
NS630L	**250**			12	12	12	12	12	T	T	T	T	50	50	50	50
STR23SE	**320**				12	12	12	12	T	T	T	T	50	50	50	50
STR53UE	**400**					12	12	12	T	T	T	T	50	50	50	50
	500						12	12	T	T	T	T	50	50	50	50
	630							12		T	T	T	50	50	50	50
NSC100N	**15**	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	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
	70	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	T
NS125E	**16**	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
	40	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	T
	125		T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSA160N	**16**	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	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	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
NB250	**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
	150			T	T	T	T	T	T	T	T	T	T	T	T	T
	175				T	T	T	T	T	T	T	T	T	T	T	T
	200					T	T	T	T	T	T	T	T	T	T	T
	225						T	T	T	T	T	T	T	T	T	T
NB400	**250**			18	18	18	18	18	T	T	T	T	T	T	T	T
	300			18	18	18	18	18	T	T	T	T	T	T	T	T
	350				18	18	18	18	T	T	T	T	T	T	T	T
	400					18	18	18	T	T	T	T	T	T	T	T
NB600	**500**						12	12	T	T	T	T	T	T	T	T
	600						12	12	T	T	T	T	T	T	T	T

Protection discrimination

Upstream: NS1600 to 3200H
Downstream: NR/NS400 to 630, NSC100N, NS125E, NSA160N, NB250 to 600

Upstream Trip unit		NS1600/NS2000/NS2500/NS3200H Micrologic 2.0 - Isd : 10 Ir				Micrologic 5.0 - 6.0 - 7.0 - Inst : OFF			
Downstream	Rating (A) Setting Ir	1600 1600	2000 2000	2500 2500	3200 3200	1600 1600	2000 2000	2500 2500	3200 3200
Discrimination limit (kA)									
NR400F STR23SE STR53UE	**160**	28	T	T	T	T	T	T	T
	200	28	T	T	T	T	T	T	T
	250	28	T	T	T	T	T	T	T
	320	28	T	T	T	T	T	T	T
	400	28	T	T	T	T	T	T	T
NS400N STR23SE STR53UE	**160**	28	40	40	40	40	40	40	40
	200	28	40	40	40	40	40	40	40
	250	28	40	40	40	40	40	40	40
	320	28	40	40	40	40	40	40	40
	400	28	40	40	40	40	40	40	40
NS400H/L STR23SE STR53UE	**160**	28	35	40	40	40	40	40	40
	200	28	35	40	40	40	40	40	40
	250	28	35	40	40	40	40	40	40
	320	28	35	40	40	40	40	40	40
	400	28	35	40	40	40	40	40	40
NR630F STR23SE STR53UE	**250**	20	30	T	T	T	T	T	T
	320	20	30	T	T	T	T	T	T
	400	20	30	T	T	T	T	T	T
	500	20	30	T	T	T	T	T	T
	630	20	30	T	T	T	T	T	T
NS630N/H STR23SE STR53UE	**250**	20	30	40	40	40	40	40	40
	320	20	30	40	40	40	40	40	40
	400	20	30	40	40	40	40	40	40
	500	20	30	40	40	40	40	40	40
	630	20	30	40	40	40	40	40	40
NS630L STR23SE STR53UE	**250**	20	30	40	40	40	40	40	40
	320	20	30	40	40	40	40	40	40
	400	20	30	40	40	40	40	40	40
	500	20	30	40	40	40	40	40	40
	630	20	30	40	40	40	40	40	40
NSC100N	**15**	T	T	T	T	T	T	T	T
	20	T	T	T	T	T	T	T	T
	25	T	T	T	T	T	T	T	T
	32	T	T	T	T	T	T	T	T
	40	T	T	T	T	T	T	T	T
	50	T	T	T	T	T	T	T	T
	63	T	T	T	T	T	T	T	T
	70	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	T
NS125E	**16**	T	T	T	T	T	T	T	T
	25	T	T	T	T	T	T	T	T
	40	T	T	T	T	T	T	T	T
	63	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	T
	125	T	T	T	T	T	T	T	T
NSA160N	**16**	T	T	T	T	T	T	T	T
	25	T	T	T	T	T	T	T	T
	32	T	T	T	T	T	T	T	T
	40	T	T	T	T	T	T	T	T
	50	T	T	T	T	T	T	T	T
	63	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	T
	125	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T
NB250	**100**	T	T	T	T	T	T	T	T
	125	T	T	T	T	T	T	T	T
	150	T	T	T	T	T	T	T	T
	175	T	T	T	T	T	T	T	T
	200	T	T	T	T	T	T	T	T
	225	T	T	T	T	T	T	T	T
NB400	**250**	T	T	T	T	T	T	T	T
	300	T	T	T	T	T	T	T	T
	350	T	T	T	T	T	T	T	T
	400	T	T	T	T	T	T	T	T
NB600	**500**	T	T	T	T	T	T	T	T
	600	T	T	T	T	T	T	T	T

Protection discrimination

Upstream: NS630b to 1600N/H
Downstream: NS630b to 1250

Upstream	NS630b/NS800/NS1000/NS1250/1600N/H																		
Trip unit	Micrologic 2.0 - Isd : 10 Ir									Micrologic 5.0 - 6.0 - 7.0 - Inst : OFF									
	Rating (A)	630					800	1000	1250	1600	630					800	1000	1250	1600
Downstream	Setting Ir	250	320	400	500	630	800	1000	1250	1600	250	320	400	500	630	800	1000	1250	1600
Discrimination limit (kA)																			
NS630bN/H Micrologic 2.0	**250**			4	5	6.3	8	10	12.5	16			25	25	25	25	25	25	25
	320				5	6.3	8	10	12.5	16				25	25	25	25	25	25
	400					6.3	8	10	12.5	16					25	25	25	25	35
	500						8	10	12.5	16						25	25	25	25
	630							10	12.5	16							25	25	25
NS630bN/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**250**												25	25	25	25	25	25	25
	320													25	25	25	25	25	25
	400														25	25	25	25	35
	500															25	25	25	25
	630																25	25	25
NS630bL Micrologic 2.0	**250**			4	5	6.3	8	10	12.5	16			50	50	50	50	50	50	50
	320				5	6.3	8	10	12.5	16				50	50	50	50	50	50
	400					6.3	8	10	12.5	16					50	50	50	50	50
	500						8	10	12.5	16						50	50	50	50
	630							10	12.5	16							50	50	50
NS630bL Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**250**												50	50	50	50	50	50	50
	320													50	50	50	50	50	50
	400														50	50	50	50	50
	500															50	50	50	50
	630																50	50	50
NS800N/H Micrologic 2.0	**320**				5	6.3	8	10	12.5	16				25	25	25	25	25	25
	400					6.3	8	10	12.5	16					25	25	25	25	25
	500						8	10	12.5	16						25	25	25	25
	630							10	12.5	16							25	25	25
	800								12.5	16								25	25
NS800N/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**320**													25	25	25	25	25	25
	400														25	25	25	25	25
	500															25	25	25	25
	630																25	25	25
	800																	25	25
NS800L Micrologic 2.0	**320**				5	6.3	8	10	12.5	16				50	50	50	50	50	50
	400					6.3	8	10	12.5	16					50	50	50	50	50
	500						8	10	12.5	16						50	50	50	50
	630							10	12.5	16							50	50	50
	800								12.5	16								50	50
NS800L Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**320**													50	50	50	50	50	50
	400														50	50	50	50	50
	500															50	50	50	50
	630																50	50	50
	800																	50	50
NS1000N/H Micrologic 2.0	**400**					6.3	8	10	12.5	16					25	25	25	25	25
	500						8	10	12.5	16						25	25	25	25
	630							10	12.5	16							25	25	25
	800								12.5	16								25	25
	1000									16									25
NS1000N/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**400**														25	25	25	25	25
	500															25	25	25	25
	630																25	25	25
	800																	25	25
	1000																		25
NS1000L Micrologic 2.0	**400**					6.3	8	10	12.5	16					50	50	50	50	50
	500						8	10	12.5	16						50	50	50	50
	630							10	12.5	16							50	50	50
	800								12.5	16								50	50
	1000									16									50
NS1000L Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**400**														50	50	50	50	50
	500															50	50	50	50
	630																50	50	50
	800																	50	50
	1000																		50
NS1250N/H Micrologic 2.0	**500**						8	10	12.5	16						25	25	25	25
	630							10	12.5	16							25	25	25
	800								12.5	16								25	25
	1000									16									25
	1250																		
NS1250N/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**500**															25	25	25	25
	630																25	25	25
	800																	25	25
	1000																		25
	1250																		

Protection discrimination

Upstream: NS630b to 1000L, NS1600 to 3200N
Downstream: NS630b to 1000

Upstream		NS630b/NS800/NS1000L							NS1600/NS2000/NS2500/NS3200N							
Trip unit		Micrologic 5.0 - 6.0 - 7.0 Inst : OFF							Micrologic 2.0 Isd : 10 Ir				Micrologic 5.0 - 6.0 - 7.0 Inst : OFF			
	Rating (A)	630					800	1000	1600	2000	2500	3200	1600	2000	2500	3200
Downstream	Setting Ir	250	320	400	500	630	800	1000	1600	2000	2500	3200	1600	2000	2500	3200
Discrimination limit (kA)																
NS630bN/H Micrologic 2.0	**250 or 320**			10	10	10	10	10	16	20	25	32	32	32	32	32
	400				10	10	10	10	16	20	25	32	32	32	32	32
	500					10	10	10	16	20	25	32	32	32	32	32
	630							10	16	20	25	32	32	32	32	32
NS630bN/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**250 or 320**			10	10	10	10	10					32	32	32	32
	400					10	10	10					32	32	32	32
	500						10	10					32	32	32	32
	630							10					32	32	32	32
NS630bL Micrologic 2.0	**250 or 320**			10	10	10	10	10	16	20	25	32	32	32	32	45
	400					10	10	10	16	20	25	32	32	32	32	45
	500						10	10	16	20	25	32	32	32	32	45
	630							10	16	20	25	32	32	32	32	45
NS630bL Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**250 or 320**			10	10	10	10	10					45	45	45	45
	400					10	10	10					45	45	45	45
	500						10	10					45	45	45	45
	630							10					45	45	45	45
NS800N/H Micrologic 2.0	**320**				10	10	10	10	16	20	25	32	32	32	32	32
	400					10	10	10	16	20	25	32	32	32	32	32
	500						10	10	16	20	25	32	32	32	32	32
	630							10	16	20	25	32	32	32	32	32
	800								16	20	25	32	32	32	32	32
NS800N/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**320**				10	10	10	10					32	32	32	32
	400					10	10	10					32	32	32	32
	500						10	10					32	32	32	32
	630							10					32	32	32	32
	800												32	32	32	32
NS800L Micrologic 2.0	**320**				10	10	10	10	16	20	25	45	32	32	32	45
	400					10	10	10	16	20	25	45	32	32	32	45
	500						10	10	16	20	25	45	32	32	32	45
	630							10	16	20	25	45	32	32	32	45
	800								16	20	25	45	32	32	32	45
NS800L Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**320**				10	10	10	10					45	45	45	45
	400					10	10	10					45	45	45	45
	500						10	10					45	45	45	45
	630							10					45	45	45	45
	800												45	45	45	45
NS1000N/H Micrologic 2.0	**400**					10	10	10	16	20	25	32	32	32	32	32
	500						10	10	16	20	25	32	32	32	32	32
	630							10	16	20	25	32	32	32	32	32
	800								16	20	25	32	32	32	32	32
	1000								16	20	25	32	32	32	32	32
NS1000N/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**400**					10	10	10					32	32	32	32
	500						10	10					32	32	32	32
	630							10					32	32	32	32
	800 or 1000												32	32	32	32
NS1000L Micrologic 2.0	**400**					10	10	10	16	20	25	45	45	45	45	45
	500						10	10	16	20	25	45	45	45	45	45
	630							10	16	20	25	45	45	45	45	45
	800 or 1000								16	20	25	45	45	45	45	45
NS1000L Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**400**					10	10	10					32	32	32	45
	500						10	10					32	32	32	45
	630							10					32	32	32	45
	800 or 1000												32	32	32	45

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: NS1600 to 3200H
Downstream: NS630b to 3200

Upstream		NS1600/NS2000/NS2500/NS3200H							
Trip unit		Micrologic 2.0 - Isd : 10 Ir				Micrologic 5.0 - 6.0 - 7.0 - Inst : OFF			
	Rating (A)	1600	2000	2500	3200	1600	2000	2500	3200
Downstream	Setting Ir	1600	2000	2500	3200	1600	2000	2500	3200
Discrimination limit (kA)									
NS630bN/H Micrologic 2.0	**250 or 320**	16	20	25	32	32	32	32	32
	400 or 500	16	20	25	32	32	32	32	32
	630	16	20	25	32	32	32	32	32
NS630bN/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**250 or 320**					32	32	32	32
	400					32	32	32	32
	500					32	32	32	32
	630					32	32	32	32
NS630bL Micrologic 2.0	**250 or 320**	16	20	25	32	40	40	40	40
	400 or 500	16	20	25	32	40	40	40	40
	630	16	20	25	32	40	40	40	40
NS630bL Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**250 or 320**					40	40	40	40
	400					40	40	40	40
	500					40	40	40	40
	630					40	40	40	40
NS800N/H Micrologic 2.0	**320 or 400**	16	20	25	32	32	32	32	32
	500 or 630	16	20	25	32	32	32	32	32
	800	16	20	25	32	32	32	32	32
NS800N/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**320 or 400**					32	32	32	32
	500					32	32	32	32
	630					32	32	32	32
	800					32	32	32	32
NS800L Micrologic 2.0	**320 or 400**	16	20	25	40	40	40	40	40
	500 or 630	16	20	25	40	40	40	40	40
	800	16	20	25	40	40	40	40	40
NS800L Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**320 or 400**					32	32	32	32
	500					32	32	32	32
	630					32	32	32	32
	800					32	32	32	32
NS1000N/H Micrologic 2.0	**400 or 500**	16	20	25	32	32	32	32	32
	630 or 800	16	20	25	32	32	32	32	32
	800 or 1000	16	20	25	32	32	32	32	32
NS1000N/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**400 or 500**					32	32	32	32
	630					32	32	32	32
	800					32	32	32	32
	1000					32	32	32	32
NS1000L Micrologic 2.0	**400 or 500**	16	20	25	40	40	40	40	40
	630 or 800	16	20	25	40	40	40	40	40
	800 or 1000	16	20	25	40	40	40	40	40
NS1000L Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**400 or 500**					32	32	32	32
	630					32	32	32	32
	800					32	32	32	32
	1000					32	32	32	32
NS1250N/H Micrologic 2.0	**500 or 630**	16	20	25	32	32	32	32	32
	800 or 1000	16	20	25	32	32	32	32	32
	1250		20	25	32		32	32	32
NS1250N/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**500 or 630**					32	32	32	32
	800					32	32	32	32
	1000					32	32	32	32
	1250						32	32	32
NS1600N/H Micrologic 2.0	**630 or 800**	16	20	25	32	32	32	32	32
	960 or 1250	16	20	25	32	32	32	32	32
	1600			25	32			32	32
NS1600N/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**640 or 800**					32	32	32	32
	960					32	32	32	32
	1250						32	32	32
	1600							32	32
NS1600b/ 3200N/H Micrologic 2.0	**1250**		20	25	32		32	32	32
	1600			25	32			32	32
	2000				32				32
	2500								
	3200								
NS1600b/ 3200N/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**1250**						32	32	32
	1600							32	32
	2000								32
	2500								
	3200								

Protection discrimination

Upstream: NS630b to 1600N/H
Downstream: NS1600N/H, NS1600b to 3200N/H

Upstream		**NS630b/NS800/NS1000/NS1250/1600N/H**																		
Trip unit		**Micrologic 2.0 - Isd : 10 Ir**									**Micrologic 5.0 - 6.0 - 7.0 - Inst : OFF**									
	Rating (A)	**630**					**800**	**1000**	**1250**	**1600**	**630**					**800**	**1000**	**1250**	**1600**	
Downstream	**Setting Ir**	**250**	**320**	**400**	**500**	**630**	**800**	**1000**	**1250**	**1600**	**250**	**320**	**400**	**500**	**630**	**800**	**1000**	**1250**	**1600**	
Discrimination limit (kA)																				
NS1600N/H Micrologic 2.0	**630**							10	12.5	16							25	25	25	
	800								12.5	16								25	25	
	960									16									25	
	1250																			
	1600																			
NS1600N/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**630**																25	25	25	
	800																	25	25	
	960																		25	
	1250																			
	1600																			
NS1600b/ 3200N/H Micrologic 2.0	**1250**																			
	1600																			
	2000																			
	2500																			
	3200																			
NS1600b/ 3200N/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**1250**																			
	1600																			
	2000																			
	2500																			
	3200																			

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: NS630b to 1000L, NS1600 to 3200N
Downstream: NS1250 to 3200N/H

Upstream		NS630b/NS800/NS1000L							NS1600/NS2000/NS2500/NS3200N							
Trip unit		Micrologic 5.0 - 6.0 - 7.0 - Inst : OFF							Micrologic 2.0 - Isd : 10 Ir				Micrologic 5.0 - 6.0 - 7.0 - Inst : OFF			
	Rating (A)	630					800	1000	1600	2000	2500	3200	1600	2000	2500	3200
Downstream	Setting Ir	250	320	400	500	630	800	1000	1600	2000	2500	3200	1600	2000	2500	3200
Discrimination limit (kA)																
NS1250N Micrologic 2.0	**500 or 630**								16	20	25	32	32	32	32	32
	800 or 1000								16	20	25	32	32	32	32	32
	1250									20	25	32		32	32	32
NS1250N Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**500 or 630**												32	32	32	32
	800												32	32	32	32
	1000												32	32	32	32
	1250												32	32	32	32
NS1250H Micrologic 2.0	**500**								16	20	25	32	32	32	32	32
	630								16	20	25	32	32	32	32	32
	800								16	20	25	32	32	32	32	32
	1000								16	20	25	32	32	32	32	32
	1250									20	25	32		32	32	32
NS1250H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**500 or 630**												32	32	32	32
	800												32	32	32	32
	1000												32	32	32	32
	1250													32	32	32
NS1600N/H Micrologic 2.0	**630 or 800**								16	20	25	32	32	32	32	32
	960								16	20	25	32	32	32	32	32
	1250									20	25	32		32	32	32
	1600										25	32			32	32
NS1600N/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**630 or 800**												32	32	32	32
	960												32	32	32	32
	1250													32	32	32
	1600														32	32
NS1600b/ 3200N/H Micrologic 2.0	**1250**									20	25	32		32	32	32
	1600										25	32			32	32
	2000											32				32
	2500 or 3200															
NS1600b/ 3200N/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**1250**													32	32	32
	1600														32	32
	2000															32
	2500 or 3200															

T	*Total discrimination, up to the breaking capacity of the downstream circuit breaker.*
400	*Discrimination limit = 400 kA.*
	No discrimination.

Protection discrimination

Upstream: Masterpact NT
Downstream: Multi 9, NR/NS100 to 250

Upstream Trip unit		Masterpact NT H1 - H2 Micrologic 2.0 Isd : 10 Ir					Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In					Micrologic 5.0 - 6.0 - 7.0 Inst : OFF				
		NT06	NT08	NT10	NT12	NT16	NT06	NT08	NT10	NT12	NT16	NT06	NT08	NT10	NT12	NT16
Downstream	**Rating (A)**	630	800	1000	1250	1600	630	800	1000	1250	1600	630	800	1000	1250	1600
	Setting Ir	630	800	1000	1250	1600	630	800	1000	1250	1600	630	800	1000	1250	1600
Discrimination limit (kA)																
iDPN, iDPN N		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C60		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C120		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NR100F	**16**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS100N	**25**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
TM-D	**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	T
NS100SX/H/L	**16**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
TM-D	**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	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	T
NR160F	**⩽ 63**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS160N/NE	**80**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
TM-D	**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	T
	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS160SX/H/L	**⩽ 63**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
TM-D	**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	T
	125	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
NR250F	**⩽ 100**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS250N	**125**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
TM-D	**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	T
	250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS250SX/H/L	**⩽ 100**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
TM-D	**125**	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	T
	250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NR100F	**40**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS100N	**100**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR22SE																
NS100SX/H/L	**40**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR22SE	**100**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NR160F	**40**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS160N	**100**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR22SE	**160**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS160SX/H/L	**40**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR22SE	**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	T
	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NR250F	**⩽ 100**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS250N	**160**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR22SE	**250**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS250SX/H/L	**⩽ 100**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR22SE	**160**	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 — *Total discrimination, up to the breaking capacity of the downstream circuit breaker.*

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: Masterpact NT
Downstream: Multi 9, NR/NS100 to 250

Upstream Trip unit		Masterpact NT L1 Micrologic 2.0 Isd : 10 Ir			Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In			Micrologic 5.0 - 6.0 - 7.0 Inst : OFF		
		NT06	NT08	NT10	NT06	NT08	NT10	NT06	NT08	NT10
Downstream	**Rating (A)**	630	800	1000	630	800	1000	630	800	1000
	Setting Ir	630	800	1000	630	800	1000	630	800	1000
Discrimination limit (kA)										
iDPN, iDPN N		T	T	T	T	T	T	T	T	T
C60		T	T	T	T	T	T	T	T	T
C120		T	T	T	T	T	T	T	T	T
NG125		T	T	T	T	T	T	T	T	T
NR100F	**16**	20	T	T	T	T	T	T	T	T
NS100N	**25**	14	T	T	T	T	T	T	T	T
TM-D	**32**	11	17	T	T	T	T	T	T	T
	40	11	17	T	T	T	T	T	T	T
	50	11	17	T	T	T	T	T	T	T
	63	11	17	T	T	T	T	T	T	T
	80	11	17	T	T	T	T	T	T	T
	100	11	17	T	T	T	T	T	T	T
NS100SX/H/L	**16**	20	35	T	T	T	T	T	T	T
TM-D	**25**	14	17	28	T	T	T	T	T	T
	32	11	17	28	T	T	T	T	T	T
	40	11	17	28	T	T	T	T	T	T
	50	11	17	28	T	T	T	T	T	T
	63	11	17	28	T	T	T	T	T	T
	80	11	17	28	T	T	T	T	T	T
	100	11	17	28	T	T	T	T	T	T
NR160F	**⩽ 63**	9	13	22	T	T	T	T	T	T
NS160N/NE	**80**	9	13	22	T	T	T	T	T	T
TM-D	**100**	9	13	22	T	T	T	T	T	T
	125	9	13	22	T	T	T	T	T	T
	160	9	13	22	T	T	T	T	T	T
NS160SX/H/L	**⩽ 63**	9	13	22	T	T	T	T	T	T
TM-D	**80**	9	13	22	T	T	T	T	T	T
	100	9	13	22	T	T	T	T	T	T
	125	9	13	22	T	T	T	T	T	T
	160	9	13	22	T	T	T	T	T	T
NR250F	**⩽ 100**	8	11	19	T	T	T	T	T	T
NS250N	**125**	8	11	19	T	T	T	T	T	T
TM-D	**160**	8	11	19	T	T	T	T	T	T
	200	8	11	19	T	T	T	T	T	T
	250	8	11	19	T	T	T	T	T	T
NS250SX/H/L	**⩽ 100**	8	11	19	T	T	T	T	T	T
TM-D	**135**	8	11	19	T	T	T	T	T	T
	160	8	11	19	T	T	T	T	T	T
	200	8	11	19	T	T	T	T	T	T
	250	8	11	19	T	T	T	T	T	T
NR100F	**40**	11	17	T	T	T	T	T	T	T
NS100N	**100**	11	17	T	T	T	T	T	T	T
STR22SE										
NS100SX/H/L	**40**	11	17	28	T	T	T	T	T	T
STR22SE	**100**	11	17	28	T	T	T	T	T	T
NR160F	**40**	9	13	22	T	T	T	T	T	T
NS160N	**100**	9	13	22	T	T	T	T	T	T
STR22SE	**160**	9	13	22	T	T	T	T	T	T
NS160SX/H/L	**40**	9	13	22	T	T	T	T	T	T
STR22SE	**80**	9	13	22	T	T	T	T	T	T
	100	9	13	22	T	T	T	T	T	T
	160	9	13	22	T	T	T	T	T	T
NR250F	**⩽ 100**	8	11	19	T	T	T	T	T	T
NS250N	**160**	8	11	19	T	T	T	T	T	T
STR22SE	**250**	8	11	19	T	T	T	T	T	T
NS250SX/H/L	**⩽ 100**	8	11	19	T	T	T	T	T	T
STR22SE	**160**	8	11	19	T	T	T	T	T	T
	250	8	11	19	T	T	T	T	T	T

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: Masterpact NT
Downstream: NR/NS400 to 630, NSC100N, NS125E, NSA160N, NB250 to 600

Upstream Trip unit		Masterpact NT H1 - H2 Micrologic 2.0 Isd : 10 Ir					Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In					Micrologic 5.0 - 6.0 - 7.0 Inst : OFF				
		NT06	NT08	NT10	NT12	NT16	NT06	NT08	NT10	NT12	NT16	NT06	NT08	NT10	NT12	NT16
Downstream	**Rating (A)**	630	800	1000	1250	1600	630	800	1000	1250	1600	630	800	1000	1250	1600
	Setting Ir	630	800	1000	1250	1600	630	800	1000	1250	1600	630	800	1000	1250	1600
Discrimination limit (kA)																
NR400F	**160**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS400N	**200**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR23SE	**250**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR53UE	**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
NS400H	**160**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR23SE	**200**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR53UE	**250**	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
NS400L	**160**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR23SE	**200**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR53UE	**250**	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
NR630F	**250**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS630N	**320**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR23SE	**400**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR53UE	**500**		T	T	T	T		T	T	T	T		T	T	T	T
	630			T	T	T			T	T	T			T	T	T
NS630H	**250**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR23SE	**320**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR53UE	**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
NS630L	**250**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR23SE	**320**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
STR53UE	**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
NSC100N	**⩽ 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	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
	70	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	T
NS125E	**⩽ 25**	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
	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	T
	125	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSA160N	**⩽ 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	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	T
	125	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
NB250N	**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	T
	150	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	175	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
	225	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NB400N	**250**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	300	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	350	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
NB600N	**500**		T	T	T	T		T	T	T	T		T	T	T	T
	600		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.*

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: Masterpact NT
Downstream: NR/NS400 to 630, NSC100N, NS125E, NSA160N, NB250 to 600

Upstream Trip unit		Masterpact NT L1 Micrologic 2.0 Isd : 10 Ir			Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In			Micrologic 5.0 - 6.0 - 7.0 Inst : OFF		
		NT06	NT08	NT10	NT06	NT08	NT10	NT06	NT08	NT10
Downstream	**Rating (A)**	**630**	**800**	**1000**	**630**	**800**	**1000**	**630**	**800**	**1000**
	Setting Ir	**630**	**800**	**1000**	**630**	**800**	**1000**	**630**	**800**	**1000**
Discrimination limit (kA)										
NR400F	**160**	6.3	8	10	8.5	15	18	18	18	18
NS400N	**200**	6.3	8	10	8.5	15	18	18	18	18
STR23SE	**250**	6.3	8	10	8.5	15	18	18	18	18
STR53UE	**320**	6.3	8	10	8.5	15	18	18	18	18
	400	6.3	8	10	8.5	15	18	18	18	18
NS400H	**160**	6.3	8	10	8.5	15	18	18	18	18
STR23SE	**200**	6.3	8	10	8.5	15	18	18	18	18
STR53UE	**250**	6.3	8	10	8.5	15	18	18	18	18
	320	6.3	8	10	8.5	15	18	18	18	18
	400	6.3	8	10	8.5	15	18	18	18	18
NS400L	**160**	6.3	8	10	8.5	15	23	30	30	30
STR23SE	**200**	6.3	8	10	8.5	15	23	30	30	30
STR53UE	**250**	6.3	8	10	8.5	15	23	30	30	30
	320	6.3	8	10	8.5	15	23	30	30	30
	400	6.3	8	10	8.5	15	23	30	30	30
NR630F	**250**	6.3	8	10	9.4	12	12	12	12	12
NS630N	**320**	6.3	8	10	9.4	12	12	12	12	12
STR23SE	**400**	6.3	8	10	9.4	12	12	12	12	12
STR53UE	**500**		8	10		12	12		12	12
	630			10			12			12
NS630H	**250**	6.3	8	10	9.4	12	12	12	12	12
STR23SE	**320**	6.3	8	10	9.4	12	12	12	12	12
STR53UE	**400**	6.3	8	10	9.4	12	12	12	12	12
	500		8	10		12	12		12	12
	630			10			12			12
NS630L	**250**	6.3	8	10	9.4	12	12	12	12	12
STR23SE	**320**	6.3	8	10	9.4	12	12	12	12	12
STR53UE	**400**	6.3	8	10	9.4	12	12	12	12	12
	500		8	10		12	12		12	12
	630			10			12			12
NSC100N	**⩽ 25**	12	T	T	T	T	T	T	T	T
	32	12	T	T	T	T	T	T	T	T
	40	12	T	T	T	T	T	T	T	T
	50	12	T	T	T	T	T	T	T	T
	63	12	T	T	T	T	T	T	T	T
	70	12	T	T	T	T	T	T	T	T
	80	12	T	T	T	T	T	T	T	T
	100	12	T	T	T	T	T	T	T	T
NS125E	**⩽ 25**	9	13	T	T	T	T	T	T	T
	40	9	13	T	T	T	T	T	T	T
	63	9	13	T	T	T	T	T	T	T
	80	9	13	T	T	T	T	T	T	T
	100	9	13	T	T	T	T	T	T	T
	125	9	13	T	T	T	T	T	T	T
NSA160N	**⩽ 25**	11	T	T	T	T	T	T	T	T
	32	11	T	T	T	T	T	T	T	T
	40	11	T	T	T	T	T	T	T	T
	50	11	T	T	T	T	T	T	T	T
	63	11	T	T	T	T	T	T	T	T
	80	11	T	T	T	T	T	T	T	T
	100	11	T	T	T	T	T	T	T	T
	125	11	T	T	T	T	T	T	T	T
	160	11	T	T	T	T	T	T	T	T
NB250N	**100**	8	11	19	T	T	T	T	T	T
	125	8	11	19	T	T	T	T	T	T
	150	8	11	19	T	T	T	T	T	T
	175	8	11	19	T	T	T	T	T	T
	200	8	11	19	T	T	T	T	T	T
	225	8	11	19	T	T	T	T	T	T
NB400N	**250**	6.3	8	10	8.5	15	18	18	18	18
	300	6.3	8	10	8.5	15	18	18	18	18
	350	6.3	8	10	8.5	15	18	18	18	18
	400	6.3	8	10	8.5	15	18	18	18	18
NB600N	**500**		8	10		12	12		12	12
	600		8	10		12	12		12	12

Protection discrimination

Upstream: Masterpact NT
Downstream: NS630b to 1600, Masterpact NT

Upstream		Masterpact NT H2														
Trip unit		Micrologic 2.0 Isd : 10 Ir					Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In					Micrologic 5.0 - 6.0 - 7.0 Inst : OFF				
		NT06	NT08	NT10	NT12	NT16	NT06	NT08	NT10	NT12	NT16	NT06	NT08	NT10	NT12	NT16
Downstream	**Rating (A)**	630	800	1000	1250	1600	630	800	1000	1250	1600	630	800	1000	1250	1600
	Setting Ir	630	800	1000	1250	1600	630	800	1000	1250	1600	630	800	1000	1250	1600
Discrimination limit (kA)																
NS630bN/H/L Micrologic 2.0	**250**	6.3	8	10	12.5	16	9.4	12	15	18.7	24	36	36	36	36	36
	320	6.3	8	10	12.5	16	9.4	12	15	18.7	24	36	36	36	36	36
	400	6.3	8	10	12.5	16	9.4	12	15	18.7	24	36	36	36	36	36
	500		8	10	12.5	16		12	15	18.7	24		36	36	36	36
	630			10	12.5	16			15	18.7	24			36	36	36
NS630bN/H/L Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**250**						9.4	12	15	18.7	24	36	36	36	36	36
	320						9.4	12	15	18.7	24	36	36	36	36	36
	400						9.4	12	15	18.7	24	36	36	36	36	36
	500							12	15	18.7	24		36	36	36	36
	630								15	18.7	24			36	36	36
NS800N/H/L Micrologic 2.0	**320**		8	10	12.5	16		12	15	18.7	24		36	36	36	36
	400		8	10	12.5	16		12	15	18.7	24		36	36	36	36
	500		8	10	12.5	16		12	15	18.7	24		36	36	36	36
	630			10	12.5	16			15	18.7	24			36	36	36
	800				12.5	16				18.7	24				36	36
NS800N/H/L Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**320**							12	15	18.7	24		36	36	36	36
	400							12	15	18.7	24		36	36	36	36
	500							12	15	18.7	24		36	36	36	36
	630								15	18.7	24			36	36	36
	800									18.7	24				36	36
NS1000N/H/L Micrologic 2.0	**400**			10	12.5	16			15	18.7	24			36	36	36
	500			10	12.5	16			15	18.7	24			36	36	36
	630			10	12.5	16			15	18.7	24			36	36	36
	800				12.5	16				18.7	24				36	36
	1000					16					24					36
NS1000N/H/L Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**400**								15	18.7	24			36	36	36
	500								15	18.7	24			36	36	36
	630								15	18.7	24			36	36	36
	800									18.7	24				36	36
	1000										24					36
NS1250N/H Micrologic 2.0	**500**				12.5	16				18.7	24				36	36
	630				12.5	16				18.7	24				36	36
	800				12.5	16				18.7	24				36	36
	1000					16					24					36
	1250															
NS1250N/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**500**									18.7	24				36	36
	630									18.7	24				36	36
	800									18.7	24				36	36
	1000										24					36
	1250															
NS1600N/H Micrologic 2.0	**640**					16					24					36
	800					16					24					36
	960					16					24					36
	1280															
	1600															
NS1600N/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**640**										24					36
	800										24					36
	960										24					36
	1280															
	1600															
Masterpact NT H1 Micrologic 2.0	**NT06**			10	12.5	16			15	18.7	24			36	36	36
	NT08				12.5	16				18.7	24				36	36
	NT10					16					24					36
	NT12															
	NT16															
Masterpact NT H1 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**NT06**								15	18.7	24			36	36	36
	NT08									18.7	24				36	36
	NT10										24					36
	NT12															
	NT16															
Masterpact NT L1 Micrologic 2.0	**NT06**			10	12.5	16			15	18.7	24			36	36	36
	NT08				12.5	16				18.7	24				36	36
	NT10					16					24					36
Masterpact NT L1 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**NT06**								15	18.7	24			36	36	36
	NT08									18.7	24				36	36
	NT10										24					36

Protection discrimination

Upstream: Masterpact NT
Downstream: NS630b to NS1600, Masterpact NT

Upstream Trip unit		Masterpact NT L1 Micrologic 2.0 Isd : 10 Ir			Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In			Micrologic 5.0 - 6.0 - 7.0 Inst : OFF		
		NT06	NT08	NT10	NT06	NT08	NT10	NT06	NT08	NT10
Downstream	**Rating (A)** **Setting Ir**	**630** **630**	**800** **800**	**1000** **1000**	**630** **630**	**800** **800**	**1000** **1000**	**630** **630**	**800** **800**	**1000** **1000**
Discrimination limit (kA)										
NS630bN/H/L	**⩽ 400**	6.3	8	10	9.4	10	10	10	10	10
Micrologic 2.0	**500**		8	10		10	10		10	10
	630			10			10			10
NS630bN/H/L	**⩽ 400**				9.4	10	10	10	10	10
Micrologic 5.0/6.0/7.0	**500**					10	10		10	10
	630						10			10
NS800N/H/L	**⩽ 500**		8	10		10	10		10	10
Micrologic 2.0	**630**			10			10			10
	800									
NS800N/H/L	**⩽ 500**					10	10		10	10
Micrologic 5.0/6.0/7.0	**630**						10			10
	800									
NS1000N/H/L	**⩽ 630**			10			10			10
Micrologic 2.0	**800**									
	1000									
NS1000N/H/L	**⩽ 630**			10			10			10
Micrologic 5.0/6.0/7.0	**800**									
	1000									
NS1250N/H	**⩽ 800**									
Micrologic 2.0	**1000**									
Micrologic 5.0/6.0/7.0	**1250**									
NS1600N/H	**⩽ 960**									
Micrologic 2.0	**1280**									
Micrologic 5.0/6.0/7.0	**1600**									
Masterpact NT H1	**⩽ NT12**			10			10			10
Micrologic 2.0	**NT16**									
Masterpact NT H1	**⩽ NT12**									10
Micrologic 5.0/6.0/7.0	**NT16**									
Masterpact NT H2	**⩽ NT12**			10			10			10
Micrologic 2.0	**NT16**									
Masterpact NT H2	**⩽ NT12**									10
Micrologic 5.0/6.0/7.0	**NT16**									
Masterpact NT L1	**⩽ NT08**			10			10			10
Micrologic 2.0	**NT10**									
Masterpact NT L1	**⩽ NT08**									10
Micrologic 5.0/6.0/7.0	**NT10**									

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: Masterpact NW
Downstream: Multi 9, NR/NS100 to 630, NSC100N, NS125E, NSA160N, NB250 to 600

Upstream Trip unit		Masterpact NW N1 - H1 - H2																			
		Micrologic 2.0 - Isd : 10 Ir										Micrologic 5.0 - 6.0 - 7.0 - Inst : 15 In									
		NW08	NW10	NW12	NW16	NW20	NW25	NW32	NW40	NW50	NW63	NW08	NW10	NW12	NW16	NW20	NW25	NW32	NW40	NW50	NW63
Downstream	**Rating (A)**	800	1000	1250	1600	2000	2500	3200	4000	5000	6300	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
	Setting Ir	800	1000	1250	1600	2000	2500	3200	4000	5000	6300	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
Discrimination limit (kA)																					
iDPN, iDPN N		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C60		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C120		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NR100F NS100N/H/L TM-D	**16**	T	T	T	T	T	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	T	T	T	T	T
	32	T	T	T	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	T	T	T
	50	T	T	T	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	T	T	T
	80	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
NR160F NS160N/NE/H/L TM-D	**⩽ 63**	T	T	T	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	T	T	T
	100	T	T	T	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	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
NR250F NS250N/H/L TM-D	**⩽ 100**	T	T	T	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	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
	200	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
NR100F NS100N/H/L STR22SE	**40**	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
NR160F NS160N/H/L STR22SE	**40**	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
	160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NR250F NS250N/H/L STR22SE	**⩽ 100**	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
	250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NR400F NS400N/H/L STR23SE STR53UE	**160**	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
	250	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	T	T
	400	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NR630F NS630N/H/L STR23SE STR53UE	**250**	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	T	T
	400	T	T	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	T	T	T	T	T
	630		T	T	T	T	T	T	T	T	T		T	T	T	T	T	T	T	T	T
NSC100N		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS125E		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSA160N		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NB250N		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NB400N		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NB600N		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.*

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: Masterpact NW
Downstream: Multi 9, NR/NS100 to 630, NSC100N, NS125E, NSA160N, NB250 to 600

Upstream Trip unit		Masterpact NW N1 - H1 - H2 Micrologic 5.0 - 6.0 - 7.0 - Inst : OFF									
		NW08	NW10	NW12	NW16	NW20	NW25	NW32	NW40	NW50	NW63
Downstream	**Rating (A)**	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
	Setting Ir	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
Discrimination limit (kA)											
iDPN, iDPN N		T	T	T	T	T	T	T	T	T	T
C60		T	T	T	T	T	T	T	T	T	T
C120		T	T	T	T	T	T	T	T	T	T
NG125		T	T	T	T	T	T	T	T	T	T
NR100F NS100N/H/L TM-D	**16**	T	T	T	T	T	T	T	T	T	T
	25	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	T	T	T	T	T	T	T	T	T	T
	63	T	T	T	T	T	T	T	T	T	T
	80	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T
NR160F NS160N/NE/H/L TM-D	**⩽ 63**	T	T	T	T	T	T	T	T	T	T
	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	T
	160	T	T	T	T	T	T	T	T	T	T
NR250F NS250N/H/L TM-D	**⩽ 100**	T	T	T	T	T	T	T	T	T	T
	125	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	T
	250	T	T	T	T	T	T	T	T	T	T
NR100F NS100N/H/L STR22SE	**40**	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T
NR160F NS160N/H/L STR22SE	**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	T	T
NR250F NS250N/H/L STR22SE	**⩽ 100**	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T
	250	T	T	T	T	T	T	T	T	T	T
NR400F NS400N/H/L STR23SE STR53UE	**160**	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
	320	T	T	T	T	T	T	T	T	T	T
	400	T	T	T	T	T	T	T	T	T	T
NR630F NS630N/H/L STR23SE STR53UE	**250**	T	T	T	T	T	T	T	T	T	T
	320	T	T	T	T	T	T	T	T	T	T
	400	T	T	T	T	T	T	T	T	T	T
	500	T	T	T	T	T	T	T	T	T	T
	630	T	T	T	T	T	T	T	T	T	T
NSC100N		T	T	T	T	T	T	T	T	T	T
NS125E		T	T	T	T	T	T	T	T	T	T
NSA160N		T	T	T	T	T	T	T	T	T	T
NB250N		T	T	T	T	T	T	T	T	T	T
NB400N		T	T	T	T	T	T	T	T	T	T
NB600N		T	T	T	T	T	T	T	T	T	T

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: Masterpact NW
Downstream: Multi 9, NR/NS100 to 630, NSC100N, NS125E, NSA160N, NB250 to 600

Upstream		Masterpact NW H3											
Trip unit		Micrologic 2.0 Isd : 10 Ir				Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In				Micrologic 5.0 - 6.0 - 7.0 Inst : OFF			
		NW20	NW25	NW32	NW40	NW20	NW25	NW32	NW40	NW20	NW25	NW32	NW40
Downstream	**Rating (A)**	2000	2500	3200	4000	2000	2500	3200	4000	2000	2500	3200	4000
	Setting Ir	2000	2500	3200	4000	2000	2500	3200	4000	2000	2500	3200	4000
Discrimination limit (kA)													
iDPN, iDPN N		T	T	T	T	T	T	T	T	T	T	T	T
C60		T	T	T	T	T	T	T	T	T	T	T	T
C120		T	T	T	T	T	T	T	T	T	T	T	T
NG125		T	T	T	T	T	T	T	T	T	T	T	T
NR100F NS100N/H/L TM-D	**16**	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	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
NR160F NS160N/NE/H/L TM-D	**⩽ 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	T
	160	T	T	T	T	T	T	T	T	T	T	T	T
NR250F NS250N/H/L TM-D	**⩽ 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	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	T
	250	T	T	T	T	T	T	T	T	T	T	T	T
NR100F NS100N/H/L STR22SE	**40**	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
NR160F NS160N/H/L STR22SE	**40**	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
	160	T	T	T	T	T	T	T	T	T	T	T	T
NR250F NS250N/H/L STR22SE	**⩽ 100**	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
	250	T	T	T	T	T	T	T	T	T	T	T	T
NR400F NS400N/H/L STR23SE STR53UE	**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	T
	250	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
	400	T	T	T	T	T	T	T	T	T	T	T	T
NR630F NS630N/H/L STR23SE STR53UE	**250**	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
	400	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	T	T
NSC100N		T	T	T	T	T	T	T	T	T	T	T	T
NS125E		T	T	T	T	T	T	T	T	T	T	T	T
NSA160N		T	T	T	T	T	T	T	T	T	T	T	T
NB250N		T	T	T	T	T	T	T	T	T	T	T	T
NB400N		T	T	T	T	T	T	T	T	T	T	T	T
NB600N		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.*

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: Masterpact NW
Downstream: Multi 9, NR/NS100 to 630, NSC100N, NS125E, NSA160N, NB250 to 600

Upstream Trip unit		Masterpact NW L1														
		Micrologic 2.0 Isd : 10 Ir					Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In					Micrologic 5.0 - 6.0 - 7.0 Inst : OFF				
		NW08	NW10	NW12	NW16	NW20	NW08	NW10	NW12	NW16	NW20	NW08	NW10	NW12	NW16	NW20
Downstream	**Rating (A)**	800	1000	1250	1600	2000	800	1000	1250	1600	2000	800	1000	1250	1600	2000
	Setting Ir	800	1000	1250	1600	2000	800	1000	1250	1600	2000	800	1000	1250	1600	2000
Discrimination limit (kA)																
iDPN, iDPN N		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C60		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C120		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NR100F NS100N/H/L TM-D	**16**	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	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	T
NR160F NS160N/NE/H/L TM-D	**⩽ 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	T
	125	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
NR250F NS250N/H/L TM-D	**⩽ 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	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	T
	250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NR100F NS100N/H/L STR22SE	**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
NR160F NS160N/H/L STR22SE	**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	T
NR250F NS250N/H/L STR22SE	**⩽ 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	T
	250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NR400F NS400N/H/L STR23SE STR53UE	**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	T
	250	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
NR630F NS630N/H/L STR23SE STR53UE	**250**	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	T	T	T
	630		T	T	T	T		T	T	T	T	T	T	T	T	T
NSC100N		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS125E		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NSA160N		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NB250N		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NB400N		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NB600N		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.*

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: Masterpact NW
Downstream: NS630b to NS1000

Upstream Trip unit		Masterpact NW N1 - H1 - H2 Micrologic 2.0 - Isd : 10 Ir										Micrologic 5.0 - 6.0 - 7.0 - Inst : 15 In									
		NW08	NW10	NW12	NW16	NW20	NW25	NW32	NW40	NW50	NW63	NW08	NW10	NW12	NW16	NW20	NW25	NW32	NW40	NW50	NW63
Downstream	**Rating (A)**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3200**	**4000**	**5000**	**6300**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3200**	**4000**	**5000**	**6300**
	Setting Ir	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3200**	**4000**	**5000**	**6300**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3200**	**4000**	**5000**	**6300**
Discrimination limit (kA)																					
NS630bN	**⩽ 500**	8	10	12.5	16	20	25	32	40	T	T	12	15	18.75	24	30	37.5	48	T	T	T
Micrologic 2.0	**630**		10	12.5	16	20	25	32	40	T	T		15	18.75	24	30	37.5	48	T	T	T
NS630bN	**⩽ 320**											12	15	18.75	24	30	37.5	48	T	T	T
Micrologic 5.0	**400**											12	15	18.75	24	30	37.5	48	T	T	T
Micrologic 6.0	**500**											12	15	18.75	24	30	37.5	48	T	T	T
Micrologic 7.0	**630**												15	18.75	24	30	37.5	48	T	T	T
NS630bH	**⩽ 500**	8	10	12.5	16	20	25	32	40	50	63	12	15	18.75	24	30	37.5	48	60	T	T
Micrologic 2.0	**630**		10	12.5	16	20	25	32	40	50	63		15	18.75	24	30	37.5	48	60	T	T
NS630bH	**⩽ 320**											12	15	18.75	24	30	37.5	48	60	T	T
Micrologic 5.0	**400**											12	15	18.75	24	30	37.5	48	60	T	T
Micrologic 6.0	**500**											12	15	18.75	24	30	37.5	48	60	T	T
Micrologic 7.0	**630**												15	18.75	24	30	37.5	48	60	T	T
NS630bL	**⩽ 500**	8	10	12.5	16	20	25	32	40	50	63	12	15	18.75	24	30	40	T	T	T	T
Micrologic 2.0	**630**		10	12.5	16	20	25	32	40	50	63		15	18.75	24	30	40	T	T	T	T
NS630bL	**⩽ 320**											12	15	18.75	24	30	40	T	T	T	T
Micrologic 5.0	**400**											12	15	18.75	24	30	40	T	T	T	T
Micrologic 6.0	**500**											12	15	18.75	24	30	40	T	T	T	T
Micrologic 7.0	**630**												15	18.75	24	30	40	T	T	T	T
NS800N	**⩽ 500**	8	10	12.5	16	20	25	32	40	T	T	12	15	18.75	24	30	37.5	48	T	T	T
Micrologic 2.0	**630**		10	12.5	16	20	25	32	40	T	T		15	18.75	24	30	37.5	48	T	T	T
	800			12.5	16	20	25	32	40	T	T			18.75	24	30	37.5	48	T	T	T
NS800N	**⩽ 400**											12	15	18.75	24	30	37.5	48	T	T	T
Micrologic 5.0	**500**											12	15	18.75	24	30	37.5	48	T	T	T
Micrologic 6.0	**630**												15	18.75	24	30	37.5	48	T	T	T
Micrologic 7.0	**800**													18.75	24	30	37.5	48	T	T	T
NS800H	**⩽ 500**	8	10	12.5	16	20	25	32	40	50	63	12	15	18.75	24	30	37.5	48	60	T	T
Micrologic 2.0	**630**		10	12.5	16	20	25	32	40	50	63		15	18.75	24	30	37.5	48	60	T	T
	800			12.5	16	20	25	32	40	50	63			18.75	24	30	37.5	48	60	T	T
NS800H	**⩽ 400**											12	15	18.75	24	30	37.5	48	60	T	T
Micrologic 5.0	**500**											12	15	18.75	24	30	37.5	48	60	T	T
Micrologic 6.0	**630**												15	18.75	24	30	37.5	48	60	T	T
Micrologic 7.0	**800**													18.75	24	30	37.5	48	60	T	T
NS800L	**⩽ 500**	8	10	12.5	16	20	25	32	40	50	63	12	15	18.75	24	30	40	T	T	T	T
Micrologic 2.0	**630**		10	12.5	16	20	25	32	40	50	63		15	18.75	24	30	40	T	T	T	T
	800			12.5	16	20	25	32	40	50	63			18.75	24	30	40	T	T	T	T
NS800L	**⩽ 400**											12	15	18.75	24	30	40	T	T	T	T
Micrologic 5.0	**500**											12	15	18.75	24	30	40	T	T	T	T
Micrologic 6.0	**630**												15	18.75	24	30	40	T	T	T	T
Micrologic 7.0	**800**													18.75	24	30	40	T	T	T	T
NS1000N	**⩽ 500**	8	10	12.5	16	20	25	32	40	T	T	12	15	18.75	24	30	37.5	48	T	T	T
Micrologic 2.0	**630**		10	12.5	16	20	25	32	40	T	T		15	18.75	24	30	37.5	48	T	T	T
	800			12.5	16	20	25	32	40	T	T			18.75	24	30	37.5	48	T	T	T
	1000				16	20	25	32	40	T	T				24	30	37.5	48	T	T	T
NS1000N	**⩽ 500**											12	15	18.75	24	30	37.5	48	T	T	T
Micrologic 5.0	**630**												15	18.75	24	30	37.5	48	T	T	T
Micrologic 6.0	**800**													18.75	24	30	37.5	48	T	T	T
Micrologic 7.0	**1000**														24	30	37.5	48	T	T	T
NS1000H	**⩽ 500**	8	10	12.5	16	20	25	32	40	50	63	12	15	18.75	24	30	37.5	48	60	T	T
Micrologic 2.0	**630**		10	12.5	16	20	25	32	40	50	63		15	18.75	24	30	37.5	48	60	T	T
	800			12.5	16	20	25	32	40	50	63			18.75	24	30	37.5	48	60	T	T
	1000				16	20	25	32	40	50	63				24	30	37.5	48	60	T	T
NS1000H	**⩽ 500**											12	15	18.75	24	30	37.5	48	60	T	T
Micrologic 5.0	**630**												15	18.75	24	30	37.5	48	60	T	T
Micrologic 6.0	**800**													18.75	24	30	37.5	48	60	T	T
Micrologic 7.0	**1000**														24	30	37.5	48	60	T	T
NS1000L	**⩽ 500**	8	10	12.5	16	20	25	32	40	50	63	12	15	18.75	24	30	40	T	T	T	T
Micrologic 2.0	**630**		10	12.5	16	20	25	32	40	50	63		15	18.75	24	30	40	T	T	T	T
	800			12.5	16	20	25	32	40	50	63			18.75	24	30	40	T	T	T	T
	1000				16	20	25	32	40	50	63				24	30	40	T	T	T	T
NS1000L	**⩽ 500**											12	15	18.75	24	30	40	T	T	T	T
Micrologic 5.0	**630**												15	18.75	24	30	40	T	T	T	T
Micrologic 6.0	**800**													18.75	24	30	40	T	T	T	T
Micrologic 7.0	**1000**														24	30	40	T	T	T	T

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: Masterpact NW
Downstream: NS1250 to NS3200

Upstream Trip unit		Masterpact NW N1 - H1 - H2 Micrologic 2.0 - Isd : 10 Ir										Micrologic 5.0 - 6.0 - 7.0 - Inst : 15 In									
		NW08	NW10	NW12	NW16	NW20	NW25	NW32	NW40	NW50	NW63	NW08	NW10	NW12	NW16	NW20	NW25	NW32	NW40	NW50	NW63
Downstream	**Rating (A)**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3200**	**4000**	**5000**	**6300**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3200**	**4000**	**5000**	**6300**
	Setting Ir	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3200**	**4000**	**5000**	**6300**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3200**	**4000**	**5000**	**6300**
Discrimination limit (kA)																					
NS1250N Micrologic 2.0	**500**	8	10	12.5	16	20	25	32	40	T	T	12	15	18.75	24	30	37.5	48	T	T	T
	630		10	12.5	16	20	25	32	40	T	T		15	18.75	24	30	37.5	48	T	T	T
	800			12.5	16	20	25	32	40	T	T			18.75	24	30	37.5	48	T	T	T
	1000				16	20	25	32	40	T	T				24	30	37.5	48	T	T	T
	1250					20	25	32	40	T	T					30	37.5	48	T	T	T
NS1250N Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**500**											12	15	18.75	24	30	37.5	48	T	T	T
	630												15	18.75	24	30	37.5	48	T	T	T
	800													18.75	24	30	37.5	48	T	T	T
	1000														24	30	37.5	48	T	T	T
	1250															30	37.5	48	T	T	T
NS1250H Micrologic 2.0	**500**	8	10	12.5	16	20	25	32	40	50	63	12	15	18.75	24	30	37.5	48	60	T	T
	630		10	12.5	16	20	25	32	40	50	63		15	18.75	24	30	37.5	48	60	T	T
	800			12.5	16	20	25	32	40	50	63			18.75	24	30	37.5	48	60	T	T
	1000				16	20	25	32	40	50	63				24	30	37.5	48	60	T	T
	1250					20	25	32	40	50	63					30	37.5	48	60	T	T
NS1250H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**500**											12	15	18.75	24	30	37.5	48	60	T	T
	630												15	18.75	24	30	37.5	48	60	T	T
	800													18.75	24	30	37.5	48	60	T	T
	1000														24	30	37.5	48	60	T	T
	1250															30	37.5	48	60	T	T
NS1600N Micrologic 2.0	**640**		10	12.5	16	20	25	32	40	T	T		15	18.75	24	30	37.5	48	T	T	T
	800			12.5	16	20	25	32	40	T	T			18.75	24	30	37.5	48	T	T	T
	960				16	20	25	32	40	T	T				24	30	37.5	48	T	T	T
	1280					20	25	32	40	T	T					30	37.5	48	T	T	T
	1600						25	32	40	T	T						37.5	48	T	T	T
NS1600N Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**640**												15	18.75	24	30	37.5	48	T	T	T
	800													18.75	24	30	37.5	48	T	T	T
	960														24	30	37.5	48	T	T	T
	1280															30	37.5	48	T	T	T
	1600																37.5	48	T	T	T
NS1600H Micrologic 2.0	**640**		10	12.5	16	20	25	32	40	50	63		15	18.75	24	30	37.5	48	60	T	T
	800			12.5	16	20	25	32	40	50	63			18.75	24	30	37.5	48	60	T	T
	960				16	20	25	32	40	50	63				24	30	37.5	48	60	T	T
	1280					20	25	32	40	50	63					30	37.5	48	60	T	T
	1600						25	32	40	50	63						37.5	48	60	T	T
NS1600H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**640**												15	18.75	24	30	37.5	48	60	T	T
	800													18.75	24	30	37.5	48	60	T	T
	960														24	30	37.5	48	60	T	T
	1280															30	37.5	48	60	T	T
	1600																37.5	48	60	T	T
NS1600b/3200 N/H Micrologic 2.0	**1250**					20	25	32	40	50	63					30	37.5	48	60	75	94.5
	1600						25	32	40	50	63						37.5	48	60	75	94.5
	2000							32	40	50	63							48	60	75	94.5
	2500								40	50	63								60	75	94.5
	3200									50	63									75	94.5
NS1600b/3200 N/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**1250**															30	37.5	48	60	75	94.5
	1600																37.5	48	60	75	94.5
	2000																	48	60	75	94.5
	2500																		60	75	94.5
	3200																			75	94.5

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: Masterpact NW
Downstream: NS630b to NS3200

Upstream Trip unit		Masterpact NW N1 - H1 - H2 Micrologic 5.0 - 6.0 - 7.0 - Inst : OFF									
		NW08	NW10	NW12	NW16	NW20	NW25	NW32	NW40	NW50	NW63
Downstream	**Rating (A)** **Setting Ir**	800 800	1000 1000	1250 1250	1600 1600	2000 2000	2500 2500	3200 3200	4000 4000	5000 5000	6300 6300
Discrimination limit (kA)											
NS630bN/H/L Micrologic 2.0	⩽ 500	T	T	T	T	T	T	T	T	T	T
	630		T	T	T	T	T	T	T	T	T
NS630bN/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	⩽ 320	T	T	T	T	T	T	T	T	T	T
	400	T	T	T	T	T	T	T	T	T	T
	500	T	T	T	T	T	T	T	T	T	T
	630		T	T	T	T	T	T	T	T	T
NS630bL Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	250	T	T	T	T	T	T	T	T	T	T
	320	T	T	T	T	T	T	T	T	T	T
	400	T	T	T	T	T	T	T	T	T	T
	500	T	T	T	T	T	T	T	T	T	T
	630		T	T	T	T	T	T	T	T	T
NS800N/H/L Micrologic 2.0 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	320	T	T	T	T	T	T	T	T	T	T
	400	T	T	T	T	T	T	T	T	T	T
	500	T	T	T	T	T	T	T	T	T	T
	630		T	T	T	T	T	T	T	T	T
	800			T	T	T	T	T	T	T	T
NS1000N/H/L Micrologic 2.0 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	400	T	T	T	T	T	T	T	T	T	T
	500	T	T	T	T	T	T	T	T	T	T
	630		T	T	T	T	T	T	T	T	T
	800			T	T	T	T	T	T	T	T
	1000				T	T	T	T	T	T	T
NS1250N/H Micrologic 2.0 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	500	T	T	T	T	T	T	T	T	T	T
	630		T	T	T	T	T	T	T	T	T
	800			T	T	T	T	T	T	T	T
	1000				T	T	T	T	T	T	T
	1250					T	T	T	T	T	T
NS1600N/H Micrologic 2.0 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	640		T	T	T	T	T	T	T	T	T
	800			T	T	T	T	T	T	T	T
	960				T	T	T	T	T	T	T
	1280					T	T	T	T	T	T
	1600						T	T	T	T	T
NS1600b/ 3200N/H Micrologic 2.0	1250					T	T	T	T	T	T
	1600						T	T	T	T	T
	2000							T	T	T	T
	2500								T	T	T
	3200									T	T
NS1600b/ 3200N/H Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	1250					T	T	T	T	T	T
	1600						T	T	T	T	T
	2000							T	T	T	T
	2500								T	T	T
	3200									T	T

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: Masterpact NW
Downstream: NS630b to NS3200

Upstream Trip unit		Masterpact NW H3 Micrologic 2.0 - Isd : 10 Ir				Micrologic 5.0 - 6.0 - 7.0 - Inst : 15 In				Micrologic 5.0 - 6.0 - 7.0 - Inst : OFF			
		NW20	NW25	NW32	NW40	NW20	NW25	NW32	NW40	NW20	NW25	NW32	NW40
Downstream	Rating (A) Setting Ir	2000 2000	2500 2500	3200 3200	4000 4000	2000 2000	2500 2500	3200 3200	4000 4000	2000 2000	2500 2500	3200 3200	4000 4000
Discrimination limit (kA)													
NS630bN	⩽ **500**	20	25	32	40	30	37.5	48	T	T	T	T	T
Micrologic 2.0	**630**	20	25	32	40	30	37.5	48	T	T	T	T	T
NS630bN	⩽ **500**					30	37.5	48	T	T	T	T	T
Micrologic 5.0/6.0/7.0	**630**					30	37.5	48	T	T	T	T	T
NS630bH	⩽ **500**	20	25	32	40	30	37.5	48	60	T	T	T	T
Micrologic 2.0	**630**	20	25	32	40	30	37.5	48	60	T	T	T	T
NS630bH	⩽ **500**					30	37.5	48	60	T	T	T	T
Micrologic 5.0/6.0/7.0	**630**					30	37.5	48	60	T	T	T	T
NS630bL	⩽ **500**	20	25	32	40	30	40	T	T	T	T	T	T
Micrologic 2.0	**630**	20	25	32	40	30	40	T	T	T	T	T	T
NS630bL	⩽ **500**					30	40	T	T	T	T	T	T
Micrologic 5.0/6.0/7.0	**630**					30	40	T	T	T	T	T	T
NS800N	⩽ **630**	20	25	32	40	30	37.5	48	T	T	T	T	T
Micrologic 2.0	**800**	20	25	32	40	30	37.5	48	T	T	T	T	T
NS800N	⩽ **630**					30	37.5	48	T	T	T	T	T
Micrologic 5.0/6.0/7.0	**800**					30	37.5	48	T	T	T	T	T
NS800H	⩽ **630**	20	25	32	40	30	37.5	48	60	T	T	T	T
Micrologic 2.0	**800**	20	25	32	40	30	37.5	48	60	T	T	T	T
NS800H	⩽ **630**					30	37.5	48	60	T	T	T	T
Micrologic 5.0/6.0/7.0	**800**					30	37.5	48	60	T	T	T	T
NS800L	⩽ **630**	20	25	32	40	30	40	T	T	T	T	T	T
Micrologic 2.0	**800**	20	25	32	40	30	40	T	T	T	T	T	T
NS800L	⩽ **630**					30	40	T	T	T	T	T	T
Micrologic 5.0/6.0/7.0	**800**					30	40	T	T	T	T	T	T
NS1000N	⩽ **800**	20	25	32	40	30	37.5	48	T	T	T	T	T
Micrologic 2.0	**1000**	20	25	32	40	30	37.5	48	T	T	T	T	T
NS1000N	⩽ **800**					30	37.5	48	T	T	T	T	T
Micrologic 5.0/6.0/7.0	**1000**					30	37.5	48	T	T	T	T	T
NS1000H	⩽ **800**	20	25	32	40	30	37.5	48	60	T	T	T	T
Micrologic 2.0	**1000**	20	25	32	40	30	37.5	48	60	T	T	T	T
NS1000H	⩽ **800**					30	37.5	48	60	T	T	T	T
Micrologic 5.0/6.0/7.0	**1000**					30	37.5	48	60	T	T	T	T
NS1000L	⩽ **800**	20	25	32	40	30	40	T	T	T	T	T	T
Micrologic 2.0	**1000**	20	25	32	40	30	40	T	T	T	T	T	T
NS1000L	⩽ **800**					30	40	T	T	T	T	T	T
Micrologic 5.0/6.0/7.0	**1000**					30	40	T	T	T	T	T	T
NS1250N	⩽ **1000**	20	25	32	40	30	37.5	48	T	T	T	T	T
Micrologic 2.0	**1250**	20	25	32	40	30	37.5	48	T	T	T	T	T
NS1250N	⩽ **1000**					30	37.5	48	T	T	T	T	T
Micrologic 5.0/6.0/7.0	**1250**					30	37.5	48	T	T	T	T	T
NS1250H	⩽ **1000**	20	25	32	40	30	37.5	48	60	T	T	T	T
Micrologic 2.0	**1250**	20	25	32	40	30	37.5	48	60	T	T	T	T
NS1250H	⩽ **1000**					30	37.5	48	60	T	T	T	T
Micrologic 5.0/6.0/7.0	**1250**					30	37.5	48	60	T	T	T	T
NS1600N	⩽ **1280**	20	25	32	40	30	37.5	48	T	T	T	T	T
Micrologic 2.0	**1600**		25	32	40		37.5	48	T		T	T	T
NS1600N	⩽ **1280**					30	37.5	48	T	T	T	T	T
Micrologic 5.0/6.0/7.0	**1600**						37.5	48	T		T	T	T
NS1600H	⩽ **1280**	20	25	32	40	30	37.5	48	60	T	T	T	T
Micrologic 2.0	**1600**		25	32	40		37.5	48	60		T	T	T
NS1600H	⩽ **1280**					30	37.5	48	60	T	T	T	T
Micrologic 5.0/6.0/7.0	**1600**						37.5	48	60		T	T	T
NS1600b/3200N/H	**1250**	20	25	32	40	30	37.5	48	60	65	65	65	65
Micrologic 2.0	**1600**		25	32	40		37.5	48	60		65	65	65
	2000			32	40			48	60			65	65
	2500				40				60				65
	3200												
NS1600b/3200N/H	**1250**					30	37.5	48	60	65	65	65	65
Micrologic 5.0/6.0/7.0	**1600**						37.5	48	60		65	65	65
	2000							48	60			65	65
	2500								60				65
	3200												

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: Masterpact NW
Downstream: NS630b to NS3200

Upstream Trip unit		Masterpact NW L1 Micrologic 2.0 - Isd : 10 Ir					Micrologic 5.0 - 6.0 - 7.0 - Inst : 15 In					Micrologic 5.0 - 6.0 - 7.0 - Inst : OFF				
		NW08	NW10	NW12	NW16	NW20	NW08	NW10	NW12	NW16	NW20	NW08	NW10	NW12	NW16	NW20
	Rating (A)	800	1000	1250	1600	2000	800	1000	1250	1600	2000	800	1000	1250	1600	2000
Downstream	Setting Ir	800	1000	1250	1600	2000	800	1000	1250	1600	2000	800	1000	1250	1600	2000
Discrimination limit (kA)																
NS630bN/H	⩽ 500	8	10	12.5	16	20	12	15	18.75	24	30	37	37	37	37	37
Micrologic 2.0	630		10	12.5	16	20		15	18.75	24	30		37	37	37	37
NS630bN/H	⩽ 320						12	15	18.75	24	30	37	37	37	37	37
Micrologic 5.0	400						12	15	18.75	24	30	37	37	37	37	37
Micrologic 6.0	500						12	15	18.75	24	30	37	37	37	37	37
Micrologic 7.0	630							15	18.75	24	30		37	37	37	37
NS630bL	⩽ 500	8	10	12.5	16	20	12	15	18.75	24	30	T	T	T	T	T
Micrologic 2.0	630		10	12.5	16	20		15	18.75	24	30		T	T	T	T
NS630bL	⩽ 320						12	15	18.75	24	30	T	T	T	T	T
Micrologic 5.0	400						12	15	18.75	24	30	T	T	T	T	T
Micrologic 6.0	500						12	15	18.75	24	30	T	T	T	T	T
Micrologic 7.0	630							15	18.75	24	30		T	T	T	T
NS800N/H	⩽ 500	8	10	12.5	16	20	12	15	18.75	24	30	37	37	37	37	37
Micrologic 2.0	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
NS800N/H	⩽ 400						12	15	18.75	24	30	37	37	37	37	37
Micrologic 5.0	500						12	15	18.75	24	30	37	37	37	37	37
Micrologic 6.0	630							15	18.75	24	30		37	37	37	37
Micrologic 7.0	800								18.75	24	30			37	37	37
NS800L	⩽ 500	8	10	12.5	16	20	12	15	18.75	24	30	T	T	T	T	T
Micrologic 2.0	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
NS800L	⩽ 400						12	15	18.75	24	30	T	T	T	T	T
Micrologic 5.0	500						12	15	18.75	24	30	T	T	T	T	T
Micrologic 6.0	630							15	18.75	24	30		T	T	T	T
Micrologic 7.0	800								18.75	24	30			T	T	T
NS1000N/H	⩽ 500	8	10	12.5	16	20	12	15	18.75	24	30	37	37	37	37	37
Micrologic 2.0	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
NS1000N/H	⩽ 500						12	15	18.75	24	30	37	37	37	37	37
Micrologic 5.0	630							15	18.75	24	30		37	37	37	37
Micrologic 6.0	800								18.75	24	30			37	37	37
Micrologic 7.0	1000									24	30				37	37
NS1000L	⩽ 500	8	10	12.5	16	20	12	15	18.75	24	30	T	T	T	T	T
Micrologic 2.0	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
NS1000L	⩽ 500						12	15	18.75	24	30	T	T	T	T	T
Micrologic 5.0	630							15	18.75	24	30		T	T	T	T
Micrologic 6.0	800								18.75	24	30			T	T	T
Micrologic 7.0	1000									24	30				T	T
NS1250N/H	500	8	10	12.5	16	20	12	15	18.75	24	30	37	37	37	37	37
Micrologic 2.0	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
NS1250N/H	500						12	15	18.75	24	30	37	37	37	37	37
Micrologic 5.0	630							15	18.75	24	30		37	37	37	37
Micrologic 6.0	800								18.75	24	30			37	37	37
Micrologic 7.0	1000									24	30				37	37
	1250										30					37
NS1600N/H	640		10	12.5	16	20		15	18.75	24	30		37	37	37	37
Micrologic 2.0	800			12.5	16	20			18.75	24	30			37	37	37
	960				16	20				24	30				37	37
	1280					20					30					37
	1600															
NS1600N/H	640							15	18.75	24	30		37	37	37	37
Micrologic 5.0	800								18.75	24	30			37	37	37
Micrologic 6.0	960									24	30				37	37
Micrologic 7.0	1280										30					37
	1600															
NS1600b/3200N/H	1250					20					30					37
Micrologic 2.0	⩽ 2500															
	3200															
NS1600b/3200N/H	⩽ 2000															
Micrologic 5.0	2500															
Micrologic 6.0	3200															
Micrologic 7.0																

Protection discrimination

Upstream: Masterpact NW
Downstream: Masterpact NT, NW

Upstream Trip unit		Masterpact NW N1 - H1 - H2																			
		Micrologic 2.0 - Isd : 10 Ir										Micrologic 5.0 - 6.0 - 7.0 - Inst : 15 In									
		NW08	NW10	NW12	NW16	NW20	NW25	NW32	NW40	NW50	NW63	NW08	NW10	NW12	NW16	NW20	NW25	NW32	NW40	NW50	NW63
Downstream	**Rating (A)**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3200**	**4000**	**5000**	**6300**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3200**	**4000**	**5000**	**6300**
	Setting Ir	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3200**	**4000**	**5000**	**6300**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3200**	**4000**	**5000**	**6300**
Discrimination limit (kA)																					
Masterpact NT H1/H2 Micrologic 2.0	**NT06**		10	12	16	20	25	32	40	T	T		15	18.75	24	30	37.5	T	T	T	T
	NT08			12	16	20	25	32	40	T	T			18.75	24	30	37.5	T	T	T	T
	NT10				16	20	25	32	40	T	T				24	30	37.5	T	T	T	T
	NT12					20	25	32	40	T	T					30	37.5	T	T	T	T
	NT16						25	32	40	T	T						37.5	T	T	T	T
Masterpact NT H1/H2 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**NT06**												15	18.75	24	30	37.5	T	T	T	T
	NT08													18.75	24	30	37.5	T	T	T	T
	NT10														24	30	37.5	T	T	T	T
	NT12															30	37.5	T	T	T	T
	NT16																37.5	T	T	T	T
Masterpact NT L1 Micrologic 2.0	**NT06**		10	12	16	20	26	45	T	T	T		15	18.75	24	35	65	T	T	T	T
	NT08			12	16	20	26	45	T	T	T			18.75	24	35	65	T	T	T	T
	NT10				16	20	26	45	T	T	T				24	35	65	T	T	T	T
Masterpact NT L1 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**NT06**												15	18.75	24	35	65	T	T	T	T
	NT08													18.75	24	35	65	T	T	T	T
	NT10														24	35	65	T	T	T	T
Masterpact NW N1/H1 Micrologic 2.0	**NW08**			12	16	20	25	32	40	50	63			18.75	24	30	37.5	48	60	T	T
	NW10				16	20	25	32	40	50	63				24	30	37.5	48	60	T	T
	NW12					20	25	32	40	50	63					30	37.5	48	60	T	T
	NW16						25	32	40	50	63						37.5	48	60	T	T
	NW20							32	40	50	63							48	60	T	T
	NW25								40	50	63								60	T	T
	NW32									50	63									T	T
	NW40										63										T
	> NW50																				
Masterpact NW N1/H1 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**NW08**													18.75	24	30	37.5	48	60	T	T
	NW10														24	30	37.5	48	60	T	T
	NW12															30	37.5	48	60	T	T
	NW16																37.5	48	60	T	T
	NW20																	48	60	T	T
	NW25																		60	T	T
	NW32																			T	T
	NW40																				T
	> NW50																				
Masterpact NW H2/H3 Micrologic 2.0	**NW08**			12	16	20	25	32	40	50	63			18.75	24	30	37.5	48	60	75	82
	NW10				16	20	25	32	40	50	63				24	30	37.5	48	60	75	82
	NW12					20	25	32	40	50	63					30	37.5	48	60	75	82
	NW16						25	32	40	50	63						37.5	48	60	75	82
	NW20							32	40	50	63							48	60	75	82
	NW25								40	50	63								60	75	82
	NW32									50	63									75	82
	NW40										63										82
	> NW50																				
Masterpact NW H2/H3 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**NW08**													18.75	24	30	37.5	48	60	75	82
	NW10														24	30	37.5	48	60	75	82
	NW12															30	37.5	48	60	75	82
	NW16																37.5	48	60	75	82
	NW20																	48	60	75	82
	NW25																		60	75	82
	NW32																			75	82
	NW40																				82
	> NW50																				
Masterpact NW L1 Micrologic 2.0	**NW08**			12	16	20	25	32	40	50	63			18.75	24	30	37.5	48	60	75	94.5
	NW10				16	20	25	32	40	50	63				24	30	37.5	48	60	75	94.5
	NW12					20	25	32	40	50	63					30	37.5	48	60	75	94.5
	NW16						25	32	40	50	63						37.5	48	60	75	94.5
	NW20							32	40	50	63							48	60	75	94.5
Masterpact NW L1 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**NW08**													18.75	24	30	37.5	48	60	75	94.5
	NW10														24	30	37.5	48	60	75	94.5
	NW12															30	37.5	48	60	75	94.5
	NW16																37.5	48	60	75	94.5
	NW20																	48	60	75	94.5

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: Masterpact NW
Downstream: Masterpact NT, NW

Upstream Trip unit		Masterpact NW N1 - H1 - H2 Micrologic 5.0 - 6.0 - 7.0 - Inst : OFF									
		NW08	NW10	NW12	NW16	NW20	NW25	NW32	NW40	NW50	NW63
Downstream	**Rating (A)**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3200**	**4000**	**5000**	**6300**
	Setting Ir	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3200**	**4000**	**5000**	**6300**
Discrimination limit (kA)											
Masterpact NT H1/H2 Micrologic 2.0 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**NT06**		T	T	T	T	T	T	T	T	T
	NT08			T	T	T	T	T	T	T	T
	NT10				T	T	T	T	T	T	T
	NT12					T	T	T	T	T	T
	NT16						T	T	T	T	T
Masterpact NT L1 Micrologic 2.0	**NT06**		T	T	T	T	T	T	T	T	T
	NT08			T	T	T	T	T	T	T	T
	NT10				T	T	T	T	T	T	T
Masterpact NT L1 Micrologic 5.0/ 6.0/7.0	**NT06**		T	T	T	T	T	T	T	T	T
	NT08			T	T	T	T	T	T	T	T
	NT10				T	T	T	T	T	T	T
Masterpact NW N1/H1 Micrologic 2.0 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**NW08**			T	T	T	T	T	T	T	T
	NW10				T	T	T	T	T	T	T
	NW12					T	T	T	T	T	T
	NW16						T	T	T	T	T
	NW20							T	T	T	T
	NW25								T	T	T
	NW32									T	T
	NW40										T
	NW50										
	NW63										
Masterpact NW H2/H3 Micrologic 2.0 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**NW08**			85	85	85	85	85	85	T	T
	NW10				85	85	85	85	85	T	T
	NW12					85	85	85	85	T	T
	NW16						85	85	85	T	T
	NW20							85	85	100	100
	NW25								85	100	100
	NW32									100	100
	NW40										100
	NW50										
	NW63										
Masterpact NW L1 Micrologic 2.0 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**NW08**			T	T	T	T	T	T	T	T
	NW10				T	T	T	T	T	T	T
	NW12					T	T	T	T	T	T
	NW16						T	T	T	T	T
	NW20							T	T	T	T

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: Masterpact NW
Downstream: Masterpact NT, NW

Upstream Trip unit		Masterpact NW H3 Micrologic 2.0 Isd : 10 Ir				Micrologic 5.0 - 6.0 - 7.0 Inst : 15 In				Micrologic 5.0 - 6.0 - 7.0 Inst : OFF			
		NW20	NW25	NW32	NW40	NW20	NW25	NW32	NW40	NW20	NW25	NW32	NW40
Downstream	**Rating (A)**	2000	2500	3200	4000	2000	2500	3200	4000	2000	2500	3200	4000
	Setting Ir	2000	2500	3200	4000	2000	2500	3200	4000	2000	2500	3200	4000
Discrimination limit (kA)													
Masterpact NT H1/H2 Micrologic 2.0	**NT06**	20	25	32	40	30	37.5	T	T	T	T	T	T
	NT08	20	25	32	40	30	37.5	T	T	T	T	T	T
	NT10	20	25	32	40	30	37.5	T	T	T	T	T	T
	NT12	20	25	32	40	30	37.5	T	T	T	T	T	T
	NT16		25	32	40		37.5	T	T		T	T	T
Masterpact NT H1/H2 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**NT06**					30	37.5	T	T	T	T	T	T
	NT08					30	37.5	T	T	T	T	T	T
	NT10					30	37.5	T	T	T	T	T	T
	NT12					30	37.5	T	T	T	T	T	T
	NT16						37.5	T	T		T	T	T
Masterpact NT L1 Micrologic 2.0	**NT06**	20	25	32	40	35	65	110	T	T	T	T	T
	NT08	20	25	32	40	35	65	110	T	T	T	T	T
	NT10	20	25	32	40	35	65	110	T	T	T	T	T
Masterpact NT L1 Micrologic 5.0/ 6.0/7.0	**NT06**					35	65	110	T	T	T	T	T
	NT08					35	65	110	T	T	T	T	T
	NT10					35	65	110	T	T	T	T	T
Masterpact NW N1/H1 Micrologic 2.0	**NW08**	20	25	32	40	30	37.5	48	60	T	T	T	T
	NW10	20	25	32	40	30	37.5	48	60	T	T	T	T
	NW12	20	25	32	40	30	37.5	48	60	T	T	T	T
	NW16		25	32	40		37.5	48	60		T	T	T
	NW20			32	40			48	60			T	T
	NW25				40				60				T
	> NW32												
Masterpact NW N1/H1 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**NW08**					30	37.5	48	60	T	T	T	T
	NW10					30	37.5	48	60	T	T	T	T
	NW12					30	37.5	48	60	T	T	T	T
	NW16						37.5	48	60		T	T	T
	NW20							48	60			T	T
	NW25								60				T
	> NW32												
Masterpact NW H2/H3 Micrologic 2.0	**NW08**	20	25	32	40	30	37.5	48	60	65	65	65	65
	NW10	20	25	32	40	30	37.5	48	60	65	65	65	65
	NW12	20	25	32	40	30	37.5	48	60	65	65	65	65
	NW16		25	32	40		37.5	48	60		65	65	65
	NW20			32	40			48	60			65	65
	NW25				40				60				65
	> NW32												
Masterpact NW H2/H3 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**NW08**					30	37.5	48	60	65	65	65	65
	NW10					30	37.5	48	60	65	65	65	65
	NW12					30	37.5	48	60	65	65	65	65
	NW16						37.5	48	60		65	65	65
	NW20							48	60			65	65
	NW25								60				65
	> NW32												
Masterpact NW L1 Micrologic 2.0	**NW08**	20	25	32	45	30	37.5	48	60	100	100	100	100
	NW10	20	25	32	45	30	37.5	48	60	100	100	100	100
	NW12	20	25	32	45	30	37.5	48	60	100	100	100	100
	NW16		25	32	45		37.5	48	60		100	100	100
	NW20			32	45			48	60			100	100
Masterpact NW L1 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**NW08**					30	37.5	48	60	100	100	100	100
	NW10					30	37.5	48	60	100	100	100	100
	NW12					30	37.5	48	60	100	100	100	100
	NW16						37.5	48	60		100	100	100
	NW20							48	60			100	100

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: Masterpact NW
Downstream: Masterpact NT, NW

Upstream Trip unit		Masterpact NW L1														
		Micrologic 2.0 Isd : 10 Ir					Micrologic 5.0 - 7.0 - 7.0 Iost : 15 In					Micrologic 5.0 - 6.0 - 7.0 Inst : OFF				
		NW08	NW10	NW12	NW16	NW20	NW08	NW10	NW12	NW16	NW20	NW08	NW10	NW12	NW16	NW20
Downstream	**Rating (A)**	800	1000	1250	1600	2000	800	1000	1250	1600	2000	800	1000	1250	1600	2000
	Setting Ir	800	1000	1250	1600	2000	800	1000	1250	1600	2000	800	1000	1250	1600	2000
Discrimination limit (kA)																
Masterpact NT H1/H2 Micrologic 2.0	**NT06**		10	12.5	16	20		15	18.75	24	30		37	37	37	37
	NT08			12.5	16	20			18.75	24	30			37	37	37
	NT10				16	20				24	30				37	37
	NT12					20					30					37
	NT16															
Masterpact NT H1/H2 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**NT06**							15	18.75	24	30		37	37	37	37
	NT08								18.75	24	30			37	37	37
	NT10									24	30				37	37
	NT12										30					37
	NT16															
Masterpact NT L1 Micrologic 2.0	**NT06**		10	12.5	16	20		15	18.75	24	30		T	T	T	T
	NT08			12.5	16	20			18.75	24	30			T	T	T
	NT10				16	20				24	30				T	T
Masterpact NT L1 Micrologic 5.0/ 6.0/7.0	**NT06**							15	18.75	24	30		T	T	T	T
	NT08								18.75	24	30			T	T	T
	NT10									24	30				T	T
Masterpact NW N1/H1 Micrologic 2.0	**NW08**			12.5	16	20			18.75	24	30			37	37	37
	NW10				16	20				24	30				37	37
	NW12					20					30					37
	> NW16															
Masterpact NW N1/H1 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**NW08**								18.75	24	30			37	37	37
	NW10									24	30				37	37
	NW12										30					37
	> NW16															
Masterpact NW H2/H3 Micrologic 2.0	**NW08**			12.5	16	20			18.75	24	30			37	37	37
	NW10				16	20				24	30				37	37
	NW12					20					30					37
	> NW16															
Masterpact NW H2/H3 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**NW08**								18.75	24	30			37	37	37
	NW10									24	30				37	37
	NW12										30					37
	> NW16															
Masterpact NW L1 Micrologic 2.0	**NW08**			12.5	16	20			18.75	24	30			37	37	37
	NW10				16	20				24	30				37	37
	NW12					20					30					37
	> NW16															
Masterpact NW L1 Micrologic 5.0 Micrologic 6.0 Micrologic 7.0	**NW08**								18.75	24	30			37	37	37
	NW10									24	30				37	37
	NW12										30					37
	> NW16															

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Protection discrimination

Upstream: Compact NS100 and NS160 DC
Downstream: Compact NS100 and NS160 DC

	Upstream	Compact NS100 DC - Thermal magnetic protection							
	Type of trip unit	TM16D	TM25D	TM32D	TM40D	TM50D	TM63D	TM80DC	TM100DC
	Fixed or adjustable	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
	Im (A)	260	400	550	700	700	700	640	800
Downstream	**Rating In (A)**								
Compact NS100 DC	**16**			550	700	700	700	640	800
TMD trip units	**25**				700	700	700	640	800
	32						700	640	800
	40							640	800
	50							640	800
	63								800
TMDC trip units	**80**								
	100								

	Upstream	Compact NS160 DC - Thermal magnetic protection									
	Type of trip unit	TM16D	TM25D	TM32D	TM40D	TM50D	TM63D	TM80DC	TM100DC	TM125DC	TM160DC
	Fixed or adjustable	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
	Im (A)	260	400	550	700	700	700	640	800	1250	1250
Downstream	**Rating In (A)**										
Compact NS100 DC	**16**			550	700	700	700	640	800	1250	1250
TMD trip units	**25**				700	700	700	640	800	1250	1250
	32						700	640	800	1250	1250
	40							640	800	1250	1250
	50							640	800	1250	1250
	63								800	1250	1250
TMDC trip units	**80**										1250
	100										1250
Compact NS160 DC	**16**			550	700	700	700	640	800	1250	1250
TMD trip units	**25**				700	700	700	640	800	1250	1250
	32						700	640	800	1250	1250
	40							640	800	1250	1250
	50							640	800	1250	1250
	63								800	1250	1250
TMDC trip units	**80**										1250
	100										1250
	125										
	160										

Protection discrimination

Upstream: Compact NS250 DC
Downstream: Compact NS100 and NS250 DC

	Upstream	Compact NS250 DC - Thermal magnetic protection							
	Type of trip unit	TM80DC	TM100DC	TM125DC	TM160DC	TM200DC		TM250DC	
	Fixed or adjustable	Fixed	Fixed	Fixed	Fixed	Adjustable		Adjustable	
						Min.	Max.	Min.	Max.
	Im (A)	640	800	1250	1250	1000	2000	1250	2500
Downstream	**Rating In (A)**								
Compact NS100 DC	**16**	640	800	1250	1250	1000	2000	1250	2500
TMD trip units	**25**	640	800	1250	1250	1000	2000	1250	2500
	32	640	800	1250	1250	1000	2000	1250	2500
	40	640	800	1250	1250		2000	1250	2500
	50	640	800	1250	1250		2000	1250	2500
	63		800	1250	1250		2000	1250	2500
TMDC trip units	**80**			1250	1250		2000		2500
	100				1250		2000		2500
Compact NS160 DC	**16**	640	800	1250	1250	1000	2000	1250	2500
TMD trip units	**25**	640	800	1250	1250	1000	2000	1250	2500
	32	640	800	1250	1250	1000	2000	1250	2500
	40	640	800	1250	1250		2000	1250	2500
	50	640	800	1250	1250		2000	1250	2500
	63		800	1250	1250		2000	1250	2500
TMDC trip units	**80**			1250	1250		2000		2500
	100				1250		2000		2500
	125						2000		2500
	160						2000		2500
Compact NS250 DC	**80**				1250		2000	1250	2500
TMDC trip units	**100**				1250		2000	1250	2500
	125						2000		2500
	160						2000		2500
	200 Irm min.						2000		2500
	200 Irm max.								2500
	250 Irm min.								2500
	250 Irm max.								

Protection discrimination

Upstream: Compact NS400-NS630 DC
Downstream: Compact NS100 to NS630 DC

	Upstream	NS400 DC-NS630 DC - Magnetic protection only					
	Magnetic trip unit	MP1		MP2		MP3	
	Adjustable	Min.	Max.	Min.	Max.	Min.	Max.
	Im (A)	800	1600	1250	2500	2000	4000
Downstream	**Rating In (A)**						
Compact NS100 DC	**16**	800	1600	1250	2500	2000	4000
TMD trip units	**25**	800	1600	1250	2500	2000	4000
	32		1600	1250	2500	2000	4000
	40		1600	1250	2500	2000	4000
	50		1600	1250	2500	2000	4000
	63		1600	1250	2500	2000	4000
TMDC trip units	**80**		1600	1250	2500	2000	4000
	100		1600	1250	2500	2000	4000
Compact NS160 DC	**16**	800	1600	1250	2500	2000	4000
TMD trip units	**25**	800	1600	1250	2500	2000	4000
	32		1600	1250	2500	2000	4000
	40		1600	1250	2500	2000	4000
	50		1600	1250	2500	2000	4000
	63		1600	1250	2500	2000	4000
TMDC trip units	**80**		1600	1250	2500	2000	4000
	100		1600	1250	2500	2000	4000
	125		1600		2500	2000	4000
	160		1600		2500	2000	4000
Compact NS250 DC	**80**		1600	1250	2500	2000	4000
TMDC trip units	**100**		1600	1250	2500	2000	4000
	125		1600		2500	2000	4000
	160		1600		2500	2000	4000
	200 Irm min.				2500	2000	4000
	200 Irm max.						4000
	250 Irm min.				2500	2000	4000
	250 Irm max.						4000
Compact NS400 DC-NS630 DC	**MP1 Irm min.**				2500		4000
	MP1 Irm max.				2500		4000
	MP2 Irm min.						4000
	MP2 Irm max.						4000
NS630DC	**MP3 Irm min.**						
	MP3 Irm max.						

Protection discrimination

Upstream: Masterpact NW10
Downstream: Compact NS100 to NS630 DC, Masterpact NW10

	Upstream	Masterpact NW10 magnetic protection only									
	Magnetic trip unit	1250 A to 2500 A					2500 A to 5400 A				
	Adjustable	Setting					Setting				
		A	B	C	D	E	A	B	C	D	E
	Ii (A)	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
Downstream	**Rating In (A)**										
Compact NS100 DC	**16**	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
TMD trip units	**25**	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
	32	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
	40	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
	50	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
	63	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
TMDC trip units	**80**	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
	100	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
Compact NS160 DC	**16**	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
TMD trip units	**25**	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
	32	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
	40	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
	50	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
	63	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
TMDC trip units	**80**	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
	100	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
	125				2000	2500	2500	3300	4000	5000	5400
	160				2000	2500	2500	3300	4000	5000	5400
Compact NS250 DC	**80**	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
TMDC trip units	**100**	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
	125				2000	2500	2500	3300	4000	5000	5400
	160				2000	2500	2500	3300	4000	5000	5400
	200 Irm min.		1500	1600	2000	2500	2500	3300	4000	5000	5400
	200 Irm max.							3300	4000	5000	5400
	250 Irm min.				2000	2500	2500	3300	4000	5000	5400
	250 Irm max.							3300	4000	5000	5400
Compact NS400 DC - NS630 DC	**MP1 Irm min.**	1250	1500	1600	2000	2500	2500	3300	4000	5000	5400
	MP1 Irm max.					2500	2500	3300	4000	5000	5400
	MP2 Irm min.				2000	2500	2500	3300	4000	5000	5400
	MP2 Irm max.								4000	5000	5400
Compact NS630 DC	**MP3 Irm min.**							3300	4000	5000	5400
	MP3 Irm max.										
Masterpact NW10 Ii = 1250/2500 A	**Setting A**			1600	2000	2500	2500	3300	4000	5000	5400
	B				2000	2500	2500	3300	4000	5000	5400
	C				2000	2500	2500	3300	4000	5000	5400
	D					2500	2500	3300	4000	5000	5400
	E							3300	4000	5000	5400
Masterpact NW10 Ii = 2500/5400 A	**Setting A**							3300	4000	5000	5400
	B									5000	5400
	C									5000	5400
	D										
	E										

Protection discrimination

Upstream: Masterpact NW10 and NW20
Downstream: Compact NS100 to NS630 DC, Masterpact NW10 and NW20

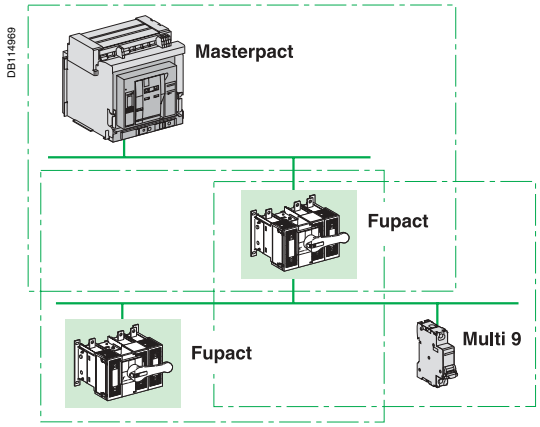
	Upstream	Masterpact NW10 magnetic protection only									
	Magnetic trip unit	5000 A to 11000 A					2500 A to 5400 A				
	Adjustable	Setting					Setting				
		A	B	C	D	E	A	B	C	D	E
	Ii (A)	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
Downstream	**Rating In (A)**										
Compact NS100 DC	**16**	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
TMD trip units	**25**	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	32	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	40	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	50	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	63	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
TMDC trip units	**80**	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	100	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
Compact NS160 DC	**16**	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
TMD trip units	**25**	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	32	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	40	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	50	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	63	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
TMDC trip units	**80**	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	100	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	125	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	160	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
Compact NS250 DC	**80**	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
TMDC trip units	**100**	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	125	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	160	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	200 Irm min.	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	200 Irm max.	5000	8000	10000	11000	11000		3300	4000	5000	5400
	250 Irm min.	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	250 Irm max.	5000	8000	10000	11000	11000		3300	4000	5000	5400
Compact NS400 DC-NS630 DC	**MP1 Irm min.**	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	MP1 Irm max.	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	MP2 Irm min.	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	MP2 Irm max.	5000	8000	10000	11000	11000			4000	5000	5400
NS630 DC	**MP3 Irm min.**	5000	8000	10000	11000	11000		3300	4000	5000	5400
	MP3 Irm max.		8000	10000	11000	11000					
Masterpact NW10 Ii = 1250/2500 A	**Setting A**	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	B	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	C	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	D	5000	8000	10000	11000	11000	2500	3300	4000	5000	5400
	E	5000	8000	10000	11000	11000		3300	4000	5000	5400
Masterpact NW10 Ii = 2500/5400 A	**Setting A**	5000	8000	10000	11000	11000		3300	4000	5000	5400
	B	5000	8000	10000	11000	11000				5000	5400
	C	5000	8000	10000	11000	11000				5000	5400
	D		8000	10000	11000	11000					
	E		8000	10000	11000	11000					
Masterpact NW10 Ii = 5000/11000 A	**Setting A**		8000	10000	11000	11000					
	B			10000	11000	11000					
	C										
	D										
	E										
Masterpact NW20 Ii = 2500/5400 A	**Setting A**							3300	4000	5000	5400
	B									5000	5400
	C									5000	5400
	D										
	E										

Protection discrimination

Upstream: Masterpact NW20 and NW40
Downstream: Compact NS100 to NS630 DC, Masterpact NW10 to NW40

	Upstream		Masterpact NW20 magnetic protection only									
	Magnetic trip unit		5000 A to 11000 A					5000 A to 11000 A				
	Adjustable		Setting					Setting				
			A	B	C	D	E	A	B	C	D	E
	Ii (A)		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
Downstream	**Rating In (A)**											
Compact NS100 DC	**16**		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
TMD trip units	**25**		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	32		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	40		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	50		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	63		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
TMDC trip units	**80**		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	100		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
Compact NS160 DC	**16**		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
TMD trip units	**25**		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	32		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	40		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	50		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	63		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
TMDC trip units	**80**		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	100		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	125		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	160		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
Compact NS250 DC	**80**		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
TMDC trip units	**100**		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	125		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	160		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	200 Irm min.		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	200 Irm max.		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	250 Irm min.		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	250 Irm max.		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
Compact NS400 DC-NS630 DC	**MP1 Irm min.**		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	MP1 Irm max.		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	MP2 Irm min.		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	MP2 Irm max.		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
NS630 DC	**MP3 Irm min.**		5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
	MP3 Irm max.			8000	10000	11000	11000		8000	10000	11000	11000
Masterpact NW10 Ii = 1250/2500 A	**Setting**	**A**	5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
		B	5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
		C	5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
		D	5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
		E	5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
Masterpact NW10 Ii = 2500/5400 A	**Setting**	**A**	5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
		B	5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
		C	5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
		D		8000	10000	11000	11000	5000	8000	10000	11000	11000
		E		8000	10000	11000	11000	5000	8000	10000	11000	11000
Masterpact NW10 Ii = 5000/11000 A	**Setting**	**A**		8000	10000	11000	11000	5000	8000	10000	11000	11000
		B			10000	11000	11000	5000	8000	10000	11000	11000
		C										
		D										
		E										
Masterpact NW20 Ii = 2500/5400 A	**Setting**	**A**	5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
		B	5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
		C	5000	8000	10000	11000	11000	5000	8000	10000	11000	11000
		D		8000	10000	11000	11000	5000	8000	10000	11000	11000
		E		8000	10000	11000	11000	5000	8000	10000	11000	11000
Masterpact NW20 Ii = 5000/11000 A	**Setting**	**A**		8000	10000	11000	11000	5000	8000	10000	11000	11000
		B			10000	11000	11000	5000	8000	10000	11000	11000
		C										
		D										
		E										
Masterpact NW40 Ii = 5000/11000 A	**Setting**	**A**						5000	8000	10000	11000	11000
		B						5000	8000	10000	11000	11000
		C										
		D										
		E										

Protection discrimination with fuses

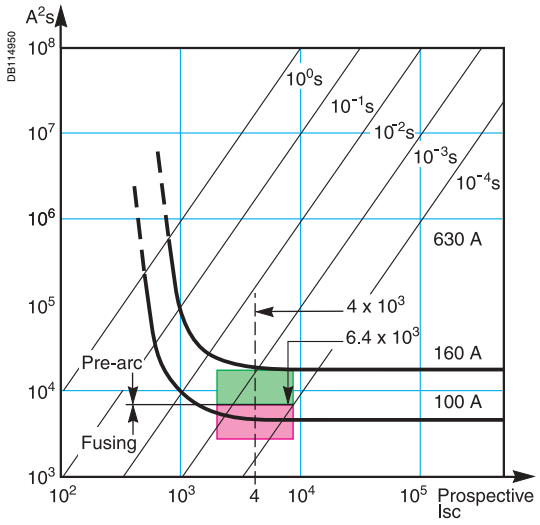


Principle

Schneider Electric offers a coordinated protection system

In an electrical installation, fuse protection devices 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.



Curves E = f (I) superimposed.

Fuse upstream / Fuse downstream

Discrimination is ensured when

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

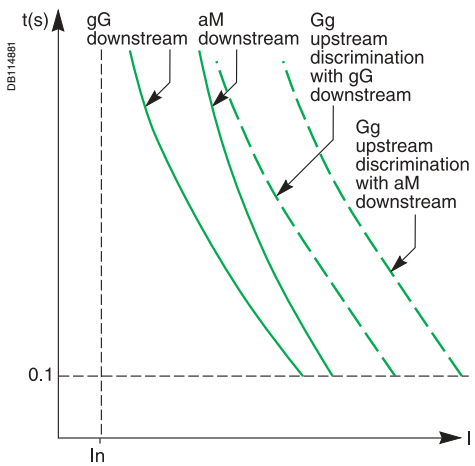
Note: *If Etav is higher than 80 % of Epam, the upstream fuse may be derated.*

■ gG fuse-link upstream / gG fuse-link downstream

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.

I ²t limit and test currents for verification of discrimination

I_n (A)	Minimum values of pre-arcing I ²t		Minimum values of operating I²t	
	Rms values of Ipprospective (kA)	I ²t (A²s)	Rms values of Ipprospective (kA)	I ²t (A²s)
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
1 000	37.00	5 470 000	66.00	17 400 000
1 250	50.00	10 000 000	90.00	33 100 000

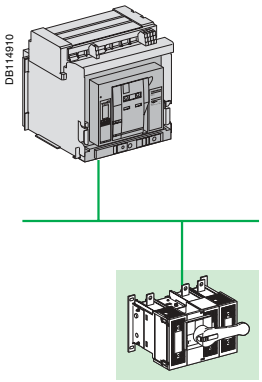


■ gG fuse-link upstream / aM fuse-link downstream

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



Circuit breaker upstream / Fuse downstream

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

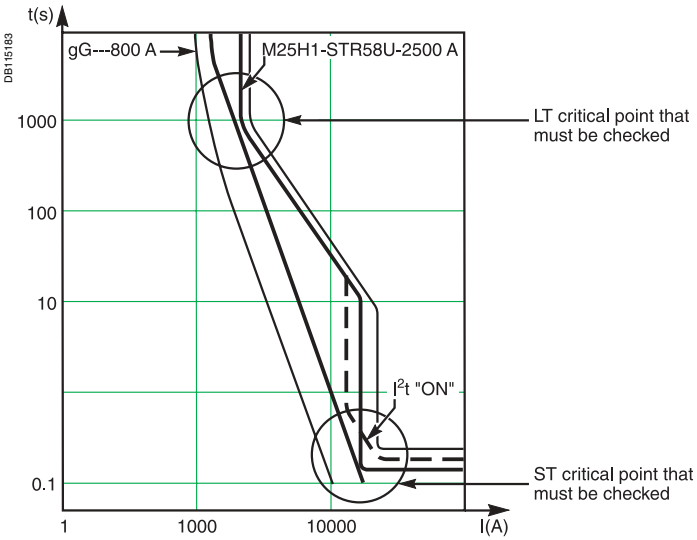
This is the situation for a MLVS (main low-voltage switchboard) or sub-distribution switchboard protected by an incoming circuit breaker.
The upstream circuit breaker has an electrodynamic withstand capacity Icw and ensures time discrimination.

Rule

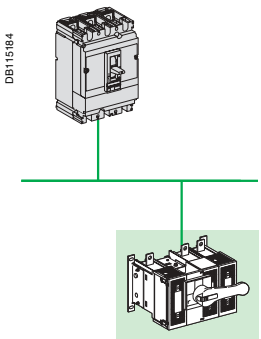
Examination of discrimination at the critical points on the LT (long time) and ST (short time) curves results in a discrimination table.
Analysis of the LT critical point indicates whether discrimination between the protection devices is possible or not.
Analysis of the ST (or Icw) critical point indicates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



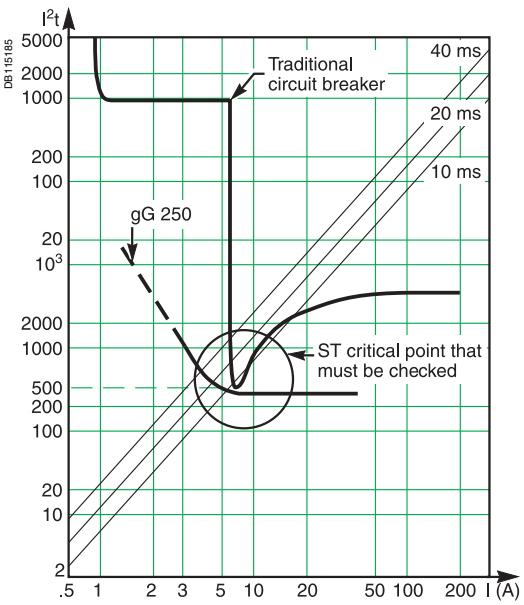
Time-current curves and critical points that must be checked.



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

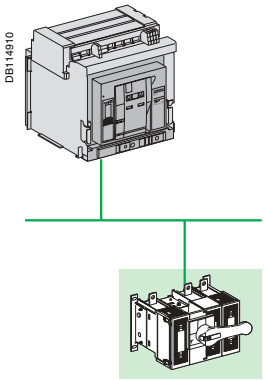
To make sure the ST critical point is OK, it is necessary to compare:

- 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.



Energy curves and critical points that must be checked.

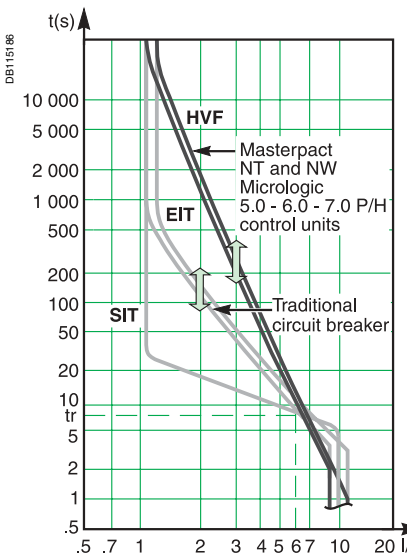
Protection discrimination with fuses



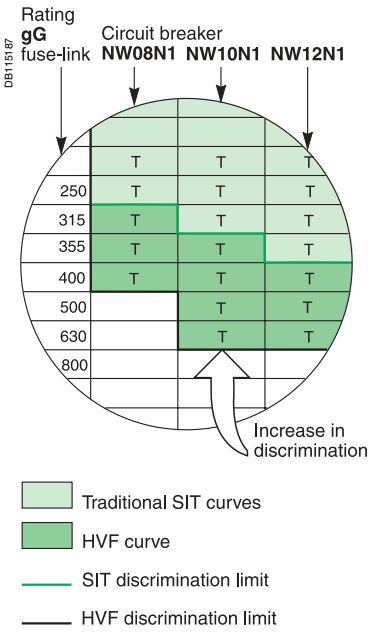
Exclusive Schneider feature

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 LV distribution fuse-based protection devices are installed downstream or HV devices are installed upstream.



IDMTL curve.



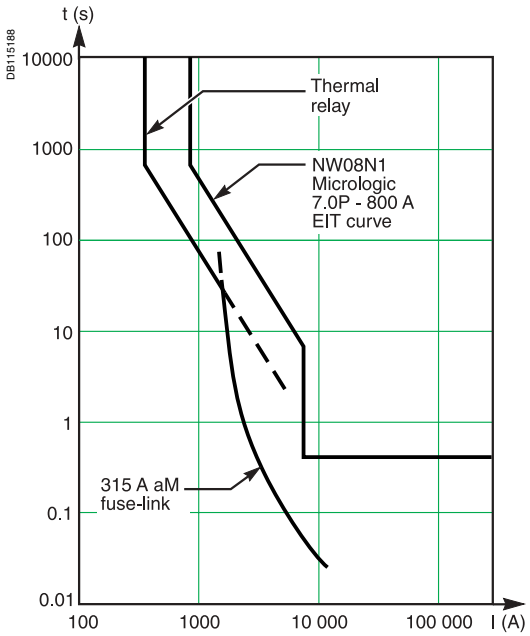
Increase in discrimination.

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.
HVF: high-voltage fuse, inverse-time curve that follows the fuse thermal curve.

Protection discrimination with fuses

Masterpact M, NT or NW upstream of an aM fuse-link

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



■ **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.

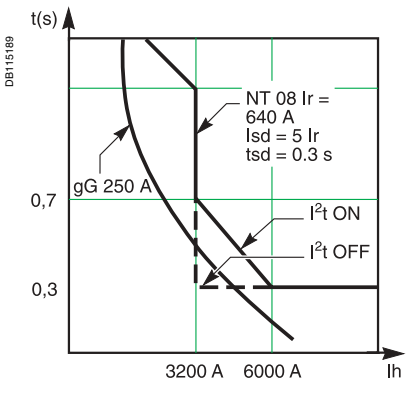
Given the above and using the EIT long-time setting, Masterpact offers the same discrimination ratios for both gG and aM fuse-links downstream. This ratio is very similar to that for gG fuse-links installed upstream of aM fuse-links.

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.*

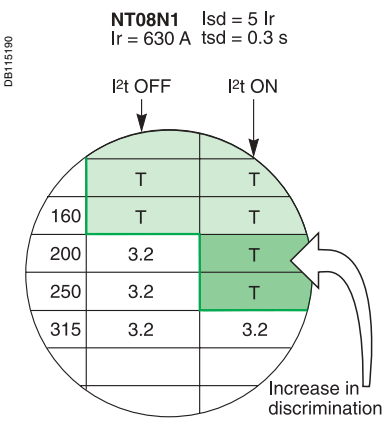
See pages 86 to 94 for the discrimination tables.

I^2t 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 I^2t ON function, a constant-energy tripping curve, maintains the level of discrimination performance and facilitates total discrimination.



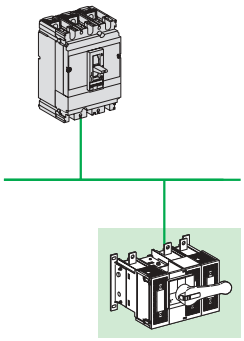
I^2t ON curve.



Increase in the discrimination limit.

Protection discrimination with fuses

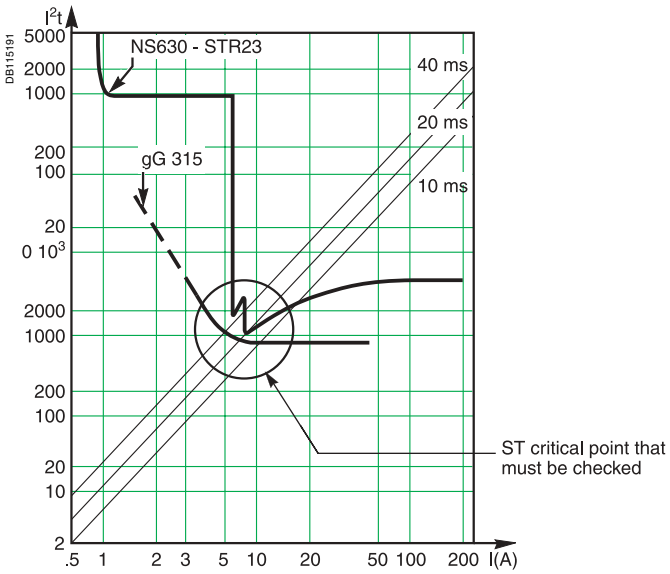
DB115184



Compact NS upstream of gG or aM fuse-links

Compact NS 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 NS has a mini-delay that considerably increases curve values at the ST critical point.

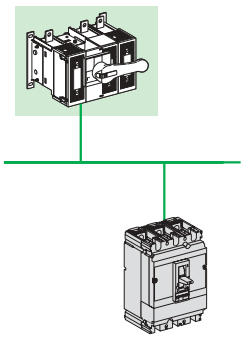
DB115191



I²t curve for Compact NS and a fuse.

Total discrimination is achieved by a gG fuse-link up to the 315 A rating (instead of 250 A with a traditional circuit breaker).
See page 93 for the discrimination tables.

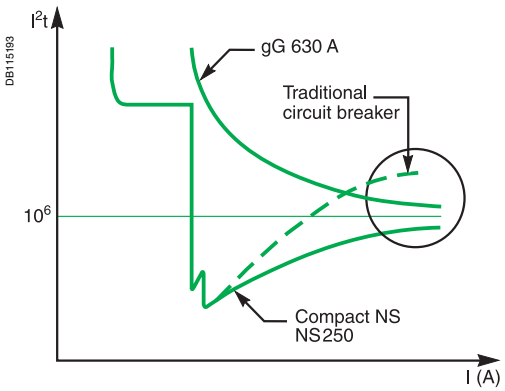
DB115192



Compact NS downstream of gG or aM fuse-links

Compact NS 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.

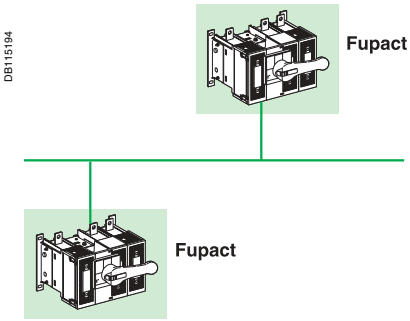
DB115193



See page 94 for the discrimination tables.

Protection discrimination with fuses

Upstream: gG fuse-link
Downstream: gG or aM fuse-link



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.

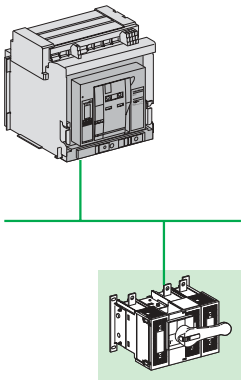
Upstream fuse-link gG (In) / gM (Ich)	Downstream fuse-link gG (In) / gM (Ich)	aM (In)
Rating (A)		
16	6	4
20	10	6
25	16	8
32	20	10
40	25	12
50	32	16
63	40	20
80	50	25
100	63	32
125	80	40
160	100	63
200	125	80
250	160	125
315	200	125
400	250	160
500	315	200
630	400	250
800	500	315
1000	630	400
1250	8000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

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

Protection discrimination

Upstream: Masterpact NT/NW (HVF long-time curve) Downstream: Fupact

DB114910



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
- CT setting: instantaneous OFF / Tsd = 0.4 seconds.

Upstream		Masterpact NTH1 / NWH1/H2/H3 Micrologic 5.0-6.0-7.0 P/H																
		NT08	NT08	NT08	NT08	NT08	NT08	NT08	NT08	NT10	NT12	NT16						
		H1	H1	H1	H1	H1	H1	H1	H1	H1	H1	H1						
		NW08	NW08	NW08	NW08	NW08	NW08	NW08	NW08	NW10	NW12	NW16	NW20	NW25	NW32	NW40	NW50	NW63
		H1/H2	H1/H2	H1/H2	H1/H2	H1/H2	H1/H2	H1/H2	H1/H2	H1/H2	H1/H2	H1/H2	H1/H2 H3	H1/H2 H3	H1/H2 H3	H1/H2 H3	H1/H2	H1/H2
	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
Down stream 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
H1 / Icu = Icw = 65 kA
H2 / Icu = 100 Icw = 85 kA

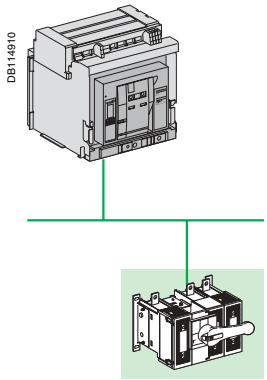
NW08 to NW20
L1 / Icu = 150 kA Icw = 30 kA

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

Protection discrimination

Upstream: Masterpact NT/NW
(HVF long-time curve)
Downstream: Fupact

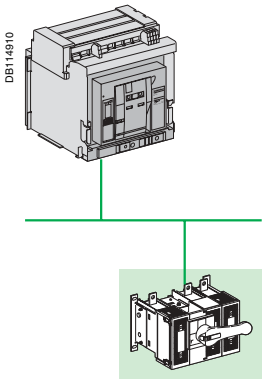


Upstream		Masterpact NT L1 Micrologic 5.0-6.0-7.0 P/H								
		NT08	NT08	NT08	NT08	NT08	NT08	NT08	NT08	NT10
	Rating (A)	400	400	400	630	630	630	630	800	1000
	Ir setting	160	200	240	315	400	480	630	800	1000
Down stream	32	T	T	T	T	T	T	T	T	T
	40	T	T	T	T	T	T	T	T	T
gG/aM fuse-link	50	T	T	T	T	T	T	T	T	T
	63	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
	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
Down stream	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
gG/aM fuse-link	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

Protection discrimination

Upstream: Masterpact NT/NW (EIT long-time curve) Downstream: Fupact



The Masterpact circuit breaker is equipped with a Micrologic 5.0 - 6.0 - 7.0 A / P / H control unit with the following settings:

- LT setting: EIT curve with Tld = 24 seconds
- CT setting: instantaneous OFF / Tsd = 0.4 seconds.

Upstream		Masterpact NT H1 / NW H1/H2/H3 Micrologic 2.0-5.0-6.0-7.0 A/P/H																
		NT08	NT08	NT08	NT08	NT08	NT08	NT08	NT08	NT10	NT12	NT16						
		H1	H1	H1	H1	H1	H1	H1	H1	H1	H1	H1						
		NW08	NW08	NW08	NW08	NW08	NW08	NW08	NW08	NW10	NW12	NW16	NW20	NW25	NW32	NW40	NW50	NW63
		H1/H2	H1/H2	H1/H2	H1/H2	H1/H2	H1/H2	H1/H2	H1/H2	H1/H2	H1/H2	H1/H2	H1/H2 H3	H1/H2 H3	H1/H2 H3	H1/H2 H3	H1/H2	H1/H2
	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
Down stream 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

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
H1 / Icu = Icw = 65 kA
H2 / Icu = 100 Icw = 85 kA

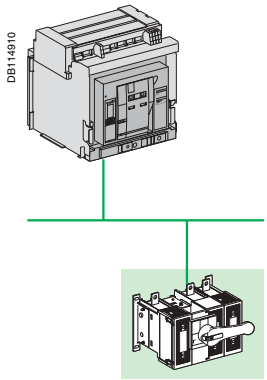
NW08 to NW20
L1 / Icu = 150 kA Icw = 30 kA

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

Protection discrimination

Upstream: Masterpact NT/NW
(EIT long-time curve)
Downstream: Fupact



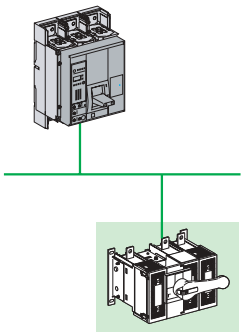
Upstream		Masterpact NT L1 Micrologic 2.0-5.0-6.0-7.0 A								
		NT08	NT08	NT08	NT08	NT08	NT08	NT08	NT08	NT10
	Rating (A)	400	400	400	630	630	630	630	800	1000
	Ir setting	160	200	240	315	400	480	630	800	1000
Down stream	32	T	T	T	T	T	T	T	T	T
	40	T	T	T	T	T	T	T	T	T
gG/aM fuse-link	50	T	T	T	T	T	T	T	T	T
	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 2.0-5.0-6.0-7.0 A/P/H											
		NW08	NW08	NW08	NW08	NW08	NW08	NW08	NW08	NW10	NW12	NW16	NW20
	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
Down stream	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
gG/aM fuse-link	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												

Protection discrimination

Upstream: Compact NS630b to 3200
Downstream: Fupact

DB115195



Upstream		Compact NS L Micrologic 5.0-6.0-7.0 A Inst OFF - EIT curve- Tsd = 0.4 Tld = 24 s								
		NS630b	NS630b	NS630b	NS630b	NS630b	NS630b	NS630b	NS800	NS1000
	Rating (A)	400	400	400	630	630	630	630	800	1000
	Ir setting	160	200	240	315	400	500	630	800	1000
Down stream 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 A Inst OFF - EIT curve- Tsd = 0.4 Tld = 24 s													
		NS630b	NS630b	NS630b	NS630b	NS630b	NS630b	NS630b	NS800	NS1000	NS1250	NS1600	NS1600b	NS2000	NS2500	NS3200
	Rating (A)	400	400	400	630	630	630	630	800	1000	1200	1600	1600	2000	2500	3200
	Ir setting	160	200	240	315	400	500	630	800	1000	1200	1600	1600	2000	2500	3200
Down stream 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 = 10kA / 0.5

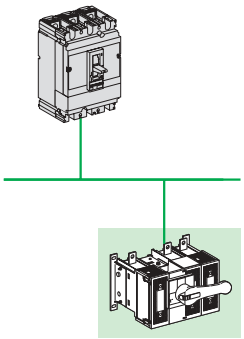
NS630b to NS1600
N / Icu = 50 KA, Icw = 25 kA
H / Icu = 70 KA, Icw = 25 kA

NS1600b to NS3200
N / Icu = 70 KA, Icw = 40 kA
H / Icu = 85 KA, Icw = 40 kA

Protection discrimination

Upstream: Compact NS100 to 630
Downstream: Fupact

DB115184



The Compact NS100 to 630 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 NS with a delayed short-time setting.*

Discrimination between an upstream Compact NS and downstream gG fuse-links

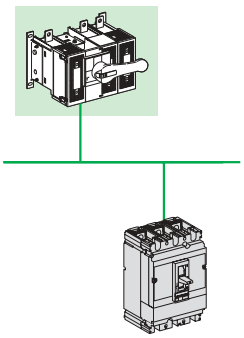
Upstream		NS100N/H/L						NS160N/H/L				NS250/N/H/L					NS400/630/N/H/L	
	Trip unit	TM-D						TM-D				TM-D			STR22		STR23/53	
	Rating (A)	16	25	40	63	80	100	80	100	125	160	160	200	250	160	250	400	630
	Im (kA)	0.19	0.3	0.5	0.5	0.63	0.8	1	1.25	1.25	1.25	1.25	2	2.5	1.6	2.5	4	6.3
Down stream gG fuse-link	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	T
	10	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
	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
	35							T	T	T	T	T	T	T	T	T	T	T
	40							T	T	T	T	T	T	T	T	T	T	T
	50								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
	100												T	T		T	T	T
	125												T	T			T	T
	160													T			T	T
	200																	T
	250																	T
	315																	
	355																	

Discrimination between an upstream Compact NS and downstream aM fuse-links

Upstream		NS100N/H/L						NS160N/H/L				NS250/N/H/L					NS400/630/N/H/L	
	Trip unit	TM-D						TM-D				TM-D			STR22		STR23/53	
	Rating (A)	16	25	40	63	80	100	80	100	125	160	160	200	250	160	250	400	630
	Im (kA)	0.19	0.3	0.5	0.5	0.63	0.8	1	1.25	1.25	1.25	1.25	2	2.5	1.6	2.5	4	6.3
Down stream 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	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	T
	20					T	T	T	T	T	T	T	T	T	T	T	T	T
	32									T	T	T	T	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																	
	160																	
	200																	

Protection discrimination
Upstream: Fupact
Downstream: Compact NS100 to 630

DB115192

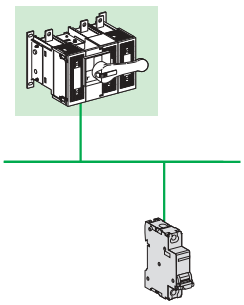


The Compact NS100 to 630 is equipped with a thermal-magnetic or electronic trip unit without a delayed short-time setting.

Discrimination between an upstream gG fuse-link and downstream Compact NS

Upstream	Rating (A)	160	200	250	315	355	400	450	500	560	630	670	710	750	800	1000	1250
Down stream NS100 TM-D trip unit	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
	40	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
NS160 TM-D trip unit	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
NS250 TM-D trip unit	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
NS100	40	2.5	4	7	15	T	T	T	T	T	T	T	T	T	T	T	T
NS160	100		4	7	15	T	T	T	T	T	T	T	T	T	T	T	T
NS250 STR22	160				7	8	T	T	T	T	T	T	T	T	T	T	T
	200					8	35	T	T	T	T	T	T	T	T	T	T
	250							T	T	T	T	T	T	T	T	T	T
NS630	400								6	7	9	10	T	T	T	T	T
	630												12	15	T	T	T

DB115196



Multi 9 downstream of a Fupact see discrimination tables in Multi 9 catalogue (for all fuse standards)

Table key

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

Cascading

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:
- IEC 60947-2 (construction)
- NF C 15-100, § 434.3.1 (installation).

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 pages 106 to 130 for data on discrimination limits

Cascading tables

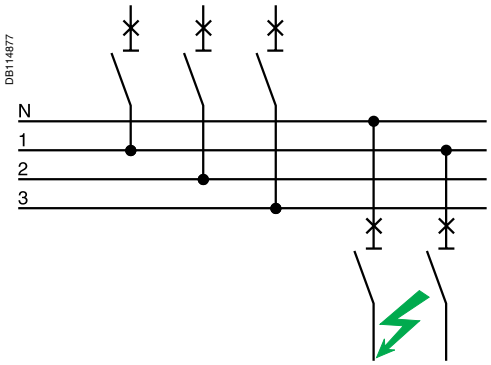
Merlin Gerin cascading tables are:
- drawn up on the basis of calculations (comparison between the energy limited by the upstream device and the maximum permissible thermal stress for the downstream device)
- verified experimentally in accordance with IEC standard 60947-2.

For distribution systems with 220/240 V, 400/415 V and 440 V between phases, the tables of the following pages indicate cascading possibilities between upstream Compact and downstream Multi 9 and Compact circuit breakers as well as between upstream Masterpact and downstream Compact circuit breakers.

Cascading

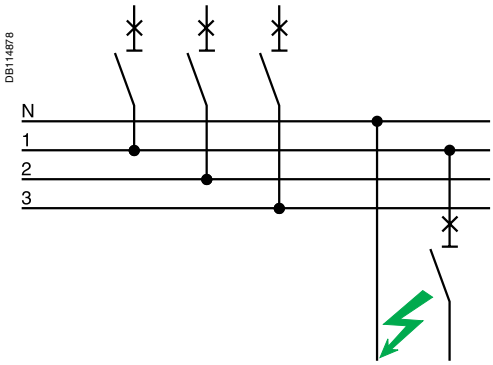
Contents

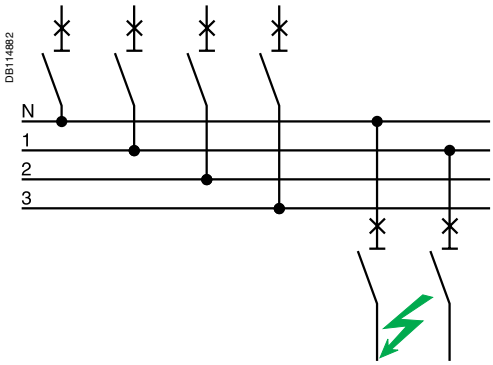
Cascading



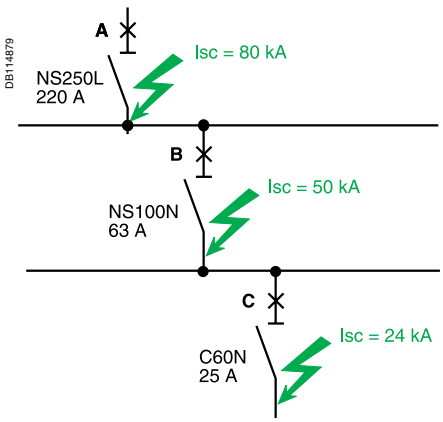
220/240 V network downstream from a 380/415 V network

For 1P + N or 2P circuit breakers connected between the phase and neutral on a 380/415 V network, with a TT or TNS neutral system, consult the 220/240 V cascading table to determinate cascading possibilities between upstream and downstream circuit breakers.





For 1P circuit breakers connected to one phase of a 380/415 V network used together with the neutral to supply a single-phase circuit, consult the cascading tables for 380/415 V networks to determine the cascading possibilities between upstream and downstream circuit breakers.



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 NS250L (breaking capacity 150 kA) for a prospective Isc of 80 kA across its output terminals.
A NS100N (breaking capacity 36 kA) can be used for circuit breaker B for a prospective Isc of 50 kA across its output terminals, since the "reinforced" breaking capacity provided by cascading with the upstream NS250L is 150 kA.
A C60N (breaking capacity 10 kA) can be used for circuit breaker C for a prospective Isc of 36 kA across its output terminals since the "reinforced" breaking capacity provided by cascading with the upstream NS250L is 30 kA.
Note that the "reinforced" breaking capacity of the C60N with the NS100N upstream is only 25 kA, but:

- A + B = 150 kA
- A + C = 30 kA.

Cascading, network 220/240 V

Upstream: Compact and Multi 9
Downstream: Compact and Multi 9

Upstream	**iDPN N**	**C60N**	**C60H**	**C60L ⩽ 25 A**	**32/40 A**	**50/63 A**	**C120N**	**C120H**	**NG125N**	**NG125H**	**NG125L**
Breaking capacity (kA rms)	**10**	**20**	**30**	**50**	**40**	**30**	**20**	**30**	**50**	**70**	**100**
Downstream	**Breaking capacity (kA rms)**										
iDPN (130 V between phase and neutral)	10	15	20	30	25	20	15	20	20	40	50
iDPN N (130 V between phase and neutral)		20	30	50	40	30	20	30	30	40	50
C60N			30	50	40	30		30	50	50	50
C60H				50	40				50	70	70
C60L ⩽ 25 A										70	100
C60L ⩽ 40 A									50	70	100
C60L ⩽ 63 A									50	70	70
C120N			30	50	40	30			50		70
C120H				50					50		70
NG125N											70
NG125H											100

Cascading, network 220/240 V

Upstream: Compact NS, NR
Downstream: Compact and Multi 9

Upstream Breaking capacity (kA rms)	NSC100N 42	NS125E 25	NSA160E 25	NSA160N 50	NR100F 35	NS100N 85	NS100SX 90	NS100H 100	NS100L 150
Downstream	**Breaking capacity (kA rms)**								
iDPN (130 V between phase and neutral)					20	20	20	20	20
iDPN N (130 V between phase and neutral)					30	30	30	30	30
C60N	40	25	25	40	35	40	90	100	100
C60H	42			50	35	50	90	100	100
C60L ⩽ 25A						65	90	100	100
C60L ⩽ 40A	42			50		65	90	100	100
C60L ⩽ 63A	42			50		65	90	100	100
P25M ⩾ 14A						85	90	100	100
C120N	42	25	25	40	35	40	50	50	70
C120H	42	25	25	40	35	40	50	50	70
NG125N						60	70	70	85
NG125H						85	85	85	100
NG125L/LMA									150
NS125E				50					
NSA160E				50					
NS80HMA									150
NSC100N				50		85	90	100	100
NS100N							90	100	150
NS100SX								100	150
NS100H									150

Upstream Breaking capacity (kA rms)	NR160F 35	NS160NE 85	NS160N 85	NS160SX 90	NS160H 100	NS160L 150	NR250F 35	NS250N 85	NS250SX 90	NS250H 100	NS250L 150
Downstream	**Breaking capacity (kA rms)**										
iDPN (130 V between phase and neutral)	20	20	20	20	20	20	20	20	20	20	20
iDPN N (130 V between phase and neutral)	30	30	30	30	30	30	30	30	30	30	30
C60N	35	40	40	60	60	60	35	40	60	60	60
C60H	35	50	50	80	80	80	35	50	65	65	65
C60L ⩽ 25A		65	65	80	80	80		65	80	80	80
C60L ⩽ 40A		65	65	80	80	80		65	80	80	80
C60L ⩽ 63A		65	65	80	80	80		50	65	65	65
P25M ⩾ 14A		85	85	90	100	100					
C120N	35	40	40	50	50	70	35	40	50	50	70
C120H	35	40	40	50	50	70	35	40	50	50	70
NG125N		60	60	70	70	85		60	70	70	85
NG125H		85	85	85	85	100		85	85	85	100
NG125L/LMA						150					150
NS125E	35	50	50	50	60	60	35	50	50	60	60
NSA160E	35	50	50	50	60	60	35	50	50	60	60
NSA160N		85	85	90	100	100		85	90	100	100
NS80HMA						150					150
NSC100N		85	85	90	100	100		85	90	100	100
NR100F				90	100	100		85	90	100	100
NS100N				90	100	150			90	100	150
NS100SX					100	150				100	150
NS100H						150					150
NR160F		85	85	90	100	100		85	90	100	100
NS160NE				90	100	150			90	100	150
NS160N				90	100	150			90	100	150
NS160SX					100	150				100	150
NS160H						150					150
NR250F									90		
NS250N									90	100	150
NS250SX										100	150
NS250H											150
NB250N								50		60	60

Cascading, network 220/240 V

Upstream: Compact NS, NR, Masterpact
Downstream: Compact

Upstream Breaking capacity (kA rms)	NR400F 40	NS400N 85	NS400H 100	NS400L 150	NR630F 40	NS630N 85	NS630H 100	NS630L 150			
Downstream	**Breaking capacity (kA rms)**										
NS125E	40	50	60	60	40	50	60	60			
NSA160E	40	50	60	60	40	50	60	60			
NSA160N		85	100	100		85	100	100			
NS80HMA				150				150			
NSC100N		85	100	100		85	100	100			
NR100F	40	85	100	100	40	85	100	100			
NS100N			100	150			100	150			
NS100SX			100	150			100	150			
NS100H				150				150			
NR160F	40	85	100	100	40	85	100	100			
NS160NE			100	150			100	150			
NS160N			100	150			100	150			
NS160SX			100	150			100	150			
NS160H				150				150			
NR250F	40				40						
NS250N			100	150			100	150			
NS250SX			100	150			100	150			
NS250H				150				150			
NR400F		85	100	100		85	100	100			
NS400N			100	150			100	150			
NS400H				150				150			
NR630F						85	100	100			
NS630N							100	150			
NS630H								150			
NS630bN								70			
NB250N		50	60	60		50	60	60			
NB400N		50	60	60		50	60	60			
NB600N						50	60	60			

Upstream Breaking capacity (kA rms)	NS630bN to NS1600N 50	NS630bH 70	NS630bL 150	NS800H 70	NS800L 150	NS1000H 70	NS1000L 150	NS1250H NS1600H 70	NS2000N NS2500N NS3200N 85	Masterpact NT L1 150	Masterpact NW L1 150
Downstream	**Breaking capacity (kA rms)**										
NR100F	40	40	50	40	50	40	50	40		50	
NS100N			150		150		150			150	
NS100SX			150		150		150			150	
NS100H			150		150		150			150	
NR160F	40	40	50	40	50	40	50	40		50	
NS160NE			50		50		50			50	
NS160N			150		150		150			150	
NS160SX			150		150		150			150	
NS160H			150		150		150			150	
NR250F	40	40	50	40	50	40	50	40		50	
NS250N			150		150		150			150	
NS250SX			150		150		150			150	
NS250H			150		150		150			150	
NR400F	50	50	50	50	50	50	50	50		50	
NS400N			150		150		150			150	100
NS400H			150		150		150			150	
NR630F	50	50	50	50	50	50	50	50		50	
NS630N			150		150		150			150	100
NS630H			150		150		150			150	
NS630bN									70		
NS800N									70		
NS1000N									70		
NS1250N									70		
NS1600N									70		

Cascading, network 380/415 V (1)

Upstream: Multi 9
Downstream: Multi 9

Upstream	C60N iDPN N 10	C60H 15	C60L ⩽ 25 A 25	32/40 A 20	50/63 A 15	C120N 10	C120H 15	NG125N 25	NG125H 36	NG125L 50
Downstream	**Breaking capacity (kA rms)**									
iDPN (230 V between phase and neutral)	10	10	20	15	10	10	10	10	15	20
iDPN N (230 V between phase and neutral)		15	25	20	15		15	15	20	25
C60N		15	25	20	15		15	25	25	25
C60H			25					25	36	36
C60L ⩽ 25 A									36	50
C60L ⩽ 40 A								25	36	50
C60L ⩽ 63 A								25	36	36
C120N							15	25	25	36
C120H							15	25	25	36
NG125N									36	36
NG125H										50

Cascading, network 380/415 V (1)

Upstream: Compact NS, NR
Downstream: Compact and Multi 9

Upstream Breaking capacity (kA rms)	NSC100N 18	NS125E 16	NSA160E 16	NSA160N 30	NR100F 25	NS100N 36	NS100SX 50	NS100H 70	NS100L 150
Downstream	**Breaking capacity (kA rms)**								
iDPN (230 V between phase and neutral)	10	10	10	10	10	10	10	10	10
iDPN N (230 V between phase and neutral)	15	15	15	15	15	15	15	15	15
C60N	18	16	16	25	25	25	30	30	30
C60H	18	16	16	30	25	30	40	40	40
C60L ⩽ 25A				30		30	40	40	40
C60L ⩽ 40A				30	25	30	40	40	40
C60L ⩽ 63A				30	25	30	40	40	40
P25M ⩾ 14A	18	16	16	25	25	25	40	50	50
C120N/H	18	16	16	25	25	25	25	25	25
NG125N				30		36	36	36	70
NG125H							40	50	100
NG125L/LMA							50	70	150
NS80HMA									150
NSC100N					25	36	50	50	50
NR100F						36	50	70	100
NS100N							50	70	150
NS100SX								70	150
NS100H									150

Upstream Breaking capacity (kA rms)	NS160NE NR160F 25	NS160N 36	NS160SX 50	NS160H 70	NS160L 150	NR250F 25	NS250N 36	NS250SX 50	NS250H 70	NS250L 150
Downstream	**Breaking capacity (kA rms)**									
iDPN (230 V between phase and neutral)	10	10	10	10	10	10	10	10	10	10
iDPN N (230 V between phase and neutral)	15	15	15	15	15	15	15	15	15	15
C60N	25	25	30	30	30	25	25	30	30	30
C60H	25	30	40	40	40	25	30	30	30	30
C60L ⩽ 25 A		30	40	40	40		30	40	40	40
C60L ⩽ 40 A	25	30	40	40	40	25	30	40	40	40
C60L ⩽ 63 A	25	30	40	40	40	25	30	30	30	30
P25M ⩾ 14 A	25	25	40	50	50					
C120N/H	25	25	25	25	25	25	25	25	25	25
NG125N		36	36	36	70		36	36	36	70
NG125H			40	50	100			40	50	100
NG125L/LMA			50	70	150			50	70	150
NS125E/NSA160E	25	25	30	30	30	25	25	30	30	30
NSA160N		36	50	50	50			50	50	50
NS80HMA					150					150
NSC100N	25	36	50	50	50	25	36	50	50	50
NR100F		36	50	70	100		36	50	70	100
NS100N/NS160N			50	70	150			50	70	150
NS100SX				70	150				70	150
NS100H					150					150
NS160NE/NR160F		36	50	70	150		36	50	70	100
NS160SX				70	150				70	150
NS160H					150					150
NR250F							36	50	70	100
NS250N								50	70	150
NS250SX									70	150
NS250H										150
NB250N						25	25	50	50	50

(1) *With single pole, single pole + neutral and two pole circuit breakers, with TT or TNS systems, see cascading table for 220/240 V network.*

Cascading, network 380/415 V (1)

Upstream: Compact NS, NR, Masterpact
Downstream: Compact

Upstream Breaking capacity (kA rms)	NR400F 36	NS400N 50	NS400H 70	NS400L 150	NR630F 36	NS630N 50	NS630H 70	NS630L 150
Downstream	**Breaking capacity (kA rms)**							
NS125E	25	25	30	30	25	25	30	30
NSA160E	25	25	30	30	25	25	30	30
NSA160N			50	50			50	50
NS80HMA				150				150
NSC100N	36	50	50	50	36	50	50	50
NR100F	36	50	70	100	36	50	70	100
NS100N		50	70	150		50	70	150
NS100SX			70	150			70	150
NS100H				150				150
NS160NE/NR160F	36	50	70	100	36	50	70	100
NS160N		50	70	150		50	70	150
NS160SX			70	150			70	150
NS160H				150				150
NR250F	36	50	70	100	36	50	70	100
NS250N		50	70	150		50	70	150
NS250SX			70	150			70	150
NS250H				150				150
NR400F		50	70	100		50	70	100
NS400N			70	150			70	150
NS400H				150				150
NR630F						50	70	100
NS630N							70	150
NS630H								150
NB250N	25	25	50	50	25	25	50	50
NB400N	25	36	50	50	25	36	50	50
NB600N						36	50	50

Upstream Breaking capacity (kA rms)	NS630bN to NS1600N 50	NS630bH 70	NS630bL 150	NS800H 70	NS800L 150	NS1000H 70	NS1000L 150	NS1250H NS1600H 70	NS2000N NS2500N NS3200N 70	Masterpact NT L1 150	Masterpact NW L1 150
Downstream	**Breaking capacity (kA rms)**										
NR100F	36	36	50	36	50	36	50	36		50	
NS100N	50	70	150	70	150	70	150	70		150	
NS100SX	50	70	150	70	150	70	150	70		150	
NS100H			150		150		150			150	
NS160NE/NR160F	36	36	50	36	50	36	50	36		50	
NS160N	50	70	150	70	150	70	150	70		150	
NS160SX		70	150	70	150	70	150	70		150	
NS160H			150		150		150			150	
NR250F	36	36	50	36	50	36	50	36		50	
NS250N	50	70	150	70	150	70	150	70		150	
NS250SX		70	150	70	150	70	150	70		150	
NS250H			150		150		150			150	
NR400F	50	50	50	50	50	50	50	50		50	
NS400N		70	150	70	150	70	150	70		150	
NS400H			150		150		150			150	
NR630F	50	50	50	50	50	50	50	50		50	
NS630N		70	150	70	150	70	150	70		150	
NS630H			150		150		150			150	
NS630bN		70	150	70	150	70	150	70	70	150	65
NS630bH			150		150		150			150	
NS800N				70	150	70	150	70	70	150	65
NS800H					150		150			150	
NS1000N						70	150	70	70	150	65
NS1000H							150			150	
NS1250N								70	70		65
NS1600N								70	70		65
NB250N	25	50	50	50	50	50	50	50		60	
NB400N	36	50	50	50	50	50	50	50		60	
NB600N	36	50	50	50	50	50	50	50		60	

(1) *With single pole, single pole + neutral and two pole circuit breakers, with TT or TNS systems, see cascading table for 220/240 V network.*

Cascading, network 440 V
Upstream: Compact NS, NR
Downstream: Compact and Multi 9

Upstream Breaking capacity (kA rms)	NSC100N 18	NS125E 15	NSA160E 10	NSA160N 18	NR100F 20	NS100N 35	NS100SX 50	NS100H 65	NS100L 130		
Downstream	**Breaking capacity (kA rms)**										
C60N						15	20	20	20		
C60H						20	25	25	25		
C60L ⩽ 25 A							25	25	25		
C60L ⩽ 40 A						20	25	25	25		
NG125LMA											
NS80HMA									150		
NSC100N						25	50	50	50		
NS100N							50	65	130		
NS100SX								65	130		
NS100H									130		

Upstream Breaking capacity (kA rms)	NR160F 20	NS160NE 25	NS160N 35	NS160SX 50	NS160H 65	NS160L 130	NR250F 20	NS250N 35	NS250SX 50	NS250H 65	NS250L 130
Downstream	**Breaking capacity (kA rms)**										
C60N			15	20	20	20					
C60H			20	25	25	25					
C60L ⩽ 25A				25	25	25					
C60L ⩽ 40A			20	25	25	25					
NG125LMA											
NS80HMA						150					150
NSC100N		25	35	50	50	50		35	50	50	50
NS100N			35	50	65	130		35	50	65	130
NS100SX					65	130				65	130
NS100H						130					130
NS160NE			35	50	65	130		35	50	65	130
NS160N				50	65	130			50	65	130
NS160SX					65	130				65	130
NS160H						130					130
NS250N									50	65	130
NS250SX										65	130
NS250H											130
NB250N							20	25	50	50	50

Cascading, network 440 V

Upstream: Compact NS, NR, Masterpact
Downstream: Compact NS, NR

Upstream Breaking capacity (kA rms)	NR400F 30	NS400N 42	NS400H 65	NS400L 130	NR630F 30	NS630N 42	NS630H 65	NS630L 130			
Downstream	**Breaking capacity (kA rms)**										
NS80HMA				150				130			
NSC100N	30	42	50	50	30	42	50	50			
NR100F	30	30	40	50	30	30	40	50			
NS100N		42	65	130		42	65	130			
NS100SX			65	130			65	130			
NS100H				130				130			
NR160F	30	30	40	50	30	30	40	50			
NS160NE	30	42	65	130	30	42	65	130			
NS160N		42	65	130		42	65	130			
NS160SX			65	130			65	130			
NS160H				130				130			
NR250F	30	30	40	50	30	30	40	50			
NS250N		42	65	130		42	65	130			
NS250SX			65	130			65	130			
NS250H				130				130			
NR400F		42	50	65		42	50	65			
NS400N			65	130			65	130			
NS400H				130				130			
NR630F						42	50	65			
NS630N							65	130			
NS630H								130			
NB250N	20	25	50	50	25	25	50	50			
NB400N		36	50	50	36	36	50	50			
NB600N						36	50	50			

Upstream Breaking capacity (kA rms)	NS630bN to NS1600N 50	NS630bH 65	NS630bL 130	NS800H 65	NS800L 130	NS1000H 65	NS1000L 130	NS1250H NS1600H 65	NS2000N NS2500N NS3200N 65	Masterpact NT L1 130	Masterpact NW L1 150
Downstream	**Breaking capacity (kA rms)**										
NR100F	30	30	40		40		40			40	
NS100N	50	65	130	65	130	65	130	65		100	
NS100SX		65	130	65	130	65	130	65		100	
NS100H			130	65	130	65	130	65		100	
NR160F	30	30	40		40		40			40	
NS160NE	50	65	130	65	130	65	130	65		100	
NS160N	50	65	130	65	130	65	130	65		100	
NS160SX		65	130	65	130	65	130	65		100	
NS160H			130		130		130			100	
NR250F	30	30	40		40		40			40	
NS250N	50	65	130	65	130	65	130	65		100	
NS250SX		65	130		130	65	130	65		100	
NS250H			130		130		130			100	
NR400F			65		65		65			65	
NS400N	50	65	130			65	130	65		100	
NS400H			130			65	130	65		100	
NR630F			65		65		65			65	
NS630N	50	65	130			65	130	65	65	100	
NS630H			130			65	130	65		100	
NS630bN		65	130	65	130	65	130	65	65	100	65
NS630bH			130		130		130			100	
NS800N				65	130	65	130	65	65	100	65
NS800H					130		130			100	
NS1000N						65	130	65	65	100	65
NS1000H							130			100	
NS1250N								65	65		65
NS1600N								65			65
NB250N	25	50	50	50	50	50	50	50		60	
NB400N	36	50	50	50	50	50	50	50		60	
NB600N	36	50	50	50	50	50	50	50		60	

Cascading and enhanced discrimination

Upstream: Compact NS100 to NS1600
Downstream: circuit breaker Multi 9 / Compact NS100 to 630

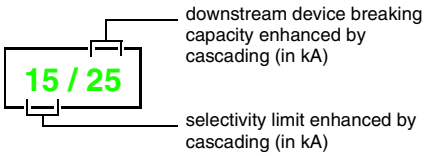
With traditional circuit breakers, cascading between two devices generally results in the look of discrimination.
With Compact NS circuit breakers, the discrimination characteristics in the tables remain applicable and are in some cases even enhanced. Protection discrimination is ensured for short-circuit 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 NS250H with trip unit TM250D
- a Compact NS100N with trip unit TM25D.

The discrimination tables indicate total discrimination. Protection discrimination is therefore ensured up to the breaking capacity of the NS100N, 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

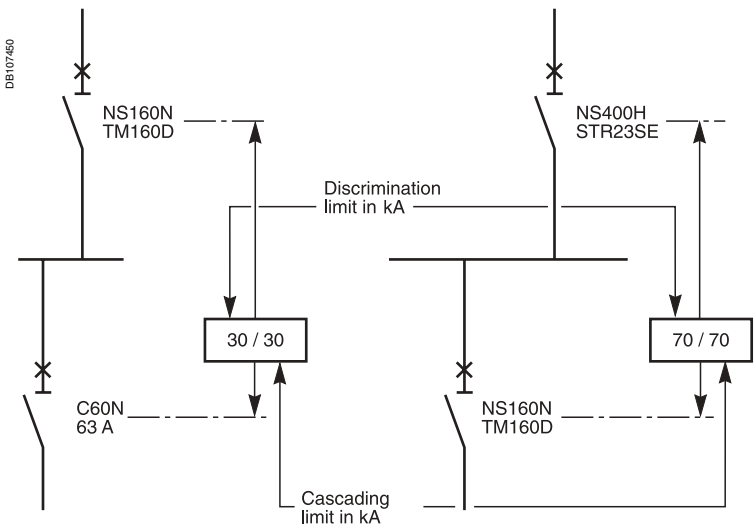
For each combination of two circuit breakers, the tables indicate the:



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 NS 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.



Cascading and enhanced discrimination

Upstream: NSC100N, NSA160
Downstream: Multi 9

Upstream: Compact NSC100 TM-D
Downstream: Multi 9

Upstream			NSC100N			
Breaking capacity			18 kA			
Trip unit			TM-D			
Downstream		Rating	63	70	80	100
C60N	10 kA	⩽ 16	18/18	18/18	18/18	18/18
		20	18/18	18/18	18/18	18/18
		25	18/18	18/18	18/18	18/18
		32	6/18	6/18	6/18	8/18
		40		6/18	6/18	8/18
		50			6/18	6/18
		63				6/18

Upstream: Compact NSA160 TM-D
Downstream: Multi 9

Upstream			NSA160E					NSA160N				
Breaking capacity			16 kA					30 kA				
Trip unit			TM-D					TM-D				
Downstream		Rating	63	80	100	125	160	63	80	100	125	160
C60N	10 kA	⩽ 16	15/15	15/15	15/15	15/15	15/15	15/25	15/25	15/25	15/25	15/25
		20	15/15	15/15	15/15	15/15	15/15	15/25	15/25	15/25	15/25	15/25
		25	15/15	15/15	15/15	15/15	15/15	15/25	15/25	15/25	15/25	15/25
		32	6/15	6/15	8/15	8/15	8/15	6/25	6/25	8/25	8/25	8/25
		40		6/15	8/15	8/15	8/15		6/25	8/25	8/25	8/25
		50		6/15	6/15	6/15	6/15		6/25	6/25	6/25	6/25
		63			6/15	6/15	6/15			6/25	6/25	6/25
C60H	15 kA	⩽ 16						15/30	15/30	30/30	30/30	30/30
		20						15/30	15/30	30/30	30/30	30/30
		25						15/30	15/30	30/30	30/30	30/30
		32						6/30	6/30	8/30	8/30	8/30
		40							6/30	8/30	8/30	8/30
		50							6/30	6/30	6/30	6/30
		63								6/30	6/30	6/30
C60L	25 kA	⩽ 16						15/30	15/30	30/30	30/30	30/30
		20						15/30	15/30	30/30	30/30	30/30
		25						15/30	15/30	30/30	30/30	30/30
	20 kA	32						6/30	6/30	8/30	8/30	8/30
		40							6/30	8/30	8/30	8/30
	15 kA	50							6/30	6/30	6/30	6/30
		63								6/30	6/30	6/30

Note: *respect the basic overload and short-circuit discrimination rules, see page 6*

Cascading and enhanced discrimination

Upstream: NR/NS160, trip unit TM-D
Downstream: Multi 9

Upstream Breaking capacity			NR160F 25 kA		NS160N 36 kA		NS160SX 50 kA		NS160H 70 kA		NS160L 150 kA	
Trip unit			**TM-D**		**TM-D**		**TM-D**		**TM-D**		**TM-D**	
Downstream		**Rating**	**80**	**100/125/160**	**80**	**100/125/160**	**80**	**100/125/160**	**80**	**100/125/160**	**80**	**100/125/160**
C60N	**10 kA**	**⩽ 16**	25/25	25/25	25/25	25/25	30/30	30/30	30/30	30/30	30/30	30/30
		20	25/25	25/25	25/25	25/25	30/30	30/30	30/30	30/30	30/30	30/30
		25	25/25	25/25	25/25	25/25	30/30	30/30	30/30	30/30	30/30	30/30
		32	15/25	25/25	15/25	25/25	15/30	30/30	15/30	30/30	15/30	30/30
		40	15/25	25/25	15/25	25/25	15/30	30/30	15/30	30/30	15/30	30/30
		50	15/25	25/25	15/25	25/25	15/30	30/30	15/30	30/30	15/30	30/30
		63		25/25		25/25		30/30		30/30		30/30
C60H	**15 kA**	**⩽ 16**	25/25	25/25	30/30	30/30	40/40	40/40	40/40	40/40	40/40	40/40
		20	25/25	25/25	30/30	30/30	40/40	40/40	40/40	40/40	40/40	40/40
		25	25/25	25/25	30/30	30/30	40/40	40/40	40/40	40/40	40/40	40/40
		32	15/25	25/25	15/30	30/30	15/40	40/40	15/40	40/40	15/40	40/40
		40	15/25	25/25	15/30	30/30	15/40	40/40	15/40	40/40	15/40	40/40
		50	15/25	25/25	15/30	30/30	15/40	40/40	15/40	40/40	15/40	40/40
		63		25/25		30/30		40/40		40/40		40/40
C60L	**25 kA**	**⩽ 16**		25/25	30/30	30/30	40/40	40/40	40/40	40/40	40/40	40/40
		20		25/25	30/30	30/30	40/40	40/40	40/40	40/40	40/40	40/40
		25		25/25	30/30	30/30	40/40	40/40	40/40	40/40	40/40	40/40
	20 kA	**32**	15/25	25/25	15/30	30/30	15/40	40/40	15/40	40/40	15/40	40/40
		40	15/25	25/25	15/30	30/30	15/40	40/40	15/40	40/40	15/40	40/40
	15 kA	**50**	15/25	25/25	15/30	30/30	15/40	40/40	15/40	40/40	15/40	40/40
		63		25/25		30/30		40/40		40/40		40/40
C120N/H	**10/15 kA**	**⩽ 16**	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25
		20 - 25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25
		32 - 40	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25
		50 - 63										
		80										
		100										
		125										
NG125N	**25 kA**	**⩽ 16**			36/36	36/36	36/36	36/36	36/36	36/36	70/70	70/70
		20 - 25			36/36	36/36	36/36	36/36	36/36	36/36	70/70	70/70
		32 - 40			36/36	36/36	36/36	36/36	36/36	36/36	70/70	70/70
		50 - 63										
		80										
		100										
		125										
NG125H	**36 kA**	**⩽ 16**					50/50	50/50	50/50	50/50	100/100	100/100
		20 - 25					50/50	50/50	50/50	50/50	100/100	100/100
		32 - 40					50/50	50/50	50/50	50/50	100/100	100/100
		50 - 63										
		80										
NG125L	**50 kA**	**⩽ 16**					50/50	50/50	70/70	70/70	150/150	150/150
NG125LMA		**20 - 25**					50/50	50/50	70/70	70/70	150/150	150/150
		32 - 40					50/50	50/50	70/70	70/70	150/150	150/150
		50 - 63										
		80										

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

Cascading and enhanced discrimination

Upstream: NR/NS250, trip unit TM-D
Downstream: Multi 9

Upstream Breaking capacity			NR250F 25 kA	NS250N 36 kA	NS250SX 50 kA	NS250 H 70 kA	NS250L 150 kA
Trip unit			TM-D	TM-D	TM-D	TM-D	TM-D
Downstream		Rating	160/200/250	160/200/250	160/200/250	160/200/250	160/200/250
C60N	10 kA	⩽ 16	25/25	25/25	30/30	30/30	30/30
		20	25/25	25/25	30/30	30/30	30/30
		25	25/25	25/25	30/30	30/30	30/30
		32	25/25	25/25	30/30	30/30	30/30
		40	25/25	25/25	30/30	30/30	30/30
		50	25/25	25/25	30/30	30/30	30/30
		63	25/25	25/25	30/30	30/30	30/30
C60H	15 kA	⩽ 16	25/25	30/30	30/30	30/30	30/30
		20	25/25	30/30	30/30	30/30	30/30
		25	25/25	30/30	30/30	30/30	30/30
		32	25/25	30/30	30/30	30/30	30/30
		40	25/25	30/30	30/30	30/30	30/30
		50	25/25	30/30	30/30	30/30	30/30
		63	25/25	30/30	30/30	30/30	30/30
C60L	25 kA	⩽ 16		30/30	40/40	40/40	40/40
		20		30/30	40/40	40/40	40/40
		25		30/30	40/40	40/40	40/40
	20 kA	32	25/25	30/30	40/40	40/40	40/40
		40	25/25	30/30	40/40	40/40	40/40
	15 kA	50	25/25	30/30	30/30	30/30	30/30
		63	25/25	30/30	30/30	30/30	30/30
C120N/H	10/15 kA	⩽ 16	25/25	25/25	25/25	25/25	25/25
		20 - 25	25/25	25/25	25/25	25/25	25/25
		32 - 40	25/25	25/25	25/25	25/25	25/25
		50 - 63	25/25	25/25	25/25	25/25	25/25
		80	25/25	25/25	25/25	25/25	25/25
		100	25/25	25/25	25/25	25/25	25/25
		125	25/25	25/25	25/25	25/25	25/25
NG125N	25 kA	⩽ 16		36/36	36/36	36/36	70/70
		20 - 25		36/36	36/36	36/36	70/70
		32 - 40		36/36	36/36	36/36	70/70
		50 - 63		36/36	36/36	36/36	70/70
		80		36/36	36/36	36/36	70/70
		100		36/36	36/36	36/36	70/70
		125		36/36	36/36	36/36	70/70
NG125H	36 kA	⩽ 16			50/50	50/50	100/100
		20 - 25			50/50	50/50	100/100
		32 - 40			50/50	50/50	100/100
		50 - 63			50/50	50/50	100/100
		80			50/50	50/50	100/100
NG125L	50 kA	⩽ 16			50/50	70/70	150/150
NG125LMA		20 - 25			50/50	70/70	150/150
		32 - 40			50/50	70/70	150/150
		50 - 63			50/50	70/70	150/150
		80			50/50	70/70	150/150

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

Cascading and enhanced discrimination

Upstream: NR/NS160, trip unit STR
Downstream: Multi 9

Upstream Breaking capacity			NR160F 25 kA		NS160N 36 kA		NS160SX 50 kA		NS160H 70 kA		NS160L 150 kA	
Trip unit			**STR22SE**		**STR22SE**		**STR22SE**		**STR22SE**		**STR22SE**	
Downstream		**Rating**	**80**	**160**	**80**	**160**	**80**	**160**	**80**	**160**	**80**	**160**
C60N	**10 kA**	**⩽ 16**	25/25	25/25	25/25	25/25	30/30	30/30	30/30	30/30	30/30	30/30
		20	25/25	25/25	25/25	25/25	30/30	30/30	30/30	30/30	30/30	30/30
		25	25/25	25/25	25/25	25/25	30/30	30/30	30/30	30/30	30/30	30/30
		32		25/25		25/25		30/30		30/30		30/30
		40		25/25		25/25		30/30		30/30		30/30
		50		25/25		25/25		30/30		30/30		30/30
		63		25/25		25/25		30/30		30/30		30/30
C60H	**15 kA**	**⩽ 16**	25/25	25/25	30/30	30/30	40/40	40/40	40/40	40/40	40/40	40/40
		20	25/25	25/25	30/30	30/30	40/40	40/40	40/40	40/40	40/40	40/40
		25	25/25	25/25	30/30	30/30	40/40	40/40	40/40	40/40	40/40	40/40
		32		25/25		30/30		40/40		40/40		40/40
		40		25/25		30/30		40/40		40/40		40/40
		50		25/25		30/30		40/40		40/40		40/40
		63		25/25		30/30		40/40		40/40		40/40
C60L	**25 kA**	**⩽ 16**			30/30	30/30	40/40	40/40	40/40	40/40	40/40	40/40
		20			30/30	30/30	40/40	40/40	40/40	40/40	40/40	40/40
		25			30/30	30/30	40/40	40/40	40/40	40/40	40/40	40/40
	20 kA	**32**		25/25		30/30		40/40		40/40		40/40
		40		25/25		30/30		40/40		40/40		40/40
	15 kA	**50**		25/25		30/30		40/40		40/40		40/40
		63		25/25		30/30		40/40		40/40		40/40
C120N/H	**10/15 kA**	**⩽ 16**	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25
		20 - 25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25
		32 - 40		25/25		25/25		25/25		25/25		25/25
		50 - 63										
		80										
		100										
		125										
NG125N	**25 kA**	**⩽ 16**			36/36	36/36	36/36	36/36	36/36	36/36	70/70	70/70
		20 - 25			36/36	36/36	36/36	36/36	36/36	36/36	70/70	70/70
		32 - 40				36/36		36/36		36/36		70/70
		50 - 63										
		80										
		100										
		125										
NG125H	**36 kA**	**⩽ 16**					50/50	50/50	50/50	50/50	100/100	100/100
		20 - 25					50/50	50/50	50/50	50/50	100/100	100/100
		32 - 40						50/50		50/50		100/100
		50 - 63										
		80										
NG125L	**50 kA**	**⩽ 16**					50/50	50/50	70/70	70/70	150/150	150/150
NG125LMA		**20 - 25**					50/50	50/50	70/70	70/70	150/150	150/150
		32 - 40						50/50		70/70		150/150
		50 - 63										
		80										

Note: *respect the basic overload and short-circuit discrimination rules, see page 6*

Cascading and enhanced discrimination

Upstream: NR/NS250, trip unit STR
Downstream: Multi 9

Upstream Breaking capacity			NR250F 25 kA	NS250N 36 kA	NS250SX 50 kA	NS250H 70 kA	NS250L 150 kA
Trip unit			STR22SE	STR22SE	STR22SE	STR22SE	STR22SE
Downstream		Rating	250	250	250	250	250
C60N	10 kA	⩽ 16	25/25	25/25	30/30	30/30	30/30
		20	25/25	25/25	30/30	30/30	30/30
		25	25/25	25/25	30/30	30/30	30/30
		32	25/25	25/25	30/30	30/30	30/30
		40	25/25	25/25	30/30	30/30	30/30
		50	25/25	25/25	30/30	30/30	30/30
		63	25/25	25/25	30/30	30/30	30/30
C60H	15 kA	⩽ 16	25/25	30/30	30/30	30/30	30/30
		20	25/25	30/30	30/30	30/30	30/30
		25	25/25	30/30	30/30	30/30	30/30
		32	25/25	30/30	30/30	30/30	30/30
		40	25/25	30/30	30/30	30/30	30/30
		50	25/25	30/30	30/30	30/30	30/30
		63	25/25	30/30	30/30	30/30	30/30
C60L	25 kA	⩽ 16		30/30	40/40	40/40	40/40
		20		30/30	40/40	40/40	40/40
		25		30/30	40/40	40/40	40/40
	20 kA	32	25/25	30/30	40/40	40/40	40/40
		40	25/25	30/30	40/40	40/40	40/40
	15 kA	50	25/25	30/30	30/30	30/30	30/30
		63	25/25	30/30	30/30	30/30	30/30
C120N/H	10/15 kA	⩽ 16	25/25	25/25	25/25	25/25	25/25
		20 - 25	25/25	25/25	25/25	25/25	25/25
		32 - 40	25/25	25/25	25/25	25/25	25/25
		50 - 63	25/25	25/25	25/25	25/25	25/25
		80	25/25	25/25	25/25	25/25	25/25
		100	25/25	25/25	25/25	25/25	25/25
		125					
NG125N	25 kA	⩽ 16		36/36	36/36	36/36	70/70
		20 - 25		36/36	36/36	36/36	70/70
		32 - 40		36/36	36/36	36/36	70/70
		50 - 63		36/36	36/36	36/36	70/70
		80		36/36	36/36	36/36	70/70
		100		36/36	36/36	36/36	70/70
		125					
NG125H	36 kA	⩽ 16			50/50	50/50	100/100
		20 - 25			50/50	50/50	100/100
		32 - 40			50/50	50/50	100/100
		50 - 63			50/50	50/50	100/100
		80			50/50	50/50	100/100
NG125L NG125LMA	50 kA	⩽ 16			50/50	70/70	150/150
		20 - 25			50/50	70/70	150/150
		32 - 40			50/50	70/70	150/150
		50 - 63			50/50	70/70	150/150
		80			50/50	70/70	150/150

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

Cascading and enhanced discrimination

Upstream: NS250, NS400 to 630
Downstream: NSA160N, NSC100N, NR/NS100 to 630

Upstream: Compact NS250
Downstream : Compact NS100 to NSA160

Upstream Breaking capacity			NS250N 36 kA			NS250SX 50 kA			NS250H 70 kA			NS250L 150 kA		
Trip unit			TM-D			TM-D			TM-D			TM-D		
Downstream		Rating	160	200	250	160	200	250	160	200	250	160	200	250
NSA160N	30 kA	63 - 160	36/36	36/36	36/36	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
NSC100N	18 kA	16 - 100	36/36	36/36	36/36	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
NS100N Trip unit TM-D	36 kA	⩽ 25				50/50	50/50	50/50	70/70	70/70	70/70	150/150	150/150	150/150
		40 - 100				36/50	36/50	36/50	36/70	36/70	36/70	36/150	36/150	36/150
NS100H Trip unit TM-D	70 kA	⩽ 25										150/150	150/150	150/150
		40 - 100										36/150	36/150	36/150
NS100N	36 kA	Trip unit STR22SE				36/50	36/50	36/50	36/70	36/70	36/70	36/150	36/150	36/150
		Trip unit STR22ME				36/50	36/50	36/50	36/70	36/70	36/70	36/150	36/150	36/150
NS100H	70 kA	Trip unit STR22SE										36/150	36/150	36/150
		Trip unit STR22ME										36/150	36/150	36/150

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

Upstream: Compact NR/NS400 to NR/NS630
Downstream : Compact NR/NS100 to NR/NS630

Upstream Breaking capacity			NR400F 36 kA	NS400N 50 kA	NS400 H 70 kA	NS400L 150 kA	NR630F 36 kA	NS630N 50 kA	NS630H 70 kA	NS630L 150 kA
Trip unit			STR23SE or STR53UE	STR23SE or STR53UE			STR23SE or STR53UE	STR23SE or STR53UE		
Downstream		Rating	400	400	400	400	630	630	630	630
NSA160N	30 kA	63 - 160	36/36	36/36	50/50	50/50	36/36	36/36	50/50	50/50
NSC100N	18 kA	16 - 100	36/36	36/36	50/50	50/50	36/36	36/36	50/50	50/50
NR100F	25 kA	Us TM-D	36/36	50/50	70/70	100/100		50/50	70/70	100/100
NS100N	36 kA	Us TM-D		50/50	70/70	150/150		50/50	70/70	150/150
NS100SX	50 kA	Us TM-D			70/70	150/150			70/70	150/150
NS100H	70 kA	Us TM-D				150/150				150/150
NR160F	25 kA	Us TM-D	36/36	50/50	70/70	100/100		50/50	70/70	100/100
NS160N	36 kA	Us TM-D		50/50	70/70	150/150		50/50	70/70	150/150
NS160SX	50 kA	Us TM-D			70/70	150/150			70/70	150/150
NS160H	70 kA	Us TM-D				150/150				150/150
NR250F	25 kA	Us TM-D	36/36	50/50	70/70	100/100		50/50	70/70	100/100
NS250N	36 kA	Us TM-D						50/50	70/70	150/150
NS250SX	50 kA	Us TM-D			70/70	150/150			70/70	150/150
NS250H	70 kA	Us TM-D								150/150
NR100F	25 kA	Trip unit STR22SE	36/36	50/50	70/70	100/100		50/50	70/70	100/100
		Trip unit STR22ME	36/36	50/50	70/70	100/100		50/50	70/70	100/100
NS100N	36 kA	Trip unit STR22SE		50/50	70/70	150/150		50/50	70/70	150/150
		Trip unit STR22ME		50/50	70/70	150/150		50/50	70/70	150/150
NS100SX	50 kA	Trip unit STR22SE			70/70	150/150			70/70	150/150
		Trip unit STR22ME			70/70	150/150			70/70	150/150
NS100H	70 kA	Trip unit STR22SE				150/150				150/150
		Trip unit STR22ME				150/150				150/150
NR160F	25 kA	Trip unit STR22SE	36/36	50/50	70/70	100/100		50/50	70/70	100/100
		Trip unit STR22ME	36/36	50/50	70/70	100/100		50/50	70/70	100/100
NS160N	36 kA	Trip unit STR22SE		50/50	70/70	150/150		50/50	70/70	150/150
		Trip unit STR22ME		50/50	70/70	150/150		50/50	70/70	150/150
NS160SX	50 kA	Trip unit STR22SE			70/70	150/150			70/70	150/150
		Trip unit STR22ME			70/70	150/150			70/70	150/150
NS160H	70 kA	Trip unit STR22SE				150/150				150/150
		Trip unit STR22ME				150/150				150/150
NR250F	25 kA	Trip unit STR22SE	36/36	50/50	70/70	100/100		50/50	70/70	100/100
		Trip unit STR22ME	36/36	50/50	70/70	100/100		50/50	70/70	100/100
NS250N	36 kA	Trip unit STR22SE						50/50	70/70	150/150
		Trip unit STR22ME						50/50	70/70	150/150
NS250SX	50 kA	Trip unit STR22SE							70/70	150/150
		Trip unit STR22ME							70/70	150/150
NS250H	70 kA	Trip unit STR22SE								150/150
		Trip unit STR22ME								150/150
NR400F	36 kA	Trip unit STR23SE								
		Trip unit STR53UE								
NS400N	50 kA	Trip unit STR23SE								
		Trip unit STR53UE								
		Trip unit STR43ME								
NR630F	36 kA	Trip unit STR23SE								
		Trip unit STR53UE								
NS630N	50 kA	Trip unit STR23SE								
		Trip unit STR53UE								
		Trip unit STR43ME								

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

Cascading and enhanced discrimination

Upstream: NS250, NS800 to 1250
Downstream: NSA160N, NSC100N, NR/NS100 to 630

Upstream: Compact NS250
Downstream: Compact NS100 to NSA160

Upstream Breaking capacity			NS250N 36 kA		NS250SX 50 kA	NS250H 70 kA	NS250L 150 kA
Trip unit			STR22SE				
Downstream		Rating	250	200	250	250	250
NSA160N	30 kA	63 - 160	36/36	50/50	50/50	50/50	50/50
NSC100N	18 kA	16 - 100	36/36	50/50	50/50	50/50	50/50
NS100N Trip unit TM-D	36 kA	⩽ 25		150/150	50/50	70/70	150/150
		40 - 100		36/150	36/50	36/70	36/150
NS100H Trip unit TM-D	70 kA	⩽ 25		150/150			150/150
		40 - 100		36/150			36/150
NS100N	36 kA	Trip unit STR22SE		36/150	36/50	36/70	36/150
		Trip unit STR22ME		36/150	36/50	36/70	36/150
NS100H	70 kA	Trip unit STR22SE		36/150			36/150
		Trip unit STR22ME		36/150			36/150

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

Upstream: Compact NS800 to NS1250
Downstream: Compact NR/NS100 to NR/NS630

Upstream Breaking capacity			NS800N 50 kA	NS800H 70 kA	NS800L 150 kA	NS1000N 50 kA	NS1000H 70 kA	NS1000L 150 kA	NS1250N 50 kA	NS1250H 70 kA
Trip unit			Micrologic / 2 Isd: 10Ir / 5.0-6.0-7.0 inst: OFF							
Downstream		Rating	800	800	800	1000	1000	1000	1250	1250
NSA160N	30 kA	63 - 160								
NSC100N	18 kA	16 - 100								
NR100F	25 kA	Us TM-D	36/36	36/36	50/50	36/36	36/36	50/50	36/36	36/36
NS100N	36 kA	Us TM-D	50/50	70/70	150/150	50/50	70/70	150/150	50/50	70/70
NS100SX	50 kA	Us TM-D		70/70	150/150		70/70	150/150		70/70
NS100H	70 kA	Us TM-D			150/150			150/150		
NR160F	25 kA	Us TM-D	36/36	36/36	50/50	36/36	36/36	50/50	36/36	36/36
NS160N	36 kA	Us TM-D	50/50	70/70	150/150	50/50	70/70	150/150	50/50	70/70
NS160SX	50 kA	Us TM-D		70/70	150/150		70/70	150/150		70/70
NS160H	70 kA	Us TM-D			150/150			150/150		
NR250F	25 kA	Us TM-D	36/36	36/36	50/50	36/36	36/36	50/50	36/36	36/36
NS250N	36 kA	Us TM-D	50/50	70/70	150/150	50/50	70/70	150/150	50/50	70/70
NS250SX	50 kA	Us TM-D		70/70	150/150		70/70	150/150		70/70
NS250H	70 kA	Us TM-D			150/150			150/150		
NR100F	25 kA	Trip unit STR22SE	36/36	36/36	50/50	36/36	36/36	50/50	36/36	36/36
		Trip unit STR22ME	36/36	36/36	50/50	36/36	36/36	50/50	36/36	36/36
NS100N	36 kA	Trip unit STR22SE	50/50	70/70	150/150	50/50	70/70	150/150	50/50	70/70
		Trip unit STR22ME	50/50	70/70	150/150	50/50	70/70	150/150	50/50	70/70
NS100SX	50 kA	Trip unit STR22SE		70/70	150/150		70/70	150/150		70/70
		Trip unit STR22ME		70/70	150/150		70/70	150/150		70/70
NS100H	70 kA	Trip unit STR22SE			150/150			150/150		
		Trip unit STR22ME			150/150			150/150		
NR160F	25 kA	Trip unit STR22SE	36/36	36/36	50/50	36/36	36/36	50/50	36/36	36/36
		Trip unit STR22ME	36/36	36/36	50/50	36/36	36/36	50/50	36/36	36/36
NS160N	36 kA	Trip unit STR22SE	50/50	70/70	150/150	50/50	70/70	150/150	50/50	70/70
		Trip unit STR22ME	50/50	70/70	150/150	50/50	70/70	150/150	50/50	70/70
NS160SX	50 kA	Trip unit STR22SE		70/70	150/150		70/70	150/150		70/70
		Trip unit STR22ME		70/70	150/150		70/70	150/150		70/70
NS160H	70 kA	Trip unit STR22SE			150/150			150/150		
		Trip unit STR22ME			150/150			150/150		
NR250F	25 kA	Trip unit STR22SE	36/36	36/36	50/50	36/36	36/36	50/50	36/36	36/36
		Trip unit STR22ME	36/36	36/36	50/50	36/36	36/36	50/50	36/36	36/36
NS250N	36 kA	Trip unit STR22SE	50/50	70/70	150/150	50/50	70/70	150/150	50/50	70/70
		Trip unit STR22ME	50/50	70/70	150/150	50/50	70/70	150/150	50/50	70/70
NS250SX	50 kA	Trip unit STR22SE		70/70	150/150		70/70	150/150		70/70
		Trip unit STR22ME		70/70	150/150		70/70	150/150		70/70
NS250H	70 kA	Trip unit STR22SE			150/150			150/150		
		Trip unit STR22ME			150/150			150/150		
NR400F	36 kA	Trip unit STR23SE	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
		Trip unit STR53UE	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
NS400N	50 kA	Trip unit STR23SE		70/70			70/70			70/70
		Trip unit STR53UE		70/70			70/70			70/70
		Trip unit STR43ME		70/70			70/70			70/70
NR630F	36 kA	Trip unit STR23SE	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
		Trip unit STR53UE	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
NS630N	50 kA	Trip unit STR23SE		70/70			70/70			70/70
		Trip unit STR53UE		70/70			70/70			70/70
		Trip unit STR43ME		70/70			70/70			70/70

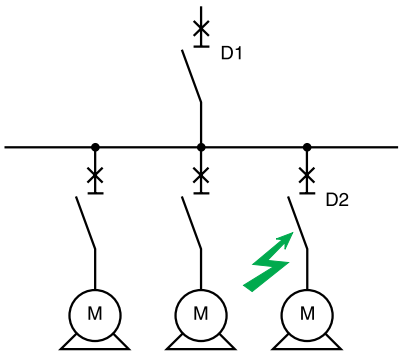
Note: *respect the basic overload and short-circuit discrimination rules, see page 6.*

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.



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:

D1	Application	D2	Ratio between upstream and downstream settings	
			Thermal protection Ir up/Ir down	Magnetic protection Im up/Im down
TM…D	Motor	MA + separate therm. relay	⩾ 3	⩾ 2
		Thermal-magnetic motor type	⩾ 3	⩾ 2
		STR…ME	⩾ 3	⩾ 1.5
STR2.. or 3.. fixed long time delay	Motor	MA + separate therm. relay	⩾ 3	⩾ 1.5
		Thermal-magnetic motor type	⩾ 3	⩾ 1.5
		STR…ME	⩾ 3	⩾ 1.5
Micrologic 2/5/6/7.0 STR5.. or 6. with adjustable long time delay (1)	Motor	MA + separate therm. relay	⩾ 3	⩾ 1.5
		Thermal-magnetic motor type	⩾ 3	⩾ 1.5
		STR…ME, Micrologic 2/5/6/7.0	⩾ 3	⩾ 1.5
		Thermal-magnetic motor type	⩾ 3	⩾ 1.5

(1) *When upstream and/or downstream control units have adjustable long time delays, adjustement must be such as upstream delay is longer than downstream delay (1 step difference).*

Motor protection discrimination

Upstream: Compact NSC100N
Downstream: GV2, Integral 18, 32

Upstream			NSC100N									
Breaking capacity			18 kA									
Trip unit			TM-D									
Downstream	**Thermal relay**	**Rating (A) Setting Ir**	**16**	**20**	**25**	**32**	**40**	**50**	**63**	**70**	**80**	**100**
Discrimination limit (kA)												
GV2 M01	integrated	0.1/0.16	T	T	T	T	T	T	T	T	T	T
GV2 M02	integrated	0.16/0.25	T	T	T	T	T	T	T	T	T	T
GV2 M03	integrated	0.25/0.40	T	T	T	T	T	T	T	T	T	T
GV2 M04	integrated	0.40/0.63	T	T	T	T	T	T	T	T	T	T
GV2 M05	integrated	0.63/1	T	T	T	T	T	T	T	T	T	T
GV2 M06	integrated	1/1.6	T	T	T	T	T	T	T	T	T	T
GV2 M07	integrated	1.6/2.5	T	T	T	T	T	T	T	T	T	T
GV2 M08	integrated	2.5/4	T	T	T	T	T	T	T	T	T	T
GV2 M10	integrated	4/6.3		0.6	0.6	0.6	0.6	1	1	1	1	T
GV2 M14	integrated	6/10				0.6	0.6	1	1	1	1	T
GV2 M16	integrated	9/14						1	1	1	1	T
GV2 M20	integrated	13/18							1	1	1	T
GV2 M21	integrated	17/23								1	1	T
GV2 M22	integrated	20/25									1	T
GV2 M32	integrated	24/32										T
GW2 P01	integrated	0.1/0.16	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
GV2 P03	integrated	0.25/0.40	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
GV2 P05	integrated	0.63/1	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
GV2 P07	integrated	1.6/2.5	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
GV2 P10	integrated	4/6.3		0.6	0.6	0.6	0.6	1	1	1	1	T
GV2 P14	integrated	6/10				0.6	0.6	1	1	1	1	T
GV2 P16	integrated	9/14						1	1	1	1	T
GV2 P20	integrated	13/18							1	1	1	T
GV2 P21	integrated	17/23								1	1	T
GV2 P22	integrated	20/25									1	T
GV2 L03	LR2 D13 03	0.25/0.40	T	T	T	T	T	T	T	T	T	T
GV2 L04	LR2 D13 04	0.40/0.63	T	T	T	T	T	T	T	T	T	T
GV2 L05	LR2 D13 05	0.63/1	T	T	T	T	T	T	T	T	T	T
GV2 L06	LR2 D13 06	1/1.6	T	T	T	T	T	T	T	T	T	T
GV2 L07	LR2 D13 07	1.6/2.5	T	T	T	T	T	T	T	T	T	T
GV2 L08	LR2 D13 08	2.5/4	T	T	T	T	T	T	T	T	T	T
GV2 L10	LR2 D13 10	4/6.3		0.6	0.6	0.6	0.6	1	1	1	1	T
GV2 L14	LR2 D13 14	7/10				0.6	0.6	1	1	1	1	T
GV2 L16	LR2 D13 16	9/13						1	1	1	1	T
GV2 L20	LR2 D13 21	12/18							1	1	1	T
GV2 L22	LR2 D13 22	17/25									1	T
Integral 18	LB1-LB03P01	0.1/0.16	T	T	T	T	T	T	T	T	T	T
LD1-LB030	LB1-LB03P02	0.16/0.25	T	T	T	T	T	T	T	T	T	T
	LB1-LB03P03	0.25/0.40	T	T	T	T	T	T	T	T	T	T
	LB1-LB03P04	0.40/0.63	T	T	T	T	T	T	T	T	T	T
	LB1-LB03P05	0.63/1	T	T	T	T	T	T	T	T	T	T
	LB1-LB03P06	1/1.6	T	T	T	T	T	T	T	T	T	T
	LB1-LB03P07	1.6/2.5	T	T	T	T	T	T	T	T	T	T
	LB1-LB03P08	2.5/4	T	T	T	T	T	T	T	T	T	T
	LB1-LB03P10	4/6		0.6	0.6	0.6	0.6	1	1	1	1	T
	LB1-LB03P13	6/10				0.6	0.6	1	1	1	1	T
	LB1-LB03P17	10/16						1	1	1	1	T
	LB1-LB03P21	12/18							1	1	1	T
Integral 32	LB1-LC03M03	0.25/0.40	T	T	T	T	T	T	T	T	T	T
LD1-LC030	LB1-LC03M04	0.40/0.63	T	T	T	T	T	T	T	T	T	T
LD4-LC130	LB1-LC03M05	0.63/1	T	T	T	T	T	T	T	T	T	T
LD4-LC030	LB1-LC03M06	1/1.6	T	T	T	T	T	T	T	T	T	T
	LB1-LC03M07	1.6/2.5	T	T	T	T	T	T	T	T	T	T
	LB1-LC03M08	2.5/4	T	T	T	T	T	T	T	T	T	T
	LB1-LC03M10	4/6		0.6	0.6	0.6	0.6	1	1	1	1	T
	LB1-LC03M13	6/10				0.6	0.6	1	1	1	1	T
	LB1-LC03M17	10/16						1	1	1	1	T
	LB1-LC03M22	16/25									1	T
	LB1-LC03M53	23/32										T

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

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Motor protection discrimination

Upstream: NS100 to 630
Downstream: GV2, GV3

Upstream Trip unit			NS100N/H/L TM-D						NS160N/H/L TM-D					
Downstream	**Trip unit or th. relay**	**Rating (A) Setting Ir**	**16**	**25**	**40**	**63**	**80**	**100**	**40**	**63**	**80**	**100**	**125**	**160**
Discrimination limit (kA)														
GV2 M01	**integrated**	**0.1/0.16**	T	T	T	T	T	T	T	T	T	T	T	T
GV2 M02	**integrated**	**0.16/0.25**	T	T	T	T	T	T	T	T	T	T	T	T
GV2 M03	**integrated**	**0.25/0.40**	T	T	T	T	T	T	T	T	T	T	T	T
GV2 M04	**integrated**	**0.40/0.63**	T	T	T	T	T	T	T	T	T	T	T	T
GW2 M05	**integrated**	**0.63/1**	T	T	T	T	T	T	T	T	T	T	T	T
GV2 M06	**integrated**	**1/1.6**	2	T	T	T	T	T	T	T	T	T	T	T
GV2 M07	**integrated**	**1.6/2.5**	0.6	2	T	T	T	T	T	T	T	T	T	T
GV2 M08	**integrated**	**2.5/4**	0.2	0.8	4	4	4	10	4	4	T	T	T	T
GV2 M10	**integrated**	**4/6.3**		0.3	1	1	1	2	1	1	T	T	T	T
GV2 M14	**integrated**	**6/10**			0.5	0.5	0.7	0.8	0.5	0.5	T	T	T	T
GV2 M16	**integrated**	**9/14**				0.5	0.7	0.8		0.5	T	T	T	T
GV2 M20	**integrated**	**13/18**				0.5	0.7	0.8		0.5	T	T	T	T
GV2 M21	**integrated**	**17/23**					0.7	0.8			T	T	T	T
GV2 M22	**integrated**	**20/25**					0.7	0.8			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**	2	T	T	T	T	T	T	T	T	T	T	T
GV2 P07	**integrated**	**1.6/2.5**	0.6	2	T	T	T	T	T	T	T	T	T	T
GV2 P08	**integrated**	**2.5/4**	0.2	0.8	4	4	4	10	4	4	T	T	T	T
GV2 P10	**integrated**	**4/6.3**		0.3	1	1	1	2	1	1	T	T	T	T
GV2 P14	**integrated**	**6/10**			0.5	0.5	0.7	0.8	0.5	0.5	T	T	T	T
GV2 P16	**integrated**	**9/14**				0.5	0.7	0.8		0.5	T	T	T	T
GV2 P20	**integrated**	**13/18**				0.5	0.7	0.8		0.5	T	T	T	T
GV2 P21	**integrated**	**17/23**					0.7	0.8			T	T	T	T
GV2 P22	**integrated**	**20/25**					0.7	0.8			T	T	T	T
GV2 L03	**LR2 D13 03**	**0.25/0.4**	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L04	**LR2 D13 04**	**0.4/0.63**	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L05	**LR2 D13 05**	**0.63/1**	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L06	**LR2 D13 06**	**1/1.6**	2	T	T	T	T	T	T	T	T	T	T	T
GV2 L07	**LR2 D13 07**	**1.6/2.5**	0.6	2	T	T	T	T	T	T	T	T	T	T
GV2 L08	**LR2 D13 08**	**2.5/4**	0.2	0.8	4	4	4	10	4	4	T	T	T	T
GV2 L10	**LR2 D13 10**	**4/6**		0.3	1	1	0.7	2	1	1	T	T	T	T
GV2 L14	**LR2 D13 14**	**7/10**			0.5	0.5	0.7	0.8	0.5	0.5	T	T	T	T
GV2 L16	**LR2 D13 16**	**9/13**				0.5	0.7	0.8		0.5	T	T	T	T
GV2 L20	**LR2 D13 21**	**12/18**				0.5	0.7	0.8		0.5	T	T	T	T
GV2 L22	**LR2 D33 22**	**17/25**					0.7	0.8			T	T	T	T
GV3 M06	**integrated**	**1/1.6**	0.2	0.3	T	T	T	T	T	T	T	T	T	T
GV3 M07	**integrated**	**1.6/2.5**	0.2	0.3	1	1	0.7	T	1	1	T	T	T	T
GV3 M08	**integrated**	**2.5/4**	0.2	0.3	0.5	0.5	0.7	0.8	0.5	0.5	T	T	T	T
GV3 M10	**integrated**	**4/6**	0.2	0.3	0.5	0.5	0.7	0.8	0.5	0.5	T	T	T	T
GV3 M14	**integrated**	**6/10**			0.5	0.5	0.7	0.8	0.5	0.5	2	3	3	3
GV3 M20	**integrated**	**10/16**				0.5	0.7	0.8		0.5	1.5	2	2	2
GV3 M25	**integrated**	**16/25**					0.7	0.8			1	2	2	2
GV3 M40	**integrated**	**25/40**											1.25	1.25
GV3 M63	**integrated**	**40/63**												
GV3 M80	**integrated**	**63/80**												

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

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Motor protection discrimination

Upstream: NS100 to 630
Downstream: GV2, GV3

Upstream Trip unit			NS250N/SX/H/L TM-D								NS100N/ SX/H/L STR22SE (1)		NS160N/ SX/H/L STR22SE (1)		NS250N/ SX/H/L STR22SE (1)		NS400N/H/L STR23SE/ 53UE (1)	NS630N/H/L STR23SE/ 53UE (1)
Downstream	**Trip unit or th. relay**	**Rating (A) Setting Ir**	**40**	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**40**	**100**	**80**	**160**	**160**	**250**	**160 to 400**	**250 to 630**
Discrimination limit (kA)																		
GV2 M01	**integrated**	**0.1/0.16**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 M02	**integrated**	**0.16/0.25**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 M03	**integrated**	**0.25/0.40**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 M04	**integrated**	**0.40/0.63**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 M05	**integrated**	**0.63/1**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 M06	**integrated**	**1/1.6**	T	T	T	T	T	T	T	T	1	T	T	T	T	T	T	T
GV2 M07	**integrated**	**1.6/2.5**	T	T	T	T	T	T	T	T	1	4	T	T	T	T	T	T
GV2 M08	**integrated**	**2.5/4**	4	4	T	T	T	T	T	T	0.8	3	T	T	T	T	T	T
GV2 M10	**integrated**	**4/6.3**	1	1	T	T	T	T	T	T	0.5	2	T	T	T	T	T	T
GV2 M14	**integrated**	**6/10**	0.5	0.5	T	T	T	T	T	T	0.5	1.2	T	T	T	T	T	T
GV2 M16	**integrated**	**9/14**		0.5	T	T	T	T	T	T		1.2	T	T	T	T	T	T
GV2 M20	**integrated**	**13/18**		0.5	T	T	T	T	T	T		1.2	T	T	T	T	T	T
GV2 M21	**integrated**	**17/23**			T	T	T	T	T	T		1.2	T	T	T	T	T	T
GV2 M22	**integrated**	**20/25**			T	T	T	T	T	T		1.2	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	T
GV2 P02	**integrated**	**0.16/0.25**	T	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	T
GV2 P04	**integrated**	**0.40/0.63**	T	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	T
GV2 P06	**integrated**	**1/1.6**	T	T	T	T	T	T	T	T	1	T	T	T	T	T	T	T
GV2 P07	**integrated**	**1.6/2.5**	T	T	T	T	T	T	T	T	1	4	T	T	T	T	T	T
GV2 P08	**integrated**	**2.5/4**	4	4	T	T	T	T	T	T	0.8	3	T	T	T	T	T	T
GV2 P10	**integrated**	**4/6.3**	1	1	T	T	T	T	T	T	0.5	2	T	T	T	T	T	T
GV2 P14	**integrated**	**6/10**	0.5	0.5	T	T	T	T	T	T	0.5	1.2	T	T	T	T	T	T
GV2 P16	**integrated**	**9/14**		0.5	T	T	T	T	T	T		1.2	T	T	T	T	T	T
GV2 P20	**integrated**	**13/18**		0.5	T	T	T	T	T	T		1.2	T	T	T	T	T	T
GV2 P21	**integrated**	**17/23**			T	T	T	T	T	T		1.2	T	T	T	T	T	T
GV2 P22	**integrated**	**20/25**			T	T	T	T	T	T		1.2	T	T	T	T	T	T
GV2 L03	**LR2 D13 03**	**0.25/0.4**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L04	**LR2 D13 04**	**0.4/0.63**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L05	**LR2 D13 05**	**0.63/1**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV2 L06	**LR2 D13 06**	**1/1.6**	T	T	T	T	T	T	T	T	1	T	T	T	T	T	T	T
GV2 L07	**LR2 D13 07**	**1.6/2.5**	T	T	T	T	T	T	T	T	1	4	T	T	T	T	T	T
GV2 L08	**LR2 D13 08**	**2.5/4**	4	4	T	T	T	T	T	T	0.8	3	T	T	T	T	T	T
GV2 L10	**LR2 D13 10**	**4/6**	1	1	T	T	T	T	T	T	0.5	2	T	T	T	T	T	T
GV2 L14	**LR2 D13 14**	**7/10**	0.5	0.5	T	T	T	T	T	T	0.5	1.2	T	T	T	T	T	T
GV2 L16	**LR2 D13 16**	**9/13**		0.5	T	T	T	T	T	T		1.2	T	T	T	T	T	T
GV2 L20	**LR2 D13 21**	**12/18**		0.5	T	T	T	T	T	T		1.2	T	T	T	T	T	T
GV2 L22	**LR2 D33 22**	**17/25**			T	T	T	T	T	T		1.2	T	T	T	T	T	T
GV3 M06	**integrated**	**1/1.6**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
GV3 M07	**integrated**	**1.6/2.5**	1	1	T	T	T	T	T	T	1	T	T	T	T	T	T	T
GV3 M08	**integrated**	**2.5/4**	0.5	0.5	T	T	T	T	T	T	0.5	5	T	T	T	T	T	T
GV3 M10	**integrated**	**4/6**	0.5	0.5	T	T	T	T	T	T	0.5	2	T	T	T	T	T	T
GV3 M14	**integrated**	**6/10**	0.5	0.5	2	3	3	T	T	T	0.5	1.2	0.9	T	T	T	T	T
GV3 M20	**integrated**	**10/16**		0.5	1.5	2	2	T	T	T		1.2	0.9	T	T	T	T	T
GV3 M25	**integrated**	**16/25**			1	2	2	T	T	T		1.2	0.9	T	T	T	T	T
GV3 M40	**integrated**	**25/40**					1.25	T	T	T				T	T	T	T	T
GV3 M63	**integrated**	**40/63**							T	T						T	T	T
GV3 M80	**integrated**	**63/80**								T						T	T	T

(1) *Respect the basic overload and short-circuit discrimination rules, see page 6.*

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Motor protection discrimination

Upstream: NS100 to 630
Downstream: Integral 18, 32, 63

Upstream Trip unit			NS100N/SX/H/L TM-D						NS160N/SX/H/L TM-D					
Downstream	**Trip unit or th. relay**	**Rating (A) Setting Ir**	**16**	**25**	**40**	**63**	**80**	**100**	**40**	**63**	**80**	**100**	**125**	**160**
Discrimination limit (kA)														
Integral 18	**LB1-LB03P01**	**0.1/0.16**	T	T	T	T	T	T	T	T	T	T	T	T
LD1-LB030	**LB1-LB03P02**	**0.16/0.25**	T	T	T	T	T	T	T	T	T	T	T	T
	LB1-LB03P03	**0.25/0.40**	T	T	T	T	T	T	T	T	T	T	T	T
	LB1-LB03P04	**0.40/0.63**	T	T	T	T	T	T	T	T	T	T	T	T
	LB1-LB03P05	**0.63/1**	T	T	T	T	T	T	T	T	T	T	T	T
	LB1-LB03P06	**1/1.6**	0.2	T	T	T	T	T	T	T	T	T	T	T
	LB1-LB03P07	**1.6/2.5**	0.2	0.3	1.5	1.5	4	T	1.5	1.5	T	T	T	T
	LB1-LB03P08	**2.5/4**	0.2	0.3	0.5	0.5	0.7	2	0.5	0.5	T	T	T	T
	LB1-LB03P10	**4/6**		0.3	0.5	0.5	0.7	1	0.5	0.5	T	T	T	T
	LB1-LB03P13	**6/10**			0.5	0.5	0.7	0.8	0.5	0.5	T	T	T	T
	LB1-LB03P17	**10/16**				0.5	0.7	0.8		0.5	4	T	T	T
	LB1-LB03P21	**12/18**				0.5	0.7	0.8		0.5	3	T	T	T
Integral 32	**LB1-LC03M03**	**0.25/0.40**	T	T	T	T	T	T	T	T	T	T	T	T
LD1-LC030	**LB1-LC03M04**	**0.40/0.63**	T	T	T	T	T	T	T	T	T	T	T	T
LD4-LC130	**LB1-LC03M05**	**0.63/1**	T	T	T	T	T	T	T	T	T	T	T	T
LD4-LC030	**LB1-LC03M06**	**1/1.6**	0.2	T	T	T	T	T	T	T	T	T	T	T
	LB1-LC03M07	**1.6/2.5**	0.2	0.3	1.5	1.5	1	T	1.5	1.5	T	T	T	T
	LB1-LC03M08	**2.5/4**	0.2	0.3	0.5	0.5	0.7	1	0.5	0.5	T	T	T	T
	LB1-LC03M10	**4/6**		0.3	0.5	0.5	0.7	0.8	0.5	0.5	T	T	T	T
	LB1-LC03M13	**6/10**			0.5	0.5	0.7	0.8	0.5	0.5	T	T	T	T
	LB1-LC03M17	**10/16**				0.5	0.7	0.8		0.5	15	T	T	T
	LB1-LC03M22	**16/25**				0.5	0.7	0.8		0.5	8	T	T	T
	LB1-LC03M53	**23/32**						0.8				T	T	T
Integral 63	**LB1-LD03M16**	**10/13**			0.5	0.5	0.65	0.8	0.5	0.5	1	1.25	1.25	1.25
LD1-LD030	**LB1-LD03M21**	**13/18**				0.5	0.65	0.8		0.5	1	1.25	1.25	1.25
LD4-LD130	**LB1-LD03M22**	**18/25**					0.65	0.8			1	1.25	1.25	1.25
LD4-LD030	**LB1-LD03M53**	**23/32**						0.8				1.25	1.25	1.25
	LB1-LD03M55	**28/40**											1.25	1.25
	LB1-LD03M57	**35/50**												1.25
	LB1-LD03M61	**45/63**												

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

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Motor protection discrimination

Upstream: NS100 to 630
Downstream: Integral 18, 32, 63

Upstream Trip unit			NS250N/SX/H/L TM-D								NS100N/ SX/H/L STR22SE (1)		NS160N/ SX/H/L STR22SE (1)		NS250N/ SX/H/L STR22SE (1)		NS400N/H/L STR23SE/ 53UE (1)	NS630N/H/L STR23SE/ 53UE (1)
Downstream	Trip unit or th. relay	Rating (A) Setting Ir	40	63	80	100	125	160	200	250	40	100	80	160	160	250	160 to 400	250 to 630
Discrimination limit (kA)																		
Integral 18	LB1-LB03P01	0.1/0.16	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
LD1-LB030	LB1-LB03P02	0.16/0.25	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	LB1-LB03P03	0.25/0.40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	LB1-LB03P04	0.40/0.63	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	LB1-LB03P05	0.63/1	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	LB1-LB03P06	1/1.6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	LB1-LB03P07	1.6/2.5	1.5	1.5	T	T	T	T	T	T	2	T	T	T	T	T	T	T
	LB1-LB03P08	2.5/4	0.5	0.5	T	T	T	T	T	T	0.5	3	T	T	T	T	T	T
	LB1-LB03P10	4/6	0.5	0.5	T	T	T	T	T	T	0.5	1.3	T	T	T	T	T	T
	LC1-LB03P13	6/10	0.5	0.5	T	T	T	T	T	T	0.5	1.2	T	T	T	T	T	T
	LB1-LB03P17	10/16		0.5	4	T	T	T	T	T		1.2	T	T	T	T	T	T
	LB1-LB03P21	12/18		0.5	3	T	T	T	T	T		1.2	T	T	T	T	T	T
Integral 32	LB1-LC03M03	0.25/0.40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
LD1-LC030	LB1-LC03M04	0.40/0.63	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
LD4-LC130	LB1-LC03M05	0.63/1	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
LD4-LC030	LB1-LC03M06	1/1.6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	LB1-LC03M07	1.6/2.5	1.5	1.5	T	T	T	T	T	T	0.5	T	T	T	T	T	T	T
	LB1-LC03M08	2.5/4	0.5	0.5	T	T	T	T	T	T	0.5	3	T	T	T	T	T	T
	LB1-LC03M10	4/6	0.5	0.5	T	T	T	T	T	T	0.5	1.2	T	T	T	T	T	T
	LB1-LC03M13	6/10	0.5	0.5	T	T	T	T	T	T	0.5	1.2	T	T	T	T	T	T
	LB1-LC03M17	10/16		0.5	15	T	T	T	T	T		1.2	T	T	T	T	T	T
	LB1-LC03M22	16/25		0.5	8	T	T	T	T	T		1.2	T	T	T	T	T	T
	LB1-LC03M53	23/32				T	T	T	T	T		1.2	T	T	T	T	T	T
Integral 63	LB1-LD03M16	13/13	0.5	0.5	1	1.25	1.25	T	T	T	0.5	1.2	T	T	T	T	T	T
LD1-LD030	LB1-LD03M21	13/18		0.5	1	1.25	1.25	T	T	T		1.2	0.9	35	35	T	T	T
LD4-LD130	LB1-LD03M22	18/25			1	1.25	1.25	T	T	T		1.2	0.9	35	35	T	T	T
LD4-LD030	LB1-LD03M53	23/32				1.25	1.25	T	T	T		1.2	0.9	35	35	T	T	T
	LB1-LD03M55	28/40					1.25	T	T	T				35	35	T	T	T
	LB1-LD03M57	35/50						T	T	T						T	T	T
	LB1-LD03M61	45/63							T	T						T	T	T

(1) *Respect the basic overload and short-circuit discrimination rules, see page 6.*

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Motor protection discrimination

Upstream: NS100 to 630
Downstream: C60LMA, NG125LMA, NS80HMA

Upstream Trip unit			NS100N/SX/H/L TM-D						NS160N/SX/H/L TM-D					
Downstream	**Trip unit or th. relay**	**Rating (A) Setting Ir**	**16**	**25**	**40**	**63**	**80**	**100**	**40**	**63**	**80**	**100**	**125**	**160**
Discrimination limit (kA)														
C60LMA 1.6	**LR2 D13 06**	**1/1.6**	0.2	T	T	T	T	T	T	T	T	T	T	T
C60LMA 2.5	**LR2 D13 07**	**1.6/2.5**	0.2	0.3	T	T	T	T	T	T	T	T	T	T
C60LMA 4	**LR2 D13 08**	**2.5/4**	0.2	0.3	0.5	0.5	3	T	0.5	0.5	T	T	T	T
C60LMA 6.3	**LR2 D13 10**	**4/6**		0.3	0.5	0.5	0.7	5	0.5	0.5	T	T	T	T
C60LMA 10	**LR2 D13 12**	**5.5/8**		0.3	0.5	0.5	0.7	2	0.5	0.5	T	T	T	T
C60LMA 10	**LR2 D13 14**	**7/10**			0.5	0.5	0.7	0.8	0.5	0.5	T	T	T	T
C60LMA 12.5	**LR2 D13 16**	**9/13**			0.5	0.5	0.7	0.8	0.5	0.5	T	T	T	T
C60LMA 16	**LR2 D13 21**	**12/18**				0.5	0.7	0.8		0.5	T	T	T	T
C60LMA 25	**LR2 D13 22**	**17/25**					0.7	0.8			T	T	T	T
C60LMA 40	**LR2 D33 53**	**23/32**						0.8				T	T	T
C60LMA 40	**LR2 D33 55**	**30/40**											T	T
NG125LMA 1.6	**LR2 D13 06**	**1/1.6**	0.2	T	T	T	T	T	T	T	T	T	T	T
NG125LMA 2.5	**LR2 D13 07**	**1.6/2.5**	0.2	0.3	T	T	T	T	T	T	T	T	T	T
NG125LMA 4	**LR2 D13 08**	**2.5/4**	0.2	0.3	0.5	0.5	10	T	0.5	0.5	T	T	T	T
NG125LMA 6.3	**LR2 D13 10**	**4/6**		0.3	0.5	0.5	0.7	10	0.5	0.5	T	T	T	T
NG125LMA 10	**LR2 D13 12**	**5.5/8**		0.3	0.5	0.5	0.7	2	0.5	0.5	T	T	T	T
NG125LMA 10	**LR2 D13 14**	**7/10**			0.5	0.5	0.7	0.8	0.5	0.5	T	T	T	T
NG125LMA 12.5	**LR2 D13 16**	**9/13**			0.5	0.5	0.7	0.8	0.5	0.5	T	T	T	T
NG125LMA 16	**LR2 D13 21**	**12/18**				0.5	0.7	0.8		0.5	T	T	T	T
NG125LMA 25	**LR2 D13 22**	**17/25**					0.7	0.8			T	T	T	T
NG125LMA 40	**LR2 D33 53**	**23/32**						0.8				T	T	T
NG125LMA 40	**LR2 D33 55**	**30/40**											T	T
NG125LMA 63	**LR2 D33 57**	**37/50**												
NG125LMA 63	**LR2 D33 59**	**48/65**												
NS80HMA 2.5	**LR2 D13 06**	**1/1.6**	T	T	T	T	T	T	T	T	T	T	T	T
NS80HMA 2.5	**LR2 D13 07**	**1.6/2.5**	T	T	T	T	T	T	T	T	T	T	T	T
NS80HMA 6.3	**LR2 D13 08**	**2.5/4**	0.2	0.3	0.5	0.5	0.7	10	0.5	0.5	T	T	T	T
NS80HMA 6.3	**LR2 D13 10**	**4/6**		0.3	0.5	0.5	0.7	2	0.5	0.5	T	T	T	T
NS80HMA 12.5	**LR2 D13 12**	**5.5/8**		0.3	0.5	0.5	0.7	0.8	0.5	0.5	T	T	T	T
NS80HMA 12.5	**LR2 D13 14**	**7/10**			0.5	0.5	0.7	0.8	0.5	0.5	T	T	T	T
NS80HMA 12.5	**LR2 D13 16**	**9/13**			0.5	0.5	0.7	0.8	0.5	0.5	T	T	T	T
NS80HMA 25	**LR2 D13 21**	**12/18**				0.5	0.7	0.8		0.5	1	T	T	T
NS80HMA 25	**LR2 D33 22**	**17/25**					0.7	0.8			1	1.2	1.2	1.2
NS80HMA 50	**LR2 D33 53**	**23/32**						0.8				1.2	1.2	1.2
NS80HMA 50	**LR2 D33 55**	**30/40**											1.2	1.2
NS80HMA 50	**LR2 D33 57**	**37/50**												1.2
NS80HMA 80	**LR2 D33 59**	**48/65**												

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Motor protection discrimination

Upstream: NS100 to 630
Downstream: C60LMA, NG125LMA, NS80HMA

Upstream Trip unit			NS250N/SX/H/L TM-D								NS100N/ SX/H/L STR22SE		NS160N/ SX/H/L STR22SE (1)		NS250N/ SX/H/L STR22SE (1)		NS400N/H/L STR23SE/ 53UE	NS630N/H/L STR23SE/ 53UE
Downstream	**Trip unit or th. relay**	**Rating (A) Setting Ir**	**40**	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**40**	**100**	**80**	**160**	**160**	**250**	**160 to 400**	**250 to 630**
Discrimination limit (kA)																		
C60LMA 1.6	**LR2 D13 06**	**1/1.6**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
C60LMA 2.5	**LR2 D13 07**	**1.6/2.5**	T	T	T	T	T	T	T	T	1	T	T	T	T	T	T	T
C60LMA 4	**LR2 D13 08**	**2.5/4**	0.5	0.5	T	T	T	T	T	T	0.5	T	T	T	T	T	T	T
C60LMA 6.3	**LR2 D13 10**	**4/6**	0.5	0.5	T	T	T	T	T	T	0.5	5	T	T	T	T	T	T
C60LMA 10	**LR2 D13 12**	**5.5/8**	0.5	0.5	T	T	T	T	T	T	0.5	2	T	T	T	T	T	T
C60LMA 10	**LR2 D13 14**	**7/10**	0.5	0.5	T	T	T	T	T	T	0.5	1.2	T	T	T	T	T	T
C60LMA 12.5	**LR2 D13 16**	**9/13**	0.5	0.5	T	T	T	T	T	T	0.5	1.2	T	T	T	T	T	T
C60LMA 16	**LR2 D13 21**	**12/18**		0.5	T	T	T	T	T	T		1.2	T	T	T	T	T	T
C60LMA 25	**LR2 D13 22**	**17/25**			T	T	T	T	T	T		1.2	T	T	T	T	T	T
C60LMA 40	**LR2 D33 53**	**23/32**				T	T	T	T	T		1.2	T	T	T	T	T	T
C60LMA 40	**LR2 D33 55**	**30/40**					T	T	T	T				T	T	T	T	T
NG125LMA 1.6	**LR2 D13 06**	**1/1.6**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NG125LMA 2.5	**LR2 D13 07**	**1.6/2.5**	T	T	T	T	T	T	T	T	1	T	T	T	T	T	T	T
NG125LMA 4	**LR2 D13 08**	**2.5/4**	0.5	0.5	T	T	T	T	T	T	0.5	15	T	T	T	T	T	T
NG125LMA 6.3	**LR2 D13 10**	**4/6**	0.5	0.5	T	T	T	T	T	T	0.5	2	T	T	T	T	T	T
NG125LMA 10	**LR2 D13 12**	**5.5/8**	0.5	0.5	T	T	T	T	T	T	0.5	1.2	T	T	T	T	T	T
NG125LMA 10	**LR2 D13 14**	**7/10**	0.5	0.5	T	T	T	T	T	T	0.5	1.2	T	T	T	T	T	T
NG125LMA 12.5	**LR2 D13 16**	**9/13**	0.5	0.5	T	T	T	T	T	T	0.5	1.2	T	T	T	T	T	T
NG125LMA 16	**LR2 D13 21**	**12/18**		0.5	T	T	T	T	T	T		1.2	T	T	T	T	T	T
NG125LMA 25	**LR2 D13 22**	**17/25**			T	T	T	T	T	T		1.2	T	T	T	T	T	T
NG125LMA 40	**LR2 D33 53**	**23/32**				T	T	T	T	T		1.2	T	T	T	T	T	T
NG125LMA 40	**LR2 D33 55**	**30/40**					T	T	T	T				T	T	T	T	T
NG125LMA 63	**LR2 D33 57**	**37/50**						T	T	T				T	T	T	T	T
NG125LMA 63	**LR2 D33 59**	**48/65**							T	T						T	T	T
NS80HMA 2.5	**LR2 D13 06**	**1/1.6**	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS80HMA 2.5	**LR2 D13 07**	**1.6/2.5**	T	T	T	T	T	T	T	T	1	T	T	T	T	T	T	T
NS80HMA 6.3	**LR2 D13 08**	**2.5/4**	0.5	0.5	T	T	T	T	T	T	0.5	T	T	T	T	T	T	T
NS80HMA 6.3	**LR2 D13 10**	**4/6**	0.5	0.5	T	T	T	T	T	T	0.5	5	T	T	T	T	T	T
NS80HMA 12.5	**LR2 D13 12**	**5.5/8**	0.5	0.5	T	T	T	T	T	T	0.5	2	T	T	T	T	T	T
NS80HMA 12.5	**LR2 D13 14**	**7/10**	0.5	0.5	T	T	T	T	T	T	0.5	1.2	T	T	T	T	T	T
NS80HMA 12.5	**LR2 D13 16**	**9/13**	0.5	0.5	T	T	T	T	T	T	0.5	1.2	T	T	T	T	T	T
NS80HMA 25	**LR2 D13 21**	**12/18**		0.5	1	T	T	T	T	T		1.2	T	T	T	T	T	T
NS80HMA 25	**LR2 D33 22**	**17/25**			1	1.2	1.2	T	T	T		1.2	T	T	T	T	T	T
NS80HMA 50	**LR2 D33 53**	**23/32**				1.2	1.2	T	T	T		1.2		T	T	T	T	T
NS80HMA 50	**LR2 D33 55**	**30/40**					1.2	T	T	T				T	T	T	T	T
NS80HMA 50	**LR2 D33 57**	**37/50**						T	T	T				T	T	T	T	T
NS80HMA 80	**LR2 D33 59**	**48/65**							T	T						T	T	T

(1) *Respect the basic overload and short-circuit discrimination rules, see page 6.*

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Motor protection discrimination

Upstream: NS100 to 630,
NS630b to 1600
Downstream: NS100 to 630

Upstream Trip unit			NS100N/SX/H/L TM-D								NS160N/SX/H/L TM-D				NS250N/SX/H/L TM-D	
Downstream	**Trip unit or th. relay**	**Rat. (A) Setting Ir**	**16**	**25**	**32**	**40**	**50**	**63**	**80**	**100**	**80**	**100**	**125**	**160**	**200**	**250**
Discrimination limit (kA)																
NS100N/H/LMA 2.5	**LR2 D13 06**	**1/1.6**	0.19	3	T	T	T	T	T	T	T	T	T	T	T	T
NS100N/H/LMA 2.5	**LR2 D13 07**	**1.6/2.5**	0.19	3	4	5	5	5	T	T	T	T	T	T	T	T
NS100N/H/LMA 6.3	**LR2 D13 08**	**2.5/4**	0.19	3	4	5	5	5	6.4	8	T	T	T	T	T	T
NS100N/H/LMA 6.3	**LR2 D13 10**	**4/6**		3	4	5	5	5	6.4	8	T	T	T	T	T	T
NS100N/H/LMA 12.5	**LR2 D13 12**	**5.5/8**		3	4	5	5	5	6.4	8	10	12.5	12.5	12.5	20	25
NS100N/H/LMA 12.5	**LR2 D13 14**	**7/10**			4	5	5	5	6.4	8	10	12.5	12.5	12.5	20	25
NS100N/H/LMA 12.5	**LR2 D13 16**	**9/13**				5	5	5	6.4	8	10	12.5	12.5	12.5	20	25
NS100N/H/LMA 25	**LR2 D13 21**	**12/18**						5	6.4	8	10	12.5	12.5	12.5	20	25
NS100N/H/LMA 25	**LR2 D33 22**	**17/25**							6.4	8	10	12.5	12.5	12.5	20	25
NS100N/H/LMA 50	**LR2 D33 53**	**23/32**								8		12.5	12.5	12.5	20	25
NS100N/H/LMA 50	**LR2 D33 55**	**30/40**											12.5	12.5	20	25
NS100N/H/LMA 50	**LR2 D33 57**	**37/50**												12.5	20	25
NS100N/H/LMA 100	**LR2 D33 59**	**48/65**													20	25
NS100N/H/LMA 100	**LR2 D33 63**	**63/80**														25
NS100N/H/LMA 100																
NS160N/H/LMA 150																
NS250N/H/LMA 220																
NS400N/H/LMA 320																
NS630N/H/LMA 500																
NS100N/H/L	**STR22ME40**	**24/40**											12.5	12.5	36	36
NS100N/H/L	**STR22ME50**	**30/50**												12.5	36	36
NS100N/H/L	**STR22ME80**	**48/80**														36
NS100N/H/L	**STR22ME100**	**60/100**														
NS160N/H/L	**STR22ME150**	**90/150**														
NS250N/H/L	**STR22ME220**	**131/220**														
NS400N/H/L	**STR43ME320**	**190/320**														

Upstream Trip unit			NS100N/ SX/H/L STR22SE (1)		NS160N/SX/H/L NS250N/SX/H/L STR22SE (1)			NS400N/H/L NS630N/H/L Micrologic STR23SE (1) STR53SE		NS630bN/H NS800N/H Micrologic 2.0 - 5.0		NS630bL NS800bL Micrologic 2.0 - 5.0		NS1000N/H NS1250/1600N/H Micrologic 2.0 - 5.0			NS1000L 2.0 - 5.0
Downstream	**Trip unit or th. relay**	**Rat. (A) Set. Ir**	**40**	**100**	**80**	**160**	**250**	**400**	**630**	**630**	**800**	**630**	**800**	**1000**	**1250**	**1600**	**1000**
Discrimination limit (kA)																	
NS100N/H/LMA 2.5	**LR2 D13 06**	**1/1.6**	0.45	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS100N/H/LMA 2.5	**LR2 D13 07**	**1.6/2.5**	0.45	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NS100N/H/LMA 6.3	**LR2 D13 08**	**2.5/4**	0.45	1.1	T	T	T	T	T	T	T	T	T	T	T	T	T
NS100N/H/LMA 6.3	**LR2 D13 10**	**4/6**	0.45	1.1	T	T	T	T	T	T	T	T	T	T	T	T	T
NS100N/H/LMA 12.5	**LR2 D13 12**	**5.5/8**	0.45	1.1	0.9	T	T	T	T	T	T	T	T	T	T	T	T
NS100N/H/LMA 12.5	**LR2 D13 14**	**07/10**	0.45	1.1	0.9	T	T	T	T	T	T	T	T	T	T	T	T
NS100N/H/LMA 12.5	**LR2 D13 16**	**9/13**	0.45	1.1	0.9	T	T	T	T	T	T	T	T	T	T	T	T
NS100N/H/LMA 25	**LR2 D13 21**	**12/18**		1.1	0.9	1.75	36	T	T	T	T	T	T	T	T	T	T
NS100N/H/LMA 25	**LR2 D33 22**	**17/25**		1.1	0.9	1.75	36	T	T	T	T	T	T	T	T	T	T
NS100N/H/LMA 50	**LR2 D33 53**	**23/32**		1.1		1.75	36	T	T	T	T	T	T	T	T	T	T
NS100N/H/LMA 50	**LR2 D33 55**	**30/40**				1.75	36	T	T	T	T	T	T	T	T	T	T
NS100N/H/LMA 50	**LR2 D33 57**	**37/50**				1.75	36	T	T	T	T	T	T	T	T	T	T
NS100N/H/LMA 100	**LR2 D33 59**	**48/65**					36	T	T	T	T	T	T	T	T	T	T
NS100N/H/LMA 100	**LR2 D33 63**	**63/80**					36	T	T	T	T	T	T	T	T	T	T
NS100N/H/LMA 100								T	T	T	T	T	T	T	T	T	T
NS160N/H/LMA 150									T	T	T	T	T	T	T	T	T
NS250N/H/LMA 220									T	T	T	T	T	T	T	T	T
NS400N/H/LMA 320														T	T	T	18
NS630N/H/LMA 500																	
NS100N/H/L	**STR22ME40**	**24/40**				1.75	3.6	T	T	T	T	T	T	T	T	T	T
NS100N/H/L	**STR22ME50**	**30/50**				1.75	3.6	T	T	T	T	T	T	T	T	T	T
NS100N/H/L	**STR22ME80**	**48/80**					3.6	T	T	T	T	T	T	T	T	T	T
NS100N/H/L	**STR22ME100**	**60/100**						T	T	T	T	T	T	T	T	T	T
NS160N/H/L	**STR22ME150**	**90/150**								T	T	T	T	T	T	T	T
NS250N/H/L	**STR22ME220**	**131/220**								T	T	T	T	T	T	T	T
NS400N/H/L	**STR43ME320**	**190/320**												T	T	T	18

(1) *Respect the basic overload and short-circuit discrimination rules. see page 6.*

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

400 — *Discrimination limit = 400 kA.*

No discrimination.

Motor protection discrimination

Upstream: NS1600, Masterpact NT, NW
Downstream: NS630, NS630b, NS800, NS1000, NS1250

Upstream Trip unit			NS1600N/H Micrologic 2.0 - 5.0	NT16H1/H2 Micrologic 2.0 - 5.0	NW16N1/H1 Micrologic 2.0 - 5.0	NW20H1/H2/H3 Micrologic 2.0 - 5.0	NW25H1/H2/H3 Micrologic 2.0 - 5.0	NW32H1/H2/H3 Micrologic 2.0 - 5.0	NW40H1/H2/H3 Micrologic 2.0 - 5.0
Downstream									
Discrimination limit (kA)									
NS630N/H/L	STR43ME	200...500	T	T	T	T	T	T	T
NS630bN/H/L	Micrologic 5.0	250...630				T	T	T	T
NS800N/H/L	Micrologic 5.0	320...800					T	T	T
NS1000N/H/L	Micrologic 5.0	400...1000						T	T
NS1250N/H/L	Micrologic 5.0	500...1250							T

Motor protection discrimination

Upstream: Compact NS
Downstream: Compact NS, Integral and GV

Network 220/240 V

Upstream	NS100N	NS100SX	NS100H	NS100L	NS160N NS160NE	NS160SX	NS160H	NS160L	
Breaking capacity (kA rms)	85	90	100	150	85	90	100	150	
Downstream	**Breaking capacity (kA rms)**								
NS80HMA				150				150	
GV2M ⩾ 23 A	85	90	100	100	85	90	100	100	
Integral 18 ⩾ 10 A	85	90	100	150	85	90	100	150	
Integral 32 ⩾ 25 A	85	90	100	150	85	90	100	150	
Integral 63 ⩾ 32 A	85	90	100	150	85	90	100	150	

Upstream	NS250N	NS250SX	NS250H	NS250L	NS400N NS630N	NS400H NS630H	NS400L	NS630L	
Breaking capacity (kA rms)	85	90	100	150	85	100	150	150	
Downstream	**Breaking capacity (kA rms)**								
NS80HMA				150			150	150	
Integral 18 ⩾ 10 A	85	90	100	150					
Integral 32 ⩾ 25 A	85	90	100	150					
Integral 63 ⩾ 32 A	85	90	100	150			150		

Network 380/415 V

Upstream	NSC100N	NS125E NS160E	NSA160N	NR100F NR160F NS160NE	NS100N NS160N	NS100SX NS160SX	NS100H NS160H	NS100L NS160L	
Breaking capacity (kA rms)	18	16	30	25	36	50	70	150	
Downstream	**Breaking capacity (kA rms)**								
NS80HMA								150	
GV2M ⩾ 14 A	18	16	30	25	36	40	50	50	
GV2L ⩾ 18 A							70	150	
GV2P ⩾ 18 A							70	150	
GV3M						50	70	150	
Integral 18 ⩾ 10 A							70	150	
Integral 32 ⩾ 25 A							70	150	
Integral 63 ⩾ 32 A							70	150	

Upstream	NR250F	NS250N NR400F NR630F	NS250SX	NS250H	NS250L	NS400N NS630N	NS400H	NS400L	NS630L
Breaking capacity (kA rms)	25	36	50	70	150	50	70	150	150
Downstream	**Breaking capacity (kA rms)**								
NS80HMA					150			150	150
GV3M			50	70	150				
Integral 18 ⩾ 10 A				70	150				
Integral 32 ⩾ 25 A				70	150				
Integral 63 ⩾ 32 A				70	150		70	150	

Network 440 V

Upstream	NR100F NR160F NR250F	NS160NE	NS100N NS160N NS250N	NS100SX NS160SX NS250SX	NS100H NS160H NS250H	NS100L NS160L NS250L			
Breaking capacity (kA rms)	20	25	35	50	65	130			
Downstream	**Breaking capacity (kA rms)**								
NS80HMA						150			
Integral 32 ⩾ 16 A				50	65	130			
Integral 63 ⩾ 25 A				50	65	130			

Upstream	NR400F	NS400N	NS400H	NS400L	NR630F	NS630N	NS630H	NS630L	
Breaking capacity (kA rms)	30	42	65	130	30	42	65	130	
Downstream	**Breaking capacity (kA rms)**								
NS80HMA				150				150	
Integral 63 ⩾ 25 A			65	130					

Cascading and enhanced discrimination

Upstream: NS160 to 400
Downstream: Integral 18 to 63

Upstream Breaking capacity			NS160H 70 kA		NS160L 150 kA		NS250H 70 kA		NS250L 150 kA	
Trip unit			TM-D		TM-D		TM-D		TM-D	
Downst.	Thermal relay	Rating (A)	80	100/125/160	80	100/125/160	160	200/250	160	200/250
Integral 18	LB1-LB03P01	0.1/0.16	70/70	70/70	150/150	150/150				
LD1-LB030	LB1-LB03P02	0.16/0.25	70/70	70/70	150/150	150/150				
	LB1-LB03P03	0.25/0.40	70/70	70/70	150/150	150/150				
	LB1-LB03P04	0.40/0.63	70/70	70/70	150/150	150/150				
	LB1-LB03P05	0.63/1	70/70	70/70	150/150	150/150				
	LB1-LB03P06	1/1.6	70/70	70/70	150/150	150/150				
	LB1-LB03P07	1.6/2.5	70/70	70/70	150/150	150/150				
	LB1-LB03P08	2.5/4	70/70	70/70	150/150	150/150				
	LB1-LB03P10	4/6	70/70	70/70	150/150	150/150				
	LB1-LB03P13	6/10	70/70	70/70	150/150	150/150				
	LB1-LB03P17	10/16		70/70		150/150				
	LB1-LB03P21	12/18		70/70		150/150				
Integral 32	LB1-LC03M03	0.25/0.40	70/70	70/70	150/150	150/150	70/70	70/70	150/150	150/150
LD1-LC030	LB1-LC03M04	0.40/0.63	70/70	70/70	150/150	150/150	70/70	70/70	150/150	150/150
LD4-LC130	LB1-LC03M05	0.63/1	70/70	70/70	150/150	150/150	70/70	70/70	150/150	150/150
LD4-LC030	LB1-LC03M06	1/1.6	70/70	70/70	150/150	150/150	70/70	70/70	150/150	150/150
	LB1-LC03M07	1.6/2.5	70/70	70/70	150/150	150/150	70/70	70/70	150/150	150/150
	LB1-LC03M08	2.5/4	70/70	70/70	150/150	150/150	70/70	70/70	150/150	150/150
	LB1-LC03M10	4/6	70/70	70/70	150/150	150/150	70/70	70/70	150/150	150/150
	LB1-LC03M13	6/10		70/70	150/150	150/150	70/70	70/70	150/150	150/150
	LB1-LC03M17	10/16		70/70	150/150	150/150	70/70	70/70	150/150	150/150
	LB1-LC03M22	16/25		70/70	150/150	150/150	70/70	70/70	150/150	150/150
	LB1-LC03M53	23/32		70/70		150/150	70/70	70/70	150/150	150/150
Integral 63	LB1-LD03M16	10/13					70/70	70/70	150/150	150/150
LD1-LD030	LB1-LD03M21	11/18					70/70	70/70	150/150	150/150
LD4-LD130	LB1-LD03M22	18/25					70/70	70/70	150/150	150/150
LD4-LD030	LB1-LD03M53	23/32					70/70	70/70	150/150	150/150
	LB1-LD03M55	28/40					70/70	70/70	150/150	150/150
	LB1-LD03M57	35/ 50					70/70	70/70	150/150	150/150
	LB1-LD03M61	45/63					70/70	70/70		150/150

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

Upstream Breaking capacity			NS160H 70 kA		NS160L 150 kA		NS250H 70 kA	NS250L 150 kA	NS400H 70 kA	NS400L 150 kA
Trip unit			STR22SE						STR23SE or STR53UE	
Downst.	Thermal relay	Rating (A)	80	160	80	160	250	250	400	400
Integral 18	LB1-LB03P01	0.1/0.16	70/70	70/70	150/150	150/150	70/70	150/150		
LD1-LB030	LB1-LB03P02	0.16/0.25	70/70	70/70	150/150	150/150	70/70	150/150		
	LB1-LB03P03	0.25/0.40	70/70	70/70	150/150	150/150	70/70	150/150		
	LB1-LB03P04	0.40/0.63	70/70	70/70	150/150	150/150	70/70	150/150		
	LB1-LB03P05	0.63/1	70/70	70/70	150/150	150/150	70/70	150/150		
	LB1-LB03P06	1/1.6	70/70	70/70	150/150	150/150	70/70	150/150		
	LB1-LB03P07	1.6/2.5	70/70	70/70	150/150	150/150	70/70	150/150		
	LB1-LB03P08	2.5/4	70/70	70/70	150/150	150/150	70/70	150/150		
	LB1-LB03P10	4/6	70/70	70/70	150/150	150/150	70/70	150/150		
	LB1-LB03P13	6/10	70/70	70/70	150/150	150/150	70/70	150/150		
	LB1-LB03P17	10/16	70/70	70/70	150/150	150/150	70/70	150/150		
	LB1-LB03P21	12/18	70/70	70/70	150/150	150/150	70/70	150/150		
Integral 32	LB1-LC03M03	0.25/0.40	70/70	70/70	150/150	150/150	70/70	150/150		
LD1-LC030	LB1-LC03M04	0.40/0.63	70/70	70/70	150/150	150/150	70/70	150/150		
LD4-LC130	LB1-LC03M05	0.63/1	70/70	70/70	150/150	150/150	70/70	150/150		
LD4-LC030	LB1-LC03M06	1/1.6	70/70	70/70	150/150	150/150	70/70	150/150		
	LB1-LC03M07	1.6/2.5	70/70	70/70	150/150	150/150	70/70	150/150		
	LB1-LC03M08	2.5/4	70/70	70/70	150/150	150/150	70/70	150/150		
	LB1-LC03M10	4/6	70/70	70/70	150/150	150/150	70/70	150/150		
	LB1-LC03M13	6/10	70/70	70/70	150/150	150/150	70/70	150/150		
	LB1-LC03M17	10/16	70/70	70/70	150/150	150/150	70/70	150/150		
	LB1-LC03M22	16/25	70/70	70/70	150/150	150/150	70/70	150/150		
	LB1-LC03M53	23/32		70/70		150/150	70/70	150/150		
Integral 63	LB1-LD03M16	10/13		70/70		150/150	70/70	150/150	70/70	150/150
LD1-LD030	LB1-LD03M21	11/18					70/70	150/150	70/70	150/150
LD4-LD130	LB1-LD03M22	18/25					70/70	150/150	70/70	150/150
LD4-LD030	LB1-LD03M53	23/32					70/70	150/150	70/70	150/150
	LB1-LD03M55	28/40					70/70	150/150	70/70	150/150
	LB1-LD03M57	35/50					70/70	150/150	70/70	150/150
	LB1-LD03M61	45/63					70/70	150/150	70/70	150/150

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

Cascading and enhanced discrimination

Upstream: NR/NS160
Downstream: GV2 M

Upstream Breaking capacity			NR160F - NS160NE 25 kA								NS160N 36 kA							
Trip unit			TM-D								TM-D							
Downst.	Thermal relay	Rating (A)	16	25	40	63	80	100	125	160	16	25	40	63	80	100	125	160
GV2 M01	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
GV2 M02	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
GV2 M03	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
GV2 M04	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
GV2 M05	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
GV2 M06	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
GV2 M07	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
GV2 M08	Integrated	2.5/4					25/25	25/25	25/25	25/25					36/36	36/36	36/36	36/36
GV2 M10	Integrated	4/6.3					25/25	25/25	25/25	25/25					36/36	36/36	36/36	36/36
GV2 M14	Integrated	6/10					25/25	25/25	25/25	25/25					36/36	36/36	36/36	36/36
GV2 M16	Integrated	9/14					25/25	25/25	25/25	25/25					36/36	36/36	36/36	36/36
GV2 M20	Integrated	13/18					25/25	25/25	25/25	25/25					36/36	36/36	36/36	36/36
GV2 M21	Integrated	17/23					25/25	25/25	25/25	25/25					36/36	36/36	36/36	36/36
GV2 M22	Integrated	20/25					25/25	25/25	25/25	25/25					36/36	36/36	36/36	36/36
GV2 M32	Integrated	24/32						25/25	25/25	25/25						36/36	36/36	36/36

Upstream Breaking capacity			NR160F - NS160NE 25 kA								NS160N 36 kA							
Trip unit			STR22SE80					STR22SE160			STR22SE80					STR22SE160		
Downst.	Thermal relay	Rating (A)	32	40	50	63	80	100	125	160	32	40	50	63	80	100	125	160
GV2 M01	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
GV2 M02	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
GV2 M03	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
GV2 M04	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
GV2 M05	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
GV2 M06	Integrated	1/1.6	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
GV2 M07	Integrated	1.6/2.5	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
GV2 M08	Integrated	2.5/4	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
GV2 M10	Integrated	4/6.3	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
GV2 M14	Integrated	6/10	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
GV2 M16	Integrated	9/14			25/25	25/25	25/25	25/25	25/25	25/25			36/36	36/36	36/36	36/36	36/36	36/36
GV2 M20	Integrated	13/18				25/25	25/25	25/25	25/25	25/25				36/36	36/36	36/36	36/36	36/36
GV2 M21	Integrated	17/23					25/25	25/25	25/25	25/25					36/36	36/36	36/36	36/36
GV2 M22	Integrated	20/25					25/25	25/25	25/25	25/25					36/36	36/36	36/36	36/36
GV2 M32	Integrated	24/32						25/25	25/25	25/25						36/36	36/36	36/36

Cascading and enhanced discrimination

Upstream: NS160
Downstream: GV2 M

Upstream Breaking capacity			NS160SX/H/L 50/70/150 kA							
Trip unit			TM-D							
Downst.	Thermal relay	Rating (A)	16	25	40	63	80	100	125	160
GV2 M01	Integrated	0.1/0.16	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 M02	Integrated	0.16/0.25	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 M03	Integrated	0.25/0.40	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 M04	Integrated	0.40/0.63	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 M05	Integrated	0.63/1	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 M06	Integrated	1/1.6		50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 M07	Integrated	1.6/2.5			50/50	50/50	50/50	50/50	50/50	50/50
GV2 M08	Integrated	2.5/4					50/50	50/50	50/50	50/50
GV2 M10	Integrated	4/6.3					50/50	50/50	50/50	50/50
GV2 M14	Integrated	6/10					50/50	50/50	50/50	50/50
GV2 M16	Integrated	9/14					50/50	50/50	50/50	50/50
GV2 M20	Integrated	13/18					50/50	50/50	50/50	50/50
GV2 M21	Integrated	17/23					50/50	50/50	50/50	50/50
GV2 M22	Integrated	20/25					50/50	50/50	50/50	50/50
GV2 M32	Integrated	24/32						50/50	50/50	50/50

Upstream Breaking capacity			NS160SX/H/L 50/70/150 kA							
Trip unit			STR22SE80					STR22SE160		
Downst.	Thermal relay	Rating (A)	32	40	50	63	80	100	125	160
GV2 M01	Integrated	0.1/0.16	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 M02	Integrated	0.16/0.25	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 M03	Integrated	0.25/0.40	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 M04	Integrated	0.40/0.63	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 M05	Integrated	0.63/1	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 M06	Integrated	1/1.6	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 M07	Integrated	1.6/2.5	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 M08	Integrated	2.5/4	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 M10	Integrated	4/6.3	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 M14	Integrated	6/10	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
GV2 M16	Integrated	9/14			50/50	50/50	50/50	50/50	50/50	50/50
GV2 M20	Integrated	13/18				50/50	50/50	50/50	50/50	50/50
GV2 M21	Integrated	17/23					50/50	50/50	50/50	50/50
GV2 M22	Integrated	20/25					50/50	50/50	50/50	50/50
GV2 M32	Integrated	24/32						50/50	50/50	50/50

Cascading and enhanced discrimination

Upstream: NS160
Downstream: GV2 P

Upstream Breaking capacity			NS160H 70 kA				NS160L 150 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	150/150	150/150	150/150	150/150
GV2 P02	Integrated	0.16/0.25	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 P03	Integrated	0.25/0.40	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 P04	Integrated	0.40/0.63	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 P05	Integrated	0.63/1	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 P06	Integrated	1/1.6	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 P07	Integrated	1.6/2.5	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 P08	Integrated	2.5/4	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 P10	Integrated	4/6.3	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 P14	Integrated	6/10	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 P16	Integrated	9/ 14	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 P20	Integrated	13/18	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 P21	Integrated	17/23	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 P22	Integrated	20/25	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150

Upstream Breaking capacity			NS160H 70 kA							
Trip unit			STR22SE80					STR22SE160		
Downst.	Thermal relay	Rating (A)	32	40	50	63	80	100	125	160
GV2 P01	Integrated	0.1/0.16	70/70	70/70	70/70	70/70	70/70	70/70	70/70	70/70
GV2 P02	Integrated	0.16/0.25	70/70	70/70	70/70	70/70	70/70	70/70	70/70	70/70
GV2 P03	Integrated	0.25/0.40	70/70	70/70	70/70	70/70	70/70	70/70	70/70	70/70
GV2 P04	Integrated	0.40/0.63	70/70	70/70	70/70	70/70	70/70	70/70	70/70	70/70
GV2 P05	Integrated	0.63/1	70/70	70/70	70/70	70/70	70/70	70/70	70/70	70/70
GV2 P06	Integrated	1/1.6	70/70	70/70	70/70	70/70	70/70	70/70	70/70	70/70
GV2 P07	Integrated	1.6/2.5	70/70	70/70	70/70	70/70	70/70	70/70	70/70	70/70
GV2 P08	Integrated	2.5/4	70/70	70/70	70/70	70/70	70/70	70/70	70/70	70/70
GV2 P10	Integrated	4/6.3	70/70	70/70	70/70	70/70	70/70	70/70	70/70	70/70
GV2 P14	Integrated	6/10	70/70	70/70	70/70	70/70	70/70	70/70	70/70	70/70
GV2 P16	Integrated	9/14			70/70	70/70	70/70	70/70	70/70	70/70
GV2 P20	Integrated	13/18				70/70	70/70	70/70	70/70	70/70
GV2 P21	Integrated	17/23					70/70	70/70	70/70	70/70
GV2 P22	Integrated	20/25					70/70	70/70	70/70	70/70

Upstream Breaking capacity			NS160L 150 kA							
Trip unit			STR22SE80					STR22SE160		
Downst.	Thermal relay	Rating (A)	32	40	50	63	80	100	125	160
GV2 P01	Integrated	0.1/0.16	150/150	150/150	150/150	150/150	150/150	150/150	150/150	150/150
GV2 P02	Integrated	0.16/0.25	150/150	150/150	150/150	150/150	150/150	150/150	150/150	150/150
GV2 P03	Integrated	0.25/0.40	150/150	150/150	150/150	150/150	150/150	150/150	150/150	150/150
GV2 P04	Integrated	0.40/0.63	150/150	150/150	150/150	150/150	150/150	150/150	150/150	150/150
GV2 P05	Integrated	0.63/1	150/150	150/150	150/150	150/150	150/150	150/150	150/150	150/150
GV2 P06	Integrated	1/1.6	150/150	150/150	150/150	150/150	150/150	150/150	150/150	150/150
GV2 P07	Integrated	1.6/2.5	150/150	150/150	150/150	150/150	150/150	150/150	150/150	150/150
GV2 P08	Integrated	2.5/4	150/150	150/150	150/150	150/150	150/150	150/150	150/150	150/150
GV2 P10	Integrated	4/6.3	150/150	150/150	150/150	150/150	150/150	150/150	150/150	150/150
GV2 P14	Integrated	6/10	150/150	150/150	150/150	150/150	150/150	150/150	150/150	150/150
GV2 P16	Integrated	9/14			150/150	150/150	150/150	150/150	150/150	150/150
GV2 P20	Integrated	13/18				150/150	150/150	150/150	150/150	150/150
GV2 P21	Integrated	17/23					150/150	150/150	150/150	150/150
GV2 P22	Integrated	20/25					150/150	150/150	150/150	150/150

Cascading and enhanced discrimination

Upstream: NS160
Downstream: GV2 L

Upstream Breaking capacity			NS160H 70 kA				NS160L 150 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	150/150	150/150	150/150	150/150
GV2 L04	LR2 D13 04	0.40/0.63	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 L05	LR2 D13 05	0.63/1	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 L06	LR2 D13 06	1/1.6	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 L07	LR2 D13 07	1.6/2.5	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 L08	LR2 D13 08	2.5/4	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 L10	LR2 D13 10	4/6.3	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 L14	LR2 D13 14	7/10	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 L16	LR2 D13 16	9/13	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 L20	LR2 D13 21	12/18	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150
GV2 L22	LR2 D13 22	17/25	70/70	70/70	70/70	70/70	150/150	150/150	150/150	150/150

Upstream Breaking capacity			NS160H 70 kA							
Trip unit			STR22SE80					STR22SE160		
Downst.	Thermal relay	Rating (A)	32	40	50	63	80	100	125	160
GV2 L03	LR2 D13 03	0.25/0.40	70/70	70/70	70/70	70/70	70/70	70/70	70/70	70/70
GV2 L04	LR2 D13 04	0.40/0.63	70/70	70/70	70/70	70/70	70/70	70/70	70/70	70/70
GV2 L05	LR2 D13 05	0.63/1	70/70	70/70	70/70	70/70	70/70	70/70	70/70	70/70
GV2 L06	LR2 D13 06	1/1.6	70/70	70/70	70/70	70/70	70/70	70/70	70/70	70/70
GV2 L07	LR2 D13 07	1.6/2.5	70/70	70/70	70/70	70/70	70/70	70/70	70/70	70/70
GV2 L08	LR2 D13 08	2.5/4	70/70	70/70	70/70	70/70	70/70	70/70	70/70	70/70
GV2 L10	LR2 D13 10	4/6.3	70/70	70/70	70/70	70/70	70/70	70/70	70/70	70/70
GV2 L14	LR2 D13 14	7/10	70/70	70/70	70/70	70/70	70/70	70/70	70/70	70/70
GV2 L16	LR2 D13 16	9/13			70/70	70/70	70/70	70/70	70/70	70/70
GV2 L20	LR2 D13 21	12/18				70/70	70/70	70/70	70/70	70/70
GV2 L22	LR2 D13 22	17/25					70/70	70/70	70/70	70/70

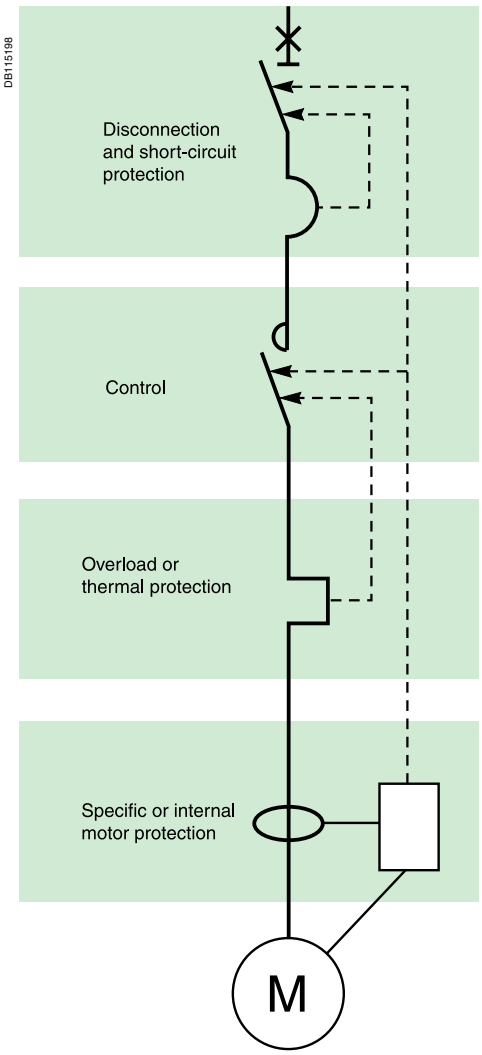
Upstream Breaking capacity			NS160L 150 kA							
Trip unit			STR22SE80					STR22SE160		
Downst.	Thermal relay	Rating (A)	32	40	50	63	80	100	125	160
GV2 L03	LR2 D13 03	0.25/0.40	150/150	150/150	150/150	150/150	150/150	150/150	150/150	150/150
GV2 L04	LR2 D13 04	0.40/0.63	150/150	150/150	150/150	150/150	150/150	150/150	150/150	150/150
GV2 L05	LR2 D13 05	0.63/1	150/150	150/150	150/150	150/150	150/150	150/150	150/150	150/150
GV2 L06	LR2 D13 06	1/1.6	150/150	150/150	150/150	150/150	150/150	150/150	150/150	150/150
GV2 L07	LR2 D13 07	1.6/2.5	150/150	150/150	150/150	150/150	150/150	150/150	150/150	150/150
GV2 L08	LR2 D13 08	2.5/4	150/150	150/150	150/150	150/150	150/150	150/150	150/150	150/150
GV2 L10	LR2 D13 10	4/6.3	150/150	150/150	150/150	150/150	150/150	150/150	150/150	150/150
GV2 L14	LR2 D13 14	7/10	150/150	150/150	150/150	150/150	150/150	150/150	150/150	150/150
GV2 L16	LR2 D13 16	9/13			150/150	150/150	150/150	150/150	150/150	150/150
GV2 L20	LR2 D13 21	12/18				150/150	150/150	150/150	150/150	150/150
GV2 L22	LR2 D13 22	17/25					150/150	150/150	150/150	150/150

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.

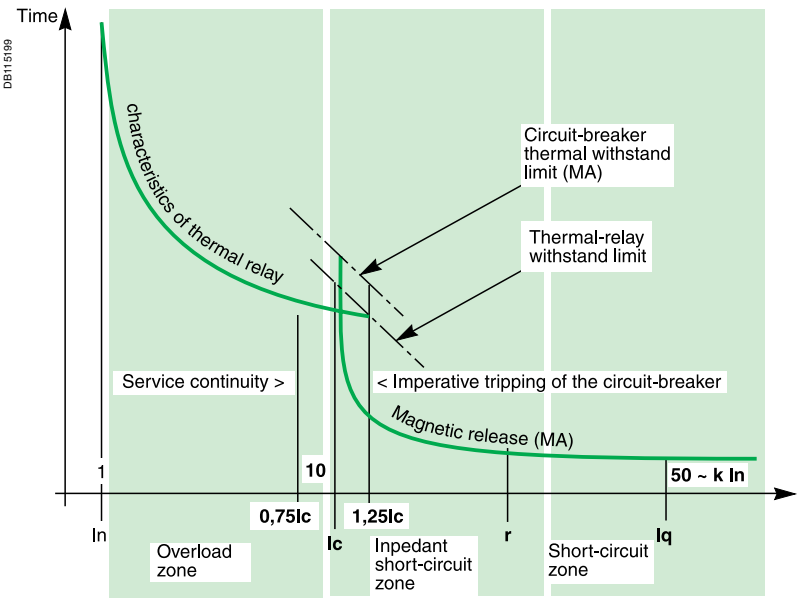
"Ic" current (overload I < 10 In)
The thermal relay provides protection against this type of fault, up to the Ic value (a function of Im or Isd) defined by the manufacturer.
IEC standard 60947-4-1 stipulates two tests that must be carried out to guarantee coordination between the thermal relay and the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

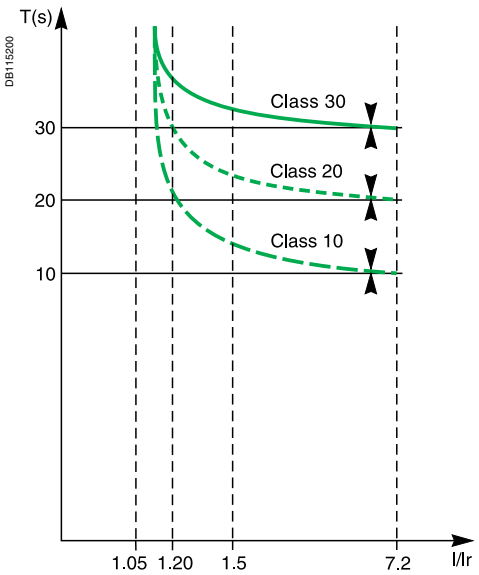
Following the tests at 0.75 and 1.25 Ic, the trip characteristics of the thermal relay must be unchanged. Type-2 coordination thus enhances continuity of service. The contactor may be closed automatically following clearing of the faul.

"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.





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.

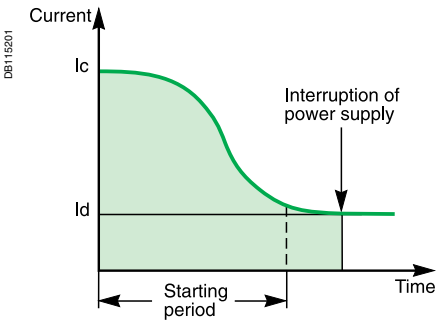
Class	1.05 Ir	1.2 Ir	1.5 Ir	7.2 Ir
10 A	t > 2 h	t < 2 h	t < 2 min.	2 ⩽ t ⩽ 10 s
10	t > 2 h	t < 2 h	t < 4 min.	4 ⩽ t ⩽ 10 s
20	t > 2 h	t < 2 h	t < 8 min.	6 ⩽ t ⩽ 20 s
30	t > 2 h	t < 2 h	t < 12 min.	9 ⩽ t ⩽ 30 s

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

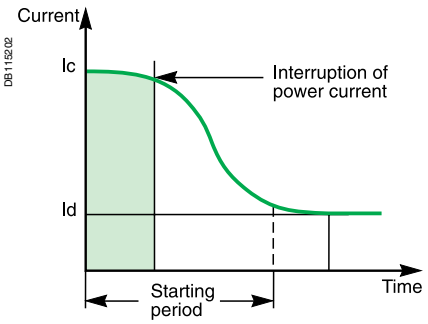
Category	Type of load	Contactor usage	Typical applications
AC1	no-inductive (cos φ 0.8)	energisation	heating, distribution
AC2	slip-ring motors (cos φ 0.65)	starting switching off during running regenerative braking inching	wire drawing machines
AC3	squirrel-cage motors (cos φ 0.45 for Ie ⩽ 100A) (cos 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 plugging inching	printing machines, wire



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.

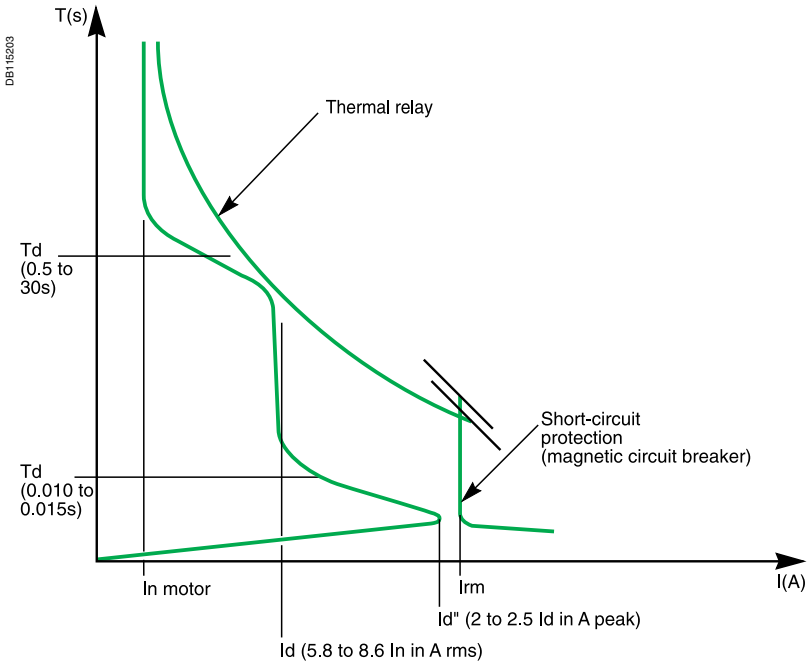
AC4 utilisation category

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.

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 $\sqrt{2}$ (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:
- mordinary 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)
■ Merlin Gerin and Telemecanique 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 Merlin Gerin circuit breakers and Telemecanique 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 Merlin Gerin circuit breaker and Telemecanique 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 Merlin Gerin 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: NS250-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:
NS400-MA320/LC1-F265/LR9-F5371

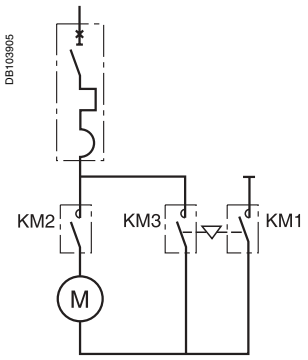
Reversing starters and coordination

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

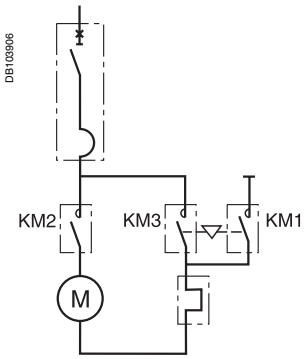
Star-delta starting and coordination

■ 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.



Solution with magnetic motor circuit breaker.

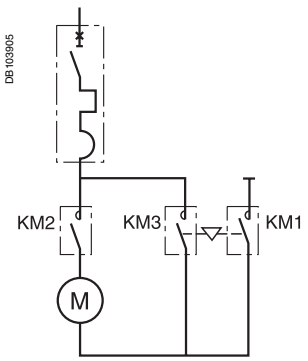
Star-delta starting and type 1 coordination

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 160:
- circuit breaker: NS100N-MA 100
- contactor: LC3-D50
- thermal relay: LR2-D3357.



Solution with thermal-magnetic motor circuit breaker.

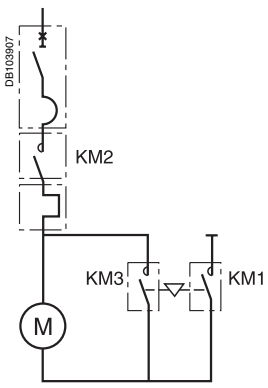
Star-delta starting and type 2 coordination

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 143:
- circuit breaker: NS160H with STR22ME
- starter: LC1-F115A to be replaced by LC3-F115.



Solution with magnetic motor circuit breaker.

Starting class and thermal relays

The data in the tables chapter "Installation recommandations" (catalogue ref. ABTED201147EN) corresponds 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

Example: e.g.NS100H MA 100 for 80 A maximum. LC1F115 for 92 A maximum.

■ **these tables may also be used for standard thermal protection using current transformers.**

The required thermal relays are:

□ LR2-D1305 (0.63 to 1 A) for class 10

□ LR2-D1505 (0.63 to 1 A) for class 20 with terminal block LA7-D1064.

The current transformer ratings must be 5 VA per phase. The other characteristics are identical to those described below.

■ 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	Connecting	
		Direct	Using current trans.
LT6-P0M005 FM	0.2 to 1 A	■	■
	1 to 5 A	■	■
LT6-P0M025 FM	5 to 25 A	■	

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

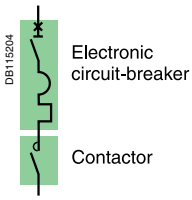
5 **P** **10**

Accuracy class (5 %)

CT intended for motor protection

Multiple of the saturation current

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



Merlin Gerin circuit breakers,Telemecanique contactors

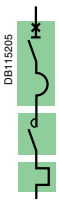
Performance: U = 220/240 V				
Circuit breakers	**N**	**SX**	**H**	**L**
NS100-STR22ME	85 kA	90 kA	100 kA	130 kA
NS160-STR22ME	85 kA	90 kA	100 kA	130 kA
NS250-STR22ME	85 kA	90 kA	100 kA	130 kA
NS400-STR43ME	85 kA	-	100 kA	130 kA
NS630-STR43ME	85 kA	-	100 kA	130 kA
NS630bL/NS1000L Micrologic 5.0	-	-	-	130 kA

Starting	**STR22ME**	**STR43ME**
Normal	class 10	class 10
Long	-	class 20

Motors				**Circuit breakers**				**Contactors**
P (kW)	**I (A) 220 V**	**I (A) 240 V**	**Ie max (A)**	**Type**	**Trip unit**	**Irth (A)**	**Irm (A)**	**Type**
4	15	14	20	NS100	STR22ME	7.5/20	13 Irth	LC1-D80
5.5	21	19	25	NS100	STR22ME	7.5/25	13 Irth	LC1-D80
6.3	24	22	25	NS100	STR22ME	7.5/25	13 Irth	LC1-D80
7.5	28	25	40	NS100	STR22ME	24/40	13 Irth	LC1-D80
10	36	33	40	NS100	STR22ME	24/40	13 Irth	LC1-D80
11	39	36	40	NS100	STR22ME	24/40	13 Irth	LC1-D80
15	52	48	80	NS100	STR22ME	48/80	13 Irth	LC1-D80
18.5	63	59	80	NS100	STR22ME	48/80	13 Irth	LC1-D80
22	75	70	100	NS100	STR22ME	60/100	13 Irth	LC1-D115 or LC1-F115
				NS400	STR43ME	60/120	13 Irth	LC1-F185
30	100	95	100	NS100	STR22ME	60/100	13 Irth	LC1-D115 or LC1-F115
				NS400	STR43ME	60/120	13 Irth	LC1-F185
37	125	115	150	NS160	STR22ME	90/150	13 Irth	LC1-D150 or LC1-F150
				NS400	STR43ME	100/200	13 Irth	LC1-F185
45	150	140	150	NS160	STR22ME	90/150	13 Irth	LC1-D150 or LC1-F150
				NS400	STR43ME	100/200	13 Irth	LC1-F185
55	180	170	185	NS250	STR22ME	131/220	13 Irth	LC1-F185
				NS400	STR43ME	100/200	13 Irth	LC1-F185
75	250	235	265	NS400	STR43ME	160/320	13 Irth	LC1-F265
90	300	280	320	NS400	STR43ME	160/320	13 Irth	LC1-F330
110	360	330	400	NS630	STR43ME	250/500	13 Irth	LC1-F400
132	430	400	500	NS630	STR43ME	250/500	13 Irth	LC1-F500
150	460	450	500	NS630	STR43ME	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

Note: *where more than one association is possible for a rated power, if the motor starting current is high or unknown, the highest association shoud be applied.*

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



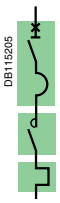
Merlin Gerin circuit breakers, Telemecanique contactors and thermal relays

Performance: U = 220/240 V			
Circuit breakers	**N**	**H**	**L**
NS80-MA	-	100 kA	-
Starting (2): normal		LRD class 10 A	

Motors				Circuit breakers			Contactors (1)	Thermal relays	
P (kW)	**I (A) 220 V**	**I (A) 240 V**	**Ie max (A)**	**Type**	**Rating (A)**	**Irm (A)**	**Type**	**Type**	**Irth (A) (2)**
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) *Reversers: replace LC1 by LC2; star-delta starter: replace LC1 by LC3.*
(2) *For long starting (class 20), see the correspondence table for thermal relay.*

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



Merlin Gerin circuit breakers, Telemecanique contactors and thermal relays

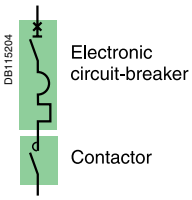
Performance: U = 220/240 V				
Circuit breakers	**N**	**SX**	**H**	**L**
NS100-MA	85 kA	90 kA	100 kA	130 kA
NS160/250-MA	85 kA	90 kA	100 kA	130 kA
NS400/630-MA	-	-	100 kA	130 kA
NS800L/NS1000L Micrologic 5.0	-	-	-	130 kA
Starting (2): normal			LRD class 10 A, LR9 class 10	

Motors				**Circuit breakers**			**Contactors (1)**	**Thermal relays**	
P (kW)	**I (A) 220 V**	**I (A) 240 V**	**Ie max (A)**	**Type**	**Rating (A)**	**Irm (A)**	**Type**	**Type**	**Irth (A) (2)**
0.18	1.2	1.1	1.6	NS100-MA	2.5	23.5	LC1-D09	LRD-06	1/1.6
0.25	1.5	1.4	2.5	NS100-MA	2.5	32.5	LC1-D09	LRD-07	1.6/2.5
0.37	2	1.8	2.5	NS100-MA	2.5	32.5	LC1-D09	LRD-07	1.6/2.5
0.55	2.8	2.6	4	NS100-MA	6.3	57	LC1-D32	LRD-08	2.5/4
0.75	3.5	3.2	4	NS100-MA	6.3	57	LC1-D32	LRD-08	2.5/4
1.1	5	4.5	6	NS100-MA	6.3	82	LC1-D32	LRD-10	4/6
1.5	6.5	6	8	NS100-MA	12.5	113	LC1-D40	LRD-33 12	5.5/8
2.2	9	8	10	NS100-MA	12.5	138	LC1-D40	LRD-33 14	7/10
3	12	11	12.5	NS100-MA	12.5	163	LC1-D40	LRD-33 16	9/13
4	15	14	18	NS100MA	25	250	LC1-D40	LRD-33 21	12/18
5.5	21	19	25	NS100-MA	25	325	LC1-D40	LRD-33 22	17/25
6.3	24	22	25	NS100-MA	25	325	LC1-D40	LRD-33 22	17/25
7.5	28	25	32	NS100-MA	50	450	LC1-D80	LRD-33 53	23/32
10	36	33	40	NS100-MA	50	550	LC1-D80	LRD-33 55	30/40
11	39	36	40	NS100-MA	50	550	LC1-D80	LRD-33 55	30/40
15	52	48	63	NS100-MA	100	700	LC1-D80	LRD-33 59	48/65
18.5	63	59	63	NS100-MA	100	900	LC1-D80	LRD-33 59	48/65
22	75	70	80	NS100-MA	100	1100	LC1-D80	LRD-33 63	63/80
30	100	95	100	NS100-MA	100	1300	LC1-D115 LC1-F115	LRD-53 67 LR9-F53 67	60/100
37	125	115	150	NS160-MA	150	1950	LC1-D150 LC1-F150	LR9-D53 69 LR9-F53 69	90/150
45	150	140	150	NS160-MA	150	1950	LC1-D150 LC1-F150	LR9-D53 69 LR9-F53 69	90/150
55	180	170	185 220	NS250-MA NS400-MA	220 320	2420 2880	LC1-F185 LC1-F265	LR9-F53 71	132/220
75	250	235	265	NS400-MA	320	3500	LC1-F265	LR9-F73 75	200/330
90	300	270	320	NS400-MA	320	4160	LC1-F330	LR9-F73 75	200/330
110	360	330	400	NS630-MA	500	5700	LC1-F400	LR9-F73 79	300/500
132	430	400	500	NS630-MA	500	6500	LC1-F500	LR9-F73 79	300/500
150	460	450	500	NS630-MA	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) *Reversers: replace LC1 by LC2; star-delta starter: replace LC1 by LC3.*
(2) *For long starting (class 20), see the correspondence table for thermal relay.*

Note: *where more than one association is possible for a rated power, if the motor starting current is high or unknown, the highest association shoud be applied.*

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



Merlin Gerin circuit breakers,Telemecanique contactors

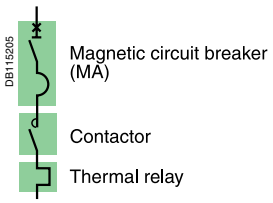
Performance: U = 380/415 V				
Circuit breakers	**N**	**SX**	**H**	**L**
NS100-STR22ME	36 kA	50 kA	70 kA	130 kA
NS160-STR22ME	36 kA	50 kA	70 kA	130 kA
NS250-STR22ME	36 kA	50 kA	70 kA	130 kA
NS400-STR43ME	50 kA	-	70 kA	130 kA
NS630-STR43ME	50 kA	-	70 kA	130 kA
NS800L/NS1000L Micrologic 5	-	-	-	130 kA
Starting: standard		IEC 60947-4-1, type 2		
		STR22ME	**STR43ME**	**Micrologic 5.0**
Normal		class 10	class 10	class 10
Long		-	class 20	class 20

Motors				**Circuit breakers**				**Contactors** (1)
P (kW)	**I (A) 380 V**	**I (A) 415 V**	**Ie max (A)**	**Type**	**Trip unit/t.u.**	**Irth(A)**	**Irm(A)** (2)	**Type**
7.5	16	14	20	NS100	STR22ME	10/20	13 Irth	LC1-D80
10	21	19	25	NS100	STR22ME	15/25	13 Irth	LC1-D80
11	23	21	25	NS100	STR22ME	15/25	13 Irth	LC1-D80
15	30	28	40	NS100	STR22ME	24/40	13 Irth	LC1-D80
18.5	37	35	40	NS100	STR22ME	24/40	13 Irth	LC1-D80
22	44	40	50	NS100	STR22ME	30/50	13 Irth	LC1-D80
30	60	55	80	NS100	STR22ME	48/80	13 Irth	LC1-D80
37	72	66	80	NS100	STR22ME	48/80	13 Irth	LC1-D80
45	85	80	100	NS100	STR22ME	60/100	13 Irth	LC1-D115 or LC1-F115
				NS400	STR43ME	60/120	13 Irth	LC1-F185
55	105	100	115	NS160	STR22ME	90/150	13 Irth	LC1-D115 or LC1-F115
				NS400	STR43ME	60/120	13 Irth	LC1-F185
75	138	135	150	NS160	STR22ME	90/150	13 Irth	LC1-D150 or LC1-F150
				NS400	STR43ME	100/200	13 Irth	LC1-F185
90	170	165	185	NS250	STR22ME	131/220	13 Irth	LC1-F185
				NS400	STR43ME	100/200	13 Irth	LC1-F185
110	205	200	220	NS250	STR22ME	131/220	13 Irth	LC1-F225
				NS400	STR43ME	100/200	13 Irth	LC1-F225
132	250	240	265	NS400	STR43ME	160/320	13 Irth	LC1-F265
160	300	280	320	NS400	STR43ME	160/320	13 Irth	LC1-F330
200	370	340	400	NS630	STR43ME	250/500	13 Irth	LC1-F400
220	408	385	500	NS630	STR43ME	250/500	13 Irth	LC1-F500
250	460	425	500	NS630	STR43ME	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	710	NS800L	Micrologic 5.0	320/800	9600	LC1-F780
400	710	660	710	NS800L	Micrologic 5.0	320/800	9600	LC1-F780
450	800	750	800	NS1000L	Micrologic 5.0	400/1000	10000	LC1-F780

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

Note: *where more than one association is possible for a rated power, if the motor starting current is high or unknown, the highest association shoud be applied.*

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



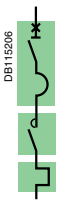
Merlin Gerin circuit breakers, Telemecanique contactors and thermal relays

Performance: U = 380/415 V			
Circuit breakers	**N**	**H**	**L**
NS80-MA	-	70 kA	-
Starting (2)**:** normal		LRD class 10 A	

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

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

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



Merlin Gerin circuit breakers, Telemecanique contactors and thermal relays

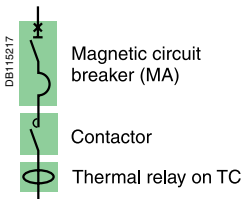
Performance: U = 380/415 V				
Circuit breakers	**N**	**SX**	**H**	**L**
NS100-MA	36 kA	50 kA	70 kA	130 kA
NS160/250-MA	36 kA	50 kA	70 kA	130 kA
NS400/630-MA	-	-	70 kA	130 kA
NS630bL/NS1000L	-	-	-	130 kA
Starting (2): normal		LRD class 10 A, other classes 10		

Motors				**Circuit breakers**			**Contactors (1)**	**Thermal relays**	
P (kW)	**I (A) 380 V**	**I (A) 415 V**	**Ie max (A)**	**Type**	**Rating (A)**	**Irm (A) (3)**	**Type**	**Type**	**Irth (2)**
0.37	1.2	1.1	1.6	NS100-MA	2.5	22.5	LC1-D09	LRD-06	1/1.6
0.55	1.6	1.5	2.5	NS100-MA	2.5	32.5	LC1-D09	LRD-07	1.6/2.5
0.75	2	1.8	2.5	NS100-MA	2.5	32.5	LC1-D09	LRD-07	1.6/2.5
1.1	2.8	2.6	4	NS100-MA	6.3	57	LC1-D32	LRD-08	2.5/4
1.5	3.7	3.4	4	NS100-MA	6.3	57	LC1-D32	LRD-08	2.5/4
2.2	5.3	4.8	6	NS100-MA	6.3	82	LC1-D32	LRD-10	4/6
3	7	6.5	8	NS100-MA	12.5	113	LC1-D40	LRD-33 12	5.5/8
4	9	8.2	10	NS100-MA	12.5	138	LC1-D40	LRD-33 14	7 /10
5.5	12	11	12.5	NS100-MA	12.5	163	LC1-D40	LRD-33 16	9/13
7.5	16	14	18	NS100-MA	25	250	LC1-D40	LRD-33 21	12/18
10	21	19	25	NS100-MA	25	325	LC1-D40	LRD-33 22	17/25
11	23	21	25	NS100-MA	25	325	LC1-D40	LRD-33 22	17/25
15	30	28	32	NS100-MA	50	450	LC1-D80	LRD-33 53	23/32
18.5	37	34	40	NS100-MA	50	550	LC1-D80	LRD-33 55	30/40
22	43	40	50	NS100-MA	50	650	LC1-D80	LRD-33 57	37/50
30	59	55	63	NS100-MA	100	900	LC1-D80	LRD-33 59	48/65
37	72	66	80	NS100-MA	100	1100	LC1-D80	LRD-33 63	63/80
45	85	80	100	NS100-MA	100	1300	LC1-D115 LC1-F115	LR9-D53 67 LR9-F53 67	60/100
55	105	100	115	NS160-MA	150	1500	LC1-D115 LC1-F115	LR9-D53 69 LR9-F53 69	90/150
75	140	135	150	NS160-MA	150	1950	LC1-D150 LC1-F150	LR9-D53 69 LR9-F53 69	90/150
90	170	160	185	NS250-MA	220	2420	LC1-F185	LR9-F53 71	132/220
110	210	200	220	NS250-MA NS400-MA	220 320	2860 2880	LC1-F225 LC1-F265	LR9-F53 71	132/220
132	250	230	265	NS400-MA	320	3500	LC1-F265	LR9-F73 75	200/330
160	300	270	320	NS400-MA	320	4160	LC1-F330	LR9-F73 75	200/330
200	380	361	400	NS630-MA	500	5700	LC1-F400	LR9-F73 79	300/500
220	420	380	500	NS630-MA	500	6500	LC1-F500	LR9-F73 79	300/500
250	460	430	500	NS630-MA	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
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	710	NS800L Micrologic 5.0 - LR off	800	9600	LC1-F780	TC800/5 + LRD-10	630/1000
400	710	660	710	NS800L Micrologic 5.0 - LR off	800	9600	LC1-F780	TC800/5 + LRD-10	630/1000
450	800	750	800	NS1000L Micrologic 5.0 - LR off	1000	10000	LC1-F780	TC800/5 + LRD-10	630/1000

(1) *Reversers: replace LC1 by LC2; star-delta starter: replace LC1 by LC3.*
(2) *For long starting (class 20), see the correspondence table for thermal relay.*
(3) *Ii for Micrologic 5.0 control unit.*

Note: *where more than one association is possible for a rated power, if the motor starting current is high or unknown, the highest association shoud be applied.*

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



Merlin Gerin circuit breakers, Telemecanique contactors and thermal relays

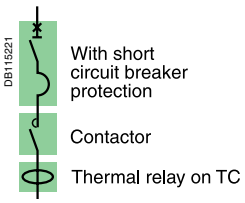
Performance: U = 380/415 V			
Circuit breakers	**N**	**H**	**L**
NS80-MA	-	70 kA	-

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

Motors				Circuit breakers			Contactors (2)	Thermal relays	
P (kW)	I (A) 380 V	I (A) 415 V	Ie max (A)	Type	Rating (A)	Irm (A)	Type	Type	Irth (A) (1)
0.18	0.7	0.6	1	NS80H-MA	1.5	13.5	LC1-D40	LT6-P0M	0.2/1
0.25	0.9	0.8	1	NS80H-MA	1.5	13.5	LC1-D40	LT6-P0M	0.2/1
0.37	1.2	1.1	2.5	NS80H-MA	2.5	32.5	LC1-D40	LT6-P0M	1/5
0.55	1.6	1.5	2.5	NS80H-MA	2.5	32.5	LC1-D40	LT6-P0M	1/5
0.75	2	1.8	2.5	NS80H-MA	2.5	32.5	LC1-D40	LT6-P0M	1/5
1.1	2.8	2.6	5	NS80H-MA	6.3	70	LC1-D40	LT6-P0M	1/5
1.5	3.7	3.4	5	NS80H-MA	6.3	70	LC1-D40	LT6-P0M	1/5
2.2	5.3	4.8	6.3	NS80H-MA	6.3	82	LC1-D40	LT6-P0M	5/25
3	7	6.5	12.5	NS80H-MA	12.5	163	LC1-D40	LT6-P0M	5/25
4	9	8.2	12.5	NS80H-MA	12.5	163	LC1-D40	LT6-P0M	5/25
5.5	12	11	12.5	NS80H-MA	12.5	163	LC1-D40	LT6-P0M	5/25
7.5	16	14	25	NS80H-MA	25	325	LC1-D40	LT6-P0M	5/25
10	21	19	25	NS80H-MA	25	325	LC1-D40	LT6-P0M	5/25
11	23	21	25	NS80H-MA	25	325	LC1-D40	LT6-P0M	5/25
15	30	28	50	NS80H-MA	50	650	LC1-D80	LT6-P0M	on TC
18.5	37	34	50	NS80H-MA	50	650	LC1-D80	LT6-P0M	on TC
22	43	40	50	NS80H-MA	50	650	LC1-D80	LT6-P0M	on TC
30	59	55	80	NS80H-MA	80	1040	LC1-D80	LT6-P0M	on TC
37	72	66	80	NS80H-MA	80	1040	LC1-D80	LT6-P0M	on TC

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

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



Merlin Gerin circuit breakers,Telemecanique contactors and thermal relays

Performance: U = 380/415 V				
Circuit breakers	**N**	**SX**	**H**	**L**
NS100-MA	36 kA	50 kA	70 kA	130 kA
NS160/250-MA	36 kA	50 kA	70 kA	130 kA
NS400/630-MA	-	-	70 kA	130 kA
NS630bL/1000L	-	-	-	130 kA

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

Motors				**Circuit breakers**			**Contactors** (2)	**Thermal relays**	
P (kW)	**I (A) 380 V**	**I (A) 415 V**	**Ie max (A)**	**Type**	**Rating (A)**	**Irm (A)** (3)	**Type**	**Type**	**Irth (A)** (1)
0.37	1.2	1.1	2.5	NS100-MA	2.5	32.5	LC1-D40	LT6-P0M	1/5
0.55	1.6	1.5	2.5	NS100-MA	2.5	32.5	LC1-D40	LT6-P0M	1/5
0.75	2	1.8	2.5	NS100-MA	2.5	32.5	LC1-D40	LT6-P0M	1/5
1.1	2.8	2.6	5	NS100-MA	6.3	70	LC1-D40	LT6-P0M	1/5
1.5	3.7	3.4	5	NS100-MA	6.3	70	LC1-D40	LT6-P0M	1/5
2.2	5.3	4.8	6.3	NS100-MA	6.3	82	LC1-D40	LT6-P0M	5/25
3	7	6.5	12.5	NS100-MA	12.5	163	LC1-D80	LT6-P0M	5/25
4	9	8.2	12.5	NS100-MA	12.5	163	LC1-D80	LT6-P0M	5/25
5.5	12	11	12.5	NS100-MA	12.5	163	LC1-D80	LT6-P0M	5/25
7.5	16	14	25	NS100-MA	25	325	LC1-D80	LT6-P0M	5/25
10	21	19	25	NS100-MA	25	325	LC1-D80	LT6-P0M	5/25
11	23	21	25	NS100-MA	25	325	LC1-D80	LT6-P0M	5/25
15	30	28	50	NS100-MA	50	650	LC1-D80	LT6-P0M	on TC
18.5	37	34	50	NS100-MA	50	650	LC1-D80	LT6-P0M	on TC
22	43	40	50	NS100-MA	50	650	LC1-D80	LT6-P0M	on TC
30	59	55	80	NS100-MA	100	1100	LC1-D80	LT6-P0M	on TC
37	72	66	80	NS100-MA	100	1100	LC1-D80	LT6-P0M	on TC
45	85	80	100	NS100-MA	100	1300	LC1-D115 LC1-F115	LT6-P0M	on TC
55	105	100	115	NS160-MA	150	1500	LC1-D115 LC1-F115	LT6-P0M	on TC
75	140	135	150	NS160-MA	150	1950	LC1-D150 LC1-F150	LT6-P0M	on TC
90	170	160	185	NS250-MA	220	2420	LC1-F185	LT6-P0M	on TC
110	210	200	220	NS250-MA	220	2860	LC1-F225	LT6-P0M	on TC
			265	NS400-MA	320	3500	LC1-F265		
132	250	230	265	NS400-MA	320	3500	LC1-F265	LT6-P0M	on TC
160	300	270	320	NS400-MA	320	4000	LC1-F330	LT6-P0M	on TC
200	380	361	400	NS630-MA	500	5700	LC1-F400	LT6-P0M	on TC
220	420	380	500	NS630-MA	500	6300	LC1-F500	LT6-P0M	on TC
250	460	430	500	NS630-MA	500	6300	LC1-F500	LT6-P0M	on TC
			630	NS800L Micrologic 5.0 - LR off	630	8000	LC1-F630	LT6-P0M	on TC
300	565	500	630	NS800L Micrologic 5.0 - LR off	800	8000	LC1-F630	LT6-P0M	on TC
335	620	560	630	NS800L Micrologic 5.0 - LR off	800	8000	LC1-F630	LT6-P0M	on TC
375	670	620	710	NS800L Micrologic 5.0 - LR off	800	9600	LC1-F800/780	LT6-P0M	on TC
400	710	660	710	NS800L Micrologic 5.0 - LR off	800	9600	LC1-F800/780	LT6-P0M	on TC
450	800	750	800	NS1000L Micrologic 5.0 - LR off	1000	10000	LC1-F800/780	LT6-P0M	on TC

(1) *For installation with a class 30 relay, a derating of 20 % must be apply on circuit breakers.*
(2) *Reversers: replace LC1 by LC2; star-delta starter: replace LC1 by LC3.*
(3) *Ii for Micrologic 5.0 control unit.*

Note: *where more than one association is possible for a rated power, if the motor starting current is high or unknown, the highest association shoud be applied.*

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

Merlin Gerin circuit breakers,Telemecanique contactors

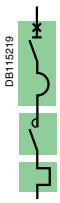
Performance (1): U = 440 V				
Circuit breakers	**N**	**SX**	**H**	**L**
NS100-STR22ME	35 kA	50 kA	65 kA	130 kA
NS160-STR22ME	35 kA	50 kA	65 kA	130 kA
NS250-STR22ME	35 kA	50 kA	65 kA	130 kA
NS400-STR43ME	42 kA	-	65 kA	130 kA
NS630-STR43ME	42 kA	-	65 kA	130 kA
NS800L/1000L	-	-	-	130 kA
Starting: standard		IEC 60947-4-1, type 2.		
		STR22ME		**STR43ME**
Normal		Class 10		Class 10
Long		-		Class 20

Motors			**Circuit breakers**				**Contactors (2)**
P (kW)	**I (A) 440 V**	**Ie max (A)**	**Type**	**Trip unit/t.u.**	**Irth (A)**	**Irm (A) (3)**	**Type**
7.5	13.7	20	NS100	STR22ME	12/20	13Irth	LC1-D80
10	19	25	NS100	STR22ME	15/25	13Irth	LC1-D80
11	20	25	NS100	STR22ME	15/25	13Irth	LC1-D80
15	26.5	40	NS100	STR22ME	24/40	13Irth	LC1-D80
18.5	33	40	NS100	STR22ME	24/40	13Irth	LC1-D80
22	39	40	NS100	STR22ME	24/40	13Irth	LC1-D80
30	51	80	NS100	STR22ME	48/80	13Irth	LC1-D80
37	64	80	NS100	STR22ME	48/80	13Irth	LC1-D80
45	76	80	NS100	STR22ME	48/80	13Irth	LC1-D80
55	90	100	NS100	STR22ME	60/100	13Irth	LC1-D115 or LC1-F115
			NS400	STR43ME	60/120	13Irth	LC1-F185
75	125	150	NS160	STR22ME	90/150	13Irth	LC1-D150 or LC1-F150
			NS400	STR43ME	100/200	13Irth	LC1-F185
90	146	150	NS160	STR22ME	90/150	13Irth	LC1-D150 or LC1-F150
			NS400	STR43ME	100/200	13Irth	LC1-F185
110	178	185	NS250	STR22ME	131/220	13Irth	LC1-F185
			NS400	STR43ME	100/200	13Irth	LC1-F185
132	215	220	NS250	STR22ME	131/220	13Irth	LC1-F225
			NS400	STR43ME	160/3200	13Irth	LC1-F225
160	256	265	NS400	STR43ME	160/320	13Irth	LC1-F265
200	320	320	NS400	STR43ME	160/320	13Irth	LC1-F330
220	353	400	NS630	STR43ME	250/500	13Irth	LC1-F400
250	400	400	NS630	STR43ME	250/500	13Irth	LC1-F400
300	460	500	NS630	STR43ME	250/500	13Irth	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) *Reversers: replace LC1 by LC2; star-delta starter: replace LC1 by LC3.*
(3) *Ii for Micrologic 5.0 control unit.*

Note: *where more than one association is possible for a rated power, if the motor starting current is high or unknown, the highest association shoud be applied.*

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



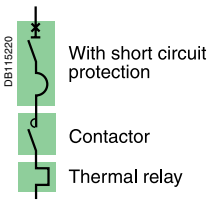
Merlin Gerin circuit breakers, Telemecanique contactors and thermal relays

Performance (1): U = 440 V			
Circuit breakers	**N**	**H**	**L**
NS80-MA	-	65 kA	-
Starting (3): normal		LRD class 10 A	

Motors			Circuit breakers			Contactors (2)	Thermal relays	
P (kW)	**I (A) 440 V**	**Ie max (A)**	**Type**	**Rating (A)**	**Irm (A)**	**Type**	**Type**	**Irth (A) (3)**
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) *Valid for 480 V NEMA.*
(2) *Reversers: replace LC1 by LC2; star-delta starter: replace LC1 by LC3.*
(3) *For long starting (class 20), see the correspondence table for thermal relay.*

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



Merlin Gerin circuit breakers, Telemecanique contactors and thermal relays

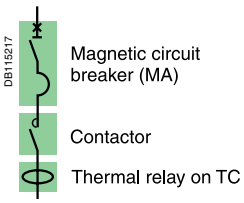
Performance [1]: U = 440 V				
Circuit breakers	**N**	**SX**	**H**	**L**
NS100-MA	35 kA	50 kA	65 kA	130 kA
NS160/250-MA	35 kA	50 kA	65 kA	130 kA
NS400/630-MA	-	-	65 kA	130 kA
NS800L/NS1000L	-	-	-	130 kA
Starting [4]: normal		LRD class 10 A, LR9 class 10.		

Motors			**Circuit breakers**			**Contactors [2]**	**Thermal relays**	
P (kW)	**I (A) 440 V**	**Ie max (A)**	**Type**	**Rating (A)**	**Irm (A) [3]**	**Type**	**Type**	**Irth (A) [4]**
0.37	1	1.6	NS100-MA	2.5	22.5	LC1-D09	LRD-06	1/1.6
0.55	1.4	1.6	NS100-MA	2.5	22.5	LC1-D09	LRD-06	1/1.6
0.75	1.7	2.5	NS100-MA	2.5	32.5	LC1-D09	LRD-07	1.6/2.5
1.1	2.4	2.5	NS100-MA	2.5	32.5	LC1-D09	LRD-07	1.6/2.5
1.5	3.1	4	NS100-MA	6.3	57	LC1-D32	LRD-08	2.5/4
2.2	4.5	6	NS100-MA	6.3	82	LC1-D32	LRD-10	4/6
3	5.8	6	NS100-MA	6.3	82	LC1-D32	LRD-10	4/6
4	8	8	NS100-MA	12.5	113	LC1-D40	LRD-33 12	5.5/8
5.5	10.5	12.5	NS100-MA	12.5	163	LC1-D40	LRD-33 16	9/13
7.5	13.7	18	NS100-MA	25	250	LC1-D40	LRD-33 21	12/18
10	19	25	NS100-MA	25	325	LC1-D40	LRD-33 22	17/25
11	20	25	NS100-MA	25	325	LC1-D40	LRD-33 22	17/25
15	26.5	32	NS100-MA	50	450	LC1-D80	LRD-33 53	23/32
18.5	33	40	NS100-MA	50	550	LC1-D80	LRD-33 55	30/40
22	39	40	NS100-MA	50	550	LC1-D80	LRD-33 55	30/40
30	52	63	NS100-MA	100	900	LC1-D80	LRD-33 59	48/65
37	63	63	NS100-MA	100	900	LC1-D80	LRD-33 59	48/65
45	76	80	NS100-MA	100	1100	LC1-D80	LRD-33 63	63/80
55	90	100	NS100-MA	100	1300	LC1-D115 LC1-F115	LR9-D53 67 LR9-F53 67	60/100
75	125	150	NS160-MA	150	1950	LC1-D150 LC1-F150	LR9-D53 69 LR9-F53 69	90/150
90	140	150	NS160-MA	150	1950	LC1-D150 LC1-F150	LR9-D53 69 LR9-F53 69	90/150
110	178	185	NS250-MA	220	2420	LC1-F185	LR9-F53 71	132/220
132	210	220 265	NS250-MA NS400-MA	220 320	2860 3500	LC1-F225 LC1-F265	LR9-F53 71	132/220
160	256	265	NS400-MA	320	3500	LC1-F265	LR9-F73 75	200/330
200	310	320	NS400-MA	320	4160	LC1-F330	LR9-F73 75	200/330
220	353	400	NS630-MA	500	5500	LC1-F400	LR9-F73 79	300/500
250	400	500	NS630-MA	500	6500	LC1-F500	LR9-F73 79	300/500
300	460	500 630	NS630-MA NS800L Micrologic 5.0 - LR off	500 800	6500 8000	LC1-F500 LC1-F630	LR9-F73 79 LR9-F73 81	300/500 380/630
335	540	630	NS800L Micrologic 5.0 - LR off	800	6400	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	8000	LC1-F780	TC800/5 + LRD-10	630/1000
450	720	720	NS800L Micrologic 5.0 - LR off	800	9600	LC1-F780	TC800/5 + LRD-10	630/1000
500	800	800	NS1000L Micrologic 5.0 - LR off	1000	10000	LC1-F780	TC800/5 + LRD-10	630/1000

(1) *Valid for 480 V NEMA.*
(2) *Reversers: replace LC1 by LC2; star-delta starter: replace LC1 by LC3.*
(3) *Ii for Micrologic 5.0 control unit.*
(4) *For long starting (class 20), see the correspondence table for thermal relay.*

Note: *where more than one association is possible for a rated power, if the motor starting current is high or unknown, the highest association shoud be applied.*

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



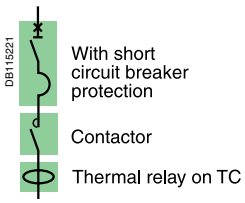
Merlin Gerin circuit breakers, Telemecanique contactors and thermal relays

Performance (1): U = 440 V			
Circuit breakers	**N**	**H**	**L**
NS80-MA	-	65 kA	-
Starting (3):		adjustable class 10 A to 30.	

Motors			Circuit breakers			Contactors (2)	Thermal relays	
P (kW)	**I (A) 440 V**	**Ie max (A)**	**Type**	**Rating (A)**	**Irm (A)**	**Type**	**Type**	**Irth (A) (3)**
0.25	0.7	1	NS80H-MA	1.5	13.5	LC1-D40	LT6-P0M	0.2/1
0.37	1	2.5	NS80H-MA	2.5	32.5	LC1-D40	LT6-P0M	1/5
0.55	1.4	2.5	NS80H-MA	2.5	32.5	LC1-D40	LT6-P0M	1/5
0.75	1.7	2.5	NS80H-MA	2.5	32.5	LC1-D40	LT6-P0M	1/5
1.1	2.4	2.5	NS80H-MA	2.5	32.5	LC1-D40	LT6-P0M	1/5
1.5	3.1	4	NS80H-MA	6.3	82	LC1-D40	LT6-P0M	1/5
2.2	4.5	5	NS80H-MA	6.3	82	LC1-D40	LT6-P0M	1/5
3	5.8	6.3	NS80H-MA	6.3	82	LC1-D40	LT6-P0M	5/25
4	8	12.5	NS80H-MA	12.5	163	LC1-D40	LT6-P0M	5/25
5.5	10.5	12.5	NS80H-MA	12.5	163	LC1-D40	LT6-P0M	5/25
7.5	13.7	25	NS80H-MA	25	325	LC1-D40	LT6-P0M	5/25
10	19	25	NS80H-MA	25	325	LC1-D40	LT6-P0M	5/25
11	20	25	NS80H-MA	25	325	LC1-D40	LT6-P0M	5/25
15	26.5	50	NS80H-MA	50	550	LC1-D80	LT6-P0M	on TC
18.5	33	50	NS80H-MA	50	550	LC1-D80	LT6-P0M	on TC
22	39	50	NS80H-MA	50	550	LC1-D80	LT6-P0M	on TC
30	52	80	NS80H-MA	80	1040	LC1-D80	LT6-P0M	on TC
37	63	80	NS80H-MA	80	1040	LC1-D80	LT6-P0M	on TC
45	76	80	NS80H-MA	80	1040	LC1-D80	LT6-P0M	on TC

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

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



Merlin Gerin circuit breakers, Telemecanique contactors and thermal relays

Performance [2]: U = 440 V				
Circuit breakers	**N**	**SX**	**H**	**L**
NS100-MA	35 kA	50 kA	65 kA	130 kA
NS160/250-MA	35 kA	50 kA	65 kA	130 kA
NS400/630-MA	-	-	65 kA	130 kA
NS800L/NS1000L	-	-	-	130 kA

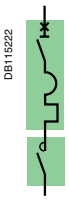
Starting [1]: normal adjustable class 10 A to 30.

Motors			**Circuit breakers**			**Contactors [3]**	**Thermal relays**	
P (kW)	**I (A) 440 V**	**Ie max (A)**	**Type**	**Rating (A)**	**Irm (A) [4]**	**Type**	**Type**	**Irth (A) [1]**
0.37	1	2.5	NS100-MA	2.5	32.5	LC1-D40	LT6-P0M	1/5
0.55	1.4	2.5	NS100-MA	2.5	32.5	LC1-D40	LT6-P0M	1/5
0.75	1.7	2.5	NS100-MA	2.5	32.5	LC1-D40	LT6-P0M	1/5
1.1	2.4	2.5	NS100-MA	2.5	32.5	LC1-D40	LT6-P0M	1/5
1.5	3.1	5	NS100-MA	6.3	82	LC1-D40	LT6-P0M	1/5
2.2	4.5	5	NS100-MA	6.3	82	LC1-D40	LT6-P0M	1/5
3	5.8	6.3	NS100-MA	6.3	82	LC1-D40	LT6-P0M	5/25
4	8	12.5	NS100-MA	12.5	163	LC1-D80	LT6-P0M	5/25
5.5	10.5	12.5	NS100-MA	12.5	163	LC1-D80	LT6-P0M	5/25
7.5	13.7	25	NS100-MA	25	325	LC1-D80	LT6-P0M	5/25
10	19	25	NS100-MA	25	325	LC1-D80	LT6-P0M	5/25
11	20	25	NS100-MA	25	325	LC1-D80	LT6-P0M	5/25
15	26.5	50	NS100-MA	50	550	LC1-D80	LT6-P0M	on TC
18.5	33	50	NS100-MA	50	550	LC1-D80	LT6-P0M	on TC
22	39	50	NS100-MA	50	550	LC1-D80	LT6-P0M	on TC
30	52	80	NS100-MA	100	1100	LC1-D80	LT6-P0M	on TC
37	63	80	NS100-MA	100	1100	LC1-D80	LT6-P0M	on TC
45	76	80	NS100-MA	100	1100	LC1-D80	LT6-P0M	on TC
55	90	100	NS100-MA	100	1300	LC1-D115 LC1-F115	LT6-P0M	on TC
75	125	150	NS160-MA	150	1950	LC1-D150 LC1-F150	LT6-P0M	on TC
90	140	150	NS160-MA	150	1950	LC1-D150 LC1-F150	LT6-P0M	on TC
110	178	185	NS250-MA	220	2420	LC1-F185	LT6-P0M	on TC
132	210	220	NS250-MA	220	2860	LC1-F225	LT6-P0M	on TC
		265	NS400-MA	320	3500	LC1-F265		
160	256	265	NS400-MA	320	3500	LC1-F265	LT6-P0M	on TC
200	310	320	NS400-MA	320	4000	LC1-F330	LT6-P0M	on TC
220	353	400	NS630-MA	500	5500	LC1-F400	LT6-P0M	on TC
250	400	500	NS630-MA	500	6500	LC1-F500	LT6-P0M	on TC
300	460	500	NS630-MA	500	6500	LC1-F500	LT6-P0M	on TC
		630	NS800L Micrologic 5.0 - LR off	800	8000	LC1-F630	LT6-P0M	on TC
335	540	630	NS800L Micrologic 5.0 - LR off	800	6400	LC1-F630	LT6-P0M	on TC
375	575	630	NS800L Micrologic 5.0 - LR off	800	8000	LC1-F630	LT6-P0M	on TC
400	611	720	NS800L Micrologic 5.0 - LR off	800	8000	LC1-F780	LT6-P0M	on TC
450	720	720	NS800L Micrologic 5.0 - LR off	800	9600	LC1-F780	LT6-P0M	on TC
500	800	800	NS1000L Micrologic 5.0 - LR off	1000	10000	LC1-F780	LT6-P0M	on TC

(1) *For installation 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 by LC2; star-delta starter: replace LC1 by LC3.*

Note: *where more than one association is possible for a rated power, if the motor starting current is high or unknown, the highest association shoud be applied.*

Type 2 coordination (IEC 60947-4-1) 500/525 V



Merlin Gerin circuit breakers,Telemecanique contactors

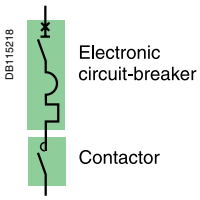
Performance: U = 500/525 V			
Circuit breakers	**H**	**L**	
NS100-STR22ME	50/35 kA	70/50 kA	
NS160-STR22ME	50/35 kA	70/50 kA	
NS250-STR22ME	50/35 kA	70/50 kA	
NS400-STR43ME	50/35 kA	70/50 kA	
NS630-STR43ME	50/35 kA	70/50 kA	
NS800L-Micrologic 5.0	-	100 kA	
Starting: standard	IEC 60947-4-1, type 2.		
	STR22ME	**STR43ME**	**Micrologic 5.0**
Normal	Class 10	Class 10	Class 10
Long	-	Class 20	Class 20

Motors				**Circuit breakers**				**Contactors** (1)
P (kW)	**I (A) 500 V**	**I (A) 525 V**	**Ie max (A)**	**Type**	**Décl./t.u.**	**Irth (A)**	**Irm (A)**	**Type**
10	15	15	20	NS100	STR22ME	12/20	13Irth	LC1-D80
11	18.4	18.4	20	NS100	STR22ME	12/20	13Irth	LC1-D80
15	23	23	25	NS100	STR22ME	15/25	13Irth	LC1-D80
18.5	28.5	28.5	40	NS100	STR22ME	24/40	13Irth	LC1-D80
22	33	33	40	NS100	STR22ME	24/40	13Irth	LC1-D80
30	45	45	50	NS100	STR22ME	30/50	13Irth	LC1-D80
37	55	55	80	NS100	STR22ME	48/80	13Irth	LC1-D80
45	65	65	80	NS100	STR22ME	48/80	13Irth	LC1-D80
55	75	75	100	NS100	STR22ME	60/100	13Irth	LC1-D115 or LC1-F115
				NS400	STR43ME	60/120	13Irth	LC1-G185
75	105	105	115	NS160	STR22ME	90/150	13Irth	LC1-D115 or LC1-F115
				NS400	STR43ME	60/120	13Irth	LC1-F185
90	130	130	150	NS160	STR22ME	90/150	13Irth	LC1-D150 or LC1-F150
				NS400	STR43ME	100/200	13Irth	LC1-F185
110	155	155	185	NS250	STR22ME	131/220	13Irth	LC1-F185
				NS400	STR43ME	100/200	13Irth	LC1-F185
132	185	185	220	NS250	STR22ME	131/220	13Irth	LC1-F265
				NS400	STR43ME	160/320	13Irth	LC1-F265
160	220	220	265	NS400	STR43ME	160/320	13Irth	LC1-F265
200	280	280	320	NS400	STR43ME	160/320	13Irth	LC1-F400
220	310	310	320	NS630	STR43ME	250/500	13Irth	LC1-F500
250	360	360	500	NS630	STR43ME	250/500	13Irth	LC1-F500
315	445	445	500	NS630	STR43ME	250/500	13Irth	LC1-F500
			550	NS800L	Micrologic 5.0	320/800	7200	LC1-F630
335	460	460	550	NS800L	Micrologic 5.0	320/800	7200	LC1-F630
355	500	500	550	NS800L	Micrologic 5.0	320/800	7200	LC1-F630
375	530	530	550	NS800L	Micrologic 5.0	320/800	7200	LC1-F630
400	570	570	630	NS800L	Micrologic 5.0	320/800	8800	LC1-F780
450	630	630	630	NS800L	Micrologic 5.0	320/800	8800	LC1-F780

(1) *Reversers: replace LC1 by LC2; star-delta starter: replace LC1 by LC3.*

Note: *where more than one association is possible for a rated power, if the motor starting current is high or unknown, the highest association shoud be applied.*

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



Merlin Gerin circuit breakers,Telemecanique contactors

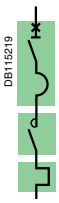
Performance: U = 690 V		
Circuit breakers	**L**	
NS100L-STR22ME	75 kA	
NS400L-STR43ME	75 kA	
NS630LB/NS800LB - Micrologic 5.0	75 kA	
Starting: standard	IEC 60947-4-1, type 2.	
	STR22ME	**STR43ME**
Normal	Class 10	Class 10
Long	-	Class 20

Motors			**Circuit breakers**				**Contactors** (1)
P (kW)	**I (A) 690 V**	**Ie max (A)**	**Type**	**Trip unit/t.u.**	**Irth (A)**	**Irm (A)**	**Type**
10	11.5	20	NS100L	STR22ME	12/20	13Irth	LC1-D80
15	17	20	NS100L	STR22ME	12/20	13Irth	LC1-D80
18.5	20.2	25	NS100L	STR22ME	12/20	13Irth	LC1-D80
22	24.2	40	NS100L	STR22ME	24/40	13Irth	LC1-D80
30	33	50	NS100L	STR22ME	30/50	13Irth	LC1-D80
37	40	50	NS100L	STR22ME	30/50	13Irth	LC1-D80
45	47	50	NS100L	STR22ME	30/50	13Irth	LC1-D80
55	58	63	NS100L	STR22ME	48/80	13Irth	LC1-F115
75	76	80	NS100L	STR22ME	60/100	13Irth	LC1-F115
		165	NS400L	STR43ME	60/120	13Irth	LC1-F265
90	94	165	NS400L	STR43ME	60/120	13Irth	LC1-F265
110	113	165	NS400L	STR43ME	100/200	13Irth	LC1-F265
132	135	165	NS400L	STR43ME	100/200	13Irth	LC1-F265
160	165	165	NS400L	STR43ME	100/200	13Irth	LC1-F265
200	203	230	NS400L	STR43ME	160/320	13Irth	LC1-F330
220	224	230	NS400L	STR43ME	160/320	13Irth	LC1-F330
250	253	255	NS400L	STR43ME	160/320	13Irth	LC1-F400
315	315	500	NS630LB	Micrologic 5.0	630	6900	LC1-F630
355	355	500	NS630LB	Micrologic 5.0	630	6900	LC1-F630
400	400	500	NS630LB	Micrologic 5.0	630	6900	LC1-F630
500	500	500	NS630LB	Micrologic 5.0	630	6900	LC1-F630
560	560	630	NS800LB	Micrologic 5.0	800	8800	LC1-F630
630	630	630	NS800LB	Micrologic 5.0	800	8800	LC1-F630

(1) *Reversers: replace LC1 by LC2; star-delta starter: replace LC1 by LC3.*

Note: *where more than one association is possible for a rated power, if the motor starting current is high or unknown, the highest association shoud be applied.*

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



Magnetic circuit breaker (MA)

Contactor

Thermal relay

Merlin Gerin circuit breakers, Telemecanique contactors and thermal relays

Performance: U = 690 V	
Circuit breakers	**L**
NS100L-MA	75 kA
NS400L-MA	75 kA
NS630LB/NS800LB - Micrologic 5.0	75 kA
Starting (1)**:** normal	LRD class 10 A, other classes 10.

Motors			**Circuit breakers**			**Contactors** (2)	**Thermal relays**	
P (kW)	**I (A) 690 V**	**Ie max (A)**	**Type**	**Rating (A)**	**Irm (A)**	**Type**	**Type**	**Irth (A)**
0.75	1.2	1.6	NS100L MA	2.5	22.5	LC1-D09	LRD-06	1/1.6
1	1.5	2	NS100L MA	2.5	27.5	LC1-D09	LRD-06	1.25/2
1.5	2	2.5	NS100L MA	2.5	32.5	LC1-D09	LRD-07	1.6/2.5
2.2	2.8	4	NS100L MA	6.3	57	LC1-D40	LRD-33 08	2.5/4
3	3.8	4	NS100L MA	6.3	57	LC1-D40	LRD-33 08	2.5/4
4	4.9	6	NS100L MA	6.3	82	LC1-D40	LRD-33 10	4/6
5.5	6.6	8	NS100L MA	12.5	113	LC1-D80	LRD-33 12	5.5/8
7.5	8.9	10	NS100L MA	12.5	138	LC1-D80	LRD-33 14	7/10
10	11.5	13	NS100L MA	25	175	LC1-D80	LRD-33 16	9/13
15	17	18	NS100L MA	25	250	LC1-D80	LRD-33 21	12/18
18.5	20.2	25	NS100L MA	25	325	LC1-D80	LRD-33 22	17/25
22	24.2	25	NS100L MA	25	325	LC1-D80	LRD-33 22	17/25
25	27,5	32	NS100L MA	50	350	LC1-D80	LRD-33 53	23/32
30	33	40	NS100L MA	50	650	LC1-D80	LRD-33 55	30/50
37	40	50	NS100L MA	50	650	LC1-D80	LRD-33 57	30/50
45	47	50	NS100L MA	50	650	LC1-D80	LRD-33 57	30/50
55	58	80	NS100L MA	100	1100	LC1-F115	LR9-F53 63	48/80
75	76	80	NS100L MA	100	1100	LC1-F115	LS9-F53 63	48/80
90	94	100	NS400L MA	320	2880	LC1-F265	LR9-F53 67	60/100
110	113	150	NS400L MA	320	2880	LC1-F265	LR9-F53 69	90/150
132	135	150	NS400L MA	320	2880	LC1-F265	LR9-F53 69	90/150
160	165	165	NS400L MA	320	2880	LC1-F265	LR9-F53 71	132/220
200	203	230	NS400L MA	320	2880	LC1-F330	LR9-F73 75	200/330
220	224	230	NS400L MA	320	2880	LC1-F330	LR9-F73 75	200/330
250	253	255	NS400L MA	320	3520	LC1-F400	LR9-F73 75	200/330
315	315	500	NS630LB	Micrologic 5.0 - LR off	6900	LC1-F630	LR9-F73 79	300/500
355	355	500	NS630LB	Micrologic 5.0 - LR off	6900	LC1-F630	LR9-F73 79	300/500
400	400	500	NS630LB	Micrologic 5.0 - LR off	6900	LC1-F630	LR9-F73 79	300/500
500	500	500	NS630LB	Micrologic 5.0 - LR off	6900	LC1-F630	LR9-F73 81	380/630
560	560	630	NS800LB	Micrologic 5.0 - LR off	8800	LC1-F630	LR9-F73 81	380/630
630	630	630	NS800LB	Micrologic 5.0 - LR off	8800	LC1-F630	LR9-F73 81	380/630

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

Type 1 coordination (IEC 60947-4-1)

Merlin Gerin NS80 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.

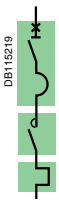
Starting (1): normal LR2 class 10 A, LR9 class 10.

Motors												Circuit breakers		Contactors (3)	Thermal relays	
220/230 V		380 V		415 V		440 V (2)		500/525 V		660/690 V						
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**	3	**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-D40	LRD-33 55	30/40
11	39	**18.5**	37	**22**	40	**22**	39					NS80H-MA	50	LC1-D40	LRD-33 57	37/50
		22	44	**25**	47			**30**	45	**33**	39	NS80H-MA	50	LC1-D50	LRD-33 57	37/50
15	52					**30**	51.5					NS80H-MA	50	LC1-D50	LRD-33 59	48/65
										37	42	NS80H-MA	50	LC1-D65	LRD-33 57	37/50
18.5	64	**30**	59	**30**	55	**37**	64	**37**	55			NS80H-MA	80	LC1-D65	LRD-33 59	48/65
				37	66							NS80H-MA	80	LC1-D65	LRD-33 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 installation 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 by 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 shoud be applied.*

Type 1 coordination (IEC 60947-4-1)



Merlin Gerin NS100 circuit breakers, Telemecanique contactors and thermal relays

Direct-on-line starting

Reverser

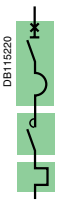
"Iq" breaking performance: equal to the breaking capacity of the circuit breaker alone.
Starting (1): normal LR9 class 10.

Motors												Circuit breakers		Contact.(3)	Thermal relays	
220/230 V		380 V		415 V		440 V (2)		500/525 V		660/690 V						
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	NS100N/SX/H/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	NS100N/SX/H/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					NS100N/SX/H/L-MA	2.5	LC1-D09	LRD-07	1.6/2.5
						1.1	2.4	**1.1**	2	**1.5**	2	NS100N/SX/H/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	NS100N/SX/H/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	NS100N/SX/H/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	NS100N/SX/H/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	NS100N/SX/H/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			NS100N/SX/H/L-MA	12.5	LC1-D09	LRD-14	7/10
										7.5	8.9	NS100N/SX/H/L-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			NS100N/SX/H/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			NS100N/SX/H/L-MA	25	LC1-D18	LRD-21	12/18
				9	17	**9**	16.9	**10**	15			NS100N/SX/H/L-MA	25	LC1-D18	LRD-21	12/18
										10	11.5	NS100N/SX/H/L-MA	25	LC1-D18	LRD-16	9/13
5.5	20	**11**	22	**11**	21	**11**	20.1	**11**	18.4			NS100N/SX/H/L-MA	25	LC1-D25	LRD-22	16/24
										15	17	NS100N/SX/H/L-MA	25	LC1-D25	LRD-21	12/18
										18.5	21.3	NS100N/SX/H/L-MA	50	LC1-D32	LRD-22	16/24
7.5	28	**15**	30	**15**	28	**15**	26.5	**18.5**	28.5			NS100N/SX/H/L-MA	50	LC1-D32	LRD-32	23/32
								22	33	**30**	34.6	NS100N/SX/H/L-MA	50	LC1-D40	LRD-33 55	30/40
11	39	**18.5**	37	**22**	40	**22**	39					NS100N/SX/H/L-MA	50	LC1-D40	LRD-33 57	37/50
		22	44	**25**	47			**30**	45	**33**	39	NS100N/SX/H/L-MA	50	LC1-D50	LRD-33 57	37/50
										37	42	NS100N/SX/H/L-MA	50	LC1-D65	LRD-33 57	37/50
15	52	**30**	59	**30**	55	**30**	51.5					NS100N/SX/H/L-MA	100	LC1-D65	LRD-33 59	48/65
18.5	64					**37**	64	**37**	55							
										45	49	NS100N/SX/H/L-MA	100	LC1-D80	LRD-33 57	37/50
22	75	**37**	72	**37** **45**	72 80	**45**	76	**55**	80			NS100N/SX/H/L-MA	100	LC1-D80	LRD-33 63	63/80
25	85	**45**	85									NS100N/SX/H/L-MA	100	LC1-D95	LRD-33 65	80/104
										55	60	NS100N/SX/H/L-MA	100	LC1-D115	LR9-D53 63	48/80
30	100			**55**	100	**55**	96			**75**	80	NS100N/SX/H/L-MA	100	LC1-D115	LR9-D53 67	60/100

(1) *For installation 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 by 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 shoud be applied.*

Type 1 coordination (IEC 60947-4-1)



Merlin Gerin NS160 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												Circuit breaker		Contactors (2)	Thermal relays (1)	
220/230 V		380 V		415 V		440 V (2)		500/525 V		660/690 V						
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	NS160N/SX/H/L MA	150	LC1-D150	LR9-D53 69	90/150
45	150	**75**	140					**90**	130	**110**	120			LC1-F150	LR9-F53 69	100/160
55	180	**90**	170	**90**	160	**90**	156	**110**	156			NS 250N/SX/H/L MA	220	LC1-F185	LR9-F53 71	132/220
						110	180									
		110	210	**110**	200	**132**	215					NS 250N/SX/H/L MA	220	LC1-F225	LR9-F53 71	132/220
								132	190	**132**	140	NS 250N/SX/H/L MA	220	LC1-F265	LR9-F53 71	132/220
										160	175					
75	250	**132**	250	**132**	230	**160**	256	**160**	228			NS400N/H/L MA	320	LC1-F265	LR9-F73 75	200/330
90	312	**160**	300	**160**	270			**200**	281	**200**	220	NS400N/H/L MA	320	LC1-F330	LR9-F73 75	200/330
										220	240					
110	360	**200**	380	**220**	380	**220**	360	**220**	310			NS630N/H/L MA	500	LC1-F400	LR9-F73 79	300/500
										250	270	NS630N/H/L MA	500	LC1-F400	LR9-F73 75	200/330
		220	420			**250**	401			**335**	335	NS630N/H/L MA	500	LC1-F500	LR9-F73 79	300/500
150	480	**250**	480	**250**	430			**315**	445			NS630N/H/L MA	500	LC1-F500	LR9-F73 79	300/500
								335	460							
						300	480			**375**	400	NS630N/H/L MA	500	LC1-F630	LR9-F73 81	380/630
										450	480					
160	520	**300**	570	**300**	510	**335**	540	**355**	500			NS800N/H Micrologic 5.0 - LR off	800	LC1-F630	LR9-F73 81	380/630
								375	530			NS1000L Micrologic 5.0 - LR off	1000			
								400	570							
200	630	**335**	630	**335**	580	**375**	590	**450**	630			NS800N/H Micrologic 5.0 - LR off	800	LC1-F630	LR9-F73 81	380/630
												NS1000L Micrologic 5.0 - LR off	1000			
220	700	**375**	700	**375**	650	**400**	650					NS800N/H Micrologic 5.0 - LR off	800	LC1-F800	LR2-F83 83	500/800
												NS1000L Micrologic 5.0 - LR off	1000			
		400	750	**400**	690	**450**	720					NS800N/H Micrologic 5.0 - LR off	800	LC1-F800	LR2-F83 83	500/800
												NS1000L Micrologic 5.0 - LR off	1000	LC1-BL33		
										500	530	NS800N/H Micrologic 5.0 - LR off	800	LC1-BL33	LR2-F83 83	500/800
										560	580	NS1000L Micrologic 5.0 - LR off	1000			
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) *Reversers: replace LC1 by 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 shoud be applied.*

Type 1 coordination (IEC 60947-4-1)

Merlin Gerin NS160 to NS1250 circuit breakers, Telemecanique contactors

Direct-on-line starting

Reverser

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

Starting:

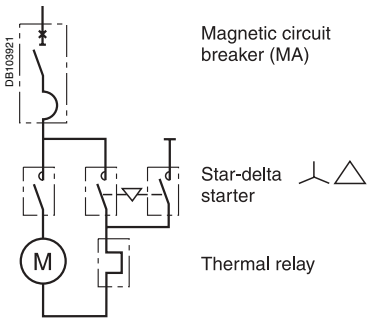
	STR22ME	STR43ME	STR55UE
Normal	Class 10	Class 10	Class 10
Long	-	Class 20	Class 20

Motors												Circuit breakers			Contactors (2)
220/230 V		380 V		415 V		440 V (1)		500/525 V		660/690 V					
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	**19**	28,5			NS100N/H/L	STR22ME	24/40	LC1-D32
11	39	**19**	37	**22**	40	**22**	39	**22**	33	**30**	34,6	NS100N/H/L	STR22ME	24/40	LC1-D40
		22	44	**25**	47			**30**	45	**33**	39	NS100N/H/L	STR22ME	30/50	LC1-D50
15	52	**30**	59	**30**	55	**30**	51,5			**37**	42	NS100N/H/L	STR22ME	48/80	LC1-D65
19	64					**37**	64	**37**	55			NS100N/H/L	STR22ME	48/80	LC1-D65
22	75	**37**	72	**37**	72	**45**	76	**55**	80	**45**	49	NS100N/H/L	STR22ME	48/80	LC1-D80
25	85	**45**	85									NS100N/H/L	STR22ME	60/100	LC1-D95
										55	60	NS100N/H/L	STR22ME	60/100	LC1-D115 or LC1-F115
30	100			**55**	100	**55**	96			**75**	80	NS100N/H/L	STR22ME	60/100	LC1-D115 or LC1-F115
37	125	**55**	105	**75**	135	**75**	124	**75**	110	**90**	100	NS160N/H/L	STR22ME	90/150	LC1-D150 or LC1-F150
45	150	**75**	140					**90**	130	**110**	120				
55	180	**90**	170	**90**	160	**90**	156	**110**	156			NS 250N/H/L	STR22ME	131/220	LC1-F185
						110	180								
		110	210	**110**	200	**132**	215					NS 250N/H/L	STR22ME	131/220	LC1-F225
								132	190	**132**	140	NS 250N/H/L	STR22ME	131/220	LC1-F265
										160	175				
75	250	**132**	250	**132**	230	**160**	256	**160**	228			NS400N/H/L	STR43ME	190/320	LC1-F265
90	312	**160**	300	**160**	270			**200**	281	**200**	220	NS400N/H/L	STR43ME	190/320	LC1-F330
										220	240				
110	360	**200**	380	**220**	380	**220**	360	**220**	310	**250**	270	NS630N/H/L	STR43ME	300/500	LC1-F400
		220	420			**250**	401	**315**	445	**335**	335	NS630N/H/L	STR43ME	300/500	LC1-F500
150	480	**250**	480	**250**	430			**335**	460			NS630N/H/L	STR43ME	300/500	LC1-F500
						300	480	**355**	500	**375**	400	NS630N/H/L	STR43ME	300/500	LC1-F630
								375	530	**450**	480				
160	520	**300**	570	**300**	510	**335**	540	**400**	570			NS800N/H	Micrologic 5.0	320/800	LC1-F630
												NS1000L		400/1000	
200	630	**335**	630	**335**	580	**375**	590	**450**	630			NS800N/H	Micrologic 5.0	320/800	LC1-F630
												NS1000L		400/1000	
220	700	**375**	700	**375**	650	**400**	650					NS800N/H	Micrologic 5.0	320/800	LC1-F800
												NS1000L		400/1000	
		400	750	**400**	690	**450**	720					NS800N/H	Micrologic 5.0	320/800	LC1-F800
												NS1000L		400/1000	LC1-BL33
										500	530	NS800N/H	Micrologic 5.0	320/800	LC1-BL33
										560	580	NS1000L		400/1000	
250	800	**450**	800	**450**	750			**500**	700			NS1000N/H	Micrologic 5.0	400/1000	LC1-BM33
								560	760						
		500	900	**500**	830	**500**	800	**600**	830			NS1000N/H	Micrologic 5.0	400/1000	LC1-BM33
						560	900								
300	970	**560**	1000	**560**	920	**600**	960	**670**	920			NS1250N/H	Micrologic 5.0	630/1250	LC1-BP33

(1) *Valid for 480 V NEMA.*
(2) *Reversers: replace LC1 by 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 shoud be applied.*

Type 1 coordination (IEC 60947-4-1)



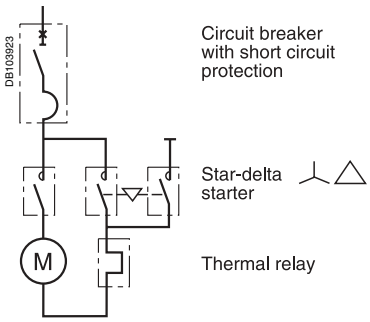
Merlin Gerin NS80 and NS100 circuit breakers, Telemecanique contactors and thermal relays

Star-delta starting
"Iq" breaking performance: equal to the breaking capacity of the circuit breaker.
Starting: normal.

Motors								Circuit breakers		Contactors	Thermal relays	
220/230 V		380 V		415 V		440 V (1)						
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	LC3-D40	LR2-D33 55	30/40
		37	72					NS80H-MA	80	LC3-D40	LR2-D33 57	37/50
22	75			**45**	80	**45**	76	NS80H-MA	80	LC3-D50	LR2-D33 57	37/50
0.55	2.8	**1.5**	3.7	**1.5**	3.5	**1.5**	3.1	NS100N/SX/H/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	NS100N/SX/H/L-MA	6.3	LC3-D09	LRD-08	2.5/4
1.5	6.1	**3**	6.6	**3**	6.5	**3**	5.8	NS100N/SX/H/L-MA	12.5	LC3-D09	LRD-08	2.5/4
2.2	8.7	**4**	8.5	**4**	8.2	**4**	7.9	NS100N/SX/H/L-MA	12.5	LC3-D09	LRD-10	4/6
3	11.5	**5.5**	11.5	**5.5**	11	**5.5**	10.4	NS100N/SX/H/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	NS100N/SX/H/L-MA	25	LC3-D09	LRD-14	7/10
5.5	20			**9**	17	**9**	16.9	NS100N/SX/H/L-MA	25	LC3-D12	LRD-16	9/13
		11	22	**11**	21	**11**	20.1	NS100N/SX/H/L-MA	25	LC3-D12	LRD-16	9/13
7.5	28	**15**	30	**15**	28	**15**	26.5	NS100N/SX/H/L-MA	50	LC3-D18	LRD-21	12/18
11	39	**18.5**	37	**22**	40	**22**	39	NS100N/SX/H/L-MA	50	LC3-D18	LRD-22	17/25
		22	44	**25**	47			NS100N/SX/H/L-MA	100	LC3-D32	LRD-32	23/32
15	52					**30**	51.5	NS100N/SX/H/L-MA	100	LC3-D32	LRD-32	23/32
				30	55			NS100N/SX/H/L-MA	100	LC3-D32	LRD-32	23/32
18.5	64	**30**	59	**37**	66	**37**	64	NS100N/SX/H/L-MA	100	LC3-D40	LR2-D33 55	30/40
		37	72					NS100N/SX/H/L-MA	100	LC3-D40	LR2-D33 57	37/50
22	75			**45**	80	**45**	76	NS100N/SX/H/L-MA	100	LC3-D50	LR2-D33 57	37/50
25	85	**45**	85					NS100N/SX/H/L-MA	100	LC3-D50	LR2-D33 57	37/50
30	100			**55**	100	**55**	96	NS100N/SX/H/L-MA	100	LC3-D50	LR2-D33 59	48/65

(1) *Valid for 480 V NEMA.*

Type 1 coordination (IEC 60947-4-1)



Merlin Gerin NS160 to NS1000 circuit breakers, Telemecanique contactors and thermal relays

Star-delta starting

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

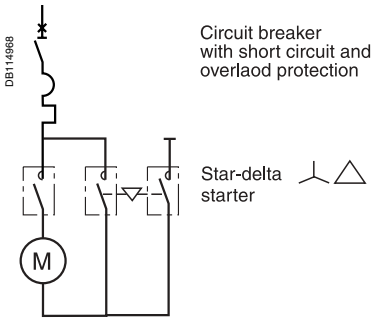
Starting: normal.

Motors								Circuit breakers		Contactors	Thermal relays	
220/230 V		380 V		415 V		440 V (1)						
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					NS160N/SX/H/L MA	150	LC3-D80	LR2-D33 59	48/65
37	125	**75**	140	**75**	135	**75**	124	NS160N/SX/H/L MA	150	LC3-D80	LR2-D33 63	63/80
45	150	**75**	140					NS160N/SX/H/L MA	150	LC3-D115 LC3-F115	LR9-D53 67 LR9-F53 67	60/100
		90	170	**90**	160	**90**	156	NS 250N/SX/H/L MA	220	LC3-D115 LC3-F115	LR9-D53 67 LR9-F53 67	60/100
55	180					**110**	180	NS 250N/SX/H/L MA	220	LC3-D115 LC3-F115	LR9-D53 69 LR9-F53 67	90/150
		110	210	**110**	200			NS 250N/SX/H/L MA	220	LC3-D115 LC3-F115	LR9-D53 69 LR9-F53 69	90/150
						132	215	NS 250N/SX/H/L MA	220	LC3-D150 LC3-F150	LR9-D53 69 LR9-F53 69	90/150
75	250	**132**	250	**132**	230			NS400N/H/L MA	320	LC3-D150 LC3-F150	LR9-D53 69 LR9-F53 69	90/150
90	312	**160**	300	**160**	270	**160**	256	NS400N/H/L MA	320	LC3F-185	LR9-F53 71	132/220
110	360	**200**	380	**220**	380	**220**	360	NS630N/H/L MA	500	LC3-F265	LR9-F73 75	200/330
		220	420			**250**	401	NS630N/H/L MA	500	LC3-F265	LR9-F73 75	200/330
150	480	**250**	480	**250**	430			NS630N/H/L MA	500	LC3-F330	LR9-F73 75	200/330
						300	480	NS630N/H/L MA	500	LC3-F330	LR9-F73 75	200/330
160	520	**300**	570	**300**	510	**335**	540	NS800N/H Micrologic 5.0 - LR off NS1000L Micrologic 5.0 - LR off	800 1000	LC3-F400	LR9-F73 75	200/330
				335	580	**375**	590	NS800N/H Micrologic 5.0 - LR off 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 shoud be applied.*

Type 1 coordination (IEC 60947-4-1)



Merlin Gerin NS100 to NS1000 circuit breakers Telemecanique contactors

Star-delta starting

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

Starting: normal.

Motors								Circuit breakers			Contactors
220/230 V		380 V		415 V		440 V (1)					
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	NS100N/SX/H/L	STR22ME	24/40	LC3-D18
11	39	**18.5**	37	**22**	40	**22**	39	NS100N/SX/H/L	STR22ME	30/50	LC3-D18
		22	44	**25**	47			NS100N/SX/H/L	STR22ME	30/50	LC3-D32
15	52					**30**	51.5	NS100N/SX/H/L	STR22ME	48/80	LC3-D32
				30	55			NS100N/SX/H/L	STR22ME	48/80	LC3-D32
18.5	64	**30**	59	**37**	66	**37**	64	NS100N/SX/H/L	STR22ME	48/80	LC3-D40
		37	72					NS100N/SX/H/L	STR22ME	48/80	LC3-D40
22	75			**45**	80	**45**	76	NS100N/SX/H/L	STR22ME	60/100	LC3-D50
25	85	**45**	85					NS100N/SX/H/L	STR22ME	60/100	LC3-D50
30	100			**55**	100	**55**	96	NS100N/SX/H/L	STR22ME	60/100	LC3-D50
		55	105					NS160N/SX/H/L	STR22ME	90/150	LC3-D80
37	125	**75**	140	**75**	135	**75**	124	NS160N/SX/H/L	STR22ME	90/150	LC3-D80
45	150	**75**	140					NS160N/SX/H/L	STR22ME	90/150	LC3-D115 or LC3-F115
		90	170	**90**	160	**90**	156	NS250N/SX/H/L	STR22ME	131/220	LC3-D115 or LC3-F115
55	180	**110**	210	**110**	200	**110**	180	NS250N/SX/H/L	STR22ME	131/220	LC3-D115 or LC3-F115
						132	215	NS250N/SX/H/L	STR22ME	131/220	LC3-D150 or LC3-F150
75	250	**132**	250	**132**	230			NS400N/H/L	STR43ME	190/320	LC3-D150 or LC3-F150
90	312	**160**	300	**160**	270	**160**	256	NS400N/H/L	STR43ME	190/320	LC3F-185
110	360	**200**	380	**220**	380	**220**	360	NS630N/H/L	STR43ME	300/500	LC3-F265
		220	420			**250**	401	NS630N/H/L	STR43ME	300/500	LC3-F265
150	480	**250**	480	**250**	430			NS630N/H/L	STR43ME	300/500	LC3-F330
						300	480	NS630N/H/L	STR43ME	300/500	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 shoud be applied.*

Protection of motor circuits with fuses

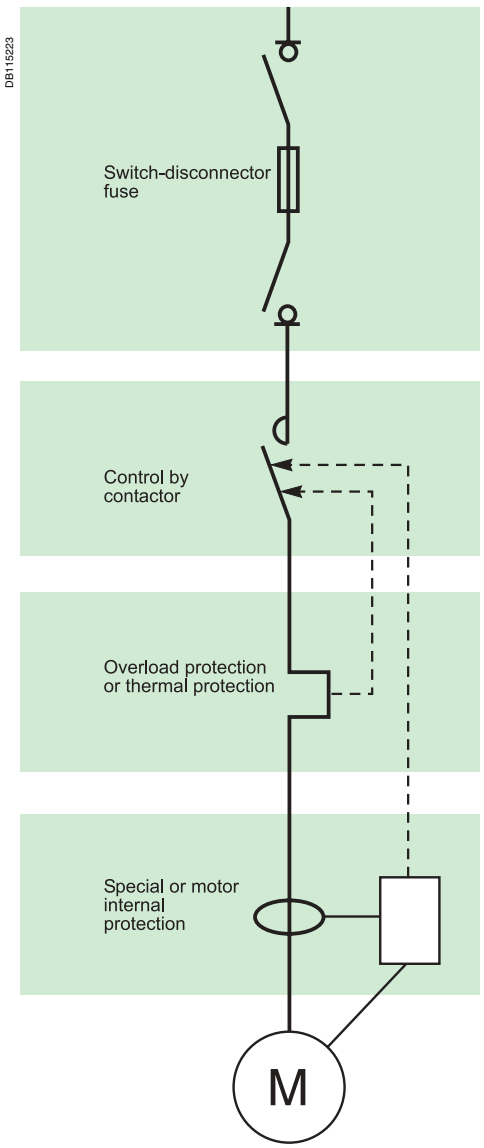
Example:
An INF.160 can receive BS fuse-links in sizes A2, A3 or A4, which correspond to the following ratings:
- ■ A2 size:
  - □ 2 to 32 A for gG fuse-links
  - □ 32M35 to 32M63 for gM fuse-links
- ■ A3 size:
  - □ 35 to 63 A for gG fuse-links
  - □ 63M80 to 63M100 for gM fuse-links
- ■ A4 size:
  - □ 80 to 200 A for gG fuse-links
  - □ 100M125 to 100M200 for gM fuse-links.

The tables on pages 165 to 169 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		
INF.63	A2	A3	000	00	14 x 51	22 X 58
INF.100	A2	A4				
INFC125					22 x 58	22 x 58
INF.160	A2	A4	000	00		
INF.250	B1	B3	0	1		
INF.400	B1	B4	0	2		
INF.630	C1	C3	3	3		
INF.800	C1	C3	3	3		
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 overload protection
- ■ a short-circuit protection device
- ■ an disconnection device capable of interrupting load currents.

The Fupact switch-disconnector-fuse is the ideal device for the last two points in the list. What is more, Fupact is totally compatible with the IEC 60204 machine directive.

Additional specific protection:
- ■ limitative fault protection (while the motor is running)
- ■ preventive fault protection (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 the:
  - □ motor
  - □ conductors
  - □ switch
  - □ fuse

is ensured by the thermal relay on the contactor.
- ■ overload (or short-circuit) protection of the:
  - □ 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.

Protection of motor circuits with fuses

Selection tables for Fupact and associated NFC fuse-links

Example:
A 55 kW motor supplied with 690 V power is protected by:
- 125 A gG fuse-links
- 63 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 tables opposite.

(1) Fupact is designed to allow over-rated protection.

230/240 V

P(kW)	(HP)	In (A)	Fupact	gG	aM
0.37	0.5	**2.0**	**INFC32**	**10**	**2**
0.55	0.7	**2.8**	**INFC32**	**10**	**4**
0.75	1.0	**3.8**	**INFC32**	**16**	**4**
1.1	1.5	**4.7**	**INFC32**	**16**	**6**
1.5	2.0	**6.6**	**INFC32**	**20**	**8**
2.2	2.9	**9.4**	**INFC32**	**25**	**10**
3	4.0	**12.3**	**INFC32**	**32**	**16**
4	5.3	**15.8**	**INFC32**	**40**	**16**
5.5	7.3	**20.8**	**INFC32**	**50**	**25**
8	10	**27**	**INFC32**		**32**
			INFC63	**63**	
11	15	**40**	**INFC32**		**40**
			INFC63	**80**	
15	20	**53**	**INFC63**	**100**	**63**
18.5	25	**66**	**INFC63**	**125**	**80**
22	29	**77**	**INFC63**	**125**	**80**

380/400V

P(kW)	(HP)	In (A)	Fupact	gG	aM
0.37	0.5	**1.1**	**INFC32**	**4**	**2**
0.55	0.7	**1.6**	**INFC32**	**6**	**2**
0.75	1.0	**2.1**	**INFC32**	**10**	**4**
1.1	1.5	**2.6**	**INFC32**	**10**	**4**
1.5	2.0	**3.6**	**INFC32**	**16**	**4**
2.2	2.9	**5.2**	**INFC32**	**16**	**6**
3	4.0	**6.7**	**INFC32**	**20**	**8**
4	5.3	**8.7**	**INFC32**	**20**	**10**
5.5	7.3	**11.4**	**INFC32**	**32**	**12**
7.5	10	**15**	**INFC32**	**35**	**16**
11	15	**22**	**INFC32**	**50**	**25**
15	20	**29**	**INFC63**	**80**	**32**
18.5	25	**36**	**INFC63**	**80**	**40**
22	29	**43**	**INFC63**	**80**	**50**
30	40	**57**	**INFC125**	**100**	**63**
37	49	**72**	**INFC125**	**125**	**80**

415 V

P(kW)	(HP)	In (A)	Fupact	gG	aM
0.37	0.5	**1.05**	**INFC32**	**4**	**2**
0.55	0.7	**1.5**	**INFC32**	**6**	**2**
0.75	1.0	**2.0**	**INFC32**	**10**	**2**
1.1	1.5	**2.5**	**INFC32**	**10**	**4**
1.5	2.0	**3.5**	**INFC32**	**16**	**4**
2.2	2.9	**5.0**	**INFC32**	**16**	**6**
3	4.0	**6.5**	**INFC32**	**20**	**8**
4	5.3	**8.4**	**INFC32**	**20**	**10**
5.5	7.3	**11**	**INFC32**	**32**	**12**
7.5	10	**14.4**	**INFC32**	**35**	**16**
11	15	**21**	**INFC32**	**50**	**25**
15	20	**28**	**INFC63**	**80**	**32**
18.5	25	**35**	**INFC63**	**80**	**40**
22	29	**41**	**INFC63**	**80**	**50**
30	40	**55**	**INFC125**	**100**	**63**
37	49	**69**	**INFC125**	**125**	**80**

500/525 V

P(kW)	(HP)	In (A)	Fupact	gG	aM
0.37	0.5	**0.8**	**INFC32**	**4**	**2**
0.55	0.7	**1.2**	**INFC32**	**4**	**2**
0.75	1.0	**1.6**	**INFC32**	**6**	**2**
1.1	1.5	**2.0**	**INFC32**	**10**	**2**
1.5	2.0	**2.8**	**INFC32**	**10**	**4**
2.2	2.9	**4.0**	**INFC32**	**16**	**4**
3	4.0	**5.1**	**INFC32**	**16**	**6**
4	5.3	**6.6**	**INFC32**	**20**	**8**
5.5	7.3	**8.7**	**INFC32**	**20**	**10**
7.5	10	**11**	**INFC32**	**32**	**12**
11	15	**17**	**INFC32**	**40**	**20**
15	20	**22**	**INFC32**		**25**
			INFC63	**63**	
18.5	25	**28**	**INFC32**		**32**
			INFC63	**63**	
22	29	**32**	**INFC63**	**80**	**40**
30	40	**43**	**INFC63**	**80**	**50**
37	49	**55**	**INFC125**	**100**	**63**
45	60	**63**	**INFC125**	**125**	**80**
55	73	**77**	**INFC125**	**125**	**80**

690 V

P(kW)	(HP)	In (A)	Fupact	gG	aM
0.37	0.5	**0.7**	**INFC32**	**2**	**2**
0.55	0.7	**0.9**	**INFC32**	**4**	**2**
0.75	1.0	**1.3**	**INFC32**	**4**	**2**
1.1	1.5	**1.6**	**INFC32**	**6**	**2**
1.5	2.0	**2.2**	**INFC32**	**10**	**4**
2.2	2.9	**3.1**	**INFC32**	**16**	**4**
3	4.0	**4.1**	**INFC32**	**16**	**6**
4	5.3	**5.3**	**INFC32**	**16**	**6**
5.5	7.3	**6.9**	**INFC32**	**20**	**8**
7.5	10	**9.1**	**INFC32**	**20**	**10**
11	15	**13**	**INFC32**	**32**	**16**
15	20	**18**	**INFC32**	**40**	**20**
18.5	25	**22**	**INFC32**		**25**
			INFC63	**63**	
22	29	**26**	**INFC32**		**32**
			INFC63	**63**	
30	40	**35**	**INFC63**	**80**	**40**
37	49	**43**	**INFC63**	**80**	**50**
45	60	**50**	**INFC63**	**100**	**63**
55	73	**62**	**INFC63**	**125**	**63**

Protection of motor circuits with fuses

Selection tables for Fupact and associated BS fuse-links

Example

A 37 kW motor supplied with 400 V power is protected by a:

- 125 A gG fuse-link

This type of fuse-link may be mounted on a Fupact INFB250 or higher.

- 100M125 gM fuse-link.

This type of fuse-link may be mounted on a Fupact INFB100 or higher.

See the grey section in the tables opposite.

230/240 V

P(kW)	(HP)	In (A)	Fupact	gG	gM
0.37	0.5	**1.9**	**INFB32**	**6**	
0.55	0.7	**2.7**	**INFB32**	**10**	
0.75	1.0	**3.6**	**INFB32**	**16**	
1.1	1.5	**4.5**	**INFB32**	**16**	
1.5	2.0	**6.3**	**INFB32**	**20**	
2.2	2.9	**9.0**	**INFB32**	**20**	
3	4.0	**11.7**	**INFB32**	**32**	**20M32**
4	5.3	**15.2**	**INFB32**		**32M40**
			INFB63	**40**	
5.5	7.3	**19.8**	**INFB32**		**32M50**
			INFB63	**50**	
7.5	10	**26.0**	**INFB32**		**32M63**
			INFB63	**63**	
11	15	**38**	**INFB63**		**63M80**
			INFB100	**80**	
15	20	**51**	**INFB63**		**63M100**
			INFB100	**100**	
18.5	25	**63**	**INFB100**		**100M125**
			INFB250	**125**	
22	29	**74**	**INFB100**		**100M125**
			INFB250	**125**	
30	40	**99**	**INFB250**	**200**	
37	49	**125**	**INFB250**	**200**	
45	60	**144**	**INFB250**	**250**	**200M250**
55	73	**177**	**INFB250**	**250**	**200M250**
75	100	**245**	**INFB400**	**355**	**315M355**
90	120	**296**	**INFB400**	**400**	
110	147	**354**	**INFB630**	**450**	**400M450**
132	176	**408**	**INFB630**	**500**	
150	200	**484**	**INFB630**	**560**	
160	213	**496**	**INFB630**	**560**	
200	267	**646**	**INFB800**	**670**	**630M670**

380/400V

P(kW)	(HP)	In (A)	Fupact	gG	gM
0.37	0.5	**1.1**	**INFB32**	**4**	
0.55	0.7	**1.6**	**INFB32**	**6**	
0.75	1.0	**2.1**	**INFB32**	**10**	
1.1	1.5	**2.6**	**INFB32**	**10**	
1.5	2.0	**3.6**	**INFB32**	**16**	
2.2	2.9	**5.2**	**INFB32**	**16**	
3	4.0	**6.7**	**INFB32**	**20**	
4	5.3	**8.7**	**INFB32**	**20**	
5.5	7.3	**11.4**	**INFB32**	**32**	**20M32**
7.5	10	**15**	**INFB32**	**35**	**32M35**
11	15	**22**	**INFB32**		**32M50**
			INFB63	**50**	
15	20	**29**	**INFB63**	**80**	**63M80**
18.5	25	**36**	**INFB63**	**80**	**63M80**
22	29	**43**	**INFB63**	**80**	**63M80**
30	40	**57**	**INFB100**	**100**	**63M100**
37	49	**72**	**INFB100**		**100M125**
			INFB250	**125**	
45	60	**83**	**INFB100**		**100M160**
			INFB250	**160**	
55	73	**102**	**INFB100**	**200**	
75	100	**141**	**INFB250**	**250**	**200M250**
90	120	**170**	**INFB250**	**250**	**200M250**
110	147	**203**	**INFB250**	**315**	**200M315**
132	176	**234**	**INFB400**	**355**	**315M355**
150	200	**278**	**INFB400**	**400**	
160	213	**285**	**INFB400**	**400**	
200	267	**371**	**INFB400**		**400M450**
			INFB630	**450**	
240	320	**444**	**INFB630**	**560**	
280	373	**506**	**INFB630**	**630**	
300	**400**	**545**	**INFB630**	**630**	
320	**427**	**558**	**INFB800**	**630**	

Protection of motor circuits with fuses

415 V

P(kW)	(HP)	In (A)	Fupact	gG	gM
0.37	0.5	**1.05**	**INFB32**	**4**	
0.55	0.7	**1.5**	**INFB32**	**6**	
0.75	1.0	**2.0**	**INFB32**	**10**	
1.1	1.5	**2.5**	**INFB32**	**10**	
1.5	2.0	**3.5**	**INFB32**	**16**	
2.2	2.9	**5.0**	**INFB32**	**16**	
3	4.0	**6.5**	**INFB32**	**20**	
4	5.3	**8.4**	**INFB32**	**20**	
5.5	7.3	**11**	**INFB32**	**32**	**20M32**
7.5	10	**14.4**	**INFB32**	**35**	**32M35**
11	15	**21**	**INFB32**	**50**	**32M50**
15	20	**28**	**INFB63**		**63M80**
			INFB100	**80**	
18.5	25	**35**	**INFB63**		**63M80**
			INFB100	**80**	
22	29	**41**	**INFB63**		**63M80**
			INFB100	**80**	
30	40	**55**	**INFB100**	**100**	**63M100**
37			**INFB100**		**100M125**
			INFB250	**125**	
45			**INFB100**		**100M160**
			INFB250	**160**	
55			**INFB160**		**100M160**
			INFB250	**160**	
75	100	**136**	**INFB100**	**250**	**200M250**
90	120	**164**	**INFB250**	**250**	**200M250**
110	147	**196**	**INFB250**	**315**	**200M315**
132	176	**226**	**INFB250**	**355**	**315M355**
150	200	**268**	**INFB400**	**355**	**315M355**
160	213	**275**	**INFB400**	**400**	
200	267	**358**	**INFB400**		**400M450**
			INFB630	**450**	
240	320	**428**	**INFB630**	**500**	
280	373	**488**	**INFB630**	**560**	
300	400	**525**	**INFB630**	**630**	
320	427	**538**	**INFB630**	**630**	

500/525 V

P(kW)	(HP)	In (A)	Fupact	gG	gM
0.37	0.5	**0.8**	**INFB32**	**4**	
0.55	0.7	**1.2**	**INFB32**	**4**	
0.75	1.0	**1.6**	**INFB32**	**6**	
1.1	1.5	**2.0**	**INFB32**	**10**	
1.5	2.0	**2.8**	**INFB32**	**10**	
2.2	2.9	**4.0**	**INFB32**	**16**	
3	4.0	**5.1**	**INFB32**	**16**	
4	5.3	**6.6**	**INFB32**	**20**	
5.5	7.3	**8.7**	**INFB32**	**20**	
7.5	10	**11**	**INFB32**	**32**	**20M32**
11	15	**17**	**INFB32**		**32M40**
			INFB63	**40**	
15	20	**22**	**INFB32**		**32M63**
			INFB63	**63**	
18.5	25	**28**	**INFB32**		**32M63**
			INFB63	**63**	
22	29	**32**	**INFB63**	**80**	**63M80**
30	40	**43**	**INFB63**	**80**	**63M80**
37	49	**55**	**INFB100**	**100**	**63M100**
45			**INFB100**		**100M125**
			INFB250	**125**	
55			**INFB100**		**100M125**
			INFB250	**125**	
75			**INFB160**	**200**	
90			**INFB250**	**250**	**200M250**
110	147	**155**	**INFB250**	**250**	**200M250**
132	176	**179**	**INFB250**	**250**	**200M250**
150	200	**212**	**INFB250**	**315**	**200M315**
160	213	**217**	**INFB400**	**355**	**315M355**
200	267	**283**	**INFB400**	**400**	
240	320	**338**	**INFB400**		**400M450**
			INFB630	**450**	
280	373	**386**	**INFB630**	**500**	
300	400	**415**	**INFB630**	**500**	
320	427	**425**	**INFB630**	**500**	
355	473	**478**	**INFB630**	**560**	
375	500	**482**	**INFB630**	**560**	

690 V

P(kW)	(HP)	In (A)	Fupact	gG	gM
0.37	0.5	**0.7**	**INFB32**	**2**	
0.55	0.7	**0.9**	**INFB32**	**4**	
0.75	1.0	**1.3**	**INFB32**	**4**	
1.1	1.5	**1.6**	**INFB32**	**6**	
1.5	2.0	**2.2**	**INFB32**	**10**	
2.2	2.9	**3.1**	**INFB32**	**16**	
3	4.0	**4.1**	**INFB32**	**16**	
4	5.3	**5.3**	**INFB32**	**16**	
5.5	7.3	**6.9**	**INFB32**	**20**	
7.5	10	**9.1**	**INFB32**	**20**	
11	15	**13**	**INFB32**	**32**	**20M32**
15	20	**18**	**INFB32**		**32M40**
			INFB63	**40**	
18.5	25	**22**	**INFB32**		**32M63**
			INFB63	**63**	
22	29	**26**	**INFB32**		**32M63**
			INFB63	**63**	
30	40	**35**	**INFB63**		**63M80**
			INFB100	**80**	
37	49	**43**	**INFB63**		**63M80**
			INFB100	**80**	
45	60	**50**	**INFB63**		**63M100**
			INFB100	**100**	
55			**INFB100**		**100M125**
			INFB250	**125**	
75			**INFB100**		**100M160**
			INFB250	**160**	
90			**INFB250**	**200**	
110			**INFB250**	**200**	
132	176	**142**	**INFB250**	**250**	**200M250**
150	200	**169**	**INFB250**	**250**	**200M250**
160	213	**173**	**INFB250**	**250**	**200M250**
200	267	**225**	**INFB400**	**355**	**315M355**
240	320	**269**	**INFB400**	**355**	**315M355**
280	373	**307**	**INFB400**	**400**	
300	400	**330**	**INFB400**		**400M450**
			INFB630	**450**	
320	427	**338**	**INFB400**		**400M450**
			INFB630	**450**	
355	473	**364**	**INFB630**	**450**	**400M450**
375	500	**367**	**INFB630**	**450**	**400M450**
400	533	**406**	**INFB630**	**500**	
425	567	**415**	**INFB630**	**500**	

Protection of motor circuits with fuses

Selection tables for Fupact and associated DIN fuse-links

Example:
A 75 kW motor supplied with 500 V power is protected by:
- 200 A gG fuse-links

This type of fuse-link may be mounted on a Fupact INFD250 or higher
- 125 A aM fuse-link.

This type of fuse-link may be mounted on a Fupact INFD160 or higher.
See the grey sections in the tables opposite.

230/240 V

P(kW)	(HP)	In (A)	Fupact	gG	aM
0.37	0.5	**1.9**	**INFD40**	**6**	**2**
0.55	0.7	**2.7**	**INFD40**	**10**	**4**
0.75	1.0	**3.6**	**INFD40**	**16**	**4**
1.1	1.5	**4.5**	**INFD40**	**16**	**6**
1.5	2.0	**6.3**	**INFD40**	**20**	**8**
2.2	2.9	**9.0**	**INFD40**	**20**	**10**
3	4.0	**11.7**	**INFD40**	**32**	**12**
4	5.3	**15.2**	**INFD40**	**40**	**16**
5.5	7.3	**19.8**	**INFD40**	**50**	**20**
7.5	10	**26**	**INFD40**	**63**	**32**
11	15	**38**	**INFD63**	**80**	**40**
15	20	**51**	**INFD63**	**100**	**63**
18.5	25	**63**	**INFD160**	**125**	**80**
22	29	**74**	**INFD160**	**125**	**80**
30	40	**99**	**INFD160**		**100**
			INFD250	**200**	
37	49	**125**	**INFD160**		**125**
			INFD250	**200**	
45	60	**144**	**INFD250**	**250**	**160**
55	73	**177**	**INFD250**	**250**	**200**
75	100	**245**	**INFD400**	**355**	**250**
90	120	**296**	**INFD400**	**400**	**315**
110	147	**354**	**INFD630**	**450**	**355**
132	176	**408**	**INFD630**	**500**	**450**
150	200	**484**	**INFD630**	**560**	**500**
160	213	**496**	**INFD630**	**560**	**500**
200	267	**646**	**INFD800**	**670**	**800**

380/400V

P(kW)	(HP)	In (A)	Fupact	gG	aM
0.37	0.5	**1.1**	**INFD40**	**4**	**2**
0.55	0.7	**1.6**	**INFD40**	**6**	**2**
0.75	1.0	**2.1**	**INFD40**	**10**	**4**
1.1	1.5	**2.6**	**INFD40**	**10**	**4**
1.5	2.0	**3.6**	**INFD40**	**16**	**4**
2.2	2.9	**5.2**	**INFD40**	**16**	**6**
3	4.0	**6.7**	**INFD40**	**20**	**8**
4	5.3	**8.7**	**INFD40**	**20**	**10**
5.5	7.3	**11.4**	**INFD40**	**32**	**12**
7.5	10	**15**	**INFD40**	**35**	**16**
11	15	**22**	**INFD40**	**50**	**25**
15	20	**29**	**INFD63**	**80**	**32**
18.5	25	**36**	**INFD63**	**80**	**40**
22	29	**43**	**INFD63**	**80**	**50**
30	40	**57**	**INFD160**	**100**	**63**
37	49	**72**	**INFD160**	**125**	**80**
45	60	**83**	**INFD160**	**160**	**100**
55	73	**102**	**INFD160**		**125**
			INFD250	**200**	
75	100	**141**	**INFD160**		**160**
			INFD250	**250**	
90	120	**170**	**INFD250**	**250**	**200**
110	147	**203**	**INFD250**		**250**
			INFD400	**315**	
132	176	**234**	**INFD250**		**250**
			INFD400	**355**	
150	200	**278**	**INFD400**	**400**	**315**
160	213	**285**	**INFD400**	**400**	**315**
200	267	**371**	**INFD400**		**400**
			INFD630	**450**	
240	320	**444**	**INFD630**	**560**	**450**
280	373	**506**	**INFD630**	**630**	**630**
300	400	**545**	**INFD630**	**630**	**630**
320	427	**558**	**INFD800**	**630**	**630**

Protection of motor circuits with fuses

415 V

P(kW)	(HP)	In (A)	Fupact	gG	aM
0.37	0.5	**1.05**	**INFD40**	**4**	**2**
0.55	0.7	**1.5**	**INFD40**	**6**	**2**
0.75	1.0	**2.0**	**INFD40**	**10**	**2**
1.1	1.5	**2.5**	**INFD40**	**10**	**4**
1.5	2.0	**3.5**	**INFD40**	**16**	**4**
2.2	2.9	**5.0**	**INFD40**	**16**	**6**
3	4.0	**6.5**	**INFD40**	**20**	**8**
4	5.3	**8.4**	**INFD40**	**20**	**10**
5.5	7.3	**11**	**INFD40**	**32**	**12**
7.5	10	**14.4**	**INFD40**	**35**	**16**
11	15	**21**	**INFD40**	**50**	**25**
15	20	**28**	**INFD63**	**80**	**32**
18.5	25	**35**	**INFD63**	**80**	**40**
22	29	**41**	**INFD63**	**80**	**50**
30	40	**55**	**INFD160**	**100**	**63**
37	49	**69**	**INFD160**	**125**	**80**
45	60	**80**	**INFD160**	**160**	**80**
55	73	**98**	**INFD160**	**160**	**100**
75	100	**136**	**INFD160**		**160**
			INFD250	**250**	
90	120	**164**	**INFD250**	**250**	**200**
110	147	**196**	**INFD250**		**200**
			INFD400	**315**	
132	176	**226**	**INFD250**		**250**
			INFD400	**355**	
150	200	**268**	**INFD400**	**355**	**315**
160	213	**275**	**INFD400**	**400**	**315**
200	267	**358**	**INFD400**		**400**
			INFD630	**450**	
240	320	**428**	**INFD630**	**500**	**450**
280	373	**488**	**INFD630**	**560**	**500**
300	400	**525**	**INFD630**	**630**	**630**
320	427	**538**	**INFD630**	**630**	**630**
355	473	**605**	**INFD800**	**670**	**630**
375	500	**610**	**INFD800**	**670**	**630**

500/525 V

P(kW)	(HP)	In (A)	Fupact	gG	aM
0.37	0.5	**0.8**	**INFD40**	**4**	**2**
0.55	0.7	**1.2**	**INFD40**	**4**	**2**
0.75	1.0	**1.6**	**INFD40**	**6**	**2**
1.1	1.5	**2.0**	**INFD40**	**10**	**2**
1.5	2.0	**2.8**	**INFD40**	**10**	**4**
2.2	2.9	**4.0**	**INFD40**	**16**	**4**
3	4.0	**5.1**	**INFD40**	**16**	**6**
4	5.3	**6.6**	**INFD40**	**20**	**8**
5.5	7.3	**8.7**	**INFD40**	**20**	**10**
7.5	10	**11**	**INFD40**	**32**	**12**
11	15	**17**	**INFD40**	**40**	**20**
15	20	**22**	**INFD40**	**63**	**25**
18.5	25	**28**	**INFD40**	**63**	**32**
22	29	**32**	**INFD63**	**80**	**40**
30	40	**43**	**INFD63**	**80**	**50**
37	49	**55**	**INFD160**	**100**	**63**
45	60	**63**	**INFD160**	**125**	**80**
55	73	**77**	**INFD160**	**125**	**80**
75	100	**108**	**INFD160**		**125**
			INFD250	**200**	
90	120	**130**	**INFD160**		**160**
			INFD250	**250**	
110	147	**155**	**INFD250**	**250**	**160**
132	176	**179**	**INFD250**	**250**	**200**
150	200	**212**	**INFD250**		**250**
			INFD400	**315**	
160	213	**217**	**INFD250**		**250**
			INFD400	**355**	
200	267	**283**	**INFD400**	**400**	**315**
240	320	**338**	**INFD400**		**355**
			INFD630	**450**	
280	373	**386**	**INFD630**	**500**	**400**
300	400	**415**	**INFD630**	**500**	**450**
320	427	**425**	**INFD630**	**500**	**450**
355	473	**478**	**INFD630**	**560**	**500**
375	500	**482**	**INFD630**	**560**	**500**
400	533	**534**	**INFD630**	**630**	**630**
425	567	**545**	**INFD800**	**630**	**630**

690 V

P(kW)	(HP)	In (A)	Fupact	gG	aM
0.37	0.5	**0.7**	**INFD40**	**2**	**2**
0.55	0.7	**0.9**	**INFD40**	**4**	**2**
0.75	1.0	**1.3**	**INFD40**	**4**	**2**
1.1	1.5	**1.6**	**INFD40**	**6**	**2**
1.5	2.0	**2.2**	**INFD40**	**10**	**4**
2.2	2.9	**3.1**	**INFD40**	**16**	**4**
3	4.0	**4.1**	**INFD40**	**16**	**6**
4	5.3	**5.3**	**INFD40**	**16**	**6**
5.5	7.3	**6.9**	**INFD40**	**20**	**8**
7.5	10	**9.1**	**INFD40**	**20**	**10**
11	15	**13**	**INFD40**	**32**	**16**
15	20	**18**	**INFD40**	**40**	**20**
18.5	25	**22**	**INFD40**	**63**	**25**
22	29	**26**	**INFD40**	**63**	**32**
30	40	**35**	**INFD63**	**80**	**40**
37	49	**43**	**INFD63**	**80**	**50**
45	60	**50**	**INFD63**	**100**	**63**
55	73	**62**	**INFD63**	**125**	**63**
75	100	**86**	**INFD160**	**160**	**100**
90	120	**103**	**INFD160**		**125**
			INFD250	**200**	
110	147	**123**	**INFD160**		**125**
			INFD250	**200**	
132	176	**142**	**INFD250**	**250**	**160**
150	200	**169**	**INFD250**	**250**	**200**
160	213	**173**	**INFD250**	**250**	**200**
200	267	**225**	**INFD250**		**250**
			INFD400	**355**	
240	320	**269**	**INFD400**	**355**	**315**
280	373	**307**	**INFD400**	**400**	**315**
300	400	**330**	**INFD400**		**355**
			INFD630	**450**	
320	427	**338**	**INFD400**		**355**
			INFD630	**450**	
355	473	**364**	**INFD400**		**400**
			INFD630	**450**	
375	500	**367**	**INFD400**		**400**
			INFD630	**450**	
400	533	**406**	**INFD630**	**500**	**450**
425	567	**415**	**INFD630**	**500**	**450**

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

Switch-fuse disconnector Merlin Gerin, contactors Telemecanique

Performance: Ue = 380/415 V - "Iq" 100 kA

Starting Class 10 A/10.

Motors				Switch-Fuse (1)	Fuse-link type		Contactors (2)	Thermal o/l relays	
P (kW)	I (A) 380 V	I (A) 415 V	Ie Max (A)	Type	gG cal(A)	aM cal(A)	Type	Type	
0.37	1.2	1.1	1.6	INFC32 or INFD40	4	2	LC1-D09	LR-D 06	1/1.6
0.55	1.6	1.5	1.6	INFC32 or INFD40	6	2	LC1-D09	LR-D 06	1/1.6
0.75	2	1.8	2.5	INFC32 or INFD40	6	2	LC1-D09	LR-D 07	1.6/2.5
1.1	2.8	2.6	2.5	INFC32 or INFD40	10	4	LC1-D09	LR-D 07	1.6/2.5
1.5	3.7	3.4	4	INFC32 or INFD40	16	4	LC1-D09	LR-D 08	2.5/4
2.2	5.3	4.8	6	INFC32 or INFD40	16	6	LC1-D09	LR-D 10	4/6
3	7	6.5	6	INFC32 or INFD40	20	8	LC1-D09	LR-D 10	4/6
4	9	8.2	8	INFC32 or INFD40	20	10	LC1-D09	LR-D 12	5.5/8
5.5	12	11	12	INFC32 or INFD40	32	12	LC1-D09	LR-D 16	9/13
7.5	16	14	16	INFC32 or INFD40	35	16	LC1-D25	LR-D 21	12/18
10	21	19	20	INFC32 or INFD40	50	20	LC1-D25	LR-D 22	16/24
11	23	21	24	INFC32 or INFD40	50	25	LC1-D25	LR-D 22	16/24
15	30	28	32	INFC32 or INFD40	63	32	LC1-D32	LR-D 32	23/32
18.5	37	34	40	INFC63 or INFD40	80	40	LC1-D40	LR2-D33 55	30/40
22	43	40	50	INFC63 or INFD63	80	50	LC1-D50	LR2-D33 57	37/50
30	59	55	50	INFC63 or INFD63	100	63	LC1-D50	LR2-D33 59	48/65
37	72	66	80	INFC125 or INFD160	125	80	LC1-D80	LR2-D33 63	63/80
45	85	80	80	INFD160	160	100	LC1-D115	LR9-D53 67	60/100
55	105	100	115	INFD160 INFD250	- 200	125 -	LC1-D115	LR9-D53 69	90/150
75	140	135	150	INFD250	250	160	LC1-D150	LR9-D53 69	90/150
90	170	160	185	INFD250	250	200	LC1-F185	LR9-F53 71	132/220
110	210	200	220	INFD250 INFD400	- 315	250	LC1-F265	LR9-F53 71	132/220
132	250	230	250 265	INFD250 INFD400	- 315	250 -	LC1-F265 LC1-F265	LR9-F73 75	200/330
160	300	270	265	INFD400	355	315	LC1-F265	LR9-F73 75	200/330
200	380	361	330	INFD400	400	315	LC1-F400	LR9-F73 79	300/500
250	460	430	500	INFD630	630	500	LC1-F500	LR9-F73 79	300/500
280	520	475	630	INFD630	630	500	LC1-F630	LR9-F73 81	380/630
300	565	500	630	INFD800	800	630	LC1-F630	LR9-F73 81	380/630
335	610	560	630	INFD800	800	630	LC1-F630	LR9-F73 81	380/630
355	630	590	630	INFD800	800	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; star-delta starter: replace LC1 with LC3.*

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

Switch-fuse disconnector Merlin Gerin, contactors Telemecanique

Performance: Ue = 380/415 V - "Iq" 100 kA

Starting Adjustable class 10 A to 30.

Motors				Switch-Fuse (1)	Fuse-link type		Contactors (2)	Thermal o/l relays	
P (kW)	I (A) 380 V	I (A) 415 V	Ie Max (A)	Type	gG cal(A)	aM cal(A)	Type	Type	
0.37	1.2	1.1	5	INFC32 or INFD40	4	2	LC1-D09	LT6-P0M	1/5 (3)
0.55	1.6	1.5	5	INFC32 or INFD40	6	2	LC1-D09	LT6-P0M	1/5 (3)
0.75	2	1.8	5	INFC32 or INFD40	6	2	LC1-D09	LT6-P0M	1/5 (3)
1.1	2.8	2.6	5	INFC32 or INFD40	10	4	LC1-D09	LT6-P0M	1/5 (3)
1.5	3.7	3.4	5	INFC32 or INFD40	16	4	LC1-D09	LT6-P0M	1/5 (3)
2.2	5.3	4.8	5	INFC32 or INFD40	16	6	LC1-D09	LT6-P0M	1/5 (3)
3	7	6.5	6	INFC32 or INFD40	20	8	LC1-D09	LT6-P0M	1/5 (3)
4	9	8.2	9	INFC32 or INFD40	20	10	LC1-D09	LT6-P0M	5/25 (3)
5.5	12	11	9	INFC32 or INFD40	32	12	LC1-D09	LT6-P0M	5/25 (3)
7.5	16	14	25	INFC32 or INFD40	35	16	LC1-D25	LT6-P0M	5/25 (3)
10	21	19	25	INFC32 or INFD40	50	20	LC1-D25	LT6-P0M	5/25 (3)
11	23	21	25	INFC32 or INFD40	50	25	LC1-D25	LT6-P0M	5/25 (3)
15	30	28	25	INFC32 or INFD40	63	32	LC1-D32	LT6-P0M	5/25 (3)
18.5	37	34	40	INFC63 or INFD40	80	40	LC1-D40	LT6-P0M	On TC
22	43	40	40	INFC63 or INFD63	80	50	LC1-D50	LT6-P0M	On TC
30	59	55	50	INFC63 or INFD63	100	63	LC1-D50	LT6-P0M	On TC
37	72	66	65	INFC125 or INFD160	125	80	LC1-D65	LT6-P0M	On TC
45	85	80	80	INFC125 or INFD160	125	80	LC1-D80	LT6-P0M	On TC
55	105	100	100	INFD160	160	100	LC1-D115	LT6-P0M	On TC
75	140	135	125 150	INFD160 INFD250	- 200	125 -	LC1-D150 LC1-D150	LT6-P0M	On TC
90	170	160	150 250	INFD160 INFD250	- 250	160 -	LC1-D150 LC1-D150	LT6-P0M	On TC
110	210	200	185	INFD250 INFD400	250	200	LC1-F185	LT6-P0M	On TC
132	250	230	250 265	INFD250 INFD400	- 315	250 -	LC1-F265 LC1-F265	LT6-P0M	On TC
160	300	270	265	INFD400	400	315	LC1-F400	LT6-P0M	On TC
200	380	361	400	INFD400	400	400	LC1-F400	LT6-P0M	On TC
250	460	430	500	INFD630	630	500	LC1-F500	LT6-P0M	On TC
280	520	475	630	INFD630	630	630	LC1-F630	LT6-P0M	On TC
300	565	500	630	INFD800	800	630	LC1-F630	LT6-P0M	On TC
335	610	560	630	INFD800	800	630	LC1-F630	LT6-P0M	On TC
355	630	590	630	INFD800	800	630	LC1-F630	LT6-P0M	On TC

(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.*

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

Switch-fuse disconnector Merlin Gerin, contactors Telemecanique

Performance: Ue = 440 V - "Iq" 100 kA

Starting Class 10 A/10.

Motors			Switch-Fuse (1)	Fuse-link type		Contactors (2)	Thermal o/l relays	
P (kW)	I (A) 440 V	Ie Max (A)	Type	gG cal(A)	aM cal(A)	Type	Type	
0.37	1	1.6	INFC32 or INFD40	4	2	LC1-D09	LR-D 06	1/1.6
0.55	1.4	1.6	INFC32 or INFD40	6	2	LC1-D09	LR-D 06	1/1.6
0.75	1.7	2.5	INFC32 or INFD40	6	2	LC1-D09	LR-D 07	1.6/2.5
1.1	2.4	2.5	INFC32 or INFD40	10	4	LC1-D09	LR-D 07	1.6/2.5
1.5	3.1	4	INFC32 or INFD40	16	4	LC1-D09	LR-D 08	2.5/4
2.2	4.5	6	INFC32 or INFD40	16	6	LC1-D09	LR-D 10	4/6
3	5.8	6	INFC32 or INFD40	20	8	LC1-D09	LR-D 10	4/6
4	8	8	INFC32 or INFD40	20	10	LC1-D09	LR-D 12	5.5/8
5.5	10.5	12	INFC32 or INFD40	32	12	LC1-D09	LR-D 16	9/13
7.5	13.7	16	INFC32 or INFD40	35	16	LC1-D25	LR-D 21	12/18
10	19	20	INFC32 or INFD40	50	20	LC1-D25	LR-D 22	16/24
11	20	20	INFC32 or INFD40	50	20	LC1-D25	LR-D 22	16/24
15	26.5	32	INFC32 or INFD40	63	32	LC1-D32	LR-D 32	23/32
18.5	33	40	INFC32 or INFD40	80	40	LC1-D40	LR2-D33 55	30/40
22	39	40	INFC63 or INFD63	80	40	LC1-D40	LR2-D33 55	30/40
30	52	50	INFC63 or INFD63	100	63	LC1-D50	LR2-D33 59	48/65
37	63	65	INFC125 or INFD160	125	80	LC1-D65	LR2-D33 59	48/65
45	76	80	INFC125 or INFD160	125	80	LC1-D80	LR2-D33 63	63/80
55	90	100	INFC125 or INFD160	160	100	LC1-D115	LR9-D53 67	60/100
75	125	125	INFD160	-	125	LC1-D150	LR9-D53 69	90/150
		150	INFD250	200	-	LC1-D150		
90	140	150	INFD160	-	160	LC1-D150	LR9-D53 69	90/150
		250	INFD250	250	-	LC1-D150		
110	178	185	INFD250 INFD400	250	200	LC1-F185	LR9-F53 71	132/220
132	210	250	INFD250	-	250	LC1-F265	LR9-F53 71	132/220
		265	INFD400	315	-	LC1-F265		
160	256	265	INFD400	355	315	LC1-F265	LR9-F73 75	200/330
200	310	330	INFD400	400	315	LC1-F400	LR9-F73 75	200/330
250	400	400	INFD630	500	450	LC1-F400	LR9-F73 79	300/500
280	435	500	INFD630	560	500	LC1-F500	LR9-F73 79	300/500
300	460	500	INFD630	560	500	LC1-F500	LR9-F73 79	300/500
335	540	630	INFD630	630	630	LC1-F500	LR9-F73 81	380/630
355	560	630	INFD630	630	630	LC1-F500	LR9-F73 81	380/630
375	575	630	INFD800	670	630	LC1-F630	LR9-F73 81	380/630
400	611	630	INFD800	670	630	LC1-F630	TC800/5 + LRD-10	630/1000

(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.*

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

Switch-fuse disconnector Merlin Gerin, contactors Telemecanique

Performance: Ue = 440 V - "Iq" 100 kA

Starting Adjustable class 10 A to 30.

Motors			Switch-Fuse (1)	Fuse-link type		Contactors (2)	Thermal o/l relays	
P (kW)	I (A) 440 V	Ie Max (A)	Type	gG cal(A)	aM cal(A)	Type	Type	
0.37	1	5	INFC32 or INFD40	4	2	LC1-D09	LT6-P0M	1/5 (3)
0.55	1.4	5	INFC32 or INFD40	6	2	LC1-D09	LT6-P0M	1/5 (3)
0.75	1.7	5	INFC32 or INFD40	6	2	LC1-D09	LT6-P0M	1/5 (3)
1.1	2.4	5	INFC32 or INFD40	10	4	LC1-D09	LT6-P0M	1/5 (3)
1.5	3.1	5	INFC32 or INFD40	16	4	LC1-D09	LT6-P0M	1/5 (3)
2.2	4.5	5	INFC32 or INFD40	16	6	LC1-D09	LT6-P0M	1/5 (3)
3	5.8	6	INFC32 or INFD40	20	8	LC1-D09	LT6-P0M	1/5 (3)
4	8	9	INFC32 or INFD40	20	10	LC1-D09	LT6-P0M	5/25 (3)
5.5	10.5	9	INFC32 or INFD40	32	12	LC1-D09	LT6-P0M	5/25 (3)
7.5	13.7	16	INFC32 or INFD40	35	16	LC1-D25	LT6-P0M	5/25 (3)
10	19	20	INFC32 or INFD40	50	20	LC1-D25	LT6-P0M	5/25 (3)
11	20	20	INFC32 or INFD40	50	20	LC1-D25	LT6-P0M	5/25 (3)
15	26.5	25	INFC32 or INFD40	63	32	LC1-D32	LT6-P0M	5/25 (3)
18.5	33	40	INFC63 or INFD40	80	40	LC1-D40	LT6-P0M	On TC
22	39	40	INFC63 or INFD63	80	40	LC1-D40	LT6-P0M	On TC
30	52	50	INFC63 or INFD63	100	63	LC1-D50	LT6-P0M	On TC
37	63	65	INFC125 or INFD160	125	80	LC1-D65	LT6-P0M	On TC
45	76	80	INFC125 or INFD160	125	80	LC1-D80	LT6-P0M	On TC
55	90	100	INFC125 or INFD160	160	100	LC1-D115	LT6-P0M	On TC
75	125	125	INFD160	-	125	LC1-D150	LT6-P0M	On TC
		150	INFD250	200	-	LC1-D150		
90	140	150	INFD160	-	160	LC1-D150	LT6-P0M	On TC
		250	INFD250	250	-	LC1-D150		
110	178	185	INFD250	250	200	LC1-F185	LT6-P0M	On TC
			INFD400					
132	210	250	INFD250	-	250	LC1-F265	LT6-P0M	On TC
		265	INFD400	315	-	LC1-F265		
160	256	265	INFD400	355	315	LC1-F265	LT6-P0M	On TC
200	310	330	INFD400	400	315	LC1-F400	LT6-P0M	On TC
250	400	400	INFD630	500	450	LC1-F400	LT6-P0M	On TC
280	435	500	INFD630	560	500	LC1-F500	LT6-P0M	On TC
300	460	500	INFD630	560	500	LC1-F500	LT6-P0M	On TC
335	540	630	INFD630	630	630	LC1-F500	LT6-P0M	On TC
355	560	630	INFD630	630	630	LC1-F500	LT6-P0M	On TC
375	575	630	INFD800	670	630	LC1-F630	LT6-P0M	On TC
400	611	630	INFD800	670	630	LC1-F630	LT6-P0M	On TC

(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 480 V NEMA network.*

Type 2 coordination (IEC 60947-4-1) 500 V

Switch-fuse disconnector Merlin Gerin, contactors Telemecanique

Performance: Ue = 500 V - "Iq" 100 kA

Starting Adjustable class 10 A/10.

Motors			Switch-Fuse (1)	Fuse-link type		Contactors (2)	Thermal o/l relays	
P (kW)	I (A) 500 V	Ie Max (A)	Type	gG cal(A)	aM cal(A)	Type	Type	
0.37	0.8	1	INFC32 or INFD40	4	2	LC1-D09	LR-D 05	0.63/1
0.55	1.2	1.6	INFC32 or INFD40	4	2	LC1-D09	LR-D 06	1/1.6
0.75	1.5	1.6	INFC32 or INFD40	4	2	LC1-D09	LR-D 06	1/1.6
1.1	2	2.5	INFC32 or INFD40	6	4	LC1-D09	LR-D 07	1.6/2.5
1.5	2.8	4	INFC32 or INFD40	10	6	LC1-D09	LR-D 08	2.5/4
2.2	3.8	4	INFC32 or INFD40	10	6	LC1-D09	LR-D 08	2.5/4
3	5	6	INFC32 or INFD40	16	8	LC1-D09	LR-D 10	4/6
4	6.5	8	INFC32 or INFD40	20	12	LC1-D09	LR-D 12	5.5/8
5.5	9	9	INFC32 or INFD40	25	16	LC1-D09	LR-D 16	9/13
7.5	12	13	INFC32 or INFD40	25	16	LC1-D25	LR-D 16	9/13
10	15	18	INFC32 or INFD40	40	20	LC1-D25	LR-D 21	12/18
11	18.4	24	INFC32 INFC63 or INFD40	- 50	25	LC1-D25	LR-D 22	16/24
15	23	24	INFC32 INFC63 or INFD40	- 50	25	LC1-D32	LR-D 22	16/24
18.5	28.5	32	INFC32 INFC63 or INFD40	- 63	40	LC1-D32	LR-D 32	23/32
22	33	40	INFC63 or INFD63	100	40	LC1-D40	LR2-D33 55	30/40
30	45	50	INFC63 or INFD63	100	50	LC1-D50	LR2-D33 57	37/50
37	55	63	INFC63 or INFD63	100	63	LC1-D65	LR2-D33 59	48/65
45	65	70	INFC125 INFD160	- 125	80	LC1-D80	LR2-D33 61	55/70
55	75	80	INFC125 INFD160	- 125	80	LC1-D115	LR2-D33 63	63/80
75	105	115	INFD160 INFD250	- 200	125 -	LC1-D115 LC1-D115	LR9-D53 69	90/150
90	130	150	INFD160 INFD250	- 250	160 -	LC1-D150 LC1-D150	LR9-D53 69	90/150
110	156	160	INFD250	250	160	LC1-F185	LR9-F53 71	132/220
132	187	200	INFD250	250	200	LC1-F265	LR9-F53 71	132/220
160	230	250	INFD250 INFD400	- 315	250 -	LC1-F265 LC1-F265	LR9-F73 75	200/330
200	280	315	INFD400	400	315	LC1-F400	LR9-F73 75	200/330
240	338	355 400	INFD400 INFD630	- 450	355 -	LC1-F400 LC1-F400	LR9-F73 79	300/500
280	386	400 500	INFD400 INFD630	- 500	400	LC1-F500	LR9-F73 79	300/500
300	415	450	INFD630	630	450	LC1-F500	LR9-F73 79	300/500
320	425	450	INFD630	630	450	LC1-F500	LR9-F73 79	300/500
355	478	500	INFD630	800	500	LC1-F500	LR9-F73 79	300/500
375	482	500 630	INFD630 INFD800	- 800	500	LC1-F630	LR9-F73 81	380/630
400	534	500 630	INFD630 INFD800	- 800	500	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.*

Type 2 coordination (IEC 60947-4-1) 500 V

Switch-fuse disconnector Merlin Gerin, contactors Telemecanique

Performance: Ue = 500 V - "Iq" 100 kA

Starting Adjustable class 10 A to 30.

Motors			Switch-Fuse (1)	Fuse-link type		Contactors (2)	Thermal o/l relays	
P (kW)	I (A) 500 V	Ie Max (A)	Type	gG cal(A)	aM cal(A)	Type	Type	
0.37	0.8	5	INFC32 or INFD40	4	2	LC1-D09	LT6-P0M	1/5 (3)
0.55	1.2	5	INFC32 or INFD40	4	2	LC1-D09	LT6-P0M	1/5 (3)
0.75	1.5	5	INFC32 or INFD40	6	2	LC1-D09	LT6-P0M	1/5 (3)
1.1	2	5	INFC32 or INFD40	10	2	LC1-D09	LT6-P0M	1/5 (3)
1.5	2.8	5	INFC32 or INFD40	10	2	LC1-D09	LT6-P0M	1/5 (3)
2.2	3.8	5	INFC32 or INFD40	16	4	LC1-D09	LT6-P0M	1/5 (3)
3	5	5	INFC32 or INFD40	16	4	LC1-D09	LT6-P0M	1/5 (3)
4	6.5	8	INFC32 or INFD40	20	8	LC1-D09	LT6-P0M	5/25 (3)
5.5	9	10	INFC32 or INFD40	20	10	LC1-D09	LT6-P0M	5/25 (3)
7.5	12	12	INFC32 or INFD40	32	12	LC1-D25	LT6-P0M	5/25 (3)
10	15	20	INFC32 or INFD40	40	20	LC1-D25	LT6-P0M	5/25 (3)
11	18.4	20 25	INFC32 INFC63 or INFD40	- 50	20	LC1-D25	LT6-P0M	5/25 (3)
15	23	25	INFC32 INFC63 or INFD40	- 50	25	LC1-D32	LT6-P0M	5/25 (3)
18.5	28.5	32	INFC32 INFC63 or INFD40	- 63	32	LC1-D32	LT6-P0M	On TC On TC
22	33	40	INFC63 or INFD63	80	40	LC1-D40	LT6-P0M	On TC
30	45	50	INFC63 or INFD63	80	50	LC1-D50	LT6-P0M	On TC
37	55	63	INFC63 or INFD63	100	63	LC1-D65	LT6-P0M	On TC
45	65	80	INFC125 INFD160	- 125	80	LC1-D80	LT6-P0M	On TC
55	75	80 115	INFC125 INFD160	- 125	80	LC1-D115	LT6-P0M	On TC
75	105	115	INFD160 INFD250	- 200	125 -	LC1-D115 LC1-D115	LT6-P0M	On TC
90	130	150	INFD160 INFD250	- 250	160 -	LC1-D150 LC1-D150	LT6-P0M	On TC
110	156	160	INFD250	250	160	LC1-F185	LT6-P0M	On TC
132	187	200	INFD250	250	200	LC1-F265	LT6-P0M	On TC
160	230	250 265	INFD250 INFD400	- 315	250 -	LC1-F265 LC1-F265	LT6-P0M	On TC
200	280	315	INFD400	400	315	LC1-F400	LT6-P0M	On TC
240	338	355 400	INFD400 INFD630	- 450	355 -	LC1-F400 LC1-F400	LT6-P0M	On TC
280	386	400 500	INFD400 INFD630	- 500	400	LC1-F500	LT6-P0M	On TC
300	415	450	INFD630	500	450	LC1-F500	LT6-P0M	On TC
320	425	450	INFD630	500	450	LC1-F500	LT6-P0M	On TC
355	478	500	INFD630	560	500	LC1-F500	LT6-P0M	On TC
375	482	500 630	INFD630 INFD800	- 800	500	LC1-F630	LT6-P0M	On TC
400	534	500 630	INFD630 INFD800	- 800	500	LC1-F630	LT6-P0M	On TC

(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 480 V NEMA network.*

Type 2 coordination (IEC 60947-4-1) 525/550 V

Switch-fuse disconnector Merlin Gerin, contactors Telemecanique

Performance: Ue = 525/550 V - "Iq" 80/100 kA (1)

Starting Adjustable class 10 A/10.

Motors				Switch-Fuse (2)	Fuse-link type		Contactors (3)	Thermal o/l relays	
P (kW)	I (A) 525 V	I (A) 550 V	Ie Max (A)	Type	gG cal(A)	aM cal(A)	Type	Type	
0.37	0.8	0.8	1	INFC32 or INFD40	4	2	LC1-D09	LR-D 05	0.63/1
0.55	1.2	1.2	1.6	INFC32 or INFD40	4	2	LC1-D09	LR-D 06	1/1.6
0.75	1.5	1.5	1.6	INFC32 or INFD40	4	2	LC1-D09	LR-D 06	1/1.6
1.1	2	2	2.5	INFC32 or INFD40	6	4	LC1-D09	LR-D 07	1.6/2.5
1.5	2.8	2.8	4	INFC32 or INFD40	10	6	LC1-D09	LR-D 08	2.5/4
2.2	3.8	3.8	4	INFC32 or INFD40	10	6	LC1-D09	LR-D 08	2.5/4
3	5	5	6	INFC32 or INFD40	16	8	LC1-D09	LR-D 10	4/6
4	6.5	6.5	8	INFC32 or INFD40	20	12	LC1-D09	LR-D 12	5.5/8
5.5	9	9	9	INFC32 or INFD40	25	16	LC1-D09	LR-D 16	9/13
7.5	12	12	13	INFC32 or INFD40	25	16	LC1-D25	LR-D 16	9/13
10	15	15	18	INFC32 or INFD40 INFC63 or INFD40	- 40	20	LC1-D25	LR-D 21	12/18
11	18.4	18.4	24	INFC32 or INFD40 INFC63 or INFD40	- 50	25	LC1-D25	LR-D 22	16/24
15	23	23	24	INFC32 or INFD40 INFC63 or INFD40	- 50	25	LC1-D32	LR-D 22	16/24
18.5	28.5	28.5	32	INFC63 or INFD63	63	40	LC1-D32	LR-D 32	23/32
22	33	33	40	INFD63 INFD160	- 100	40	LC1-D40	LR2-D33 55	30/40
30	45	45	50	INFD63 INFD160	- 100	50	LC1-D50	LR2-D33 57	37/50
37	55	55	63	INFD160	100	63	LC1-D65	LR2-D33 59	48/65
45	65	65	70	INFD160	125	80	LC1-D80	LR2-D33 61	55/70
55	75	75	80	INFD160	125	80	LC1-D115	LR2-D33 63	63/80
75	105	105	115	INFD160 INFD250	- 200	125	LC1-D115	LR9-D53 69	90/150
90	130	130	150	INFD250 INFD400	- 250	160	LC1-D150	LR9-D53 69	90/150
110	156	156	185	INFD250 INFD400	- 250	160	LC1-F185	LR9-F53 71	132/220
132	187	187	200 220	INFD250 INFD400	- 250	200	LC1-F265	LR9-F53 71	132/220
160	230	220	250 265	INFD250 INFD400	- 315	250 -	LC1-F265	LR9-F73 75	200/330
200	280	280	315 330	INFD400 INFD630	- 400	315	LC1-F400	LR9-F73 75	200/330
240	338	338	355 400	INFD400 INFD630	- 450	355 -	LC1-F400	LR9-F73 79	300/500
280	386	386	400 500	INFD400 INFD630	- 500	400	LC1-F500	LR9-F73 79	300/500
300	415	415	450	INFD630	-	450	LC1-F500	LR9-F73 79	300/500
320	425	425	450	INFD630	-	450	LC1-F500	LR9-F73 79	300/500
355	478	478	500	INFD630	-	500	LC1-F500	LR9-F73 79	300/500
375	482	482	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

Switch-fuse disconnector Merlin Gerin, contactors Telemecanique

Performance: Ue = 525/550 V - "Iq" 80/100 kA (1)

Starting Adjustable class 10 A to 30.

Motors				Switch-Fuse (2)	Fuse-link type		Contactors (3)	Thermal o/l relays	
P (kW)	I (A) 525 V	I (A) 550 V	Ie Max (A)	Type	gG cal(A)	aM cal(A)	Type	Type	
0.37	0.8	0.8	5	INFC32 or INFD40	4	2	LC1-D09	LT6-P0M	1/5 (4)
0.55	1.2	1.2	5	INFC32 or INFD40	4	2	LC1-D09	LT6-P0M	1/5 (4)
0.75	1.5	1.5	5	INFC32 or INFD40	6	2	LC1-D09	LT6-P0M	1/5 (4)
1.1	2	2	5	INFC32 or INFD40	10	2	LC1-D09	LT6-P0M	1/5 (4)
1.5	2.8	2.8	5	INFC32 or INFD40	10	2	LC1-D09	LT6-P0M	1/5 (4)
2.2	3.8	3.8	5	INFC32 or INFD40	16	4	LC1-D09	LT6-P0M	1/5 (4)
3	5	5	5	INFC32 or INFD40	16	4	LC1-D09	LT6-P0M	1/5 (4)
4	6.5	6.5	8	INFC32 or INFD40	20	8	LC1-D09	LT6-P0M	5/25 (4)
5.5	9	9	10	INFC32 or INFD40	20	10	LC1-D09	LT6-P0M	5/25 (4)
7.5	12	12	12	INFC32 or INFD40	32	12	LC1-D25	LT6-P0M	5/25 (4)
10	15	15	20	INFC32 or INFD40	-	20	LC1-D25	LT6-P0M	5/25 (4)
			25	INFC63 or INFD40	40				
11	18.4	18.4	20	INFC32 or INFD40	-	20	LC1-D25	LT6-P0M	5/25 (4)
			25	INFC63 or INFD40	50				
15	23	23	25	INFC32 or INFD40	-	25	LC1-D32	LT6-P0M	5/25 (4)
				INFC63 or INFD40	50				
18.5	28.5	28.5	32	INFC63 or INFD63	63	32	LC1-D32	LT6-P0M	On TC
22	33	33	40	INFD63	-	40	LC1-D40	LT6-P0M	On TC
				INFD160	80				
30	45	45	50	INFD63	-	50	LC1-D50	LT6-P0M	On TC
				INFD160	80				
37	55	55	63	INFD160	100	63	LC1-D65	LT6-P0M	On TC
45	65	65	80	INFD160	125	80	LC1-D80	LT6-P0M	On TC
55	75	75	80	INFD160	125	80	LC1-D115	LT6-P0M	On TC
75	105	105	115	INFD160	-	125	LC1-D115	LT6-P0M	On TC
				INFD250	200				
90	130	130	150	INFD250	-	160	LC1-D150	LT6-P0M	On TC
				INFD400	250				
110	156	156	160	INFD250	-	160	LC1-F185	LT6-P0M	On TC
			185	INFD400	250				
132	187	187	200	INFD250	-	200	LC1-F265	LT6-P0M	On TC
			250	INFD400	250				
160	230	220	250	INFD250	-	250	LC1-F265	LT6-P0M	On TC
			265	INFD400	315	-			
200	280	280	315	INFD400	-	315	LC1-F400	LT6-P0M	On TC
			400	INFD630	400				
240	338	338	355	INFD400	-	355	LC1-F400	LT6-P0M	On TC
			400	INFD630	450	-			
280	386	386	400	INFD400	-	400	LC1-F500	LT6-P0M	On TC
			500	INFD630	500				
300	415	415	450	INFD630	-	450	LC1-F500	LT6-P0M	On TC
320	425	425	450	INFD630	-	450	LC1-F500	LT6-P0M	On TC
355	478	478	500	INFD630	-	500	LC1-F500	LT6-P0M	On TC
375	482	482	500	INFD630	-	500	LC1-F630	LT6-P0M	On TC

(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) *Currents transformers built-in electronic relays.*

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

Switch-fuse disconnector Merlin Gerin, contactors Telemecanique

Performance: Ue = 690 V - "Iq" 80/100 kA (1)

Starting Adjustable class 10 A/10.

Motors			Switch-Fuse (2)	Fuse-link type		Contactors (3)	Thermal o/l relays	
P (kW)	I (A) 690 V	Ie Max (A)	Type	gG cal(A)	aM cal(A)	Type	Type	
0.75	1.2	1.6	INFC32 or INFD40	4	2	LC1-D09	LR-D 06	1/1.6
1	1.5	1.6	INFC32 or INFD40	4	2	LC1-D09	LR-D 06	1/1.6
1.5	2	2.5	INFC32 or INFD40	6	4	LC1-D09	LR-D 07	1.6/2.5
2.2	2.8	4	INFC32 or INFD40	10	6	LC1-D09	LR-D 08	2.5/4
3	3.8	4	INFC32 or INFD40	10	6	LC1-D09	LR-D 08	2.5/4
4	5	6	INFC32 or INFD40	16	8	LC1-D09	LR-D 10	4/6
5.5	6.5	8	INFC32 or INFD40	20	12	LC1-D09	LR-D 12	5.5/8
7.5	9	13	INFC32 or INFD40	25	16	LC1-D25	LR-D 16	9/13
11	12	13	INFC32 or INFD40	25	16	LC1-D25	LR-D 16	9/13
15	17	18	INFC32 or INFD40 INFC63 or INFD40	- 50	20	LC1-D25	LR-D 22	16/24
18.5	20.2	21	INFC32 or INFD40 INFC63 or INFD40	- 50	25	LC1-D32	LR-D 22	16/24
22	24.2	32	INFC63 or INFD63	63	32	LC1-D40	LR-D 32	23/32
30	33	35	INFD63 INFD160	- 100	40	LC1-D40	LR2-D33 55	30/40
37	40	40	INFD63 INFD160	- 100	40	LC1-D65	LR2-D33 57	37/50
45	47	50	INFD63 INFD160	- 100	50	LC1-D80	LR2-D33 57	37/50
55	58	63	INFD160	100	63	LC1-D115	LR2-D33 59	48/65
75	76	80	INFD160	125	80	LC1-D115	LR2-D33 63	63/80
90	94	100	INFD160 INFD250	- 200	100	LC1-D150	LR9-D53 69	90/150
110	113	125	INFD250 INFD400	- 250	125	LC1-F185	LR9-D53 69	90/150
132	135	185	INFD250 INFD400	- 250	160	LC1-F265	LR9-F53 71	132/220
160	165	180 220	INFD250 INFD400	- 250	200	LC1-F265	LR9-F53 71	132/220
200	203	250 265	INFD250 INFD400	- 315	250 -	LC1-F400	LR9-F73 75	200/330
220	224	250 265	INFD250 INFD400	- 315	250 -	LC1-F400	LR9-F73 75	200/330
250	253	315 330	INFD400 INFD630	- 400	315	LC1-F400	LR9-F73 75	200/330
315	321	355 400	INFD400 INFD630	- 450	355 -	LC1-F500	LR9-F73 79	300/500
355	350	400 500	INFD400 INFD630	- 500	400	LC1-F630	LR9-F73 79	300/500
400	390	450	INFD630	-	450	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) 690 V

Switch-fuse disconnector Merlin Gerin, contactors Telemecanique

Performance: Ue = 690 V - "Iq" 80/100 kA (1)

Starting Adjustable class 10 A/10.

Motors			Switch-Fuse (1)	Fuse-link type		Contactors (2)	Thermal o/l relays	
P (kW)	I (A) 690 V	Ie Max (A)	Type	gG cal(A)	aM cal(A)	Type	Type	
0.75	1.2	5	INFC32 or INFD40	4	2	LC1-D09	LT6-P0M	1/5 (4)
1	1.5	5	INFC32 or INFD40	6	2	LC1-D09	LT6-P0M	1/5 (4)
1.5	2	5	INFC32 or INFD40	10	2	LC1-D09	LT6-P0M	1/5 (4)
2.2	2.8	5	INFC32 or INFD40	10	2	LC1-D09	LT6-P0M	1/5 (4)
3	3.8	5	INFC32 or INFD40	16	4	LC1-D09	LT6-P0M	1/5 (4)
4	5	5	INFC32 or INFD40	16	4	LC1-D09	LT6-P0M	1/5 (4)
5.5	6.5	8	INFC32 or INFD40	20	8	LC1-D09	LT6-P0M	1/5 (4)
7.5	9	18	INFC32 or INFD40	20	10	LC1-D25	LT6-P0M	5/25 (4)
11	12	18	INFC32 or INFD40	32	12	LC1-D25	LT6-P0M	5/25 (4)
15	17	18	INFC32 or INFD40 INFC63 or INFD40	- 50	20	LC1-D25	LT6-P0M	5/25 (4)
18.5	20.2	21	INFC32 or INFD40 INFC63 or INFD40	- 50	25	LC1-D32	LT6-P0M	5/25 (4)
22	24.2	32	INFC63 or INFD63	63	32	LC1-D40	LT6-P0M	On TC
30	33	35	INFD63 INFD160	- 80	40	LC1-D40	LT6-P0M	On TC
37	40	40	INFD63 INFD160	- 80	40	LC1-D65	LT6-P0M	On TC
45	47	50	INFD63 INFD160	- 80	50	LC1-D80	LT6-P0M	On TC
55	58	63	INFD160	100	63	LC1-D115	LT6-P0M	On TC
75	76	80	INFD160	125	80	LC1-D115	LT6-P0M	On TC
90	94	100	INFD160 INFD250	- 200	100	LC1-D150	LT6-P0M	On TC
110	113	125	INFD250 INFD400	- 250	125	LC1-F185	LT6-P0M	On TC
132	135	185	INFD250 INFD400	- 250	160	LC1-F265	LT6-P0M	On TC
160	165	180 220	INFD250 INFD400	- 250	200	LC1-F265	LT6-P0M	On TC
200	203	250 265	INFD250 INFD400	- 315	250 -	LC1-F400	LT6-P0M	On TC
220	224	250 265	INFD250 INFD400	- 315	250 -	LC1-F400	LT6-P0M	On TC
250	253	315 330	INFD400 INFD630	- 400	315	LC1-F400	LT6-P0M	On TC
315	321	355 400	INFD400 INFD630	- 450	355 -	LC1-F500	LT6-P0M	On TC
355	350	400 500	INFD400 INFD630	- 500	400	LC1-F630	LT6-P0M	On TC
400	390	450	INFD630	-	450	LC1-F630	LT6-P0M	On TC

(1) *Coordination chart built with 690 V fuse-links (80 kA for NFC fuse-links, 100 kA for DIN fuse-link).*
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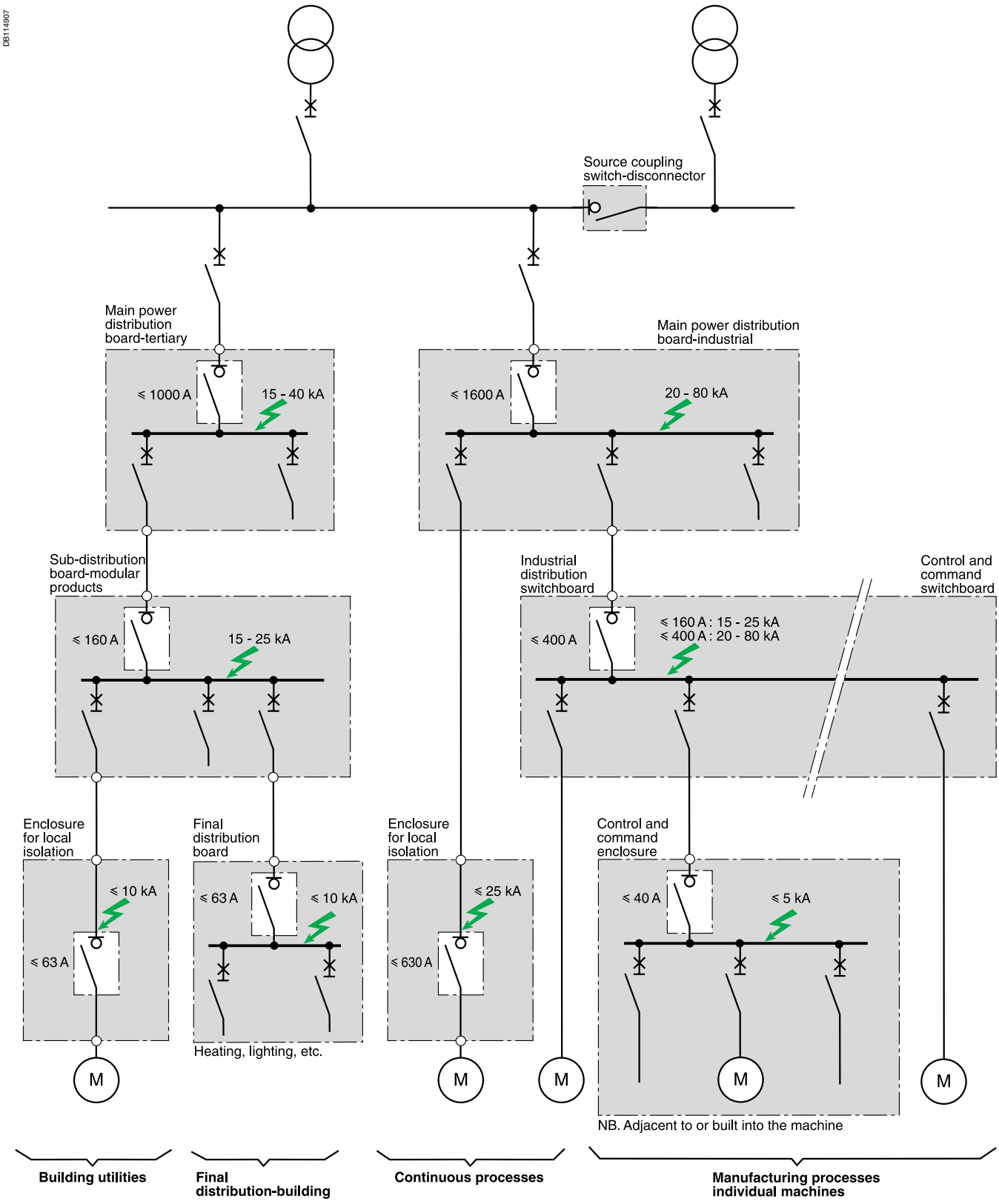
(3) *Reversers: replace LC1 with LC2; star-delta starter: replace LC1 with LC3.*
(4) *Currents transformers built-in electronic relays.*

Use of LV switches

Functions performed by switch



Use of LV switches

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.

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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 185) and the switch technical data table M (see page 187) 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

Renewal and standardisation of the Interpact range is part of the Schneider Electric global 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	Industrial power switchboards	Automation cubicles	Subdistribution switchboards	Small tertiary distribution enclosures	Automation enclosures	Local isolation enclosures
	400-6300 A	400-630 A	400-630 A	20-160 A	⩽ 125 A	⩽ 40/125 A	10-630 A
Vario (Telemecanique)						■	■
Multi 9 I/ID (modular profile)					■		□
Multi 9 I-NA (profil modulaire)					□		■
Interpact INS (modular profile)		■	□ (1)	■	■		■
NG125 NA (modular profile)				■	■		■
Interpact INS (industrial)	■	■	□ (1)				■
Compact NA (industrial)	□	■	□ (1)	□			■
Masterpact HI/HF (industrial)	■						

Table L
■ *very common*
□ *fairly common.*
(1) *Fairly common, but totally suitable for these application types.*

Choosing a Schneider Electric switch

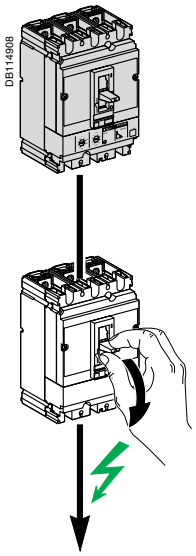
Switch range technical data

Table M below lists the main technical data of the switches in the Schneider Electric ranges.

Range		Vario	Multi 9				Interpact			Compact		Masterpact		
			I	I-NA	ID	NG125NA	INS	INV	IN	NA/NI	CMI	NI	HI	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)	■ (1)	■ (1)	■ (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 or CAM contact.*
(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



Compact NSA type NA switch-disconnectors Upstream protection		NSA125NA	NSA160NA
By Compact NS			
Type/maximum rating (A)		NS160N/125	NS160N/160
Isc max. (380/415 V)	kA rms	36	36
Making capacity (380/415 V)	kA peak	75	75
Type/maximum rating (A)		NS160H/125	NS160H/160
Isc max. (380/415 V)	kA rms	70	70
Making capacity (380/415 V)	kA peak	154	154
Type/maximum rating (A)		NS160L/125	NS160L/160
Isc max. (380/415 V)	kA rms	150	150
Making capacity (380/415 V)	kA peak	330	330
Type/maximum rating (A)		NSA160N/125	NSA160N/160
Isc max. (380/415 V)	kA rms	30	30
Making capacity (380/415 V)	kA peak	63	63
Type/maximum rating (A)			
Isc max. (380/415 V)	kA rms		
Making capacity (380/415 V)	kA peak		
By fuse			
Type aM (1) maximum rating (A)		125	160
Isc max. (500 V)	kA rms	55	33
Making capacity (500 V)	kA peak	121	69
Type gl (2) maximum rating (A)		100	125
Isc max. (500 V)	kA rms	100	100
Making capacity (500 V)	kA peak	220	220
Type gl (1) maximum rating (A)		160	160
Isc max. (500 V)	kA rms	100	100
Making capacity (500 V)	kA peak	220	220
Type BS (2) maximum rating (A)		100 and 63M100	125 and 100M125
Isc max. (500 V)	kA rms	80	80
Making capacity (500 V)	kA peak	176	176
Type BS (1) maximum rating (A)		160 and 100M160	160 and 100M160
Isc max. (500 V)	kA rms	80	80
Making capacity (500 V)	kA peak	176	176

(1) *Protection by external thermal relay obligatory.*
(2) *Without extandernal thermal relay.*

Use of LV switches
Switch-disconnectors protection

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
	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
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
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 efg.
	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
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

(1) *Suitable for NEMA 480 V voltage.*
(2) *Protection by external thermal relay obligatory.*
(3) *Without external thermal relay.*

	NS100NA	NS160NA	NS250NA	NS400NA	NS630NA
	NS100N/100 35 74	NS160N/160 35 74	NS250N/250 35 74	NS400N/400 50 105	NS630N/630 50 105
	NS100SX/100 50 105	NS160SX/160 50 105	NS250SX/250 50 105		
	NS100H/100 70 154	NS160H/160 70 154	NS250H/250 70 154	NS400H/400 70 154	NS630H/630 70 154
	NS100L/100 150 330	NS160L/160 150 330	NS250L/250 150 330	NS400L/400 150 330	NS630L/630 150 330
	NS100N/100 35 74	NS160N/160 35 74	NS250N/250 35 74	NS400N/400 42 88	NS630N/630 42 88
	NS100SX/100 50 105	NS160SX/160 50 105	NS250SX/250 50 105		
	NS100H/100 65 143	NS160H/160 65 143	NS250H/250 65 143	NS400H/400 65 143	NS630H/630 65 143
	NS100L/100 130 286	NS160L/160 130 286	NS250L/250 130 286	NS400L/400 130 286	NS630L/630 130 286
	NS100N/100 25 52	NS160N/160 30 63	NS250N/250 30 63	NS400N/400 30 63	NS630N/630 30 63
	NS100SX/100 35 74	NS160SX/160 35 74	NS250SX/250 35 74		
	NS100H/100 50 105	NS160H/160 50 105	NS250H/250 50 105	NS400H/400 50 105	NS630H/630 50 105
	NS100L/100 100 220	NS160L/160 70 154	NS250L/250 70 154	NS400L/400 100 220	NS630L/630 70 154
	NS100N/100 22 46	NS160N/160 22 46	NS250N/250 22 46	NS400N/400 22 46	NS630N/630 22 46
	NS100SX/100 35 74	NS160SX/160 35 74	NS250SX/250 35 74		
	NS100H/100 35 74	NS160H/160 35 74	NS250H/250 35 74	NS400H/400 35 74	NS630H/630 35 74
	NS100L/100 100 220	NS160L/160 50 105	NS250L/250 50 105	NS400L/400 100 220	NS630L/630 50 105
	NS100N/100 8 14	NS160N/160 8 14	NS250N/250 8 14	NS400N/400 10 17	NS630N/630 10 17
	NS100SX-H/100 10 17	NS160SX-H/160 10 17	NS250SX-H/250 10 17	NS400H/400 20 40	NS630H/630 20 40
	NS100L/100 75 165	NS160L/160 20 40	NS250L/250 20 40	NS400L/400 75 165	NS630L/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 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	DIN off/DIN on (2)
	Making capacity	kA peak	DIN off/DIN 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	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	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN on (3)
By 500/525 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN on (3)
By 690 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN 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) *DIN on:*
- *maximum setting position 15 (In ⩽ 2000).*
- *maximum setting position 12 (In = 2500).*
- *maximum setting position 8 (In = 3200).*

	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
	NS630bL/630 25 53	NS800L/800 25 53	NS1000L/1000 25 53		
	NT06H1/630 25/42 53/88	NT08H1/800 25/42 53/88	NT10H1/1000 25/42 53/88	NT12H1/1000 25/42 53/88	NT16H1/160 25/42 53/88
	NT06L1/630 100 220	NT08L1/800 100 220	NT10L1/1000 100 220	NT12L1/1250 100 220	NT16L1/160 100 220
	NT06L1/630 25 53	NT08L1/800 25 53	NT10L1/1000 25 53	NT12L1/1250 25 53	NT16L1/160 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	NW16N1/160 25/4 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	NW16N1/160 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	NW16H2/160 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	NW16N1/160 25/3 53/6
	NW08H1/630 25/30 53/63	NW08H1/800 25/30 53/63	NW10H1/1000 25/30 53/63	NW12H1/1250 25/30 53/63	NW16H1/160 25/30 53/6
	NW08H2/630 25/30 53/63	NW08H2/800 25/30 53/63	NW10H2/1000 25/30 53/63	NW12H2/1250 25/30 53/63	NW16H2/160 25/30 53/6
	NW08L1/630 25 53	NW08L1/800 25 53	NW10L1/1000 25 53	NW12L1/1250 25 53	NW16L1/160 25 53

Use of LV switches
Switch-disconnectors protection

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	DIN off/DIN on (2)
	Making capacity	kA peak	DIN off/DIN on (2)
Masterpact NT L1			
By 220/525 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (2)
	Making capacity	kA peak	DIN off/DIN on (2)
By 690 V	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (2)
	Making capacity	kA peak	DIN off/DIN on (2)
Masterpact NW N1-H1-H2-H3			
By 220/440-480 V (1) circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (2)
	Making capacity	kA peak	DIN off/DIN on (2)
	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN on (3)
By 500/525 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN on (3)
By 690 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN on (3)
	Type/maximum rating (A)		
	Isc max.	kA rms	DIN off/DIN on (3)
	Making capacity	kA peak	DIN off/DIN on (3)
Masterpact NW L1			
By 220/690 V circuit breaker	Type/maximum rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	

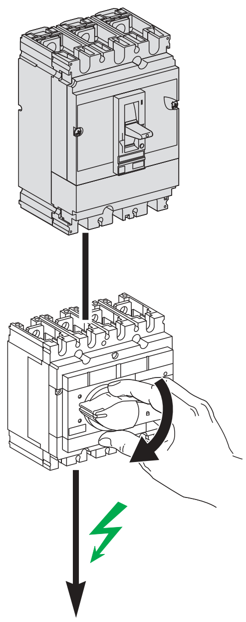
(1) Suitable for NEMA 480 V voltage.
(2) Maximum setting position 15.
(3) DIN on:
- *maximum setting position 15 (In ⩽ 2000).*
- *maximum setting position 12 (In = 2500).*
- *maximum setting position 8 (In = 3200).*

	NS1600bNA	NS2000NA	NS2500NA	NS3200NA
	NS1600N/bN/1600 50/70 105/154	NS2000N/2000 70 154	NS2500N/2500 70 154	NS3200N/3200 70 154
	NS1600H/bH/1600 70/85 154/187	NS2000H/2000 85 187	NS2500H/2500 85 187	NS3200H/320 85 187
	NS1600N/bN/1600 50/65 105/143	NS2000N/2000 65 143	NS2500N/2500 65 143	NS3200N/3200 65 143
	NS1600H/bH/1600 65/85 143/187	NS2000H/2000 85 187	NS2500H/2500 85 187	NS3200H/3200 85 187
	NS1600N/bN/1600 40/65 84/143	NS2000N/2000 65 143	NS2500N/2500 65 143	NS3200N/3200 65 143
	NS1600H/BH/1600 50/65 105/143	NS2000H/2000 65 143	NS2500H/2500 65 143	NS3200H/3200 65 143
	NS1600N/bN/1600 30/65 63/143	NS2000N/2000 65 143	NS2500N/2500 65 143	NS3200N/3200 65 143
	NS1600H/bH/1600 42/65 88/143	NS2000H/2000 65 143	NS2500H/2500 65 143	NS3200H/3200 65 143
	NT16H1/1600 30/42 63/88			
	NT16L1/1600 100 220			
	NT16L1/1600 25 50			
	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 75 143	NW20H1/3000 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		

Protection of switch-disconnectors

INS40toINS160byCompact NScircuitbreaker

DB114971



Interpact INS switch-disconnectors
Upstream protection

By Compact NS circuit breaker

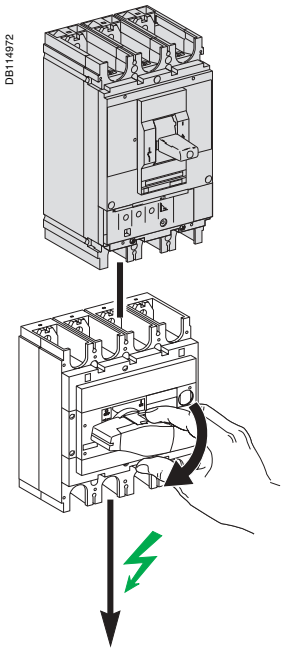
By circuit breaker 380/415 V	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By circuit breaker 440/480 V (1)	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By circuit breaker 500 V (INS40 to INS80) 500/525 V (INS100 to INS160)	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
By circuit breaker 690 V	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak
	Type / max. rating (A)	
	Isc max.	kA rms
	Making capacity	kA peak

***(1)** Applicable for 480 NEMA.*

	INS40	INS63	INS80	INS100	INS125	INS160
	NS100N/40 36 75	NS100N/63 36 75	NS100N/80 36 75	NS100N/100 36 75	-	-
	NS100SX-H-L/40 36 75	NS100SX-H-L/63 36 75	NS100SX-H-L/80 36 75	NS100SX-H-L/100 50/70 105/154	-	-
	NS160N-SX/40 25 52	NS160N-SX/63 25 52	NS160N-SX/80 25 52	NS160-250N/100 36 75	NS160-250N/125 36 75	NS160-250N/160 36 75
	NS160H-L/40 25 52	NS160H-L/63 25 52	NS160H-L/80 25 52	NS160-250SX-H-L/100 50/70 105/154	NS160-250SX-H-L/125 50/70 105/154	NS160-250SX-H-L/160 50/70 105/154
	NSC100N/40 18 37	NSC100N/63 18 37	NSC100N/80 18 37	NSC100N/100 18 37	-	-
	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	-	-	-
	NSA160N/40 30 63	NSA160N/63 30 63	NSA160N/80 30 63	NSA160N/100 30 63	NSA160N/125 30 63	NSA160N/160 30 63
	NS100N/40 35 73	NS100N/63 35 73	NS100N/80 35 73	NS100N/100 35 73	-	-
	NS100SX-H-L/40 35 73	NS100SX-H-L/63 35 73	NS100SX-H-L/80 35 73	NS100SX-H-L/100 35/65 73/143	-	-
	NS160N/40 25 52	NS160N/63 25 52	NS160N/80 25 52	NS160-250N/100 35 73	NS160-250N/125 35 73	NS160-250N/160 35 73
	NS160H-L/40 25 52	NS160H-L/63 25 52	NS160H-L/80 25 52	NS160-250SX-H-L/100 35/65 73/143	NS160-250SX-H-L/125 35/65 73/143	NS160-250SX-H-L/160 35/65 73/143
	NSC100N/40 18 37	NSC100N/63 18 37	NSC100N/80 18 37	NSC100N/100 18 37	-	-
	NS100N/40 18 36	NS100N/63 18 36	NS100N/80 18 36	NS100N/100 18 36	-	-
	NS100SX-H-L/40 18-25 36-53	NS100SX-H-L/63 18-25 36-53	NS100SX-H-L/80 18-25 36-53	NS100SX-H-L/100 35-100 73-220	-	-
	NS160N/40 15 30	NS160N/63 15 30	NS160N/80 15 30	NS160-250N/100 22 46	NS160-250N/125 22 46	NS160-250N/160 22 46
	NS160SX-H-L/40 15 30	NS160SX-H-L/63 15 30	NS160SX-H-L/80 15 30	NS160-250SX-H-L/100 22 46	NS160-250SX-H-L/125 22 46	NS160-250SX-H-L/160 22 46
	NSC100N/40 10 17	NSC100N/63 10 17	NSC100N/80 10 17	NSC100N/100 10 17	-	-
	-	-	-	NS100N/100 8 14	-	-
	-	-	-	NS100SX-H-L/100 10-75 17-165	-	-
	-	-	-	NS160-250N/100 8 14	NS160-250N/125 8 14	NS160-250N/160 8 14
	-	-	-	NS160-250SX-H-L/100 10-20 17-40	NS160-250SX-H-L/125 10-20 17-40	NS160-250SX-H-L/160 10-20 17-40

Protection of switch-disconnectors

INS/INV100 to INS/INV630 by Compact NS circuit breaker



Interpact INS switch-disconnectors Upstream protection			INS250-100 / INV100	INS250-160 / INV160
By Compact NS circuit breaker				
By circuit breaker 380/415 V	Type / max. rating (A)		NS100-160-250N/100	NS160-250N/160
	Isc max.	kA rms	36	36
	Making capacity	kA peak	75	75
	Type / max. rating (A)		NS100-160-250SX/100	NS160-250SX/160
	Isc max.	kA rms	50	50
	Making capacity	kA peak	105	105
	Type / max. rating (A)		NS100-160-250H/100	NS160-250H/160
	Isc max.	kA rms	70	70
	Making capacity	kA peak	154	154
	Type / max. rating (A)		NS100-160-250L/100	NS160-250L/160
	Isc max.	kA rms	150	150
	Making capacity	kA peak	330	330
By circuit breaker 440/480 V (1)	Type / max. rating (A)		NS100-160-250N/100	NS160-250N/160
	Isc max.	kA rms	35	35
	Making capacity	kA peak	73	73
	Type / max. rating (A)		NS100-160-250SX	NS160-250SX
	Isc max.	kA rms	50	50
	Making capacity	kA peak	105	105
	Type / max. rating (A)		NS100-160-250H/100	NS160-250H/160
	Isc max.	kA rms	65	65
	Making capacity	kA peak	143	143
	Type / max. rating (A)		NS100-160-250L/100	NS160-250L/160
	Isc max.	kA rms	130	130
	Making capacity	kA peak	286	286
By circuit breaker 500 V	Type / max. rating (A)		NS100-160-250N/100	NS160-250N/160
	Isc max.	kA rms	25-30-30	30
	Making capacity	kA peak	53-63-63	63
	Type / max. rating (A)		NS100-160-250SX/100	NS160-250SX/160
	Isc max.	kA rms	36	36
	Making capacity	kA peak	75	75
	Type / max. rating (A)		NS100-160-250H/100	NS160-250H/160
	Isc max.	kA rms	50	50
	Making capacity	kA peak	105	105
	Type / max. rating (A)		NS100-160-250L/100	NS160-250L/160
	Isc max.	kA rms	100-70-70	70
	Making capacity	kA peak	220-154-154	154
By circuit breaker 525 V	Type / max. rating (A)		NS100-160-250N/100	NS160-250N/160
	Isc max.	kA rms	22	22
	Making capacity	kA peak	46	46
	Type / max. rating (A)		NS100-160-250SX/100	NS160-250SX/160
	Isc max.	kA rms	35	35
	Making capacity	kA peak	73	73
	Type / max. rating (A)		NS100-160-250H/100	NS160-250H/160
	Isc max.	kA rms	35	35
	Making capacity	kA peak	73	73
	Type / max. rating (A)		NS100-160-250L/100	NS160-250L/160
	Isc max.	kA rms	100-50-50	50
	Making capacity	kA peak	220-105-105	105
By circuit breaker 690 V	Type / max. rating (A)		NS100-160-250N/100	NS160-250N/160
	Isc max.	kA rms	8	8
	Making capacity	kA peak	14	14
	Type / max. rating (A)		NS100-160-250SX/100	NS160-250SX/160
	Isc max.	kA rms	10	10
	Making capacity	kA peak	17	17
	Type / max. rating (A)		NS100-160-250H/100	NS160-250H/160
	Isc max.	kA rms	10	10
	Making capacity	kA peak	17	17
	Type / max. rating (A)		NS100-160-250L/100	NS160-250L/160
	Isc max.	kA rms	75-20-20	20
	Making capacity	kA peak	165-40-40	40

(1) *Applicable for 480 NEMA.*

Protection of switch-disconnectors

INS/INV100 to INS/INV630 by Compact NS circuit breaker

	INS250-200 / INV200	INS/INV250	INS/INV320	INS/INV400	INS/INV500	INS/INV630
	NS250N/200 36 75	NS250N/250 36 75	NS400-630N/320 50 105	NS400-630N/400 50 105	NS630N/500 50 105	NS630N/630 50 105
	NS250SX/200 50 105	NS250SX/250 50 105	-	-	-	-
	NS250H/200 70 154	NS250H/250 70 154	NS400-630H/320 70 154	NS400-630H/400 70 154	NS630H/500 70 154	NS630H/630 70 154
	NS250L/200 150 330	NS250L/250 150 330	NS400-630L/320 150 330	NS400-630L/400 150 330	NS630L/500 150 330	NS630L/630 150 330
	NS250N/200 35 73	NS250N/250 35 73	NS400-630N/320 42 88	NS400-630N/400 42 88	NS630N/500 42 88	NS630N/630 42 88
	NS250SX/200 50 105	NS250SX/250 50 105	-	-	-	-
	NS250H/200 65 143	NS250H/250 65 143	NS400-630H/320 65 143	NS400-630H/400 65 143	NS630H/500 65 143	NS630H/630 65 143
	NS250L/200 130 286	NS250L/250 130 286	NS400-630L/320 130 286	NS400-630L/400 130 286	NS630L/500 130 286	NS630L/630 130 286
	NS250N/200 30 63	NS250N/250 30 63	NS400-630N/320 30 63	NS400-630N/400 30 63	NS630N/500 30 63	NS630N/630 30 63
	NS250SX/200 36 75	NS250SX/250 36 75	-	-	-	-
	NS250H/200 50 105	NS250H/250 50 105	NS400-630H/320 50 105	NS400-630H/400 50 105	NS630H/500 50 105	NS630H/630 50 105
	NS250L/200 70 154	NS250L/250 70 154	NS400-630L/320 100-70 220-154	NS400-630L/400 100-70 220-154	NS630L/500 70 154	NS630L/630 70 154
	NS250N/200 22 46	NS250N/250 22 46	NS400-630N/320 22 46	NS400-630N/400 22 46	NS630N/500 22 46	NS630N/630 22 46
	NS250SX/200 35 73	NS250SX/250 35 73	-	-	-	-
	NS250H/200 35 73	NS250H/250 35 73	NS400-630H/320 35 73	NS400-630H/400 35 73	NS630H/500 35 73	NS630H/630 35 73
	NS250L/200 50 105	NS250L/250 50 105	NS400-630L/320 100-50 220-105	NS400-630L/400 100-50 220-105	NS630L/500 50 105	NS630L/630 50 105
	NS250N/200 8 14	NS250N/250 8 14	NS400-630N/320 10 17	NS400-630N/400 10 17	NS630N/500 10 17	NS630N/630 10 17
	NS250SX/200 10 17	NS250SX/250 10 17	-	-	-	-
	NS250H/200 10 17	NS250H/250 10 17	NS400-630H/320 20 40	NS400-630H/400 20 40	NS630H/500 20 42	NS630H/630 20 42
	NS250L/200 20 40	NS250L/250 20 40	NS400-630L/320 75-35 165-73	NS400-630L/400 75-35 165-73	NS630L/500 35 73	NS630L/630 35 73

Protection of switch-disconnectors

INS/INV630b to INS/INV2500 by Compact NS circuit breaker

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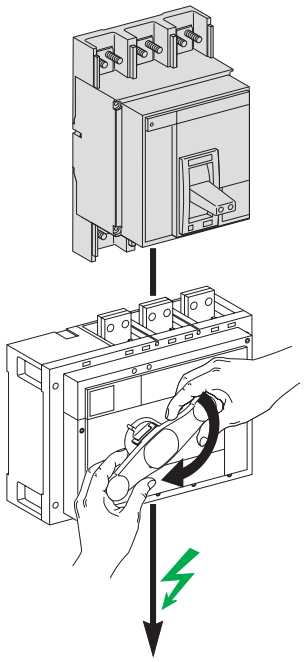

Interpact INS switch-disconnectors Upstream protection		
By Compact NS circuit breaker		
By circuit breaker 380/415 V	Type / max. rating (A) Isc max. Making capacity	 kA rms kA peak
	Type / max. rating (A) Isc max. Making capacity	 kA rms kA peak
	Type / max. rating (A) Isc max. Making capacity	 kA rms kA peak
By circuit breaker 440/480 V (1)	Type / max. rating (A) Isc max. Making capacity	 kA rms kA peak
	Type / max. rating (A) Isc max. Making capacity	 kA rms kA peak
	Type / max. rating (A) Isc max. Making capacity	 kA rms kA peak
By circuit breaker 500/525 V	Type / max. rating (A) Isc max. Making capacity	 kA rms kA peak
	Type / max. rating (A) Isc max. Making capacity	 kA rms kA peak
	Type / max. rating (A) Isc max. Making capacity	 kA rms kA peak
By circuit breaker 690 V	Type / max. rating (A) Isc max. Making capacity	 kA rms kA peak
	Type / max. rating (A) Isc max. Making capacity	 kA rms kA peak
	Type / max. rating (A) Isc max. Making capacity	 kA rms kA peak
By Masterpact NT H1 circuit breaker		
By circuit breaker 220/690 V	Type / max. rating (A) Isc max. Making capacity	 kA rms kA peak
By Masterpact NT H2 circuit breaker		
By circuit breaker 220/690 V	Type / max. rating (A) Isc max. Making capacity	 kA rms kA peak
By Masterpact NT L1 circuit breaker		
By circuit breaker 220/525 V	Type / max. rating (A) Isc max. Making capacity	 kA rms kA peak
By circuit breaker 690 V	Type / max. rating (A) Isc max. Making capacity	 kA rms kA peak

(1) *Applicable for 480 NEMA.*

Protection of switch-disconnectors

INS/INV630b to INS/INV2500 by Compact NS 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
	NS630bL/630 25 53	NS800L/800 25 53	NS1000L/1000 25 53	-	-	-	-
	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	NT12L1/1250 100 220	NT16L1/1600 100 220	-	-
	NT06L1/630 25 53	NT08L1/800 25 53	NT10L1/1000 25 53	NT12L1/1250 25 53	NT16L1/1600 25 53	-	-

Protection of switch-disconnectors

INS/INV630b to INS/INV2500 by Masterpact NT and NW circuit breakers

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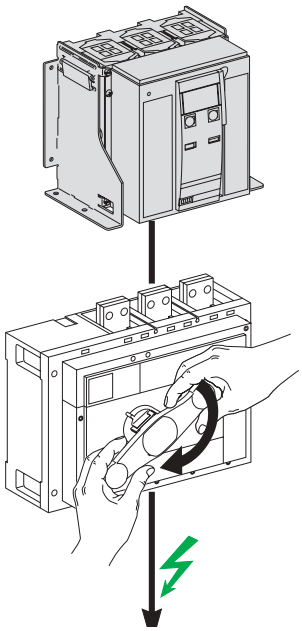

Interpact INS switch-disconnectors			
Upstream protection			
By Masterpact NW N1-H1-H2-H3 circuit breaker			
By circuit breaker 220/440-480 V (1)	Type / max. rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type / max. rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type / max. rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type / max. rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
By circuit breaker 500/525 V	Type / max. rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type / max. rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type / max. rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type / max. rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
By circuit breaker 690 V	Type / max. rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type / max. rating (A)		
	Isc max.	kA rms	DIN OFF / DIN ON
	Making capacity	kA peak	DIN OFF / DIN ON
	Type / max. rating (A)		
	Isc max.	kA rms	DIN OFF / DIN ON
	Making capacity	kA peak	DIN OFF / DIN ON
	Type / max. rating (A)		
	Isc max.	kA rms	DIN OFF / DIN ON
	Making capacity	kA peak	DIN OFF / DIN ON
By Masterpact NW L1 circuit breaker			
By circuit breaker 220/690 V	Type / max. rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
By fuse			
By fuse 500 V	Type aM (2) / max. rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type gG (3) / max. rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type gG (2) / max. rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type BS (3) / max. rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type BS (2) / max. rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
By fuse 690 V	Type aM (2) / max. rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type gG (3) / max. rating (A)		
	Isc max.	kA rms	
	Making capacity	kA peak	
	Type gG (2) / max. 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 NT and NW circuit breakers

	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 switch-disconnectors
INS40 to 2500 and INV100 to 2500 by fuses

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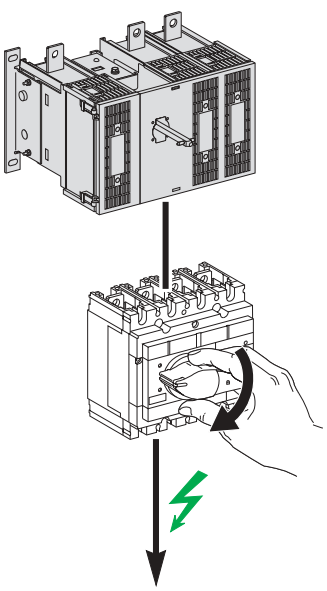


Interpact INS switch-disconnectors Upstream protection			INS40	INS63	INS80
By fuse 500 V	Type aM (1) / max. rating (A)		125	125	125
	Isc max.	kA rms	100	100	100
	Making capacity	kA peak	220	220	220
	Type gG (2) / max. rating (A)		32	50	63
	Isc max.	kA rms	100	100	100
	Making capacity	kA peak	220	220	220
	Type gG (1) / max. rating (A)		100	100	100
	Isc max.	kA rms	100	100	100
	Making capacity	kA peak	220	220	220
	Type BS (2) / max. rating (A)		32	50 & 32M50	63 & 32M63
	Isc max.	kA rms	80	80	80
	Making capacity	kA peak	176	176	176
	Type BS (1) / max. rating (A)		125 & 100M125	125 & 100M125	125 & 100M125
	Isc max.	kA rms	80	80	80
	Making capacity	kA peak	176	176	176

(1) *Mandatory protection by an external thermal relay.*
(2) *No external thermal relay.*

Interpact INS switch-disconnectors Upstream protection			INS/INV400	INS/INV500	INS/INV630
By fuse 500 V	Type aM (1) / max. rating (A)		800	800	800
	Isc max.	kA rms	100	100	100
	Making capacity	kA peak	220	220	220
	Type gG (2) / max. rating (A)		315	400	500
	Isc max.	kA rms	100	100	100
	Making capacity	kA peak	220	220	220
	Type gG (1) / max. rating (A)		630	630	500/630
	Isc max.	kA rms	50	50	100/50
	Making capacity	kA peak	105	105	220/105
	Type BS (2) / max. rating (A)		315 & 200M315	400	500
	Isc max.	kA rms	80	80	80
	Making capacity	kA peak	176	176	176
	Type BS (1) / max. rating (A)		355 & 315M355	450 & 400M450	450 & 400M450
	Isc max.	kA rms	80	80	80
	Making capacity	kA peak	176	176	176
By fuse 690 V	Type aM (1) / max. rating (A)		800	800	800
	Isc max.	kA rms	100	100	100
	Making capacity	kA peak	220	220	220
	Type gG (2) / max. rating (A)		315	400	500
	Isc max.	kA rms	100	100	100
	Making capacity	kA peak	220	220	220
	Type gG (1) / max. rating (A)		630	630	500/630
	Isc max.	kA rms	50	50	100/50
	Making capacity	kA peak	105	105	220/105

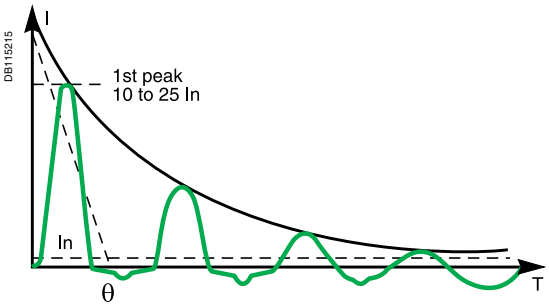
(1) *Mandatory protection by an external thermal relay.*
(2) *No external thermal relay.*

Protection of switch-disconnectors
INS40 to 2500 and INV100 to 2500 by fuses

	INS100	INS125	INS160	INS250-100 INV100	INS250-160 INV160	INS250-200 INV200	INS/INV250	INS/INV320
	200 100 220	200 100 220	200 100 220	315 100 220	315 100 220	315 100 220	315 100 220	800 100 220
	80 100 220	100 100 220	125 100 220	80 100 220	125 100 220	160 100 220	200 100 220	250 100 220
	125/160 100/50 220/105	125/160 100/50 220/105	125/160 100/50 220/105	225/355 100/50 220/105	225/355 100/50 220/105	225/355 100/50 220/105	225/355 100/50 220/105	630 50 105
	80 & 63M80 80 176	100 & 63M100 80 176	125 & 100M125 80 176	80 & 63M80 80 176	125 & 100M125 80 176	160 & 100M160 80 176	200 & 100M200 80 176	250 & 200M250 80 176
	160 & 100M160 80 176	160 & 100M160 80 176	160 & 100M160 80 176	250 & 200M250 80 176	250 & 200M250 80 176	250 & 200M250 80 176	250 & 200M250 80 176	355 & 315M355 80 176

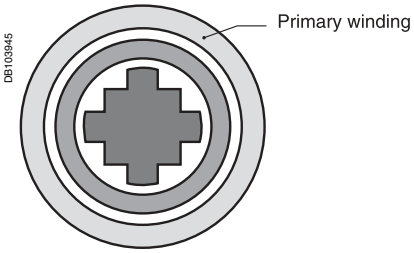
	INS/INV630b	INS/INV800	INS/INV1000	INS/INV1250	INS/INV1600	INS/INV2000	INS/INV2500
	1000/1250 100 220	1000/1250 100 220	1000/1250 100 220	1000/1250 100 220	1000/1250 100 220	-	-
	500 100 220	630 100 220	800 100 220	1000 80 176	1000/1250 80/50 176/105	-	-
	1000/1250 80/50 176/105	1000/1250 80/50 176/105	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

Merlin Gerin 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 NS100 to NS250 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**	NS100N/H/L	TM16D	1
5	**8 to 9**	**14 to 16**	NS100N/H/L	TM25D	1
7 to 9	**13 to 16**	**22 to 28**	NS100N/H/L	TM40D	1
12 to 15	**20 to 25**	**35 to 44**	NS100N/H/L	TM63D	1
16 to 19	**26 to 32**	**45 to 56**	NS100N/H/L	TM80D	1
18 to 23	**32 to 40**	**55 to 69**	NS160N/H/L	TM100D	1
23 to 29	**40 to 50**	**69 to 87**	NS160N/H/L	TM125D	1
29 to 37	**51 to 64**	**89 to 111**	NS250N/H/L	TM160D	1
37 to 46	**64 to 80**	**111 to 139**	NS250N/H/L	TM200D	1

Compact NS100 to NS1600 / Masterpact equipped with STR and 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	NS100N/H/L	STR22SE 40	0.8
9 to 19	16 to 30	27 to 56	NS100N/H/L	STR22SE 100	0.8
15 to 30	05 to 50	44 to 90	NS160N/H/L	STR22SE 160	0.8
23 to 46	40 to 80	70 to 139	NS250N/H/L	STR22SE 250	0.8
37 to 65	64 to 112	111 to 195	NS400N/H	STR23SE/53UE 400	0.7
37 to 55	64 to 95	111 to 166	NS400L	STR23SE/53UE 400	0.6
58 to 83	100 to 144	175 to 250	NS630N/H/L	STR23SE/53UE 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).

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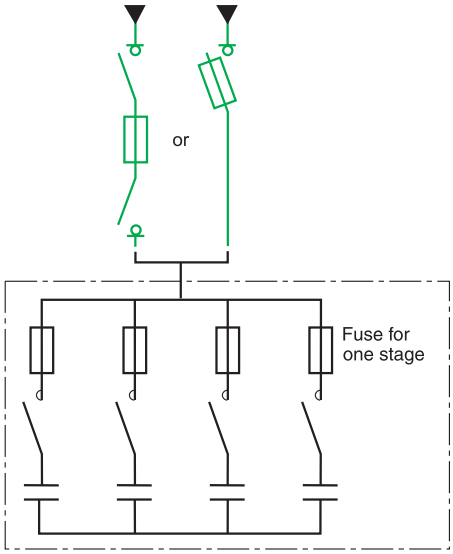


Capacitor-bank protection.

056639

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.

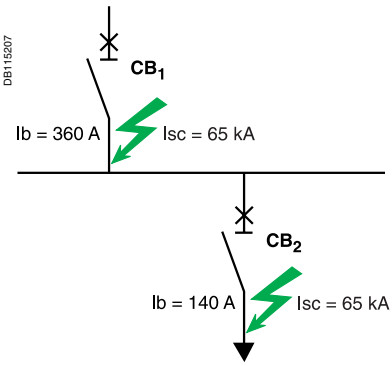
Coordination tables
The tables for coordinating Merlin Gerin.

Traditional circuit breaker selection method

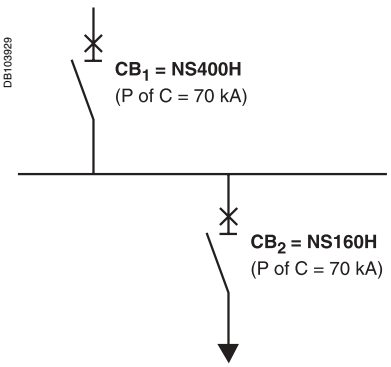
The circuit breaker used to protect a distribution circuit is chosen according to two fundamental criteria:
■ the maximum load current Ib flowing in the supply circuit
■ the prospective short-circuit current Isc at a point where the circuit breaker is to be installed.

The circuit breaker is choosen such that:
□ In circuit breaker ⩾ Ib
□ breaking capacity of the circuit breaker ⩾ Isc.

Installation example



Application for Compact NS range



Coordination tables between circuit breaker and Canalis electrical busbar trunking

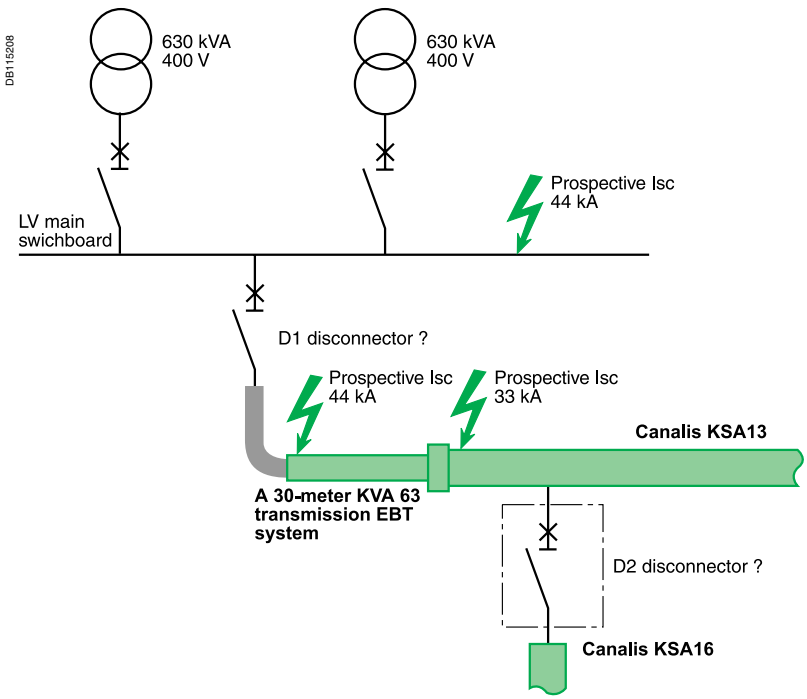
Example

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	NS630N (50 kA breaking capacity)	NS160N (35 kA breaking capacity)
Isc protection level for KVA63 trunking	50 kA	
Isc protection level for KVA63 trunking	50 kA	
Isc protection level 35 kA for KSA16 trunking		35 kA



Coordination tables between circuit breaker and Canalis electrical busbar trunking

Voltage: 380 V/415 V

Type of Canalis busbar trunking KDP20						
Isc max. in kA rms		**10 kA**	**15 kA**	**20 kA**		
Type of circuit breaker Isc max. in kA rms	Multi 9	C60N 10/16/20 NG125N 10/16/20	C60H 10/16/20	C60L 10/16/20		
Type of Canalis busbar trunking KBA25						
		10 kA	**15 kA**	**20 kA**	**25 kA**	
Type of circuit breaker Isc max. in kA rms	Multi 9	C60N 10/.../25 NG125N 10/.../25	C60H 10/.../25		C60L 10/.../25	
Type of Canalis busbar trunking KBB25						
		10 kA	**15 kA**	**20 kA**	**25 kA**	
Type of circuit breaker Isc max. in kA rms	Multi 9	C60N 10/.../25 NG125N 10/.../25	C60H 10/.../25		C60L 10/.../25	
Type of Canalis busbar trunking KBA40						
		10 kA	**15 kA**	**20 kA**	**25 kA**	**50 kA**
Type of circuit breaker Isc max. in kA rms	Multi 9	C60N 10/.../40	C60H 10/.../40	C60L 40 NG125N 10/.../40	C60L 10/.../25	NG125L 10/.../40
Type of Canalis busbar trunking KBB40						
		10 kA	**15 kA**	**20 kA**	**25 kA**	**50 kA**
Type of circuit breaker Isc max. in kA rms	Multi 9	C60N 10/.../40	C60H 10/.../40	C60L 40 NG125N 10/.../40	C60L 10/.../25	NG125L 10/.../40

Type of Canalis busbar trunking KN04						
		10 kA	**15 kA**	**25 kA**		
Type of circuit breaker Isc max. in kA rms	Multi 9	C60N 40 NG125N 10/.../40	C60H 40	C60L 40		
	Compact NS			NS100N/H/L 40		
Type of Canalis busbar trunking KN06						
		10 kA	**15 kA**	**25 kA**	**30 kA**	**50 kA**
Type of circuit breaker Isc max. in kA rms	Multi 9	C60N 63 C120N	C60H 63 C120H	C60H 63 NG125N 63		NG125L 63
	Compact NS		NS100N/H/L D63		NSA160N 63	
Type of Canalis busbar trunking KN10						
		10 kA	**15 kA**	**25 kA**	**30 kA**	
Type of circuit breaker Isc max. in kA rms	Multi 9	C120N	C120H	NG125N 100		
	Compact NS			NS100N/H/L 100	NSA160N 100	
Type of Canalis busbar trunking KN16						
		10 kA	**25 kA**	**30 kA**	**36 kA**	**50 kA**
Type of circuit breaker Isc max. in kA rms	Multi 9		NG125N 125			
	Compact NS			NSA160N 160	NS100N 100/ NS160N 160	NS160SX/H/L 160

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Voltage: 380 V/415 V

Type of Canalis busbar trunking KSA10							
Isc max. in kA rms		**17 kA**	**20 kA**	**25 kA**	**30 kA**		
Type of circuit breaker	Multi 9			NG125N 100			
	Compact				NSA160N 100		
		NS250N/H/L	NS160N/H/L	NS100N/H/L			
Type of Canalis busbar trunking KSA16							
Isc max. in kA rms		**30 kA**	**36 kA**	**50 kA**	**70 kA**	**90 kA**	
Type of circuit breaker	Compact NS	NSA160N 160					
			NS100N		NS100H	NS100L	
			NS160N	NS160SX	NS160H/L		
			NS250N	NS250H/L			
Type of Canalis busbar trunking KSA25							
Isc max. in kA rms		**36 kA**	**45 kA**	**50 kA**	**70 kA**	**100 kA**	**150 kA**
Type of circuit breaker	Compact NS	NS160N			NS160H		NS160L
		NS250N		NS250SX	NS250H		NS250L
			NS400N/H/L				
Type of Canalis busbar trunking KSA40							
Isc max. in kA rms		**24 kA**	**36 kA**	**50 kA**	**70 kA**	**100 kA**	**150 kA**
Type of circuit breaker	Compact NS		NS250N		NS250H		NS250L
				NS400N	NS400H		NS400L
		NS630bN		NS630N/ NS630bL	NS630H		NS630L
Type of Canalis busbar trunking KSA50							
Isc max. in kA rms		**26 kA**	**50 kA**	**70 kA**	**100 kA**	**150 kA**	
Type of circuit breaker	Compact NS		NS400N	NS400H		NS400L	
			NS630N	NS630H		NS630L	
		NS630bN		NS630bL			
Type of Canalis busbar trunking KSA63							
Isc max. in kA rms		**32 kA**	**50 kA**	**70 kA**	**100 kA**	**120 kA**	**150 kA**
Type of circuit breaker	Compact NS		NS400N	NS400H			NS400L
		NS630bN	NS630N	NS630H		NS630bL	NS630L
		NS800N				NS800L	
Type of Canalis busbar trunking KSA80							
Isc max. in kA rms		**38 kA**	**50 kA**	**70 kA**	**150 kA**		
Type of circuit breaker	Compact NS	NS630bN	NS630N	NS630H	NS630L		
		NS800N			NS800L		
		NS1000N			NS1000L		
Type of Canalis busbar trunking KSA100							
Isc max. in kA rms		**38 kA**	**50 kA**	**70 kA**	**150 kA**		
Type of circuit breaker	Compact NS	NS800N	NS630N	NS630H	NS800L		
		NS1000N			NS1000L		
		NS1250N/H					
		NS1600N/H					
	Masterpact NT	NT...H1H2			NT...L1		

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Voltage: 380 V/415 V

Type of Canalis busbar trunking KTA0800						
Isc max. in kA rms		**31 kA**	**50 kA**	**70 kA**	**90 kA**	**150 kA**
Type of circuit breaker	Compact NS	NS800N/H NS1000N/H	NS630N	NS630H	NS800L	NS630L
	Masterpact NT				NT08L1 NT10L1	
	Masterpact NW	NW08H1/H2 NW10H1/H2				
Type of Canalis busbar trunking KTA1000						
Isc max. in kA rms		**42 kA**	**50 kA**	**60 kA**	**150 kA**	
Type of circuit breaker	Compact NS		NS800N/H NS1000N/H NS1250N/H		NS1000L	
	Masterpact NT	NT1.H1	NT.H2		NT10L1	
	Masterpact NW	NW.N1	NW1.H1H2	NW10L1 NW12L1		
Type of Canalis busbar trunking KTA1250						
Isc max. in kA rms		**42 kA**	**50 kA**	**60 kA**	**150 kA**	
Type of circuit breaker	Compact NS		NS1000N/H NS1250N/H NS1600N/H		NS1000L	
	Masterpact NT	NT1.H1	NT.H2		NT10L1	
	Masterpact NW	NW1.N1	NW1.H1H2	NW10L1 NW12L1		
Type of Canalis busbar trunking KTA1600						
Isc max. in kA rms		**42 kA**	**50 kA**	**60 kA**	**90 kA**	
Type of circuit breaker	Compact NS		NS1250N NS1600N	NS1250H NS1600H		
	Masterpact NT	NT12H1 NT16H1	NT12H2 NT16H2			
	Masterpact NW	NW12N1 NW16N1 NW20N1		NW12H1H2 NW16H1H2 NW2.H1H2	NW12L1 NW16L1 NW20L1	
Type of Canalis busbar trunking KTA2000						
Isc max. in kA rms		**42 kA**	**50 kA**	**65 kA**	**72 kA**	**110 kA**
Type of circuit breaker	Compact NS		NS1600N			
	Masterpact NT	NT16H1	NT16H2			
	Masterpact NW	NW16N1 NW20N1		NW16H1 NW2.H1	NW16H2 NW2.H2 NW25H3	NW16L1 NW20L1
Type of Canalis busbar trunking KTA2500						
Isc max. in kA rms		**42 kA**	**65 kA**	**80 kA**	**150 kA**	
Type of circuit breaker	Masterpact NW	NW20N1	NW2.H1 NW32H1 NW40H1	NW40bH1 NW2.H2 NW32H2 NW40H2 NW..H3	NW16L1 NW20L1	
Type of Canalis busbar trunking KTA3200						
Isc max. in kA rms		**65 kA**	**86 kA**	**150 kA**		
Type of circuit breaker	Masterpact NW	NW25H1 NW32H1 NW40H1	NW40bH1 NW2.H2 NW32H2 NW40H2 NW..H3	NW20L1		
Type of Canalis busbar trunking KTA4000						
Isc max. in kA rms		**65 kA**	**90 kA**			
Type of circuit breaker	Masterpact NW	NW32H1 NW40H1	NW40bH1 NW50H1 NW32H2 NW40H2 NW50H2 NW32H3 NW40H3			

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Voltage: 380 V/415 V

Type of Canalis busbar trunking KTC1000						
Isc max. in kA rms		**42 kA**	**50 kA**	**60 kA**	**150 kA**	
Type of circuit breaker	Compact NS		NS800N/H NS1000N/H NS1250N/H		 NS1000L NT10L1	
	Masterpact NT	NT1.H1	NT.H1H2			
	Masterpact NW	NW1.N1	NW1.H1H2	NW10L1 NW12L1		
Type of Canalis busbar trunking KTC1350						
Isc max. in kA rms		**42 kA**	**50 kA**	**60 kA**	**150 kA**	
Type of circuit breaker	Compact NS		NS1000N/H NS1250N/H NS1600N/H		NS1000L	
	Masterpact NT	NT1.H1	NT.H2		NT10L1	
	Masterpact NW	NW.N1	NW1.H1H2	NW10L1 NW12L1		
Type of Canalis busbar trunking KTC1600						
Isc max. in kA rms		**42 kA**	**50 kA**	**60 kA**	**90 kA**	
Type of circuit breaker	Compact NS		NS1250N NS1600N	NS1250H NS1600H	NW12L1 NW16L1	
	Masterpact NT	NT12H1 NT16H1	NT12H2 NT16H2		 NW20L1	
	Masterpact NW	NW12N1 NW16N1 NW20N1		NW12H1H2 NW16H1H2 NW2.H1H2		
Type of Canalis busbar trunking KTC2000						
Isc max. in kA rms		**42 kA**	**50 kA**	**65 kA**	**72 kA**	**110 kA**
Type of circuit breaker	Masterpact NW	 NT16H1 NW16N1 NW20N1	NS1600N NT16H2	 NW16H1 NW2.H1	 NW16H2 NW2.H2 NW25H3	 NW16L1 NW20L1
Type of Canalis busbar trunking KTC2500						
Isc max. in kA rms		**42 kA**	**65 kA**	**80 kA**	**150 kA**	
Type of circuit breaker	Masterpact NW	NW20N1	NW2.H1 NW32H1 NW40H1	NW40bH1 NW2.H2 NW32H2 NW40H2 NW..H3	NW16L1 NW20L1	
Type of Canalis busbar trunking KTC3200						
Isc max. in kA rms		**65 kA**	**86 kA**	**150 kA**		
Type of circuit breaker	Masterpact NW	NW25H1 NW32H1 NW40H1	NW40bH1 NW2.H2 NW32H2 NW40H2 NW..H3	NW20L1		
Type of Canalis busbar trunking KTC4000						
Isc max. in kA rms		**65 kA**	**90 kA**			
Type of circuit breaker	Masterpact NW	NW32H1 NW40H1	NW40bH1 NW50H1 NW32H2 NW40H2 NW50H2 NW32H3 NW40H3			
Type of Canalis busbar trunking KTC5000						
Isc max. in kA rms		**95 kA**				
Type of circuit breaker	Masterpact NW	NW40bH1H2 NW40H2H3 NW50H1H2 NW63H1H2				

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Voltage: 660 V/690 V

Type of Canalis busbar trunking KSA10								
Isc max. in kA rms		**8 kA**	**10 kA**	**20 kA**				
Type of circuit breaker	Compact NS	NS100N NS160N NS250N	NS100SX/H NS160SX/H NS250SX/H	NS100L				
Type of Canalis busbar trunking KSA16								
Isc max. in kA rms		**8 kA**	**10 kA**	**20 kA**	**75 kA**			
Type of circuit breaker	Compact NS	NS100N NS160N NS250N	NS100SX/H NS160SX/H NS250SX/H	 NS160L NS250L	NS100L			
Type of Canalis busbar trunking KSA25								
Isc max. in kA rms		**8 kA**	**10 kA**	**20 kA**	**28 kA**			
Type of circuit breaker	Compact NS	NS160N NS250N	NS160SX/H NS250SX/H NS400N	 NS250L NS400H	 NS400L			
Type of Canalis busbar trunking KSA40								
Isc max. in kA rms		**10 kA**	**20 kA**	**24 kA**	**35 kA**	**75 kA**		
Type of circuit breaker	Compact NS	NS250SX/H NS400N NS630N	NS250L NS400H NS630H	 NS630bH NS..00..	 NS630L	 NS400L NS630bL		
	Masterpact NT			NT..H.L1				
Type of Canalis busbar trunking KSA50								
Isc max. in kA rms		**10 kA**	**20 kA**	**26 kA**	**35 kA**	**75 kA**		
Type of circuit breaker	Compact NS	NS400N NS630N	NS400H NS630H	NS630bN NS630bH NS..00..	NS400L NS630L	 NS630bL		
	Masterpact NT			NT..H.L1				
	Masterpact NW			NW..N1H.L1				
Type of Canalis busbar trunking KSA63								
Isc max. in kA rms		**10 kA**	**20 kA**	**25 kA**	**30 kA**	**32 kA**	**35 kA**	**75 kA**
Type of circuit breaker	Compact NS	NS400N NS630N	NS400H NS630H	 NS800L NS1000L	 NS630bN NS800N NS1250N NS1600N	 NS630bH NS800H NS1000H NS1250H NS1600H NS..00..	NS400L NS630L	 NS630bL
	Masterpact NT			NT..L1		NT..H.		
	Masterpact NW			NW..N1H.L1				
Type of Canalis busbar trunking KSA80								
Isc max. in kA rms		**10 kA**	**20 kA**	**25 kA**	**30 kA**	**35 kA**	**38 kA**	**75 kA**
Type of circuit breaker	Compact NS	NS630N	NS630H	 NS800L NS1000L	NS630bN NS800N NS1000N	NS630L	NS630bH NS800H NS1000H	NS630bL
	Masterpact NT			NT..L1			NT..H.	
	Masterpact NW						NW..N1H.L1	
Type of Canalis busbar trunking KSA100								
Isc max. in kA rms		**10 kA**	**20 kA**	**25 kA**	**30 kA**	**35 kA**	**38 kA**	**75 kA**
Type of circuit breaker	Compact NS	NS630N	NS630H	 NS800L NS1000L	NS630bN NS800N NS1000N NS1250N NS1600N	NS630L	NS630bH NS800H NS1000H NS1250H NS1600H	NS630bL
	Masterpact NT			NT..L1			NT..H.	
	Masterpact NW						NW..N1H.L1	

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Voltage: 660 V/690 V

Type of Canalis busbar trunking KTA10						
Isc max. in kA rms		**25 kA**	**28 kA**	**30 kA**	**40 kA**	
Type of circuit breaker	Compact NS	NS1000L	NS1600bN	NS1000N NS1250N NS1600N	NS1000H NS1250H NS1600H	
	Masterpact NT	NT10L1			NT1.H1H2	
	Masterpact NW				NW..N1 NW1.H1H2 NW10L1 NW12L1	
Type of Canalis busbar trunking KTA12						
Isc max. in kA rms		**25 kA**	**30 kA**	**38 kA**	**42 kA**	**50 kA**
Type of circuit breaker	Compact NS	NS1000L	NS1000N NS1250N NS1600N	NS1600bN	NS1000H NS1250H NS1600H	
	Masterpact NT	NT10L1			NT1.H1H2	
	Masterpact NW				NW..N1	NW1.H1 NW1.H2 NW10L1 NW12L1
Type of Canalis busbar trunking KTA16						
Isc max. in kA rms		**42 kA**	**60 kA**	**65 kA**		
Type of circuit breaker	Compact NS		NS1600bN NS2000N	NW..L1		
	Masterpact NT	NT12H. NT16H.				
	Masterpact NW	NW12N1 NW16N1 NW20N1	NW12H1H2 NW16H1H2 NW20H1H2 NW25H3			
Type of Canalis busbar trunking KTA20						
Isc max. in kA rms		**42 kA**	**65 kA**	**72 kA**	**100 kA**	
Type of circuit breaker	Compact NS		NS1600bN NS2000N NS2500N			
	Masterpact NT	NT16H1H2		NW16H2	NW16L1	
	Masterpact NW	NW16N1 NW20N1	NW16H1 NW20H1 NW25H1	NW20H2 NW25H2H3	NW20L1	
Type of Canalis busbar trunking KTA25						
Isc max. in kA rms		**42 kA**	**65 kA**	**80 kA**	**100 kA**	
Type of circuit breaker	Compact NS		NS2000N NS2500N NS3200N			
	Masterpact NW	NW20N1	NW20H1 NW25H1 NW32H1 NW40H1	NW40bH1 NW25H2H3 NW32H2H3 NW40H2H3 NW40bH2	NW16L1 NW20L1	
Type of Canalis busbar trunking KTA30						
Isc max. in kA rms		**65 kA**	**85 kA**			
Type of circuit breaker	Compact NS	NS2500N NS3200N				
	Masterpact NW	NW25H1 NW32H1 NW40H1	NW2.H2H3 NW32H2H3 NW40H2 NW40bH1 NW40bH2			
Type of Canalis busbar trunking KTA40						
Isc max. in kA rms		**65 kA**	**85 kA**	**90 kA**		
Type of circuit breaker	Compact NS	NS3200N				
	Masterpact NW	NW32H1 NW40H1	NW32H2 NW40H2	NW40bH1 NW50H1 NW40bH2 NW50H2 NW32H3 NW40H3		

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Voltage: 660 V/690 V

Type of Canalis busbar trunking KTC1000

Isc max. in kA rms		25 kA	28 kA	30 kA	40 kA	
Type of circuit breaker	Compact NS	NS1000L	NS1600bN	NS1000N NS1250N NS1600N	NS1000H NS1250H NS1600H	
	Masterpact NT	NT10L1			NT1.H1H2	
	Masterpact NW				NW..N1 NW1.H1H2 NW10L1 NW12L1	

Type of Canalis busbar trunking KTC1350

Isc max. in kA rms		25 kA	30 kA	38 kA	42 kA	50 kA
Type of circuit breaker	Compact NS	NS1000L	NS1000N NS1250N NS1600N	NS1600bN	NS1000H NS1250H NS1600H	
	Masterpact NT	NT10L1			NT1.H1H2	
	Masterpact NW				NW..N1	NW1.H1 NW1.H2 NW10L1 NW12L1

Type of Canalis busbar trunking KTC1600

Isc max. in kA rms		42 kA	60 kA	65 kA		
Type of circuit breaker	Compact NS		NS1600bN NS2000N			
	Masterpact NT	NT12H. NT16H.	NW12H1H2			
	Masterpact NW	NW12N1 NW16N1 NW20N1	NW16H1H2 NW20H1H2 NW25H3	NW..L1		

Type of Canalis busbar trunking KTC2000

Isc max. in kA rms		42 kA	65 kA	72 kA	100 kA	
Type of circuit breaker	Compact NS		NS1600bN NS2000N			
	Masterpact NT	NT16H1H2	NS2500N			
	Masterpact NW	NW16N1 NW20N1	NW16H1 NW20H1 NW25H1	NW16H2 NW20H2 NW25H2H3	NW16L1 NW20L1	

Type of Canalis busbar trunking KTC2500

Isc max. in kA rms		42 kA	65 kA	80 kA	100 kA	
Type of circuit breaker	Compact NS		NS2000N NS2500N			
	Masterpact NT	NW20N1	NS3200N NW20H1	NW40bH1	NW16L1	
	Masterpact NW		NW25H1 NW32H1 NW40H1	NW25H2H3 NW32H2H3 NW40H2H3 NW40bH2	NW20L1	

Type of Canalis busbar trunking KTC3000

Isc max. in kA rms		65 kA	85 kA			
Type of circuit breaker	Compact NS	NS2500N NS3200N				
	Masterpact NW	NW25H1 NW32H1 NW40H1	NW40bH1 NW2.H2H3 NW32H2H3 NW40H2 NW40bH2			

Type of Canalis busbar trunking KTC4000

Isc max. in kA rms		65 kA	85 kA	90 kA		
Type of circuit breaker	Compact NS	NS3200N				
	Masterpact NW	NW32H1 NW40H1	NW32H2 NW40H2	NW40bH1 NW50H1 NW40bH2 NW50H2 NW32H3 NW40H3		

Type of Canalis busbar trunking KTC5000

Isc max. in kA rms		95 kA				
Type of circuit breaker	Masterpact NW	NW40bH1H2 NW40H2H3 NW50H1H2 NW63H1H2				

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Enhanced discrimination through cascading

Introduction

The use of current-limiting circuit breakers makes it possible to implement coordination techniques. This improves circuit breaker performance in terms of breaking capacity and continuity of service.

Coordination techniques are described and recognised by the following standards:

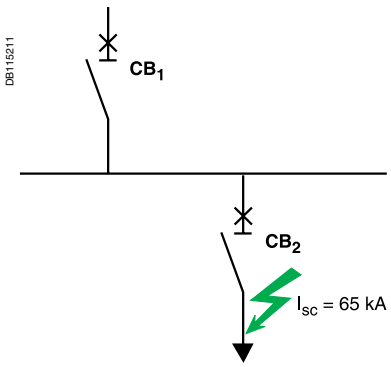
- product standards IEC 60947-1 and 60947-2
- installation standards IEC 60364, NF C15-100, etc

Cascading

The use of a current-limiting circuit breaker upstream to reinforce the breaking capacity of a downstream circuit breaker.

Principle

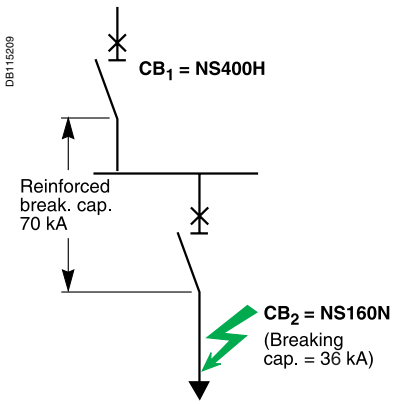
Cascading.



CB_2 breaking capacity

Application for Compact NS range

Cascading.



Coordination tables between circuit breaker and Canalis electrical busbar trunking

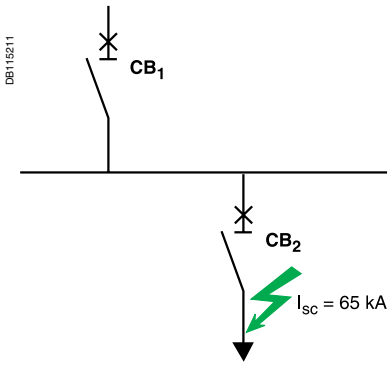
Enhanced discrimination through cascading

Discrimination

In the event of an electrical fault on one outgoing circuit, discrimination is the ability of the electrical installation to maintain the continuity of electrical power supplied to the other circuits not concerned by the fault.
As a general rule, cascading and discrimination techniques are applied independently.
Schneider Electric has developed an exclusive system to conciliate cascading and discrimination.
This system ensures discrimination up to the reinforced breaking capacity of the association of circuit breakers CB_1 and CB_2.

Principle

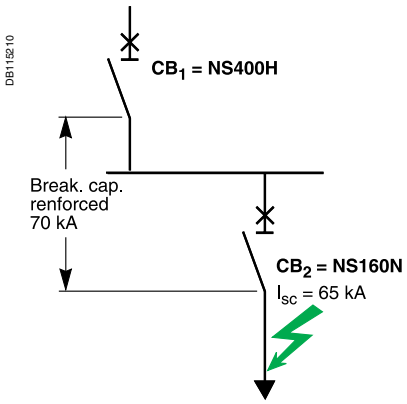
Cascading and reinforced discrimination.



***CB_2** breaking capacity*
*Discrimination ensured up to the reinforced breaking capacity of **CB_2***

Application for Compact NS range

Cascading and reinforced discrimination.



Coordination tables between circuit breaker and Canalis electrical busbar trunking

Enhanced discrimination through cascading

Cascading, reinforced discrimination and reinforced protection of busbar trunking systems (BTS)

This technique is the direct application of cascading and discrimination techniques to the protection of busbar trunking systems.

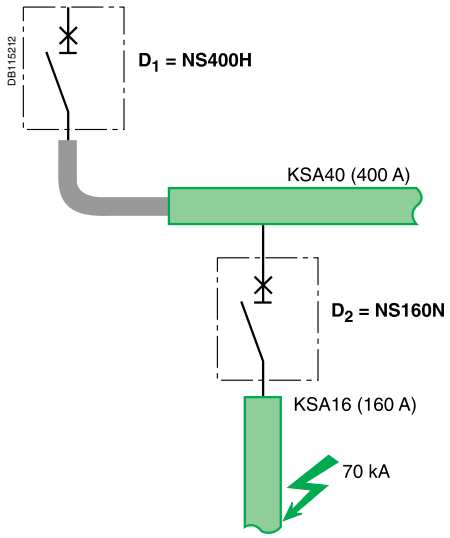
For various upstream circuit breakers and upstream busbar trunking systems, the tables below give directly:

- the level of short-circuit protection of the busbar trunking
- the downstream circuit breaker and associated busbar trunking
- the cascading breaking capacity of the downstream circuit breaker
- the level of reinforced discrimination of the upstream and downstream circuit breakers
- the level of reinforced protection of the downstream busbar trunking.

Application to a Canalis distributed distribution system:

- reinforcement of the breaking capacity of the NS 160N (CB2) up to **70 kA**
- discrimination between CB_1 and CB_2 ensured up to **70 kA**
- protection of Canalis KSA 16 busbar trunking up to **70 kA**.

Alimentation



Example of a table corresponding to the above diagram.

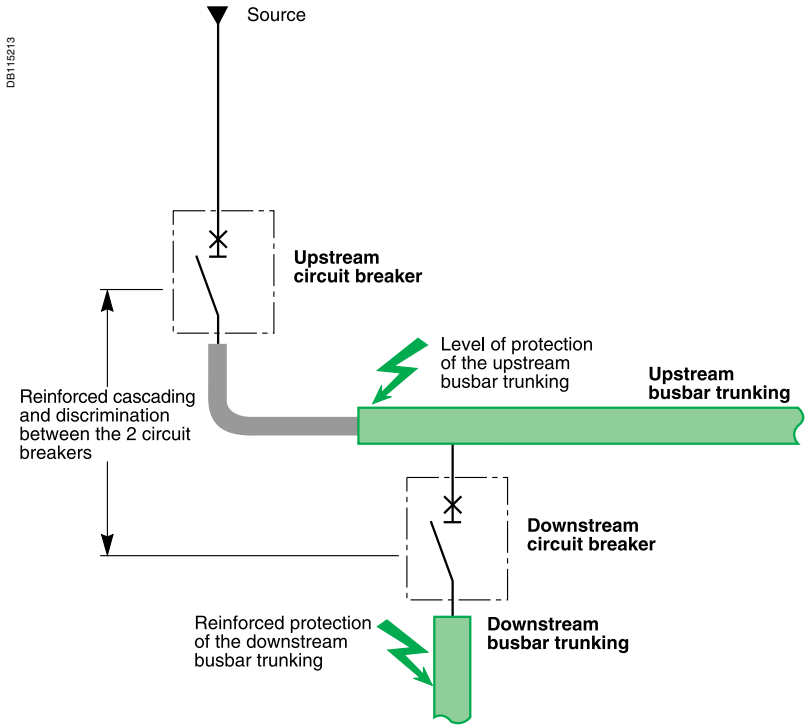
Rated current of the upstream busbar trunking: 315 and 400 A

Upstream circuit breaker Associated trip unit	**NS400N STR23SE/STR53UE**		**NS400H STR23SE/STR53UE**		**NS400H STR23SE/STR53UE**	
Upstream busbar trunking	KSA/KVA/KVC 315 and 400 A		KSA/KVA/KVC 315 and 400 A		**KSA/KVA/KVC 315 and 400 A**	
Level of protection of the upstream busbar trunking (kA)	**50**		**70**		**70**	
Downstream circuit breaker Associated trip unit	**NS100N** TMD/STR22SE	**NS160N**	**NS100N** TMD/STR22SE	**NS160N**	**NS100N** TMD/STR22SE	**NS160N**
Downstream busbar trunking	KSA 100 A	KSA 160 A	KSA 100 A	KSA 160 A	KSA 100 A	**KSA 160 A**
Discrimination limit between upst. and downst. circuit breakers (kA)	50	50	70	70	70	**70**
Reinforced breaking capacity of the downstream circuit breaker (kA)	50	50	70	70	70	**70**
Reinforced protection of the downstream busbar trunking (kA)	50	50	70	70	70	**70**

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Enhanced discrimination through cascading

Voltage: 380/415 V



Rated current of the upstream busbar trunking: 1600 A

Upstream circuit breaker Associated trip unit	**NS1600N Micrologic 5.0**					**NS1600N Micrologic 5.0**		
Upstream busbar trunking	KTA-16/KTC-16 1600 A					KTA-16/KTC-16 1600 A		
Level of protection of the upstream busbar trunking (kA)	**50**					**50**		
Downstream circuit breaker Associated trip unit	**NS100N** TMD/STR22SE	**NS160N** TMD/STR22SE	**NS250N** TMD/STR22SE	**NS400N** STR23SE/STR53UE	**NS630N** STR23SE/STR53UE	**NS100N** 40 A	TMD/STR22SE 63 A	100 A
Downstream busbar trunking	KSA 100 A	KSA 160 A	KSA 250 A	KSA/KVA/KVC 315-400 A	500-630 A	KN 40 A	KN 63 A	KN 100 A
Discrimination limit between upst. and downst. circuit breakers (kA)	50	50	50	45	40	50	50	50
Reinforced breaking capacity of the downstream circuit breaker (kA)	50	50	50	50	50	50	50	50
Reinforced protection of the downstream busbar trunking (kA)	50	50	50	50	50	50	50	50

Upstream circuit breaker Associated trip unit	**NS1600H Micrologic 5.0**					**NS1600H Micrologic 5.0**		
Upstream busbar trunking	KTA-16/KTC-16 1600 A					KTA-16/KTC-16 1600 A		
Level of protection of the upstream busbar trunking (kA)	**70**					**70**		
Downstream circuit breaker Associated trip unit	**NS100N** TMD/STR22SE	**NS160N** TMD/STR22SE	**NS250N** TMD/STR22SE	**NS400N** STR23SE/STR53UE	**NS630N** STR23SE/STR53UE	**NS100N** 40 A	TMD/STR22SE 63 A	100 A
Downstream busbar trunking	KSA 100 A	KSA 160 A	KSA 250 A	KSA/KVA/KVC 315-400 A	500-630 A	KN 40 A	KN 63 A	KN 100 A
Discrimination limit between upst. and downst. circuit breakers (kA)	70	70	70	45	40	70	70	70
Reinforced breaking capacity of the downstream circuit breaker (kA)	70	70	70	70	70	70	70	70
Reinforced protection of the downstream busbar trunking (kA)	70	70	70	70	70	50	50	50

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Enhanced discrimination through cascading

Rated current of the upstream busbar trunking: 1200 to 1350 A

Upstream circuit breaker **Associated trip unit**	**NS1250N** **Micrologic 5.0**					**NS1250N** **Micrologic 5.0**		
Upstream busbar trunking	KTA-12/KTC-13 1200 and 1350 A					KTA-12/KTC-13 1200 and 1350 A		
Level of protection of the upstream busbar trunking (kA)	50					50		
Downstream circuit breaker Associated trip unit	**NS100N** TMD/STR22SE	**NS160N**	**NS250N**	**NS400N** STR23SE/STR53UE	**NS630N**	**NS100N** 40 A	TMD/STR22SE 63 A	 100 A
Downstream busbar trunking	KSA 100 A	KSA 160 A	KSA 250 A	KSA/KVA/KVC 315-400 A	 500-630 A	KN 40 A	KN 63 A	KN 100 A
Discrimination limit between upst. and downst. circuit breakers (kA)	50	50	50	45	40	50	50	50
Reinforced breaking capacity of the downstream circuit breaker (kA)	50	50	50	50	50	50	50	50
Reinforced protection of the downstream busbar trunking (kA)	50	50	50	50	50	50	50	50

Upstream circuit breaker **Associated trip unit**	**NS1250H** **Micrologic 5.0**					**NS1250H** **Micrologic 5.0**		
Upstream busbar trunking	KTA-12/KTC-13 1200 and 1350 A					KTA-12/KTC-13 1250 and 1350 A		
Level of protection of the upstream busbar trunking (kA)	70					70		
Downstream circuit breaker Associated trip unit	**NS100N** TMD/STR22SE	**NS160N**	**NS250N**	**NS400N** STR23SE/STR53UE	**NS630N**	**NS100N** 40 A	TMD/STR22SE 63 A	 100 A
Downstream busbar trunking	KSA 100 A	KSA 160 A	KSA 250 A	KSA/KVA/KVC 315-400 A	 500-630 A	KN 40 A	KN 63 A	KN 100 A
Discrimination limit between upst. and downst. circuit breakers (kA)	70	70	70	45	40	70	70	70
Reinforced breaking capacity of the downstream circuit breaker (kA)	70	70	70	70	70	70	70	70
Reinforced protection of the downstream busbar trunking (kA)	70	70	70	70	70	50	50	50

Rated current of the upstream busbar trunking: 1000 A

Upstream circuit breaker **Associated trip unit**	**NS1000N** **Micrologic 5.0**					**NS1000N** **Micrologic 5.0**		
Upstream busbar trunking	KTA-10/KTC-10 1000 A					KTA-10/KTC-10 1000 A		
Level of protection of the upstream busbar trunking (kA)	50					50		
Downstream circuit breaker Associated trip unit	**NS100N**	**NS160N** TMD/STR22SE	**NS250N**	**NS400N** STR23SE/STR53UE	**NS630N**	**NS100N** 40 A	TMD/STR22SE 63 A	 100 A
Downstream busbar trunking	KSA 100 A	KSA 160 A	KSA 250 A	KSA/KVA/KVC 315-400 A	 500-630 A	KN 40 A	KN 63 A	KN 100 A
Discrimination limit between upst. and downst. circuit breakers (kA)	50	50	50	45	40	50	50	50
Reinforced breaking capacity of the downstream circuit breaker (kA)	50	50	50	50	50	50	50	50
Reinforced protection of the downstream busbar trunking (kA)	50	50	50	50	50	50	50	50

Upstream circuit breaker **Associated trip unit**	**NS1000H** **Micrologic 5.0**					**NS1000H** **Micrologic 5.0**		
Upstream busbar trunking	KTA-10/KTC-10 1000 A					KTA-10/KTC-10 1000 A		
Level of protection of the upstream busbar trunking (kA)	55					55		
Downstream circuit breaker Associated trip unit	**NS100N** TMD/STR22SE	**NS160N**	**NS250N**	**NS400N** STR23SE/STR53UE	**NS630N**	**NS100N** 40 A	TMD/STR22SE 63 A	 100 A
Downstream busbar trunking	KSA 100 A	KSA 160 A	KSA 250 A	KSA/KVA/KVC 315-400 A	 500-630 A	KN 40 A	KN 63 A	KN 100 A
Discrimination limit between upst. and downst. circuit breakers (kA)	70	70	70	45	40	70	70	70
Reinforced breaking capacity of the downstream circuit breaker (kA)	70	70	70	70	70	70	70	70
Reinforced protection of the downstream busbar trunking (kA)	55	55	55	55	55	50	50	50

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Enhanced discrimination through cascading

Rated current of the upstream busbar trunking: 1000 A

Upstream circuit breaker **Associated trip unit**	**NS1000L** **Micrologic 5.0**					**NS1000L** **Micrologic 5.0**		
Upstream busbar trunking	KTA-10/KTC-10 1000 A					KTA-10/KTC-10 1000 A		
Level of protection of the upstream busbar trunking (kA)	**150**					**150**		
Downstream circuit breaker Associated trip unit	**NS100N/H** TMD/STR22SE	**NS160N/H**	**NS250N/H**	**NS400N/H** STR23SE/STR53UE	**NS630N/H**	**NS100N/H** 40 A	TMD/STR22SE 63 A	 100 A
Downstream busbar trunking	KSA 100 A	KSA 160 A	KSA 250 A	KSA/KVA/KVC 315-400 A	 500-630 A	KN 40 A	KN 63 A	KN 100 A
Discrimination limit between upst. and downst. circuit breakers (kA)	150	150	150	150	150	150	150	150
Reinforced breaking capacity of the downstream circuit breaker (kA)	150	150	150	150	150	150	150	150
Reinforced protection of the downstream busbar trunking (kA)	50	70	150	150	150	50	50	50

Rated current of the upstream busbar trunking: 800 A

Upstream circuit breaker **Associated trip unit**	**NS800N** **Micrologic 5.0**				**NS800N** **Micrologic 5.0**		
Upstream busbar trunking	KVA-80/KVC-80 800 A				KVA-80/KVC-80 800 A		
Level of protection of the upstream busbar trunking (kA)	**50**				**50**		
Downstream circuit breaker Associated trip unit	**NS100N** TMD/STR22SE	**NS160N**	**NS250N**	**NS400N** STR23SE/STR53UE	**NS100N** 40 A	TMD/STR22SE 63 A	 100 A
Downstream busbar trunking	KSA 100 A	KSA 160 A	KSA 250 A	KSA/KVA/KVC 315-400 A	KN 40 A	KN 63 A	KN 100 A
Discrimination limit between upst. and downst. circuit breakers (kA)	50	50	50	35	50	50	50
Reinforced breaking capacity of the downstream circuit breaker (kA)	50	50	50	50	50	50	50
Reinforced protection of the downstream busbar trunking (kA)	50	50	50	50	50	50	50

Upstream circuit breaker **Associated trip unit**	**NS800H** **Micrologic 5.0**				**NS800H** **Micrologic 5.0**		
Upstream busbar trunking	KVA-80/KVC-80 800 A				KVA-80/KVC-80 800 A		
Level of protection of the upstream busbar trunking (kA)	**60**				**60**		
Downstream circuit breaker Associated trip unit	**NS100N** TMD/STR22SE	**NS160N**	**NS250N**	**NS400N** STR23SE/STR53UE	**NS100N** 40 A	TMD/STR22SE 63 A	 100 A
Downstream busbar trunking	KSA 100 A	KSA 160 A	KSA 250 A	KSA/KVA/KVC 315-400 A	KN 40 A	KN 63 A	KN 100 A
Discrimination limit between upst. and downst. circuit breakers (kA)	70	70	70	35	70	70	70
Reinforced breaking capacity of the downstream circuit breaker (kA)	70	70	70	70	70	70	70
Reinforced protection of the downstream busbar trunking (kA)	60	60	60	60	50	50	50

Upstream circuit breaker **Associated trip unit**	**NS800L** **Micrologic 5.0**					**NS800L** **Micrologic 5.0**		
Upstream busbar trunking	KVA-80/KVC-80 800 A					KVA-80/KVC-80 800 A		
Level of protection of the upstream busbar trunking (kA)	**150**					**150**		
Downstream circuit breaker Associated trip unit	**NS100N/H** TMD/STR22SE	**NS160N/H**	**NS250N/H**	**NS400N/H** STR23SE/STR53UE		**NS100N/H** 40 A	TMD/STR22SE 63 A	 100 A
Downstream busbar trunking	KSA 100 A	KSA 160 A	KSA 250 A	KSA/KVA/KVC 315-400 A		KN 40 A	KN 63 A	KN 100 A
Discrimination limit between upst. and downst. circuit breakers (kA)	150	150	150	150		150	150	150
Reinforced breaking capacity of the downstream circuit breaker (kA)	150	150	150	150		150	150	150
Reinforced protection of the downstream busbar trunking (kA)	50	70	150	150		50	50	50

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Enhanced discrimination through cascading

Rated current of the upstream busbar trunking: 500 and 630 A

Upstream circuit breaker	**NS630bN**			**NS630bH**			**NS630bL**		
Associated trip unit	**Micrologic 5.0**			**Micrologic 5.0**			**Micrologic 5.0**		
Upstream busbar trunking	KSA/KVA/KVC 630 A			KSA/KVA/KVC 630 A			KSA/KVA/KVC 630 A		
Level of protection of the upstream busbar trunking (kA)	20			29			150		
Downstream circuit breaker Associated trip unit	**NS100N** TMD/STR22SE	**NS160N**	**NS250N**	**NS100N** TMD/STR22SE	**NS160N**	**NS250N**	**NS100N/H** TMD/STR22SE	**NS160N/H**	**NS250N/H**
Downstream busbar trunking	KSA 100 A	KSA 160 A	KSA 250 A	KSA 100 A	KSA 160 A	KSA 250 A	KSA 100 A	KSA 160 A	KSA 250 A
Discrimination limit between upst. and downst. circuit breakers (kA)	50	50	50	70	70	70	150	150	150
Reinforced breaking capacity of the downstream circuit breaker (kA)	50	50	50	70	70	70	150	150	150
Reinforced protection of the downstream busbar trunking (kA)	50	50	50	60	70	70	50	70	150

Upstream circuit breaker	**NS630bN**			**NS630bH**			**NS630bL**		
Associated trip unit	**Micrologic 5.0**			**Micrologic 5.0**			**Micrologic 5.0**		
Upstream busbar trunking	KSA/KVA/KVC 630 A			KSA/KVA/KVC 630 A			KSA/KVA/KVC 630 A		
Level of protection of the upstream busbar trunking (kA)	**29**			**29**			**150**		
Downstream circuit breaker Associated trip unit	**NS100N** TMD/STR22SE 40 A	63 A	100 A	**NS100N** TMD/STR22SE 40 A	63 A	100 A	**NS100N/H** TMD/STR22SE 40 A	63 A	100 A
Downstream busbar trunking	KN 40 A	KN 63 A	KN 100 A	KN 40 A	KN 63 A	KN 100 A	KN 40 A	KN 63 A	KN 100 A
Discrimination limit between upst. and downst. circuit breakers (kA)	50	50	50	70	70	70	150	150	150
Reinforced breaking capacity of the downstream circuit breaker (kA)	50	50	50	70	70	70	150	150	150
Reinforced protection of the downstream busbar trunking (kA)	50	50	50	50	50	50	50	50	50

Upstream circuit breaker	**NS630N**			**NS630H**			**NS630L**		
Associated trip unit	**STR23SE/STR53UE**			**STR23SE/STR53UE**			**STR23SE/STR53UE**		
Upstream busbar trunking	KSA/KVA/KVC 500 and 630 A			KSA/KVA/KVC 500 and 630 A			KSA/KVA/KVC 500 and 630 A		
Level of protection of the upstream busbar trunking (kA)	**45**			**70**			**150**		
Downstream circuit breaker Associated trip unit	**NS100N** TMD/STR22SE	**NS160N**	**NS250N**	**NS100N** TMD/STR22SE	**NS160N**	**NS250N**	**NS100H** TMD/STR22SE	**NS160H**	**NS250H**
Downstream busbar trunking	KSA 100 A	KSA 160 A	KSA 250 A	KSA 100 A	KSA 160 A	KSA 250 A	KSA 100 A	KSA 160 A	KSA 250 A
Discrimination limit between upst. and downst. circuit breakers (kA)	45	45	45	70	70	70	150	150	150
Reinforced breaking capacity of the downstream circuit breaker (kA)	45	45	45	70	70	70	150	150	150
Reinforced protection of the downstream busbar trunking (kA)	45	45	45	70	70	70	70	70	70

Upstream circuit breaker	**NS630N**			**NS630H**			**NS630L**		
Associated trip unit	**STR23SE/STR53UE**			**STR23SE/STR53UE**			**STR23SE/STR53UE**		
Upstream busbar trunking	KSA/KVA/KVC 500 and 630 A			KSA/KVA/KVC 500 and 630 A			KSA/KVA/KVC 500 and 630 A		
Level of protection of the upstream busbar trunking (kA)	**45**			**70**			**150**		
Downstream circuit breaker Associated trip unit	**NS100N** TMD/STR22SE 40 A	63 A	100 A	**NS100N** TMD/STR22SE 40 A	63 A	100 A	**NS100N** TMD/STR22SE 40 A	63 A	100 A
Downstream busbar trunking	KN 40 A	KN 63 A	KN 100 A	KN 40 A	KN 63 A	KN 100 A	KN 40 A	KN 63 A	KN 100 A
Discrimination limit between upst. and downst. circuit breakers (kA)	45	45	45	70	70	70	150	150	150
Reinforced breaking capacity of the downstream circuit breaker (kA)	45	45	45	70	70	70	150	150	150
Reinforced protection of the downstream busbar trunking (kA)	45	45	45	50	50	50	50	50	50

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Enhanced discrimination through cascading

Rated current of the upstream busbar trunking: 315 and 400 A

Upstream circuit breaker **Associated trip unit**	**NS400N** **STR23SE/STR53UE**		**NS400H** **STR23SE/STR53UE**		**NS400L** **STR23SE/STR53UE**	
Upstream busbar trunking	KSA/KVA/KVC 315 and 400 A		KSA/KVA/KVC 315 and 400 A		KSA/KVA/KVC 315 and 400 A	
Level of protection of the upstream busbar trunking (kA)	**45**		**70**		**150**	
Downstream circuit breaker Associated trip unit	**NS100N** TMD/STR22SE	**NS160N** TMD/STR22SE	**NS100N** TMD/STR22SE	**NS160N** TMD/STR22SE	**NS100H** TMD/STR22SE	**NS160H** TMD/STR22SE
Downstream busbar trunking	KSA 100 A	KSA 160 A	KSA 100 A	KSA 160 A	KSA 100 A	KSA 160 A
Discrimination limit between upst. and downst. circuit breakers (kA)	45	45	70	70	150	150
Reinforced breaking capacity of the downstream circuit breaker (kA)	45	45	70	70	150	150
Reinforced protection of the downstream busbar trunking (kA)	45	45	70	70	70	70

Upstream circuit breaker **Associated trip unit**	**NS400N** **STR23SE/STR53UE**			**NS400H** **STR23SE/STR53UE**			**NS400L** **STR23SE/STR53UE**		
Upstream busbar trunking	KSA/KVA/KVC 315 and 400 A			KSA/KVA/KVC 315 and 400 A			KSA/KVA/KVC 315 and 400 A		
Level of protection of the upstream busbar trunking (kA)	**45**			**70**			**150**		
Downstream circuit breaker Associated trip unit	**NS100N** TMD/STR22SE 40 A	63 A	100 A	**NS100N** TMD/STR22SE 40 A	63 A	100 A	**NS100N** TMD/STR22SE 40 A	63 A	100 A
Downstream busbar trunking	KN 40 A	KN 63 A	KN 100 A	KN 40 A	KN 63 A	KN 100 A	KN 40 A	KN 63 A	KN 100 A
Discrimination limit between upst. and downst. circuit breakers (kA)	45	45	45	70	70	70	150	150	150
Reinforced breaking capacity of the downstream circuit breaker (kA)	45	45	45	70	70	70	150	150	150
Reinforced protection of the downstream busbar trunking (kA)	45	45	45	50	50	50	50	50	50

Rated current of the upstream busbar trunking: 200 and 250 A

Upstream circuit breaker **Associated trip unit**	**NS250N** **TMD/STR22SE**	**NS250H** **TMD/STR22SE**	**NS250L** **TMD/STR22SE**
Upstream busbar trunking	KSA/KVA/KVC 200 and 250 A	KSA/KVA/KVC 200 and 250 A	KSA/KVA/KVC 200 and 250 A
Level of protection of the upstream busbar trunking (kA)	**36**	**70**	**150**
Downstream circuit breaker Associated trip unit	**NS100N** TMD/STR22SE	**NS100N** TMD/STR22SE	**NS100H** TMD/STR22SE
Downstream busbar trunking	KSA-10 100 A	KSA-10 100 A	KSA-10 100 A
Discrimination limit between upst. and downst. circuit breakers (kA)	36	36	36
Reinforced breaking capacity of the downstream circuit breaker (kA)	36	70	150
Reinforced protection of the downstream busbar trunking (kA)	36	70	70

Upstream circuit breaker **Associated trip unit**	**NS250N** **TMD/STR22SE**			**NS250H** **TMD/STR22SE**			**NS250L** **TMD/STR22SE**		
Upstream busbar trunking	KSA/KVA/KVC 200 and 250 A			KSA/KVA/KVC 200 and 250 A			KSA/KVA/KVC 200 and 250 A		
Level of protection of the upstream busbar trunking (kA)	**36**			**70**			**150**		
Downstream circuit breaker Associated trip unit	**NS100N** TMD/STR22SE 40 A	63 A	100 A	**NS100N** TMD/STR22SE 40 A	63 A	100 A	**NS100N** TMD/STR22SE 40 A	63 A	100 A
Downstream busbar trunking	KN 40 A	KN 63 A	KN 100 A	KN 40 A	KN 63 A	KN 100 A	KN 40 A	KN 63 A	KN 100 A
Discrimination limit between upst. and downst. circuit breakers (kA)	36	36	36	36	36	36	36	36	36
Reinforced breaking capacity of the downstream circuit breaker (kA)	36	36	36	70	70	70	150	150	150
Reinforced protection of the downstream busbar trunking (kA)	36	36	36	50	50	50	50	50	50

Coordination tables between circuit breaker and Canalis electrical busbar trunking

Enhanced discrimination through cascading

Rated current of the upstream busbar trunking: 200 and 250 A (cont.)

Upstream circuit breaker **Associated trip unit**	**NS250N** **TMD/STR22SE**		**NS250H** **TMD/STR22SE**	
Upstream busbar trunking	KSA/KVA/KVC 200 and 250 A		KSA/KVA/KVC 200 and 250 A	
Level of protection of the upstream busbar trunking (kA)	**36**		**70**	
Downstream circuit breaker Associated trip unit	**C60N** 16/20	**C60N** 25/40	**C60H** 16/20	**C60H** 25/40
Downstream busbar trunking	KLE 16-20 A	KBA/KBB 25-40 A	KLE 16 -20 A	KBA/KBB 25-40 A
Discrimination limit between upstream and downstream circuit breakers (kA)	25	25	40	40
Reinforced breaking capacity of the downstream circuit breaker (kA)	25	25	40	40
Reinforced protection of the downstream busbar trunking (kA)	25	25	40	40

Upstream circuit breaker **Associated trip unit**	**NS250N** **TMD/STR22SE**		**NS250H** **TMD/STR22SE**	
Upstream busbar trunking	KSA/KVA/KVC 200 and 250 A		KSA/KVA/KVC 200 and 250 A	
Level of protection of the upstream busbar trunking (kA)	**36**		**70**	
Downstream circuit breaker Associated trip unit	**C60N** 40 A	**C60N** 63 A	**C60H** 40 A	**C60H** 63 A
Downstream busbar trunking	KN 40 A	KN 63 A	KN 40 A	KN 63 A
Discrimination limit between upstream and downstream circuit breakers (kA)	25	25	40	30
Reinforced breaking capacity of the downstream circuit breaker (kA)	25	25	40	30
Reinforced protection of the downstream busbar trunking (kA)	25	25	40	30

Rated current of the upstream busbar trunking: 160 A

Upstream circuit breaker **Associated trip unit**	**NS160N** **TMD/STR22SE**		**NS160H** **TMD/STR22SE**	
Upstream busbar trunking	KSA 160 A		KSA 160 A	
Level of protection of the upstream busbar trunking (kA)	**36**		**70**	
Downstream circuit breaker Associated trip unit	**C60N** 16/20	**C60N** 25/40	**C60H** 16/20	**C60H** 25/40
Downstream busbar trunking	KLE 17-20 A	KBA/KBB 25-40 A	KLE 16-20 A	KBA/KBB 25-40 A
Discrimination limit between upst. and downstream circuit breakers (kA)	25	25	40	40
Reinforced breaking capacity of the downstream circuit breaker (kA)	25	25	40	40
Reinforced protection of the downstream busbar trunking (kA)	25	25	40	40

Upstream circuit breaker **Associated trip unit**	**NS160N** **TMD/STR22SE**		**NS160H** **TMD/STR22SE**	
Upstream busbar trunking	KSA 160 A		KSA 160 A	
Level of protection of the upstream busbar trunking (kA)	**36**		**70**	
Downstream circuit breaker Associated trip unit	**C60N** 40 A	**C60N** 63 A	**C60H** 40 A	**C60H** 63 A
Downstream busbar trunking	KN 40 A	KN 63 A	KN 40 A	KN 63 A
Discrimination limit between upstream and downstream circuit breakers (kA)	25	25	40	40
Reinforced breaking capacity of the downstream circuit breaker (kA)	25	25	40	40
Reinforced protection of the downstream busbar trunking (kA)	25	25	40	40

Notes

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