

Circuit protection and control devices 0.5 to 6300 A

LV product characteristics
2009



TOOLS

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The technical guide

These technical guides help you comply with installation standards and rules i.e.: the electrical installation guide, the protection guide, the switchboard implementation guide, the technical booklets and the co-ordination tables all form genuine reference tools for the design of high performance electrical installations. For example, the LV protection co-ordination guide - discrimination and cascading - optimises choice of protection and connection devices while also increasing markedly continuity of supply in the installations.



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Multi 9 circuit breakers from 0.5 to 125 A



DPN N Vigi



C60



C120



NG125

Multi 9 circuit breaker		DPN N Vigi	
Number of poles		1 + N	
Electrical characteristics			
Rated current (A)	In	4-40	
Rated insulation voltage (V)	Ui	400	
Impulse withstand voltage (kV)	Uimp	4	
Maximum operational voltage (V)	Ue	AC 50/60 Hz	230
Fast closing		■	
Suitability for isolation and positive contact indication		■	
AC breaking capacity			
IEC 60898 (EN 60898)	Icn (A)	230/400 V	6
IEC 60947-2 (EN 60947-2)	Icu (kA)	130 V	-
		230 V	-
		400 V	-
		440 V	-
		500 V	-
	Ics	(% of Icu)	-
Trip units (non adjustable)			
Curve type		B (Im = 3 to 5 In)	■
		C (Im = 5 to 10 In)	■
		D (Im = 10 to 14 In)	-
		K (Im = 10 to 14 In)	-
		Z (Im = 2.4 to 3.2)	-
		MA (Im = 12 In)	-
Earth leakage protection			
Add-on rcd's (Vigi module)		-	
Integrated		■	
Sensitivity type (mA)		AC	30-300
		A	30
		A si	30-300
		A si E	-
Electrical auxiliaries			
Auxiliary and alarm switches (OF-SD)		■	
Shunt trip (MX); undervoltage release (MN)		■	
Emergency stop opening switch (MNx)		■	
Voltage threshold release (MSU)		■	
Connection			
Cable maxi capacity (mm ²)		Flexible	10
		Rigid	16
Installation			
Plug in base		-	
Terminal shields		-	
Padlocking device		■	
Rotary handle		-	
Dimensions (mm)	W	36	
	H	81	
	D	70	

Multi 9 circuit breakers from 0.5 to 125 A

C60N		C60H		C60L		C120N		C120H		NG125N		NG125H		NG125L					
1	2-3-4	1	2-3-4	1	2-3-4	1	2-3-4	1	2-3-4	1	2-3-4	1	2-3-4	1	2-3-4				
0.5-63		0.5-63		0.5-25	32-40	50-63	63-125	10-125		10-125		10-80		10-80					
500		500		500	500	500	500	500		690		690		690					
6		6		6	6	6	6	6		8		8		8					
440		440		440	440	440	440	440		500		500		500					
■		■		■	■	■	■	■		■		■		■					
■		■		■	■	■	■	■		■		■		■					
6000		10000		-	-	-	10000	15000		-		-		-					
20	-	30	-	50	-	50	-	50	-	20	-	30	-	50	-	70	-	100	-
10	20	15	30	25	50	20	40	15	30	10	20	15	30	25	50	36	70	50	100
3	10	4	15	6	25	5	20	4	15	3	10	4.5	15	6	25	9	36	12.5	50
-	6	-	10	-	20	-	15	-	10	-	6	-	10	-	20	-	30	-	40
-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	8	6	10	6	12
75 %		50 %		50 %		50 %		50 %		75 %		50 %		75 %		75 %		75 %	
■		■		■		■		■		■		■		-		■		■	
■		■		■		■		■		■		■		■		■		■	
■		■		■		■		■		■		■		-		■		■	
-		-		■		■		■		-		-		-		-		-	
-		-		■		■		■		-		-		-		-		-	
-		-		■ ≤ 40 A		-		-		-		-		-		-		-	
■		■		■		■		■		■		■		■		■		■	
-		-		-		-		-		-		-		-		-		-	
10-1000		10-1000		10-1000		30-1000		30-1000		30-1000		30-1000		30-300		30-300		30-300	
30-1000		30-1000		30-500		30-300		30-1000		30-1000		30-1000		30-3000		30-3000		30-3000	
30-1000		30-1000		30		30		30-1000		30-1000		30-1000		30-3000		30-3000		30-3000	
30-1000		30-1000		30		30-300		30-1000		30-1000		30-1000		-		-		-	
■		■		■		■		■		■		■		■		■		■	
■		■		■		■		■		■		■		■		■		■	
■		■		■		■		■		■		■		■		■		■	
■		■		■		■		■		■		■		-		-		-	
16 (≤ 25 A)		25 (> 25 A)						16		25		25		35		35		35	
25 (≤ 25 A)		35 (> 25 A)						25		35		35		50		50		50	
■		■		■		■		■ ≤ 63 A		■ ≤ 63 A		-		-		-		-	
■		■		■		■		■		■		■		■		■		■	
■		■		■		■		■		■		■		■		■		■	
■		■		■		■		■		■		■		■		■		■	
18 per pole		18 per pole		18 per pole		18 per pole		18 per pole		27 per pole		27 per pole		27 per pole		27 per pole		27 per pole	
81		81		81		81		81		81		103		103		103		103	
73		73		73		73		73		73		81		81		81		81	

Characteristics of NG 160 circuit breakers and switch-disconnectors

Incomer for modular switchboards

3 and 4 pole circuit breakers and switch-disconnectors specially designed for use upstream of Multi 9 modular devices:

- reinforcement of breaking capacities of downstream devices by cascading up to 25 kA
- easy installation in Pragma or Prisma Plus type G enclosures:
 - standard 45 mm front cut-out
 - clip-on installation on a DIN rail
 - reduced depth (82.5 mm).

PB103512-40



NG160 circuit breaker.

NG160 circuit breaker

Electrical characteristics as per IEC 60947-2

Rated current (A)	In	40 °C	160
Rated insulation voltage (V)	Ui		800
Rated impulse withstand voltage (kV)	Uimp		8
Rated operational voltage (V)	Ue	AC 50/60 Hz	500
Type of circuit breaker			
Ultimate breaking capacity (kA rms)	Icu	AC 220/240 V	25 40 50
		50/60 380/415 V	16 25 36
		Hz 440 V	10 16 22
		500 V	8 10 15
Service breaking capacity	Ics	% Icu	75 %
Suitability for isolation			■
Durability (C-O cycles)	mechanical		10000
		electrical (In -440 V)	5000

Protection

Built-in thermal-magnetic trip unit

Ratings	In	16	25	32	40	50	63	80	100	125	160
Thermal protection	Ir	fixed threshold									
Magnetic protection	Im	600	600	600	600	600	800	800	1000	1250	1250

NG160NA switch-disconnector

Electrical characteristics as per IEC 60947-3

Conventional thermal current (A)	Ith	40 °C	160
Rated insulation voltage (V)	Ui		800
Rated impulse withstand voltage (kV)	Uimp		8
Rated operational voltage (V)	Ue	AC 50/60 Hz	500
Rated operational current	Ie	AC 50/60 Hz	AC22A AC23A
		220/240 V	160 160
		380/415 V	160 160
		440/480 V	160 160
		500 V	160 125
Short-circuit making capacity	Icm	(kA peak) min. for switch-disconnector alone	2.1
		max. with protection by upstream circuit breaker	330
Short-time withstand current	Icw	(A rms) 1 s	1500
		3 s	1500
Suitability for isolation			■

Coordination between circuit breakers and switch-disconnectors

The switch-disconnector must be protected against downstream short-circuits. The choice of the right switch-disconnector therefore depends on coordination with the protective device installed upstream. The table below indicates the maximum short-circuit current in kArms for which the switch-disconnector is protected by coordination with the circuit breaker located upstream.

Important: the switch-disconnector must be protected against overloads. The rating of the switch-disconnector must be greater than or equal to that of the upstream circuit breaker.

Upstream protection			NR100F	NS100 - NS160		
NG160NA downstream			NR160F	N	SX	H
380 - 415 V	Isc max	kA rms	25	36	50	70
	Making capacity	kA peak	52	75	105	154
440 V	Isc max	kA rms	20	35	50	65
	Making capacity	kA peak	42	73	105	143

Characteristics of NG160 circuit breakers and switch-disconnectors

Incomer for modular switchboards



NG160 in modular enclosure.

Installation and connections

Connections

Connectors Bare cables from 1.5 to 70 mm² cables

Dimensions (mm)		W x H x D	Width in 9 mm modules
NG160	3P	90 x 120 x 82.5	10
	4P	120 x 120 x 82.5	14
NG160 with Vigi	3P	210 x 120 x 82.5	24
	4P	240 x 120 x 82.5	27
Weight (kg)			
Device	3P	1.1	
	4P	1.4	
Device + Vigi module	3P	2.6	
	4P	2.9	

Selection table

EZC circuit breakers



PB101838-10
EZC100-1P.



PB101840-15
EZC100-2P.



PB101843-22
EZC100-3P.



PB102172-27
EZC100-4P.



PB101845-29
EZC250-3P.

EasyPact circuit breakers

Number of poles		
Rated current (A)	In	at 40 °C
Rated insulation voltage (V)	Ui	
Rated impulse withstand voltage (kV)	Uimp	
Rated operational voltage (V)	Ue	AC 50/60 Hz DC

Electrical characteristics as per IEC 60947-2, EN 60947-2, JIS C8201-2-1

Ultimate breaking capacity (kA rms)	Icu	AC 50/60 Hz	110/130 V
			220/230/240 V
			380 V
			400/415 V
			440 V
Rated service breaking capacity (kA rms)	Ics	% Icu	550 V
			DC
			125 V (1P) 250 V (2P in series)
			110-400 V
			415-550 V

Suitability for isolation		
Utilisation category		
Pollution degree		
Endurance (C-O cycles)	Mechanical	
	Electrical	In/415 V

Electrical characteristics as per NEMA-AB1

Breaking capacity (kA rms)	HIC	AC 50/60 Hz	240 V
			277/480 V

Protection

Overload protection	Bimetal	
Instantaneous protection	Magnetic	Fixed (±20 %)

Auxiliaries

Indication contacts	Auxiliary switch	AX
	Alarm switch	AL
	Combined AX + AL	AXAL
Voltage releases	Shunt trip release	SHT
	Undervoltage release	UVR

Installation

Connection	Crimp lugs/bars	
Accessories	Box lugs for bare cables	
	Rotary handles	Direct Extended
	Terminal extensions	
	Spreaders	
	Phase barriers	
	Terminal shields	
	Padlocking system	
	DIN rail adaptor	

Dimension and weight

Dimensions (mm)	D x H W
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Weight (kg)	
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Selection table

EZC circuit breakers

	EZC100B	EZC100F	EZC100N	EZC100H		EZC250F	EZC250N	EZC250H	
	3	3	1	3-4	1	2-3-4	3	3	2-3
	15, 16, 20, 25, 30, 32, 40, 45, 50, 60	15, 16, 20, 25, 30, 32, 40, 45, 50, 60, 63, 75, 80, 100	15, 16, 20, 25, 30, 32, 40, 45, 50, 60, 63, 75, 80, 100	15, 16, 20, 25, 30, 32, 40, 45, 50, 60, 63, 75, 80, 100	15, 16, 20, 25, 30, 32, 40, 45, 50, 60, 63, 75, 80, 100	15, 16, 20, 25, 30, 32, 40, 45, 50, 60, 63, 75, 80, 100	100, 125, 150, 160, 175, 200, 225, 250	100, 125, 150, 160, 175, 200, 225, 250	100, 125, 150, 160, 175, 200, 225, 250
	690	690	690	690	690	690	690	690	690
	6	6	6	6	6	6	6	6	6
	550	550	415	550	415	550	550	550	550
	-	250	125	250	125	250	250	250	250
	10	25	25	25	50	100	25	50	85
	10	25	18	25	25	100 ⁽¹⁾	25	50	85
	7.5	10	2.5	18	5	30	18	25	36
	7.5	10	2.5	15	5	30	18	25	36
	5	7.5	-	10	-	20	15	20	25
	2.5	5	-	5	-	10	5	8	10
	-	5	5	5	10	10	5	20	30
	-	5	-	5	-	10	5	20	30
	25 %	50 %	50 %	50 %	50 %	50 %	50 %	50 %	50 %
	25 %	50 %	50 %	50 %	50 %	25 %	50 %	50 %	50 %
	■	■	■	■	■	■	■	■	■
	A	A	A	A	A	A	A	A	A
	3	3	3	3	3	3	3	3	3
	8 500	8 500	8 500	8 500	8 500	8 500	10 000	10 000	10 000
	1 500	1 500	1 500	1 500	1 500	1 500	5 000	5 000	5 000
	-	-	10	25	18	100	25	50	85
	-	-	10 ⁽²⁾	10	18 ⁽²⁾	18 ⁽³⁾	15	18	25 ⁽³⁾
	fixed	fixed	fixed	fixed	fixed	fixed	fixed	fixed	fixed
	fixed	fixed	fixed	fixed	fixed	fixed	10 In	10 In	10 In
	■	■	-	■	-	■	■	■	■
	■	■	-	■	-	■	■	■	■
	■	■	-	■	-	■	■	■	■
	■	■	-	■	-	■	■	■	■
	■	■	-	■	-	■	■	■	■
	■	■	■	■	■	■	■	■	■
	■	■	■	■	■	■	■	■	■
	■	■	-	■	-	■ ⁽³⁾	■	■	■
	■	■	-	■	-	■ ⁽³⁾	■	■	■
	-	-	-	-	-	-	■	■	■
	■	■	-	■	-	■	■	■	■
	■	■	■	■	■	■	■	■	■
	■	■	-	■	-	■ ⁽³⁾	■	■	■
	■	■	■	■	■	■	■	■	■
	■	■	■	■	■	■	-	-	-
	60 x 130	60 x 130	60 x 130	60 x 130	60 x 130	60 x 130	60 x 165	60 x 165	60 x 165
	75	75	25	75 (3P), 100 (4P)	25	50 (2P), 75 (3P), 100 (4P)	105	105	105
	0.78	0.78	0.28	0.78 (3P), 1.0 (4P)	0.28	0.6 (2P), 0.78 (3P), 1.0 (4P)	1.3	1.3	1.1 (2P), 1.3 (3P)

(1) 50 kA for 2 poles.

(2) For 277 V only.

(3) For 3 poles only.

Selection table

EZC circuit breakers



EZC250.



EZCV250-4P.



EZC400-3P.



EZC400-4P.

EasyPact circuit breakers

Number of poles		
Rated current (A)	I_n	at 40°C
Rated insulation voltage (V)	U_i	
Rated impulse withstand voltage (kV)	U_{imp}	
Rated operational voltage (V)	U_e	AC 50/60 Hz DC

Electrical characteristics as per IEC 60947-2, EN 60947-2 and JIS C8201-2-1/C8201-2-2

Ultimate breaking capacity (kA rms)	I_{cu}	AC 50/60 Hz	220/230/240 V 380 V 400/415 V 440 V 550 V
		DC	125 V (1P) 250 V (2P in series)

Rated service breaking capacity (kA rms)	I_{cs}	% I _{cu}
Suitability for isolation		
Utilisation category		
Pollution degree		
Endurance (C-O cycles)	Mechanical	
	Electrical	I _n /415 V

Electrical characteristics as per NEMA-AB1

Breaking capacity (kA rms)	HIC	AC 50/60 Hz	240 V 277/480 V
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Protection

Overload protection	Bimetal	
Instantaneous protection	Magnetic	fixed (± 20 %)

Earth-leakage protection

Sensitivity (A)	I _{Δn}	adjustable
Time-delay (ms)	Δt	adjustable
Max. breaking time (s)	at 2 I _{Δn}	

Auxiliaries

Indication contacts	Auxiliary switch	AX
	Alarm switch	AL
	Combined AX + AL	AXAL
	Earth-alarm switch	ALV
Voltage releases	Shunt trip release	SHT
	Undervoltage release	UVR

Installation

Connection	Crimp lugs / bars	
Accessories	Box lugs for bare cables	
	Rotary handles	Direct Extended
	Terminal extensions	
	Spreaders	
	Phase barriers	
	Terminal shields	
	Padlocking system	

Dimension and weight

Dimensions (mm)	D x H W
Weight (kg)	

Selection table

EZC circuit breakers

EZC250N	EZC250H	EZCV250N	EZCV250H	EZC400N	EZC400H
4	4	3-4	3-4	3-4	3-4
63, 80, 100, 125, 150, 160, 175, 200, 225, 250	63, 80, 100, 125, 150, 160, 175, 200, 225, 250	63, 80, 100, 125, 150, 160, 175, 200, 225, 250	63, 80, 100, 125, 150, 160, 175, 200, 225, 250	250, 300, 320, 350, 400	250, 300, 320, 350, 400
690	690	440	440	690	690
6	6	6	6	8	8
550	550	440	440	550	550
250	250	-	-	250	250
50	85	85	100	85	100
25	36	25	36	36	50
25	36	25	36	36	50
20	25	20	25	36	50
8	10	-	-	15	20
20	30	-	-	-	-
20	30	-	-	20	40
50 %	50 %	50 %	50 %	50 %	50 %
■	■	■	■	■	■
A	A	A	A	A	A
3	3	3	3	3	3
10 000	10 000	10 000	10 000	4 000	4 000
5 000	5 000	5 000	5 000	1 000	1 000
50	85	50	85	50	85
18	25	-	-	25	35
fixed	fixed	fixed	fixed	fixed	fixed
10 In	10 In	10 In	10 In	10 In	10 In
-	-	0.1/0.3/0.5/1	0.1/0.3/0.5/1	-	-
-	-	0/200/500/1000	0/200/500/1000	-	-
-	-	0.15/0.4/1/2	0.15/0.4/1/2	-	-
■	■	■	■	■	■
■	■	■	■	■	■
■	■	■	■	■	■
-	-	■	■	-	-
■	■	■	■	■	■
■	■	■	■	■	■
■	■	■	■	■	■
■	■	■	■	-	-
■	■	■	■	■	■
■	■	■	■	■	■
■	■	■	■	■	■
■	■	■	■	■	■
■	■	■	■	■	■
68 x 165	68 x 165	68 x 165	68 x 165	103 x 257	103 x 257
140	140	105 (3P) 140 (4P)	105 (3P) 140 (4P)	140 (3P) 185 (4P)	140 (3P) 185 (4P)
1.8	1.8	1.6 (3P) 2.1 (4P)	1.6 (3P) 2.1 (4P)	5 (3P) 7.5 (4P)	5 (3P) 7.5 (4P)

Characteristics and performance of Compact NSX circuit breakers from 100 to 630 A

PB103954-40



Compact NSX100/160/250.

PB103279-44



Compact NSX400/630.

Common characteristics

Rated voltages			
Insulation voltage (V)	Ui		800
Impulse withstand voltage (kV)	Uimp		8
Operational voltage (V)	Ue	AC 50/60 Hz	690
Suitability for isolation		IEC/EN 60947-2	yes
Utilisation category			A
Pollution degree		IEC 60664-1	3

Circuit breakers

Breaking capacity levels

Electrical characteristics as per IEC 60947-2

Rated current (A)	In	40 °C	
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Number of poles

Breaking capacity (kA rms)

Icu	AC 50/60 Hz	220/240 V	380/415 V	440 V	500 V	525 V	660/690 V
------------	-------------	-----------	-----------	-------	-------	-------	-----------

Service breaking capacity (kA rms)

Ics	AC 50/60 Hz	220/240 V	380/415 V	440 V	500 V	525 V	660/690 V
------------	-------------	-----------	-----------	-------	-------	-------	-----------

Durability (C-O cycles)	Mechanical		
		Electrical	440 V
		690 V	In/2
			In

Characteristics as per Nema AB1

Breaking capacity (kA rms)	AC 50/60 Hz	240 V	480 V	600 V
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Characteristics as per UL 508

Breaking capacity (kA rms)	AC 50/60 Hz	240 V	480 V	600 V
----------------------------	-------------	-------	-------	-------

Protection and measurements

Short-circuit protection	Magnetic only
Overload / short-circuit protection	Thermal magnetic
	Electronic
	with neutral protection (Off-0.5-1-OSN) ⁽¹⁾
	with ground-fault protection
	with zone selective interlocking (ZSI) ⁽²⁾

Display / I, U, f, P, E, THD measurements / interrupted-current measurement

Options	Power Meter display on door
	Operating assistance
	Counters
	Histories and alarms
	Metering Com
	Device status/control Com

Earth-leakage protection	By Vigi module
	By Vigirex relay

Installation / connections

Dimensions and weights

Dimensions (mm)	Fixed, front connections	2/3P
	W x H x D	4P
Weight (kg)	Fixed, front connections	2/3P
		4P

Connections

Connection terminals	Pitch	With/without spreaders
Large Cu or Al cables	Cross-section	mm ²

⁽¹⁾ OSN: Over Sized Neutral protection for neutrals carrying high currents (e.g. 3rd harmonics).

⁽²⁾ ZSI: Zone Selective Interlocking using pilot wires.

⁽³⁾ 2P circuit breaker in 3P case for B and F types, only with thermal-magnetic trip unit.

Characteristics and performance of Compact NSX circuit breakers from 100 to 630 A

Common characteristics

Control	Manual	With toggle	■
		With direct or extended rotary handle	■
	Electrical	With remote control	■
Versions	Fixed		■
	Withdrawable	Plug-in base	■
		Chassis	■

NSX100						NSX160						NSX250						NSX400						NSX630					
B	F	N	H	S	L	B	F	N	H	S	L	B	F	N	H	S	L	F	N	H	S	L	F	N	H	S	L		
100						160						250						400						630					
2 ⁽³⁾ , 3, 4						2 ⁽³⁾ , 3, 4						2 ⁽³⁾ , 3, 4						3, 4						3, 4					
40	85	90	100	120	150	40	85	90	100	120	150	40	85	90	100	120	150	40	85	100	120	150	40	85	100	120	150		
25	36	50	70	100	150	25	36	50	70	100	150	25	36	50	70	100	150	36	50	70	100	150	36	50	70	100	150		
20	35	50	65	90	130	20	35	50	65	90	130	20	35	50	65	90	130	30	42	65	90	130	30	42	65	90	130		
15	25	36	50	65	70	15	30	36	50	65	70	15	30	36	50	65	70	25	30	50	65	70	25	30	50	65	70		
-	22	35	35	40	50	-	22	35	35	40	50	-	22	35	35	40	50	20	22	35	40	50	20	22	35	40	50		
-	8	10	10	15	20	-	8	10	10	15	20	-	8	10	10	15	20	10	10	20	25	35	10	10	20	25	35		
40	85	90	100	120	150	40	85	90	100	120	150	40	85	90	100	120	150	40	85	100	120	150	40	85	100	120	150		
25	36	50	70	100	150	25	36	50	70	100	150	25	36	50	70	100	150	36	50	70	100	150	36	50	70	100	150		
20	35	50	65	90	130	20	35	50	65	90	130	20	35	50	65	90	130	30	42	65	90	130	30	42	65	90	130		
7.5	12.5	36	50	65	70	15	30	36	50	65	70	15	30	36	50	65	70	25	30	50	65	70	25	30	50	65	70		
-	11	35	35	40	50	-	22	35	35	40	50	-	22	35	35	40	50	10	11	11	12	12	10	11	11	12	12		
-	4	10	10	15	20	-	8	10	10	15	20	-	8	10	10	15	20	10	10	10	12	12	10	10	10	12	12		
50000						40000						20000						15000						15000					
50000						20000						20000						12000						8000					
30000						10000						10000						6000						4000					
20000						15000						10000						6000						6000					
10000						7500						5000						3000						2000					
40	85	90	100	120	150	40	85	90	100	120	150	40	85	90	100	120	150	40	85	100	120	150	40	85	100	120	150		
20	35	50	65	90	130	20	35	50	65	90	130	20	35	50	65	90	130	30	42	65	90	130	30	42	65	90	130		
-	8	20	35	40	50	-	20	20	35	40	50	-	20	20	35	40	50	-	20	35	40	50	-	20	35	40	50		
-	85	85	85	-	-	-	85	85	85	-	-	-	85	85	85	-	-	85	85	85	-	-	85	85	85	-	-		
-	25	50	65	-	-	-	35	50	65	-	-	-	35	50	65	-	-	35	50	65	-	-	35	50	65	-	-		
-	10	10	10	-	-	-	10	10	10	-	-	-	15	15	15	-	-	20	20	20	-	-	20	20	20	-	-		
■						■						■						■						■					
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■						■						■						■						■					
■						■						■						■						■					
■						■						■						■						■					
105 x 161 x 86						105 x 161 x 86						105 x 161 x 86						140 x 255 x 110						140 x 255 x 110					
140 x 161 x 86						140 x 161 x 86						140 x 161 x 86						185 x 255 x 110						185 x 255 x 110					
2.05						2.2						2.4						6.05						6.2					
2.4						2.6						2.8						7.90						8.13					
35/45 mm						35/45 mm						35/45 mm						45/52.5 mm						45/52.5 mm					
																		45/70 mm						45/70 mm					
300						300						300						4 x 240						4 x 240					

Protection of distribution systems

Compact NS circuit breakers up to 630 A



Compact NS250H



Compact NS630N

Compact circuit breakers

Number of poles		
Control	manual	toggle
	electric	direct or extended rotary handle
Connections	fixed	front connection
		rear connection
	plug-in (on base)	front connection
		rear connection
	withdrawable (on chassis)	front connection
		rear connection

Electrical characteristics as per IEC 60947-2 and EN 60947-2

Rated current (A)	I_n	40 °C	
		65 °C	
Rated insulation voltage (V)	U_i		
Rated impulse withstand voltage (kV)	U_{imp}		
Rated operational voltage (V)	U_e	AC 50/60 Hz	
		DC	

Type of circuit breaker

Ultimate breaking capacity (kA rms)	I_{cu}	AC	220/240 V
		50/60 Hz	380/415 V
			440 V
			500 V
			525 V
			660/690 V

Service breaking capacity (kA rms)	I_{cs}	% I _{cu}	
------------------------------------	-----------------------	-------------------	--

Suitability for isolation

Utilisation category

Durability (C-O cycles)	mechanical		
	electrical	440 V	In/2
			In

Electrical characteristics as per NEMA AB1 (H.I.C.)

Breaking capacity (kA)		240 V
		480 V
		600 V

Electrical characteristics as per UL508

Breaking capacity (kA)		240 V
		480 V
		600 V

Protection

Trip units		
Overload protection	long time	I_r (I _n x ...)
Short-circuit protection	short time	I_{sd} (I _r x ...)
	instantaneous	I_i (I _n x ...)
Earth-fault protection		I_g (I _n x ...)
Zone selective interlocking		ZSI
Add-on earth-leakage protection		add-on Vigi module
		combination with Vigirex relay

Current measurements

Additional measurement, indication and control auxiliaries

Indication contacts	
MX shunt and MN undervoltage releases	
Voltage-presence indicator	
Current-transformer module and ammeter module	
Insulation-monitoring module	
Remote communication by bus	
Device-status indication	
Device remote operation	
Transmission of settings	
Indication and identification of protection devices and alarms	
Transmission of measured current values	

Installation

Accessories	terminal extensions and spreaders
	terminal shields and interphase barriers
	escutcheons
Dimensions (mm) W x H x D	fixed, front connections 2-3P / 4P
Weight (kg)	fixed, front connections 3P / 4P

Source changeover system (see section on source changeover systems)

Manual, remote-operated and automatic source changeover systems

(1) 2P in 3P case for type N only
 (2) specific trip units are available for operational voltages > 525 V
 (3) NS100N et U ≥ 500 V: I_{cs} = 50 % I_{cu}
 (4) operational voltage ≤ 500 V

Protection of distribution systems

Compact NS circuit breakers up to 630 A

NS125E	NS100				NS160				NS250				NS400			NS630		
3, 4	2 ⁽¹⁾ , 3, 4				2 ⁽¹⁾ , 3, 4				2 ⁽¹⁾ , 3, 4				3, 4			3, 4		
■	■				■				■				■			■		
-	■				■				■				■			■		
■	■				■				■				■			■		
■	■				■				■				■			■		
-	■				■				■				■			■		
-	■				■				■				■			■		
-	■				■				■				■			■		
-	■				■				■				■			■		
125	100				160				250				400			630		
-	100				150				220				320			500		
750	750				750				750				750			750		
8	8				8				8				8			8		
500	690				690				690				690			690		
-	750				750				750				750			750		
E	N	SX	H	L	N	SX	H	L	N	SX	H	L	N	H	L	N	H	L
25	85	90	100	150	85	90	100	150	85	90	100	150	85	100	150	85	100	150
16/10	36	50	70	150	36	50	70	150	36	50	70	150	50	70	150	50	70	150
10	35	50	65	130	35	50	65	130	35	50	65	130	42	65	130	42	65	130
6	25	36	50	100	30	36	50	70	30	36	50	70	30	50	100	30	50	70
-	22	35	35	100	22	35	35	50	22	35	35	50	22	35	100	22	35	50
-	8	10	10	75	8	10	10	20	8	10	10	20	10 ⁽²⁾	20 ⁽²⁾	75 ⁽²⁾	10 ⁽²⁾	20 ⁽²⁾	35 ⁽²⁾
50 %	100 % ⁽³⁾				100 %				100 %				100 %			100 % ⁽⁴⁾		
■	■				■				■				■			■		
A	A				A				A				A			A		
10000	50000				40000				20000				15000			15000		
6000	50000				40000				20000				12000			8000		
6000	30000				20000				10000				6000			4000		
E	N	SX	H	L	N	SX	H	L	N	SX	H	L	N	H	L	N	H	L
5	85	90	100	200	85	90	100	200	85	90	100	200	85	100	200	85	100	200
5	35	50	65	130	35	50	65	130	35	50	65	130	42	65	130	42	65	130
-	8	20	35	50	20	20	35	50	20	20	35	50	20	35	50	20	35	50
E	N	SX	H	L	N	SX	H	L	N	SX	H	L	N	H	L	N	H	L
-	85	85	85	-	85	85	85	-	85	85	85	-	-	-	-	-	-	-
-	25	50	65	-	35	50	65	-	35	50	65	-	-	-	-	-	-	-
-	10	10	10	-	10	10	10	-	18	18	18	-	-	-	-	-	-	-
non interchangeable	TM (thermal-magnetic)				STR22 (electronic)				STR23 (electronic)				STR53 (electronic)					
12.5... 125 (A)	■				■				■				■					
-	-				■				■				■					
-	■				■				■				■					
-	-				-				-				■					
-	-				-				-				■					
■	■				■				■				■					
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■	■				■				■				■					
■	■				■				■				■					
105 x 161 x 86 / 140 x 161 x 86													140 x 255 x 110 / 185 x 255 x 110					
2.0 to 2.2 / 2.6 to 2.8													6.2 to 8.1					
-	■				■				■				■					

Protection of distribution systems

Compact NS circuit breakers from 630 up to 3200 A



Compact NS800L



Compact NS2000H

Compact circuit breakers

Number of poles			
Control	manual	toggle	
	electric	direct or extended rotary handle	
Type of circuit breaker			
Connections	fixed	front connection	
		rear connection	
		front connection with bare cables	
	withdrawable (on chassis)	front connection	
		rear connection	
Electrical characteristics as per IEC 60947-2 and EN 60947-2			
Rated current (A)	I_n	50 °C	
		65 °C ⁽¹⁾	
Rated insulation voltage (V)	U_i		
Rated impulse withstand voltage (kV)	U_{imp}		
Rated operational voltage (V)	U_e	AC 50/60 Hz	
Type of circuit breaker			
Ultimate breaking capacity (kA rms)	I_{cu}	AC	220/240 V
		50/60 Hz	380/415 V
			440 V
			500/525 V
			660/690 V
Service breaking capacity (kA rms)	I_{cs}	Value or % I _{cu}	manual operation
			electrical operation
Short-time withstand current (kA rms)	I_{cw}	AC 50/60 Hz	1 s
			3 s
Integrated instantaneous protection		kA peak ±10 %	
Suitability for isolation			
Utilisation category			
Durability (C-O cycles)	mechanical		
	electrical	440 V	I _n /2
			I _n
		690 V	I _n /2
			I _n
Pollution degree			
Electrical characteristics as per Nema AB1			
Breaking capacity at 60 Hz (kA)		240 V	
		480 V	
		600 V	
Protection and measurements			
Interchangeable control units			
Overload protection	long time	I_r (I _n x ...)	
Short-circuit protection	short time	I_{sd} (I _r x ...)	
	instantaneous	I_i (I _n x ...)	
Earth-fault protection		I_g (I _n x ...)	
Residual earth-leakage protection		I_{Δn}	
Zone selective interlocking		ZSI	
Protection of the fourth pole			
Current measurements			
Power measurements			
Advanced protection			
Remote communication by bus			
Device-status indication			
Device remote operation			
Transmission of settings			
Indication and identification of protection devices and alarms			
Transmission of measured current values			
Additional indication and control auxiliaries			
Indication contacts			
Voltage releases		MX shunt release/MN undervoltage release	
Installation			
Accessories		terminal extensions and spreaders	
		terminal shields and interphase barriers	
		escutcheons	
Dimensions fixed devices, front connections (mm)		3P	
		4P	
Weight fixed devices, front connections (kg)		3P	
		4P	
Source changeover system (see section on "source changeover systems")			
Manual, remote-operated and automatic source changeover systems			

(1) 65 °C with vertical connections. See the temperature derating tables for other types of connections.

(2) I_{cs}: 100 % I_{cu} for breaking capacity 440V/500V/660V
I_{cs}: 75 % I_{cu} for breaking capacity 220V/380V.

(3) Except 1600b-3200.

Protection of distribution systems

Compact NS circuit breakers

from 630 up to 3200 A

NS630b		NS800		NS1000			NS1250		NS1600		NS1600b		NS2000		NS2500		NS3200			
3, 4				3, 4			3, 4		3, 4		3, 4									
■				■			■		■		■									
■				■			■		■		■									
■ (except LB)				■			■		■		■									
N		H		L		LB		N		H		N		H						
■		■		■		-		■		■		■		■						
■		■		■		■		■		■		■		■						
■		■		-		-		■		■		-		-						
■		■		■		■		■		■		■		■						
■		■		■		■		■		■		■		■						
630		800		1000			1250		1600		1600		2000		2500		3200			
630		800		1000			1250		1510		1550		1900		2500		2970			
800				800			800		800		800									
8				8			8		8		8									
690				690			690		690		690									
N		H		L		LB		N		H		N		H						
50		70		150		200		50		70		50		70		85		125		
50		70		150		200		50		70		50		70		70		85		
50		65		130		200		50		65		50		65		65		85		
40		50		100		100		40		50		40		50		65		-		
30		42		-		75		30		42		30		42		65		-		
100 %		75 %		100 %		100 %		100 %		75 %		75 %		50 %		100 % ⁽²⁾		75 %		
75 %		50 %		100 %		-		75 %		50 %		75 %		50 %		100 % ⁽²⁾		75 %		
19.2		19.2		-		-		19.2		19.2		19.2		19.2		-		-		
-		-		-		-		-		-		-		-		32		32		
40		40		-		-		40		40		40		40		130		130		
■				■			■		■		■		■		■		■		■	
B		B		A		A		B		B		B		B		B		B		
10000				10000			10000		10000		5000									
6000		6000		4000		4000		6000		6000		4000		5000		3000				
5000		5000		3000		3000		5000		5000		4000		2000		2000				
4000		4000		3000		3000		4000		4000		3000		2000		2000				
2000		2000		2000		2000		2000		2000		1000		1000		1000				
3				3			3		3		3									
N		H		L		LB		N		H		N		H						
50		65		125		200		50		65		50		65		85		125		
35		50		100		200		35		50		35		50		65		85		
25		50		-		100		25		50		25		50		50		-		
Micrologic 2.0		Micrologic 5.0		Micrologic 2.0 A			Micrologic 5.0 A		Micrologic 6.0 A		Micrologic 7.0 A		Micrologic 5.0 P ⁽³⁾		Micrologic 6.0 P ⁽³⁾		Micrologic 7.0 P ⁽³⁾			
■		■		■			■		■		■		■		■		■			
-		■		-			■		■		■		■		■		■			
■		■		■			■		■		■		■		■		■			
-		-		-			-		-		-		■		■		■			
-		-		-			-		-		■		■		■		■			
■		■		■			■		■		■		■		■		■			
-		-		■			■		■		■		■		■		■			
-		-		-			■		■		■		■		■		■			
-		-		-			■		■		■		■		■		■			
■		■		■			■		■		■		■		■		■			
■		■		■			■		-		-		■		■		■			
-		-		■			■		■		■		■		■		■			
-		-		■			■		■		■		-		-		-			
-		-		■			■		■		■		■		■		■			
■		■		■			■		■		■		■		■		■			
■		■		■			■		■		■		■		■		■			
327 x 210 x 147		327 x 280 x 147									350 x 420 x 160		350 x 535 x 160							
14											24									
18											36									
■				■			■		■		■		■		■		■			

DC circuit breakers characteristics

Compact NS100 to NS630



Compact circuit breaker

Number of poles

Electrical characteristics as per IEC 60947-1/ 60947-2 and EN 60947-1 / 60947-2

Rated current at 40 °C	In	(A)
Rated insulation voltage	Ui	(V)
Rated impulse withstand voltage	Uimp	(kV peak)
Rated operational voltage	Ue	(V DC)

Type of circuit breaker

Ultimate breaking capacity (L/R = 5 ms and L/R = 15 ms)	Icu	(kA rms)	V DC	48-125 V (1P) ⁽¹⁾
				250 V (1P) ⁽¹⁾
				500 V (2P) ⁽¹⁾
				750 V (3P) ⁽¹⁾

Service breaking capacity	Ics	% Icu
Rated making capacity	Icm	% Icu
Utilisation category		
Breaking time		(ms)

Suitability for isolation

Pollution degree (as per IEC 60664-1)

Protection against overcurrents (see on catalogue LVPED208006EN)

Trip units	Built-in
	Interchangeable
Protection	Overloads
	Short-circuits

Durability

(O/C cycles)	Mechanical	
	Electrical	250 V In
		250 V In/2
		500 V In
		500 V In/2
		750 V In
		750 V In/2

Indication and control auxiliaries

Auxiliary contacts	
Voltage release	MX shunt release
	MN undervoltage release

Installation and connections

Fixed	Front connection
	Rear connection
Plug-in (base)	Front connection
	Rear connection
Withdrawable (chassis)	Front connection
	Rear connection

Dimensions and weight

Dimensions H x W x D (mm) connected in series	Fixed	1P
		2P
		3P
		4P
Weight (kg) connected in series	Fixed	1P
		2P
		3P
		4P

⁽¹⁾ Number of poles taking part in current interruption.

Example. The NS100N circuit breaker exists in the following versions:

- 1 pole with an Icu of 50 kA, for systems ≤ 250 V
- 2 poles with an Icu of 85 kA, for systems ≤ 500 V; 1 pole can be used in a 250 V system.

DC circuit breaker characteristics

Compact NS100 to NS630

NS100					NS160					NS250	NS400	NS630
1		2		3/4	1		2		3/4	3/4	3/4	3/4
100					160					250	400	550
750					750					750	750	750
8					8					8	8	8
250		500		750	250		500		750	750	750	750
N	H	N	H	DC	N	H	N	H	DC	DC	DC	DC
50	85	85	100	100	50	85	85	100	100	100	100	100
50	85	85	100	100	50	85	85	100	100	100	100	100
-	-	85	100	100	-	-	85	100	100	100	100	100
-	-	-	-	100	-	-	-	-	100	100	100	100
100 %					100 %							
100 %					100 %							
A					A							
< 10 ms					< 10 ms							
■					■							
III					III							
■	■	■	■	-	■	■	■	■	-	-	■	■
-	-	-	-	■	-	-	-	-	■	■	-	-
■	■	■	■	■	■	■	■	■	■	■	-	-
■	■	■	■	■	■	■	■	■	■	■	■	■
10000					10000					5000		
5000					5000					1000		
10000					10000					2000		
5000					5000					1000		
10000					10000					2000		
5000					5000					1000		
10000					10000					2000		
■					■							
■					■							
■					■							
■					■							
■					■							
-	-	-	-	■	-	-	-	-	■	■	■	■
-	-	-	-	■	-	-	-	-	■	■	■	■
-	-	-	-	■	-	-	-	-	■	■	■	■
-	-	-	-	■	-	-	-	-	■	■	■	■
161 x 35 x 86		-		-	161 x 35 x 86		-		-	-		-
-		161 x 70 x 86		-	-		161 x 70 x 86		-	-		-
-		-		161 x 105 x 86	-		-		161 x 105 x 86	255 x 140 x 110		-
-		-		161 x 140 x 86	-		-		161 x 140 x 86	225 x 185 x 110		-
0.7		-		-	0.7		-		-	-		-
-		1.2		-	-		1.2		-	-		-
-		-		1.6 to 1.9	-		-		1.6 to 1.9	6.0		-
-		-		2.1 to 2.3	-		-		2.1 to 2.3	7.8		-

Circuit breakers and switch-disconnectors

NT06 to NT16

PB100767-48



Common characteristics

Number of poles		3/4
Rated insulation voltage (V)	Ui	1000
Impulse withstand voltage (kV)	Uimp	12
Rated operational voltage (V AC 50/60 Hz)	Ue	690/1000
Suitability for isolation	IEC 60947-2	
Degree of pollution	IEC 60664-1	3

Basic switchgear

Circuit breaker as per IEC 60947-2

Rated current (A)	In	at 40 °C/50 °C ⁽¹⁾
Rating of 4th pole (A)		
Sensor ratings (A)		
Type of circuit breaker		
Ultimate breaking capacity (kA rms) V AC 50/60 Hz	Icu	220/415 V 440 V 525 V 690 V 1000 V
Rated service breaking capacity (kA rms)	Ics	% Icu
Utilisation category		
Rated short-time withstand current (kA rms) V AC 50/60 Hz	Icw	0.5 s 1 s 3 s
Integrated instantaneous protection (kA peak ±10 %)		
Rated making capacity (kA peak) V AC 50/60 Hz	Icm	220/415 V 440 V 525 V 690 V 1000 V
Break time (ms) between tripping order and arc extinction		
Closing time (ms)		

Circuit breaker as per NEMA AB1

Breaking capacity (kA) V AC 50/60 Hz		240 V 480 V 600 V
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Switch-disconnector as per IEC 60947-3 and Annex A

Type of switch-disconnector

Rated making capacity (kA peak) AC23A/AC3 category V AC 50/60 Hz	Icm	220 V 440 V 525/690 V 1000 V
Rated short-time withstand current (kA rms) AC23A/AC3 category V AC 50/60 Hz	Icw	0.5 s 1 s 3 s
Ultimate breaking capacity Icu (kA rms) with an external protection relay Maximum time delay: 350 ms		690 V

Mechanical and electrical durability as per IEC 60947-2/3 at In/Ie

Service life	Mechanical	without maintenance	
C/O cycles x 1000			
Type of circuit breaker			
Rated current			
C/O cycles x 1000	Electrical	without maintenance	440 V ⁽⁴⁾ 690 V 1000 V
IEC 60947-2			
Type of circuit breaker or switch-disconnector			
Rated operational current			
C/O cycles x 1000	Electrical	without maintenance	440 V ⁽⁴⁾ 690V
IEC 60947-3			
Type of circuit breaker or switch-disconnector			
Rated operational current			
Ie (A)			
AC23A			
Motor power			
380/415 V (kW) 440 V (kW)			
C/O cycles x 1000	Electrical	without maintenance	440 V ⁽⁴⁾ 690 V
IEC 60947-3 Annex M/IEC 60947-4-1			

(1) 50 °C: rear vertical connected. Refer to temperature derating tables for other connection types.

(2) See the current-limiting curves in the catalogue LVPED208008EN.

(3) SELLIM system.

(4) Available for 480 V NEMA.

(5) Suitable for motor control (direct-on-line starting).

Circuit breakers and switch-disconnectors NT06 to NT16

Sensor selection

Sensor rating (A)	250 ⁽¹⁾	400	630	800	1000	1250	1600
I _r threshold setting(A)	100 to 250	160 to 400	250 to 630	320 to 800	400 to 1000	500 to 1250	640 to 1600

(1) For circuit breaker NT02, please consult us.

NT06			NT08			NT10			NT12		NT16	
630			800			1000			1250		1600	
630			800			1000			1250		1600	
400 to 630			400 to 800			400 to 1000			630 to 1250		800 to 1600	
H1	H2	L1 ⁽²⁾							H1	H2		
42	50	150							42	50		
42	50	130							42	50		
42	42	100							42	42		
42	42	25							42	42		
-	-	-							-	-		
100 %									100 %			
B	B	A							B	B		
42	36	10							42	36		
42	36	-							42	36		
24	20	-							24	20		
-	90	10 x I _n ⁽³⁾							-	90		
88	105	330							88	105		
88	105	286							88	105		
88	88	220							88	88		
88	88	52							88	88		
-	-	-							-	-		
25	25	9							25	25		
< 50									< 50			
42 50 150									42 50			
42 50 100									42 50			
42 42 25									42 42			
HA									HA			
75									75			
75									75			
75									75			
-									-			
36									36			
36									36			
20									20			
36									36			
12.5												
H1	H2	L1	H1	H2	L1	H1	H2	L1	H1	H2	H1	H2
630			800			1000			1250		1600	
6	6	3	6	6	3	6	6	3	6	6	6	6
3	3	2	3	3	2	3	3	2	3	3	3	3
-	-	-	-	-	-	-	-	-	-	-	-	-
H1/H2/HA												
630			800			1000			1250		1600	
6			6			6			6		6	
3			3			3			3		3	
H1/H2/HA												
500			630			800			1000		1000	
≤ 250			250 to 335			335 to 450			450 to 560		450 to 560	
≤ 300			300 to 400			400 to 500			500 to 630		500 to 630	
6												
-												

Circuit breakers and switch-disconnectors

NW08 to NW63



Common characteristics

Number of poles		3/4
Rated insulation voltage (V)	Ui	1000/1250
Impulse withstand voltage (kV)	Uimp	12
Rated operational voltage (V AC 50/60 Hz)	Ue	690/1150
Suitability for isolation	IEC 60947-2	
Degree of pollution	IEC 60664-1	4 (1000 V) / 3 (1250 V)

Basic circuit breaker

Circuit breaker as per IEC 60947-2

Rated current (A)		at 40 °C / 50 °C ⁽¹⁾
Rating of 4th pole (A)		
Sensor ratings (A)		

Type of circuit breaker

Ultimate breaking capacity (kA rms) V AC 50/60 Hz	Icu	220/415/440 V 525 V 690 V 1150 V
Rated service breaking capacity (kA rms)	Ics	% Icu
Utilisation category		
Rated short-time withstand current (kA rms) V AC 50/60 Hz	Icw	1 s 3 s
Integrated instantaneous protection (kA peak ±10 %)		
Rated making capacity (kA peak) V AC 50/60 Hz	Icm	220/415/440 V 525 V 690 V 1150 V

Break time (ms) between tripping order and arc extinction
Closing time (ms)

Circuit breaker as per NEMA AB1

Breaking capacity (kA) V AC 50/60 Hz	240/480 V 600 V
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Unprotected circuit breaker

Tripping by shunt trip as per IEC 60947-2

Type of circuit breaker

Ultimate breaking capacity (kA rms) V AC 50/60 Hz	Icu	220...690 V
Rated service breaking capacity (kA rms)	Ics	% Icu
Rated short-time withstand current (kA rms)	Icw	1 s 3 s

Overload and short-circuit protection
External protection relay: short-circuit protection, maximum delay: 350 ms⁽⁴⁾

Rated making capacity (kA peak) V AC 50/60 Hz	Icm	220...690 V
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Switch-disconnector as per IEC 60947-3 and Annex A

Rated making capacity (kA peak) AC23A/AC3 category V AC 50/60 Hz	Icm	220...690 V 1150 V
Rated short-time withstand current (kA rms) AC23A/AC3 category V AC 50/60 Hz	Icw	0.5 s 1 s 3 s

Mechanical and electrical durability as per IEC 60947-2/3 at In/Ie

Service life Mechanical with maintenance
C/O cycles x 1000 without maintenance

Type of circuit breaker

Rated current		In (A)
C/O cycles x 1000	Electrical	without maintenance
IEC 60947-2		440 V ⁽⁵⁾ 690 V 1150 V

Type of circuit breaker or switch-disconnector

Rated operational current		Ie (A)	AC23A
C/O cycles x 1000	Electrical	without maintenance	440 V ⁽⁵⁾ 690 V
IEC 60947-3			690 V

Type of circuit breaker or switch-disconnector

Rated operational current		Ie (A)	AC3⁽⁶⁾
Motor power			380/415 V (kW) 440 V ⁽⁵⁾ (kW) 690 V (kW)
C/O cycles x 1000	Electrical	without maintenance	440/690 V ⁽⁵⁾
IEC 60947-3 Annex M/IEC 60947-4-1			

⁽¹⁾ 50 °C: rear vertical connected. Refer to temperature derating tables for other connection types.

⁽²⁾ See the current-limiting curves in the catalogue LVPED208008EN.

⁽³⁾ Equipped with a trip unit with a making current of 90 kA peak.

⁽⁴⁾ External protection must comply with permissible thermal constraints of the circuit breaker (please consult us). No fault-trip indication by the SDE or the reset button.

⁽⁵⁾ Available for 480 V NEMA.

⁽⁶⁾ Suitable for motor control (direct-on-line starting).

Circuit breakers and switch-disconnectors NW08 to NW63

Sensor selection													
Sensor rating (A)	250 ⁽¹⁾	400	630	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
Ir threshold setting(A)	100 to 250	160 to 400	250 to 630	320 to 800	400 to 1000	500 to 1250	630 to 1600	800 to 2000	1000 to 2500	1250 to 3200	1600 to 4000	2000 to 5000	2500 to 6300

(1) For circuit breaker NW02, please consult us.

NW08	NW10	NW12	NW16		NW20					NW25	NW32	NW40		NW40b	NW50	NW63
800	1000	1250	1600		2000					2500	3200	4000		4000	5000	6300
800	1000	1250	1600		2000					2500	3200	4000		4000	5000	6300
400 to 800	400 to 1000	630 to 1250	800 to 1600		1000 to 2000					1250 to 2500	1600 to 3200	2000 to 4000		2000 to 4000	2500 to 5000	3200 to 6300
N1	H1	H2	L1 ⁽²⁾	H10	H1	H2	H3	L1 ⁽²⁾	H10	H1	H2	H3	H10	H1	H2	
42	65	100	150	-	65	100	150	150	-	65	100	150	-	100	150	
42	65	85	130	-	65	85	130	130	-	65	85	130	-	100	130	
42	65	85	100	-	65	85	100	100	-	65	85	100	-	100	100	
-	-	-	-	50	-	-	-	-	50	-	-	-	50	-	-	
100 %					100 %					100 %				100 %		
B					B					B				B		
42	65	85	30	50	65	85	65	30	50	65	85	65	50	100	100	
22	36	50	30	50	36	75	65	30	50	65	75	65	50	100	100	
-	-	190	80	-	-	190	150	80	-	-	190	150	-	-	270	
88	143	220	330	-	143	220	330	330	-	143	220	330	-	220	330	
88	143	187	286	-	143	187	286	286	-	143	187	286	-	220	286	
88	143	187	220	-	143	187	220	220	-	143	187	220	-	220	220	
-	-	-	-	105	-	-	-	-	105	-	-	-	105	-	-	
25	25	25	10	25	25	25	25	10	25	25	25	25	25	25	25	
< 70					< 70					< 70				< 80		

42	65	100	150	-	65	100	150	150	-	65	100	150	-	100	150
42	65	85	100	-	65	85	100	100	-	65	85	100	-	100	100

HA		HF ⁽³⁾		HA		HF ⁽³⁾		HA		HF ⁽³⁾		HA	
50	85	50	85	55	85	55	85	85	85	85	85	85	85
100 %				100 %				100 %				100 %	
50	85	50	85	55	85	55	85	85	85	85	85	85	85
36	50	36	75	55	75	55	75	85	85	85	85	85	85
-	-	-	-	-	-	-	-	-	-	-	-	-	-
105	187	105	187	121	187	121	187	187	187	187	187	187	187

NW08/NW10/NW12				NW16			NW20			NW25/NW32/NW40			NW40b/NW50/NW63	
NA	HA	HF	HA10	HA	HF	HA10	HA	HF	HA10	HA	HF	HA10	HA	
88	105	187	-	105	187	-	105	187	-	121	187	-	187	
-	-	-	105	-	-	105	-	-	105	-	-	105	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
42	50	85	50	50	85	50	50	85	50	55	85	50	85	
-	36	50	50	36	50	50	36	75	50	55	75	50	85	

25													10
12.5													5
N1/H1/H2	L1	H10		H1/H2	H3	L1	H10	H1/H2	H3	H10	H1	H2	
800/1000/1250/1600				2000				2500/3200/4000			4000b/5000/6300		
10	3	-		8	2	3	-	5	1.25	-	1.5	1.5	
10	3	-		6	2	3	-	2.5	1.25	-	1.5	1.5	
-	-	0.5		-	-	-	0.5	-	-	0.5	-	-	
H1/H2/HA/HF				H1/H2/H3/HA/HF				H1/H2/H3/HA/HF			H1/H2/HA		
800/1000/1250/1600				2000				2500/3200/4000			4000b/5000/6300		
10				8				5			1.5		
10				6				2.5			1.5		
H1/H2/HA/HF				H1/H2/H3/HA/HF									
800	1000	1250	1600	2000									
335 to 450	450 to 560	560 to 670	670 to 900	900 to 1150									
400 to 500	500 to 630	500 to 800	800 to 1000	1000 to 1300									
≤ 800	800 to 1000	1000 to 1250	1250 to 1600	1600 to 2000									

6

All Masterpact circuit breakers are equipped with a Micrologic control unit that can be changed on site. Control units are designed to protect Power circuits and loads. Alarms may be programmed for remote indications. Measurements of current, voltage, frequency, power and power quality optimise continuity of service and energy management.

Dependability

Integration of protection functions in an ASIC electronic component used in all Micrologic control units guarantees a high degree of reliability and immunity to conducted or radiated disturbances. On Micrologic A, P and H control units, advanced functions are managed by an independent microprocessor.

Accessories

Certain functions require the addition of Micrologic control unit accessories, described on catalogue LVPED208008EN. The rules governing the various possible combinations can be found in the documentation accessible via the Products and services menu of the www.schneider-electric.com web site.

Micrologic name codes



X: type of protection

- 2 for basic protection
- 5 for selective protection
- 6 for selective + earth-fault protection
- 7 for selective + earth-leakage protection.

Y: control-unit generation

Identification of the control-unit generation. "0" signifies the first generation.

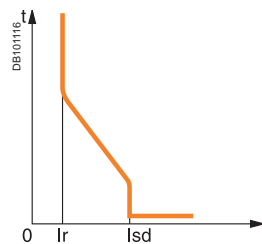
Z: type of measurement

- A for "ammeter"
- P for "power meter"
- H for "harmonic meter".



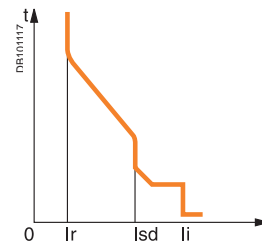
Current protection

Micrologic 2: basic protection



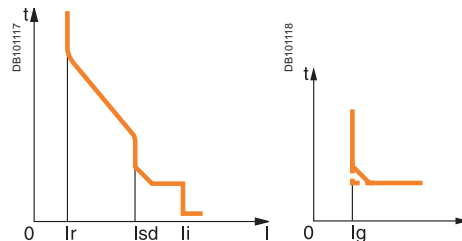
Protection:
long time
+ instantaneous

Micrologic 5: basic protection



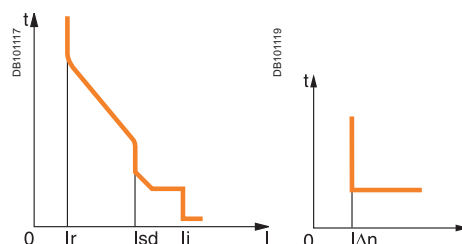
Protection:
long time
+ short time
+ instantaneous

Micrologic 6: selective + earth-fault protection



Protection:
long time
+ short time
+ instantaneous
+ earth fault

Micrologic 7: selective + earth-leakage protection



Protection:
long time
+ short time
+ instantaneous
+ earth leakage up to 3200A

Measurements and programmable protection

A: ammeter

- $I_1, I_2, I_3, I_N, I_{\text{earth-fault}}, I_{\text{earth-leakage}}$ and maximeter for these measurements
- fault indications
- settings in amperes and in seconds.

P: A + power meter + programmable protection

- measurements of V, A, W, VAR, VA, Wh, VARh, VAh, Hz, $V_{\text{peak}}, A_{\text{peak}}$, power factor and maximeters and minimeters
- IDMTL long-time protection, minimum and maximum voltage and frequency, voltage and current imbalance, phase sequence, reverse power
- load shedding and reconnection depending on power or current
- measurements of interrupted currents, differentiated fault indications, maintenance indications, event histories and time-stamping, etc.

H: P + harmonics

- power quality: fundamentals, distortion, amplitude and phase of harmonics up to the 31st order
- waveform capture after fault, alarm or on request
- enhanced alarm programming: thresholds and actions.

2.0 A



5.0 A



5.0 P



5.0 H



6.0 A



6.0 P



6.0 H



7.0 A



7.0 P



7.0 H



DC circuit breakers characteristics

Masterpact NW10 to NW40



NW10DC 4P.

Masterpact circuit breaker

Poles coupling version	C or D (3 poles) E (4 poles)
------------------------	---------------------------------

Electrical characteristics as per IEC 60947-1/ 60947-2 and EN 60947-1 / 60947-2

Rated current at 40 °C / 50 °C ⁽¹⁾	I_n	(A)
Rated insulation voltage	U_i	(V)
Rated impulse withstand voltage	U_{imp}	(kV peak)
Rated operational voltage	U_e	(V DC)

Type of circuit breaker

Ultimate breaking capacity	L/R = 5 ms	I_{cu}	(kA)	V DC	500
					750
					900
	L/R = 15 ms	I_{cu}			500
					750
					900
	L/R = 30 ms	I_{cu}			500
					750
					900

Service breaking capacity	I_{cs}	% I _{cu}
Rated making capacity	I_{cm}	% I _{cu}
Short-time withstand current	I_{cw}	1 s
Utilisation category		
Breaking time		(ms)
Making time		(ms)

Suitability for isolation

Pollution degree (as per IEC 60664-1)

Protection against overcurrents (see catalogue LVPED208006EN)

Trip units	Built-in
Protection	Overloads Short-circuits

Durability

(O/C cycles)	Mechanical	With maintenance	
		Without maintenance	
	Electrical	Without maintenance	500 V DC 900 V DC

Indication and control auxiliaries

Auxiliary contacts	
Voltage release	MX shunt release MN undervoltage release

Characteristics of switch-disconnectors as per IEC 60947-3 and EN 60947-3

Type of switch-disconnector

Rated making capacity	I_{cm}	(kA)
Rated short-time withstand current	I_{cw}	(kA) 1 s

Installation and connections

Connection	Drawout	3P	RC	Horizontal
		4P		Vertical
	Fixed	3P	RC	Horizontal
		4P		Vertical

Dimensions and weight

Dimensions H x W x D (mm) connected in series	Drawout	3P
		4P
	Fixed	3P
		4P
Weight (kg) connected in series (approximate values)	Drawout	3P
		4P
	Fixed	3P
		4P

(1) 50 °C - see the derating table for the NW40.

DC circuit breakers characteristics

Masterpact NW10 to NW40

NW10		NW20		NW40	
■		■		■	
■		■		■	
1000		2000		4000	
1000		1000		1000	
12		12		12	
500/900		500/900		500/900	
N	H	N	H	N	H
85	100	85	100	85	100
-	85	-	85	-	85
-	85	-	85	-	85
35	85	35	85	35	85
-	50	-	50	-	50
-	35	-	35	-	35
25	50	25	50	25	50
-	50	-	50	-	50
-	25	-	25	-	25
100 %					
100 %					
50	85	50	85	50	85
B					
30 to 75					
< 70					
■	■	■	■	■	■
4					
■	■	■	■	■	■
-	-	-	-	-	-
■	■	■	■	■	■
20000					
10000					
8500		5000		2000	
-	2000	-	2000	-	1000
■	■	■	■	■	■
■	■	■	■	■	■
■	■	■	■	■	■
	HA		HA		HA
-	85	-	85	-	85
-	85	-	85	-	85
■	■	■	■	-	-
■	■	■	■	■	■
■	■	■	■	-	-
■	■	■	■	■	■
439 x 441 x 494				439 x 441 x 594	
439 x 556 x 494				439 x 556 x 594	
352 x 422 x 427				352 x 422 x 527	
352 x 537 x 427				352 x 537 x 527	
90 to 116					
125 to 146					
60 to 86					
85 to 106					

Switch-disconnector selection

Interpact INS40 to 160

05Z164b-3B



Interpact INS80 switch-disconnector.

05B203b-3B



Interpact INS40 emergency-off switch-disconnector.

05Z166a-50



Interpact INS160 switch-disconnector.

05B202a-50



Interpact INS160 emergency-off switch-disconnector.

Interpact INS switch-disconnectors

Number of poles

Electrical characteristics as defined by IEC 60947-1 / 60947-3 and EN 60947-1 / 60947-3

Conventional thermal current (A)	I_{th}	at 60 °C
Conventional thermal current in enclosure	I_{the}	at 60 °C
Rated insulation level (V)	Ui	AC 50/60 Hz
Impulse-withstand voltage (kV)	U_{imp}	
Rated operational voltage (V)	U_e	AC 50/60 Hz DC
Rated operational voltage AC20 and DC20 (V)		AC 50/60 Hz
Rated operational current (A)	I_e	Electrical AC 50/60 Hz

220-240 V
380-415 V
440-480 V ⁽¹⁾
500 V
660-690 V

Electrical DC

125 V (2P in series)
250 V (4P in series)

Rated operational power AC23 (kW)

Electrical AC 50/60 Hz

220-240 V
230 V (NEMA)
380-415 V
440 V
480 V (NEMA)
500-525 V
660-690 V

Rated duties

Uninterrupted duty
Intermittent duty

Short-circuit making capacity (kA peak)

I_{cm}

Min. (switch-disconnector alone)
Max. (with upstream protection circuit breaker)

Short-time withstand current (A rms)

I_{cw}

1 s
3 s
20 s
30 s

Suitability for isolation

Durability (O-C cycles)

Mechanical

Electrical AC 50/60 Hz

220-240 V
380-415 V
440 V
500 V
690 V

Electrical DC

250 V

Positive contact indication

Visible break

Emergency-off switch disconnector

Degree of pollution

Upstream protection

See catalogue LVPED208015EN.

⁽¹⁾ Suitable for 480 V NEMA.

Switch-disconnector selection

Interpact INS40 to 160

INS40		INS63		INS80		INS100		INS125		INS160	
3-4		3-4		3-4		3-4		3-4		3-4	
40		63		80		100		125		160	
40		63		80		100		125		160	
690		690		690		750		750		750	
8		8		8		8		8		8	
500		500		500		690		690		690	
250		250		250		250		250		250	
690		690		690		750		750		750	
AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A
40	40	63	63	80	80	100	100	125	125	160	160
40	40	63	63	80	72	100	100	125	125	160	160
40	40	63	63	80	63	100	100	125	125	160	160
40	32	63	40	80	40	100	100	125	125	160	160
-	-	-	-	-	-	100	63	125	80	160	100
DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A
40	40	63	63	80	80	100	100	125	125	160	160
40	40	63	63	80	80	100	100	125	125	160	160
11	15	22	22	37	45	55	75	90	110	160	160
7,5	15	15	22	37	45	55	75	90	110	160	160
20	30	37	45	55	75	90	110	160	160	160	160
22	30	37	45	55	75	90	110	160	160	160	160
22	30	37	45	55	75	90	110	160	160	160	160
18,5	22	22	22	37	45	55	75	90	110	160	160
-	-	-	-	37	45	55	75	90	110	160	160
■	■	■	■	■	■	■	■	■	■	■	■
Class 120 - 60 %		Class 120 - 60 %		Class 120 - 60 %		Class 120 - 60 %		Class 120 - 60 %		Class 120 - 60 %	
15		15		15		20		20		20	
75		75		75		154		154		154	
3000		3000		3000		5500		5500		5500	
1730		1730		1730		3175		3175		3175	
670		670		670		1230		1230		1230	
550		550		550		1000		1000		1000	
■		■		■		■		■		■	
20000		20000		20000		15000		15000		15000	
AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A
1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
-	-	-	-	-	-	1500	1500	1500	1500	1500	1500
DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A
1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
■	■	■	■	■	■	■	■	■	■	■	■
-	-	-	-	-	-	-	-	-	-	-	-
■	■	■	■	■	■	■	■	■	■	■	■
3	3	3	3	3	3	3	3	3	3	3	3
-	-	-	-	-	-	-	-	-	-	-	-

Switch-disconnector selection

Interpact INS40 to 160

Interpact INS switch-disconnectors

Installation

Fixed, front connection
 Fixed, rear connection
 On symmetrical rails
 On a backplate

Connection

By cables	To bare cable connectors
By cables with lugs	Directly to terminals
	To spreaders
	To vertical-connection adapters via cable-lug adapters
Flat-facing bars	Directly to terminals
	To spreaders
Edgewise bars	To vertical-connection adapters

Indication and measurement auxiliaries

Auxiliary contacts
 Voltage-presence indicator
 Current-transformer module
 Ammeter module

Control, locking and interlocking

Control	Direct front rotary handle
	Extended front rotary handle
	Direct lateral rotary handle
	Extended lateral rotary handle
Locking	By keylock
	By padlocks
Interlocking	By keylock
	Mechanical

Complete source-changeover assembly
 Operating torque (Nm) (typical value for 3-4 poles with front handle)

Installation and connection accessories

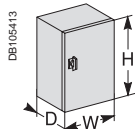
Bare cable connectors
 Rear connectors
 Terminal extensions
 Spreader
 One-piece spreader
 Terminal shrouds
 Terminal shields
 Interphase-barrier
 Front panel escutcheons
 Coupling accessories
 Tightening torque for electrical connections (Nm)

Dimensions and weights

Overall dimensions H x W x D (mm)	3 poles
	4 poles
Approximate weight (kg)	3 poles
	4 poles

Enclosure dimensions for lthe

H x W x D (mm)



Switch-disconnector selection

Interpact INS40 to 160

	INS40	INS63	INS80	INS100	INS125	INS160
■	■	■	■	■	■	■
-	-	-	-	-	-	-
■	■	■	■	-	-	-
■	■	■	■	■	■	■
■	■	■	■	■	■	■
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
■	■	■	■	■	■	■
-	-	-	-	-	-	-
-	-	-	-	-	-	-
■	■	■	■	■	■	■
-	-	-	-	-	-	-
-	-	-	-	-	-	-
■	■	■	■	■	■	■
-	-	-	-	-	-	-
-	-	-	-	-	-	-
0.7 < Nm < 1.3	0.7 < Nm < 1.3	0.7 < Nm < 1.3	1.4 < Nm < 2	1.4 < Nm < 2	1.4 < Nm < 2	
■	■	■	■	■	■	
-	-	-	-	-	-	
-	-	-	-	-	-	
-	-	-	-	-	-	
-	-	-	-	-	-	
■	■	■	■	■	■	
■	■	■	■	■	■	
■	■	■	■	■	■	
-	-	-	-	-	-	
-	-	-	-	-	-	
8	8	8	8	8	8	
85 x 90 x 62.5	85 x 90 x 62.5	85 x 90 x 62.5	100 x 135 x 62.5	100 x 135 x 62.5	100 x 135 x 62.5	
85 x 90 x 62.5	85 x 90 x 62.5	85 x 90 x 62.5	100 x 135 x 62.5	100 x 135 x 62.5	100 x 135 x 62.5	
0.5	0.5	0.5	0.8	0.8	0.8	
0.6	0.6	0.6	0.9	0.9	0.9	
190 x 115 x 55	190 x 115 x 55	190 x 115 x 55	260 x 160 x 55	260 x 160 x 55	260 x 160 x 55	

Switch-disconnector selection

Interpact INS250-100 to 630

056648b-41



Interpact INS250 switch-disconnector.

056652a-41



Interpact INS250 emergency-off switch-disconnector.

059487b-54



Interpact INS400 switch-disconnector.

059488b-54



Interpact INS400 emergency-off switch-disconnector.

Interpact INS switch-disconnectors

Number of poles

Electrical characteristics as defined by IEC 60947-1 / 60947-3 and EN 60947-1 / 60947-3

Conventional thermal current (A)	I_{th}	at 60 °C
Conventional thermal current in enclosure	I_{the}	at 60 °C
Rated insulation level (V)	Ui	AC 50/60 Hz
Impulse-withstand voltage (kV)	U_{imp}	
Rated operational voltage (V)	U_e	AC 50/60 Hz DC
Rated operational voltage AC20 and DC20 (V)		AC 50/60 Hz
Rated operational current (A)	I_e	Electrical AC 50/60 Hz

- 220-240 V
- 380-415 V
- 440-480 V ⁽¹⁾
- 500-525 V
- 660-690 V

Electrical DC

- 125 V (2P in series)
- 250 V (4P in series)

Rated operational power AC23 (kW)	Electrical AC 50/60 Hz
	220-240 V
	230 V (NEMA)
	380-415 V
	440 V
	480 V (NEMA)
	500-525 V
	660-690 V

Rated duties	Uninterrupted duty Intermittent duty
Short-circuit making capacity (kA peak)	I_{cm} Min. (switch-disconnector alone) Max. (with upstream protection circuit breaker)
Short-time withstand current (A rms)	I_{cw} 1 s 3 s 20 s 30 s

Suitability for isolation	
Durability (O-C cycles)	Mechanical
	Electrical AC 50/60 Hz
	440 V
	500 V
	690 V
	Electrical DC
	250 V

Positive contact indication	
Visible break	
Emergency-off switch disconnector	
Degree of pollution	

Upstream protection

See catalogue LVPED208015EN.

⁽¹⁾ Suitable for 480 V NEMA.

⁽²⁾ 550 A (DC).

Switch-disconnector selection

Interpact INS250-100 to 630

INS250-100		INS250-160		INS250-200		INS250		INS320		INS400		INS500		INS630	
3-4		3-4		3-4		3-4		3-4		3-4		3-4		3-4	
100		160		200		250		320		400		500		630	
100		160		200		250		320		400		500		630 (2)	
750		750		750		750		750		750		750		750	
8		8		8		8		8		8		8		8	
690		690		690		690		690		690		690		690	
250		250		250		250		250		250		250		250	
750		750		750		750		750		750		750		750	
AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A
100	100	160	160	200	200	250	250	320	320	400	400	500	500	630	630
100	100	160	160	200	200	250	250	320	320	400	400	500	500	630	630
100	100	160	160	200	200	250	250	320	320	400	400	500	500	630	630
100	100	160	160	200	200	250	250	320	320	400	400	500	500	630	630
100	100	160	160	200	200	250	250	320	320	400	400	500	500	630	630
DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23B
100	100	160	160	200	200	250	250	320	320	400	400	500	500	550	630
100	100	160	160	200	200	250	250	320	320	400	400	500	500	550	630
22	45	55	75	90	110	132	150	185	220	250	355	400	560	200	200
22	45	55	75	90	110	132	150	185	220	250	355	400	560	200	200
45	75	90	110	132	150	185	220	250	355	400	560	200	200	200	200
55	90	110	132	150	185	220	250	355	400	560	200	200	200	200	200
55	90	110	132	150	185	220	250	355	400	560	200	200	200	200	200
55	110	132	150	185	220	250	355	400	560	200	200	200	200	200	200
55	90	110	132	150	185	220	250	355	400	560	200	200	200	200	200
■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Class 120 - 60 %		Class 120 - 60 %		Class 120 - 60 %		Class 120 - 60 %		Class 120 - 60 %		Class 120 - 60 %		Class 120 - 60 %		Class 120 - 60 %	
30		30		30		30		50		50		50		50	
330		330		330		330		330		330		330		330	
8500		8500		8500		8500		20000		20000		20000		20000	
4900		4900		4900		4900		11500		11500		11500		11500	
2200		2200		2200		2200		4900		4900		4900		4900	
1800		1800		1800		1800		4000		4000		4000		4000	
■		■		■		■		■		■		■		■	
15000		15000		15000		15000		10000		10000		10000		10000	
AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A
1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC23A	DC23B	DC23A	DC23B	DC23A	DC23B	DC23A	DC23B
1500	1500	1500	1500	1500	1500	1500	1500	1000	-	1000	-	1000	-	1000	200
■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Switch-disconnector selection

Interpact INS250-100 to 630

Interpact INS switch-disconnectors

Installation

Fixed, front connection
 Fixed, rear connection
 On symmetrical rails
 On a backplate

Connection

By cables	To bare cable connectors
By cables with lugs	Directly to terminals
	To spreaders
	To vertical-connection adapters via cable-lug adapters
Flat-facing bars	Directly to terminals
	To spreaders
Edgewise bars	To vertical-connection adapters

Indication and measurement auxiliaries

Auxiliary contacts

Voltage-presence indicator

Current-transformer module

Ammeter module

Control, locking and interlocking

Control	Direct front rotary handle
	Extended front rotary handle
	Direct lateral rotary handle
	Extended lateral rotary handle

Locking	By keylock
	By padlocks

Interlocking	By keylock
	Mechanical

Complete source-changeover assembly

Operating torque (Nm) (typical value for 3-4 poles with front handle)

Installation and connection accessories

Bare cable connectors

Rear connectors

Terminal extensions

Spreaders

One-piece spreader

Terminal shrouds

Terminal shields

Interphase-barrier

Front panel escutcheons

Coupling accessories

Tightening torque for electrical connections (Nm)

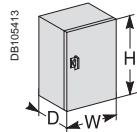
Dimensions and weights

Overall dimensions H x W x D (mm)	3 poles
	4 poles

Approximate weight (kg)	3 poles
	4 poles

Enclosure dimensions for lthe

H x W x D (mm)



DB105413

Switch-disconnector selection

Interpact INS630b to 2500

PB100016a-55



Interpact INS1600 switch-disconnector.

PB100018a-55



Interpact INS1600 emergency-off switch-disconnector.

PB100020a-65



Interpact INS2500 switch-disconnector.

Interpact INS switch-disconnectors

Number of poles

Electrical characteristics as defined by IEC 60947-1 / 60947-3 and EN 60947-1 / 60947-3

Conventional thermal current (A)	I_{th}	at 60 °C
Conventional thermal current in enclosure	I_{the}	at 60 °C
Rated insulation level (V)	Ui	AC 50/60 Hz
Impulse-withstand voltage (kV)	U_{imp}	
Rated operational voltage (V)	U_e	AC 50/60 Hz DC
Rated operational voltage AC20 and DC20 (V)		AC 50/60 Hz
Rated operational current (A)	I_e	Electrical AC 50/60 Hz

220-240 V

380-415 V

440-480 V ⁽¹⁾

500-525 V

660-690 V

Electrical DC

125 V (2P in series)

250 V (4P in series)

Rated operational power AC23 (kW)

Electrical AC 50/60 Hz

220-240 V

380-400 V

415 V

500-525 V

660-690 V

Rated duties

Uninterrupted duty

Intermittent duty

Short-circuit making capacity (kA peak)

I_{cm}

Min. (switch-disconnector alone)

Max. (with upstream protection circuit breaker)

Short-time withstand current (kA rms)

I_{cw}

0.5 s

0.8 s

1 s

3 s

20 s

30 s

Suitability for isolation

Durability (O-C cycles)

Mechanical

Electrical AC 50/60 Hz

220-240 V

380-415 V

440-480 V ⁽¹⁾

500-525 V

660-690 V

Electrical DC

125 V (2P)

250 V (4P)

Positive contact indication

Visible break

Emergency-off switch disconnector

Degree of pollution

Upstream protection

See catalogue LVPED208015EN.

⁽¹⁾ Suitable for 480 V NEMA.

⁽²⁾ For vertical connection busbars only. For horizontal connection busbars, see catalogue LVPED208015EN.

Switch-disconnector selection

Interpact INS630b to 2500

INS630b			INS800			INS1000			INS1250			INS1600			INS2000			INS2500		
3-4			3-4			3-4			3-4			3-4			3-4			3-4		
630			800			1000			1250			1600 ⁽²⁾			2000			2500		
630			800			1000			1250			1600 ⁽²⁾			2000			2500		
1000			1000			1000			1000			1000			1000			1000		
12			12			12			12			12			12			12		
690			690			690			690			690			690			690		
250			250			250			250			250			250			250		
800			800			800			800			800			800			800		
AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21B	AC22B	AC23A	AC21B	AC22B	AC23B	AC21B	AC22B	AC23B
630	630	630	800	800	800	1000	1000	1000	1250	1250	1250	1600	1600	1250	2000	2000	-	2500	2500	-
630	630	630	800	800	800	1000	1000	1000	1250	1250	1250	1600	1600	1250	2000	2000	-	2500	2500	-
630	630	630	800	800	800	1000	1000	1000	1250	1250	1250	1600	1600	1250	2000	2000	-	2500	2500	-
630	630	630	800	800	800	1000	1000	1000	1250	1250	1250	1600	1600	1250	2000	2000	-	2500	2500	-
630	630	630	800	800	800	1000	1000	1000	1250	1250	1250	1600	1600	1250	2000	2000	-	2500	2500	-
DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21B	DC22B	DC23B	DC21B	DC22B	DC23B
630/2	630/2	630/2	800/2	800/2	800/2	1000/2	1000/2	1000/2	1250/2	1250/2	1250/2	1600/2	1600/2	1600/2	2000/2	2000/2	-	2500/2	2500/2	-
630/4	630/4	630/4	800/4	800/4	800/4	1000/4	1000/4	1000/4	1250/4	1250/4	1250/4	1600/4	1600/4	1600/4	2000/4	2000/4	-	2500/4	2500/4	-
250			250			315			400			400			-			-		
400			400			560			710			710			-			-		
500			500			630			800			800			-			-		
560			560			710			900			900			-			-		
710			710			900			-			-			-			-		
■			■			■			■			■			■			■		
Class 120 - 60 %			Class 120 - 60 %			Class 120 - 60 %			Class 120 - 60 %			Class 120 - 60 %			Class 120 - 60 %			Class 120 - 60 %		
75			75			75			75			75			105			105		
330			330			330			330			330			330			330		
50			50			50			50			50			50			50		
42			42			42			42			42			50			50		
35			35			35			35			35			50			50		
20			20			20			20			20			30			30		
10			10			10			10			10			13			13		
8			8			8			8			8			11			11		
■			■			■			■			■			■			■		
5000			3000			3000			3000			3000			3000			3000		
AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21B	AC22B	AC23A	AC21B	AC22B	AC23B	AC21B	AC22B	AC23B
1000	1000	1000	500	500	500	500	500	500	500	500	500	100	100	500	100	100	-	100	100	-
1000	1000	1000	500	500	500	500	500	500	500	500	500	100	100	500	100	100	-	100	100	-
1000	1000	1000	500	500	500	500	500	500	500	500	500	100	100	500	100	100	-	100	100	-
1000	1000	1000	500	500	500	500	500	500	500	500	500	100	100	500	100	100	-	100	100	-
1000	1000	1000	500	500	500	500	500	500	500	500	500	100	100	500	100	100	-	100	100	-
DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23B	DC21B	DC22B	DC23B	DC21B	DC22B	DC23B
1000	1000	1000	500	500	500	500	500	500	500	500	500	500	500	500	100	100	-	100	100	-
1000	1000	1000	500	500	500	500	500	500	500	500	500	500	500	500	100	100	-	100	100	-
■			■			■			■			■			■			■		
-			-			-			-			-			-			-		
■			■			■			■			■			■			■		
3			3			3			3			3			3			3		
-			-			-			-			-			-			-		

Switch-disconnector selection

Interpact INS630b to 2500

Interpact INS switch-disconnectors

Installation

Fixed, front connection
 Fixed, rear connection
 On symmetrical rails
 On a backplate

Connection

By cables	To bare cable connectors
By cables with lugs	Directly to terminals
	To spreaders
	To vertical-connection adapters via cable-lug adapters
Flat-facing bars	Directly to terminals
	To spreaders
Edgewise bars	To vertical-connection adapters

Indication and measurement auxiliaries

Auxiliary contacts
 Voltage-presence indicator
 Current-transformer module
 Ammeter module

Control, locking and interlocking

Control	Direct front rotary handle
	Extended front rotary handle
	Direct lateral rotary handle
	Extended lateral rotary handle
Locking	By keylock
	By padlocks
Interlocking	By keylock
	Mechanical

Complete source-changeover assembly
 Operating torque (Nm) (typical value for 3-4 poles with front handle)

Installation and connection accessories

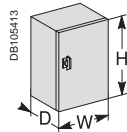
Bare cable connectors
 Rear connectors
 Terminal extensions
 Spreader
 One-piece spreader
 Terminal shrouds
 Terminal shields
 Interphase-barrier
 Front panel escutcheons
 Coupling accessories
 Tightening torque for electrical connections (Nm)

Dimensions and weights

Overall dimensions H x W x D (mm)	3 poles
	4 poles
Approximate weight (kg)	3 poles
	4 poles

Enclosure dimensions for the

H x W x D (mm)



Switch-disconnector selection

Interpact INS630b to 2500

	INS630b	INS800	INS1000	INS1250	INS1600	INS2000	INS2500
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
-	-	-	-	-	-	-	-
■	■	■	■	■	■	■	■
-	-	-	-	-	-	-	-
-	-	-	-	-	-	■	■
-	-	-	-	-	-	-	-
■	■	■	■	■	■	-	-
■	■	■	■	■	■	■	■
■	■	■	■	■	■	-	-
■	■	■	■	■	■	-	-
■	■	■	■	■	■	-	-
■	■	■	■	■	■	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
30	30	30	30	30	30	60	60
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
-	-	-	-	-	-	-	-
50	50	50	50	50	50	50	50
300 x 340 x 146.5	300 x 340 x 146.5	300 x 340 x 146.5	300 x 340 x 146.5	300 x 340 x 146.5	300 x 340 x 146.5	440 x 347.5 x 227.5	440 x 347.5 x 227.5
300 x 410 x 146.5	300 x 410 x 146.5	300 x 410 x 146.5	300 x 410 x 146.5	300 x 410 x 146.5	300 x 410 x 146.5	440 x 462.5 x 227.5	440 x 462.5 x 227.5
14	14	14	14	14	14	35	35
18	18	18	18	18	18	45	45
-	-	-	-	-	-	-	-

Switch-disconnector selection

Interpact INV100 to 630

056650a-41



Interpact INV250 switch-disconnector.

056654a-41



Interpact INV250 emergency-off switch-disconnector.

059491a-54



Interpact INV400 Std.

059493a-52



Interpact INV400 emergency-off switch-disconnector.

Interpact INV switch-disconnectors

Number of poles

Electrical characteristics as defined by IEC 60947-1 / 60947-3 and EN 60947-1 / 60947-3

Conventional thermal current (A)	I_{th}	at 60 °C
Conventional thermal current in enclosure	I_{the}	at 60 °C
Rated insulation level (V)	Ui	AC 50/60 Hz
Impulse-withstand voltage (kV)	U_{imp}	
Rated operational voltage (V)	U_e	AC 50/60 Hz DC
Rated operational voltage AC20 and DC20 (V)		AC 50/60 Hz
Rated operational current (A)	I_e	Electrical AC 50/60 Hz

220-240 V
380-415 V
440-480 V ⁽¹⁾
500-525 V
660-690 V

Electrical DC

125 V (2P in series)
250 V (4P in series)

Rated operational power AC23 (kW)		Electrical AC 50/60 Hz
		220-240 V 230 V (NEMA) 380-415 V 440 V 480 V (NEMA) 500-525 V 660-690 V

Rated duties		Uninterrupted duty Intermittent duty
Short-circuit making capacity (kA peak)	I_{cm}	Min. (switch-disconnector alone) Max. (with upstream protection circuit breaker)
Short-time withstand current (A rms)	I_{cw}	1 s 3 s 20 s 30 s

Suitability for isolation		Mechanical
Durability (O-C cycles)		Electrical AC 50/60 Hz
		440 V 500 V 690 V
		Electrical DC
		250 V

Positive contact indication		
Visible break		
Emergency-off switch disconnector		
Degree of pollution		

Upstream protection

See catalogue LVPED208015EN.

(1) Suitable for 480 V NEMA.

(2) 550 A (DC).

Switch-disconnector selection

Interpact INV100 to 630

INV100			INV160			INV200			INV250			INV320			INV400			INV500			INV630					
3-4			3-4			3-4			3-4			3-4			3-4			3-4			3-4					
100			160			200			250			320			400			500			630					
100			160			200			250			320			400			500			630 ⁽²⁾					
750			750			750			750			750			750			750			750					
8			8			8			8			8			8			8			8					
690			690			690			690			690			690			690			690					
250			250			250			250			250			250			250			250					
750			750			750			750			750			750			750			750					
AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21A	AC22A	AC23A/AC23B
100	100	100	160	160	160	200	200	200	250	250	250	320	320	320	400	400	400	500	500	500	630	630	630	630	630	630/630
100	100	100	160	160	160	200	200	200	250	250	250	320	320	320	400	400	400	500	500	500	630	630	630	630	630	630/630
100	100	100	160	160	160	200	200	200	250	250	200	320	320	320	400	400	400	500	500	500	630	630	630	630	630	500/630
100	100	100	160	160	160	200	200	200	250	250	200	320	320	320	400	400	400	500	500	500	630	550	500	630	550	500/630
DC21A	DC22A	DC23B	DC21A	DC22A	DC23B	DC21A	DC22A	DC23B	DC21A	DC22A	DC23B	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A/DC23B
100	100	100	160	160	160	200	200	200	250	250	200	320	320	320	400	400	400	500	500	500	550	550	500	550	550	550/630
100	100	100	160	160	160	200	200	200	250	250	200	320	320	320	400	400	400	500	500	500	550	550	500	550	550	550/630
22			45			55			75			90			110			132			200					
22			45			55			75			90			110			150			200					
45			75			90			132			160			200			250			315					
55			90			110			150			185			220			250			400					
55			50			110			150			185			220			250			375					
55			110			132			132			220			250			355			400					
55			90			160			160			250			400			500			560					
■			■			■			■			■			■			■			■			■		
Class 120 - 60 %			Class 120 - 60 %			Class 120 - 60 %			Class 120 - 60 %			Class 120 - 60 %			Class 120 - 60 %			Class 120 - 60 %			Class 120 - 60 %			Class 120 - 60 %		
30			30			30			30			50			50			50			50			50		
330			330			330			330			330			330			330			330			330		
8500			8500			8500			8500			20000			20000			20000			20000			20000		
4900			4900			4900			4900			11500			11500			11500			11500			11500		
2200			2200			2200			2200			4900			4900			4900			4900			4900		
1800			1800			1800			1800			4000			4000			4000			4000			4000		
■			■			■			■			■			■			■			■			■		
15000			15000			15000			15000			10000			10000			10000			10000			10000		
AC22A	AC23A	AC22A	AC22A	AC23A	AC22A	AC22A	AC23A	AC22A	AC22A	AC23A	AC22A	AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21A	AC22A	AC23A/AC23B
1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000/200
DC22A	DC23A	DC22A	DC22A	DC23A	DC22A	DC22A	DC23A	DC22A	DC22A	DC23A	DC22A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A/DC23B
1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000/200
■			■			■			■			■			■			■			■			■		
■			■			■			■			■			■			■			■			■		
■			■			■			■			■			■			■			■			■		
3			3			3			3			3			3			3			3			3		
-			-			-			-			-			-			-			-			-		

Switch-disconnector selection

Interpact INV100 to 630

Interpact INV switch-disconnectors

Installation

Fixed, front connection

Fixed, rear connection

On symmetrical rails

On a backplate

Connection

By cables

To bare cable connectors

By cables with lugs

Directly to terminals

To spreaders

To vertical-connection adapters via cable-lug adapters

Flat-facing bars

Directly to terminals

To spreaders

Edgewise bars

To vertical-connection adapters

Indication and measurement auxiliaries

Auxiliary contacts

Voltage-presence indicator

Current-transformer module

Ammeter module

Control, locking and interlocking

Control

Direct front rotary handle

Extended front rotary handle

Direct lateral rotary handle

Extended lateral rotary handle

Locking

By keylock

By padlocks

Interlocking

By keylock

Mechanical

Complete source-changeover assembly

Operating torque (Nm) (typical value for 3-4 poles with front handle)

Installation and connection accessories

Bare cable connectors

Rear connectors

Terminal extensions

Spreaders

One-piece spreader

Terminal shrouds

Terminal shields

Interphase-barrier

Front panel escutcheons

Coupling accessories

Tightening torque for electrical connections (Nm)

Dimensions and weights

Overall dimensions H x W x D (mm)

3 poles

4 poles

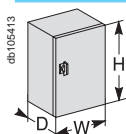
Approximate weight (kg)

3 poles

4 poles

Enclosure dimensions for the

H x W x D (mm)



Switch-disconnector selection

Interpact INV100 to 630

	INV100	INV160	INV200	INV250	INV320	INV400	INV500	INV630
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
-	-	-	-	-	-	-	-	-
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
-	-	-	-	-	-	-	-	-
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
-	-	-	-	-	■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
-	-	-	-	-	-	-	-	-
5 < Nm < 6.2	5 < Nm < 6.2	5 < Nm < 6.2	5 < Nm < 6.2	5 < Nm < 6.2	13.5 < Nm < 16.5	13.5 < Nm < 16.5	13.5 < Nm < 16.5	13.5 < Nm < 16.5
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	-	-	-	-
■	■	■	■	■	-	-	-	-
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
-	-	-	-	-	-	-	-	-
15	15	15	15	50	50	50	50	50
136 x 140 x 96	136 x 140 x 96	136 x 140 x 96	136 x 140 x 96	205 x 185 x 130	205 x 185 x 130	205 x 185 x 130	205 x 185 x 130	205 x 185 x 130
136 x 140 x 96	136 x 140 x 96	136 x 140 x 96	136 x 140 x 96	205 x 185 x 130	205 x 185 x 130	205 x 185 x 130	205 x 185 x 130	205 x 185 x 130
2	2	2	2	4.6	4.6	4.6	4.6	4.6
2.2	2.2	2.2	2.2	4.9	4.9	4.9	4.9	4.9
400 x 300 x 200	400 x 300 x 200	400 x 300 x 200	400 x 300 x 200	600 x 400 x 200	600 x 400 x 200	600 x 400 x 200	600 x 400 x 200	600 x 400 x 200

Switch-disconnector selection

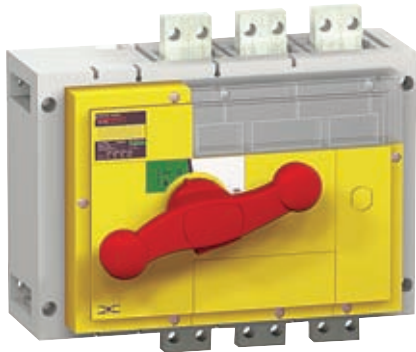
Interpact INV630b to 2500

PB100017a-55



Interpact INV1600 switch-disconnector.

PB100019a-55



Interpact INV1600 emergency-off switch-disconnector.

PB100021a-65



Interpact INV2500 switch-disconnector.

Interpact INV switch-disconnectors

Number of poles

Electrical characteristics as defined by IEC 60947-1 / 60947-3 and EN 60947-1 / 60947-3

Conventional thermal current (A)	I_{th}	at 60 °C
Conventional thermal current in enclosure	I_{the}	at 60 °C
Rated insulation level (V)	Ui	AC 50/60 Hz
Impulse-withstand voltage (kV)	U_{imp}	
Rated operational voltage (V)	U_e	AC 50/60 Hz DC
Rated operational voltage AC20 and DC20 (V)		AC 50/60 Hz
Rated operational current (A)	I_e	Electrical AC 50/60 Hz

220-240 V

380-415 V

440-480 V ⁽¹⁾

500-525 V

660-690 V

Electrical DC

125 V (2P in series)

250 V (4P in series)

Rated operational power AC23 (kW)

Electrical AC 50/60 Hz

220-240 V

380-400 V

415 V

500-525 V

660-690 V

Rated duties

Uninterrupted duty

Intermittent duty

Short-circuit making capacity (kA peak)

I_{cm}

Min. (switch-disconnector alone)

Max. (with upstream protection circuit breaker)

Short-time withstand current (kA rms)

I_{cw}

0.5 s

0.8 s

1 s

3 s

20 s

30 s

Suitability for isolation

Durability (O-C cycles)

Mechanical

Electrical AC 50/60 Hz

220-240 V

380-415 V

440-480 V ⁽¹⁾

500-525 V

660-690 V

Electrical DC

125 V (2P)

250 V (4P)

Positive contact indication

Visible break

Emergency-off switch disconnector

Degree of pollution

Upstream protection

See catalogue LVPED208015EN.

⁽¹⁾ Suitable for 480 V NEMA.

⁽²⁾ For vertical connection busbars only. For horizontal connection busbars, see catalogue LVPED208015EN..

Switch-disconnector selection

Interpact INV630b to 2500

INV630b			INV800			INV1000			INV1250			INV1600			INV2000			INV2500		
3-4			3-4			3-4			3-4			3-4			3-4			3-4		
630			800			1000			1250			1600 ⁽²⁾			2000			2500		
630			800			1000			1250			1600 ⁽²⁾			2000			2500		
1000			1000			1000			1000			1000			1000			1000		
12			12			12			12			12			12			12		
690			690			690			690			690			690			690		
250			250			250			250			250			250			250		
800			800			800			800			800			800			800		
AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21B	AC22B	AC23A	AC21B	AC22B	AC23B	AC21B	AC22B	AC23B
630	630	630	800	800	800	1000	1000	1000	1250	1250	1250	1600	1600	1250	2000	2000	-	2500	2500	-
630	630	630	800	800	800	1000	1000	1000	1250	1250	1250	1600	1600	1250	2000	2000	-	2500	2500	-
630	630	630	800	800	800	1000	1000	1000	1250	1250	1250	1600	1600	1250	2000	2000	-	2500	2500	-
630	630	630	800	800	800	1000	1000	1000	1250	1250	1250	1600	1600	1250	2000	2000	-	2500	2500	-
630	630	630	800	800	800	1000	1000	1000	1250	1250	1250	1600	1600	1250	2000	2000	-	2500	2500	-
DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21B	DC22B	DC23B	DC21B	DC22B	DC23B
630/2	630/2	630/2	800/2	800/2	800/2	1000/2	1000/2	1000/2	1250/2	1250/2	1250/2	1600/2	1600/2	1600/2	2000/2	2000/2	-	2500/2	2500/2	-
630/4	630/4	630/4	800/4	800/4	800/4	1000/4	1000/4	1000/4	1250/4	1250/4	1250/4	1600/4	1600/4	1600/4	2000/4	2000/4	-	2500/4	2500/4	-
250			250			315			400			400			-			-		
400			400			560			710			710			-			-		
500			500			630			800			800			-			-		
560			560			710			900			900			-			-		
710			710			900			-			-			-			-		
■			■			■			■			■			■			■		
Class 120 - 60 %			Class 120 - 60 %			Class 120 - 60 %			Class 120 - 60 %			Class 120 - 60 %			Class 120 - 60 %			Class 120 - 60 %		
75			75			75			75			75			105			105		
330			330			330			330			330			330			330		
50			50			50			50			50			50			50		
42			42			42			42			42			50			50		
35			35			35			35			35			50			50		
20			20			20			20			20			30			30		
10			10			10			10			10			13			13		
8			8			8			8			8			11			11		
■			■			■			■			■			■			■		
5000			3000			3000			3000			3000			3000			3000		
AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21A	AC22A	AC23A	AC21B	AC22B	AC23A	AC21B	AC22B	AC23B	AC21B	AC22B	AC23B
1000	1000	1000	500	500	500	500	500	500	500	500	500	100	100	500	100	100	-	100	100	-
1000	1000	1000	500	500	500	500	500	500	500	500	500	100	100	500	100	100	-	100	100	-
1000	1000	1000	500	500	500	500	500	500	500	500	500	100	100	500	100	100	-	100	100	-
1000	1000	1000	500	500	500	500	500	500	500	500	500	100	100	500	100	100	-	100	100	-
1000	1000	1000	500	500	500	500	500	500	500	500	500	100	100	500	100	100	-	100	100	-
DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23B	DC21B	DC22B	DC23B	DC21B	DC22B	DC23B
1000	1000	1000	500	500	500	500	500	500	500	500	500	500	500	500	100	100	-	100	100	-
1000	1000	1000	500	500	500	500	500	500	500	500	500	500	500	500	100	100	-	100	100	-
■			■			■			■			■			■			■		
■			■			■			■			■			■			■		
■			■			■			■			■			■			■		
3			3			3			3			3			3			3		
-			-			-			-			-			-			-		

Switch-disconnector selection

Interpact INV630b to 2500

Interpact INV switch-disconnectors

Installation

Fixed, front connection
 Fixed, rear connection
 On symmetrical rails
 On a backplate

Connection

By cables	To bare cable connectors
By cables with lugs	Directly to terminals
	To spreaders
	To vertical-connection adapters via cable-lug adapters
Flat-facing bars	Directly to terminals
	To spreaders
Edgewise bars	To vertical-connection adapters

Indication and measurement auxiliaries

Auxiliary contacts
 Voltage-presence indicator
 Current-transformer module
 Ammeter module

Control, locking and interlocking

Control	Direct front rotary handle
	Extended front rotary handle
	Direct lateral rotary handle
	Extended lateral rotary handle
Locking	By keylock
	By padlocks
Interlocking	By keylock
	Mechanical

Complete source-changeover assembly

Operating torque (Nm) (typical value for 3-4 poles with front handle)

Installation and connection accessories

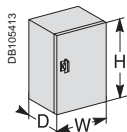
Bare cable connectors
 Rear connectors
 Terminal extensions
 Spreader
 One-piece spreader
 Terminal shrouds
 Terminal shields
 Interphase-barrier
 Front panel escutcheons
 Coupling accessories
 Tightening torque for electrical connections (Nm)

Dimensions and weights

Overall dimensions H x W x D (mm)	3 poles
	4 poles
Approximate weight (kg)	3 poles
	4 poles

Enclosure dimensions for the

H x W x D (mm)



Switch-disconnector selection

Interpact INV630b to 2500

	INV630b	INV800	INV1000	INV1250	INV1600	INV2000	INV2500
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
-	-	-	-	-	-	-	-
■	■	■	■	■	■	■	■
-	-	-	-	-	-	-	-
-	-	-	-	-	-	■	■
-	-	-	-	-	-	-	-
■	■	■	■	■	■	-	-
■	■	■	■	■	■	■	■
■	■	■	■	■	■	-	-
■	■	■	■	■	■	-	-
■	■	■	■	■	■	-	-
■	■	■	■	■	■	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
30	30	30	30	30	30	60	60
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
-	-	-	-	-	-	-	-
50	50	50	50	50	50	50	50
300 x 340 x 146.5	300 x 340 x 146.5	300 x 340 x 146.5	300 x 340 x 146.5	300 x 340 x 146.5	300 x 340 x 146.5	440 x 347.5 x 227.5	440 x 347.5 x 227.5
300 x 410 x 146.5	300 x 410 x 146.5	300 x 410 x 146.5	300 x 410 x 146.5	300 x 410 x 146.5	300 x 410 x 146.5	440 x 462.5 x 227.5	440 x 462.5 x 227.5
14	14	14	14	14	14	35	35
18	18	18	18	18	18	45	45
-	-	-	-	-	-	-	-

Overview of solutions

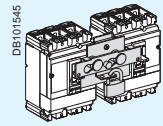
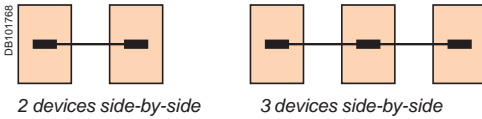
Manual source-changeover systems

Interpact INS/INV and Compact NS 40 A to 630 A

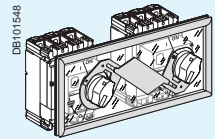
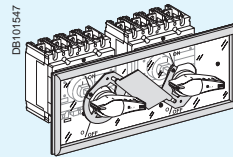
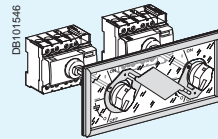
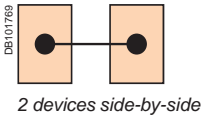
Range	Interpact		Compact
Models	INS40 to INS80 INS100 to INS160	INS250 to INS630 INV250 to INV630	NS100 to NS250 NS400 to NS630
Rating (A)	40 to 160	100 to 630	100 to 630
Type of device	Switch-disconnectors with extended handles	Switch-disconnectors	N/H/L circuit breakers NA switch-disconnectors

Manual source-changeover systems

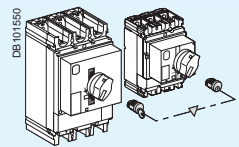
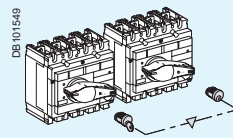
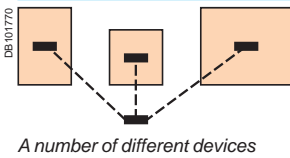
Interlocking via toggles



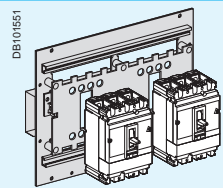
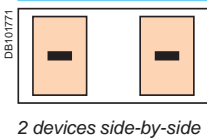
Interlocking via rotary handles



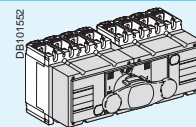
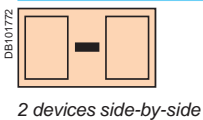
Interlocking via keylocks with captive keys



Interlocking on a base plate



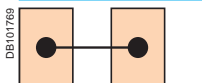
Complete source-changeover assemblies



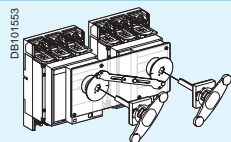
Range	Compact	Masterpact	
Models	NS630b to NS1600	NT06 to NT16	NW08 to NW63
Rating (A)	630 to 1600	630 to 1600	800 to 6300
Type of device	N/H/L circuit breakers NA switch-disconnectors	H1/L1 circuit breakers HA switch-disconnectors	N1/H1/H2/H3/L1 circuit breakers NA/HA/HF switch-disconnectors

Manual source-changeover systems

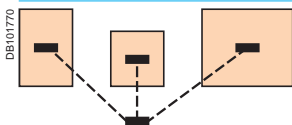
Interlocking via extended rotary handles



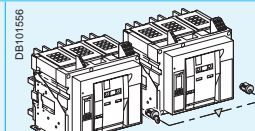
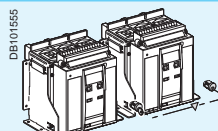
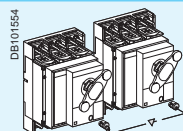
2 devices side-by-side



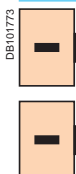
Interlocking via keylocks with captive keys



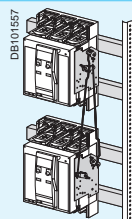
A number of different devices



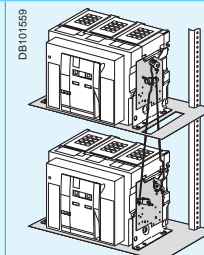
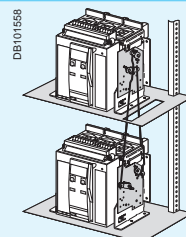
Mechanical interlocking using connecting rods



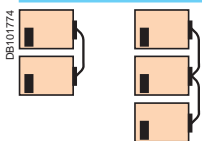
2 devices one above the other



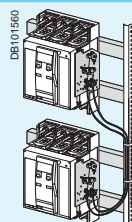
(1)



Mechanical interlocking using cables

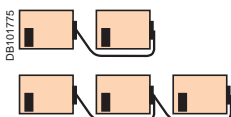
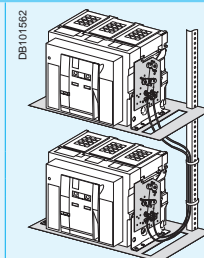
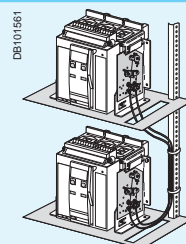


2 or 3 devices one above the other



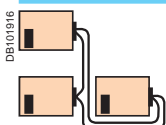
(1)

(2)



2 or 3 devices side-by-side

For this case and other cases, please consult us



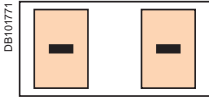
(1) Implemented with NS630b to NS1600 electrically-operated devices only.

(2) For source-changeover systems using cables, always respect the installation conditions specified on catalogue LVPED208007EN.

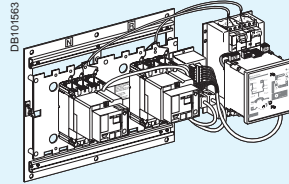
Range	Compact	
Models	NS100 to NS630	NS630b to NS1600
Rating (A)	100 to 630	630 to 1600
Type of device	N/H/L circuit breakers NA switch-disconnectors	N/H/L circuit breakers NA switch-disconnectors

Remote-operated source-changeover system

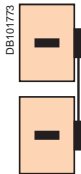
Mechanical interlocking on base plate + electrical interlocking



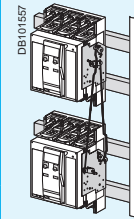
2 electrically-operated devices side-by-side combined with an electrical interlocking system



Mechanical interlocking using connecting rods + electrical interlocking



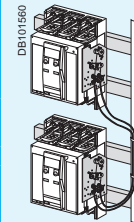
2 electrically-operated devices one above the other combined with an electrical interlocking system



Mechanical interlocking using cables + electrical interlocking



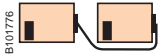
2 electrically-operated devices one above the other combined with an electrical interlocking system



2 electrically-operated devices side-by-side combined with an electrical interlocking system

Automatic source-changeover systems

Remote-operated source-changeover system combined with an automatic-control system



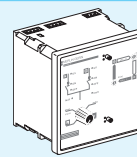
The automatic controller operates the devices depending on external parameters.

BA: Simple controller that manages the changeover function.

UA: Controller that also manages engine generator sets.

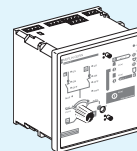
UA150: UA controller with a communication option.

DB101564



BA controller

DB101565



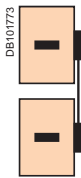
UA and UA150 controller

(2) For source-changeover systems using cables, always respect the installation conditions specified on catalogue LVPED208007EN.

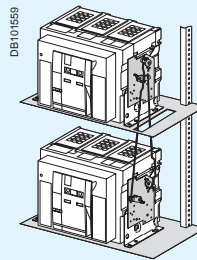
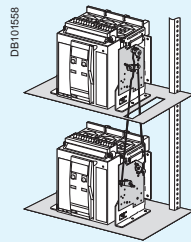
Range	Masterpact	
Models	NT06 to NT16	NW08 to NW63
Rating (A)	630 to 1600	800 to 6300
Type of device	H1/L1 circuit breakers HA switch-disconnectors	N1/H1/H2/H3/L1 circuit breakers NA/HA/HF switch-disconnectors

Remote-operated source-changeover system

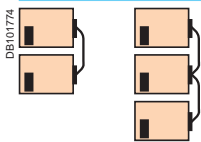
Mechanical interlocking using connecting rods + electrical interlocking



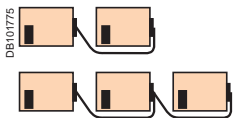
2 electrically-operated devices side-by-side combined with an electrical interlocking system



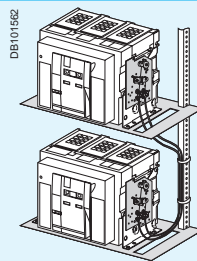
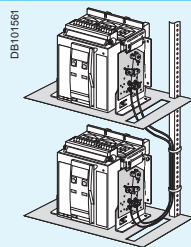
Mechanical interlocking using cables + electrical interlocking



2 or 3 electrically-operated devices one above the other combined with an electrical interlocking system⁽¹⁾

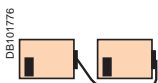


2 or 3 electrically-operated devices side-by-side combined with an electrical interlocking system⁽¹⁾



Automatic source-changeover systems

Remote-operated source-changeover system combined with an automatic-control system



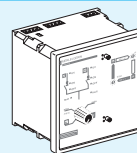
The automatic controller operates the devices depending on external parameters.

BA: Simple controller that manages the changeover function.

UA: Controller that also manages engine generator sets.

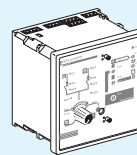
UA150: UA controller with a communication option.

DB101564



BA controller

DB101565



UA and UA150 controller

(1) Three devices with Masterpact NW only.

(2) For source-changeover systems using cables, always respect the installation conditions specified on catalogue LVPED208007EN. For other cases, please consult us.

Switch-disconnector fuses selection

Fupact INF.32 to INF.160

059000



INF.32.

056502



INF.63.

056503



INF.160.

Switch-disconnector fuses

Number of poles / type of fuse-link	3 poles / 3 fuse-links
	4 poles / 3 fuse-links + switched neutral
	4 poles / 4 fuse-links

Electrical characteristics as defined by IEC 60947-1 / IEC 60947-3 and EN 60947-1 / EN 60947-3

Conventional thermal current (A)	In free air	I_{th}	at 40 °C
			Maximum fuse power dissipation (W)
	In enclosure	I_{the}	at 40 °C
			Maximum fuse power dissipation (W)
Rated insulation voltage (V)		U_i	AC 50/60 Hz / DC
Rated impulse-withstand voltage (kV)		U_{imp}	
Rated operational voltage (V)		U_e	AC 50/60 Hz
			DC
Rated operational voltage AC20 and DC20 (V)		U_e	
Rated operational current (A)		I_e	AC 50/60 Hz
			220/240 V
			380/415 V
			440/480 V ⁽¹⁾
			500/525 V
			660/690 V
			DC/poles in serie
			125 V/nbr of pole
			250 V/nbr of pole
			500 V/nbr of pole
			750 V/nbr of pole
Rated operational power (kW) ⁽³⁾ (motor power given for direct on-line starting)		AC	220/240 V
			380/400 V
			415 V
			500/525 V
			660/690 V
Rated duties			Uninterrupted duty
			Intermittent duty
Rated short-circuit making capacity (kA peak) Switch-disconnector without fuse (refer to single-phase fuse limitation curves)		I_{cm}	415 V
			500 V
			690 V
Rated short-circuit breaking capacity (kA rms) / Rated short-circuit making capacity (kA peak) ⁽⁴⁾		I_{cn} / I_{cm}	415 V (BS)
			500 V (DIN)
			690 V (DIN)
Rated short-time withstand current (A rms)		I_{cw}	1 s
			3 s
			20 s
			30 s
Endurance (category A) (CO cycles)			Mechanical
			Electrical AC
			AC22A 500 V
			AC22A 690 V
			AC23A 500 V
			AC23A 690 V

Suitability for isolation

Positive contact indication

Pollution degree

Control

Direct front rotary handle

Extended front rotary handle

Extended lateral rotary handle

Locking by padlocks

Operating torque (typical for 3 poles switch-disconnector fuses) (Nm)

Indication auxiliaries

Auxiliary contacts

Blown-fuse indicator

Fuse monitor

Auxiliary contact test position

⁽¹⁾ Suitable for 480 V NEMA.

⁽²⁾ AC23B.

⁽³⁾ Some fuse-links limit these values. Motor starting current must be considered separately.

⁽⁴⁾ Switch-disconnector combined with fuses.

⁽⁵⁾ Only for NFC fuse-links.

Switch-disconnector fuses selection

Fupact INF.32 to INF.160

INF.32		INF40		INF.63		INFB100		INFC125		INF.160	
NFC-BS		DIN		NFC-DIN-BS		BS		NFC		DIN-BS	
NFC-BS		DIN		NFC-DIN-BS		BS		NFC		DIN-BS	
NFC		-		NFC-DIN		-		NFC		DIN	
32		40		63		100		125		160	
3.5		4.5		7.5		12		12		12	
32		40		63		100		125		160	135
3.5		4.5		7.5		12		12		10	12
750		750		750		750		750		750	
8		8		8		8		8		8	
750		750		750		750		750		750	
250		250		250		500		500		500	
690		690		690		690		690		690	
AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A
32	32	40	40	63	63	100	100	125	125	160	160
32	32	40	40	63	63	100	100	125	125	160	160
32	32	40	40	63	63	100	100	125	125	160	160
32	32	40	40	63	63	100	100	125	125	160	160
32	32	40	40	63	63 ⁽²⁾	100	100 ⁽²⁾	125	125 ⁽²⁾	160	160 ⁽²⁾
DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A
32/2	32/2	40/2	40/2	63/3	63/3	100/2	100/2	125/2	125/2	160/2	160/2
32/4	32/4	40/4	40/4	63/3	63/3	100/2	100/2	125/2	125/2	160/2	160/2
-	-	-	-	-	-	100/4	100/4	100/4	100/4	100/4	100/4
-	-	-	-	-	-	-	-	-	-	-	-
8		11		18.5		30		37		45	
14		18.5		30		45		60		80	
15		18.5		30		55		60		90	
18		22		37		60		80		110	
25		30		60		90		110		132	
■		■		■		■		■		■	
class 120-60 %		class 120-60 %		class 120-60 %		class 120-60 %		class 120-60 %		class 120-60 %	
9		9		17		22		22		22	
7.5		7.5		17		22		22		22	
6		6		13		15		15		15	
80/176		80/176		80/176		80/176		80/176		80/176	
100/220		100/220		100/220		100/220		100/220		100/220	
50/105		50/105		50/105		50/105		50/105		50/105	
1000		1000		2500		5000		5000		5000	
570		570		1440		2900		2900		2900	
220		220		560		1150		1150		1150	
180		180		460		950		950		950	
10000		10000		10000		10000		10000		10000	
1500		1500		1500		1500		1500		1500	
1500		1500		1500		1500		1500		1500	
1500		1500		1500		1500		1500		1500	
1500		1500		1500		1500		1500		1500	
■		■		■		■		■		■	
■		■		■		■		■		■	
3		3		3		3		3		3	
■		■		■		■		■		■	
■		■		■		■		■		■	
■		■		■		■		■		■	
■		■		■		■		■		■	
3		3		4		8		8		8	
■		■		■		■		■		■	
■ ⁽⁵⁾		-		■ ⁽⁵⁾		-		■		-	
■		■		■		■		■		■	
■ (standard)		■ (standard)		■ (standard)		■ (standard)		■ (standard)		■ (standard)	

Switch-disconnector fuses selection

Fupact INF.32 to INF.160

059000



INF.32.

056502



INF.63.

056503



INF.160.

Switch-disconnector fuses

Type of fuse-link

NFC	10 x 38
	14 x 51
	22 x 58
DIN (NH)	NH000
	NH00
BS (fixing centres in mm) ⁽²⁾	A1 (44.5)
	F1
	A2 (73.0)
	A3 (73.0)
	A4 (93.7)

Installation and connection

Fixed front connection
Terminal tightening torque (Nm)
Fuse-link bolts tightening torque (Nm)

Installation and connection accessories

Bare-cable connectors
Terminals
Neutral link
Terminal shields

Dimensions and weight

Overall dimensions H x W x D (mm)	3P
	4P
Approximate weight without fuses (kg)	3P
	4P

Enclosure dimensions for Ithe

H x W x D (mm)

Temperature derating⁽³⁾⁽⁴⁾

"Vertical mounting" fuse-links in vertical position	Ith (A)	40 °C
		45 °C
"Horizontal mounting" fuse-links in horizontal position	Ith (A)	50 °C
		55 °C
		60 °C
		65 °C
		70 °C
		35 °C
		40 °C
45 °C		
50 °C		
55 °C		
60 °C		
65 °C		
70 °C		

(1) Maximum fuse body diameter : Ø32 mm.

(2) A: fuse-link with centre bolted tags.

(3) Derating data is based on:

- the maximum rating for fuse-links intended for the device,
- maximum heat loss.

(4) For installation on a ceiling, derate an additional 10 %.

Switch-disconnector fuses selection

Fupact INF.32 to INF.160

INF.32	INFD40	INF.63	INFB100	INFC125	INF.160
■	-	-	-	-	-
■	-	■	-	-	-
-	-	■	-	■	■
-	■	■	-	-	■
-	-	■	-	-	■
■	-	-	-	-	-
■	-	-	-	-	-
■	-	■	■	-	■
-	-	■	■	-	■
-	-	-	■ ⁽¹⁾	-	■ ⁽¹⁾
■	■	■	■	■	■
2	2	3.5	M8: 15-22	M8: 15-22	M8: 15-22
2	2	2	M5: 3.5 M8: 5	-	M5: 3.5 M8: 5
■ (standard)	■ (standard)	■ (standard)	■ (optional)	■ (optional)	■ (optional)
-	-	-	■	■	■
■	■	■	■	■	■
-	■	■	■	■	■
97 x 106 x 105	97 x 106 x 133	100 x 143 x 128	140 x 180 x 130	140 x 180 x 130	140 x 180 x 130
97 x 142 x 105	97 x 142 x 133	100 x 188 x 128	140 x 215 x 130	140 x 215 x 130	140 x 215 x 130
0.7	0.7	1.3	1.5	1.5	1.5
0.9	0.9	1.6	1.8	1.8	1.8
300 x 350 x 200					
NFC-BS	DIN	NFC-DIN-BS	BS	NFC	DIN-BS
32	40	63	100	125	160
30.4	38	60	95	119	152
28.8	36	56.7	90	113	144
27.2	34	53.6	85	106	136
25.6	32	50.4	80	100	128
25	30	47.2	75	94	120
24.4	28	44	70	88	112
31	38	61	96	121	156
29.5	36	58	92	115	148
28	34	55	87	109	140
26.5	32	52.2	83	103	133
25	30	49.3	78	97	126
23.5	28	46.4	74	92	118
22	26	43	69	86	111
20.5	24	40	65	81	103

Switch-disconnector fuses selection

Fupact INF.200 to INF.800

PB104224



INF200.

Switch-disconnector fuses

Number of poles / type of fuse-link	3 poles / 3 fuse-links
	4 poles / 3 fuse-links + switched neutral
	4 poles / 4 fuse-links
Electrical characteristics as defined by IEC 60947-1 / IEC 60947-3 and EN 60947-1 / EN 60947-3	
Conventional thermal current (A)	In free air I_{th} at 40 °C
	Maximum fuse power dissipation (W)
	In enclosure I_{the} at 40 °C
	Maximum fuse power dissipation (W)
Rated insulation voltage (V)	U_i AC 50/60 Hz / DC
Rated impulse-withstand voltage (kV)	U_{imp}
Rated operational voltage (V)	U_e AC 50/60 Hz
	DC
Rated operational voltage AC20 and DC20 (V)	U_e
Rated operational current (A)	I_e AC 50/60 Hz
	220/240 V
	380/415 V
	440/480 V ⁽¹⁾
	500/525 V
	660/690 V
	DC/poles in serie
	125 V/nbr of pole
	250 V/nbr of pole
	500 V/nbr of pole
750 V/nbr of pole	
Rated operational power (kW) ⁽²⁾ (motor power given for direct on-line starting)	AC 220/240 V
	380/400 V
	415 V
	500/525 V
	660/690 V
Rated duties	Uninterrupted duty
	Intermittent duty
Rated short-circuit making capacity (kA peak) Switch-disconnector without fuse (refer to single-phase fuse limitation curves)	I_{cm} 415 V
	500 V
	690 V
Rated short-circuit breaking capacity (kA rms) / Rated short-circuit making capacity (kA peak) ⁽³⁾	I_{cn} / I_{cm} 415 V (BS)
	500 V (DIN)
	690 V (DIN)
Rated short-time withstand current (A rms)	I_{cw} 1 s
	3 s
	20 s
	30 s
Endurance (category A) (CO cycles)	Mechanical
	Electrical AC AC22A 500 V
	AC22A 690 V
	AC23A 500 V
	AC23A 690 V
Suitability for isolation	
Positive contact indication	
Pollution degree	
Control	
Direct front rotary handle	
Extended front rotary handle	
Extended lateral rotary handle	
Locking by padlocks	
Operating torque (typical for 3 poles switch-disconnector fuses) (Nm)	
Indication auxiliaries	
Auxiliary contacts	
Blown-fuse indicator	
Fuse monitor	
Auxiliary contact test position	

⁽¹⁾ Suitable for 480 V NEMA.

⁽²⁾ Some fuse-links limit these values.

Motor starting current must be considered separately.

⁽³⁾ Switch-disconnector combined with fuses.

⁽⁴⁾ Category B

⁽⁵⁾ Only for DIN fuse-links.

Switch-disconnector fuses selection

Fupact INF.200 to INF.800

INF.200		INF.250		INF.400		INF.630		INF.800	
DIN-BS		DIN-BS		DIN-BS		DIN-BS		DIN-BS	
DIN		DIN		DIN		DIN		DIN	
200		250		400		630		800	
17		23		45		60		65	
200	180	250	230	400	360	630	570	800	720
15	18	20	27	34	37	50	50	800	55
1000		1000		1000		1000		1000	
12		12		12		12		12	
750		750		750		750		750	
750		750		750		750		750	
690		690		690		690		690	
AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A
200	200	250	250	400	400	630	630	800	800
200	200	250	250	400	400	630	630	800	800
200	200	250	250	400	400	630	630	800	800
200	200	250	250	400	400	630	630	800	800
200	200	250	250	400	400	630	630	800	800
DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A
200/1	200/1	250/1	250/1	400/2	400/2	630/2	630/2	800/2	800/2
200/2	200/2	250/2	250/2	400/3 ⁽⁴⁾	400/3 ⁽⁴⁾	630/3	630/3	800/3	800/3
200/3	200/3	250/3	250/3	400/4 ⁽⁴⁾	400/4 ⁽⁴⁾	630/4	630/4	800/4	800/4
180/4	180/4	230/4	230/4	400/4 ⁽⁴⁾	400/4 ⁽⁴⁾	630/4	630/4	800/4	800/4
60		75		130		200		250	
110		140		220		355		450	
110		145		230		355		450	
140		180		300		480		590	
200		250		400		630		710	
■		■		■		■		■	
class 120-60 %		class 120-60 %		class 120-60 %		class 120-60 %		class 120-60 %	
28		38		53		78		78	
34		35		56		83		83	
22		25		37		63		63	
80/176		80/176		80/176		80/176		80/176	
100/220		100/220		100/220		100/220		100/220	
80/176		80/176		80/176		80/176		80/176	
8000		8000		14000		16000		16000	
4600		4600		8000		9200		9200	
1800		1800		3100		3600		3600	
1450		1450		2500		2900		2900	
10000		10000		8000		5000		5000	
1000		1000		1000		1000		500	
1000		1000		1000		1000		500	
1000		1000		1000		1000		500	
■		■		■		■		■	
-		■		■		■		■	
3		3		3		3		3	
■		■		■		■		■	
■		■		■		■		■	
■		■		-		-		-	
■		■		■		■		■	
7		7		19		38		38	
■		■		■		■		■	
■ ⁽⁵⁾		■ ⁽⁵⁾		■ ⁽⁵⁾		■ ⁽⁵⁾		■ ⁽⁵⁾	
■		■		■		■		■	
■		■ (optional)		■ (optional)		■ (optional)		■ (optional)	

Switch-disconnector fuses selection

Fupact INF.200 to INF.800

PB104224



INF200.

Switch-disconnector fuses

Number of poles / type of fuse-link	3 poles / 3 fuse-links	
	4 poles / 3 fuse-links + switched neutral	
	4 poles / 4 fuse-links	
Electrical characteristics as defined by IEC 60947-1 / IEC 60947-3 and EN 60947-1 / EN 60947-3		
Conventional thermal current (A)	In free air	I_{th} at 40 °C
	Maximum fuse power dissipation (W)	
	In enclosure	I_{the} at 40 °C
	Maximum fuse power dissipation (W)	
Rated insulation voltage (V)	U_i AC 50/60 Hz / DC	
Rated impulse-withstand voltage (kV)	U_{imp}	
Rated operational voltage (V)	U_e AC 50/60 Hz	
	DC	
Rated operational voltage AC20 and DC20 (V)	U_e	
Rated operational current (A)	I_e AC 50/60 Hz	
	220/240 V	
	380/415 V	
	440/480 V ⁽¹⁾	
	500/525 V	
	660/690 V	
	DC/poles in serie	
	125 V/nbr of pole	
	250 V/nbr of pole	
	500 V/nbr of pole	
750 V/nbr of pole		
Rated operational power (kW) ⁽²⁾ (motor power given for direct on-line starting)	AC 220/240 V	
	380/400 V	
	415 V	
	500/525 V	
	660/690 V	
Rated duties	Uninterrupted duty	
	Intermittent duty	
Rated short-circuit making capacity (kA peak) Switch-disconnector without fuse (refer to single-phase fuse limitation curves)	I_{cm} 415 V	
	500 V	
	690 V	
Rated short-circuit breaking capacity (kA rms) / Rated short-circuit making capacity (kA peak) ⁽³⁾	I_{cn} / I_{cm} 415 V (BS)	
	500 V (DIN)	
	690 V (DIN)	
Rated short-time withstand current (A rms)	I_{cw} 1 s	
	3 s	
	20 s	
	30 s	
Endurance (category A) (CO cycles)	Mechanical	
	Electrical AC AC22A 500 V	
	AC22A 690 V	
	AC23A 500 V	
	AC23A 690 V	
Suitability for isolation		
Positive contact indication		
Pollution degree		
Control		
Direct front rotary handle		
Extended front rotary handle		
Extended lateral rotary handle		
Locking by padlocks		
Operating torque (typical for 3 poles switch-disconnector fuses) (Nm)		
Indication auxiliaries		
Auxiliary contacts		
Blown-fuse indicator		
Fuse monitor		
Auxiliary contact test position		

⁽¹⁾ Suitable for 480 V NEMA.

⁽²⁾ Some fuse-links limit these values.

Motor starting current must be considered separately.

⁽³⁾ Switch-disconnector combined with fuses.

⁽⁴⁾ Category B

⁽⁵⁾ Only for DIN fuse-links.

Switch-disconnector fuses selection

Fupact INF.200 to INF.800

INF.200		INF.250		INF.400		INF.630		INF.800	
DIN-BS		DIN-BS		DIN-BS		DIN-BS		DIN-BS	
DIN		DIN		DIN		DIN		DIN	
200		250		400		630		800	
17		23		45		60		65	
200	180	250	230	400	360	630	570	800	720
15	18	20	27	34	37	50	50	800	55
1000		1000		1000		1000		1000	
12		12		12		12		12	
750		750		750		750		750	
750		750		750		750		750	
690		690		690		690		690	
AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A	AC22A	AC23A
200	200	250	250	400	400	630	630	800	800
200	200	250	250	400	400	630	630	800	800
200	200	250	250	400	400	630	630	800	800
200	200	250	250	400	400	630	630	800	800
200	200	250	250	400	400	630	630	800	800
DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A
200/1	200/1	250/1	250/1	400/2	400/2	630/2	630/2	800/2	800/2
200/2	200/2	250/2	250/2	400/3 ⁽⁴⁾	400/3 ⁽⁴⁾	630/3	630/3	800/3	800/3
200/3	200/3	250/3	250/3	400/4 ⁽⁴⁾	400/4 ⁽⁴⁾	630/4	630/4	800/4	800/4
180/4	180/4	230/4	230/4	400/4 ⁽⁴⁾	400/4 ⁽⁴⁾	630/4	630/4	800/4	800/4
60		75		130		200		250	
110		140		220		355		450	
110		145		230		355		450	
140		180		300		480		590	
200		250		400		630		710	
■		■		■		■		■	
class 120-60 %		class 120-60 %		class 120-60 %		class 120-60 %		class 120-60 %	
28		38		53		78		78	
34		35		56		83		83	
22		25		37		63		63	
80/176		80/176		80/176		80/176		80/176	
100/220		100/220		100/220		100/220		100/220	
80/176		80/176		80/176		80/176		80/176	
8000		8000		14000		16000		16000	
4600		4600		8000		9200		9200	
1800		1800		3100		3600		3600	
1450		1450		2500		2900		2900	
10000		10000		8000		5000		5000	
1000		1000		1000		1000		500	
1000		1000		1000		1000		500	
1000		1000		1000		1000		500	
■		■		■		■		■	
-		■		■		■		■	
3		3		3		3		3	
■		■		■		■		■	
■		■		■		■		■	
■		■		-		-		-	
■		■		■		■		■	
7		7		19		38		38	
■		■		■		■		■	
■ ⁽⁵⁾		■ ⁽⁵⁾		■ ⁽⁵⁾		■ ⁽⁵⁾		■ ⁽⁵⁾	
■		■		■		■		■	
■		■ (optional)		■ (optional)		■ (optional)		■ (optional)	

Fuse-switch disconnectors selection

Fupact ISFT100N to ISFT630

PB104311



ISFT100N.

62183A_SE



ISFT100.

62194A_SE



ISFT160.

62195A_SE



ISFT630.

Fuse-switch disconnectors

Number of poles / type of fuse-link IEC60 269-2-1 Section 1

Electrical characteristics as defined by IEC 60947-1 / IEC 60947-3 and EN 60947-1 / EN 60947-3

Conventional thermal current (A)	In free air	I_{th}	at 40 °C
	Maximum fuse power dissipation (W)		
	In enclosure	I_{the}	at 40 °C
Maximum fuse power dissipation (W)			
Rated insulation voltage (V)	U_i	AC 50/60 Hz / DC	
Rated impulse-withstand voltage (kV)	U_{imp}		
Rated operational voltage (V)	U_e	AC 50/60 Hz	
		DC	
Rated operational voltage AC20 and DC20 (V)	U_e		
Rated operational current (A)	I_e	AC 50/60 Hz	
		220/240 V	
		380/415 V	
		440/480 V ⁽²⁾	
		500 V	
		660/690 V	
DC/poles in series			
125 V /nbr of poles			
220 V /nbr of poles			
440 V /nbr of poles			
Rated duties	Uninterrupted duty		
Rated short-circuit breaking capacity (kA rms)/Rated short-circuit making capacity (kA peak)/I _n fuse-link (A) ⁽³⁾	I_{cn}/I_{cm}/I_n	415 V	
		500 V	
		690 V	
Endurance (category B) (CO cycles)	Mechanical		
		Electrical AC	AC22B 415 V
			AC23B 415 V
		AC21B 690 V	

Suitability for isolation

Visible break

Pollution degree

Control

Direct front rotary handle (operator-dependent opening and closing)

Locking

Padlocks

Lead seal

Indication auxiliary

Auxiliary contacts

Fuse monitor

Blown-fuse indicator

Installation and connection accessories

Mounting position possible

Horizontal

Vertical

Bare-cable connectors

Other connectors

For bare Cu/Al cables

For flexible bars

Distribution connector

Lugs for copper cables

Comb busbars

Insulated comb covers

Incoming connector for comb busbars

Terminal shields

Dimensions and weight

Overall dimension H x W x D (mm)

3P

Approximate weight without fuse-links (kg)

3P

⁽¹⁾ With 95 mm² connector.

⁽²⁾ Suitable for 480 V NEMA.

⁽³⁾ Fuse-switch disconnectors with fuse-links.

Fuse-switch disconnectors selection

Fupact ISFT100N to ISFT630

ISFT100N		ISFT100		ISFT160		ISFT250		ISFT400		ISFT630	
3P/DIN (NH)		3P/DIN (NH)		3P/DIN (NH)		3P/DIN (NH)		3P/DIN (NH)		3P/DIN (NH)	
100		160 ⁽¹⁾		160		250		400		630	
7.5		9		12		23		34		48	
100		160 ⁽¹⁾		160		250		400		630	
7.5		9		12		23		34		48	
1000		690		800		800		800		800	
6		6		8		8		8		8	
690		690		690		690		690		690	
440		440		440		440		440		440	
690		690		800		800		800		800	
AC21B	AC23B	AC21B	AC22B	AC21B	AC22B	AC21B	AC22B	AC21B	AC22B	AC21B	AC22B
100	100	160	160	160	160	250	250	400	400	630	630
100	100	160	160	160	160	250	250	400	400	630	630
100	-	100	-	160	-	250	-	400	-	630	-
100	-	100	-	160	-	250	-	400	-	630	-
100	-	100	-	100	-	250	-	400	-	630	-
DC21B	DC22B	DC21B	DC22B	DC21B	DC22B	DC21B	DC22B	DC21B	DC22B	DC21B	DC22B
100/3	100/3	100/1	-	160/1	-	250/1	-	400/1	-	630/1	-
100/3	100/3	100/1	-	160/1	-	250/1	-	400/1	-	630/1	-
100/3	100/3	100/1	-	160/2	-	250/2	-	400/2	-	630/2	-
■		■		■		■		■		■	
80 / 176 / 100		80 / 176 / 100		50 / 105 / 160		50 / 105 / 250		50 / 105 / 400		50 / 105 / 630	
50 / 105 / 100		50 / 105 / 100		50 / 105 / 160		50 / 105 / 250		50 / 105 / 400		50 / 105 / 630	
50 / 105 / 100		50 / 105 / 100		50 / 105 / 100		50 / 105 / 200		50 / 105 / 315		50 / 105 / 500	
2000		2000		1600		1600		1000		1000	
300		300		200		200		200		200	
300		-		-		-		-		-	
300		300		200		200		200		200	
■		■		■		■		■		■	
■		■		■		■		■		■	
3		3		3		3		3		3	
■		■		■		■		■		■	
-		-		-		-		-		-	
■		■		■		■		■		■	
■		■		■		■		■		■	
-		-		■		■		■		■	
-		-		■		■		■		■	
-		-		■		■		■		■	
-		-		■		■		■		■	
-		-		■		■		■		■	
-		-		-		-		-		-	
-		-		-		-		-		-	
-		-		-		-		-		-	
-		-		-		-		-		-	
-		-		-		-		-		-	
■		-		■		■		■		■	
216 x 53 x 82		141 x 89 x 71		163 x 107 x 80		246 x 186 x 110		271 x 210 x 127		271 x 250 x 132	
0.54		0.46		0.64		2.06		2.96		4.00	

Fuse-switch disconnectors selection

Fupact ISFT100N to ISFT630

PB104311



ISFT100N.

62193A_SE



ISFT100.

62194A_SE



ISFT160.

62195A_SE



ISFT630.

Fuse-switch disconnectors

Type of fuse-link

- DIN NH000
- DIN NH00
- DIN NH1
- DIN NH2
- DIN NH3

Installation and connection

- Symmetrical rail
- Direct connection on backplate
- Push-on connection to 60 mm busbars
- Hook-on connection to 60 mm busbars
- Hook-on connection to 100 mm busbars
- Tightening torque (Nm)

Temperature derating (with gG fuse-link) ⁽¹⁾⁽²⁾

"Vertical mounting" fuse-links in vertical position	I_{th} (A)	40 °C
		45 °C
		50 °C
		55 °C
		60 °C
		65 °C
"Horizontal mounting" fuse-links in horizontal position	I_{th} (A)	40 °C
		45 °C
		50 °C
		55 °C
		60 °C
		65 °C
		70 °C

- (1) Derating data is based on:
- the maximum rating for fuse-links intended for the device,
- maximum heat loss.
- (2) For installation on a ceiling, derate an additional 10 %.
- (3) With 100/160 A fuse-link.

Fuse-switch disconnectors selection

Fupact ISFT100N to ISFT630

	ISFT100N	ISFT100	ISFT160	ISFT250	ISFT400	ISFT630
	■	■	■	-	-	-
	-	-	■	-	-	-
	-	-	-	■	-	-
	-	-	-	-	■	-
	-	-	-	-	-	■
	■	■	-	-	-	-
	■	■	■	■	■	■
	-	-	■	■	-	-
	■	-	■	■	■	■
	-	-	-	■	■	■
see catalogue LVPED208014EN						
	100	100/160 ⁽³⁾	160	250	400	630
	95	95/152	152	238	380	599
	90	90/144	144	225	360	567
	85	85/136	136	213	340	536
	80	80/128	128	200	320	504
	75	75/120	120	188	300	473
	70	70/112	112	175	280	441
	100	100/160 ⁽³⁾	160	250	400	630
	95	95/152	152	238	380	599
	90	90/144	144	225	360	567
	85	85/136	136	213	340	536
	80	80/128	128	200	320	504
	75	75/120	120	188	300	473
	70	70/112	112	175	280	441

Fuse-switch disconnectors selection

Fupact ISFL160 to ISFL630

62196



ISFL160.

62197



ISFL250.

Fuse-switch disconnectors

Number of poles / type of fuse-link IEC60 269-2-1 Section 1

Electrical characteristics as defined by IEC 60947-1 / IEC 60947-3 and EN 60947-1 / EN 60947-3

Conventional thermal current (A)	In free air	I_{th}	at 40 °C
	Maximum fuse power dissipation (W)		
	In enclosure	I_{the}	at 40 °C
Maximum fuse power dissipation (W)			

Rated insulation voltage (V)	U_i	AC 50/60 Hz / DC
------------------------------	----------------------	------------------

Rated impulse-withstand voltage (kV)	U_{imp}	
--------------------------------------	------------------------	--

Rated operational voltage (V)	U_e	AC 50/60 Hz
		DC

Rated operational voltage AC20 and DC20 (V)	U_e	
---	----------------------	--

Rated operational current (A)	I_e	AC 50/60 Hz
		220/240 V
		380/415 V
		440/480 V ⁽¹⁾
		500 V
		660/690 V

DC/poles in serie

125 V /nbr of poles
220 V /nbr of poles
440 V /nbr of poles

Rated duties	Uninterrupted duty	
--------------	--------------------	--

Rated short-circuit breaking capacity (kA rms)/Rated short-circuit making capacity (kA peak)/In fuse-link (A) ⁽²⁾	I_{cn}/I_{cm}/I_n	415 V
		500 V
		690 V

Endurance (category B) (CO cycles)	Mechanical	
	Electrical AC	AC22B 415 V
		AC21B 690 V

Suitability for isolation

Visible break

Pollution degree

Control

Direct front rotary handle (operator-dependent opening and closing)

Locking	Padlocks
	Lead seal

Indication auxiliaries

Auxiliary contacts

Blown-fuse indicator

Current transformer

Installation and connection accessories

Mounting position possible	Horizontal
	Vertical

Connector	For bare Cu/Al cables
	For flexible bars

Lugs for Cu/Al cables

Terminal shields

Coupling accessories

Dimensions and weight

Overall dimensions H x W x D (mm)	3P
-----------------------------------	----

Approximate weight without fuse-links (kg)	3P
--	----

⁽¹⁾ Suitable for 480 V NEMA.

⁽²⁾ Fuse-switch disconnectors with fuse-links.

⁽³⁾ Only for ISF160 with direct connection to the busbars.

Fuse-switch disconnectors selection

Fupact ISFL160 to ISFL630

ISFL160		ISFL250		ISFL400		ISFL630	
3P/DIN (NH)		3P/DIN (NH)		3P/DIN (NH)		3P/DIN (NH)	
160		250		400		630	
12		23		34		48	
160		250		400		630	
12		23		34		48	
800		800		800		800	
8		8		8		8	
690		690		690		690	
440		440		440		440	
800		800		800		800	
AC21B	AC22B	AC21B	AC22B	AC21B	AC22B	AC21B	AC22B
160	160	250	250	400	400	630	630
160	160	250	250	400	400	630	630
160	-	250	-	400	-	630	-
160	-	250	-	400	-	630	-
100	-	250	-	400	-	630	-
DC21B	DC22B	DC21B	DC22B	DC22B	DC21B	DC22B	DC21B
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
■		■		■		■	
50 / 105 / 160		100 / 220 / 250		100 / 220 / 400		100 / 220 / 630	
50 / 105 / 160		50 / 105 / 250		50 / 105 / 400		50 / 105 / 630	
50 / 105 / 100		50 / 105 / 200		50 / 105 / 315		50 / 105 / 500	
1600		1600		1000		1000	
200		200		200		200	
200		200		200		200	
■		■		■		■	
■		■		■		■	
3		3		3		3	
■		■		■		■	
■		■		■		■	
-		-		-		-	
■		■		■		■	
■ ⁽³⁾		■		■		■	
■		-		-		-	
■		■		■		■	
■		■		■		■	
■		-		-		-	
■		-		-		-	
■		■		■		■	
■		■		■		■	
456 x 50 x 159		755 x 100 x 192		755 x 100 x 192		755 x 100 x 192	
1.35		6.35		6.35		6.35	

Fuse-switch disconnectors selection

Fupact ISFL160 to ISFL630



62196

ISFL160.



62197

ISFL250.

Fuse-switch disconnectors

Type of fuse-link

- DIN NH000
- DIN NH00
- DIN NH1
- DIN NH2
- DIN NH3

Installation and connection

- Hook-on connection to 60 mm busbars
- Direct connection to 100 mm busbars
- Direct connection to 185 mm busbars
- To 60 mm busbars using single-device conversion kit
- To 185 mm busbars using single or double device conversion kit
- Tightening torque (Nm)

Temperature derating (with gG fuse-link)⁽¹⁾

Mounting type	I _{th} (A)	Temperature (°C)	
		40	50
"Vertical mounting" fuse-links in vertical position	40	100	100
	45	90	90
	50	80	80
	55	70	70
	60	60	60
	65	50	50
"Horizontal mounting" fuse-links in horizontal position	40	100	100
	45	90	90
	50	80	80
	55	70	70
	60	60	60
	65	50	50

⁽¹⁾ Derating data is based on:
 - the maximum rating for fuse-links intended for the device
 - maximum heat loss.

Fuse-switch disconnectors selection

Fupact ISFL160 to ISFL630

	ISFL160	ISFL250	ISFL400	ISFL630
	■	-	-	-
	■	-	-	-
	-	■	-	-
	-	-	■	-
	-	-	-	■
	■	-	-	-
	■	-	-	-
	-	■	■	■
	■	-	-	-
	■	-	-	-
	see catalogue LVPED208014EN			
	160	250	400	630
	152	238	380	599
	144	225	360	567
	136	213	340	536
	128	200	320	504
	120	188	300	473
	112	175	280	441
	160	-	-	-
	152	-	-	-
	144	-	-	-
	136	-	-	-
	128	-	-	-
	120	-	-	-
	112	-	-	-

Selection guide

Protection and monitoring relays

	Protection relays ⁽²⁾	
	RH10	RH21
All Vigirex products are type A ⁽¹⁾ devices, also covering the requirements of type AC devices.		
Functions		
Protection	■	■
Local indications	■	■
Remote indications (hard-wired)	-	-
Remote indications (via communication)	-	-
Display of measurements	-	-
Wiring		
Optimum continuity of service	■	■
Optimum safety (failsafe)	■	■
Mounting		
DIN rail	■	■
Front-panel mount	■	■
Rated operational voltage		
1 DC voltage range from 12 to 48 V	■	■
1 DC voltage range from 24 to 130 V and AC 48 V	-	-
6 AC voltage ranges from 12 to 525 V	■	■
4 AC voltage ranges from 48 to 415 V	-	-
Thresholds		
Fault (I Δ n)	1 fixed instantaneous threshold choose from 0.03 A to 1 A	2 user-selectable thresholds 0.03 A or 0.3 A
Alarm	-	-
Pre-alarm	-	-
Time delays		
Fault	Instantaneous	Instantaneous for I Δ n = 0.03 A 1 user-selectable time delay instantaneous or 0.06 s for I Δ n = 0.3 A
Alarm	-	-
Pre-alarm	-	-
Display and indications		
Voltage presence (LED and/or relay) ⁽⁶⁾	■	■
Threshold overrun	■	■
fault (LED)	■	■
alarm (LED and relay)	-	-
pre-alarm (LED and relay)	-	-
Leakage current (digital)	-	-
Settings (digital)	-	-
Test with or without actuation of output contacts		
Local	■	■
Remote (hard-wired)	■	■
Remote (hard-wired for several relays)	■	■
Remote (via communication)	-	-
Communication		
Suitable for supervision (internal bus)	-	-
Characteristics	See catalogue LVPED208009EN	
Sensors		
Merlin Gerin A, OA, E toroids ⁽⁷⁾ up to 630 A	■	■
Merlin Gerin rectangular sensors up to 3200 A	■	■

(1) Type A relay up to I Δ n = 5 A.

(2) Relay with output contact requiring local, manual reset after fault clearance.


(3) Relay with output contact that automatically resets after fault clearance.

(4) Mandatory with an RMH (multiplexing for the 12 toroids).

(5) Mandatory with an RM12T (multiplexing for the 12 toroids).

Selection guide

Protection and monitoring relays

			Monitoring relays ⁽³⁾	
RH99	RH197P	RHUs or RHU	RH99	RMH
				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-	-	<input type="checkbox"/> except RHUs	<input type="checkbox"/>	<input type="checkbox"/>
-	<input type="checkbox"/> ⁽⁶⁾	<input type="checkbox"/>	-	<input type="checkbox"/> 12 measurement channels ⁽⁵⁾
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	-
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	-
<input type="checkbox"/>	-	-	<input type="checkbox"/>	-
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	-	-	<input type="checkbox"/>	-
-	<input type="checkbox"/>	-	-	-
<input type="checkbox"/>	-	-	<input type="checkbox"/>	-
-	<input type="checkbox"/>	<input type="checkbox"/>	-	220 to 240 V AC
9 user-selectable thresholds from 0.03 A to 30 A	19 user-selectable thresholds from 0.03 A to 30 A	1 adjustable threshold from 0.03 A to 30 A	-	-
-	Fixed: 50 % I _{Δn} or 100 % I _{Δn}	1 adjustable threshold from 0.015 A to 30 A	9 user-selectable thresholds from 0.03 A to 30 A	1 adjustable threshold/channel from 0.03 A to 30 A
-	-	-	-	1 adjustable threshold/channel from 0.015 A to 30 A
9 user-selectable time delays instantaneous to 4.5 s	7 user-selectable time delays instantaneous to 4.5 s	1 adjustable threshold instantaneous to 4.5 s	-	-
-	instantaneous	1 adjustable threshold instantaneous to 4.5 s	9 user-selectable time delays instantaneous to 4.5 s	1 adjustable threshold/channel instantaneous to 5 s
-	-	-	-	1 adjustable threshold/channel instantaneous to 5 s
<input type="checkbox"/>	<input type="checkbox"/> ⁽⁹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-
-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-	-	-	-	<input type="checkbox"/>
-	on bargraph	<input type="checkbox"/>	-	<input type="checkbox"/>
-	-	<input type="checkbox"/>	-	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/> ⁽¹⁰⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-
-	-	<input type="checkbox"/> except RHUs	-	<input type="checkbox"/>
-	-	<input type="checkbox"/> except RHUs	-	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(6) Depending on the type of wiring (optimum continuity of service or optimum safety).
 (7) See catalogue LVPED208009EN.

(8) On a bargraph
 (9) No voltage presence relay.
 (10) With actuation of contacts only.

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