

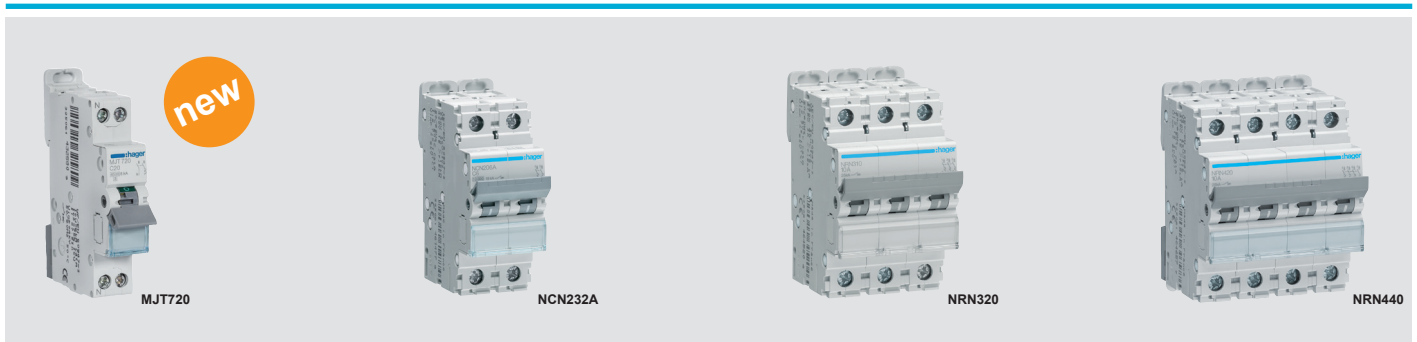


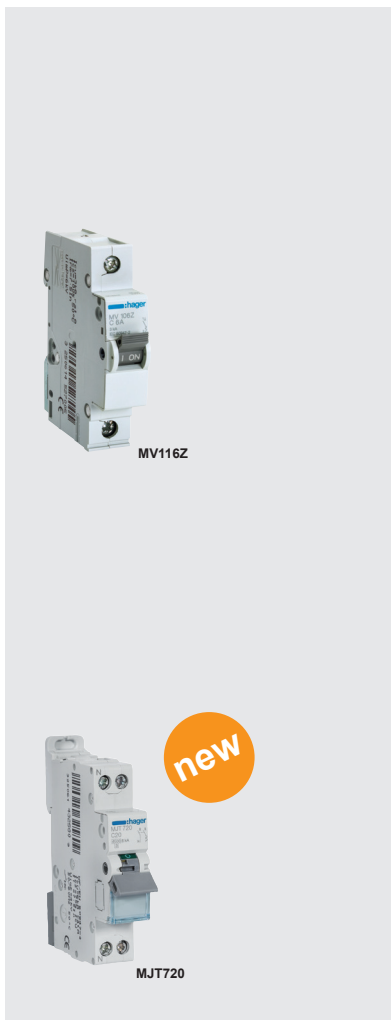
POWER DISTRIBUTION & PROTECTION

B

Miniature circuit breakers (MCB'S)		Hager	B-1...7
Modular isolators / Contactors / Relays		Hager	B-8/11
Earth leakage protection		Hager Socomec Lovato	B-9...10 B-53 B-54
Modular time switches		Hager	B-12
Control and signalling devices		Hager	B-13
Surge protection devices (SPD's)		Hager CPT Dehn	B-14 B-50...52 B-55...56
Moulded case circuit breakers (MCCB's)		Hager	B-15..19
Air circuit breakers (ACB's)		Hager	B-20..22
Load break / Changover switches		Hager Socomec	B-8 B-23...35
Fuse combination switches		Socomec	B-36
Fuses and bases		DF Electric	B-37...47
Photovoltaic switches		Socomec DF Electric	B-26 B-41/44
Fuse switch disconnectors		Aparator K Electric	B-48 B-49
Power supplies (AC-DC)		Delta Lovato	B-57...58 B-59
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Type	MV	MJT	MA	NF/NFN	HLF	NGN	HMD	NCN	HMC	NRN	HMK	
No. Of Poles	1	1 + N	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	1, 2, 3, 4	
Width per Pole in 17.5 mm	1	1	1	1	1.5	1	1.5	1	1.5	1	1.5	
Rated Current (A)	6 - 40A	6 - 40A	0.5 - 63A	0.5 - 63A	80 - 125A	0.5 - 63A	80 - 125A	0.5 - 63A	80 - 125A	0.5 - 63A	80 - 125A	
Breaking capacity	3kA	6kA	6kA	10kA	10kA	10kA	15kA	15kA	15kA	15 - 25kA	30kA	
Tripping Curve	C	C	C	C	C	D	D	C	C	C	C	
Rated AC Voltage (V)	230	230	230/400	230/400	230/400	230/400	230/400	230/400	230/400	230/400	230/400	
DC Application (refer Annex-9)	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Frequency (Hz)	50/60	50/60	50	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	
Add on Block (Earth Leakage)	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Connecting Capacity (conductor)	Flexible (mm ²)	16 mm ²	10 mm ²	16 mm ²	25 mm ²	50 mm ²	25 mm ²	50 mm ²	25 mm ²	50 mm ²	25 mm ²	50 mm ²
	Rigid (mm ²)	25 mm ²	16 mm ²	25 mm ²	35 mm ²	70 mm ²	35 mm ²	70 mm ²	35 mm ²	70 mm ²	35 mm ²	70 mm ²
Isolation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Page	B-1	B1	B-2	B-3	B-3	B-4	B-4	B-5	B-5	B-6	B-6	



MV series C curve (5-10 In)

Protection and control of circuits against overload and short circuits. Suitable for domestic and commercial installations.

type	current rating	poles	breaking capacity	description	width in 17.5 mm
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Breaking capacity: 3 kA SANS/IEC 60947-2, SANS 556

- Does not accept clip-on accessories: auxiliaries, shunt trip, undervoltage release
- Compatible for DC voltage applications (see chart Annex 9)

Single pole

MV106Z	6A	1	3 kA	miniature circuit breaker	1
MV110Z	10A	1	3 kA	miniature circuit breaker	1
MV116Z	16A	1	3 kA	miniature circuit breaker	1
MV120Z	20A	1	3 kA	miniature circuit breaker	1
MV125Z	25A	1	3 kA	miniature circuit breaker	1
MV132Z	32A	1	3 kA	miniature circuit breaker	1
MV140Z	40A	1	3 kA	miniature circuit breaker	1

MJT series C curve (5-10 In)

Breaking capacity: 6 kA SANS/IEC 60947-2, SANS 556

- Accepts clip-on: auxiliaries, shunt trip, undervoltage and earth leakage (see page B-7/9)
- Trip indication - yellow flag on toggle indicates either "overload" or "short circuit" trip

1 Ph+N in one module

MJT702	2A	1+N	6 kA	miniature circuit breaker	1
MJT706	6A	1+N	6 kA	miniature circuit breaker	1
MJT710	10A	1+N	6 kA	miniature circuit breaker	1
MJT716	16A	1+N	6 kA	miniature circuit breaker	1
MJT720	20A	1+N	6 kA	miniature circuit breaker	1
MJT725	25A	1+N	6 kA	miniature circuit breaker	1
MJT732	32A	1+N	6 kA	miniature circuit breaker	1
MJT740	40A	1+N	6 kA	miniature circuit breaker	1



MA163Z



MA216Z



MA325Z



MA416Z

For the protection and control of circuits against overload and short circuits. Suitable for commercial and industrial installations.

- Compatible for DC voltage applications (see chart Annex 9)

Voltage rating: 230/400V 50-60Hz

Field fittable clip-on accessories (see page B-7)

- auxiliary/alarm contacts
- shunt trip device
- undervoltage release
- earth leakage (see page B-9)

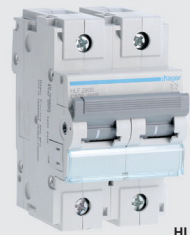
type	current rating	poles	breaking capacity	description	width in 17.5 mm
MA series					
C curve (5-10 In)					
Breaking capacity:			6kA	SANS/IEC 60947-2, SANS 556	
Single pole					
MA100Z	0.5A	1	6kA	miniature circuit breaker	1
MA101Z	1A	1	6kA	miniature circuit breaker	1
MA102Z	2A	1	6kA	miniature circuit breaker	1
MA103Z	3A	1	6kA	miniature circuit breaker	1
MA106Z	6A	1	6kA	miniature circuit breaker	1
MA110Z	10A	1	6kA	miniature circuit breaker	1
MA116Z	16A	1	6kA	miniature circuit breaker	1
MA120Z	20A	1	6kA	miniature circuit breaker	1
MA125Z	25A	1	6kA	miniature circuit breaker	1
MA132Z	32A	1	6kA	miniature circuit breaker	1
MA140Z	40A	1	6kA	miniature circuit breaker	1
MA150Z	50A	1	6kA	miniature circuit breaker	1
MA163Z	63A	1	6kA	miniature circuit breaker	1
Two pole					
MA201Z	1A	2	6kA	miniature circuit breaker	2
MA202Z	2A	2	6kA	miniature circuit breaker	2
MA203Z	3A	2	6kA	miniature circuit breaker	2
MA206Z	6A	2	6kA	miniature circuit breaker	2
MA210Z	10A	2	6kA	miniature circuit breaker	2
MA216Z	16A	2	6kA	miniature circuit breaker	2
MA220Z	20A	2	6kA	miniature circuit breaker	2
MA225Z	25A	2	6kA	miniature circuit breaker	2
MA232Z	32A	2	6kA	miniature circuit breaker	2
MA240Z	40A	2	6kA	miniature circuit breaker	2
MA250Z	50A	2	6kA	miniature circuit breaker	2
MA263Z	63A	2	6kA	miniature circuit breaker	2
Three pole					
MA301Z	1A	3	6kA	miniature circuit breaker	3
MA302Z	2A	3	6kA	miniature circuit breaker	3
MA303Z	3A	3	6kA	miniature circuit breaker	3
MA306Z	6A	3	6kA	miniature circuit breaker	3
MA310Z	10A	3	6kA	miniature circuit breaker	3
MA316Z	16A	3	6kA	miniature circuit breaker	3
MA320Z	20A	3	6kA	miniature circuit breaker	3
MA325Z	25A	3	6kA	miniature circuit breaker	3
MA332Z	32A	3	6kA	miniature circuit breaker	3
MA340Z	40A	3	6kA	miniature circuit breaker	3
MA350Z	50A	3	6kA	miniature circuit breaker	3
MA363Z	63A	3	6kA	miniature circuit breaker	3
Four pole					
MA406Z	6A	4	6kA	miniature circuit breaker	4
MA410Z	10A	4	6kA	miniature circuit breaker	4
MA416Z	16A	4	6kA	miniature circuit breaker	4
MA420Z	20A	4	6kA	miniature circuit breaker	4
MA425Z	25A	4	6kA	miniature circuit breaker	4
MA432Z	32A	4	6kA	miniature circuit breaker	4
MA440Z	40A	4	6kA	miniature circuit breaker	4
MA450Z	50A	4	6kA	miniature circuit breaker	4
MA463Z	63A	4	6kA	miniature circuit breaker	4



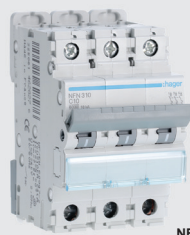
NFN163



NFN263



HLF290S



NFN363

For the protection and control of circuits against overload and short circuits.

Field fittable clip-on accessories (see page B-7)

- auxiliary/alarm contacts - shunt trip device
- undervoltage release - earth leakage (see page B-9)

• Compatible for DC voltage applications (see chart Annex 9)

type	current rating	poles	breaking capacity	description	width in 17.5 mm
NF / HLF series					
C curve (5-10 In)					
Breaking capacity:			10kA	SANS / IEC 60947-2, SANS 556	
Single pole					
NF100A	0.5A	1	10kA	miniature circuit breaker	1
NF101A	1A	1	10kA	miniature circuit breaker	1
NF102A	2A	1	10kA	miniature circuit breaker	1
NF103A	3A	1	10kA	miniature circuit breaker	1
NF106A	6A	1	10kA	miniature circuit breaker	1
NF110A	10A	1	10kA	miniature circuit breaker	1
NF116A	16A	1	10kA	miniature circuit breaker	1
NF120A	20A	1	10kA	miniature circuit breaker	1
NF125A	25A	1	10kA	miniature circuit breaker	1
NF132A	32A	1	10kA	miniature circuit breaker	1
NF140A	40A	1	10kA	miniature circuit breaker	1
NFN150	50A	1	10kA	miniature circuit breaker	1
NFN163	63A	1	10kA	miniature circuit breaker	1
HLF180S	80A	1	10kA	miniature circuit breaker	1.5
HLF190S	100A	1	10kA	miniature circuit breaker	1.5
HLF199S	125A	1	10kA	miniature circuit breaker	1.5
Two pole					
NF202A	2A	2	10kA	miniature circuit breaker	2
NF203A	3A	2	10kA	miniature circuit breaker	2
NF206A	6A	2	10kA	miniature circuit breaker	2
NF210A	10A	2	10kA	miniature circuit breaker	2
NF216A	16A	2	10kA	miniature circuit breaker	2
NF220A	20A	2	10kA	miniature circuit breaker	2
NF225A	25A	2	10kA	miniature circuit breaker	2
NF232A	32A	2	10kA	miniature circuit breaker	2
NF240A	40A	2	10kA	miniature circuit breaker	2
NFN250	50A	2	10kA	miniature circuit breaker	2
NFN263	63A	2	10kA	miniature circuit breaker	2
HLF280S	80A	2	10kA	miniature circuit breaker	3
HLF290S	100A	2	10kA	miniature circuit breaker	3
HLF299S	125A	2	10kA	miniature circuit breaker	3
Three pole					
NF302A	2A	3	10kA	miniature circuit breaker	3
NF303A	3A	3	10kA	miniature circuit breaker	3
NF306A	6A	3	10kA	miniature circuit breaker	3
NF310A	10A	3	10kA	miniature circuit breaker	3
NF316A	16A	3	10kA	miniature circuit breaker	3
NF320A	20A	3	10kA	miniature circuit breaker	3
NF325A	25A	3	10kA	miniature circuit breaker	3
NF332A	32A	3	10kA	miniature circuit breaker	3
NF340A	40A	3	10kA	miniature circuit breaker	3
NFN350	50A	3	10kA	miniature circuit breaker	3
NFN363	63A	3	10kA	miniature circuit breaker	3
HLF380S	80A	3	10kA	miniature circuit breaker	4.5
HLF390S	100A	3	10kA	miniature circuit breaker	4.5
HLF399S	125A	3	10kA	miniature circuit breaker	4.5
Four pole					
NF406A	6A	4	10kA	miniature circuit breaker	4
NF410A	10A	4	10kA	miniature circuit breaker	4
NF416A	16A	4	10kA	miniature circuit breaker	4
NF420A	20A	4	10kA	miniature circuit breaker	4
NF425A	25A	4	10kA	miniature circuit breaker	4
NF432A	32A	4	10kA	miniature circuit breaker	4
NF440A	40A	4	10kA	miniature circuit breaker	4
NFN450	50A	4	10kA	miniature circuit breaker	4
NFN463	63A	4	10kA	miniature circuit breaker	4
HLF480S	80A	4	10kA	miniature circuit breaker	6
HLF490S	100A	4	10kA	miniature circuit breaker	6
HLF499S	125A	4	10kA	miniature circuit breaker	6

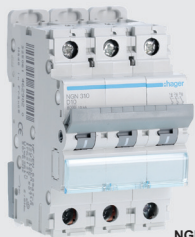


NGN116

new



NGN216



NGN363



NGN410

For the protection and control of circuits against overload and short circuits. Suitable for commercial and industrial installations.

- Compatible for DC voltage applications (see chart Annex 9)

Field fittable clip-on accessories (see page B-7)

- auxiliary/alarm contacts
- shunt trip device
- undervoltage release
- earth leakage (see page B-9)

Voltage rating: 230/400V 50-60Hz

type	current rating	poles	breaking capacity	description	width in 17.5 mm
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NGN / HMD series D curve (10-20 In)

Breaking capacity: NGN:10kA / HMD: 15kA SANS/IEC 60947-2, SANS 556

Single pole

Model	Current Rating (A)	Poles	Breaking Capacity (kA)	Description	Width (mm)
NGN101	1A	1	10kA	miniature circuit breaker	1
NGN102	2A	1	10kA	miniature circuit breaker	1
NGN103	3A	1	10kA	miniature circuit breaker	1
NGN104	4A	1	10kA	miniature circuit breaker	1
NGN106	6A	1	10kA	miniature circuit breaker	1
NGN110	10A	1	10kA	miniature circuit breaker	1
NGN116	16A	1	10kA	miniature circuit breaker	1
NGN120	20A	1	10kA	miniature circuit breaker	1
NGN125	25A	1	10kA	miniature circuit breaker	1
NGN132	32A	1	10kA	miniature circuit breaker	1
NGN140	40A	1	10kA	miniature circuit breaker	1
NGN150	50A	1	10kA	miniature circuit breaker	1
NGN163	63A	1	10kA	miniature circuit breaker	1
HMD180	80A	1	15kA	miniature circuit breaker	1.5
HMD190	100A	1	15kA	miniature circuit breaker	1.5
HMD199	125A	1	15kA	miniature circuit breaker	1.5

Two pole

Model	Current Rating (A)	Poles	Breaking Capacity (kA)	Description	Width (mm)
NGN202	2A	2	10kA	miniature circuit breaker	2
NGN203	3A	2	10kA	miniature circuit breaker	2
NGN206	6A	2	10kA	miniature circuit breaker	2
NGN210	10A	2	10kA	miniature circuit breaker	2
NGN216	16A	2	10kA	miniature circuit breaker	2
NGN220	20A	2	10kA	miniature circuit breaker	2
NGN225	25A	2	10kA	miniature circuit breaker	2
NGN232	32A	2	10kA	miniature circuit breaker	2
NGN240	40A	2	10kA	miniature circuit breaker	2
NGN250	50A	2	10kA	miniature circuit breaker	2
NGN263	63A	2	10kA	miniature circuit breaker	2
HMD280	80A	2	15kA	miniature circuit breaker	3
HMD290	100A	2	15kA	miniature circuit breaker	3
HMD299	125A	2	15kA	miniature circuit breaker	3

Three pole

Model	Current Rating (A)	Poles	Breaking Capacity (kA)	Description	Width (mm)
NGN306	6A	3	10kA	miniature circuit breaker	3
NGN310	10A	3	10kA	miniature circuit breaker	3
NGN316	16A	3	10kA	miniature circuit breaker	3
NGN320	20A	3	10kA	miniature circuit breaker	3
NGN325	25A	3	10kA	miniature circuit breaker	3
NGN332	32A	3	10kA	miniature circuit breaker	3
NGN340	40A	3	10kA	miniature circuit breaker	3
NGN350	50A	3	10kA	miniature circuit breaker	3
NGN363	63A	3	10kA	miniature circuit breaker	3
HMD380	80A	3	15kA	miniature circuit breaker	4.5
HMD390	100A	3	15kA	miniature circuit breaker	4.5
HMD399	125A	3	15kA	miniature circuit breaker	4.5

Four pole

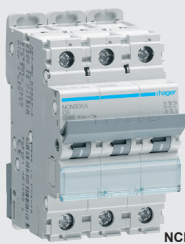
Model	Current Rating (A)	Poles	Breaking Capacity (kA)	Description	Width (mm)
NGN406	6A	4	10kA	miniature circuit breaker	4
NGN410	10A	4	10kA	miniature circuit breaker	4
NGN416	16A	4	10kA	miniature circuit breaker	4
NGN420	20A	4	10kA	miniature circuit breaker	4
NGN425	25A	4	10kA	miniature circuit breaker	4
NGN432	32A	4	10kA	miniature circuit breaker	4
NGN440	40A	4	10kA	miniature circuit breaker	4
NGN450	50A	4	10kA	miniature circuit breaker	4
NGN463	63A	4	10kA	miniature circuit breaker	4
HMD480	80A	4	15kA	miniature circuit breaker	6
HMD490	100A	4	15kA	miniature circuit breaker	6
HMD499	125A	4	15kA	miniature circuit breaker	6



NCN116A



NCN232A



NCN320A



NCN440A

For the protection and control of circuits against overload and short circuits. Suitable for commercial and industrial installations.

- Compatible for DC voltage applications (see chart Annex 9)

Voltage rating: 230/400V 50-60Hz

Field fittable clip-on accessories (see page B-7)

- auxiliary/alarm contacts
- shunt trip device
- undervoltage release
- earth leakage (see page B-9)

type	current rating	poles	breaking capacity	description	width in 17.5 mm
NCN / HMC series					
Breaking capacity:			15kA	SANS/IEC 60947-2, SANS 556	
Single pole					
NCN106A	6A	1	15kA	miniature circuit breaker	1
NCN110A	10A	1	15kA	miniature circuit breaker	1
NCN116A	16A	1	15kA	miniature circuit breaker	1
NCN120A	20A	1	15kA	miniature circuit breaker	1
NCN125A	25A	1	15kA	miniature circuit breaker	1
NCN132A	32A	1	15kA	miniature circuit breaker	1
NCN140A	40A	1	15kA	miniature circuit breaker	1
NCN150A	50A	1	15kA	miniature circuit breaker	1
NCN163A	63A	1	15kA	miniature circuit breaker	1
HMC180	80A	1	15kA	miniature circuit breaker	1.5
HMC190	100A	1	15kA	miniature circuit breaker	1.5
HMC199	125A	1	15kA	miniature circuit breaker	1.5
Two pole					
NCN206A	6A	2	15kA	miniature circuit breaker	2
NCN210A	10A	2	15kA	miniature circuit breaker	2
NCN216A	16A	2	15kA	miniature circuit breaker	2
NCN220A	20A	2	15kA	miniature circuit breaker	2
NCN225A	25A	2	15kA	miniature circuit breaker	2
NCN232A	32A	2	15kA	miniature circuit breaker	2
NCN240A	40A	2	15kA	miniature circuit breaker	2
NCN250A	50A	2	15kA	miniature circuit breaker	2
NCN263A	63A	2	15kA	miniature circuit breaker	2
HMC280	80A	2	15kA	miniature circuit breaker	3
HMC290	100A	2	15kA	miniature circuit breaker	3
HMC299	125A	2	15kA	miniature circuit breaker	3
Three pole					
NCN306A	6A	3	15kA	miniature circuit breaker	3
NCN310A	10A	3	15kA	miniature circuit breaker	3
NCN316A	16A	3	15kA	miniature circuit breaker	3
NCN320A	20A	3	15kA	miniature circuit breaker	3
NCN325A	25A	3	15kA	miniature circuit breaker	3
NCN332A	32A	3	15kA	miniature circuit breaker	3
NCN340A	40A	3	15kA	miniature circuit breaker	3
NCN350A	50A	3	15kA	miniature circuit breaker	3
NCN363A	63A	3	15kA	miniature circuit breaker	3
HMC380	80A	3	15kA	miniature circuit breaker	4.5
HMC390	100A	3	15kA	miniature circuit breaker	4.5
HMC399	125A	3	15kA	miniature circuit breaker	4.5
Four pole					
NCN406A	6A	4	15kA	miniature circuit breaker	4
NCN410A	10A	4	15kA	miniature circuit breaker	4
NCN416A	16A	4	15kA	miniature circuit breaker	4
NCN420A	20A	4	15kA	miniature circuit breaker	4
NCN425A	25A	4	15kA	miniature circuit breaker	4
NCN432A	32A	4	15kA	miniature circuit breaker	4
NCN440A	40A	4	15kA	miniature circuit breaker	4
NCN450A	50A	4	15kA	miniature circuit breaker	4
NCN463A	63A	4	15kA	miniature circuit breaker	4
HMC480	80A	4	15kA	miniature circuit breaker	6
HMC490	100A	4	15kA	miniature circuit breaker	6
HMC499	125A	4	15kA	miniature circuit breaker	6

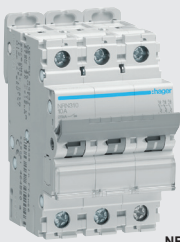
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HMK180



NRN232



NRN320



NRN440

For the protection and control of circuits against overload and short circuits. Suitable for commercial and industrial installations.

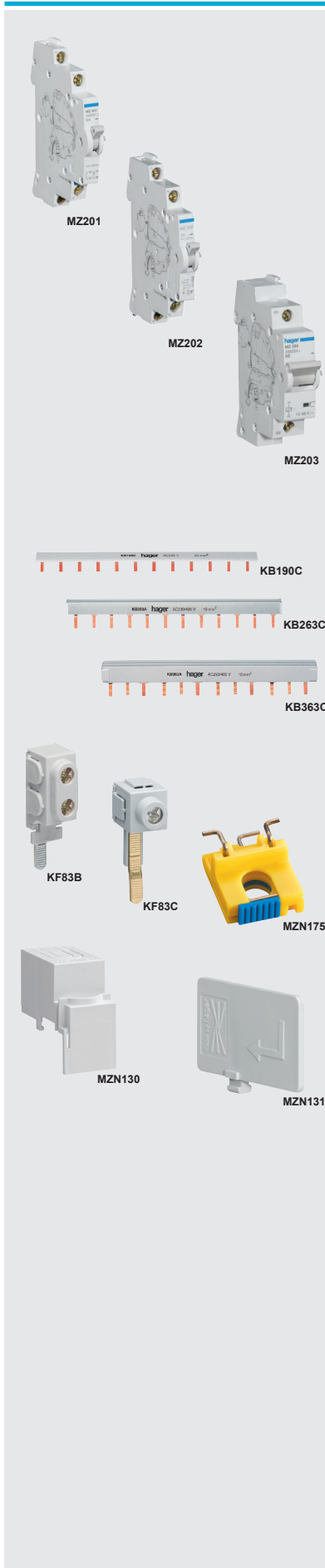
- Compatible for DC voltage applications (see chart Annex 9)

Voltage rating: 230/400V 50-60Hz

Field fittable clip-on accessories (see page B-7)

- auxiliary/alarm contacts
- shunt trip device
- undervoltage release
- earth leakage (see page B-9)

type	current rating	poles	breaking capacity	description	width in 17.5 mm
NRN / HMK series					
C curve (5-10 In)					
Breaking capacity:		6 - 25A	25kA	SANS/IEC 60947-2, SANS 556	
		32 - 40A	20kA		
		50 - 63A	15kA		
		80 - 125A	30kA		
Single pole					
NRN106	6A	1	25kA	miniature circuit breaker	1
NRN110	10A	1	25kA	miniature circuit breaker	1
NRN116	16A	1	25kA	miniature circuit breaker	1
NRN120	20A	1	25kA	miniature circuit breaker	1
NRN125	25A	1	25kA	miniature circuit breaker	1
NRN132	32A	1	20kA	miniature circuit breaker	1
NRN140	40A	1	20kA	miniature circuit breaker	1
NRN150	50A	1	15kA	miniature circuit breaker	1
NRN163	63A	1	15kA	miniature circuit breaker	1
HMK180	80A	1	30kA	miniature circuit breaker	1.5
HMK190	100A	1	30kA	miniature circuit breaker	1.5
HMK199	125A	1	30kA	miniature circuit breaker	1.5
Two pole					
NRN206	6A	2	25kA	miniature circuit breaker	2
NRN210	10A	2	25kA	miniature circuit breaker	2
NRN216	16A	2	25kA	miniature circuit breaker	2
NRN220	20A	2	25kA	miniature circuit breaker	2
NRN225	25A	2	25kA	miniature circuit breaker	2
NRN232	32A	2	20kA	miniature circuit breaker	2
NRN240	40A	2	20kA	miniature circuit breaker	2
NRN250	50A	2	15kA	miniature circuit breaker	2
NRN263	63A	2	15kA	miniature circuit breaker	2
HMK280	80A	2	30kA	miniature circuit breaker	3
HMK290	100A	2	30kA	miniature circuit breaker	3
HMK299	125A	2	30kA	miniature circuit breaker	3
Three pole					
NRN306	6A	3	25kA	miniature circuit breaker	3
NRN310	10A	3	25kA	miniature circuit breaker	3
NRN316	16A	3	25kA	miniature circuit breaker	3
NRN320	20A	3	25kA	miniature circuit breaker	3
NRN325	25A	3	25kA	miniature circuit breaker	3
NRN332	32A	3	20kA	miniature circuit breaker	3
NRN340	40A	3	20kA	miniature circuit breaker	3
NRN350	50A	3	15kA	miniature circuit breaker	3
NRN363	63A	3	15kA	miniature circuit breaker	3
HMK380	80A	3	30kA	miniature circuit breaker	4.5
HMK390	100A	3	30kA	miniature circuit breaker	4.5
HMK399	125A	3	30kA	miniature circuit breaker	4.5
Four pole					
NRN406	6A	4	25kA	miniature circuit breaker	4
NRN410	10A	4	25kA	miniature circuit breaker	4
NRN416	16A	4	25kA	miniature circuit breaker	4
NRN420	20A	4	25kA	miniature circuit breaker	4
NRN425	25A	4	25kA	miniature circuit breaker	4
NRN432	32A	4	20kA	miniature circuit breaker	4
NRN440	40A	4	20kA	miniature circuit breaker	4
NRN450	50A	4	15kA	miniature circuit breaker	4
NRN463	63A	4	15kA	miniature circuit breaker	4
HMK480	80A	4	30kA	miniature circuit breaker	6
HMK490	100A	4	30kA	miniature circuit breaker	6
HMK499	125A	4	30kA	miniature circuit breaker	6



All auxiliaries are common to both single and multi-pole circuit breakers.
Auxiliaries are fitted to the left side of the protection device.

Field fittable accessories for MCB's: MJT, MA, NF, NFN, HLF, NGN, HMD, NCN, HMC, NRN, HMK

type	function	description		width in 17.5 mm
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Auxiliaries and tripping devices for MCB's and RCD's

Auxiliary contacts - (indication of MCB main contact status)

MZ201	auxiliary	contact block	1NO + 1NC	6A 230 VAC	0.5
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Alarm contacts - (indicates fault condition - MCB "tripped" on overload or short-circuit)

MZ202	alarm	contact block	1NO + 1NC	6A 230 VAC	0.5
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Shunt trip device - (permits remote tripping of the protection device)

MZ203	shunt	shunt trip device	110 - 130 VDC / 230 - 415 VAC		1
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MZ204	shunt	shunt trip device	12 - 48 VDC / 24 - 48VAC		1
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Under voltage release (MCB can only close when voltage is above 70% of Un)
(automatically trips when voltage drops below 35% of Un)

MZ206	undervolt	under voltage release		230 VAC	1
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Over voltage release - (trips the protection device in case of overvoltage)

MZ212	overvolt	over voltage release		230 VAC	1
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Connection and MCB accessories

type	mm ²	current rating	poles	description	no. ways
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KB190C	20 mm ²	100A	1 pole	insulated busbar	24
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KB263C	10 mm ²	63A	2 pole	insulated busbar	24
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KB363C	10 mm ²	63A	3 pole	insulated busbar	24
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KB380B	16 mm ²	80A	3 pole	insulated busbar	57
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KB463C	10 mm ²	63A	4 pole	insulated busbar	24
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KZ022		end protection caps for busbar		KB263C	-
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KZ023A		end protection caps for busbar		KB363C, KB380B	-
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KZ024		end protection caps for busbar		KB463C	-
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KF84A	25 mm ²	enlarged terminal		(lateral connection)	-
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KF83B	2 x 25 mm ²	enlarged terminal		(lateral connection)	-
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KF83C	25 mm ²	enlarged terminal		(top or lateral connection)	-
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Accessories for MCBs

JP024	blinking	MCB blanking strip (with breakable sections)			24
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LZ060	dummy	module or heat dissipation insert between devices			0.5
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MZN175	padlock	attachment for locking MCB toggle in on/off position			1
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MZN130	cover	terminal cover for HLF, HMC, HMD, HMK MCBs			1.5
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MZN131	separator	phase separator for HLF, HMC, HMD, HMK MCBs			(set of 3)
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SBN132



SBN232



SBN399



SFH125



SFH225

SBN series - Modular isolators (switch disconnectors)

- SBN series is not suitable for DC circuits
- For use as a switch disconnector in all types of circuits
- Green/red (I/O) indication on handle provides positive contact indication

Voltage rating: 230/400 VAC
Utilisation category: AC 22A
Specification: SANS/IEC 60947-3

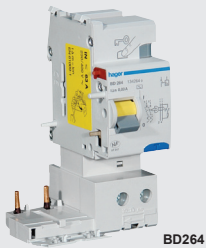
type	current rating (A)	switching	poles	description	width in 17.5 mm
Modular isolators (modular DIN rail mount)					
SBN132	32A	on - off	1 pole	modular isolator switch	1
SBN163	63A	on - off	1 pole	modular isolator switch	1
SBN190	100A	on - off	1 pole	modular isolator switch	1
SBN199	125A	on - off	1 pole	modular isolator switch	1
SBN232	32A	on - off	2 pole	modular isolator switch	1
SBN263	63A	on - off	2 pole	modular isolator switch	2
SBN290	100A	on - off	2 pole	modular isolator switch	2
SBN299	125A	on - off	2 pole	modular isolator switch	2
SBN332	32A	on - off	3 pole	modular isolator switch	2
SBN363	63A	on - off	3 pole	modular isolator switch	3
SBN390	100A	on - off	3 pole	modular isolator switch	3
SBN399	125A	on - off	3 pole	modular isolator switch	3
SBN432	32A	on - off	4 pole	modular isolator switch	2
SBN463	63A	on - off	4 pole	modular isolator switch	4
SBN490	100A	on - off	4 pole	modular isolator switch	4
SBN499	125A	on - off	4 pole	modular isolator switch	4

Auxiliary contact for above isolators

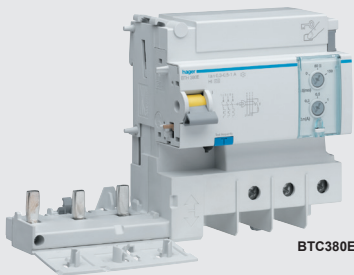
ESC080	6A	1NO + 1NC		clip-on auxiliary for above switches	0.5
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Changeover switches (modular DIN rail mount)

SFH125	25A	on - on	1 pole	2 way changeover switch	1
SFH225	25A	on - on	2 pole	2 way changeover switch	2
SFT125	25A	on - off - on	1 pole	centre off changeover switch	1
SFT140	40A	on - off - on	1 pole	centre off changeover switch	1
SFT240	40A	on - off - on	2 pole	centre off changeover switch	2
SFT440	40A	on - off - on	4 pole	centre off changeover switch	4
SF263	63A	on - off - on	2 pole	centre off changeover switch	4
SF463	63A	on - off - on	4 pole	centre off changeover switch	8



BD264



BTC380E



new

MJT720

BDC240F

=

Add-on earth leakage devices for MCBs

For connection to all MCBs to be mounted to the right side of 2, 3, 4 pole circuit breakers. The combined unit provides effective protection against overload, short circuit as well as earth leakage faults. Features independent indication of "earth fault" or "overload" when tripped.

Description: To automatically open a circuit in the event of an earth leakage fault. Suitable for domestic, commercial and industrial installations

Nuisance Tripping: Hager earth leakage devices are protected against nuisance tripping caused by transient leakage currents

Nominal Voltage: (2 pole) 240V 50Hz
(4 pole) 400V 50Hz

type	current rating	sensitivity	poles	description	width in 17.5 mm
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Add-on earth leakage devices - for MA - NF - NFN - NGN - NCN - NRN circuit breakers

BD264	63A	30 mA	2 pole	add-on earth leakage device	2
BD364	63A	30 mA	3 pole	add-on earth leakage device	3
BD464	63A	30 mA	4 pole	add-on earth leakage device	3
BF264	63A	300 mA	2 pole	add-on earth leakage device	2
BF364	63A	300 mA	3 pole	add-on earth leakage device	3
BF464	63A	300 mA	4 pole	add-on earth leakage device	3

Add-on earth leakage devices - for HLF - HMC - HMD - HMK circuit breakers

BDC series - fixed sensitivity 30mA

BDC280E	125A	30 mA	2 pole	add-on earth leakage device	6
BDC380E	125A	30 mA	3 pole	add-on earth leakage device	6
BDC480E	125A	30 mA	4 pole	add-on earth leakage device	6

BTC series - adjustable sensitivity - 300mA - 500mA - 1A

• Adjustable trip delay: 0/60/150ms

BTC280E	125A	0.3/0.5/1A	2 pole	add-on earth leakage device	6
BTC380E	125A	0.3/0.5/1A	3 pole	add-on earth leakage device	6
BTC480E	125A	0.3/0.5/1A	4 pole	add-on earth leakage device	6

Add-on earth leakage device - for MJT series (1 module) circuit breakers only

The new **BDC240F** is a compact (1 module) earth leakage device which simply clips onto the **MJT series** (MCBs 1P+N) offering additional earth leakage protection to the attached MCB.

• Replacement for previous **AD---J** series. (only 2 modules wide)

BDC240F	40A	30mA	2 pole	add-on earth leakage device	1
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Combination MCB/RCD - earth leakage combined with overload/short circuit protection to replace previous **AD---J** series, can be made by attaching **BDC240F** (above) to **MJT series** MCB's (below).

• Provides separate indication of "e/leakage" - "overload" - short circuit" fault

1 Ph+N in one module		6 kA	SANS/IEC 60947-2	
MJT702	2A	6 kA	1+N	miniature circuit breaker 1
MJT706	6A	6 kA	1+N	miniature circuit breaker 1
MJT710	10A	6 kA	1+N	miniature circuit breaker 1
MJT716	16A	6 kA	1+N	miniature circuit breaker 1
MJT720	20A	6 kA	1+N	miniature circuit breaker 1
MJT725	25A	6 kA	1+N	miniature circuit breaker 1
MJT732	32A	6 kA	1+N	miniature circuit breaker 1
MJT740	40A	6 kA	1+N	miniature circuit breaker 1



CD241J



CD464J



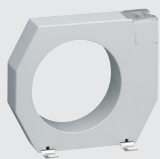
HR500



HR520



HR700



HR743

Residual current devices (RCDs) without overload protection

Compact device provides earth leakage protection (against electrical shocks by direct or indirect contact) to open automatically in the event of an earth fault between phase and earth and/or neutral and earth. Hager earth leakage devices are protected against nuisance tripping caused by transient leakage currents.

Field fittable accessories (see page B-7)

- shunt trip device
 - undervoltage release
- } Requires CZ001 interface auxiliary

Nominal voltage: (2 pole) 240V 50Hz
(4 pole) 400V 50Hz
Mechanical life: 40.000 operations

type	overload rating (A)	sensitivity (mA)	poles	description	width in 17.5 mm
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Earth leakage units (RCDs) (Type AC)

30mA sensitivity

CD226J	25A	30 mA	2 pole	earth leakage device	2
CD241J	40A	30 mA	2 pole	earth leakage device	2
CD264J	63A	30 mA	2 pole	earth leakage device	2
CD285Z	100A	30 mA	2 pole	earth leakage device	2
CD464J	63A	30 mA	4 pole	earth leakage device	4
CD485Z	100A	30 mA	4 pole	earth leakage device	4

100/300mA sensitivity (selective type)

CE264J	63A	100 mA	2 pole	earth leakage device	2
CF264J	63A	300 mA	2 pole	earth leakage device	2
CF285Z	100A	300 mA	2 pole	earth leakage device	4
CF464J	63A	300 mA	4 pole	earth leakage device	4
CF485Z	100A	300 mA	4 pole	earth leakage device	4

Auxiliaries for RCDs

CZ001	1NO + 1NC	auxiliary + alarm contact for above RCDs	2
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Industrial electronic earth leakage relay (with separate torroid)

- Incorporating "test" and "reset" buttons and LED indication

Fixed sensitivity, instantaneous trip

HR500	230V	30 mA	4 pole	entry level e/leakage relay	1
HR502	230V	300 mA	4 pole	entry level e/leakage relay	1

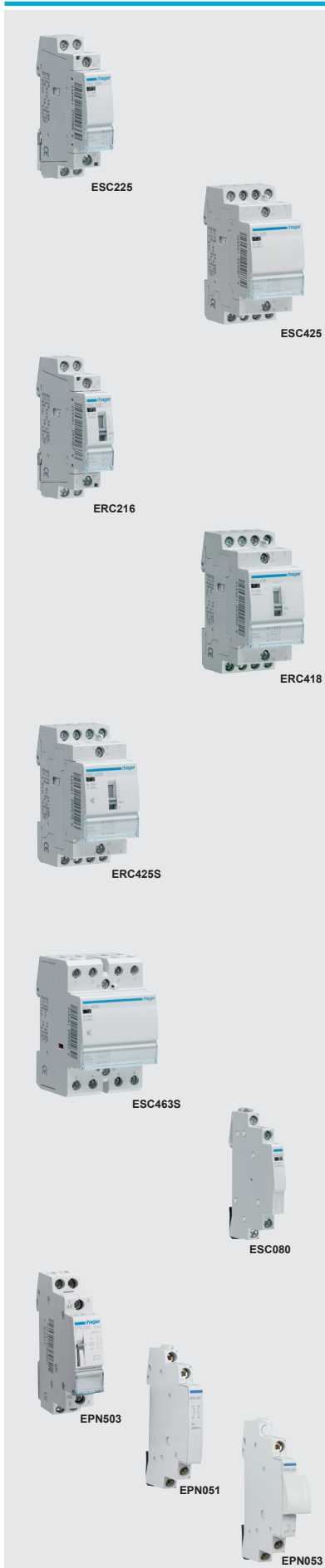
Adjustable sensitivity and trip delay

- Selectable In threshold: 0.03/0.1/0.3/0.4/0.5/1/3/10A (30mA - 10A)
- Selectable trip delay: 0/0.1/0.3/0.4/0.5/1/3sec (0-3sec)

HR510	230V	selectable	4 pole	earth leakage relay	3
HR520	as above	with fault current indication and 50% pre-alarm output			3

Separate torroid sensors for electronic earth leakages

type	hole	diameter Ø (mm)		description	mount
HR700	round	30 mm	-	standard torroidal t/former	DIN rail
HR742	round	70 mm	-	standard torroidal t/former	chassis
HR743	round	105 mm	-	standard torroidal t/former	chassis
HR745	round	210 mm	-	standard torroidal t/former	chassis
HR830	rectangular	70 x 175	-	standard torroidal t/former	chassis



- Modular DIN rail mounting (*same cutout as MCBs*)
- Feature economic low consumption, low heat dissipation coils

type	contact rating	coil voltage	description	contact config.	width in 17.5 mm
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Modular contactors

Standard contactors (230 VAC 50/60 Hz)

ESC225	25A	230 VAC	modular standard contactor	2NO	1
ESC226	25A	230 VAC	modular standard contactor	2NC	1
ESC227	25A	230 VAC	modular standard contactor	1NO + 1NC	1
ESC425	25A	230 VAC	modular standard contactor	4NO	2
ESC427	25A	230 VAC	modular standard contactor	2NO + 2NC	2
ESC240	40A	230 VAC	modular standard contactor	2NO	3
ESC241	40A	230 VAC	modular standard contactor	2NC	3
ESC440	40A	230 VAC	modular standard contactor	4NO	3
ESC442	40A	230 VAC	modular standard contactor	2NO + 2NC	3
ESC263	63A	230 VAC	modular standard contactor	2NO	3
ESC463	63A	230 VAC	modular standard contactor	4NO	3
ESC464	63A	230 VAC	modular standard contactor	4NC	3
ESC465	63A	230 VAC	modular standard contactor	2NO + 2NC	3

Relays and contactors with manual override facility

ERC216	16A	230 VAC	modular rail mount relay	2NO	1
ERC218	16A	230 VAC	modular rail mount relay	1NO + 1NC	1
ERC416	16A	230 VAC	modular rail mount relay	4NO	2
ERC418	16A	230 VAC	modular rail mount relay	2NO + 2NC	2
ERC225	25A	230 VAC	modular standard contactor	2NO	1
ERC240	40A	230 VAC	modular standard contactor	2NO	3
ERC263	63A	230 VAC	modular standard contactor	2NO	3

Modular "low noise" contactors

- No humming while energised / low switching noise

ERC225S*	25A	230 VAC	low noise modular contactor	2NO	1
ERC425S*	25A	230 VAC	low noise modular contactor	4NO	2
ESC440S	40A	230 VAC	low noise modular contactor	4NO	3
ESC463S	63A	230 VAC	low noise modular contactor	4NO	3
ERL625SDC*	25A	12 VDC	low noise modular contactor	2NO	1
ERL425SDC*	25A	12 VDC	low noise modular contactor	4NO	2
ESL440S	40A	12 VDC	low noise modular contactor	4NO	3
ESL463S	63A	12 VDC	low noise modular contactor	4NO	3
ERD225SDC*	25A	24 VDC	low noise modular contactor	2NO	1
ESD425SDC*	25A	24 VDC	low noise modular contactor	4NO	2
ESD440S	40A	24 VDC	low noise modular contactor	4NO	3
ESD463S	63A	24 VDC	low noise modular contactor	4NO	3

* With manual override control

Contactors accessories

Auxiliary contact for all above contactors

Auxiliaries are not compatible with low noise contactors **ERC225S, ERL625SDC, ERD225SDC**

ESC080	1th 6A	–	clip-on auxiliary contact	1NO + 1NC	0.5
LZ060*	heat dissipation insert for mounting between contactors				0.5

* Avoid overheating when installed side by side, insert a heat dissipation module **LZ060** between contactors

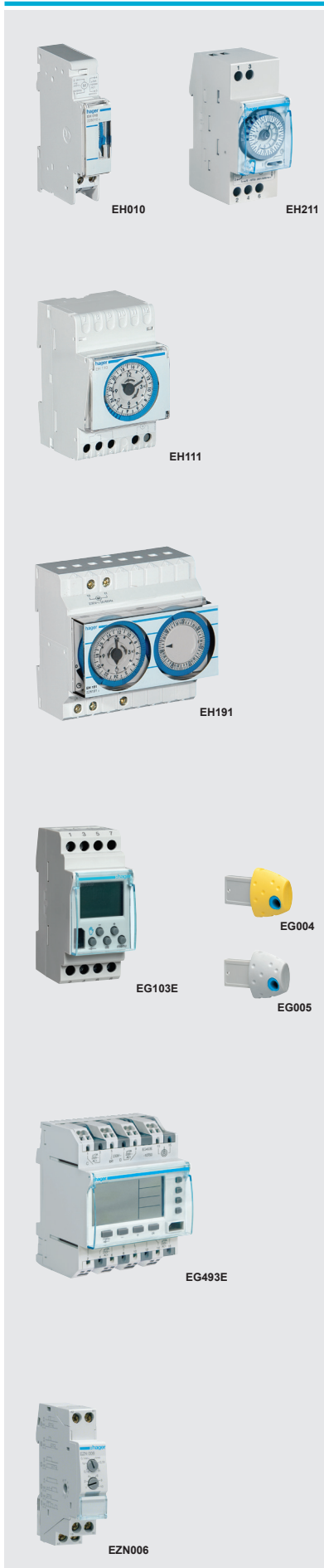
Modular latching / step relays

- Pulsing the relay changes the contact status until pulsed again
- Max. pulse duration: 1 hour
- With manual override facility

EPN515	16A	230 VAC	modular stepping relay	1NO + 1NC	1
EPN503	16A	48 VAC/24 VDC	modular stepping relay	1NO + 1NC	1
EPN518	16A	24 VAC/12 VDC	modular stepping relay	1NO + 1NC	1
EPN519	16A	12 VAC	modular stepping relay	1NO + 1NC	1
EPN521	16A	12 VAC	modular stepping relay	2NO	1

Auxiliary for above stepping relays

EPN051	1th 6A	–	clip-on auxiliary contact	1NO + 1NC	0.5
EPN053	1th 6A	–	converts maintained contact into a pulsed one	1 C/over	0.5



Time switches control lighting, heating, household appliances, shop windows and many other devices according to pre-defined programming.

- Modular DIN rail mounting

type	time range	min. setting	reserve	contact config.	description	width in 17.5 mm
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Analogue time switches (electro-mechanical) 16A 250V

Slimline 1 module wide (17.5 mm)

EH010	24 hr	15 min	no	1 NO	time switch	1
EH011	24 hr	15 min	200 hrs	1 NO	time switch	1

Standard 2/3 module wide - clock hands indicate real time (except EH109)

EH210	24 hr	30 min	no	1 c/over	time switch	2
EH211	24 hr	30 min	200 hrs	1 c/over	time switch	2
EH109	24 hr	15 min	no	1 c/over	time switch	3
EH110	24 hr	15 min	no	1 c/over	time switch	3
EH111	24 hr	15 min	200 hrs	1 c/over	time switch	3
EH171	7 day	2 hr	200 hrs	1 c/over	time switch	3

Dual dial (1 dial 7 day / 1 dial 24hr)

EH191	7 day / 24 hr	15 min / 2 hr	200 hrs	1 c/over	time switch	5
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Digital time switches (programmable via buttons or via PC programmable key)

- Up to 56 program steps
- Indicates date and time (pre-programmed at factory)
- Visualisation of daily profile via incorporated bar-graph display
- Programmable via front keypad (even without supply) or program key "EG005"

Basic version (programming key to be ordered separately) 230 VAC

EG103B	7 day	1 min	5 years	1 c/over	time switch	2
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Exclusive version (supplied with programming key) 230 VAC

Impulse time switch (suitable for school-bell ringing - lunch/tea break)

- Programmable pulses of 1 sec - 30 min duration
- "Holiday" mode programmable (between two dates)
- Backlit display (for indication in badly illuminated locations)

EG103E	7 day	1 sec	5 years	1 c/over	time switch	2
EG203E	7 day + 7 day	1 sec	5 years	2 c/over	time switch	2

12 / 24VAC/DC version (supplied with programming key)

EG103V	7 day	1 sec	5 years	1 c/over	time switch	2
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4 Channel yearly time switch (300 program steps)

EG493E	week	1 min	10 years	2 CO + 2 NO	time switch	4
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Accessories for time switches

EG004	Locking key (for disabling front keypad)	
EG005	Programming key (for down/up loading of program)	EG103/203E
EG007	Programming key (for down/up loading of program)	EG493E

Modular electronic timers - (8A 230V changeover)

- Multi-time range: 0.1s - 10h
- Multi-voltage: 12 - 230 VAC +/-10% / 12 - 48 VDC +/-10%
- 8A 230V changeover output
- Modular DIN rail mounting

EZN001	On-delay multi-range (modular timer)	electronic timer	1
EZN002	Delay-on de-energisation (modular timer)	electronic timer	1
EZN003	Interval/off delay (modular timer)	electronic timer	1
EZN004	Pulse controlled interval (modular timer)	electronic timer	1
EZN006	Multi-function on-delay / off-delay / interval / repeat	electronic timer	1



Control transformers (modular DIN rail mount)

type	supply voltage	output voltage	power (VA)	description	width in 17.5 mm
ST312	230V	12/24V	25VA	modular safety transformer	4
ST314	230V	12/24V	40VA	modular safety transformer	4
ST315	230V	12/24V	63VA	modular safety transformer	6
ST303	230V	8/12V	8VA	modular bell transformer	2
ST305	230V	8/12V	16VA	modular bell transformer	3

Audible devices (modular DIN rail mount)

SU213	230V	–	6.5VA	85 dBA	modular buzzer	1
SU214	8/12 VAC	–	4.0VA	78 dBA	modular buzzer	1
SU215	230V	–	6.5VA	78 dBA	modular buzzer	1

Fuse holders (modular DIN rail mount)

- For protection and control of circuits against overloads and short circuits
- Short-circuit resistance with 10 x 38 mm fuse link: 80kA
- For 10 x 38 mm cylindrical fuses (see page **B-38-41**)

LSN501	32A	1 pole		modular cylindrical fuse holder	1
LSN502	32A	2 pole		modular cylindrical fuse holder	2

Control and indicating devices (modular DIN rail mount)

LED indicating lights (10.000 hrs)

SVN121	230VAC	green		modular LED indicating light	1
SVN122	230 VAC	red		modular LED indicating light	1
SVN123	230 VAC	amber		modular LED indicating light	1
SVN126	230 VAC	grn+red		modular LED indicating light	1
SVN223	230 VAC	red/wht/blu		modular LED p/light for phase indication	1
SVN131	12 - 48 VAC/DC	green		modular LED indicating light	1
SVN132	12 - 48 VAC/DC	red		modular LED indicating light	1
SVN351	1NO + 1NC	green		modular momentary pushbutton	1
SVN391	1NO + 1NC	grn+red		double pushbutton (grn NO / red NC)	1
SVN411	1NO	green		modular pushbutton + green pilot light	1

SCAME DIN modular domestic sockets for distribution boards

Permits the mounting of domestic switches and/or sockets into standard DIN distribution boards to provide an electrical connection for tools, power supplies or recording instruments.

- DIN rail mounting housing/support for domestic switches or sockets
- Mounts into standard distribution boards with same dimensions and cut-out as MCB's
- Two modular widths: one module (18 mm) and two module (36 mm)

type	description	no. of modules (W) 18 mm
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DIN rail support for Evolution series

654.0091	DIN rail support for Evolution series switches or sockets	1
654.0092	DIN rail support for Evolution series switches or sockets	2

Evolution series switches and sockets for (above) supports

- Simply clips into DIN rail mount housing (above)

101.6414.G	15A	2P+E	South African std socket for housings	2
101.6403.G	16A	2P+E	European/Italian socket for housings	1
101.6303.G	16A	1 pole	switch for housings (I-O)	1
101.6311.G	16A	2 pole	changeover switch for housings (I-O-II)	1



SPN802



SPN240D



SPN440R



SPN040D



ECP180D



ECP310D



ECP300C

Modular surge protection devices

SANS/IEC 61643-11

For the protection of low voltage equipment against transient voltages and current surges from atmospheric origins (*lightning*) as well as transients produced by switching characteristics such as switching of distribution networks, transformers, motors, etc.

type	poles	Up	limp 10/350 µs	I _{max} 8/20 µs	description	width in 17.5 mm
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Class 1 and class 2 combined surge protection device

- Lightning and surge-voltage protection in one device
- Replaceable plug-in cartridges

SPN802	3ph + N	≤ 1.5kV	100kA	–	class 1+2 surge protector	8
SPN802R*	3ph + N	≤ 1.5kV	100kA	–	class 1+2 surge protector	8

* With remote signalling contact for monitoring

Class 2 surge protection (modular plug-in)

Suitable for second level protection in distribution panels where type 1 protectors are installed or areas not exposed to direct lightning strikes and with no external lightning protection system.

- Protection for domestic, industrial and commercial buildings
- Replaceable plug-in cartridges

I_{max} 40kA (8/20µs)

SPN140D	1P	≤ 1.5kV	–	40kA	class 2 surge protector	1
SPN140R*	1P	≤ 1.5kV	–	40kA	class 2 surge protector	1
SPN240D	1ph + N	≤ 1.5kV	–	40kA	class 2 surge protector	2
SPN240R*	1ph + N	≤ 1.5kV	–	40kA	class 2 surge protector	2
SPN440D	3ph + N	≤ 1.5kV	–	40kA	class 2 surge protector	4
SPN440R*	3ph + N	≤ 1.5kV	–	40kA	class 2 surge protector	4

* With remote signalling contact for monitoring

Replacement cartridges for above surge protection devices

SPN040D	phase	replacement cartridge	for protectors	SPN240/440	1
SPN040N	neutral	replacement cartridge	for protectors	SPN2/4	1

Energy meters (kWh meters) (modular DIN rail mounting)

- Accuracy: 1%
- Impulse output
- Backlit LCD display
- "Total" counter and "Partial" (*resettable*) counter
- Class 1 according to IEC 62 053-21 and EN 50470
- LED indication blinks according to consumption (1 pulse = 100wh)

type	current	operation	description	width
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Single-phase kWh meter 80A (direct reading)

- Displays consumption of active energy and instantaneous power consumption

ECP180D	80A	direct	single-phase kWh meter	2
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Three-phase kWh meters 80/125A (direct reading)

- Protected against phase/neutral inversion
- Adaptable to three phase with or without neutral, 230V or 400V between lines
- Displays consumption of active energy and instantaneous power consumption

ECP380D	80A	direct	three-phase kWh meter	4
ECP310D	125A	direct	three-phase kWh meter	6

Three-phase kWh meters up to 6000A (connection via CT)

- Displays instantaneous power consumption
- Displays consumption of active energy and reactive energy
- Adaptable to three phase with or without neutral, 230V or 400V between lines

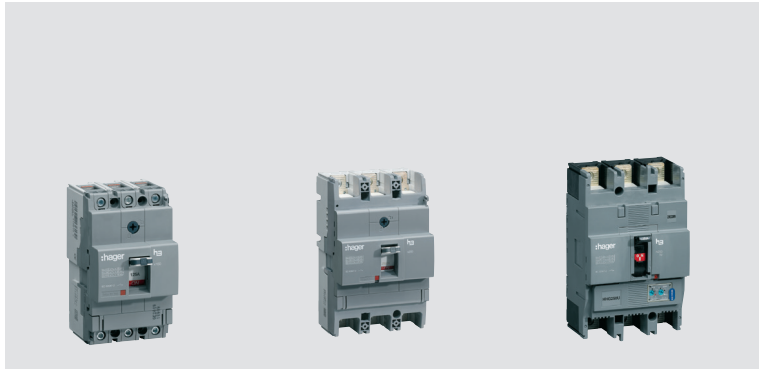
ECP300C	6000A	CT / 5A	three-phase kWh meter	4
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* For CT's, see **Section E-Metering**

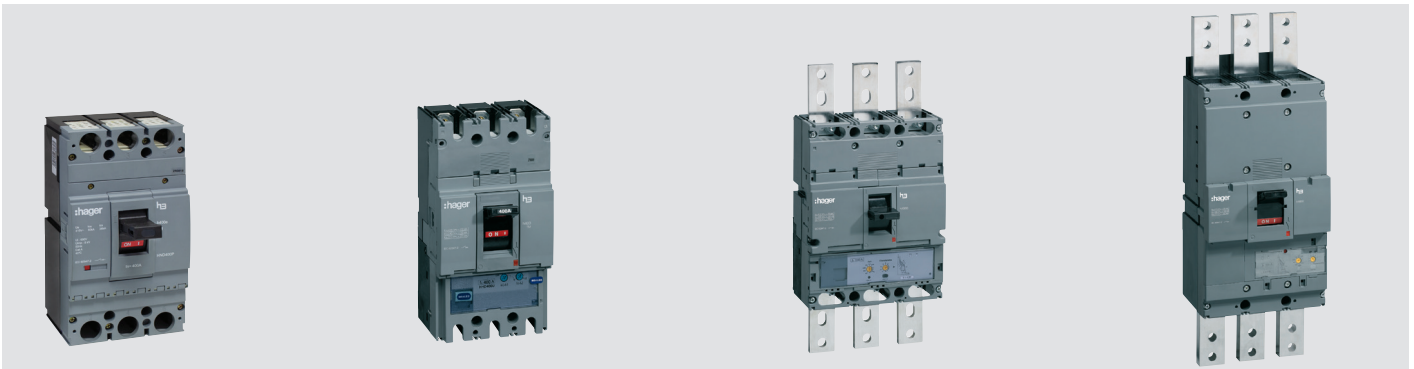
H3 circuit breakers conform to IEC/EN 60947-2 standards and to all major international standards and performance categories.

- Suitable for co-ordinated installations in all applications
- Thermal magnetic and electronic release
- Calibrated at 50°C

Cascading with MCBs (see cascading chart **Annex-10**)



Frame			x160			x250			h250 TM		
			Switch			MCCB			MCCB		
Product			HCA	HHA	HNA	HCB	HHB	HNB	HEG		
Reference											
Number of poles			[No.]			3-4			3-4		
Electrical characteristics											
Rated current	In	[A]	160			250			250		
Current rated range		[A]	125-160			16-160 (3,4P)			250		
Rated service voltage, (AC)	Ue	[V]	220-690			220-690			220-690		
Frequency	f	[Hz]	50/60			50/60			50/60		
Rated insulation voltage	Ui	[V]	690			800			800		
Rated impulse withstand voltage	Uimp	[kV]	8			8			8		
Rated ultimate short-circuit breaking capacity	(Icu)										
(AC) 50-60 Hz 220/230 V	Icu	[kA]	-	35	85	-	35	85	35	85	85
(AC) 50-60 Hz 380/415 V	Icu	[kA]	-	25	40	-	25	40	25	50	65
(AC) 50-60 Hz 480/500/525 V	Icu	[kA]	-	7.5	12.5	-	-	10	10	25	25
(AC) 50-60 Hz 660/690 V	Icu	[kA]	-	-	-	-	-	4	-	7.5	7.5
(DC) 250 V - 2 poles in series	Icu	[kA]	-	20	25	-	25	25	25	40	40
Rated service short-circuit breaking capacity,	(Ics)										
(AC) 50-60 Hz 220/230 V	Ics	[kA]	-	25	40	-	25	40	27	65	85
(AC) 50-60 Hz 380/415 V	Ics	[kA]	-	20	20	-	20	20	19	25	36
(AC) 50-60 Hz 480/500/525 V	Ics	[kA]	-	4	7.5	-	-	7.5	7.5	25	25
(AC) 50-60 Hz 660/690 V	Ics	[kA]	-	-	3	-	-	2	-	7.5	7.5
(DC) 250 V - 2 poles in series	Ics	[kA]	-	10	13	-	13	13	19	40	40
Rated short-circuit making capacity	Icm	[kA]	2.8	-	-	6	-	-	-	-	-
Rated short-time withstand current for 1s	Icw	[kA]	2	-	-	3	-	-	-	-	-
Category of use (EN 60947-2)			A			A			A		
Calibration temperature			50°C			50°C			50°C		
Derating	40°C		100%			100%			100%		
	50°C		100%			100%			100%		
	55°C		95%			94%			94%		
	60°C		93%			91%			91%		
	65°C		90%			88%			88%		
Suitability for insulation			ok			ok			ok		
Electric endurance in number of cycles			10000			10000			10000		
Mechanical endurance in number of operations			20000			20000			30000		
Operating temperature			-25 to +70°C			-25 to +70°C			-25 to +70°C		
Storage temperature			-35 to +70°C			-35 to +70°C			-35 to +70°C		
Power loss (at In for 3P)		[W]	39			60			65		
Reference standard			IEC 60947-3	IEC 60947-2		IEC 60947-3	IEC 60947-2		IEC 60947-2		
Releases: switch			ok	-		ok	-		-		
Releases: TM (thermomagnetic)			-	ok		-	ok		ok		
T fixed, M fixed			-	ok		-	ok		-		
T adjustable, M fixed			-	ok		-	-		-		
T adjustable, M adjustable			-	-		-	ok		ok		
Thermal adjustment value			-	0.63 to 1 x In		-	0.63 to 1 x In		0.63 to 1 x In		
Magnetic adjustment value			-	-		-	6-8-10-13 x In (200A) 5-7-9-11 In (250A)		6-8-10-13 x In		
Releases: LSI (electronic)			-	-		-	-		-		
Long delay			-	-		-	-		-		
Short delay			-	-		-	-		-		
Time delay			-	-		-	-		-		
Connection											
Standard terminal type			cage			lugs			lugs		
Maximum terminal capacity			95 mm ²			185 mm ² (cage)			120 mm ² (cage)		
Terminal width		mm	-			25			25		
Terminal shields			ok			ok			ok		
Cage terminal			integrated			ok			ok		
Extended connections			ok			ok			ok		
Rear connections			no			ok			ok		
Dimensions											
Height		mm	130			165			165		
Width	1P	mm	-	25	-	-	-	-	-	-	-
	2P	mm	-	50	-	-	-	-	-	-	-
	3P	mm	-	75	-	-	105	-	-	105	-
	4P	mm	-	100	-	-	140	-	-	140	-
Depth		mm	68			68			68		
Weight	1P	kg	-	0.29	-	-	-	-	-	-	-
	2P	kg	-	0.48	-	-	-	-	-	-	-
	3P	kg	-	0.715	-	-	1.3	-	-	1.5	-
	4P	kg	-	0.95	-	-	1.6	-	-	1.9	-



h400e		h800e	h400 TM	h630 LSI		h1000 LSI			h1600 LSI			
MCCB			MCCB	Switch	MCCB		Switch	MCCB		Switch	MCCB	
HND	HNE		HND	HCD	HND	HED	HCE	HNE	HEE	HCF	HNF	HEF
3	3		3-4		3-4			3-4			3-4	
320, 400	500, 630, 800		400	400-630	630			1000			1600	
			250-400		250-400-630			630-800-1000			1250-1600	
415	415		220-690		220-690			220-690			220-690	
50	50		50/60		50/60			50/60			50/60	
690	690		800		800			800			800	
8	8		8		8			8			8	
			85	-	85	100	-	85 (800A), 75 (1000A)	100	-	100	100
50	50		50	-	50	70	-	50	70	-	50	70
			30	-	30	30	-	30	30	-	45	65
			20	-	20	20	-	20	20	-	25	45
			40	-			-			-		
			85	-	85	85	-	85 (800A), 75 (1000A)	100 (800A), 75 (1000A)	-	75	75
36	36		50	-	50	50	-	50	50	-	50	50
			30	-	30	30	-	30	30	-	45	50
			15	-	15	15	-	20	20	-	25	34
			40	-			-			-		
			-	9	-	-	20	-	-	45	-	-
			-	5 (0.3s)	-	-	10 (0.3s)	-	-	20 (0.3s)	-	-
A	A	A	-	-	B(250-400A) - A(630A)		-	B(800A) - A(1000A)		-	B	
		50°C	-	-	40/50°C		-	40/50°C		-	40/50°C	
100%	100%	100%	-	-	100%		-	100%		-	100%	
92%	94%	100%	-	-	95%		-	95%		-	95%	
88%	86%	95%	-	-	90%		-	90%		-	90%	
83%	82%	92%	-	-	80%		-	80%		-	80%	
		89%	-	-	80%		-	80%		-	80%	
ok	ok	ok			ok			ok			ok	
2000	1500	4500			4500			4500			4500	
4000	4000	15000			15000			15000			15000	
-5 to +60°C	-5 to +60°C	-25 to +70°C			-25 to +70°C			-25 to +70°C			-25 to +70°C	
-25 to +70°C	-25 to +70°C	-35 to +70°C			-35 to +70°C			-35 to +70°C			-35 to +70°C	
		75			150			150			170	
IEC 60947-2	IEC 60947-2	IEC 60947-2	IEC 60947-3	IEC 60947-2			IEC 60947-3	IEC 60947-2		IEC 60947-3	IEC 60947-2	
ok	ok	ok	ok	-			ok	-		ok	-	
ok	ok	-	-	-			-	-		-	-	
-	-	-	-	-			-	-		-	-	
-	-	ok	-	-			-	-		-	-	
-	-	0.63 to 1 x In	-	-			-	-		-	-	
-	-	6-8-10-12 x In	-	-			-	-		-	-	
-	-	-	-	ok			-	ok		-	ok	
-	-	-	-	0.4 to 1 x Ir			-	0.4 to 1 x Ir		-	0.4 to 1 x In	
-	-	-	-	2.5 to 10 x Ir (250 - 400A), 2.5 to 8 x Ir (630A)			-	2.5 to 10 x Ir (800A), 2.5 to 8 x Ir (1000A)		-	2.5 to 10 x Ir	
-	-	-	-	0.1 - 0.2s			-	0.1 - 0.2s		-	0.1 - 0.2s	
-	-	lugs		lugs			-	lugs		-	lugs	
-	-	240 mm² (cage)		-			-	-		-	-	
-	-	30		30			-	45		-	45	
-	-	ok		ok			-	ok		-	ok	
-	-	ok		-			-	-		-	-	
-	-	ok		integrated			-	integrated		-	integrated	
ok	ok	ok		ok			-	ok		-	ok	
257	275	260		260			273/433				370/570	
-	-	-		-			-	-		-	-	
-	-	-		-			-	-		-	-	
140	210	140		140			210				210	
184	280	185		185			280				280	
155	155	97		97			99.5				140	
-	-	-		-			-	-		-	-	
-	-	-		-			-	-		-	-	
4.3	6.6	4.2		4.3			11				27	
5.2	8.9	5.6		5.7			14.8				31	



HHA125Z



HND400P



HNB250U



HND630H



HNE970U

- Mechanical "test" button on facia
- Integrated padlock facility on toggle
- Cascading with MCBs (see chart Annex 10)
- Lockable thermal/magnetic settings
- Standards: SANS / IEC 60947-2

"Clip-in" accessories

- Auxiliary contacts
- Alarm contacts
- Shunt trip device
- Undervoltage release

type	thermal current	rated kA 415V (Icu)	poles	description	frame
Fixed type thermal / magnetic trip 25/50 kA					
Fixed: thermal 1 x In / magnetic >10 x In					
HHA016Z	16A	25kA	3 pole	moulded case CB	x160
HHA020Z	20A	25kA	3 pole	moulded case CB	x160
HHA025Z	25A	25kA	3 pole	moulded case CB	x160
HHA032Z	32A	25kA	3 pole	moulded case CB	x160
HHA040Z	40A	25kA	3 pole	moulded case CB	x160
HHA050Z	50A	25kA	3 pole	moulded case CB	x160
HHA063Z	63A	25kA	3 pole	moulded case CB	x160
HHA080Z	80A	25kA	3 pole	moulded case CB	x160
HHA100Z	100A	25kA	3 pole	moulded case CB	x160
HHA125Z	125A	25kA	3 pole	moulded case CB	x160
HHA160Z	160A	25kA	3 pole	moulded case CB	x160
HHB200Z	200A	25kA	3 pole	moulded case CB	x250
HHB250Z	250A	25kA	3 pole	moulded case CB	x250
H3e series economical, cost-efficient (not compatible with Quadro enclosure system)					
Fixed: thermal 1.05 to 1.3 x In / magnetic >10 x In					
HND320P	320A	50kA	3 pole	moulded case CB	h400e
HND400P	400A	50kA	3 pole	moulded case CB	h400e
HNE500P	500A	50kA	3 pole	moulded case CB	h800e
HNE630P	630A	50kA	3 pole	moulded case CB	h800e
HNE800P	800A	50kA	3 pole	moulded case CB	h800e
Adjustable thermal / magnetic trip 40/50 kA					
• Window indicating presence of: - auxiliary/alarm contacts, shunt trip, UV release					
TM: adjustable thermal 0.63 - 0.8 - 1 x In / fixed magnetic >10 x In					
HNA025U	16 - 25A	40kA	3 pole	moulded case CB	x160
HNA040U	25 - 40A	40kA	3 pole	moulded case CB	x160
HNA063U	40 - 63A	40kA	3 pole	moulded case CB	x160
HNA100U	63 - 100A	40kA	3 pole	moulded case CB	x160
HNA125U	80 - 125A	40kA	3 pole	moulded case CB	x160
HNA160U	101 - 160A	40kA	3 pole	moulded case CB	x160
HNA026U	16 - 25A	40kA	4 pole	moulded case CB	x160
HNA041U	25 - 40A	40kA	4 pole	moulded case CB	x160
HNA064U	40 - 63A	40kA	4 pole	moulded case CB	x160
HNA101U	63 - 100A	40kA	4 pole	moulded case CB	x160
HNA126U	80 - 125A	40kA	4 pole	moulded case CB	x160
HNA161U	101 - 160A	40kA	4 pole	moulded case CB	x160
TM: adjustable thermal 0.63 - 0.8 - 1 x In / adjustable magnetic 5-7-9-11 x In					
HNB250U	160 - 250A	40kA	3 pole	moulded case CB	x250
HNB251U	160 - 250A	40kA	4 pole	moulded case CB	x250
TM: adjustable thermal 0.63 - 0.8 - 1 x In / adjustable magnetic 6-12 x In					
HND400U	252 - 400A	50kA	3 pole	moulded case CB	h400
HND401U	252 - 400A	50kA	4 pole	moulded case CB	h400
Adjustable electronic release (LSI) 50 kA					
LSI: adjustable thermal 0.4 - 1 x In / adjustable magnetic 2.5 - 8 x Ir / time 0.1 - 0.2sec					
HND400H	252 - 400A	50kA	3 pole	moulded case CB	h400
HND630H	252 - 630A	50kA	3 pole	moulded case CB	h630
HNE800H	320 - 800A	50kA	3 pole	moulded case CB	h1000
HNE970H	400 - 1000A	50kA	3 pole	moulded case CB	h1000
HNF980H	500 - 1250A	50kA	3 pole	moulded case CB	h1600
HNF990H	640 - 1600A	50kA	3 pole	moulded case CB	h1600
HND631H	252 - 630A	50kA	4 pole	moulded case CB	h630
HNE801H	320 - 800A	50kA	4 pole	moulded case CB	h1000
HNE971H	400 - 1000A	50kA	4 pole	moulded case CB	h1000
HNF981H	500 - 1250A	50kA	4 pole	moulded case CB	h1600
HNF991H	640 - 1600A	50kA	4 pole	moulded case CB	h1600



HEG063U



HED630H



HCF990H



HXA021H



HXA024H



HXC024H



HXC004H

- Mechanical "test" button on fascia
- Cascading with MCBs (see chart Annex 10)
- Lockable thermal/magnetic settings
- Standards: SANS / IEC 60947-2

"Clip-in" accessories

- Auxiliary contacts
- Alarm contacts
- Shunt trip device
- Undervoltage release

type	thermal current	rated kA 415V (Icu)	poles	description	frame
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Adjustable thermal / magnetic trip 65 kA

TM: adjustable thermal 0.63 - 1 x In / magnetic 6 - 8 - 11 - 13 x In

HEG063U	40 - 63A	65kA	3 pole	moulded case circuit breaker	h250
HEG100U	63 - 100A	65kA	3 pole	moulded case circuit breaker	h250
HEG160U	100 - 160A	65kA	3 pole	moulded case circuit breaker	h250
HEG250U	160 - 250A	65kA	3 pole	moulded case circuit breaker	h250

Adjustable thermal / magnetic trip 70 kA

LSI: adjustable thermal 0.4 - 1 x In / fixed magnetic 2.5 - 8 x Ir / time 0.1 - 0.2sec

HED400H	160 - 400A	70kA	3 pole	moulded case circuit breaker	h630
HED630H	252 - 630A	70kA	3 pole	moulded case circuit breaker	h630
HEE800H	320 - 800A	70kA	3 pole	moulded case circuit breaker	h1000
HEE970H	400 - 1000A	70kA	3 pole	moulded case circuit breaker	h1000
HEF980H	500 - 1250A	70kA	3 pole	moulded case circuit breaker	h1600
HEF990H	640 - 1600A	70kA	3 pole	moulded case circuit breaker	h1600

Four pole available on request.

Load break switches (switch disconnectors / isolators)

HCA125Z	125A	-	3 pole	load break switch (isolator)	x160
HCA160Z	160A	-	3 pole	load break switch (isolator)	x160
HCB250Z	250A	-	3 pole	load break switch (isolator)	x250
HCD400H	400A	-	3 pole	load break switch (isolator)	h400
HCD630H	630A	-	3 pole	load break switch (isolator)	h630
HCE800H	800A	-	3 pole	load break switch (isolator)	h1000
HCE970H	1000A	-	3 pole	load break switch (isolator)	h1000
HCF980H	1250A	-	3 pole	load break switch (isolator)	h1600
HCF990H	1600A	-	3 pole	load break switch (isolator)	h1600
HCA126Z	125A	-	4 pole	load break switch (isolator)	x160
HCA161Z	160A	-	4 pole	load break switch (isolator)	x160
HCB251Z	250A	-	4 pole	load break switch (isolator)	x250
HCD401H	400A	-	4 pole	load break switch (isolator)	h400
HCD631H	630A	-	4 pole	load break switch (isolator)	h630
HCE801H	800A	-	4 pole	load break switch (isolator)	h1000
HCE971H	1000A	-	4 pole	load break switch (isolator)	h1000
HCF981H	1250A	-	4 pole	load break switch (isolator)	h1600
HCF991H	1600A	-	4 pole	load break switch (isolator)	h1600

Accessories for MCCBs and load break switches






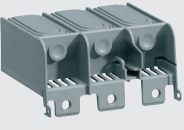

Auxiliary contacts

HXA021H	1NO + 1NC	auxiliary	contact	1NO+1NC for circuit breakers	x160-250
HXD022P	2NO + 2NC	auxiliary	contact	1NO+1NC for circuit breakers	h400e
HXE022P	2NO + 2NC	auxiliary	contact	1NO+1NC for circuit breakers	h800e
HXC021H	1NO + 1NC	auxiliary	contact	1NO+1NC for circuit breakers	h250-1600
HXA024H	1NO + 1NC	alarm	contact	1NO+1NC for circuit breakers	x160-250
HXD024P	1NO + 1NC	alarm	contact	1NO+1NC for circuit breakers	h400e
HXE024P	1NO + 1NC	alarm	contact	1NO+1NC for circuit breakers	h800e
HXC024H	1NO + 1NC	alarm	contact	1NO+1NC for circuit breakers	h250-1600

Shunt trip units (SH)

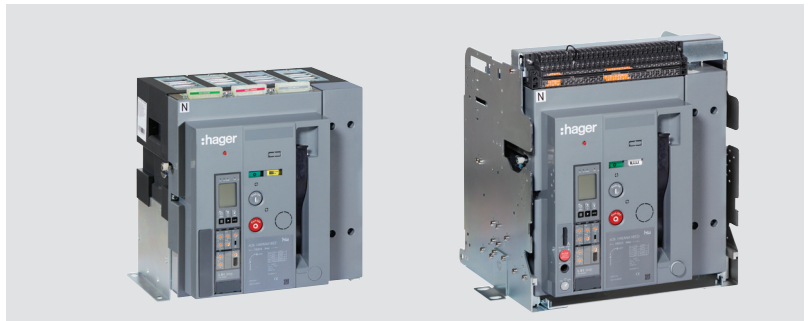
HXA00*H	shunt	(SH)	shunt trip device for circuit breakers	x160-250
HXD00*P	shunt	(SH)	shunt trip device for circuit breakers	h400e
HXE00*P	shunt	(SH)	shunt trip device for circuit breakers	h800e
HXC00*H	shunt	(SH)	shunt trip device for circuit breakers	h250-1600

* 1 = 24VDC, 3 = 110VAC, 4 = 230VAC, 5 = 400VAC

	type	voltage		description	frame
 <p>HXC014H</p>  <p>HXA030H</p>  <p>HXA031H</p>  <p>HXB042H</p>  <p>HYD003H</p>  <p>HYA027H</p>  <p>A48-M10/31</p>	Undervoltage release (UV)				
	HXA014H	230 VAC	(UV)	undervoltage release for circuit breakers	x160-250
	HXA015H	440 VAC	(UV)	undervoltage release for circuit breakers	x160-250
	HXD014P	230 VAC	(UV)	undervoltage release for circuit breakers	h400e
	HXD015P	380 VAC	(UV)	undervoltage release for circuit breakers	h400e
	HXC014H	230 VAC	(UV)	undervoltage release for circuit breakers	h250-630
	HXC015H	440 VAC	(UV)	undervoltage release for circuit breakers	h250-630
	HXE014P	230 VAC	(UV)	undervoltage release for circuit breakers	h800e
	HXE015P	380 VAC	(UV)	undervoltage release for circuit breakers	h800e
	HXE014H	230 VAC	(UV)	undervoltage release for circuit breakers	h1000-1600
HXE015H	440 VAC	(UV)	undervoltage release for circuit breakers	h1000-1600	
Rotary handles (padlockable in "off" position) direct mounting					
HXA030H	direct mount		front mount rotary handle for circuit breakers	x160	
HXB030H	direct mount		front mount rotary handle for circuit breakers	x250	
HXC030H	direct mount		front mount rotary handle for circuit breakers	h250	
HXD030H	direct mount		front mount rotary handle for circuit breakers	h400/630	
HXE030H	direct mount		front mount rotary handle for circuit breakers	h1000	
HXF030H	direct mount		front mount rotary handle for circuit breakers	h1600	
Rotary handles (vari-depth door interlocking)					
HXA031H	vary-depth	200 mm	door interlocking rotary handle and shaft	x160	
HXB031H	vary-depth	200 mm	door interlocking rotary handle and shaft	x250	
HXC031H	vary-depth		door interlocking rotary handle and shaft	h250	
HXD031P	vary-depth		door interlocking rotary handle and shaft	h400e	
HXE031P	vary-depth		door interlocking rotary handle and shaft	h800e	
HXD031H	vary-depth		door interlocking rotary handle and shaft	h400/630	
HXE031H	vary-depth		door interlocking rotary handle and shaft	h1000	
HXF031H	vary-depth		door interlocking rotary handle and shaft	h1600	
Motor operators for MCCBs					
HXB042H	230 VAC		motor operator for remote operation of MCCB	x250	
HXD042H	230 VAC		motor operator for remote operation of MCCB	h400/630	
HXE042H	230 VAC		motor operator for remote operation of MCCB	h1000	
HXF042H	230 VAC		motor operator for remote operation of MCCB	h1600	
Terminals and mounting accessories					
HYA033H			DIN rail mounting adaptor	x160	
HYB033H			DIN rail mounting adaptor	x250	
HYB001H	(set of 3)	150 mm ²	collar terminals for cables	x250	
HYD003H	(set of 3)	240 mm ²	collar terminals for cables	h400/630	
HYA014H	(3 pole)		spreader link extended terminals	x160	
HYB011H	(3 pole)		spreader link extended terminals	x250	
HYC011H	(3 pole)		spreader link extended terminals	h250	
HYD014H	(3 pole)		spreader link extended terminals	h400/630	
HYA027H	(3 pole)		terminal shrouds	x160	
HYB021H	(3 pole)		extended terminal shrouds	x250	
HYC021H	(3 pole)		extended terminal shrouds	h250	
HYD021H	(3 pole)		extended terminal shrouds	h400/630	
HYE021H	(3 pole)		extended terminal shrouds	h1000	
HYA019H	(3 per set)		spare interphase barriers	x160	
HYB019H	(3 per set)		spare interphase barriers	x250	
HYC019H	(3 per set)		spare interphase barriers	h250	
Special "contained palm" cable lugs for MCCBs					
type	cable size	lug width	hole Ø	description	for MCCB
A24B-M8/19	120 mm ²	19.0 mm	M8	contained palm cable lug (ea)	x/h250
A30B-M8/19	150 mm ²	19.0 mm	M8	contained palm cable lug (ea)	x/h250
A37B-M10/24.5	185 mm ²	24.5 mm	M10	contained palm cable lug (ea)	250/400/630
A48-M10/31	240 mm ²	31.0 mm	M10	contained palm cable lug (ea)	h400/630

Hager ACBs conform to IEC/EN 60947-2 standards and to all major international standards and performance categories.

- High breaking capacity: full range I_{cu}=I_{cs}
- Optimised and compact panel size: same height and depth
- Terminal conversion horizontal – vertical (*up to 3200A*)
- Quick and easy mounting of accessories
- OCR: LCD display, pre-trip alarm, fault/event recording, integrated communication, remote reset, ZSI, temperature alarm
- Advanced protection: low load, unbalance voltage, reserve power, low/over voltage protection
- Advanced metering: ammeter, voltage, power, energy, demand...



Type				HWAN		HWBS				HWCP
Frame				A		B				C
Rated uninterrupted current	40°C		A	1250	1600	2000	2500	3200	4000	5000
No. of poles				3/4						
Rated operational voltage	50/60Hz	U _e	V	690						
Rated insulation voltage	50/60Hz	U _i	V	1000						
Rated impulse withstand voltage		U _{imp}	kV	12						
Current setting range (...x I _n max)			I _r	0.4 ~ 1.0						
Compliance				EN60947-2, IEC60947-2, GB14048-2						
Rated breaking capacity	415/380/220 AC	I _{cu}	KA	65	85				100	
	550/600/690 AC			50	65				85	
Rated service breaking capacity	415/380/220 AC	I _{cs}	(% I _{cu})	100%						
	550/600/690 AC									
Rated short-time capacity	1 Sec	I _{cw}	KA	65	85				85	
	3 Sec			36	55				65	
Rated making capacity (kA peak)	415/380/220 AC	I _{cm}	kA	143	187				220	
	550/600/690 AC			105	143				187	
Utilization category	IEC 60947-2			B						
Time										
Maximum total breaking time			ms	40						
Closing operating time		motor charging	s	10						
		max. closing time	ms	40						
Protection										
Long time overload protection LTD	I _{ct}	I _n =I _{ct} x...		0.5-0.63-0.7-0.8-0.9-1						
	current setting	I _r = I _n x...	A	0.8-0.83-0.85-0.88-0.9-0.93-0.95-0.98-1-non						
	time delay	t _r at (6 x I _r)	sec	0.5-1.25-2-2.5-5-10-15-20-25-30						
Short time STD	current setting	I _{sd} = I _n x...	A	1.0-1.5-2-2.5-3-4-6-8-10-non						
	time delay at 10xI _n	I ² t off	sec	0.05-0.1-0.2-0.3-0.4-0.5						
			sec	0.05-0.1-0.2-0.3-0.4-0.5						
		I ² t on	min. trip time	ms	20-80-160-260-360-460					
max. trip time	ms		80-140-240-340-440-540							
Instantaneous INST	current setting	I _i = I _n x...	A	2-3-4-6-8-10-12-15-non						
	trip time		ms	below 50						
Pre trip alarm PTA	current setting	I _p = I _n x...	A	0.6-0.65-0.7-0.75-0.8-0.85-0.9-0.95-1-non						
	time delay	t _p at (I _p x1.2)	sec	5-10-15-20-40-60-80-120-160						
Mechanical life	with maintenance	no. of cycles		30 000	20 000				20 000	
Electrical life	with maintenance	no. of cycles		10 000	10 000				5 000	
Dimensions										
Dimensions	width 3 pole	Fixed	mm	296	367				592	
	width 4 pole		mm	381	523				762	
	depth		mm	296 (without terminals)						
	height		mm	404						
	width 3 pole	Draw-out	mm	328	399				624	
	width 4 pole		mm	413	514				794	
	depth		mm	368 (without terminals)						
	height		mm	466						
Pitch	Ph-Ph		mm	85	115	115	115	152.5	190.5	
Terminal width			mm	50	75	75	90	100	125	
Weight	3 pole	Fixed	kg	34	44	44	44	61	76	
	4 pole		kg	44	55	55	55	81	81	
	3 pole	Draw-out	kg	63	87	87	87	107	145	
	4 pole		kg	80	130	130	130	161	173	

Air Circuit Breakers (ACBs)

- 3 frame sizes 500A - 5000A
- Terminals easily convert from horizontal to vertical (up to 3200A)
- Compact dimensions (*same panel cut-out for all sizes*)

Air circuit breakers are supplied standard with the following:

	fixed	draw-out
Auxiliary contacts (4NO + 4NC)	•	•
RTC (<i>ready to close</i>) contact for "spring loaded" indication	•	•
OCR - LSI Amp - microprocessor protection and control unit (<i>with LCD digital display</i>)	•	•
Internal components to easily mount mechanical interlock facility	•	•
Panel door ingress seal (<i>flange for compartment door</i>)	•	•
Cradle of draw-out circuit breaker		•
Operation (<i>racking</i>) crank handle		•
Safety shutters (<i>padlockable top and bottom</i>)		•



HWAN316EFCZ

Current setting $I_r + I_n \times \dots$	A	0.4-0.5-0.6-0.7-0.8-0.85-0.9-0.95-1
Time delay at $6 \times I_r$	s	0.5-1.25-2-2.5-5-10-15-20-25-30
Short circuit $I_s = I_n \times \dots$	A	1.0-1.5-2-2.5-3-4-6-8-10-non
Time delay $T_s 10 \times I_r - I_r^2$	ms	20-80-160-260-360-460
Instantaneous trip $I_p = I_n \times \dots$	A	2-3-4-6-8-10-12-15-non

type	thermal adjustment (A)	breaking capacity 415V (rms)	poles	mount	description	frame size
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Fixed-type air circuit breaker

Three pole

HWAN312EFCZ	500 - 1250	65kA	3 pole	(fixed)	air circuit breaker	A
HWAN316EFCZ	640 - 1600	65kA	3 pole	(fixed)	air circuit breaker	A
HWBS325EFCZ	1000 - 2500	85kA	3 pole	(fixed)	air circuit breaker	B
HWBS332EFCZ	1280 - 3200	85kA	3 pole	(fixed)	air circuit breaker	B
HWBS340EFCZ	1600 - 4000	85kA	3 pole	(fixed)	air circuit breaker	B
HWCP350EFCZ	2000 - 5000	100kA	3 pole	(fixed)	air circuit breaker	C

Four pole

HWAN416EFCZ	640 - 1600	65kA	4 pole	(fixed)	air circuit breaker	A
HWBS425EFCZ	1000 - 2500	85kA	4 pole	(fixed)	air circuit breaker	B
HWBS432EFCZ	1280 - 3200	85kA	4 pole	(fixed)	air circuit breaker	B
HWBS440EFCZ	1600 - 4000	85kA	4 pole	(fixed)	air circuit breaker	B
HWCP450EFCZ	2000 - 5000	100kA	4 pole	(fixed)	air circuit breaker	C

Draw-out air circuit breakers *supplied complete with cradle and crank handle*

Three pole

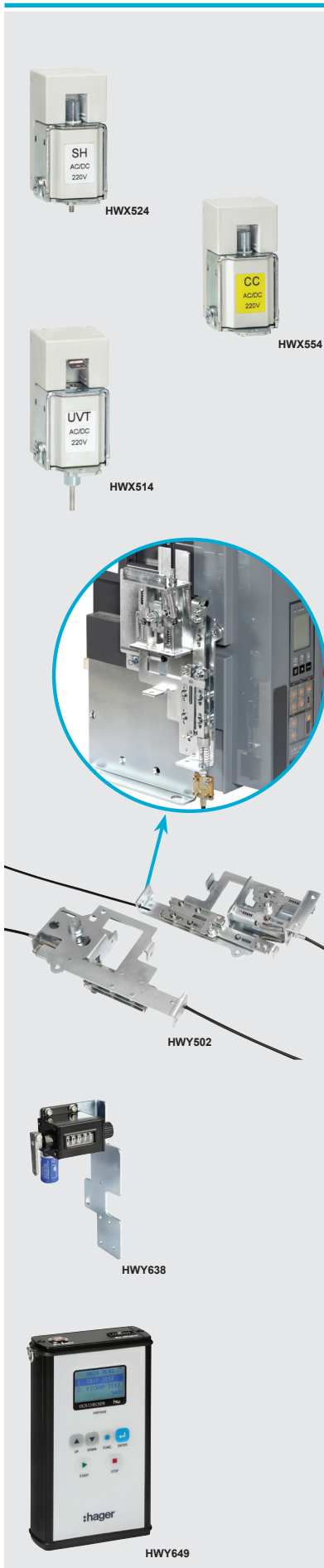
HWAN312EDCZ	500 - 1250	65kA	3 pole	(draw-out)	air circuit breaker	A
HWAN316EDCZ	640 - 1600	65kA	3 pole	(draw-out)	air circuit breaker	A
HWBS325EDCZ	1000 - 2500	85kA	3 pole	(draw-out)	air circuit breaker	B
HWBS332EDCZ	1280 - 3200	85kA	3 pole	(draw-out)	air circuit breaker	B
HWBS340EDCZ	1600 - 4000	85kA	3 pole	(draw-out)	air circuit breaker	B
HWCP350EDCZ	2000 - 5000	100kA	3 pole	(draw-out)	air circuit breaker	C

Four pole

HWAN416EDCZ	640 - 1600	65kA	4 pole	(draw-out)	air circuit breaker	A
HWBS425EDCZ	1000 - 2500	85kA	4 pole	(draw-out)	air circuit breaker	B
HWBS432EDCZ	1280 - 3200	85kA	4 pole	(draw-out)	air circuit breaker	B
HWBS440EDCZ	1600 - 4000	85kA	4 pole	(draw-out)	air circuit breaker	B
HWCP450EDCZ	2000 - 5000	100kA	4 pole	(draw-out)	air circuit breaker	C



HWAN416EDCZ



type	description		voltage
Shunt opening release SH (trip coils)			
HWX504	SH	shunt opening release for all air circuit breakers	220 VAC/DC
HWX505	SH	shunt opening release for all air circuit breakers	380 - 415 VAC
HWX501	SH	shunt opening release for all air circuit breakers	24 VDC
Secondary trip coil sSH (shunt release) <i>only if not using UV release</i>			
HWX524	sSH	shunt closing release for all air circuit breakers	220 VAC/DC
HWX525	sSH	shunt closing release for all air circuit breakers	380 - 415 VAC
HWX521	sSH	shunt closing release for all air circuit breakers	24 VDC
Closing coils (CC)			
HWX554	CC	shunt closing release for all air circuit breakers	220 VAC/DC
HWX555	CC	shunt closing release for all air circuit breakers	380 - 415 VAC
HWX551	CC	shunt closing release for all air circuit breakers	24 VDC
Under voltage release (UVT) release 70% of UV			
HWX514	UVT	undervoltage release for all air circuit breakers	220/250 VAC/DC
HWX515	UVT	undervoltage release for all air circuit breakers	380 - 415 VAC
HWX534	UVT	undervoltage release time delay controller	220/250 VAC/DC
HWX535	UVT	undervoltage release time delay controller	380 - 415 VAC
Motor operators (MO) <i>electric charging device</i>			
HWX544	MO	motor for automatic charging of closing spring	220 VAC/DC
HWX541	MO	motor for automatic charging of closing spring	24 VDC
Mechanical interlocks (MI)			
Up to three circuit breakers fixed/draw-out/mixed versions can be mechanically interlocked in horizontal or vertical configurations. <i>(Supplied standard with 2 meter cables)</i>			
HWY502	2 way	mechanical Interlock mech. with cables	fixed/drawout
HWY503	3 way	mechanical Interlock mech. with cables	fixed/drawout
HWY509	5 meter	cable for mechanical interlocks	fixed/drawout
Arc shields (for installing drawout ACB into panels with restricted space)			
HWY670	3 pole	arc shield for drawout type ACBs	1000 - 1600A
HWY671	4 pole	arc shield for drawout type ACBs	1000 - 1600A
HWY672	3 pole	arc shield for drawout type ACBs	2000 - 4000A
HWY673	4 pole	arc shield for drawout type ACBs	2000 - 4000A
HWY674	3 pole	arc shield for drawout type ACBs	5000A
HWY675	4 pole	arc shield for drawout type ACBs	5000A
Accessories			
HWY648		lifting lugs for all Air Circuit Breakers	
HWY641	(IP30)	spare panel door ingress seal (<i>flange for compartment door</i>)	
HWY642	(IP54)	hinged transparent dust cover for front door	
HWY632		ON/OFF pushbutton protection cover (<i>padlockable</i>)	
HWY637		control terminals protection cover for all ACB's	
HWY630	3 pole	(2 units) phase insulation barrier for all ACB's	
HWY631	4 pole	(3 units) phase insulation barrier for all ACB's	
HWY638		mechanical operation counter for all ACBs	
Key lock devices			
HWY701	Ronis	key lock in open position for all ACBs	Ronis 1-K1L1/12
HWY702	Ronis	key lock in open position for all ACBs	Ronis 2-K2L2/12/23
HWY703	Ronis	key lock in open position for all ACBs	Ronis 3-K3L3/23
HWY706	Castel	key lock in open position for all ACBs	Castel 1 - A
HWY707	Castel	key lock in open position for all ACBs	Castel 2 - B
HWY708	Castel	key lock in open position for all ACBs	Castel 3 - A - B
HWY697		adaptor kit for Ronis/Castell locks	
HWY633		key cylinder lock in open position	type 1
OCR portable checker instrument			
HWY649	OCR	portable OCR checker instrument	all ACB's



2200 3005



2200 3011



2200 3016



1473 1111



1474 1111



1413 2111



1407 0520



2299 5001



2299 5011

SIRCO M and MV manually operated switches

SIRCO modular switches make and break under load conditions and provide safety isolation for any low voltage circuit, particularly for machine control circuits.

Within a single product, **SIRCO M** offers front or side operation. The highly functional design enables the switch to be easily transformed from a load break switch to a changeover switch, offering a highly innovative modular solution for numerous applications.

- Modular DIN rail mounting (*fits into standard distribution board 45 mm cut-out*)
- External front (*or side*) operating handle and shaft (*to be ordered separately-see below*)
- Severe load duty categories (AC-22 and AC-23)
- Conformity to standards: IEC/EN 60947-3 / IS13947-3 / UL / KEMA / RINA

type	AC-22 A 415V (A)	AC-23 A 400V (kW)	No. poles	frame size	description	dimensions (mm) (H) (W) (D)		
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SIRCO M series - Load break switches 16 - 125A

2200 3000	16A	7.5kW	3	M1	load break switch	68	45	75
2200 3002	25A	11.0kW	3	M1	load break switch	68	45	75
2200 3003	32A	15.0kW	3	M1	load break switch	68	45	75
2200 3004	40A	18.5kW	3	M1	load break switch	68	45	75
2200 3005	63A	22.0kW	3	M1	load break switch	68	45	75
2200 3006	63A	30.0kW	3	M2	load break switch	76	53	75
2200 3008	80A	37.0kW	3	M2	load break switch	76	53	75
2200 3010	100A	45.0kW	3	M3	load break switch	125	78	75
2200 3011	125A	55.0kW	3	M3	load break switch	125	78	75

SIRCO MV series load break switches 160A (visual double break contacts)

2200 3016	160A	75.0kW	3	MV	load break switch	125	109	75
2200 4016	160A	75.0kW	4	MV	load break switch	125	135	75

Operating handles and shafts for above switches (IP65)

- External front operated, door interlocking, padlockable in "off" position (up to 3 padlocks)
- Defeatable interlocking mechanism

type	colour	handle size	description	for switch frame (A)	
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Handles for switches - external operation

1473 1111	black	S00	external operating handle for switches	M1/2	16 - 80A
1474 1111	red/yellow	S00	external operating handle for switches	M1/2	16 - 80A
1483 1111	black	S0	external operating handle for switches	M3	100 - 125A
1493 0111	black	S0	external operating handle for switches	MV	160A
1413 2111	black	S1	external operating handle for switches	MV	160A
141D 2911	black	S1	as above (<i>with metal connection</i>)	MV	160A

Extension shafts for switches (mm □)

1407 0520	L 200mm	S000\S00\S0	5 mm	extension shaft for switch	M1-3	16 - 125A
1407 0532	L 320mm	S000\S00\S0	5 mm	extension shaft for switch	M1-3	16 - 125A
1409 0632	L 320mm	S00\S0	6 mm	ext. shaft for (S0) handle	MV	160A
1401 0632	L 320mm	S1	6 mm	ext. shaft for (S1) handle	MV	160A
1419 0000	guide	<i>(permits engaging of misaligned shaft with handle)</i>		M1-3	16 - 125A	
1429 0000	guide	<i>(permits engaging of misaligned shaft with handle)</i>		MV	160A	

Direct mount handles (mounts directly onto front of switch - no shaft required)

2299 5012	blue	M00	5 mm	direct switch mount handle	M1/2	16 - 80A
2299 5032	blue	M01	5 mm	direct switch mount handle	M3	100 - 125A
2299 5042	blue	M0b	6 mm	direct switch mount handle	MV	160A

Auxiliary contacts for M/MV switches

2299 0001	1NO + 1NC	M type	side mount auxiliary contact	M/MV	16 - 160A
2299 0011	2NO	M type	side mount auxiliary contact	M/MV	16 - 160A
3999 0701	1NO	U type	internal mounting auxiliary contact	MV	160A
3999 0702	1NC	U type	internal mounting auxiliary contact	MV	160A

Door mount kit (for direct door or side panel mounting of Sirco M switches)

2299 3409	door mounting kit (<i>direct door mounting of switch</i>)			M1/2	16 - 80A
2299 3609	door mounting kit (<i>direct door mounting of switch</i>)			M3	100-125A



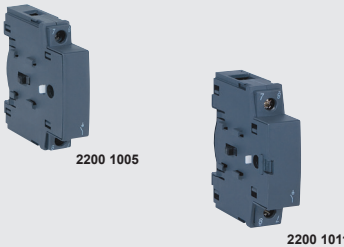
2209 6009



1407 0532



1473 1111



2200 1005

2200 1011



2294 3005

Conversion kits for Sirco M switches (mechanical interlock / parallel attachment)

Sirco M switches can be converted to 3 or 4 pole changeover switches with the addition of conversion kits. A mechanical interlock module simply clips onto two identical 3 pole switches to provide a changeover facility.

- 4th poles clip onto 3 pole switches for 4 pole applications.

type	info	no. of poles	description	for switch frame (A)
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Changeover mechanism (mechanically interlocks two switches)

Supplied with direct mounting operating handle. Handle and shaft to be ordered separately for externally mounted applications.

2209 6009	I-O-II	changeover mechanism between two switches	M1/2	16 - 80A
2209 6011	I-O-II	changeover mechanism between two switches	M3	100 - 125A

Handles and shafts for changeover switches

1473 1113	I-O-II	handle (S00)	for above changeover switches	M1/2	16 - 80A
1473 0113	I-O-II	handle (S00)	for above changeover switches	M3	100 - 125A
1407 0532	shaft	320 mm	5 mm extension shaft for switch	M1/2	16 - 80A
1409 0632	shaft	320 mm	6 mm extension shaft for switch	M3	100 - 125A

Bridging kit for changeover switches

2299 3005	bridge	3 pole	bridging kit for ch/over switches	M1	16 - 40A
2299 4005	bridge	4 pole	bridging kit for ch/over switches	M1	16 - 40A
2299 3009	bridge	3 pole	bridging kit for ch/over switches	M2	63 - 80A
2299 4009	bridge	4 pole	bridging kit for ch/over switches	M2	63 - 80A

Parallel attachments (used to operate two switches simultaneously)

To create 6/8 pole switches by combining two 3/4 pole switches

2269 6009	I-O	6/8 pole	conversion kit between two switches	M1/2	16 - 80A
2269 6011	I-O	6/8 pole	conversion kit between two switches	M3	100 - 125A

Handles and shafts for above parallel attachments (IP65)

1473 1111	I-O	handle	ext. operating handle for switches	M1/2	16 - 80A
1493 0111	I-O	handle	ext. operating handle for switches	M3	100 - 125A
1407 0532	shaft	320 mm	5mm extension shaft for switch	M1-3	16 - 125A
1409 0632	shaft	320 mm	6mm ext. shaft for (S00) handle	M3/V	100 - 125A

Attachable 4th pole module (clips onto either side of 3 pole switches)

2200 1004	40A	1 pole	attachable 4th pole module	M1	16 - 40A
2200 1005	63A	1 pole	attachable 4th pole module	M1	63A
2200 1008	80A	1 pole	attachable 4th pole module	M2	63 - 80A
2200 1011	125A	1 pole	attachable 4th pole module	M3	100 - 125A

Terminal shrouds top (or) bottom terminal protection (two required for total protection)

2294 1005	shroud	1 pole	t/parent terminal protection shroud	M1	16 - 63A
2294 3005	shroud	3 pole	t/parent terminal protection shroud	M1	16 - 63A
2294 1009	shroud	1 pole	t/parent terminal protection shroud	M2	63 - 80A
2294 3009	shroud	3 pole	t/parent terminal protection shroud	M2	63 - 80A
2294 1011	shroud	1 pole	t/parent terminal protection shroud	M3	100 - 125A
2294 3016	shroud	3 pole	t/parent terminal protection shroud	MV	160A
2294 3016	shroud	3 pole	t/parent terminal protection shroud	M3	100 - 125A
2294 4016	shroud	4 pole	t/parent terminal protection shroud	MV	160A



SIRCO series - Manually operated switches

SIRCO switches make and break under load conditions and provide safety isolation for any low voltage circuit.

- External front operating handle and shaft (*to be ordered separately - see below*)
- Severe load duty categories (AC-22 and AC-23)
- Position indicator located on the sliding bar mechanism, ensures visibility in all circumstances
- High thermal and dynamic withstand
- High electrical and mechanical endurance
- Conformity to standards: IEC/EN 60947-3 / IS13947-3 / UL / KEMA / RINA

type	AC-22 A	AC-23 A	No. poles	frame size	description	dimensions (mm)		
	415V (A)	400V				(H)	(W)	(D)

SIRCO AC series - Load break switches 125 - 5000A

SIRCO double break per pole achieved through its sliding bar contact system offers very high durability and short-circuit withstand.

3 pole switches

2600 3014	125A	63kW	3	B3	load break switch	135	140	115
2600 3017	160A	80kW	3	B3	load break switch	135	140	115
26AC 3020	200A	100kW	3	B4	load break switch	160	180	115
26AC 3025	250A	132kW	3	B4	load break switch	160	180	115
26AC 3031	315A	160kW	3	B4	load break switch	160	180	115
26AC 3040	400A	220kW	3	B5	load break switch	235	230	165
26AC 3050	500A	280kW	3	B5	load break switch	235	230	165
26AC 3063	630A	280kW	3	B5	load break switch	260	230	165
26AC 3080	800A	450kW	3	B6	load break switch	321	280	166
26AC 3100	1000A	560kW	3	B6	load break switch	321	280	166
26AC 3121	1250A	710kW	3	B7	load break switch	288	372	166
26AC 3160	1600A	710kW	3	B7	load break switch	288	372	166
2600 3200	2000A	710kW	3	B8	load break switch	380	372	226
2600 3250	2500A	710kW	3	B8	load break switch	380	372	226
2600 3320	3200A	710kW	3	B8	load break switch	380	372	226

4 pole switches

26AC 4025	250A	132kW	4	B4	load break switch	160	230	115
26AC 4040	400A	220kW	4	B5	load break switch	235	290	160
26AC 4063	630A	280kW	4	B5	load break switch	260	290	160
26AC 4080	800A	450kW	4	B6	load break switch	321	360	166
26AC 4121	1250A	710kW	4	B7	load break switch	288	492	166

Larger sizes (up to 5000A) available on request.

Operating handles and shafts for above switches (IP65)

type	handle	colour		description	for switch
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External front operated door interlocking, padlockable in "off" position (3 padlocks)

1423 2111	S2	black		pistol grip ext. operating handle	125 - 630A
1443 3111	S4	black		"T" grip ext. operating handle	800 - 1600A
1453 8111	S5	black		"T" grip ext. operating handle	2000 - 3200A
142D 2911	S2	black		as above (with metal connection)	125 - 630A
144D 3911	S4	black		as above (with metal connection)	800 - 1600A
1400 1032	S2	320 mm	□ 10	extension shaft	125 - 630A
1400 1050	S2	500 mm	□ 10	extension shaft	125 - 630A
1401 1532	S4	320 mm	□ 15	extension shaft	800 - 1600A
1401 1540	S4	400 mm	□ 15	extension shaft	800 - 1600A
2799 3018	S5	320 mm	□ 30	extension shaft	2000 - 3200A
1429 0000	guide			(permits engaging of misaligned shaft with handle)	(all sizes)

Direct mount handles (mounts directly onto front of switch)

2699 5042	B1	black	□ 10	direct switch mount handle	125 - 160A
1112 1111	J1	black	□ 10	direct switch mount handle	200 - 630A
1142 1111	J4	black	□ 15	direct switch mount handle	800 - 1600A
2799 7042	S5	black	□ 30	direct switch mount handle	2000 - 3200A

Auxiliary contacts for switches

2699 0031	1 C/Over	aux		auxiliary contact and support	125 - 3200A
2699 0032	1 C/Over	aux		additional auxiliary contact	125 - 3200A

Inter-phase barriers

Safe isolation between terminals, essential for use at 690VAC or in a polluted or dusty atmosphere.

2998 0033	barriers	-		phase barriers for switches (2pcs)	B3 125-160A
2998 0023	barriers	-		phase barriers for switches (2pcs)	B4 200-250A
2998 0013	barriers	-		phase barriers for switches (2pcs)	B5 315-6300A



21PV 3722
+
2119 1012



26PV 2025



1423 2111



2119 0001



9915 3063

SIRCO PV series - Manually operated photovoltaic switches

Photovoltaic energy producers demand equipment which offer high production output together with consistent reliability and safety with low maintenance costs. Equipment has to support specific technical constraints of solar applications and their severe environment.

- Up to 1500 VDC
- Fully visualised breaking
- Patented switching technology
- Conformity to: IEC/EN 60947-3/VDE 0660-107 / IEC 60364-4-410 / IEC364-7-712

type	current	poles/ config.	volts DC	description	dimensions (mm)		
					(H)	(W)	(D)

SIRCO MC PV		Load break switches for photovoltaic applications					
21PV 3722	25A	2P+, 1P-	1000 VDC	photovoltaic switch	78	52	55
21PV 4754	40A	2P+, 2P-	1000 VDC	photovoltaic switch	78	63	55

SIRCO PV		Load break switches for photovoltaic applications					
26PV 2010	100A	1P+, 1P-	1000 VDC	photovoltaic switch	160	180	95
26PV 2016	160A	1P+, 1P-	1000 VDC	photovoltaic switch	160	180	95
26PV 2025	250A	1P+, 1P-	1000 VDC	photovoltaic switch	160	180	95
26PV 2031	315A	1P+, 1P-	1000 VDC	photovoltaic switch	160	180	95
26PV 4040	400A	2P+, 2P-	1000 VDC	photovoltaic switch	170	230	91
26PV 4050	500A	2P+, 2P-	1000 VDC	photovoltaic switch	170	230	91
26PV 4063	630A	2P+, 2P-	1000 VDC	photovoltaic switch	260	290	131
26PV 3026	275A	2P+, 1P-	1500 VDC	photovoltaic switch	250	230	147
26PV 3032	315A	2P+, 1P-	1500 VDC	photovoltaic switch	250	230	147
26PV 3041	400A	2P+, 1P-	1500 VDC	photovoltaic switch	250	230	147
26PV 8063	630A	2P+, 2P-	1500 VDC	photovoltaic switch	260	290	131

- Available on request:
- larger sizes up to 2000A
 - Double switches (to switch two different PV circuits simultaneously)

Accessories for above switches

Handle - direct mount

2119 1012	MC01	direct switch mounting handle for 1000V switches	25 - 40A
1112 1111	J1	direct switch mounting handle for 1000V switches	100 - 630A
1122 1111	J2	direct switch mounting handle for 1500V switches	275 - 630A

Handles - external mount

- Door interlocking,
- External front operated,
- Padlockable in "off" position (3 padlocks)

2119 3312	MC01	external mount door interlocking handle for switches	25 - 40A
1423 2111	S2	external mount door interlocking handle for switches	100 - 630A
2107 0516	165 mm	extension shaft for externally operated switches	25 - 40A
1400 1032	320 mm	extension shaft for externally operated switches	100 - 630A
2119 0001	NO + NC	side mount auxiliary contact for switches	25 - 40A
2699 0031	1 Ch/Over	side mount auxiliary contact for switches	100 - 2000A

Motorised load-break switches

- Ideal contactor replacement for high current switching applications
- Reliable, robust AC-23A switching
- Manual override facility (handle supplied)

type	AC-22A 400V	AC-23A 400V	description	dimensions (mm)		
				(H)	(W)	(D)
9915 3016	160A	75kW	3 pole motorised load break switch	135	267	244
9915 3025	250A	132kW	3 pole motorised load break switch	160	328	244
9915 3040	400A	220kW	3 pole motorised load break switch	170	328	244
9915 3063	630A	280kW	3 pole motorised load break switch	260	377	321
9915 3080	800A	450kW	3 pole motorised load break switch	321	504	292
9915 3100	1000A	560kW	3 pole motorised load break switch	321	504	292
9915 3120	1250A	710kW	3 pole motorised load break switch	330	504	292
9915 3160	1600A	710kW	3 pole motorised load break switch	288	596	292
9915 4063	630A	280kW	4 pole motorised load break switch	260	437	321
9915 4080	800A	450kW	4 pole motorised load break switch	321	584	292
9915 4100	1000A	560kW	4 pole motorised load break switch	321	584	292
9915 4120	1250A	710kW	4 pole motorised load break switch	330	584	292
9915 4160	1600A	710kW	4 pole motorised load break switch	288	716	292



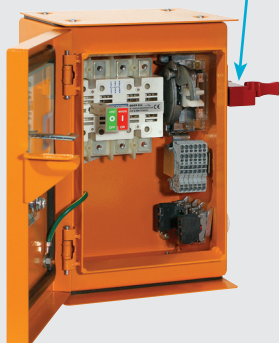
2115 3401



2115 3403



ESW3080M



Enclosed isolator switches (manually operated)

Socomec **COMO** series enclosed isolators are supplied in robust, heavy duty ABS enclosures.

- Red/yellow handle, interlocked with front cover in ON position, padlockable (3 padlocks) in OFF position

type	AC-23A ≤ 400V	AC-23A ≤ 525V	poles	description	dimensions (mm)		
					(H)	(W)	(D)

Enclosed isolator switches (manually operated) (IP65) - ABS enclosure

2115 3401	20A	7.5kW	3	enclosed load-break switch	90	64	58
2115 3403	32A	11.0kW	3	enclosed load-break switch	152	100	81
2115 3404	40A	18.5kW	3	enclosed load-break switch	152	100	81
2115 3405	50A	22.0kW	3	enclosed load-break switch	152	100	81
2115 4401	20A	7.5kW	4	enclosed load-break switch	90	64	58
2115 4404	40A	18.5kW	4	enclosed load-break switch	152	100	81
2115 4405	50A	22.0kW	4	enclosed load-break switch	152	100	81

Auxiliary contacts for above enclosed switches

2113 4001	NO + NC	auxiliary		contact for enclosed switches			32 - 50A
2113 4002	2 NO	auxiliary		contact for enclosed switches			33 - 50A

Sheet metal enclosure (IP65) Colour: BS/EN06 E53 (electric orange)

- IP65 sheet metal enclosed load-break switches
- Door interlocking in "ON" position, padlockable (3 padlocks) in "OFF" position

3 pole switches

ESW3004M	40A	18.5kW	3	enclosed load-break switch	350	250	170
ESW3006M	63A	30kW	3	enclosed load-break switch	350	250	170
ESW3012M	125A	63kW	3	enclosed load-break switch	350	250	170
ESW3016M	160A	80kW	3	enclosed load-break switch	350	250	170
ESW3025M	250A	132kW	3	enclosed load-break switch	550	400	220
ESW3040M	400A	220kW	3	enclosed load-break switch	550	400	220
ESW3063M	630A	280kW	3	enclosed load-break switch	550	400	220
ESW3080M	800A	450kW	3	enclosed load-break switch	950	700	270
ESW3100M	1000A	560kW	3	enclosed load-break switch	950	700	270
ESW3125M	1250A	710kW	3	enclosed load-break switch	950	700	270

Larger sizes available on request.

4 pole switches - 4th pole can be attached to above 40/63/125A switches (see below)

2200 1004	40A	1 pole		attachable 4th pole module	M1		40A
2200 1008	80A	1 pole		attachable 4th pole module	M2		63A
2200 1011	125A	1 pole		attachable 4th pole module	M3		125A

Safety enclosures (IP55) Colour: BS/EN06 E53 (electric orange)

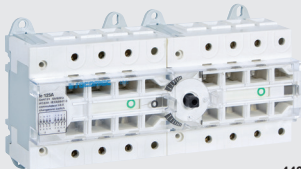
Safety enclosed switches provide emergency stop and safety breaking for any low voltage electric circuit. They break "ON" and "OFF" load and provide safety isolation.

- Zinc galvanised sheet metal enclosure (1.5mm thick) chrome plated zamak hinges
- Bottom mounted gland plate and 2 internal + 1 external earthing connection
- Metallic side mounted operating handle (red colour) padlockable in "OFF" position (3 padlocks)
- Equipped with a double locking system (door can also be padlocked closed in the "OFF" position)
- Visible breaking facility provided through a triplex window (made of 2 layer 3mm thick safety glass)
- Mechanical flag indicator (visible through triplex window) for indication of switch position status
- 2 sets terminated auxiliary contacts NO + NC mounted on the double locking system internally
- Supplied with 2 hooded pushbuttons on right side of enclosure: green 1NO / red 2NC contacts

25484	15kW	25kW	3	80A	1way safety switch	400	300	160
43505	25kW	55kW	3	125A	1way safety switch	400	300	200
43506	63kW	90kW	3	200A	1way safety switch	400	300	200
43565	157kW	160kW	3	400A	1way safety switch	700	400	250
43566	250kW	270kW	3	630A	1way safety switch	900	500	300



2230 3004EM



4430 4012



1413 2113



41AC 3063



1433 3113

SIRCO series - Changeover switches

SIRCO manual changeover switches provide switching, source inversion and changeover under load for two power circuits with safety isolation double breaking per pole.

- Severe load duty categories (AC-23 AND AC-33)
- Conformity to Standards: IEC/EN 60947-3, IEC 60947-6-1, IS13947-3, UL, KEMA, RINA
- External front operating handle and shaft (*to be ordered separately*)

type	AC-23 A 415V (A)	no. of poles	frame size	description	dimensions (mm)		
					(H)	(W)	(D)

SIRCO M - Changeover switches 16A - 125A

- Modular DIN rail mounting (*fits into standard distribution board with 45 mm cut-out*)
- Supplied with internal direct mount handle for external mount handle, see accessories (*below*)

2230 3001EM	16A	3	M1	modular changeover switch	68	98	89
2230 3002EM	25A	3	M1	modular changeover switch	68	98	89
2230 3004EM	40A	3	M1	modular changeover switch	68	98	89
2230 3006EM	63A	3	M1	modular changeover switch	76	105	89
2230 3008EM	80A	3	M2	modular changeover switch	76	105	89
2230 3010EM	100A	3	M3	modular changeover switch	125	159	100
2230 3011EM	125A	3	M3	modular changeover switch	125	159	100

4th pole can be added to above switches (see page **B-24**)

Accessories for changeover switches

1473 1113	handle	I-O-II		external for ch/over switches	M1/2	16 - 80A	
1473 0113	handle	I-O-II		external for ch/over switches	M3	100 - 125A	
1407 0532	shaft	320 mm		(5 mm) ext. shaft for switch	M1/2	16 - 80A	
1409 0632	shaft	320 mm		(6 mm) ext. shaft for switch	M3	100 - 125A	
2299 3005	bridge	3 pole		bridging kit for ch/over switches	M1	16 - 40A	
2299 4005	bridge	4 pole		bridging kit for ch/over switches	M1	16 - 40A	
2299 3009	bridge	3 pole		bridging kit for ch/over switches	M2	63 - 80A	
2299 4009	bridge	4 pole		bridging kit for ch/over switches	M2	63 - 80A	

SIRCO VM1 - Changeover switches 100A - 125A

- DIN rail, chassis or modular panel mounting
- Double visible breaking

4430 4010	100A	4 pole		modular changeover switch	95	215	97
4430 4012	125A	4 pole		modular changeover switch	95	215	97
4499 4006	bridge	4 pole		insulated 4P bridging bar set			for VM1 switches
4439 5012	handle	I-O-II		direct switch mount handle			for VM1 switches
1413 2113	handle	I-O-II		external door interlock handle			for VM1 switches
1402 0832	shaft	320 mm		extension shaft			for VM1 switches

SIRCOVER - Manual changeover switches 125A - 3200A

- High thermal and dynamic withstand, high electrical and mechanical endurance
- Severe utilization categories (AC-22 and AC-23)
- Handles and shafts (*to be ordered separately-see below*)

41AC 3016	160A	3 pole		manual changeover switch	135	221	173
41AC 3020	200A	3 pole		manual changeover switch	135	221	173
41AC 3025	250A	3 pole		manual changeover switch	160	262	173
41AC 3040	400A	3 pole		manual changeover switch	170	262	173
41AC 3063	630A	3 pole		manual changeover switch	260	319	225
41AC 3080	800A	3 pole		manual changeover switch	321	386	298
41AC 3100	1000A	3 pole		manual changeover switch	321	386	298
41AC 3120	1250A	3 pole		manual changeover switch	330	386	298
41AC 3160	1600A	3 pole		manual changeover switch	228	478	298
41AC 4016	160A	4 pole		manual changeover switch	135	251	173
41AC 4025	250A	4 pole		manual changeover switch	160	312	173
41AC 4040	400A	4 pole		manual changeover switch	170	312	173
41AC 4063	630A	4 pole		manual changeover switch	260	379	225
41AC 4080	800A	4 pole		manual changeover switch	320	466	298
41AC 4120	1250A	4 pole		manual changeover switch	330	466	298
41AC 4160	1600A	4 pole		manual changeover switch	288	598	298

Larger sizes up to 3200A available on request.

Operating handles and shafts for above changeover switches

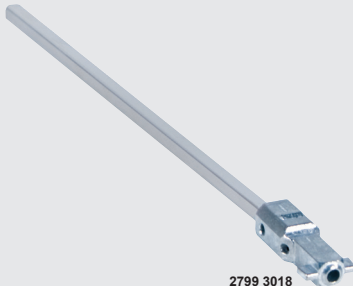
1423 2113	S2	black	I-O-II	ext. operating handle		160 - 630A	
1443 3113	S4	black	I-O-II	ext. operating handle		800 - 1600A	
1400 1032	shaft	320 mm	□ 10	ext. shaft for switch		160 - 630A	
1401 1532	shaft	320 mm	□ 15	ext. shaft for switch		800 - 1600A	
1122 1111	J2	black		direct switch mounting handle		160 - 630A	
1132 1111	J3	black		direct switch mounting handle		800 - 1600A	



4100 7063



1433 3113



2799 3018



4109...



2694 4051

SIRCOVER series - Manual bypass switches

SIRCOVER Bypass are a combination of three interlocked switches enabling the use with 3+6 or 4+8 poles from 160A to 1600A.

- Severe load duty categories (AC-23 AND AC-33)
- Conformity to Standards: IEC/EN 60947-3, IEC 60947-6-1, IS13947-3, UL, KEMA, RINA
- External IP65 front operating handle and shaft (*to be ordered separately*)

type	AC-23 A 415V (A)	No. poles	description	dimensions (mm)		
				(H)	(W)	(D)

3 pole manual bypass switches

4100 7016	160A	3 pole	manually operated bypass switch	135	221	268
4100 7019	200A	3 pole	manually operated bypass switch	135	221	268
4100 7025	250A	3 pole	manually operated bypass switch	160	262	268
4100 7039	400A	3 pole	manually operated bypass switch	170	262	268
4100 7063	630A	3 pole	manually operated bypass switch	260	319	387
4100 7080	800A	3 pole	manually operated bypass switch	320	386	508
4100 7120	1250A	3 pole	manually operated bypass switch	320	386	508
4100 7160	1600A	3 pole	manually operated bypass switch	288	478	508

4 pole manual bypass switches

4100 9016	160A	4 pole	manually operated bypass switch	135	251	268
4100 9025	250A	4 pole	manually operated bypass switch	160	312	268
4100 9039	400A	4 pole	manually operated bypass switch	170	312	268
4100 9063	630A	4 pole	manually operated bypass switch	260	379	387
4100 9080	800A	4 pole	manually operated bypass switch	320	466	508
4100 9120	1250A	4 pole	manually operated bypass switch	320	466	508
4100 9160	1600A	4 pole	manually operated bypass switch	288	598	508

Larger sizes available on request.

Handles and shafts for bypass switches - (door interlocking padlockable in "O" position)

1423 2113	S2	black	I-O-II	ext. operating handle	160 - 200A
1433 3113	S3	black	I-O-II	ext. operating handle	250 - 630A
4199 7146	V2	black	I-O-II	ext. operating handle	800 - 1600A
1400 1032	shaft	320 mm	□10	extension shaft for switch	160 - 200A
1401 1532	shaft	320 mm	□15	extension shaft for switch	250 - 630A
2799 3018	shaft	320 mm	□30	extension shaft for switch	800 - 1600A
1429 0000	guide	<i>(permits engaging of misaligned shaft with handle)</i>			<i>(all sizes)</i>
4199 5012	J2	black		direct switch mounting handle	160 - 200A
1132 1111	J3	black		direct switch mounting handle	250 - 630A
1142 1111	J4	black		direct switch mounting handle	800 - 1600A

Accessories for all changeover and bypass switches

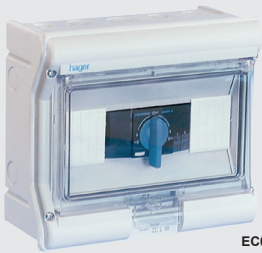
type		poles	description	for switch
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Bridging bar sets for changeover and bypass switches

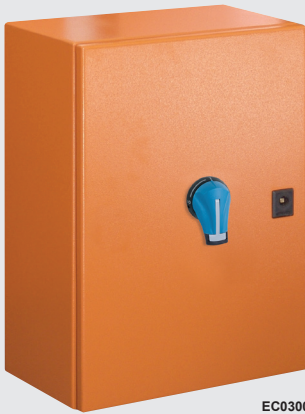
4109 3019	bridge	3 pole	bridging bar for ch/over switches	160/200A
4109 3025	bridge	3 pole	bridging bar for ch/over switches	250A
4109 3039	bridge	3 pole	bridging bar for ch/over switches	400A
4109 3063	bridge	3 pole	bridging bar for ch/over switches	630A
4109 3080	bridge	3 pole	bridging bar for ch/over switches	800/1000A
4109 3120	bridge	3 pole	bridging bar for ch/over switches	1250A
4109 3160	bridge	3 pole	bridging bar for ch/over switches	1600A
4109 0019	bridge	1 pole	bridging bar for ch/over switches	160/200A
4109 0025	bridge	1 pole	bridging bar for ch/over switches	250A
4109 0039	bridge	1 pole	bridging bar for ch/over switches	400A
4109 0063	bridge	1 pole	bridging bar for ch/over switches	630A
4109 0080	bridge	1 pole	bridging bar for ch/over switches	800/1000A
4109 0120	bridge	1 pole	bridging bar for ch/over switches	1250A
4109 0160	bridge	1 pole	bridging bar for ch/over switches	1600A

Terminal shrouds for changeover and bypass switches

2694 3014	shroud	3 pole	t/parent terminal protection shroud	160/200A
2694 3021	shroud	3 pole	t/parent terminal protection shroud	250/400A
2694 3051	shroud	3 pole	t/parent terminal protection shroud	630A
2694 4014	shroud	4 pole	t/parent terminal protection shroud	160/200A
2694 4021	shroud	4 pole	t/parent terminal protection shroud	250/400A
2694 4051	shroud	4 pole	t/parent terminal protection shroud	630A
1509 3080	screen	3 pole	t/parent terminal protection screen	800/1250A
1509 4080	screen	4 pole	t/parent terminal protection screen	800/1250A
1509 3160	screen	3 pole	t/parent terminal protection screen	1600
1509 4160	screen	4 pole	t/parent terminal protection screen	1600A



ECO3009P



ECO3009M



ES-VCH-S



ES-VCH-P



ES-PLS-KD

Enclosed manual changeover switches (IP65)				
type	AC-31 B 415V (A)	enclosure	no. poles	description
				dimensions (mm) (H) (W) (D)

SIRCO-M - Changeover switches

Polycarbonate housing (IP65)

- Supplied with internal direct mount handle
- Distribution board style enclosure with transparent door

ECO3002P	25A	polycarb	3 pole	enclosed ch/over switch	210	237	114
ECO3004P	40A	polycarb	3 pole	enclosed ch/over switch	210	237	114
ECO3006P	63A	polycarb	3 pole	enclosed ch/over switch	210	237	114
ECO3009P	100A	polycarb	3 pole	enclosed ch/over switch	302	310	151
ECO3012P	125A	polycarb	3 pole	enclosed ch/over switch	302	310	151

Sheet metal enclosed (IP65)

- With external door interlocking padlockable handle

ECO3004M	40A	metal	3 pole	enclosed ch/over switch	350	250	170
ECO3006M	63A	metal	3 pole	enclosed ch/over switch	350	250	170
ECO3009M	100A	metal	3 pole	enclosed ch/over switch	350	250	170
ECO3012M	125A	metal	3 pole	enclosed ch/over switch	350	250	170

4 pole switches can be made by adding clip-on 4th poles (see page B-24)

SIRCOVER - Changeover switches

- With external door interlocking padlockable handle
- Supplied complete with bridge bars (output side)
- Sheet metal enclosed

ECO3016M	160A	metal	3 pole	enclosed ch/over switch	550	400	220
ECO3025M	250A	metal	3 pole	enclosed ch/over switch	550	400	220
ECO3040M	400A	metal	3 pole	enclosed ch/over switch	850	600	270
ECO3063M	630A	metal	3 pole	enclosed ch/over switch	850	600	270
ECO3080M	800A	metal	3 pole	enclosed ch/over switch	900	600	450
ECO3125M	1250A	metal	3 pole	enclosed ch/over switch	900	600	450
ECO3160M	1600A	metal	3 pole	enclosed ch/over switch	900	600	450
ECO4016M	160A	metal	4 pole	enclosed ch/over switch	550	400	220
ECO4025M	250A	metal	4 pole	enclosed ch/over switch	550	400	220
ECO4040M	400A	metal	4 pole	enclosed ch/over switch	850	600	270
ECO4063M	630A	metal	4 pole	enclosed ch/over switch	850	600	270
ECO4080M	800A	metal	4 pole	enclosed ch/over switch	900	600	450
ECO4125M	1250A	metal	4 pole	enclosed ch/over switch	900	600	450
ECO4160M	1600A	metal	4 pole	enclosed ch/over switch	900	600	450

EM Safety lockout hasps

Safety lockout hasps permit multiple padlocks to be used when isolating one energy source. The lockout hasp is placed through the isolating point and closed. Each person carrying out maintenance or service attaches their unique individually keyed padlock through the lockout hasp, thereby ensuring complete safety during maintenance operations. The hasp can only be removed once all padlocks have been removed.

- Scissor action hasp with Ø25 mm or 38 mm jaw size
- Accepts padlocks with a shackle diameter up to 9 mm (up to 6 padlocks can be attached)
- Manufactured from high tensile steel, electroplated to prevent rust

type	jaw size	colour	number of padlocks accepted	description
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Vinyl coated hasp

- Padlock section vinyl coated (red) for improved grip and visibility

ES-VCH-S	25 mm	red	6	safety lockout hasp
ES-VCH-P	38 mm	red	6	safety lockout hasp

Lockout padlocks

Maximum security laminated padlocks made for tough lockout situations.

- Increased durability against cutting, prying and twisting
- Supplied with two keys per lock

ES-PLS-KD	padlock long shackle - different keys
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9503 4008

ATyS S - Motorised changeover switches (4 pole)

ATyS S is 4 pole remotely operated transfer switch with positive break indication, enabling the on-load transfer of two three-phase supplies via remote volt-free contacts, or an external automatic controller, using pulse logic, or a switch.

For use in low voltage power supply systems where a brief interruption of the load supply is acceptable during transfer. Fully integrated cost effective solution to switch between main and an alternative power supply for loads of up to 125A: <90kVA /3 phase 415 VAC.

- Two switches mounted back to back, motorised (*easily replaceable motors*)
- Fail-safe mechanical interlock
- Padlockable in the "OFF" position
- Manual override facility (*handle supplied*)
- Wide-band AC control voltage $\pm 30\%$
- Can be configured for "impulse" or "contactor" logic
- Energy efficient power consumption is minimal and only required during transfer operation
- Fully independent position auxiliary contacts one for each position (I / O / II)

AC 32B IEC 60947-6-1, GB 14048-11 (*transfer switch standards*)
 AC 22A IEC60947-3 (*load break switch standard*)



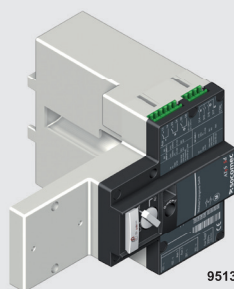
9505 4008



9509 4013



9594 4012



9513 5012

type	AC-31 B 415V (A)	poles	supply voltage	description
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ATyS S - Motorised changeover switches (H) 144 x (W) 198 x (D) 181 mm

230 VAC power supply

9503 4004	40A	4 pole	230 VAC	motorised changeover switch
9503 4006	63A	4 pole	230 VAC	motorised changeover switch
9503 4008	80A	4 pole	230 VAC	motorised changeover switch
9503 4010	100A	4 pole	230 VAC	motorised changeover switch
9503 4012	125A	4 pole	230 VAC	motorised changeover switch

12 VDC power supply

9505 4004	40A	4 pole	12 VDC	motorised changeover switch
9505 4006	63A	4 pole	12 VDC	motorised changeover switch
9505 4008	80A	4 pole	12 VDC	motorised changeover switch
9505 4010	100A	4 pole	12 VDC	motorised changeover switch
9505 4012	125A	4 pole	12 VDC	motorised changeover switch

24/48 VDC power supply

9506 4004	40A	4 pole	24/48 VDC	motorised changeover switch
9506 4006	63A	4 pole	24/48 VDC	motorised changeover switch
9506 4008	80A	4 pole	24/48 VDC	motorised changeover switch
9506 4010	100A	4 pole	24/48 VDC	motorised changeover switch
9506 4012	125A	4 pole	24/48 VDC	motorised changeover switch

ATyS d S - Dual power supply (2 x 230 VAC)

Incorporates supply redundancy without the need for additional wiring, by integrating a double supply (*2 independent supplies*) directly within the product.

9513 4004	40A	4 pole	2 x 230 VAC	motorised changeover switch
9513 4006	63A	4 pole	2 x 230 VAC	motorised changeover switch
9513 4008	80A	4 pole	2 x 230 VAC	motorised changeover switch
9513 4010	100A	4 pole	2 x 230 VAC	motorised changeover switch
9513 4012	125A	4 pole	2 x 230 VAC	motorised changeover switch

Accessories for ATyS S switches

Bridging bars (1 piece required per pole)

9509 4013	bridge	4 pole	power terminal bridging bar (<i>top or bottom</i>)
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Voltage tap

9599 4001	terminal	control voltage tapping kit (<i>from power terminals</i>)
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Terminal shroud

9594 4012	shroud	4 pole	supply side terminal protection shrouds x 2
9594 9012	shroud	4 pole	load side terminal protection shrouds x 2

Spare motor units

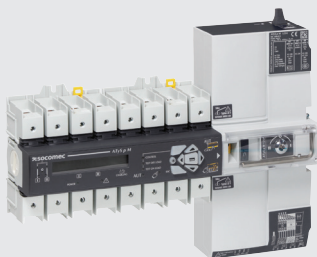
9503 5012	motor	230 VAC	spare motor for above switches
9505 5012	motor	12 VDC	spare motor for above switches
9506 5012	motor	24/48 VDC	spare motor for above switches
9513 5012	motor	2 x 230 VAC	spare motor for above switches



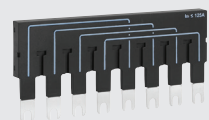
9323 4006



9323 4012



9364 4012



1309 4006



1309 1001



1399 4006

ATyS M - Motorised changeover switches

ATyS M modular motorised changeover switches with positive break indication enabling on-load changeover switching of two supply sources in automatic or manual mode.

- Modular format to easily mount into standard distribution boards
- Provide rapid switching (< 90ms) excellent dynamic withstand and long life
- Auto or manual operation (*with incorporated Allen key*) padlockable in "O" position
- Supply only active during transfer, unaffected by network voltage fluctuations
- Fully compliant with IEC 60947-6-1 (*standard governing transfer switches*)

type	AC-31 B 415V (A)	poles	supply voltage	description
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ATyS d M - Motorised changeover switches (H) 245 x (W) 2P 235/4P 340 x (D) 74 mm

9323 2006	63A	2 pole	230 VAC	motorised changeover switch
9323 2008	80A	2 pole	230 VAC	motorised changeover switch
9323 4006	63A	4 pole	230 VAC	motorised changeover switch
9323 4008	80A	4 pole	230 VAC	motorised changeover switch
9323 4010	100A	4 pole	230 VAC	motorised changeover switch
9323 4012	125A	4 pole	230 VAC	motorised changeover switch
9323 4016	160A	4 pole	230 VAC	motorised changeover switch

ATyS g M - Automatic changeover switches (H) 245 x (W) 2P 235/4P 340 x (D) 74 mm

The ATyS g M switch monitors the supply from both mains and from generator. On mains failure, the switch provides an output to start generator and once the generator voltage reaches the correct level, switches over to the generator supply until mains is restored, causing the switch to change back to the mains supply and stop the generator.

- Potentiometers for: Nominal voltage configuration
Voltage and frequency threshold configuration
Operating cycle configuration
- DIP- switches for: 50 or 60Hz, single or 3-phase
Delay in "O" position during I-O transfer cycles
- LED indication of: Supply source availability, automatic mode, fault
- External command inputs: Manual change of supply from emergency to main source
Remote test on-load (*or priority change*)
1NO output relay for generator start/stop command

9353 2006	63A	2 pole	230 VAC	automatic changeover switch
9353 2008	80A	2 pole	230 VAC	automatic changeover switch
9354 4006	63A	4 pole	230 VAC	automatic changeover switch
9354 4008	80A	4 pole	230 VAC	automatic changeover switch
9354 4010	100A	4 pole	230 VAC	automatic changeover switch
9354 4012	125A	4 pole	230 VAC	automatic changeover switch
9354 4016	160A	4 pole	231 VAC	automatic changeover switch

ATyS p M - Automatic transfer switch (digital display and settings)

As the ATyS g M above, but configurable for network/genset or network/network (*with or without priority*). Monitoring parameters configured via pushbuttons and a digital display.

- LED indicator: power on, supply status, position of switch, auto/manual/test mode, fault
- 3 configurable inputs and 3 x outputs
- 1 configurable bi-stable output relay for generator start/stop command

9364 4006	63A	4 pole	230 VAC	automatic changeover switch
9364 4008	80A	4 pole	230 VAC	automatic changeover switch
9364 4010	100A	4 pole	230 VAC	automatic changeover switch
9364 4012	125A	4 pole	230 VAC	automatic changeover switch
9364 4016	160A	4 pole	230 VAC	automatic changeover switch

Accessories for all ATyS M switches

Bridging bars (plug-in) (for incoming or outgoing side of switch)

- Provides a common connection between switches I & II on the incoming or outgoing side of the ATyS M without reducing terminal capacity.

1309 2006	63-125A	2 pole	plug-in	fully insulated plug-in bridging bar
1309 4006	63-125A	4 pole	plug-in	fully insulated plug-in bridging bar
1309 4016	160A	4 pole	plug-in	fully insulated plug-in bridging bar
1399 4006	tap	1 pole		tap-off terminal for power supply
2294 4016	shroud	2 pole		terminal protection shroud
1309 1001	auxiliary	contact	1NO+1NC	for each position (I-O-II)



9523 3120

ATyS - Motorised and automatic changeover switches

Three phase motorised changeover switches with positive break indication, enabling the on load transfer of two different three-phase supplies.

- Wide-band AC control voltage $\pm 20\%$
- Fail-safe mechanical interlock
- Padlockable in the "OFF" position
- Fully independent position auxiliary contacts one for each position (I / O / II)

type	AC-31 B 415V (A)	poles	description	dimensions (mm)		
				(H)	(W)	(D)

ATyS r - Motorised changeover switches supply: 230 VAC

Three-phase remotely operated motorised transfer switches, 3 or 4 poles, with positive break indication, enable the on load transfer of two three-phase power supplies via remote volt-free contacts, from an external automatic controller using pulse logic, or a switch.

3 pole switches

9523 3016	160A	3 pole	motorised changeover switch	135	287	244
9523 3025	250A	3 pole	motorised changeover switch	160	328	244
9523 3040	400A	3 pole	motorised changeover switch	170	328	244
9523 3063	630A	3 pole	motorised changeover switch	260	377	321
9523 3080	800A	3 pole	motorised changeover switch	370	504	440
9523 3100	1000A	3 pole	motorised changeover switch	370	504	440
9523 3120	1250A	3 pole	motorised changeover switch	370	504	440
9523 3160	1600A	3 pole	motorised changeover switch	380	596	440
9523 3200	2000A	3 pole	motorised changeover switch	380	596	569
9523 3250	2500A	3 pole	motorised changeover switch	380	596	569
9523 3320	3200A	3 pole	motorised changeover switch	380	596	569

4 pole switches

9523 4016	160A	4 pole	motorised changeover switch	135	317	244
9523 4025	250A	4 pole	motorised changeover switch	160	395	244
9523 4040	400A	4 pole	motorised changeover switch	170	395	244
9523 4063	630A	4 pole	motorised changeover switch	260	454	321
9523 4080	800A	4 pole	motorised changeover switch	321	584	440
9523 4100	1000A	4 pole	motorised changeover switch	321	584	440
9523 4120	1250A	4 pole	motorised changeover switch	330	584	440
9523 4160	1600A	4 pole	motorised changeover switch	288	716	440
9523 4200	2000A	4 pole	motorised changeover switch	380	716	569
9523 4250	2500A	4 pole	motorised changeover switch	380	716	569
9523 4320	3200A	4 pole	motorised changeover switch	380	716	569



9523 4016

ATyS g - Automatic changeover switches supply: 230 VAC

Automatic changeover switches for transformer/generator applications. An integrated controller provides all necessary functions, including monitoring the voltage and frequency of both sources, providing on-load changeover switching between two power supply sources.

- Integrated dual power supply (2 independent supplies within the switch)
- Integrated generator on-load and off-load test function

ATyS g automatic changeover switches

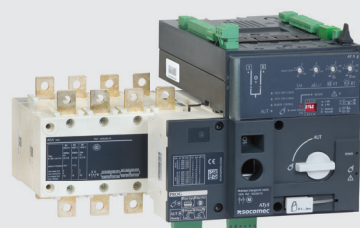
3 pole switches

9553 3016	160A	3 pole	automatic changeover switch	135	287	244
9553 3025	250A	3 pole	automatic changeover switch	160	328	244
9553 3040	400A	3 pole	automatic changeover switch	170	328	244
9553 3063	630A	3 pole	automatic changeover switch	260	377	321
9553 3080	800A	3 pole	automatic changeover switch	321	504	392
9553 3100	1000A	3 pole	automatic changeover switch	321	504	392
9553 3120	1250A	3 pole	automatic changeover switch	330	504	392
9553 3160	1600A	3 pole	automatic changeover switch	288	596	392

4 pole switches

9553 4016	160A	4 pole	automatic changeover switch	135	317	244
9553 4025	250A	4 pole	automatic changeover switch	160	395	244
9553 4040	400A	4 pole	automatic changeover switch	170	395	244
9553 4063	630A	4 pole	automatic changeover switch	260	454	321
9553 4080	800A	4 pole	automatic changeover switch	321	584	392
9553 4100	1000A	4 pole	automatic changeover switch	321	584	392
9553 4120	1250A	4 pole	automatic changeover switch	330	584	392
9553 4160	1600A	4 pole	automatic changeover switch	288	716	392

Larger sizes (up to 3200A) available on request.



9553 4016



4109...

Accessories for ATyS changeover switches

type		poles	description	for switch
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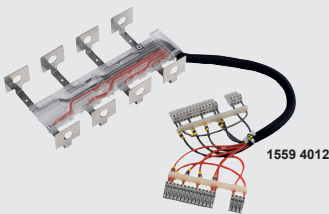
Bridging bars for switches

Supplied with all mounting accessories

4109 3019	bridge	3 pole	bridging bar set for ch/over switches	160 - 200A
4109 3025	bridge	3 pole	bridging bar set for ch/over switches	250A
4109 3039	bridge	3 pole	bridging bar set for ch/over switches	400A
4109 3063	bridge	3 pole	bridging bar set for ch/over switches	630A
4109 3080	bridge	3 pole	bridging bar set for ch/over switches	800 - 1000A
4109 3120	bridge	3 pole	bridging bar set for ch/over switches	1250A
4109 3160	bridge	3 pole	bridging bar set for ch/over switches	1600A
4109 0019	bridge	1 pole	bridging bar for ch/over switches	160A
4109 0025	bridge	1 pole	bridging bar for ch/over switches	250A
4109 0039	bridge	1 pole	bridging bar for ch/over switches	400A
4109 0063	bridge	1 pole	bridging bar for ch/over switches	630A
4109 0080	bridge	1 pole	bridging bar for ch/over switches	800 - 1000A
4109 0120	bridge	1 pole	bridging bar for ch/over switches	1250A
4109 0160	bridge	1 pole	bridging bar for ch/over switches	1600A

Voltage sensing and power supply harness

To supply controller directly from switch terminals



1559 4012

1559 3012	harness	3 pole	voltage sense and p/supply harness	160A
1559 3025	harness	3 pole	voltage sense and p/supply harness	250A
1559 3040	harness	3 pole	voltage sense and p/supply harness	400A
1559 3063	harness	3 pole	voltage sense and p/supply harness	630A
1559 3080	harness	3 pole	voltage sense and p/supply harness	800 - 1000A
1559 3120	harness	3 pole	voltage sense and p/supply harness	1250A
1559 3160	harness	3 pole	voltage sense and p/supply harness	1600A
1559 4012	N-right	4 pole	voltage sense and p/supply harness	160A
1559 4025	N-right	4 pole	voltage sense and p/supply harness	250A
1559 4040	N-right	4 pole	voltage sense and p/supply harness	400A
1559 4063	N-right	4 pole	voltage sense and p/supply harness	630A
1559 4080	N-right	4 pole	voltage sense and p/supply harness	800 - 1000A
1559 4120	N-right	4 pole	voltage sense and p/supply harness	1250A
1559 4160	N-right	4 pole	voltage sense and p/supply harness	1600A

Power supplies

1599 5112	24 VDC-230 VAC power supply to operate switches with DC			all ATyS r/g/p
1599 4001	dual power supply permits remote transfer to any position			all ATyS r

Terminal shrouds and mounting accessories

Terminal shrouds

2694 3014	shroud	3 pole	terminal protection shroud	160A
2694 3021	shroud	3 pole	terminal protection shroud	250 - 400A
2694 3051	shroud	3 pole	terminal protection shroud	630A
2694 4021	shroud	4 pole	terminal protection shroud	250 - 400A
2694 4051	shroud	4 pole	terminal protection shroud	630A

Door mounting frame (to permit access to controller from front panel door)

1529 0012	frame	3/4 pole	door protective frame for switches	ATyS r 160-630A
1529 0080	frame	3/4 pole	door protective frame for switches	ATyS r 800-3200A
1539 0012	frame	3/4 pole	door protective frame for switches	ATyS g 160-630A
1539 0080	frame	3/4 pole	door protective frame for switches	ATyS g 800-3200A
1509 0001	10 mm		mounting spacers (<i>stackable</i>) to raise switch	(2 per set)



2694 4051



ATyS-G - Automatic changeover panels

ATyS automatic changeover panel is a complete AMF (*Automatic Mains Failure*) switch in an enclosure. The internal ATyS g switch features an integrated controller which monitors the voltage and frequency of both the mains and generator supply. Should the monitored conditions move beyond the pre-configured parameters, the switch provides a “generator start” signal and once the generator voltage and frequency are within the preset limits, the switch changes over to the generator supply. When mains are restored, the switch changes back to the mains supply providing a “generator stop” signal.

- Easy parameter setup via four potentiometers and DIP switches
- Integrated dual power supply (*2 independent supplies within the switch*)
- Integrated generator on-load and off-load test function
- Fail-safe mechanical interlock
- Internal control circuit fuse protections
- Internal Earth bar provided
- Supplied complete with bridge bars on (*output side*), manual override key/handle
- 4 Pole - (*3 Phase + Neutral*)

type	AC-31 B 415V (A)	supply voltage	No. poles	description	dimensions (mm)		
					(H)	(W)	(D)

ATyS M - Automatic changeover systems 40 - 160A

Internal **ATyS p M** motorised changeover switch fully compliant with IEC 60947-6-1 (*standard governing transfer governing transfer switches*)

- Provides rapid switching (< 90ms), excellent dynamic withstand and long life
- Configurable for network/genset or network/network
- Supplied mounted into a wall mounting sheet metal enclosure (*IP65*)
- Colour: BS/EN06 E53 (*electric orange*)

4 pole switches

EAC4010M	100A	230 VAC	4 pole	automatic ch/over panel	850	600	330
EAC4016M	160A	230 VAC	4 pole	automatic ch/over panel	850	600	330

ATyS G - Automatic changeover systems 250 - 1600A

Internal **ATyS g** automatic motorised changeover switch fully compliant with IEC 60947-6-1 (*standard switches*)

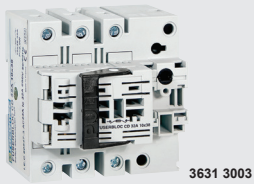
- Integrated dual power supply (*2 independent supplies within the switch*)
- Integrated generator on-load and off-load test function
- Supplied mounted into a wall mounting sheet metal enclosure (*IP65*)
- Colour: BS/EN06 E53 (*electric orange*)

4 pole switches

EAC4025M	250A	230 VAC	4 pole	automatic ch/over panel	850	600	330
EAC4040M	400A	230 VAC	4 pole	automatic ch/over panel	1200	900	600
EAC4063M	630A	230 VAC	4 pole	automatic ch/over panel	1200	900	600
EAC4080M	800A	230 VAC	4 pole	automatic ch/over panel	1200	900	600
EAC4100M	1000A	230 VAC	4 pole	automatic ch/over panel	1200	900	600
EAC4125M	1250A	230 VAC	4 pole	automatic ch/over panel	1200	900	600
EAC4160M	1600A	230 VAC	4 pole	automatic ch/over panel	1200	900	600

Larger sizes (up to 3200A) available on request.





3631 3003



3831 3005



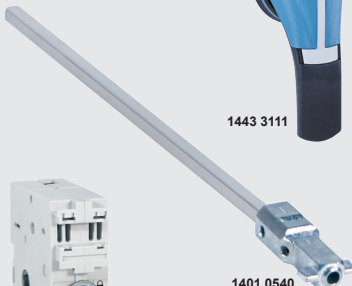
3831 3015



3821 3063



1443 3111



1401 0540



3999 0600

FUSERBLOC - Fuse combination switches

FUSERBLOC are manually operated fuse combination switches. They make and break on load and provide safety isolation and protection against overcurrent in any low voltage electrical circuit.

- Complete isolation of fuses with double breaking per pole (*top and bottom of fuse*) positive break indication
- "Test" position for testing control circuits without power (*enclosure door can be opened in "test" position*)
- External front operating handle and shaft (to be ordered separately-see below)
- IEC/EN 60947-3, IEC/EN 60269-1, IEC/EN 60269-2, VDE 0636-1, VDE 0660-107

type	AC-22 A	AC-23 A	fuse type	description	dimensions (mm)		
	415V (A)	400V			(H)	(W)	(D)

Fuse combination switches - 3 pole

NFC cylindrical fuses

3631 3003	CD32A	15kW	10 x 38	fuse combination switch	98	96	65
3831 3005	50A	25kW	14 x 51	fuse combination switch	118	121	1000
3831 3011	125A	63kW	22 x 58	fuse combination switch	162	148	135

DIN pattern fuses

3831 3006	63A	30kW	000	fuse combination switch	118	136	125
3831 3012	125A	63kW	00	fuse combination switch	162	148	135
3831 3015	160A	80kW	00	fuse combination switch	162	148	135
3831 3024	250A	132kW	1	fuse combination switch	195	234	154
3831 3038	400A	220kW	2	fuse combination switch	240	256	188
3811 3063	630A	355kW	3	fuse combination switch	300	364	265
3811 3080	800A	450kW	3	fuse combination switch	304	364	265
3811 3120	1250A	560kW	4	fuse combination switch	304	442	289

BS88 pattern fuses

3641 3001	CD32A	15kW	A1	fuse combination switch	98	96	102
3841 3003	32A	15kW	A1	fuse combination switch	118	121	100
3841 3006	63A	30kW	A2 - A3	fuse combination switch	118	136	125
3841 3010	100A	51kW	A4	fuse combination switch	162	148	135
3841 3015	160A	80kW	A4	fuse combination switch	162	190	145
3841 3021	200A	100kW	B1-B2	fuse combination switch	195	234	154
3841 3024	250A	132kW	B1-B2-B3	fuse combination switch	195	234	154
3841 3031	315A	160kW	B1-B2-B3	fuse combination switch	240	256	188
3841 3038	400A	220kW	B2-B3-B4	fuse combination switch	240	256	188
3821 3063	630A	355kW	C1-C2	fuse combination switch	300	364	265
3821 3080	800A	450kW	C1-C2-C3	fuse combination switch	300	364	265
3821 3120	1250A	560kW	D1	fuse combination switch	300	442	304

Operating handles and shafts for above switches (IP65)

- External front operated, door interlocking, padlockable (3 padlocks) in "OFF" with "TEST" position

type	handle	colour		description	for switch
1413 2115	S1	black		pistol grip external operating handle	32 - 63A
1423 2115	S2	black		pistol grip external operating handle	100 - 400A
1433 3111	S3	black		pistol grip external operating handle	630 - 800A
1443 3111	S4	black		"T" grip external operating handle	1250A
1401 0532	S1	320 mm	□ 5	extension shaft for switch	CD32A
1401 0540	S1	400 mm	□ 5	extension shaft for switch	CD32A
1400 1020	S2	200 mm	□ 10	extension shaft for switch	32 - 400A
1400 1032	S2	320 mm	□ 10	extension shaft for switch	32 - 400A
1400 1050	S2	500 mm	□ 10	extension shaft for switch	32 - 400A
1400 1232	S3/4	320 mm	□ 12	extension shaft for switch	630-1250A
1400 1250	S3/4	500 mm	□ 12	extension shaft for switch	630-1250A
1429 0000	guide			(permits engaging of misaligned shaft with handle)	(all sizes)

Auxiliary contacts for switch fuses

3999 0701	1 NO		auxiliary contact and support for switches	CD32-1250A
3999 0702	1 NC		additional auxiliary contact fuse switches	CD32-1250A
3999 0710	holder		contact holder for additional auxiliary contacts	CD32A
3999 0600	holder		contact holder for additional auxiliary contacts	32-400A

Terminal shrouds (also provides phase separation for switches)

3998 3016	shroud	3 pole	terminal protection shroud for switches	100 - 160A
3998 3025	shroud	3 pole	terminal protection shroud for switches	200 - 400A
3898 3080	shroud	3 pole	terminal protection shroud for switches	630 - 800A
3898 3120	shroud	3 pole	terminal protection shroud for switches	800 - 1250A



Miniature glass fuses (20 x 5 mm)

Miniature glass fuse links with low breaking capacity, intended for small currents. Provide protection against overloads and short circuits in electronic equipment, household, telecommunications and small transformers or motors. Available with quick acting (F) characteristics. Manufactured according to IEC and EN standards with glass tube and nickel plated copper alloy contact caps.

type	rated current	rated voltage	breaking capacity	description	dimensions (mm)
Standard glass fuses 20 x 5 mm (10 pcs)					
5120025	0.25A	250V	35A	(F) fast acting cylindrical glass fuse	20 x 5
5120050	0.50A	250V	35A	(F) fast acting cylindrical glass fuse	20 x 5
5120063	0.63A	250V	35A	(F) fast acting cylindrical glass fuse	20 x 5
5120100	1.0A	250V	35A	(F) fast acting cylindrical glass fuse	20 x 5
5120125	1.25A	250V	35A	(F) fast acting cylindrical glass fuse	20 x 5
5120160	1.6A	250V	35A	(F) fast acting cylindrical glass fuse	20 x 5
5120200	2.0A	250V	35A	(F) fast acting cylindrical glass fuse	20 x 5
5120250	2.5A	250V	35A	(F) fast acting cylindrical glass fuse	20 x 5
5120315	3.15A	250V	35A	(F) fast acting cylindrical glass fuse	20 x 5
5120400	4.0A	250V	10 x In	(F) fast acting cylindrical glass fuse	20 x 5
5120500	5.0A	250V	10 x In	(F) fast acting cylindrical glass fuse	20 x 5
5120630	6.3A	250V	10 x In	(F) fast acting cylindrical glass fuse	20 x 5
5021000	10A	250V	10 x In	(F) fast acting cylindrical glass fuse	20 x 5
5021600	16A	250V	10 x In	(F) fast acting cylindrical glass fuse	20 x 5

Fuse holders for 20 x 5 mm glass fuses

- Protection against electric shock: I-II
- Impulse withstand bet. terminals: > 4.0 kV
- Admissible ambient temperature: -30°C to 85°C
- Pollution degree: 3
- Flame class rating: UL 94 VO

type	rated current	rated voltage	mounting	description	for fuse (mm)
PCB mount fuse holders					
PTF/78	6.3A	250V	PCB	PCB mount fuse holder	20 x 5
BS232VE	cover			protection cover for above PTF/78 fuse holder	
PTF/45	10A	250V	PCB	PCB vertical mounting fuse holder	20 x 5
PTF/50	10A	250V	PCB	PCB horizontal mounting fuse holder	20 x 5

Panel mount fuse holder (knurled knob) access - L 34.2 mm extends 11 mm outside panel

PTF/30	10A	250V	panel	panel mount Ø13 mm fuse holder	20 x 5
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Panel mount fuse holder (flat blade) access - L 37.5 mm extends 5.5 mm outside panel

PTF/35	10A	250V	panel	panel mount Ø12.7 mm fuse holder	20 x 5
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In-line shocksafe fuse holder

PTF/80A	6.3A	250V	in-line	in-line shocksafe fuse holder	20 x 5
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421...



4212...



422...



4222...

gG class - Cylindrical fuse links

Cylindrical fuse links with high withstand to internal pressure and thermal shock, permitting very high breaking capacities in a compact fuse design. Melting elements are designed to avoid ageing thus maintaining their electrical characteristics over time.

- Standards: IEC/EN 60269-1, IEC/EN 60269-2

type	rated current	rated voltage	breaking capacity	class	description	dimension (mm)
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gG class - Cylindrical fuse links

General protection of overloads and short circuits, protection of cables, power lines and equipment.

10 x 38 mm cylindrical fuses

420000	0.5A	500V	120kA	gG	cylindrical fuse link	10 x 38
420001	1A	500V	120kA	gG	cylindrical fuse link	10 x 38
420002	2A	500V	120kA	gG	cylindrical fuse link	10 x 38
420004	4A	500V	120kA	gG	cylindrical fuse link	10 x 38
420006	6A	500V	120kA	gG	cylindrical fuse link	10 x 38
420010	10A	500V	120kA	gG	cylindrical fuse link	10 x 38
420016	16A	500V	120kA	gG	cylindrical fuse link	10 x 38
420020	20A	500V	120kA	gG	cylindrical fuse link	10 x 38
420025	25A	500V	120kA	gG	cylindrical fuse link	10 x 38
420032	32A	400V	120kA	gG	cylindrical fuse link	10 x 38

14 x 51 mm cylindrical fuses

421010	10A	690V	80kA	gG	cylindrical fuse link	14 x 51
421016	16A	690V	80kA	gG	cylindrical fuse link	14 x 51
421020	20A	690V	80kA	gG	cylindrical fuse link	14 x 51
421025	25A	690V	80kA	gG	cylindrical fuse link	14 x 51
421032	32A	500V	120kA	gG	cylindrical fuse link	14 x 51
421040	40A	500V	120kA	gG	cylindrical fuse link	14 x 51
421050	50A	400V	120kA	gG	cylindrical fuse link	14 x 51

With striker - for use with fuse holder incorporating a micro switch for remote "fuse blown" indication

421202	2A	500V	120kA	gG	fuse link with striker	14 x 51
421204	4A	500V	120kA	gG	fuse link with striker	14 x 51
421206	6A	500V	120kA	gG	fuse link with striker	14 x 51
421210	10A	500V	120kA	gG	fuse link with striker	14 x 51
421216	16A	500V	120kA	gG	fuse link with striker	14 x 51
421220	20A	500V	120kA	gG	fuse link with striker	14 x 51
421225	25A	500V	120kA	gG	fuse link with striker	14 x 51
421232	32A	500V	120kA	gG	fuse link with striker	14 x 51
421240	40A	500V	120kA	gG	fuse link with striker	14 x 51
421250	50A	400V	120kA	gG	fuse link with striker	14 x 51

22 x 58 mm cylindrical fuses

422032	32A	690V	80kA	gG	cylindrical fuse link	22 x 58
422040	40A	690V	80kA	gG	cylindrical fuse link	22 x 58
422050	50A	690V	80kA	gG	cylindrical fuse link	22 x 58
422063	63A	690V	80kA	gG	cylindrical fuse link	22 x 58
422080	80A	500V	120kA	gG	cylindrical fuse link	22 x 58
422000	100A	500V	120kA	gG	cylindrical fuse link	22 x 58
422015	125A	400V	120kA	gG	cylindrical fuse link	22 x 58

With striker - for use with fuse holder incorporating a micro switch for remote "fuse blown" indication

422232	32A	690V	80kA	gG	fuse link with striker	22 x 58
422240	40A	690V	80kA	gG	fuse link with striker	22 x 58
422250	50A	690V	80kA	gG	fuse link with striker	22 x 58
422263	63A	690V	80kA	gG	fuse link with striker	22 x 58
422280	80A	500V	120kA	gG	fuse link with striker	22 x 58
422200	100A	500V	120kA	gG	fuse link with striker	22 x 58
422215	125A	400V	120kA	gG	fuse link with striker	22 x 58

DC application - for DF gG fuse-links

Fuses are generally suitable for both AC and DC applications, however voltage ratings will differ and therefore have to be taken into consideration.

Fuse size	rated current	maximum DC voltage	DC breaking capacity
10 x 38	0.5A...16A	250 VDC	15 kA
	20A...32A	80 VDC	
14 x 51	1A...25A	440 VDC	15 kA
	32A...40A	150 VDC	
	50A	48 VDC	
22 x 58	2A...63A	440 VDC	15 kA
	80A...100A	150 VDC	
	125A	48 VDC	



aM (motor protection) fuse links

aM fuse links for short circuit protection of motors, transformers and other loads with high inrush currents. Excellent protection of switchgear due to the effective current limiting capabilities and low I^2t values.

- Standards: IEC/EN 60269-1, IEC/EN 60269-2

type	rated current	rated voltage	breaking capacity	class	description	dimension (mm)
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aM (motor protection) fuse links

10 x 38 mm cylindrical fuses

440000	0.5A	500V	120kA	aM	cylindrical fuse link	10 x 38
440001	1A	500V	120kA	aM	cylindrical fuse link	10 x 38
440002	2A	500V	120kA	aM	cylindrical fuse link	10 x 38
440004	4A	500V	120kA	aM	cylindrical fuse link	10 x 38
440006	6A	500V	120kA	aM	cylindrical fuse link	10 x 38
440010	10A	500V	120kA	aM	cylindrical fuse link	10 x 38
440016	16A	500V	120kA	aM	cylindrical fuse link	10 x 38
440020	20A	400V	120kA	aM	cylindrical fuse link	10 x 38
440025	25A	400V	120kA	aM	cylindrical fuse link	10 x 38
440032	32A	400V	120kA	aM	cylindrical fuse link	10 x 38

14 x 51 mm cylindrical fuses

441020	20A	690V	80kA	aM	cylindrical fuse link	14 x 51
441025	25A	690V	80kA	aM	cylindrical fuse link	14 x 51
441032	32A	500V	120kA	aM	cylindrical fuse link	14 x 51
441040	40A	500V	120kA	aM	cylindrical fuse link	14 x 51
441050	50A	400V	120kA	aM	cylindrical fuse link	14 x 51

22 x 58 mm cylindrical fuses

442032	32A	690V	80kA	aM	cylindrical fuse link	22 x 58
442040	40A	690V	80kA	aM	cylindrical fuse link	22 x 58
442050	50A	690V	80kA	aM	cylindrical fuse link	22 x 58
442063	63A	690V	80kA	aM	cylindrical fuse link	22 x 58
442080	80A	500V	120kA	aM	cylindrical fuse link	22 x 58
442000	100A	500V	120kA	aM	cylindrical fuse link	22 x 58
442015	125A	400V	120kA	aM	cylindrical fuse link	22 x 58

Solid neutral links (cylindrical)

431000	32A	-	-	gG/aM	solid neutral link	10 x 38
432000	50A	-	-	gG/aM	solid neutral link	14 x 51
433000	125A	-	-	gG/aM	solid neutral link	22 x 58

Medium voltage (MV) fuse links for public lighting

Public lighting systems cause voltage drops and high energy losses when lines are very long, requiring higher network voltages (*between 900V and 5500 VAC*) to protect the medium voltage network, fuse-links with adequate voltages are requested.

415010	3.15A	1500V	20kA	g	MV cylindrical fuse-link	10 x 85
415015	4A	1500V	20kA	g	MV cylindrical fuse-link	10 x 85
415020	5A	1500V	20kA	g	MV cylindrical fuse-link	10 x 85
415025	6.3A	1500V	20kA	g	MV cylindrical fuse-link	10 x 85
415030	8A	1500V	20kA	g	MV cylindrical fuse-link	10 x 85
415035	10A	1500V	20kA	g	MV cylindrical fuse-link	10 x 85
415040	12A	1500V	20kA	g	MV cylindrical fuse-link	10 x 85

Longer body fuses (150 / 180 mm) for higher voltages 2500, 3200, 5500V available on request.

PML series - MV fuse holder 1000 VAC/1500 VDC (H) 130 x (W) 24 x (D) 58 mm

10/14 x 85 mm fuse holder DIN rail mounting

485701	32A	1 pole	industrial medium voltage cylindrical fuse holder	10/14 x 85
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Accessories

480005	pin	body pins for multi-pole assembly of fuse holders	10/14 x 85
485050	ties	handle ties for multi-pole assembly of fuse holders	10/14 x 85



491155



491770



491835



492004



492123

Semiconductor cylindrical fuse links

Semiconductor fuse-links designed for protection of semiconductors (*diodes, thyristors, triacs, etc*) used in power rectifiers, UPS, converters, motor drives, soft starters, solid state relays, photovoltaic inverters, welding inverters and any application where semiconductor protection is required.

- Standards: IEC/EN 60269-1, IEC/EN 60269-4, UL248 standard (file Nr. E477155)

RAPIDPLUS aR high speed fuse links for semiconductors

RAPIDPLUS aR fuses are Intended for clearing short-circuits, designed and manufactured to have very low I²t values with reduced arc voltages guaranteeing optimum semiconductor protection.

type	rated current	rated voltage	breaking capacity	class	description	dimension (mm)
10 x 38 mm aR cylindrical fuses						
491107	2A	690V	200kA	aR	semiconductor fuse link	10 x 38
491110	3A	690V	200kA	aR	semiconductor fuse link	10 x 38
491113	4A	690V	200kA	aR	semiconductor fuse link	10 x 38
491115	6A	690V	200kA	aR	semiconductor fuse link	10 x 38
491120	8A	690V	200kA	aR	semiconductor fuse link	10 x 38
491125	10A	690V	200kA	aR	semiconductor fuse link	10 x 38
491130	12A	690V	200kA	aR	semiconductor fuse link	10 x 38
491135	16A	690V	200kA	aR	semiconductor fuse link	10 x 38
491140	20A	690V	200kA	aR	semiconductor fuse link	10 x 38
491145	25A	690V	200kA	aR	semiconductor fuse link	10 x 38
491155	32A	690V	200kA	aR	semiconductor fuse link	10 x 38

14 x 51 mm aR cylindrical fuses with "striker"

- For use with fuse holder incorporating a micro switch for remote "fuse blown" indication

491730	8A	690V	200kA	aR	semiconductor fuse link	14 x 51
491735	10A	690V	200kA	aR	semiconductor fuse link	14 x 51
491737	12A	690V	200kA	aR	semiconductor fuse link	14 x 51
491741	16A	690V	200kA	aR	semiconductor fuse link	14 x 51
491745	20A	690V	200kA	aR	semiconductor fuse link	14 x 51
491750	25A	690V	200kA	aR	semiconductor fuse link	14 x 51
491760	32A	690V	200kA	aR	semiconductor fuse link	14 x 51
491765	40A	690V	200kA	aR	semiconductor fuse link	14 x 51
491770	50A	690V	200kA	aR	semiconductor fuse link	14 x 51

22 x 58 mm aR cylindrical fuses with "striker"

- For use with fuse holder incorporating a micro switch for remote "fuse blown" indication

491820	50A	690V	200kA	aR	semiconductor fuse link	22 x 58
491825	63A	690V	200kA	aR	semiconductor fuse link	22 x 58
491830	80A	690V	200kA	aR	semiconductor fuse link	22 x 58
491835	100A	690V	200kA	aR	semiconductor fuse link	22 x 58

RAPIDPLUS gR - High speed fuse links for semiconductors

RAPIDPLUS gR fuse links are capable of clearing all types of overcurrents, overloads and short-circuits, protecting semiconductors, cables and associated switchgear within the installation.

10 x 38 mm gR cylindrical fuses

492003	4A	690V	200kA	gR	semiconductor fuse link	10 x 38
492004	6A	690V	200kA	gR	semiconductor fuse link	10 x 38
492006	10A	690V	200kA	gR	semiconductor fuse link	10 x 38
492008	16A	690V	200kA	gR	semiconductor fuse link	10 x 38
492009	20A	690V	200kA	gR	semiconductor fuse link	10 x 38
492010	25A	690V	200kA	gR	semiconductor fuse link	10 x 38
492011	32A	690V	200kA	gR	semiconductor fuse link	10 x 38

14 x 51 mm gR cylindrical fuses

492022	32A	690V	200kA	gR	semiconductor fuse link	14 x 51
492023	40A	690V	200kA	gR	semiconductor fuse link	14 x 51
492024	50A	690V	200kA	gR	semiconductor fuse link	14 x 51

With "striker"

- For use with fuse holder incorporating a micro switch for remote "fuse blown" indication

492117	10A	690V	200kA	gR	SC fuse link with striker	14 x 51
492118	12A	690V	200kA	gR	SC fuse link with striker	14 x 51
492119	16A	690V	200kA	gR	SC fuse link with striker	14 x 51
492120	20A	690V	200kA	gR	SC fuse link with striker	14 x 51
492121	25A	690V	200kA	gR	SC fuse link with striker	14 x 51
492122	32A	690V	200kA	gR	SC fuse link with striker	14 x 51
492123	40A	690V	200kA	gR	SC fuse link with striker	14 x 51
492124	50A	690V	200kA	gR	SC fuse link with striker	14 x 51



492139



491610



492225



10 x 85



485...



10/14 x 85

Continued...RAPIDPLUS gR - High speed fuse links for semiconductors

RAPIDPLUS gR fuse links are capable of clearing all types of overcurrents, overloads and short-circuits, protecting semiconductors, cables and associated switchgear within the installation.

type	rated current	rated voltage	breaking capacity	class	description	dimension (mm)
22 x 58 mm gR cylindrical fuses						
492037	50A	690V	200kA	gR	semiconductor fuse link	22 x 58
492038	63A	690V	200kA	gR	semiconductor fuse link	22 x 58
492039	80A	690V	200kA	gR	semiconductor fuse link	22 x 58
492040	100A	690V	200kA	gR	semiconductor fuse link	22 x 58

With "striker"

- For use with fuse holder incorporating a micro switch for remote "fuse blown" indication

492137	50A	690V	200kA	gR	SC fuse link with striker	22 x 58
492138	63A	690V	200kA	gR	SC fuse link with striker	22 x 58
492139	80A	690V	200kA	gR	SC fuse link with striker	22 x 58
492140	100A	690V	200kA	gR	SC fuse link with striker	22 x 58

gPV - Photovoltaic fuse links

gPV photovoltaic fuse-links developed for safety and economic protection in PV installations where, due to the increase of power and technologic evolution, no-load voltages above 800V DC are achieved. Meets requirements for instruments and traction equipment auxiliary circuits. Provides effective protection against overloads as well as short-circuits.

type	rated current	rated voltage	breaking capacity	class	description	dimension (mm)
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gPV - Photovoltaic (PV) fuse links

gPV photovoltaic cylindrical fuse links

					600/1000 VDC	
491601	1A	1000 VDC	30kA	gPV	photovoltaic fuse link	10 x 38
491602	2A	1000 VDC	30kA	gPV	photovoltaic fuse link	10 x 38
491604	3A	1000 VDC	30kA	gPV	photovoltaic fuse link	10 x 38
491605	4A	1000 VDC	30kA	gPV	photovoltaic fuse link	10 x 38
491606	5A	1000 VDC	30kA	gPV	photovoltaic fuse link	10 x 38
491610	6A	1000 VDC	30kA	gPV	photovoltaic fuse link	10 x 38
491615	8A	1000 VDC	30kA	gPV	photovoltaic fuse link	10 x 38
491620	10A	1000 VDC	30kA	gPV	photovoltaic fuse link	10 x 38
491625	12A	1000 VDC	30kA	gPV	photovoltaic fuse link	10 x 38
491629	15A	1000 VDC	30kA	gPV	photovoltaic fuse link	10 x 38
491630	16A	1000 VDC	30kA	gPV	photovoltaic fuse link	10 x 38
491635	20A	1000 VDC	30kA	gPV	photovoltaic fuse link	10 x 38
491940	25A	600 VDC	30kA	gPV	photovoltaic fuse link	10 x 38
491945	32A	600 VDC	30kA	gPV	photovoltaic fuse link	10 x 38
491650	25A	1000 VDC	30kA	gPV	photovoltaic fuse link	14 x 51
491655	32A	1000 VDC	30kA	gPV	photovoltaic fuse link	14 x 51

gPV photovoltaic (PV) cylindrical fuse links

					1500 VDC	
492202	2A	1500 VDC	30kA	gPV	photovoltaic fuse link	10 x 85
492205	4A	1500 VDC	30kA	gPV	photovoltaic fuse link	10 x 85
492210	6A	1500 VDC	30kA	gPV	photovoltaic fuse link	10 x 85
492215	8A	1500 VDC	30kA	gPV	photovoltaic fuse link	10 x 85
492220	10A	1500 VDC	30kA	gPV	photovoltaic fuse link	10 x 85
492225	12A	1500 VDC	30kA	gPV	photovoltaic fuse link	10 x 85
492230	16A	1500 VDC	30kA	gPV	photovoltaic fuse link	10 x 85
492250	20A	1500 VDC	10kA	gPV	photovoltaic fuse link	10/14 x 85
492255	25A	1500 VDC	10kA	gPV	photovoltaic fuse link	10/14 x 85
492262	32A	1500 VDC	10kA	gPV	photovoltaic fuse link	10/14 x 85

Fuse holders for photovoltaic (PV) applications

					1500 VDC	
type	rated current	for fuse size (mm)	poles		description	width in 17.5 (mm)
485150	32A	10 x 38	1 pole	1000 VDC	cylindrical PV fuseholder	1
485152	32A	1000 VDC	1 pole	gPV	fuse holder with indication	10 x 38
485151	32A	1000 VDC	2 pole	gPV	photovoltaic fuse holder	10 x 38
485250	50A	14 x 51	1 pole	1100 VDC	cylindrical PV fuseholder	1.5
485701	32A	10/14 x 85	1 pole	1500 VDC	cylindrical PV fuseholder	(24 mm)



new

485120



485205



485305



485356



480005



485359



485360



483530



483534

PMX series - Modular fuse holders

- Modular, compact fuse holder DIN rail mountable for cylindrical fuses
- Incorporated, hinged transparent label holder for positive circuit identification
- Optimized ventilation zones for improved heat dissipation
- High temperature resistance, self-extinguishing-halogen free body / silver plated copper contacts
- Standards: IEC/EN 60269-1, IEC/EN 60269-2, IEC/EN 60947-3, CSA C22.2 4248-1, UL4248-1

type	rated current	for fuse size (mm)	poles	description	width in 17.5 (mm)
10 x 38 mm fuse holders			690 VAC / 750 VDC		(H) 88.8 x (D) 58 mm
485101	32A	10 x 38	1 pole	industrial cylindrical fuse holder	1
485108	32A	10 x 38	1 pole	with 120 - 690V neon indication	1
485120	32A	10 x 38	1 pole+N	industrial cylindrical fuse holder	1
485104	32A	10 x 38	2 pole	industrial cylindrical fuse holder	2
485105	32A	10 x 38	3 pole	industrial cylindrical fuse holder	3
485107	32A	10 x 38	4 pole	industrial cylindrical fuse holder	4

Accessories for 10 x 38 mm fuse holders

480005	pin	10 x 38/85	body pins for multi-pole assembly of fuse holders		
485050	ties	10 x 38/85	handle ties for multi-pole assembly of fuse holders		
485051	lock	10 x 38/85	lock support to padlock fuse holders in "open" position		
485053	barrier	10 x 38	phase separator accessory for fuse holders		
485054	neon	10 x 38	fusing neon indicator 120 - 690V for fuse holders		

14 x 51 mm fuse holders

690 VAC

(H) 110 x (D) 76 mm

485201	50A	14 x 51	1 pole	industrial cylindrical fuse holder	1.5
485208	50A	14 x 51	1 pole	with 120 - 690V neon indication	1.5
485203	50A	14 x 51	1 pole+N	industrial cylindrical fuse holder	3
485205	50A	14 x 51	3 pole	industrial cylindrical fuse holder	4.5

Accessories for 14 x 51 mm fuse holders

480005	pin	14 x 51	body pins for multi-pole assembly of fuse holders		
485356	ties	14 x 51	handle ties for multi-pole assembly of fuse holders		
485357	ties	14 x 51	handle ties for micro switch assembly of fuse holders		
485258	lock	14 x 51	lock support to padlock fuse holders in "open" position		
485259	micro	14 x 51	1 pole	micro switch for use with "striker" fuses	
485260	micro	14 x 51	3 pole	micro switch for use with "striker" fuses	
485262	micro	14 x 51	1 pole	micro sw extension for 2/4 pole requirements	
485264	neon	14 x 51	fusing neon indicator 120~690V for fuse holders		

22 x 58 mm fuse holders

690 VAC

(H) 126.5 x (D) 76.5 mm

485301	125A	22 x 58	1 pole	industrial cylindrical fuse holder	2
485308	125A	22 x 58	1 pole	with 120 - 690V neon indication	2
485303	125A	22 x 58	1 pole+N	industrial cylindrical fuse holder	4
485305	125A	22 x 58	3 pole	industrial cylindrical fuse holder	6

22 x 58 fuse holders are rated at 125A, they are marked at 100A to conform to IEC/EN 60269-2 requirements

Accessories for 22 x 58 mm fuse holders

480005	pin	22 x 58	body pins for multi-pole assembly of fuse holders		
485356	ties	22 x 58	handle ties for multi-pole assembly of fuse holders		
485357	ties	22 x 58	handle ties for micro switch assembly of fuse holders		
485358	lock	22 x 58	lock support to padlock fuse holders in "open" position		
485359	micro	22 x 58	1 pole	micro switch for use with "striker" fuses	
485360	micro	22 x 58	3 pole	micro switch for use with "striker" fuses	
485362	micro	22 x 58	1 pole	micro sw extension for 2/4 pole requirements	
485364	neon	22 x 58	fusing neon indicator 120 - 690V for fuse holders		

PMC series - "Compact" modular fuse holders

(H) 82.7 x (D) 38.5 mm

Compact fuse holder with shallow dimension - for installation in low profile enclosures

10 x 38 mm compact fuse holder - low profile (38.5 mm)

483530	32A	10 x 38	1 pole	compact cylindrical fuse holder	1
483534	32A	10 x 38	1 pole+N	compact cylindrical fuse holder	1

Accessories for compact 10x38 mm fuse holder

483552	kit	10 x 38	PMC multi-pole assembly kit for fuse holders		
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NH000



NH1



NH2



357010



340001

Class gG for general use with high breaking capacity for protection of cables, power lines and equipment.

- gG class for use as general protection against overloads and short circuits
- For protection of cables, power lines and equipment
- Fusing indicator on top of fuse link
- Standards: IEC/EN60269-1, IEC/EN 60269-2, VDE0636, DIN43620

type	rated current	rated voltage	breaking capacity	class size	fuse	description
gG NH HRC - Fuse links 500V top indicator						
381010	6A	500V	120kA	gG	NH000	DIN HRC fuse link
381015	10A	500V	120kA	gG	NH000	DIN HRC fuse link
381020	16A	500V	120kA	gG	NH000	DIN HRC fuse link
381025	20A	500V	120kA	gG	NH000	DIN HRC fuse link
381030	25A	500V	120kA	gG	NH000	DIN HRC fuse link
381035	32A	500V	120kA	gG	NH000	DIN HRC fuse link
381045	40A	500V	120kA	gG	NH000	DIN HRC fuse link
381050	50A	500V	120kA	gG	NH000	DIN HRC fuse link
381055	63A	500V	120kA	gG	NH000	DIN HRC fuse link
381060	80A	500V	120kA	gG	NH000	DIN HRC fuse link
381065	100A	500V	120kA	gG	NH000	DIN HRC fuse link
381070	125A	500V	120kA	gG	NH00	DIN HRC fuse link
381075	160A	500V	120kA	gG	NH00	DIN HRC fuse link
381255	160A	500V	120kA	gG	NHC1	DIN HRC fuse link
381260	200A	500V	120kA	gG	NH1	DIN HRC fuse link
381270	250A	500V	120kA	gG	NH1	DIN HRC fuse link
381280	315A	500V	120kA	gG	NH1	DIN HRC fuse link
381285	355A	500V	120kA	gG	NH1	DIN HRC fuse link
381370	315A	500V	120kA	gG	NH2	DIN HRC fuse link
381375	355A	500V	120kA	gG	NH2	DIN HRC fuse link
381380	400A	500V	120kA	gG	NH2	DIN HRC fuse link
381390	500A	500V	120kA	gG	NH2	DIN HRC fuse link
381465	500A	500V	120kA	gG	NH3	DIN HRC fuse link
381470	630A	500V	120kA	gG	NH3	DIN HRC fuse link
381475	800A	500V	120kA	gG	NH3	DIN HRC fuse link
381525	800A	500V	120kA	gG	NH4	DIN HRC fuse link
381530	1000A	500V	120kA	gG	NH4	DIN HRC fuse link
381535	1250A	500V	120kA	gG	NH4	DIN HRC fuse link
gG NH HRC - Fuse links 690V top indicator						
382010	6A	690V	80kA	gG	NH000	DIN HRC fuse link
382015	10A	690V	80kA	gG	NH000	DIN HRC fuse link
382020	16A	690V	80kA	gG	NH000	DIN HRC fuse link
382025	20A	690V	80kA	gG	NH000	DIN HRC fuse link
382030	25A	690V	80kA	gG	NH000	DIN HRC fuse link
382035	32A	690V	80kA	gG	NH000	DIN HRC fuse link
382045	40A	690V	80kA	gG	NH000	DIN HRC fuse link
382050	50A	690V	80kA	gG	NH00	DIN HRC fuse link
382055	63A	690V	80kA	gG	NH00	DIN HRC fuse link
382060	80A	690V	80kA	gG	NH00	DIN HRC fuse link
382065	100A	690V	80kA	gG	NH00	DIN HRC fuse link
382250	125A	690V	80kA	gG	NH1	DIN HRC fuse link
382255	160A	690V	80kA	gG	NH1	DIN HRC fuse link
382260	200A	690V	80kA	gG	NH1	DIN HRC fuse link
382360	250A	690V	80kA	gG	NH2	DIN HRC fuse link
382370	315A	690V	80kA	gG	NH2	DIN HRC fuse link
382450	355A	690V	80kA	gG	NH3	DIN HRC fuse link
382455	400A	690V	80kA	gG	NH3	DIN HRC fuse link
382465	500A	690V	80kA	gG	NH3	DIN HRC fuse link
382520	630A	690V	80kA	gG	NH4	DIN HRC fuse link
382525	800A	690V	80kA	gG	NH4	DIN HRC fuse link

Fuse bases and accessories for above fuse-links (see page B-46)

Accessories for NH fuse links

Microswitch for NH fuses

(mounts directly onto fuse-links)

357010	5A	250 VAC	1 pole	microswitch for all sizes NH fuses
340001	handle	universal fuse replace/removal handle		for all sizes NH fuses



384035



384065



373245



341250

aM (motor protection) - Fuse links

aM class (NH) high breaking capacity fuse links are intended for short circuit protection of motors, transformers and other loads with high inrush currents, with rated voltages up to 690 VAC. They offer excellent protection of switchgear due to the excellent current limiting capability and low I^2t values.

Standards: IEC/EN 60269-1, IEC/EN 60269-2 and VDE43620

type	rated current	rated voltage	breaking capacity	class size	fuse	description
aM class NH motor protection - Fuse links 500/690V						
						<i>top indicator</i>
384010	6A	690V	80kA	aM	NH000	DIN HRC fuse link
384015	10A	690V	80kA	aM	NH000	DIN HRC fuse link
384020	16A	690V	80kA	aM	NH000	DIN HRC fuse link
384025	20A	690V	80kA	aM	NH000	DIN HRC fuse link
384030	25A	690V	80kA	aM	NH000	DIN HRC fuse link
384035	32A	690V	80kA	aM	NH000	DIN HRC fuse link
384045	40A	690V	80kA	aM	NH000	DIN HRC fuse link
384050	50A	690V	80kA	aM	NH00	DIN HRC fuse link
384055	63A	690V	80kA	aM	NH00	DIN HRC fuse link
384060	80A	690V	80kA	aM	NH00	DIN HRC fuse link
384065	100A	690V	80kA	aM	NH00	DIN HRC fuse link
383070	125A	500V	120kA	aM	NH00	DIN HRC fuse link
383075	160A	500V	120kA	aM	NH00	DIN HRC fuse link
384260	200A	690V	80kA	aM	NH1	DIN HRC fuse link
383270	250A	500V	120kA	aM	NH1	DIN HRC fuse link
384370	315A	690V	80kA	aM	NH2	DIN HRC fuse link
384375	355A	690V	80kA	aM	NH2	DIN HRC fuse link
383380	400A	500V	120kA	aM	NH2	DIN HRC fuse link
384465	500A	690V	80kA	aM	NH3	DIN HRC fuse link
383470	630A	500V	120kA	aM	NH3	DIN HRC fuse link
383525	800A	500V	120kA	aM	NH4	DIN HRC fuse link
383530	1000A	500V	120kA	aM	NH4	DIN HRC fuse link
383535	1250A	500V	120kA	aM	NH4	DIN HRC fuse link

gPV class NH photovoltaic - Fuse links

PV photovoltaic fuse-links designed for safety and economic protection in PV installations where, due to the increase of power and technological evolution, no-load voltages above 800 VDC are achieved. Meets requirements for instruments and traction equipment auxiliary circuits. Provides effective protection against overloads as well as short-circuits.

gPV photovoltaic cylindrical fuse links

373215	32A	1000 VDC	30kA	gPV	NH1	photovoltaic fuse link
373225	40A	1000 VDC	30kA	gPV	NH1	photovoltaic fuse link
373230	50A	1000 VDC	30kA	gPV	NH1	photovoltaic fuse link
373235	63A	1000 VDC	30kA	gPV	NH1	photovoltaic fuse link
373240	80A	1000 VDC	30kA	gPV	NH1	photovoltaic fuse link
373245	100A	1000 VDC	30kA	gPV	NH1	photovoltaic fuse link
373250	125A	1000 VDC	30kA	gPV	NH1	photovoltaic fuse link
373255	160A	1000 VDC	30kA	gPV	NH1	photovoltaic fuse link
373260	200A	1000 VDC	30kA	gPV	NH1	photovoltaic fuse link
373360	250A	1000 VDC	30kA	gPV	NH2	photovoltaic fuse link
373425	200A	1000 VDC	30kA	gPV	NH3	photovoltaic fuse link
373435	250A	1000 VDC	30kA	gPV	NH3	photovoltaic fuse link
373445	315A	1000 VDC	30kA	gPV	NH3	photovoltaic fuse link
373450	355A	1000 VDC	30kA	gPV	NH3	photovoltaic fuse link
373455	400A	1000 VDC	30kA	gPV	NH3	photovoltaic fuse link

Above NH fuses available at 1500 VDC (XL-longer body) on request.

ST fuse holders for NH PV fuse links - 1000 VDC

354172	250A	1000 VDC	1 pole	gPV	NH1	photovoltaic fuse base
354175	400A	1000 VDC	1 pole	gPV	NH2	photovoltaic fuse base
354180	630A	1000 VDC	1 pole	gPV	NH3	photovoltaic fuse base

Solid NH neutral links

341100	160A	690V	1 pole	NH000/00	neutral link blades
341250	250A	690V	1 pole	NH1	neutral link blades
341400	400A	690V	1 pole	NH2	neutral link blades
341630	630A	690V	1 pole	NH3	neutral link blades
340125	1250A	690V	1 pole	NH4	neutral link blades



Semiconductor fuse links designed for protection of semiconductors (*diodes, thyristors, triacs, etc*) used in power rectifiers, UPS, converters, motor drives, soft starters, solid state relays, photovoltaic inverters, welding inverters and any application where semiconductor protection is required.

- Standards: IEC/EN 60269-1, IEC/EN 60269-4, UL248 standard (file Nr. E477155)

type	rated current	rated voltage	breaking capacity	class size	fuse	description
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RAPIDPLUS NH aR - High speed fuse links for semiconductors

RAPIDPLUS aR fuses Intended for clearing short-circuits, specifically designed to have very low I²t values with reduced arc voltages guaranteeing optimum semiconductor protection.

365020	16A	690V	120kA	aR	NH000	semiconductor fuse link
365025	20A	690V	120kA	aR	NH000	semiconductor fuse link
365030	25A	690V	120kA	aR	NH000	semiconductor fuse link
365035	32A	690V	120kA	aR	NH000	semiconductor fuse link
365045	40A	690V	120kA	aR	NH000	semiconductor fuse link
365050	50A	690V	120kA	aR	NH000	semiconductor fuse link
365055	63A	690V	120kA	aR	NH000	semiconductor fuse link
365060	80A	690V	120kA	aR	NH000	semiconductor fuse link
365065	100A	690V	120kA	aR	NH000	semiconductor fuse link
365070	125A	690V	120kA	aR	NH000	semiconductor fuse link
365075	160A	690V	120kA	aR	NH000	semiconductor fuse link
365080	200A	690V	120kA	aR	NH000	semiconductor fuse link
365085	250A	690V	120kA	aR	NH000	semiconductor fuse link
365270	250A	690V	120kA	aR	NH1	semiconductor fuse link
365280	315A	690V	120kA	aR	NH1	semiconductor fuse link
365282	350A	690V	120kA	aR	NH1	semiconductor fuse link
365290	400A	690V	120kA	aR	NH1	semiconductor fuse link
365380	400A	690V	120kA	aR	NH2	semiconductor fuse link
365390	500A	690V	120kA	aR	NH2	semiconductor fuse link
365395	630A	690V	120kA	aR	NH2	semiconductor fuse link
365475	800A	690V	120kA	aR	NH2	semiconductor fuse link
365485	1000A	690V	120kA	aR	NH2	semiconductor fuse link

RAPIDPLUS NH gS - High-speed fuse links for semiconductors

RAPIDPLUS NH gS fuse links are capable of clearing all types of overcurrents, overloads and short-circuits, protecting semiconductors, cables and associated switchgear in the installation.

371025	20A	690V	100kA	gS	NH000	semiconductor fuse link
371030	25A	690V	100kA	gS	NH000	semiconductor fuse link
371035	32A	690V	100kA	gS	NH000	semiconductor fuse link
371045	40A	690V	100kA	gS	NH000	semiconductor fuse link
371050	50A	690V	100kA	gS	NH000	semiconductor fuse link
371055	63A	690V	100kA	gS	NH000	semiconductor fuse link
371060	80A	690V	100kA	gS	NH000	semiconductor fuse link
371065	100A	690V	100kA	gS	NH000	semiconductor fuse link
371070	125A	690V	100kA	gS	NH00	semiconductor fuse link
371075	160A	690V	100kA	gS	NH00	semiconductor fuse link
371260	200A	690V	100kA	gS	NH1	semiconductor fuse link
371270	250A	690V	100kA	gS	NH1	semiconductor fuse link
371370	315A	690V	100kA	gS	NH2	semiconductor fuse link
371375	355A	690V	100kA	gS	NH2	semiconductor fuse link
371380	400A	690V	100kA	gS	NH2	semiconductor fuse link
371465	500A	690V	100kA	gS	NH3	semiconductor fuse link
371470	630A	690V	100kA	gS	NH3	semiconductor fuse link

Fuse bases for above fuse-links (see page **B-46**)



354115



353102



326250



325250



354115



325030 + 354115

ST series - Fuse bases for NH fuse links

- Rated voltage: 690V
- Self-extinguishing polyamide body / silver plated copper contacts
- Standards: IEC/EN 60269-1, IEC/EN 60269-2, DIN43620

type	rated current	for fuse size	poles	description	qty (per pack)
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ST series - NH fuse bases

Single pole

354115	160A	NH000/00	1 pole	industrial NH fuse base	1
352115*	160A	NH000/00	1 pole	industrial NH fuse base	1
352250	250A	NH1	1 pole	industrial NH fuse base	1
352400	400A	NH2	1 pole	industrial NH fuse base	1
352630	630A	NH3	1 pole	industrial NH fuse base	1
354125	1250A	NH4	1 pole	industrial NH fuse base	1

Three pole (supplied with separating phase barriers between phases)

353102*	160A	NH000/00	3 pole	industrial NH fuse base	1
353250	250A	NH1	3 pole	industrial NH fuse base	1
353400	400A	NH2	3 pole	industrial NH fuse base	1
353630	630A	NH3	3 pole	industrial NH fuse base	1

* DIN rail or chassis mountable

Sectionable neutral NH bases

Neutral link base - (can be mounted directly onto sides of fuse base)

334103	160A	NH00	1 pole	sectionable neutral terminal	1
334160	250A	NH0	1 pole	sectionable neutral terminal	1
334251	630A	NH3	1 pole	sectionable neutral terminal	1

NH fuse holder accessories

Partition walls - (NH00/1/2/3 require connectors to mount)

326100	160A	NH00		partition walls for fuse bases	2
326250	250A	NH1/2		partition walls for fuse bases	2
326630	630A	NH3		partition walls for fuse bases	2
343125*	1250A	NH4		partition walls for fuse bases	1

* Screws directly onto chassis plate (does not mount onto fuse base)

Connectors - (to connect two bases together - accepts partition wall)

325100	160A	NH00		separators for fuse bases	2
325250	250A	NH1/2		separators for fuse bases	2
325630	630A	NH3		separators for fuse bases	2

Terminal covers - (to protect connection terminals of fuse holders)

325000	160A	NH00	1 pole	terminal cover for bases	6
325002	250A	NH1	1 pole	terminal cover for bases	6
325003	400A	NH2	1 pole	terminal cover for bases	6
325007	630A	NH3	1 pole	terminal cover for bases	6

Fuse link covers - (connects onto terminal covers)

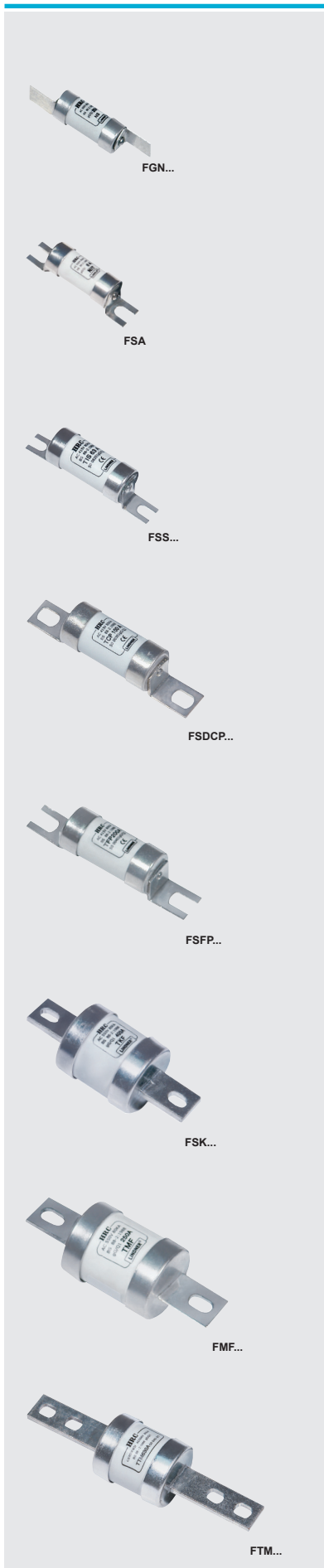
325010	160A	NH00		hinged covers for fuse link	3
325020	250A	NH1/2		hinged covers for fuse link	3
325025	630A	NH3		hinged covers for fuse link	3

Complete fuse base protection kits (for fuse and terminal insulation protection IP20)

- Comprises - partition walls - terminal cover - fuse cover

325009*	160A	NH00	3 pole	integral terminal cover	1
325030	160A	NH00	1 pole	IP20 full protection kit	1
325041	250A	NH1	3 pole	IP20 full protection kit	1
325046	400A	NH2	3 pole	IP20 full protection kit	1
325051	630A	NH3	3 pole	IP20 full protection kit	1

* Partition wall incorporated. Fuse covers 325010 to be ordered separately.



Industrial protection HRC fuses

Rated voltage: 500 VAC
 Rated breaking capacity: 80 kA
 Standards specification: BS88-2, IEC 60269-2-1
 Fuse class: gG/Q1

type	rated current	BS88 ref.	rated voltage	breaking capacity	fixing centres	body dia. (mm)	type (GEC)
Off-set blade tag fuses (F1) body length 60 mm							
FGN 02A	2A	A1/NP	500V	80kA	offset blade	14.2 mm	NS
FGN 04A	4A	A1/NP	500V	80kA	offset blade	14.2 mm	NS
FGN 06A	6A	A1/NP	500V	80kA	offset blade	14.2 mm	NS
FGN 10A	10A	A1/NP	500V	80kA	offset blade	14.2 mm	NS
FGN 16A	16A	A1/NP	500V	80kA	offset blade	14.2 mm	NS
FGN 20A	20A	A1/NP	500V	80kA	offset blade	14.2 mm	NS
FGN 25A	25A	A1/NP	500V	80kA	offset blade	14.2 mm	NS
FGN 32A	32A	A1/NP	500V	80kA	offset blade	14.2 mm	NS
Off-set bolted tag (A2) body length 86 mm							
FSA 02A	2A	A2	500V	80kA	73 mm	21.5 mm	TIA
FSA 04A	4A	A2	500V	80kA	73 mm	21.5 mm	TIA
FSA 06A	6A	A2	500V	80kA	73 mm	21.5 mm	TIA
FSA 10A	10A	A2	500V	80kA	73 mm	21.5 mm	TIA
FSA 16A	16A	A2	500V	80kA	73 mm	21.5 mm	TIA
FSA 20A	20A	A2	500V	80kA	73 mm	21.5 mm	TIA
FSA 25A	25A	A2	500V	80kA	73 mm	21.5 mm	TIA
FSA 32A	32A	A2	500V	80kA	73 mm	21.5 mm	TIA
Off-set bolted tag (A3) body length 90 mm							
FSS 40	40A	A3	500V	80kA	73 mm	21.5 mm	TIS
FSS 50	50A	A3	500V	80kA	73 mm	21.5 mm	TIS
FSS 63	63A	A3	500V	80kA	73 mm	21.5 mm	TIS
Off-set bolted tag (A4) body length 111 mm							
FSDCP 63	63A	A4	500V	80kA	94 mm	32 mm	TCP
FSDCP 80	80A	A4	500V	80kA	94 mm	32 mm	TCP
FSDCP 100	100A	A4	500V	80kA	94 mm	32 mm	TCP
Off-set bolted tag (A4) body length 111 mm							
FSFP 125	125A	A4a	500V	80kA	94 mm	39.5 mm	TFP
FSFP 160	160A	A4a	500V	80kA	94 mm	39.5 mm	TFP
FSFP 200	200A	A4a	500V	80kA	94 mm	39.5 mm	TFP
Central bolted tag (B2) body length 132 mm							
FSF 160	160A	B2	500V	80kA	111 mm	39.5 mm	TF
FSF 200	200A	B2	500V	80kA	111 mm	39.5 mm	TF
Central bolted tag (B3) body length 136 mm							
FSK 250	250A	B3	500V	120kA	111 mm	50.5 mm	TKF
FSK 315	315A	B3	500V	120kA	111 mm	50.5 mm	TKF
Central bolted tag (B4) body length 136 mm							
FMF 355	355A	B4	500V	80kA	111 mm	50.5 mm	TMF
FMF 400	400A	B4	500V	80kA	111 mm	50.5 mm	TMF
Central bolted tag (C2) body length 208 mm							
FTM 500	500A	C2	500V	80kA	133/184 mm	70.2 mm	TTM
FTM 600	600A	C2	500V	80kA	133/184 mm	70.2 mm	TTM

new



63-823191-021



63-823267-001



63-823234-041



63-001341-004

RBK series - NH-fuse switch disconnectors (for panel mounting)

RBK fuse switch disconnectors designed for distribution of electricity and protection of electrical equipment against short-circuits and overloads with industrial fuse links. They are conforming to IEC/EN 60947-1, IEC/EN 60947-3 standards
Intended for installation in low voltage distribution boards, cable and metering cabinets.

- Degree of touch protection: IP 20 - (IP30 for RBP and RBK 1 units)
- Lid lock and lid seal (with optional accessories)
- Voltage test can be performed through test holes in fuse link cover

type	model	No. poles	fuse size	max. current	cable terminal	dimensions (mm)		
						(H)	(W)	(D)

NH - fuse switch disconnector (panel mounting)

- Rated operational voltage Un: 690 V
- Insulation voltage Ui: 1000 V
- Rated impulse withstand voltage Uimp: 8 kV

Fuse switch disconnectors for installation on chassis plate

63-823191-021	RBK 000 pro-M	3	000	160A	M8	181	89	92
63-823256-021	RBK 00 pro-M	3	00	160A	M8	182	106	81
63-811748-021	RBK 1 pro-M	3	1	250A	M10	269	180	111
63-811685-061	RBK 2 pro-M	3	2	400A	M10	298	208	130
63-811761-021	RBK 3 pro-M	3	3	630A	M12	307	250	144

Slimline (53mm wide) compact fuse switch disconnectors

63-823267-001	RBP 000 pro	3	000	125A	clamp	216	53	83
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Fuse switch disconnectors for installation on 60mm busbar system

- Rated operational voltage Un: 690 V
- Insulation voltage Ui: 1000 V
- Rated impulse withstand voltage Uimp: 8 kV

Termination: Bottom of switch (top terminals available on request)

63-823234-041	RBK 000 pro-SD-M	3	000	160A	M8	191	89	112
63-823259-141	RBK 00 pro-SD-M	3	00	160A	M8	214	106	110
63-811750-061	RBK 1 pro-SD-M	3	1	250A	M10	243	180	140
63-811686-061	RBK 2 pro-SD-M	3	2	400A	M10	298	208	154
63-028802-003	RBK 3 pro-SD-M	3	3	630A	M12	307	250	137

Slimline (53mm wide) compact fuse switch disconnectors

63-823427-002	RBP 000 pro-SD	3	000	125A	clamp	214	53	108
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Accessories for above RBK fuse switch disconnectors

1115296311T	auxiliary contact	000/00	monitoring switch for door position status
1115296316	auxiliary contact	1/2	monitoring switch for door position status
51-930160-011	extended cover	000	termination extended cover (25 mm)
51-930499-011	extended cover	00	termination extended cover (25 mm)

smartARS pro series - Vertical mounted fuse switch disconnectors

smartARS pro vertical fuse switch disconnectors designed for electrical distribution and protection against short circuits and overloads in three phase AC circuits.

Intended for direct installation on horizontal or vertical busbar systems in applications requiring reliability and safety for low voltage distribution boards in transformer substations, industrial assemblies and cable cabinets.

Fuse switch disconnectors for installation on 60mm busbar system

Switching 3 poles simultaneously (individual pole switching available on request)

63-002354-001	ARS 00/60 M-pro	3	00	160A	M8	401	50	132
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Fuse switch disconnectors for installation on 100mm busbar system

63-811628-041	ARS 00/100 M-pro	3	00	160A	M8	423	50	127
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Fuse switch disconnectors for installation on 185mm busbar system

63-001415-002	smartARS 00-3 pro	3	00	160A	M8	684	50	151
63-001341-003	smartARS 2-6-M pro	3	2	400A	M12	686	99	152
63-001341-004	smartARS 3-6-M pro	3	3	630A	M12	686	99	152



143017



143018



143119



106300



106538

MULTIBLOC series - NH-fuse switch disconnecter (for panel mounting)

- Parking position of the switch cover (even with inserted fuse-links)
- Modular terminal covers can be extended as required
- Lid lock and lid seal (with optional accessories)

Utilization category to IEC/EN 60947-3	00	1
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Ue: AC 400V; Ie =	160A	250A	AC 23 B
Ue: AC 500V; Ie =	160A	250A	AC 22 B
Ue: AC 690V; Ie =	125A	200A	AC 21 B
Ue: DC 220V; Ie =	160A	250A	DC 22 B

type	No. poles	fuse size	max. current	cable terminal	description	dimensions (mm) (H) (W) (D)		
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NH - Fuse switch disconnecter (panel mounting) IP30

- Rated operational voltage: 690 V
- Rated impulse withstand Uimp: 8 kV
- Insulation voltage Ui: 1000 V

NH00 - Fuse switch disconnecter

143017	1	00	160A	M8	fuse switch disconnecter	184	42	84
143018	2	00	160A	M8	fuse switch disconnecter	184	84	84

NH1 - Fuse switch disconnecter

143119	1	1	250A	M10	fuse switch disconnecter	184	71	84
143118	2	1	250A	M10	fuse switch disconnecter	184	142	84

Accessories for above switch disconnectors

140149	1/2	00	cable termination cover for NH00 switches				(2 pcs)	
140354	1/2	1	cable termination cover for NH1 switches				(2 pcs)	
140155	1/2	00/1	cover sealing set for switch disconnecter				sizes 00 & 1	
140852	1/2		monitoring switch for door position status				all sizes	

60 mm busbar system

Busbar supports for busbars (W) 12 - 30 mm x (D) 5/10 mm

106300	3	busbar support for 12 - 30 mm x 5/10 mm bars		185	17	43
106302*	1	busbar support for 12 - 30 mm x 5/10 mm bars		77	17	43

* 1 pole unit can be attached to each other for two pole or a 3 pole to make a 4 pole support

Busbar 3 phase feed-in terminals

106096	3	bar mount feed-in terminal	16...50 mm ²	201	54	44
106097	3	bar mount feed-in terminal	16...70 mm ²	201	108	80
106098	3	bar mount feed-in terminal	16...185 mm ²	201	108	80

Component adaptors for direct mounting on 60 mm system busbars

106521	3	25A	1 rail	4 mm ²	component adaptor	207	45
106523	3	25A	2 rails	4 mm ²	component adaptor	260	45
106526	3	32A	1 rail	6 mm ²	component adaptor	207	54
106528	3	32A	2 rails	6 mm ²	component adaptor	260	54
106530	3	32A	1 rail	6 mm ²	component adaptor	207	72
106531	3	32A	2 rails	6 mm ²	component adaptor	260	72
106533	3	63A	1 rail	10 mm ²	component adaptor	207	54
106535	3	63A	2 rails	10 mm ²	component adaptor	260	54
106537	3	63A	1 rail	10 mm ²	component adaptor	207	72
106538	3	63A	2 rails	10 mm ²	component adaptor	260	72
106539	3	63A	2 rails	10 mm ²	component adaptor	207	81
106544	3	80A	2 rails	16 mm ²	component adaptor	260	72

Protection cover for 60 mm system

126074	3	bar mounted cover support bracket				
126075	3	panel front cover protection 1000 mm				2met

Busbar support for 100 and 185 mm system

188100	3	100 mm	busbar support for 30 - 60 mm x 10 mm bars	324	28	50
188101	3	185 mm	busbar support for 30 - 120 mm x 10 mm bars	573	28	50
188102	1	100/185	busbar support for 30 - 120 mm x 10 mm bars	224	25	50



V-CHECK RPT

V-CHECK MR - Surge protection + POP + self reclose MCB in a single unit

Combined transient and Power-frequency Overvoltage Protection (SPD+POP), complete with automatic reclosure (motorised MCB included) Type 2 / Class II, 15 kA (8/20 µs) surges with test button for POP.

With V-CHECK MR the installation is protected against transient voltage spikes and voltage increases which last for an indefinite period. Typically, the first is associated with lightning and the second with bad connections or faulty neutral in 3-phase installations.

- Automatic recloser - ideal for installation panels requiring continuity of service and for second homes

type	surge protection device		POP	MCB		general		
	I _{max} L-N (kA)	U _p L-N (kV)	U _a (V)	C curve (In)	break capacity	poles	config.	mod. (18 mm)

V-CHECK MR - Surge protection + POP + self reclose MCB in a single unit

- Transient (*surge*) protection
- Power frequency Overvoltage Protection (POP)
- Overload and short circuit protection
- Self-reclose MCB (*automatically resets once fault is cleared*)

V-Check 2MR-10	15 kA	1.5 kV	>275 V	10A	6 kA	2	1ph+N	5
V-Check 2MR-25	15 kA	1.5 kV	>275 V	25A	6 kA	2	1ph+N	5
V-Check 2MR-40	15 kA	1.5 kV	>275 V	40A	6 kA	2	1ph+N	5
V-Check 4MR-16	20 kA	1.5 kV	>275 V	16A	10 kA	4	3ph+N	9
V-Check 4MR-32	20 kA	1.5 kV	>275 V	32A	10 kA	4	3ph+N	9
V-Check 4MR-63	20 kA	1.5 kV	>275 V	63A	10 kA	4	3ph+N	9

V-Check RPT - SPD+POP protection disconnecting the circuit via a circuit breaker + shunt trip.

V-Check 4RPT 40 kA 1.8 kV >275 V (*without MCB*) 4 3ph+N 4

V-Check RC - SPD+POP protection disconnecting the circuit via a contactor

V-Check 4RC 40 kA 1.8 kV >275 V (*without MCB*) 4 3ph+N 4

G-Check earthing installation monitor

G-CHECK is a device for continuous monitoring of earthing system installations in DIN rail format for panel installations. Complies with standard IEC 61010-1.

By calculating the loop resistance, **G-CHECK** checks the impedance of the actual path of an indirect contact leakage for detection of the following possible incidents, within the installation and in the transformation centre to which it is connected:

- Deterioration of earth connection due to ageing of earth rods or cable theft
- Breakage or bad connection of the neutral cable

Continuously monitoring the state of the earth connection with **G-CHECK**:

- Ensures proper operation of surge protection devices
- Ensures the protection of personnel against indirect contact
- Reduces cost of preventative maintenance

- Installed into panel, by connecting directly to earth and setting the loop resistance thresholds
- Alarm function activates if detected value exceeds a maximum preset by the user



G-CHECK 230

type	voltage	frequency	alarm activation value	max. measured value
G-CHECK 230	230 V	50/60 Hz	adjustable	500 ohms



PSM1-40/230



PSM2-40/230 TT



PSM4-40/400 TT



PSM2-40/230 SG



PSM-40/230

Modular plug-in surge protection devices (SANS/IEC 61643-11)

For the protection of low voltage equipment against transient voltages and current surges from atmospheric origins (*lightning*) as well as transients produced by switching characteristics such as in switching of distribution networks, transformers, motors, etc.

- Provides protection for even most sensitive equipment (IEC 60634-4-443 category-1)
- Clear lifetime indication (*on front face*) and optional remote (IR) end of life signalling contact
- Meets all current international standards (*IEC 61643 / IEC 62305, etc.*)
- Plug-in cartridges for quick and easy replacement of damaged cartridges
- Suitable for all types of applications: residential, commercial and industrial

type	(8/20 μ s) L-N (Imax)	max. volts L-N (Uc)	voltage protection (Up)	poles	config.	with signal contact	width in 18 mm
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Type 2 / Class II surge protection devices

Ability to discharge induced voltage surges (8/20 μ s). Suitable for second level protection in supply distribution panels in which Type 1 protectors are installed, or first level of protection for applications not exposed to direct strikes and with no external lightning protection system. IEC 61643-11.

- High discharge capacity tested with an 8/20 μ s waveform: 20kA or 40 kA per phase
- Provides protection for most sensitive equipment (*IEC 60634-4-443 category 1*)

Imax 20kA (8/20 μ s)

PSM1-20/230	20 kA	320 V	≤ 1.4 kV	1	1ph	–	1
PSM1-20N	20 kA	265 V	≤ 1.5 kV	1	N	–	1
PSM2-20/230 TT	20 kA	320 V	≤ 1.4 kV	2	1ph+N	–	2
PSM2-20/230 TTIR	20 kA	320 V	≤ 1.4 kV	2	1ph+N	signal	2
PSM4-20/400 TT	20 kA	320 V	≤ 1.4 kV	4	3ph+N	–	4
PSM4-20/400 TTIR	20 kA	320 V	≤ 1.4 kV	4	3ph+N	signal	4

Imax 40kA (8/20 μ s)

PSM1-40/230	40 kA	275 V	≤ 1.3 kV	1	1ph	–	1
PSM1-40N	40 kA	265 V	≤ 1.5 kV	1	N	–	1
PSM2-40/230 TT	40 kA	275 V	≤ 1.3 kV	2	1ph+N	–	2
PSM2-40/230 TTIR	40 kA	275 V	≤ 1.3 kV	2	1ph+N	signal	2
PSM4-40/400 TT	40 kA	275 V	≤ 1.3 kV	4	3ph+N	–	4
PSM4-40/400 TTIR	40 kA	275 V	≤ 1.3 kV	4	3ph+N	signal	4

PSM SAFEGROUND

DIN - rail device for monitoring the earthing system from within the actual surge protection device. SAFEGROUND technology is based on the loop impedance monitoring sending current pulses to check the status of the grounding system and provide information regarding the proper wiring of the device and the existence of an adequate path to ground for the SPD itself to protect effectively.

- Confirms the device is properly installed and how effective the surge protection is
- Indication of the status of the earth loop via multi-state LEDs
- High discharge capacity with an 8/20 μ s waveform. Imax: 40 kA

PSM2-40/230 SG	40 kA	275 V	≤ 1.3 kV	2	1ph+N	–	2
PSM4-40/400 SG	40 kA	275 V	≤ 1.3 kV	4	3ph+N	–	4

Class 2 surge protection devices for higher voltage applications (500 - 690V)

- Rated varistor voltage Uc = 750 VAC / Imax 30kA (8/20 μ s) Un 690 VAC

PSM1-30/750	30 kA	750 V	≤ 3.0 kV	1	1ph	–	1
PSM1-30/750 IR	30 kA	750 V	≤ 3.0 kV	1	1ph	signal	1
PSM3-30/750 TNC	30 kA	750 V	≤ 3.0 kV	3	3ph	–	1
PSM3-30/750 TNCIR	30 kA	750 V	≤ 3.0 kV	3	3ph	signal	1

Spare replacement plug-in cartridges for Type 2 surge arrestors

PSM-20/230	20 kA	320 V	< 1.4 kV	–	PSM1/2/4-20 phase
PSM-40/230	40 kA	275 V	< 1.3 kV	–	PSM1/2/4-40 phase
PSM-30/750	30 kA	750 V	< 3.0 kV	–	PSM1/3-30 phase
PSM-20N	20 kA	255 V	< 1.5 kV	–	PSM1/2/4-20 neutral
PSM-40N	40 kA	255 V	< 1.5 kV	–	PSM1/2/4-40 neutral



PSC2-12.5/230 TT



PSC4-25/400 TTIR



PSM3-40/1000 PV



PSC 12.5/230

Modular plug-in surge protection devices (SANS/IEC 61643-11)

Type 1+2 / Class I+II lightning current and surge arrester (*combined in a single device*)

Suitable for first level protection of incoming power supply panels in areas with greater exposure to lightning. For installations usually provided with external lightning protection systems. Able to discharge lightning currents (10/350 μ s) and induced voltage surges (8/20 μ s) IEC 61643-11

- Capable of protecting equipment from direct lightning strikes
- Discharges impulse currents with a 10/350 μ s waveform. Iimp: 12.5 kA or 25 kA per phase
- Clear lifetime indication (on front face) and optional remote (IR) end of life signalling contact
- Provides protection for most sensitive equipment (*IEC 60634-4-443 category 1*)

type	10/350 μ s L-N (Iimp)	(8/20 μ s) L-N (Imax)	max. volts L-N (Uc)	voltage protection (Up)	poles	config.	width in 18 mm
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Type 1+2 / Class I+II lightning current and surge arrester (*combined in a single device*)

Iimp (10/350) 12.5kA per phase, I total 25kA (2 pole) and 50kA (4 pole)

PSC2-12.5/230 TT	12.5 kA	65 kA	275 V	≤ 1.3 kV	2	1ph+N	2
PSC2-12.5/230 TTIR	12.5 kA	65 kA	275 V	≤ 1.3 kV	2	1ph+N	2
PSC4-12.5/400 TT	12.5 kA	65 kA	275 V	≤ 1.3 kV	4	3ph+N	4
PSC4-12.5/400 TTIR	12.5 kA	65 kA	275 V	≤ 1.3 kV	4	3ph+N	4

Iimp (10/350) 25kA per phase, I total 50kA (2 pole) and 100kA (4 pole)

PSC2-25/230 TT	25 kA	100 kA	275 V	≤ 1.5 kV	2	1ph+N	4
PSC2-25/230 TTIR	25 kA	100 kA	275 V	≤ 1.5 kV	2	1ph+N	4
PSC4-25/400 TT	25 kA	100 kA	275 V	≤ 1.5 kV	4	3ph+N	8
PSC4-25/400 TTIR	25 kA	100 kA	275 V	≤ 1.5 kV	4	3ph+N	8

(IR) last two digits - with signalling contacts for remote indication/monitoring of devices

Surge protection devices for photovoltaic (PV) installations 1000/1500 VDC

PSM PV is the range of devices for discharging induced transient overvoltages (Type 2 / Class II) for Photovoltaic installations, in accordance with EN 50539-11, UL 1449 certified.

Due to their location, solar panels and in many cases, the inverters they are connected to are exposed to and particularly prone to direct or indirect lightning strikes.

As PV systems are directly connected to electrical networks of buildings, surge protection is essential.

Type 2 / Class II - photovoltaic surge protection devices

Suitable for protection where no external protection is installed. Protection should be installed on the DC and AC side of an installation.

- Clear lifetime indication (*on front face*) and optional remote (IR) end of life signalling contact
- Plug-in cartridges for quick and easy replacement of damaged ones
- Suitable for PV applications: large-scale, rooftop and self-consumption (*off-grid*) DC installations.
- No back-up fuse required due to dynamic thermal disconnect system - capacity of 10kA (Iscpv)

1000/1500 VDC photovoltaic surge protection device

PSM3-40/1000 PV	–	40 kA	1060 V	≤ 4.0 kV	3	L+/PE/L-	3
PSM3-40/1000 PVIR	–	40 kA	1060 V	≤ 4.0 kV	3	L+/PE/L-	3
PSM3-40/1500 PV	–	40 kA	1500 V	≤ 5.0 kV	3	L+/PE/L-	3
PSM3-40/1500 PVIR	–	40 kA	1500 V	≤ 5.0 kV	3	L+/PE/L-	3

Type 1+2 / Class I+II photovoltaic surge protection devices (*combined in a single device*)

PSC PV is a combined device for discharging lightning currents (*Type 1 / Class I*) and protecting against induced transient overvoltages (*Type 2 / Class II*) for Photovoltaic installations, in accordance with EN 50539-11. DIN rail plug-in format.

- Protection for combiner boxes in areas with greater exposure to the atmosphere
- Exclusive device for photovoltaic systems according to EN 50539-11
- No back-up fuse required due to dynamic thermal disconnect system - capacity of 10kA (Iscpv)

1000 VDC photovoltaic surge protection device

PSC3-5/1000 PV	5 kA	40 kA	1060 V	≤ 4.0 kV	3	L+/PE/L-	3
PSC3-5/1000 PVIR	5 kA	40 kA	1060 V	≤ 4.0 kV	3	L+/PE/L-	3

(IR) last two digits - with signalling contacts for remote indication/monitoring of devices

Spare replacement plug-in cartridges for surge arrestors type

PSC 12.5/230	12.5 kA	65 kA	275 V	< 1.3 kV	1+2	PSC2/4 - 12.5 ph
PSC 25/230	25 kA	100 kA	275 V	< 1.5 kV	1+2	PSC2/4 - 25 ph
PSC 50N2	50 kA	65 kA	255 V	< 1.5 kV	1+2	PSC2 - 25 neutral
PSC 100N	100 kA	100 kA	255 V	< 1.5 kV	1+2	PSC4 - 25 neutral
PSM-40/1000 PV	–	40 kA	1170 V	< 2.0 kV	2	PSC3 - 40 PV
PSC-5/1000 PV	5 kA	40 kA	1060 V	≤ 4.0 kV	1+2	PSC3-12.5 PV



4941 3723



4941 3724



4942 3723



4950 6080

RESYS M40 - Earth leakage protection

RESYS M40 earth leakage relays associated with a remote trip breaking device (*automatic power breaking*), provide the following functions:

- Protection against indirect contact
- Limitation of leakage currents

They also preventively monitor electrical installations via a (*configurable*) pre-alarm function or when used as a signalling relay.

- Positive or negative security
- Modular DIN rail mountable (*same format as MCB's*) 44mm wide
- 2 relays with configurable function (*alarm or pre-alarm at 50% (IΔn)*)
- Adjustment of IΔn: 0.03 - 0.1 - 0.3 - 0.5 - 1 - 3 - 5 - 10 - 30A
- Time delay: 0 - 0.06 - 0.15 - 0.30 - 0.50 - 0.80 - 1 - 4 - 10 sec
- Tripping accuracy by TRMS measurement (*improves immunity to nuisance tripping*)
- LED bargraph provides real-time display of leakage currents

type	current setting IΔn	time delay (sec)	power supply	description
RESYS M40 - Type A differential relay (H)85 x (W)44 x (D)63				
4941 3723	0.03 - 30A	0 - 10	115/230 VAC	electronic earth leakage relay
4941 3740	0.03 - 30A	0 - 10	400 VAC	electronic earth leakage relay
4941 3602	0.03 - 30A	0 - 10	12 - 125 VDC	electronic earth leakage relay

RESYS M40R - With automatic reclosing

M40R relay recloses the system up to six consecutive times after preselected time intervals. If the fault is still present after the sequence of six reclosing attempts, the relay is locked in alarm mode and a manual intervention will be required.

- Time delay between two reclosings: 7.5 - 15 - 30 - 60 - 120 - 240 sec
- | | | | | |
|-----------|------------|--------|-------------|-------------------------------|
| 4941 3724 | 0.03 - 30A | 0 - 10 | 115/230 VAC | reclosing earth leakage relay |
| 4941 3741 | 0.03 - 30A | 0 - 10 | 400 VAC | reclosing earth leakage relay |

RESYS P40 - Panel mounting (48 x 48 mm)

As per RESYS M40 (*above*) but in panel mounting version

4942 3723	0.03 - 30A	0 - 10	115/230 VAC	panel mount earth leakage relay
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Core balance transformers (toroidal transformers) - type A

Active conductors pass through the aperture of the core balance transformer, providing a differential summation of vector currents, enabling detection of leakage currents.

type	aperture Ø diameter	description	dimensions (mm)		
			(H)	(W)	(D)
4950 6030	30 mm	core balance transformer for e/leakages	104	92	26
4950 6050	50 mm	core balance transformer for e/leakages	125	103	26
4950 6080	80 mm	core balance transformer for e/leakages	143	116	26
4950 6120	120 mm	core balance transformer for e/leakages	183	163	26
4950 6200	200 mm	core balance transformer for e/leakages	274	253	51

Larger aperture sizes available on request.

Accessories for above

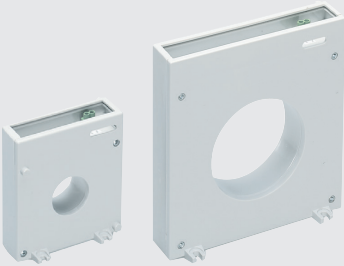
Cable locator

Enables cables passing through toroids to be centred (*for direct cable mounting*)

4950 0011	30 mm	for directly mounting transformers onto cables
4950 0012	50 mm	for directly mounting transformers onto cables
4950 0013	80 mm	for directly mounting transformers onto cables
4950 0014	120 mm	for directly mounting transformers onto cables
4950 0031		DIN-rail clip (<i>for DIN rail mounting core balance transformers</i>)



R4D 415



RT...



RC80 415

Industrial electronic earth leakage relays

- LED indication (Green – Power "ON") (Red – TRIP)
- Front "TEST" and "RESET" buttons
- Configurable automatic or manual reset
- Configurable tripping set-point ($I_{\Delta n}$): 0.025 - 0.25A / 0.25 - 2.5A / 2.5 - 25A
- Configurable tripping time delay (t): 0.02 - 0.5s / 0.2 - 5s
- Reference standards: IEC/EN 60947-2

type	supply voltage	relays	description
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Panel mount earth leakage relays - (96 x 96 mm)

Require toroidal current transformers (*listed below*)

R1D 1 operational threshold

R1D 415 110 - 240 - 415V 1 earth leakage 1 operational threshold

R2D 2 operational thresholds (*configurable for 2 tripping or 1 + alarm*)

R2D 415 110 - 240 - 415V 2 earth leakage 2 operational threshold

R4D 2 operational thresholds (*configurable for 2 tripping or 1 + alarm*)

- Flag indicator "trip memory"
- Digital fault current measurement and display with configurable tripping value

R4D 415 110 - 240 - 415V 2 earth leakage 2 operational threshold

Toroidal current transformers for above earth leakage relays

type	supply voltage	hole size	description
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RT60	toroid	60 mm	toroidal transformer for above relays
RT80	toroid	80 mm	toroidal transformer for above relays
RT110	toroid	110 mm	toroidal transformer for above relays
RT210	toroid	210 mm	toroidal transformer for above relays
RTA110	toroid	110 mm	split-core toroidal transformers
RTA210	toroid	210 mm	split-core toroidal transformers

Earth leakage relay incorporating toroidal transformer

RC60 48	24 - 48 VAC/DC	60 mm	earth leakage and toroidal combinations
RC60 415	110 - 240 - 415V	60 mm	earth leakage and toroidal combinations
RC80 415	110 - 240 - 415V	80 mm	earth leakage and toroidal combinations
RC110 415	110-240-415V	110 mm	earth leakage and toroidal combinations



For the protection of low voltage equipment against transient voltage and current surges mainly from atmospheric origin (*lightning*) and transient produced by switching characteristics such as in switching of distribution networks, transformers, motors, etc.

type	DEHN type	(10/350 μ s) L-N (Iimp)	(8/20 μ s) L-N (In)	max. voltage volts L-N (Uc)	protection voltage (Up)	config	width in 18 mm
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DEHNventil Type 1+2 combined lightning and surge protection *(in a single unit)*

- Clamps voltage to less than 1500V as per SANS 10142-1:2008 table L1
- Prewired spark-gap-based type 1 and 2 combined lightning current and surge arrester

941110	shield	12.5 kA	12.5 kA	255 V	$\leq 1.5kV$	1ph+N	2
951110	ventil	25 kA	25 kA	264 V	$\leq 1.5kV$	1ph+N	4
951115*	ventil	25 kA	25 kA	264 V	$\leq 1.5kV$	1ph+N	4
941310	shield	12.5 kA	12.5 kA	255 V	$\leq 1.5kV$	3ph+N	4
951310	ventil	25 kA	25 kA	264 V	$\leq 1.5kV$	3ph+N	8
951315*	ventil	25 kA	25 kA	264 V	$\leq 1.5kV$	3ph+N	8

Type 1 combined lightning current and surge arrester with integrated backup fuse

961200	ventil CI	25 kA	–	255 V	$\leq 1.5kV$	ph	2
961205*	ventil CI	25 kA	–	255 V	$\leq 1.5kV$	ph	2
961180	gap	25 kA	–	255 V	$\leq 1.5kV$	N	2
961185*	gap	25 kA	–	255 V	$\leq 1.5kV$	N	2
961146	bloc	35 kA	–	440 V	$\leq 2.5kV$	ph	3
961176	bloc	35 kA	–	760 V	$\leq 4kV$	ph	3

* With signalling contacts for remote indication/monitoring of devices

DEHNgard basic Type 2 surge protection devices *(non-plug-in modules)*

900453	basic	–	5 kA	340 V	$\leq 1.2kV$	1ph+N	2
900454	basic	–	10 kA	340 V	$\leq 1.3kV$	1ph+N	2
900463	basic	–	10 kA	340 V	$\leq 1.3kV$	3ph+N	4

DEHNgard Type 2 surge protection devices

Minimum requirement as per SANS 10142-1:2008 annex L for use in all electrical distribution boards and sub boards. For installation in conformity with the lightning protection zone.

- Replaceable plug-in modules
- Visual fault indication
- Clamps voltage to less than 1500V as per SANS 10142-1:2008 table L1

I_{max} 40kA (8/20 μ s)

952070	guard	–	20 kA	275 V	$\leq 1.5kV$	ph	1
952090*	guard	–	20 kA	275 V	$\leq 1.5kV$	ph	1
952030	gap	12 kA	20 kA	255 V	$\leq 1.5kV$	N	1
952035*	gap	12 kA	20 kA	255 V	$\leq 1.5kV$	N	1
952110	guard	12 kA	20 kA	275 V	$\leq 1.5kV$	1ph+N	2
952115*	guard	12 kA	20 kA	275 V	$\leq 1.5kV$	1ph+N	2
952310	guard	12 kA	20 kA	275 V	$\leq 1.5kV$	3ph+N	4
952315*	guard	12 kA	20 kA	275 V	$\leq 1.5kV$	3ph+N	4

Type 2 surge protection device with backup fuse

952171	guard	12 kA	20 kA	275 V	$<1.5 kV$	1ph+N	2
952176*	guard	12 kA	20 kA	275 V	$<1.5 kV$	1ph+N	2
952322	guard	12 kA	12.5 kA	275 V	$<1.5 kV$	3ph+N	4
952327*	guard	12 kA	12.5 kA	275 V	$<1.5 kV$	3ph+N	4

* With signalling contacts for remote indication/monitoring of devices

DEHNgard S/M ACI 275 Type 2 arrester

With its new integrated switch/spark gap combination, ACI (*Advanced Circuit Interruption*) technology reduces complexity, improves system availability and saves time, space and material costs.

952341	guard	–	20 kA	275 V	$<1.5 kV$	3ph+N	4
952121	guard	–	20 kA	275 V	$<1.5 kV$	1ph+N	2
952100	guard	–	20 kA	275 V	$<1.5 kV$	ph	1

DEHNrail modular Type 3 surge protection devices

- Replaceable plug-in protection modules
- High discharge capacity due to heavy-duty oxide varistor / spark gap combination
- Energy coordination with other arrestors

953200	rail	12 kA	1 kA	30 V	$\leq 180 V$	ph	1
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950530



900070



920300



920244



929121



929 221



Photovoltaic surge protection devices (SPD)

Due to their location, solar panels and the inverters they are connected to are exposed to and particularly prone to direct or indirect lightning strikes. As PV systems are directly connected to electrical networks of buildings, surge protection is essential.

type	max. PV voltage (Ucpv)	(8/20 μs) DC+/DC- (Imax)	(10/350 μs) DC+/DC- (Iimp)	voltage protection (Up)	poles	config.	width in 18 mm
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DEHNGuard Type 2 PV (SPD) with SCI (non-plug-in modules)

- Short circuit interruption (SCI) technology for maximum safety in PV systems

950530	1000 V	25 kA	–	≤ 4 kV	3	DC+/DC-	3
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DEHNGuard Type 2+3 PV (SPD) with SCI

- Plug-in cartridges for easy replacement
- Safe replacement of protection modules without arc formation due to integrated DC fuses

952516	≤ 600 V	25 kA	–	≤ 2.5 kV	3	DC+/DC-	3
952515*	≤ 1000 V	25 kA	–	≤ 4 kV	3	DC+/DC-	3
952520	≤ 1500V	12.5 kA	–	< 6 kV	3	DC+/DC-	4.5

DEHNCombo Type 1+2 PV (SPD) without SCI (non-plug-in modules)

- Combined lightning current and surge arrester for use in Photovoltaic systems

900070	≤ 1200V	20 kA	6.5 kA	< 3.8 kV	2	DC+/DC-	4
900075*	≤ 1200V	20 kA	6.5 kA	< 3.8 kV	2	DC+/DC-	4
900071	≤ 1500V	20 kA	6.5 kA	< 4.5 kV	2	DC+/DC-	4
900076*	≤ 1500V	20 kA	6.5 kA	< 4.5 kV	2	DC+/DC-	4

* With signalling contacts for remote indication/monitoring of devices

Surge protection devices for data networks

type	nominal voltage (Un)	voltage line-line (Up)	(8/20 μs) per line (In)	(10/350 μs) per line (Iimp)	poles	config.	width (mm)
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BLITZDUCTOR surge arresters are pluggable multipole DIN rail mounting arresters. Universally used for protecting Data networks, control/measuring circuits, bus or telecom systems.

- Permits easy replacement of modules (no signal interruption when protection module removed)
- Universal surge arrester for two-pole, three-pole or four-pole interfaces

920300 DIN rail mount socket to receive various protection modules for data networks

BLITZDUCTOR XT – Protection Modules

Type 2 P1 surge protection device high degree of protection for one pair

- For installation in conformity with lightning protection zone concept from 0B -2 and higher

926244	24 V	≤ 55 V	10 kA	–	4	line-PG	12 mm
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Type 1 P1 surge protection device optimal protection of one pair and the cable shield

- For installation in conformity with lightning protection zone concept from 0A -2 and higher

920244	24 V	≤ 52 V	10 kA	2.5 kA	4	line-PG	12 mm
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DEHNpatch for Ethernet applications

Universal arrester for Industrial Ethernet, Power over Ethernet (PoE+ acc. to IEEE 802.3at to 57V) and similar applications in structured cabling systems according to class E up to 250 MHz.

929121	48 V	≤ 180 V	0.5 kA	0.5 kA	4	line-PG	19 mm
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DEHNpatch outdoor type 2 (IP65) UL, CSA

Complete surge protection unit to protect surveillance camera's, PoE ++ 4PPoE and other GBit Ethernet applications from damage due to surges. The IP65 rated enclosure permits safe to use outdoor

- Easy mounting: even at great heights (universal brackets for poles and wall mounting)
- Lightning current discharge capacity (10/350 μs)

929221	24 V	≤ 52 V	10 kA	2.5 kA	4	line-PG	12 mm
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LYTE



CliQ



CliQ II



SYNC

Industrial Power Supplies

Delta - worlds leading power supply manufacturer offers state-of-the-art designs made to withstand harsh industrial environments in accordance with ATEX requirements. The rugged ultra-compact case is both shock and vibration resistant according to IEC 60068-2.

Product features:

- DIN rail mounting (RoHS compliant)
- Wide input voltage range 85 to 264 VAC (1 phase) / 320 to 600 VAC (3 phase)
- Provides - overload, overvoltage and thermal protection
- Power boost - (enables reserve power for reliable start-up of loads with high inrush currents)
- Conforms to harmonic current IEC/EN 61000-3-2, Class A
- Conformal coating on PCBAs to protect against chemical and dust pollutants
- Certification: UL508, EN 60950, cULus 60950, EN 50178, EN 60204, GS, CCS Aus

type	input voltage	output voltage	rated load		housing	dimensions (mm)		
			(W)	(A)		(H)	(W)	(D)

LYTE series *DIN rail mounting, cost effective*

LYTE - DIN rail mounting economically priced, compact Power Supplies for general applications.

- Universal AC input voltage range: 85 - 264 VAC (DC input range 120 - 375 VDC)
- Efficiency - up to 90.0% at 230 VAC
- Built-in constant current circuit for reactive loads
- Operating temperature: -20°C to +70°C

DRL-24V75W1AZ	85 - 264 VAC	24 VDC (adj)	75	3.2	plastic	124	27	102
DRL-24V120W1AA	85 - 264 VAC	24 VDC (adj)	120	5	alu.	124	40	118
DRL-24V240W1AA	85 - 264 VAC	24 VDC (adj)	240	10	alu.	124	60	118
DRL-24V480W1AA	85 - 264 VAC	24 VDC (adj)	480	20	alu.	124	86	129
DRL-48V120W1AA	85 - 264 VAC	48 VDC (adj)	120	2.5	alu.	124	40	118

CliQ series *DIN rail mounting*

- Universal AC input voltage (without power de-rating for entire input voltage range)
- Power Boost of 150% for 3 seconds
- Efficiency - up to 88.0% @ 230 VAC
- Operating temperature: -20°C to +80°C

DRP012V030W1AZ	85 - 264 VAC	12 VDC (adj)	30	2.5	plastic	100	32	101
DRP012V060W1AA	85 - 264 VAC	12 VDC (adj)	60	5	alu.	121	32	120
DRP012V100W1AA	85 - 264 VAC	12 VDC (adj)	100	8.33	alu.	121	50	119
DRP-24V48W1AZ	85 - 264 VAC	24 VDC (adj)	48	2	plastic	100	32	101
DRP024V060W1AZ	85 - 264 VAC	24 VDC (adj)	60	2.5	plastic	121	32	113

CliQ II series *DIN rail mounting, high specification series*

- High efficiency - up to 92.0% at 230 VAC
- Power Boost of 150% for 5 seconds (480W: 200% for 2 seconds)
- Operating temperature: -25°C to +80°C

DRP024V060W1BN	85 - 264 VAC	24 VDC (adj)	60	2.5	alu.	121	32	125
DRP024V120W1BN	85 - 264 VAC	24 VDC (adj)	120	5	alu.	121	50	125
DRP024V240W1BN	85 - 264 VAC	24 VDC (adj)	240	10	alu.	121	85	125
DRP024V480W1BN	85 - 264 VAC	24 VDC (adj)	480	20	alu.	121	144	119
DRP048V120W1BN	85 - 264 VAC	48 VDC (adj)	120	2.5	alu.	121	50	125
DRP048V240W1BN	85 - 264 VAC	48 VDC (adj)	240	5	alu.	121	85	125
DRP048V480W1BN	85 - 264 VAC	48 VDC (adj)	480	10	alu.	121	144	119

Three phase 320 - 575 VAC 24 VDC output

DRP024V060W3BN	320 - 575 VAC	24 VDC (adj)	60	2.5	alu.	121	50	118
DRP024V120W3BN	320 - 575 VAC	24 VDC (adj)	120	5	alu.	121	50	118
DRP024V240W3BN	320 - 575 VAC	24 VDC (adj)	240	10	alu.	121	70	118
DRP024V480W3BN	320 - 575 VAC	24 VDC (adj)	480	20	alu.	121	140	118
DRP024V960W3BN	320 - 575 VAC	24 VDC (adj)	960	40	alu.	121	255	118

SYNC series *DIN rail mounting, Slimline power supplies*

Ultra-compact, galvanic isolation, competitively priced DIN rail mount power supplies, designed for general applications requiring a highly reliable power supply with restricted dimensions.

- Universal AC input voltage
- Efficiency - up to 89.0% at 230 VAC
- Operating temperature: -20°C to +70°C

DRS-12V50W1NZ	85 - 264 VAC	12 VDC (adj)	48	4	plastic	75	30	90
DRS-24V30W1NZ	85 - 264 VAC	24 VDC (adj)	30	1.25	plastic	75	21	90
DRS-24V50W1NZ	85 - 264 VAC	24 VDC (adj)	50	2.1	plastic	75	30	90
DRS-24V100W1NZ	85 - 264 VAC	24 VDC (adj)	96	4	plastic	75	45	100



CHROME

CHROME series *DIN rail mounting, modular, Class II*

Chrome DIN rail power supply is a compact, modular unit designed for compact cabinets, they feature a universal AC input range and are certified to international safety standards ITE and ICE

- Compact modular housing (*same profile and cut-out as standard MCB's*)
- Class II double insulation (*no earth connection required*)
- Safety approval to IEC/EN/UL 60950-1 (ITE standard) and UL 508 (*industrial standard*)

type	input voltage	output voltage	rated load		housing	dimensions (mm)		
			(W)	(A)		(H)	(W)	(D)
DRC-5V10W1AZ	90 - 264 VAC	5 VDC (adj)	7.5	1.50	plastic	91	18	56
DRC-12V10W1AZ	90 - 264 VAC	12 VDC (adj)	10	0.83	plastic	91	18	56
DRC-12V30W1AZ	90 - 264 VAC	12 VDC (adj)	25.2	2.10	plastic	91	53	56
DRC-12V60W1AZ	90 - 264 VAC	12 VDC (adj)	54	4.50	plastic	91	71	56
DRC-24V10W1AZ	90 - 264 VAC	24 VDC (adj)	10	0.42	plastic	91	18	56
DRC-24V30W1AZ	90 - 264 VAC	24 VDC (adj)	30	1.25	plastic	91	53	56
DRC-24V60W1AZ	90 - 264 VAC	24 VDC (adj)	60	2.50	plastic	91	71	56
DRC-24V100W1AZ	90 - 264 VAC	24 VDC (adj)	91.2	3.80	plastic	91	90	56



Complementary modules

DC-UPS module (*without battery*) *Suitable for 24V system up to 10A / 40A*

- High MTBF > 500 000 hours per Telcordia SR-332
- Zero switch over time from loss of DC input to battery operation
- Built-in diagnostic monitoring for DC OK, discharge and battery fail by relay contacts
- Modular design to be used in small cabinets where space is critical (*DRU-24V10ACZ*)

DRU-24V10ACZ	DC-UPS mod.	24-28 VDC	10A	plastic	91	71	56
DRU-24V40ABN	DC-UPS mod.	23-28 VDC	40A	alu.	121	50	118

Complementary modules - DIN rail mounting

Redundancy module *built-in 2 channel DC OK signal and alarm contact*

Redundancy modules provide additional protection against potential failure of the 24 VDC supply. Two power supplies are decoupled via a redundancy module which continually monitors the feeding power supply units and when one unit fails, automatically switches to the other.

DRR-20N	22 - 60 VDC	22 - 60 VDC	20A	alu.	121	50	122
DRR-40N	22 - 60 VDC	22 - 60 VDC	40A	alu.	121	50	122

Buffer module *for protection against short power failures*

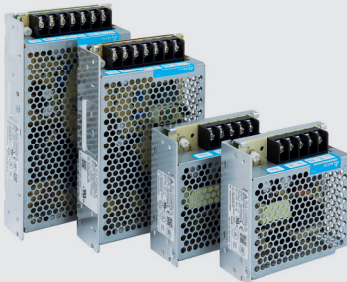
- Buffering time 250ms to 10s (*depending on load current*)
- Supports parallel connection for extended buffer time

DRB-24V020ABN	23 - 28.8 VDC	22 - 28 VDC	20A	alu.	121	50	122
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PMT series - Panel mounting (*chassis type*) *enclosed power supplies (single phase)*

PMT panel mount Power Supplies with a wide operating temperature range, withstand shock and vibration according to IEC 60068-2. They offer overvoltage and over current protection and meet price competitive demand without compromising quality of components and product specifications.

- Universal AC input voltage without power de-rating
- Conforms to harmonic current IEC/EN 61000-3-2, Class A
- Short Circuit / Overvoltage / Overload / Over Temperature Protection



PMT

PMT-5V35W1AA	85 - 264 VAC	5 VDC (adj)	35	7	alu.	38	98	98
PMT-5V50W1AA	85 - 264 VAC	5 VDC (adj)	50	10	alu.	38	98	98
PMT-5V350W1AM*	180 - 264 VAC	5 VDC (adj)	300	60	alu.	50	115	215
PMT-12V35W1AA	90 - 264 VAC	12VDC (adj)	35	2.92	alu.	30	82	99
PMT-12V50W2BA	90 - 264 VAC	12VDC (adj)	50.4	4.2	alu.	30	82	99
PMT-12V100W2BA	90 - 264 VAC	12VDC (adj)	102	8.5	alu.	30	97	129
PMT-12V150W2BA*	180 - 264 VAC	12VDC (adj)	150	12.5	alu.	30	97	159
PMT-24V35W1AA	90 - 264 VAC	24 VDC (adj)	35	1.46	alu.	38	98	98
PMT-24V50W2BA	90 - 264 VAC	24 VDC (adj)	53	2.2	alu.	30	82	99
PMT-24V100W2BA	90 - 264 VAC	24 VDC (adj)	108	4.5	alu.	30	97	129
PMT-24V150W2BA*	180 - 264 VAC	24 VDC (adj)	150	6.3	alu.	30	97	159
PMT-24V200W1AM*	180 - 264 VAC	24 VDC (adj)	211	8.8	alu.	50	115	215
PMT-24V350W1AK*	180 - 264 VAC	24 VDC (adj)	350	14.6	alu.	50	115	215

* AC input voltage selectable 90 - 132 VAC (or) 180 - 264 VAC - via switch



PSL1M...



PSL1...



PSL3...

DIN rail mount power supplies

- Modular DIN rail mounting (*aligns with standard MCB's with 45 mm cut out*)
- Rated output voltage 12 VDC or 24 VDC
- High output efficiency up to 89%
- Adjustable output voltage

type	input voltage	output voltage	rated load		description	dimensions (mm)		
			(A)	(W)		(H)	(W)	(D)

Modular DIN rail mount power supplies

- Protection:
- short circuit
 - overvoltage
 - input voltage peaks

Single - phase 100 - 240 VAC (*insulated housing*)

PSL1M02412	90 - 264 VAC	12 VDC	2	24	power supply	96	35	56
PSL1M03312	90 - 264 VAC	12 VDC	2.75	33	power supply	96	53	56
PSL1M05412	90 - 264 VAC	12 VDC	4.5	54	power supply	96	72	56
PSL1M07212	90 - 264 VAC	12 VDC	6	72	power supply	96	90	56
PSL1M02424	90 - 264 VAC	24 VDC	1	24	power supply	96	35	56
PSL1M03624	90 - 264 VAC	24 VDC	1.5	36	power supply	96	53	56
PSL1M06024	90 - 264 VAC	24 VDC	2.5	60	power supply	96	72	56
PSL1M10024	90 - 264 VAC	24 VDC	4.2	100	power supply	96	90	56

DIN rail mount industrial power supplies (IEC/EN 60715)

- Rated voltage 24 VDC
- High output efficiency up to 92%
- Adjustable output voltage

Single - phase (90 - 264 VAC)

PSL112024	90 - 264 VAC	24 VDC	5	120	power supply	124	64	124
PSL124024	90 - 264 VAC	24 VDC	10	240	power supply	124	84	124
PSL130024	90 - 264 VAC	24 VDC	12.5	300	power supply	124	84	124

Three phase (340 - 575 VAC)

PSL312024	340 - 575 VAC	24 VDC	5	120	power supply	124	74	119
PSL324024	340 - 575 VAC	24 VDC	10	240	power supply	124	89	119
PSL348024	340 - 575 VAC	24 VDC	20	480	power supply	124	150	119



680100040



680320042



680630042

TR28 series - Control and safety or isolating transformers

Control and safety or isolating single-phase transformers supply high instantaneous power for the correct operation of contactors and other control and switchgear.

- DIN rail mountable (up to 400VA)
- High flexibility - several primary rated voltages (with regulation taps +20V or -20V)
- Serial-parallel secondary bridge pieces for ease of connection
- High capacity clamp terminals (10 mm² up to 400VA / 25 mm² up to 1250VA)

Primary voltages: 240V - 400V - 525V (with regulation taps + and - 20V)
 Secondary voltages: 12-24V (or) 115-230V
 Protection degree: IP20 protection (finger safe)
 Thermal class: B (130°C)
 Class: Class I
 Frequency: 50/60 Hz
 Dielectric strength: Primary - secondary > 4.5kV
 Standards: IEC/EN 61558-1, IEC/EN 61558-2-2 I-2-4 I-2-6

type	power (VA)		inrush VA	secondary voltage	dimensions (mm)			weight kg
	t _a 25°C	t _a 40°C			(H)	(W)	(D)	

TR 28 - Secondary voltage: 12 - 24V

- Primary voltage: 240V - 400V - 525V

680040040	40	25	75	12-24V	113	84	96	1.17
680063040	63	40	120	12-24V	113	84	105	1.48
680100040	100	63	150	12-24V	113	84	112	1.83
680200040	200	160	350	12-24V	113	84	131	2.73
680320040	320	250	600	12-24V	135	108	138	4.45
680400040	400	320	800	12-24V	135	108	148	5.00
680630040	630	500	1275	12-24V	152	120	156	7.08
680800040	800	630	1700	12-24V	177	150	140	8.68
681000040	1000	800	2100	12-24V	177	150	160	11.50
681250040	1250	1000	3300	12-24V	177	150	183	14.40

TR 28 - Secondary voltage: 115 - 230V

- Primary voltage: 240V - 400V - 525V

680040042	40	25	75	115-230V	113	84	96	1.17
680063042	63	40	120	115-230V	113	84	105	1.48
680100042	100	63	150	115-230V	113	84	112	1.83
680130042	130	100	230	115-230V	113	84	116	1.83
680200042	200	160	350	115-230V	113	84	131	2.73
680320042	320	250	600	115-230V	135	108	138	4.45
680400042	400	320	800	115-230V	135	108	148	5.00
680630042	630	500	1275	115-230V	152	120	156	7.08
680800042	800	630	1700	115-230V	177	150	140	8.68
681000042	1000	800	2100	115-230V	177	150	160	11.50
681250042	1250	1000	3300	115-230V	177	150	183	14.40

