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LV MOULDED CASE CIRCUIT BREAKERS

The most important function of compact switches, also known as circuit breakers, is to protect the circuit in short circuit and overload situations, as well as to enable on-off operations of the circuit. At the same time, when used with the combination of leakage current protection relays and toroidal transformers, they protect the circuit against leakage currents.

- 1, 2, 3 and 4 poles
- Rated currents from 16A to 1600A
- 20kA, 25kA, 36kA, 50kA and 70kA breaking capacity
- Thermal-magnetic adjustable and fixed type options
- Short circuit interruption time thanks to the limiter feature
- Additional protection and control functions thanks to their compatibility with accessories (motor mechanism, trip coil, low voltage coil, connection terminal block, extension bar set, rotary extension arm, rotary control arm, mechanical padlock apparatus, auxiliary contact, alarm contacts)
- Highly durable body design with BMC body

Type	Model	Type Code	Nr Of Poles	Rated current(A)	Icu(kA)	Ue(V)	Protection Unit	Protection Unit
Adjustable	B	B160	3 Pole	25~160 A	25 KA	400 V AC	Thermal Adj Magnetic Fixed	I _r : (0.8-1)×I _n ; I _m : 10×I _n
		B160N	4 Pole	25~160 A	25 KA	400 V AC	Thermal Adj Magnetic Fixed	I _r : (0.8-1)×I _n ; I _m : 10×I _n
		B250	3 Pole	200 , 250 A	36 KA	400 V AC	Thermal Adj Magnetic Fixed	I _r : (0.8-1)×I _n ; I _m : 10×I _n
		B250N	4 Pole	100 ~ 250 A	36 KA	400 V AC	Thermal Adj Magnetic Fixed	I _r : (0.8-1)×I _n ; I _m : 10×I _n
	K	K160	3 Pole	16~160 A	36 KA	415 V AC	Thermal Adj Magnetic Fixed	I _r : (0.7-1)×I _n ; I _m : 10×I _n
		K160N	4 Pole	16~160 A	36 KA	415 V AC	Thermal Adj Magnetic Fixed	I _r : (0.7-1)×I _n ; I _m : 10×I _n
		K250	3 Pole	63 ~ 250 A	36 KA	400 V AC	Thermal Magnetic Adj	I _r : (0.7-1)×I _n ; I _m : (5-10)×I _n
		K250N	4 Pole	200 , 250 A	36 KA	400 V AC	Thermal Magnetic Adj	I _r : (0.7-1)×I _n ; I _m : (5-10)×I _n
		K400	3 Pole	315 , 400 A	36 KA	400 V AC	Thermal Magnetic Adj	I _r : (0.8-1)×I _n ; I _m : (5-10)×I _n
		K630	4 Pole	500 , 630 A	36 KA	400 V AC	Thermal Magnetic Adj	I _r : (0.8-1)×I _n ; I _m : (5-10)×I _n
		M160	3 Pole	40 ~ 160 A	50 KA	400 V AC	Thermal Adj Magnetic Fixed	I _r : (0.8-1)×I _n ; I _m : 10×I _n
		M250	3 Pole	63 ~ 250 A	50 KA	400 V AC	Thermal Magnetic Adj	I _r : (0.7-1)×I _n ; I _m : (5-10)×I _n
	M	M250N	4 Pole	63 ~ 250 A	50 KA	400 V AC	Thermal Magnetic Adj	I _r : (0.7-1)×I _n ; I _m : (5-10)×I _n
		M400	3 Pole	315 , 400 A	50 KA	400 V AC	Thermal Magnetic Adj	I _r : (0.8-1)×I _n ; I _m : (5-10)×I _n
		M630	3 Pole	500 , 630 A	50 KA	400 V AC	Thermal Magnetic Adj	I _r : (0.8-1)×I _n ; I _m : (5-10)×I _n
		M800	3 Pole	800 A	50 KA	400 V AC	Thermal Magnetic Adj	I _r : (0.8-1)×I _n ; I _m : (5-10)×I _n
	S	S250	3 Pole	100 ~ 250 A	70 KA	400 V AC	Thermal Magnetic Adj	I _r : (0.8-1)×I _n ; I _m : (5-10)×I _n
		S400	3 Pole	315 , 400 A	70 KA	400 V AC	Thermal Magnetic Adj	I _r : (0.8-1)×I _n ; I _m : (5-10)×I _n
		S400N	4 Pole	315 , 400 A	70 KA	400 V AC	Thermal Magnetic Adj	I _r : (0.8-1)×I _n ; I _m : (5-10)×I _n
		S630	3 Pole	500 , 630 A	70 KA	400 V AC	Thermal Magnetic Adj	I _r : (0.8-1)×I _n ; I _m : (5-10)×I _n
		S630N	4 Pole	500 , 630 A	70 KA	400 V AC	Thermal Magnetic Adj	I _r : (0.8-1)×I _n ; I _m : (5-10)×I _n
		S800	3 Pole	800 A	70 KA	400 V AC	Thermal Magnetic Adj	I _r : (0.8-1)×I _n ; I _m : (5-10)×I _n
	U	U250	3 Pole	40 ~ 250 A	36 KA	400 V AC	Electronic	I _o : 0,4 - 1 / I _r : (0.9-1)×I _o / I _{sd} : (1,5-10)×I _r
		U250N	4 Pole	40 ~ 250 A	36 KA	400 V AC	Electronic	I _o : 0,4 - 1 / I _r : (0.9-1)×I _o / I _{sd} : (1,5-10)×I _r
		U400	3 Pole	400 A	70 KA	400 V AC	Electronic	I _o : 0,5 - 1 / I _r : (0.8-1)×I _o / I _{sd} : (2-10)×I _r
		U400N	4 Pole	400 A	70 KA	400 V AC	Electronic	I _o : 0,5 - 1 / I _r : (0.8-1)×I _o / I _{sd} : (2-10)×I _r
		U630	3 Pole	630 A	70 KA	400 V AC	Electronic	I _o : 0,5 - 1 / I _r : (0.8-1)×I _o / I _{sd} : (2-10)×I _r
		U630N	4 Pole	630 A	70 KA	400 V AC	Electronic	I _o : 0,5 - 1 / I _r : (0.8-1)×I _o / I _{sd} : (2-10)×I _r
		U1600	3 Pole	800,1000,1250,1600 A	70 KA	400 V AC	Electronic	I _r : (0.4-1)×I _n ; I _m : (2-10)×I _n
Fixed Type	KM	KM200	1 Pole	16 ~ 200 A	36 KA	400/415 V AC		Fixed
	A	A125	2,3 Pole	20 ~ 125 A	20 KA	400/415 V AC		Fixed
		A160	3 Pole	20 ~ 160 A	25 KA	415 V AC		Fixed
		A160N	4 Pole	20 ~ 160 A	25 KA	415 V AC		Fixed
		A250	3 Pole	200 , 250 A	36 KA	415 V AC		Fixed
		A250N	4 Pole	200 , 250 A	36 KA	415 V AC		Fixed
		A400	3 Pole	315 , 400 A	36 KA	415 V AC		Fixed
		A400N	4 Pole	315 , 400 A	36 KA	415 V AC		Fixed
		A630	3 Pole	500 , 630 A	36 KA	415 V AC		Fixed
		A630N	4 Pole	500 , 630 A	36 KA	415 V AC		Fixed
		A800	4 Pole	800 A	36 KA	415 V AC		Fixed
Earth Leakage	H	H125	3 Pole	40~125 A	25 KA	400 V AC	Thermal Adj Magnetic Fixed	10×I _n
		H125N	4 Pole	40~125 A	25 KA	400 V AC	Thermal Adj Magnetic Fixed	10×I _n
		H250	3 Pole	160~250 A	36 KA	400 V AC	Thermal Adj Magnetic Fixed	10×I _n
		H250N	4 Pole	160~250 A	36 KA	400 V AC	Thermal Adj Magnetic Fixed	10×I _n
	F	F250	3 Pole	40~250 A	36 KA	400 V AC	Thermal Magnetic Adj	10×I _n
	D	D125	4 Pole	40~125 A	36 KA	400 V AC	Fixed	10×I _n
		D250	4 Pole	160~250 A	36 KA	400 V AC	Fixed	10×I _n
		D400	4 Pole	250 , 315 , 400 A	50 KA	400 V AC	Fixed	10×I _n
		D630	4 Pole	630 A	50 KA	400 V AC	Fixed	10×I _n
DC		DC160	1,2,3,4	80, 100, 125, 160 A	36 KA	1000 V DC	Thermal Adj Magnetic Fixed	I _r : (0.7-1)×I _n ; I _m : (7)×I _n
		CD250	1,2,3,4	200, 250	36 KA	1000 V DC	Fixed	7×I _n

LV MCCB, Thermal-Magnetic Adjustable Type - Technical Specifications

						B160				K160				M160		B250			K250												
Standard						IEC / EN 60947-2						IEC / EN 60947-2				IEC / EN 60947-2				IEC / EN 60947-2											
Rated current In (at 40°C)						A						25, 32, 40, 50, 63, 80, 100, 125, 160				16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160				40, 50, 63, 80, 100, 125, 160				200, 250		100, 125, 160, 200, 250		63, 80, 100, 125, 160, 200, 250		200, 250	
Number of poles						1		2		3		4		3		4		3		3		4		3		4					
Rated operating voltage						Ue	V	AC		400				415				400				400				400					
Rated insulation voltage						Ui	V	AC		1000				1000				1000				1000				1000					
Test Voltage at Industrial Frequency for 1 Minute						V		AC		3000				3000				3000				3000				3000					
Rated impulse Withstand voltage						Uimp	kV	AC		8				8				8				8				8					
Rated ultimate short circuit breaking capacity						Icu		kA		690 V AC		8				8				10				8				8			
										500 V AC		7				9				18				9				9			
										440 V AC		15				22				42				22				22			
										415 V AC		25				36				50				36				36			
										240 V AC		35				50				65				50				50			
										250 V DC (3 poles serial)		10				15				25				15				15			
Rated service short circuit breaking capacity						Ics		kA		690 V AC		5				8				8				8				8			
										500 V AC		7				9				14				9				9			
										440 V AC		10				22				32				22				22			
										415 V AC		25				36				50				36				36			
										240 V AC		15				50				50				25				50			
										250 V DC (3 poles serial)		5				10				19				5				10			
Category (IEC/EN 60947-2)						A						A				A				A				A							
Pollution degree						3						3				3				3				3							
Electrical life (No. operation)						ON - OFF		415 V		4.000				8.000				8.000				4.000				8.000					
Mechanical life (No. operation)						ON - OFF		10.000				20.000				20.000				10.000				20.000							
Protection unit												Thermal Adjustable Magnetic Fixed										Thermal Magnetic Adjustable									
Protection unit (power & network system protection)						Ir: (0,8-1)xIn; Im: 10xIn						Ir: (0,7-1)xIn; Im: 10xIn				Ir: (0,8-1)xIn; Im: 10xIn				Ir: (0,8-1)xIn; Im: 10xIn				Ir: (0,7-1)xIn; Im: (5-10)xIn							
Ambient operating temperature						°C		-20 to +60				-20 to +60				-20 to +60				-20 to +60				-20 to +60							
Ambient storage temperature						°C		-40 to +80				-40 to +80				-40 to +80				-40 to +80				-40 to +80							
Relative humidity						90%						90%				90%				90%				90%							
Dimensions						Width	mm		24,5	49,5	74,5	99,5	105	140	90	105	140	105	140												
						Length	mm		141				178	169	138	177	177	178	169												
						Depth	mm		60				89	89	82	88,5	88,5	89	89												

M250		S250	K400	M400	S400		K630	M630	S630		M800	S800
IEC / EN 60947-2		IEC / EN 60947-2	IEC / EN 60947-2	IEC / EN 60947-2	IEC / EN 60947-2		IEC / EN 60947-2	IEC / EN 60947-2	IEC / EN 60947-2		IEC / EN 60947-2	IEC / EN 60947-2
63, 80, 100, 125, 160, 200, 250	100, 125, 160, 200, 250	100, 125, 160, 200, 250	315, 400	315, 400	315, 400		500, 630	500, 630	500, 630		800	800
3	4	3	3	3	3	4	3	3	3	4	3	3
400		400	400	400	400		400	400	400		400	400
1000		1000	1000	1000	1000		1000	1000	1000		1000	1000
3000		3000	3000	3000	3000		3000	3000	3000		3000	3000
8		8	8	8	8		8	8	8		8	8
10		16	12	17	16		12	17	16		22	16
18		42	20	25	42		20	25	42		35	42
42		50	25	35	50		25	35	50		42	50
50		70	36	50	70		36	50	70		50	70
65		100	65	50	100		65	80	100		100	100
25		30	25	30	30		25	30	30		30	30
10		8	12	17	8		12	17	8		22	8
18		21	20	25	21		20	25	21		35	21
42		25	25	35	25		25	35	25		42	25
50		52	36	50	52		36	50	52		25	35
65		50	36	80	50		36	50	50		50	50
25		23	20	23	23		23	23	23		23	23
A		A	A	A	A		A	A	A		A	A
3		3	3	3	3		3	3	3		3	3
8000		8000	6000	6000	6000		5000	5000	5000		5000	5000
20000		20000	15000	15000	15000		15000	15000	15000		10000	10000
Thermal Magnetic Adjustable			Thermal Magnetic Adjustable									
I _r : (0,7-1)xI _n ; I _m : (5-10)xI _n		I _r : (0,8-1)xI _n ; I _m : (5-10)xI _n	I _r : (0,8-1)xI _n ; I _m : (5-10)xI _n	I _r : (0,8-1)xI _n ; I _m : (5-10)xI _n	I _r : (0,8-1)xI _n ; I _m : (5-10)xI _n		I _r : (0,8-1)xI _n ; I _m : (5-10)xI _n	I _r : (0,8-1)xI _n ; I _m : (5-10)xI _n	I _r : (0,8-1)xI _n ; I _m : (5-10)xI _n		I _r : (0,8-1)xI _n ; I _m : (5-10)xI _n	I _r : (0,8-1)xI _n ; I _m : (5-10)xI _n
-20 to +60		-20 to +60	-20 to +60	-20 to +60	-20 to +60		-20 to +60	-20 to +60	-20 to +60		-20 to +60	-20 to +60
-40 to +80		-40 to +80	-40 to +80	-40 to +80	-40 to +80		-40 to +80	-40 to +80	-40 to +80		-40 to +80	-40 to +80
90%		90%	90%	90%	90%		90%	90%	90%		90%	90%
105	140	105	140	140	188	140	140	140	140	188	210	210
178	169	161	267	267	263	263	267	267	263	263	280	280
89	89	89	104	104	117	117	104	104	117	117	107	107

LV MCCB, Electronic Type - Technical Specifications

				U250		U400		U630		U1600	
Standard				IEC / EN 60947-2		IEC / EN 60947-2		IEC / EN 60947-2		IEC / EN 60947-2	
Rated current In (at 40°C)	A			40, 100, 160, 250		400		630		800, 1000, 1250, 1600	
Number of poles				3	4	3	4	3	4	3	
Rated operating voltage	Ue	V	AC	400		400		400		400	
Rated insulation voltage	Ui	V	AC	1000		1000		1000		1000	
Test Voltage at Industrial Frequency for 1 Minute	V		AC	3000		3000		3000		3000	
Rated impulse Withstand voltage	Uimp	kV	AC	8		8		8		8	
Rated ultimate short circuit breaking capacity	Icu	kA	690 V AC	8		16		16		25	
			500 V AC	9		42		42		35	
			440 V AC	22		50		50		50	
			415 V AC	36		70		70		70	
			240 V AC	50		85		85		85	
			250 V DC (3 poles serial)	15		30		30		—	
Rated service short circuit breaking capacity	Ics	kA	690 V AC	8		16		16		25	
			500 V AC	9		42		42		35	
			440 V AC	22		50		50		50	
			415 V AC	36		70		70		70	
			240 V AC	50		85		85		85	
			250 V DC (3 poles serial)	10		23		23		—	
Category (IEC/EN 60947-2)				A		A		A		A	
Pollution degree				3		3		3		3	
Electrical life (No. operation)	ON - OFF	415 V		8000		8000		8000		4000	
Mechanical life (No. operation)	ON - OFF			20000		15000		15000		8000	
Protection unit				Electronic		Electronic		Electronic		Electronic	
Protection unit (power & network system protection)				Io: 0,4-1 I _r : (0,9-1) x Io I _{sd} : (1,5-10) x I _r		Io: 0,5-1 I _r : (0,8-1) x Io I _{sd} : (2-10) x I _r		Io: 0,5-1 I _r : (0,8-1) x Io I _{sd} : (2-10) x I _r		I _r : (0,4-1)xIo; I _m : (2-10)xIo	
Ambient operating temperature	°C			-20 to +60		-20 to +60		-20 to +60		-20 to +60	
Ambient storage temperature	°C			-40 to +80		-40 to +80		-40 to +80		-40 to +80	
Relative humidity				90%		90%		90%		90%	



ELECTRONIC TYPE LV CIRCUIT BREAKERS

LV MCCB, Thermal-Magnetic Fixed Type - Technical Specifications

			KM200	A125		A160				A250		A400		A630		A800
Standard			IEC / EN 60947-2	IEC / EN 60947-2		IEC / EN 60947-2				IEC / EN 60947-2		IEC / EN 60947-2		IEC / EN 60947-2		IEC / EN 60947-2
Rated current In (at 40°C)	A		16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160, 200	20, 25, 32, 40, 50, 63, 80, 100, 125		16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160				200, 250		315, 400		500, 630		800
Number of poles			1	2	3	1	2	3	4	3	4	3	4	3	4	4
Rated operating voltage	Ue	V AC	400-415	400-415		415				400	415	415		415		415
Rated insulation voltage	Ui	V AC	1000	1000		1000				1000		1000		1000		1000
Test Voltage at Industrial Frequency for 1 Minute	V AC		3000	3000		3000				3000		3000		3000		3000
Rated impulse withstand voltage	Uimp	kV	8	8		8				8		8		8		8
Rated ultimate short circuit breaking capacity	Icu	kA	690 V AC	12	7	8				12		12		12		12
		500V AC	20	8	10				25		20		20		20	
		440V AV	25	15	20				25		25		25		25	
		415 V AC	36	20	25				36		36		36		36	
		240 V AC	50	30	35				50		50		50		50	
		250 V DC (3 poles serial)	15	8	15				15		15		15		15	
Rated service short circuit breaking capacity	Ics	kA	690 V AC	12	7	8				12		12		12		12
		500 V AC	20	8	10				20		20		20		20	
		440V AC	25	15	20				25		25		25		25	
		415 V AC	36	20	25				36		36		36		36	
		240 V AC	50	30	35				50		50		50		50	
		250 V DC (3 poles serial)	15	8	15				15		15		15		15	
Pollution degree			3	3		3				3		3		3		3
Electrical life (No. operation)	ON-OFF	400/415 V AC	4.000	4.000		5.000				4.000		3.000		1.000	2.000	1.500
Mechanical life (No. operation)	ON-OFF		10.000	8.000		12.000				10.000		7.000		4.000	6.000	5.000
Thermal adjustment			Fixed	Fixed		Fixed				Fixed		Fixed		Fixed		Fixed
Magnetic adjustment			Fixed	Fixed		Fixed				Fixed		Fixed		Fixed		Fixed
Operating ambient temperature	°C		-20 to +60	-20 to +60		-20 to +60				-20 to +60		-20 to +60		-20 to +60		-20 to +60
Storage temperature	°C		-40 to +80	-40 to +80		-40 to +80				-40 to +80		-40 to +80		-40 to +80		-40 to +80
Relative humidity			90%	90%		90%				90%		90%		90%		90%
Dimensions	Width	mm	35	50	75	24,5	49,5	74,5	99,5	105	140	139	186	139	280	280
	Length	mm	158	130	135	141	141	141	141	177	177	267	262	267	281	281
	Depth	mm	89	60	65	60	60	60	60	60,5	60,5	104	104	104	108	108



FIXED TYPE LV CIRCUIT BREAKERS

Earth Leakage Circuit Breakers - Technical Specifications

				H125	H125N	H250	H250N	
Number of poles				3	4	3	4	
Rated current In (at 40°C)	A				40, 50, 63, 80,100, 125	25, 32, 40, 50, 63, 80,100, 125	160, 200, 250	160, 200, 250
Sensitivity settings IΔn	mA				30, 300, 500	30, 300, 500	30, 300, 500	30, 300, 500
Tripping time IΔn	milli second				100, 300, 1000	100, 300, 1000	100, 300, 1000	100, 300, 1000
Instantaneous tripping time	milli second				<100	<100	<100	<100
Rated operating voltage	Ue	V	AC		400	400	400	400
Rated insulation voltage	Ui	V	AC		690	690	690	690
Rated impulse withstand voltage	Uimp	kV	AC		8	8	8	8
Rated ultimate short circuit breaking capacity	Icu	kA	690 V AC		7	7	8	8
			500 V AC		8	8	9	9
			440V AC		15	15	22	22
			415 V AC		25	25	36	36
			240 V AC		35	35	50	50
			"250 V DC (3 poles serial) "		10	10	15	15
Rated service short circuit breaking capacity	Ics	kA	690 V AC		7	7	8	8
			500 V AC		8	8	10	10
			440V AC		12	12	14	14
			415 V AC		12,5	12,5	18	18
			240 V AC		18	18	25	25
			"250 V DC (3 poles serial)"		7	7	9	9
Pollution degree				3	3	3	3	
Electrical life (No. operation)	ON - OFF	400 / 415 V AC		1.000	1.000	1.000	1.000	
Mechanical life (No. operation)	ON - OFF			7.000	7.000	7.000	7.000	
Overload protection				(0,8-1)xIn	(0,8-1)xIn	(0,8-1)xIn	(0,8-1)xIn	
Rated short circuit breaking protection				10xIn	10xIn	10xIn	10xIn	
Operating ambient temperature	°C				-20 to +60	-20 to +60	-20 to +60	-20 to +60
Storage temperature	°C				-20 to +60	-20 to +60	-20 to +60	-20 to +60
Relative humidity				90%	90%	90%	90%	
Dimensions	Width	mm		75	100	105	140	
	Length	mm		130	130	165	165	
	Depth	mm		60	60	60	60	

F250		D125	D250	D400	D630
3	4	4	4	4	4
40, 50, 63, 80, 100, 125, 160, 200, 250		40, 50, 63, 80, 100, 125	160, 200, 250	250, 315, 400	630
30, 300, 500, 1000, 3000		30, 100, 300, 500	30, 100, 300, 500	100, 200, 300, 500	100, 200, 300, 500
100, 500, 1000		100, 300, 500, 1000	100, 300, 500, 1000	100, 300, 500, 1000	100, 300, 500, 1000
<100		<100	<100	<100	<100
400		400	400	400	400
1000		690	690	690	690
8		8	8	8	8
8		8	8	10	10
9		9	9	18	18
22		22	22	42	42
36		36	36	50	50
50		50	50	65	65
15		15	15	25	25
8		8	8	7	7
10		10	10	8	8
14		14	14	15	15
18		18	18	25	25
25		25	25	35	35
9		9	9	10	10
3		3	3	3	3
5.000		5.000	5.000	5.000	4.000
15.000		15.000	15.000	15.000	10.000
(0,8-1)xIn		Fixed	Fixed	Fixed	Fixed
10xIn		10xIn	10xIn	10xIn	10xIn
-20 to +60		-20 to +60	-20 to +60	-20 to +60	-20 to +60
-40 to +80		-40 to +80	-40 to +80	-40 to +80	-40 to +80
90%		90%	90%	90%	90%
105	140	120	140	184	280
252	252	203	221	308	347
89	89	68	86	103	103



**EARTH LEAKAGE
CIRCUIT BREAKERS**

Shunt Trip Release



Applicable MCCB	Coil Voltage (V)	Order Code
B160 - B160N - A160 - A160N	230 AC	B0160AB230AC
B250 - B250N - A250 - A250N	230 AC	B0250AB230AC
K160 - K250 - M250 - K160N - K250N - M250N - U250	230 AC	K0250AB230AC
K160 - K250 - M250 - K160N - K250N - M250N - U250	24- 30 DC	K0250AB030DC
M160 - S250 - S400 - S630 - S400N - S630N - U400 - U630	230 AC	S0630AB230AC
K400 - M400 - K630 - M630 - A400 - A630	230 AC	K0630AB230AC
A400N - A630N - M800 - S800 - A800N	230 AC	A0800AB230AC
U1600	230 AC	U1600AB230AC

Under Voltage Release



Applicable MCCB	Coil Voltage (V)	Order Code
K160 - K250 - M250 - K160N - K250N - M250N - U250	400 AC	K0250DG400AC
M160 - S250 - S400 - S630 - S400N - S630N - U400 - U630	400 AC	S0630DG400AC
K400 - M400 - K630 - M630 - A400 - A630	400 AC	K0630DG400AC
A400N - A630N - M800 - S800 - A800N	400 AC	A0800DG400AC
U1600	400 AC	U1600DG400AC

Auxiliary Contact



Applicable MCCB	Auxiliary Contact	Order Code
B160 - B160N - B250 - B250N - A160 - A160N - A250 - A250N	1NO+1NC	B0250YK
B160 - B160N - B250 - B250N - A160 - A160N - A250 - A250N	2NO+2NC	B0250YL
K160 - K250 - M250 - K160N - K250N - M250N - U250	1NO+1NC	K0250YK
M160 - S250 - S400 - S630 - S400N - S630N - U400 - U630	1NO+1NC	S0630YK
K400 - M400 - K630 - M630 - A400 - A630	1NO+1NC	K0630YK
A400N - A630N - M800 - S800 - A800N	1NO+1NC	A0800YK
U1600	1NO+1NC	U1600YK

Alarm Contact



Applicable MCCB	Auxiliary Contact	Order Code
B160 - B160N - B250 - B250N - A160 - A160N - A250 - A250N	1NO+1NC	B0250AK
K160 - K250 - M250 - K160N - K250N - M250N - U250	1NO+1NC	K0250AK
M160 - S250 - S400 - S630 - S400N - S630N - U400 - U630	1NO+1NC	S0630AK
K400 - M400 - K630 - M630 - A400 - A630	1NO+1NC	K0630AK
A400N - A630N - M800 - S800 - A800N	1NO+1NC	A0800AK
U1600	1NO+1NC	U1600AK

Motor Operator



Applicable MCCB	Coil Voltage (V)	Order Code
K160 - K250 - M250 - K160N - K250N - M250N - U250	110-230 AC/DC	K0250MM
K400 - M400 - K630 - M630 - A400 - A630	110-230 AC/DC	K0630MM
S250	110-230 AC/DC	S0250MM
S400 - S630 - U400 - U630	110-230 AC/DC	S0400MM
M160	110-230 AC/DC	M0160MM
A400N	110-230 AC/DC	A0400MM
A630N - A800N - M800 - S800	110-230 AC/DC	A0800MM
U1600	110-230 AC/DC	U1600MM

Extension Rotary Handle (with extension shaft)



Applicable MCCB	Order Code
K160 - K250 - M250 - K160N - K250N - M250N	K0250DK
M160	M0160DK
S250	S0250DK
K400 - M400 - K630 - M630 - A400 - A630	K0630DK
A400N	A0400DK
A630N - M800 - K800 - S800 - A800N	A0800DK
U1600	U1600DK

Rotary Handle (Direct Assembly)



Applicable MCCB	Order Code
K160 - K250 - M250 - K160N - K250N - M250N - U250	K0250DU
M160	M0160DU
S250	S0250DU

Extension Bus Bar Set (6-8 Pcs/Set)



Applicable MCCB	Piece	Order Code
A160 - B160 - M160	6	B0160UB
A160N - B160N	8	B0160UN
K160 - K250 - M250 - S250 - A250 - U250 - B250	6	K0250UB
K160N - K250N - M250N - A250N - B250N	8	K0250UN
K400 - M400 - A400 - S400	6	A0400UB
A400N - S400N	8	A0400UN
S630	6	S0630UB
S630N	8	S0630UN
M800 - S800	6	M800UB
A800N	8	M800UN
U1600	6	U1600UB

Connection Terminals



Applicable MCCB	Piece	Order Code
K160 - K250 - M250 - U250	6	K3250BK
K160N - K250N - M250N - U250N	8	K4250BK
A160-B160	6	A3160BK
A160N-B160N	8	A4160BK
B250	6	B3250BK
B250N	8	B4250BK

Mechanical Pad Lock



Applicable MCCB	Order Code
KM160 - K160 - K250 - M250 - K400 - M400 - K630 - M630 - U250 - K160N - K250N - M250N - S400N - S630N - A400 - A630	SEMK101

Note: Padlock is not included offered price.

Toroidal Current Transformers



Type	Inner Diameter Φ (mm)	Pcs in a Box	Order Code
ST-80	80,3	40	ST080
ST-110	110,3	30	ST110
ST-160	160,5	15	ST160
ST-210	210,5	12	ST210
ST-300	300,5	1	ST300
STA-110*	110,5	1	STA-110
STA-210*	210,5	1	STA-210
ST-280x115 (Rectangle)	280x115	1	STD280
ST-470x160 (Rectangle)	470x160	1	STD470

Toroidal Current Transformers should be ordered with SAR-103LE Earth Leakage Protection Relay.

* Split-Core Type Current Transformers

Selection Chart for Toroidal Current Transformer

Type	Diameter (mm)	Applicable MCCB
ST-80	80,3	B160, A160
ST-110, STA-110	110,3	B250, K160, M160, K250, M250, A250, S250, U250, A160N, B160N
ST-160	160,5	K400, M400, S400, A400, K630, M630, S630, A250N, B250N, K250N, M250N, K160N
ST-210, STA210	210,5	A630, S800, A400N, S400N, S630N, U1600
ST-300	300,5	A630N, A800N
ST-280*115	280*115	A630N, A800N
ST-470*160	470*160	SFA1600, SFA2000, SFA1600N, SFA2000N, SFA2500, SFA3200, SDA1000, SDA1250, SDA1600, SDA2000

Auxiliary Contacts



Applicable MCCB	Auxiliary Contact	Order Code
D100	1NO+1NC	D0100YK
D250	1NO+1NC	D0250YK
D400	1NO+1NC	D0400YK
D630	1NO+1NC	D0630YK
F250	1NO+1NC	K0250YK

Shunt Trip Release



Applicable MCCB	Coil Voltage (V)	Order Code
D100	230 AC	D0100AB
D250	230 AC	D0250AB
D400	230 AC	D0400AB
D630	230 AC	D0630AB
F250	230 AC	K0250AB230AC

Shunt Trip Release



Type Code	Rated Current In (A)	Applicable MCCB	Order Code
H125AB	230	40-250 A	B0160AB230AC
H250AB	230	40-250 A	B0250AB230AC





LV AIR CIRCUIT BREAKERS

Air type power circuit breakers are designed as main breaker to protect electrical equipment against overload currents, short circuit currents and ground faults. They are suitable for use in power plants, factories, mines and smart building distribution systems, especially in buildings that are expected to draw high loads. When equipped with a motor mechanism, they are ready to get shut off at any time.

- 3 and 4 poles
- 80kA, 100kA and 120kA short circuit breaking capacity
- Rated current from 630A to 6300A
- 1000 VAC rated insulation voltage
- Possibility of maintenance and repair without cutting off system power with draw-out types
- Possibility to monitor phase voltages and phase currents on the LCD screen
- Showing phase information where the error occurred

LV Air Circuit Breakers - Technical Specifications

Type of Products			Type Code	Number Of Poles	Icu (KA)	Vn (V)	In (A)	Nominal Application Voltage	Auxiliary Power Supply	Order Code
ATS	SATS	SATS (With MCB)	SATS-32	4P	6	400VAC, 50Hz	32	230 + 20%	24VDC (-10%, +15%)	SATS032
			SATS-4P0	4P	6	400VAC, 50Hz	40	230 + 20%	24VDC (-10%, +15%)	SATS040
			SATS-50	4P	6	400VAC, 50Hz	50	230 + 20%	24VDC (-10%, +15%)	SATS050
			SATS-63	4P	6	400VAC, 50Hz	63	230 + 20%	24VDC (-10%, +15%)	SATS063
		SATS (With MCCB)	SATS-100	4P	25	400VAC, 50Hz	100	230 + 20%	24VDC (-10%, +15%)	SATS100
			SATS-125	4P	36	400VAC, 50Hz	125	230 + 20%	24VDC (-10%, +15%)	SATS125
			SATS-160	4P	36	400VAC, 50Hz	160	230 + 20%	24VDC (-10%, +15%)	SATS160
			SATS-200	4P	36	400VAC, 50Hz	200	230 + 20%	24VDC (-10%, +15%)	SATS200
			SATS-250	4P	36	400VAC, 50Hz	250	230 + 20%	24VDC (-10%, +15%)	SATS250
			SATS-400	4P	36	400VAC, 50Hz	400	230 + 20%	24VDC (-10%, +15%)	SATS400
			SATS-630	4P	36	400VAC, 50Hz	630	230 + 20%	24VDC (-10%, +15%)	SATS630
			SATS-800	4P	36	400VAC, 50Hz	800	230 + 20%	24VDC (-10%, +15%)	SATS800
					Icm (KA)					
	MATS	Motorized Switch Disconnect	MATS-100	4P	9	400VAC, 50Hz	100	230 + 20%	24VDC (-10%, +15%)	
			MATS-160	4P	12	400VAC, 50Hz	160	230 + 20%	24VDC (-10%, +15%)	
			MATS-250	4P	12	400VAC, 50Hz	250	230 + 20%	24VDC (-10%, +15%)	
			MATS-630	4P	50	400VAC, 50Hz	630	230 + 20%	24VDC (-10%, +15%)	
			MATS-1000	4P	90	400VAC, 50Hz	1000	230 + 20%	24VDC (-10%, +15%)	
			MATS-1600	4P	90	400VAC, 50Hz	1600	230 + 20%	24VDC (-10%, +15%)	
			MATS-2000	4P	50	400VAC, 50Hz	2000	230 + 20%	24VDC (-10%, +15%)	
			MATS-2500	4P		400VAC, 50Hz	2500	230 + 20%	24VDC (-10%, +15%)	
			MATS-3200	4P		400VAC, 50Hz	3200	230 + 20%	24VDC (-10%, +15%)	

Accessories



Type Code	Description	Features	Order Code
SADG	Under Voltage Release - Without Delay	230 V AC	SADG230
	Under Voltage Release - Without Delay	380 V AC	SADG380
SAGDG	Under Voltage Release - With Delay	230 V AC	SAGDG230
	Under Voltage Release - With Delay	400 V AC	SAGDG400
SAAB	Shunt Trip Coil	230 V AC	SAAB
SAKB	Closing Coil	230 V AC	SAKB
SAMM-1	Motor Operator (630...2000 A)	230 V AC	SAM1
SAMM-2	Motor Operator (2500...6300 A)	230 V AC	SAM2
SAMK	Mechanical Interlock	Wire Type	SAMK

LV Air Circuit Breakers - Technical Specifications

Type				SDA-2000/ SFA-2000	SDA-3200/ SFA-3200	SDA-4000/ SFA-4000	SDA-6300 SFA-6300
Type of structure				Draw-Out/Fixed	Draw-Out/Fixed	Draw-Out/Fixed	Draw-Out/Fixed
Number of poles				3-4	3-4	3-4	3-4
Electrical specifications							
Rated current (at 40°C)		A		630, 800, 1000, 1250, 1600, 2000	2500, 3200	4000	5000, 6300
Rated operating voltage	Ue	V	AC	415	415	415	415
Rated insulation voltage	Ui	V		1000	1000	1000	1000
Rated impulse withstand voltage	Uimp	kV		8	8	8	8
Breaking capacity							
Rated ultimate short circuit breaking capacity	Icu	kA	690 V AC	50	80	80	80
			415 V AC	80	100	100	120
Rated service short circuit breaking capacity	Ics	kA	690 V AC	40	50	50	50
			415 V AC	50	65	65	65
Utilization category				A, B	A, B	A, B	A, B
Pollution degree				3	3	3	3
Electrical life (No. operation)	ON-OFF		415 V	1000	500	500	500
Mechanical life (No. operation)	ON-OFF			10000	10000	8000	8000
Protection unit				Electronic	Electronic	Electronic	Electronic
Long time delay current	Ir1	A		(0,4-1)xIn	(0,4-1)xIn	(0,4-1)xIn	(0,4-1)xIn
Long time delay time	t1	sn		0-480	0-480	0-480	0-480
Short time delay current	Ir2	A		(0,4-15)xIn	(0,4-15)xIn	(0,4-15)xIn	(0,4-15)xIn
Short time delay time	t1	sn		0,1-1	0,1-1	0,1-1	0,1-1
Instantaneous breaking current	Ir3	A		In...50 kA +OFF	In...50 kA +OFF	In...50 kA +OFF	In...50 kA +OFF
Earth fault current	Ir4	A		(0,2-0,8)xIn+OFF	(0,2-0,8)xIn+OFF	(0,2-0,8)xIn.OFF	(0,2-0,8)xIn.OFF
Operating ambient temperature		°C		-25 to +70	-25 to +70	-25 to +70	-25 to +70
Storage temperature		°C		-40 to +80	-40 to +80	-40 to +80	-40 to +80
Relative humidity				90 %	90 %	90 %	90 %
Accessories							
Shunt trip coil (230 V AC)				On request	On request	On request	On request
Under voltage coil (230 V AC)				On request	On request	On request	On request
Delay type under voltage coil (230 V AC)				On request	On request	On request	On request
Closing coil (230 V AC)				On request	On request	On request	On request
Auxiliary contact (2NO+2NC)				Standard	Standard	Standard	Standard
Motor operator (230 V AC)				On request	On request	On request	On request
Mechanical interlock				Optional	On request	On request	On request
Counter	NEW PROPERTY			Standard	Standard	Standard	Standard





FUSE SWITCH DISCONNECTORS

They provide safe separation of rated currents under load in AC circuits in accordance with the usage category and operating voltage, while also providing safe protection against overload currents and short circuit currents.

- Design suitable for NHC00, NH00, NH1, NH2, NH3 fuse use
- Option to open 3 phases together or separately (Vertical type)
- Fireproof BMC body material with very high mechanical and electrical insulation features
- Saving on maintenance and repair costs

Technical Specifications

Product	Type	Type Code	Nr. Poles	Rated current	Rated short circuit breaking capacity with Fuse Protection	Rated insulation voltage	Rated operating voltage	NH Fuse link size
Fuse Switch Disconnector	Vertical	SDY160	3 Pole	160 A	100 kA	Ui: 1000 V (AC)	Ue: 400-500-690 V (AC)	NH00C - NH00
		SDY250	3 Pole	250 A	100 kA	Ui: 1000 V (AC)	Ue: 400-500-690 V (AC)	NH1 - NH2
		SDY400	3 Pole	400 A	100 kA	Ui: 1000 V (AC)	Ue: 400-500-690 V (AC)	NH1 - NH2 - NH3
		SDY630	3 Pole	630 A	100 kA	Ui: 1000 V (AC)	Ue: 400-500-690 V (AC)	NH1 - NH2 - NH3
	Horizontal	SFH160	3 Pole	160 A	100 kA	Ui: 800 V	Ue: 400-500-690 V (AC)	NH00C - NH00
		SFH250	3 Pole	250 A	100 kA	Ui: 800 V	Ue: 400-500-690 V (AC)	NH1
		SFH400	3 Pole	400 A	100 kA	Ui: 1000 V	Ue: 400-500-690 V (AC)	NH2

NH Fuses (Double Indicator)



Size	Rated Current In (A)	Breaking Cap. (kA)	Minimum Order	Pcs in a Box	Order Code
NHC00	6	120	3	180	SNHC00I006
	10	120	3	180	SNHC00I010
	16	120	3	180	SNHC00I016
	20	120	3	180	SNHC00I020
	25	120	3	180	SNHC00I025
	32	120	3	180	SNHC00I032
	40	120	3	180	SNHC00I040
	50	120	3	180	SNHC00I050
	63	120	3	180	SNHC00I063
	80	120	3	180	SNHC00I080
NH00	100	120	3	180	SNHC00I100
	6	120	3	96	SNH00I0006
	10	120	3	96	SNH00I0010
	16	120	3	96	SNH00I0016
	20	120	3	96	SNH00I0020
	25	120	3	96	SNH00I0025
	32	120	3	96	SNH00I0032
	40	120	3	96	SNH00I0040
	50	120	3	96	SNH00I0050
	63	120	3	96	SNH00I0063
	80	120	3	96	SNH00I0080
	100	120	3	96	SNH00I0100
NH1	125	120	3	96	SNH00I0125
	160	120	3	96	SNH00I0160
	40	120	3	36	SNH1I00040
	63	120	3	36	SNH1I00063
	80	120	3	36	SNH1I00080
	100	120	3	36	SNH1I00100
	125	120	3	36	SNH1I00125
	160	120	3	36	SNH1I00160
NH2	200	120	3	36	SNH1I00200
	250	120	3	36	SNH1I00250
	63	120	3	24	SNH2I00063
	80	120	3	24	SNH2I00080
	100	120	3	24	SNH2I00100
	125	120	3	24	SNH2I00125
	160	120	3	24	SNH2I00160
	200	120	3	24	SNH2I00200
NH3	250	120	3	24	SNH2I00250
	315	120	3	24	SNH2I00315
	400	120	3	24	SNH2I00400
	315	120	3	24	SNH3I0315
	400	120	3	24	SNH3I0400
	500	120	3	24	SNH3I0500
	630	120	3	24	SNH3I0630

Vertical Type Fuse Switch Disconnectors - Technical Specifications

Type		SDY160	SDY250	SDY400	SDY630
Standard		TS EN 60947-3, IEC60947-3			
Rated current	A	160A	250A	400A	630A
Rated Thermal Current (with NH fuse) (Ith)	A	160	250	400	630
Rated Thermal Current with Solid Links (Ith)	A	200	400	630	800
Number of poles		3	3	3	3
Rated operating voltage (Ue)	V (AC)	400 - 500 - 690	400 - 500 - 690	400 - 500 - 690	400 - 500 - 690
Rated insulation voltage (Ui)	V (AC)	1000	1000	1000	1000
Rated impulse withstand voltage (Uimp)	kV (AC)	12	12	12	12
Rated Short Circuit Breaking Capacity with Fuse Protection (Icc)	kA	100	100	100	100
NH Fuse link size		NH00C - NH00	NH1 - NH2	NH1 - NH2 - NH3	NH1 - NH2 - NH3
Electrical life (No. operation)	ON - OFF	200	200	200	200
Mechanical life (No. operation)	ON - OFF	1600	1600	1000	1000
IP degree of protection	On Off	IP20 / IP30	IP20 / IP30	IP20 / IP30	IP20 / IP30
Ambient operating temperature	°C	(-25 / +55)*	(-25 / +55)*	(-25 / +55)*	(-25 / +55)*
Relative Humidity	%	90	90	90	90
Rated frequency	Hz	50-60HZ	50-60HZ	50-60HZ	50-60HZ
Utilization category		AC23B/AC22B/AC21B	AC23B/AC22B/AC21B	AC23B/AC22B/AC21B	AC23B/AC22B/AC21B
Connection Cross Section	mm ²	70	120	240	2x185
Power loss per pole	W	12	23	34	48
Tightening torque	Nm	6	10	10	14
Hole diameter	Ø	M8	M10	M10	M12
Distance between main busbar terminals	mm	185	185	185	185
Weight	kg	2,3	4,7	4,7	5,85
Accessories					
Fuse holder		✓	✓	✓	✓
Terminal cover		✓	✓	✓	✓
Parking position		✓	✓	✓	✓
Micro switch		✓	✓	✓	✓
Mechanical padlock apparatus		✓	✓	✓	✓
Position indicator + mechanic fuse monitor		✓	✓	✓	✓
Fixing screws		✓	✓	✓	✓

* 24 hours operating average can not exceed + 35 ° C.

Horizontal Type Fuse Switch Disconnectors - Technical Specifications

Type		SFH 160			SFH 250			SFH 400		
Standard		TS EN 60947-3, EN 60947-3								
Nh fuse link size		NH00C- NH00			NH1			NH2		
Number of poles		3			3			3		
Rated operational current	A	160	160	100	250	250	200	400	400	315
Rated voltage	V	400	500	690	400	500	690	400	500	690
Rated insulation voltage	V	800			800			800		
Fuse protected rated short circuit current	kA	100	100	80	100	100	80	100	100	80
Utilization category		AC23B, AC22B, AC21B			AC23B, AC22B, AC21B			AC23B, AC22B, AC21B		
Relative Humidity	%	90			90			90		
Weight	kg	0,7			1,5			3,3		

Vertical Type Fuse Switch Disconnectors



Type	Rated Current	Feature	NH Fuse / Length	Order Code
SDY-160	160A	3 phase can open separately	NH000- NH00	SDY1160N
	160A	3 phase can open separately (with current transformer)		SDY1160CT
	160A	3 phase can open together		SDY3160N
	160A	3 phase can open together (with current transformer)		SDY3160CT
SDY-250	250A	3 phase can open separately	NH1-NH2	SDY1250N
	250A	3 phase can open separately (with current transformer)		SDY1250CT
	250A	3 phase can open together		SDY3250N
	250A	3 phase can open together (with current transformer)		SDY3250CT
	250A	3 phase can open separately (with right side output)		SDY1250R
	250A	3 phase can open together (with right side output)		SDY3250R
	250A	3 phase can open separately (with left side output)		SDY1250L
	250A	3 phase can open together (with left side output)		SDY3250L
SDY-400	400A	3 phase can open separately	NH1-NH2-NH3	SDY1400N
	400A	3 phase can open separately (with current transformer)		SDY1400CT
	400A	3 phase can open together		SDY3400N
	400A	3 phase can open together (with current transformer)		SDY3400CT
	400A	3 phase can open separately (with right side output)		SDY1400R
	400A	3 phase can open together (with right side output)		SDY3400R
	400A	3 phase can open separately (with left side output)		SDY1400L
	400A	3 phase can open together (with left side output)		SDY3400L
SDY-630	630A	3 phase can open separately	NH1-NH2-NH3	SDY1630N
	630A	3 phase can open separately (with current transformer)		SDY1630CT
	630A	3 phase can open together		SDY3630N
	630A	3 phase can open together (with current transformer)		SDY3630CT
	630A	3 phase can open separately (with right side output)		SDY1630R
	630A	3 phase can open together (with right side output)		SDY3630R
	630A	3 phase can open separately (with left side output)		SDY1630L
	630A	3 phase can open together (with left side output)		SDY3630L

Current Transformers for Vertical Type Fuse Switch Disconnectors



Type Code	Primary Current	Secondary Current	Power (VA)	Class	Order Code
SDY20	160A	1A	2,5VA	0,5cl	SDY201600502
	250A	1A	2,5VA	0,5cl	SDY202500502
	400A	1A	2,5VA	0,5cl	SDY204000502
	630A	1A	2,5VA	0,5cl	SDY206300502

Horizontal Type Fuse Switch Disconnectors



Size	Rated Current In (A)	Fuse Size	Minimum Order (pcs)	Pcs in a Box (pcs)	Order Code
SFH-160	160	C00-00	1	9	SFH160
SFH-250	250	1	1	3	SFH250
SFH-400	400	2	1	1	SFH400
SFH-630	630	3	1	1	SFH630



MINIATURE CIRCUIT BREAKERS

Automatic fuses are devices that protect the circuit they are connected to against overload and short circuits, and also perform the function of opening and closing the circuit.

- Rated current from 1A to 125A
- 4.5kA, 6kA, 10kA, 16kA short circuit breaking capacity
- 1, 2, 3 and 4 pole product variety
- IP20 protection degree
- High electrical and mechanical life
- Crowning handle compatible with accessories (Auxiliary contact, opening coil, motor mechanism, alarm contact).

Miniature Circuit Breaker - Technical Specifications

Product	Type	Icu(kA)	Type Code	Nr Of Poles	Rated Current	Instantaneous Tripping Class		
MCB	AC	3KA	SND3000	1,2,3,4 Pole	2 - 63 A	B type : (3-5)×In	C type : (5 - 10)×In	
		6KA	SND6000	1,2,3,4 Pole	1 ~ 63 A	B type : (3-5) ×In	C type : (5 - 10) ×In	D type : (10 - 20) ×In
		6KA	SLD6000	1,2,3,4 Pole	80 , 100 , 125 A	C type : (5 - 10) ×In		
		10KA	SMD10000	1,2,3,4 Pole	2 ~ 63 A	B type : (3-5) ×In	C type : (5 - 10) ×In	D type : (10 - 20) ×In
		10KA	SLD10000	1,2,3,4 Pole	80 , 100 , 125 A	C type : (5 - 10) ×In		
		16KA	SND16000	1 Pole	40 ~ 125 A	C type : (5 - 10) ×In		
		4.5KA	Phase - Neutral 1P + N (18mm)	1 Pole	6 ~ 32 A			
	DC	10KA	SDC10000	1,2,4 Pole	6-63 A	RIV : 1000 V	ROV: 1p~250V / 2p~500V / 4p~1000V	C

Type			SND 4500				SND 6000				SLD 6000			
Number of poles			1	2	3	4	1	2	3	4	1	2	3	4
Rated nominal current (at 30°C)	In	A	2, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63				1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50,63				80, 100, 125			
Instantaneous tripping class			B : (3-5)xIn C : (5-10)xIn				B : (3-5)xIn C : (5-10)xIn D : (10-20)xIn				C : (5-10)xIn			
Power supply			AC				AC				AC			
Rated operating voltage	Ue	AC (V)	230/400	400			230/400	400			230/400	400		
Rated insulation voltage	Ui	V	750				750				750			
Rated impulse withstand voltage	Uimp	kV	6				6				6			
Rated short circuit capacity	Icn	kA	4,5				6				6			
Energy limiting class			3				3				3			
Electrical life (No. operation)	op.	230 V	4.000				6.000				5.000			
Mechanical life (No. operation)	op.		20.000				20.000				20.000			
Protection class			IP 20				IP 20				IP 20			
Operating temperature		°C	-30 to +60				-30 to +60				-30 to +60			
Storage temperature		°C	-40 to +70				-40 to +70				-40 to +70			
Relative Humidity		%	90				90				90			
Assembly (EN 60715)			35 mm. DIN Rail				35 mm. DIN Rail				35 mm. DIN Rail			
Min. Max. Connection section		mm²	1 – 25				1 – 25				25 – 50			
Max. Clamping torque		Nm	2				2				3,5			

Type			SMD 10000				SLD 10000				SND 16000	
Number of poles			1	2	3	4	1	2	3	4	1	
Rated nominal current (at 30°C)	In	A	2, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63				80, 100, 125				40, 50, 63, 80, 100, 125	
Instantaneous tripping class			B : (3-5)×In C : (5-10)×In D : (10-20)×In				C : (5-10)×In				C : (5-10)×In	
Power supply			AC				AC				AC	
Rated operating voltage	Ue	AC (V)	230/400	400			230/400	400			230/400	
Rated insulation voltage	Ui	V	750				750				750	
Rated impulse withstand voltage	Uimp	kV	6				6				6	
Rated short circuit capacity	Icn	kA	10				10				16	
Energy limiting class			3				3				3	
Electrical life (No. operation)	op.	230 V	6.000				5.000				4.000	
Mechanical life (No. operation)	op.		20.000				20.000				15.000	
Protection class			IP 20				IP 20				IP 20	
Operating temperature		°C	-30 to +60				-30 to +60				-30 to +60	
Storage temperature		°C	-40 to +70				-40 to +70				-40 to +70	
Relative Humidity		%	90				90				90	
Assembly (EN 60715)			35 mm. DIN Rail				35 mm. DIN Rail				35 mm. DIN Rail	
Min. Max. Connection section		mm²	1 – 25				25 – 50				2,5 – 50	
Max. Clamping torque		Nm	2				3,5				3,5	



DC PRODUCTS FOR PHOTOVOLTAIC (SOLAR) SYSTEM

DC products are needed in every field where DC circuits are used.

DC Miniature Circuit Breakers

- 1, 2 and 4 poles
- 10kA short circuit breaking capacity
- Rated current from 6A to 125A
- Type C

DC LV Circuit Breakers

- Rated current from 80A to 250A
- 36kA breaking capacity
- 1000V DC rated voltage

DC LV Surge Arresters

- 20kA short circuit breaking capacity
- Possibility of remote monitoring with auxiliary contact function

DC Cylindrical (Cartridge) Fuse Bases

- 1 pole
- 25A and 50A rated currents

DC Cylindrical (Cartridge) Fuse

- Rated current from 8A to 30A
- 20kA and 25kA short circuit breaking capacity
- 10*38mm and 10*85mm cartridge size

Technical Specifications

Indicators	
Rated Current(A)	Cartridge Diameter(mm)
gG	
2/4/6/10/16/20/25/32	10*38
40/50	14*51
63/80/100	22*58
aM	
2/4/6/10/16/20/25/32	10*38
aR	
2/4/6/10/16/20/25/32	10*38

Type Cod		Rated Current(A)	Number Of Poles	Cartridge Diameter(mm)
Cylindrical (Cartridge) Fuses Holders	SFH032	32	1	10*38
			1P+N	
			3	
			4	
	SFH050	50	1	14*51
			1P+N	
			3	
	SFH100	100	1	22*58
			1P+N	
			3	

DC MCB - 10kA

	SDC 10000			
Number of poles	1P	2P	3P	4P
Rated nominal current	6-63A	6-63A	-	6-63A
Rated insulation voltage	1000V	1000V	-	1000V
Rated operating voltage	250V	500V	-	1000V
Rated impulse withstand voltage	4kV	4kV	-	4kV
Rated short circuit breaking capacity	10kA	10kA	-	10kA
Instantaneous tripping class	C	C	-	C
Mechanical life (No. operation)	20000	20000	-	20000
Electrical life (No. operation)	2500	2500	-	2500
Operating temperature	-25 to +60	-25 to +60	-	-25 to +60
Storage temperature	-40 to +80	-40 to +80	-	-40 to +80
Relative Humidity	90%	90%	-	90%



RESIDUAL CURRENT CIRCUIT BREAKERS

Residual current protection switches are protection equipments that help protect living beings from the harmful effects of electrical energy. RCCBs prevent from possible dangers by opening the circuit in case of a leakage current in the system, in order not to endanger the lives of living beings and to prevent from damage to the devices in the system.

- Product diversity in AC, A and B types
- Life (human protection) protection function at 10mA and 30mA, installation (fire protection) protection function at 100mA and 300mA
- 2 and 4 pole product variety
- 6kA and 10kA short circuit breaking capacity
- Rated current from 16A to 125A
- Delayed types, AC type at 300mA and A type at 300mA
- Test button that allows testing electrical and mechanical operability
- Double indicator design

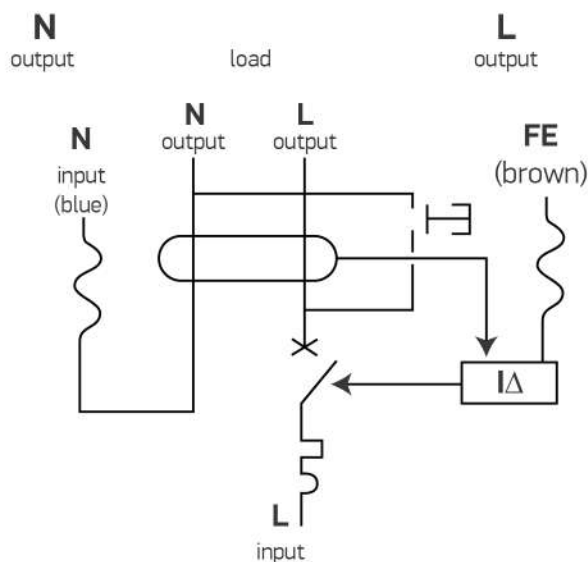
Technical Specifications

Product	Type	Icu	Type Code	Nr Of Poles	Rated Current	Residual Current	Rated operation voltage
RCCB	AC	6KA	SHM-2	2 Pole	In: 25 ~ 100 A	IΔ: 30 , 300 mA	Ue: 240 V AC
			SHM-4	4 Pole	In: 25 ~ 100 A	IΔ: 30 , 300 mA	Ue: 415 V AC
			SDM-2	2 Pole	In: 25 ~ 80 A	IΔ: 300 mA	Ue: 240 V AC
			SDM-4	4 Pole	In: 25 ~ 80 A	IΔ: 300 mA	Ue: 415V AC
	A	10KA	SGM-2	2 Pole	In: 25 ~ 125 A	IΔ: 30 , 300 mA	Ue: 240 V AC
			SGM-4	4 Pole	In: 25 ~ 125 A	IΔ: 30 , 300 mA	Ue: 415 V AC
			SFM-2	2 Pole	In: 25 ~ 100 A	IΔ: 30 , 300 mA	Ue: 240 V AC
			SFM-4	4 Pole	In: 25 ~ 100 A	IΔ: 30 , 300 mA	Ue: 415 V AC
	B	10KA	SLM-2	2 Pole	In: 25 ~ 100 A	IΔ: 300 mA	Ue: 230 V AC
			SLM4	4 Pole	In: 25 ~ 100 A	IΔ: 300 mA	Ue: 415 V AC
			SKM-2	2 Pole	In: 25 , 40 , 63 A	IΔ: 30 , 300 mA	Ue: 230 V AC
			SKM-4	4 Pole	In: 25 , 40 , 63 A	IΔ: 30 , 300 mA	Ue: 415 V AC
RCBO	AC	6 KA	SRM-2	2 Pole	In: 6 ~ 40 A	IΔn: 30 mA	
					In: 6 ~ 40 A	IΔn: 300 mA	
					In: 6 ~ 40 A	IΔn: 30 mA	
			SRE-2 (Wired)	2 Pole	In: 6 ~ 40 A	IΔn: 100 mA	
					In: 6 ~ 40 A	IΔn: 300 mA	

Technical Specifications

		SRE-2	SRM-2
Instantaneous tripping characteristic		B, C	B, C
Rated operating voltage	V AC	230 (240)	230
Rated frequency	Hz.	50...60	50...60
Rated current (In)	A	6, 10, 16, 20, 32, 40	6, 10, 16, 20, 32, 40
Residual current (IΔn)	mA	30-100-300	30-300
Rated ultimate short-circuit breaking capacity	kA	6	6
Connection section	mm ²	0.75 ... 16	1.5 - 3.5
Max. clamping torque	Nm	2	2
Degree of protection		IP20	IP20
Electrical life (No. operation)		6.000	6.000
Mechanical life (No. operation)		20.000	20.000
Storage ambient temperature	°C	-40 to +75	-40 to +70
Operating ambient temperature	°C	-25 to +55	-25 to +55
Relative humidity	%	90	90
CFC-silicone free		Yes	Yes

Circuit Diagram



Residual Current Circuit Breakers - Technical Specification

Type			SGM-2	SGM-4	SFM-2	SFM-4	SHM-2		SHM-4
Number of poles			2	4	2	4	2	2	4
Rated current	In	A	25, 32, 40, 63, 80, 100, 125		25, 32, 40, 63, 80, 100		16, 25		25, 32, 40, 50, 63, 80, 100
Rated residual current	IΔ	mA	30, 100, 300		30, 100, 300		10		30, 100, 300
Rated frequency		Hz	50-60		50-60		50-60		
Type of residual current			AC		A		AC		
Tripping unit			Electro-mechanic		Electro-mechanic		Electro-mechanic		
Tripping time			0.5.....1 x IΔn		0.11.....1.4 x IΔn		0.5.....1 x IΔn		
Breaking time at residual current (IΔn)		ms	< 50		< 50		< 50		
Operating characteristic			General		General		General		
Rated operating voltage	Ue	(AC) V	240	415	240	415	240	240	415
Rated insulation voltage	Ui	V	660		660		660		
Rated impulse withstand voltage	Uimp	kV	6		6		6		
Rated short circuit withstand current with fuse (Inc/IΔc)		kA	10		10		6		
Electrical life (No. operation)	operation	(230 V)	6000		6000		6000		
Mechanical life (No. operation)	operation		20000		20000		20000		
Degree of protection (after assembly)			IP 20 (IP 40)		IP 20 (IP 40)		IP 20 (IP 40)		
Ambient operating temperature		°C	-25 to +60		-25 to +60		-25 to +60		
Storage temperature		°C	-40 to +70		-40 to +70		-40 to +70		
Relative humidity		%	90		90		90		
Dimensions	Width	mm	35	70	35	70	35	35	70
	Length	mm	80		80		80		
Assembly type (EN 60715)			35 mm DIN Rail		35 mm DIN Rail		35 mm DIN Rail		
Min.. Max. Connection section		mm²	1.5 - 35		1.5 - 35		1.5 - 35		

Type			SDM-2	SDM-4	SLM-2	SLM-4	SKM-2	SKM-4	SNM-2	SNM-4
Number of poles			2	4	2	4	2	4	2	4
Rated current	In	A	25, 32, 40, 63, 80		25, 40, 63, 80, 100		25, 40, 63		25, 40, 63	
Rated residual current	IΔ	mA	300		300		30, 300		30 mA AC - 6 mA DC	
Rated frequency		Hz	50-60		50-60		50-60		50-60	
Type of residual current			AC		A		B		B	
Tripping unit			Electro-mechanic		Electro-mechanic		Electro-mechanic		Electro-mechanic	
Tripping time			0.5.....1 x IΔn		0.5.....1 x IΔn		0.5.....1 x IΔn		0.5.....1 x IΔn	
Breaking time at residual current (IΔn)		ms	130 < t < 500		130 < t < 500		< 50		< 50	
Operating characteristic			Delay Time Selectivity		Delay Time Selectivity		General		General	
Rated operating voltage	Ue	(AC) V	240	415	230	415	230	415	230	415
Rated insulation voltage	Ui	V	660		660		660		660	
Rated impulse withstand voltage	Uimp	kV	6		6		6		6	
Rated short circuit withstand current with fuse (Inc/IΔc)		kA	6		10		10		10	
Electrical life (No. operation)	operation	(230 V)	6000		6000		4000		4000	
Mechanical life (No. operation)	operation		20000		20000		2000		2000	
Degree of protection (after assembly)			IP 20 (IP 40)		IP 20 (IP 40)		IP 20 (IP 40)		IP 20 (IP 40)	
Ambient operating temperature		°C	-25 to +60		-25 to +60		-25 to +40		-25 to +40	
Storage temperature		°C	-40 to +70		-40 to +70		-25 to +70		-25 to +70	
Relative humidity		%	90		90		90		90	
Dimensions	Width	mm	35	70	35	70	53,5	71,5	53,5	71,5
	Length	mm	80		80		81,5		81,5	
Assembly type (EN 60715)			35 mm DIN Rail		35 mm DIN Rail		35 mm DIN Rail		35 mm DIN Rail	
Min.. Max. Connection section		mm²	1.5 - 35		1.5 - 35		1.5 - 35		1.5 - 35	





MODULAR PRODUCTS

Modular products are products that combine monitoring (measurement), efficiency, functionality and comfort.

DIN Rail Type LED Signal Indicators and LED Signal Indicators

- Long service life, high brightness and low power loss opportunities
- Options with connection clamps or rail mounting for mounting on device covers, panels, control cabinets
- Single piece rail mounting or cabin front cover plate mounting option
- 5 color options: red, green, yellow, blue, white

Cylindrical (Cartridge) Fuses

- Series suitable for AC and DC loads,
- Options for fuses suitable for load classes; gG, aM, Ar
- Product variety from 2A to 100A

Cylindrical (Cartridge) Fuse Holders

- Product variety from 32A, 50A and 100A
- 1, 1P+N, 3, 4 pole options in cartridge slots

Modular DIN Rail Sockets

- Design resistant to high temperatures thanks to thermoplastic body material
- IP20 protection degree
- 230V, 6A
- Easy mounting on DIN rail

Impulse Relays

- 230 V AC, 16 A, 1NO production
- 960°C heat resistant body material
- IP20 protection degree
- High electrical and mechanical life

Isolator Switches (without protection)

- 1, 2, 3 and 4 poles
- 40A and 125A rated current

Indicators		
Din Rail (Deutsches Institut für Normung)	Blue	220 V AC
		24 V AC
		24 V DC
	Red	220 V AC
		24 V AC
		24 V DC
	Green	220 V AC
		24 V AC
		24 V DC
	Yellow	220 V AC
		24 V AC
		24 V DC

DIN Rail Type Led Signal Indicators



Colour	Rated Voltage (V)	Min. Order Quantity	Pcs in a Box	Order Code
Blue	220 V AC	12	120	SSL-B220A
	24 V AC	12	120	SSL-B024A
	24 V DC	12	120	SSL-B024D
Red	220 V AC	12	120	SSL-R220A
	24 V AC	12	120	SSL-R024A
	24 V DC	12	120	SSL-R024D
Green	220 V AC	12	120	SSL-G220A
	24 V AC	12	120	SSL-G024A
	24 V DC	12	120	SSL-G024D
Yellow	220 V AC	12	120	SSL-Y220A
	24 V AC	12	120	SSL-Y024A
	24 V DC	12	120	SSL-Y024D

Cylindrical (Cartridge) Fuses	
Rated Current(A)	Cartridge Diameter(mm)
gG	
2/4/6/10/16/20/25/32	10*38
40/50	14*51
63/80/100	22*58
aM	
2/4/6/10/16/20/25/32	10*38
aR	
2/4/6/10/16/20/25/32	10*38

Type Cod		Rated Current(A)	Number Of Poles	Cartridge Diameter(mm)
Cylindrical (Cartridge) Fuses Holders	SFH032	32	1	10*38
			1P+N	
			3	
			4	
	SFH050	50	1	14*51
			1P+N	
			3	
	SFH100	100	1	22*58
			1P+N	
			3	

Din Rail (Deutsches Institut für Normung)	Type Cod	Description	Rated Voltage(V)	Color
	SL-22-22DS	Led Indicator	220 V AC	Red
				Green
				Yellow
				Blue
				White
			24 V AC/DC	Red
				Green
				Yellow
				Blue
				White
	SL-22-22VM	Voltmeter Function	12-500 V AC	Red
				White
			5-60 V DC	Red
				White
	SL-22-22AM	Ammeter Function	0-100 A	Red
				White
	SL-22-22VAM	Voltmeter-Ammeter Functions	12-500 V AC	Red
			0-100 A AC	White
	SL-22-22HM	Frequency Function	0-50 HZ	Red
				White
	SL-22-22TM	Temperature Function	-20 °C < +199	Red
				White

Led Signal Indicators



Type Code	Description	Rated Voltage (V)	Dimensions (mm)	Colour	Pcs in a Box	Order Code
SL-22-22DS	Led Indicator	220 V AC	22	Red	240	SL22-220DSR
				Green	240	SL22-220DSG
				Yellow	240	SL22-220DSY
				Blue	240	SL22-220DSB
				White	240	SL22-220DSW
		24 V AC/DC		Red	240	SL22-024DSR
				Green	240	SL22-024DSG
				Yellow	240	SL22-024DSY
				Blue	240	SL22-024DSB
				White	240	SL22-024DSW



Type Code	Description	Rated Voltage (V)	Dimensions (mm)	Colour	Pcs in a Box	Order Code
SL-22-22VM	Led Indicator with Voltmeter Function	50-500 V AC	22	Red	240	SL22-22VMR
				Green	240	SL22-22VMG
				Yellow	240	SL22-22VMY
				Blue	240	SL22-22VMB
				White	240	SL22-22VMW
		5-60 V DC	22	Red	240	SL22-22VMRD
				White	240	SL22-22VMWD
				Red	240	SL22-22AMR
				White	240	SL22-22AMW
				Red	240	SL22-22VAMR
SL-22-22VAM	Led Indicator with Voltmeter-Ammeter Functions	50-500 V AC 0-100 A AC	22	White	240	SL22-22VAMW
				Red	240	SL22-22HMR
SL-22-22HM	Led Indicator with Frequency Meter Function	0-50 Hz	22	White	240	SL22-22HMW
				Red	240	SL22-22TMR
SL-22-22TM	Led Indicator with Temperature Function	-20...+ 199 °C	22	White	240	SL22-22TMW
				Red	240	SL22-22TMR

Cylindrical (Cartridge) Fuses

	Type	Rated Current (A)	Cartridge Diameter (Øxmm)	Min. Order Quantity	Pcs in a Box	Order Code
	gG Type cylindrical fuses (General protection of cables and electrical systems against overload and short circuit).	2	10x38	10	2000	SFLG02
		4	10x38	10	2000	SFLG04
		6	10x38	10	2000	SFLG06
		10	10x38	10	2000	SFLG10
		16	10x38	10	2000	SFLG16
		20	10x38	10	2000	SFLG20
		25	10x38	10	2000	SFLG25
		32	10x38	10	2000	SFLG32
		40	14x51	10	2000	SFNG040
		50	14x51	10	2000	SFNG050
		63	22x58	10	2000	SFMG063
		80	22x58	10	2000	SFMG080
		100	22x58	10	2000	SFMG100
	aM Type cylindrical fuses (Protection of Motor systems against short circuits)	2	10x38	10	2000	SFLM02
		4	10x38	10	2000	SFLM04
		6	10x38	10	2000	SFLM06
		10	10x38	10	2000	SFLM10
		16	10x38	10	2000	SFLM16
		20	10x38	10	2000	SFLM20
		25	10x38	10	2000	SFLM25
		32	10x38	10	2000	SFLM32
	aR Type high speed fuses (Protection against short-circuit of semi-conductor and power systems ; UPS, soft starter, inverter, converter, AC/DC starters e.g.)	2	10x38	10	2000	SFLR02
		4	10x38	10	2000	SFLR04
		6	10x38	10	2000	SFLR06
		10	10x38	10	2000	SFLR10
		16	10x38	10	2000	SFLR16
		20	10x38	10	2000	SFLR20
		25	10x38	10	2000	SFLR25
		32	10x38	10	2000	SFLR32

Cylindrical (Cartridge) Fuse Holders

	Type	Rated Current (A)	Number of poles	Cartridge Diameter (Øxmm)	Min. Order Quantity	Pcs in a Box	Order Code
	SFH032	32	1	10x38	12	144	SFH132
		32	1P+N	10x38	6	72	SFH232
		32	3	10x38	4	48	SFH332
		32	4	10x38	3	36	SFH432
	SFH050	50	1	14x51	1	50	SFH1050
		50	1P+N	14x51	1	50	SFH2050
		50	3	14x51	1	50	SFH3050
	SFH100	100	1	22x58	1	60	SFH1100
		100	1P+N	22x58	1	60	SFH2100
		100	3	22x58	1	60	SFH3100

Product	Specification
Modular Din Rail Socket	6 A , 230 V
Impulse Relay	16A , 230 V , 1 NO
Isolator Switch (Without Protection)	40/63/80/100/125 A 1P/2P/3P/4P

Modular DIN Rail Socket



Specification	Min. Order Quantity	Pcs in a Box	Order Code
6 A, 230 V	5	50	SPP-16T

Isolator Switch (Without Protection)



Number of poles	Rated Current In (A)	Min. Order Quantity	Pcs in a Box	Order Code
1P	40	12	240	SYA1040
	63	12	240	SYA1063
	80	12	240	SYA1080
	100	12	240	SYA1100
	125	12	240	SYA1125
2P	40	6	120	SYA2040
	63	6	120	SYA2063
	80	6	120	SYA2080
	100	6	120	SYA2100
	125	6	120	SYA2125
3P	40	4	80	SYA3040
	63	4	80	SYA3063
	80	4	80	SYA3080
	100	4	80	SYA3100
	125	4	80	SYA3125
4P	40	3	60	SYA4040
	63	3	60	SYA4063
	80	3	60	SYA4080
	100	3	60	SYA4100
	125	3	60	SYA4125





LV SURGE PROTECTION DEVICES

Surge arresters are protection equipments that discharge excessive voltage occurring in energy transmission lines to the ground. They act as open circuit when no pulse passes through it and provide isolation between active circuit elements and ground. When exposed to a voltage pulse, they increase their impedance within nanoseconds, act as closed circuit, and transmit the pulse current to the ground.

- Product diversity in B, C, B+C and D types
- 5kA, 40kA and 100kA short circuit breaking capacities
- 1, 2, 3 and 4 poles
- Possibility of remote monitoring with auxiliary contact function

Technical Specifications

LV Surge Protection Devices							
Type	Description	Number Of Poles	Uc (V) AC	Iimp	I max(KA)	In (KA)	Up (KV)
	Type 1 B Class(install before electricity meter)	1	255	50 (10.35µs)		100	<2.5
		4					
	Type 1+Type 2 B+C Class(install before electricity meter)	4	385	12.5 (10.35µs)	100 (8.2µs)	20	<1.6
	Type 2 C Class(install after electricity meter)	1	275		40 (8.2µs)		<1.4
		2					
		3					
		4					
	Type 3 D Class(install after electricity meter)	1					5 (8.2µs)
	Spare Cartridg For C Class Surge Protection				40 (8.2µs)	8.2µs	<1.4
Data Line Surge Protection Device CAT6							
	Ethernet Lines , IP Camera , Data Lines , Server equipment and systems , Intranet protection	1	48 V DC		10	3	≤100

LV Surge Protection Devices

Type	Description	Number of poles	Uc (V) AC	Iimp	I max (kA)	In (kA)	Up (kV)	PE grounding section*	Order Code
SP1-B100	Type 1 B Class (install before electricity meter)	1	255	50 (10/350µs)		100 (8/20µs)	2.5	16 mm ²	SP1-B100
SP4-B100	Type 1 B Class (install before electricity meter)	4	255	50 (10/350µs)		100 (8/20µs)	2.5	16 mm ²	SP4-B100
SP4-BC100	Type 1+Type 2 B+C Class (install before electricity meter)	4	385	12,5 (10/350µs)	100 (8/20µs)	20 (8/20µs)	1.6	16 mm ²	SP4-BC100
SP1-C040	Type 2 C Class (install after electricity meter)	1	275		40 (8/20µs)	20 (8/20µs)	1.4	4 mm ²	SP1-C040
SP2-C040	Type 2 C Class (install after electricity meter)	2	275		40 (8/20µs)	20 (8/20µs)	1.4	4 mm ²	SP2-C040
SP3-C040	Type 2 C Class (install after electricity meter)	3	275		40 (8/20µs)	20 (8/20µs)	1.4	4 mm ²	SP3-C040
SP4-C040	Type 2 C Class (install after electricity meter)	4	275		40 (8/20µs)	20 (8/20µs)	1.4	4 mm ²	SP4-C040
SP1-D005	Type 3 D Class (install after electricity meter)	1	275		5 (8/20µs)	3 (8/20µs)	1.6	4 mm ²	SP1-D005
SP1-C040K	Spare cartridge for C Class surge protection	1	275		40 (8/20µs)	20 (8/20µs)	1.4	—	SP1-C040K
SLP12,5	Protection of 800 V AC String Inverters Against Lightning Damage on the AC Side	4	950	12,5	100	20	4		SLP12,5-950

Note: The LV Surge Protection devices are offered with signal contact except B type.

Note: Connection cross-sections are shown as min.

Selection of cable cross-section

Connection between the energy supply and the surge arrester: In post-meter input connections, the cable must have at least the same cross-section as the cable coming from the upper circuit. In pre-meter connections, phases and neutral should be 10 mm² in the main panel and ground should be 16 mm².

Surge arrester ground connection:

If there is no lightning rod, the minimum cross-section should be 4 mm², and if there is a lightning rod, it should be minimum 10 mm². However, it is recommended to choose a larger cross-section of 10-20 mm². Standard terminal connection for single-core sections max. 35mm², max. in multi-core sections. 25mm² connection can be made.



POWER CONTACTORS

Contactors are switching elements that work according to the electromagnetic field principle that controls the opening and closing of the electrical circuit.

They allow remote control of electrical facilities such as electric motors, compensation and heating systems via cable. When used with thermal relays, they protect facilities and devices in the system against overload currents.

- 3 and 4 pole product options
- Wide range from 9A to 800A
- Wide coil options (24, 42, 48, 110, 230, 400, 415 AC/DC)
- Wide product range, including power, modular (silent), 6-pole and 8-pole changeover, compensation and mini type contactors
- Possibility of attaching accessories from the top, left side and right side
- Double-sided coil terminal inputs (for SCG types)

Technical Specifications

Product	Nr Of Poles	Supply Voltage	Type Code	Model	Rated Current	Auxillary Contact
MC	3 Poles	230V AC	SCM	SCM-(6 UP 16)M	6-16 A	1NO/1NC
			SDM	SDM-(6 UP 16)M	6-16 A	1NO/1NC
			SCG	With Doubl Connection Coil	9-100	1NO+1NC
					115-800	2NO+2NC
			SCR	Reversing Contactor	9-100	
		24V DC	SDM	SDM-(9 UP 40)	9 UP 40	1NO+1NC
		48V DC		SDM-(9 UP 40)	9 UP 40	1NO+1NC
		100-240V AC/DC	SCM	Common Coil	100-250	2NO+2NC
	4 Poles	230V AC	SCF	(Power Contactor)4NO	9 UP 85	1NO+1NC
				(Power Contactor)4NO	116 UP 800	2NO+2NC
			SCT	Reversing Contactor	9 UP 85	
Modular Contactor	2 Poles	230V AC	SMC-2025	(Contact Structure)2NO	25	SSR
	4 Poles		SMC-2063	(Contact Structure)2NO	63	
			SMC-4025	(Contact Structure)4NO	25	
			SMC-4063	(Contact Structure)4NO	63	
			SMC-4100	(Contact Structure)4NO	100	

Technical Specifications

Type	3 poles	AC bobin	SCG 9	SCG 12	SCG 18	SCG 25	SCG 32	SCG 40	SCG 50	SCG 65	SCG 80	SCG 95	SCG 100	
TypeRated operational current for AC-3 (Ue : 400 V)	A		9	12	18	25	32	40	50	65	80	95	100	
Rated thermal current (at 40°C)	Ith	A	20	25	40	40	50	60	80	100	110	135	135	
Rated operational current for AC-1 (Ue: 400 V) (≤ 40°C)	A		20	25	40	40	50	60	80	100	110	135	135	
Rated insulation voltage	Ui	V	1000											
Rated impulse voltage	Uimp	kV	8											
Max. Rating of slipring or squirrel-cage motors	AC-3		500 V	4	7.5	7.5	15	18.5	22	30	37	45	45	55
			380-440 V	4	5.5	7.5	11	15	18.5	22	30	37	45	55
			220-240 V	2.5	3.5	4.5	5.5	7.5	11	15	18.5	22	25	30
Switching discharge lamps (mercury vapour lamps)	AC-5a	A	14	16	25	32	40	55	80	85	105	120	125	
Electrical life (No. operation) (x1000)			2.000.000					1.500.000			1.000.000		500.000	
Mechanical life (No. operation) (x1000)			20.000.000						15.000.000				10.000.000	
Auxiliary contact technical specifications														
Number of auxiliary contacts (standard)			1NO+1NC											
Number of auxiliary contact options			1NO+1NC, 2NO+2NC, 4NO, 4NC, 3NO+1NC, 1NO+3NC											
Control unit specifications														
Coil type			SGB 1						SGB 2					
Supply voltages	V	AC	24, 42, 48, 110, 230, 400, 415											
Max. Operating temperature	°C		-25 to +55											
Max. Storage temperature	°C		-40 to +65											
Relative humidity			90%											

Type		4 poles	AC bobin	SCF-9	SCF-12	SCF-18	SCF-22	SCF-32	SCF-40	SCF-50	SCF-65	SCF-75	SCF-85
		3 poles	DC bobin	SDM-9	SDM-12	SDM-18	SDM-22	SDM-32	SDM-40				
Rated operational current for AC-3 (Ue : 400 V)		A		9	12	18	22	32	40	50	65	75	85
Rated thermal current (at 40°C)	Ith	A		20	25	40	40	50	60	80	100	110	110
Rated operational current for AC-1 (Ue: 400 V) (≤ 40°C)		A		20	25	40	40	50	60	80	100	110	110
Rated insulation voltage	Ui	V		1.000						1.000			
Rated impulse voltage	Uimp	kV		8						8			
Max. Rating of slipring or squirrel-cage motors	AC-3	kW	400 V	4	5.5	7.5	11	15	18.5	22	30	37	45
			230 V	2.5	3.5	4.5	5.5	7.5	11	15	18.5	22	25
Switching discharge lamps (mercury vapour lamps)	AC-5a	A		14	16	25	30	40	45	80	85	105	120
Electrical life (No. operation) (x1000)	AC-3	A		2.000					1.500	1.500		1.000	
Mechanical life (No. operation) (x1000)				20.000						15000			
Auxiliary contact technical specifications													
Number of auxiliary contacts (standard)				1NO+1NC									
Number of auxiliary contact options				1NO+1NC, 2NO+2NC, 4NO, 4NC, 3NO+1NC, 1NO+3NC									
Rated thermal current	Ith	A		16									
Control for non-inductive loads	AC-1	A	220 V AC	16									
Control for ohmic and static loads	AC-12	A	220 V AC	8									
Max. Operating temperature				-25 to +55									
Max. Storage temperature				-40 to +65									
Relative humidity				90%									

Type		3 poles	AC bobin	SCG 115	SCG 150	SCG 185	SCG 225	SCG 265	SCG 330	SCG 400	SCG 500	SCG 630	SCG 800	
		4 poles	AC bobin	SCF-115	SCF-150	SCF-185	SCF-225	SCF-265	SCF-330	SCF-400	SCF-500	SCF-630	SCF-800	
Rated operational current for AC-3 (U _e : 400 V)		A		115	150	185	225	265	330	400	500	630	800	
Rated thermal current (at 40°C)	lth	A		200	200	275	315	350	400	500	700	1000	1200	
Rated operational current for AC-1 (U _e : 400 V) (≤ 40°C)		A		200	200	275	315	350	400	500	700	1000	1200	
Rated insulation voltage	U _i	V		1000										
Rated impulse voltage	U _{imp}	kV		8										
Max. Rating of slipring or squirrel-cage motors	AC-3	kW	400 V	60	75	90	110	132	160	200	250	335	400	
			230 V	30	40	55	63	75	100	110	147	200	250	
Switching discharge lamps (mercury vapour lamps)	AC-5a	A		140	180	220	260	300	350	470	560	730	880	
Electrical life (No. operation) (x1000)	AC-3	A		500					300					
Mechanical life (No. operation) (x1000)				10.000		5.000			3.000					
Auxiliary contact technical specifications														
Number of auxiliary contacts (standard)				2NO+2NC										
Number of auxiliary contact options				2NO+2NC										4NO+4NC
Rated thermal current	lth	A		16										
Control for non-inductive loads	AC-1	A	220 V AC	16										
Control for ohmic and static loads	AC-12	A	220 V AC	8										
Max. Operating temperature				-25 to +55										
Max. Storage temperature				-40 to +65										
Relative humidity				90%										

DC bobin gerilimi için bilgi isteyiniz.

3 Poles Power Contactors - Coil Voltage: 100-240 V AC / 100-220 V DC (Common Coil)

Type		3 poles		SCM 100	SCM 125	SCM 150	SCM 180
Rated operational current for AC-3 (Ue : 400 V)		A		100	125	150	180
Rated thermal current (at 40°C)	Ith	A		160	160	200	230
Rated operational current for AC-1 (Ue: 400 V) (≤ 40°C)		A		160	160	200	230
Rated insulation voltage	Ui	V		1.000			
Rated impulse voltage	Uimp	kV		8			
Max. Rating of slipring or squirrel-cage motors	AC-3	kW	400 V	55	60	75	90
			230 V	30	37	45	55
Switching discharge lamps (mercury vapour lamps)	AC-5a	A		70	90	100	150
Electrical life (No. operation) (x1000)	AC-3	A		500			
Mechanical life (No. operation) (x1000)				10.000			5.000
Auxiliary contact technical specifications							
Number of auxiliary contacts (standard)				2NO+2NC			
Rated thermal current	Ith	A		16			
Control for non-inductive loads	AC-1	A	220 V AC	16			
Control for ohmic and static loads	AC-12	A	220 V AC	8			
Max. Operating temperature				-25 to +55			
Max. Storage temperature				-40 to +65			
Relative humidity				90%			



ROTARY CAM SWITCHES

Package switches are mechanical switching elements that work with the effect of rotation.

- 1 and 3 pole product options
- Continuous operating currents from 10A to 63A
- Transmitting the electrical energy needed by the motor in star-delta and direct starting circuits
- Sending current to the engine during the operation of engine control circuits
- Acting as a measurement switch in measurement circuits
- Controlling double-speed engines
- Determining the direction of energy in control circuits

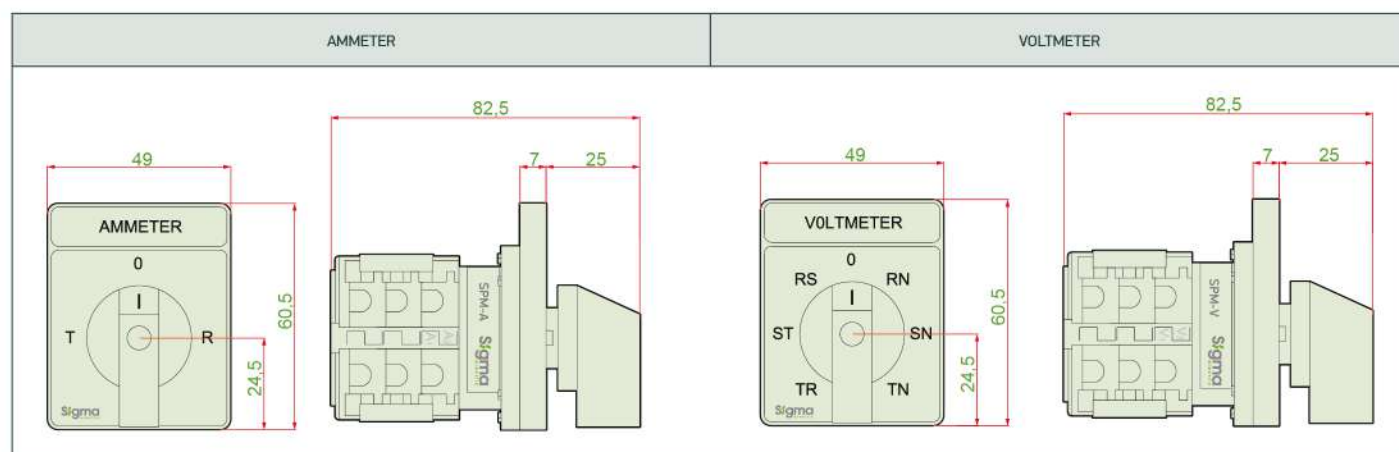
Technical Specifications

Type	Power(KVAR)	Voltage(V)	I rms (A)	Dimensions(mm)
SESRM	1.66	230	7.22	150*130*125
	3.33		14.48	192*160*144
	6.66		28.96	195*290*160
	16.66	Ask for information		

Instrument Selector Switches



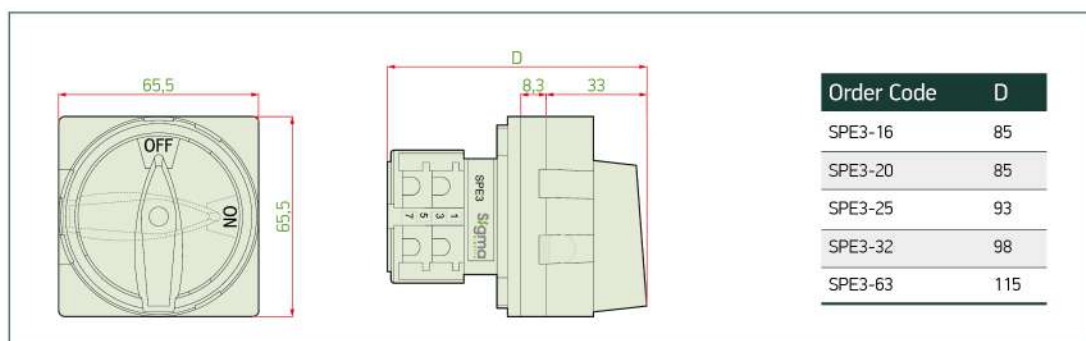
Type Code	Stages	Continuous Operating Current (Ith) A	Order Code
SPM-A	4 Stages	20	SPM-A
SPM-V	7 Stages	20	SPM-V



Locking Safety Switches (Red - Yellow)



Type Code	Number of poles	Continuous Operating Current (Ith) A	Pcs in a Box	Order Code
SPE3	3	20	20	SPE3-20
	3	32	20	SPE3-32
	3	63	20	SPE3-63

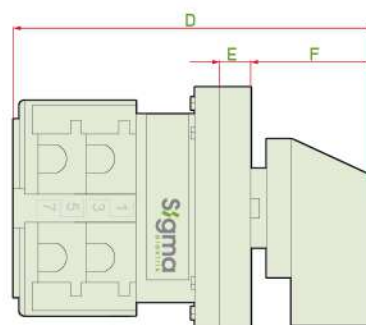
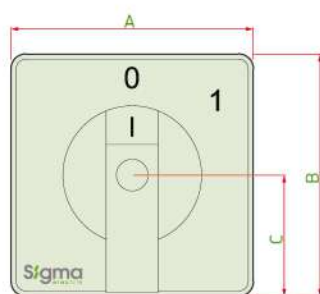


0 - 1 On - Off Cam Switches

	Type Code	Number of poles	Continuous Operating Current (Ith) A	Order Code
	SPA1	1	10	SPA1-10
		1	16	SPA1-16
		1	20	SPA1-20
		1	25	SPA1-25
		1	32	SPA1-32
		1	63	SPA1-63
	SPA3	3	10	SPA3-10
		3	16	SPA3-16
		3	20	SPA3-20
		3	25	SPA3-25
		3	32	SPA3-32
		3	63	SPA3-63

Change Over Switches (1 - 0 - 2)

	Type Code	Number of poles	Continuous Operating Current (Ith) A	Order Code
	SPN1	1	16	SPN1-16
		1	25	SPN1-25
		1	32	SPN1-32
		1	63	SPN1-63
	SPN3	3	16	SPN3-16
		3	25	SPN3-25
		3	32	SPN3-32
		3	63	SPN3-63



	A	B	C	D	E	F
SPA1-10 / 16 / 20	49	49	24,5	63	6,3	25
SPA1-25	49	49	24,5	66	6,3	25
SPA1-32	65	65	32,5	81	8	30
SPA1-63	65	65	32,5	90	8	30
SPN1-16	49	49	24,5	63	6,3	25
SPN1-25	49	49	24,5	66	6,3	25
SPN1-32	65	65	32,5	81	8	30
SPN1-63	65	65	32,5	90	8	30

	A	B	C	D	E	F
SPA3-10 / 16 / 20	49	49	24,5	73	6,3	25
SPA3-25	49	49	24,5	80	6,3	25
SPA3-32	65	65	32,5	93,5	8	30
SPA3-63	65	65	32,5	112	8	30
SPN3-16	49	49	24,5	83	6,3	25
SPN3-25	49	49	24,5	93	6,3	25
SPN3-32	65	65	32,5	107	8	30
SPN3-63	65	65	32,5	107	8	30





MOTOR PROTECTION SWITCHES

Motor protection switches are electrical control, command and protection elements designed to protect electric motors against overload current (thermal current), short circuit currents and to manually activate and deactivate the electric motor.

- 10kA, 15kA and 100kA short circuit breaking capacity
- Rated current from 0.16A to 85A
- Possibility to use padlock to fix in OFF position
- Terminals protected against finger contact
- Design compatible with accessories (auxiliary contact, low voltage coil, trip coil)

Motor Protection Switches

Product	Type Code	Nr. Poles	Rated Power at (kW) 400V AC3	Rated current Range	Rated short circuit breaking capacity at 400V Icu	Rated insulation voltage
Motor Protection Switches	SMK-25	3 Pole	0.02 ~ 15 kW	0.1 ~ 32 A	100 kA	Ui: 690 V (AC)
	SMK-80	3 Pole	18.5 ~ 40 kW	25 ~ 80 A	15 kA	Ui: 690 V (AC)

Product	Type Code	Rated Motor Power V 380 (kW)	Setting Range (A)	Coil Voltage (V) AC
Motor Starters with Widthchlosure (DOL)	SMS	0.37 ~ 45 KW	1-85 A	230 (V) AC



Type		SMK-25	SMK-80
Number of poles		3	3
Rated insulation voltage	Ui (V)	690	690
Rated impuls withstand voltage	Uimp (kV)	6	6
Electrical life (No. operation)	Op.	100.000	80.000
Mechanical life (No. operation)	Op.	100.000	100.000
Compatibility		AC-3	AC-3
Rated operating voltage	Ue (V)	690	690
Rated operating frequency	Hz	50/60	50/60
Utilization category		A	A
Contamination degree		3	3
Vibration strength		5 g (from 5 to 150 Hz)	5 g (from 5 to 150 Hz)
Maximum ambient operating temperature	°C	From -4 to +140°F (from -20 to +60°C)	From -4 to +140°F (from -20 to +60°C)
Maximum ambient storage temperature	°C	From -40 to +176°F (from -40 to +80°C)	From -40 to +176°F (from -40 to +80°C)
Relative Humidity	%	90	90
Flame resistance	°C	1760°F (960°C)	1760°F (960°C)
Tightening torque	Nm	1,2	2
Auxiliary contact		Yes	Yes
Under voltage release		Yes	Yes
Remote tripping coil		Yes	Yes
Container		Yes	Yes
Contact combination block		Yes	Yes
Standards		TS EN 60947-4-1, 60947-2	TS EN 60947-4-1, 60947-2



Type Code	Rated Power at 400V AC3 (kW)	Rated Current Range (A)	Rated Short Circuit Breaking Capacity at 400V Icu (kA)	Min. Order Quantity	Pcs in a Box	Order Code
SMK-25	0,02	0.1-0.16	100	1	48	SMK25-0.16
	0,06	0.16-0.25	100	1	48	SMK25-0.25
	0,09	0.25-0.4	100	1	48	SMK25-0.4
	0,12	0.4-0.63	100	1	48	SMK25-0.63
	0,25	0.63-1	100	1	48	SMK25-1
	0,37	1-1.6	100	1	48	SMK25-1.6
	0,75	1.6-2.5	100	1	48	SMK25-2.5
	1,5	2.5-4	100	1	48	SMK25-4
	2,2	4-6,3	100	1	48	SMK25-6.3
	4	6-10	100	1	48	SMK25-10
	5,5	9-14	15	1	48	SMK25-14
	7,5	13-18	15	1	48	SMK25-18
	9	17-23	15	1	48	SMK25-23
	11	20-25	15	1	48	SMK25-25
	15	24-32	10	1	48	SMK25-32
SMK-80	18,5	25-40	15	1	24	SMK80-40
	22	37-50	15	1	24	SMK80-50
	30	40-63	15	1	24	SMK80-63
	40	56-80	15	1	24	SMK80-80

Accessories for Motor Protection Switches



Type Code	Accessories	Order Code
SMK25-F11	Auxiliary Contact 1NO+1NC (Front Mounting)	SMK25-F11
SMK25-F20	Auxiliary Contact 2NO (Front Mounting)	SMK25-F20
SMK25-L11	Auxiliary Contact 1NO+1NC (Side Mounting)	SMK25-L11
SMK25-L20	Auxiliary Contact 2NO (Side Mounting)	SMK25-L20
SMK80-L11	Auxiliary Contact 1NO+1NC (Side Mounting)	SMK80-L11
SMK80-L20	Auxiliary Contact 2NO (Side Mounting)	SMK80-L20



Type Code	Accessories	Order Code
SMK25-DG	Under Voltage Release 380 V	SMK25-DG
SMK25-AB	Shunt Trip Release 230 V	SMK25-AB



Type Code	Accessories	Order Code
SMK25-A	Combination Block for Contactor (SCM9-40)	SMK25-A



Type Code	Accessories	Order Code
SMK25-K	Widthclosure for Motor Protection Switch	SMK25-K

Motor Starters with Widthclosure (DOL)



Type Code	Rated Motor Power (kW) 380 V	Setting Range (A)	Coil Voltage (V) AC	Pcs in a Box	Order Code
SMS09230	0.37	1-1.6	230	8	SMS090037
	0.75	1.6-2.5	230	8	SMS090075
	1.5	2.5-4	230	8	SMS090115
	2.2	4-6	230	8	SMS090220
	3	5-8	230	8	SMS090300
	4	7-10	230	8	SMS090400
SMS012230	5.5	9-13	230	8	SMS0120550
SMS018230	7.5	12-18	230	8	SMS0180750
SMS025230	11	16-22	230	8	SMS0251110
SMS032230	15	24-36	230	4	SMS0321150
SMS040230	18.5	28-40	230	4	SMS0401185
SMS050230	22	34-50	230	1	SMS0501220
SMS065230	30	45-65	230	1	SMS0651300
SMS080230	37	54-75	230	1	SMS0801370
SMS095230	45	63-85	230	1	SMS0951450





DIGITAL MEASUREMENT DEVICES

Digital measuring instruments measure the electrical parameters in your facility with high precision and reliability.

- Class 0.5 measurement accuracy
- Compact type design
- Variety of sizes (72x72mm, 96x96mm)
- CATIII degree of protection (model based)
- Communication via RS485 (model based)

Technical Specifications

Digital Measurement Devices	Type	Description	Diameter(mm)
	SD 72A	Ammeter with Current Transformer 1-5000/5A	72*72
	SD 96A		96*96
	SD 72A	Voltmeter 0-600V AC	72*72
	SD 96V		96*96
	SD 96M	I-V-HZ Multimeter	96*96
	SD 96MP	Multifunctional Powermeter	96*96
	SD 96MAC	Multifunctional Network Analyser (with harmonic measurement)	96*96
	SD8MAC	DIN Rail Type Multifunctional Network Analyser (with harmonic measurement)	DIN Type

	Ammeters	Voltmeters
	220 V AC	
	(0.9-1.1)*Un	
	50/60 HZ	
	0-5000 A~	0-600 V~
	CAT III	
	%1+1 digit	
	-5°C ... +50°C	

Digital Measurement Devices

	Ammeters	Voltmeters
Operating Voltage (Un)	220 VAC	220 VAC
Operating Voltage Range	(0.9-1.1) x Un	(0.9-1.1) x Un
Frequency	50/60 Hz.	50/60 Hz.
Measuring range	0-5000 A~	0-600V~
Mounting class	CAT III	CAT III
Accuracy	Class 0.5	Class 0.5
Ambient Air Temperature	-5°C...+50°C	-5°C...+50°C



Type Code	Description	Diameter (mm)	Accuracy Class	Min. Order Quantity	Pcs in a Box	Order Code
SD 72A	Ammeter with Current Transformer 1-5000/5A	72x72	Cl 0.5	1	72	SD72A-5000
SD 96A	Ammeter with Current Transformer 1-5000/5A	96x96	Cl 0.5	1	72	SD96A-5000
SD 72V	Voltmeter 0-600 V AC	72x72	Cl 0.5	1	72	SD72V-0600
SD 96V	Voltmeter 0-600 V AC	96x96	Cl 0.5	1	72	SD96V-0600
SD 96M	I-V-Hz Multimeter	96x96	Cl 0.5	1	27	SD96M
SD 96MP	Multifunctional Powermeter (with RS485)	96x96	Cl 0.5	1	27	SD96MP
SD 96MAC	Multifunctional Network Analyser (with harmonic measurement)	96x96	Cl 0.5	1	27	SD96MAC
SD8MAC	DIN Rail Type Multifunctional Network Analyser (with harmonic measurement)	DIN type	Cl 0.5	1	27	SD8MAC



RELAYS

Relay is a switch model that can control the circuit electrically. The main reason why relays working with an electromechanical system are used in electrical and electronic circuits is that they can control high currents with low currents. Relays are generally used in control circuits.

- Level Control Relay: In monitoring environments such as tanks, water tanks and wells containing conductive liquids
- 3-Phase Voltage Relay: In protecting devices and motors from overvoltage and undervoltage
- Asymmetrical Cycle Time Relay: General room ventilation, periodic dehumidification, lighting control, circulation pumps, signage, etc. in areas
- Star-Delta Delayed Time Relay: Providing the required time interval during the transition from star connection to delta connection
- Single Function Time Relay: It is used in applications where function and time requirements are known.

Technical Specifications

Type Code		Description	Explanation	Supply Voltage
Relay		Voltage Relay	Over/High Voltage	230 V AC
			Phase Sequence and phase failure protection	220/460 V
			Over Voltage Under Voltage Asymmetry time delay Phase Sequence Phase Failure	
		Single - Function Time Relay	0.10-30 S delay ON	230 V AC
			0.10-60 S delay ON	
		Multi - Function Time Relay	0.10- 10 S days ON-OFF	AC/DC 12V ~240V
			1*SPDT	
			2*SPDT	
		Delay on Star/Delta Relay	Range of time delay t1:0.1 s - 10 min , Switch time t2:0.1 s - 1 s.	230V AC
		Asymmetric Cycler Relay	0.1 s - 100 day	AC/DC 12V ~240V
		Level Control Relay	2 level control mode	
	Analogue Time Switch			
Timer		STS8-01C	100 hours reserve time.	230 V AC
			72 hours reseve time.(battery changeable)	

Relays

Type	Description	Explanation	Supply Voltage	Order Code
SRV8-01	Voltage Relay	Over/High Voltage	230 V AC	SRV801230
SRV8-03	Voltage Relay	Phase sequence and phase failure protection	220-460 V	SRV803460
SRV8-05	Voltage Relay	Over voltage Under voltage Asymmetry time delay Phase sequence Phase failure	220-460 vV	SRV805460
SRT8-A30S	Single - Function Time Relay	0.1-30 Second delay ON	230 V AC	SRT8A30S
SRT8-A60S	Single - Function Time Relay	0.1-60 Second delay ON	230 V AC	SRT8A60S
SRT8-A10D	Multi-Function Time Relay	0.1 s - 10 days, ON-OFF	230 V AC	SRT8A10D
SRT8-M1	Multi-Function Time Relay	1xSPDT	AC/DC 12V~240V	SRT8-M1
SRT8-M2	Multi-Function Time Relay	2xSPDT	AC/DC 12V~240V	SRT8-M2
SRT8-STD	Delay On Star/Delta Relay	Range of time delay t1:0.1s - 10min, Switch time t2:0.1s-1s	AC/DC 12V~240V	SRT8ST240
SRT8-STA	Delay On Star/Delta Relay	Range of time delay t1:0.1s - 10min, Switch time t2:0.1s-1s	230 V AC	SRT8STA
SRT8-S1	Asymmetric Cycler Relay	0.1 s - 100 days	AC/DC 12V~240V	SRTSS1240
SRL8-01	Level Control Relay	2 Level control mode	AC/DC 12V~240V	SRL801240

Analogue Time Switch

Type	Description	Explanation	Supply Voltage	Pcs in a Box	Order Code
STS8-01	Analogue Time Switch	100 hours reserve time	230 V AC	80	STS8-01





COMPENSATION PRODUCTS

Reactive penalty is a type of penalty system applied when the reactive power generated in electricity consumption exceeds a certain limit. Compensation is a method used to balance reactive power consumption and correct the power factor.

Thanks to compensation products, businesses can;

- Prevent from penalty payments by minimizing the reactive energy drawn from the network
- Reduce in electrical losses and voltage drops
- Make energy systems work more efficiently
- Ensure energy efficiency by reducing energy losses

Technical Specifications

Inductive Load Drivers								
Type	Power (KVar)	Driving capability of shunt reactor	Operating Voltage(V)	Nominal current of MCB(A)	Thermal protection	Switching Voltage	Response time	Dimensions
SSE5	3*1.66KVAR	3 - Single Phase	230 V	16	*	5 V DC	20 ms	120*90*120
SSE10	3*3.66KVAR			25				75*125*125
SSE20	3*6.66KVAR			63				130*190*135
SSE50	3*16.66KVAR			100				189*198*129

Power Factor Controllers						
Type	Min.Current Limit (mA)	Steps	Shunt Reactor	Mobile Remote Monitoring	Remote Parameter Adjustment	Up to 63th Harmonic
	20	15	+	-	-	-
	5	12		+	+	+
		24				

Power Factor Controllers							
Type	Up to 31st Harmonic	Automatic Steps	Password Protection	Internal Temperature Measurement	Rs485	Display Type	
	-	+	+	-	-	LCD	
	+			+	+		
					+		

Power Factor Controllers						
Type	Real Time Clock	Protection of Step Life Time	Automatic Correction of Connection Faults	SVC/TCR Output	Thristor Switchcontroller	Enerji Sayaclari
	-	+	+	-	-	+
	+					

Inductive Load Drivers



Type Code	Power (KVar)	Driving capability of shunt reactor	Operating Voltage (V)	Nominal current of MCB (A)	Thermal protection	Switching Voltage	Response time	Dimensions	Order Code
SSE 5	3x1,66 kVAr	3- Single Phase	230 V	16	Ø	5 VDC	20 ms	120x90x120	SSE5
SSE 10	3x3,66 kVAr	3- Single Phase	230 V	25	Ø	5 VDC	20 ms	75x125x125	SSE10
SSE 20	3x6,66 kVAr	3- Single Phase	230 V	63	Ø	5 VDC	20 ms	130x190x135	SSE20
SSE 50	3x16,66 kVAr	3- Single Phase	230 V	100	Ø	5 VDC	20 ms	189x198x129	SSE50

Single Phase Shunt Reactors



Type Code	Power (KVar)	Voltage (V)	I rms (A)	Dimensions (mm)	Pcs in a Box	Order Code
SESRM	1,66	230	7,22	150x130x125		SESRM-1,66
	3,33	230	14,48	192x160x144		SESRM-3,33
	6,66	230	28,96	195x290x160		SESRM-6,66
	16,66	Ask for information				SESRM-16,66

Technical Specifications

Type			Power (Kvar)	Voltage (V)	I rms (A)	Type	Power(KVAR)	Voltage(V)	I rms (A)	Dimensions(mm)
Shunt Reactors	Single Phase	SESRM	0,25 ~ 10	230	1,09 ~ 43,48	SESRM	1.66	230	7.22	150*130*125
							3.33		14.48	192*160*144
							6.66		28.96	195*290*160
							16.66	Ask for information		
	Three Phase	SESRT	0,25 ~ 50	400	0,36 ~ 72,46					

Single Phase Shunt Reactors



Type Code	Power (KVar)	Voltage (V)	I rms (A)	Dimensions (mm)	Order Code
SESRM	0,25	230	1,09	120x100x95	SESRM-0,25
	0,5	230	2,17	120x100x95	SESRM-0,5
	1	230	4,35	150x130x125	SESRM-1
	1,5	230	6,52	150x130x125	SESRM-1,5
	1,66	230	7,22	150x130x125	SESRM-1,66
	2,5	230	10,87	192x160x144	SESRM-2,5
	3	230	13,04	192x160x144	SESRM-3
	3,33	230	14,48	192x160x144	SESRM-3,33
	5	230	21,74	195x300x155	SESRM-5
	6,66	230	28,96	195x290x160	SESRM-6,66
	7,5	230	32,61	195x365x155	SESRM-7,5
	10	230	43,48	235x365x185	SESRM-10

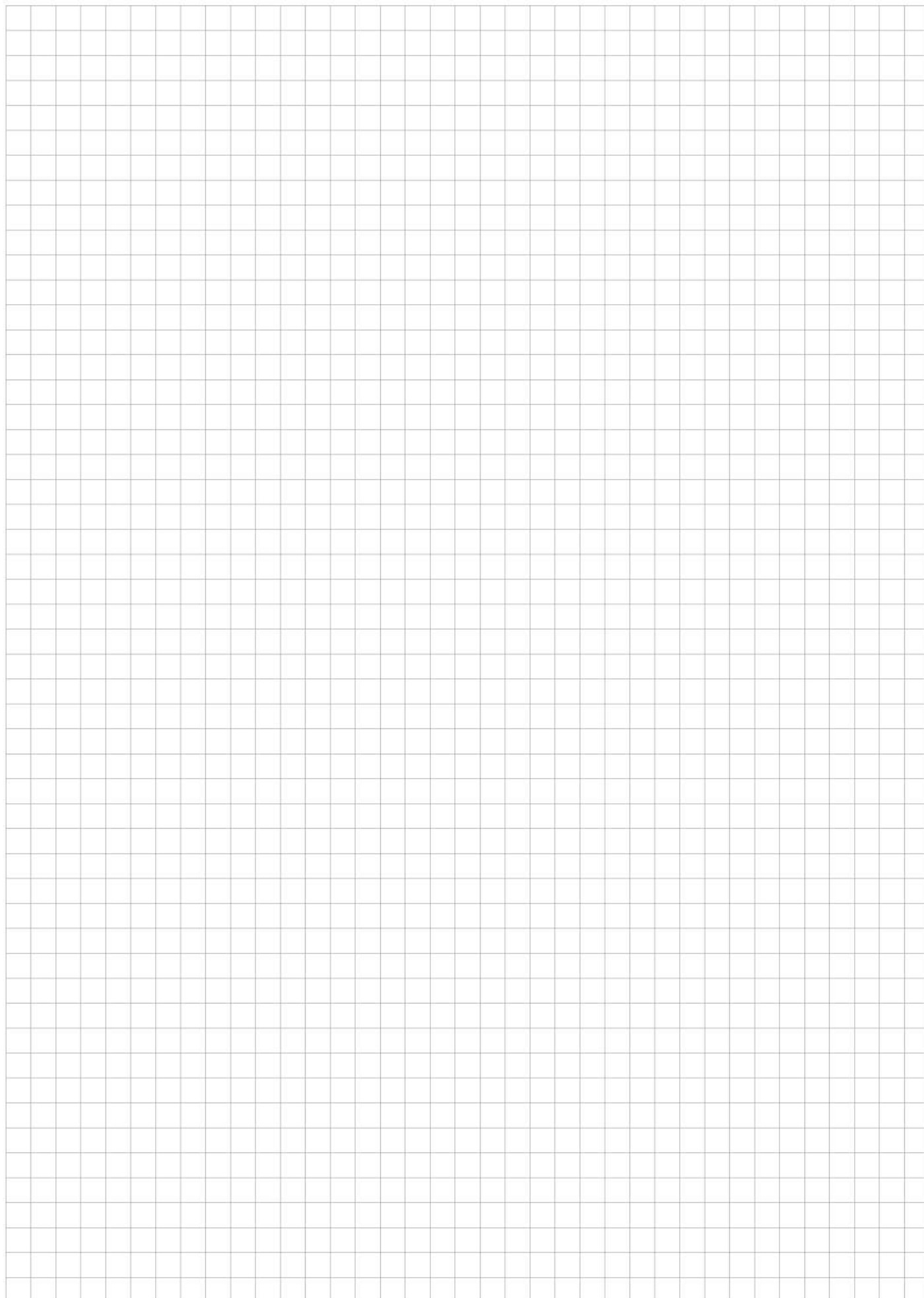
Three Phase Shunt Reactors



Type Code	Power (KVar)	Voltage (V)	I rms (A)	Dimensions (mm)	Order Code
SESRT	0,25	400	0,36	200x180x85	SESRT-0,25
	0,5	400	0,72	200x180x85	SESRT-0,5
	1	400	1,44	200x180x120	SESRT-1
	1,5	400	2,17	200x180x120	SESRT-1,5
	2,5	400	3,62	240x270x140	SESRT-2,5
	5	400	7,24	290x320x150	SESRT-5
	7,5	400	10,86	190x320x160	SESRT-7,5
	10	400	14,49	360x375x160	SESRT-10
	15	400	21,73	360x375x170	SESRT-15
	20	400	28,98	415x400x175	SESRT-20
	25	400	36,23	415x400x220	SESRT-25
	30	400	43,47	415x400x220	SESRT-30
	40	400	57,97	520x480x280	SESRT-40
	50	400	72,46	570x530x300	SESRT-50









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CATALOGUE

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