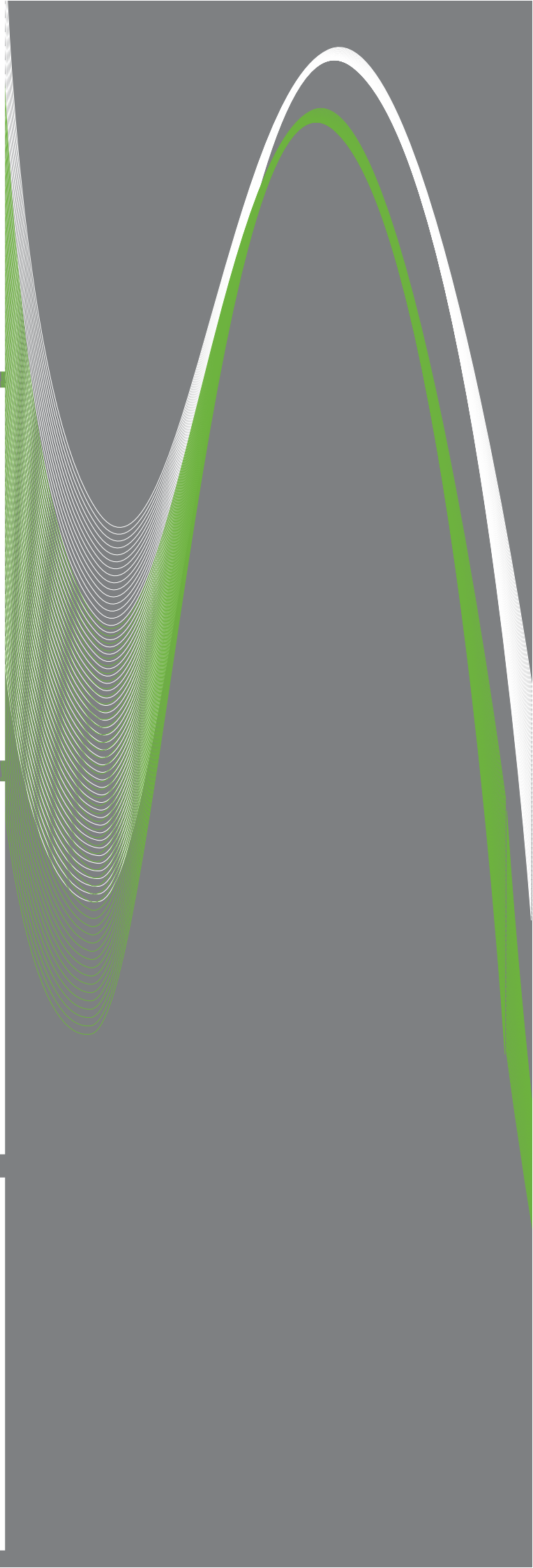
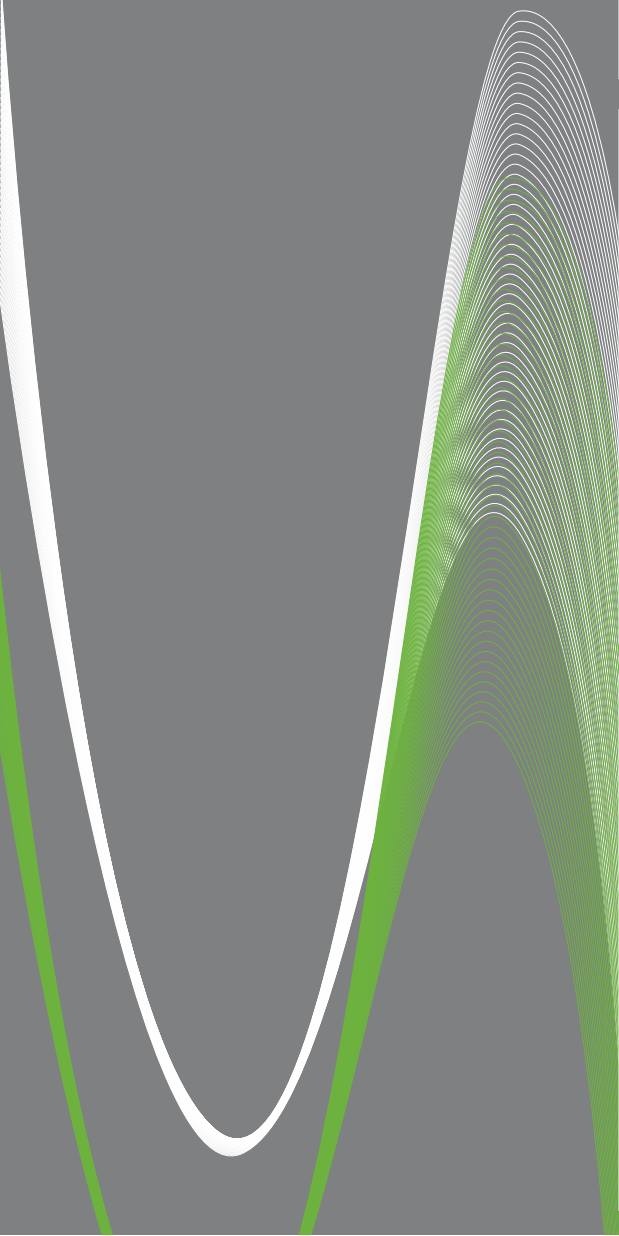




LOW VOLTAGE PRODUCTS
2016 Order Catalogue







Company Profile

Sigma Elektrik® located in İstanbul ,is one of the leading company, focuses on designing, manufacturing and marketing of low voltage switchgear components such as MCCB, MCB, RCCB, Contactors, Current Transformers, Motor Protection switches e.g since 1993 in Turkey. The key figure of the company's growth strategies are its subsidiaries in Turkey and abroad and close cooperation with selected strategic partners. Its products are being distributed through 5 different continents over the World.

Consequence of overachievements of Sigma Elektrik®, it expanded business operation and distribution channel by foreign Joint Venture investment from Netherland in 2009. Currently, %50 of its shares belongs to a Dutch company. Sigma Elektrik® is a leading supplier of solutions and services for low voltage products in residential and commercial buildings as well as for switchgear applications in industrial projects. The quality of the products and services are constantly aimed at achieving customer's satisfaction and corresponding business excellence.

In Sigma Elektrik® considering quality is an indispensable principle at each step of manufacturing, all work processes are completed according to ISO Quality Management System and awarded by ISO 9001:2008, ISO 14001 certificates. All products are manufactured according to applicable EN, IEC, UKRSEPRO, GOST and CE Conformance Certificates from international accredited laboratories.

Sigma Elektrik® has a modern moulding room equipped with modern workbenches. We use Uni-graphics NX software which is advanced for design, modelling, production , engineering analyse, improvement, integrated with CAD / CAM / CAE applications, and this is one of the most popular software in aviation, automation, defence, mechanical, plastic and moulding industries. We provide you large scale of solution for your L.V. Electro mechanical component requirements by using these assets and create extra value for solution.



Index

- 06 LV Moulded Case Circuit Breakers
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LV MCCB, Thermal-Magnetic Adjustable Type - Technical Specifications.

Type				C160	K 160		M160	K 250		M 250		S 250	U250	
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 I_n (at 40° C)	A			16, 20, 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	200, 250	63, 80, 100, 125, 160, 200, 250	63, 80, 100, 125, 160, 200, 250	100, 125, 160, 200, 250	100, 125, 160, 200, 250	100, 160, 250	100, 160, 250
No of Poles				3	3	4	3	3	4	3	4	3	3	4
Rated Operating Voltage	Ue	V	AC	400	400		400	400		400		400	400	
Rated Insulation Voltage	Ui	V	AC	690	750		750	750		750		750	750	
Power Frequency Withstand Test at 1 Minute		V	AC	3000	3000		3000	3000		3000		3000	3000	
Rated Impulse Withstand Voltage	Uimp	kV	AC	8	8		8	8		8		8	8	
Rated Ultimate Short Circuit Breaking Capacity	Icu	kA	690 V AC	5	8		10	8		10		16	8	
			500 V AC	7	9		18	9		18		42	9	
			440 V AC	15	22		42	22		42		50	22	
			415 V AC	25	36		50	36		50		70	36	
			240 V AC	35	50		65	50		65		100	50	
			250 V DC (3 poles serial)	10	15		25	15		25	30		15	
Rated Service Short Circuit Breaking Capacity	Ics	kA	690 V AC	5	8		8	8		10		8	8	
			500 V AC	7	9		14	9		18		21	9	
			440 V AC	10	22		32	22		42		25	22	
			415 V AC	18	36		38	36		50		52	36	
			240 V AC	25	50		50	50		65		50	50	
			250 V DC (3 poles serial)	5	10		19	10		25	23		10	
Category (IEC/EN 60947-2)				A	A		A	A		A		A	A	
Pollution Degree				3	3		3	3		3		3	3	
Electrical Life (Operation)	ON - OFF		415 V	5000	8000		8000	8000		8000		8000	8000	
Mechanical Life (Operation)	ON - OFF			15000	20000		20000	20000		20000		20000	20000	
Protection Unit				Thermal Adj. Magnetic Fixed	Thermal Adj. Magnetic Fixed		Thermal Adj. Magnetic Adj.	Thermal Adj. Magnetic Adj.		Thermal Adj. Magnetic Adj.		Thermal Adj. Magnetic Adj.	Electronic	
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 : (0,7-1)xIn ; Im:(5-10)xIn		Ir : (0,7-1)xIn ; Im:(5-10)xIn		Ir : (0,8-1)xIn ; Im:(5-10)xIn	Ir : (0,4-1)xIn ; Im:(2-10)xIn	
Protection Unit (AC Motors Protection)				Ir : (0,8-1)xIn ; Im:15xIn	Ir : (0,7-1)xIn ; Im:15xIn		Ir : (0,8-1)xIn ; Im:15xIn	Ir : (0,7-1)xIn ; Im:(10-15)xIn		Ir : (0,7-1)xIn ; Im:(10-15)xIn		Ir : (0,8-1)xIn ; Im:(10-15)xIn	Ir : (0,4-1)xIn ; Im:(2-10)xIn	
Ambient Operation Temperature	°C			-20 to +60	-20 to +60		-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		-40 to +80	-40 to +80	
Dimensions	Width	mm		90	105	140	90	105	140	105	140	105	105	140
	Lenght	mm		141	178	169	138	178	169	178	169	161	178	169
	Depth	mm		75	89	89	89	89	89	89	89	89	89	89
Accessories														
Shunt Trip Release				√	√		√	√		√		√	√	
Undervoltage Release				√	√		√	√		√		√	√	
Auxiliary Contact				√	√		√	√		√		√	√	
Alarm Contact				√	√		√	√		√		√	√	
Motor Operator				-	√		-	√		√		-	√	
Ext. Rotary Handle				-	√		√	√		√		√	√	
Connection Clamp				Standard	√		-	√		√		-	√	
Mechanical Lock Ped				√	√		-	√		√		-	√	
Extention Bus Bar				-	√		√	√		√		√	√	

K 400	M 400	S 400		K 630	M 630	S 630		M800	S800	U1600
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
315, 400	315, 400	315, 400		500, 630	500,630	500,630		800	800	1000, 1250, 1600
3	3	3	4	3	3	3	4	3	3	3
400	400	400		400	400	400		400	400	400
690	750	690		750	750	750		750	750	750
3000	3000	3000		3000	3000	3000		3000	3000	3000
8	8	8		8	8	8		8	8	8
12	17	16		12	17	16		22	16	25
20	25	42		20	25	42		35	42	35
25	35	50		25	35	50		42	50	50
36	50	70		36	50	70		50	70	70
65	50	100		65	80	100		100	100	85
25	30	30		25	30	30		30	30	-
12	17	8		12	17	8		22	8	25
20	25	21		20	25	21		35	21	35
25	35	25		25	35	25		42	25	50
18	36	52		18	36	35		36	35	35
36	80	50		36	50	50		50	50	65
20	23	23		23	23	23		23	23	-
A	A	A		A	A	A		A	A	B
3	3	3		3	3	3		3	3	3
6000	6000	6000		5000	5000	5000		5000	5000	4000
15000	15000	15000		15000	15000	15000		10000	10000	8000
Thermal Adj. Magnetic Adj.	Thermal Adj. Magnetic Adj.	Thermal Adj. Magnetic Adj.		Thermal Adj. Magnetic Adj.	Thermal Adj. Magnetic Adj.	Thermal Adj. Magnetic Adj.		Thermal Adj. Magnetic Adj.	Thermal Adj. Magnetic Adj.	Electronic
Ir : (0,8-1)xln ; Im : (5-8)xln	Ir : (0,8-1)xln ; Im : (5-8)xln	Ir : (0,8-1)xln ; Im : (5-10)xln		Ir : (0,8-1)xln ; Im : (5-8)xln	Ir : (0,8-1)xln ; Im : (5-8)xln	Ir : (0,8-1)xln ; Im : (5-10)xln		Ir : (0,8-1)xln ; Im : (5-10)xln	Ir : (0,8-1)xln ; Im : (5-10)xln	Ir : (0,4-1)xln ; Im : (2-10)xln
Ir : (0,8-1)xln ; Im : (8-12)xln	Ir : (0,8-1)xln ; Im : (8-12)xln	Ir : (0,8-1)xln ; Im : (10-15)xln		Ir : (0,8-1)xln ; Im : (8-12)xln	Ir : (0,8-1)xln ; Im : (8-12)xln	Ir : (0,8-1)xln ; Im : (10-15)xln		Ir : (0,8-1)xln ; Im : (10-15)xln	Ir : (0,8-1)xln ; Im : (10-15)xln	Ir : (0,4-1)xln ; Im : (2-10)xln
-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
140	140	140	188	140	140	140	188	210	210	210
267	267	263	263	267	267	263	263	280	280	408
104	104	117	117	104	104	117	117	107	107	143
√	√	√	√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√	√	√	√
√	√	-	√	√	√	-	√	√	√	√
√	√	√	√	√	√	√	√	√	√	√
-	-	-	-	-	-	-	-	-	-	-
√	√	-	√	√	√	-	√	-	-	-
Standard	Standard	√	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard

LV MCCB, Thermal-Magnetic Fixed Type - Technical Specifications.

Type				KM200	A160	A250	A400	A160N	A250N	A400N	A630N	A800N
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	IEC / EN 60947-2	IEC / EN 60947-2
Rated Current I_n (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, 160	200, 250	315, 400	20, 25, 32, 40, 50, 63, 80, 100, 125, 160	200, 250	315, 400	500, 630	800
No of Poles				1	3	3	3	4	4	4	4	4
Rated Operating Voltage	Ue	V	AC	400	400	400	400	400	400	400	400	400
Rated Insulation Voltage	Ui	V	AC	750	750	750	750	750	750	750	750	750
Power Frequency Withstand Test at 1 Minute		V	AC	3000	3000	3000	3000	3000	3000	3000	3000	3000
Rated Impulse Withstand Voltage	Uimp	kV		8	8	8	8	8	8	8	8	8
Rated Ultimate Short Circuit Breaking Capacity	Icu	kA	400/415 V AC	36	25	25	36	25	36	36	36	36
Rated Service Short Circuit Breaking Capacity	Ics	kA	400/415V AC	18	12,5	12,5	18	12,5	18	18	18	18
Pollution Degree				3	3	3	3	3	3	3	3	3
Electrical Life (Operation)	ON - OFF		400/415 V AC	4000	5000	4000	3000	5000	4000	3000	2000	1500
Mechanical Life (Operation)	ON - OFF			10000	12000	10000	7000	12000	10000	7000	6000	5000
Thermal Adjustment				Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
Magnetic Adjustment				Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
Ambient Temperature		°C		-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
Storage Temperature		°C		-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
Dimensions	Width	mm		35	90	105	140	120	140	185	280	280
	Length	mm		158	159	170	265	159	169	262	281	281
	Depth	mm		89	74	74	110	74	74	110	110	110
Accessories												
Shunt Trip Release				-	√	√	√	√	√	√	√	√
Undervoltage Release				-	√	√	√	√	√	√	√	√
Auxiliary Contact				-	√	√	√	√	√	√	√	√
Alarm Contact				-	√	√	√	√	√	√	√	√
Motor Operator				-	-	-	-	-	-	-	-	-
Ext. Rotary Handle				-	√	√	√	√	√	√	√	√
Extention Bus Bar				-	√	√	√	√	√	√	√	√

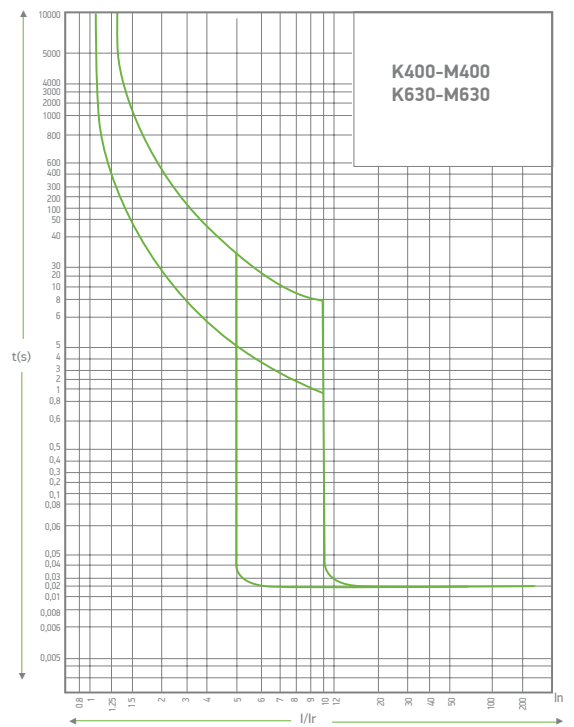
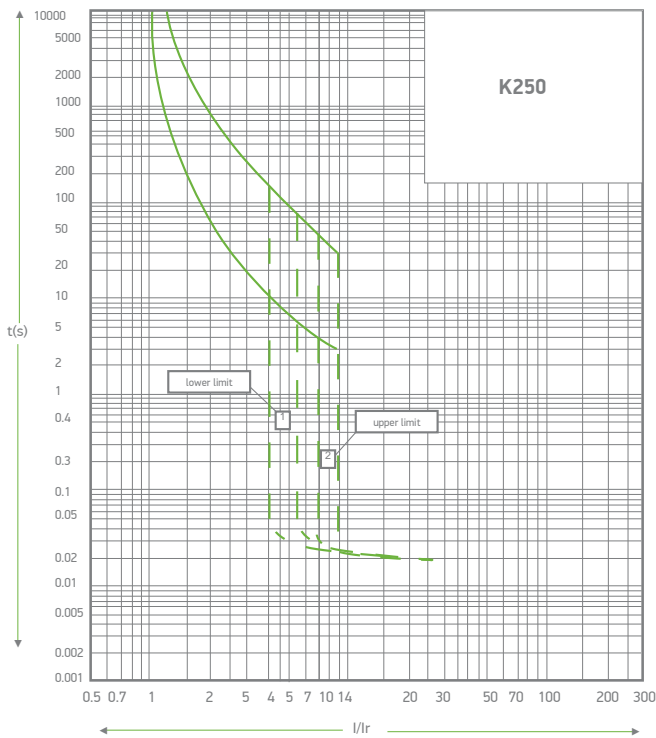
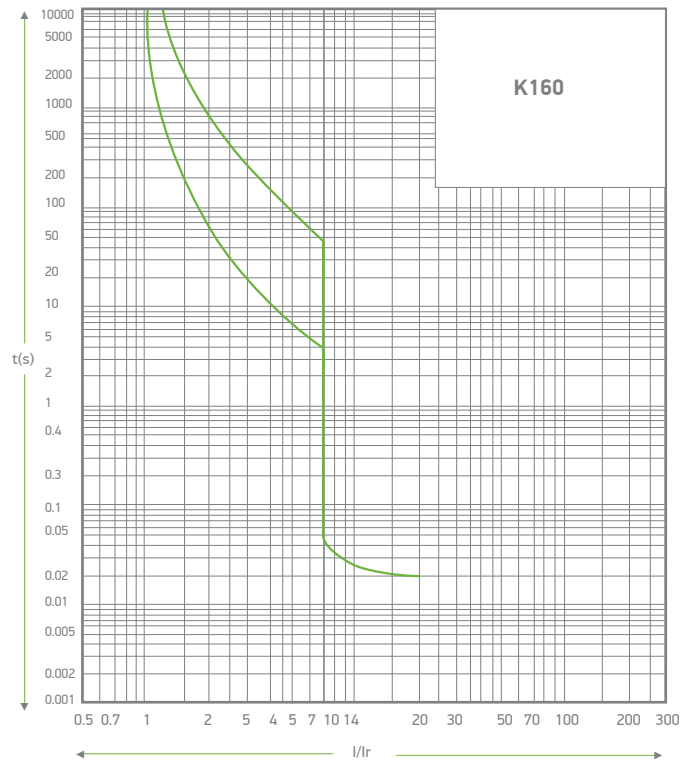
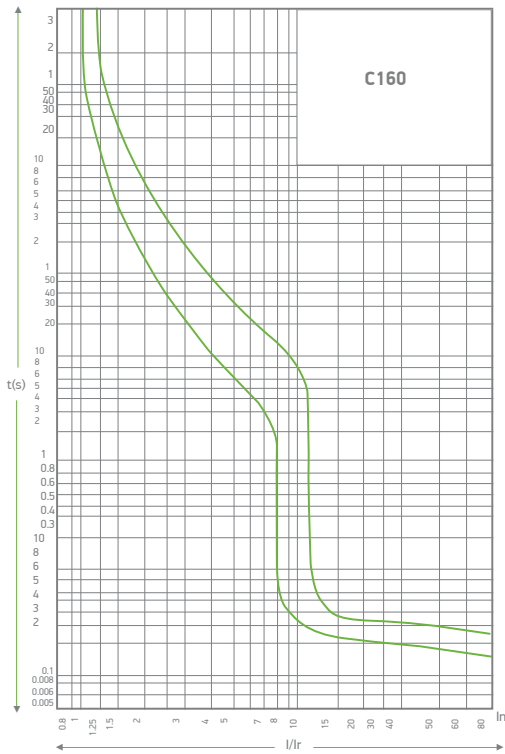


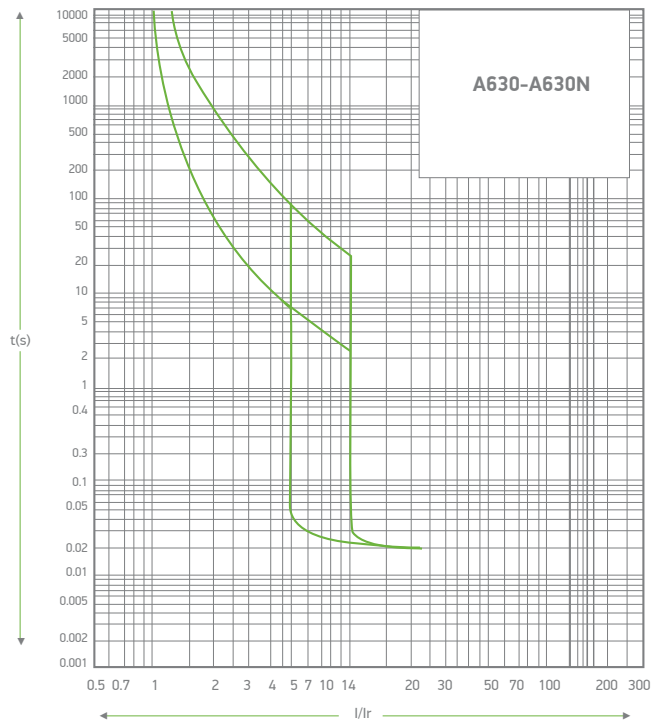
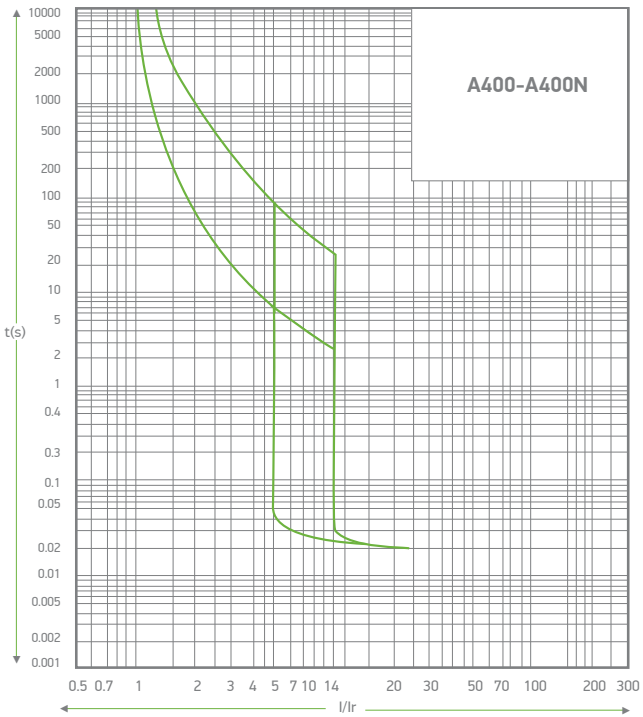
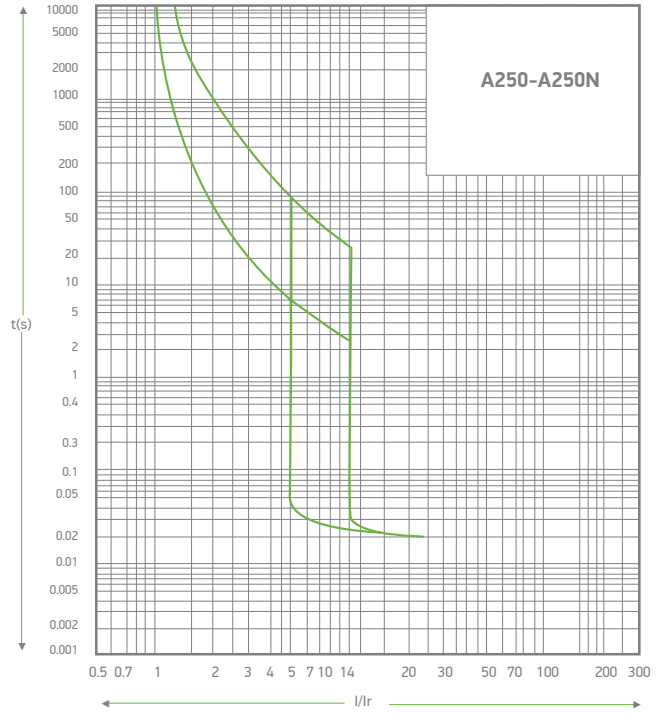
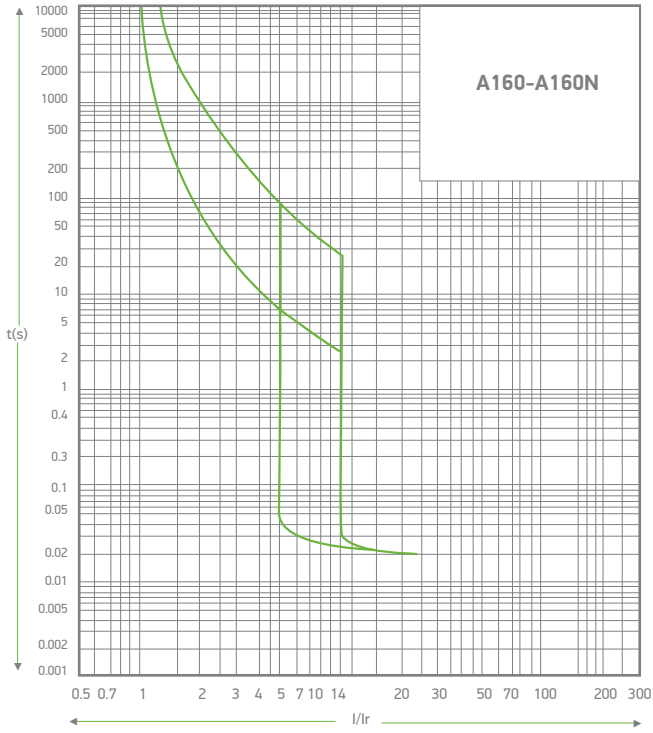
Earth Leakage Circuit Breakers - Technical Specifications

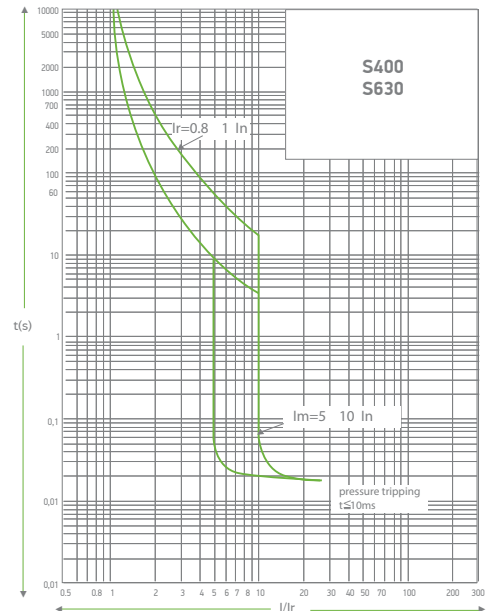
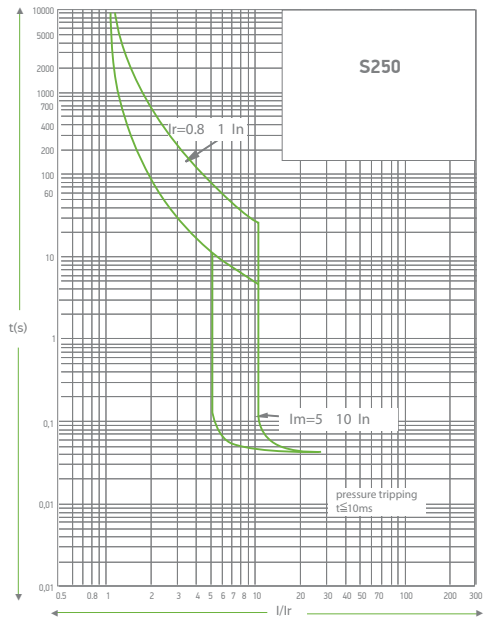
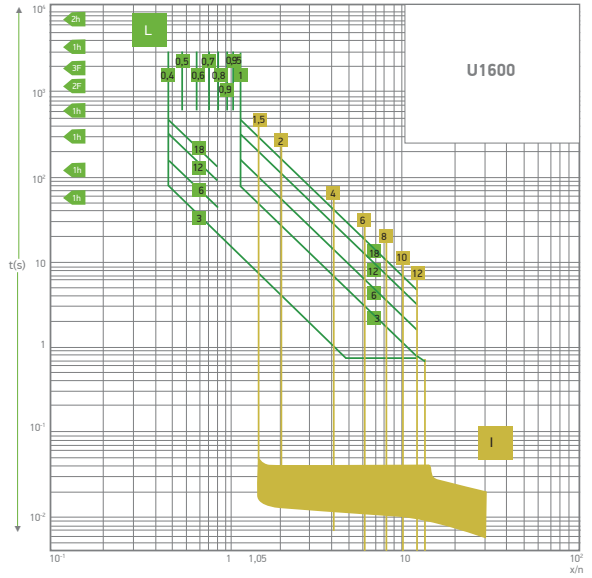
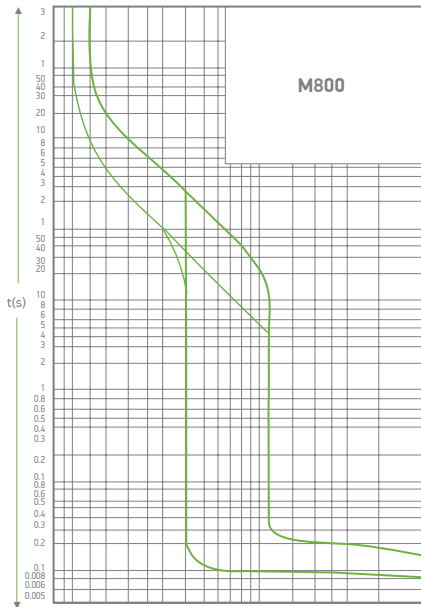
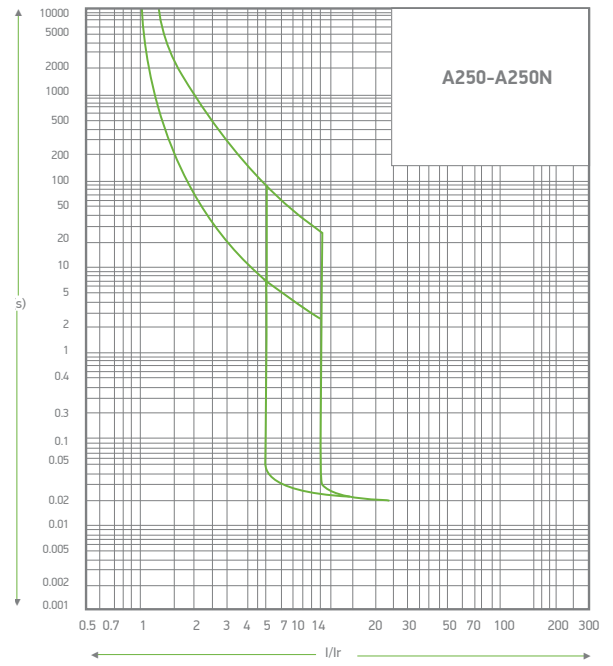
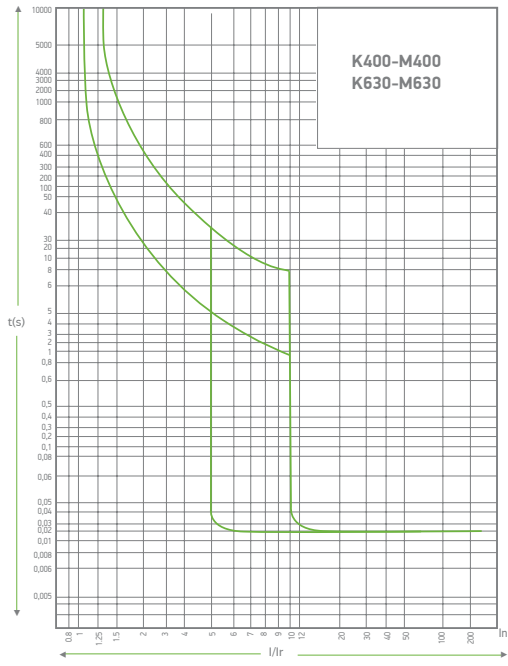
Type				F250	D100	D250	D400	D630	
No of Poles				3	4	4	4	4	
Rated Current In (at 40° C)	A				40, 50, 63, 80, 100, 125, 160, 200, 250	40, 50, 63, 80, 100	125, 160, 200, 250	250, 315, 400	630
Rated Threshold Current	mA				30-300-500-1000-3000	30-100-300-500	30-100-300-500	100-200-300-500	100-200-300-500
Threshold Tripping Time (Adjustable)	milli second				100-500-1000	100-300-500-1000	100-300-500-1000	100-300-500-1000	100-300-500-1000
Instantaneous Tripping Time (Adjustable)	milli second				<200	<200	<200	<200	<200
Rated Operating Voltage	Ue	V	AC	400	400	400	400	400	
Rated Insulation Voltage	Ui	V	AC	750	750	750	750	750	
Rated Impulse Withstand Voltage	Uimp	kV	AC	8	8	8	8	8	
Rated Ultimate Short Circuit Breaking Capacity	Icu	kA	400/415V AC	36	36	36	50	50	
Rated Service Short Circuit Breaking Capacity	Ics	kA	400/415V AC	18	18	18	25	25	
Pollution Degree				3	3	3	3	3	
Electrical Life (Operation)	ON - OFF	400 V		5000	5000	5000	5000	4000	
Mechanical Life (Operation)	ON - OFF			15000	15000	15000	15000	10000	
Overload Protection				>1.3xIn	>1.3xIn	>1.3xIn	>1.3xIn	>1.3xIn	
Rated Short Circuit Breaking Protection				8xIn	8xIn	8xIn	8xIn	8xIn	
Threshold Current Protection				(30-3000 mA)	(30-500 mA)	(30-500 mA)	(100-500 mA)	(100-500 mA)	
Deactivation of Threshold Current Protection				Available	Available	Available	Available	Available	
Ambient Temperature	°C				-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
Dimensions	Width	mm		105	120	140	184	280	
	Lenght	mm		252	203	221	302	347	
	Depth	mm		89	68	86	103	103	



Time-Current Characteristic

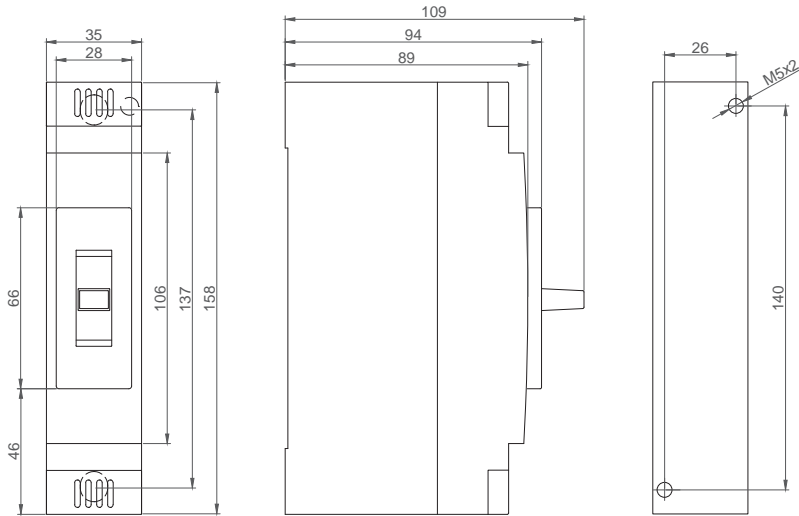




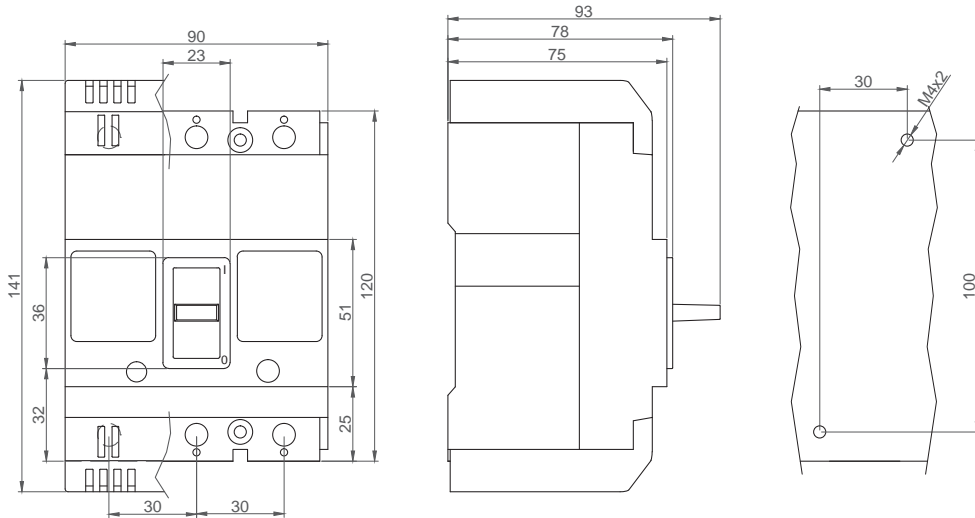


Dimensions

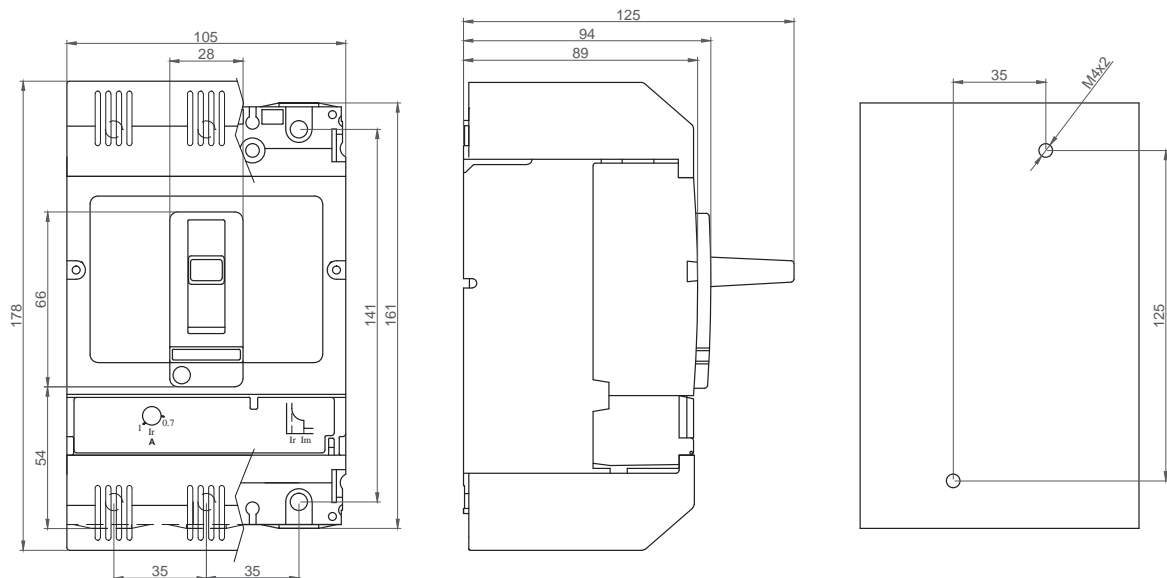
KM200



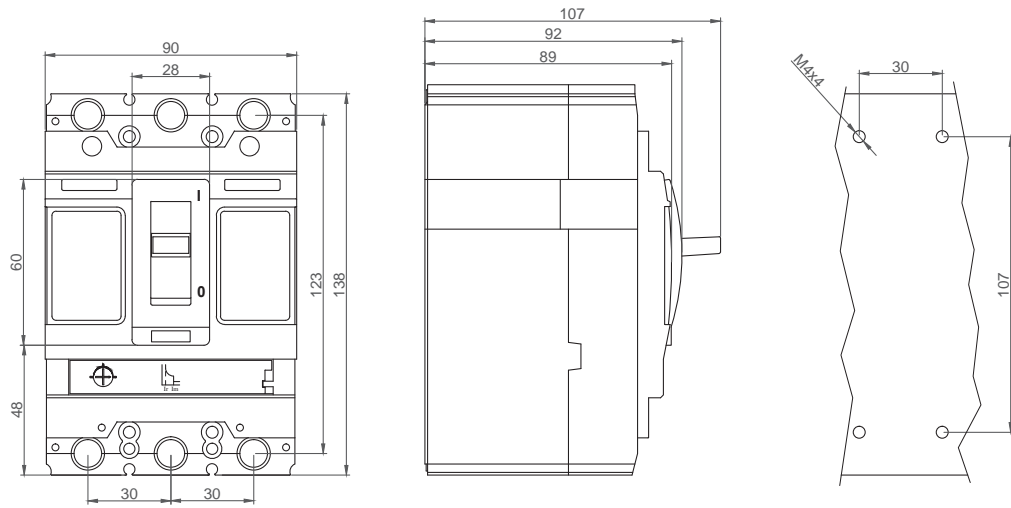
C160



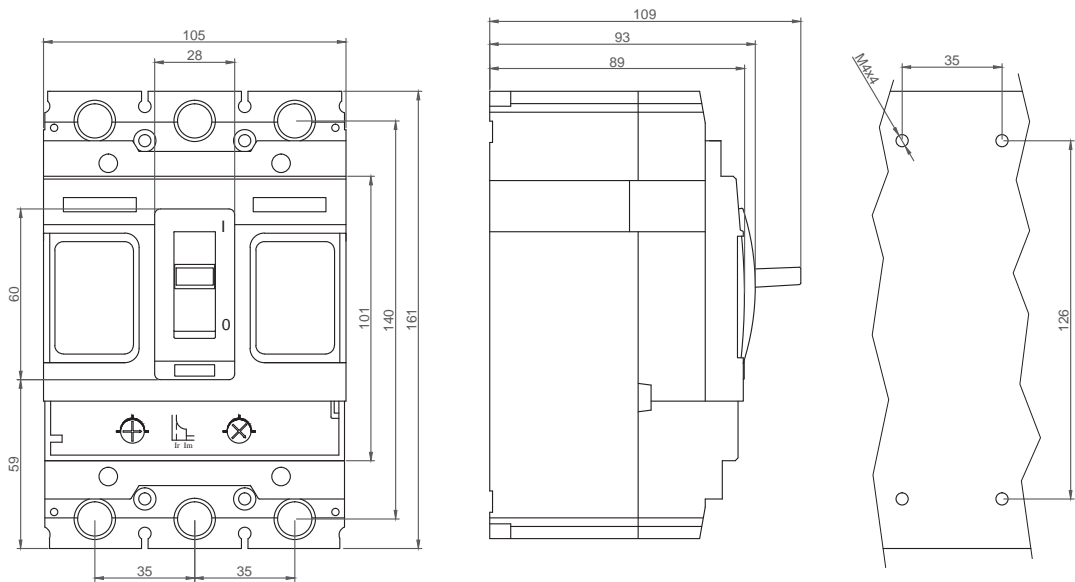
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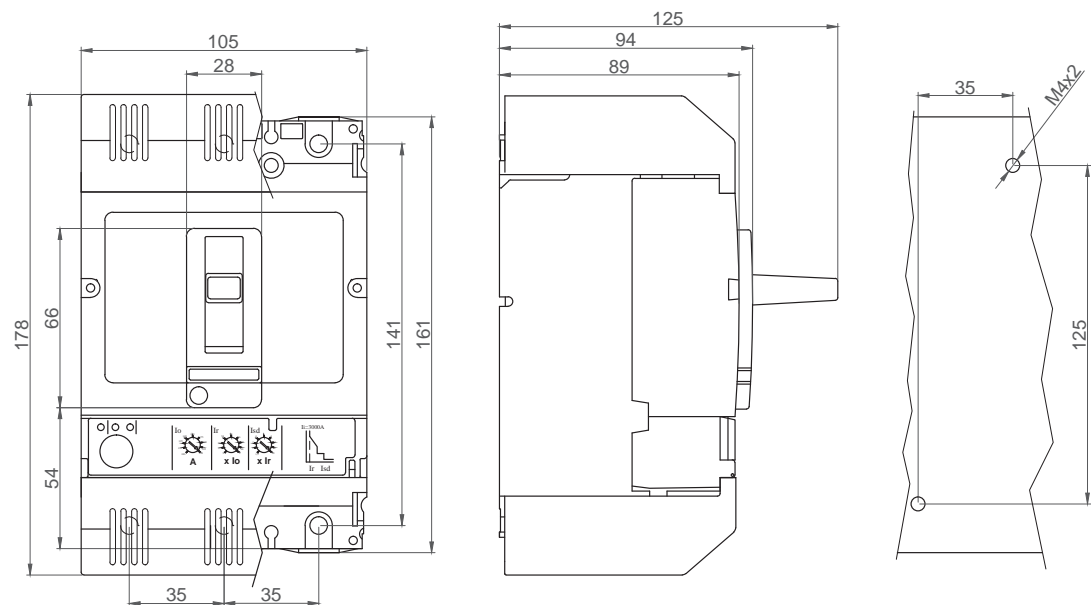
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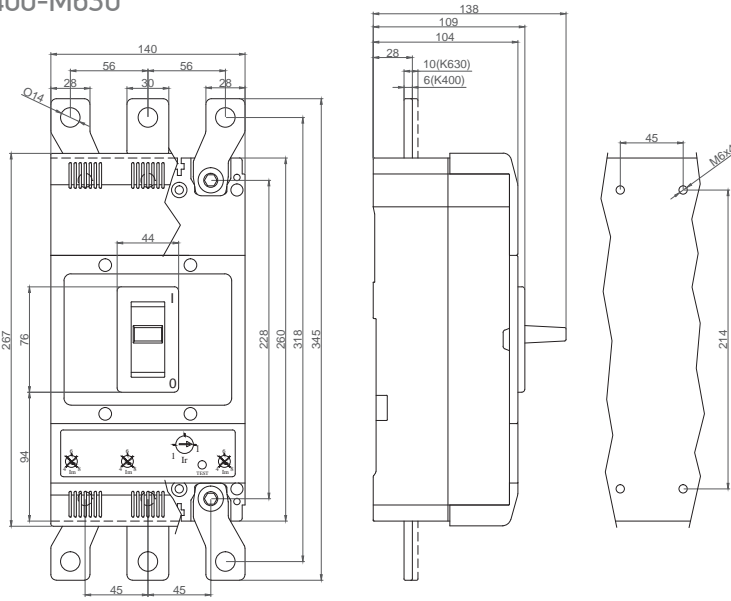
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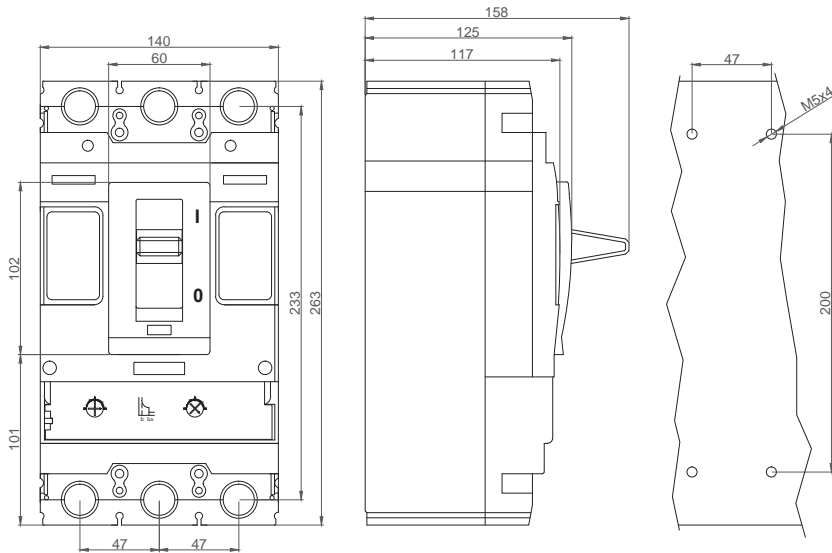
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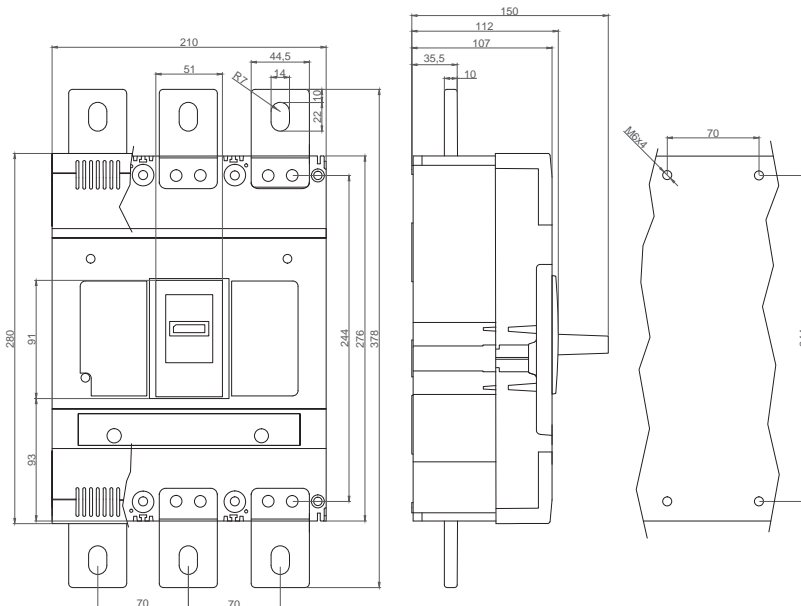
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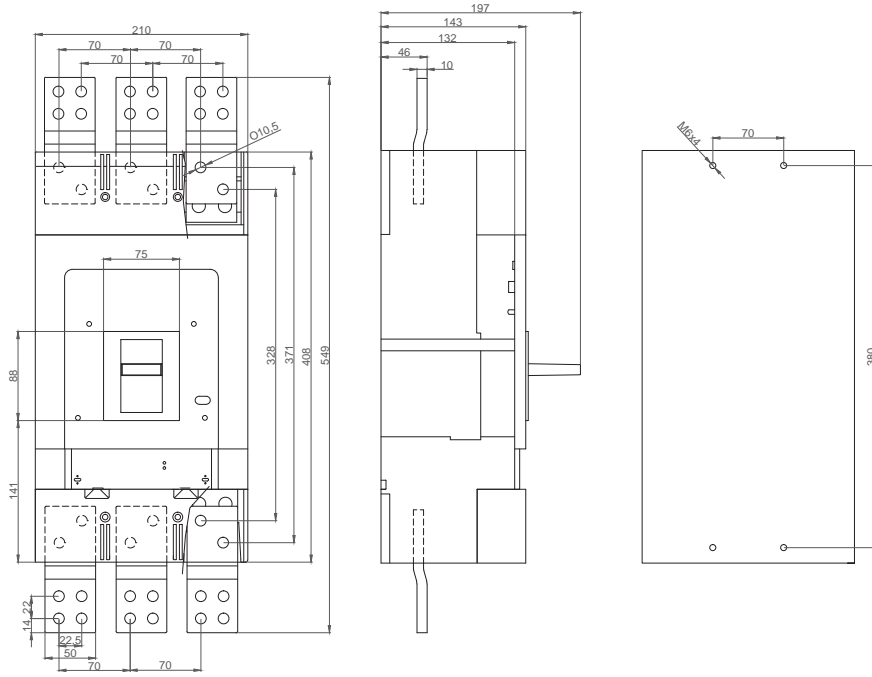
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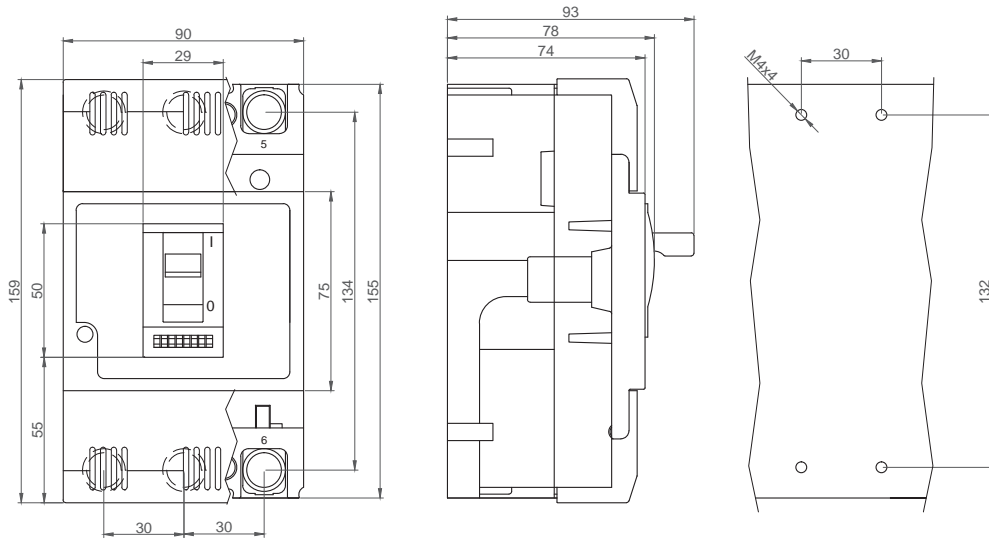
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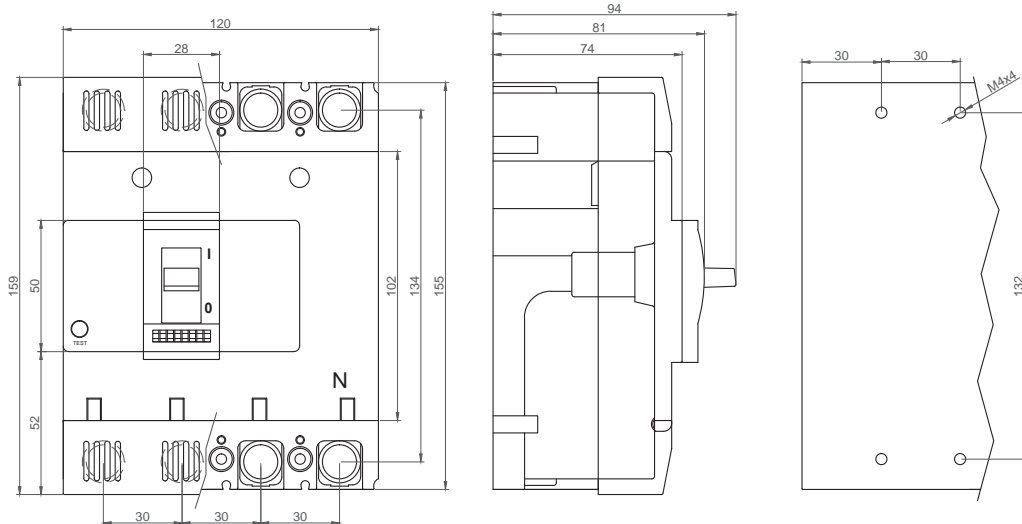
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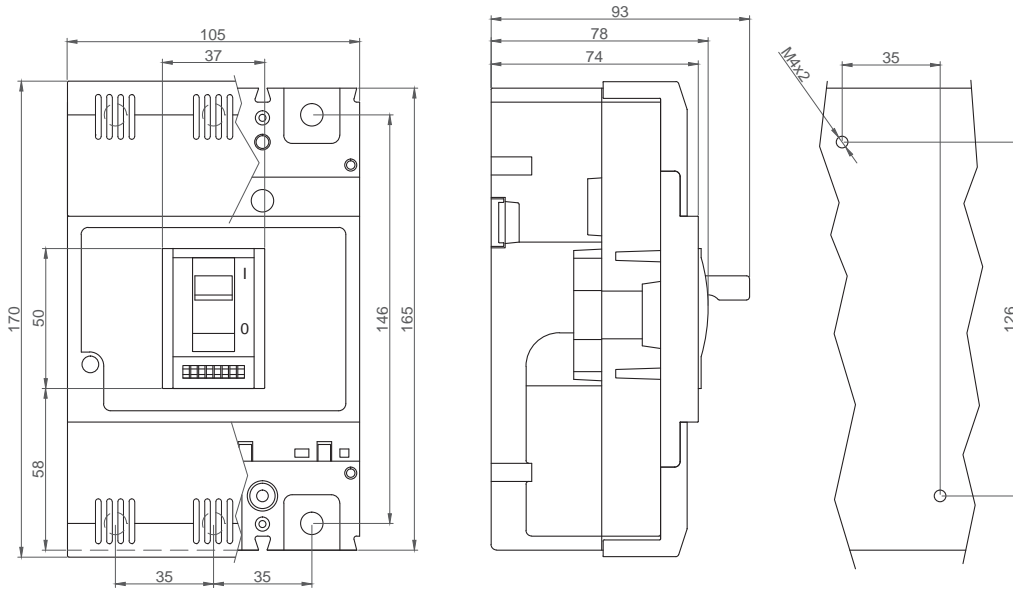
A160



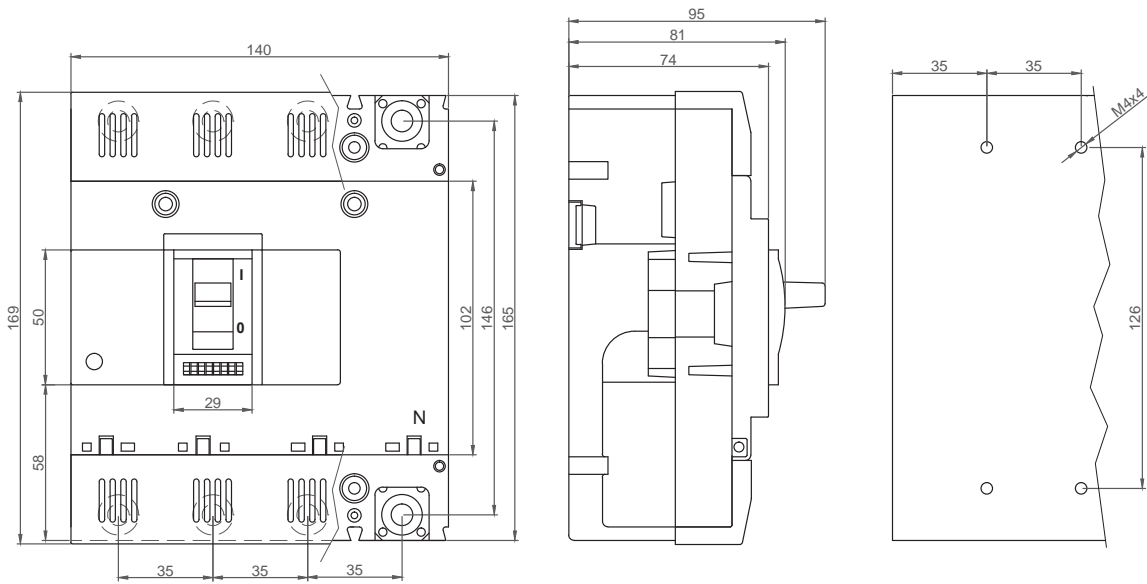
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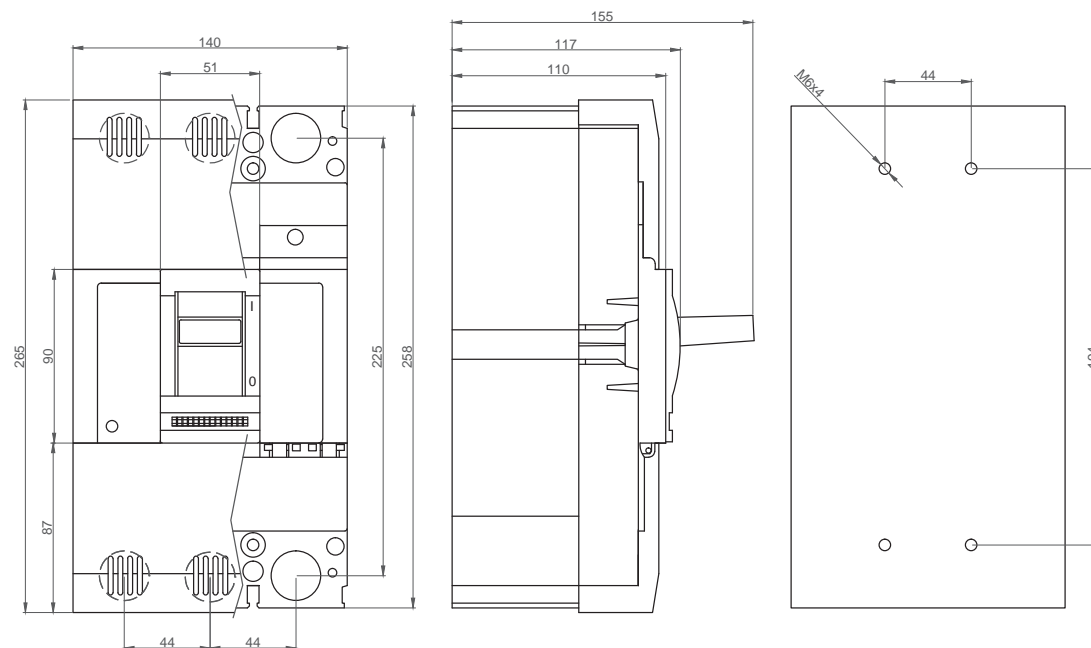
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A250N

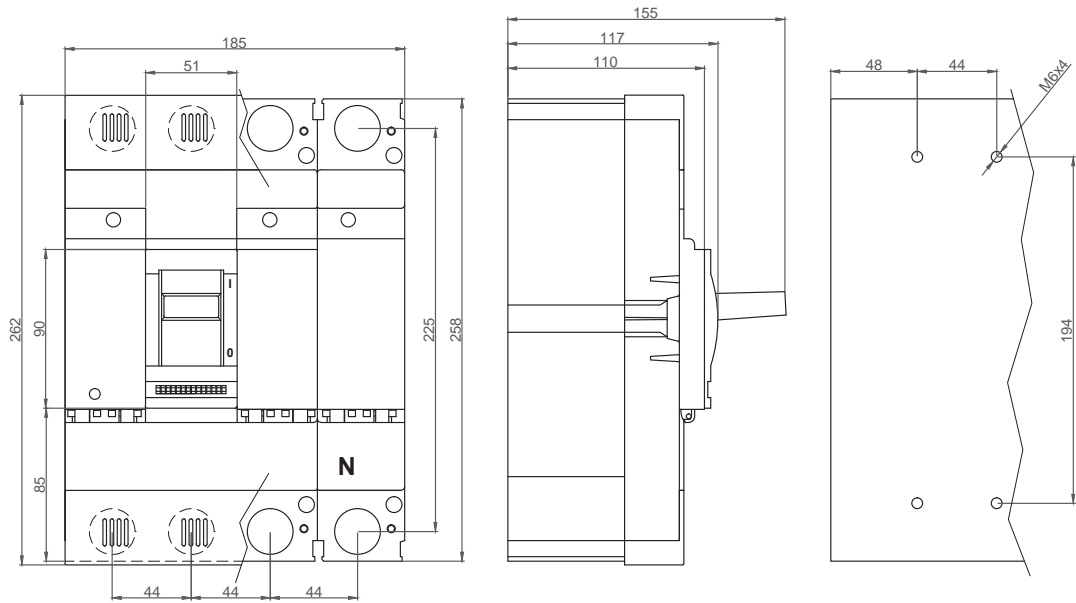


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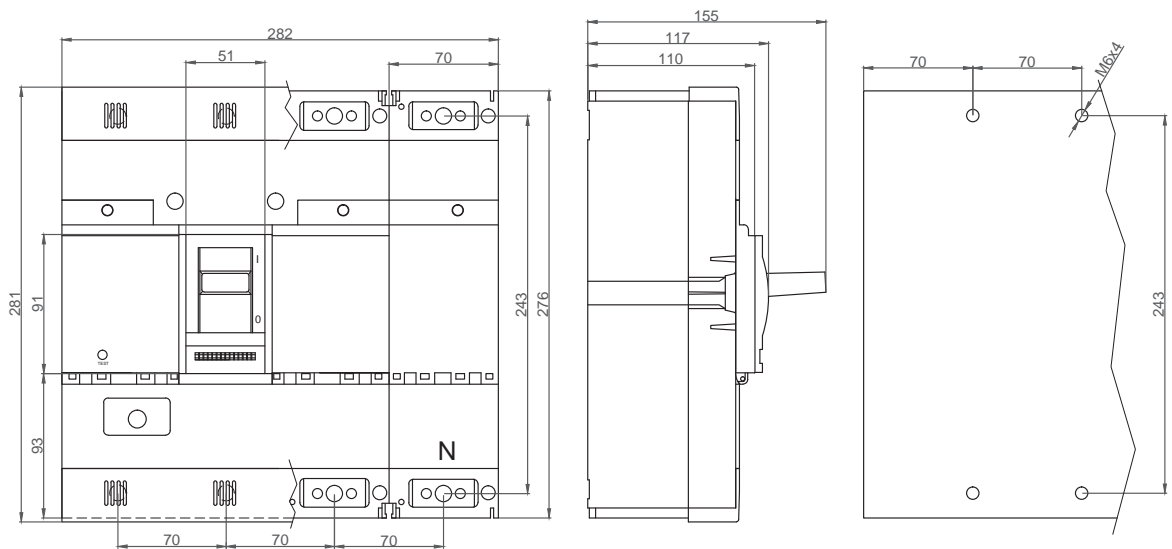


L.V Moulded Case Circuit Breakers

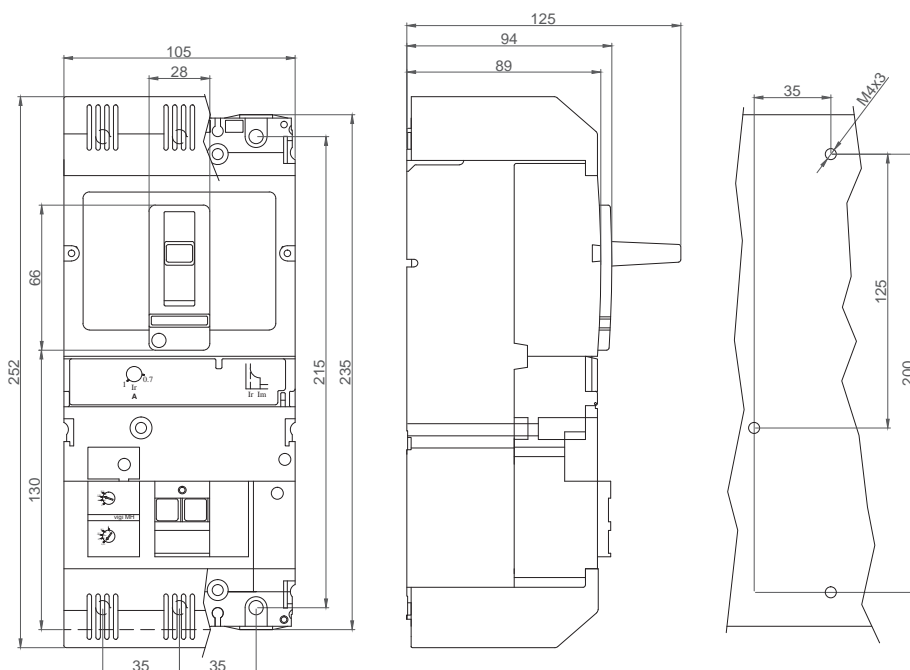
A400N



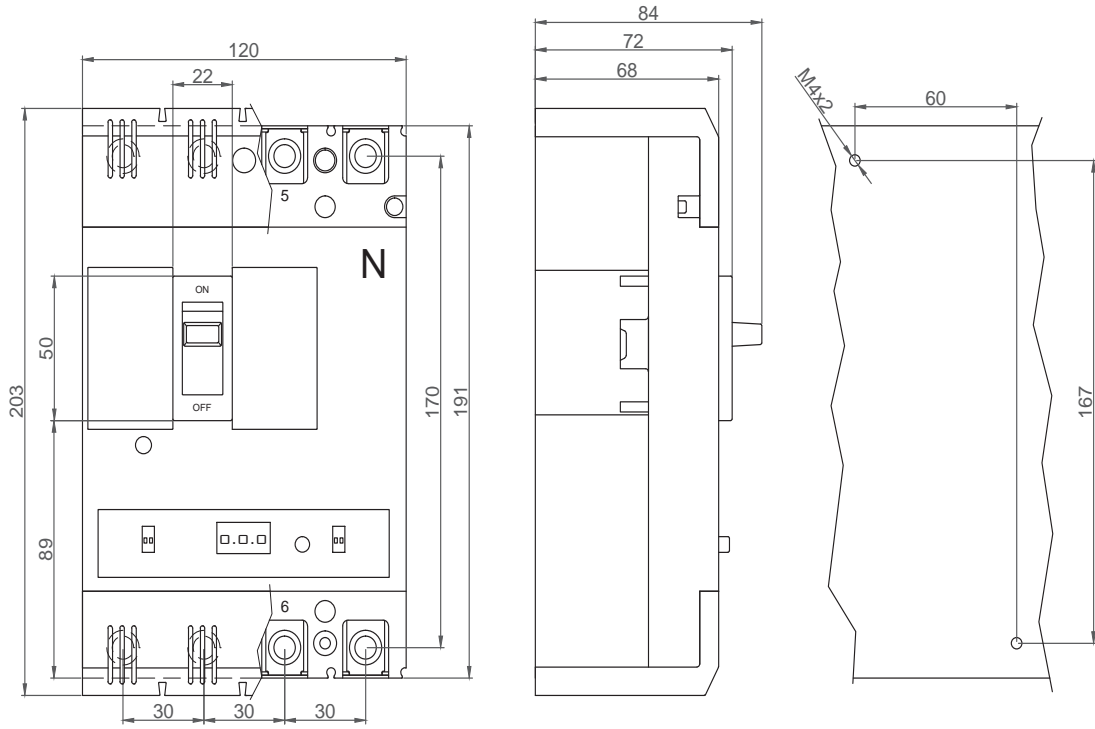
A630N-A800N



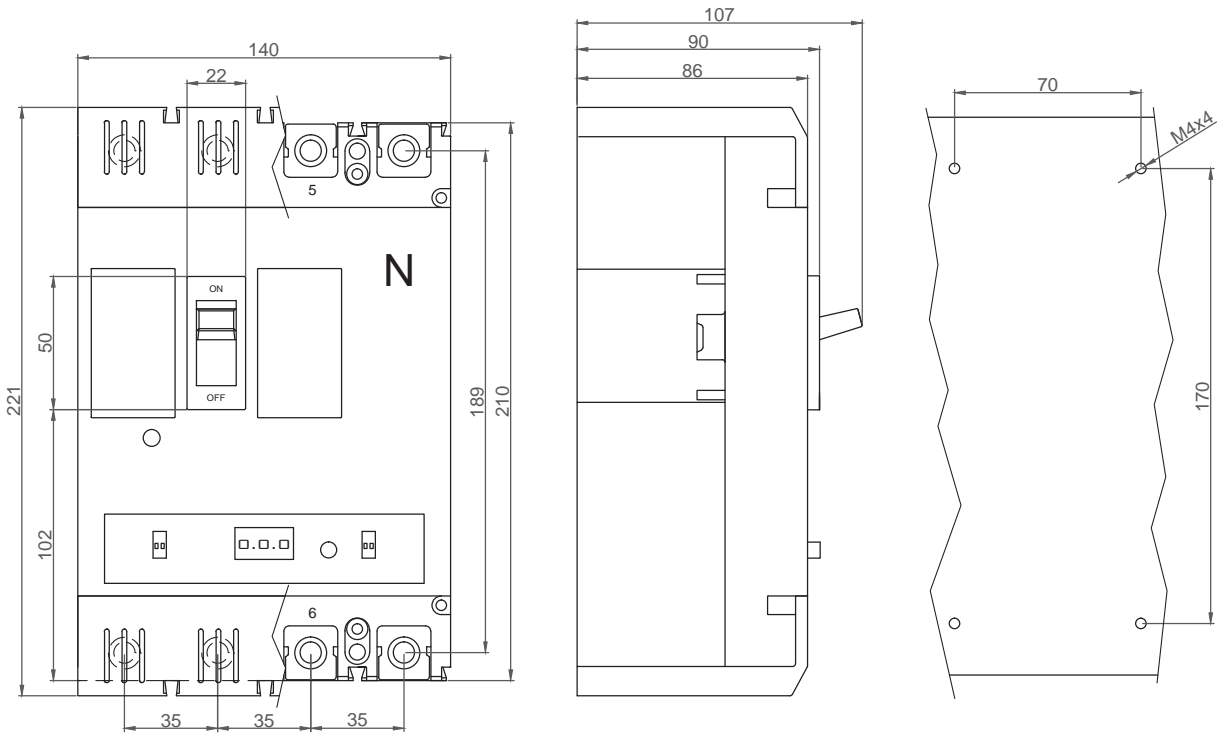
F250



D100

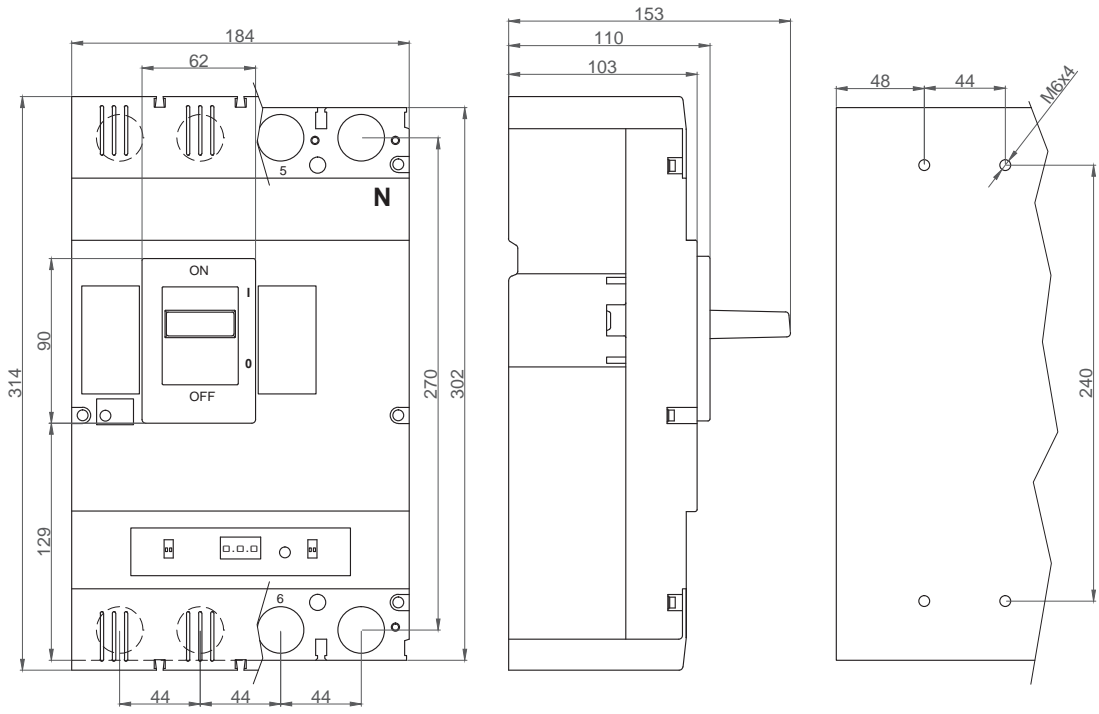


D250

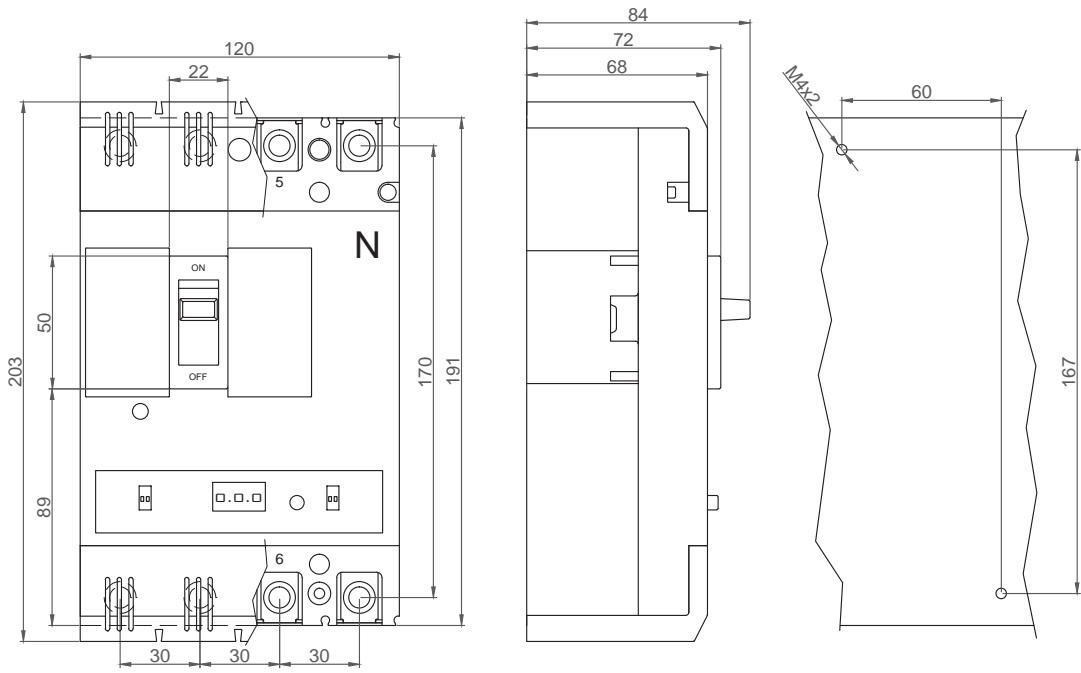


LV Moulded Case Circuit Breakers

D400



D630



3 Poles, Thermal-Magnetic Adjustable Type, MCCB

(Protection for Power Distribution & Network)

Type Code	Rated Current In (A)	Thermal Adj. Current Range Ir (A)	Instantaneous Tripping Current I _m	Breaking Capacity I _{cu} (kA)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
C160	16	10-16	15xI _n	25	1	8	3C160016
	20	16-20	12xI _n	25	1	8	3C160020
	25	20-25	12xI _n	25	1	8	3C160025
	32	25-32	10xI _n	25	1	8	3C160032
	40	32-40	10xI _n	25	1	8	3C160040
	50	40-50	10xI _n	25	1	8	3C160050
	63	50-63	10xI _n	25	1	8	3C160063
	80	63-80	10xI _n	25	1	8	3C160080
	100	80-100	10xI _n	25	1	8	3C160100
125	100-125	10xI _n	25	1	8	3C160125	
160	125-160	10xI _n	25	1	8	3C160160	
K160	16	11-16	15xI _n	36	1	6	3K160016
	20	14-20	12xI _n	36	1	6	3K160020
	25	18-25	10xI _n	36	1	6	3K160025
	32	23-32	10xI _n	36	1	6	3K160032
	40	28-40	10xI _n	36	1	6	3K160040
	50	35-50	10xI _n	36	1	6	3K160050
	63	44-63	10xI _n	36	1	6	3K160063
	80	56-80	10xI _n	36	1	6	3K160080
	100	70-100	10xI _n	36	1	6	3K160100
125	88-125	10xI _n	36	1	6	3K160125	
160	112-160	10xI _n	36	1	6	3K160160	
K250	200	140-200	(5-10)xI _n	36	1	6	3K250200
	250	175-250	(5-10)xI _n	36	1	6	3K250250
K400	315	250-315	(4-8)xI _n	36	1	2	3K400315
	400	315-400	(4-8)xI _n	36	1	2	3K400400
K630	500	400-500	(4-8)xI _n	36	1	2	3K630500
	630	500-630	(4-8)xI _n	36	1	2	3K630630
M160	40	32-40	10xI _n	50	1	6	3M160040
	50	40-50	10xI _n	50	1	6	3M160050
	63	50-63	10xI _n	50	1	6	3M160063
	80	63-80	10xI _n	50	1	6	3M160080
	100	80-100	10xI _n	50	1	6	3M160100
	125	100-125	10xI _n	50	1	6	3M160125
160	125-160	10xI _n	50	1	6	3M160160	
M250	63	50-63	(5-10)xI _n	50	1	6	3M250063
	80	56-80	(5-10)xI _n	50	1	6	3M250080
	100	70-100	(5-10)xI _n	50	1	6	3M250100
	125	88-125	(5-10)xI _n	50	1	6	3M250125
	160	112-160	(5-10)xI _n	50	1	6	3M250160
	200	140-200	(5-10)xI _n	50	1	6	3M250200
250	175-250	(5-10)xI _n	50	1	6	3M250250	
M400	315	250-315	(4-8)xI _n	50	1	2	3M400315
	400	315-400	(4-8)xI _n	50	1	2	3M400400
M630	500	400-500	(4-8)xI _n	50	1	2	3M630500
	630	500-630	(4-8)xI _n	50	1	2	3M630630
M800	800	630-800	(4-8)xI _n	50	1	2	3M800800
S250	100	80-100	(5-10)xI _n	70	1	6	3S250100
	125	100-125	(5-10)xI _n	70	1	6	3S250125
	160	125-160	(5-10)xI _n	70	1	6	3S250160
	200	160-200	(5-10)xI _n	70	1	6	3S250200
	250	200-250	(5-10)xI _n	70	1	6	3S250250
S400	315	250-315	(5-10)xI _n	70	1	2	3S400315
	400	315-400	(5-10)xI _n	70	1	2	3S400400
S630	500	400-500	(5-10)xI _n	70	1	2	3S630500
	630	500-630	(5-10)xI _n	70	1	2	3S630630
S800	800	630-800	(4-8)xI _n	70	1	2	3S800800



LV Moulded Case Circuit Breakers

3 Poles, Electronic Type, MCCB



Type Code	Rated Current In (A)	Thermal Adj. Current Ir(A)	Instantaneous Tripping Current (Im)	Breaking Capacity Icu (kA)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
U250	100	40-100	(1,5-10)xIn	36	1	6	3U250100
	160	64-160	(1,5-10)xIn	36	1	6	3U250160
	250	100-250	(1,5-10)xIn	36	1	6	3U250250
U1600	1000	400-1000	(1,5-12)xIn	70	1	1	3U160010
	1250	500-1250	(1,5-12)xIn	70	1	1	3U160012
	1600	640-1600	(1,5-12)xIn	70	1	1	3U160016

3 Poles, Thermal-Magnetic Adjustable Type, MCCB (For Motor Protection)



Type Code	Rated Current In (A)	Thermal Adj. Current Ir(A)	Instantaneous Tripping Current (Im)	Breaking Capacity Icu (kA)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
K160	25	18-25	15xIn	36	1	8	MK160025
	32	23-32	15xIn	36	1	8	MK160032
	40	28-40	15xIn	36	1	8	MK160040
	50	35-50	15xIn	36	1	8	MK160050
	63	44-63	15xIn	36	1	8	MK160063
	80	56-80	15xIn	36	1	8	MK160080
	100	70-100	15xIn	36	1	8	MK160100
	125	88-125	15xIn	36	1	8	MK160125
K250	160	112-160	15xIn	36	1	8	MK160160
	200	140-200	(10-15)xIn	36	1	6	MK250200
K400	250	175-250	(10-15)xIn	36	1	6	MK250250
	315	250-315	(8-12)xIn	36	1	4	MK400315
K630	400	315-400	(8-12)xIn	36	1	4	MK400400
	500	400-500	(8-12)xIn	36	1	2	MK630500
K630	630	500-630	(8-12)xIn	36	1	2	MK630630

1 Pole, Fixed Type, MCCB



Type Code	Rated Current In (A)	Breaking Capacity Icu (kA)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
KM200	16	36	1	24	1KM200016
	20	36	1	24	1KM200020
	25	36	1	24	1KM200025
	32	36	1	24	1KM200032
	40	36	1	24	1KM200040
	50	36	1	24	1KM200050
	63	36	1	24	1KM200063
	80	36	1	24	1KM200080
	100	36	1	24	1KM200100
	125	36	1	24	1KM200125
	160	36	1	24	1KM200160
	200	36	1	24	1KM200200

3 Poles, Thermal-Magnetic Fixed Type, MCCB (Protection for Power Distribution & Network)

Type Code	Rated Current In (A)	Thermal Adj. Current Ir(A)	Instantaneous Tripping Current (Im)	Breaking Capacity Icu (kA)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
A160	20	Fixed	10xIn	25	1	8	3A160020
	25	Fixed	10xIn	25	1	8	3A160025
	32	Fixed	10xIn	25	1	8	3A160032
	40	Fixed	10xIn	25	1	8	3A160040
	50	Fixed	10xIn	25	1	8	3A160050
	63	Fixed	10xIn	25	1	8	3A160063
	80	Fixed	10xIn	25	1	8	3A160080
	100	Fixed	10xIn	25	1	8	3A160100
	125	Fixed	10xIn	25	1	8	3A160125
	160	Fixed	10xIn	25	1	6	3A160160
A250	200	Fixed	10xIn	36	1	6	3A250200
	250	Fixed	10xIn	36	1	6	3A250250
A400	315	Fixed	10xIn	36	1	2	3A400315
	400	Fixed	10xIn	36	1	2	3A400400



4 Poles, Thermal-Magnetic Fixed Type, MCCB (Protection for Power Distribution & Network)

Type Code	Rated Current In (A)	Thermal Adj. Current Ir(A)	Instantaneous Tripping Current (Im)	Breaking Capacity Icu (kA)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
A160N	25	Fixed	10xIn	25	1	6	4A160025
	32	Fixed	10xIn	25	1	6	4A160032
	40	Fixed	10xIn	25	1	6	4A160040
	50	Fixed	10xIn	25	1	6	4A160050
	63	Fixed	10xIn	25	1	6	4A160063
	80	Fixed	10xIn	25	1	6	4A160080
	100	Fixed	10xIn	25	1	6	4A160100
	125	Fixed	10xIn	25	1	6	4A160125
	160	Fixed	10xIn	25	1	6	4A160160
A250N	200	Fixed	10xIn	36	1	6	4A250200
	250	Fixed	10xIn	36	1	6	4A250250
A400N	315	Fixed	10xIn	36	1	2	4A400315
	400	Fixed	10xIn	36	1	2	4A400400
A630N	500	Fixed	10xIn	36	1	2	4A630500
	630	Fixed	10xIn	36	1	2	4A630630
A800N	800	Fixed	10xIn	36	1	1	4A800800



4 Poles, Thermal-Magnetic Adjustable Type, MCCB (Protection for Power Distribution & Network)



Type Code	Rated Current In (A)	Thermal Adj. Current Ir(A)	Instantaneous Tripping Current (Im)	Breaking Capacity Icu (kA)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
K160N	16	11-16	(5-10)xIn	36	1	8	4K160016
	20	14-20	(5-10)xIn	36	1	8	4K160020
	25	18-25	(5-10)xIn	36	1	8	4K160025
	32	23-32	(5-10)xIn	36	1	8	4K160032
	40	28-40	(5-10)xIn	36	1	8	4K160040
	50	35-50	(5-10)xIn	36	1	8	4K160050
	63	44-63	(5-10)xIn	36	1	8	4K160063
	80	56-80	(5-10)xIn	36	1	8	4K160080
	100	70-100	(5-10)xIn	36	1	8	4K160100
	125	88-125	(5-10)xIn	36	1	8	4K160125
K250N	200	140-200	(5-10)xIn	36	1	6	4K250200
	250	175-250	(5-10)xIn	36	1	6	4K250250
M250N	200	140-200	(5-10)xIn	50	1	6	4M250200
	250	175-250	(5-10)xIn	50	1	6	4M250250
S400N	315	250-315	(5-10)xIn	70	1	2	4S400315
	400	315-400	(5-10)xIn	70	1	2	4S400400
S630N	500	400-500	(5-10)xIn	70	1	2	4S630500
	630	500-630	(5-10)xIn	70	1	2	4S630630

Automatic Transfer Switches



Type Code	Rated Current In (A)	Breaking Capacity Icu (kA)	Order Code
SATS-32	32	6	SATS032
SATS-40	40	6	SATS040
SATS-50	50	6	SATS050
SATS-63	63	6	SATS063
SATS-100	100	25	SATS100
SATS-125	125	25	SATS125
SATS-160	160	25	SATS160
SATS-200	200	36	SATS200
SATS-250	250	36	SATS250
SATS-400	400	36	SATS400
SATS-630	630	36	SATS630
SATS-800	800	36	SATS800

P.S.: Automatic transferring and protection between 32A and 63A are made by using MCB instead of MCCB.

Accessories for Moulded Case Circuit Breakers

Shunt Trip Release

Applicable MCCB	Coil Voltage (V)	Order Code
C160	230 AC	C0160AB230AC
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	230 AC	S0630AB230AC
K400, M400, K630, M630	230 AC	K0630AB230AC
A160, A160N	230 AC	A0160AB230AC
A250, A250N	230 AC	A0250AB230AC
A400, A400N, A630N, M800, S800, A800	230 AC	A0800AB230AC
U1600	230 AC	U1600AB230AC



Undervoltage Release

Applicable MCCB	Coil Voltage (V)	Order Code
C160	400 AC	C0160DG400AC
K160, K250, M250, K160N, K250N, M250N, U250	400 AC	K0250DG400AC
M160, S250, S400, S630, S400N, S630N	400 AC	S0630DG400AC
K400, M400, K630, M630	400 AC	K0630DG400AC
A160, A160N	400 AC	A0160DG400AC
A250, A250N	400 AC	A0250DG400AC
A400, A400N, A630N, M800, S800, A800	400 AC	A0800DG400DC
U1600	400 AC	U1600DG400AC



Auxiliary Contact

Applicable MCCB	Aux .Contact	Order Code
C160	1NO+1NC	C0160YK
C160	2NO+2NC	C0160YL
K160, K250, M250, K160N, K250N, M250N, U250	1NO+1NC	K0250YK
M160, S250, S400, S630, S400N, S630N	1NO+1NC	S0630YK
K400, M400, K630, M630	1NO+1NC	K0630YK
A160, A160N	1NO+1NC	A0160YK
A250, A250N	1NO+1NC	A0250YK
A400, A400N, A630N, M800, S800, A800	1NO+1NC	A0800YK
U1600	1NO+1NC	U1600YK



Alarm Contact

Applicable MCCB	Aux .Contact	Order Code
C160	1NO+1NC	C0160AK
K160, K250, M250, K160N, K250N, M250N, U250	1NO+1NC	K0250AK
M160, S250, S400, S630, S400N, S630N	1NO+1NC	S0630AK
K400, M400, K630, M630	1NO+1NC	K0630AK
A160, A160N	1NO+1NC	A0160AK
A250, A250N	1NO+1NC	A0250AK
A400, A400N, A630N, M800, S800, A800	1NO+1NC	A0800AK
U1600	1NO+1NC	U1600AK



Connection Terminals



Applicable MCCB	Quantity	Order Code
K160-K250-M250,U250	6	3K160BK

Motor Operator



Applicable MCCB	Coil Voltage(V)	Order Code
K160, K250, M250,K160N,K250N,M250N,U250	230	K0250MM
K400, M400, K630, M630	230	K0630MM
A160, A160N	230	A0160MM
A250, A250N	230	A0250MM
A400,A400N	230	A0400MM
A630N, M800, S800 ,A800	230	M0800MM
U1600	230	U1600MM

Extension Rotary Handle

(with extension shaft)



Applicable MCCB	Order Code
K160, K250, M250,K160N,K250N,M250N,U250	K0250DK
M160	M0160DK
S250	S0250DK
K400, M400, K630, M630	K0630DK
A160, A160N	A0160DK
A250, A250N	A0250DK
A400,A400N	A0400DK
A630N, M800, S800 ,A800	M0800DK
U1600	U1600DK

Rotary Handle

(Direct Assembly)



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

Mechanical Pad Lock



Applicable MCCB	Order Code
KM160-C160-K160-K250-M250-K400-M400-K630-M630,U250	SEMK101*

* Padlock is not included offered price.

Extension Bus Bar Set (6 Pcs / Set)

Applicable Mccb	Number in Cartoon (Pcs)	Order Code
K160, K250, M250, S250,A250,U250	6	K0250UB
K160N,K250N,M250N,A250N	8	K0250UN
A160,M160	6	A0160UB
A160N	8	A0160UN
A400,S400	6	A0400UB
A400N,S400N	8	A0400UN
S630	6	S0630UB
S630N	6	S0630UN



Earth Leakage Module

Applicable Mccb	Threshold Current (mA)	Threshold Tripping Time (sec)	Order Code
K160-K250-M250,U250	0,03-0,3-0,5-1-3	0-0,1-0,5-1	3F250

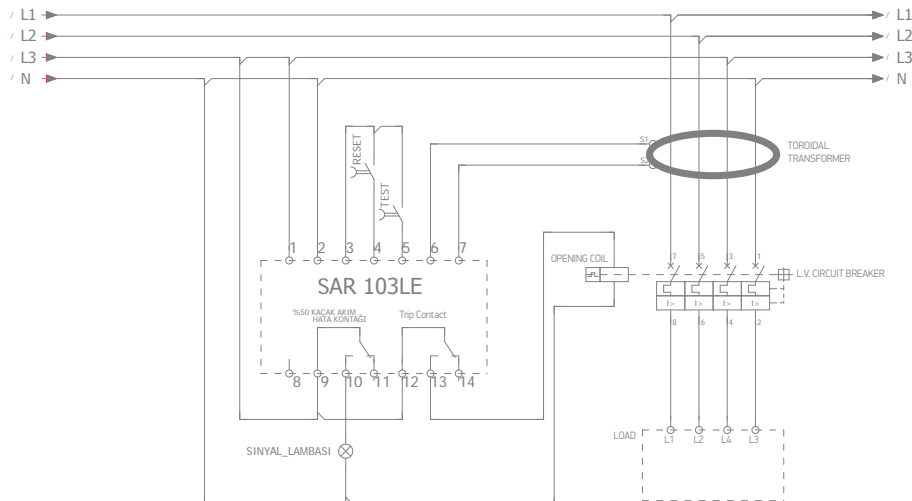


Earth Leakage Protection Relay

Threshold Current (mA)	Threshold Tripping Time (sec)	Order Code
0,03 - 30	0,03-3	SAR103LE



Earth Leakage Relay Connection Diagram



Toroidal Current Transformer

Type	Inner Diameter Φ (mm)	Order Code
ST-55	55	ST055
ST-80	80	ST080
ST-110	110	ST110
ST-160	160	ST160
ST-210	210	ST210
ST-300	300	ST300



4 Poles, Earth Leakage Circuit Breakers



Type Code	Rated Current In (A)	Breaking Capacity Icu (kA)	Threshold Current (mA)	Threshold Tripping Time (sec)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
D100	40	36	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	4	4D100040
	50	36	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	4	4D100050
	63	36	0,03-0,1-0,3-0,5	0,1-0,3,0,5-1	1	4	4D100063
	80	36	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	4	4D100080
	100	36	0,03-0,1-0,3-0,5	0,1-0,3,0,5-1	1	4	4D100100
D250	125	36	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	2	4D250125
	160	36	0,03-0,1-0,3-0,5	0,1-0,3,0,5-1	1	2	4D250160
	200	36	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	2	4D250200
	250	36	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	2	4D250250
D400*	250	50	0,1-0,3-0,5-1	0,1-0,3-0,5-1	1	2	4D400250
	315	50	0,1-0,3-0,5-1	0,1-0,3-0,5-1	1	2	4D400315
	400	50	0,1-0,3,0,5-1	0,1-0,3,0,5-1	1	2	4D400400
D630*	630	50	0,1-0,3-0,5-1	0,1-0,3-0,5-1	1	1	4D630630

* D400 and D630 type L.V. Circuit breakers are dispatched with bus bars as standard.

4 Poles, Earth Leakage Circuit Breakers (with Shunt Trip Release)



Type Code	Rated Current In (A)	Breaking Capacity Icu (kA)	Threshold Current (mA)	Threshold Tripping Time (sec)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
D100	40	36	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	4	4E100040
	50	36	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	4	4E100050
	63	36	0,03-0,1-0,3-0,5	0,1-0,3,0,5-1	1	4	4E100063
	80	36	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	4	4E100080
	100	36	0,03-0,1-0,3-0,5	0,1-0,3,0,5-1	1	4	4E100100
D250	125	36	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	2	4E250125
	160	36	0,03-0,1-0,3-0,5	0,1-0,3,0,5-1	1	2	4E250160
	200	36	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	2	4E250200
	250	36	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	2	4E250250
D400*	250	50	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	2	4E400250
	315	50	0,1-0,3-0,5-1	0,1-0,3-0,5-1	1	2	4E400315
	400	50	0,1-0,3,0,5-1	0,1-0,3,0,5-1	1	2	4E400400
D630*	630	50	0,1-0,3-0,5-1	0,1-0,3-0,5-1	1	1	4E630630

* D400 and D630 type L.V. Circuit breakers are dispatched with bus bars as standard.

Please ask delivery period for D250 250A L.V. MCCB.

4 Poles, Earth Leakage Circuit Breakers (Shunt Trip Release +Auxiliary Contacts)



Type Code	Rated Current In (A)	Breaking Capacity Icu (kA)	Threshold Current (mA)	Threshold Tripping Time (sec)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
D100	40	36	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	4	4F100040
	50	36	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	4	4F100050
	63	36	0,03-0,1-0,3-0,5	0,1-0,3,0,5-1	1	4	4F100063
	80	36	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	4	4F100080
	100	36	0,03-0,1-0,3-0,5	0,1-0,3,0,5-1	1	4	4F100100
D250	125	36	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	2	4F250125
	160	36	0,03-0,1-0,3-0,5	0,1-0,3,0,5-1	1	2	4F250160
	200	36	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	2	4F250200
	250	36	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	2	4F250250
D400*	250	50	0,03-0,1-0,3-0,5	0,1-0,3-0,5-1	1	2	4F400400
	315	50	0,1-0,3-0,5-1	0,1-0,3-0,5-1	1	2	4F400315
	400	50	0,1-0,3,0,5-1	0,1-0,3,0,5-1	1	2	4F400400
D630*	630	50	0,1-0,3-0,5-1	0,1-0,3-0,5-1	1	1	4F630630

* D400 and D630 type L.V. Circuit breakers are dispatched with bus bars as standard.

Please ask delivery period for D250 250A

3 Poles, Earth Leakage Circuit Breakers

Type Code	Rated Current In (A)	Breaking Capacity Icu (kA)	Threshold Current (mA)	Threshold Breaking Time (sec)	Min. Order Quantity (Pcs)	Number in Carloon (Pcs)	Order Code
F250	25	36	0,03-0,3-0,5-1-3	0-0,1-0,5-1	1	4	3F250025
	32	36	0,03-0,3-0,5-1-3	0,1-0,3-0,5-1	1	4	3F250032
	40	36	0,03-0,3-0,5-1-3	0,1-0,3-0,5-1	1	4	3F250040
	50	36	0,03-0,3-0,5-1-3	0,1-0,3-0,5-1	1	4	3F250050
	63	36	0,03-0,3-0,5-1-3	0,1-0,3,0,5-1	1	4	3F250063
	80	36	0,03-0,3-0,5-1-3	0,1-0,3-0,5-1	1	4	3F250080
	100	36	0,03-0,3-0,5-1-3	0,1-0,3,0,5-1	1	4	3F250100
	125	36	0,03-0,3-0,5-1-3	0,1-0,3-0,5-1	1	2	3F250125
	160	36	0,03-0,3-0,5-1-3	0,1-0,3,0,5-1	1	2	3F250160
	200	36	0,03-0,3-0,5-1-3	0,1-0,3-0,5-1	1	2	3F250200
	250	36	0,03-0,3-0,5-1-3	0,1-0,3,0,5-1	1	2	3F250250

Type Code	Rated Current In (A)	Breaking Capacity Icu (kA)	Threshold Current (mA)	Threshold Breaking Time (sec)	Min. Order Quantity (Pcs)	Number in Carloon Box (Pcs)	Order Code
F250 (With Shunt Trip Release)	25	36	0,03-0,3-0,5-1-3	0,1-0,3-0,5-1	1	4	3G250025
	32	36	0,03-0,3-0,5-1-3	0,1-0,3-0,5-1	1	4	3G250032
	40	36	0,03-0,3-0,5-1-3	0,1-0,3-0,5-1	1	4	3G250040
	50	36	0,03-0,3-0,5-1-3	0,1-0,3-0,5-1	1	4	3G250050
	63	36	0,03-0,3-0,5-1-3	0,1-0,3,0,5-1	1	4	3G250063
	80	36	0,03-0,3-0,5-1-3	0,1-0,3-0,5-1	1	4	3G250080
	100	36	0,03-0,3-0,5-1-3	0,1-0,3,0,5-1	1	4	3G250100
	125	36	0,03-0,3-0,5-1-3	0,1-0,3-0,5-1	1	2	3G250125
	160	36	0,03-0,3-0,5-1-3	0,1-0,3,0,5-1	1	2	3G250160
	200	36	0,03-0,3-0,5-1-3	0,1-0,3-0,5-1	1	2	3G250200
	250	36	0,03-0,3-0,5-1-3	0,1-0,3,0,5-1	1	2	3G250250



Accessories for Earth Leakage Circuit Breakers

Auxiliary Contacts

Applicable Mccb	Aux. 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	K0250AB



Motor Operator

Applicable Mccb	Coil Voltage (V)	Order Code
D100	230 AC	D0100MM
D250	230 AC	D0250MM
D400	230 AC	D0400MM
D630	230 AC	D0630MM
F250	230 AC	K0250MM

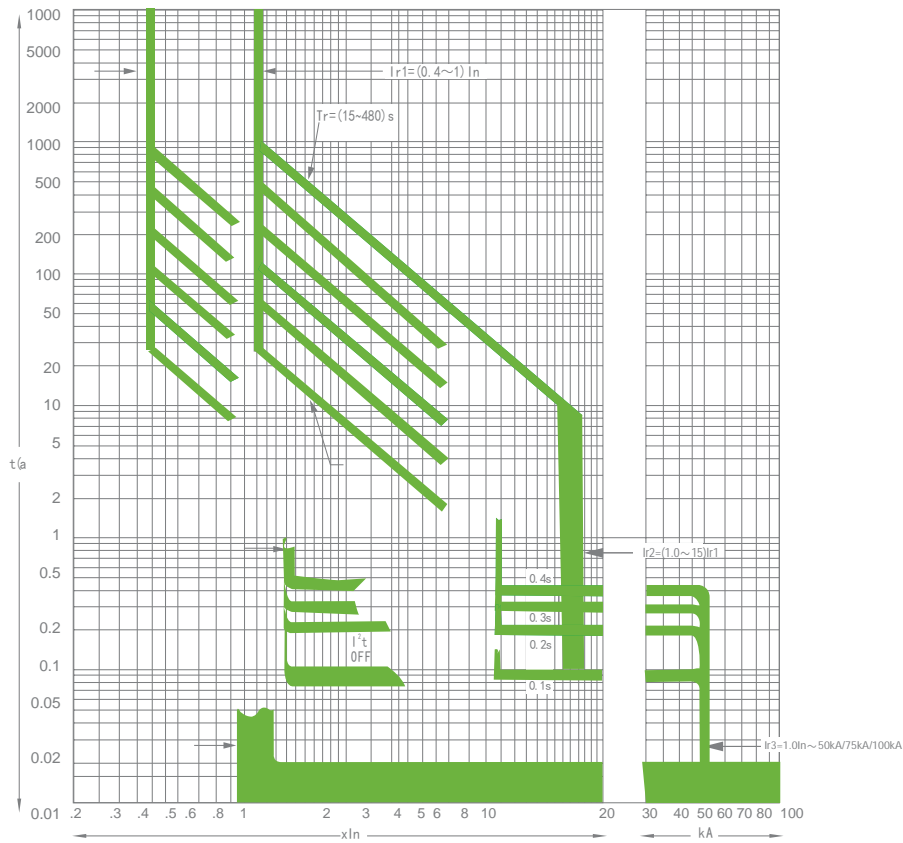
LV Air Circuit Breakers

Type		
Type Of Structure		
No of Poles		
Electrical Specifications		
Rated Current (at 40° C)		A
Rated Operating Voltage	Ue	V
Rated Insulation Voltage	Ui	V
Rated Impulse Withstand Voltage	Uimp	kV
Breaking Capacity		
Rated Ultimate Short Circuit Breaking Capacity	Icu	kA
Rated Service Short Circuit Breaking Capacity	Ics	kA
Utilization Category		
Pollution Degree		
Electrical Life	ON-OFF	
Mechanical Life	ON-OFF	
Protection Unit		
Long Time Delay Current	Ir1	A
Long Time Delay Time	t1	sn
Short Time Delay Current	Ir2	A
Short Time Delay Time	t1	sn
Instantaneous Breaking Current	Ir3	A
Earth Fault Current	Ir4	A
Ambient Temperature		
Max. Operational Ambient Temperature		°C
Max. Storage Temperature		°C
Accessories		
Shunt Trip Coil (230 V AC)		
Undervoltage Coil (230 V AC)		
Delay Type Undervoltage Coil (230 V AC)		
Closing Coil (230 V AC)		
Auxiliary Contact (2NO+2NC)		
Motor Operator (230 V AC)		
Mechanical Interlock		

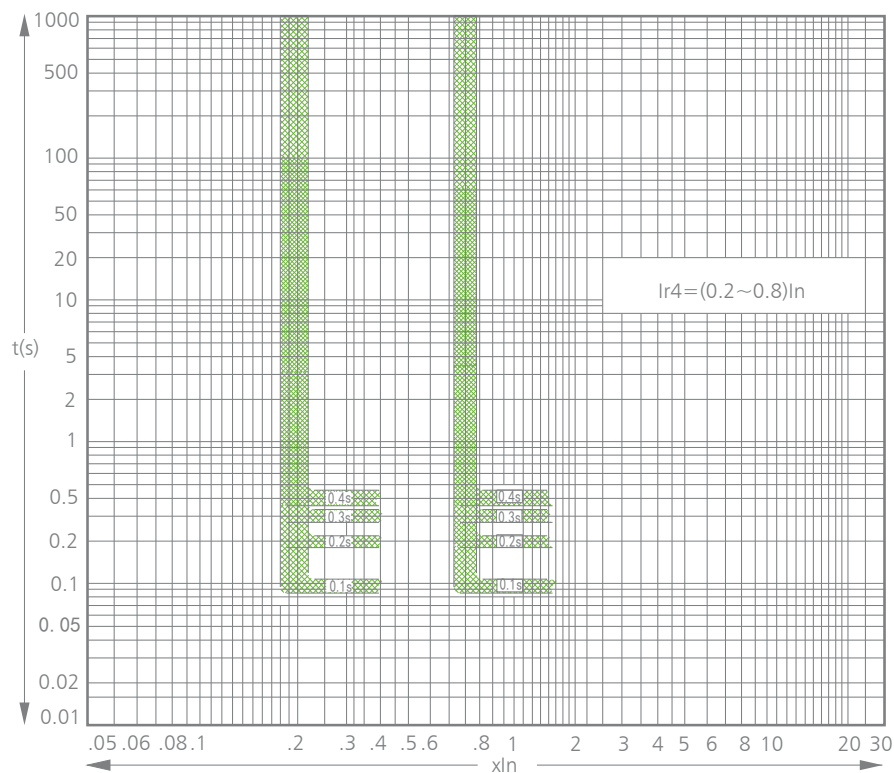
	SDA-2000/SFA-2000	SDA-3200/ SFA-3200	SDA-4000/ SFA-4000	SDA-6300
	Draw-Out/Fixed	Draw-Out/Fixed	Draw-Out/Fixed	Draw-Out/Fixed
	3/4	3/4	3/4	3/4
	630,800,1000,1250,1600,2000	2500,3200	4000	5000/6300
AC	415	415	415	415
	1000	1000	1000	1000
	8	8	8	8
690 V AC	50	65	65	65
415 V AC	80	100	100	100
690 V AC	40	50	50	50
415 V AC	50	65	65	65
	A,B	A,B	A,B	A,B
	3	3	3	3
415 V	1000	500	500	500
	10000	10000	8000	8000
	Electronic	Electronic	Electronic	Electronic
	(0,4-1)xIn	(0,4-1)xIn	(0,4-1)xIn	(0,4-1)xIn
	0-480	0-480	0-480	0-480
	(0,4-15)xIn	(0,4-15)xIn	(0,4-15)xIn	(0,4-15)xIn
	0,1-1	0,1-1	0,1-1	0,1-1
	In...50 kA +OFF	In...50 kA +OFF	In...50 kA +OFF	In...50 kA +OFF
	(0,2-0,8)xIn+OFF	(0,2-0,8)xIn+OFF	(0,2-0,8)xIn.OFF	(0,2-0,8)xIn.OFF
	-25 to +70	-25 to +70	-25 to +71	-25 to +71
	-40 to +80	-40 to +80	-40 to +81	-40 to +81
	On Request	On Request	On Request	On Request
	On Request	On Request	On Request	On Request
	On Request	On Request	On Request	On Request
	On Request	On Request	On Request	On Request
	standard	standard	standard	standard
	On Request	On Request	On Request	On Request
	On Request	On Request	On Request	On Request

LV Air Circuit Breakers

Overload Current Time-Current Characteristic for ACB



Earth Fault Protection Time-Current Characteristic for ACB



Protection Properties for Air Circuit Breakers

Long-Time Delay Overcurrent Protection

Setting Current (Ir1)	Error	Current	Tripping Time (s)						Time Error
(0.4~1)×In	±10%	1.05×Ir1	<2h non-tripping						
		1.30×Ir1	<1h trip						
		1.5× Ir1 (t1)	15 sec	30 sec	60 sec	120 sec	240 sec	480 sec	±10%
		2.0×Ir1	8.4 sec	16.9 sec	33.7 sec	67.5 sec	135 sec	270 sec	±10%

Short-Time Delay Overcurrent Protection

Setting Current (Ir2)	Error	Current	Tripping Time (s)				Time Error
(0.4~15)×In	±10%	≤0.9×Ir2	<2h non-tripping				
		>1.10×Ir2	<1h trip				
		delay setting (ts)	0.1 sec	0.2 sec	0.3 sec	0.4 sec	±15%
		>8×Ir2	0.06 sec	0.14 sec	0.23 sec	0.35 sec	±15%

Instantaneous Tripping Protection

Setting Current (Ir3)	Error	Current	Time Error
1.0 In-50kA	± 15%	≤0.85×Ir3	non-tripping
		>1.15×Ir3	trip

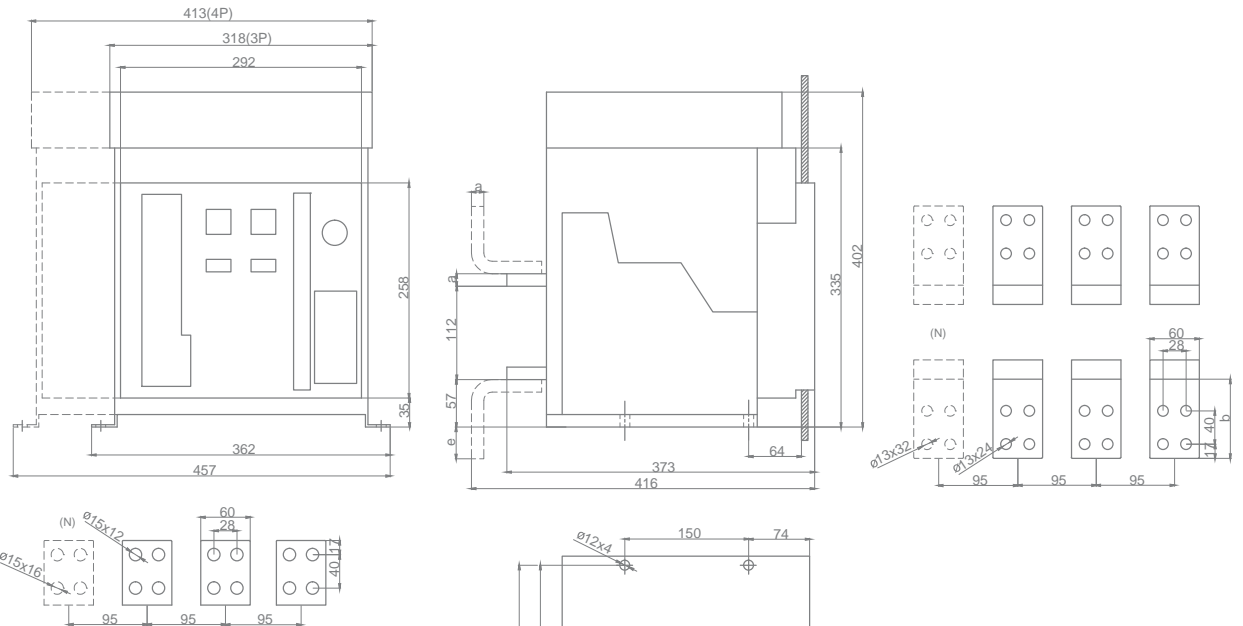
Earthing Fault Protection

Setting Current (Ir4)	Error	Current	Tripping Time (s)				Time Error
(0.2~0.8)In	±10%	≤0.9×Ir4	non-tripping				
		>1.10×Ir4	Tripping Time (sec)				
		tripping time (TG)	0.1 sec	0.2 sec	0.3 sec	0.4 sec	±15%



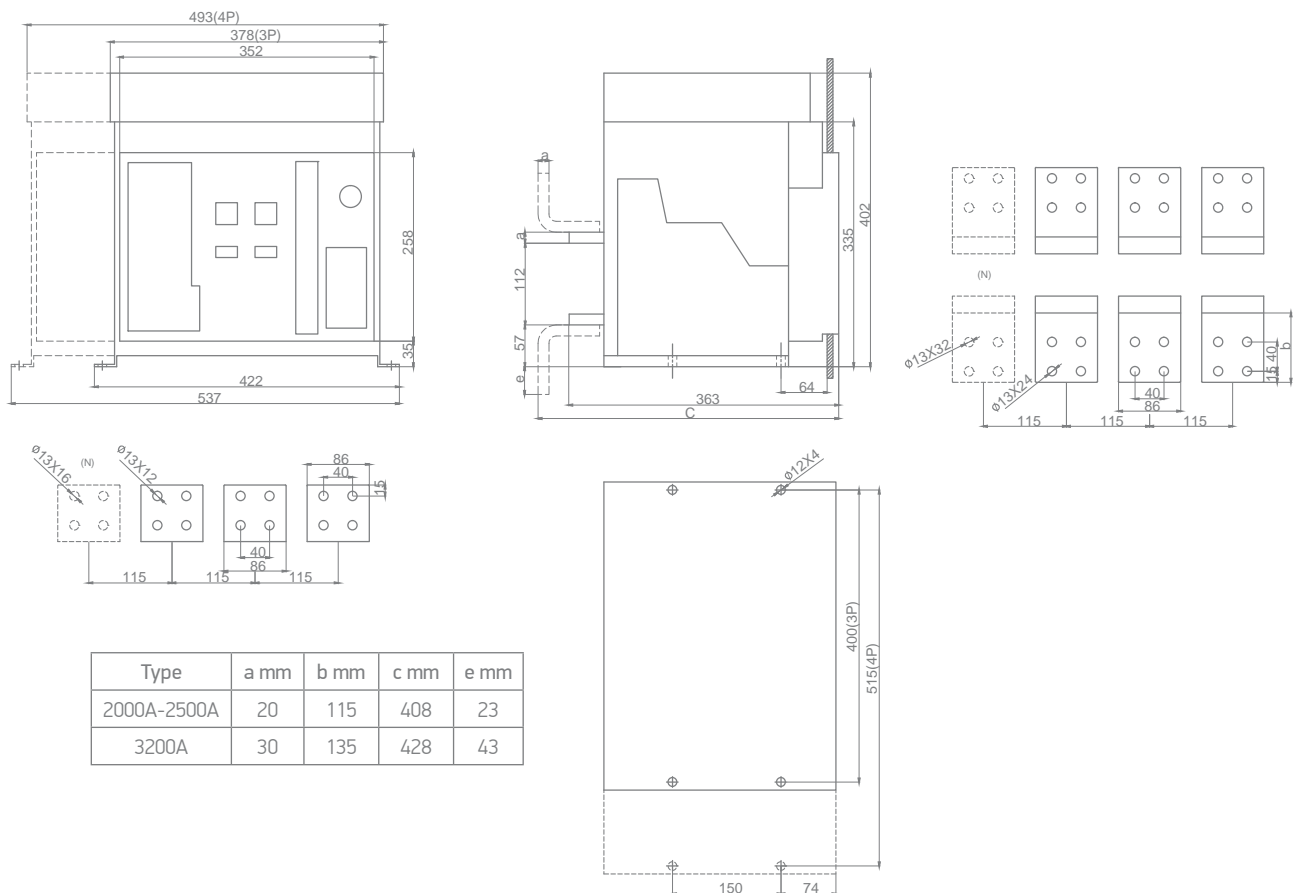
Dimensions

SFA-2000 SFA-2000(N)



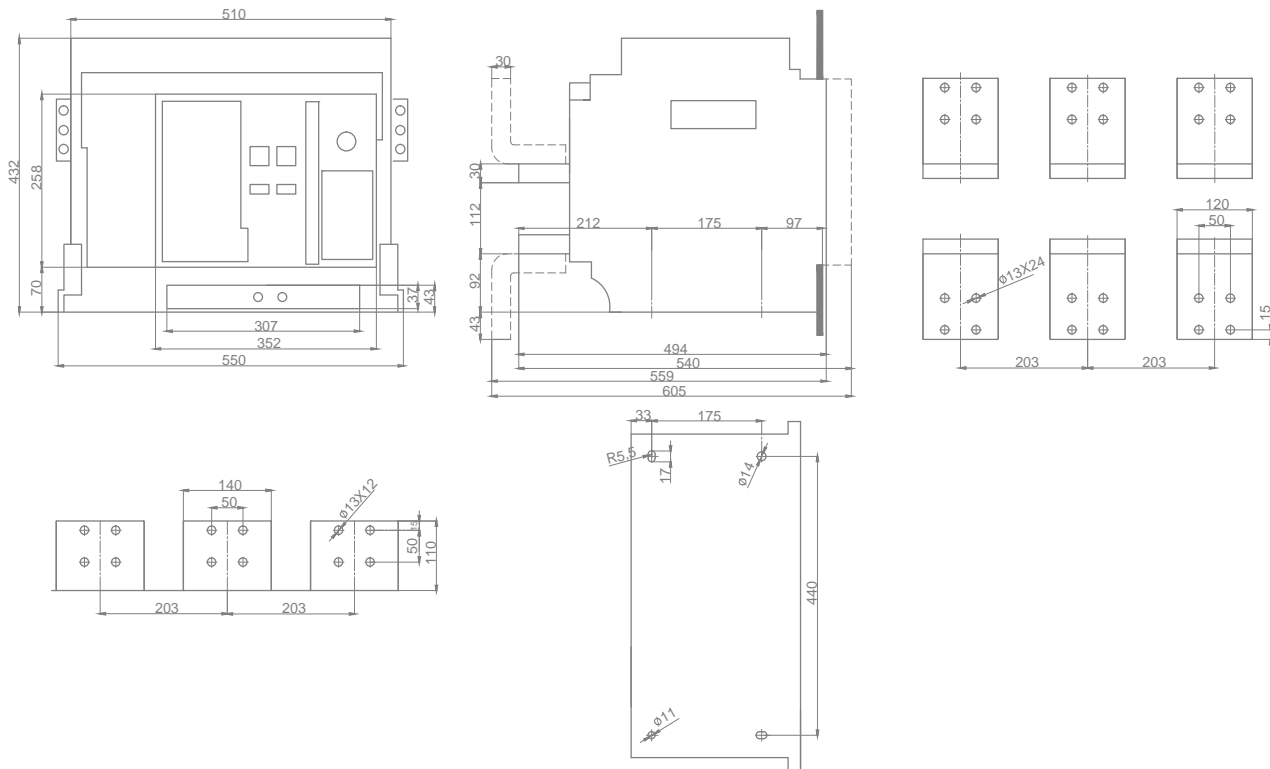
Type	a mm	b mm	e mm
630A-800A	10	95	38
1000A-1600A	15	105	48
2000A	20	115	58

SFA-3200 SFA-3200(N)

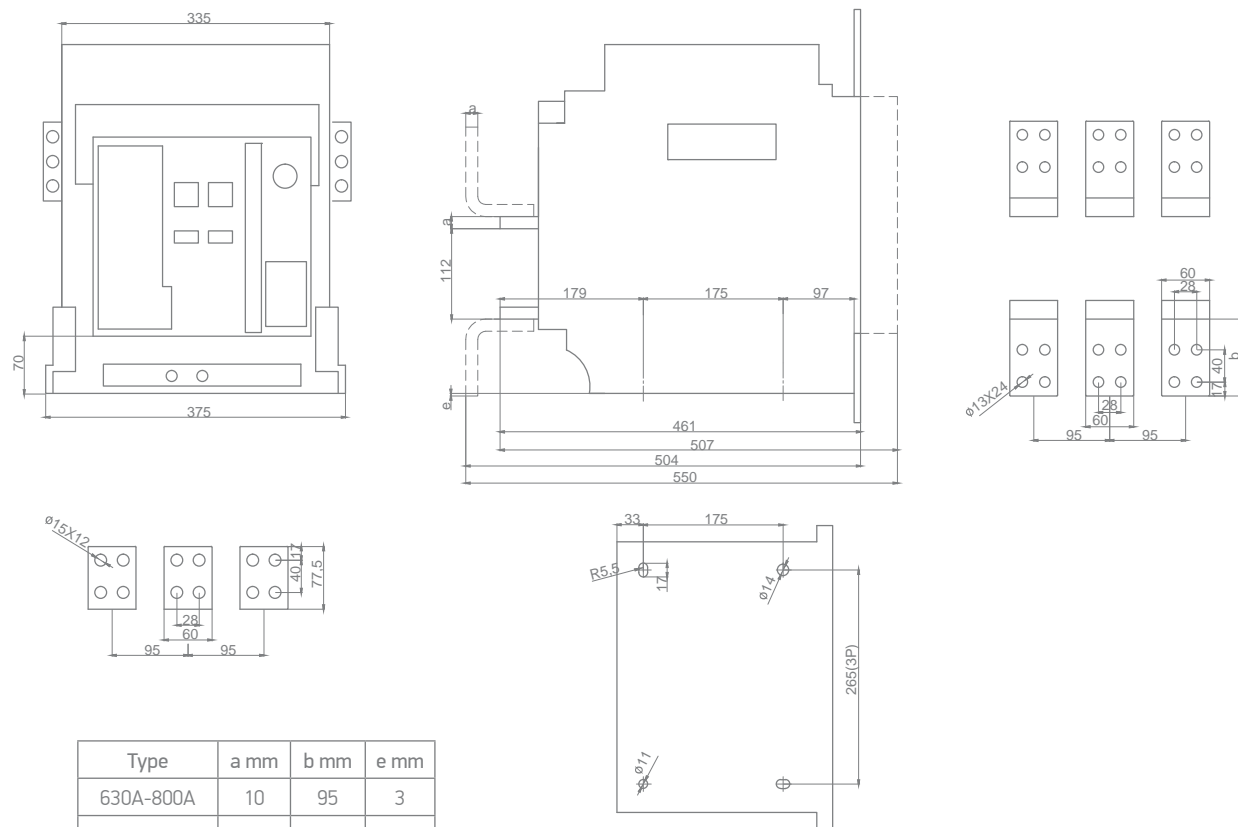


Type	a mm	b mm	c mm	e mm
2000A-2500A	20	115	408	23
3200A	30	135	428	43

SFA-4000

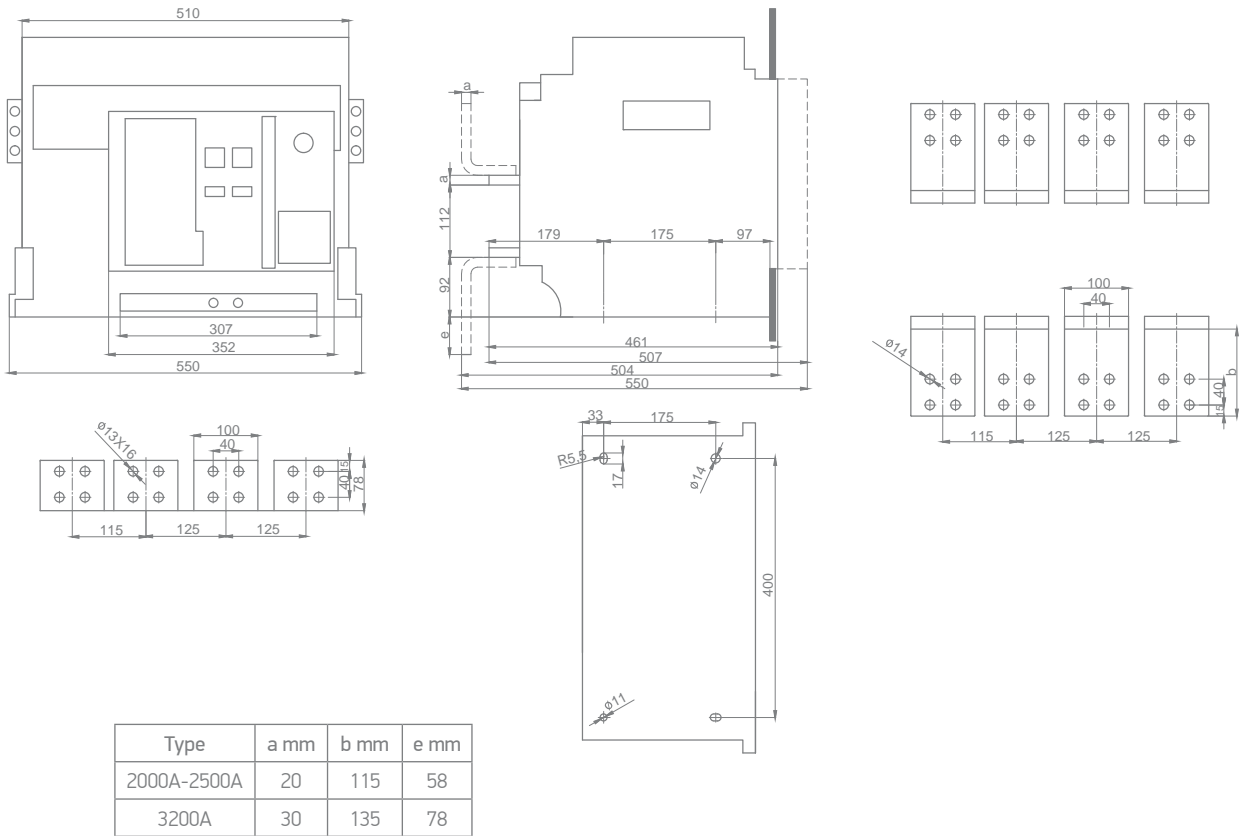


SDA-2000

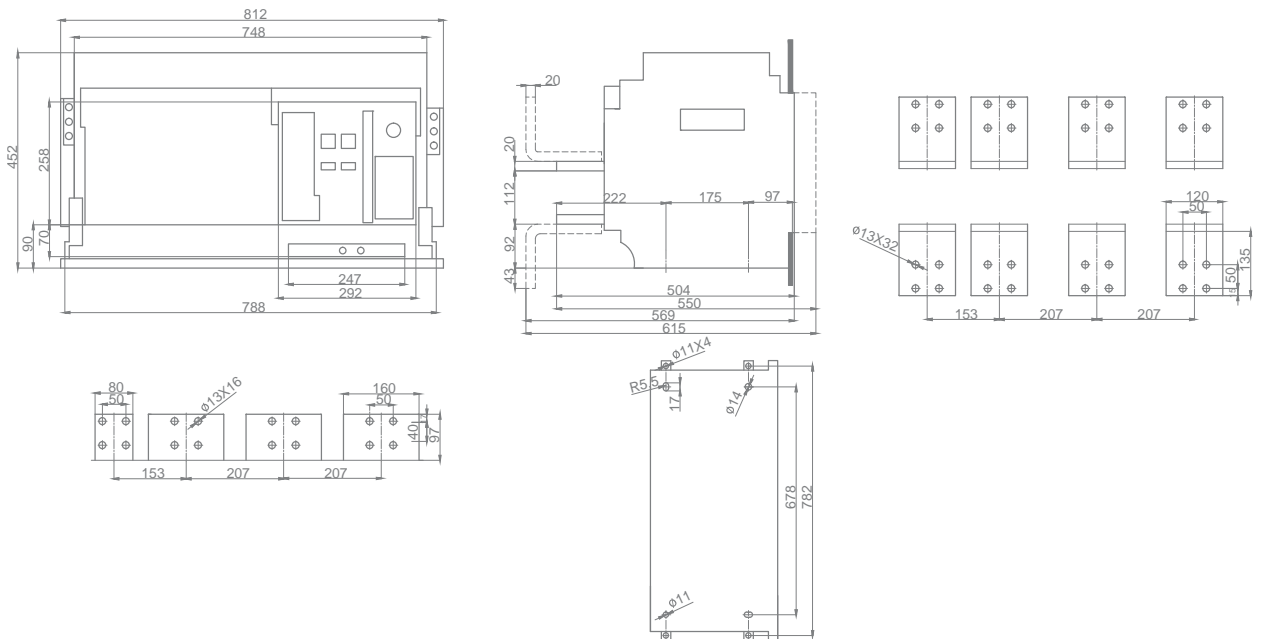


Type	a mm	b mm	e mm
630A-800A	10	95	3
1000A-1600A	15	105	13
2000A	20	115	23

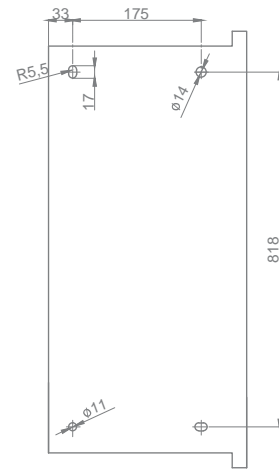
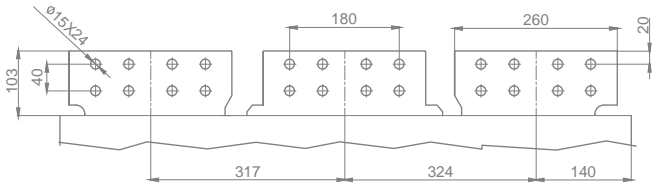
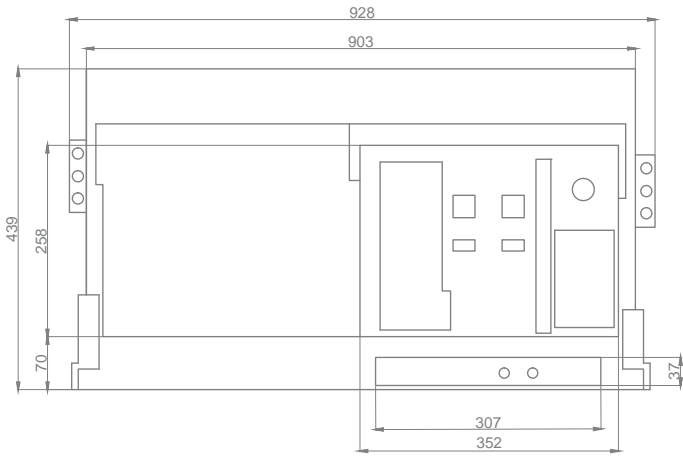
SDA-3200



SDA-4000



SDA-6300



LV Air Circuit Breakers

3 Poles, Fixed Type, Air Circuit Breakers



Type Code	Rated Current In (A)	Rated Current Adjustment (Ir1)	Breaking Capacity Icu (kA)	Operation Mechanism	Order Code
SFA-2000	630	252-630	80	Manuel	SFA0630H3
	800	320-800			SFA0800H3
	1000	400-1000			SFA1000H3
	1250	500-1250			SFA1250H3
	1600	640-1600			SFA1600H3
	2000	1200-2000			SFA2000H3
SFA-3200	2500	1000-2500	100	Manuel	SFA2500H3
	3200	1280-3200			SFA3200H3
SFA-4000	4000	1600-4000	100	Manuel	SFA4000H3
SFA-2000	630	252-630	80	Motorized	SFA0630M3
	800	320-800			SFA0800M3
	1000	400-1000			SFA1000M3
	1250	500-1250			SFA1250M3
	1600	640-1600			SFA1600M3
	2000	1200-2000			SFA2000M3
SFA-3200	2500	1000-2500	100	Motorized	SFA2500M3
	3200	1280-3200			SFA3200M3
SFA-4000	4000	1600-4000	100	Motorized	SFA4000M3

(*) All Acbs have 4NO+4NC auxiliary contacts as standard product.

4 Poles, Fixed Type, Air Circuit Breakers



Type Code	Rated Current In (A)	Breaking Capacity Icu (kA)	Operation Mechanism	Order Code
SFA-2000	400-1000	80	Manual	SFA1000H4
	500-1250	80		SFA1250H4
	640-1600	80		SFA1600H4
	1200-2000	80		SFA2000H4
SFA-3200	1000-2500	100	Manual	SFA2500H4
	1280-3200	100		SFA3200H4
(*)SDA-4000	1600-4000	100	Manual	SDA4000H4
SFA-2000	400-1000	80	Motorized	SFA1000M4
	500-1250	80		SFA1250M4
	640-1600	80		SFA1600M4
	1200-2000	80		SFA2000M4
SFA-3200	1000-2500	100	Motorized	SFA2500M4
	1280-3200	100		SFA3200M4
(**)SDA-4000	1600-4000	100	Motorized	SDA4000M4

(*) All Acbs have 4NO+4NC auxiliary contacts as standard product.

(**) 4 Poles 4000 A ACBs are Draw Out Type.

3 Poles Draw-Out Type Air Circuit Breakers

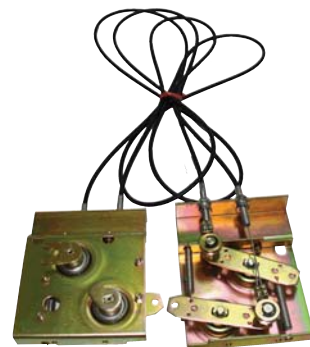
Type Code	Rated Current In (A)	Rated Current Adjustment (Ir1)	Breaking Capacity Icu (kA)	Operation Mechanism	Order Code
SDA-2000	1000	400-1000	80	Manuel	SDA1000H3
	1250	500-1250			SDA1250H3
	1600	640-1600			SDA1600H3
	2000	1200-2000			SDA2000H3
SDA-3200	2500	1000-2500	100	Manuel	SDA2500H3
	3200	1280-3200			SDA3200H3
SDA-4000	4000	1600-4000	100	Manuel	SDA4000H3
SDA-6300	5000	2000-5000	100	Manuel	SDA5000H3
	6300	2560-6300			SDA6300H3
SDA-2000	1000	400-1000	80	Motorized	SDA1000M3
	1250	500-1250			SDA1250M3
	1600	640-1600			SDA1600M3
	2000	1200-2000			SDA2000M3
SDA-3200	2500	1000-2500	100	Motorized	SDA2500M3
	3200	1280-3200			SDA3200M3
SDA-4000	4000	1600-4000	100	Motorized	SDA4000M3
SDA-6300	5000	2000-5000	100	Motorized	SDA5000M3
	6300	2560-6300			SDA6300M3

(*) All Acbs have 4NO+4NC auxiliary contacts as standard product.



Accessories for Air Circuit Breakers

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	380 V AC	SAGDG380
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



Fuse Switch Disconnectors

Technical Specifications



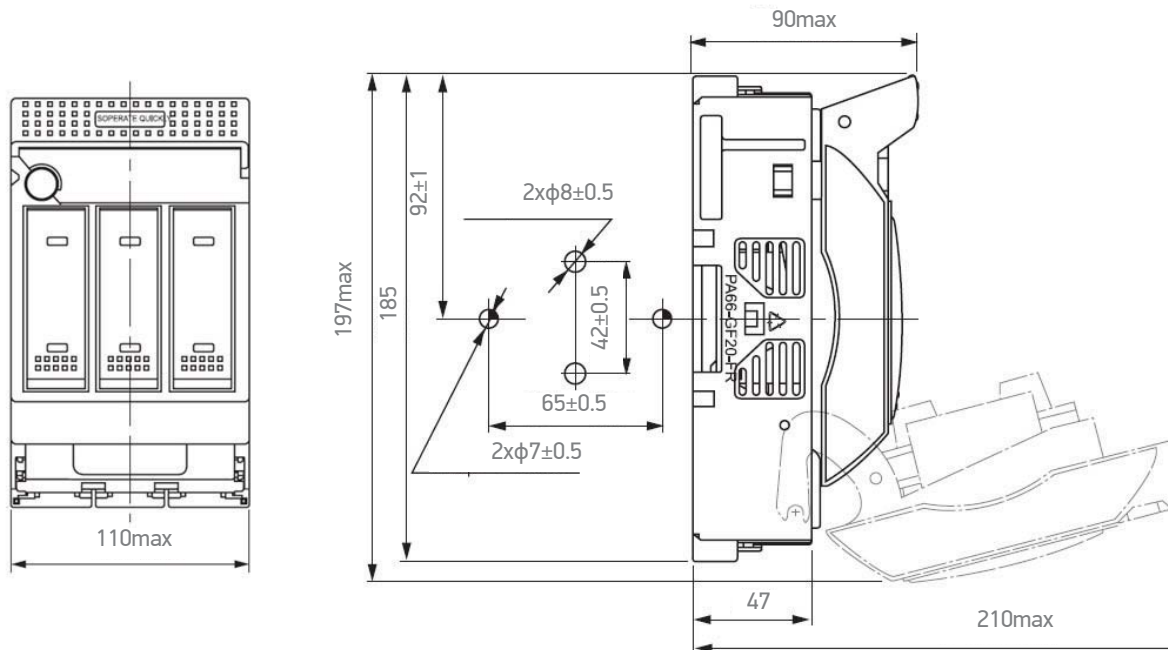
Type		SFH 160	SFH 250	SFH 400
Standard		TS EN 60947-3 , EN 60947-3		
NH fuse link size		NH00C- NH00	NH1	NH2
No of poles		3	3	3
Rated operational Current	A	160	250	400
Rated Voltage	V	690	690	690
Rated Insulation Voltage	V	800	800	800
Breaking Capacity of fuse link	kA	120	120	120
Utilitization Category		AC23B	AC23B	AC23B
Weight	kg	0,7	1,5	3,3

Order Information

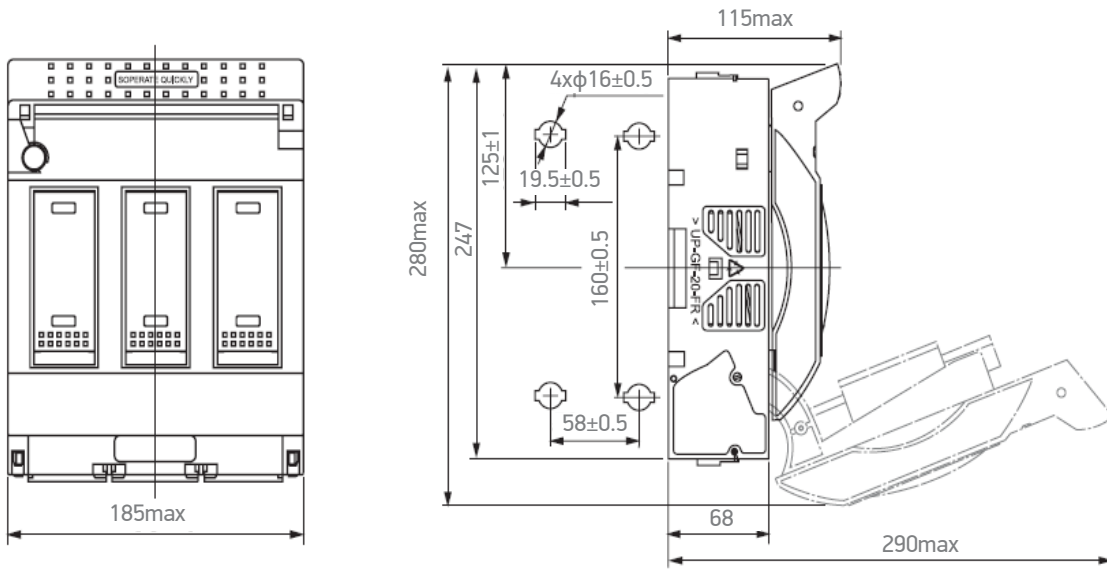
Size	Rated Current In (A)	Fuse Size	Minimum Order (pcs)	Number in Cartoon (pcs)	Order Code
SFH-160	160	NH00C/ NH00	1	1	SFH160
SFH-250	250	NH1	1	1	SFH250
SFH-400	400	NH2	1	1	SFH400

Dimensions

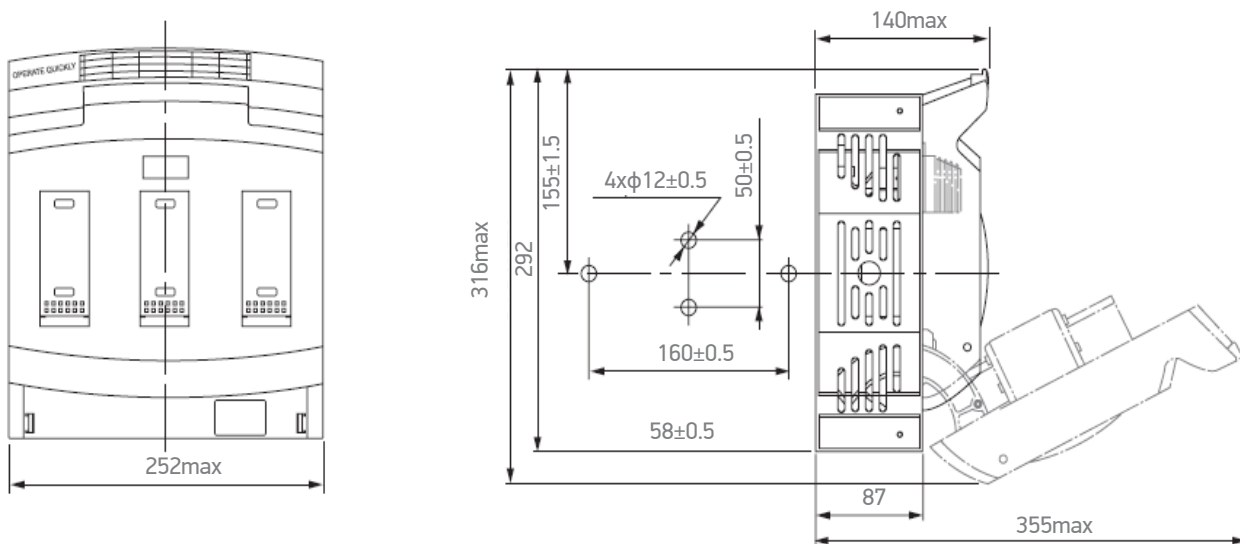
SFH160



SFH250



SFH400

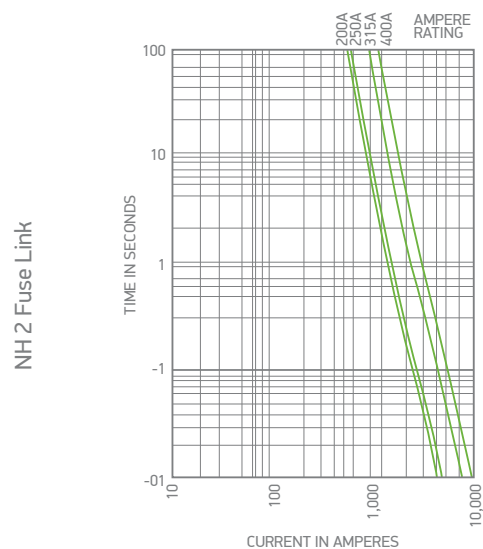
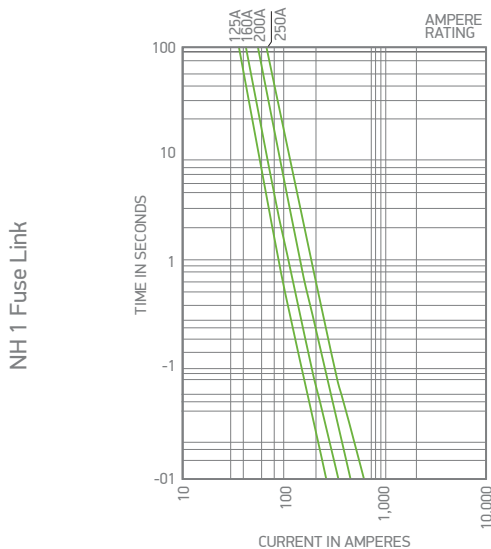
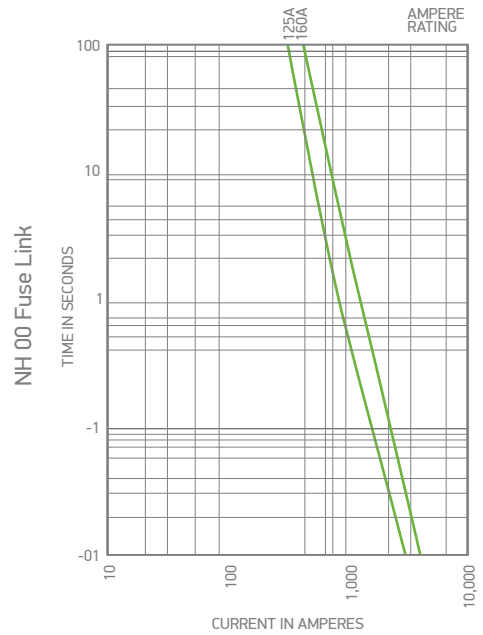
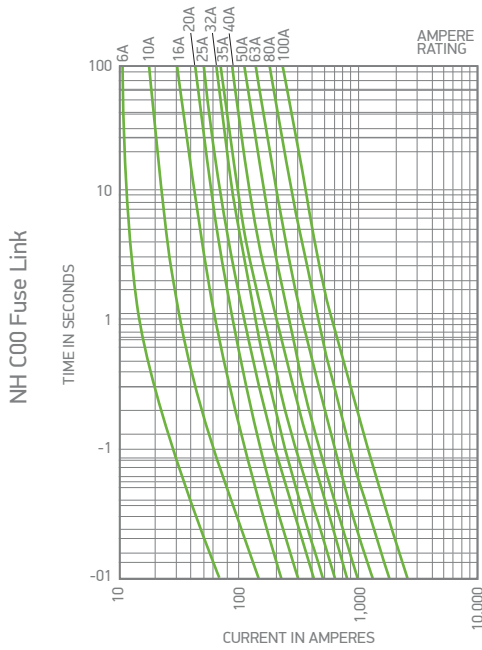


NH (H.R.C) Fuse Links (Steatit Body)



NH Fuse Link					
Size	Rated Current In (A)	Breaking Cap. (kA)	Minimum order (pcs)	Number in Carton (pcs.)	Order Code
NHC00	6	120	3	120	SNH00006
	10	120	3	120	SNH00010
	16	120	3	120	SNH00016
	20	120	3	120	SNH00020
	25	120	3	120	SNH00025
	32	120	3	120	SNH00032
	40	120	3	120	SNH00040
	50	120	3	120	SNH00050
	63	120	3	120	SNH00063
NH00	80	120	3	120	SNH00080
	100	120	3	120	SNH00100
	125	120	3	120	SNH00125
NH1	160	120	3	120	SNH00160
	125	120	3	120	SNH10125
	160	120	3	120	SNH10160
	200	120	3	120	SNH10200
NH2	250	120	3	120	SNH10250
	200	120	3	120	SNH20200
	250	120	3	120	SNH20250
	315	120	3	120	SNH20315
	400	120	3	120	SNH20400

Time-Current Curves

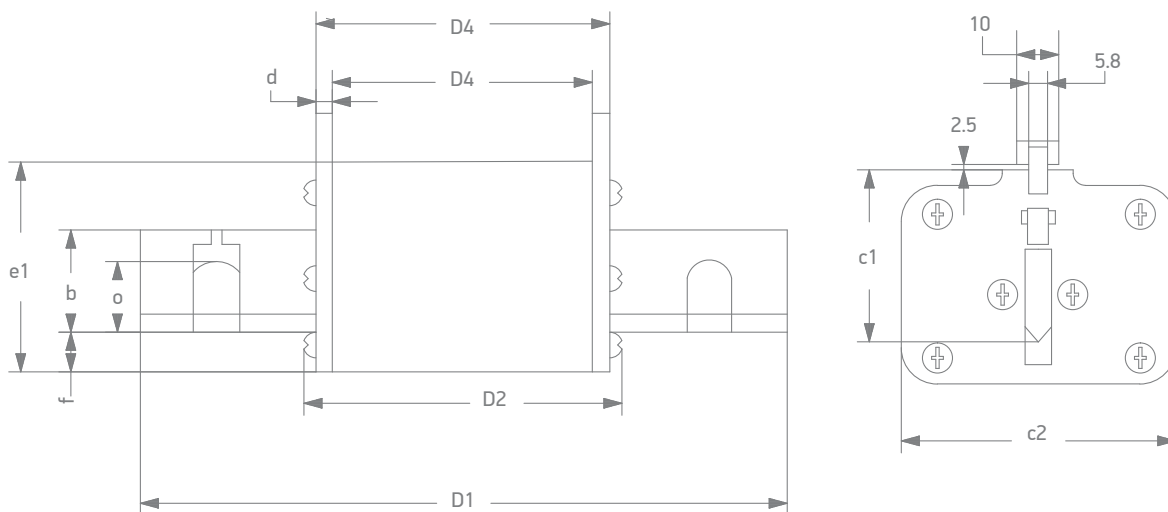


Maximum Power Dissipation for NH Fuse Links

Size	Rated Current In (A)	EN 60269	SIGMA
NHC00	6	12 W	1.8 W
	10	12 W	2.1 W
	16	12 W	2.4 W
	20	12 W	2.7 W
	25	12 W	2.9 W
	32	12 W	3.7 W
	40	12 W	4.3 W
	50	12 W	4.7 W
	63	12 W	6 W
	80	12 W	6.8 W
NH00	125	12 W	10.2 W
	160	12 W	12 W
NH1	125	23 W	10.2 W
	160	23 W	13.1 W
	200	23 W	17.6 W
	250	23 W	23 W
NH2	200	34 W	17.8 W
	250	34 W	20.5 W
	315	34 W	25.4 W
	400	34 W	31 W

Dimensions

Size	a1	a2	a3	a4	e1	e2	e4	f	b	c1	d	m	n	o
00C	78	54	45	49	36	21	6	6	15	35	2	-	-	-
00	78	54	45	49	45	29	6	13	15	35	22	-	-	-
1	135	72	62	68	48	48	6	11	20	40	2.5	-	-	-
2	150	72	62	68	58	58	6	14	25	48	2.5	-	-	-



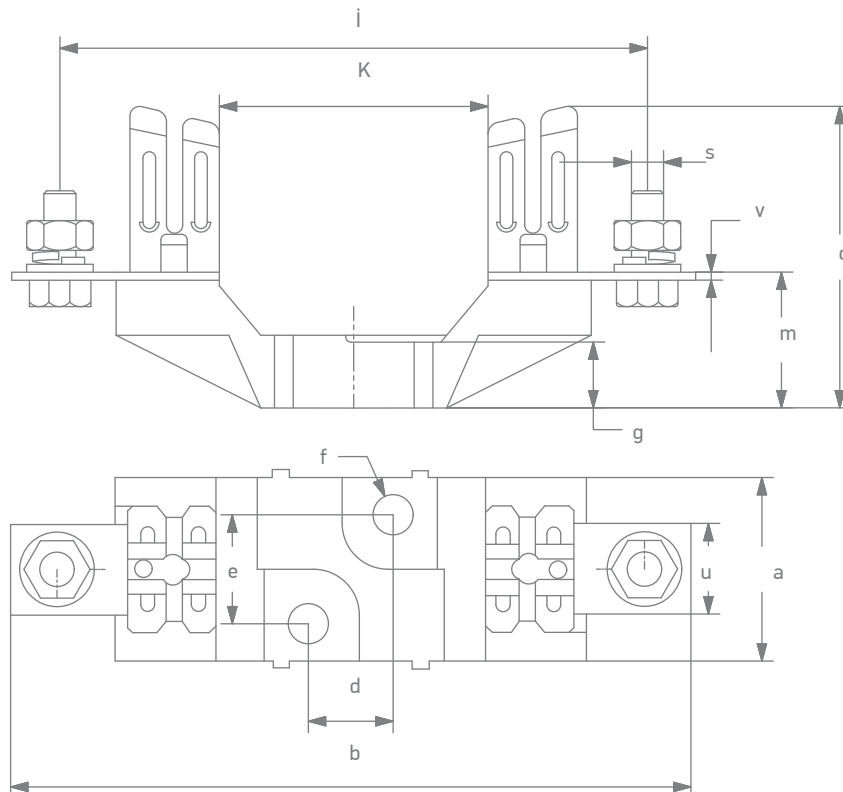
NH (H.R.C.) Fuse Base

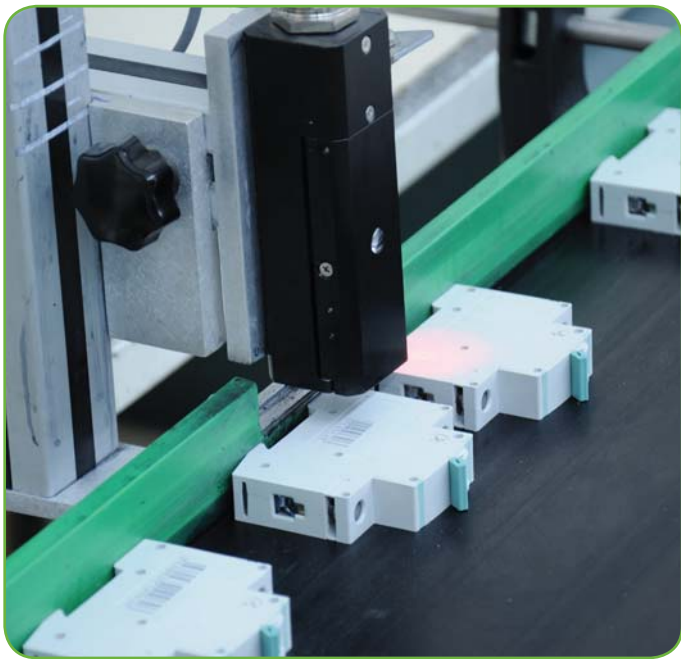


NH Fuse Base					
Size	Rated Current	Body Material	Minimum Order (pcs)	Box Qty	Order Code
NH00	160	Steatit	5	120	SNB00
NH1	250	resin	5	120	SNB01
NH2	400	resin	5	120	SNB02

Dimensions

Size	a	b	c	d	e	f	g	i	m	s	u	v	k
NH00	30	120	60	25	0	7.5	8	100	26	M8	23	2	56
NH1	54	200	81	25	30	10.5	18	175	36	M10	25	2	80
NH2	54	225	93	25	30	10.5	18	200	37	M10	31	2.5	80





Miniature Circuit Breaker - Technical Specifications

Type	SND 3000				SND 4500				SND 6000							
No of Poles	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				1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63					
Instantaneous Tripping Class			B: (3-5)xIn C:(5-10)xIn				B: (3-5)xIn C:(5-10)xIn D: (10-20)xIn				B: (3-5)xIn C:(5-10)xIn D: (10-20)xIn					
Power Supply			AC													
Rated Operating Voltage	Ue	AC (V)	230/400		400		230/400		400		230/400		400			
Rated Insulation Voltage	Ui	V	690													
Rated impulse Withstanding Voltage	Uimp	kV	6													
Rated Short Circuit Breaking Capacity		kA	3				4.5				6					
Energy Class			3													
Electrical Life (Operation)	op.	230 (V)	3000				4000				5000					
Mechanical Life (Operation)	op.		20000													
Protection Class			IP 20													
Operation Temperature		°C	-30 to +60													
Storage Temperature		°C	-40 to +70													
Colour			RAL 7035													
Assembly (EN 60715)			35 mm. DIN Rail													
Min..max. connection section		mm ²	1-25													
Min..max. clamping torque		Nm	2													



SDC 6000		SLD 6000				SND 10000				SLD 10000				SND 16000
1	2	1	2	3	4	1	2	3	4	1	2	3	4	1
6, 10, 16, 20, 25, 32, 40, 50, 63		80,100,125				2, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63				80,100,125				40, 50, 63, 80, 100, 125
C (7-14)xIn		C:(5-10)xIn				B: (3-5)xIn C:(5-10)xIn D: (10-20)xIn				C:(5-10)xIn				C:(5-10)xIn
DC		AC												
250	500	230/400	400			230/400	400			230/400	400			230/400
440		690				690				690				
4		6												
6					10					16				
3														
3000		4000				5000				4000				4000
20000													15000	
IP 20														
-30 to +60														
-40 to +70														
RAL 7035														
35 mm. DIN Rail														
1-25		1.5-50				1-25				1.5-50				2.5-50
2		3,5				2				3,5				3,5



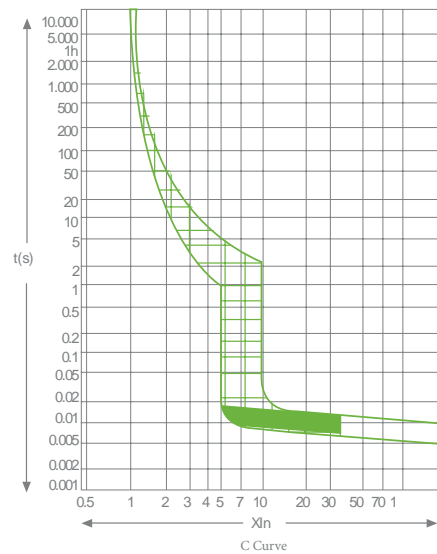
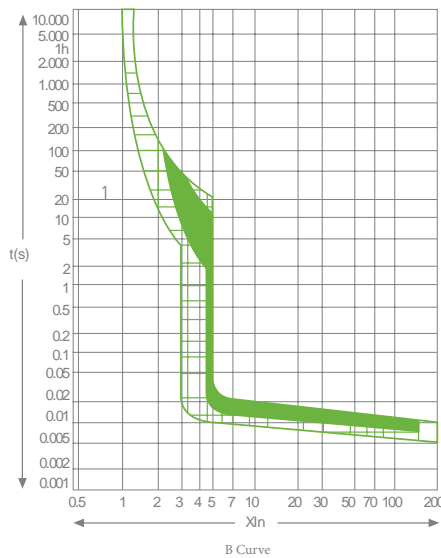
Miniature Circuit Breakers

3 kA Miniature Circuit Breakers



Type	SND 3000					
No Of Poles			1	2	3	4
Rated Current (at 30 °C)		A	2, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63			
Rated Voltage	Ue	AC (V)	230/400		400	
Rated Insulation Voltage	AC (V)		690			
Rated Impulse Voltage	Uimp	kV	6			
Rated Breaking Capacity	Icn	kA	3			
Energy Class			3			
Electrical Life	ope.	230 V	3.000			
Mechanical Life	ope.		20.000			
Protection Class			IP 20			
Ambient Operating Temperature		°C	-30 to +60			
Storage Temperature		°C	-40 to +70			
Colour			RAL 7035			
Assembly (EN 60715)			35 mm DIN Rail			
Connection Capacity (min - max)		mm ²	1-25			
Max. Tightening Torque		Nm	2			

Time- Current Characteristic

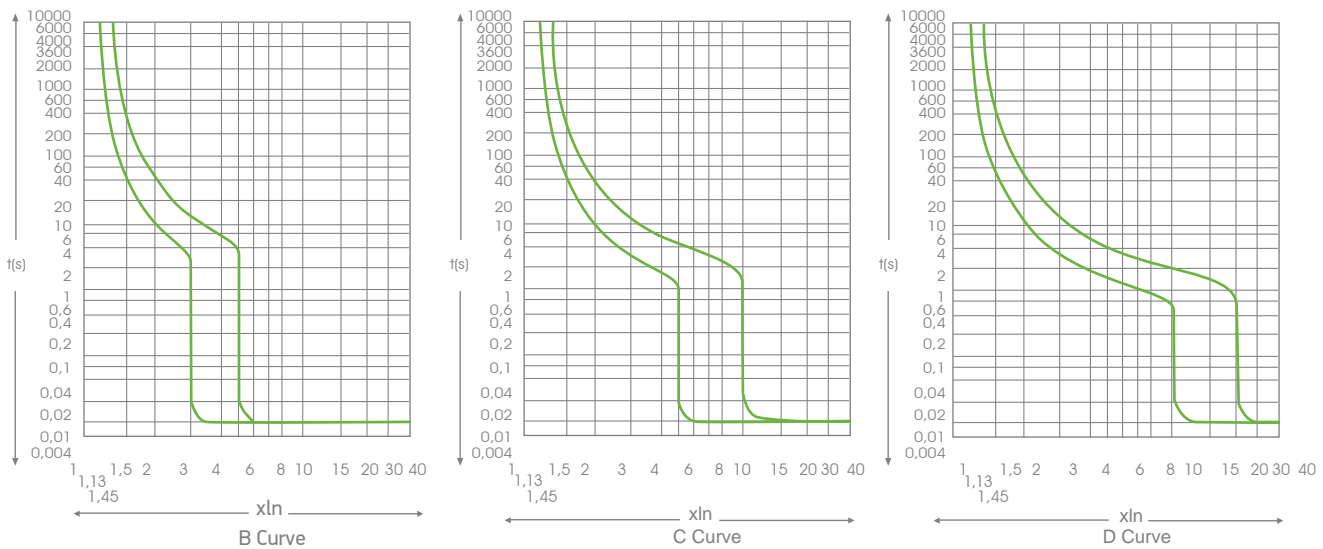


4,5 kA Miniature Circuit Breakers

Type	SND 4500		
No Of Poles			1 2 3 4
Rated Current (at 30 °C)		A	2, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63
Rated Voltage	Ue	AC (V)	230/400 400
Rated Insulation Voltage	AC (V)		690
Rated Impulse Voltage	Uimp	kV	6
Rated Breaking Capacity	Icn	kA	4,5
Energy Class			3
Electrical Life	ope.	230 V	4.000
Mechanical Life	ope.		20.000
Protection Class			IP 20
Ambient Operating Temperature		°C	-30 to +60
Storage Temperature		°C	-40 to +70
Colour			RAL 7035
Assembly (EN 60715)			35 mm DIN Rail
Connection Capacity (min - max)		mm ²	1-25
Max. Tightening Torque		Nm	2



Time- Current Characteristic

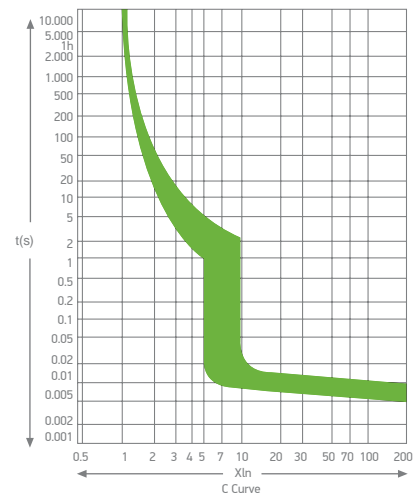
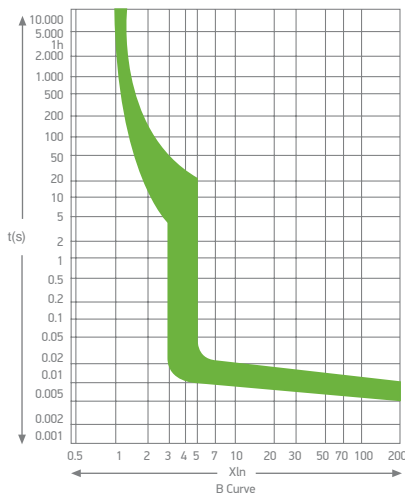


6 kA Miniature Circuit Breakers



Type			SND 6000			
No Of Poles			1	2	3	4
Rated Current (at 30 °C)		A	2, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63			
Rated Voltage	Ue	AC (V)	230/400		400	
Rated Insulation Voltage	AC (V)		690			
Rated Impulse Voltage	Uimp	kV	6			
Rated Breaking Capacity	Icn	kA	6			
Energy Class			3			
Electrical Life	ope.	230 V	5.000			
Mechanical Life	ope.		20.000			
Protection Class			IP 20			
Ambient Operating Temperature		°C	-30 to +60			
Storage Temperature		°C	-40 to +70			
Colour			RAL 7035			
Assembly (EN 60715)			35 mm DIN Rail			
Connection Capacity (min - max)		mm ²	1-25			
Max. Tightening Torque		Nm	2			

Time- Current Characteristic

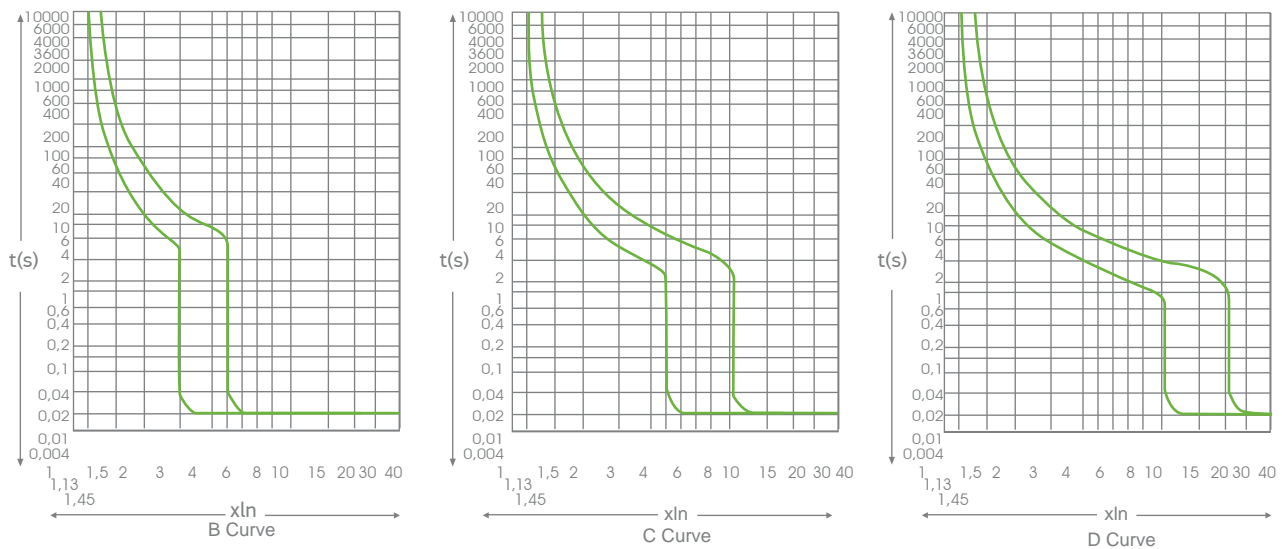


10 kA Miniature Circuit Breakers

Type	SND 10000		
No Of Poles			1 2 3 4
Rated Current (at 30 °C)	A	2, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63	
Rated Voltage	Ue	AC (V)	230/400 400
Rated Insulation Voltage	AC (V)	690	
Rated Impulse Voltage	Uimp	kV	6
Rated Breaking Capacity	Icn	kA	10
Energy Class	3		
Electrical Life	ope.	230 V	5.000
Mechanical Life	ope.		20.000
Protection Class	IP 20		
Ambient Operating Temperature	°C	-30 to +60	
Storage Temperature	°C	-40 to +70	
Colour	RAL 7035		
Assembly (EN 60715)	35 mm DIN Rail		
Connection Capacity (min - max)	mm ²	1-25	
Max. Tightening Torque	Nm	2	



Time- Current Characteristic

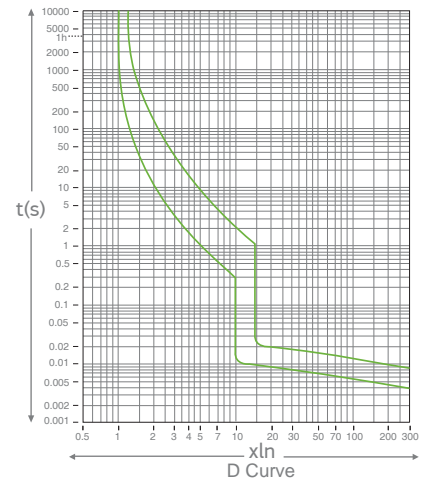
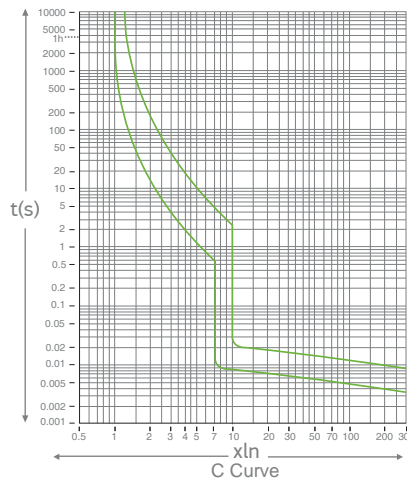
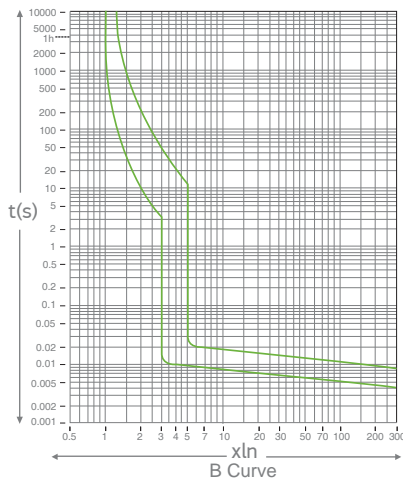


6 kA Miniature Circuit Breakers 80 -100 - 125 A



Type	SLD 6000					
No Of Poles			1	2	3	4
Rated Current (at 30 °C)		A	80,100,125			
Rated Voltage	Ue	AC (V)	230/400		400	
Rated Insulation Voltage	AC (V)		690			
Rated Impulse Voltage	Uimp	kV	6			
Rated Breaking Capacity	Icn	kA	6			
Energy Class			3			
Electrical Life	ope.	230 V	4.000			
Mechanical Life	ope.		20.000			
Protection Class			IP 20			
Ambient Operating Temperature		°C	-30 to +60			
Storage Temperature		°C	-40 to +70			
Colour			RAL 7035			
Assembly (EN 60715)			35 mm DIN Rail			
Connection Capacity (min - max)		mm ²	1,5-50			
Max. Tightening Torque		Nm	3,5			

Time- Current Characteristic

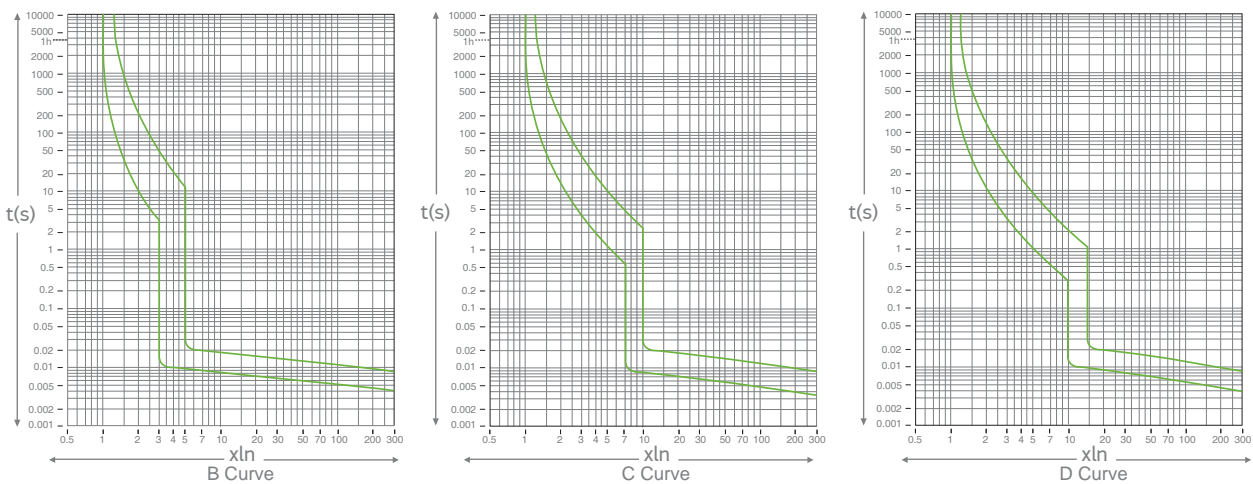


10 kA Miniature Circuit Breakers 80 - 100 - 125 A

Type			SLD 10000			
No Of Poles			1	2	3	4
Rated Current (at 30 °C)		A	80,100,125			
Rated Voltage	Ue	AC (V)	230/400		400	
Rated Insulation Voltage	AC (V)		690			
Rated Impulse Voltage	Uimp	kV	6			
Rated Breaking Capacity	Icn	kA	10			
Energy Class			3			
Electrical Life	ope.	230 V	4.000			
Mechanical Life	ope.		20.000			
Protection Class			IP 20			
Ambient Operating Temperature		°C	-30 to +60			
Storage Temperature		°C	-40 to +70			
Colour			RAL 7035			
Assembly (EN 60715)			35 mm DIN Rail			
Connection Capacity (min - max)		mm ²	1,5-50			
Max. Tightening Torque		Nm	3,5			



Time- Current Characteristic

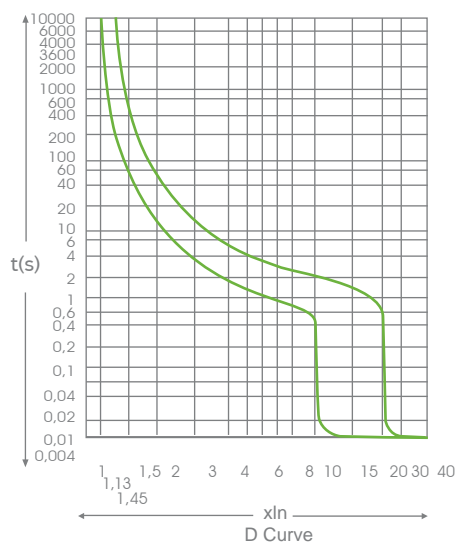
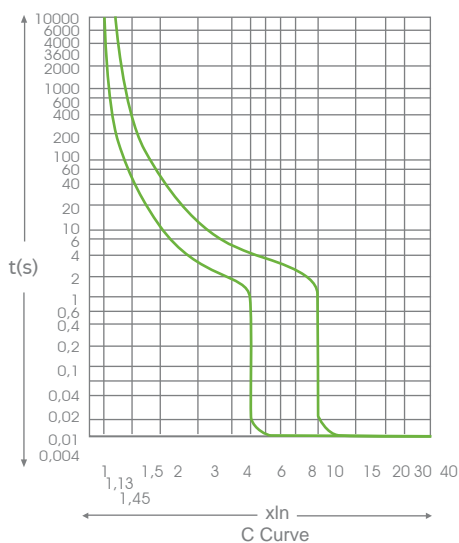


16 kA Miniature Circuit Breakers



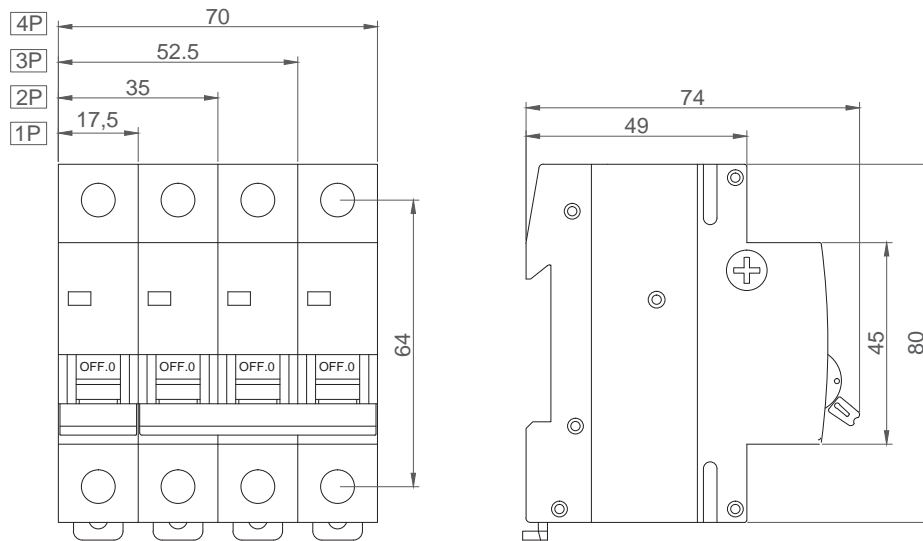
Type			SLD 10000
No Of Poles			1
Rated Current (at 30 °C)		A	40,50,63,80,100,125
Rated Voltage	Ue	AC (V)	230/400
Rated Insulation Voltage	AC (V)		690
Rated Impulse Voltage	Uimp	kV	6
Rated Breaking Capacity	Icn	kA	16
Energy Class			3
Electrical Life	ope.	230 V	4.000
Mechanical Life	ope.		15.000
Protection Class			IP 20
Ambient Operating Temperature		°C	-30 to +60
Storage Temperature		°C	-40 to +70
Colour			RAL 7035
Assembly (EN 60715)			35 mm DIN Rail
Connection Capacity (min - max)		mm ²	2,5-50
Max. Tightening Torque		Nm	3,5

Time- Current Characteristic

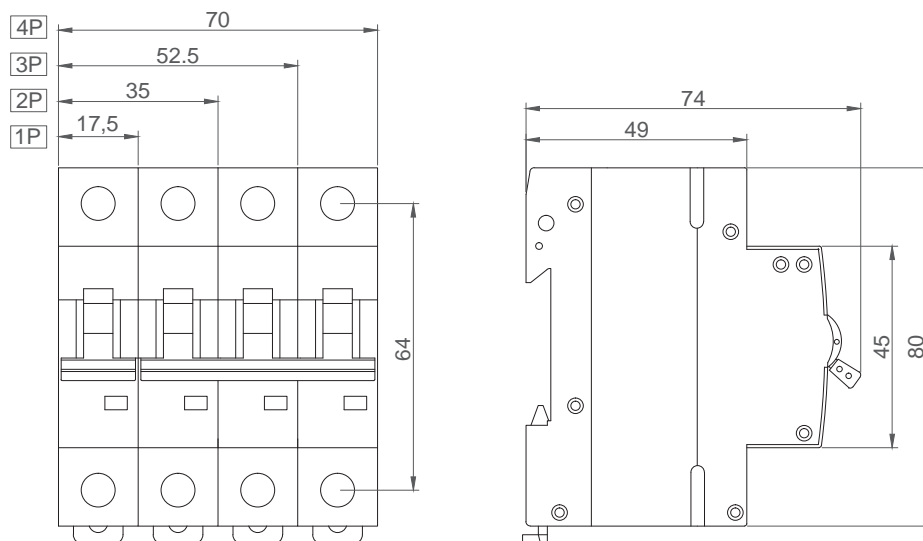


Dimensions

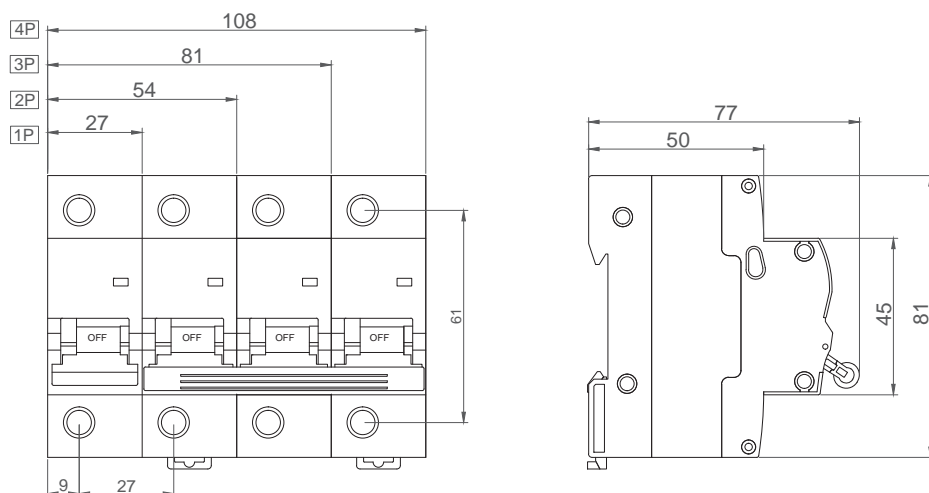
3 kA - 4,5 kA - 6 kA (2A-63A)



10 kA (2A-63A)



6 kA - 10 kA (80A-100A-125A)





No of Poles	Rated Current In (A)	Min. Order Quantity (Pcs)	Number in Carton (Pcs)	Order Code for B Type	Order Code for C Type
1P	2	12	240	3SM102B	3SM102C
	4	12	240	3SM104B	3SM104C
	6	12	240	3SM106B	3SM106C
	10	12	240	3SM110B	3SM110C
	16	12	240	3SM116B	3SM116C
	20	12	240	3SM120B	3SM120C
	25	12	240	3SM125B	3SM125C
	32	12	240	3SM132B	3SM132C
	40	12	240	3SM140B	3SM140C
	50	12	240	3SM150B	3SM150C
	63	12	240	3SM163B	3SM163C
2P	2	6	120		3SM202C
	4	6	120		3SM204C
	6	6	120		3SM206C
	10	6	120		3SM210C
	16	6	120		3SM216C
	20	6	120		3SM220C
	25	6	120		3SM225C
	32	6	120		3SM232C
	40	6	120		3SM240C
	50	6	120		3SM250C
	63	6	120		3SM263C
3P	2	4	80		3SM302C
	4	4	80		3SM304C
	6	4	80		3SM306C
	10	4	80		3SM310C
	16	4	80		3SM316C
	20	4	80		3SM320C
	25	4	80		3SM325C
	32	4	80		3SM332C
	40	4	80		3SM340C
	50	4	80		3SM350C
	63	4	80		3SM363C
4P	2	3	60		3SM402C
	4	3	60		3SM404C
	6	3	60		3SM406C
	10	3	60		3SM410C
	16	3	60		3SM416C
	20	3	60		3SM420C
	25	3	60		3SM425C
	32	3	60		3SM432C
	40	3	60		3SM440C
	50	3	60		3SM450C
	63	3	60		3SM463C

No of Poles	Rated Current In (A)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code for B Type	Order Code for C Type	Order Code for D Type
1P	1	12	240	4SM101B	4SM101C	4SM101D
	2	12	240	4SM102B	4SM102C	4SM102D
	3	12	240	4SM103B	4SM103C	4SM103D
	4	12	240	4SM104B	4SM104C	4SM104D
	5	12	240	4SM105B	4SM105C	4SM105D
	6	12	240	4SM106B	4SM106C	4SM106D
	10	12	240	4SM110B	4SM110C	4SM110D
	16	12	240	4SM116B	4SM116C	4SM116D
	20	12	240	4SM120B	4SM120C	4SM120D
	25	12	240	4SM125B	4SM125C	4SM125D
	32	12	240	4SM132B	4SM132C	4SM132D
	40	12	240	4SM140B	4SM140C	4SM140D
	50	12	240	4SM150B	4SM150C	4SM150D
	63	12	240	4SM163B	4SM163C	4SM163D
2P	2	6	120		4SM202C	4SM202D
	4	6	120		4SM204C	4SM204D
	6	6	120		4SM206C	4SM206D
	10	6	120		4SM210C	4SM210D
	16	6	120		4SM216C	4SM216D
	20	6	120		4SM220C	4SM220D
	25	6	120		4SM225C	4SM225D
	32	6	120		4SM232C	4SM232D
	40	6	120		4SM240C	4SM240D
	50	6	120		4SM250C	4SM250D
63	6	120		4SM263C	4SM263D	
3P	2	4	80		4SM302C	4SM302D
	4	4	80		4SM304C	4SM304D
	6	4	80		4SM306C	4SM306D
	10	4	80		4SM310C	4SM310D
	16	4	80		4SM316C	4SM316D
	20	4	80		4SM320C	4SM320D
	25	4	80		4SM325C	4SM325D
	32	4	80		4SM332C	4SM332D
	40	4	80		4SM340C	4SM340D
	50	4	80		4SM350C	4SM350D
63	4	80		4SM363C	4SM363D	
4P	2	3	60		4SM402C	4SM402D
	4	3	60		4SM404C	4SM404D
	6	3	60		4SM406C	4SM406D
	10	3	60		4SM410C	4SM410D
	16	3	60		4SM416C	4SM416D
	20	3	60		4SM420C	4SM420D
	25	3	60		4SM425C	4SM425D
	32	3	60		4SM432C	4SM432D
	40	3	60		4SM440C	4SM440D
	50	3	60		4SM450C	4SM450D
63	3	60		4SM463C	4SM463D	





No of Poles	Rated Current In (A)	Min. Order Quantity (Pcs)	Number in Carton (Pcs)	Order Code for B Type	Order Code for C Type	Order Code for D Type
1P	1	12	240	6SM101B	6SM101C	6SM101D
	2	12	240	6SM102B	6SM102C	6SM102D
	3	12	240	6SM103B	6SM103C	6SM103D
	4	12	240	6SM104B	6SM104C	6SM104D
	5	12	240	6SM105B	6SM105C	6SM105D
	6	12	240	6SM106B	6SM106C	6SM106D
	10	12	240	6SM110B	6SM110C	6SM110D
	16	12	240	6SM116B	6SM116C	6SM116D
	20	12	240	6SM120B	6SM120C	6SM120D
	25	12	240	6SM125B	6SM125C	6SM125D
	32	12	240	6SM132B	6SM132C	6SM132D
	40	12	240	6SM140B	6SM140C	6SM140D
	50	12	240	6SM150B	6SM150C	6SM150D
63	12	240	6SM163B	6SM163C	6SM163D	
2P	2	6	120		6SM202C	6SM202D
	4	6	120		6SM204C	6SM204D
	6	6	120		6SM206C	6SM206D
	10	6	120		6SM210C	6SM210D
	16	6	120		6SM216C	6SM216D
	20	6	120		6SM220C	6SM220D
	25	6	120		6SM225C	6SM225D
	32	6	120		6SM232C	6SM232D
	40	6	120		6SM240C	6SM240D
	50	6	120		6SM250C	6SM250D
63	6	120		6SM263C	6SM263D	
3P	2	4	80		6SM302C	6SM302D
	4	4	80		6SM304C	6SM304D
	6	4	80		6SM306C	6SM306D
	10	4	80		6SM310C	6SM310D
	16	4	80		6SM316C	6SM316D
	20	4	80		6SM320C	6SM320D
	25	4	80		6SM325C	6SM325D
	32	4	80		6SM332C	6SM332D
	40	4	80		6SM340C	6SM340D
	50	4	80		6SM350C	6SM350D
63	4	80		6SM363C	6SM363D	
4P	2	3	60		6SM402C	6SM402D
	4	3	60		6SM404C	6SM404D
	6	3	60		6SM406C	6SM406D
	10	3	60		6SM410C	6SM410D
	16	3	60		6SM416C	6SM416D
	20	3	60		6SM420C	6SM420D
	25	3	60		6SM425C	6SM425D
	32	3	60		6SM432C	6SM432D
	40	3	60		6SM440C	6SM440D
	50	3	60		6SM450C	6SM450D
63	3	60		6SM463C	6SM463D	

No of Poles	Rated Current In (A)	Min. Order Quantity (Pcs)	Number in Carton (Pcs)	Order Code for B Type	Order Code for C Type	Order Code for D Type
1P	2	12	240	1SM102B	1SM102C	1SM102D
	4	12	240	1SM104B	1SM104C	1SM104D
	6	12	240	1SM106B	1SM106C	1SM106D
	10	12	240	1SM110B	1SM110C	1SM110D
	16	12	240	1SM116B	1SM116C	1SM116D
	20	12	240	1SM120B	1SM120C	1SM120D
	25	12	240	1SM125B	1SM125C	1SM125D
	32	12	240	1SM132B	1SM132C	1SM132D
	40	12	240	1SM140B	1SM140C	1SM140D
	50	12	240	1SM150B	1SM150C	1SM150D
	63	12	240	1SM163B	1SM163C	1SM163D
2P	2	6	120		1SM202C	1SM202D
	4	6	120		1SM204C	1SM204D
	6	6	120		1SM206C	1SM206D
	10	6	120		1SM210C	1SM210D
	16	6	120		1SM216C	1SM216D
	20	6	120		1SM220C	1SM220D
	25	6	120		1SM225C	1SM225D
	32	6	120		1SM232C	1SM232D
	40	6	120		1SM240C	1SM240D
	50	6	120		1SM250C	1SM250D
	63	6	120		1SM263C	1SM263D
3P	2	4	80		1SM302C	1SM302D
	4	4	80		1SM304C	1SM304D
	6	4	80		1SM306C	1SM306D
	10	4	80		1SM310C	1SM310D
	16	4	80		1SM316C	1SM316D
	20	4	80		1SM320C	1SM320D
	25	4	80		1SM325C	1SM325D
	32	4	80		1SM332C	1SM332D
	40	4	80		1SM340C	1SM340D
	50	4	80		1SM350C	1SM350D
	63	4	80		1SM363C	1SM363D
4P	2	3	60		1SM402C	1SM402D
	4	3	60		1SM404C	1SM404D
	6	3	60		1SM406C	1SM406D
	10	3	60		1SM410C	1SM410D
	16	3	60		1SM416C	1SM416D
	20	3	60		1SM420C	1SM420D
	25	3	60		1SM425C	1SM425D
	32	3	60		1SM432C	1SM432D
	40	3	60		1SM440C	1SM440D
	50	3	60		1SM450C	1SM450D
	63	3	60		1SM463C	1SM463D



Miniature Circuit Breakers

Miniature Circuit Breakers 80-100-125A

6 kA



No of Poles	Rated Current In (A)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
1P	80	8	120	6SL180C
	100	8	120	6SL100C
	125	8	120	6SL112C
2P	80	4	60	6SL280C
	100	4	60	6SL200C
	125	4	60	6SL212C
3P	80	2	40	6SL380C
	100	2	40	6SL300C
	125	2	40	6SL312C
4P	80	2	30	6SL480C
	100	2	30	6SL400C
	125	2	30	6SL412C

Miniature Circuit Breakers 80-100-125A

10 kA



No of Poles	Rated Current In (A)	Min. Order Quantity (pcs.)	Number in Cartoon (Pcs)	Order Code
1P	80	8	160	1SL180C
	100	8	160	1SL100C
	125	8	160	1SL112C
2P	80	4	80	1SL280C
	100	4	80	1SL200C
	125	4	80	1SL212C
3P	80	2	40	1SL380C
	100	2	40	1SL300C
	125	2	40	1SL312C
4P	80	2	40	1SL480C
	100	2	40	1SL400C
	125	2	40	1SL412C

Miniature Circuit Breakers

16 kA



No of Poles	Rated Current In (A)	Min. Order Quantity (pcs.)	Order Code
1P	C40	1	5SM140C
	C50	1	5SM150C
	C63	1	5SM163C
	C80	1	5SM180C
	C100	1	5SM100C
	C125	1	5SM125C

4.5 kA

Phase-Neutral Miniature Circuit Breakers

1P+N

No of Poles	Rated Current In (A)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
1P+N	6	12	240	4SN106C
	10	12	240	4SN110C
	16	12	240	4SN116C
	20	12	240	4SN120C
	25	12	240	4SN125C
	32	12	240	4SN132C



6 kA

DC Miniature Circuit Breakers

No of Poles	Rated Current In (A)	Reated Operation Voltage DC (V)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
1P	6	250	12	240	1SD106C
	10	250	12	240	1SD110C
	16	250	12	240	1SD116C
	20	250	12	240	1SD120C
	25	250	12	240	1SD125C
	32	250	12	240	1SD132C
	40	250	12	240	1SD140C
	50	250	12	240	1SD150C
2P	6	500	6	120	1SD206C
	10	500	6	120	1SD210C
	16	500	6	120	1SD216C
	20	500	6	120	1SD220C
	25	500	6	120	1SD225C
	32	500	6	120	1SD232C
	40	500	6	120	1SD240C
	50	500	6	120	1SD250C
	63	500	6	120	1SD263C



Miniature Circuit Breakers

Accessories

Type Code	Description	Order Code
SNAB	AC-DC 110-400 V Shunt Trip Release (For 4.5-6 kA Mcb)	SNAB220
	AC-DC 24-48 V Shunt Trip Release (For 4.5-6 kA Mcb)	SNAB024
SNYK	1NO+1NC Auxiliary Contact (For 4.5-6 Ka Mcb)	SNYK011
SMAB	110-415 V AC / 110-220 V DC Shunt Trip Release (For 10 kA Mcb)	SMAB220
	24 V AC Shunt Trip Release (For 10 kA Mcb)	SMAB024
SMYK	1NO+1NC Aux Contact + Alarm Contact (Ith:6 A , 250 V AC) (For 10 kA Mcb)	SMYK011
SMEK	Safety Lock (For all type Mcb)*	SMEK



*Pedlock is NOT included our offer.

Required Data for Mcb Order

- Rated Current (1...125A)
- Rated Breaking Capacity (3kA - 4.5kA - 6kA - 10kA - 16kA)
- Required No of Poles (1P-2P-3P-4P)
- Tripping Curve Type (B-C-D)

Mcb Selection According to Instantaneous Tripping Curve

B Curve: It is used for protection of illumination of houses, plugs, heaters, PLC and control circuits.

C Curve: It is used for protection of inductive loads like fluorescent lamps, transformers, power socket plugs, machines, lower power motors, air-conditions, cooling machines, power distribution panels.

D Curve: It is used for protection of motor starters, pumps, compressors, capacitors and welding machines.

Miniature Circuit Breakers Tripping and Non-Tripping Conditions

Tripping Curve	Rated Current	Applied Test Current	Tripping Time	Result (should be)
B,C,D	$I_n \leq 63$	1.13 I_n	$t \geq 3600s$	Non trip
B,C,D	$I_n \leq 63$	1.45 I_n	$t < 3600s$	Trip
B,C,D	$I_n > 63$	1.13 I_n	$t \geq 7200s$	Non trip
B,C,D	$I_n > 63$	1.45 I_n	$t < 7200s$	Trip
B,C,D	$I_n \leq 32$	2.55 I_n	$1s < t < 60s$	Trip
B,C,D	$I_n > 32$	2.55 I_n	$1s < t < 120s$	Trip
B	all	3 I_n	$t \geq 0.1s$	Non trip
B	all	5 I_n	$t < 0.1s$	Trip
C	all	5 I_n	$t \geq 0.1s$	Non trip
C	all	10 I_n	$t < 0.1s$	Trip
D	all	10 I_n	$t \geq 0.1s$	Non trip
D	all	20 I_n	$t < 0.1s$	Trip

Din Rail Type Led Signal Indicators



Colour	Rated Voltage (V)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	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 VDC	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

Din Rail Type Socket for Panel boards.



Specification	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
Socket 16A, 230V	5	100	SPP-16T

Isolator Switch

No of Poles	Rated Current In (A)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	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



Impulse Relay

Specification	Min.Order Quantity	Order Code
16 A 230 V 1NO	12	SDA-16A



L.V. Surge Protection Devices

Type	Description	No of Pole	Uc (V) AC	I _{max} (kA)	I _n (kA)	U _p (kV)	Order Code
SP1-B100	Type 1, Class B	1	255	50 (10/350μs)	100	<2.5	SP1-B100
SP4-B100	Type 1, Class B	4	255	50 (10/350μs)	100	<2.5	SP4-B100
SP1-C040	Type 2, Class C	1	275	40 (8/20μs)	20	<1.4	SP1-C040
SP2-C040	Type 2, Class C	2	275	40 (8/20μs)	20	<1.4	SP2-C040
SP3-C040	Type 2, Class C	3	275	40 (8/20μs)	20	<1.4	SP3-C040
SP4-C040	Type 2, Class C	4	275	40 (8/20μs)	20	<1.4	SP4-C040
SP1-D005	Type 3 Class D	1	275	5 (8/20μs)	3	<1	SP1-D005

The L.V. Surge Protection devices are offered with signal contact except B type.



Isolator Switches and Surge Protection Devices

Cylindrical (cartridge) Fuse Holders



Type	Rated Current (A)	No of Poles	Cartridge Diameter (ØXmm)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
SFH-232	32	1	10x38	12	360	SFH132
	32	1P+N	10x38	6	180	SFH232
	32	3	10x38	4	90	SFH332

Cylindrical (cartridge) Fuses - 10x38 mm

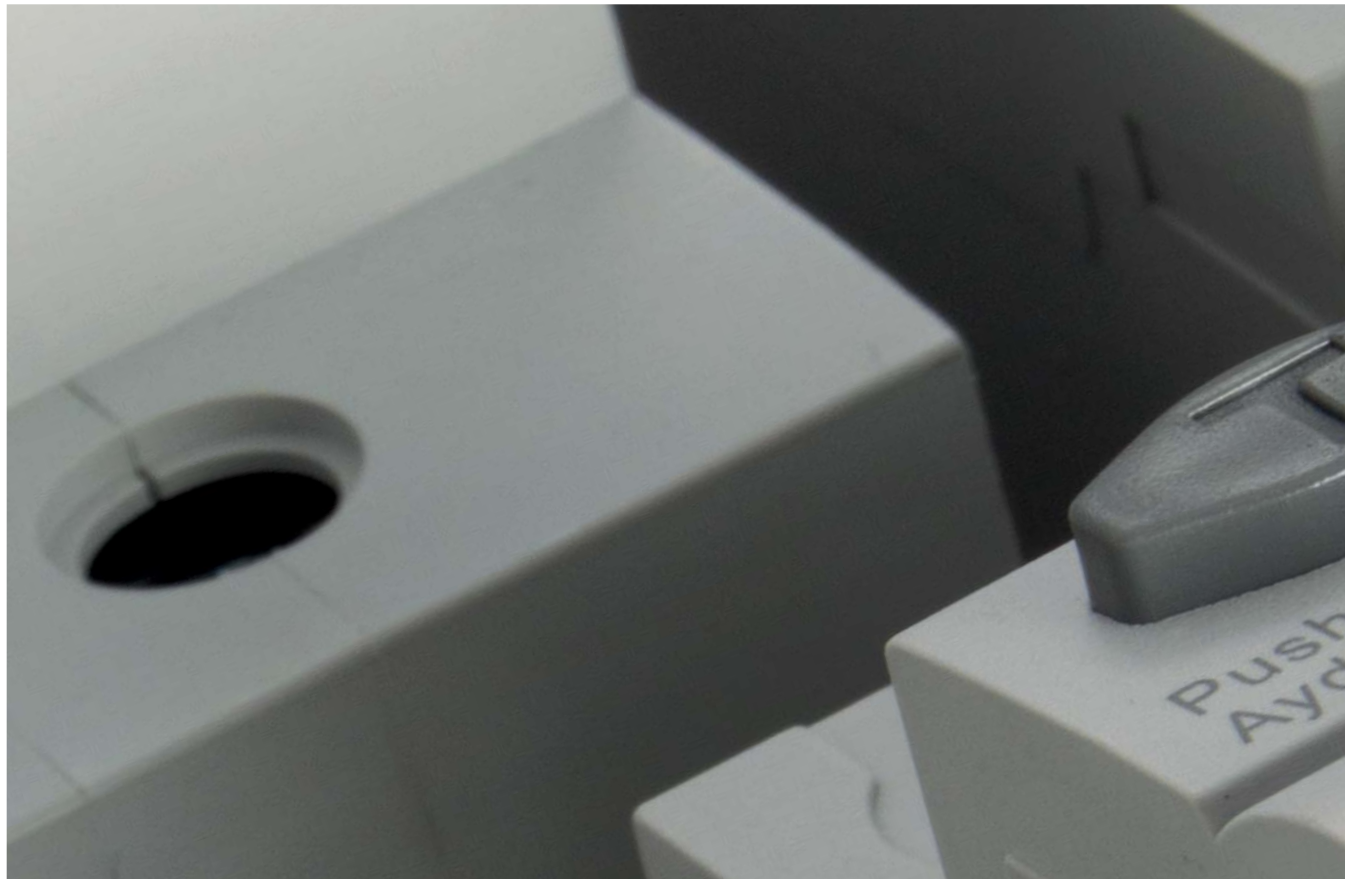


Type	Rated Current In (A)	Cartridge Diameter (ØXmm)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
gG Type cylindrical fuses (General protection of cables and electrical systems against overload and short circuit).	2	10x38	10	2000	SFLG02
	4	10x38	10	2000	SFLG04
	6	10x38	10	2000	SFLG06
	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
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
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	



Residual Current Circuit Breakers - Technical Specification

Type			SGM-2	SGM-4	SFM-2
No of Poles			2	4	2
Rated Current	I_n	A	25-40-63-80-100		
Rated Residual Current	I_{Δ}	mA	30, 300		
Rated Frequency		Hz	50-60		
Current Selectivity			AC		A
Tripping Unit					
Tripping Time			0.5.....1 x $I_{\Delta n}$		0.11.....1.4 x $I_{\Delta n}$
Breaking Time at Residual Current ($I_{\Delta n}$)		ms	< 200		
Delay Type according to Residual Current			General		
Rated Operating Voltage	U_e	(AC) V	240	415	240
Rated Insulation Voltage	U_i	V	660		
Rated Impulse Withstand Voltage	U_{imp}	kV	6		
Rated Short Circuit Withstand current with Fuse ($I_{nc}/I_{\Delta c}$)		kA	10		
Electric Life (Operation)	operation	(230 V)	6000		
Mechanical Life (Operation)	operation		20000		
Degree of Protection (After Assembly)			IP 20 (IP 40)		
Ambient Operation Temperature		°C	-25 to +60		
Max. Storage Temperature		°C	-40 to +70		
Dimensions	Width	mm	35	70	35
	Lenght	mm	80		
Colour			RAL 7035		
Assembly Type (EN 60715)			35 mm DIN Rail		
Min.. Max. Connection Section		mm ²	1.5-35		

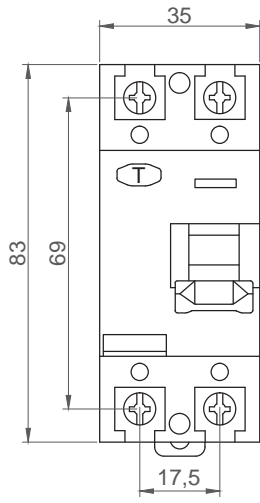


SFM-4	SHM-2	SHM-4	SDM-2	SDM-4
4	2	4	2	4
25,40,63,80,100				
30, 300				
50-60				
A	AC		AC	
Electro-mechanic				
0.11.....1.4 x IΔn	0.5.....1 x IΔn		0.5.....1 x IΔn	
	< 200		130<t<500	
	General		Delay Time Selectivity	
415	240	415	240	415
660				
6				
10	6			
6000				
20000				
IP 20 (IP 40)				
-25 to +60				
-40 to +70				
70	35	70	35	70
80				
RAL 7035				
35 mm DIN Rail				
1.5-35				

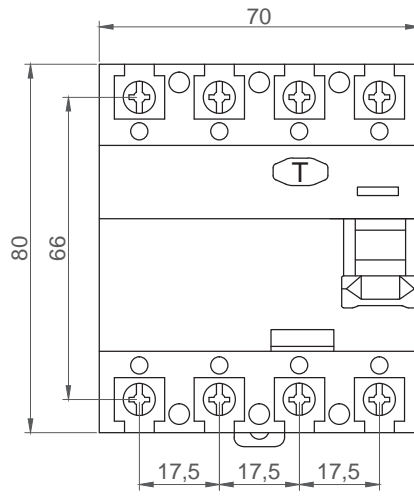


Dimensions

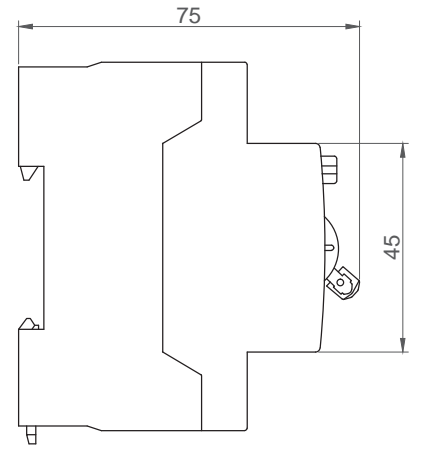
SGM-2 / SGM-4



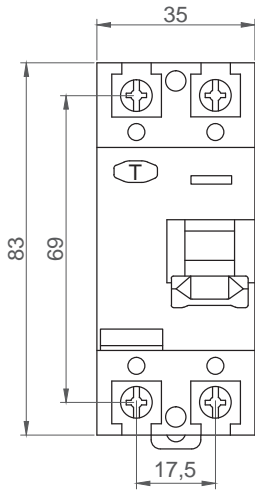
2P



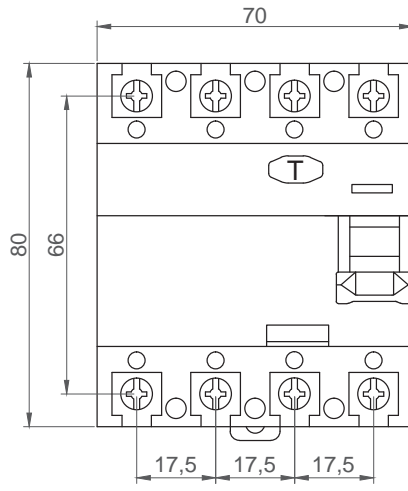
4P



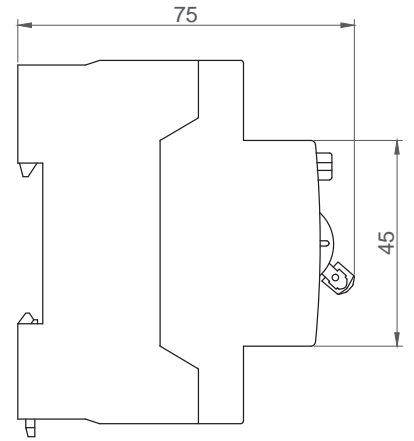
SHM-2 / SHM-4



2P



4P



Residual Current Circuit Breakers (AC Type)

6 kA

Type Code	Rated Current I _n (A)	No of Poles	Protection	Residual Current I _{Δn} (mA)	Tripping Time at Residual Current (ms)	Number in Cartoon (Pcs)	Order Code
SHM-2	25	2	Life Protection	30	Instantaneously	100	SHM2025030
	40					100	SHM2040030
	63					100	SHM2063030
	80					100	SHM2080030
	25	2	Fire Protection	300	Instantaneously	100	SHM2025300
	40					100	SHM2040300
	63					100	SHM2063300
	80					100	SHM2080300
SHM-4	25	4	Life Protection	30	Instantaneously	50	SHM4025030
	40					50	SHM4040030
	63					50	SHM4063030
	80					50	SHM4080030
	100	50	SHM4100030				
	25	4	Fire Protection	300	Instantaneously	50	SHM4025300
	40					50	SHM4040300
	63					50	SHM4063300
	80					50	SHM4080300
	100					50	SHM4100300
100	50					SHM4100300	
SDM-2 (Delay)	40	2	Fire Protection	300	Min. 130 ms	100	SDM2040300
	63					100	SDM2063300
	80					100	SDM2080300
SDM-4 (Delay)	40	4	(Selectivity Option)	300	Min. 130 ms	50	SDM4040300
	63					50	SDM4063300
	80					50	SDM4080300



Residual Current Circuit Breakers



Residual Current Circuit Breakers (AC Type)

10 kA



Type Code	Rated Current In (A)	No of Poles	Protection	Residual Current I Δ n (mA)	Tripping Time at Residual Current (ms)	Number in Cartoon (Pcs)	Order Code	
SGM-2	25	2	Life Protection	30	Instantaneously	100	SGM2025030	
	40					100	SGM2040030	
	63					100	SGM2063030	
	80					100	SGM2080030	
	100					100	SGM2100030	
	SGM-4	25	2	Fire Protection	300	Instantaneously	100	SGM2025300
		40					100	SGM2040300
		63					100	SGM2063300
		80					100	SGM2080300
		100					100	SGM2100300
SGM-4		25	4	Life Protection	30	Instantaneously	50	SGM4025030
		40					50	SGM4040030
		63					50	SGM4063030
		80					50	SGM4080030
		100					50	SGM4100030
	SGM-4	25	4	Fire Protection	300	Instantaneously	50	SGM4025300
		40					50	SGM4040300
		63					50	SGM4063300
		80					50	SGM4080300
		100					50	SGM4100300

Residual Current Circuit Breakers (A Type)

10 kA



Type Code	Rated Current In (A)	No of Poles	Protection	Residual Current I Δ n (mA)	Tripping Time at Residual Current (ms)	Number in Cartoon (Pcs)	Order Code	
SFM-2	25	2	Life Protection (Protection for AC ve DC puls residual current).	30	Instantaneously	100	SFM2025030	
	40					100	SFM2040030	
	63					100	SFM2063030	
	80					100	SFM2080030	
	100					100	SFM2100030	
	SFM-4	25	2	Fire Protection (Protection for AC ve DC puls residual current).	300	Instantaneously	100	SFM2025300
		40					100	SFM2040300
		63					100	SFM2063300
		80					100	SFM2080300
		100					100	SFM2100300
SFM-4		25	4	Life Protection (Protection for AC ve DC puls residual current).	30	Instantaneously	50	SFM4025030
		40					50	SFM4040030
		63					50	SFM4063030
		80					50	SFM4080030
		100					50	SFM4100030
	SFM-4	25	4	Fire Protection (Protection for AC ve DC puls residual current).	300	Instantaneously	50	SFM4025300
		40					50	SFM4040300
		63					50	SFM4063300
		80					50	SFM4080300
		100					50	SFM4100300

The "A" type RCCBs are used for protection of UPS, Power Supplies, Elevators and electronic devices which involved Thyristor and Diode against residual current.

3 Poles Power Contactors

Coil Voltage: 230V AC

Type	Rated Power at 400V (kW)	Utilization Category, AC-3 le max (A)	Utilization Category, AC-1 le max (A)	Auxiliary Contact on Body	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
SCM-9	4	9	25	1NO+1NC	1	42	SCM009230
SCM-12	5,5	12	25	1NO+1NC	1	42	SCM012230
SCM-18	7,5	18	40	1NO+1NC	1	42	SCM018230
SCM-22	11	22	40	1NO+1NC	1	42	SCM022230
SCM-32	15	32	50	1NO+1NC	1	24	SCM032230
SCM-40	18,5	40	60	1NO+1NC	1	24	SCM040230
SCM-50	22	50	80	1NO+1NC	1	10	SCM050230
SCM-65	30	65	100	1NO+1NC	1	10	SCM065230
SCM-75	37	75	110	1NO+1NC	1	10	SCM075230
SCM-85	45	85	135	1NO+1NC	1	10	SCM085230
SCM-100	55	100	160	2NO+2NC	1	4	SCM100230
SCM-125	60	120	160	2NO+2NC	1	4	SCM125230
SCM-150	75	150	210	2NO+2NC	1	4	SCM150230
SCM-180	90	180	230	2NO+2NC	1	1	SCM180230
SCM-250	132	250	260	2NO+2NC	1	1	SCM250230
SCM-330	200	330	400	2NO+2NC	1	1	SCM330230
SCM-400	250	400	500	2NO+2NC	1	1	SCM400230
SCM-630	400	630	1000	2NO+2NC	1	1	SCM630230



3 Poles Power Contactors

Coil Voltage: 100-240 V AC / 100-220 V DC (Common Coil)

Type	Rated Power at 400V (kW)	Utilization Category, AC-3 le max (A)	Utilization Category, AC-1 le max (A)	Auxiliary Contact on Body	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
SCM-100	55	100	160	2NO+2NC	1	4	SCM100ADC
SCM-125	60	120	160	2NO+2NC	1	4	SCM125ADC
SCM-150	75	150	210	2NO+2NC	1	4	SCM150ADC
SCM-180	90	180	230	2NO+2NC	1	4	SCM180ADC
SCM-250	132	250	260	2NO+2NC	1	4	SCM250ADC

* In case of voltage fluctuation, Common Coil works between 100V - 240V .



3 Poles Power Contactors

Coil Voltage: 24V DC

Type Code	Rated Power at 400V (kW)	Utilization Category, AC-3 le max (A)	Utilization Category, AC-1 le max (A)	Auxiliary Contact on Body	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
SDM-9	4	9	25	1NO+1NC	1	32	SDM009024
SDM-12	5,5	12	25	1NO+1NC	1	32	SDM012024
SDM-18	7,5	18	40	1NO+1NC	1	32	SDM018024
SDM-22	11	22	40	1NO+1NC	1	32	SDM022024
SDM-32	15	32	50	1NO+1NC	1	16	SDM032024
SDM-40	18,5	40	60	1NO+1NC	1	16	SDM040024



Coil Voltage: 48V DC

3 Poles Power Contactors



Type Code	Rated Power at 400V (kW)	Utilization Category, AC-3 le max (A)	Utilization Category, AC-1 le max (A)	Auxiliary Contact on Body	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
SDM-9	4	9	25	1NO+1NC	1	32	SDM009048
SDM-12	5,5	12	25	1NO+1NC	1	32	SDM012048
SDM-18	7,5	18	40	1NO+1NC	1	32	SDM018048
SDM-22	11	22	40	1NO+1NC	1	32	SDM022048
SDM-32	15	32	50	1NO+1NC	1	16	SDM032048
SDM-40	18,5	40	60	1NO+1NC	1	16	SDM040048

Coil Voltage: 230V AC

4 Poles (4NO) Power Contactors



Type Code	Rated Power at 400V (kW)	Utilization Category, AC-3 le max (A)	Utilization Category, AC-1 le max (A)	Auxiliary Contact on Body	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
SCF-9	4	9	25	1NO+1NC	1	42	SCF009230
SCF-12	5,5	12	25	1NO+1NC	1	42	SCF012230
SCF-18	7,5	18	40	1NO+1NC	1	42	SCF018230
SCF-22	11	22	40	1NO+1NC	1	42	SCF022230
SCF-32	15	32	50	1NO+1NC	1	34	SCF032230
SCF-40	18,5	40	60	1NO+1NC	1	34	SCF040230
SCF-50	22	50	80	1NO+1NC	1	10	SCF050230
SCF-65	30	65	100	1NO+1NC	1	10	SCF065230
SCF-75	37	75	110	1NO+1NC	1	10	SCF075230
SCF-85	45	85	135	1NO+1NC	1	10	SCF085230

Coil Voltage: 230V AC

4 Poles (2NO+2NC) Power Contactors



Type Code	Rated Power at 400V (kW)	Utilization Category, AC-3 le max (A)	Utilization Category, AC-1 le max (A)	Auxiliary Contact on Body	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
SCH-9	4	9	25	1NO+1NC	1	42	SCH009230
SCH-12	5,5	12	25	1NO+1NC	1	42	SCH012230
SCH-18	7,5	18	40	1NO+1NC	1	42	SCH018230
SCH-22	11	22	40	1NO+1NC	1	42	SCH022230
SCH-32	15	32	50	1NO+1NC	1	34	SCH032230
SCH-40	18,5	40	60	1NO+1NC	1	34	SCH040230
SCH-50	22	50	80	1NO+1NC	1	10	SCH050230
SCH-65	30	65	100	1NO+1NC	1	10	SCH065230
SCH-75	37	75	110	1NO+1NC	1	10	SCH075230
SCH-85	45	85	135	1NO+1NC	1	10	SCH085230

6 Poles Reversing Contactors

Coil Voltage: 230V AC

Type Code	Rated Power at 400V (kW)	Utilization Category, AC-3 I _e max (A)	Utilization Category, AC-1 I _e max (A)	Auxiliary Contact on Body	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
SCR-9	4	9	25	2NO+2NC	1	10	SCR009230
SCR-12	5,5	12	25	2NO+2NC	1	10	SCR012230
SCR-18	7,5	18	40	2NO+2NC	1	10	SCR018230
SCR-22	11	22	40	2NO+2NC	1	10	SCR022230
SCR-32	15	32	50	2NO+2NC	1	10	SCR032230
SCR-40	18,5	40	60	2NO+2NC	1	10	SCR040230
SCR-50	22	50	80	2NO+2NC	1	4	SCR050230
SCR-65	30	65	100	2NO+2NC	1	4	SCR065230
SCR-75	37	75	110	2NO+2NC	1	4	SCR075230
SCR-85	45	85	135	2NO+2NC	1	4	SCR085230
SCR-100	55	100	160	2NO+2NC	1	2	SCR100230
SCR-125	60	125	160	2NO+2NC	1	2	SCR125230
SCR-150	75	150	210	2NO+2NC	1	2	SCR150230
SCR-180	90	180	230	2NO+2NC	1	2	SCR180230
SCR-250	132	250	260	2NO+2NC	1	2	SCR250230
SCR-330	160	330	400	2NO+2NC	1	2	SCR330230
SCR-400	200	400	500	2NO+2NC	1	2	SCR400230
SCR-630	330	630	1000	2NO+2NC	1	2	SCR630230



8 Poles Reversing Contactors

Coil Voltage: 230V AC

Type Code	Rated Power at 400V (kW)	Utilization Category, AC-3 I _e max (A)	Utilization Category, AC-1 I _e max (A)	Auxiliary Contact on Body	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
SCT-9	4	9	25	2NO+2NC	1	10	SCT009230
SCT-12	5,5	12	25	2NO+2NC	1	10	SCT012230
SCT-18	7,5	18	40	2NO+2NC	1	10	SCT018230
SCT-22	11	22	40	2NO+2NC	1	10	SCT022230
SCT-32	15	32	50	2NO+2NC	1	10	SCT032230
SCT-40	18,5	40	60	2NO+2NC	1	10	SCT040230
SCT-50	22	50	80	2NO+2NC	1	4	SCT050230
SCT-65	30	65	100	2NO+2NC	1	4	SCT065230
SCT-75	37	75	110	2NO+2NC	1	4	SCT075230
SCT-85	45	85	135	2NO+2NC	1	4	SCT085230

Spare Coils



Type Code	Compatible with	Coil Voltage	Order Code
SYB-1	SCM-9....SCM-40	24 V AC 50/60 Hz.	SYB1-024AC
	SCM-9....SCM-40	42 V AC 50/60 Hz.	SYB1-042AC
	SCM-9....SCM-40	48 V AC 50/60 Hz.	SYB1-048AC
	SCM-9....SCM-40	110 V AC 50/60 Hz.	SYB1-110AC
	SCM-9....SCM-40	220 V AC 50/60 Hz.	SYB1-220AC
	SCM-9....SCM-40	380 V AC 50/60 Hz.	SYB1-380AC
	SCM-9....SCM-40	415 V AC 50/60 Hz.	SYB1-415AC
SYB-2	SCM-50....SCM-85	24 V AC 50/60 Hz.	SYB2-024AC
	SCM-50....SCM-85	42 V AC 50/60 Hz.	SYB2-042AC
	SCM-50....SCM-85	48 V AC 50/60 Hz.	SYB2-048AC
	SCM-50....SCM-85	110 V AC 50/60 Hz.	SYB2-110AC
	SCM-50....SCM-85	220 V AC 50/60 Hz.	SYB2-220AC
	SCM-50....SCM-85	380 V AC 50/60 Hz.	SYB2-380AC
	SCM-50....SCM-85	415 V AC 50/60 Hz.	SYB2-415AC
SYB-3	SCM-100....SCM-150	220 V AC 50/60 Hz.	SYB3-220AC
	SCM-100....SCM-150	380 V AC 50/60 Hz.	SYB3-380AC
	SCM-100....SCM-150	100-240 V AC / 100-220 V DC	SYB3-0ACDC
SYB-4	SCM180-SCM250	380 V AC 50/60 Hz.	SYB4-380AC
SYB-5	SCM330	380 V AC 50/60 Hz.	SYB5-380AC
SYB-6	SCM400	380 V AC 50/60 Hz.	SYB6-380AC
SYB-7	SCM630	380 V AC 50/60 Hz.	SYB7-380AC
SYD-1	SDM-9...SDM-40	24 V DC	SYD1-024DC
	SDM-9...SDM-40	48 V DC	SYD1-048DC
	SDM-9...SDM-40	60 V DC	SYD1-060DC
	SDM-9...SDM-40	110 V DC	SYD1-110DC

Auxiliary Contact Blocks



Type Code	Compatible with	Auxiliary Contact on Body	Type of Assembly	Order Code
SAC-1	SCM-9....SCM-85	1NO+1NC	Side	SAC-1S11
SAC-100	SCM-100...SCM-150	1NO+1NC	Side	SAC-1B11
SAC-2	SCM-9....SCM-85	1NO+1NC	Top	SAC-2S11
	SCM-9....SCM-85	2NO	Top	SAC-2S20
SAC-4	SCM-9....SCM-85	2NO+2NC	Top	SAC-4S22
	SCM-9....SCM-85	3NO+1NC	Top	SAC-4S31
	SCM-9....SCM-85	1NO+3NC	Top	SAC-4S13
	SCM-9....SCM-85	4NO	Top	SAC-4S40
	SCM-9....SCM-85	4NC	Top	SAC-4S04
SAC-5	SCM-330....SCM-630	2NO+2NC	Top	SAC-5S22

Thermal Overload Relays

Type Code	Rated Current In (A)	Thermal Setting (A)	Type of Contactors	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
STRP-22	0.16	0.1-0.16	SCM-9...SCM-22	1	54	STRP22-016
	0.25	0.16-0.25	SCM-9...SCM-22	1	54	STRP22-025
	0.40	0.25-0.40	SCM-9...SCM-22	1	54	STRP22-040
	0.63	0.40-0.63	SCM-9...SCM-22	1	54	STRP22-063
	1	0.63-1	SCM-9...SCM-22	1	54	STRP22-1
	1.6	1-1.6	SCM-9...SCM-22	1	54	STRP22-1.6
	2.5	1.6-2.5	SCM-9...SCM-22	1	54	STRP22-2.5
	4	2.5-4	SCM-9...SCM-22	1	54	STRP22-4
	6	4-6	SCM-9...SCM-22	1	54	STRP22-6
	8	5-8	SCM-9...SCM-22	1	54	STRP22-8
	10	7-10	SCM-9...SCM-22	1	54	STRP22-10
	13	9-13	SCM-9...SCM-22	1	54	STRP22-13
	18	12-18	SCM-9...SCM-22	1	54	STRP22-18
22	16-22	SCM-9...SCM-22	1	54	STRP22-22	
STRP-40	26	18-26	SCM-32, SCM-40	1	36	STRP40-26
	36	24-36	SCM-32, SCM-40	1	36	STRP40-36
	40	28-40	SCM-32, SCM-40	1	36	STRP40-40
STRP-85	50	34-50	SCM-50...SCM-85	1	24	STRP85-50
	65	45-65	SCM-50...SCM-85	1	24	STRP85-65
	75	54-75	SCM-50...SCM-85	1	24	STRP85-75
	85	63-85	SCM-50...SCM-85	1	24	STRP85-85
STRP-100	100	65-100	SCM-100...SCM-125	1	12	STRP100-100
	125	85-125	SCM-100...SCM-125	1	12	STRP100-125
STRP150	150	100-150	SCM-150	1	12	STRP150-150
STRP220	180	120-180	SCM-250	1	12	STRP220-180
	240	160-240	SCM-251	1	12	STRP220-240



DIN RAIL Mounting Part for Thermal Overload Relays

Type Code	Compatible with	Order Code
SDR-22	STRP-22	SDR-22
SDR-40	STRP-40	SDR-40
SDR-85	STRP-85	SDR-85



3 Poles Mini Contactors

Coil Voltage: 230V AC

Type	Rated Power at 400V (kW)	Utilization Class AC-3 Ie max (A)	Utilization Class AC-1 Ie max (A)	Auxiliary Contact on Body	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
SCM-6M	2.2	6	20	1NO	1	80	SCM0610230
	2.2	6	20	1NC	1	80	SCM0601230
SCM-9M	4	9	20	1NO	1	80	SCM0910230
	4	9	20	1NC	1	80	SCM0901230
SCM-12M	5.5	12	20	1NO	1	80	SCM1210230
	5.5	12	20	1NC	1	80	SCM1201230
SCM-16M	7.5	16	20	1NO	1	80	SCM1610230
	7.5	16	20	1NC	1	80	SCM1601230



3 Poles Mini Contactors

Coil Voltage: 24V DC



Type Code	Rated Power at 400V (kW)	Utilization Class, AC-3 le max (A)	Utilization Class, AC-1 le max (A)	Auxiliary Contact on Body	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
SDM-6M	2.2	6	20	1NO	1	80	SDM0610024
	2.2	6	20	1NC	1	80	SDM0601024
SDM-9M	4	6	20	1NO	1	80	SDM0910024
	4	9	20	1NC	1	80	SDM0901024
SDM-12M	5.5	12	20	1NO	1	80	SDM1210024
	5.5	12	20	1NC	1	80	SDM1201024
SDM-16M	7.5	16	20	1NO	1	80	SCM1610024
	7.5	16	20	1NC	1	80	SCM1601024

Auxiliary Contact Blocks for Mini Contactors



Type Code	Auxiliary Contact	Type of Assembly	Order Code
SAC-4M	2NO+2NC	Top	SAC-4M22
	3NO+1NC	Top	SAC-4M31
	4NO	Top	SAC-4M40
	4NC	Top	SAC-4M04

Spare Coils for Mini Contactors



Type Code	Coil Voltage	Order Code
SYM-1	24 V AC 50/60 Hz.	SYM1-024AC
	42 V AC 50/60 Hz.	SYM1-042AC
	48 V AC 50/60 Hz.	SYM1-048AC
	110 V AC 50/60 Hz.	SYM1-110AC
	230 V AC 50/60 Hz.	SYM1-230AC
SMD-1	24 V DC	SMD1-024DC
	48 V DC	SMD1-048DC
	110 V DC	SMD1-110DC

Thermal Overload Relays for Mini Contactors



Type Code	Rated Current In (A)	Thermal Setting (A)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
STRM-12	1.6	1-1.6	1	80	STRM12-1.6
	2.5	1.6-2.5	1	80	STRM12-2.5
	4	2.5-4	1	80	STRM12-4
	6	4-6	1	80	STRM12-6
	9	6-9	1	80	STRM12-9
	13	9-13	1	80	STRM12-13
	16	12-16	1	80	STRM12-16

DIN RAIL Mounting Part for Mini-Thermal Overload Relay

Type Code	Compatible Mini Thermal Relay	Order Code
SDR-12	STRM-12	SDR-12

Corresponding Sigma Contactors with other brands (AC-3 Class)

3 Phase Motor (380 V)		Sigma Elektrik	Federal Elektrik	Siemens	Telemecanique	ABB	Legrand	LG	General Electric	K. Moeller
kW	Hp									
4	5	SCM-9	FC-09D	3TF-40	LC1-D910	A9	CTX1 9A	GMC-9	CL00	DILM9
5.5	7.5	SCM-12	FC-12D	3TF-41	LC1-DI210	A12	CTX1 12A	GMC-12	CL01	DILM12
7.5	10	SCM-18	FC-18D	3TF-42	LC1-D1810	A16	CTX1 16A	GMC-18	CL02	DILM15
11	15	SCM-22	FC-25D	3TF-43	LC1-D2510	A26	CTX1 25A	GMC-22	CL025	DILM25
15	20	SCM-32	FC-32D	3TF-44	LC1-D3210	A30	CTX1 32A	GMC-32	CL04	DILM32
18.5	25	SCM-40	FC-40D	3TF-45	LC1-D4011	A40	CTX1 40A	GMC-40	CL45	DILM40
22	30	SCM-50	FC-50D	3TF-46	LC1-D5011	A50	CTX1 50A	GMC-50	CL06	DILM50
30	40	SCM-65	FC-65D	3TF-47	LC1-D6511	A63	CTX1 65A	GMC-65	CL07	DILM65
37	50	SCM-75	FC-80D	3TF-48	LC1-D8011	A75	CTX1 80A	GMC-75	CL08	DILM80
45	60	SCM-85	FC-95D	3TF-49	LC1-D9511	A95	CTX1 95A	GMC-85	CL09	DILM95
55	80	SCM-100	FC-115D	3TF-50	LC1-F115	A110	CTX1 110A	GMC-100	CL10	DILM115
75	100	SCM-150	FC-150D	3TF-51	LC1-F150	EH145	CTX2 150A	GMC-150	CK75	DILM150

Utilization Categories of Contactors

Utilization Category	Load Characteristic	Power Factor	Application Examples	Making Current (I)	Breaking Current (I _c)
AC-1	Non-Inductive loads	$\text{Cos}\theta=0.8$	The most common example is heating system (When 3P contactors are used to control of 1P heating systems, contactor's pole should be serially connected. In case which 2 poles are serially connected, Rated Current (I _n) should be considered at 1,6 times of nominal current (I _e) and if 3 poles are serially connected, 2,25 times of nominal current (I _e).	I _e	I _e
AC-2	Driving Slip-Ring Motors, reversing, stepping operation	$\text{Cos}\theta=0.65$	Lifting and metallurgy applications, wire drawing machines	2.5xI _e	8xI _e
AC-3	Driving Squirrel Cage asynchronous motors, motor stop in operation	I _e <100 A için $\text{Cos}\theta=0.45$ I _e >100 A için $\text{Cos}\theta=0.35$	Compressors, pumps, fans, valves, elevators, conveyors, air conditioner.	6xI _e	8xI _e
AC-4	Driving Squirrel Cage asynchronous motors, reversing operation	I _e <100 A için $\text{Cos}\theta=0.45$ I _e >100 A için $\text{Cos}\theta=0.35$	Printing press machines, wire drawing machines, stepping operation looms	6xI _e	8xI _e

Contactors Selection According to Utilization Categories

Type Code	Rated Power AC-3 (kW) (400-415 V)	Rated Current AC-3 (A) $\theta \leq 55^{\circ}\text{C}$	Rated Current AC-1 (A) $\theta \leq 40^{\circ}\text{C}$	Rated Current AC-1 (A) $\theta \leq 55^{\circ}\text{C}$	Rated Current AC-1 (A) (3 Phases serial)	Rated Current AC-5a (A)	Mechanical Endurance (ope.)	Electrical Endurance (ope) AC-3 $U_e \leq 440\text{ V}$
SCM-9	4	9	25	21	45	9	20.000.000	2.000.000
SCM-12	5,5	12	25	21	45	12	20.000.000	2.000.000
SCM-18	7,5	18	40	34	75	15	20.000.000	2.000.000
SCM-22	11	22	40	34	75	18	20.000.000	2.000.000
SCM-32	15	32	50	42	90	25	20.000.000	2.000.000
SCM-40	18,5	40	60	50	100	28	20.000.000	1.500.000
SCM-50	22	50	80	70	150	38	15.000.000	1.500.000
SCM-65	30	65	100	85	190	43	15.000.000	1.500.000
SCM-75	37	75	110	95	210	48	15.000.000	1.000.000
SCM-85	45	85	135	115	250	60	15.000.000	1.000.000
SCM-100	55	100	160	135	300	70	10.000.000	500.000
SCM-125	60	120	160	135	300	90	10.000.000	500.000
SCM-150	75	150	210	180	400	100	10.000.000	500.000
SCM-180	90	180	230	230	500		5.000.000	500.000
SCM-250	132	250	260	260	550		5.000.000	500.000
SCM-330	200	330	400	400	900		5.000.000	500.000
SCM-400	250	400	500	500	1100		3.000.000	300.000
SCM-630	400	630	1000	1000	2200		3.000.000	300.000

Utilization Categories According to IEC/EN 60947-4-1

Utilization Category	Typical Use
AC-1	Non-Inductive or Slightly Inductive loads (heating systems, resistance furnace e.g..)
AC-2	Driving and/or stopping slip-ring motors. (Lifting and metallurgy applications, wire drawing machines e.g..)
AC-3	Driving Squirrel Cage asynchronous motors, motor stop in operation (Compressors, pumps, fans, valves, elevators, conveyors, air conditioner. e.g..)
AC-4	Stepping Drive Squirrel Cage asynchronous motors, reversing operation, (Printing press machines, wire drawing machines, stepping operation looms)
AC-5a	Switching of electrical discharge lamps (high or lower pressure sodium vapor lamps, mercury discharge lamps)
AC-5b	Switching of Incandescent lamps
AC-6a	Switching of Transformatores
AC-6b	Switching of Capacitor groups
AC-8a	Controlling of Hermetic type compressor's motors which equipped with Manuel-reset thermal overload relays.
AC-8b	Controlling of Hermetic type compressor's motors which equipped with Auto-reset thermal overload relays.
DC-1	Non-Inductive or lower Inductive loads
DC-3	Driving of Shunt Motors, Stepping, reversing, motor stop in operation, dynamic breaking of DC motors
DC-5	Driving of Serial Motors, Stepping, reversing, motor stop in operation, dynamic breaking of DC motors

Motor Protection Switches

Type Code	Rated Power AC3 400V (kW)	Thermal Adjusting Range (A)	Rated Short Circuit Breaking Capacity at 400V Icu (kA)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	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



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-L20	Auxiliary Contact 2NO (Front Mounting)	SMK25-L20
SMK25-L11	Auxiliary Contact 1NO+1NC (Side Mounting)	SMK25-L11
SMK25-DG	Undervoltage Release 380 V	SMK25-DG
SMK25-AB	Shunt Trip Release 230 V	SMK25-AB
SMK25-K	Encloser for Motor Protection Switch	SMK25-K
SMK25-A	Combination block for Contactor (SCM9-40)	SMK25-A



0 - 1 On - Off Cam Switches



Type Code	No 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

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

Motor Starters with Enclosure (DOL)



Type Code	Rated Motor Power (kW) 380 V	Setting Range (A)	Coil Voltage (V) AC	Number in Cartoon (Pcs)	Order Code
SMS009230	0.37	1-1.6	230	1	SMS090037
	0.75	1.6-2.5	230	1	SMS090075
	1.5	2.5-4	230	1	SMS090115
	2.2	4-6	230	1	SMS090220
	3	5-8	230	1	SMS090300
	4	7-10	230	1	SMS090400
SMS012230	5.5	9-13	230	1	SMS0120550
SMS018230	7.5	12-18	230	1	SMS0180750
SMS022230	11	16-22	230	1	SMS0221110
SMS032230	15	24-36	230	1	SMS0321150
SMS040230	18.5	28-40	230	1	SMS0401185
SMS050230	22	34-50	230	1	SMS0501220
SMS065230	30	45-65	230	1	SMS0651300
SMS075230	37	54-75	230	1	SMS0751370
SMS085230	45	63-85	230	1	SMS0851450

LV Current Transformers

Technical Specifications

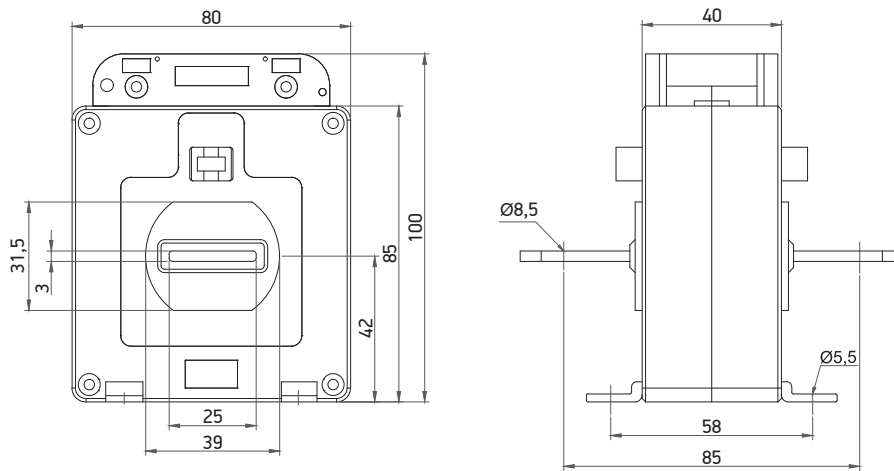
Standard	IEC 60044-1/ 61869-2
Rated operational voltage (Un)	720V
Rated frequency	50/60Hz (on demand 400 Hz)
Ambient temperature	-20/75 °C
Storage temperature	-50/80 °C
Operating humidity	up to 95% relative humidity
Rated Thermal continuous current	1.2In
Rated short time thermal current (Ith)	60xIn / 1 sec. - 100xIn / 1 sec.
Rated dynamic current (Idyn)	2.5 x Ith / 1 sec.
Rated Power-frequency withstand voltage	5kV eff. (50 Hz) /1 min.
Thermal class of insulation	E (120 deg.C max.)
Casing	non-flammable, self extinguishing, glass reinforced PA6
Degree of protection	IP20
Instrument security factor(FS)	5
Secondary terminals	Brass plated nickel M5 screws
Recommended tightening torque	2 Nm (for secondary terminals)
Accuracy class	Metering: 0,2,0,2s,0,5,0,5s,1,3 ; Protection 5P, 10P
Burden	from 1 to 30VA
Rated primary current	up to 5000A
Rated secondary current	1 or 5 A

Main Dimensions

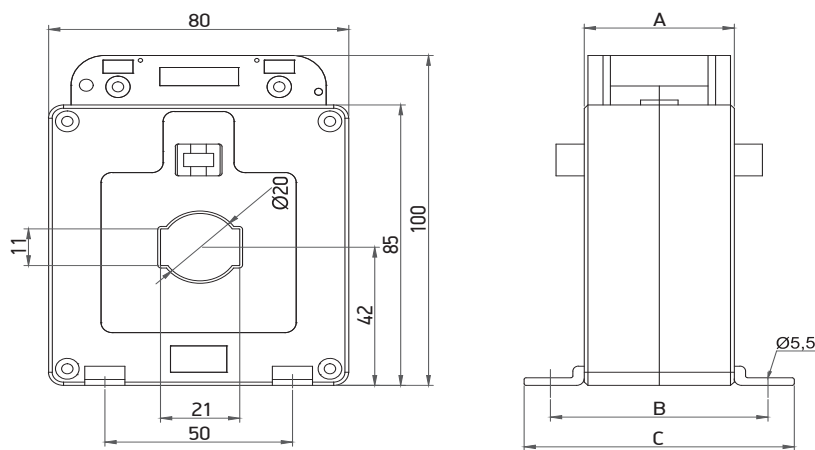
Type	Cable Diameter (mm)	Window (mm)	Busbar (mm)	Cable Section (mm ²)	Outer dimensions (mm) wxhxd
S25BN	—	—	—	2,5.....50	80x100x40
S20	20	21x11	20x10	16.....95	80x100x(40-60)
S20M	20	21x11	20x10	25.....95	62x80x(30-45)
S30	24	31x11	30x10	35.....300	80x100x(40-60)
S30M	24	31x11	30x10	50.....300	62x80x(30-45)
S40	31	41x11	40x10	185.....400	80x100x(40-60)
S50	38	51x11	50x10	—	80x100x(40-60)
S60	46	62x31	60x10	—	107x132x45
S60D	30	61x31	60x10	—	82x134x60
S60A	30	61x31	60x10	—	102x145x40
S80	67	81x31	2x(80x10)	—	145x165x55
S100	62	102x11	100x10	—	145x165x55
S100D	70	101x72	4x(100x10)	—	128x193x61
S125	126	131x11	130x10	—	190x220x55
			3x(125x10)		

Dimensions

S25B

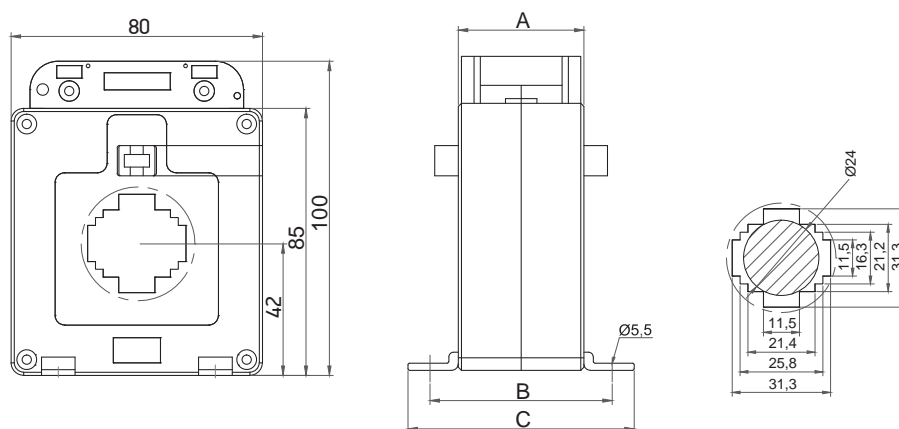


S20



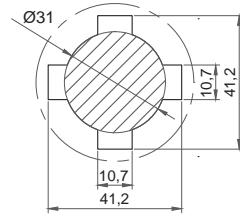
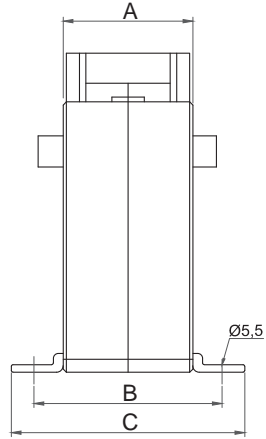
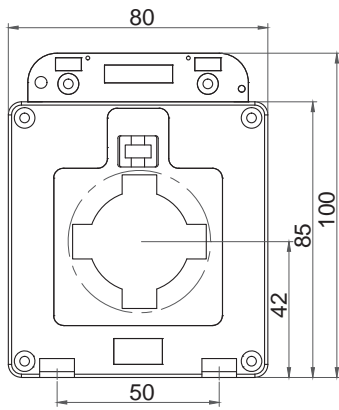
	A	B	C
S20	40	60	72
S20L	60	80	92

S30



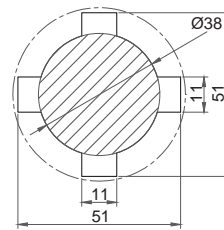
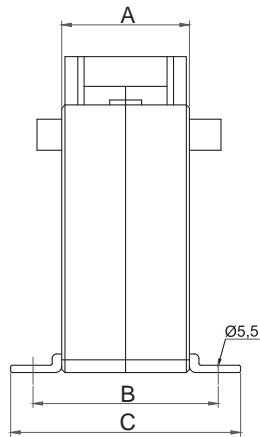
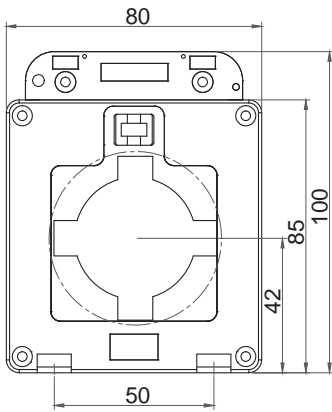
	A	B	C
S30	40	60	72
S30L	60	80	92

S40



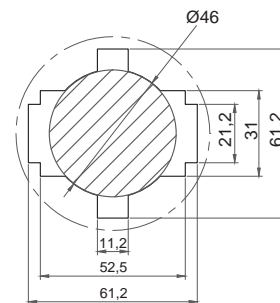
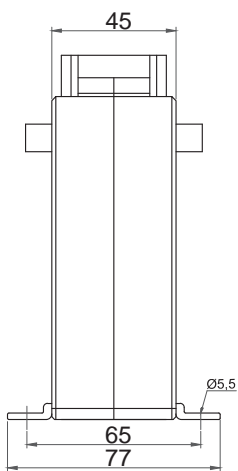
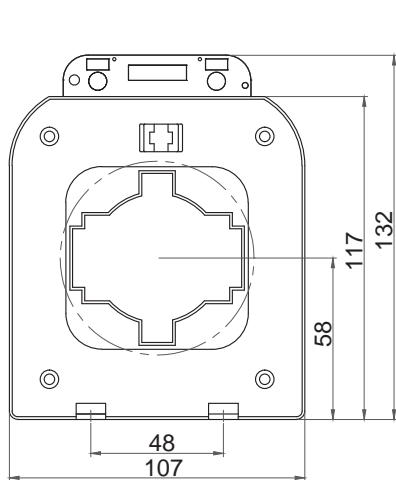
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S40	40	60	72
S40L	60	80	92

S50

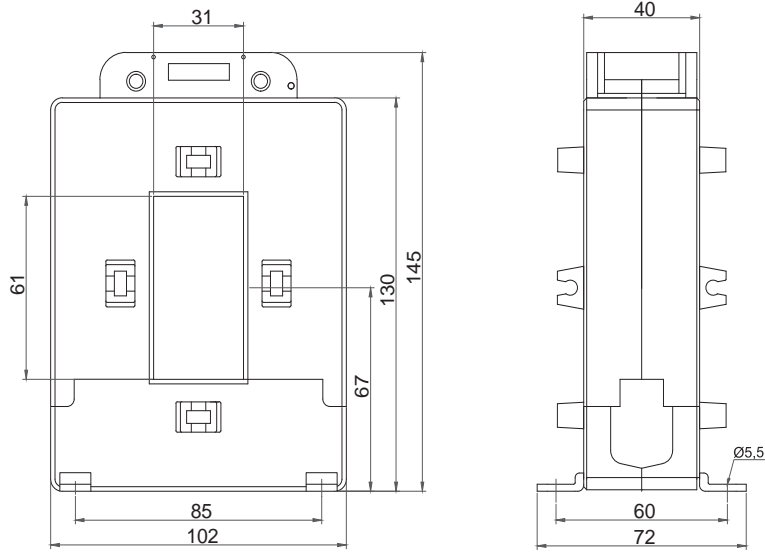


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S50	40	60	72
S50L	60	80	92

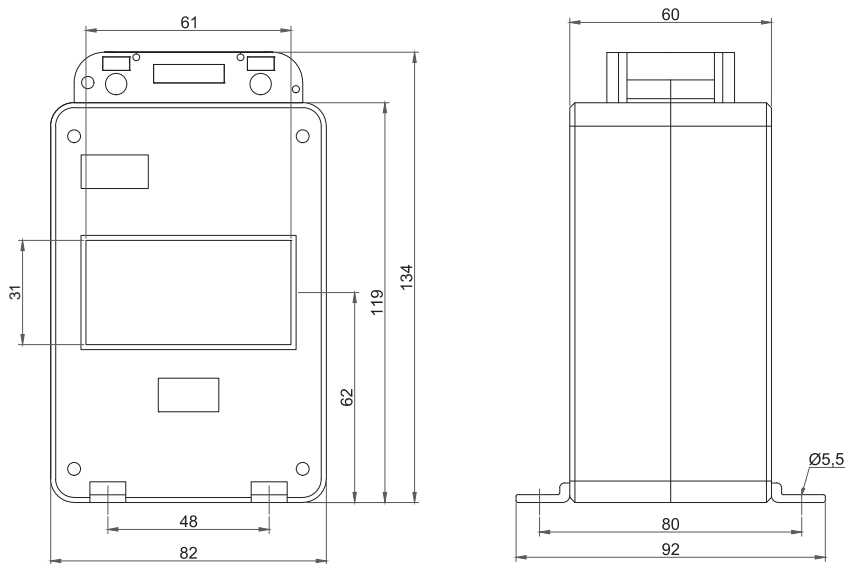
S60



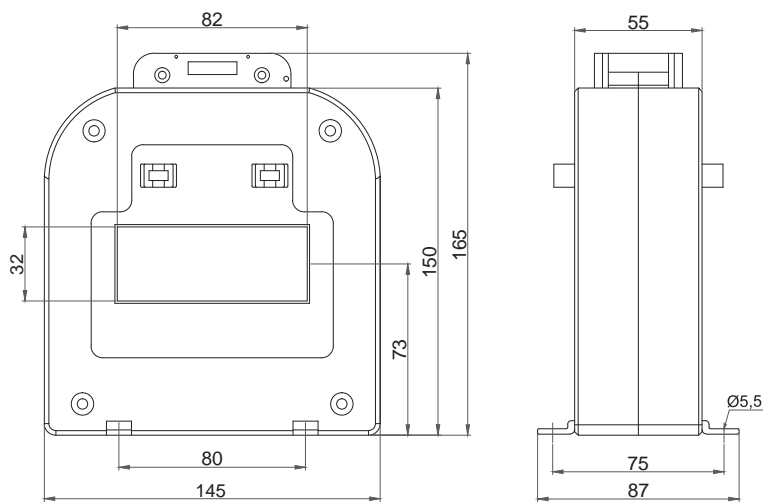
S60A



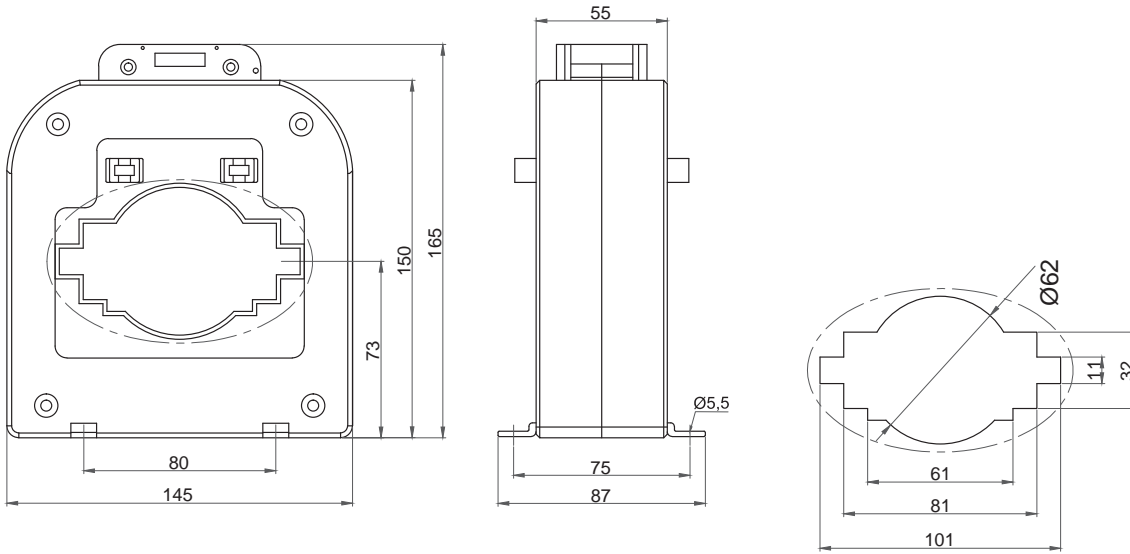
S60D



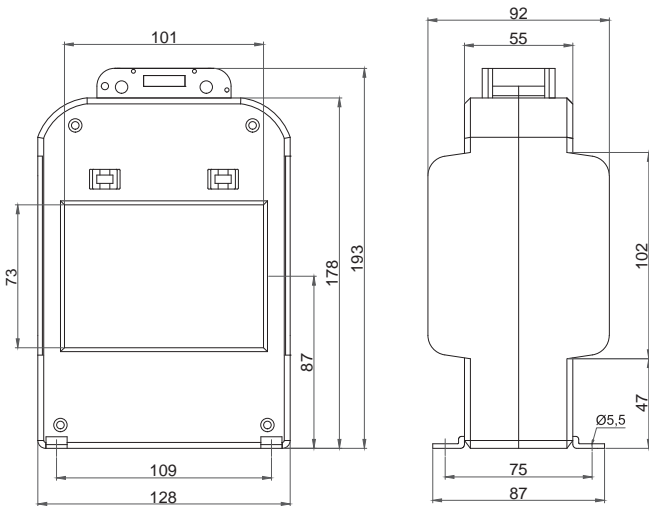
S80



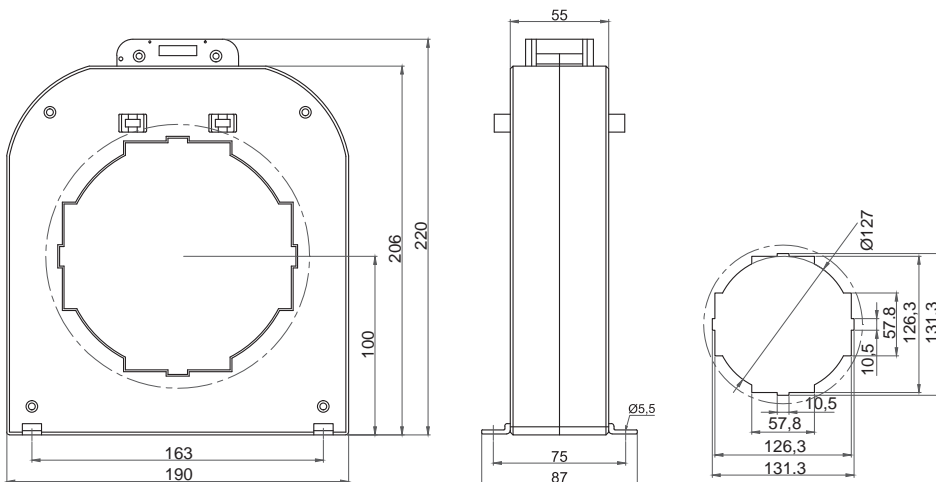
S100



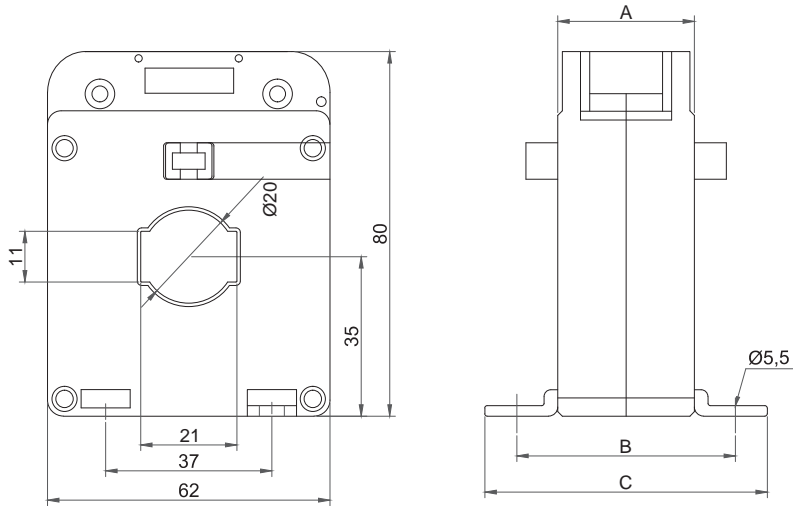
S100D



S125

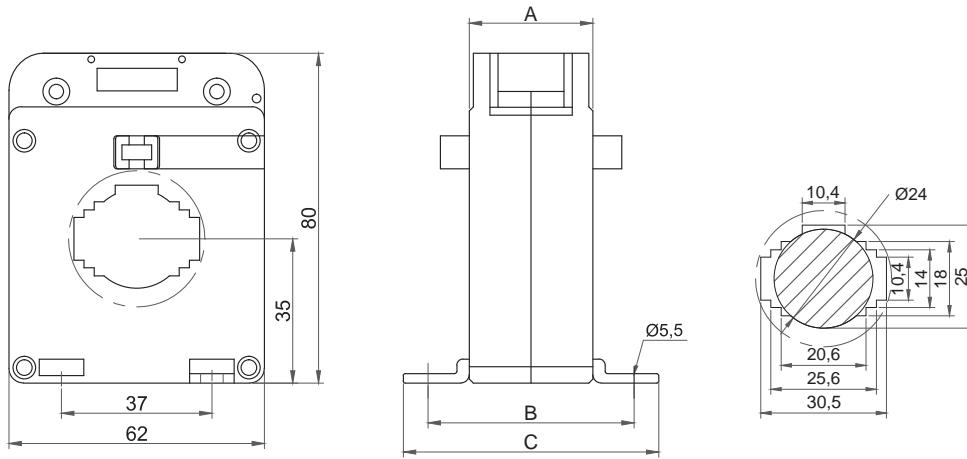


S20M

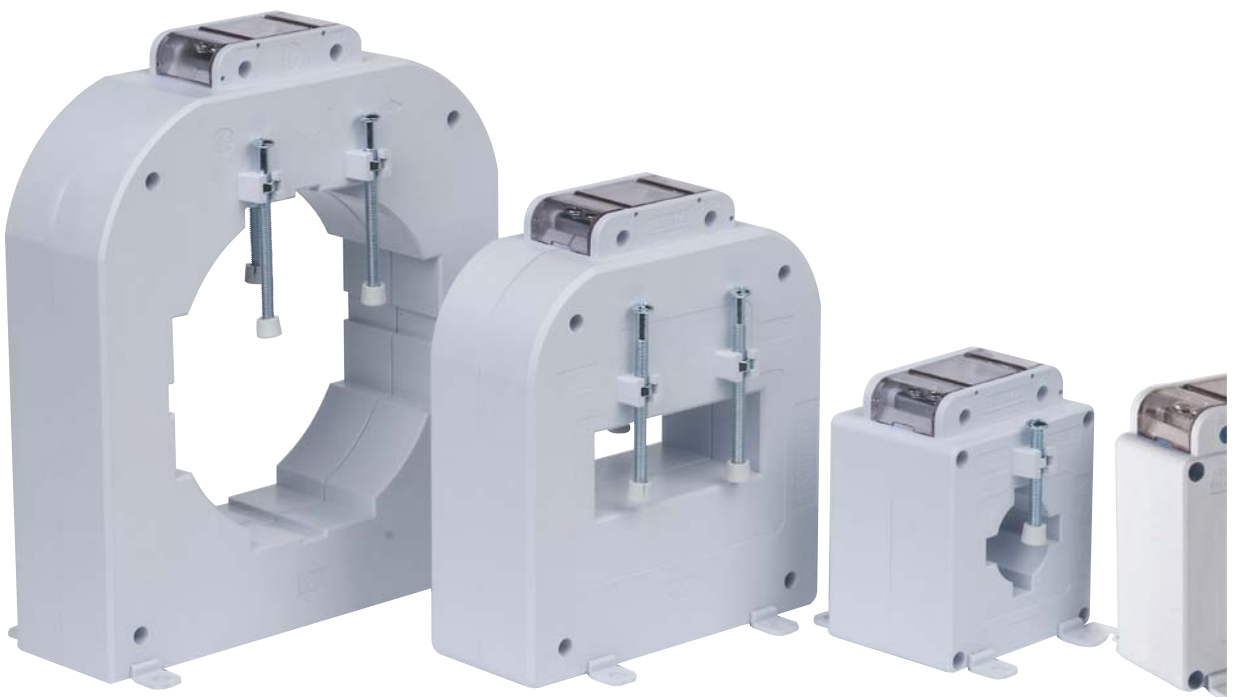


	A	B	C
S20M	30	50	62
S20ML	45	65	77

S30M



	A	B	C
S30M	30	50	62
S30ML	45	65	77



LV Current Transformers

cl: 0.5

Type Code	Primary Current (A)	Burden Rate (VA)	Class (cl)	Bus Bar Dimensions (mm)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
S25B	20	10	0,5	with bus bar	3	24	SS2500200510
	25	10	0,5	with bus bar	3	24	SS2500250510
	30	10	0,5	with bus bar	3	24	SS2500300510
	40	10	0,5	with bus bar	3	24	SS2500400510
	50	10	0,5	with bus bar	3	24	SS2500500510
	60	10	0,5	with bus bar	3	24	SS2500600510
	75	10	0,5	with bus bar	3	24	SS2500750510
	100	10	0,5	with bus bar	3	24	SS2501000510
	125	10	0,5	with bus bar	3	24	SS2501250510
	150	10	0,5	with bus bar	3	24	SS2501500510
S20	100	5	0,5	20X10	3	30	SS2001000505
	125	5	0,5	20X10	3	30	SS2001250505
	150	10	0,5	20X10	3	30	SS2001500510
S30	150	5	0,5	30 X 10	3	30	SS3001500505
	150	10	0,5	30 X 10	3	30	SS3001500510
	200	10	0,5	30 X 10	3	30	SS3002000510
	250	10	0,5	30 X 10	3	42	SS3002500510
	300	10	0,5	30 X 10	3	42	SS3003000510
	400	10	0,5	30 X 10	3	42	SS3004000510
S40	300	10	0,5	40 X 10	3	42	SS4003000510
	400	10	0,5	40 X 10	3	42	SS4004000510
	500	10	0,5	40 X 10	3	42	SS4005000510
	600	10	0,5	40 X 10	3	42	SS4006000510
S50	500	10	0,5	50 X 10	3	42	SS5005000510
	600	10	0,5	50 X 10	3	42	SS5006000510
	750	10	0,5	50 X 10	3	42	SS5007500510
	800	15	0,5	50 X 10	3	42	SS5008000515
	1000	15	0,5	50 X 10	3	42	SS5001000515
S60	750	15	0,5	60 X 10	3	36	SS6007500515
	800	15	0,5	60 X 10	3	36	SS6008000515
	1000	15	0,5	60 X 10	3	36	SS6001000515
S80	750	10	0,5	80 X 10	3	18	SS8007500510
	800	10	0,5	80 X 10	3	18	SS8008000510
	1000	15	0,5	80 X 10	3	18	SS8010000515
	1200	15	0,5	80 X 10	3	18	SS8012000515
	1250	15	0,5	80 X 10	3	18	SS8012500515
	1500	15	0,5	80 X 10	3	18	SS8015000515
S100	1200	15	0,5	100 X 10	3	18	SS1001200515
	1250	15	0,5	100 X 10	3	18	SS1001250515
	1500	15	0,5	100 X 10	3	18	SS1001500515
	1600	15	0,5	100 X 10	3	18	SS1001600515
	2000	15	0,5	100 X 10	3	18	SS1002000515
	2000	30	0,5	100 X 10	3	18	SS1002000530
	2500	15	0,5	100 X 10	3	18	SS1002500515
	2500	30	0,5	100 X 10	3	18	SS1002500530
	3000	30	0,5	100 X 10	3	18	SS1003000530



S25B



S20



S30



S40



S50



S60



S80



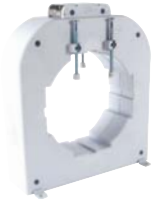
S100

LV Current Transformers

cl: 0.5



S125



S60D



S100D

Type Code	Primary Current (A)	Burden Rate (VA)	Class (cl)	Bus Bar Dimensions (mm)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
S125	2000	15	0,5	3x (125 X 10)	3	12	SS1252000515
	2500	15	0,5	3x (125 X 10)	3	12	SS1252500515
	3000	30	0,5	3x (125 X 10)	3	12	SS1253000530
	4000	30	0,5	3x (125 X 10)	3	12	SS1254000530
	5000	30	0,5	3x (125 X 10)	3	12	SS1255000530
S60D (Narrow Type)	600	5	0,5	60X10	3	36	SD6006000505
	750	7,5	0,5	60X10	3	36	SD6007500507
	1000	10	0,5	60X10	3	36	SD6010000510
	1200	15	0,5	60X10	3	36	SD6012000515
	1250	15	0,5	60X10	3	36	SD6012500515
	1600	15	0,5	60X10	3	36	SD6016000515
S100D (Narrow Type)	600	5	0,5	4x(100x10)	3	12	SD1006000505
	800	7,5	0,5	4x(100x10)	3	12	SD1008000507
	1000	10	0,5	4x(100x10)	3	12	SD1001000510
	1200	15	0,5	4x(100x10)	3	12	SD1001200515
	1250	15	0,5	4x(100x10)	3	12	SD1001250515
	1600	15	0,5	4x(100x10)	3	12	SD1001600515
	2000	15	0,5	4x(100x10)	3	12	SD1002000515
	2500	15	0,5	4x(100x10)	3	12	SD1002500515
	3000	30	0,5	4x(100x10)	3	12	SD1003000530
4000	30	0,5	4x(100x10)	3	12	SD1004000530	

LV Current Transformers

cl: 1



S30



S40

Type Code	Primary Current (A)	Burden Rate (VA)	Class (cl)	Bus Bar Dimensions (mm)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
S30	100	5	1	30x10	3	30	SS3001001005
	150	5	1	30x10	3	30	SS3001501005
	200	5	1	30x10	3	30	SS3002001005
	250	5	1	30x10	3	42	SS3002501005
	300	5	1	30x10	3	42	SS3003001005
	400	5	1	30x10	3	42	SS3004001005
S40	400	5	1	40x10	3	42	SS4004001005
	500	5	1	40x10	3	42	SS4005001005
	600	5	1	40x10	3	42	SS4006001005

LV Current Transformers

cl: 3



S30

Type Code	Primary Current (A)	Burden Rate (VA)	Class (cl)	Bus Bar Dimensions (mm)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
S30	50	2,5	3	30x10	3	30	SS300503002
	60	2,5	3	30x10	3	30	SS300603002
	75	2,5	3	30x10	3	30	SS300753002

Split-Core Type Current Transformers

Type Code	Primary Current (A)	Burden Rate (VA)	Class (cl)	Bus Bar Dimensions (mm)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
S60A	400	3,75	1	60x30	3	18	SA6004001003
	500	5	1	60x30	3	18	SA6005000505
	600	5	0,5	60x30	3	18	SA6006000505
	800	7,5	0,5	60x30	3	18	SA6008000510
	1000	10	0,5	60x30	3	18	SA6010000515



S60A

Mini Type Current Transformers (Assembly to 35mm Din Rail)

Type Code	Primary Current (A)	Burden Rate (VA)	Class (cl)	Bus Bar Dimensions (mm)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
S20M	75	2,5	1	20x10	3	51	SM2000751002
	100	2,5	1	20x10	3	51	SM2001001002
	125	2,5	1	20x10	3	51	SM2001251002
	150	2,5	0,5	20x10	3	51	SM2001500502
	200	3,75	0,5	20x10	3	51	SM2002000503
	150	5	1	20x10	3	51	SM2001501005
	200	5	1	20x10	3	51	SM2002001005
S30M	150	2,5	0,5	30X10	3	51	SM3001500502
	200	2,5	0,5	30X10	3	51	SM3002000502
	200	5	0,5	30X10	3	51	SM3002000505
	250	10	0,5	30X10	3	51	SM3002500510
	300	10	0,5	30X10	3	51	SM3003000510
	400	10	0,5	30X10	3	51	SM3004000510
	500	10	0,5	30X10	3	51	SM3005000510
	600	10	0,5	30X10	3	51	SM3006000510
	150	5	1	30X10	3	51	SM3001501005
	200	5	1	30X10	3	51	SM3002001005
	250	5	1	30X10	3	51	SM3002501005
	300	5	1	30X10	3	51	SM3003001005
	400	5	1	30X10	3	51	SM3004001005
	500	5	1	30X10	3	51	SM3005001005
	600	5	1	30X10	3	51	SM3006001005



S20M



S30M

Determination of Current Transformer's Power

The below formula can be used to determine current transformer's power. The most important matter is; determined power of current transformer should not exceed from maximum load of transformer power and not less than 1/4 of rated power. Otherwise, It may cause fault measuring or create fault protection signals.

$$P_s = P_A + P_K + P_T$$

Distance between Current Transformer and Load (meter)	Cable Loss (P_K) according to Secondary cable section			
	2.5 mm ²	4 mm ²	6 mm ²	10 mm ²
1 m	0,36	0,22	0,15	0,09
2 m	0,71	0,45	0,3	0,18
3 m	1,07	0,67	0,45	0,27
4 m	1,43	0,89	0,6	0,36
5 m	1,78	1,12	0,74	0,44
6 m	2,14	1,34	0,89	0,54
7 m	2,5	1,56	1,04	0,63
8 m	2,86	1,79	1,19	0,71
9 m	3,21	2,01	1,34	0,80
10 m	3,57	2,24	1,49	0,89

**You can use this formula to calculate Cable Loss which Apart from above mentioned cable length.

(P_s) Total Secondary Power (VA)

(P_A) Secondary rated Power (VA)

(P_K) Dielectric Cable Loss (VA)

(P_T) Contact Loss (considered 0.5 VA)

$$P_K = (I_{sn}^2 \times 2L) / S \times 56$$

I_{sn} = Secondary Rated Current (A)

L = length of the cable on secondary side (m)

S = Section of copper cable (mm²)

56 = Conductivity of Copper Cable (m/ohm x mm²)



Power of devices connected to current transformers (P_A)

Device	Power (VA)
Ammeter	0,7 1,5
Watt meter	0,2 5,0
CosØmeter	2,0 6,0
Counters (active and reactives)	0,4 1,0
Reactive power control relays	0,5 1,0
Over current relays	0,2 6,0
Reverse current relays	1,0 2,0
Secondary Thermal Relays	7,2 9,0

Current error and Phase shifting limits (According to IEC 60044-1, IEC 385 class 0.1-0.2-0.5-1)

Accuracy Class	Current (proportion) error \pm percentage for the rated currents given below				\pm phase shifting for rated current percentages given below							
					Minutes				Centi-radians			
	%5	%20	%100	%120	%5	%20	%100	%120	%5	%20	%100	%120
0,1	0,4	0,2	0,1	0,1	15	5	5	5	0,45	0,24	0,15	0,15
0,2	0,75	0,35	0,2	0,2	30	10	10	10	0,9	0,45	0,3	0,3
0,5	1,5	0,75	0,5	0,5	90	30	30	30	2,7	1,35	0,9	0,9
1,0	3,0	1,5	1,0	1,0	180	90	60	60	5,4	2,7	1,8	1,8

When current fault and phase shift at rated frequency varies between 1/1 and 1/4 of the secondary load, rated load, the values in the table should not be exceeded

Necessary information for Current Transformer order

- Transforming ratio.....(20/5 A ...5000/5 A)
- Secondary current..... (1A or 5A)
- Window Dimensions.....(20-30-40-50-60-80-100-125 mm)
- Secondary Burden Rate...(from 1VA to 30 VA)
- Accuracy Class.....(0.1 - 0.2 - 0.2s - 0.5 - 0.5s - 1 - 3)



Digital Measurement Devices



Type Code	Description	Dimensions (mm)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
SD 72A	Ammeter with Current Transformer 1-5000/5A	72x72	1	72	SD72A-5000
SD 96A	Ammeter with Current Transformer 1-5000/5A	96x96	1	72	SD96A-5000
SD 72V	Voltmeter 0-600 V AC	72x72	1	72	SD72V-0600
SD 96V	Voltmeter 0-600 V AC	96x96	1	72	SD96V-0600
SD 96M	I-V-Hz Multimetre	96x96	1	72	SD96M-0600

Analogue Ammeters



Type Code	Description	Diameter (mm)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
SA 72A	Analogue Ammeter 30A, Direct Connection	72x72	1	48	SA72A-D030
	Analogue Ammeter 50A, Direct Connection	72x72	1	48	SA72A-D050
	Analogue Ammeter 100A, Direct Connection	72x72	1	48	SA72A-D100
	Ammeter for X/5 A Current Transformer	72x72	1	48	* SA72A-X
SA 96A	Analogue Ammeter 30A, Direct Connection	96x96	1	27	SA96A-D030
	Analogue Ammeter 50A, Direct Connection	96x96	1	27	SA96A-D050
	Analogue Ammeter 100A, Direct Connection	96x96	1	27	SA96A-D100
	Ammeter for X/5 A Current Transformer	96x96	1	27	*SA96A-X

Analogue Voltmeters



Type Code	Description	Dimensions (mm)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
SA 72V	Analogue Voltmeter 0-250 V AC	72x72	1	48	SA72V-0250
	Analogue Voltmeter 0-500 V AC	72x72	1	48	SA72V-0500
SA 96V	Analogue Voltmeter 0-250 V AC	96x96	1	27	SA96V-0250
	Analogue Voltmeter 0-500 V AC	96x96	1	27	SA96V-0500

Analogue Ammeters with Demandmeter



Type Code	Description	Dimensions (mm)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
SA 72D	Ammeter with Demand meter 250/5 A (15 min)	72x72	1	48	SA72D-0250
	Ammeter with Demand meter 400/5 A (15 min)	72x72	1	48	SA72D-0400
	Ammeter with Demand meter 600/5 A (15 min)	72x72	1	48	SA72D-0600
	Ammeter with Demand meter 1000/5 A (15 min)	72x72	1	48	SA72D-1000
SA 96D	Ammeter with Demand meter 250/5 A (15 min)	96x96	1	27	SA96D-0250
	Ammeter with Demand meter 400/5 A (15 min)	96x96	1	27	SA96D-0400
	Ammeter with Demand meter 600/5 A (15 min)	96x96	1	27	SA96D-0600
	Ammeter with Demand meter 1000/5 A (15 min)	96x96	1	27	SA96D-1000

LV Power Capacitors

(Dry, cylindrical type, self healing, overpressing protection)

Type Code	Power (kVAr) (230V)	Type	Voltage(V)	Diameters DxH (mm)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
1SK230	0.25	1 Phase	230	76x105	3	3	1SK230-0.25
	0.5	1 Phase	230	76x105	3	3	1SK230-0.5
	1	1 Phase	230	76x105	3	3	1SK230-1
	1.5	1 Phase	230	76x105	3	3	1SK230-1.5
	2.5	1 Phase	230	76x120	3	3	1SK230-2.5
3SK400	1,0	3 Phases	400	65x175	3	10	3SK400-1
	1,5	3 Phases	400	65x175	3	10	3SK400-1.5
	2,5	3 Phases	400	65x175	3	10	3SK400-2.5
	5,0	3 Phases	400	76x175	3	7	3SK400-5
	7,5	3 Phases	400	76x240	3	7	3SK400-7.5
	10,00	3 Phases	400	76x240	3	7	3SK400-10
	12,5	3 Phases	400	86x240	3	5	3SK400-12.5
	15,0	3 Phases	400	96x240	3	4	3SK400-15
	20,0	3 Phases	400	106x240	3	3	3SK400-20
	25,0	3 Phases	400	116x240	3	3	3SK400-25
	30,0	3 Phases	400	116x285	3	3	3SK400-30
	40	3 Phases	400	116x325	3	2	3SK400-40
	50	3 Phases	400	137x400	3	2	3SK400-50
3SK440	1,0	3 Phases	440	65x175	3	10	3SK440-1
	1,5	3 Phases	440	65x175	3	10	3SK440-1.5
	2,5	3 Phases	440	65x175	3	10	3SK440-2.5
	5,0	3 Phases	440	65x175	3	7	3SK440-5
	7,5	3 Phases	440	65x240	3	7	3SK440-7.5
	10,00	3 Phases	440	76x240	3	7	3SK440-10
	12,5	3 Phases	440	76x240	3	5	3SK440-12.5
	15,0	3 Phases	440	86x240	3	4	3SK440-15
	20,0	3 Phases	440	96x240	3	3	3SK440-20
	25,0	3 Phases	440	106x240	3	3	3SK440-25
	30,0	3 Phases	440	116x240	3	3	3SK440-30
	40	3 Phases	440	116x325	3	2	3SK440-40
50	3 Phases	440	137x400	3	2	3SK440-50	



LV Power Capacitors

Coil Voltage: 230V AC

Contactors for Capacitor Bank

Type Code	Rated Capacitor Power at 220/240V (kVAr)	Rated Capacitor Power at 380/440V (kVAr)	Auxiliary Contact	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
SCK-18	5	5	1NO+1NC	1	32	SCK018
SCK-22	6	10	1NO+1NC	1	32	SCK022
SCK-32	8	15	1NO+1NC	1	32	SCK032
SCK-40	12	20	1NO+1NC	1	32	SCK040
SCK-50	15	25	1NO+1NC	1	8	SCK050
SCK-65	20	33,3	1NO+1NC	1	8	SCK065
SCK-75	22	40	1NO+1NC	1	8	SCK075
SCK-85	33,3	50	1NO+1NC	1	8	SCK085



Reactive Power Control Relay



Type Code	Description	Dimensions (mm)	Min. Order Quantity (Pcs)	Number in Cartoon (Pcs)	Order Code
SR144	Reactive Power Controller ,12 Steps, Digital , controlling monophas capacitors, Led Display showing each single phase	144x144	1	6	SR144-012

LV Capacitor Bank Component Selection

400 V AC 3 Phases Capacitor			Cable	L.V. Circuit Breaker		Mcb	Contactor for Capacitor Bank	Power Contactor
Type Code	Rated Power (kVAr)	Rated Current (A)	Section (mm ²)	Type	Rated Current (A)	Rated Current (A)	Type	Type
3SK400-1	1,0	1,4	2,5			C6	SCK-18	SCM-18
3SK400-1.5	1,5	2,16	2,5			C10	SCK-18	SCM-18
3SK400-2.5	2,5	3,6	2,5			C10	SCK-18	SCM-18
3SK400-5	5,0	7,2	2,5	C160, K160	20	C16	SCK-18	SCM-22
3SK400-7.5	7,5	10,80	2,5	C160, K160	20	C20	SCK-22	SCM-32
3SK400-10	10,00	14,40	4	C160, K160	32	C25	SCK-22	SCM-40
3SK400-12.5	12,5	18,00	6	C160, K160	40	C32	SCK-32	SCM-50
3SK400-15	15,0	21,60	6	C160, K160	40	C40	SCK-32	SCM-65
3SK400-20	20,0	28,80	10	C160, K160	50	C50	SCK-40	SCM-75
3SK400-25	25,0	36,00	16	C160, K160	63	C63	SCK-50	SCM-85
3SK400-30	30,0	43,20	25	C160, K160	80	C80	SCK-65	SCM-100
3SK400-40	40	57,6	35	C160, K160	100	C100	SCK-75	SCM-125
3SK400-50	50	72	35	C160, K160	125	C125	SCK-85	SCM-150

QUALITY CERTIFICATES

ISO 9001 Quality Management System Certificate

Domestic Goods Certificate

ISO 14001 Environment Management Certificate



CE Certificate of Conformity

TÜV Certificates



Conformity Certificates of Turkish Standards



GOST-R Certificates

UKRSEPRO Certificate





Sigma
Moulded Case
Circuit Breaker
S400
Icu 70 kA
Ics 75% Icu

Sigma
Alçak Gerilim
Devre Kesicisi
400 A
I_n 400A
I_{im} 2000-4000A · 20%
CE
IEC 60947-2
TS EN 60947-2

Sigma
Moulded Case
Circuit Breaker
250
70 kA
75% Icu
400/415 V -
750 V -
U_{imp} 8 kV -
50-60 Hz
Ta 40°C

Sigma
Moulded Case
Circuit Breaker
M160
Icu 50 kA
Ics 75% Icu
Ue 400/415 V -
U_i 750 V -
U_{imp} 8 kV -
Fn 50-60 Hz
40°C

Sigma
Alçak Gerilim
Devre Kesicisi
160 A
I_n 160A
I_{im} 1600A · 20%
CE
IEC 60947-2
TS EN 60947-2



Sigma

Moulded Case
Circuit Breaker

A400

Icu 36 kA
Ics 75% Icu
Ue 400/415 V -
Ui 750 V -
Uimp 8 kV -
Fn 50-60 Hz
Ta 40°C

OFF

315

Sigma

Alçak Gerilim

Sigma

Moulded Case
Circuit Breaker

A 250

Icu 36 kA
Ics 75% Icu
Ue 400/415 V -
Ui 750 V -
Uimp 8 kV -
Fn 50-60 Hz
Ta 40°C

TEST

Sigma

Moulded Case
Circuit Breaker

A 160

Icu 25 kA
Ics 75% Icu
Ue 400/415 V -
Ui 750 V -
Uimp 8 kV -
Fn 50-60 Hz
Ta 40°C

OFF

160A

Sigma

Alçak Gerilim
Devre Kesicisi

160 A

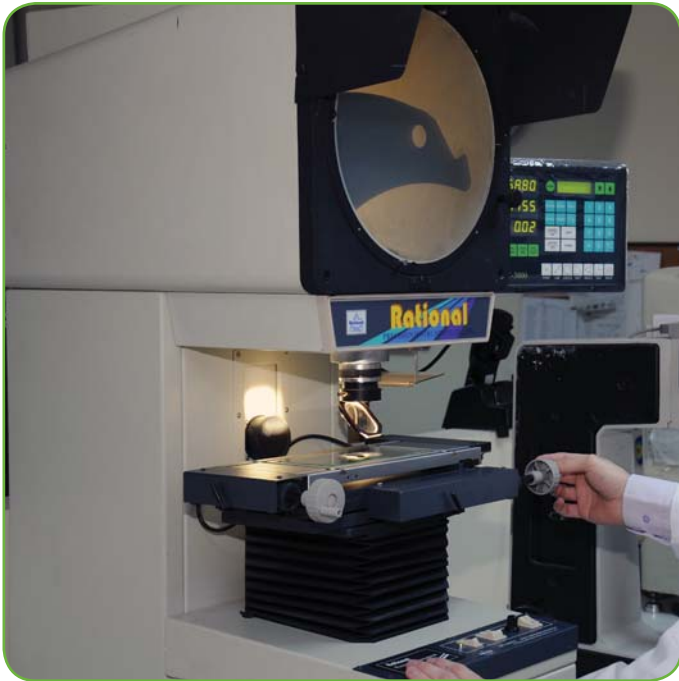
I_r 160A
 I_m 1600 A \pm 20%

CE

IEC 60947-2
TS EN 60947-2



TEST



Sigma Elektrik San. ve Tic. A.Ş.

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