

CONTACTORS & OVERLOAD RELAYS



*Switch on
to the Best*





Introduction

Salzer was established in 1985 with German Collaboration for Rotary switches to bring to the Indian Industry world class technology in Low voltage switchgear Products, coupled with dependability and excellence in service, to the delight of all end users.

We seek to understand the requirements of our clients and provide them the perfect electrical solution. All our ongoing developmental activities for innovative and value-added products are driven by this sense of responsibility.

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Standard Contactors - Non Reversing (SC)

SC series contactors are ideal for motors, actuator, solenoid and other power switching applications they carry.



markings which makes them suitable for use anywhere in the world.

Features

High fault short circuit rating of 100kA @ 600V with Class J Fuses.

Overload Relays direct in mount onto RC Series Reversing Contactors, reducing installation time and space.

MP Series Motor Protection Circuit Breakers direct mount onto RC Series 9-40A Non Reversing AC/DC Contactors

AC and DC operating coils for control circuit application flexibility. 50A to 80A DC operated devices featured electronic coil control.

Environmentally friendly contacts are cadmium free and non-metallic materials are asbestos, halogen.

IP 20 guarded terminal to prevent accidental contacts from live parts.

IEC and NEMA terminal markings for ease of wiring anywhere in the world.

Devices identification marker for labeling in all contactors and front mounted auxiliary contacts simplifies trouble shooting in panels with many contactors.

Power wiring modules provide reliable, rigid interconnections between the forward and reverse contactors.

Combination head terminal screws allow the use of that, phillips or pozidrive screwdrivers.

Allen head screws on 50A through 80A contactors make it easy to apply the proper terminal tightening torque for secure conductor connections.

Snap-on front mounted auxiliary contacts install without the use of tools for lower installed cost.

Unique Product Features



4 TERMINAL COILS

4 terminal coils on 9A – 105A AC and DC operated contactors are easily accessible on contactor and overload relay assemblies or contactor and motor protection circuit breaker assemblies. The control circuit can be wired from the line side or the load side of the contactor, whichever is most convenient for the installation. Control circuit wire runs can be minimised, and the devices can be easily substituted in your existing equipment without disturbing or changing your control wires. So no matter what components are being used, SC series Contactors can be easily and quickly wired, reducing your labour and installation costs.

Standard Contactors - Reversing (RC)

RC series contactors are ideal for Reversing motors applications. Their panel space is a premium and device modularity is required to satisfy virtually any application requirement.

   makes them suitable anywhere in the world.

RC Reversing Contactors consist of an assembly of Standard Contactors along with interlock & wiring modules. These are in the form for direct application as Reversing Contactor and to be used in a panel or in an enclosure.

A common mechanical electrical interlock, power wiring modules and IP20 guarded terminals with dual terminal marking and shared accessories will help reduce your total installed cost and enhance the features and performance of your equipment.

Features

High fault short circuit rating of 100kA @ 600V with Class J Fuses.

Overload Relays directly mount onto RC Series Reversing Contactors, reducing installation time and space.

MP Series Motor Protection Circuit Breakers direct mount onto RC Series 9-40A Non Reversing AC/DC Contactors

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Snap-on front mounted auxiliary contacts install without the use of tools for lower installed cost.

Unique Product Features



INTERLOCK

RC series Reversing Contactors feature a single side mounted electrical and mechanical or mechanical only interlock that is used for the whole range of contactors, enabling a 9A contactor to be interlocked with a 105A contactor. The side mounted interlock doesn't increase the depth of the contactor and doesn't prevent front mounted auxiliary contacts from being added to either the forward or reverse contactors. Contactors are physically secured together with a dovetail bracket that installs from the bottom of the contactor – so it can't fall out when it is installed on a DIN rail or on a panel, even in high vibration applications.

Standard Contactors

IS/IEC-60947-4-1

Technical Specifications

		SC009	SC012	SC018	SC025	SC032	SC040	SC050	SC065	SC080	SC095	SC105
ELECTRICAL GENERAL	Units											
Rated operating frequency	Hz	25 ~ 400										
Impedence per pole	mΩ	2.35	2.35	2.41	1.65	1.28	0.95	0.85	0.86	0.86	0.76	0.76
Power dissipation per pole												
AC - 1	W	1.47	1.47	2.46	3.34	4.6	3.42	6.89	10.4	10.4	14.89	14.89
AC - 3	W	0.19	0.34	0.78	1.03	1.31	1.52	2.12	3.63	5.5	6.86	8.37
Rated coil frequency		AC: 50Hz, 60Hz, 50/60Hz and DC										
IEC RATING												
Rated Insulation voltage, Ui	V	1000										
Rated Impulse voltage withstand, Uimp	KV	6	6	6	6	6	6	8	8	8	8	8
Rated operating voltage, Ue	V	690							1000			
Rated thermal current, Ith for Ambient Temperature < 40°C	A	25	25	32	32	60	60	90	110	110	140	140
MAKING CAPACITY	A	300	300	300	450	550	550	1000	1000	1000	1280	1280
BREAKING CAPACITY												
Ue ≤ 400V	A	250	250	250	350	450	450	920	920	920	1050	1050
Ue = 500V	A	250	250	250	350	450	450	920	920	920	1050	1050
Ue = 690V	A	130	130	130	170	205	780	780	780	780	950	950
AC-1 OPERATING CURRENT, Ie												
At 40° C	A	25.0	25.0	32.0	32.0	60.0	60.0	90.0	110.0	110.0	140.0	140.0
At 70° C	A	20.0	20.0	25.0	25.0	48.0	48.0	72.0	88.0	88.0	110.0	110.0
AC-3 OPERATING CURRENT, Ie												
220 ~ 240V	A	9.0	12.0	18.0	25.0	32.0	40.0	50.0	65.0	80.0	95.0	105.0
380 ~ 400V	A	9.0	12.0	18.0	25.0	32.0	40.0	50.0	65.0	80.0	95.0	105.0
415 ~ 440V	A	9.0	12.0	18.0	25.0	32.0	40.0	50.0	65.0	80.0	95.0	105.0
500V	A	7.5	10.5	14.0	19.0	24.0	32.0	38.0	55.0	63.0	79.0	85.0
660 ~ 690V	A	7.0	9.0	13.0	15.0	22.0	25.0	34.0	44.0	48.0	60.0	80.0
AC-3 OPERATING POWER, Pe												
220 ~ 240V	kW	2.2	3.0	4.5	6.5	9.2	11.0	15.0	18.5	22.0	25.0	30.0
380 ~ 400V	kW	4.0	5.5	7.5	12.5	15.0	18.5	22.0	30.0	40.0	45.0	55.0
415 ~ 440V	kW	4.5	6.5	9.2	12.5	15.0	22.0	30.0	37.0	45.0	55.0	59.0
500V	kW	4.5	6.5	10.0	12.5	15.0	25.0	30.0	40.0	45.0	55.0	59.0
660 ~ 690V	kW	5.5	7.5	11.0	12.5	18.5	25.0	30.0	45.0	45.0	55.0	65.0
AC-4 OPERATING CURRENT, Ie												
220 ~ 240V	A	7.5	10.0	15.0	20.8	26.7	33.3	41.7	54.2	66.7	79.2	87.5
380 ~ 400V	A	7.5	10.0	15.0	20.8	26.7	33.3	41.7	54.2	66.7	79.2	87.5
415 ~ 440V	A	7.5	10.0	15.0	20.8	26.7	33.3	41.7	54.2	66.7	79.2	87.5
500V	A	6.3	8.8	11.7	15.8	20.0	26.7	31.7	45.8	52.5	65.8	70.8
660 ~ 690V	A	5.8	7.5	10.8	12.5	18.3	20.8	28.3	36.7	40.0	50.0	66.7

Standard Contactors

UL 60947-4-1

Technical Specifications (Contd.)

		SC009	SC012	SC018	SC025	SC032	SC040	SC050	SC065	SC080	SC095	SC105
	Units											
UL RATING												
General Purpose Current Rating	A	25	25	32	32	60	60	90	110	110	140	140
RATED 1 PHASE OPERATING CURRENT, I_e												
115V	A	9.8	13.8	16.0	24.0	34.0	34.0	34.0	56.0	80.0	80.0	100.0
230V	A	10.0	12.0	17.0	17.0	28.0	28.0	40.0	40.0	50.0	68.0	88.0
RATED 1 PHASE OPERATING POWER, P_e												
115V	HP	1/2	3/4	1	2	3	3	3	5	7.1/2	7.1/2	10
230V	HP	1.1/2	2	3	3	5	5	7.1/2	10	15	15	20
RATED 3 PHASE OPERATING CURRENT, I_e												
200V	A	11.0	11.0	17.5	25.3	32.2	32.2	48.3	62.1	62.1	78.2	92.0
230V	A	9.6	9.6	15.2	22.0	28.0	42.0	42.0	54.0	68.0	80.0	104.0
460V	A	7.6	11.0	14.0	21.0	27.0	40.0	52.0	65.0	65.0	77.0	96.0
575V	A	9.0	11.0	17.0	17.0	27.0	27.0	41.0	52.0	62.0	77.0	77.0
RATED 3 PHASE OPERATING POWER, P_e												
200V	HP	3.0	3.0	5.0	7.1/2	10.0	10.0	15.0	20.0	20.0	25.0	30.0
230V	HP	3.0	3.0	5.0	7.1/2	10.0	15.0	15.0	20.0	25.0	30.0	40.0
460V	HP	5.0	7.1/2	10.0	15.0	20.0	30.0	40.0	50.0	50.0	60.0	75.0
575V	HP	7.1/2	10.0	15.0	15.0	25.0	25.0	40.0	50.0	60.0	75.0	75.0
SCCRs												
STANDARD FAULT TEST												
Short Circuit Current Rating	kA	5						10				
Maximum Fuse Size	A	30	30	60	60	60	60	100	125	150	200	200
HIGH FAULT TEST												
Short Circuit Current Rating	kA	100										
Maximum Fuse Size	A	25	25	40	40	50	60	90	100	125	175	175
ELECTRICAL ENDURANCE												
@Maximum rated 3 Phase Operating Power (460V)	Ops. (mill.)	1.8	2.0	1.6	1.6	1.5	1.5	1.6	1.8	1.5	1.5	1.0
COIL CHARACTERISTICS												
Rated Insulation Voltage, U _i	V	1000										
OPERATING LIMITS 50HZ, 60HZ, 50/60HZ												
Operating	%	80% to 110%										
Pick - up	%	60% to 80%					65% to 80%					
Sealed	%	35% to 55%					40% to 60%					
DC												
Operating	%	80% to 110%										
Pickup	%	45% to 75%					60% to 80%					
Sealed	%	15% to 30%					25% to 60%					

Standard Contactors

Technical Specifications (Contd.)

		SC009	SC012	SC018	SC025	SC032	SC040	SC050	SC065	SC080	SC095	SC105
	Units											
AC-4 OPERATING POWER, Pe												
220 ~ 240V	kW	1.5	2.2	4.0	5.5	5.5	7.5	11.0	15.0	18.5	22.0	22.0
380 ~ 400V	kW	3.0	4.0	5.5	7.5	11.0	15.0	22.0	22.0	37.0	37.0	45.0
415 ~ 440V	kW	3.0	4.0	5.5	7.5	11.0	15.0	22.0	22.0	37.0	37.0	45.0
500V	kW	3.0	4.0	5.5	7.5	11.0	15.0	18.5	30.0	30.0	45.0	45.0
660 ~ 690V	kW	4.0	5.5	7.5	7.5	15.0	18.5	22.0	30.0	37.0	45.0	55.0
AC-4 OPERATING CURRENT Ie @ 200,000 OPERATIONS												
220 ~ 240V	A	2.7	3.6	5.5	7.6	9.7	12.1	15.2	19.7	24.2	28.8	31.8
380 ~ 400V	A	2.7	3.6	5.5	7.6	9.7	12.1	15.2	19.7	24.2	28.8	31.8
415 ~ 440V	A	2.7	3.6	5.5	7.6	9.7	12.1	15.2	19.7	24.2	28.8	31.8
500V	A	2.3	3.2	4.2	5.8	7.3	9.7	11.5	16.7	19.1	23.9	25.8
660 ~ 690V	A	2.1	2.7	3.9	4.5	6.7	7.6	10.3	13.3	14.5	18.2	24.2
AC-4 OPERATING POWER Pe @ 200,000 OPERATIONS												
220 ~ 240V	kW	0.55	0.75	1.1	1.5	2.2	3.0	4.0	4.0	5.5	7.5	7.5
380 ~ 400V	kW	1.1	1.5	2.2	3.0	4.0	5.5	5.5	7.5	11.0	11.0	15.0
415 ~ 440V	kW	1.1	1.5	2.2	3.0	4.0	5.5	5.5	7.5	11.0	11.0	15.0
500V	kW	1.1	1.5	2.2	3.0	4.0	5.5	5.5	7.5	11.0	15.0	15.0
660 ~ 690V	kW	1.5	1.5	3.0	3.0	5.5	5.5	7.5	11.0	11.0	15.0	22.0
SHORT CIRCUIT COORDINATION												
Short Circuit Current Rating	kA	5						10				
Type "1" gL/gG	A	50	50	63	63	100	125	200	200	200	250	250
Type "2" gL/gG	A	25	35	35	50	63	80	100	125	125	160	200
RATED SHORT TIME CURRENT, Icw												
1 second	A	455	455	570	630	1010	1265	1580	2530	2530	3300	3300
5 seconds	A	205	205	254	280	450	450	710	1130	1130	1485	1485
10 seconds	A	144	144	180	200	320	400	500	800	800	1050	1050
30 seconds	A	85	85	104	115	185	230	290	460	460	600	600
1 minute	A	60	60	74	80	130	165	205	325	325	430	430
3 minutes	A	35	35	46	50	90	100	120	185	185	250	250
MAXIMUM ELECTRICAL SWITCHING RATE												
AC - 1	Ops. /hr.	1200	1200	1200	1200	1200	1200	1200	1200	1200	600	600
AC - 3	Ops. /hr.	1200	1200	1200	1200	1200	1200	1200	1200	1200	600	600
AC - 4	Ops. /hr.	360	360	360	360	360	200	200	200	200	200	200
ELECTRICAL ENDURANCE, AC - 3 AT MAXIMUM RATED 3 PHASE OPERATING POWER @ 400V												
	Ops. (mill)	1.6	1.8	1.3	1.4	1.3	1.3	1.2	1.4	1.2	1.2	1.0

Technical Specifications (Contd.)

		SC009	SC012	SC018	SC025	SC032	SC040	SC050	SC065	SC080	SC095	SC105
	Units											
COIL CONSUMPTION 50HZ, 60HZ, 50/60HZ												
Pick - up	VA		70			98			255			
Hold - in	VA		11			14			30			
DC												
Pick - up	W		8.5			10			340			
Hold - in	W		8.5			10			6.5			
OPERATING TIMES												
AC												
Pick - up	msec		8 ~ 20			10 ~ 19			15 ~ 30			
Drop - out	msec		6 ~ 13			5 ~ 25			9 ~ 15			
DC												
Pick - up	msec		35 ~ 45			40 ~ 55			50 ~ 60			
Drop - out	msec		7 ~ 12			30 ~ 65			55 ~ 60			
POWER DISSIPATION 50HZ,60HZ,50/60HZ	W		2.6			4.3			8			
Power factor												
Closed	cos ϕ		0.33			0.28			0.26			
Open	cos ϕ		0.84			0.73			0.54			
MECHANICAL												
Mechanical Endurance	Ops (mill.)					10						
Maximum Mechanical switching rate	Ops/ hr					9000.0						
ENVIRONMENTAL												
Ambient Operating Temperature						-25 to +55° C (-13 to +131°F) - UL Standard -5 to +40°C)+23 to+104°F) - IEC Standard						
Ambient Storage Temperature						-55 to +80° C (-67 to +176° F)						
CONSTRUCTION												
Pollution Degree						3						
INGRESS PROTECTION												
Main Terminals					IP20		IP20*			IP20*		
Coil Terminals							IP20					
Auxiliary Terminals							IP20					
WEIGHT	Kg	0.295	0.295	0.295	0.295	0.52	0.52	1.105	1.12	1.13	1.45	1.47
Lbs		0.65	0.65	0.65	0.65	1.15	1.19	2.44	2.47	2.49	3.2	3.24
RoHS COMPLAINE							Yes					
Construction Conductor cross sections												
MAIN TERMINAL CAPACITY												
Solid Stranded without end sleeve	mm ²		2 x 0.5 ~ 6			2 x 1 ~ 16		2 x 1.5 ~ 35		2 x 1.5 ~ 50		
AWG Wire	AWG		2 x 20 ~ 10			2 x 18 ~ 6		2 x 16 ~ 2		2 x 16 ~ 1.0		
Recommended strip length	mm in		8.5 5 / 16			10 3 / 8		13 1 / 2		15 9 / 16		
Tightening Torque												
	Nm		1 ~ 1.7			2.5 ~ 3.0		4 ~ 6		5 ~ 6.5		
	lb*in		8.8 ~ 15			22.1 ~ 26.6		35.4 ~ 53.1		44.3 ~ 57.5		
Screw Driver						Philips nr.2		Allen 4mm				

*Note: with Conductors connected

Standard Contactors

Auxiliary Contacts Technical Specifications

		Built-in Auxiliary		SCFA, SCSA
GENERAL		Units		
Minimum Switching Capacity		5mA @ 17V		
Electrical Endurance	Ops.(mill.)	1		
Mechanical Endurance	Ops.(mill.)	15		
Non-Overlap Time	msec.	1.5		
Insulation Resistance	mΩ	>10		
IEC RATINGS				
Rated Insulation Voltage, Ui	V	1000		
Rated Operating Voltage, Ue	V	690		
Rated Thermal Current, Ith for Ambient Temperature < 40°C	A	16	10	
MAKING CAPACITY, Ue< 400V, AC - 15				
Ue ≤ 400V 50/60Hz	A	250	90	
Ue ≤ 220V DC	A	250	90	
BREAKING CAPACITY, Ue< 400V, AC - 15				
Ue ≤ 400V 50/60Hz	A	250	60	
Ue ≤ 220V DC	A	2	0.95	
AC - 15				
110 ~ 120V	A	10	6	
220 ~ 240V	A	10	6	
380 ~ 400V	A	6	4	
415 ~ 440V	A	5	3.5	
500V	A	4	2.5	
600 ~ 690V	A	2.5	1.5	
DC - 13				
24V	A	6	6	
48V	A	4	4	
110V	A	2	2	
220 ~ 240V	A	0.7	0.7	
440V	A	0.3	0.3	
SHORT CIRCUIT COORDINATION				
gL/gG	A	10	10	
UL RATINGS				
Rated Operating Voltage	V	600		
PILOT DUTY RATING				
AC	A600			
DC	P600		Q600	
ENVIRONMENTAL				
Ambient Operating Temperature	-25 to +55°C (-13 to +131° F) -UL Std., -5 to +40°C (-23 to +104°F)-IEC Std			
Ambient Storage Temperature	-55 to +80°C (-67 to +176° F)			
CONSTRUCTION				
TERMINAL CAPACITY				
AWG Wire	AWG	2 X 18 ~ 12 / 1 X 18 ~ 10		
Solid, Stranded Without End Sleeve	mm²	2 X 1.0 ~ 4.0 / 1 X 1.0 ~ 6.0		
Tightening Torque	lb-in	10		
	Nm	1.13		
RoHS COMPLIANCE				Yes

Standard Contactors - Accessories

Front Mounted Auxiliary Contacts



Front mounted auxiliary contacts feature IP20 guarded terminals to protect against accidental contact with live parts. The device identification marker simplifies troubleshooting in panels with many contactors. These contacts snap-on and install without the use of tools.

Code	Contact Configuration	Connection Diagram
SCFA10	1 Normaly Open	
SCFA01	1 Normaly Closed	
SCFA10EM	1 Normaly Open Early Make	
SCFA01DB	1 Normaly Closed Delayed Break	

Side Mounted Auxiliary Contact



Side mounted auxiliary contact feature IP20 guarded terminals to protect against accidental contact with live parts.

Code	Contact Configuration	Connection Diagram
SCSA11	1 Normaly Open & 1 Normaly Closed	
SCSA20	2 Normaly Open	
SCSA11X	1 Normaly Open & 1 Normaly Closed*	
SCSA20X	2 Normaly Open*	

Maximum Number of Front or Side Mounted Auxiliary Contacts	
Contactor	Maximum Number Contacts
SC009,SC012,SC018,SC025	4
SC032,SC040	6
SC050,SC065,SC080,SC095,SC105	8

*Note: For usage of side mounted on the same side of the Contactor.

*Please Limit the No. of Aux. contracts as per specification to achieve specifiable pickup.

Standard Contactors - Accessories

Interlocks



Mechanical Interlock

Side mounted mechanical interlock for use with reversing contactors, reversing starters, two speed starters and star-delta starters. The single interlock can be used with all size contactors from 9A-105A, Preventing the forward and reverse contactors from being energised at the same time.

Electrical & Mechanical Interlock

Electrical / Mechanical interlock for reversing contactors has the same features as the mechanical interlock but also has two normally closed auxiliaries built into the unit for electrical interlocking, eliminating the need for two normally closed auxiliary contacts and the Mechanical Interlock. The result of integrating the normally closed auxiliary contact is decreased width of reversing contactors and more available auxiliary contact locations.

Code	Description
SCMI	Side Mounted Mechanical Interlock
SCMEI	Side Mounted Electrical / Mechanical Interlock

Wiring Modules



Reversing contactors power wiring modules make field assembly of reversing contactors easy. Line and load side molded copper bus bar conductors ensure error free installation and make a rigid assembly with a mechanical interlock (SCMI) or electrical / mechanical interlock (SCMEI).

Code	For Use With Contactors
SC025RWM1 + SC025RWM2	SC009,SC012,SC018,SC025
SC040RWM1 + SC040RWM2	SC032,SC040
SC080RWM1 + SC080RWM2	SC050,SC065,SC080

*Note: M1 - Load side, M2-Line side.

Operating Coils



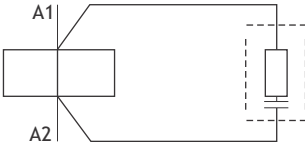
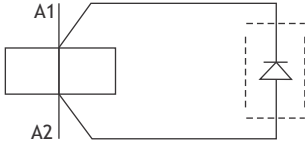
Coil Voltage																			
AC Coil Voltage 80% to 110%																			
Voltage	12	24	48	110	120	208	220	230	240	277	380	400	400	415	440	480	500	550	600
50Hz	✓	✓	✓	✓			✓				✓	✓	✓	✓	✓		✓	✓	
60Hz	✓	✓	✓		✓	✓			✓	✓						✓			✓
50/60Hz	✓	✓	✓	✓	✓		✓	✓	✓			✓			✓				
DC Coil Voltage																			
Voltage			12	24	24 ~ 28		48	42 ~ 50		110	125	110 ~ 130		208	250	250			
SC009 to SC040			✓	✓			✓			✓	✓			✓	✓	✓			
SC050 to SC105			✓		✓			✓				✓		✓					

*Note: Wide band coil available

Surge Suppressors

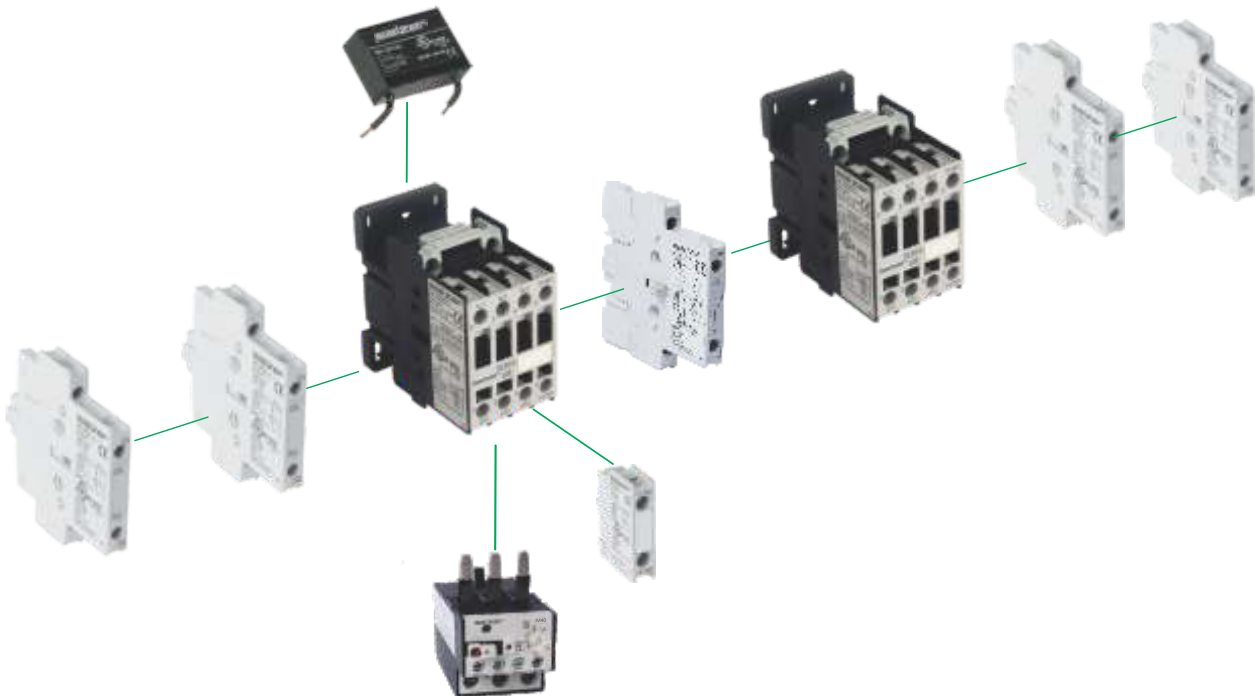


Coil mounted surge suppressors protect sensitive electronic components in control circuits from damaging line voltage spikes.

RC Surge Suppressor			
Code	Voltage Range		For Use With Contactor / Coil AC
SC040SSRA048	24 ~ 48V AC		SC009, SC012,SC018,SC025,SC032,SC040
SC040SSRA127	50 ~ 127V AC		SC009, SC012,SC018,SC025,SC032,SC040
SC040SSRA250	130 ~ 250V AC		SC009, SC012,SC018,SC025,SC032,SC040
SC105SSRA048	24 ~ 48V AC		SC050,SC065,SC080,SC095,SC105
SC105SSRA127	50 ~ 127V AC		SC050,SC065,SC080,SC095,SC105
SC105SSRA250	130 ~ 250V AC		SC050,SC065,SC080,SC095,SC105
Diode Surge Suppressor			
Code	Voltage Range		For Use With All Contactor / Coil DC
SC105SSDD600	12 ~ 600V DC		SC009,SC012,SC018
			SC025,SC032,SC040
			SC050,SC065,SC080
			SC095,SC105

Accessories for Non-Reversing & Reversing Contactors

The complete range of SC Series Non-Reversing Contactors and RC Series Reversing Contactors share common accessories including single circuit front mounted auxiliary contacts, two circuit side mounted auxiliary contacts, a single electrical/mechanical or mechanical interlock, and coil mounted surge suppressors. Designing starter assemblies and panels is easy - you don't have to remember which auxiliary is required for each contactor they all work together. Installation is easy too - once you learn how to install each accessory, it's always the same no matter what contactor it's being installed on. If simple design and assembly isn't enough - you'll also reduce your inventory and maximize its flexibility, because unique accessories are not required for each size contactor.



Standard Contactors Ordering Code

Standard Contactor 9A to 105A

I	II	III	IV	V	VI	VII	VIII	IX (Optional)																																																
Contactor Type	Current Rating	Poles	Main Pole Contact Configuration	Built in Auxiliary Contacts	Coil type type AC/DC	Coil voltage	Frequency	Additional feature																																																
SC	009	P	30	01	A	110	F	WW																																																
Example SC 009 P 30 01 A 110 F WW																																																								
I - Contactor Type								IX-Additional Feature																																																
SC - Standard Contactor RC - Reversing Contactor								With Wiring Modules for RC (Reversing Contactors)																																																
II - Current Rating																																																								
009 - 9A 012 - 12A 018 - 18A 025 - 25A 032 - 32A 040 - 40A 050 - 50A 065 - 65A 080 - 80A 095 - 95A 105 - 105A								VIII - Frequency																																																
								F - 50 Hz, S - 60 Hz B - 50/60Hz Blank - DC																																																
III - Poles								VII - Coil Voltage																																																
Main Poles								<table><tr><th colspan="2">AC</th><th colspan="2">DC</th></tr><tr><td>Code</td><td>Voltage</td><td>Code</td><td>Voltage</td></tr><tr><td>024</td><td>24</td><td>024</td><td>24</td></tr><tr><td>042</td><td>42</td><td>048</td><td>48</td></tr><tr><td>048</td><td>48</td><td>110</td><td>110</td></tr><tr><td>110</td><td>110</td><td>125</td><td>125</td></tr><tr><td>220</td><td>220</td><td>220</td><td>220</td></tr><tr><td>230</td><td>230</td><td>250</td><td>250</td></tr><tr><td>240</td><td>240</td><td></td><td></td></tr><tr><td>380</td><td>380</td><td></td><td></td></tr><tr><td>415</td><td>415</td><td></td><td></td></tr><tr><td>440</td><td>440</td><td></td><td></td></tr></table>	AC		DC		Code	Voltage	Code	Voltage	024	24	024	24	042	42	048	48	048	48	110	110	110	110	125	125	220	220	220	220	230	230	250	250	240	240			380	380			415	415			440	440		
AC		DC																																																						
Code	Voltage	Code	Voltage																																																					
024	24	024	24																																																					
042	42	048	48																																																					
048	48	110	110																																																					
110	110	125	125																																																					
220	220	220	220																																																					
230	230	250	250																																																					
240	240																																																							
380	380																																																							
415	415																																																							
440	440																																																							
IV - Main Pole Contact Configuration																																																								
(9-25A) 30 - 3 Normally Open 40 - 4 Normally Open (32 - 105A) 30 - 3 Normally Open 40 - Normally Open* Add on Power Pole																																																								
V - Built in Auxiliary								VI - Coil Voltage Type																																																
10 - 1 Normally Open 01 - 1 Normally Closed 00 - Aux not provided For 32A - 105A (Built in Auxiliary not Available) Please mention 00 as Aux Not offered								A - AC Coil D -DC Coil																																																

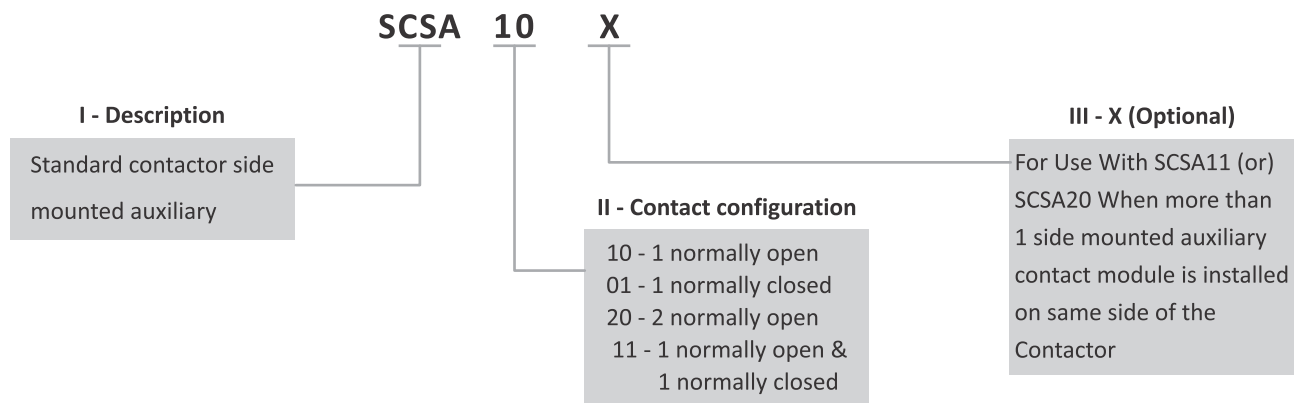
Note : RC Contactors wiring module available upto 80 Amps only

*Without UL Mark.

Ordering Code - Accessories

Side Mounted Accessories

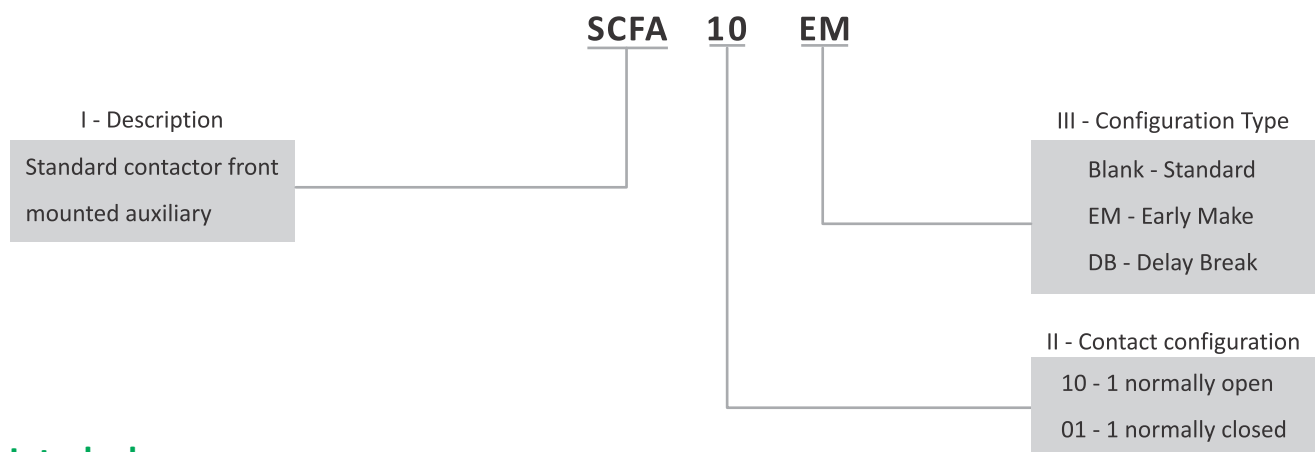
Ordering Informations		
I	II	III
Description	Contact configuration	X (Optional)



* Additional side mounted Accessories is to be mounted on same side of contactor

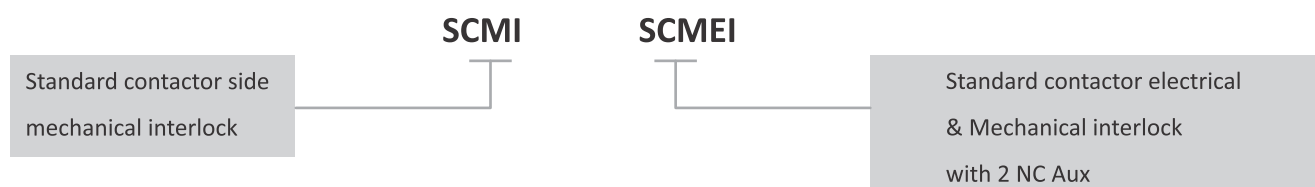
Front Mounted Accessories

Ordering Informations		
I	II	III
Description	Contact configuration	Configuration Type



Interlocks

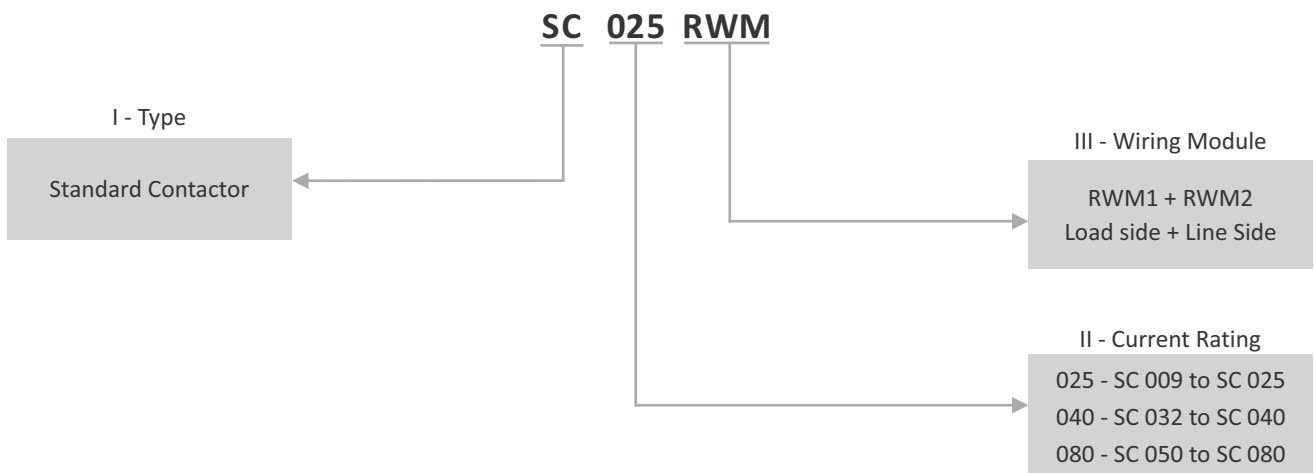
Ordering Informations	
I	II
Description	



Ordering Code - Accessories

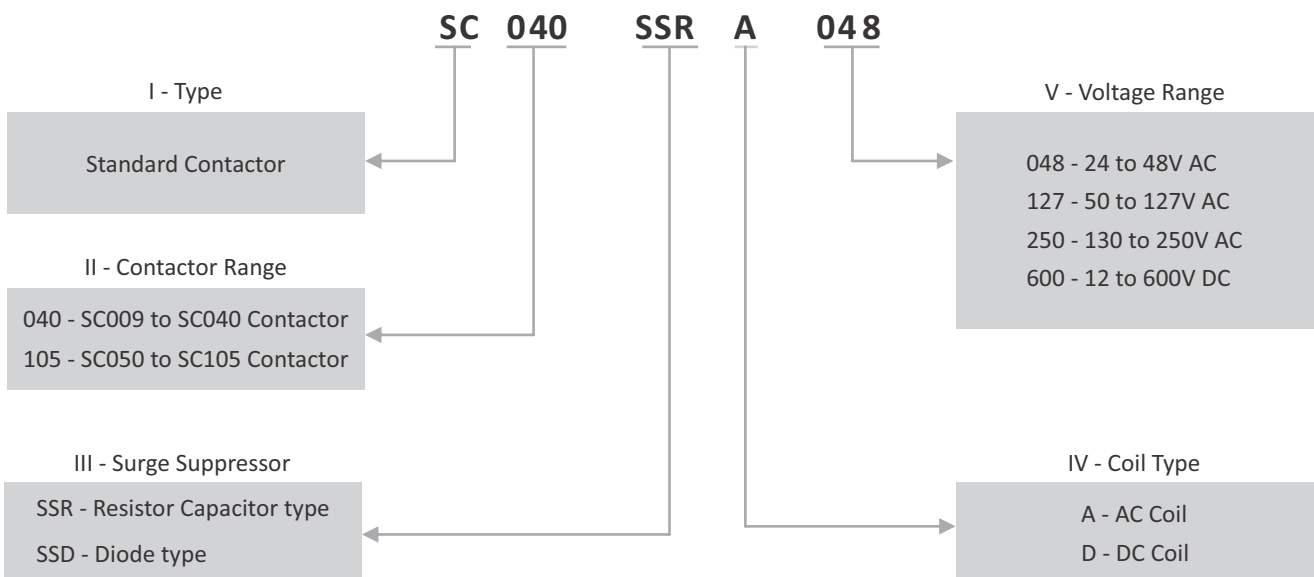
Wiring module

Ordering Informations		
I	II	III
Contactor Type	Current Rating	Wiring Module



Surge suppressor

Ordering Informations				
I	II	III	IV	V
Contactor Type	Current Rating	Type	Coil Type	Voltage Range

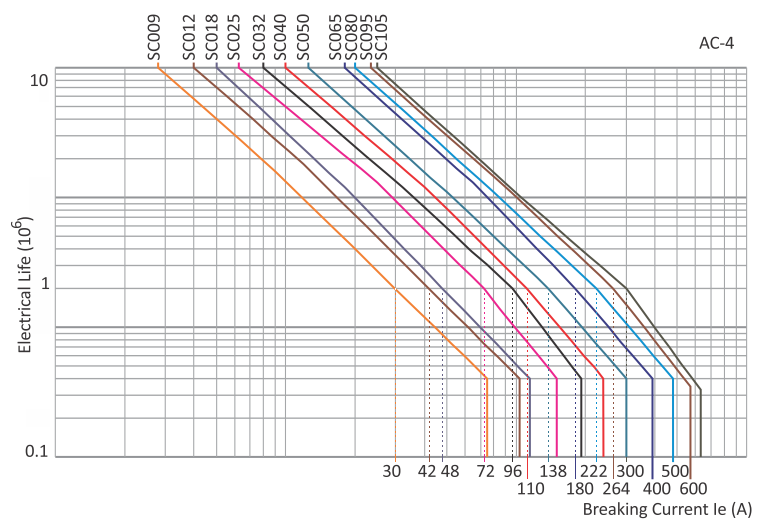
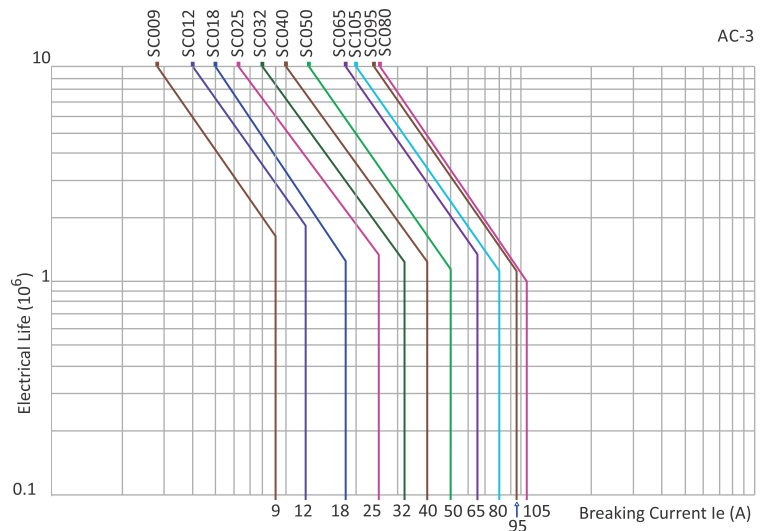
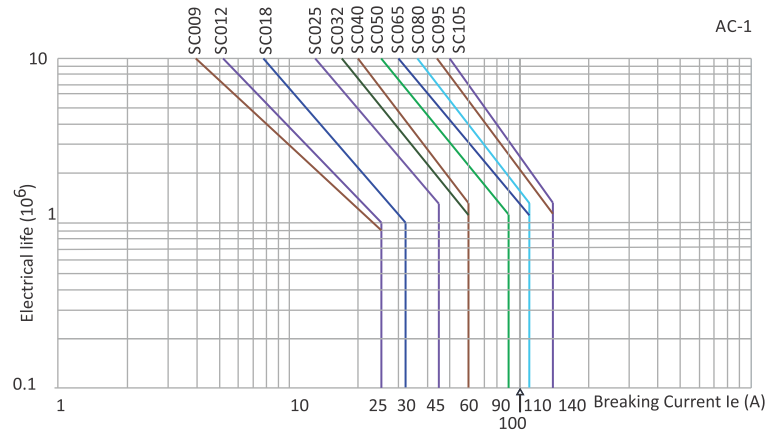


Electrical Life In Utilization Category

To find a Contactor's Estimated Life:

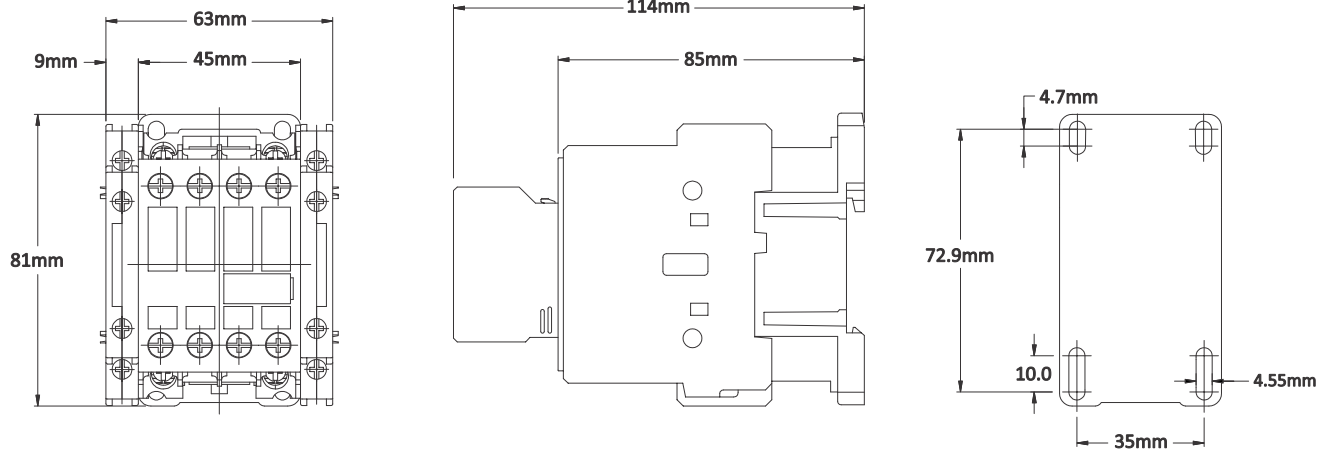
1. Identify the Utilization Category of the Application.
2. Refer to the chart For the Applicable Utilization category.
3. Locate the Intersection of the Life-load Curve For the Contactor Selected with the Application Breaking Current (I_e) on the Horizontal Axis of the Chart.
4. Read the estimated Contactor Life From the Vertical Axis of the Chart.

The Life -load curves are based on tests in accordance with IEC 60947-4-1. Many Conditions of an actual application effect contact life such as the environment and duty cycle, therefore, the actual contact life may vary from the life Indicated by the curves shown here.

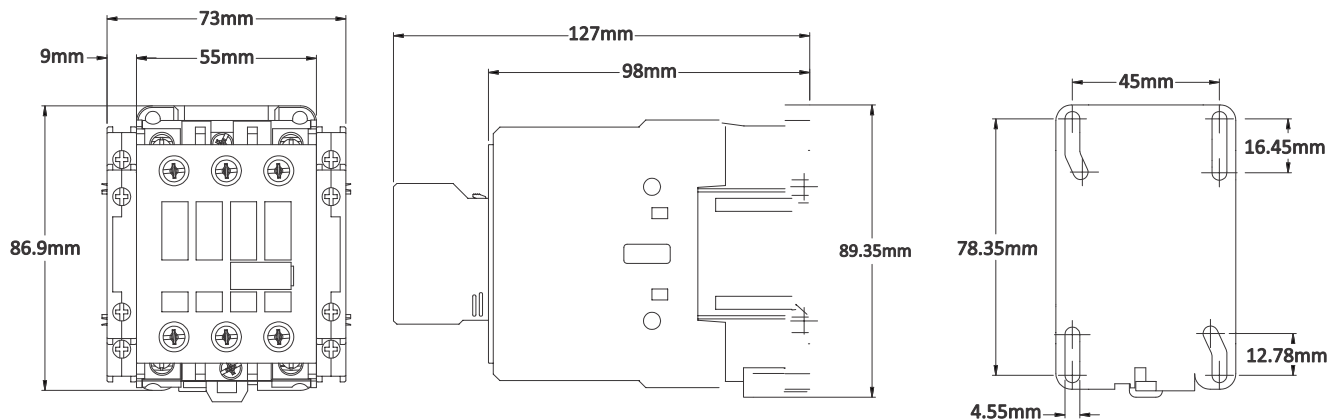


3 Pole Non-Reversing Contactors - AC Coils

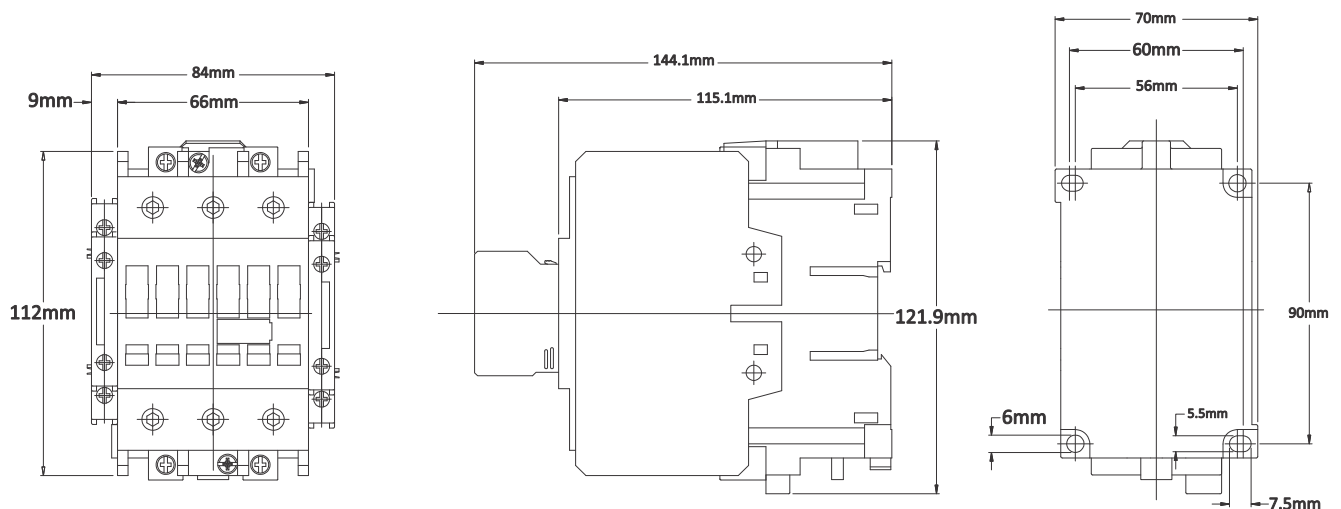
SC009, SC012, SC018 & SC025



SC032 & SC040

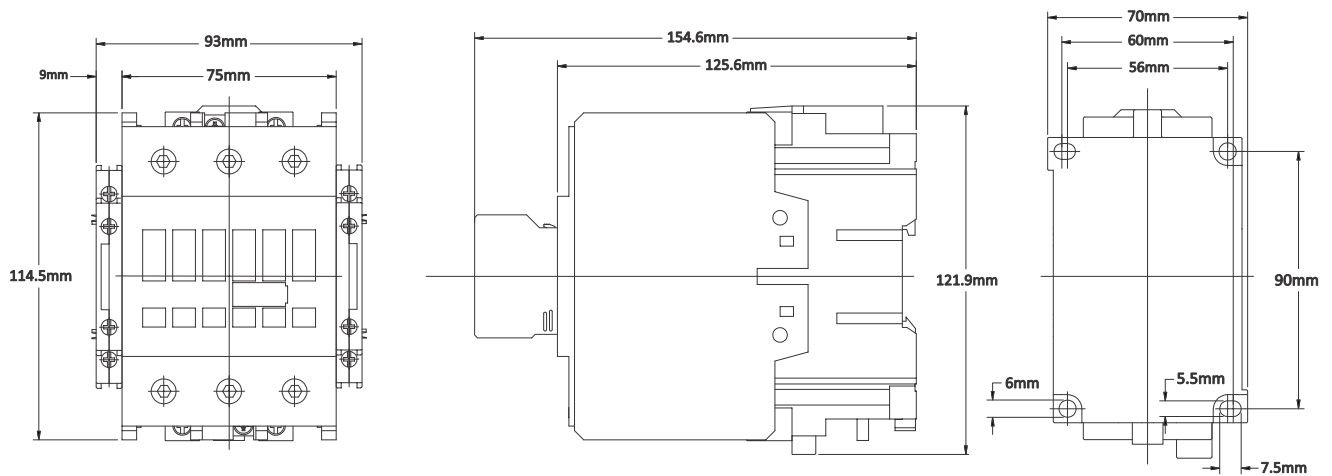


SC050, SC065 & SC080



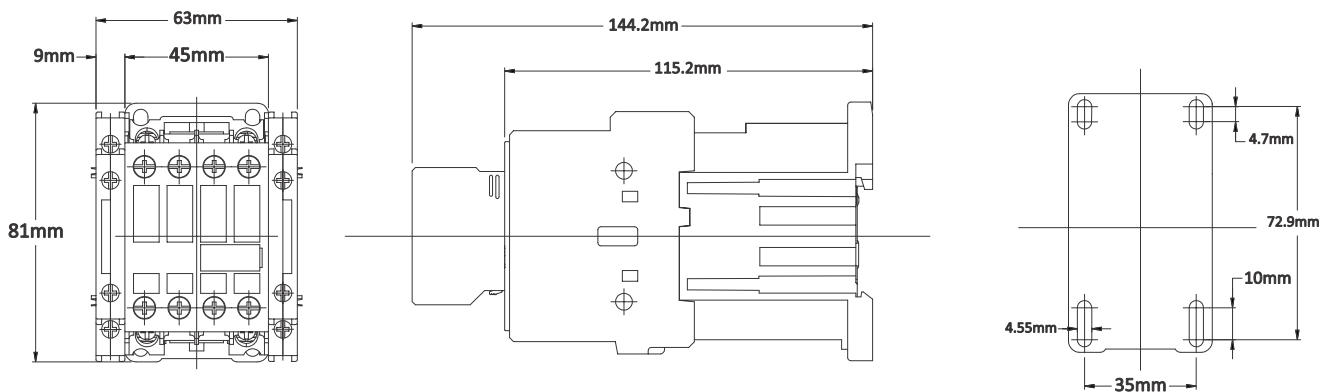
3 Pole Non-Reversing Contactors - AC Coils (Cont.)

SC095 & SC105

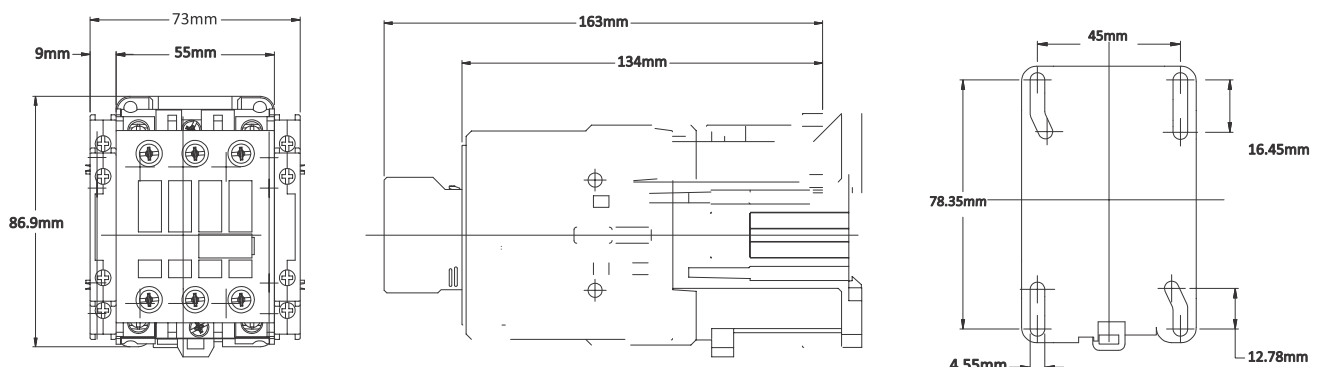


3 Pole Non-Reversing Contactors - DC Coils

SC009, SC012, SC018 & SC025

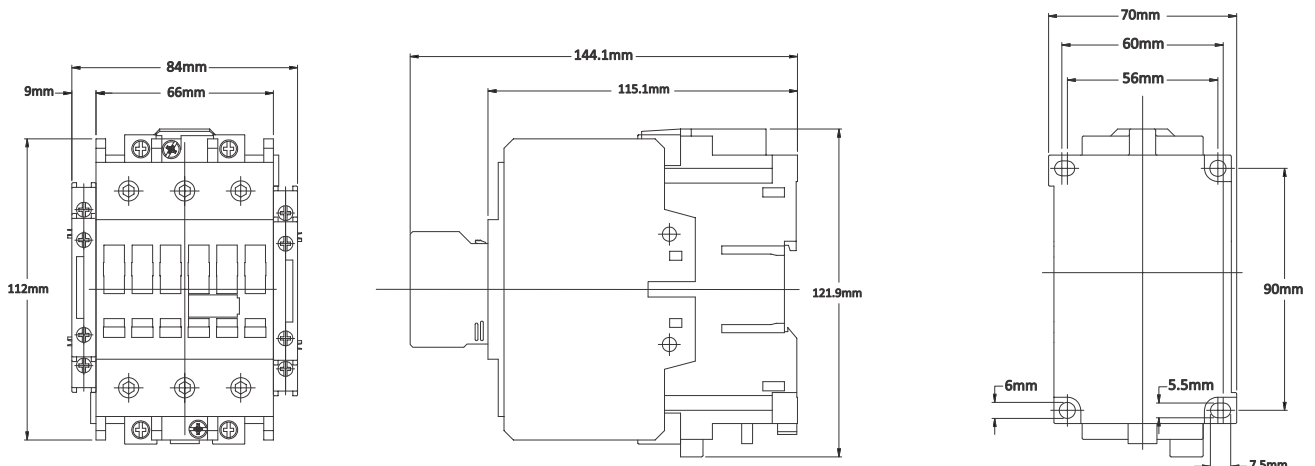


SC032 & SC040

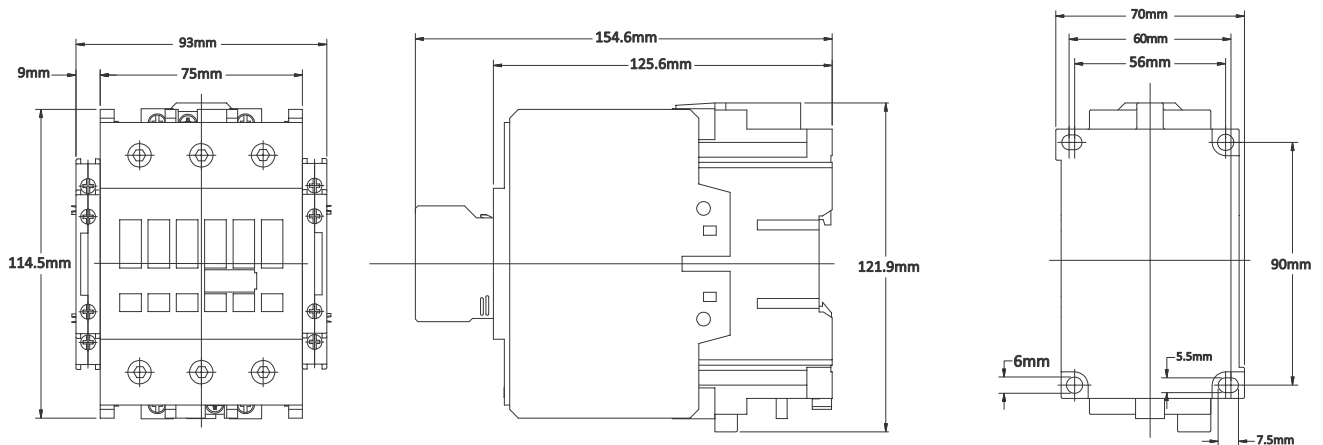


3 Pole Non-Reversing Contactors - DC Coils (Cont.)

SC050, SC065 & SC080

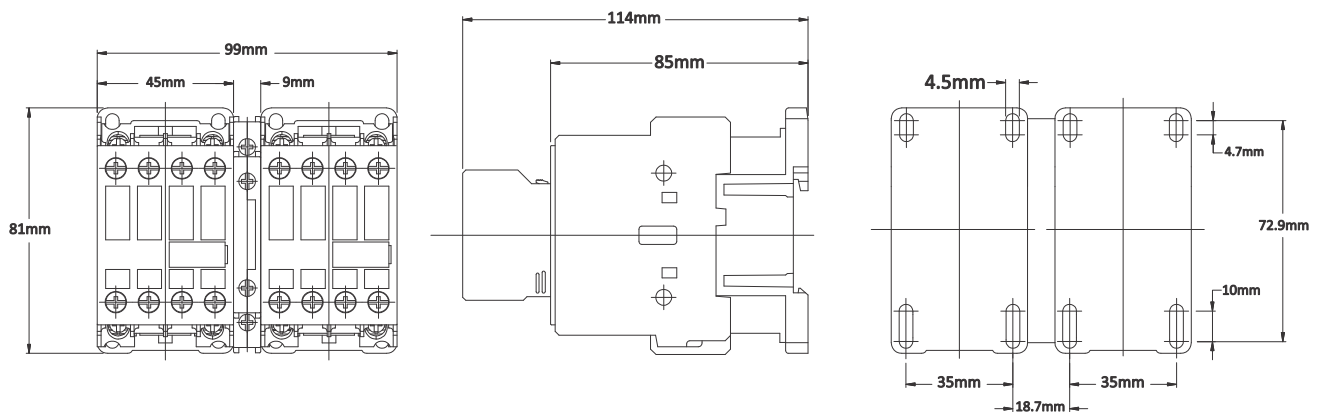


SC095 & SC105



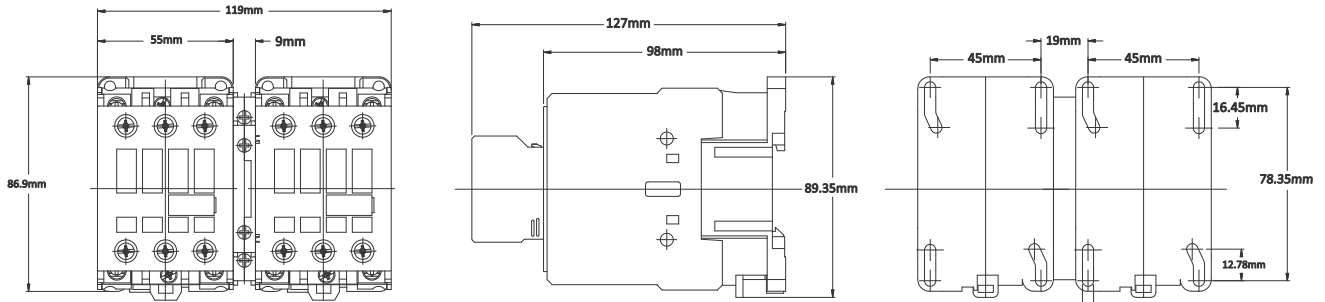
3 Pole Contactors with Electrical / Mechanical Interlock - AC Coils

RC009, RC012, RC018 & RC025

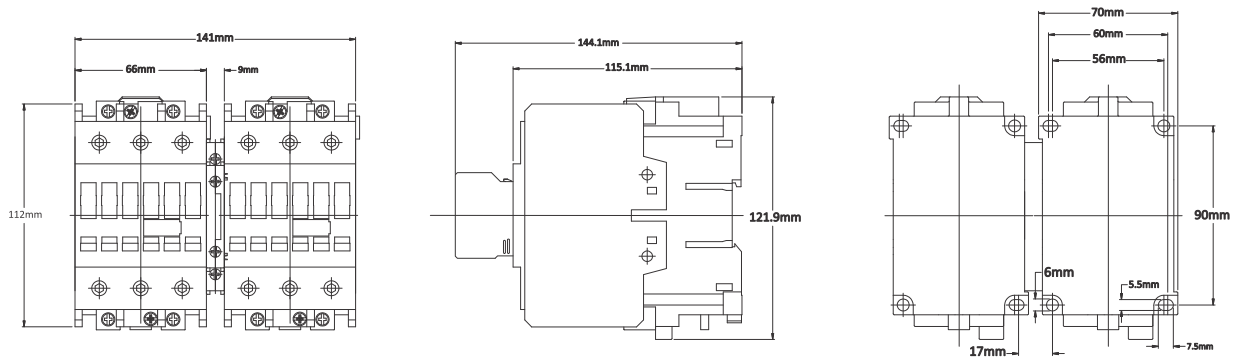


3 Pole Contactors with Electrical / Mechanical Interlock - AC Coils (Cont.)

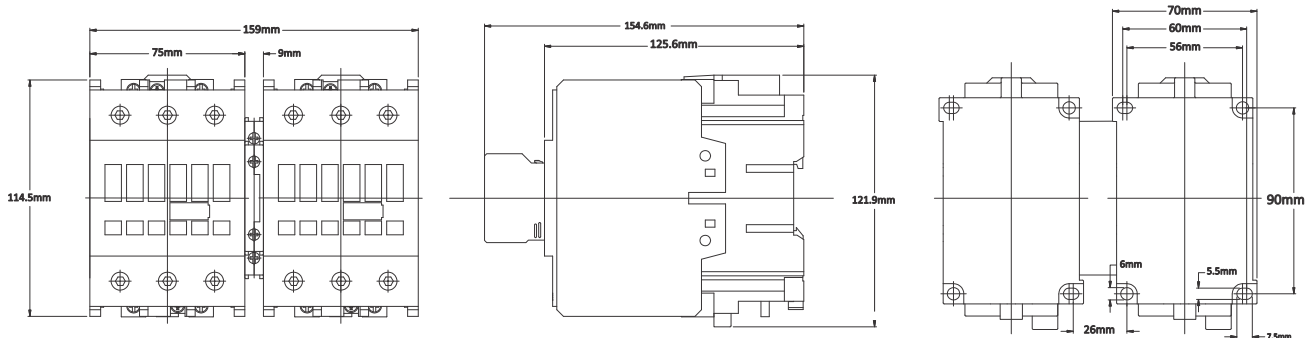
RC032 & RC040



RC050, RC065 & RC080

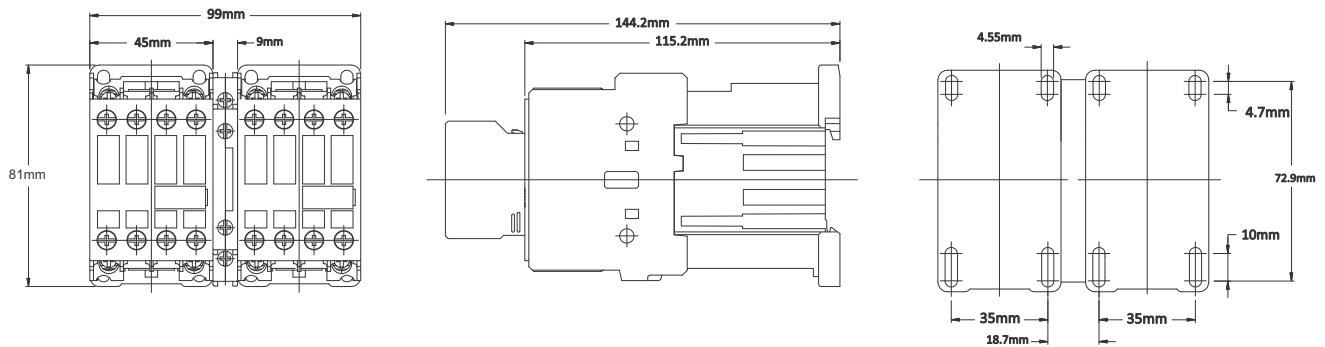


RC095 & RC105

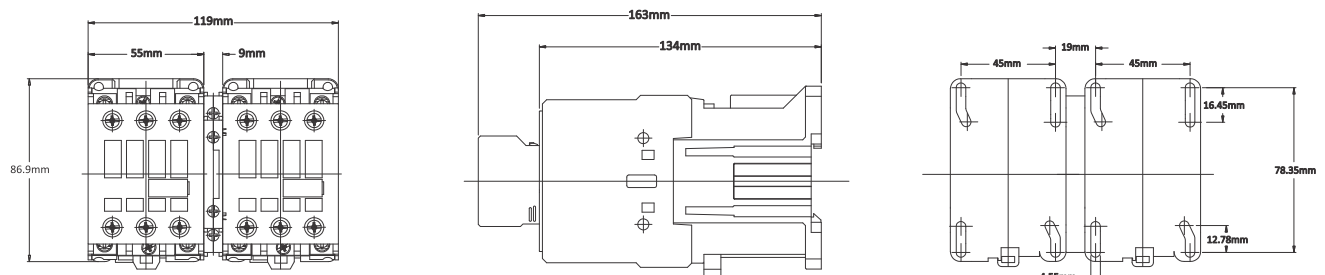


3 Pole Contactors with Electrical / Mechanical Interlock - DC Coils

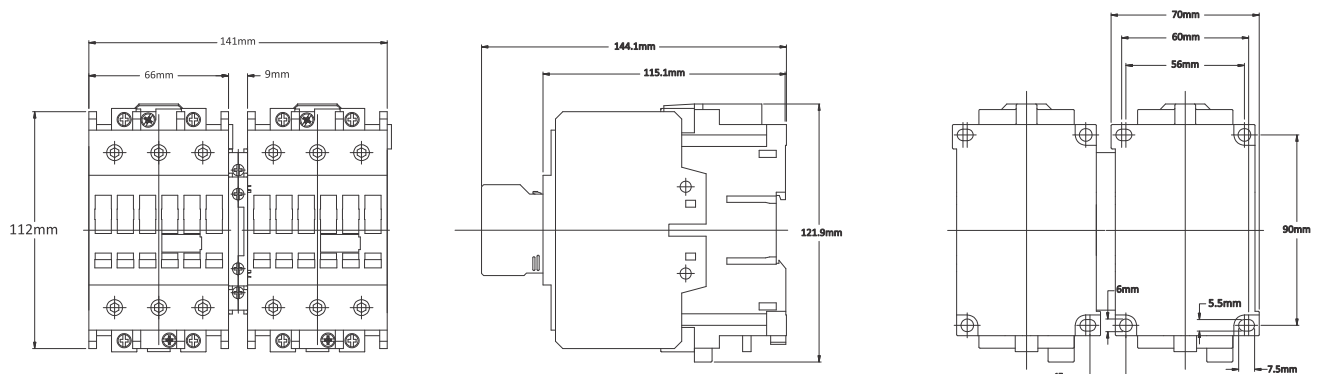
RC009, RC012, RC018 & RC025



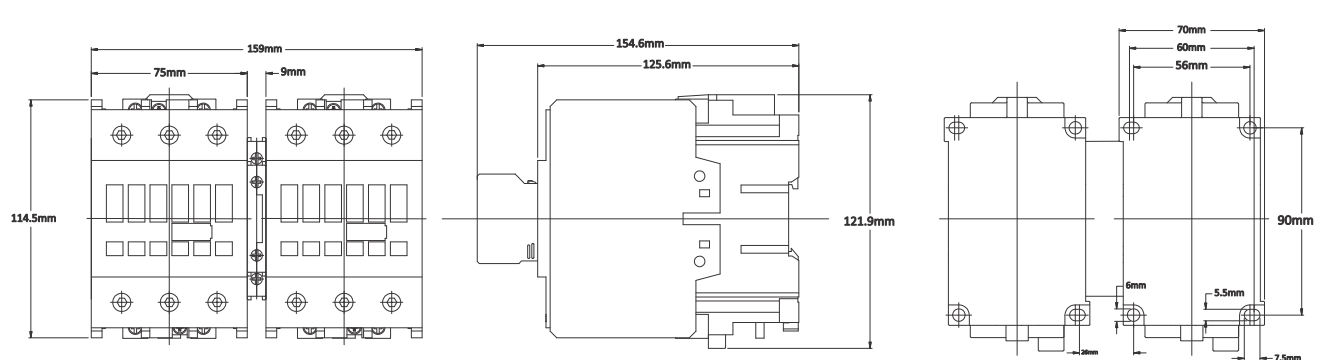
RC032 & RC040



RC050, RC062 & RC080



RC095 & RC105



MINI CONTACTORS & CONTROL RELAYS



Mini Contactors and Control Relays (MC & CR)

Salzer Mini Contactors (MC) and Control Relays (CR) are compact family of control devices for switching motors and other logic control circuits. MR Series Mini Reversing Contactors are ideal for reversing motors in applications where panel space is a premium and device modularity is required to satisfy virtually any application requirement. Common accessories enable the devices to be customized for each application. For motor overload protection, Overload Relays can be directly mounted to mini contactors.



Product features include

- High fault short circuit rating of 100kA @ 600V with Class J Fuses .
- Removable / replaceable ID Marker for MC Series Contactors and CR Series Control Relay, Device identification marker for labeling contactors and front mounted auxiliary contacts simplifies trouble shooting in panels with many contactors.
- Markings and labels, high visibility label for ease of troubleshooting and maintenance
- Compact size – one frame size for devices rated up to 16A. AC3 and AC/DC
- Modular design and common snap-on accessories are easily installed without the use of tools, lowering assembly and installation costs.
- Front Mounted auxiliary contacts and surge suppressors install directly on top of the single front mounted mechanical interlock when used with our Mini reversing contactor.
- Miniature contactors are compatible with directly mounted BR1 series overload Relays with current ratings from 0.28 to 17A.
- Over load relays are Class 10 with selectable manual or automatic reset, and provide phase loss sensitivity. IP20 guarded terminals with dual terminal markings prevent accidental contact with live parts.
- Device identification marker for labelling the contactor or control relay simplifies trouble shooting in panels with many devices.
- Universal ratings and markings: A, kW and HP rating as well as applicable 3rd party certification markings.
- 35mm DIN rail mounting for fast and easy installation and removal without the use of tools, panel mounting for more secure installation in high shock and vibration applications. Mini Non-Reversing contactors and Control Relays feature printed circuit board mounting with an accessory link module.
- Control relay includes bifurcated contacts rated 16A, AC-1,A600, and Q600 for high switching applications upto 600V.
- Four pole control relay with NO and NC contact configuration.

Mini Contactor

Unique Product Feature



The Printed Circuit Board Link Module installs directly on the Terminals of mini contactors and control relays enabling them to be directly mounted on an electronic printed circuit board. The module is rated 16A AC-3 and 22A AC-1 to take full advantage of the maximum switching capability of the mini contactor and control relay. The insulated, wiring modules provide error free interconnections for reversing the power poles, and provide the electrical interlock through the integrated normally closed auxiliary contacts.



Mini Control Relays



Mini Control Relays

Code	Description	Contact Ratings
CR016P00	Four Pole Control Relay	16A AC~1, A600,Q600

Contact Configuration

Code	Description
22	2 NO and 2 NC
31	3 NO and 1 NC
40	4 NO
13	1 NO and 3 NC
04	4 NC



Coil Voltage

AC Coil Voltage

Voltage	24	48	110	120	230	240	400	415	480	600
50Hz			✓					✓	✓	
60Hz				✓		✓			✓	✓
50/60Hz	✓	✓			✓		✓			

DC Coil Voltage

Voltage	12	24	30	110	125	220	250
	✓	✓	✓	✓	✓	✓	✓

IS/IEC 60947-4-1

Mini Contactor Technical Specifications

		MC007	MC009	MC012	MC016
ELECTRICAL GENERAL	Units				
Rated Operating Frequency		25 ~ 400			
Rated Coil Frequency		AC: 50Hz, 60Hz, 50/60Hz & DC			
IEC RATINGS					
Rated Insulation Voltage, U_i	V	690			
Rated Impluse Voltage withstand, U_{imp}	KV	4			
Rated Operating Voltage, U_e	V	690			
Rated Thermal Current, I_{th} for Ambient Temperature < 40°C	A	18	20	22	22
MAKING CAPACITY	A	70	90	120	160
BREAKING CAPACITY					
$U_e \leq 400V$	A	50	72	96	128
$U_e = 500V$	A	50	72	96	128
$U_e = 690V$	A	35	54	72	96
AC-1 OPERATING CURRENT, I_e					
At 40°C @ 690V	A	18.0	20.0	22.0	22.0
At 70°C	A	14.4	16.0	17.6	17.6
AC - 3 OPERATING CURRENT, I_e					
220 ~ 240V	A	7.0	9.0	12.0	16.0
380 ~ 400V	A	7.0	9.0	12.0	16.0
415 ~ 440V	A	7.0	9.0	12.0	16.0
500V	A	6.5	7.5	8.8	13.0
660 ~ 690V	A	4.9	6.0	6.6	9.7
AC - 3 OPERATING POWER, P_e					
220 ~ 240V	KW	2.2	2.2	3.0	4.5
380 ~ 400V	KW	3.0	4.0	5.5	7.5
415 ~ 440V	KW	3.7	4.5	5.5	7.5
500V	KW	4.0	4.5	5.5	7.5
660 ~ 690V	KW	4.0	4.5	5.5	7.5
AC - 4 OPERATING CURRENT, I_e					
220 ~ 240V	A	5.8	7.5	10.0	13.3
380 ~ 400V	A	5.8	7.5	10.0	13.3
415 ~ 440V	A	5.8	7.5	10.0	13.3
500V	A	5.4	6.3	7.3	10.8
660 ~ 690V	A	4.1	5.0	5.5	8.1
AC - 4 OPERATING POWER, P_e					
220 ~ 240V	KW	1.1	1.5	2.2	3.0
380 ~ 400V	KW	2.2	3.0	4.0	5.5
415 ~ 440V	KW	2.2	3.0	4.0	5.5
500V	KW	3.0	3.0	4.0	5.5
660 ~ 690V	KW	3.0	4.0	4.0	5.5
AC - 4 OPERATING CURRENT, I_e @ 200,000 OPERATIONS					
220 ~ 240V	A	2.1	2.7	3.6	4.8
380 ~ 400V	A	2.1	2.7	3.6	4.8
415 ~ 440V	A	2.1	2.7	3.6	4.8
500V	A	2.0	2.3	2.7	3.9
660 ~ 690V	A	1.5	1.8	2.0	2.9
AC - 4 OPERATING POWER, P_e @ 200,000 OPERATIONS					
220 ~ 240V	KW	0.37	0.55	0.75	1.1
380 ~ 400V	KW	0.75	1.1	1.5	1.5
415 ~ 440V	KW	0.75	1.1	1.5	1.5
500V	KW	0.75	1.1	1.1	2.2
660 ~ 690V	KW	0.75	1.1	1.1	2.2
MAXIMUM ELECTRICAL SWITCHING RATE					
AC - 1	Ops./Hr.	300			
AC - 3	Ops./Hr.	600			
AC - 4	Ops./Hr.	300			
Electrical Endurance, AC - 3 at Maximum Rated 3 Phase Operating Power (@ 400V)	Ops. (mill.)	1.4	1.3	1.2	1.1
Short Circuit Coordination	KA	5			
Type "1" gL/gG	A	35	35	35	35
Type "2" gL/gG	A	20	20	25	25

UL 60947-4-1

Mini Contactor Technical Specifications

		MC007	MC009	MC012	MC016
	Units				
UL RATINGS					
General Purpose Current Rating	A	18	20	22	22
Rated 1 Phase Operating Current, Ie					
115V	A	7.2	7.2	9.8	16.0
230V	A	6.9	8.0	12.0	12.0
Rated 1 Phase Operating Power, Pe					
115V	Hp	1/3	1/3	1/2	1
230V	Hp	3/4	1	2	2
Rated 3 Phase Operating Current, Ie					
200V	A	6.9	7.8	11.0	11.0
230V	A	6.0	6.8	9.6	9.6
460V	A	7.6	7.6	11.0	14.0
575V	A	6.1	9.0	9.0	11.0
Rated 3 Phase Operating Power, Pe					
200V	Hp	1 1/2	2	3	3
230V	Hp	1 1/2	3	3	5
460V	Hp	5	5	7 1/2	10.0
575V	Hp	5	7 1/2	7 1/2	10
SCCR					
Standard Fault (5KA) Fuse Size	A	30	30	30	40
High Fault (100KA) Fuse Size	A	15	15	20	25
ELECTRICAL ENDURANCE					
@ Maximum Rated 3 Phase Operating Power (400V)	Ops.(mill.)	1.4	1.3	1.2	1.1
COIL CHARACTERISTICS					
Rated Insulation Voltage, Ui	V	690			
OPERATING LIMITS					
50Hz, 60Hz, 50/60Hz					
Operating	%	80% to 110%			
Pick-Up	%	40% to 76%			
Sealed	%	25% to 65%			
DC					
Operating	%	80% to 110%			
Pick-Up	%	40% to 70%			
Sealed	%	15% to 40%			
COIL CONSUMPTION					
50Hz, 60Hz, 50/60Hz					
Pick-Up	VA	16			
Hold-In	VA	2 ~ 4			
DC					
Pick-Up	W	1.74 ~ 3.0			
Hold-In	W	1.74 ~ 3.0			
Operating Times					
AC					
Pick-Up	msec.	8 ~ 20			
Drop-Out	msec.	6 ~ 13			
DC					
Pick-Up	msec.	35 ~ 45			
Drop-Out	msec.	7 ~ 12			
POWER DISSIPATION					
50Hz, 60Hz, 50/60Hz	W	3			
POWER FACTOR					
Closed	cos ϕ	0.27			
Open	cos ϕ	0.8			
MECHANICAL					
Mechanical Endurance	Ops.(mill.)	10			
Maximum Mechanical Switching Rate	Ops./Hr.	2000			

Mini Contactor Technical Specifications (Contd.)

		MC007	MC009	MC012	MC016
ENVIRONMENTAL	Units				
Ambient Operating Temperature		-25 to +55°C (-13 to +131°F)-UL Std., -5 to +40°C (+23 to 104°F)			
Ambient Storage Temperature		-55 to +80°C (-67 to +176°F)			
CONSTRUCTION					
INGRESS PROTECTION					
Main Circuits		IP20			
Control Circuit Terminations		IP20			
Weight	Kg.	0.18			
	lbs.	0.4			
TERMINAL CAPACITY					
AWG Wire	AWG	2 X 20 ~ 14			
Solid	mm ²	1 X 0.5 ~ 4.0 2 x 0.5~2.5			
Stranded	mm ²	1 X 0.5 ~ 4.0 2 x 0.5~2.5			
Tightening Torque	Nm	1 ~ 1.2			
	lb-in	8.8 ~ 10.6			

Auxiliary Contact Specifications

		Built-in Auxiliary	MCFA, CRFA
IEC RATINGS			
Rated insulation Voltage, Ui	V	690	690
Rated Operating Voltage, Ue	V	690	690
Rated Thermal Current, Ith for Ambient Temperature < 40°C	A	10	10
Making Capacity, Ue ≤ 400V, AC-15	A	10xIe (AC-15)	30.0
Breaking Capacity, Ue ≤ 400V, AC-15	A	10xIe (AC-15)	3.0
AC-15			
≤ 240V	A	10.0	10.0
380 ~ 400V	A	6.0	5.0
415 ~ 440V	A	5.0	5.0
500V	A	4.0	4.0
660 ~ 690V	A	2.0	-
DC-13			
24V	A	6.0	1.5
48V	A	4.0	-
60V	A	1.5	0.5
110V	A	0.7	0.4
220 ~ 240V	A	0.35	0.2
SHORT CIRCUIT COORDINATION			
gL/gG	A	10	10
UL RATINGS			
Rated Voltage, Ue	V	600	600
PILOT DUTY RATING			
	AC	A600	A600
	DC	Q600	Q600
ELECTRICAL ENDURANCE	Ops.(mill.)	1.0	1.0
MECHANICAL			
Mechanical Endurance	Ops.(mill.)	10	10
ENVIRONMENTAL			
Ambient Operating Temperature		-25 to +55°C (-13 to +131°F)-UL Std., -5 to +40°C (+23 to 104°F)-IEC Std.,	
Ambient Storage Temperature		-55 to +80°C (-67 to +176°F)	
CONSTRUCTION			
Terminal Capacity			
AWG Wire	AWG	2 X 20 ~ 14	2 X 20 ~ 14
Solid	mm ²	2 X 0.5 ~ 2.5	2 X 0.5 ~ 2.5
Stranded	mm ²	2 X 0.5 ~ 2.5	2 X 0.5 ~ 2.5
Tightening Torque	Nm	1 ~ 1.2	1 ~ 1.2
	lb-in	8.8 ~ 10.6	8.8 ~ 10.6

Control Relays

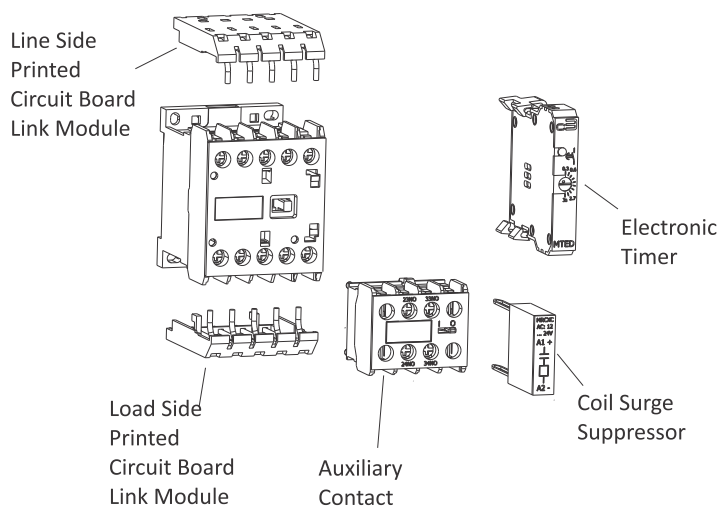
Technical Specifications

		Control Relay (CR016)
IEC RATINGS		
Rated insulation Voltage, Ui	V	690
Rated Operating Voltage, Ue	V	690
AC-1 Ratings @ 230V	A	16
Rated Thermal Current, Ith for Ambient Temperature < 40°C	A	10
Making Capacity, Ue < 400V, AC-15	A	10 X Ie (AC-15)
Breaking Capacity, Ue < 400V, AC-15	A	10 X Ie (AC-15)
AC-15		
≤ 240V	A	10.0
380 ~ 400V	A	6.0
415 ~ 440V	A	5.0
500V	A	4.0
660 ~ 690V	A	2.0
DC-13		
24V	A	6.0
48V	A	4.0
60V	A	1.5
110V	A	0.7
220 ~ 240V	A	0.35
SHORT CIRCUIT COORDINATION		
gL/gG	A	10
UL RATINGS		
Rated Voltage, Ue	V	600
PILOT DUTY RATING		
	AC DC	A600 Q600
ELECTRICAL ENDURANCE	Ops.(mill.)	1.0
MECHANICAL		
Mechanical Endurance	Ops.(mill.)	10
ENVIRONMENTAL		
Ambient Operating Temperature	-25 to +55°C (-13 to +131°F)-UL Std., -5 to +40°C (+23 to 104°F)IEC Std	
Ambient Storage Temperature	-55 to +80°C (-67 to +176°F)	
CONSTRUCTION		
Terminal Capacity		
AWG Wire	AWG	2 X 20 ~ 14
Solid	mm ²	2 X 0.5 ~ 2.5
Stranded	mm ²	2 X 0.5 ~ 2.5
Tightening Torque	Nm	1 ~ 1.2
	lb-in	8.8 ~ 10.6

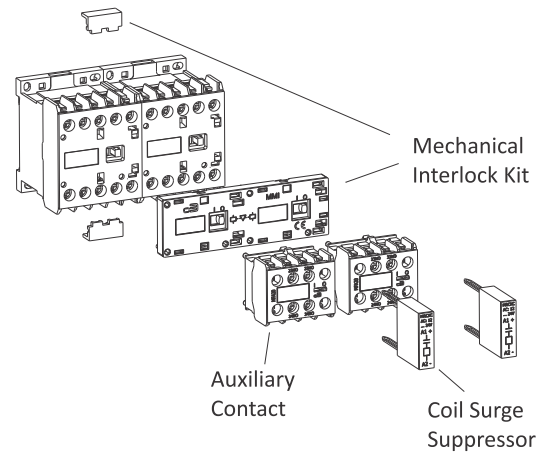
Accessories for Mini Contactors and Control Relays

The complete range of Mini Contactors and Control Relays share common accessories including auxiliary contacts, mechanical interlock, electronic timers, reversing wiring modules, surge suppressors and a printed circuit board link module. Designing starter assemblies and panels is easy – you don't have to remember which auxiliary is required for each contactor or control relay, they all work together. Installation is easy too – once you learn how to install each accessory, it's always the same no matter what contactor or control relay it's being installed on. If simple design and assembly isn't enough – you'll also reduce your inventory and maximize its flexibility, because unique accessories are not required for each size contactor or control relay.

Mini Contactors & Control Relays



Reversing Mini Contactors



Auxiliary Contacts



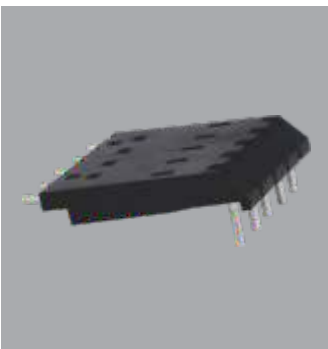
Front mounted auxiliary contact modules feature IP20 guarded terminals to protect against accidental contact with live parts. The modules are available in 2 and 4 circuit configurations. The device identification marker simplifies trouble shooting in panels with many devices. These modules snap on and install without the use of tools.

Contact Configuration			
Code	NO	NC	For Use With Contactors
MCFA20	2	0	MC007
MCFA11	1	1	
MCFA02	0	2	
MCFA40	4	0	
MCFA22	2	2	MC009
MCFA04	0	4	MC012
MCFA31	3	1	MC016
MCFA13	1	3	

Contact Configuration			
Code	NO	NC	For Use With Contactors
CRFA20	2	0	CR016
CRFA11	1	1	
CRFA02	0	2	
CRFA40	4	0	
CRFA22	2	2	
CRFA04	0	4	
CRFA31	3	1	
CRFA13	1	3	

Maximum Number of Front Mounted Auxiliary Contacts	
Coil Specification	Maximum Number
AC	Up to four additional poles
DC	Up to two additional poles

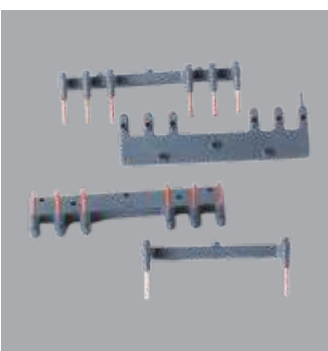
Printed Circuit Board Link Module



The printed circuit board module enables mini contactors and control relays to be mounted directly on electronic printed circuit boards. The module is rated 16A AC-3 and 22A AC-1.

Printed Circuit Board Link Module	
Code	Description
MCPCLM	Printed Circuit Board Link Module

Wiring Modules



Reversing contactor power wiring modules make field assembly of reversing contactors easy.

Wiring Module	
Code	For use with Contactors
MCRWM16	MC007, MC009, MC012, MC016
LIS	Line Side
LDS	Load Side

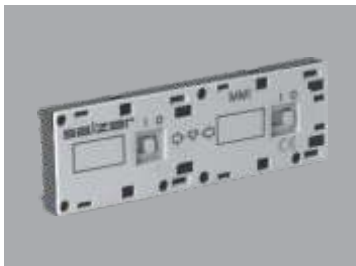
Electronic Timers



Right side mounted electronic timers are available in On-Delay and off-Delay configurations with timing ranges up to 30 seconds. The modules install without the use of tools, and can be used in conjunction with all other accessories.

Electronic Timers			
Code	Function	Timing Range (Secs.)	Voltage
MCETN03V240	On-Delay	0.3 ~ 3	24 ~ 240V AC/DC
MCETN10V240		1 ~ 10	
MCETN30V240		3 ~ 30	
MCETF03V060	Off-Delay	0.3 ~ 3	24 ~ 60V AC/DC
MCETF10V060		1 ~ 10	
MCETF30V060		3 ~ 30	
MCETF03V240	Off-Delay	0.3 ~ 3	100 ~ 240V AC/DC
MCETF10V240		1 ~ 10	
MCETF30V240		3 ~ 30	

Mechanical interlock



Our front mounted mechanical interlock is for reversing contactors. The interlock prevents the forward and reverse contactors from being actuated at the same time. Auxiliary contact modules, surge suppressors, and timers can be used in conjunction with the mechanical interlock.

Mechanical Interlock	
Code	Description
MCMI	Front Mounted Mechanical Interlock

Surge Suppressors

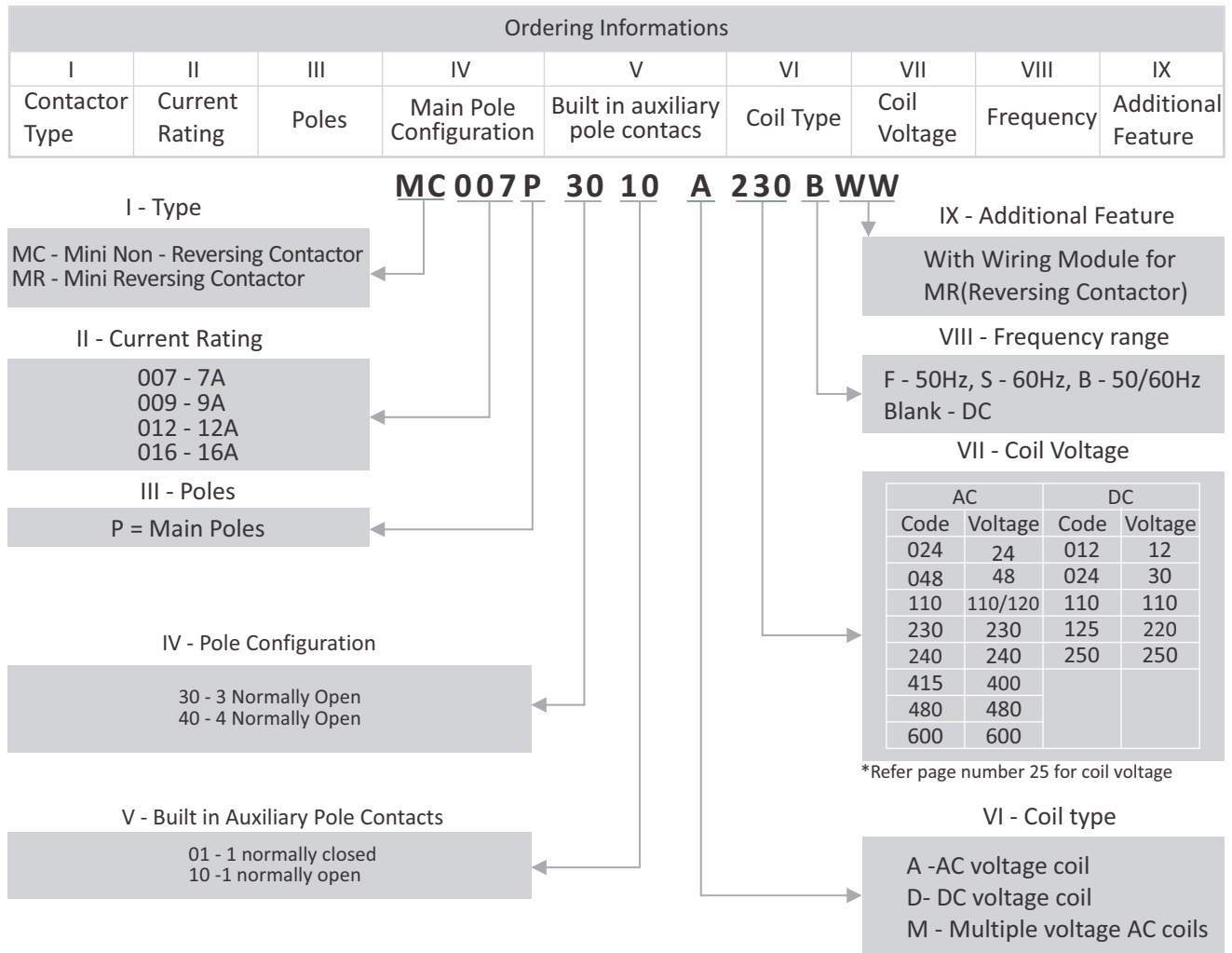


Front mounted surge suppressors protect sensitive electronic components from damaging line voltage spikes. The modules install without the use of tools, and can be used in conjunction with all other accessories.

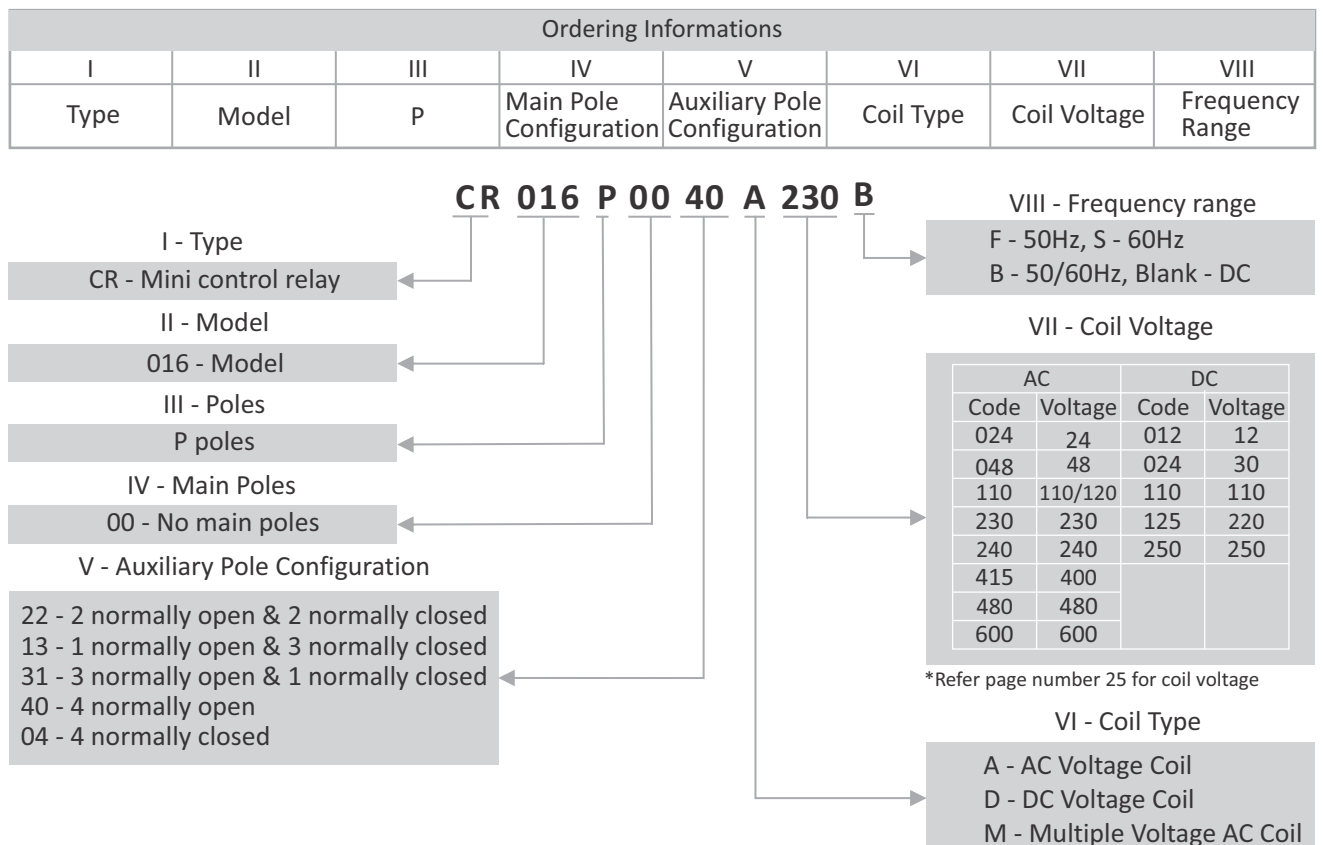
Code	Voltage Range	Type
MCRA024B	12 ~ 24V 50/60Hz	RC
MCRA048B	24 ~ 48V 50/60Hz	
MCRA127B	50 ~ 127V 50/60Hz	
MCRA250B	130 ~ 250V 50/60Hz	
MCRA380B	275 ~ 380V 50/60Hz	Varistor
MCRA510B	400 ~ 510V 50/60Hz	
MCVSAD048	12 ~ 48VAC/12 ~ 60VDC	
MCVSAD127	50 ~ 127VAC/60 ~ 180VDC	
MCVSAD250	130 ~ 250VAC/180 ~ 300VDC	
MCVSAD380	277 ~ 380VAC/380 ~ 510VDC	
MCVSA510	400 ~ 510VAC	
MCDSD600	12 ~ 600VDC	Diode

Ordering Code

Mini Contactors

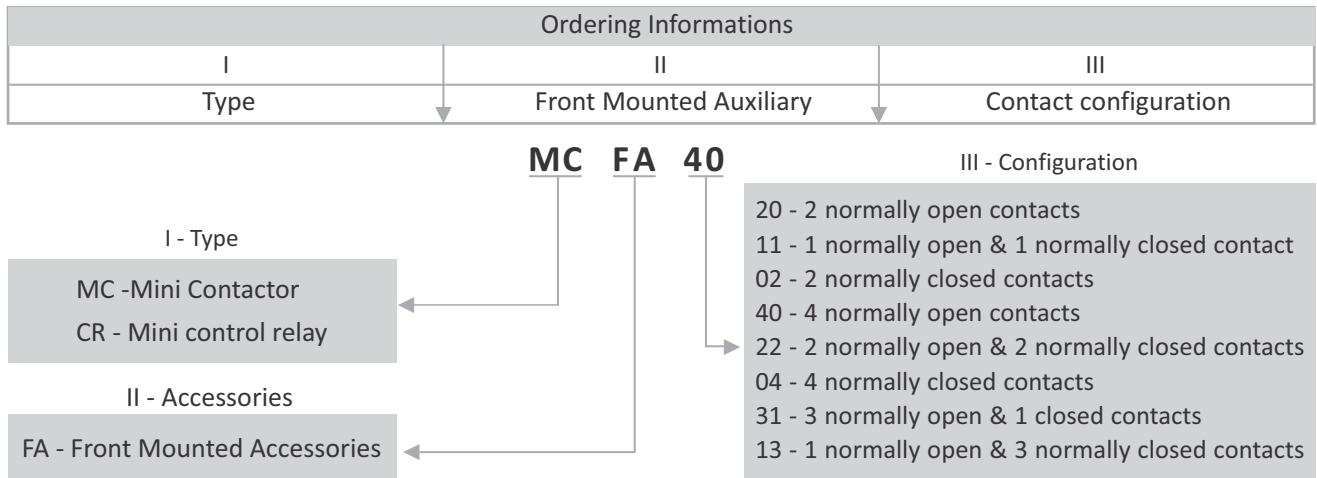


Mini Control Relay

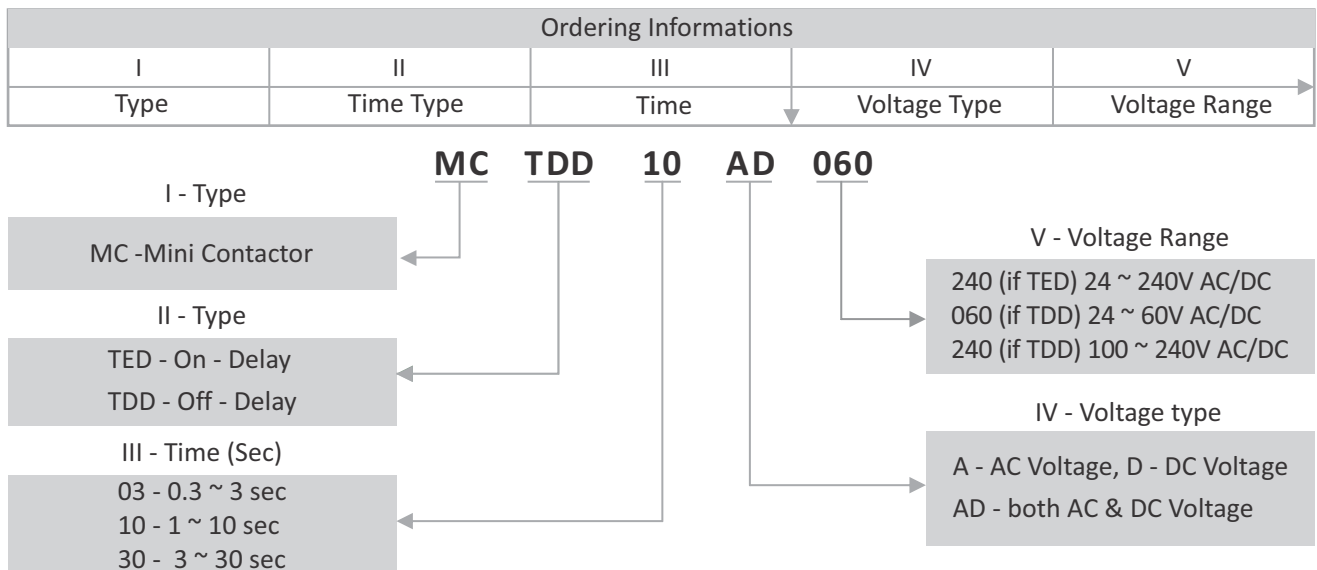


Ordering Code - Accessories

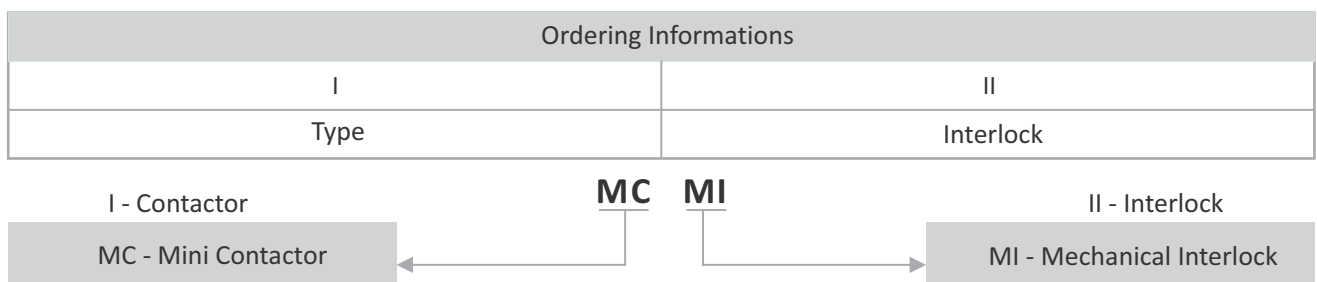
Auxiliary Contact



Electronic Timer



Mechanical Interlock



Ordering Code - Accessories

Wiring Module

Ordering Informations	
I	II
MC	RWM16



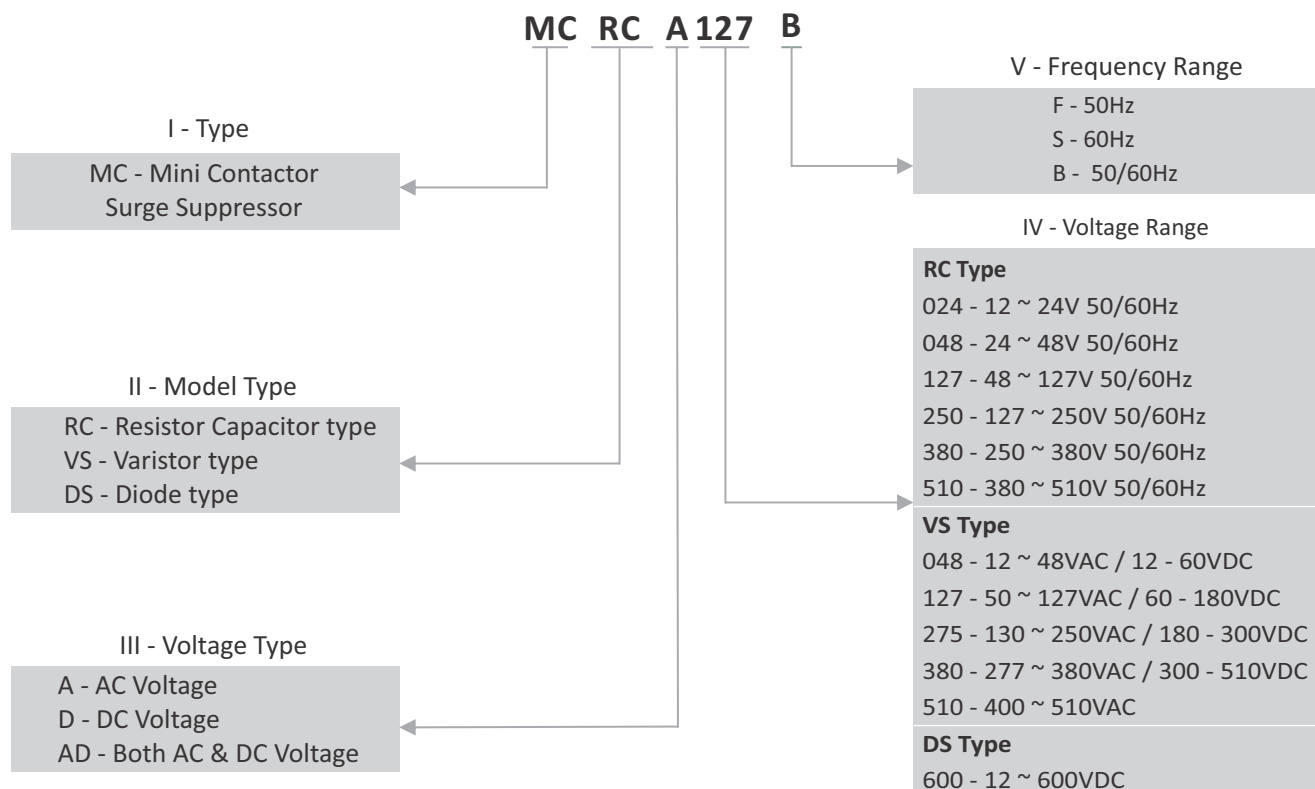
Printed Circuit Board Link Module

Ordering Informations	
I	II
MC	PCLM

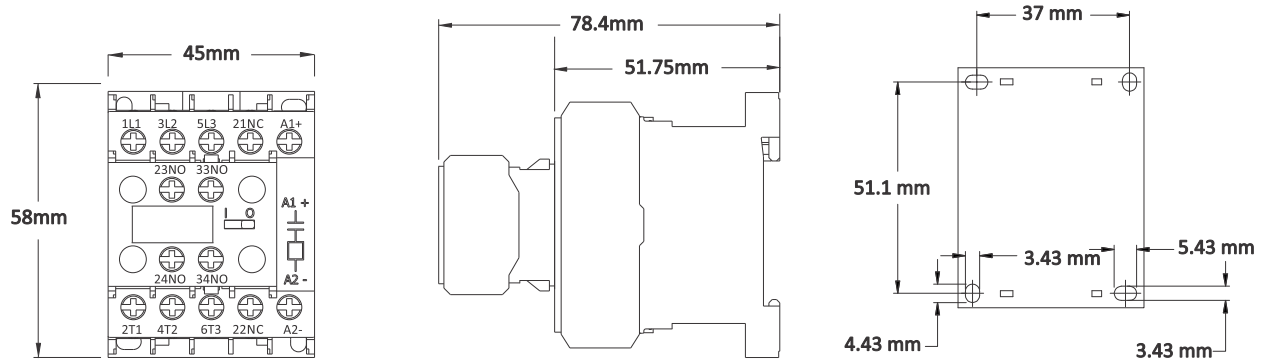


Mini Contactor Surge Suppressor

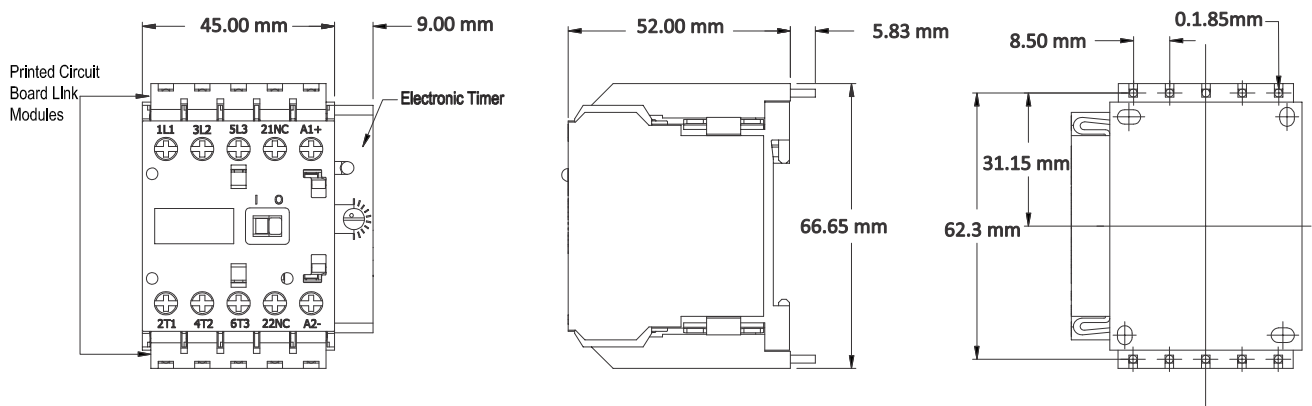
Ordering Informations				
I	II	III	IV	V
Type	Model	Voltage Type	Voltage Range	Frequency Range



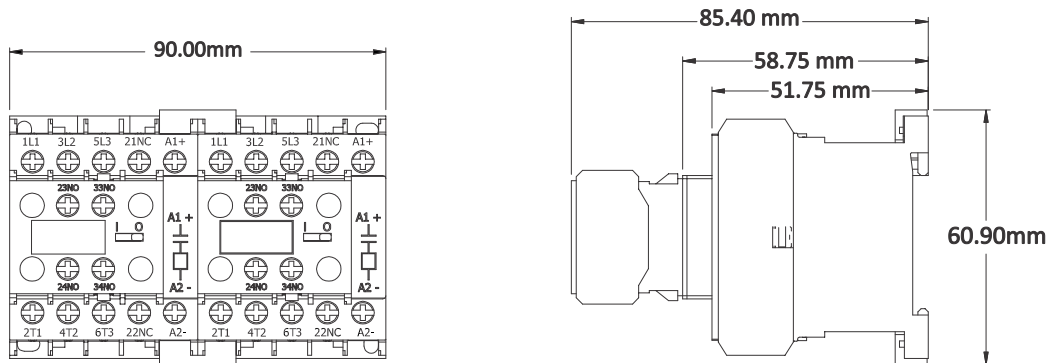
Mini Non -reversing Contactor & Control Relay with Auxiliary Contacts & Surge Suppressor



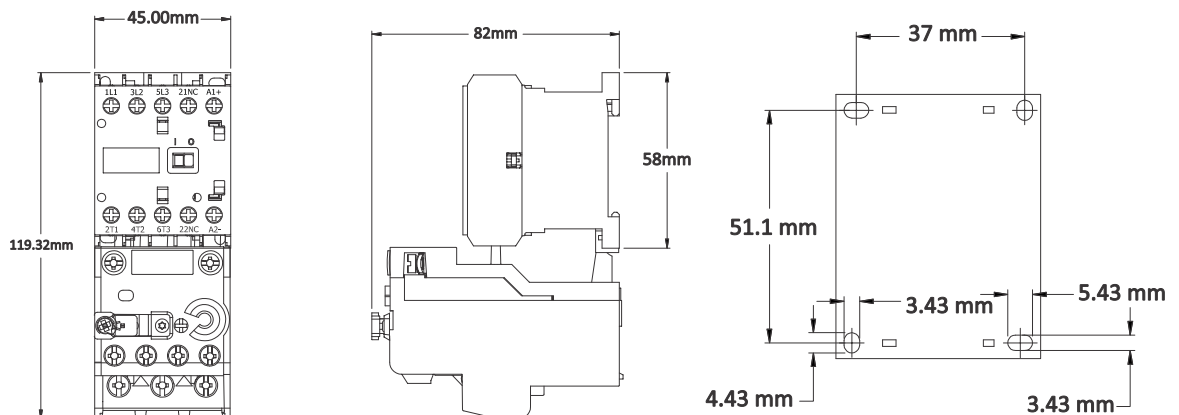
Mini Non -reversing Contactor & Control Relay With Printed Circuit Board Link Module & Electronic Timer



Mini Reversing Contactor & Control Relay with Auxiliary Contacts & Surge Suppressor



Mini Non - Reversing Contactor with Over Load Relay Assembly



OVERLOAD RELAYS



Bimetallic Overload Relays



Our Series BR Bimetallic Overload Relays are available in five frame sizes for motor full load currents from 0.28 ~ 112A.

Overload Relay Type	
Code	Description
BR	Bimetallic Overload Relay

Overload Relay Frame Size and Current Adjustment Range		
Code	Installs On Contactor	Current Adjustment Range
BR1L40	MC007, MC009, MC012, MC016	0.28 ~ 0.4
BR1L63	MC007, MC009, MC012, MC016	0.4 ~ 0.63
BR1L80	MC007, MC009, MC012, MC016	0.56 ~ 0.8
BR1M12	MC007, MC009, MC012, MC016	0.8 ~ 1.2
BR1M18	MC007, MC009, MC012, MC016	1.2 ~ 1.8
BR1M28	MC007, MC009, MC012, MC016	1.8 ~ 2.8
BR1M40	MC007, MC009, MC012, MC016	2.8 ~ 4.0
BR1M63	MC007, MC009, MC012, MC016	4.0 ~ 6.3
BR1M80	MC007, MC009, MC012, MC016	5.6 ~ 8.0
BR1H10	MC007, MC009, MC012, MC016	7.0 ~ 10.0
BR1H12	MC007, MC009, MC012, MC016	8.0 ~ 12.5
BR1H15	MC007, MC009, MC012, MC016	10 ~ 15
BR1H17	MC007, MC009, MC012, MC016	11 ~ 17
BR2L40	SC009, SC012, SC018, SC025	0.28 ~ 0.4
BR2L63	SC009, SC012, SC018, SC025	0.4 ~ 0.63
BR2L80	SC009, SC012, SC018, SC025	0.56 ~ 0.8
BR2M12	SC009, SC012, SC018, SC025	0.8 ~ 1.2
BR2M18	SC009, SC012, SC018, SC025	1.2 ~ 1.8
BR2M28	SC009, SC012, SC018, SC025	1.8 ~ 2.8
BR2M40	SC009, SC012, SC018, SC025	2.8 ~ 4.0
BR2M63	SC009, SC012, SC018, SC025	4.0 ~ 6.3
BR2M80	SC009, SC012, SC018, SC025	5.6 ~ 8.0
BR2H10	SC009, SC012, SC018, SC025	7.0 ~ 10.0
BR2H12	SC009, SC012, SC018, SC025	8 ~ 12.5
BR2H15	SC009, SC012, SC018, SC025	10 ~ 15
BR2H17	SC009, SC012, SC018, SC025	11 ~ 17
BR2H23	SC009, SC012, SC018, SC025	15 ~ 23
BR2H32	SC009, SC012, SC018, SC025	22 ~ 32
BR3H40	SC032, SC040	25 ~ 40
BR4H50	SC050, SC065, SC080	32 ~ 50
BR4H57	SC050, SC065, SC080	40 ~ 57
BR4H63	SC050, SC065, SC080	50 ~ 63
BR4H70	SC050, SC065, SC080	57 ~ 70
BR5H80	SC095, SC105	63 ~ 80
BR5H97	SC095, SC105	75 ~ 97
BR5X11	SC095, SC105	90 ~ 112

Bimetallic Overload Relays

Salzer BR Series Bimetallic Overload Relays provide thermal Trip Class 10 overload protection for single and three phase motors, and phase loss protection for three phase motors. Other features like IP20 guarded terminals with dual terminal markings, integral stop button, and direct mounting will help you to reduce your total installed costs and enhance the features and performance of your equipment.

BR1 - (MC007 - MC016)

BR2 - (SC009 - SC025)

BR3 - (SC032 - SC040)

BR4 - (SC050 - SC080)

BR5 - (SC095 - SC105)



Features

- 5 Frame sizes current rating up to 112 Amps suitable for Standard Contactors & Mini Contactors.
- BR1 series Overload Relays for use with MC Series Mini Contactors.
- BR series Overload Relays include integral connection to auxiliary and coil terminations for ease of wiring during installation when installed on MC Series Mini Contactors.
- Trip Indicator as an Unique feature
- Trip Class 10 for reliable and accurate protection against overload conditions.
- Single phase sensitivity to protect motors against damaging phase loss conditions.
- Direct mounting to all contactors, including BR1 Overload Relays for use with Series MC Mini Contactors.
- IP20 guarded terminals prevent accidental contact with live parts.
- Combination head terminal screws allow the use of flat, phillips or pozidriv screwdrivers.
- Ambient temperature compensation ensures reliable motor protection even in high temperature environments.

Unique Product Feature

Test button

Trip indicator



A - Automatic Reset Only
 AUTO - Automatic Reset and Test
 H - Manual Reset Only
 HAND - Manual Reset and Test

Salzer BR Series Bimetallic Overload Relays feature a multi-function reset button enabling the user to select the reset mode-manual or automatic and whether or not to enable the test function. When the reset button is pressed, with the reset function enabled, the Normally Open (NO) contact closes and the Normally Closed (NC) contact opens to verify the control circuit functionality. In addition, the NC contact can be used in a "Stop" circuit. With the test function disabled, the NO and NC contacts do not change state when the reset button is pressed-preventing unauthorized personnel from operating the control circuit. Multiple functions in a single device help you to reduce inventory and customize the overload relay operation to provide the performance and features you need for your specific application.

IEC 60947-4-1

Technical Specifications

UL 60947-4-1

		BR1	BR2	BR3	BR4	BR5
Electrical General	Units					
Current setting range	A	0.28 ~ 17	0.28 ~ 32	25 ~ 40	32 ~ 70	63 ~ 112
Operating Frequency	Hz	0 ~ 400				
Power Dissipation per pole	W	0.9 ~ 1.4	1.3 ~ 2.0	1.3 ~ 2.0	1.9 ~ 4.8	3 ~ 4.8
IEC Ratings						
Main Circuits						
Rated Insulation Voltage, U_i	V	690				
Rated Impulse Voltage withstand, U_{imp}	KV	6				
Rated Operating Voltage, U_e	VAC	690				
Maximum Rated Operating Current, I_e	A	17	32	40	70	112
Short Circuit Current, I_e	A	5kA				
Maximum fuse size in type "1" gL/gG*	A	63	100	125	200	275
Maximum fuse size in type "2" gL/gG*	A	35	63	100	175	250
Control Circuits						
Rated Insulation Voltage, U_i	V	690				
Rated Operating Current, I_e						
AC-15						
24V	A	4				
48V	A	3.5				
60V	A	3.5				
110~120V	A	3.00				
220~240V	A	2.00				
400~415V	A	1.50				
500V	A	0.50				
660~690V	A	0.30				
DC-13						
24V	A	1.00				
48V	A	0.50				
60V	A	0.50				
110V	A	0.25				
220V	A	0.10				
250V	A	0.10				
Short Circuit Coordination						
gL/gG	A	6				
UL Ratings						
Main Circuits						
Rated Operating Voltage, U_e	VAC	600				
Short Circuit Coordination						
Standard Fault Current	kA	5			10	
Maximum Fuse Size*	A	60	90	90	175	250
High Fault Current	kA	10				
Maximum Fuse Size*	A	30	60	60	100	150
Control Circuits						
Pilot Duting Rating	AC	C600				
	DC	R300				

*Varies by current settings range of overload relay.

Technical Specifications (Contd.)

		BR1	BR2	BR3	BR4	BR5
Environmental	Units					
Ambient Temperature		-25 to +55°C (-13 to -131°F) -UL Std., -5to+40°C (+23to+104°F)-IEC Std.,				
Ambient Storage Temperature		-40 to +70°C (-40 to 158°F)				
Altitude		<2000 mtrs				
Ambient Storage Temperature		<50% of +40°C, <90% of +20°C				
Construction						
Number of Poles		3				
Trip Class		10				
Pollution Degree		3				
Ingress Protection						
Main Circuit Terminals		IP20 (With wires connected)				
Control Circuit Terminals		IP20				
Weight						
	Kg.	0.15	0.15	0.31	0.31	0.37
	lbs.	0.33	0.33	0.68	0.68	0.82
Conductor Size						
Main Circuit Terminals						
UL / CSA	AWG	14 ~ 6	14 ~ 6	18 ~ 2	18 ~ 2	8 ~ 1/0
Solid	mm ²	2.5 ~ 16	2.5 ~ 16	1 ~ 35	1 ~ 35	10 ~ 50
Stranded	mm ²	2.5 ~ 16	2.5 ~ 16	1 ~ 35	1 ~ 35	10 ~ 50
Terminal Torque	Nm	1.4 ~ 2.3	1.4 ~ 2.3	4 ~ 6	4 ~ 6	5 ~ 6.5
	lb.in.	12.4 ~ 20.4	12.4 ~ 20.4	35 ~ 53	35 ~ 53	44.3 ~ 57.5
Control Circuits						
UL/CSA	AWG			2 X 18 ~ 12		
Solid	mm ²			2 X 1 ~ 4		
Stranded	mm ²			2 X 1 ~ 4		
Terminal Torque	Nm			1.13		
	lb.in.			10		
ROHS Compliance				Yes		

*Varies by current settings range of overload relay.

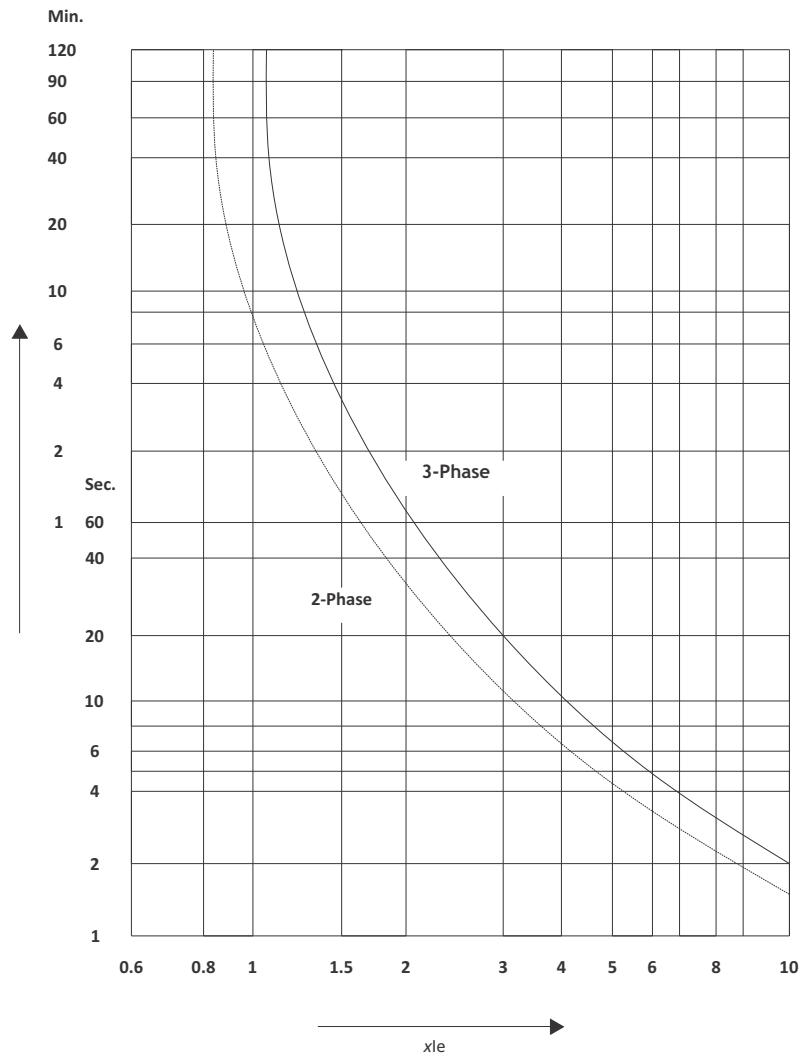
Separate Mounting Adapters



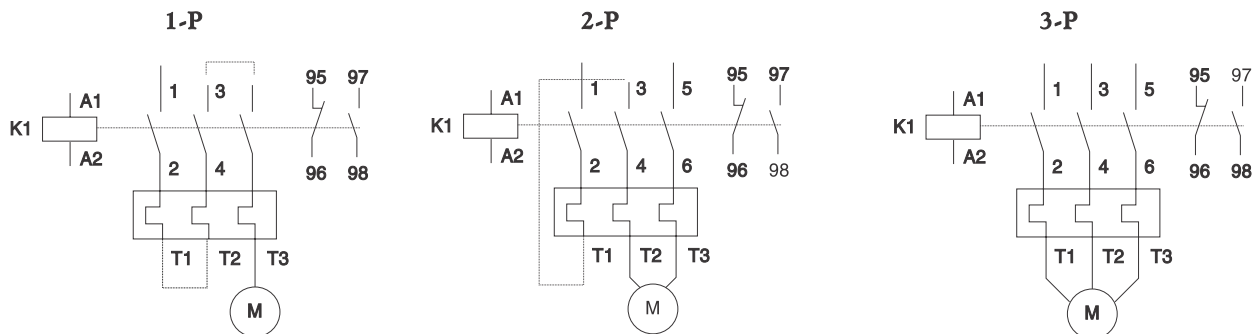
Separate mounting adapters enables Series BR Overload Relays to be installed separately from a contactor on a 35mm DIN rail or with fixing screws to a panel.

Separate Mounting Adapters	
Code	For use with
BR2MA2	BR2 Overload Relays
BR2MA4	BR3 & BR4 Overload Relays
BR2MA5	BR5 Overload Relays

Bimetallic Overload Relay Trip Characteristics



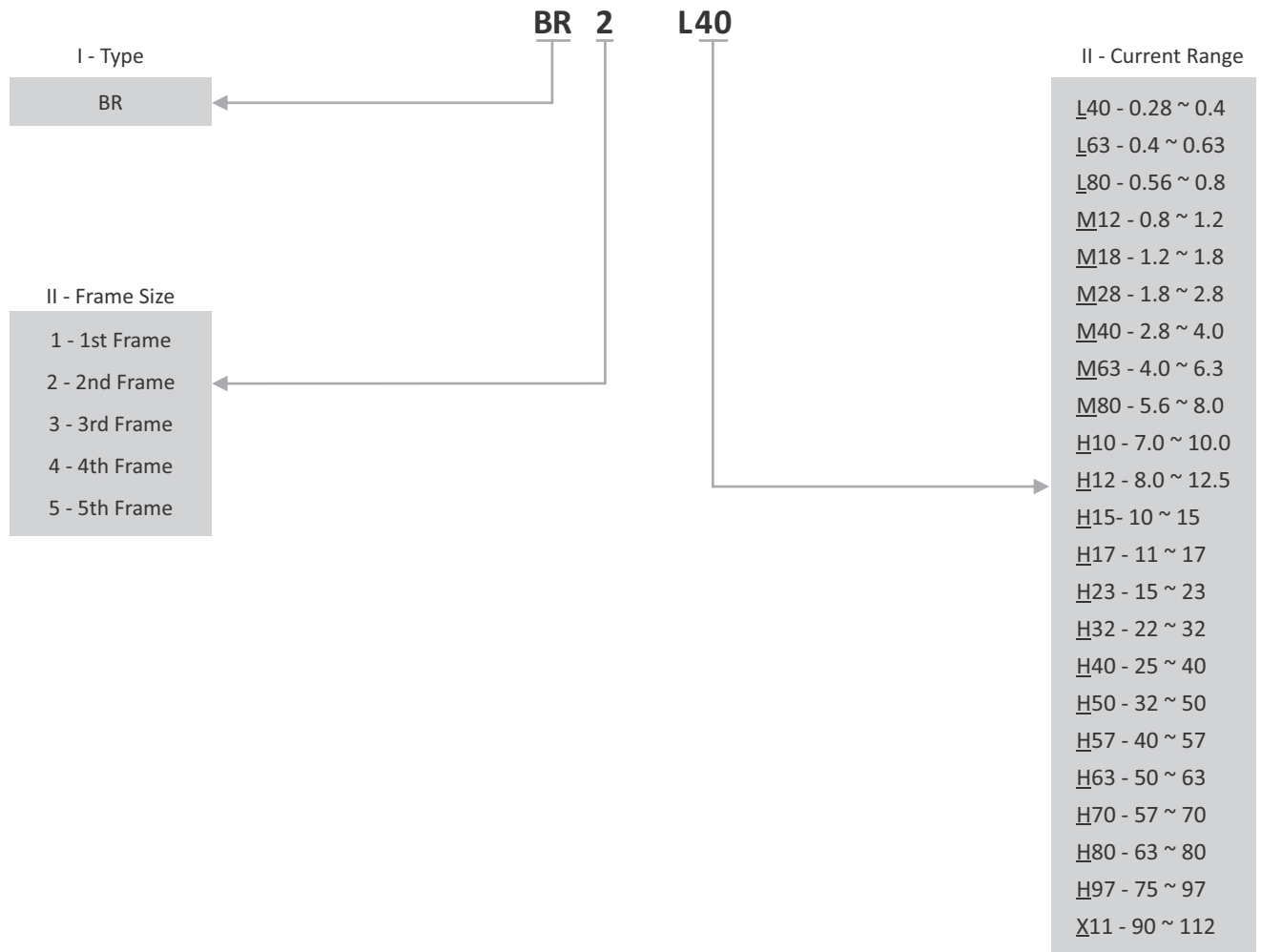
Circuit Diagrams



Ordering Code

Overload Relay

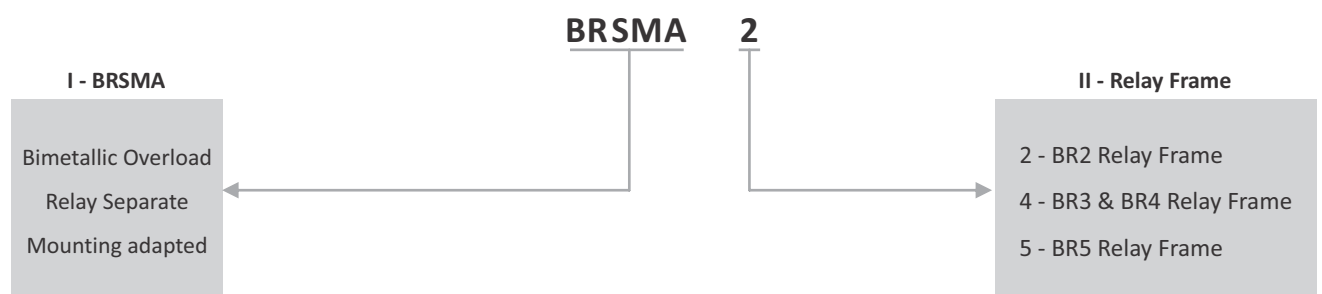
Ordering Informations		
I	II	III
Type	Frame Size	Configuration & Current Range



*For Ordering refer
page No.40

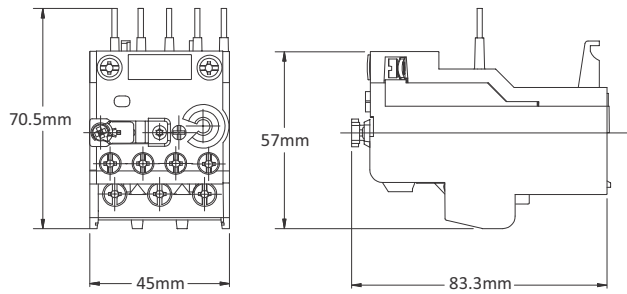
OLR Mounting Adapter

Ordering Informations	
I	II
BRSMA	Relay Frame

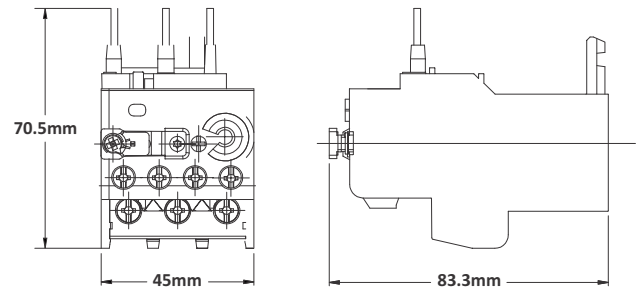


BR Series Bimetallic Overload Relays

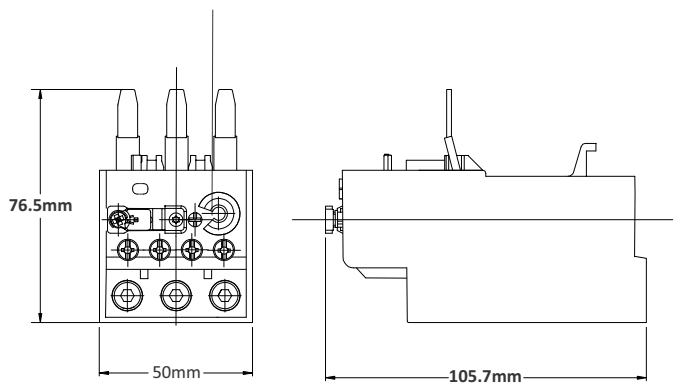
BR 1



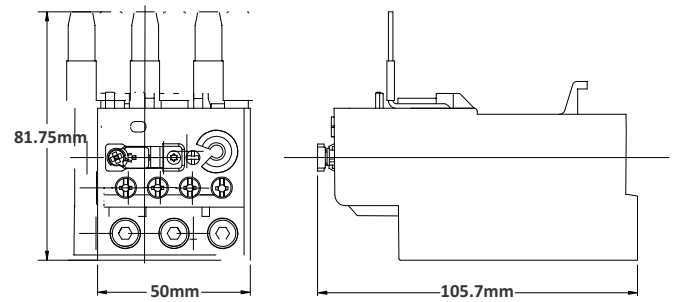
BR 2



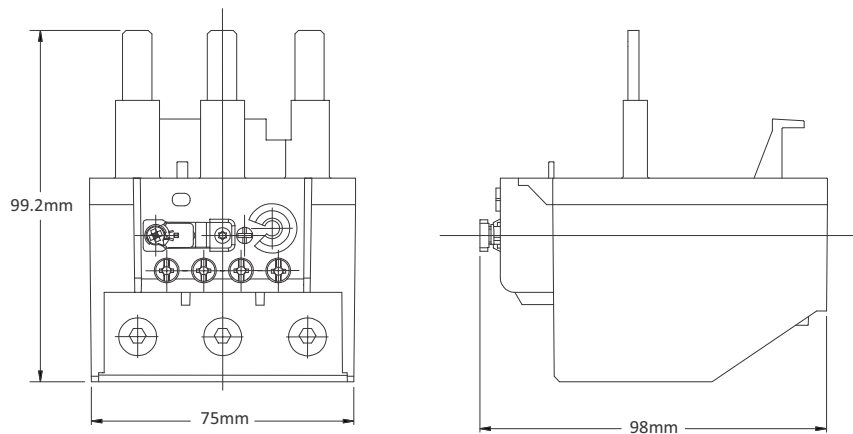
BR3



BR4

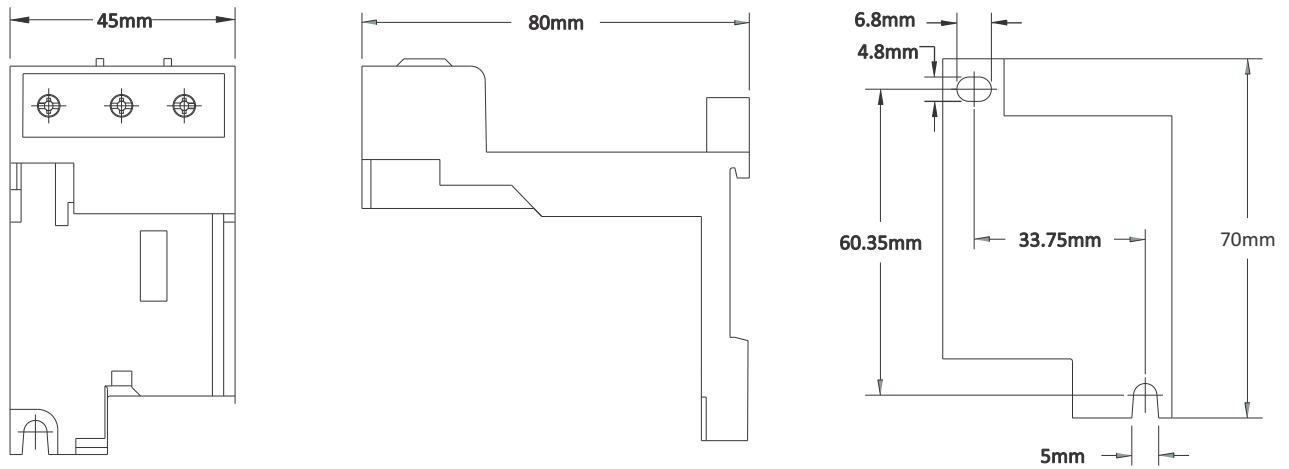


BR5

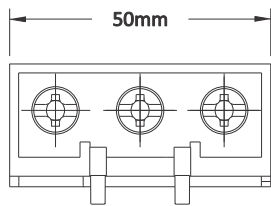


BR Series Separate Mounting Adapters

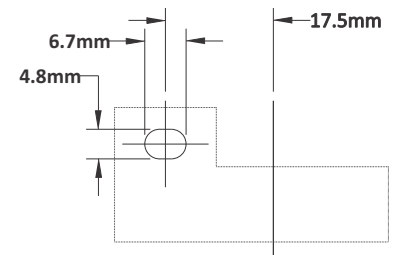
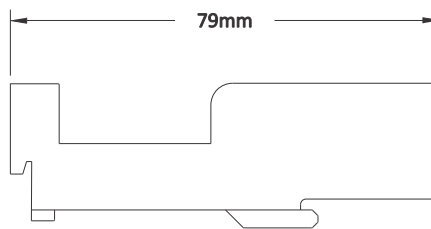
BR SMA2 Separate Mounting Adapter for use with BR2



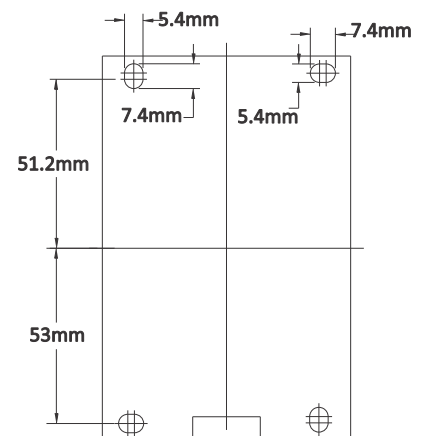
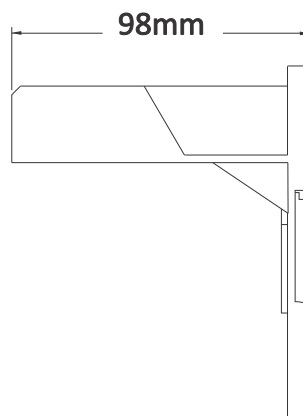
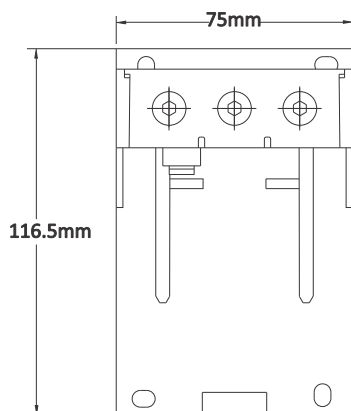
BR SMA4 Separate Mounting Adapter for use with BR3 & BR4



BR SMA5 Separate Mounting Adapter for use with BR5



BR SMA5 Separate Mounting Adapter for use with BR5



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