

Thermal-magnetic Motor Circuit Breakers, GV2 ME

GV2ME motor circuit breakers are 3-pole thermal-magnetic circuit breakers specially designed for the control and protection of motors, conforming to standard IEC 60947-2 and IEC 60947-1;

Circuit breakers GV2ME can be supplied with lugs or spring terminal connections, spring terminal connections ensure secure, permanent and durable clamping that is resistant to harsh environments, vibration and impact and are even more effective when conductors without cable ends are used, each connection can take two independent conductors;

Technical Data



GV2ME10

Motor circuit breakers from 0.12kW to 15kW/400V, with screw clamp terminals

GV2ME with pushbutton control

Reference	Setting range of thermal trips A	Standard power ratings of 3-phase motors, 50/60Hz in category AC-3								
		400/415V			500V			690V		
		P kW	I _{cu} kA	I _{cs} %	P kW	I _{cu} kA	I _{cs} %	P kW	I _{cu} kA	I _{cs} %
GV2ME04	0.40...0.63	0.12	-	-	-	-	-	0.37	-	-
GV2ME05	0.63...1.00	0.18	-	-	-	-	-	-	-	-
GV2ME06	1.00...1.60	0.25	-	-	-	-	-	0.55	-	-
GV2ME07	1.60...2.50	0.37	-	-	0.37	-	-	-	-	-
GV2ME08	2.50...4.00	0.55	-	-	0.55	-	-	0.75	-	-
GV2ME10	4.00...6.30	0.75	-	-	1.1	-	-	1.5	3	75
GV2ME14	6.00...10.0	1.5	-	-	1.5	-	-	2.2	3	75
GV2ME16	9.00...14.0	1.5	-	-	2.2	-	-	3	3	75
GV2ME20	13.0...18.0	2.2	-	-	3	50	100	4	3	75
GV2ME21	17.0...23.0	3	-	-	4	10	100	5.5	3	75
GV2ME22	20.0...25.0	4	-	-	5.5	10	100	7.5	3	75
GV2ME32	24.0...32.0	5.5	15	20	7.5	6	75	9	3	75
		7.5	15	50	9	6	75	11	3	75
		9	5	40	11	4	75	15	3	75
		11	15	40	15	4	75	18.5	3	75
		15	10	50	18.5	4	75	22	3	75

Thermal-magnetic Motor Circuit Breakers, GV2 LE

Motor circuit breakers from 0.12kW to 15kW/400V

GV2LE: control by rocker lever, connection by screw clamp terminals



GV2LE14

Reference	Magnetic protection ratings A	Standard power ratings of 3-phase motors, 50/60Hz in category AC-3								
		400/415V			500V			690V		
		P kW	I _{cu} kA	I _{cs} %	P kW	I _{cu} kA	I _{cs} %	P kW	I _{cu} kA	I _{cs} %
GV2LE04	0.63	0.12	-	-	-	-	-	0.37	-	-
GV2LE05	1	0.25	-	-	-	-	-	-	-	-
GV2LE06	1.6	0.55	-	-	0.55	-	-	1.1	-	-
GV2LE07	2.5	0.75	-	-	1.1	-	-	1.5	3	75
GV2LE08	4	1.5	-	-	1.5	-	-	3	3	75
GV2LE10	6.3	2.2	-	-	3	5	100	4	3	75
GV2LE14	10	-	-	-	-	-	-	7.5	3	75
GV2LE16	14	-	-	-	-	-	-	9	3	75
GV2LE20	18	7.5	15	50	9	6	75	15	3	75
GV2LE22	25	9	15	40	11	4	75	18.5	3	75
GV2LE32	32	15	10	50	18.5	4	75	22	3	75

xStart Motor Protectors

- Perfect for actuation by pressing or hitting;
- Common accessories, tool-less installation;
- Module design, highest level of flexibility and performance;

Motor-protective circuit-breaker, PKZM0

- Rotary operator knob



PKZM0-10.0

Motor rating	Setting range overload release	Type designation	Artical number	Units per package
-	0.10-0.16A	PKZM0-0.16	072730	1
0.06kW	0.16-0.25A	PKZM0-0.25	072731	1
0.09kW	0.25-0.40A	PKZM0-0.40	072732	1
0.12kW	0.40-0.63A	PKZM0-0.63	072733	1
0.25kW	0.63-1.00A	PKZM0-1.00	072734	1
0.55kW	1.00-1.60A	PKZM0-1.60	072735	1
0.75kW	1.60-2.50A	PKZM0-2.50	072736	1
1.50kW	2.50-4.00A	PKZM0-4.00	072737	1
2.20kW	4.00-6.30A	PKZM0-6.30	072738	1
4.00kW	6.30-10.0A	PKZM0-10.0	072739	1
5.50kW	10.0-12.0A	PKZM0-12.0	278486	1
7.50kW	12.0-16.0A	PKZM0-16.0	046938	1
9.00kW	16.0-20.0A	PKZM0-20.0	046988	1
12.5kW	20.0-25.0A	PKZM0-25.0	046989	1
15.0kW	25.0-32.0A	PKZM0-32.0	278489	1

Motor-protective circuit-breaker, PKZM01

- Push-button operated



PKZM01-16.0

Motor rating	Setting range overload release	Type designation	Artical number	Units per package
-	0.10-0.16A	PKZM01-0.16	278475	1
0.06kW	0.16-0.25A	PKZM01-0.25	278476	1
0.09kW	0.25-0.40A	PKZM01-0.40	278477	1
0.12kW	0.40-0.63A	PKZM01-0.63	278478	1
0.25kW	0.63-1.00A	PKZM01-1.00	278479	1
0.55kW	1.00-1.60A	PKZM01-1.60	278480	1
0.75kW	1.60-2.50A	PKZM01-2.50	278481	1
1.50kW	2.50-4.00A	PKZM01-4.00	278482	1
2.20kW	4.00-6.30A	PKZM01-6.30	278483	1
4.00kW	6.30-10.0A	PKZM01-10.0	278484	1
5.50kW	10.0-12.0A	PKZM01-12.0	278485	1
7.50kW	12.0-16.0A	PKZM01-16.0	283390	1

Accessories

Plastic enclosure for PKZM01	CI-PKZ01-G	281404	1
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Motor-protective circuit-breaker, PKZM01-G

- Degree of protection of the housing IP66



PKZM01-16.0-G

Motor rating	Setting range overload release	Type designation	Artical number	Units per package
-	0.10-0.16A	PKZM01-0.16-G	286068	1
0.06kW	0.16-0.25A	PKZM01-0.25-G	286069	1
0.09kW	0.25-0.40A	PKZM01-0.40-G	286080	1
0.12kW	0.40-0.63A	PKZM01-0.63-G	286081	1
0.25kW	0.63-1.00A	PKZM01-1.00-G	286082	1
0.55kW	1.00-1.60A	PKZM01-1.60-G	286083	1
0.75kW	1.60-2.50A	PKZM01-2.50-G	286084	1
1.50kW	2.50-4.00A	PKZM01-4.00-G	286085	1
2.20kW	4.00-6.30A	PKZM01-6.30-G	286086	1
4.00kW	6.30-10.0A	PKZM01-10.0-G	286087	1
5.50kW	10.0-12.0A	PKZM01-12.0-G	286088	1
7.50kW	12.0-16.0A	PKZM01-16.0-G	286089	1

AC Contactors LC1D

Application: LC1D series contactors are suitable for using in the circuits with rated voltage up to 660V, AC50/60Hz, current up to 95A, for making, breaking, frequently starting and controlling AC motors, combined with auxiliary contact blocks, time delaying blocks, and mechanical interlocking devices etc, they will become delaying contactors, mechanical interlocking contactors, star-delta starter.

Technical Data

Type	LC1D09	LC1D12	LC1D18	LC1D25	LC1D32	LC1D40	LC1D50	LC1D65	LC1D80	LC1D95		
Rated insulation voltage, U_i V	690											
Rated thermal current, I _{th} A	20	20	32	40	50	60	80	80	95	95		
Rated operational current, I _e	AC-3, 380VA	9	12	18	25	32	40	50	65	80	95	
	AC-3, 660VA	6.6	8.9	12	18	21	34	39	42	49	55	
	AC-4, 380VA	3.5	5	7.7	8.5	12	18.5	24	28	37	41	
	AC-4, 660VA	1.5	2	3.8	4.4	7.5	9	12	14	17.3	21.3	
Maximum power of 3 phase motor controlled	AC-3, 220V kW	2.2	3	4	5.5	7.5	11	15	18.5	22	25	
	AC-3, 380V kW	4	5.5	7.5	11	15	18.5	22	30	37	45	
	AC-3, 660V kW	5.5	7.5	10	15	18.5	30	33	37	45	55	
Mechanical life	10000t 1000				800				600			
Electrical life	AC-3	10000t 100				80				60		
	AC-4	10000t 20				15				10		
Operation frequency	AC-3	t/h 1200				600				600		
	AC-4	t/h 600				300				300		
Wiring capacity	mm ² 1.5 1.5 2.5 4 6 10 16 16 25 25											
Control power voltage, U _s AC	36, 110, 127, 220, 380V											
Allowed control voltage	Operation	85% to 110% U _s										
	Drop-out	20% to 75% U _s										
Coil voltage of contactors and codes												
Coil voltage	24	36	42	48	110	220	230	240	380	400	415	440
50Hz	B5	C5	D5	E5	F5	M5	P5	U5	Q5	V5	N5	R5
60Hz	B6	C6	D6	E6	F6	M6	P6	U6	Q6	V6	N6	R6
50/60Hz	B7	C7	D7	E7	F7	M7	P7	U7	Q7	V7	N7	R7



LC1D09-18



LC1D25-32



LC1D40-65



LC1D80-95

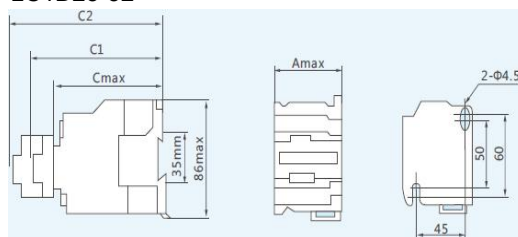
Dimensions, mm

LC1D09-18

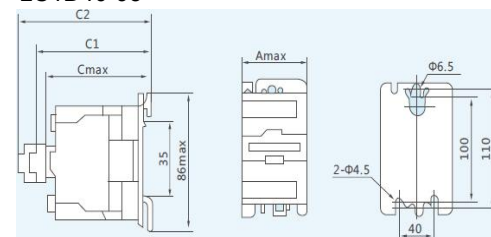


Type	Amax	Cmax	C1	C2
LC1D09-12	47	82	115	134
LC1D18	47	87	120	139
LC1D25	59	97	130	149
LC1D32	59	102	135	154
LC1D40-65	79	116	149	168
LC1D80-95	87	127	160	179

LC1D25-32



LC1D40-95



Contact Blocks LA1D and Time-Delaying Blocks LA2D



Specifications	NO	NC
LA1DN20	2	0
LA1DN11	1	1
LA1DN02	0	2
LA1DN40	4	0
LA1DN31	3	1
LA1DN22	2	2
LA1DN13	1	3
LA1DN04	0	4



Specifications	Range	Contacts
LA2DT0	0.1-0.3S	NO+NC
LA2DT2	0.1-30S	NO+NC
LA2DT4	10-180S	NO+NC
LA3DR0	0.1-0.3S	NO+NC
LA3DR2	0.1-30S	NO+NC
LA3DR4	10-180S	NO+NC

Tesys D Contactors

Applications: Industry, infrastructure, building etc

- Tesys D contactors have been designed for perfect integration in control system, specific reference BL or BBE compatible with digital I/O 100mA or 500mA;
- They can be used to create motor starters for any type of application;

Tesys D Contactors are the largest selling line of contactors in the world, they offer multistandard compact solution, high reliability with long mechanical and electrical life and the most complete line of accessories in the industry, are the perfect choice of any application.

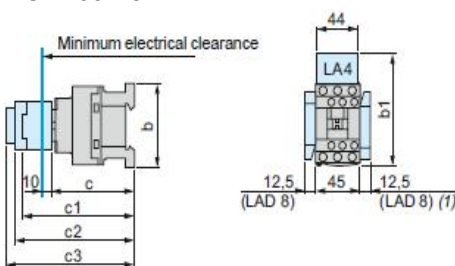
Pole Characteristics

Contactor Type	LC1	D09	D12	D18	D25	D32	D40	D50	D65	D80	D95	D115	D150	
Rated operational current, Ie	In AC-3, θ≤60°C	A 9	12	18	25	32	40	50	65	80	95	115	150	
Ue≤440V	In AC-1, θ≤60°C	A 25	25	32	40	50	60	80	80	125	125	200	200	
Rated operational voltage, Ue	Up to	V 690						1000						
Frequency limits	Of Ie	Hz 25...400												
Conventional thermal current, Ith	θ≤60°C	A 25	25	32	40	50	60	80	80	125	125	200	200	
Rated making capacity, 440V	Conforming to	A 250	250	300	450	550	800	900	1000	1100	1100	1260	1660	
Rated breaking capacity, 440V	IEC 60947	A 250	250	300	450	550	800	900	1000	1100	1100	1100	1400	
Permissible short time rating	For 1 s	A 210	210	240	380	430	42	810	900	990	1100	1100	1400	
No current flowing for preceding 15 minutes with θ≤40°C	For 10 s	A 105	105	145	240	260	320	400	520	640	800	950	1200	
	For 1 min	A 61	61	84	120	138	165	208	260	320	400	550	580	
	For 10 min	A 30	30	40	50	60	72	84	110	135	135	250	250	
Average impedance per pole	At Ith and 50Hz	mΩ 2.5	2.5	2.5	2	2	1.5	1.5	1.5	0.8	0.8	0.6	0.6	
Control Circuit Characteristics, AC Supply														
Rated control circuit voltage, U	50/60Hz	V 12...690						24...500						
Control voltage limits														
50 or 60Hz coils	Operation							0.85...1.1Uc at 55°C						
	Drop-out							0.3...0.5Uc at 55°C						
50/60Hz coils	Operation	0.8...1.1 Uc on 50Hz and 0.85...1.1Uc on 60Hz at 60°C						0.8...1.15Uc at 55°C						
	Drop-out	0.3...0.6Uc at 60°C						0.3...0.5Uc						
Average consumption at 20°C and at Uc														
AC50Hz, Inrush	50Hz coil	VA	-						200		300		-	
	CosØ		0.75								0.8		0.9	
AC50Hz, Sealed	50/60Hz coil	VA	70			160			245		280...350			
	CosØ		0.3										0.9	
AC60Hz, Inrush	50/60Hz coil	VA	7			15			26		2...18			
	CosØ		0.75								220		300	
AC60Hz, Sealed	50/60Hz coil	VA	70			140			245		280...350			
	CosØ		0.3								22		22	
Heat dissipation	50/60Hz	W	2...3			4...5			6...10		3...4.5			
	Closing "C"	ms	12...22			12...16			20...35					
Operating time	Opening "O"	ms	4...19						6...20					
	Maximum operating rate	in operating cycles per hour	3600						2400		1200			
Coil Voltage Code														
Volts		24	48	110	220	230	380	415	440					
50Hz		B5	E5	F5	M5	P5	Q5	N5	R5					
60Hz		B6	E6	F6	M6	P6	Q6	N6	R6					
50/60Hz		B7	E7	F7	M7	P7	Q7	N7	R7					

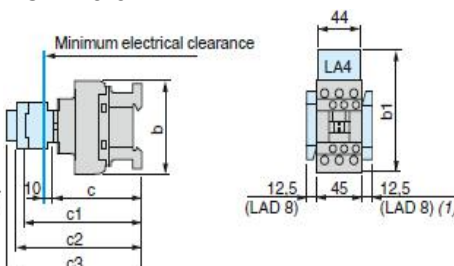
Tesys D Contactors

Dimensions, mm

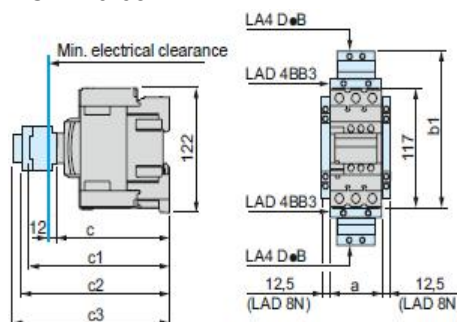
LC1D09-18



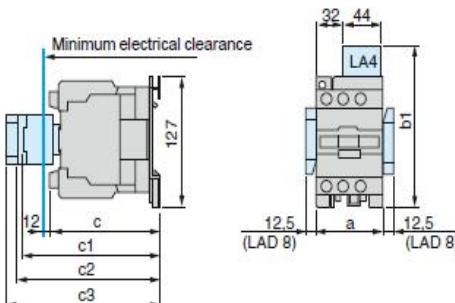
LC1D25-32



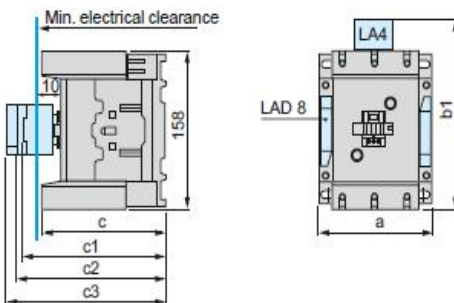
LC1D40-65



LC1D80-95



LC1D115-150



Auxiliary Contact Blocks LADN, LADT and Mechanical Latching Blocks LAD6K

Instantaneous auxiliary contact blocks for connection by screw clamp terminals



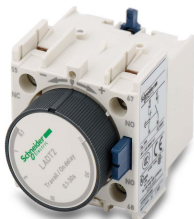
LADN10



LADN20



LADN22



LADT2



LAD6K10

Clip-on Mounting	Number of Contact	Composition					Reference
Front	1	-	-	-	1	-	LADN10
		-	-	-	-	1	LADN01
	2	-	-	-	1	1	LADN11
		-	-	-	2	-	LADN20
	4	-	-	-	-	2	LADN02
		-	-	-	2	2	LADN22
Front	4	-	-	-	1	3	LADN13
		-	-	-	4	-	LADN40
	-	-	-	-	4	LADN04	
-	-	-	3	-	LADN31		

Time delay auxiliary contact blocks for connection by screw clamp terminals

Clip-on Mounting	Number of Contact	Time-delay		Reference
		Type	Setting Range	
Front	1NO + 1NC	On-delay	0.1 ... 3 s	LADT0
			0.1 ... 30 s	LADT2
			10 ... 180 s	LADT4
		Off-delay	1 ... 30 s	LADS2
			0.1 ... 3 s	LADR0
			0.1 ... 30 s	LADR2
-	-	10 ... 180 s	LADR4	

Mechanical latching blocks

Clip-on Mounting	Unlatching control	For use on contactors	Reference
Front	Manual or Electric	LC1D09 ... LC1D65	LAD6K10●
-	-	LC1D80 ... LC1D115	LAD6K20●

TeSys F, 3-Pole Contactors

- Tesys F offers every high performance in AC3 and AC1 applications

-AC 3 range: For motor applications up to 450kW/400V, Control of all types of motors in normal or severe service conditions

-AC 1 range: For resistive applications up to 2100A/AC1 like Wind Turbines, UPS panels, Light Distribution Circuits etc

- Combined with LR9 electronic relay or GV7 motor circuit breakers, AC3 contactors are the ideal motor starters, offering quick simple selection as well as shared accessories for greater flexibility

- Tesys F contactors guarantee electrical coordination with fuses and Masterpact NW circuit breaker offers

Technical Data



LC1F185



LC1F400



LC1F630

Basic reference, to be completed by adding voltage code

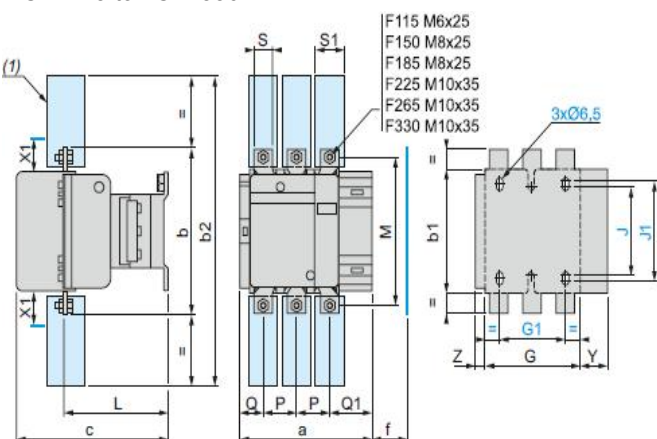
Rated Operational Current in AC-3, 440V up to	220/230V	380/400V	415V	440V	500V	660/690V	1000V
LC1F115●●	115	30	55	59	59	75	65
LC1F150●●	150	40	75	80	80	90	65
LC1F185●●	185	55	90	100	100	110	185
LC1F225●●	225	63	110	110	110	129	100
LC1F265●●	265	75	132	140	140	160	147
LC1F330●●	330	100	160	180	200	200	160
LC1F400●●	400	110	200	220	250	257	185
LC1F500●●	500	147	250	280	295	355	335
LC1F630●●	630	200	335	375	400	400	450
LC1F780●●	780	220	400	425	425	450	450
LC1F800●●	800	250	450	450	450	450	450

Voltage Codes

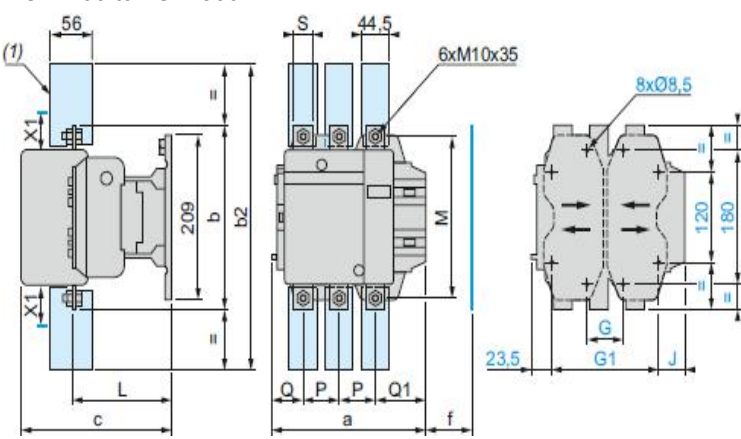
Volts, AC	24	48	120	220	240	380	415
LC1F115...F225							
50Hz, Coil LX1	B5	E5	-	M5	P5	Q5	N5
60Hz, Coil LX1	-	E6	G6	M6	-	Q6	-
LC1F265...F330							
40...400Hz, Coil LX1	B7	E7	G7	M7	P7	Q7	N7
LC1F400...F630							
40...400Hz, Coil LX1	-	E7	G7	M7	P7	Q7	N7
LC1F780							
40...400Hz, Coil LX1	-	-	F7	M7	P7	Q7	N7
LC1F800							
40...400Hz, Coil LX4	-	-	FW	MW	MW	QW	QW

Dimensions, mm

LC1F115 to LC1F330



LC1F400 to LC1F500



Modular Contactors, CT

CT modular contactors are not only used in residential sector, but in tertiary sector or in industrial utilities for the control of single or three-phase loads up to 100A, the range includes two types of contactors:

- Contactors with no manual operating mechanism
 - with closing poles, pole closing is controlled by the presence of voltage on the coil and pole opening by the disappearance of this voltage;
 - with opening poles, the poles are closed with the coil de-energized and open when the coil is fed with power, mainly used for load-shedding;
 - with mixed poles, closing and opening;
- Contactors with manual operating mechanism: they additionally allow closing or opening of the poles using the selector switch on the front panel during maintenance operations, or are used to override an automatic system, the selector switch has 3 positions: Off/Automatic Operation/Manual or Permanent operation.


A complete range of modular contactors:

- 16A to 100A ratings in single, two, three or 4-pole;
- Closing, opening or mixed poles with or without manual operating mechanism;
- Comply with standard in force in residential and tertiary applications: IEC 61095;
- With an adequate indication auxiliary for 25A to 100A contactors;

Electrical Characteristics

- Power circuit ratings at 40°C: 16 to 100A;
- Operating voltages: 24VAC±10%, 230VAC±15%;
- Coil frequency: 50Hz;

Selection Table

	Poles	Ratings, In	Width in 9mm Modules	Control Contacts	Control Voltage	With Manual	No Manual
	1P	25A	2	1N/O	230/240VAC	-	15958
		16A	2	1N/O + 1N/C	230/240VAC	-	15956
			2	2N/O	230/240VAC	-	15957
		2P	25A	2	2N/O	230/240VAC	15981
2	2N/O			24VAC	-	16020	
40A	2		2N/C	230/240VAC	-	15960	
	4		2N/O	230/240VAC	15984	15966	
63A	4		2N/O	230/240VAC	15987	15971	
	4		2N/O	24VAC	-	16024	
3P	25A	4	2N/O	230/240VAC	-	15977	
		4	3N/O	230/240VAC	15982	15961	
	40A	6	3N/O	230/240VAC	-	15967	
		6	3N/O	230/240VAC	-	15972	
	63A	4	4N/O	230/240VAC	15983	15962	
		4	4N/O	24VAC	-	10622	
4P	25A	4	4N/C	230/240VAC	-	15963	
		4	4N/C	24VAC	-	16023	
		4	2N/O + 2N/C	230/240VAC	-	15964	
	40A	6	4N/O	230/240VAC	15986	15968	
		6	4N/C	230/240VAC	-	15969	
	63A	6	4N/O	230/240VAC	15988	15973	
		6	4N/O	24VAC	-	16025	
		6	4N/C	230/240VAC	-	15974	
		6	4N/C	24VAC	-	16026	
		6	2N/O + 2N/C	230/240VAC	-	15975	
100A	12	4N/O	230/240VAC	-	15978		
Schematic Diagrams	1N/O	A1 1	A2 2				
	1NO + 1NC	A1 1	A2 2	R1 1	R2 2		
	2NO	A1 1	A2 2	1 3	2 4		
	2N/C	A1 1	A2 2	R1 1	R2 2	R3 3	R4 4
	3N/O	A1 1	A2 2	1 3	2 4	5 7	6 8
	4N/O	A1 1	A2 2	1 3	2 4	5 7	6 8

CT: 15988

Modular Contactors, iCT

iCT modular contactors can be used to remote control applications in alternative networks from 16A to 100A:

- lighting, heating, ventilation, roller blinds, sanitary hot water
- mechanical ventilation system, etc
- loading-shedding of non-priority circuits

Characteristics on load types

■ Standard IEC 61095 applies to electromechanical contactors for domestic and similar purpose, it differs from standard IEC 60947-4 by specific requirements relating to safety of persons and equipment in premises and corridors accessible to general public:

Applications	Industrial: IEC 60947-4	Domestic: IEC 61095
Motor	AC3	AC7b
Heating	AC1	AC7a
Lighting	AC5a and b	AC5a and b

Technical Data

Power Circuit	Voltage Rating, Ue	1P, 2P 3P, 4P	250VAC 400VAC
	Frequency		50 or 60Hz
	Endurance, O-C	Electrical	
Maximum number of switching/Da			100
Additional characteristics	Insulation Voltage, Ui		500VAC
	Pollution Degree		2
	Rated impulse withstand voltage		2.5kV
	Degree of protection		IP20
	Operating temperature		-5 to +60°C

Selection Table

Poles	Ratings, In	Width in 9mm Modules	Control Contacts	Control Voltage	With Manual	
					No Manual	Manual
1P	16A	2	1NO	220VAC	-	A9C22511
		2	1NO	230/240VAC	-	A9C22711
	25A	2	1NO	220VAC	-	A9C20531
		2	1NO	230/240VAC	-	A9C20731
	16A	2	2NO	220VAC	A9C23512	A9C22512
		2	1NO + 1NC	220VAC	A9C23515	A9C22515
2		1NO + 1NC	230/240VAC	A9C23715	A9C22715	
2		2NO	220VAC	A9C21532	A9C20532	
2P	25A	2	2NO	230/240VAC	A9C21732	A9C20732
		2	2NC	220VAC	-	A9C20536
		2	2NC	230/240VAC	-	A9C20736
		40A	6	2NO	220/240VAC	A9C21842
	63A	6	2NO	24VAC	A9C21162	A9C20162
	100A	6	2NO	220/240VAC	-	A9C80882
3P	16A	4	3NO	220/240VAC	-	A9C22813
		4	3NO	220/240VAC	A9C21833	A9C20833
	40A	6	3NO	220/240VAC	A9C21843	A9C20843
		6	3NO	220/240VAC	-	A9C20863
	16A	4	4NO	220/240VAC	-	A9C22814
		4	2NO + 2NC	220/240VAC	-	A9C22818
4P	20A	4	4NO	220/240VAC	-	A9C22824
		4	4NO	220/240VAC	A9C21834	A9C20834
	25A	4	4NC	220/240VAC	-	A9C20837
		4	2NO + 2NC	220/240VAC	-	A9C20838
	40A	6	4NO	220/240VAC	A9C21844	A9C20844
		6	4NC	220/240VAC	-	A9C20847
63A	6	4NO	220/240VAC	A9C21864	A9C20864	
	6	4NC	220/240VAC	-	A9C20867	
	6	2NO + 2NC	220/240VAC	-	A9C20868	
	6	3NO + 1NC	220/240VAC	-	A9C20869	
100A	6	4NO	220/240VAC	-	A9C20884	



iCT: A9C22211



iCT: A9C23515



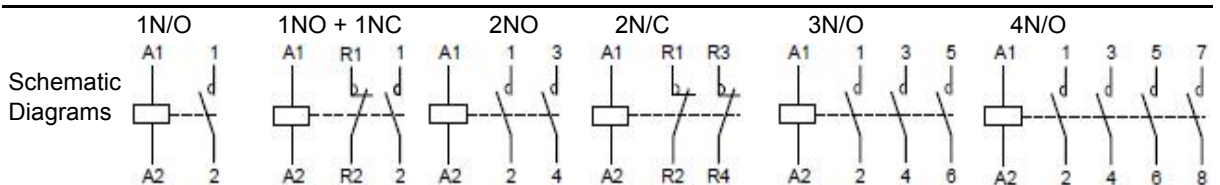
iCT: A9C20833



iCT: A9C21843



iCT: A9C20847



A9...A300, 3-pole Contactors








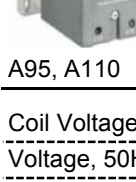
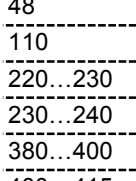
Description: A9...A300 contactors are mainly used for controlling 3-phase motors and power circuits up to 690VAC, the contactors are of the block type design with:

-3 main poles and 1 built-in auxiliary contact;

-control circuit: AC operated;

-add-on auxiliary contact blocks for front or side mounting and a wide range of accessories;

Technical Data

Rated Operational power, 400V AC-3, kW	Current, $\theta \leq 40^\circ\text{C}$ AC-1, A	Auxiliary Contacts		Type	Order Code	Weight Pack 1 Piece	
							
 A9, A12, A16	4	25	1	0	A9-30-10	1SBL141001R□□10	0.340
			0	1	A9-30-01	1SBL141001R□□01	
 A26	5.5	27	1	0	A12-30-10	1SBL161001R□□10	0.340
			0	1	A12-30-01	1SBL161001R□□01	
 A30, A40	7.5	30	1	0	A16-30-10	1SBL181001R□□10	0.340
			0	1	A16-30-01	1SBL181001R□□01	
 A50, A63, A75	11	45	1	0	A26-30-10	1SBL241001R□□10	0.600
			0	1	A26-30-01	1SBL241001R□□01	
 A95, A110	15	55	1	0	A30-30-10	1SBL281001R□□10	0.710
			0	1	A30-30-01	1SBL281001R□□01	
 A145, A185	18.5	60	1	0	A40-30-10	1SBL321001R□□10	0.710
			0	1	A40-30-01	1SBL321001R□□01	
 A210, A260, A300	22	100	1	0	A50-30-10	1SBL351001R□□10	1.160
			0	1	A50-30-01	1SBL351001R□□01	
	30	115	1	0	A63-30-10	1SBL371001R□□10	1.160
			0	1	A63-30-01	1SBL371001R□□01	
	37	125	1	0	A75-30-10	1SBL411001R□□10	1.160
			0	1	A75-30-01	1SBL411001R□□01	
	45	145	1	0	A95-30-10	1SBL431001R□□10	2.000
			0	1	A95-30-01	1SBL431001R□□01	
	55	160	1	0	A110-30-10	1SBL451001R□□10	2.000
			0	1	A110-30-01	1SBL451001R□□01	
	75	250	1	0	A145-30-10	1SBL471001R□□10	3.500
			0	1	A145-30-01	1SBL471001R□□01	
	90	275	1	0	A185-30-10	1SBL491001R□□10	3.500
			0	1	A185-30-01	1SBL491001R□□01	
	110	350	1	0	A210-30-10	1SBL511001R□□10	6.100
			0	1	A210-30-01	1SBL511001R□□01	
	140	400	1	0	A260-30-10	1SBL531001R□□10	6.100
			0	1	A260-30-01	1SBL531001R□□01	
	160	500	1	0	A300-30-10	1SBL551001R□□10	6.100
			0	1	A300-30-01	1SBL551001R□□01	

Coil Voltages and Codes: A9...A300

Voltage, 50Hz	Voltage, 60Hz	Voltage, 60Hz	Code, □□
24	24	24	8 1
48	48	48	8 3
110	110...120	110...120	8 4
220...230	230...240	230...240	8 0
230...240	240...260	240...260	8 8
380...400	400...415	400...415	8 5
400...415	415...440	415...440	8 6



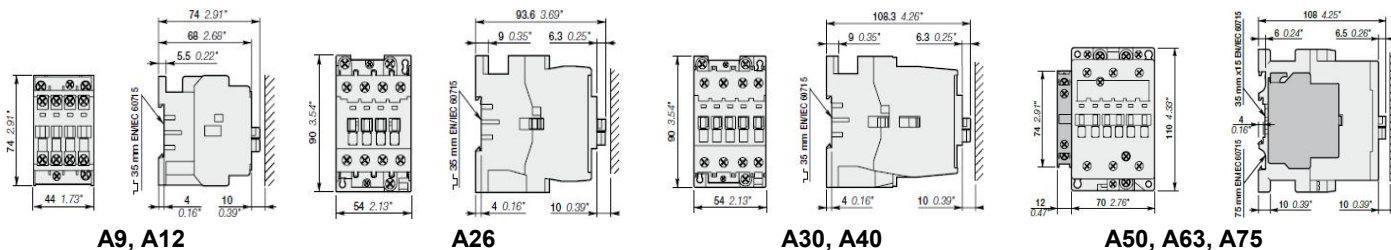
A145, A185



A210, A260, A300

A9...A300, 3-pole Contactors

Main dimension mm, inches



Auxiliary Contact Blocks

Description: the auxiliary contact blocks are used for the operation of auxiliary circuits and control circuits for standard industrial environments;

Type of auxiliary contact blocks for front mounting:

-CA5, 1 or 4-pole block, instantaneous with NO, NC contacts;

Select the 4-pole auxiliary contact blocks CA5 type, according to the contactor type for compliance with the standard requirements;

Type of auxiliary contact blocks for side mounting:

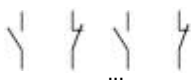
-CAL, 2-pole block, instantaneous NO+NC contacts;

For clipping onto the right, left hand side of the contactors:

The CAL18-11B is a second block for mounting in addition to a first CAL18-11 block, right, left hand of the A145...A300 contactors;

The auxiliary contact blocks are equipped with screw type connecting terminals delivered open, protected against accidental direct contact and bear the corresponding function marking;

For Contactors	Auxiliary Contacts	Type	Order Code	Package Weight quantity 1 Piece Pieces kg
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Front-mounted instantaneous auxiliary contact blocks, 1-pole

A9...A110	1 0 - -	CA5-10	1SBN010010R1010	10 0.014
	0 1 - -	CA5-01	1SBN010010R1001	10 0.014

Front-mounted instantaneous auxiliary contact blocks, 4-pole

A9...A26-40-00	2 2 - -	CA5-22E	1SBN010040R1022	5 0.060
A9...A26-22-00	3 1 - -	CA5-31E	1SBN010040R1031	5 0.060
A45...A110	4 0 - -	CA5-40E	1SBN010040R1040	5 0.060
	0 4 - -	CA5-04E	1SBN010040R1004	5 0.060
	1 1 1 1	CA5-11/11E	1SBN010040R1018	5 0.060
A9...A40-30-10	2 2 - -	CA5-22M	1SBN010040R1122	5 0.060
	3 1 - -	CA5-31M	1SBN010040R1131	5 0.060
	4 0 - -	CA5-40M	1SBN010040R1140	5 0.060
	0 4 - -	CA5-04M	1SBN010040R1104	5 0.060
	1 1 1 1	CA5-11/11M	1SBN010040R1118	5 0.060
A9...A40-30-01	2 2 - -	CA5-22U	1SBN010040R1322	5 0.060
	3 1 - -	CA5-31U	1SBN010040R1331	5 0.060
	4 0 - -	CA5-40U	1SBN010040R1340	5 0.060
	0 4 - -	CA5-04U	1SBN010040R1304	5 0.060
N 4-pole	2 2 - -	CA5-22N	1SBN010040R1222	5 0.060
	3 1 - -	CA5-31N	1SBN010040R1231	5 0.060
	4 0 - -	CA5-40N	1SBN010040R1240	5 0.060
	0 4 - -	CA5-04N	1SBN010040R1204	5 0.060

Side-mounted instantaneous auxiliary contact blocks, 2-pole

A9...A75	1 1 - -	CAL5-11	1SBN010020R1011	5 0.050
A95...A300	1 1 - -	CAL18-11	1SFN010720R1011	5 0.050
A145...A300	1 1 - -	CAL18-11B	1SFN010720R3311	5 0.050

Interlock Units

A9...A40	Mechanical	- -	VM5-1	1SBN030100R1000	5 0.066
		- 2	VE5-1	1SBN030110R1000	5 0.076
A50...A110		- 2	VE5-2	1SBN030210R1000	5 0.146
A145...A300			VM300H	1SFN034700R1000	5 0.150



CA5-10



CA5-31



CAL5-11



VE5-1

S-N Magnetic Contactors

S-N Magnetic Contactors are designed to conform the relevant IEC recommendations and to the standards of as many countries as possible with the following characteristics:

- By adopting a CAN terminal, there is no need to remove the screws, and losing of the terminal screw by the integrated screw holder and terminal screw, the terminal screw is set in a plastic screw holder, when each pole is moved and the screw loosened, the screw is naturally set in the screw holder;
- The design has been unified for S-N, the front face of the product is a bright white color, making the inside of the panel brighter and providing a clean image;
- By adopting the new extinguishing mechanism, the arc space have to reduced to approximate one-third, the arc blowoff have been changed to further improve safety and space conversation;
- Medium and large sized models from S-N50 to S-N800, an easy-to-install terminal cover, which lays importance on further safety and is compatible with finger protection, has been prepared;

Technical Data

Contactor Type		S-N10	S-N12	S-N18	S-N21	S-N25	S-N35	S-N50	S-N65	S-N80	S-N95	S-N125	S-N150	S-N180	
Rated insulation voltage, Ui V		690												1000	
Conventional air thermal current, Ith A		20	20	25	32	50	60	80	100	135	150	150	200	260	
Max current for AC-4 duty at 440V	A	6	9	9	13	17	24	32	47	62	75	90	110	150	
3-ph, cosθ=0.35, 240/440V	Making	A	110	130	180	220	300	400	550	650	850	1050	1250	1500	1800
	Breaking	A	100	120	180	220	300	400	550	650	800	930	1000	1200	1450
Rated capacity for resistive loads 3-ph, Category AC-1	220-240V	kW	7.5	7.5	9.5	12	18	20	30	35	50	55	75	95	
	380-440V	kW	7	8.5	13	20	30	35	50	65	85	90	130	170	
Rated capacity for resistive loads 3-ph, Category AC-3	220-240V	A	11	13	18	22	30	40	55	65	85	105	125	150	180
	380-440V	A	9	12	16	22	30	40	50	65	85	105	120	150	180
Rated capacity for jogging of AC motors 3-ph, Category AC-4	220-240V	kW	0.75	1.1	1.5	2.2	3	3.7	5.5	7.5	7.5	11	15	18.5	22
	380-440V	kW	1.1	1.5	2.2	3.7	5.5	5.5	7.5	11	15	18.5	22	30	37
Switching frequency, operations/hour	AC-1		1800	1800	1800	1800	1800	1800	1200	1200	1200	1200	1200	1200	
	AC-3		1800	1800	1800	1800	1800	1800	1200	1200	1200	1200	1200	1200	
Operating time at rated coil voltage, AC	AC-4		660	660	600	600	600	600	600	600	300	300	300	300	
	Closing	ms	15	15	15	15	15	15	25	25	27	27	25	27	30
Coil consumption at rated voltage, AC	Opening	ms	10	10	10	10	10	10	53	53	75	75	85	85	100
	Inrush	VA	60	60	60	90	110	110	132	132	225	225	320	320	480
Coil voltage tolerance	Sealed	VA	10	10	10	15	13	13	17	17	22	22	26	26	44
	Watts	VA	3.5	3.5	3.5	5.3	5.3	5.3	2.8	2.8	3.3	3.3	3.5	3.5	5
Mechanical endurance, make/break oper		10 Million						5 Million							
Permissible ambient temperature	°C	-25 to +55													
Vibration, 10-55Hz		19.6m/s ²													
Shock, 10ms half sine wave		49m/s ²													
Conductor size, mm ²		1-2.5	1-2.5	1-6	1-6	2-16	2-16	2-25	2-25	2-50	2-50	-	-	-	
Control terminal, mm ²		1-2.5													
Busbar width, mm		-	-	-	-	-	-	-	-	15	15	15	20	25	



S-N10



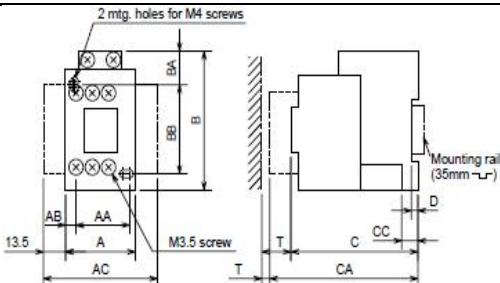
S-N18



S-N25



S-N50



Outer Dimensions, mm

Type	A	B	C	AA	AB	AC	BB	BA	CC	CA	D
S-N10	43	78	78	35	4.5	70	50	19	10	106	4
S-N12	53	78	78	40	4.5	-	50	19	10	106	4
S-N18	43	79	81	30	6	-	60	13	10	109	4
S-N21	63	81	81	54	4.5	90	60	14	6.5	109	4
S-N25	75	89	91	65	5	102	70	13	6.5	119	4
S-N35	75	89	91	65	5	102	70	13	6.5	119	4

Magnetic Contactors, SC

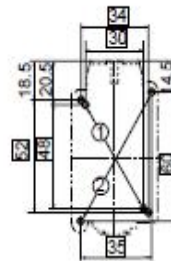
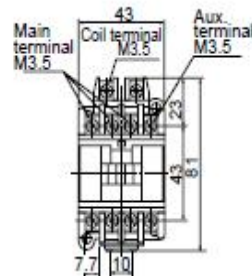
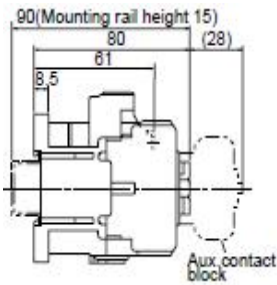
Descriptions: SC series contactors have been developed and manufactured using the most advanced electronic technologies, they employ an electronically-controlled super magnet which is provided with a built-in IC, thus enhancing their performance and reliability, the super magnet is based on an "AC-Input, DC-operated concept", thus allowing the coil to be energized by both AC and DC input. Moreover, once closed, sealed current is controlled by switching circuit, this permits a great reduction in power consumption with the following features:

- Operates on both AC and DC power supply;
- Has a wide operational voltage range;
- No tendency to "chatter";
- Eliminates contact welding or coil burning;
- Reduces power consumption;

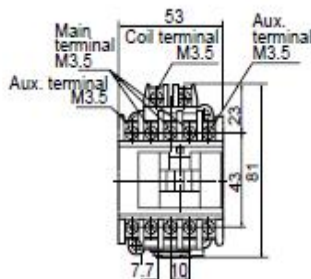
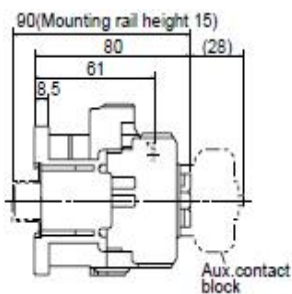
Selection Table of SC Magnetic Contactors

Frame size and type: SC-	03	0	05	4-0	4-1	5-1	N1	N2	N2S	N3	N4	N5A	N6	N7	N8	N10	
Operational current, I _{AC-1}	20	20	20	25	32	32	50	60	80	100	135	150	150	200	260	260	
Conventional free air thermal current, A	20	20	20	25	32	32	50	60	80	100	135	150	150	200	260	260	
Operational current, I	200-240V	11	13	13	18	22	22	32	40	50	65	80	105	125	150	180	220
	380-440V	9	12	12	16	22	22	32	40	50	65	80	105	125	150	180	220
	500-550V	7	9	9	13	17	17	24	29	38	60	60	85	90	120	180	200
	600-660V	5	7	7	9	9	9	15	19	26	38	44	64	72	103	150	150
Maximum motor capacity, kW, AC-3, IEC 60947-4-1	200-240V	2.5	3.5	3.5	4.5	5.5	5.5	7.5	11	15	19	22	30	37	45	55	65
	380-440V	4	5.5	5.5	7.5	11	11	15	19	22	30	40	55	60	75	90	110
	500-550V	4	5.5	5.5	7.5	11	11	15	19	25	37	37	55	60	75	130	132
	600-660V	4	5.5	5.5	7.5	7.5	7.5	11	15	22	30	37	55	60	90	132	132
Thermal overload relays	TR-0N			TR-5-1N			TR-N2	TR-N3	TR-N5	TR-N7	TR-N10						

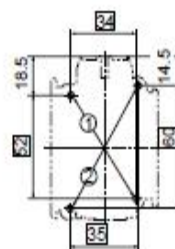
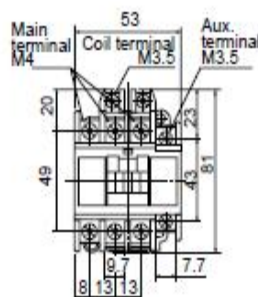
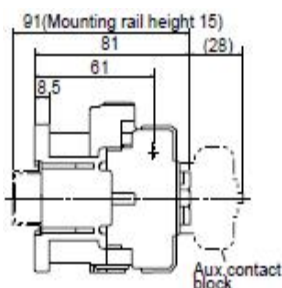
Dimensions, mm



SC-03, SC-0



SC-05



SC-4-0, SC-4-1

GMC(D) Magnetic Contactors, Meta-Mec Type

Descriptions: Meta-mec contactors are designed to show superior technology, sealed structure has improved its safety features so that no arc flash is exposed, in order to emphasize its durability as an individual device, Metamec series adopt simple design form and sophisticated shape applying diamond cut concepts on product surface.

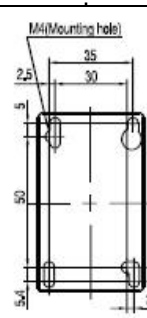
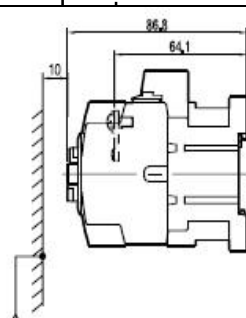
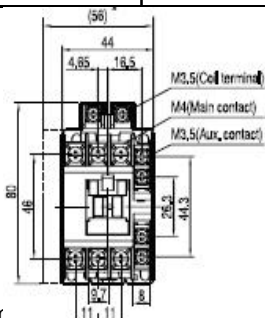
Selection Table of GMC(D) Magnetic Contactors, Meta-Mec Type

Frame size																
Type: GMC(D)-		9	12	18	22	32	40	50	65	75	85	100	125	150		
Number of poles		3-pole														
Rated operational voltage, Ue		690V														
Rated insulation voltage, Ui		690V														
Rated impulse withstand voltage, Umip		6kV														
Rated frequency		50/60Hz														
Max operating rating operating cycles		1800 operations per hour										1200 operations per hour				
Durability	Mechanical	15 million operations										12 million operations				
	Electrical	2.5 million operation										2 million operations				
Current and power	AC-1, Thermal current	A	25	25	40	40	50	60	80	100	110	135	150	150	200	
		kW	2.5	3.5	4.5	5.5	7.5	11	15	19	22	25	30	37	45	
	200/240	A	11	13	18	22	32	40	55	65	75	85	105	125	150	
		kW	4	5.5	7.5	11	15	19	22	30	37	45	55	60	75	
	380/440	A	9	12	18	22	32	40	50	65	75	85	105	120	150	
		kW	4	7.5	7.5	15	19	22	30	33	37	45	55	60	90	
	500/550	A	7	12	13	22	28	32	43	60	64	75	85	90	140	
		kW	4	7.5	7.5	15	19	22	30	33	37	45	55	60	90	
	690	A	5	9	9	18	20	23	28	35	42	45	65	70	100	
		kW	5	9	9	18	20	23	28	35	42	45	65	70	100	
UL ratings, 50/60Hz	Continuous current	A	20	25	30	32	45	50	70	80	90	100	160	160	210	
		HP	0.5	0.5	1	2	2	3	3	5	5	7.5	7.5	10	15	
	Single phase	110-120	HP	1	2	3	3	5	5	7.5	10	15	15	20	25	
		220-240	HP	2	3	5	7	7.5	10	10	15	20	25	30	40	40
	Three phase	220-240	HP	2	3	5	7.5	10	10	15	20	25	30	30	40	50
		440-480	HP	5	7.5	10	10	20	25	30	40	50	50	60	75	100
500-600	HP	7.5	10	15	15	20	25	30	40	50	50	60	75	100		
	NEMA size		00	00	0	0	1	1	2	2	2	3	3	3	4	
Size & weight	Weight	kg	0.33		0.37		0.45		1.00		2.90		3.40			
	Size, WxHxD	mm	56x80x113				68x82x121				94x124x117		100x130x146			
Auxiliary	Standard		1a or 1b				2a2b				2a2b		2a2b			
	Side mount		AU-1, AU-100													
	Front mount		AU-2, AU-4													

Selection Table of GT Thermal Overload Relays, Meta-Mec Type

Type		GT-22			GT-40		GT-85		GT-100		GT-150
Screw clamp terminals		•			•		•		•		•
Rated operational voltage, Ue		690V									
Rated insulation voltage, Ui		690V									
Rated impulse withstand voltage, Umip		6kV									
Trip class		10A, 20									
Setting range		0.63-4A			4-43A		7-36A		34-150A		
Size & weight	Weight	kg	0.1		0.21		0.31		0.48		
	Size, WxHxD	mm	45x73.2x63.7			45x75x80		45x75x90		70x97x110	

Dimensions, mm



GMC-9 to GMC-22

MC Magnetic Contactors, Metasol Type

Descriptions: Metasol contactors are designed to show superior technology, sealed structure has improved its safety features so that no arc flash is exposed, in order to emphasize its durability as an individual device, Metasol series adopt simple design form and sophisticated shape applying diamond cut concepts on product surface.

Selection Table of MC Magnetic Contactors, Metasol Type

Frame size		18AF				22AF				40AF		65AF		100AF				
Type: MC-		6a	9a	12a	18a	9b	12b	18b	22b	32a	40a	50a	65a	75a	85a	100a		
Number of poles		3-pole																
Rated operational voltage, Ue		690V																
Rated insulation voltage, Ui		690V																
Rated impulse withstand voltage, Umip		6kV																
Rated frequency		50/60Hz																
Max operating rating operating cycles		1800 operations per hour										1200 operations per hour						
Durability	Mechanical	15 million operations										12 million operations						
	Electrical	2.5 million operation										2 million operations						
Current and power	AC-1, Thermal current	A	25	25	25	32	25	25	40	40	50	60	70	100	110	135	160	
			kW	2.2	2.5	3.5	4.5	2.5	3.5	4.5	5.5	7.5	11	15	19	22	25	30
		200/240	A	9	11	13	18	11	13	18	22	32	40	55	65	75	85	105
			kW	3	4	5.5	7.5	4	5.5	7.5	11	15	19	22	30	37	45	55
		380/440	A	7	9	12	18	9	12	18	22	32	40	50	65	75	85	105
			kW	3	4	7.5	7.5	4	7.5	7.5	15	19	22	30	33	37	45	55
		500/550	A	6	7	12	13	7	12	13	20	28	32	43	60	64	75	85
			kW	3	4	7.5	7.5	4	7.5	7.5	15	19	22	30	33	37	45	55
		690	A	4	5	9	9	6	9	9	18	20	23	28	35	42	45	65
			kW	-	-	-	-	-	-	-	-	22	22	30	30	37	37	37
		1000	A	-	-	-	-	-	-	-	-	17	17	23	23	28	28	28
			kW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rated short-time withstand current, IEC 60947	1 Second	A	210	250	280	300	250	280	300	400	600	700	1000	1050	1100	1200	1320	
	10 Seconds	A	105	110	120	130	110	120	154	186	260	300	550	700	750	800	900	
	30 Seconds	A	70	70	80	85	70	80	100	130	160	160	330	380	400	450	500	
	1 Minute	A	61	61	61	70	61	61	84	90	100	100	250	270	300	350	400	
	3 Minute	A	40	45	47	50	45	50	60	60	70	70	150	200	220	270	270	
	10 Minutes	A	30	30	30	40	30	30	40	50	55	55	90	120	140	170	180	
	≥15 Minutes	A	25	26	28	40	26	28	40	45	50	50	87	100	114	150	160	
UL ratings, 50/60Hz	Continuous current	A	25	25	25	32	25	25	40	40	50	60	70	100	110	135	160	
		HP	0.5	0.5	0.8	1	0.5	0.8	1	2	2	2	3	5	5	7.5	10	
	Single phase	110-120	HP	0.5	0.5	0.8	1	0.5	0.8	1	2	2	2	3	5	5	7.5	10
		220-240	HP	1.5	1.5	2	3	1.5	2	3	3	5	5	10	15	15	15	20
	Three phase	200-208	HP	2	2	3	7.5	2	3	7.5	7.5	7.5	15	20	25	25	30	30
		220-240	HP	3	3	5	7.5	3	5	7.5	10	10	15	25	30	30	40	40
440-480		HP	5	5	7.5	10	5	7.5	10	15	20	30	40	50	50	60	75	
500-600		HP	7.5	7.5	10	15	7.5	10	15	20	25	30	50	60	60	75	75	
NEMA size		00	00	0	1	00	0	1	-	1P	2	-	-	-	3	-		
Size & weight	Weight	kg	0.33				0.34				0.55		1.05		1.93			
	Size, WxHxD	mm	45x73.5x80.4				45x73.5x87.4				69x83x90		79x106x119		94x140x135.8			
Auxiliary	Standard		1a or 1b				1a1b				2a2b		2a2b		2a2b			
	Side mount		UA-1															
	Front mount		UA-2, UA-4															

Selection Table of MT Thermal Overload Relays, Metasol Type

Type		MT-12/□				MT-32/□		MT-32/□		MT-63/□		MT-95/□		
Screw clamp terminals		•				•		•		•		•		
Rated operational voltage, Ue		690V												
Rated insulation voltage, Ui		690V												
Rated impulse withstand voltage, Umip		6kV												
Trip class		10A, 20												
Setting range		0.63-18A				1-40A		1-40A		10-65A		16-100A		
Size & weight	Weight	kg	0.1				0.17		0.17		0.31		0.48	
	Size, WxHxD	mm	45x73.2x63.7				45x75x90		45x75x90		55x81x100		70x97x110	

MC Magnetic Contactors, Metasol Type

Descriptions: Metasol contactors are designed to show superior technology, sealed structure has improved its safety features so that no arc flash is exposed, in order to emphasize its durability as an individual device, Metasol series adopt simple design form and sophisticated shape applying diamond cut concepts on product surface.

Selection Table of MC Magnetic Contactors, Metasol Type

Frame size		18AF					22AF					40AF		65AF		100AF			
Type: MC-		6a	9a	12a	18a	9b	12b	18b	22b	32a	40a	50a	65a	75a	85a	100a			
Number of poles		3-pole																	
Rated operational voltage, Ue		690V																	
Rated insulation voltage, Ui		690V																	
Rated impulse withstand voltage, Umip		6kV																	
Rated frequency		50/60Hz																	
Max operating rating operating cycles		1800 operations per hour										1200 operations per hour							
Durability	Mechanical	15 million operations										12 million operations							
	Electrical	2.5 million operation										2 million operations							
Current and power	AC-1, Thermal current	200/240	kW	2.2	2.5	3.5	4.5	2.5	3.5	4.5	5.5	7.5	11	15	19	22	25	30	
			A	9	11	13	18	11	13	18	22	32	40	55	65	75	85	105	
		380/440	kW	3	4	5.5	7.5	4	5.5	7.5	11	15	19	22	30	37	45	55	
			A	7	9	12	18	9	12	18	22	32	40	50	65	75	85	105	
		500/550	kW	3	4	7.5	7.5	4	7.5	7.5	15	19	22	30	33	37	45	55	
			A	6	7	12	13	7	12	13	20	28	32	43	60	64	75	85	
	690	kW	3	4	7.5	7.5	4	7.5	7.5	15	19	22	30	33	37	45	55		
		A	4	5	9	9	6	9	9	18	20	23	28	35	42	45	65		
	1000	kW	-	-	-	-	-	-	-	-	22	22	30	30	37	37	37		
		A	-	-	-	-	-	-	-	-	17	17	23	23	28	28	28		
	Rated short-time withstand current, IEC 60947	1 Second	A	210	250	280	300	250	280	300	400	600	700	1000	1050	1100	1200	1320	
		10 Seconds	A	105	110	120	130	110	120	154	186	260	300	550	700	750	800	900	
30 Seconds		A	70	70	80	85	70	80	100	130	160	160	330	380	400	450	500		
1 Minute		A	61	61	61	70	61	61	84	90	100	100	250	270	300	350	400		
3 Minute		A	40	45	47	50	45	50	60	60	70	70	150	200	220	270	270		
10 Minutes		A	30	30	30	40	30	30	40	50	55	55	90	120	140	170	180		
≥15 Minutes		A	25	26	28	40	26	28	40	45	50	50	87	100	114	150	160		
UL ratings, 50/60Hz	Continuous current	A	25	25	25	32	25	25	40	40	50	60	70	100	110	135	160		
		HP	0.5	0.5	0.8	1	0.5	0.8	1	2	2	2	3	5	5	7.5	10		
	Single phase	110-120	HP	1.5	1.5	2	3	1.5	2	3	3	5	5	10	15	15	20		
		220-240	HP	2	2	3	7.5	2	3	7.5	7.5	7.5	15	20	25	25	30	30	
	Three phase	220-240	HP	3	3	5	7.5	3	5	7.5	10	10	15	25	30	30	40	40	
		440-480	HP	5	5	7.5	10	5	7.5	10	15	20	30	40	50	50	60	75	
500-600	HP	7.5	7.5	10	15	7.5	10	15	20	25	30	50	60	60	75	75			
Size & weight	NEMA size	00 00 0 1 00 0 1 - 1P 2 - - - 3 -																	
	Weight	kg	0.33					0.34					0.55		1.05		1.93		
	Size, WxHxD	mm	45x73.5x80.4					45x73.5x87.4					69x83x90		79x106x119		94x140x135.8		
Auxiliary	Standard	1a or 1b 1a1b 2a2b 2a2b 2a2b																	
	Side mount	UA-1																	
	Front mount	UA-2, UA-4																	

Selection Table of MT Thermal Overload Relays, Metasol Type

Type		MT-12/□					MT-32/□					MT-32/□		MT-63/□		MT-95/□		
Screw clamp terminals		• • • • •																
Rated operational voltage, Ue		690V																
Rated insulation voltage, Ui		690V																
Rated impulse withstand voltage, Umip		6kV																
Trip class		10A, 20																
Setting range		0.63-18A					1-40A					1-40A		10-65A		16-100A		
Size & weight	Weight	kg	0.1					0.17					0.17		0.31		0.48	
	Size, WxHxD	mm	45x73.2x63.7					45x75x90					45x75x90		55x81x100		70x97x110	

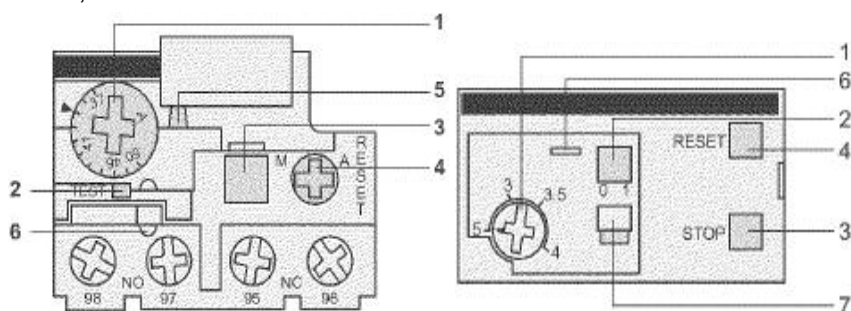
Tesys LR2D and LRD, 3-pole Thermal Overload Relays

Descriptions: Tesys LR2D and LRD, 3-pole thermal overload relays are designed to protect AC circuits and motors against overloads, phase failure, long starting times and prolonged stalling of the motor.

Explanation of Cover

LR2D, LRD3322 to LRD4369

LRD01 to LRD35



- 1: Adjustment dial I_r
- 2: Test button
- 3: Stop button
- 4: Reset button
- 5: Trip indicator
- 6: Setting locked by sealing the cover
- 7: Selector for manual or automatic reset

Technical Data

Relay Type	LRD01-16 LR2D13●●	LRD21-35	LR2D22●●	LRD33●●	LR2D33●●	LRD436●
Electrical Characteristics of Power Circuit						
Tripping Class	10	20	10	20	10	20
Rated Insulation Voltage	690V			1000V		
Rated Impulse Voltage	6000V					
Frequency Limits	0 to 400					
Setting Range, A	0.1 to 13		12 to 38		17 to 104	
Operational Characteristics						
Temperature Compensatio	-20 to +60		-30 to +60		-30 to +60	
Tripping Threshold	1.14 ± 0.06I _n					
Sensitivity to Phase Failure Tripping current 30% of I _n , one phase. Others at I _n						

Selection Table

Relay setting range	Fuses to be used with selective relay			For use with LC1	Reference
	aM(A)	gG(A)	BS88(A)		
Class 10A for connection by screw clamp terminals or connectors					
0.10...0.16A	0.25	2	-	D09...D32	LRD01
0.16...0.25A	0.5	2	-	D09...D32	LRD02
0.25...0.40A	1	2	-	D09...D32	LRD03
0.40...0.63A	1	2	-	D09...D32	LRD04
0.63...1.00A	2	4	-	D09...D32	LRD05
1.00...1.60A	2	4	6	D09...D32	LRD06
1.60...2.50A	4	6	10	D09...D32	LRD07
2.50...4.00A	6	10	16	D09...D32	LRD08
4.00...6.00A	8	16	16	D09...D32	LRD10
5.50...8.00A	12	20	20	D09...D32	LRD12
7.00...10.0A	12	20	20	D09...D32	LRD14
9.00...13.0A	16	25	25	D09...D32	LRD16
12.0...18.0A	20	35	32	D09...D32	LRD21
16.0...24.0A	25	50	50	D09...D32	LRD22
23.0...32.0A	40	63	63	D09...D32	LRD32
30.0...38.0A	40	80	80	D09...D32	LRD35
17.0...25.0A	25	50	50	D40 and D95	LRD3322
23.0...32.0A	40	63	63	D40 and D95	LRD3353
30.0...40.0A	40	100	80	D40 and D95	LRD3355
37.0...50.0A	63	100	100	D40 and D95	LRD3357
48.0...65.0A	63	100	100	D50 and D95	LRD3359
55.0...70.0A	80	125	125	D50 and D95	LRD3361
63.0...80.0A	80	125	125	D65 and D95	LRD3363
80.0...104.0A	100	160	160	D80 and D95	LRD3365
80.0...104.0A	125	200	160	D115 and D150	LRD4365
95.0...120.0A	125	200	200	D115 and D150	LRD4367
110.0...140.0A	160	250	200	D150	LRD4369



LR2D13●●



LRD●●



LRD3322 to 4369, LR2D33

TA25...200DU Thermal Overload Relays

Description: TA42...TA200DU thermal overload relays are economic electromechanical protection devices for the main circuits, they offer reliable protection for motors in the event of overload or phase failure, the devices have trip class 10A.

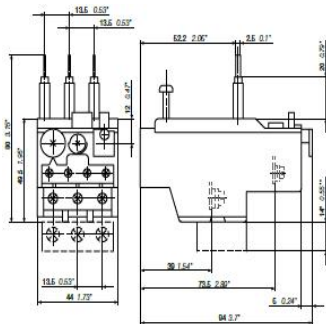
The thermal overload relays are three pole relays with bimetal tripping elements, the motor current flows through the bimetal tripping elements and heats them directly and indirectly, in case of an overload, over current, the bimetal elements bent as a result of the heating, this leads to a release of the relay and a change of the contacts switching position:

- Manual or automatic reset selectable;
- Phase loss sensitive according to IEC 60947-4-1;
- Two electrically isolated auxiliary contacts, 1NO+1NC;
- Test and Stop function, trip indication on the front;
- Temperature compensation;
- Suitable for three and single-phase applications;

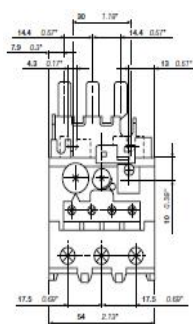
Technical Data

Type	Setting Range	Short-circuit Protective Device	Order Code	Weight
TA25DU-4.0M	2.8...4A	10A, Fuse type gG/6A aM	1SAZ211201R2033	0.150
TA25DU-5.0M	3.5...5A	16A, Fuse type gG/10A aM	1SAZ211201R2035	0.150
TA25DU-6.5M	4.5...6.5A	20A, Fuse type gG/16A aM	1SAZ211201R2038	0.150
TA25DU-8.5M	6...8.5A	20A, Fuse type gG/20A aM	1SAZ211201R2040	0.150
TA25DU-11M	7.5...11A	35A, Fuse type gG/25A aM	1SAZ211201R2043	0.150
TA25DU-14M	10...14A	35A, Fuse type gG/25A aM	1SAZ211201R2045	0.150
TA25DU-19M	13...19A	50A, Fuse type gG/35A aM	1SAZ211201R2047	0.170
TA25DU-25M	18...25A	63A, Fuse type gG/50A aM	1SAZ211201R2051	0.170
TA25DU-32M	24...32A	80A, Fuse type gG/63A aM	1SAZ211201R2053	0.200
TA42DU-25M	18...25A	63A, Fuse type gG/50A aM	1SAZ311201R2001	0.335
TA42DU-32M	22...32A	80A, Fuse type gG/63A aM	1SAZ311201R2002	0.335
TA42DU-42M	29...42A	100A, Fuse type gG/80A aM	1SAZ311201R2003	0.335
TA75DU-52M	36...52A	125A, Fuse type gG/100A aM	1SAZ321201R2004	0.335
TA75DU-63M	45...63A	160A, Fuse type gG/125A aM	1SAZ321201R2005	0.335
TA75DU-80M	60...80A	200A, Fuse type gG/160A aM	1SAZ321201R2006	0.370
TA110DU-90	66...90A	200A, Fuse type gG/160A aM	1SAZ411201R1001	0.750
TA110DU-110	80...110A	224A, Fuse type gG/200A aM	1SAZ411201R1002	0.750
TA200DU-135	100...135A	224A, Fuse type gG/200A aM	1SAZ421201R1003	0.760
TA200DU-150	110...150A	250A, Fuse type gG/200A aM	1SAZ421201R1004	0.760
TA200DU-175	130...175A	315A, Fuse type gG/250A aM	1SAZ421201R1005	0.760
TA200DU-200	150...200A	315A, Fuse type gG/250A aM	1SAZ421201R1006	0.760
TA450DU-235	165...235A	Not Applicable	1SAZ511201R1002	1.500
TA450DU-310	220...310A	Not Applicable	1SAZ511201R1003	1.500

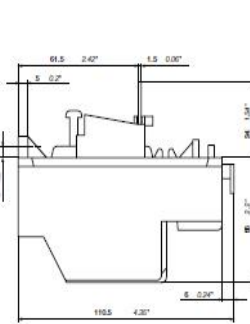
Main dimensions mm, inch



TA25DU



TA42DU



TA75DU

Selection Table of GT Thermal Overload Relays, Meta-Mec Type

Type			GT-22	GT-40	GT-85	GT-100	GT-150	
Screw clamp terminals			•	•	•	•		
Rated operational voltage, Ue			690V					
Rated insulation voltage, Ui			690V					
Rated impulse withstand voltage, Umip			6kV					
Trip class			10A, 20					
Setting range			0.63-4A	4-43A	7-36A	34-150A		
Size & weight	Weight	kg	0.1	0.21	0.31	0.48		
	Size, WxHxD	mm	45x73.2x63.7	45x75x80	45x75x90	70x97x110		

Selection Table of MT Thermal Overload Relays, Metasol Type



MT-32/□

Type			MT-12/□	MT-32/□	MT-32/□	MT-63/□	MT-95/□
Screw clamp terminals			•	•	•	•	•
Rated operational voltage, Ue			690V				
Rated insulation voltage, Ui			690V				
Rated impulse withstand voltage, Umip			6kV				
Trip class			10A, 20				
Setting range			0.63-18A	1-40A	1-40A	10-65A	16-100A
Size & weight	Weight	kg	0.1	0.17	0.17	0.31	0.48
	Size, WxHxD	mm	45x73.2x63.7	45x75x90	45x75x90	55x81x100	70x97x110

Electronic Over Current Relays, EOCRSE/SE2

Description: two or three phase motor currents are monitored by current transformers, CTs form integral part of the relay, and external CTs are required for currents above 60A.

- Overload and phase loss protection;
- Visual load setting read and verify actual load current, no Amper meter required;
- Trip indication LED, fail-safe protection, N type;
- Flexible power supply, 90 to 260VAC or 320 to 480VAC;
- Manual and electrical reset;

Technical data of EOCR-SE/SE2



EOCR-SE2

Model	EOCR-SE/SE2		
Current Setting	Type	Ampere Range	
	05	0.5-5/6A	
	30	3.0-30/35A	
Time Setting	60	5.0-60/70A	
	O-Time, Operating Delay	0.5-15 seconds, Adjustable	
Reset	Manual Reset	By depressing Reset button	
	Electrical Reset, Remote	By interrupting power supply	
Time Characteristics	Definite		
Trip Indication	LED		
Tolerance	Current	±10%	
	Time	±10%	
Ambient Temperature	Storage	-30 to +80°C	
	Operation	-25 to +70°C	
Ambient Humidity	45-85% RH without condensation		
Control Voltage	Voltage	220V	90-260VAC
		440V	320-480VAC, Option
Output Contacts	Frequency	50/60Hz	
	Contacts	SPDT, 3A/250VAC, Resistive	
	Condition	N	Normally Energized
Insulation		R	Normally De-energized
	Between casing and circuits	Over10MΩ, DC500V Megger	
	Between casing and circuits	2kV, 50/60Hz, 1 Minute	
Dielectric Strength	Between contacts	1kV, 50/60Hz, 1 Minute	
	Between circuits	2kV, 50/60Hz, 1 Minute	
	Power Consumption	≤1W	
Reference	Control Voltage	Frequency	Mounting Method
EOCR-SE(2)-05NB	DC/AC24V	-	Panel Mounting/DIN Rail
EOCR-SE(2)-05RB			
EOCR-SE(2)-30NB			
EOCR-SE(2)-30RB			
EOCR-SE(2)-60NB			
EOCR-SE(2)-60RB			
EOCR-SE(2)-05NY7	220/90-260VAC	50/60Hz	Panel Mounting/DIN Rail
EOCR-SE(2)-05RY7			
EOCR-SE(2)-30NY7			
EOCR-SE(2)-30RY7			
EOCR-SE(2)-60NY7			
EOCR-SE(2)-60RY7			

Dimensions of EOCR-SE/SE2, mm

