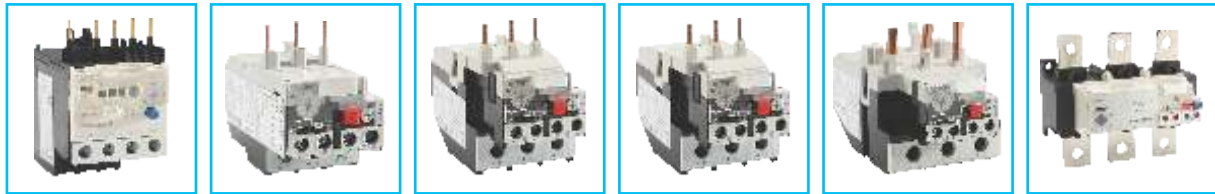


Opticon

Opticon contactors are user friendly, highly reliable and provide safe switching. Its modular design with wide range of add-on accessories meets all requirements for control and protection of motors across all sectors.

Contactors Range

OPTICON MINI	OPTICON 18	OPTICON 32	OPTICON 65	OPTICON 95	OPTICON 150
9	9	25	40	80	115
12	12	32	50	95	150
	18		65		



OPTICON 225	OPTICON 330	OPTICON 400	OPTICON 500	OPTICON 630
185	265	400	500	630
225	330			



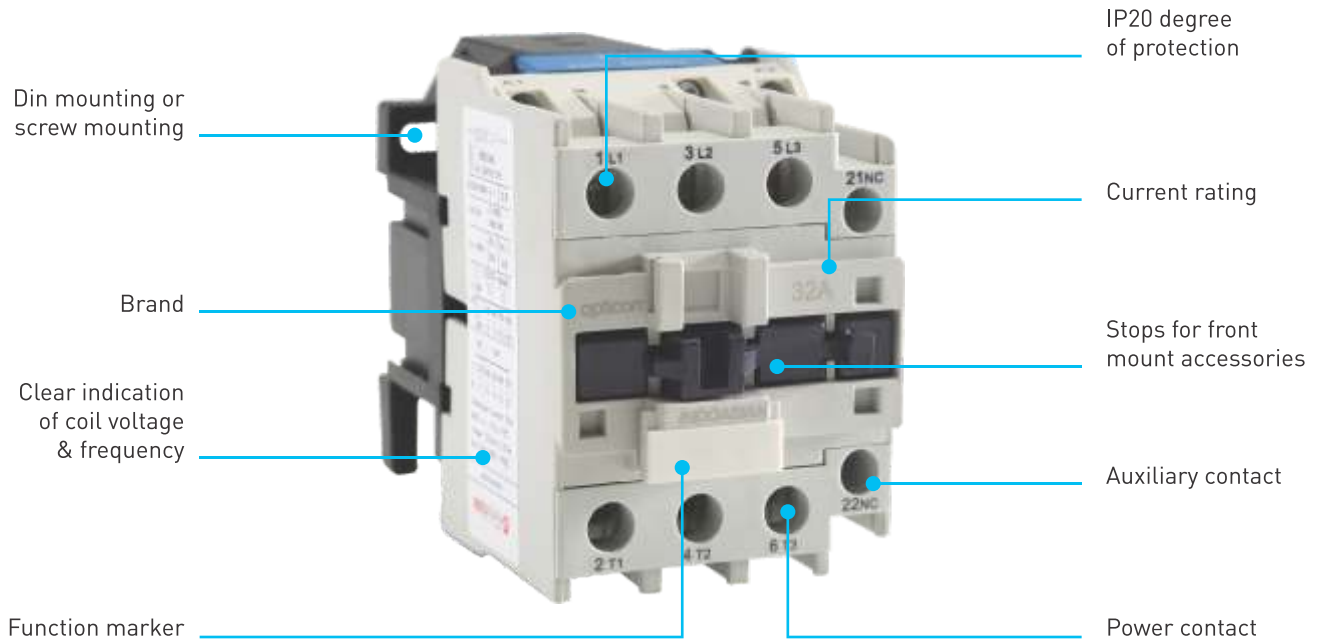
Power Contactor



Features

- Conforms to IEC 60947-4-1
- Complete range available from 9A to 630A
- Entire range is CE certified
- 3-pole & 4-pole contactors
- Utilisation category: AC1, AC3 & AC4
- Low coil consumption
- High mechanical and electrical life
- Complete range of auxiliaries & accessories
- Spares available for entire range

Power Contactor



Accessories



Coil



Add-on Block

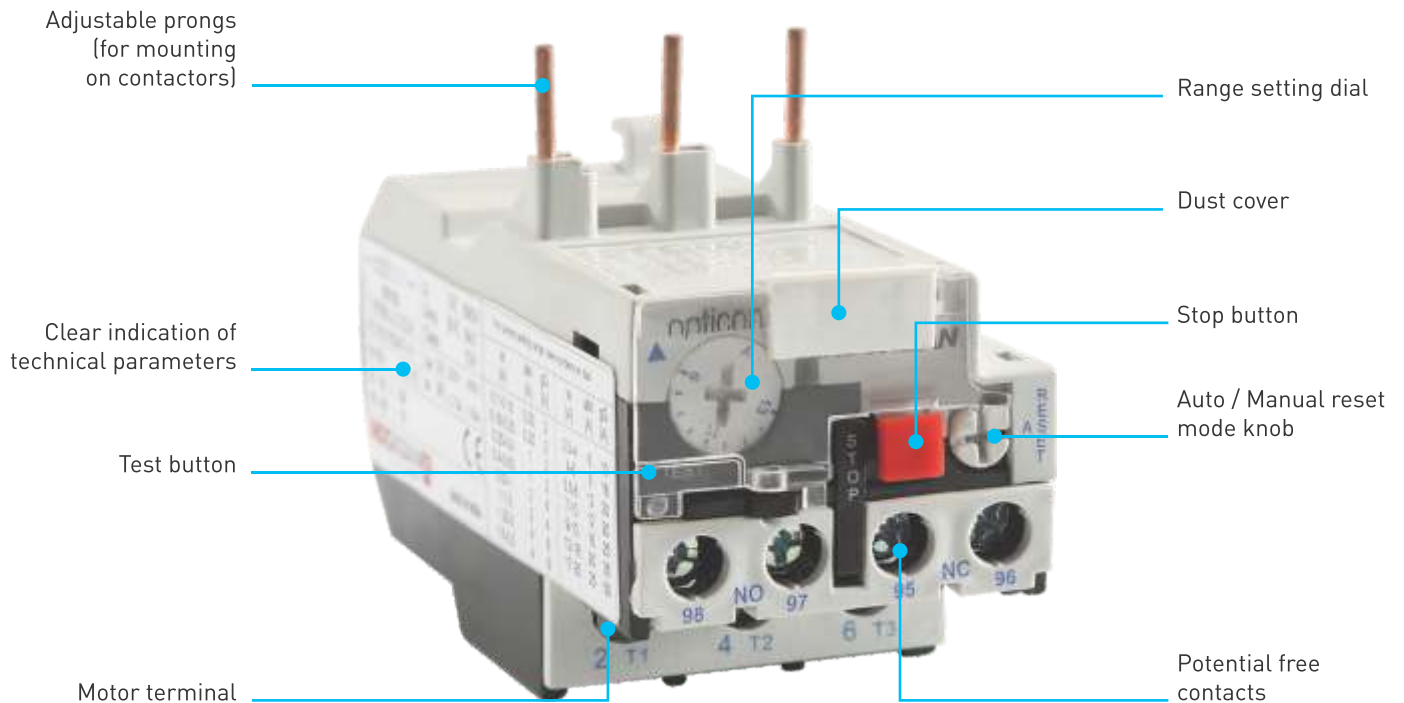


Timer Block



Mechanical Interlock

Thermal Overload Relay



Features

- Conforms to IEC 60947-4-1
- Tripping class 10A
- Rated operational voltage U_e - upto 690V
- Rated insulation voltage U_i - 690V
- Available in 3 frame sizes from 0.1 to 630A
- Ambient temperature compensated up to 55°C
- Built-in single phasing protection
- Manual and auto reset mode
- Front access to START and STOP/RESET buttons
- Direct and independent mounting

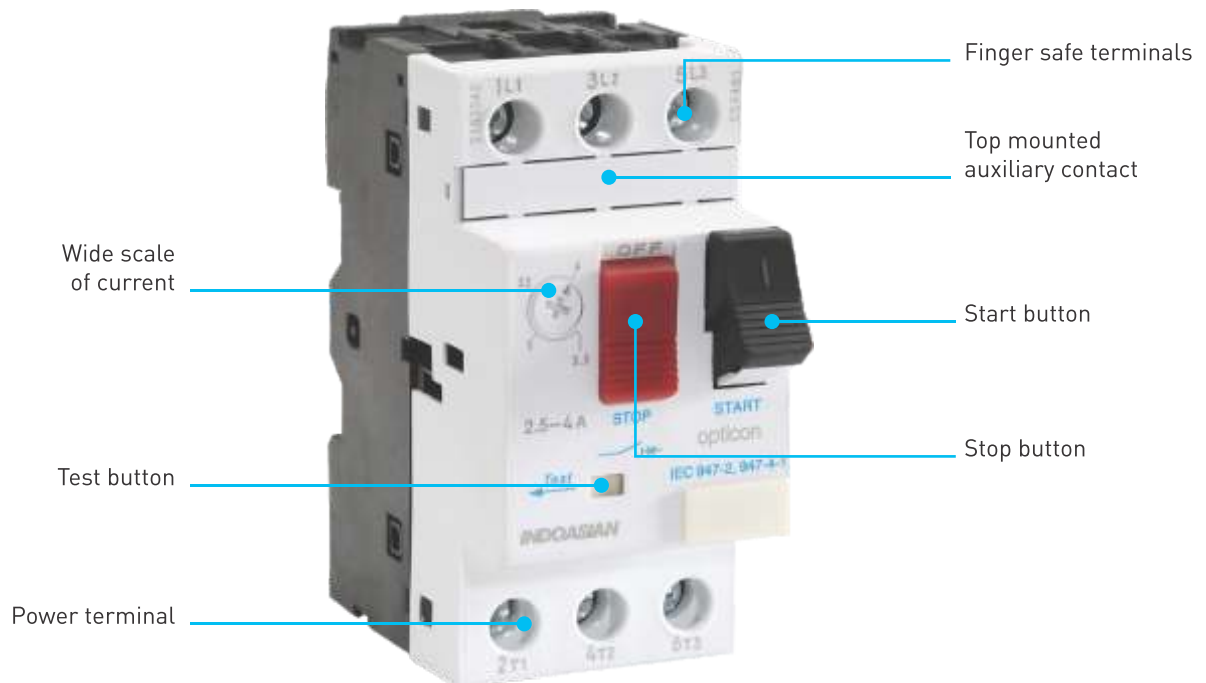
Capacitor Duty Contactors



Features

- Conforms to IEC 60947-4-1
- CE certified
- Range from 12kVAR to 50kVAR
- Utilisation category AC-6b
- Current limitation by the inbuilt damping resistors
- Finger safe terminals
- Compact dimensions
- Reduced watt loss during ON condition
- Enhanced equipment life

Motor Protection Circuit Breaker



Features

- Conforms to IEC 60947-4-1
- CE certified
- High breaking capacity upto 100kA
- Compact size and space saving
- Phase failure protection
- Current limiting short circuit protection isolation
- Wide range of accessories
- Available in open execution and in plastic enclosures

Motor Protection Circuit Breaker (0.16A to 80A)



Upto 32A



Upto 32A



Upto 63A



Upto 80A



OptiMPCB-32S
0.16A ---100kA
14 to 25A--15kA
32A--35kA



OptiMPCB-32S
0.16A ---100kA
14 to 25A--15kA
32A--35kA



OptiMPCB-63S
40A to 63A --35kA



OptiMPCB-80S
80A --35kA

Mini Contactor

Technical Table

CONTACTOR TYPE		AC CONTACTOR	9A		12A	
STANDARD			IEC/EN 60947-4-1			
No. of Poles			3P, 4P			
No. of contacts		Power	3NO	3NO	4NO	2NO+2NC
		Auxiliary	1NO	1NC	-	-
Rated conventional Thermal Current (Ith)		A	20			
Rated operational voltage (Ue)		V	690			
Rated insulation voltage (Ui)		V	690			
Rated impulse withstand voltage (Uimp)		kV	6			
Rated frequency		Hz	50/60			
Rated operational current	AC3 (380V/400V)	A	9		12	
	AC4 (380V/400V)	A	3.5		5	
Rated operational power in AC-3 category	220/230/240V	kW	2.2		3	
	380/400V		4		5.5	
	660/690V		5		5.5	
Rated making capacity		A	110		114	
Rated breaking capacity	380V	A	100		100	
	690V	A	70		70	
Short circuit protection	gG fuse	A	20			
Short circuit withstand (I _r)		kA	1			
Electrical Life	AC3	(X10000)	120		120	
	AC4		2		2	
Mechanical life		in Millions	10			
Operating frequency	AC3 (Electrical)	Cycles/Hr	1200			
	AC4 (Electrical)	Cycles/Hr	300			
	Mechanical	Cycles/Hr	3600			

Thermal Overload Relay - Mini Contactor

Technical Data

- Standard IEC/EN 60947-4-1
- Number of connecting pin 5
- Rated operational voltage Ue (V) up to 690
- Rated insulation voltage Ui (V) 690
- Rated impulse withstand voltage Uimp (kV) 6
- Rated current range In (A) 0.11-0.16,0.16-0.23,0.23-0.36, 0.36-0.54,0.54-0.8,0.8-1.2,1.8-2.6, 2.6-3.7,3.7-5.5,5.5-8,8-11.5,10-14
- Signalling Trip indicator
- Tightening torque(N-m) 0.8
- Mounting Directly under the contactor
- Aux contacts Rated Current 2.73A
- - AC15 220V 1.58A
- - AC15 380V 0.2A
- - DC13 220V

Rated Current (A)	Reference codes
0.11-0.16	851201
0.16-0.23	851202
0.23-0.36	851203
0.36-0.54	851204
0.54-0.8	851205
0.8-1.2	851206
1.8-2.6	851208
2.6-3.7	851209
3.7-5.5	851210
5.5-8	851211
8-11.5	851212
10-14	851213

Accessories

Technical Data

- Number of auxiliary contact: 2 , 4
- Mounting type: Front
- Conventional heating current (A) 10
- Rated operational voltage Ue (V) Up to 690
- Rated insulation voltage Ui (V) 690
- Conventional thermal current Ith (A) 10
- Control Rating AC-15: 360VA
- DC-13: 33W

No. of Contacts	Reference codes
2NO	851121
1NO+1NC	851122
2NC	851123
4NO	851124
3NO+1NC	851125
2NO+2NC	851126
1NO+3NC	851127
4NC	851128

Power Contactor (from 9A to 95A)

Technical Table

CONTACTOR TYPE			AC	9A	12A	18A	25A	32A	40A	50A	65A	80A	95A
			DC										
STANDARD			IEC/EN 60947-4-1										
No. of Poles				3, 4	3, 4	3	3, 4	3	3, 4	3, 4	3, 4	3, 4	3, 4
Rated conventional Thermal Current (Ith)			A	20	25	32	40	50	60	80	80	110	125
Rated operational voltage (Ue)			V	Up to 690									
Rated insulation voltage (Ui)			V	690									
Rated impulse withstand voltage (Uimp)			kV	8									
Rated frequency			Hz	50/60									
Rated operational current	380V/400V	AC3	A	9	12	18	25	32	40	50	65	80	95
		AC4	A	3.5	5	7.7	8.5	12	18.5	24	28	37	44
	660V	AC3	A	6.6	8.9	12	18	21	34	39	42	49	55
		AC4	A	1.5	2	3.8	4.4	7.5	9	12	14	17.3	21.3
	440V	AC1	A	20	25	32	40	50	60	80	80	110	125
Rated operational power in AC-3 category	220/230/240V		kW	2.2	3	4	5.5	7.5	11	15	18.5	22	25
	380/400V			4	5.5	7.5	11	15	18.5	22	30	37	45
	660/690V			5.5	7.5	10	15	18.5	30	33	33		
Rated making capacity			A	10 X Ie for AC3 or 12 X Ie for AC4									
Rated breaking capacity			A	8 X Ie for AC3 or 10 X Ie for AC4									
Short circuit protection	gG fuse	A	20	25	35	40	63	80	100	125	160	160	
Short circuit withstand (I _r)		kA	1	1	3	3	3	3	3	3	5	5	
Electrical Life	AC3	[X 1000]	1000	1000	1000	1000	800	800	600	600	600	600	
	AC4	[X 1000]	200	200	200	200	200	150	150	150	100	100	
Mechanical life		[in Millions]	10	10	10	10	8	8	8	8	6	6	
Operating Frequency	AC3	cycles/hr	1200	1200	1200	1200	600	600	600	600	600	600	
	AC4	cycles/hr	300	300	300	300	300	300	300	300	300	300	
	Mechanical	cycles/hr	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	
Coil operating range	AC & DC		Pick-up	[85 % - 110 %] Us									
			Drop-out	[20 % - 75 %] Us									
Coil Consumption	AC	Startup	VA	70	70	70	100	100	245	245	245	245	245
		Holding	VA	8	8	8	10	10	26	26	26	26	26
		Power	W	1.8~2.8	1.8~2.8	1.8~2.8	3~4	3~4	6~10	6~10	6~10	6~10	6~10
	DC	Power	W	9	9	11	11	11	20	20	20	20	20

Power Contactor (from 115A to 630A)

Technical Table

CONTACTOR TYPE		AC CONTACTOR	115A	150A	185A	225A	265A	330A	400A	500A	630A
STANDARD			IEC/EN60947-4-1								
No. of Poles			3, 4	3, 4	3, 4	3, 4	3	3	3, 4	3, 4	3, 4
Rated conventional Thermal Current (I _{th})		A	25	32	40	50	60	80	80	110	
Rated operational voltage (U _e)		V	1000								
Rated insulation voltage (U _i)		V	1000								
Rated impulse withstand voltage (U _{imp})		kV	8								
Rated frequency		Hz	50/60								
Rated operational current	Ac3	A	115	150	185	225	265	330	400	500	630
	Ac1	A	200	250	275	315	350	400	500	700	1000
Rated operational power in AC3 category	220/230/240V	kW	30	40	55	63	75	100	110	147	200
	380/400V	kW	55	75	90	110	132	160	200	250	335
	660/690V	kW	80	100	110	129	160	220	280	355	450
Rated making capacity		A	10 X I _e for Ac3 or 12 X I _e for AC4								
Rated breaking capacity		A	8 X I _e for Ac3 or 10 X I _e for AC4								
Short circuit protection		A	350	350	400	500	450	500	1000	1000	1000
Short circuit withstand current (I _r)		kA	10	10	10	10	10	10	18	30	30
Electrical life	AC3	(X 10 ⁶)	1.2	1.2	1	1	0.8	0.8	0.8	0.8	0.8
Mechanical life		(X 10 ⁶)	10	10	6	6	6	6	6	6	6
Operating frequency	Electrical -AC3	Cycles / Hr	1200	1200	600	600	600	600	600	600	600
	Mechanical	Cycles / Hr	3600	3600	3600	3600	3600	3600	3600	3600	3600
Coil operating range	AC & DC	Pick - up	[85 % ~ 110 %] U _s								
		Drop - out	[20 % ~ 75 %] U _s								

Thermal Overload Relay (for 9A to 95A)

Technical Data

- Standard IEC/EN 60947-4-1
- Tripping Class 10A
- Rated operational voltage Ue (V) up to 690
- Rated insulation voltage Ui (V) 690
- Rated impulse withstand voltage Uimp (kV) 6
- Rated current range In (A) 0.1-25, 23-36, 23-93
- Signalling Trip indicator
- Mounting Directly under the contactor
- Aux contacts Rated Current
 - AC15 230V 2.73A
 - AC15 400V 1.58A
 - DC13 220V 0.2A

Rated Current	Reference Code	For Use With Contactors as per AC3 ratings)	Rated Current	Reference Code	For Use With Contactors as per AC3 ratings)
0.1-0.16	851151	9A 12A 18A 25A	23.0-32.0	851166	32A
0.16-0.25	851152		28.0-36.0	851167	
0.25-0.40	851153		23.0-32.0	851168	40A 50A 65A 80A 95A
0.4-0.63	851154		30.0-40.0	851169	
0.63-1.0	851155		37.0-50.0	851170	
1.0-1.6	851156		48.0-65.0	851171	
1.25-2	851157		55.0-70.0	851172	
1.6-2.5	851158		63.0-80.0	851173	
2.5-4.0	851159		80.0-93.0	851174	
4.0-6.0	851160				
5.5-8.0	851161				
7.0-10.0	851162				
9.0-13.0	851163				
12.0-18.0	851164				
17.0-25.0	851165				

Thermal Overload Relay (from 30A to 630A)

Technical Data

- Standard IEC/EN 60947-4-1
- Tripping Class 10A
- Rated operational voltage Ue (V) 1000
- Rated insulation voltage Ui (V) 1000
- Rated impulse withstand voltage Uimp (kV) 8
- Rated current range In (A) 30-50, 48-80, 90-150, 200-330, 300-500, 380-630

Rated Current	Reference Code	For Use With Contactors as per AC3 ratings)
30-50	851175	115A 150A 185A
48-80	851176	
60-100	851177	
90-150	851179	
200-330	851184	225A 265A 330A 400A 500A
300-500	851186	
380-630	851187	400A 500A 630A

Accessories For Power Contactor

Technical Data

Add-on Auxiliary Blocks

- Standard IEC/EN 60947-5-1
- Number of Auxiliary Contacts 2,4
- Mounting Type Front, Side
- Conventional heating current: 10A
- Rated operational voltage Up to 690V
- Rated Insulation voltage 690V
- Uimp 6kV
- Operating Frequency: 50/60Hz
- Control Rating:
 - AC-15 360VA
 - DC-13 33W
- Short Circuit protection (Ig fuse) 10A

ADD-ON AUXILIARY BLOCKS		
Mounting	Contact Configuration	Ref.Codes
Front	2NO	851001
Front	1NO+1NC	851002
Front	2NC	851003
Front	4NO	851004
Front	3NO+1NC	851005
Front	2NO+2NC	851006
Front	1NO+3NC	851007
Front	4NC	851008
Side	1NO+1NC	851009

Time Delay Blocks

- Standard IEC/EN 60947-5-1
- Number of Auxiliary Contacts 2
- Mounting Type Front
- Time delay type Making time delay
Breaking time delay
- Ranges 0.1-0.3s/0.1-30s/10-180s
- Reset time
 - During time delay period (ms) 150
 - After time delay period (ms) 50
- Conventional heating current: 10A
- Rated operational voltage Up to 690V
- Rated Insulation voltage 690V
- Uimp 6kV
- Operating Frequency: 50/60Hz

TIME DELAY BLOCKS		
Type of Time Delay	Time Delay Range	Ref. Codes
On Delay	0.1-3s	851021
On Delay	0.1-30s	851022
On Delay	10-180s	851023
Off Delay	0.1-3s	851024
Off Delay	0.1-30s	851025
Off Delay	10-180s	851026

Control Relay

Technical Table

Contactor Type	Contact Configuration		AC	24V, 48V, 110V, 230V, 415V
	4NO, 3NO+1NC, 2NO+2NC		DC	24V and 48V
Thermal current Ith	A		10	
Ue	V		690	
Ui	V		690	
Uimp	kV		6	
Operating limits	AC	Pick-up	V	[75-115] % Us
		Drop-out	V	[20-55] % Us
In rush		VA	30 / 4	
Holding		VA	25 / 3.0	
Coil Consumption	DC	Pick-up	V	[75-115] % Us
		Drop-out	V	[10-20] % Us
Coil Consumption	DC	In rush / Holding	W	3.2
		Average time Us	AC	Closing NO
Opening NC	ms			7-17
Average time Us	DC	Closing NO	ms	18-25
		Opening NC	ms	11-17
Mechanical Life	In Millions	cycles	20	
Operating Frequency		cycles/hr	3600	

Capacitor Duty Contactors

Technical Table

Model			12 kVAr	16 kVAr	20 kVAr	25 kVAr	30 kVAr	37 kVAr	45 kVAr	50kVAr
Standard			IEC/EN60947-4-1							
Rated Current Ie @ 415V		A	17.3	23	29	36	43	53	65	72
Capacity Duty (AC-6b)	220/230V AC	kVAr	6	8.5	10	12	15	22	23	25
	380/415V AC		12	16	20	25	30	37	45	50
	660/690V AC		12	16	20	25	30	37	45	50
Rated Insulation Voltage Ui		V	690							
Rated Operational Voltage Ue		V	690							
Rated Frequency		Hz	50 / 60							
Restrained Surge Capacity			20Ie							
Mechanical Life		(X1000)	3000	3000	3000	1000	1000	1000	800	800
Electrical Life		(X1000)	100	100	100	60	60	60	60	60
Operating Frequency		Cycles/hr	120	120	120	120	120	120	120	120
Operation Range			Pick-up: {85%~110%} Us ; Drop-out: {20%~75%} Us							
Coil Power	Start-Up	VA	70	100	100	245	245	245	245	245
	Holding		8	8.5	8.5	26	26	26	26	26
Auxiliary Contact type			2NO				2NO+1NC			
Tightening Torque		Nm	1.7	2.0	2.5	5	5	5	9	9

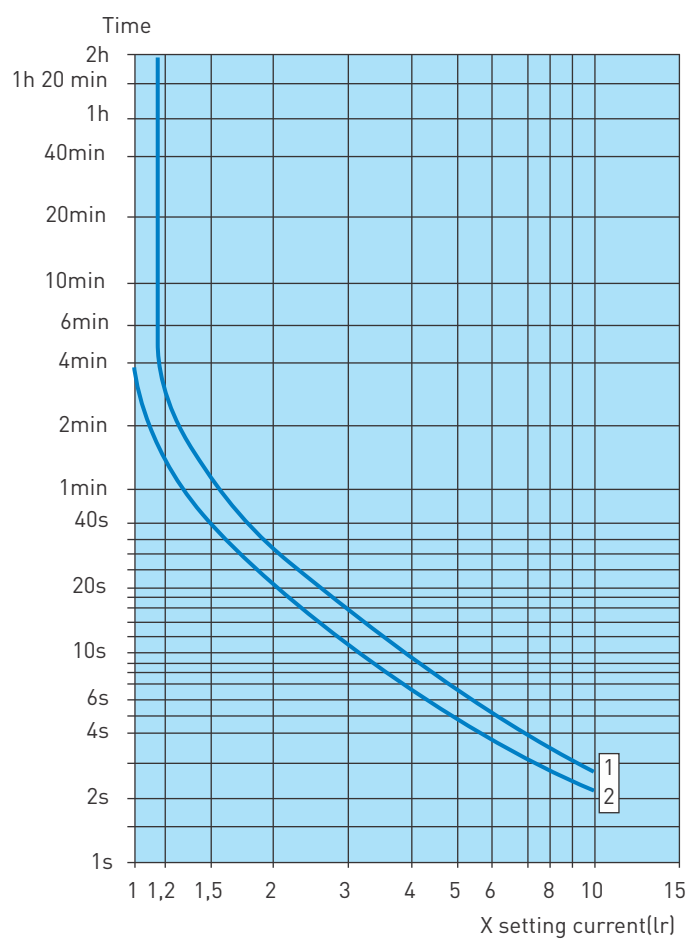
Rating	Aux. Contact Configuration	Reference Codes	
		230V AC	415 V AC
12 kVAr	2NO	850804	850805
16 kVAr	2NO	850814	850815
20 kVAr	2NO	850824	850825
25 kVAr	2NO+1NC	850834	850835
30 kVAr	2NO+1NC	850844	850845
37 kVAr	2NO+1NC	850854	850855
45 kVAr	2NO+1NC	850864	850865
50 kVAr	2NO+1NC	850874	

Technical Characteristics

Thermal Overload Relay - Mini Contactor

Tripping Curve

Thermal Overload Relay - Mini Contactor (from 0.11A to 14A)



1 Setting : at lower end of scale

2 Setting : at upper end of scale

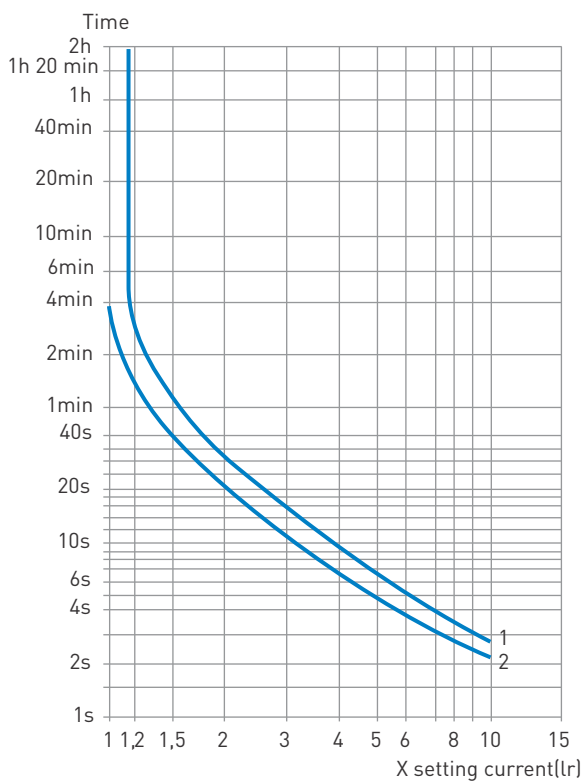
Technical Characteristics - Thermal Overload Relay (for Power Contactors)

Action characteristics for thermal relay

Average operating time related to multiples of the current setting (Class 10A)

Thermal Overload Relay (from 0.1A to 93A)

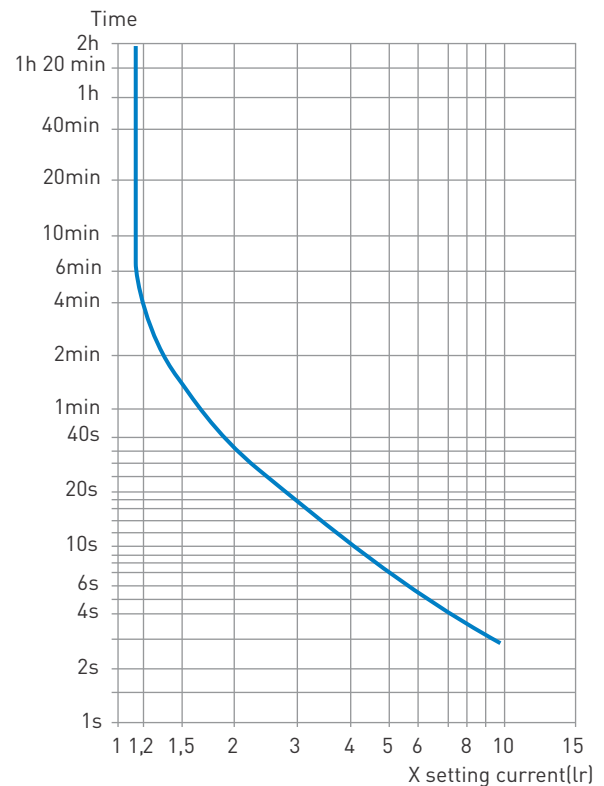
Balanced 3-phase operation, from cold state



1 Setting : at lower end of scale

2 Setting : at upper end of scale

Balanced operation with 2 phases only, from cold state



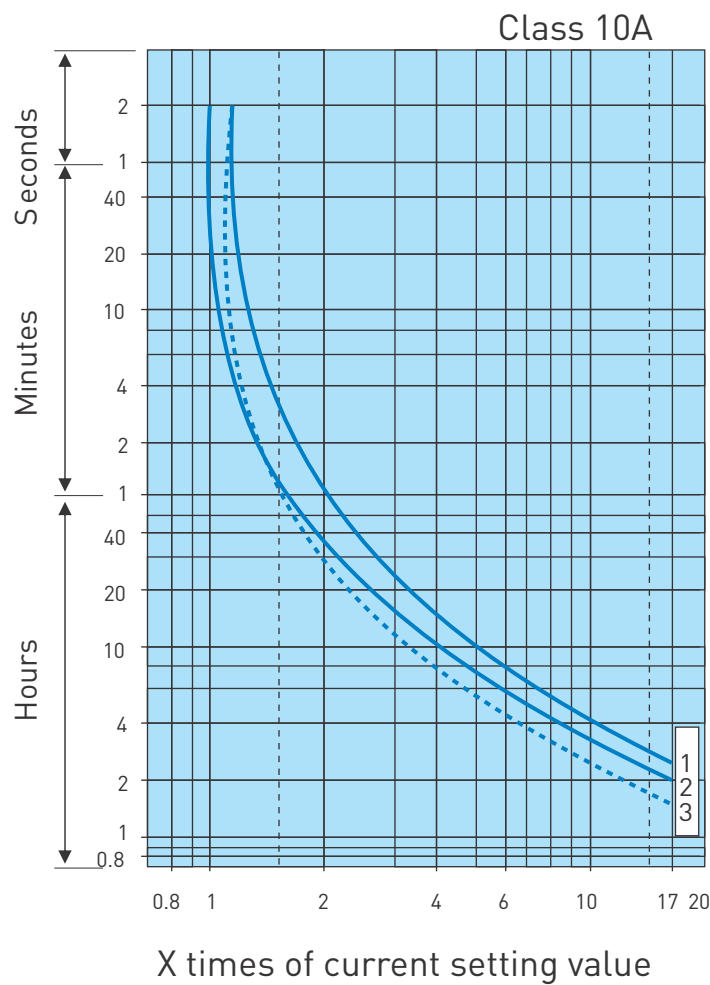
Technical Characteristics

Thermal Overload Relay (for Power Contactors)

Tripping Curve

Thermal Overload Relay (from 0.1A to 93A)

1. Equilibrium running, 3 phase, start from cold state
2. Equilibrium running, 2 phase, start from cold state
3. Equilibrium running, 3 phase, after long period of setting current (hot state)

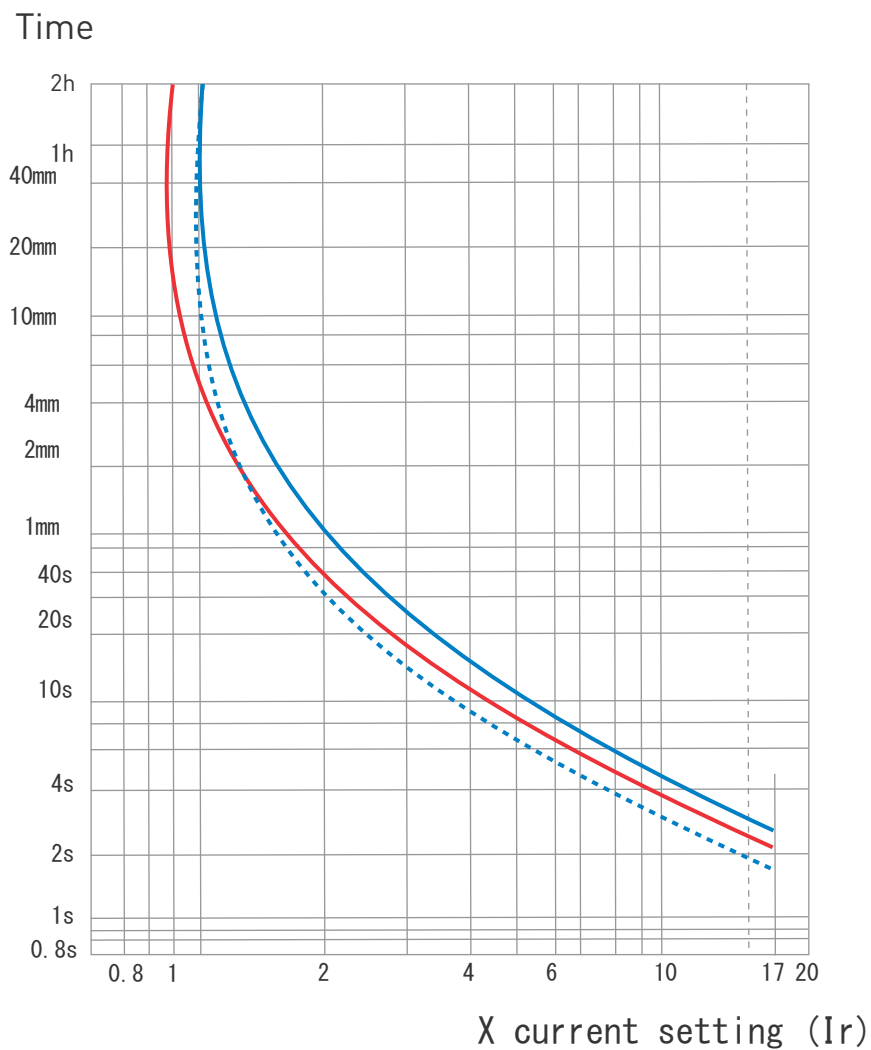


Technical Characteristics

Thermal Overload Relay (for Power Contactor)

Tripping Curve

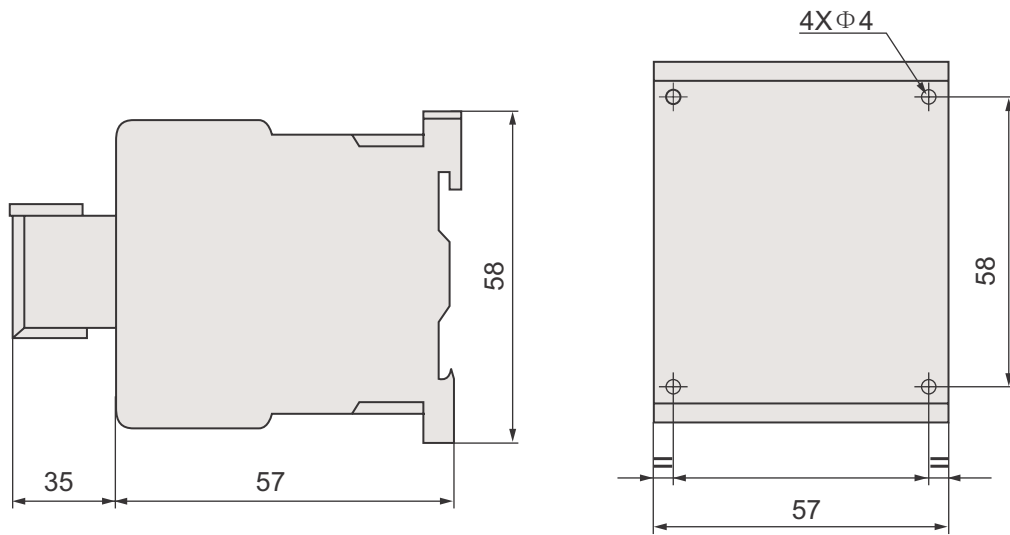
Thermal Overload Relay (from 30A to 630A)



Dimensional Drawings

Mini Contactor

unit in mm



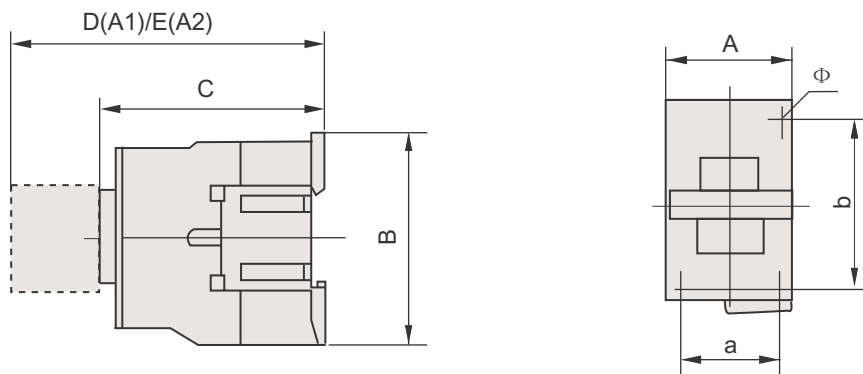
Type	A	B	C	D	E
9A-12A	35	57	58	57	58

Dimensional Drawings

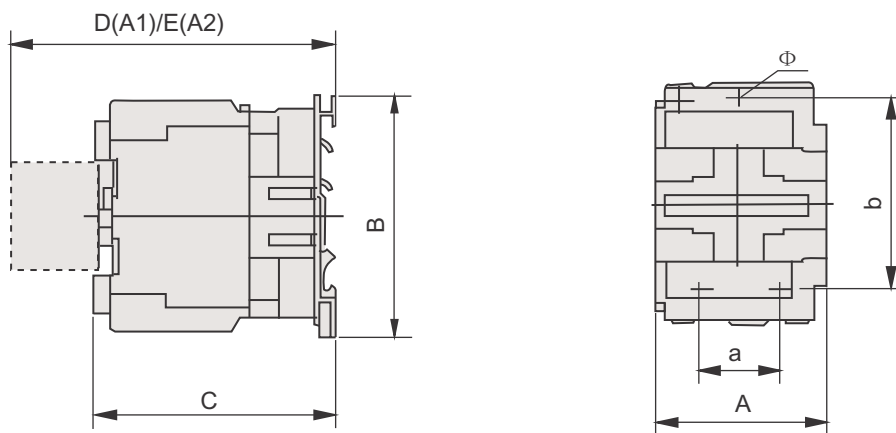
AC Power Contactor (from 9A to 95A)

unit in mm

9A to 32A



40A to 95A



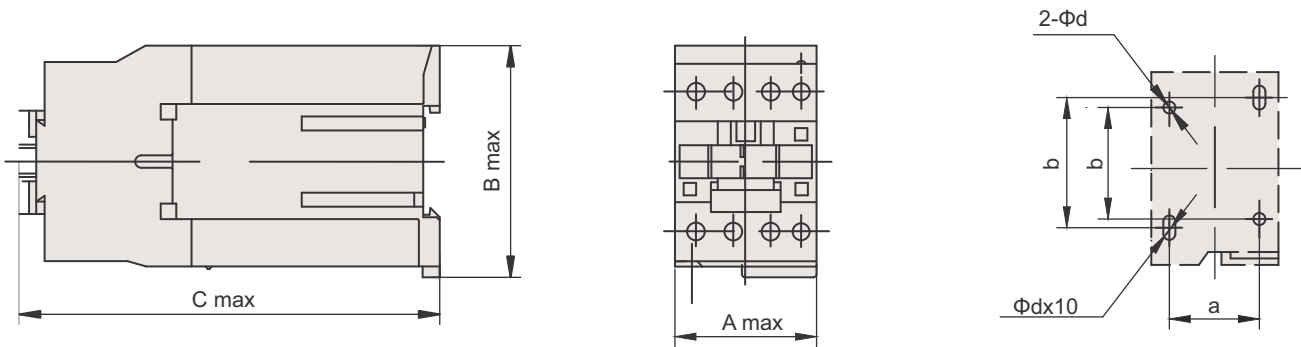
	Type	A max	B max	C max	D max	E max	a	b	Φ
3P	09A~12A	47	76	82	113	133	34/35	50/60	2-Φ4.5
	18A	47	76	87	118	138	34/35	50/60	2-Φ4.5
	25A	57	86	95	126	146	40	48	2-Φ4.5
	32A	57	86	100	131	151	40	48	2-Φ4.5
	40A~65A	77	129	116	145	165	40	100/110	3-Φ6.5
	80A~95A	87	129	127	156	176	40	100/110	3-Φ6.5
4P	09A~12A	47	76	82	113	133	34/35	50/60	2-Φ4.5
	25A	57	86	95	126	146	40	48	2-Φ4.5
	40A~65A	86	129	116/129	145	165	40	100/110	3-Φ6.5
	80A~95A	97	129	127/140	156	176	40	100/110	3-Φ6.5

Dimensional Drawings

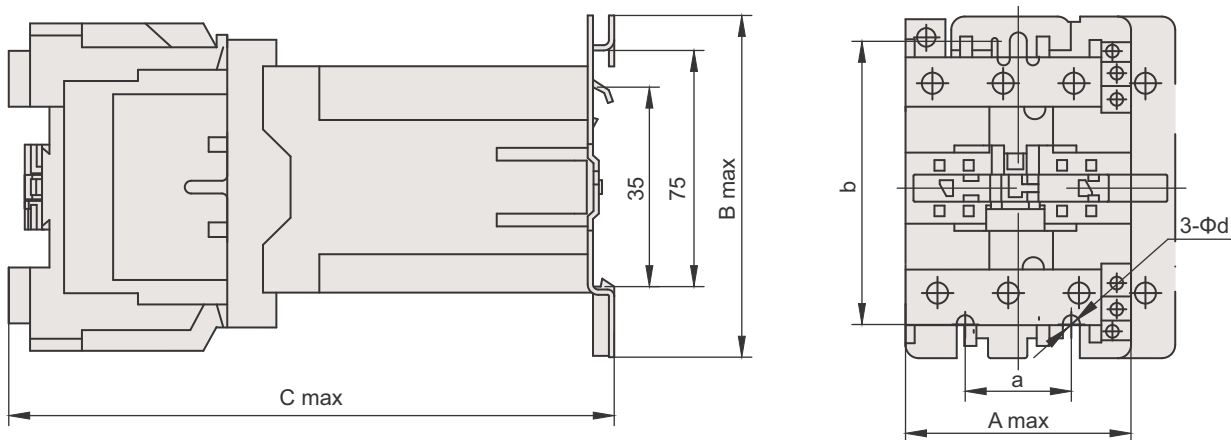
DC Power Contactor (from 9A to 95A)

unit in mm

09A to 32A



40A to 95A

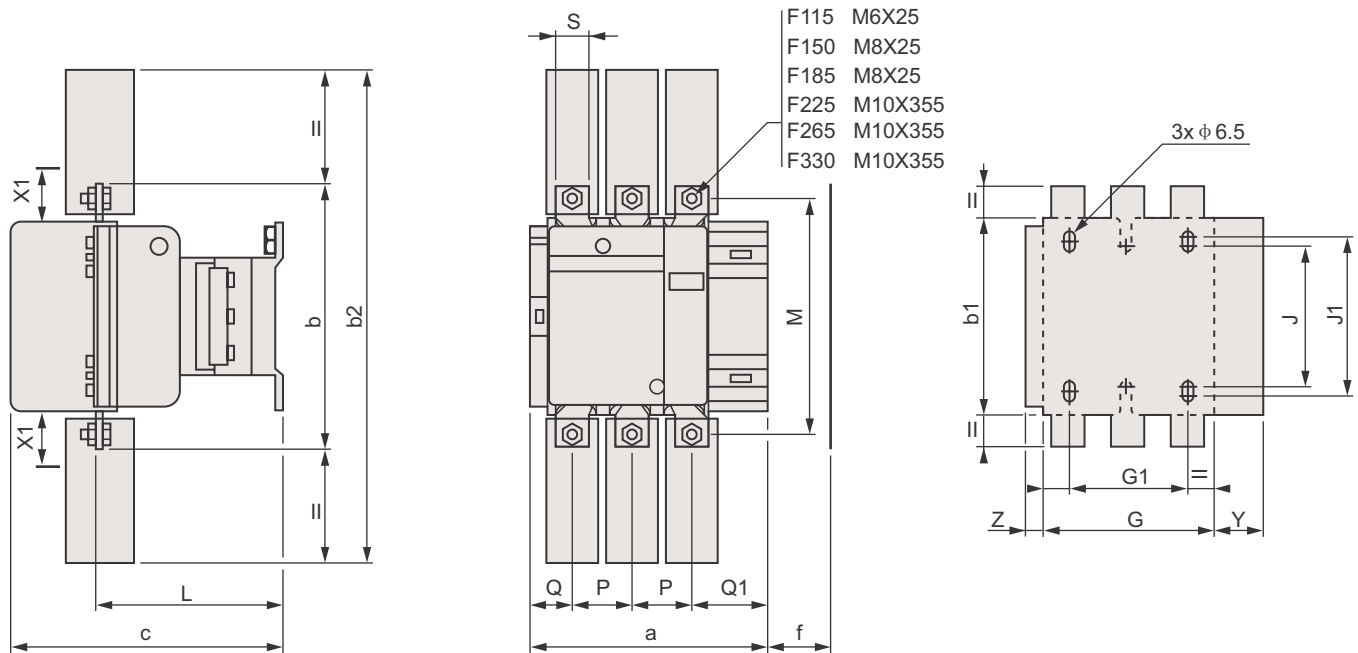


TYPE	Outline dimensions			Installation dimensions		
	A max	B max	C max	a	b	Φ
09A ~ 12A	47	76	115	34/35	50/60	2- $\Phi 4.5$
18A	47	76	120	34/35	50/60	2- $\Phi 4.5$
25A	57	86	132	40	50/60	2- $\Phi 4.5$
32A	57	86	137	40	50/60	2- $\Phi 4.5$
40A ~ 65A	77	129	169	40	100/110	3- $\Phi 6.5$
80A ~ 95A	87	129	180	40	100/110	3- $\Phi 6.5$

Dimensional Drawings

Power Contactor (from 115A to 630A)

115A to 330A



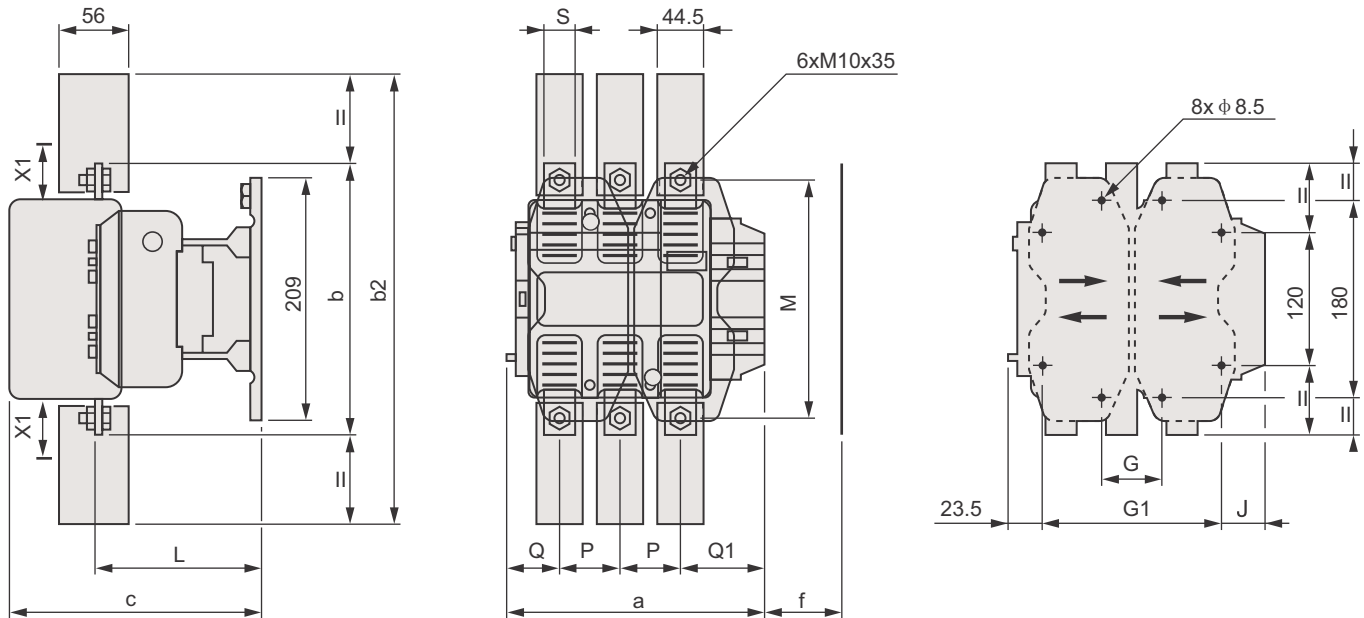
TYPE		a	b	b1	b2	c	f	G	G1	J	J1	L	M	P	Q	Q1	S	1	Y	Z
115A	3P	163.5	162	137	265	171	131	106	80	106	120	107	147	37	29.5	60	20	26	44	13.5
	4P	200.5	162	137	265	171	131	143	80	106	120	107	147	37	29.5	60	20	26	44	13.5
150A	3P	163.5	170	137	301	171	131	106	80	106	120	107	150	40	26	57.5	20	34	44	13.5
	4P	200.5	170	137	301	171	131	143	80	106	120	107	150	40	26	55.5	20	34	44	13.5
185A	3P	168.5	174	137	305	181	130	111	80	106	120	113.5	154	40	29	59.5	20	34	44	13.5
	4P	208.5	174	137	305	181	130	151	80	106	120	113.5	154	40	29	59.5	20	34	44	13.5
225A	3P	168.5	197	137	364	181	130	111	80	106	120	113.5	172	48	21	51.5	25	44.5	44	13.5
	4P	208.5	197	137	364	181	130	151	80	106	120	113.5	172	48	17	47.5	25	44.5	44	13.5
265A	3P	201.5	203	145	375	213	147	142	96	106	120	141	178	48	39	66.5	25	44.5	38	21.5
	4P	244.5	203	145	375	213	147	190	96	106	120	141	178	48	34	66.5	25	44.5	38	21.5
330A	3P	213	206	145	375	219	147	154.5	96	106	120	145	181	48	43	74	25	44.5	38	20.5
	4P	261	206	145	375	219	147	202.5	96	106	120	145	181	48	43	74	25	44.5	38	20.5

f=minimum distance required for coil removal

Dimensional Drawings

Power Contactor (from 115A to 630A)

400A to 500A



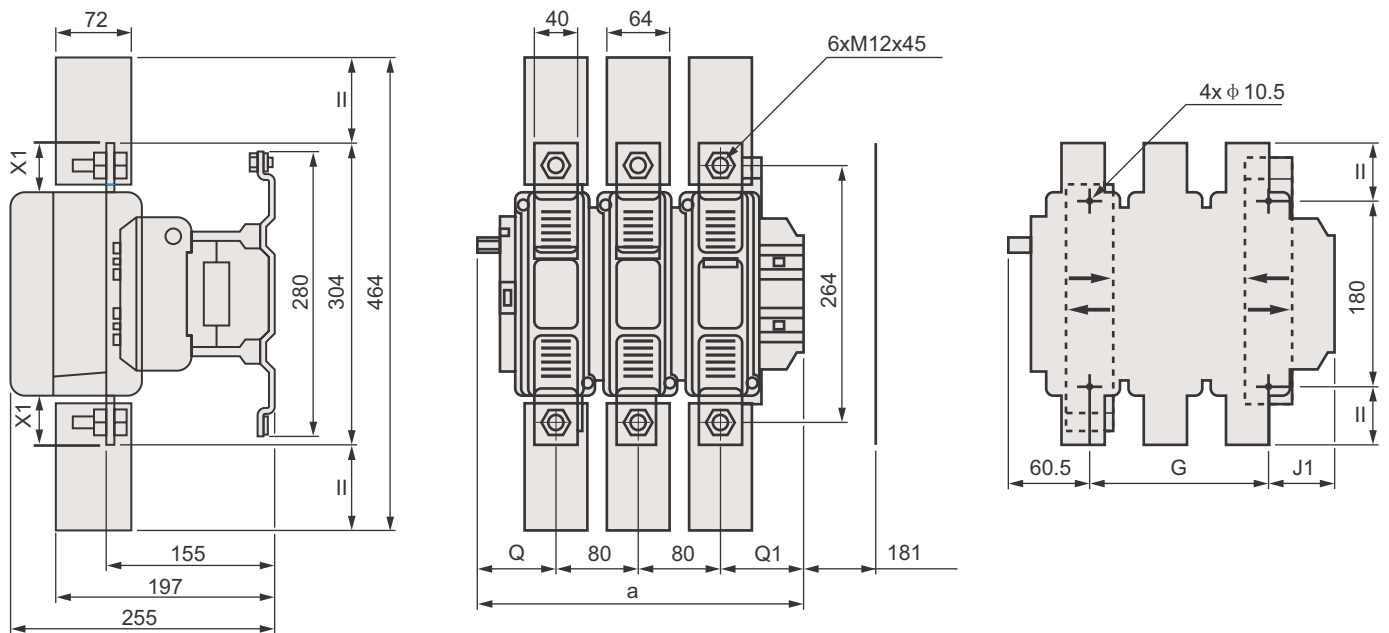
TYPE		a	b	b2	c	f	G*	G min.	G max.	G1*	G1 min.	G1 max.	J	L	M	P	Q	Q1	S
400A	2P	213	206	375	219	119	80	66	102	170	156	192	19.5	145	181	48	69	96	25
	3P	213	206	375	219	119	80	66	102	170	156	192	19.5	145	181	48	43	74	25
	4P	261	206	375	219	119	80	66	150	170	156	240	67.5	145	181	48	43	74	25
500A	2P	233	238	400	232	141	80	66	120	170	156	210	39.5	146	208	55	76	102	30
	3P	233	238	400	232	141	80	66	120	170	156	210	39.5	146	208	55	46	77	30
	4P	288	288	400	232	141	140	66	175	230	156	265	34.5	146	208	55	46	77	30

f=minimum distance required for coil removal

Dimensional Drawings

Power Contactor (from 115A to 630A)

630A

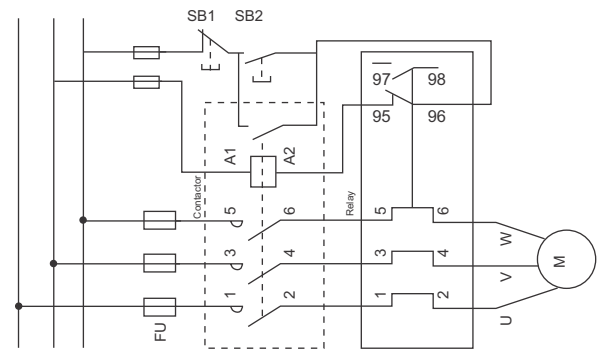
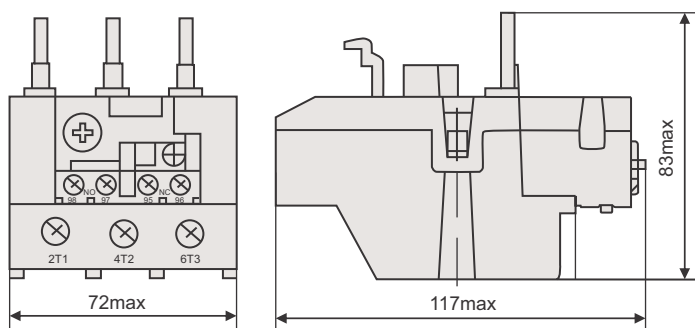
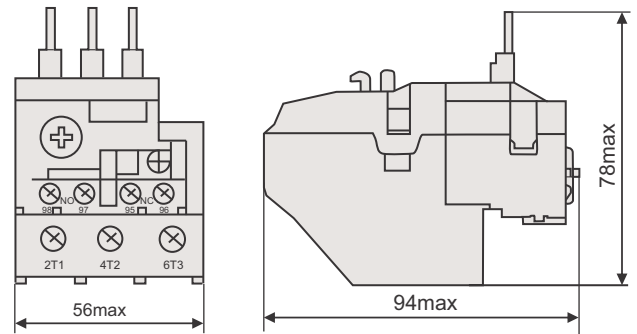
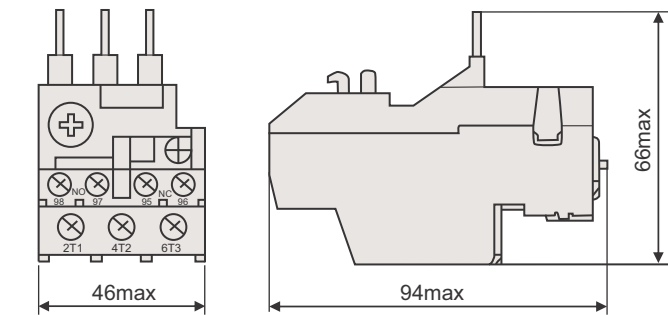


TYPE		a	G	G min.	G max.	J1	Q	Q1
630A	3P	309	180	100	195	68.5	60	89
630A	4P	309	240	150	275	68.5	60	89

Dimensional Drawings

Thermal Overload Relay Upto 93A

unit in mm

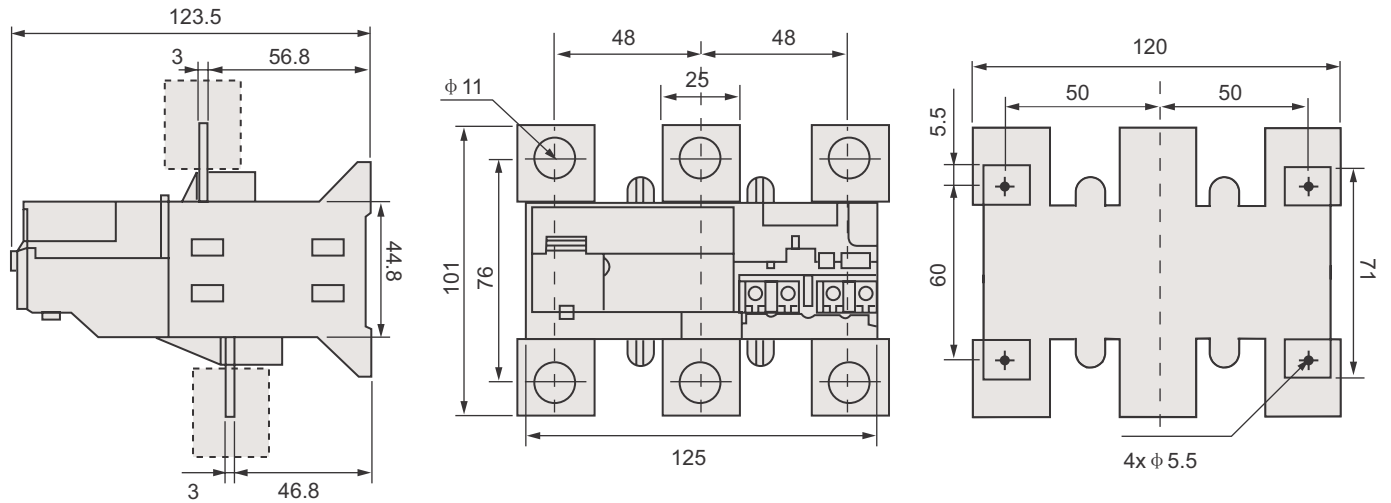


Operating principle diagram of thermal overload relay

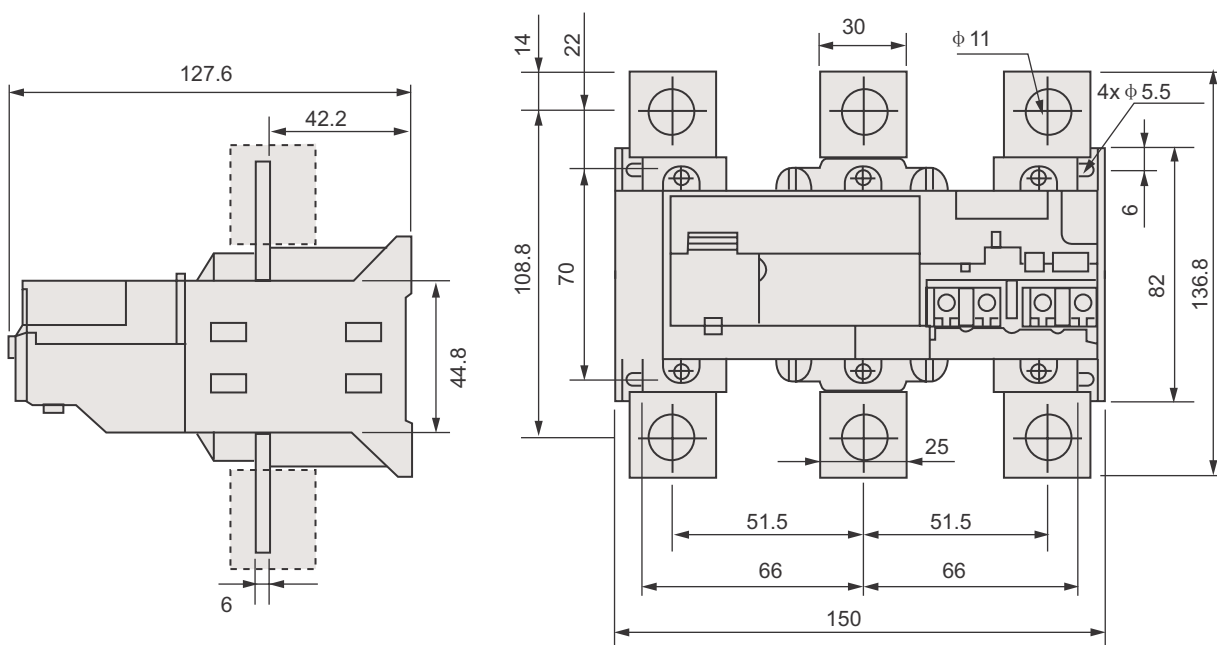
Dimensional Drawings

Thermal Overload Relay (for contactors from 115A to 630A)

30A to 200A

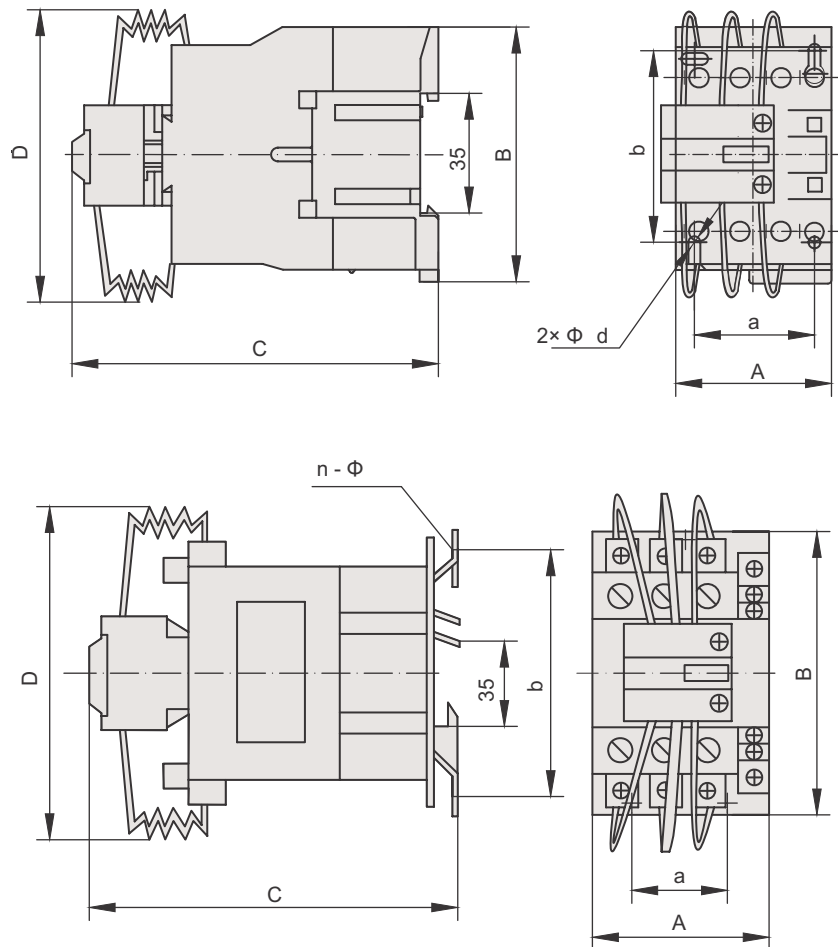


200A to 630A



Dimensional Drawings

Capacitor Duty Contactors



TYPE	Outline dimensions				Installation dimensions		
	A	B	C	D	a	b	c
12kVAr	47	76	124	100	34/35	50/60	2×Φ 4.5
16kVAr	57	86	132	110	40	50/60	2×Φ 4.5
20kVAr	57	86	136	110	40	50/60	2×Φ 4.5
25kVAr	77	129	152	155	40	100/110	3×Φ 6.5
30kVAr	77	129	152	155	40	100/110	3×Φ 6.5
37kVAr	77	129	152	155	40	100/110	3×Φ 6.5
45kVAr	87	129	162	165	40	100/110	3×Φ 6.5
50kVAr	87	129	162	165	40	100/110	3×Φ 6.5

Motor Protection Circuit Breaker - MPCB

Technical Table

Type		Frame 1										
Standard		IEC/EN60947-2, IEC/EN60947-4-1										
Utilization category	According to IEC60947-2	A										
	According to IEC60947-4-1	AC-3										
Rated insulation voltage (Ui)		V	690									
Rated operational voltage (Ue)		V	230 /240, 400/415, 440, 500, 660/690									
Rated Impulse withstand voltage (Uimp)		kV	8									
Rated Range of current Setting		A	0.1-0.16	0.16-0.25	0.25-0.4	0.4-0.63	0.63-1	1-1.6	1.6-2.5	2.5-4	4-6	
Rated current of release		A	0.16	0.25	0.4	0.63	1	1.6	2.5	4	6	
Rated frequency		Hz	50/60									
Rated ultimate short circuit breaking capacity (Icu)	230/240 V	kA	100	100	100	100	100	100	100	100	100	
	400/415 V	kA	100	100	100	100	100	100	100	100	100	
	440 V	kA	100	100	100	100	100	100	100	100	100	
	660/690 V	kA	100	100	100	100	100	100	3	3	3	
Rated Service Short circuit breaking capacity (Ics)	230/240 V	kA	100	100	100	100	100	100	100	100	100	
	400/415 V	kA	100	100	100	100	100	100	100	100	100	
	440V	kA	100	100	100	100	100	100	100	100	100	
	660/690 V	kA	100	100	100	100	100	100	2.25	2.25	2.25	
Standard rated power of three phase motor	230/240 V	kW	-	-	-	-	-	-	0.37	0.75	1.1	
	400 V	kW	-	-	-	-	-	0.37	0.75	1.5	2.2	
	440 V	kW	-	-	-	-	0.37	0.55	1.1	1.5	3	
	660/690 V	kW	-	-	-	0.37	0.55	1.1	1.5	3	4	
Current setting values for instantaneous release (Ir)		A	1.5	2.5	5	8	13	22.5	33.5	51	78	
Electrical life (AC-3)			10000									
Mechanical life			20000									
Tightening Torque		Nm	1.7									

Motor Protection Circuit Breaker - MPCB

Technical Table

Type		Frame 1					Frame 2					
Standard		IEC/EN60947-2, IEC/EN60947-4-1										
Utilization category	According to IEC60947-2	A										
	According to IEC60947-4-1	AC-3										
Rated insulation voltage (Ui)		V	690									
Rated operational voltage (Ue)		V	230 /240, 400/415, 440, 500, 660/690									
Rated Impulse withstand voltage (Uimp)		kV	8									
Rated Range of current Setting		A	6-10	9-14	13-18	17-23	20-25	24-32	25-40	40-63	56-80	
Rated current of release		A	10	14	18	23	25	32	40	63	80	
Rated frequency		Hz	50/60									
Rated ultimate short circuit breaking capacity (Icu)	230/240 V	kA	100	100	100	50	50	100	100	100	100	
	400/415 V	kA	100	15	15	15	15	35	35	35	35	
	440 V	kA	100	8	8	6	6	-	25	25	25	
	660/690 V	kA	3	3	3	3	3	-	4	4	4	
Rated Service Short circuit breaking capacity (Ics)	230/240 V	kA	100	100	100	50	50	75	75	75	75	
	400/415 V	kA	100	7.5	7.5	6	6	17.5	17.5	17.5	17.5	
	440V	kA	100	4	4	3	3	-	12.5	12.5	12.5	
	660/690 V	kA	2.25	2.25	2.25	2.25	2.25	-	2	2	2	
Standard rated power of three phase motor	230/240 V	kW	2.2	3	4	5.5	5.5	5.5	11	15	22	
	400 V	kW	4	5.5	7.5	11	11	11	18.5	30	40	
	440 V	kW	4	7.5	9	11	11	-	22	33	45	
	660/690 V	kW	7.5	9	11	15	15	-	33	55	63	
Current setting values for instantaneous release (Ir)		A	138	170	223	327	327	327	480	756	960	
Electrical life (AC-3)			10000									
Mechanical life			20000									
Tightening Torque		Nm	1.7									

Technical Table - MPCB Accessories

Shunt Release

ITEM CODE	RATED INSULATION VOLTAGE	RANGE OF OPERATION	FREQUENCY	SPECIFICATION
851261	690V	70%~110% Ue	50/60 Hz	110~115V 50Hz
851262		70%~110% Ue		220~240V 50Hz
851263		70%~ 110% Ue		380~400V 50Hz

Under Voltage Release

ITEM CODE	RATED INSULATION VOLTAGE	RANGE OF OPERATION	FREQUENCY	SPECIFICATION
851264	690V	35%~70% Ue	50/60 Hz	110~115V 50Hz
851265		35%~70% Ue		220~240V 50Hz
851266		35%~ 70% Ue		380~400V 50Hz

Auxiliary Contact

ITEM CODE	MOUNTING TYPE	RATED INSULATION VOLTAGE	CONVENTIONAL THERMAL CURRENT (Ith)	AC15 RATING @ 240V (VA)	CONTACT CONFIGURATION
851271	FRONT	250V	2.5A	120	1NO+1NC
851272	FRONT				2NO
851273	SIDE	690V	6A	720	1NO+1NC
851274	SIDE				2NO

Auxiliary Alarm

ITEM CODE	RATED INSULATION VOLTAGE	CONVENTIONAL THERMAL CURRENT (Ith)
851275	690V	6A
851276		6A
851277		6A
851278		6A

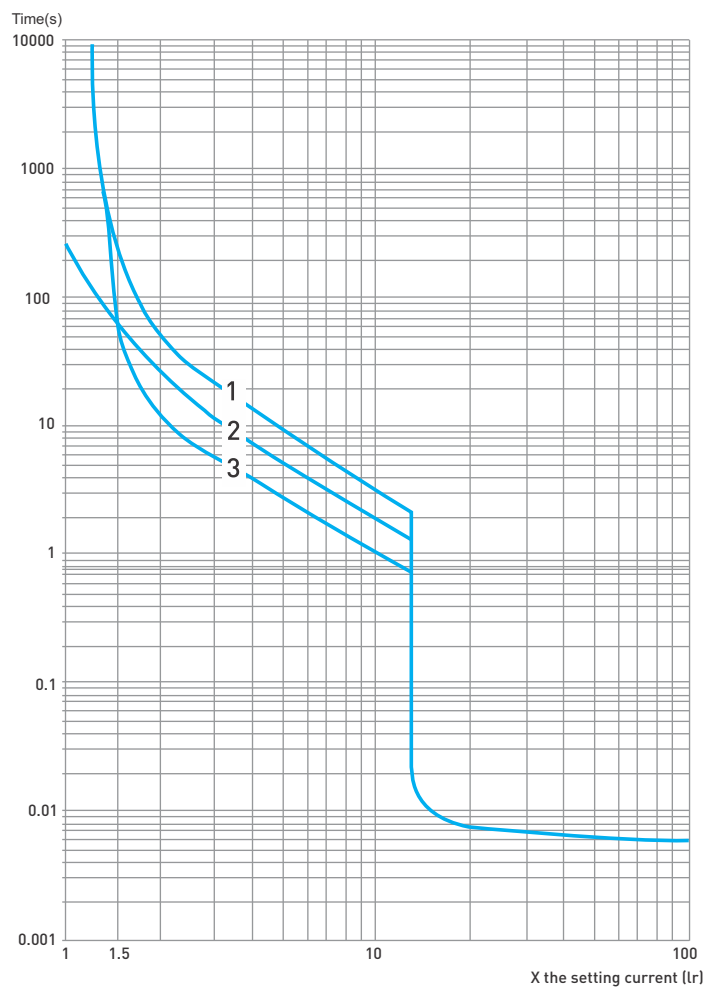
Technical Characteristics - MPCB

Tripping Curve

MPCB from 0.1A to 80A

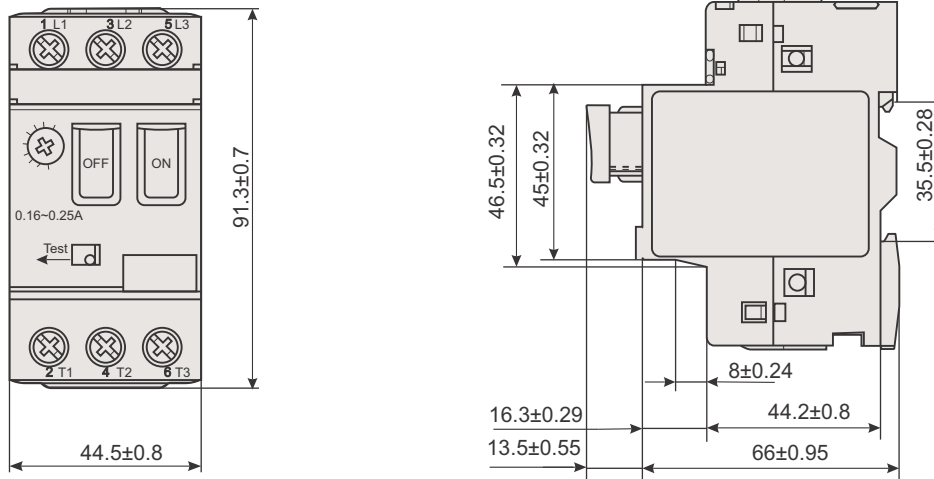
Average operating times at 20°C related to multiples of the setting current

- 1 3 poles from cold state
- 2 2 poles from cold state
- 3 3 poles from hot state

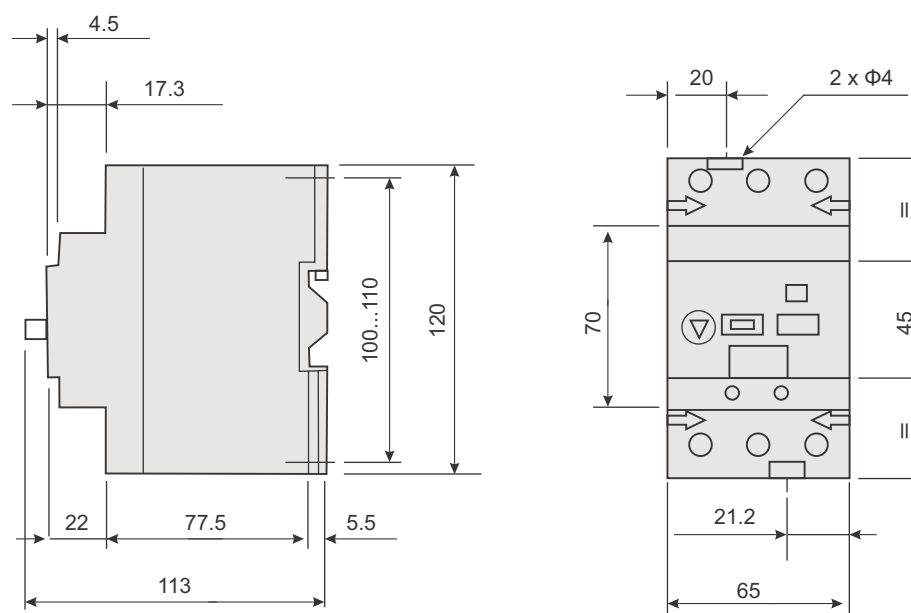


Dimensional Drawings

Frame 1





Frame 2




Power Contactors

- Conforms to IEC 60947-4-1
- Range from 9A to 630A
- Utilisation category AC1, AC3 & AC4
- Compact Dimensions saving panel space
- Rated operational voltage upto 690V
- Spares available for entire range

	Type	Contact	Rating(A)	Coil	Coil	Coil	Coil	Coil	Coil	Coil
				Voltage 24V AC	Voltage 24V DC	Voltage 48V AC	Voltage 48V DC	Voltage 110V AC	Voltage 230V AC	Voltage 415V AC
	AC-3	1NO	9	850001	850002	850003	850004	850005	850006	850007
	AC-3	1NO	12	850011	850012	850013	850014	850015	850016	850017
	AC-3	1NO	18	850021	850022	850023	850024	850025	850026	850027
	AC-3	1NO	25	850031	850032	850033	850034	850035	850036	850037
	AC-3	1NO	32	850041	850042	850043	850044	850045	850046	850047

	Type	Contact	Rating(A)	Coil	Coil	Coil	Coil	Coil	Coil	Coil
				Voltage 24V AC	Voltage 24V DC	Voltage 48V AC	Voltage 48V DC	Voltage 110V AC	Voltage 230V AC	Voltage 415V AC
	AC-3	1NC	9	850101	850102	850103	850104	850105	850106	850107
	AC-3	1NC	12	850111	850112	850113	850114	850115	850116	850117
	AC-3	1NC	18	850121	850122	850123	850124	850125	850126	850127
	AC-3	1NC	25	850131	850132	850133	850134	850135	850136	850137
	AC-3	1NC	32	850141	850142	850143	850144	850145	850146	850147

	Type	Contact	Rating(A)	Coil	Coil	Coil	Coil	Coil	Coil	Coil
				Voltage 24V AC	Voltage 24V DC	Voltage 48V AC	Voltage 48V DC	Voltage 110V AC	Voltage 230V AC	Voltage 415V AC
	AC-3	1NO+1NC	40	850151	850152	850153	850154	850155	850156	850157
	AC-3	1NO+1NC	50	850161	850162	850163	850164	850165	850166	850167
	AC-3	1NO+1NC	65	850171	850172	850173	850174	850175	850176	850177
	AC-3	1NO+1NC	80	850181	850182	850183	850184	850185	850186	850187
	AC-3	1NO+1NC	95	850191	850192	850193	850194	850195	850196	850197



Type	Contact	Rating(A)	Coil Voltage 24V AC	Coil Voltage 48V AC	Coil Voltage 110V AC	Coil Voltage 230V AC	Coil Voltage 415V AC
AC-3	-	115	850201	850203	850205	850206	850207
AC-3	-	150	850211	850213	850215	850216	850217
AC-3	-	185	850221	850223	850225	850226	850227
AC-3	-	225	850231	850233	850235	850236	850237
AC-3	-	265	850241	850243	850245	850246	850247
AC-3	-	330	850251	850253	850255	850256	850257
AC-3	-	400	-	850263	850265	850266	850267
AC-3	-	500	-	850273	850275	850276	850277
AC-3	-	630	-	850283	850285	850286	850287



Type	Contact	Rating (A) AC1	Rating (A) AC3	Coil Voltage 24V AC	Coil Voltage 24V DC	Coil Voltage 48V AC	Coil Voltage 48V DC	Coil Voltage 110V AC	Coil Voltage 230V AC	Coil Voltage 415V AC
AC-1	4NO	20	9	850301	850302	850303	850304	850305	850306	850307
AC-1	4NO	25	12	850311	850312	850313	850314	850315	850316	850317
AC-1	4NO	40	25	850321	850322	850323	850324	850325	850326	850327
AC-1	4NO	60	40	850331	850332	850333	850334	850335	850336	850337
AC-1	4NO	80	50	850341	850342	850343	850344	850345	850346	850347
AC-1	4NO	80	65	850351	850352	850353	850354	850355	850356	850357
AC-1	4NO	110	80	850361	850362	850363	850364	850365	850366	850367
AC-1	4NO	125	95	850371	850372	850373	850374	850375	850376	850377
AC-1	4NO	200	115	850381	-	850383	-	850385	850386	850387
AC-1	4NO	250	150	850391	-	850393	-	850395	850396	850397
AC-1	4NO	275	185	850401	-	850403	-	850405	850406	850407
AC-1	4NO	315	225	850411	-	850413	-	850415	850416	850417
AC-1	4NO	500	400	-	-	850423	-	850425	850426	850427
AC-1	4NO	700	500	-	-	850433	-	850435	850436	850437
AC-1	4NO	1000	630	-	-	850443	-	850445	850446	850447

Type	Contact	Rating	Rating	Coil	Coil	Coil	Coil	Coil	Coil	Coil
		(A) AC1	(A) AC3	Voltage 24V AC	Voltage 24V DC	Voltage 48V AC	Voltage 48V DC	Voltage 110V AC	Voltage 230V AC	Voltage 415V AC
AC-1	2NO+2NC	20	9	850501	850502	850503	850504	850505	850506	850507
AC-1	2NO+2NC	25	12	850511	850512	850513	850514	850515	850516	850517
AC-1	2NO+2NC	40	25	850521	850522	850523	850524	850525	850526	850527
AC-1	2NO+2NC	60	40	850531	850532	850533	850534	850535	850536	850537
AC-1	2NO+2NC	80	50	850541	850542	850543	850544	850545	850546	850547
AC-1	2NO+2NC	80	65	850551	850552	850553	850554	850555	850556	850557
AC-1	2NO+2NC	110	80	850561	850562	850563	850564	850565	850566	850567
AC-1	2NO+2NC	125	95	850571	850572	850573	850574	850575	850576	850577
AC-1	2NO+2NC	200	115	850581	-	850583	-	850585	850586	850587
AC-1	2NO+2NC	250	225	850591	-	850593	-	850595	850596	850597
AC-1	2NO+2NC	275	150	850601	-	850603	-	850605	850606	850607
AC-1	2NO+2NC	315	185	850611	-	850613	-	850615	850616	850617
AC-1	2NO+2NC	500	400	-	-	850623	-	850625	850626	850627
AC-1	2NO+2NC	700	500	-	-	850633	-	850635	850636	850637
AC-1	2NO+2NC	1000	630	-	-	850643	-	850645	850646	850647



Mini Contactors

- Conforms to IEC 60947-4-1
- Utilisation category AC1, AC3 & AC4
- CE Certified
- Rated operational voltage 690V
- Range from 9A to 12A

Type	Contact	Rating(A)	Coil Voltage 24V AC	Coil Voltage 48V AC	Coil Voltage 110V AC	Coil Voltage 230V AC	Coil Voltage 415V AC
3P	1NO	9	850701	850703	850705	850706	850707
3P	1NO	12	850711	850713	850715	850716	850717
3P	1NC	9	850721	850723	850725	850726	850727
3P	1NC	12	850731	850733	850735	850736	850737
4P	4NO	9	-	-	-	850751	850752
4P	2NO+2NC	9	-	-	-	850771	850772



Capacitor Duty Contactors

- Conforms to IEC 60947-4-1
- Utilisation category AC-6B
- CE Certified
- Separate termination for damping resistors
- Range from 12kVAR to 50kVAR

Type	Contact	Rating(A)	Coil Voltage 230V AC	Coil Voltage 415V AC
3P	-	12	850804	850805
3P	-	16	850814	850815
3P	-	20	850824	850825
3P	-	25	850834	850835
3P	-	30	850844	850845
3P	-	37	850854	850855
3P	-	45	850864	850865
3P	-	50	850874	850875


Control Relay


- Conforms to IEC 60947-4-1
- CE Certified
- Rated operational voltage 690V
- Available with AC & DC coil voltage


Type	Contact	Rating(A)	Coil Voltage 24V AC	Coil Voltage 24V DC	Coil Voltage 48V AC	Coil Voltage 48V DC
-	4NO	-	850881	850882	850883	850884
-	3NO + 1NC	-	850891	850892	850893	850894
-	2NO + 2NC	-	850901	850902	850903	850904

Type	Contact	Rating(A)	Coil Voltage 110V AC	Coil Voltage 230V AC	Coil Voltage 415V AC
-	-	-	850885	850886	850887
-	-	-	850895	850896	850897
-	-	-	850905	850906	850907

Accessories

	Type	Contact	Rating(A)	Cat Ref.
	Add on block for Power contactor - Front Mounted	2 NO	-	851001
	Add on block for Power contactor - Front Mounted	1 NO + 1NC	-	851002
	Add on block for Power contactor - Front Mounted	2 NC	-	851003
	Add on block for Power contactor - Front Mounted	4 NO	-	851004
	Add on block for Power contactor - Front Mounted	3 NO + 1 NC	-	851005
	Add on block for Power contactor - Front Mounted	2 NO + 2 NC	-	851006
	Add on block for Power contactor - Front Mounted	1 NO + 3 NC	-	851007
	Add on block for Power contactor - Front Mounted	4 NC	-	851008
	Add on block for Power contactor - Side Mounted	1 NO + 1NC	-	851009

	Type	Contact	Rating(A)	Cat Ref.
	Add on block for Mini contactor - Front Mounted	2 NO	-	851121
	Add on block for Mini contactor - Front Mounted	1 NO + 1NC	-	851122
	Add on block for Mini contactor - Front Mounted	2 NC	-	851123
	Add on block for Mini contactor - Front Mounted	4 NO	-	851124
	Add on block for Mini contactor - Front Mounted	3 NO + 1 NC	-	851125
	Add on block for Mini contactor - Front Mounted	2 NO + 2 NC	-	851126
	Add on block for Mini contactor - Front Mounted	1 NO + 3 NC	-	851127
	Add on block for Mini contactor - Front Mounted	4 NC	-	851128

	Type	Contact	Rating	Cat Ref.
	Mechanical interlock	-	9 A to 32 A	851011
	Mechanical interlock	-	40 A to 95 A	851012
	Mechanical interlock	-	115 A to 150 A	851013
	Mechanical interlock	-	185 A to 225 A	851014
	Mechanical interlock	-	265 A to 400 A	851015
	Mechanical interlock	-	500 A to 630 A	851016



Type	Contact	Rating	Cat Ref.
Timer blocks	On delay	0.1 to 3 sec	851021
Timer blocks	On delay	0.1 to 30 sec	851022
Timer blocks	On delay	10 to 180 sec	851023
Timer blocks	Off delay	0.1 to 3 sec	851024
Timer blocks	Off delay	0.1 to 30 sec	851025
Timer blocks	Off delay	10 to 180 sec	851026



Type	Contact	Rating	Cat Ref.
Spare coil	24 V AC	9 to 18 A	851031
Spare coil	48 V AC	9 to 18 A	851041
Spare coil	110 V AC	9 to 18 A	851051
Spare coil	240 V AC	9 to 18 A	851061
Spare coil	415 V AC	9 to 18 A	851071
Spare coil	24 V DC	9 to 18 A	851081
Spare coil	48 V DC	9 to 18 A	851091
Spare coil	24 V AC	25 to 32 A	851032
Spare coil	48 V AC	25 to 32 A	851042
Spare coil	110 V AC	25 to 32 A	851052
Spare coil	240 V AC	25 to 32 A	851062
Spare coil	415 V AC	25 to 32 A	851072
Spare coil	24 V DC	25 to 32 A	851082
Spare coil	48 V DC	25 to 32 A	851092
Spare coil	24 V AC	40 to 95 A	851033
Spare coil	48 V AC	40 to 95 A	851043
Spare coil	110 V AC	40 to 95 A	851053
Spare coil	240 V AC	40 to 95 A	851063
Spare coil	415 V AC	40 to 95 A	851073
Spare coil	24 V DC	40 to 95 A	851083
Spare coil	48 V DC	40 to 95 A	851093
Spare coil	110 V AC	115 to 150 A	851054
Spare coil	240 V AC	115 to 150 A	851064
Spare coil	415 V AC	115 to 150 A	851074


Type	Contact	Rating	Cat Ref.
Spare coil	110 V AC	185 to 225 A	851055
Spare coil	240 V AC	185 to 225 A	851065
Spare coil	415 V AC	185 to 225 A	851075
Spare coil	110 V AC	265 to 330 A	851056
Spare coil	240 V AC	265 to 330 A	851066
Spare coil	415 V AC	265 to 330 A	851076
Spare coil	110 V AC	400 A	851057
Spare coil	240 V AC	400 A	851067
Spare coil	415 V AC	400 A	851077
Spare coil	110 V AC	500 A	851058
Spare coil	240 V AC	500 A	851068
Spare coil	415 V AC	500 A	851078
Spare coil	110 V AC	630 A	851059
Spare coil	240 V AC	630 A	851069
Spare coil	415 V AC	630 A	851079

Thermal Overload Relay


- Conforms to IEC 60947-4-1
- CE Certified
- Available range from 0.1A to 630A
- Trip class - 10A
- Direct and independent mounting

Type	Contact	Rating	Cat Ref.
Thermal Overload Relay for Power Contactor	-	0.1-0.16A	851151
Thermal Overload Relay for Power Contactor	-	0.16-0.25A	851152
Thermal Overload Relay for Power Contactor	-	0.25-0.40A	851153
Thermal Overload Relay for Power Contactor	-	0.40-0.63A	851154
Thermal Overload Relay for Power Contactor	-	0.63-1.0A	851155
Thermal Overload Relay for Power Contactor	-	1.0-1.6A	851156
Thermal Overload Relay for Power Contactor	-	1.25-2.0A	851157
Thermal Overload Relay for Power Contactor	-	1.6-2.5A	851158
Thermal Overload Relay for Power Contactor	-	2.5-4.0A	851159
Thermal Overload Relay for Power Contactor	-	4.0-6.0A	851160
Thermal Overload Relay for Power Contactor	-	5.5-8.0A	851161



	Type	Contact	Rating	Cat Ref.
	Thermal Overload Relay for Power Contactor	-	7.0-10.0A	851162
	Thermal Overload Relay for Power Contactor	-	9.0-13.0A	851163
	Thermal Overload Relay for Power Contactor	-	12.0-18.0A	851164
	Thermal Overload Relay for Power Contactor	-	17.0-25.0A	851165
	Thermal Overload Relay for Power Contactor	-	23.0-32.0A	851166
	Thermal Overload Relay for Power Contactor	-	28.0-36.0A	851167
	Thermal Overload Relay for Power Contactor	-	23.0-32.0A	851168
	Thermal Overload Relay for Power Contactor	-	30.0-40.0A	851169
	Thermal Overload Relay for Power Contactor	-	37.0-50.0A	851170
	Thermal Overload Relay for Power Contactor	-	48.0-65.0A	851171
	Thermal Overload Relay for Power Contactor	-	55.0-70.0A	851172
	Thermal Overload Relay for Power Contactor	-	63.0-80.0A	851173
	Thermal Overload Relay for Power Contactor	-	80.0-93.0A	851174
	Thermal Overload Relay for Power Contactor	-	30-50A	851175
	Thermal Overload Relay for Power Contactor	-	48-80A	851176
Thermal Overload Relay for Power Contactor	-	80-104A	851177	
Thermal Overload Relay for Power Contactor	-	110-150A	851179	
Thermal Overload Relay for Power Contactor	-	200-315A	851184	
Thermal Overload Relay for Power Contactor	-	315-500A	851186	
Thermal Overload Relay for Power Contactor	-	400-630A	851187	


Type	Contact	Rating	Cat Ref.
Mounting Bracket	-	Relay 25	851190
Mounting Bracket	-	Relay 36	851191
Mounting Bracket	-	Relay 93	851192

	Type	Contact	Rating	Cat Ref.
	Thermal Overload Relay for Mini Contactor	-	0.11-0.16A	851201
	Thermal Overload Relay for Mini Contactor	-	0.16-0.23A	851202
	Thermal Overload Relay for Mini Contactor	-	0.23-0.36A	851203
Thermal Overload Relay for Mini Contactor	-	0.36-0.54A	851204	


	Type	Contact	Rating	Cat Ref.
	Thermal Overload Relay for Mini Contactor	-	0.54-0.8A	851205
	Thermal Overload Relay for Mini Contactor	-	0.8-1.2A	851206
	Thermal Overload Relay for Mini Contactor	-	1.8-2.6A	851208
	Thermal Overload Relay for Mini Contactor	-	2.6-3.7A	851209
	Thermal Overload Relay for Mini Contactor	-	3.7-5.5A	851210
	Thermal Overload Relay for Mini Contactor	-	5.5-8.0A	851211
	Thermal Overload Relay for Mini Contactor	-	8.0-11.5A	851212
	Thermal Overload Relay for Mini Contactor	-	10-14.0A	851213

Motor Protection Circuit Breaker - MPCB

- Conforms to IEC 60947-4-1
- CE Certified
- High breaking capacity upto 100A
- Wide range of accessories

	Thermal Protection Adj. Range	Contact	Rating(A)	Cat Ref.
	0.1-0.16	-	0.16	851221
	0.16-0.25	-	0.25	851222
	0.25-0.4	-	0.4	851223
	0.4-0.63	-	0.63	851224
	0.63-1	-	1	851225
	1-1.6	-	1.6	851226
	1.6-2.5	-	2.5	851227
	2.5-4	-	4	851228
	4-6	-	6	851229
	6-10	-	10	851230
	9-14	-	14	851231
	13-18	-	18	851232
	17-23	-	23	851233
	20-25	-	25	851234
	24-32	-	32	851235
	25-40	-	40	851236
40-63	-	63	851237	
56-80	-	80	851238	

Accessories for MPCB

	Type	Contact	Rating	Cat Ref.
	Shunt trip	-	110 - 115 V AC	851261
	Shunt trip	-	220 - 240 V AC	851262
	Shunt trip	-	380 - 415 V AC	851263
	Undervoltage	-	110 - 115 V AC	851264
	Undervoltage	-	220 - 240 V AC	851265
	Undervoltage	-	380 - 415 V AC	851266
	Auxiliary contact Top	1 NO + 1 NC	-	851271
	Auxiliary contact Top	2 NO	-	851272
	Auxiliary contact Front	1 NO + 1 NC	-	851273
	Auxiliary contact Front	2 NO	-	851274
	Auxiliary Alarm	1 NO + 1NO	-	851275
	Auxiliary Alarm	1 NO + 1 NC	-	851276
	Auxiliary Alarm	1NC + 1NO	-	851277
	Auxiliary Alarm	1 NC + 1 NC	-	851278
	Enclosure	-	-	851279