



Thermal overload relays for minicontactors from 0.11 to 14A

- Control circuit up to 690V
- Power circuit up to 690V
- Three-pole differential (phase unbalance protection)
- Automatic ambient temperature compensation between -25°C and +60°C
- Choice of manual or automatic reset
- Direct connection to contactor or independent mounting using accessories.
- Screw and Ring terminal versions
- Terminals protected against accidental contact in accordance with VDE 0106 T.100 and VBG4.
- Terminal numbering in accordance with EN 50005
- Degree of protection IP20 (EN 60529)
- Additional auxiliary contact block 1NO (with manual reset only)

Standards

IEC/EN 60947-4-1	CSA 22.2/14
IEC/EN 60947-5-1	NI C 63-650
UNE 115	VDE 0660
NFC 63-650	UL 508

General characteristics


- Thermal protection against balanced overload.
- Three-pole differential (phase unbalance protection).
- Automatic ambient temperature compensation.
- Front mounted selector for choosing utilisation current.
- Reset button, 2 positions :
Manual(H) and Automatic(A) by turning the blue selector.
- Stop push button, independent of reset (red).
- Manual trip lever (tripping test).
- Tripping indicator (0-1).
- To facilitate wiring arrangements terminal 96 fits directly onto coil terminal (A2) and terminal 14/22 fits directly onto the feedback auxiliary contact.

Approvals






Order codes ● pg. C.61
 Technical data ● pg. C.66
 Dimensions ● pg. C.67

Thermal overload relays for minicontactors

	For use with:	Setting range (regulation)		Fuse				Terminal: screw		Terminal: ring terminal		Pack
				aM		gL		Cat. no.	Ref. no.	Cat. no.	Ref. no.	
				Type 2	Type 1	Type 2	Type 1					
	MC0...	min. A	max. A	A	A	A	A	MT03A	101000	MT03RA	103540	10
	MC1...	0.11	0.17	0.5	0.5	0.5	0.5	MT03B	101001	MT03RB	103541	10
	MC2...	0.26	0.43	1	2	2	4	MT03C	101002	MT03RC	103542	10
		0.43	0.65	1	4	2	8	MT03D	101003	MT03RD	103543	10
		0.65	1	2	6	4	12	MT03E	101004	MT03RE	103544	10
		0.85	1.3	2	6	4	12	MT03F	101005	MT03RF	103545	10
		1.1	1.6	2	10	4	16	MT03G	101006	MT03RG	103546	10
		1.35	2	4	10	6	16	MT03H	101007	MT03RH	103547	10
		1.7	2.4	4	16	6	25	MT03I	101008	MT03RI	103548	10
		2.2	3.2	4	20	6	32	MT03J	101009	MT03RJ	103549	10
		2.5	4	4	20	6	32	MT03R	101015			10
		3	4.7	6	20	10	32	MT03K	101010	MT03RK	103550	10
		4	6.3	10	32	16	50	MT03L	101011	MT03RL	103551	10
		5.5	8	12	50	20	63	MT03M	101012	MT03RM	103552	10
		7.5	10.5	16	50	25	80	MT03N	101013	MT03RN	103553	10
		10	14	20	32	32	100	MT03P	101014	MT03RP	103554	10

Accessories

		Terminal	Cat. no.	Ref. no.	Pack
	Input terminals	Screw	MVE0T	101020	5
		Ring terminal	MVE0R	103562	5
	Base	For separate mounting onto standard EN 50022-35 profile	MVB0T	101021	5
	Auxiliary contact block	Screw	MATV10AT	101022	10
		Ring terminal	MATV10AR	103563	10
	Identification	Sheets of labels (sheets of 260 labels each)	EAT 260	100548	1
		Labeling plate base (50 pieces in one pack)	SPR	100549	1

Order codes

A

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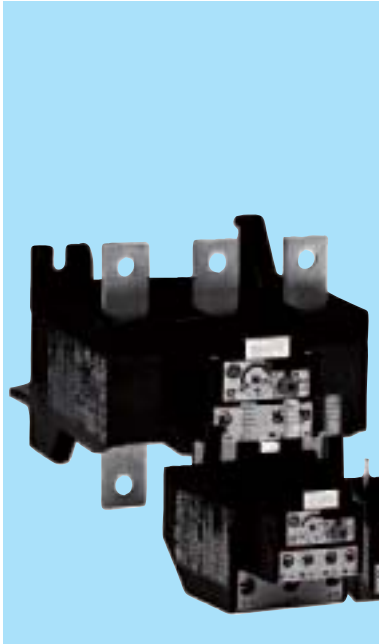
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Thermal overload relays for contactors from 0.16 to 850A

- Control circuit up to 690V AC
- Power circuit:
 - RT1, RT12: up to 690V
 - RT2, RT22, RT3, RT32, RT4/4L, RT5/5L & RT6/6L: up to 1000V
- Thermal protection against normal overloads.
- Three pole differential (phase unbalance protection).
- Protection against long starting times.
- Automatic ambient temperature compensation between - 25°C y + 60°C.
- Front mounted test button.
- Trip indication.
- Independent auxiliary contacts with double rupture (1NO + 1NC).
- Function selector:
 - Manual RESET
 - Manual RESET and STOP
 - Automatic RESET with STOP
 - Automatic RESET without STOP

Standards

IEC/EN 60947-4-1	CSA 22.2/14
IEC/EN 60947-5-1	NI C 63-650
UNE 115	VDE 0660
NFC 63-650	UL 508
CEI 17-50	

Approvals



cULus



CE



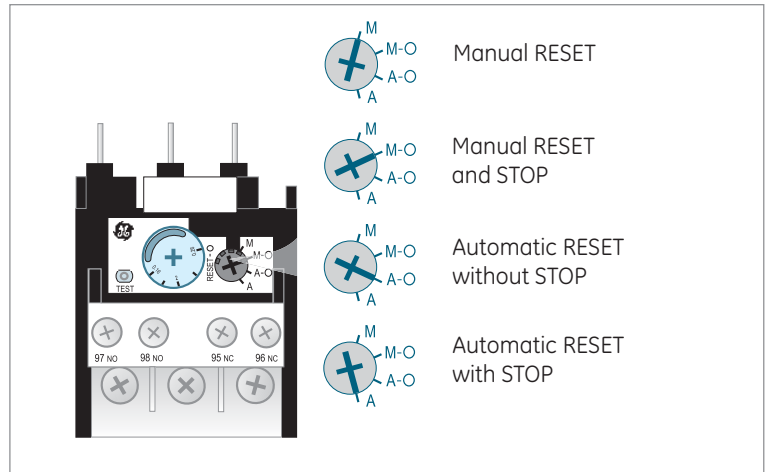
Lloyd's Register



Bureau Veritas



RINA



Order codes ● pg. C.63
 Technical data ● pg. C.68
 Dimensions ● pg. C.72



Thermal overload relays for contactors



	For use with:	Setting range (regulation)		Fuses ⁽¹⁾		Srew terminal		Ring terminal		Pack	
				aM	gL - gG						
		min. A	max. A	A	A	Cat. no.	Ref. no.	Cat. no.	Ref. no.		
Class 10A	CL00	0.16	0.26	2	2	RT1B	113700	RT1RB	114087	5	
	CL01	0.25	0.41	2	2	RT1C	113701	RT1RC	114088	5	
	CL02	0.4	0.65	2	2	RT1D	113702	RT1RD	114089	5	
	CL25	0.65	1.1	2	4	RT1F	113703	RT1RF	114090	5	
	CL03	1.0	1.5	4	6	RT1G	113704	RT1RG	114091	5	
	CL04	1.3	1.9	4	6	RT1H	113705	RT1RH	114092	5	
	CL45	1.8	2.7	6	10	RT1J	113706	RT1RJ	114093	5	
		2.5	4.0	8	16	RT1K	113707	RT1RK	114094	5	
		4.0	6.3	12	20	RT1L	113708	RT1RL	114095	5	
		5.5	8.5	16	20	RT1M	113709	RT1RM	114096	5	
		8.0	12.0	20	25	RT1N	113710	RT1RN	114097	5	
		10.0	16.0	25	35	RT1P	113711	RT1RP	114098	5	
		14.5	18.0	32	50	RT1S	113712	RT1RS	114099	5	
		17.5	22.0	40	50	RT1T	113713	RT1RT	114100	5	
		21.0	26.0	40	63	RT1U	113714	RT1RU	114101	5	
		25.0	32.0	50	80	RT1V	113715	RT1RV	114102	5	
		30.0	40.0	63	100	RT1W	113716	RT1RW	114103	5	
	Class 10	CL05	11.5	15.0	32	35	RT2A	113717	RT2RA	114104	1
CL06		14.5	19.0	40	50	RT2B	113718	RT2RB	114105	1	
CL07		18.5	25.0	50	63	RT2C	113719	RT2RC	114106	1	
CL08		24.0	32.0	63	100	RT2D	113720	RT2RD	114107	1	
CL09		30.0	43.0	80	125	RT2E	113721	RT2RE	114108	1	
CL10		42.0	55.0	100	160	RT2G	113722	RT2RG	114109	1	
		54.0	65.0	125	160	RT2H	113723	RT2RH	114110	1	
		64.0	82.0	125	200	RT2J	113724	RT2RJ	114111	1	
		78.0	97.0	125	200	RT2L	113725	RT2RL	114112	1	
		90.0	110	160	250	RT2M	113726	RT2RM	114113	1	
Class 20	CL00	0.4	0.65	2	2	RT12D	139138	RT12RD	114060	5	
	CL01	0.65	1.1	2	4	RT12F	139139	RT12RF	114061	5	
	CL02	1	1.5	4	6	RT12G	139140	RT12RG	114062	5	
	CL25	1.3	1.9	4	6	RT12H	139141	RT12RH	114063	5	
	CL03	1.8	2.7	8	10	RT12J	139142	RT12RJ	114159	5	
	CL04	2.5	4.1	8	16	RT12K	113640	RT12RK	114114	5	
	CL45	4	6.3	12	20	RT12L	113641	RT12RL	114115	5	
		5.5	8.5	16	20	RT12M	113642	RT12RM	114116	5	
		8	12	20	35	RT12N	113643	RT12RN	114117	5	
		10	16	25	35	RT12P	113644	RT12RP	114118	5	
		14.5	18	32	50	RT12S	113645	RT12RS	114119	5	
		17.5	22	40	50	RT12T	113646	RT12RT	114120	5	
		21	26	40	63	RT12U	113647	RT12RU	114121	5	
		25	32	50	80	RT12V	113648	RT12RV	114122	5	
		30	40	63	100	RT12W	113649	RT12RW	114123	5	
		CL05	24	32	63	80	RT22D	113650	RT22RD	114124	1
		CL06	30	43	80	100	RT22E	113651	RT22RE	114125	1
		CL07	42	55	100	160	RT22G	113652	RT22RG	114126	1
		CL08	54	65	125	160	RT22H	113653	RT22RH	114127	1
		CL09	64	82	125	200	RT22J	113654	RT22RJ	114128	1
		CL09	78	97	125	200	RT22L	113655	RT22RL	114129	1
		CL10	90	110	160	250	RT22M	113656	RT22RM	114130	1

(1) Most suitable fuse in accordance with IEC 60947-4-1.

Order codes

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Thermal overload relays for contactors

Thermal overload relays

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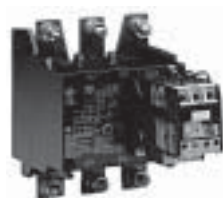
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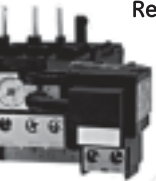


	For use with:	Setting range (regulation)		Fuses ⁽¹⁾		Cat. no. (Screw terminal)	Ref. no.	Pack	
		min. A	max. A	aM A	gL - gG A				
Class 10	Direct mounting	CK75	55	80	125	200	RT3B	113727	1
		CK08	63	90	125	200	RT3C	113728	1
			90	120	160	250	RT3D	113729	1
			110	140	200	315	RT3E	113730	1
			140	190	250	355	RT3F	113731	1
		CK85	120	190	250	315	RT4N	113732	1
		CK09	175	280	315	400	RT4P	113733	1
		CK95 ⁽²⁾	200	310	400	500	RT4R	113734	1
		CK10	120	190	250	315	RT5A	113750	1
		CK11	175	280	315	400	RT5B	113751	1
		CK12 ⁽³⁾	250	400	500	630	RT5C	113752	1
			315	500	630	800	RT5D	113753	1
			430	700	800	1000	RT5E	113754	1
	CK13 ⁽⁴⁾	500	850	100	1250	RT6A	113760	1	
Class 20	Direct mounting	CK75	63	90	125	200	RT32C	113657	1
		CK08	90	120	160	250	RT32D	113658	1
			110	140	200	315	RT32E	113659	1
			140	190	250	355	RT32F	113660	1
Class 30	Mounting with screws	CL...	2.5	4	10	16	RT4LA	113735	1
		CK...	4	6.5	12	20	RT4LB	113736	1
			5.5	8.5	16	25	RT4LC	113737	1
			7.5	11	20	32	RT4LD	113738	1
			10	16	25	40	RT4LE	113739	1
			12.5	20	32	50	RT4LF	113740	1
			17	27	50	80	RT4LG	113741	1
			26	40	80	125	RT4LH	113742	1
			32	52	100	160	RT4LJ	113743	1
			45	70	125	160	RT4LK	113744	1
			60	90	160	200	RT4LL	113745	1
			80	125	200	250	RT4LM	113746	1
			CK85	120	190	250	315	RT4LN	113747
		CK09	175	280	315	400	RT4LP	113748	1
		CK95 ⁽²⁾	200	310	400	500	RT4LR	113749	1
		CK10	120	190	250	315	RT5LA	113755	1
		CK11	175	280	315	400	RT5LB	113756	1
		CK12 ⁽³⁾	250	400	500	630	RT5LC	113757	1
			315	500	630	800	RT5LD	113758	1
	430		700	800	1000	RT5LE	113759	1	
	CK13 ⁽⁴⁾	500	850	1000	1250	RT6LA	113761	1	

- (1) Most suitable fuse in accordance with IEC 60947-4-1.
- (2) Fitting direct to the contactor.
- (3) Fitting direct to the contactor: by means of a coupling and connection set. Separate mounting: with screws on DIN rail / with cable connection.
- (4) RT6A = RT1 with right setting range plus RTXP, independent mounting base adaptor, to be utilised with current transformer connected by passing cable chosen by customer. Current transformer data on request.



Accessories

			Cat. no.	Ref. no.	Pack
 <p>Base for separate mounting</p>	DIN EN50022-35				
	RT1		RTXP	105170	1
	RT2		RT2XP	113764	1
<p>Setting range cover protection</p>	RT...		RTX3	113762	1
 <p>Push-button with flexible cable</p>	for distance RESET				
	RT1... - RT6... (front)	0.5 meters	RTXS	113855	1
	RT1... - RT6... (front)	1 meters	RTXSL	113856	1
	RT1..., RT2..., RT4..., RT5..., RT6... (back)		RTXBS	108864	1
<p>Terminal protection</p>	for RT3 or CK75C/CK08C				
	Thermal overload relay	1 pole IPxB	PTPCK75	103747	1
	Connection contactor-relay	3 poles	RT3PXX3P	110565	1
 <p>Remote electrical reset</p>	RT1... - RT6...		RTXRR ♦		1

Available coil voltages (V)

♦	B	D	G	J	N	U	X
AC/DC	12	24	48	110	220	380	440
				240	415	480	

Order codes

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Technical data

General

- Thermal protection against balanced overload.
- Three-pole differential (phase unbalance protection).
- Automatic ambient temperature compensation.
- Front mounted selector for choosing utilisation current.
- Reset button, 2 positions :
Manual(H) and Automatic(A) by turning the blue selector.
- Stop push button, independent of reset (red).
- Manual trip lever (tripping test).
- Tripping indicator (0-1).
- To facilitate wiring arrangements terminal 96 fits directly onto coil terminal (A2) and terminal 14/22 fits directly onto the feedback auxiliary contact.

Conformity to standards

IEC 60947-4	CEI 17-50	VDE660
UNE 115	NI C63-650	UL508
NFC63-650		

Approvals

UL	CSA	SEMKO
SETI	NEMKO	CE

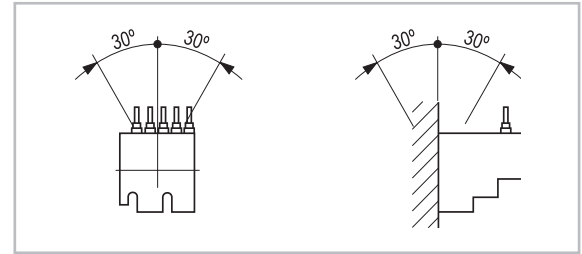
Ambient conditions

Storage temperature	-55°C to +80°C	
Operation temperature	-25°C to +60°C	
Altitude	up to 3000m	Nominal values
	from 3000 to 4000m	90%Ie 80%Ue
	from 4000 to 5000m	80%Ie 75%Ue
Degree of protection	IP20	
Protection treatment	Tropical finish	

Climatic resistance

Continuous tests 40 / 125 / 56		
Cold (72h)	Temperature	-40°C
	Dry heat (96h)	
	Temperature	+125°C
	Relative humidity	< 50%
Humid heat (56 days)	Temperature	+40°C
	Relative humidity	95%
Cyclical tests		
First half-cycle (12h)	Low temperature	+25°C
	Relative humidity	93%
Second half-cycle (12h)	Low temperature	+55°C
	Relative humidity	95%
Number of consecutive cycles	6	

Mounting positions



Main circuit (poles)

		MT0...
Rated insulation voltage (Ui) according to IEC 947	(V)	750
Frequency	(Hz)	0..400
Power dissipation per pole	(W)	min. 1 / max. 2.5
Terminal capacity		
Screw M 3.5 (pozidrive head)		
safety flange		
Maximum capacity :		
Solid	(Ø mm)	2 x 2 wires
Stranded without end sleeve	(mm ²)	2 wires Ø 2.5
Stranded with end sleeve		
pen (2 end sleeves)	(mm ²)	2 wires Ø 0.75
pen (1 end sleeve)	(mm ²)	2 wires Ø 1
		1 wires Ø 2.5
Tightening torque	(Nm)	0.8

Control circuit (incorporated auxiliary contact)

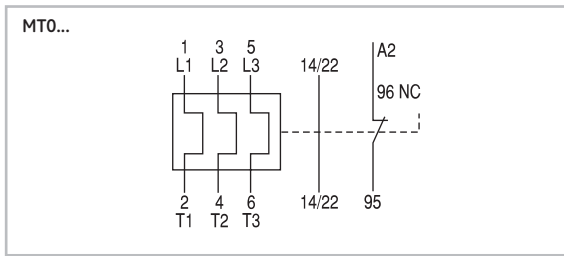
		MT0...
Rated insulation voltage (Ui) according to IEC 947	(V)	750
Rated thermal current (Ith) $\theta \leq 60^\circ\text{C}$	(A)	10
Tripping currents		
AC-15	Ue-Ie (V-A)	223-3, 380-2, 500-1
DC-13	Ue-Ie (V-A)	60-0.5, 110-0.2, 220-0.1
Short-circuit protection (max.glass gL fuse - w/h welding)	(A)	6
Number and type of contacts		

Control circuit (auxiliary contact block)

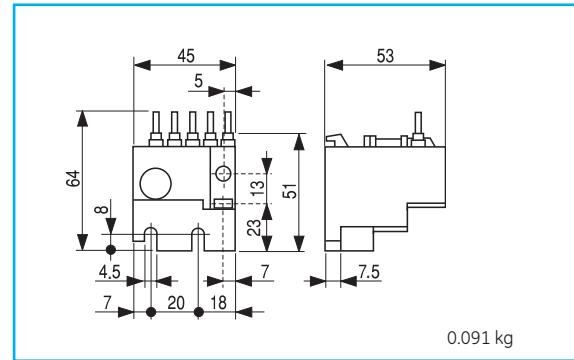
		MATV10AT
Rated insulation voltage (Ui) according to IEC 947	(V)	750
Rated thermal current (Ith) $\theta \leq 60^\circ\text{C}$	(A)	10
Tripping currents		
AC-15	Ue-Ie (V-A)	223-1, 380-0.5
DC-13	Ue-Ie (V-A)	60-0.1, 110-0.5
Short-circuit protection (max.glass gL fuse - w/h welding)	(A)	6
Number and type of contacts		

Dimensional drawings

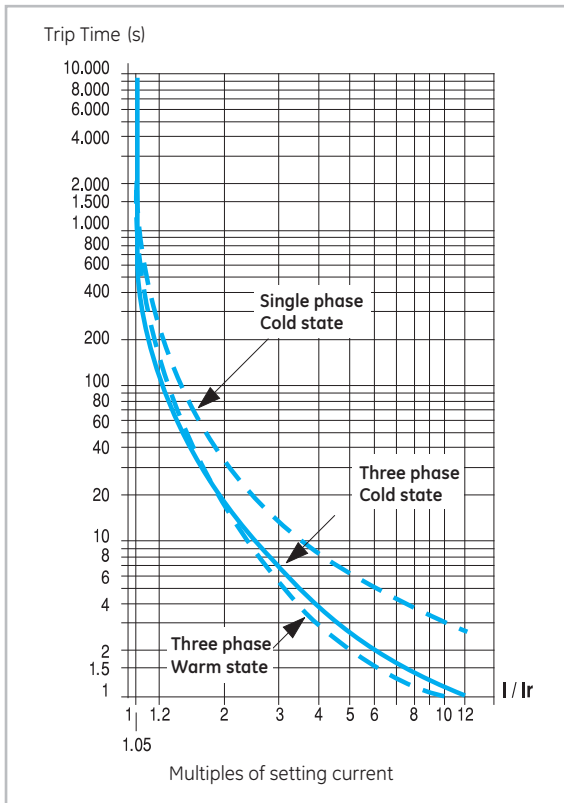
Numbering of the terminals



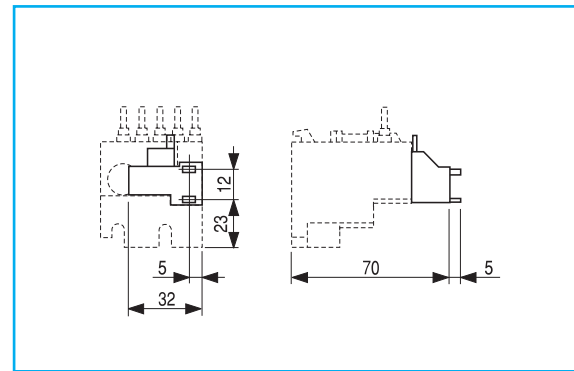
Thermal overload relay



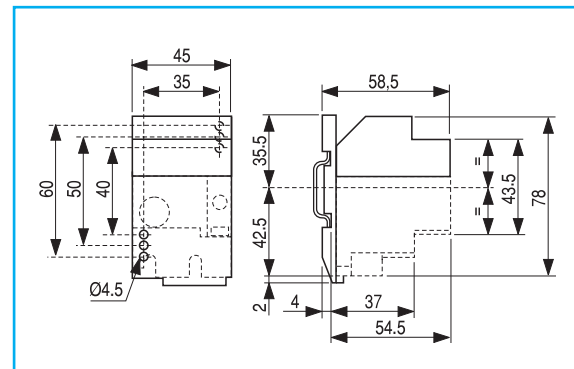
Tripping curves



Thermal overload relay + aux. contact block (front mounting)



Independent mounting of the thermal overload relay



Technical data

		RT1...	RT2...	RT3...	RT4.../ 4L...	RT5.../ 5L...	RT6.../ 6L...
General							
Class		10A / 20	10 / 20	10 / 20	10 / 30	10 / 30	10 / 30
Setting range	(A)	0.16 ... 40	11.5 ... 110	55 ... 190	2.5 ... 310	120 ... 700	500 ... 850
Suitable for		CL00...CL45	CL05...CL10	CK75...CK08	CL,CK	CK10...CK12	CK13
Main circuit							
Rated insulation voltage (IEC947-4) Ui	(V)	690	1000	1000	1000	1000	1000
Frequency limits	(Hz)	0..400	0..400	0..400	50..60	50..60	50..60
Terminal capacity							
Clamp terminal - solid	(mm ²)	16	50	120	-	-	-
Clamp terminal - flexible	(mm ²)	10	50	120	-	-	-
Flat terminal	(mm)	-	-	25 x 5	-	-	80 x 10
Passing by hole (wire) through C.T. core	(mm ²)	-	-	-	-	400	-
Passing by hole (bar) through C.T. core	(mm)	-	-	-	30 x 10	30 x 10	-
Tightening torque	(Nm)	2.5	4.5	6.5	23	31.5	-
Control circuit							
Rated insulation voltage (IEC60947-4) Ui	(V)				690		
Rated thermal current Ith	(A)				10		
Operation current							
AC-15 - Ue-Ie	(V - A)				110/120 - 3 ; 220/240 - 2 ; 380/415 - 1 ; 480/500 - 0.8 ; 660/690 - 0.3		
DC-13 - Ue-Ie	(V - A)				24 - 2 ; 48 - 1.4 ; 110 - 0.6 ; 250 - 0.3 ; 440 - 0.1		
Utilisation according UL and CSA					B600 - Q600		
Protective fuse type gL	(A)				10		
Terminal capacity	(mm ²)				2.5		
Tightening capacity	(Nm)				0.8		

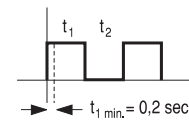
Conformity to standards

IEC/EN 60947-4-1	NFC 63-650	NI C 63-650
IEC/EN 60947-5-1	CEI 17-50	VDE 0660
UNE 115	CSA 22.2/14	UL 508

Remote electrical reset

Power consumption		
AC	(VA)	100
DC	(W)	100

Coils not suitable for continuous operating duty



- $t_1 = 1 \text{ sec}$ ◆ $t_2 = 30 \text{ sec}$
 - $t_1 = 5 \text{ sec}$ ◆ $t_2 = 90 \text{ sec}$
 - $t_1 = 10 \text{ sec}$ ◆ $t_2 = 180 \text{ sec}$
- ($t_1 = \text{ON time}$ $t_2 = \text{OFF time}$)

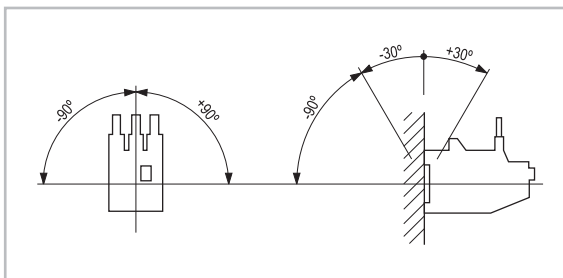
Approvals

cULus	RINA	CE
Lloyd's Register	Bureau Veritas	

Ambient conditions

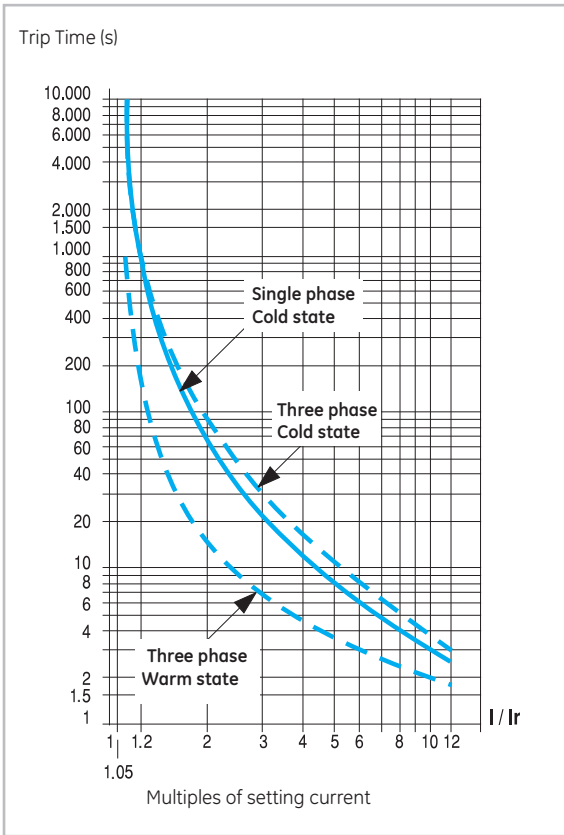
Storage temperature	-40°C to +70°C
Operation temperature (compensated)	-25°C to +60°C
Altitude	up to 3000m
	w/o any changes in characteristics
Relative humidity	98%
Protection treatment	Tropical finish

Mounting positions

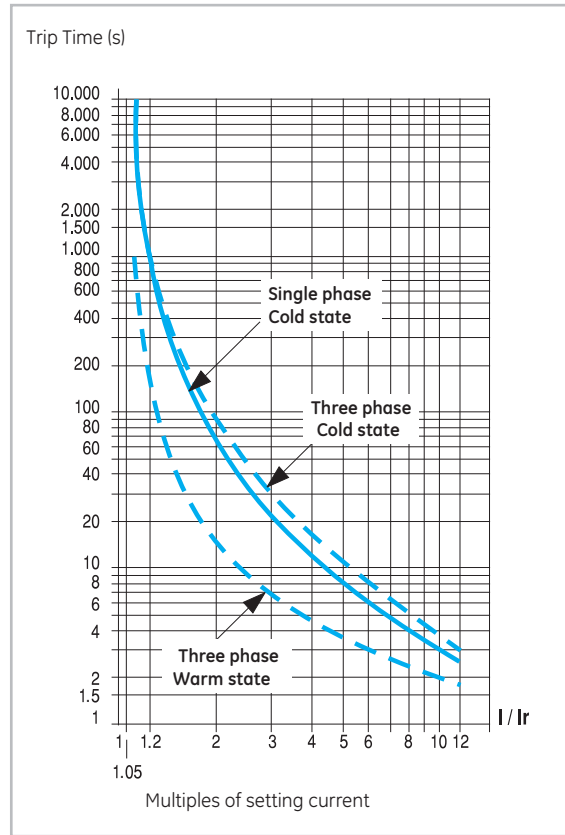


Tripping curves

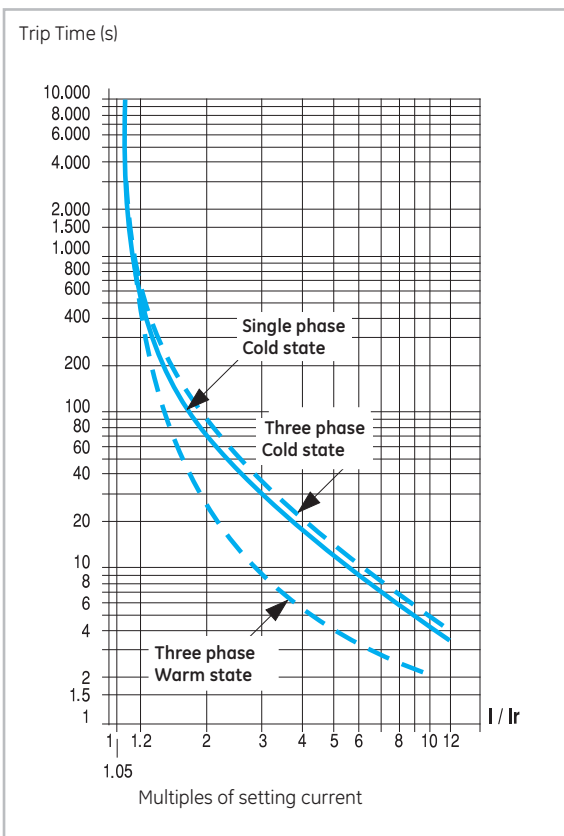
RT1 Class 10A



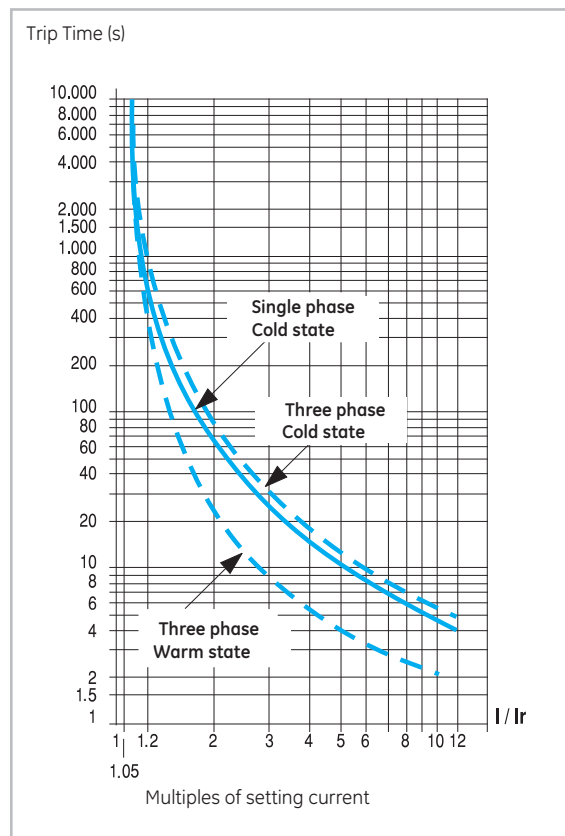
RT2 Class 10



RT12 Class 20



RT22 Class 20



Technical data

A

B

C

D

E

F

G

H

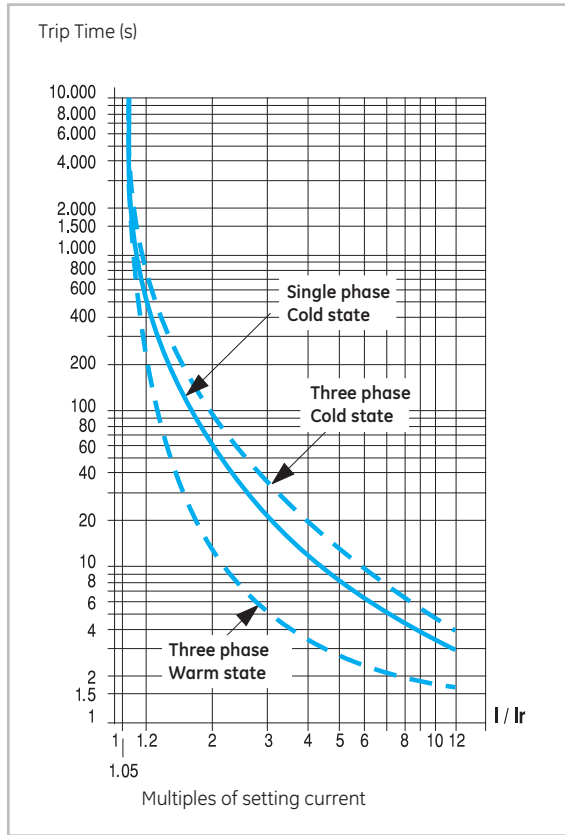
I

X

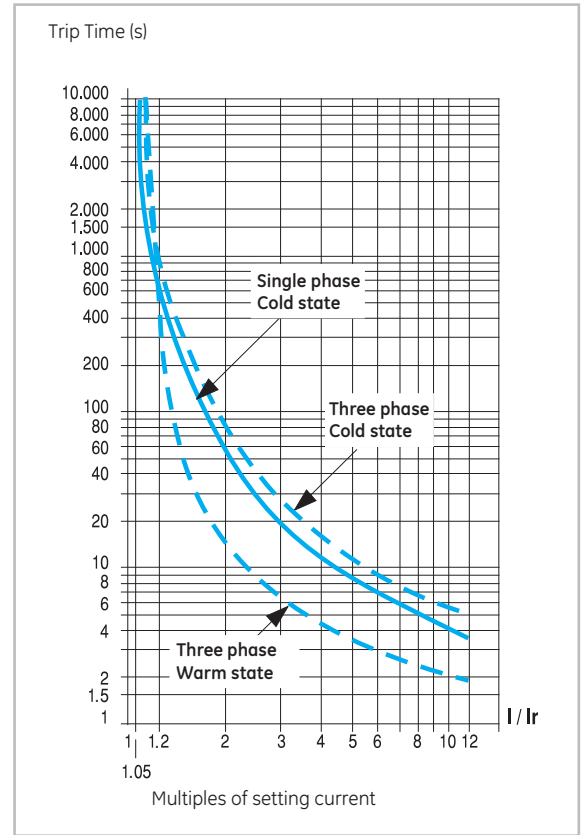


Tripping curves

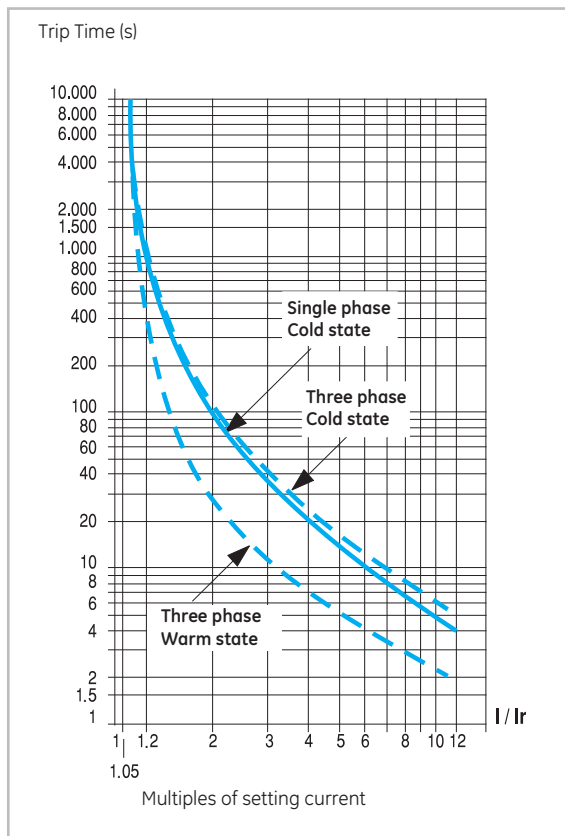
RT3 Class 10



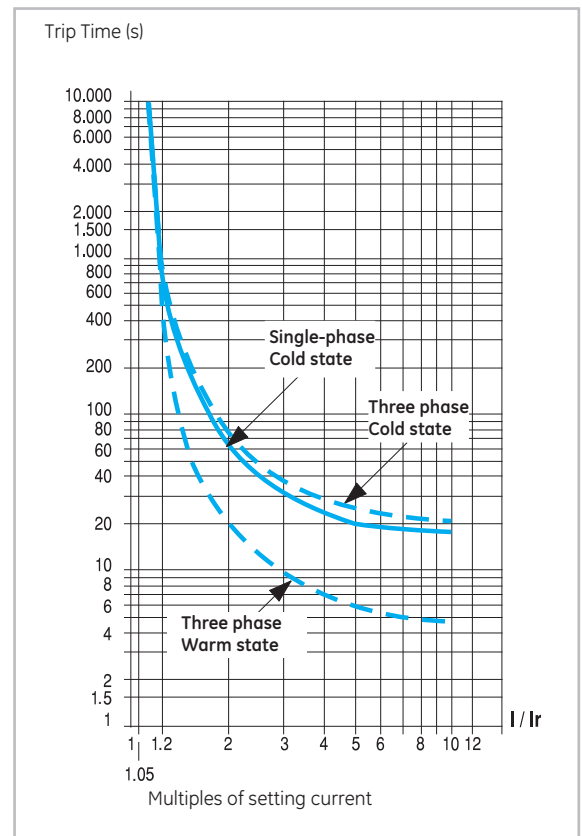
RT4 Class 10



RT32 Class 20



RT4L Class 30



Thermal overload relays

A

B

C

D

E

F

G

H

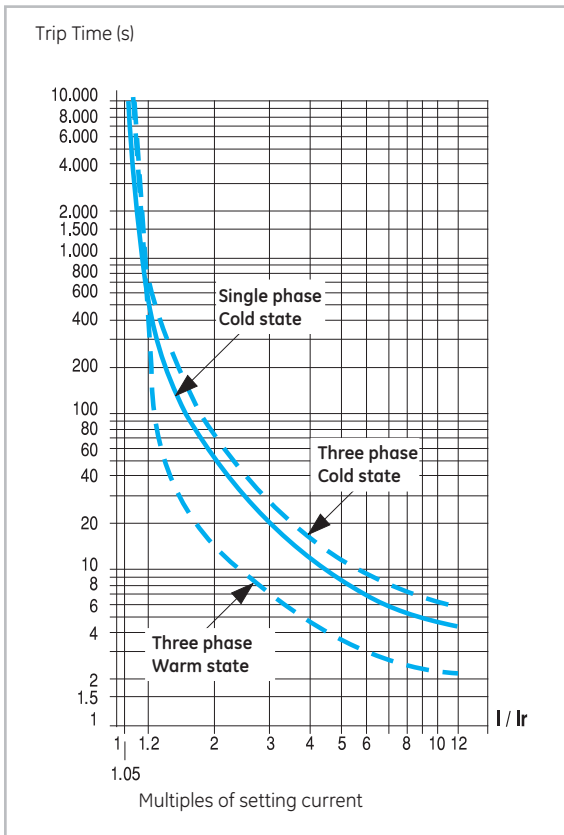
I

X

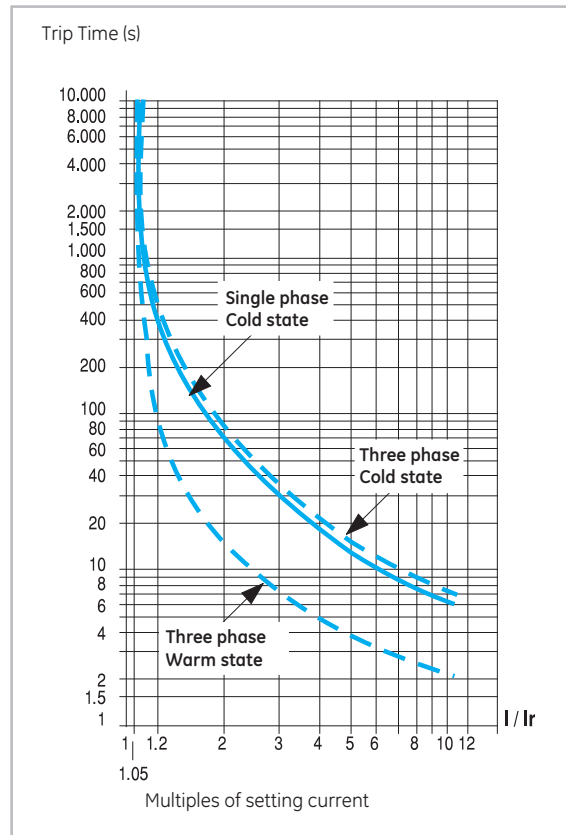


Tripping curves

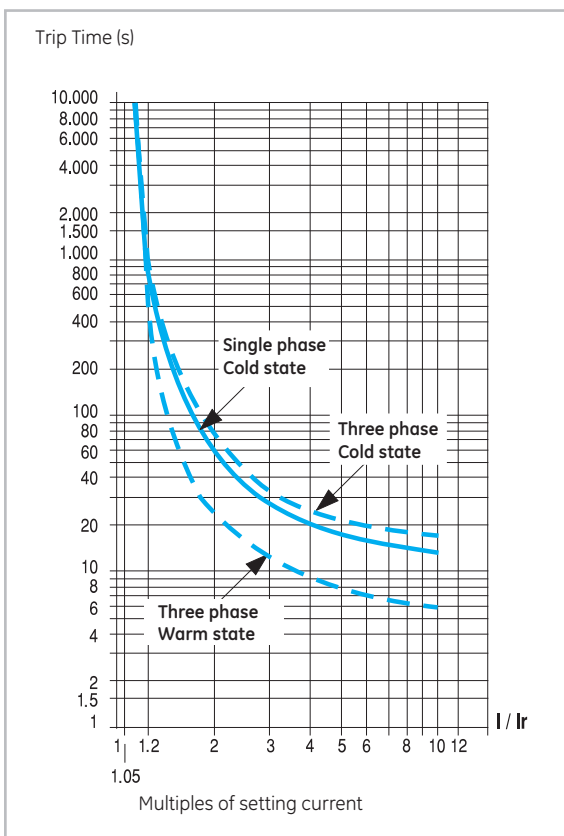
RT5 Class 10



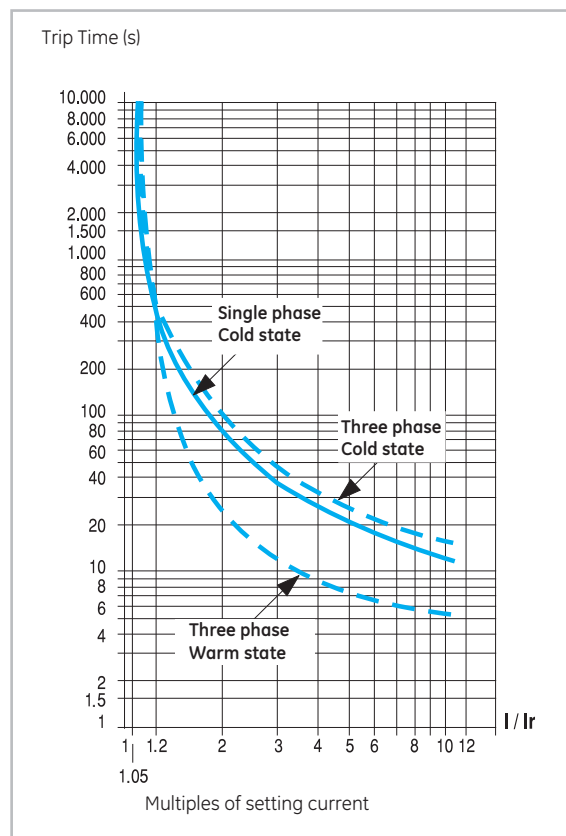
RT6 Class 10



RT5L Class 30



RT6L Class 30



Technical data

A

B

C

D

E

F

G

H

I

X



Dimensional drawings

Thermal overload relay for contactors

Thermal overload relays

A

B

C

D

E

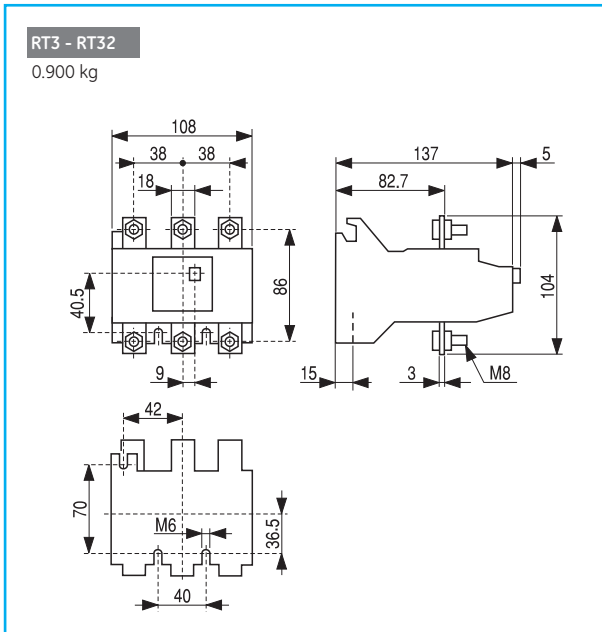
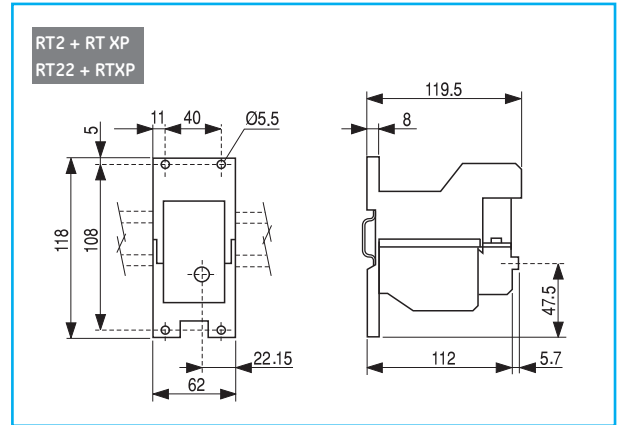
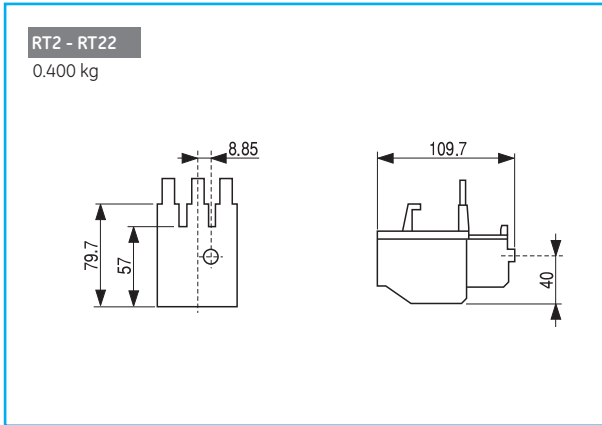
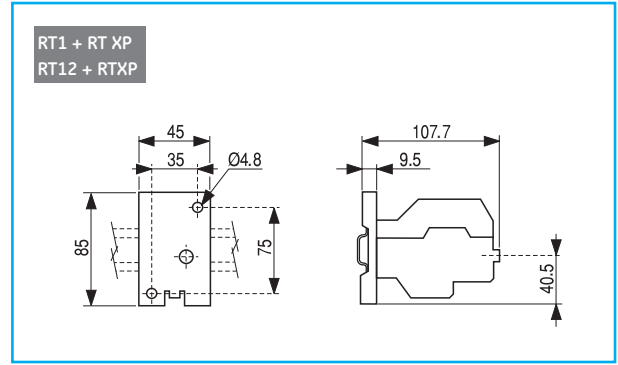
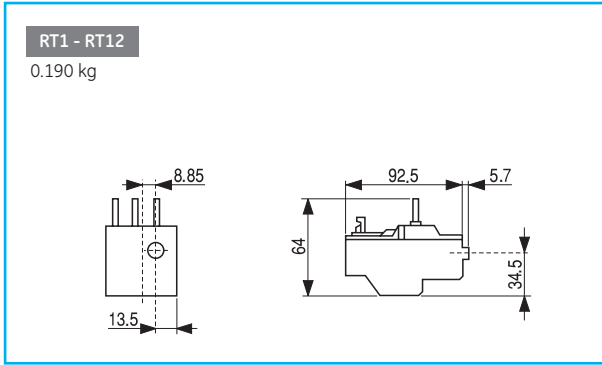
F

G

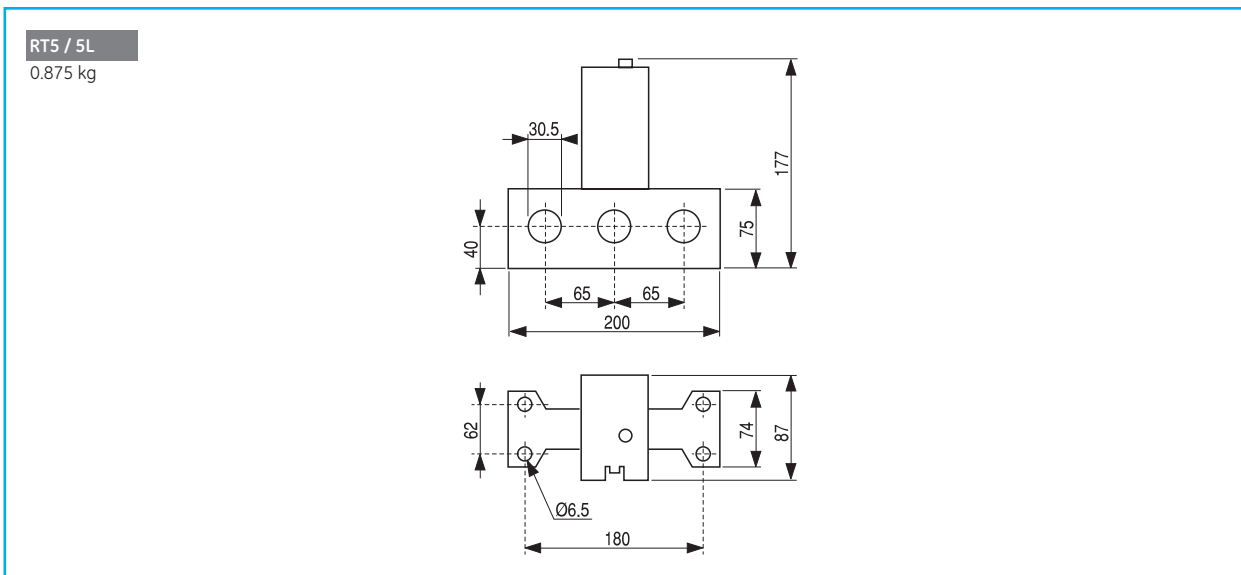
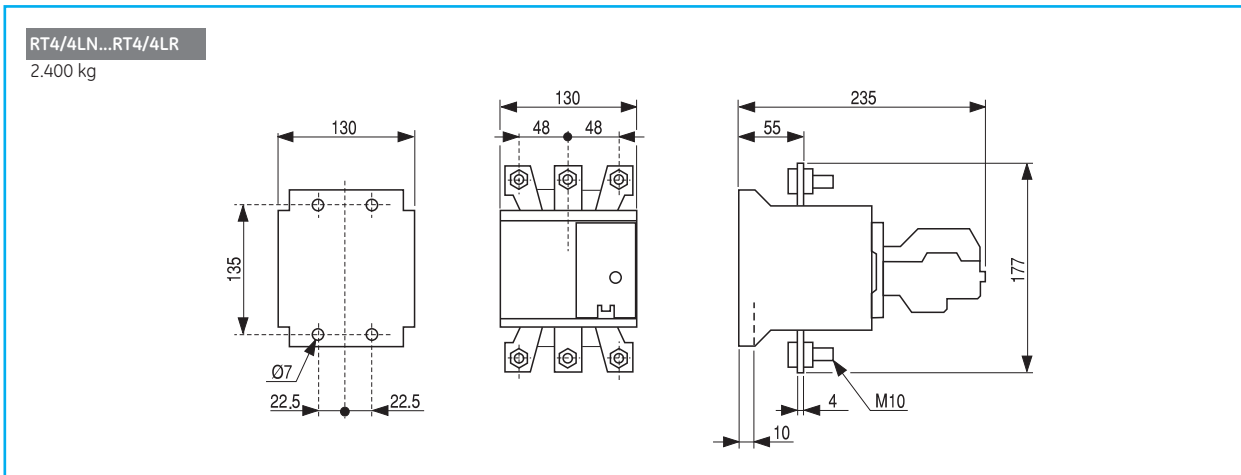
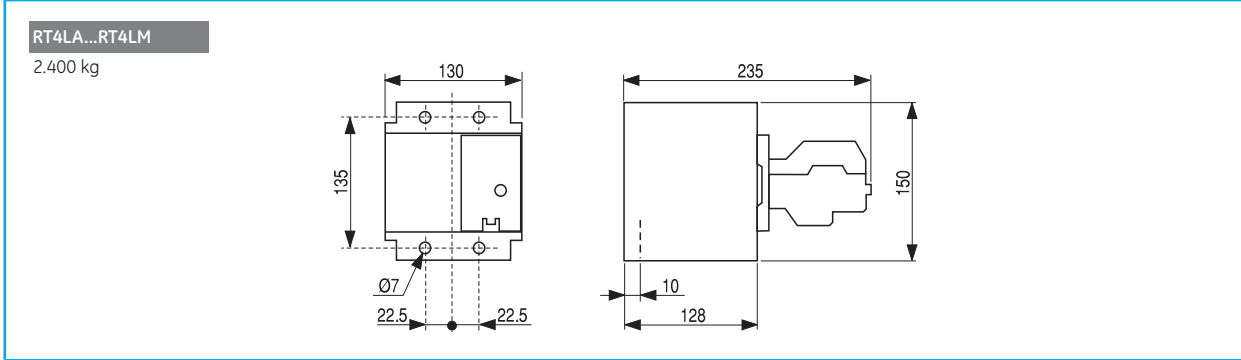
H

I

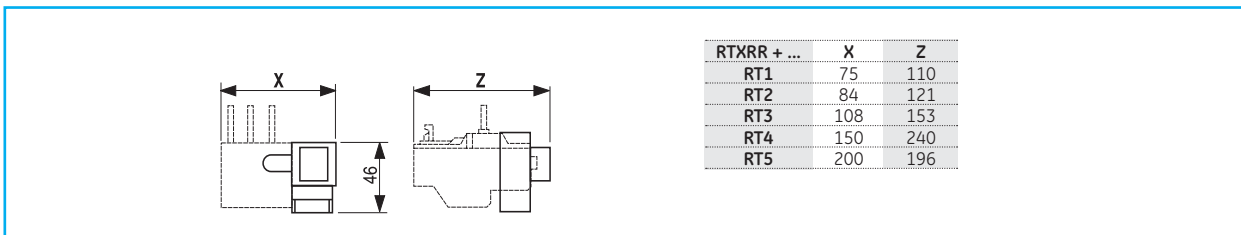
X



Thermal overload relay for contactors



Remote electrical reset



Dimensions

A

B

C

D

E

F

G

H

I

X

