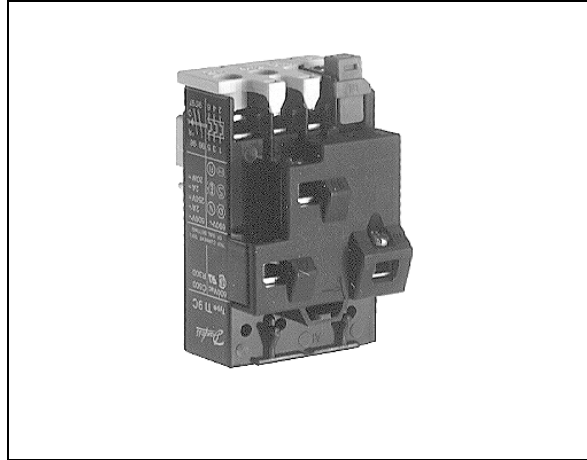


TI 9 C Thermal Overload Relay

Introduction



Thermal overload relays TI 9C are used with minicontactors CI 4 for class 10 protection of squirrel cage motors where space is a premium. The relays have single-phase protection, i.e. accelerated release if phase drop-out occurs. This is particularly important for motors with delta connected windings.

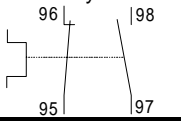
Other features of TI 9C:

- stop/reset button
- manual/automatic reset
- test button
- double scale for direct start or Y/D start
- signal contact with change over or galvanically isolated

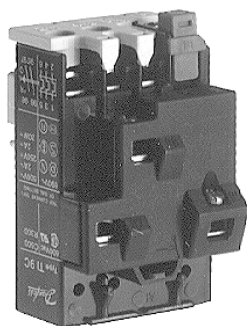
For technical data, [see page 49-51](#)

Ordering Data

Thermal overload relays TI 9C

Range		Max. Fusing Class "J" time delay fuse Amp.	Signal contact galvanically isolated 	Code no.
Motor protection Amp.	Y/D starters Amp.			
0.13 - 0.20	-	1	x	047H3060
0.19 - 0.29	-	1	x	047H3061
0.27 - 0.42	-	1	x	047H3062
0.40 - 0.62	-	1	x	047H3063
0.60 - 0.92	-	3	x	047H3064
0.85 - 1.30	-	3	x	047H3065
1.2 - 1.9	-	3	x	047H3066
1.8 - 2.8	3.2 - 4.8	4	x	047H3067
2.7 - 4.2	4.7 - 7.3	6	x	047H3068
4.0 - 6.2	6.9 - 10.7	10	x	047H3069
6.0 - 9.2	10 - 16	15	x	047H3070

Overview



Thermal Overload Relay TI 9C



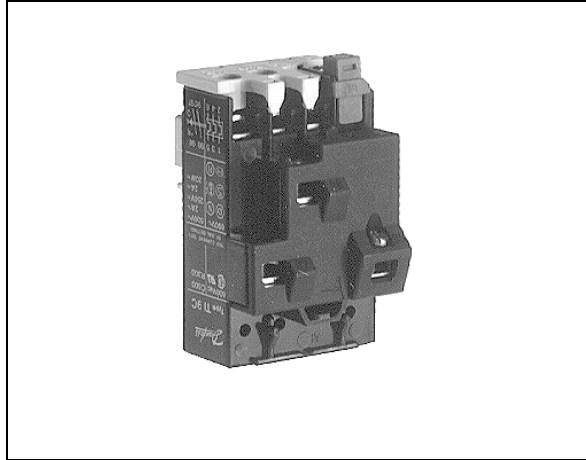
Automatic reset button
(supplied with unit)



Stop button extension
[See page 18](#)

TI 16C, TI 25C and TI 30C Thermal Overload Relays

Introduction



Thermal overload relays TI 16C, TI 25C and TI 30C are used with contactors CI 6 - 30 for class 10 protection of squirrel cage motors up to 30 HP. The relays have single-phase protection, i.e. accelerated release if phase drop-out occurs. This is particularly important for motors with delta connected windings.

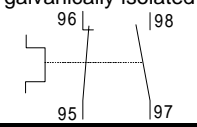
Other features of TI 16C - 30C:

- stop/reset button
- manual/automatic reset
- test button
- double scale for direct start or Y/D start
- signal contact with change over or galvanically isolated

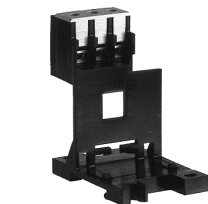
For technical data, [see page 49-51](#)

Ordering Data

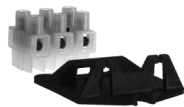
Thermal overload relays TI 16C, TI 25C and TI 30C

Range		Max. Fusing Class "J" time delay fuse Amp.	Signal contact galvanically isolated 	Code no.	Type
Motor protection Amp.	Y/D starters Amp.				
0.13 - 0.20	-	1	x	047H0200	TI 16C
0.19 - 0.29	-	1	x	047H0201	
0.27 - 0.42	-	1	x	047H0202	
0.40 - 0.62	-	1	x	047H0203	
0.60 - 0.92	-	3	x	047H0204	
0.85 - 1.30	-	3	x	047H0205	
1.2 - 1.9	-	3	x	047H0206	
1.8 - 2.8	3.2 - 4.8	4	x	047H0207	
2.7 - 4.2	4.7 - 7.3	6	x	047H0208	
4 - 6.2	6.9 - 10.7	10	x	047H0209	
6 - 9.2	10 - 16	15	x	047H0210	
8 - 12	13 - 20.8	15	x	047H0211	
11 - 16	19 - 27	20	x	047H0212	TI 25C
15 - 20	26 - 35	25	x	047H0213	
19 - 25	33 - 43	35	x	047H0214	
24 - 32	41 - 55	40	x	047H0215	TI 30C

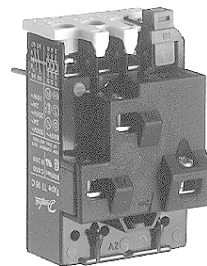
Overview



Holder for DIN rail mounting
[See accessories page 18](#)



3-pole terminal block and adaptor
[See accessories page 18](#)



Thermal Overload Relay TI 9C



Assembly clips
[See accessories page 18](#)



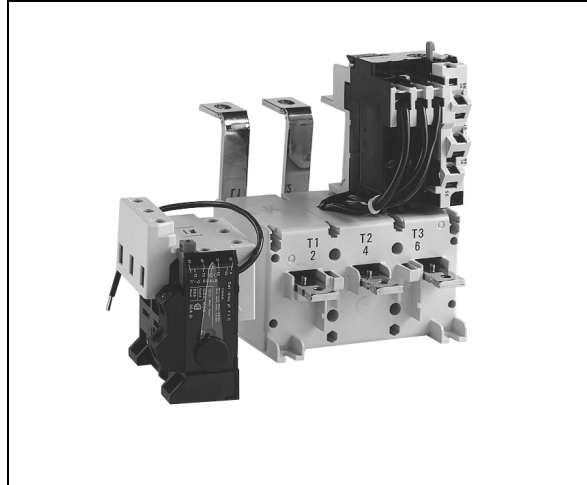
Automatic reset button
(supplied with unit)



Stop button extension
[See accessories page 18](#)

TI 80, TI 85, TI 90 and TI 110 Thermal Overload Relays

Introduction



Thermal overload relays TI 80 - 110 are used with contactors CI 32 - 105 for class 10 protection of squirrel cage motors up to 100 HP.

The relays have single-phase protection, i.e. accelerated release if phase drop-out occurs. This is particularly important for motors with delta connected windings.

Other features of TI 80 - 110:

- stop/reset button (TI 80 - 85)
- reset button (TI 90 - 110)
- manual/automatic reset
- test button
- double scale for direct start or Y/D start
- signal contact with change over or galvanically isolated

For technical data, [see page 49-51](#)

Ordering Data

Thermal overload relays TI 80, TI 85, TI 90 and TI 110

Range		Max. Fusing Class "J" time delay fuse Amp.	Signal contact		Type	Code no.
Motor protection Amp.	Y/D starters Amp.					
16 - 23	28 - 40	30	x		TI 80	047H1013
22 - 32	38 - 56	40	x			047H1014
30 - 45	52 - 78	60	x			047H1015
42 - 63	75 - 109	80	x			047H1016
60 - 80	105 - 138	100	x			047H1017
74 - 90	130 - 147	125	x		TI 85	047H1018
68 - 90	121 - 155	125		x	TI 90	047H3010
85 - 110	147 - 190	150		x	TI 110	047H3011

Overview



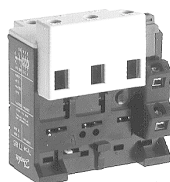
Adaptor for TI 80 - 85
[See accessories page 18](#)



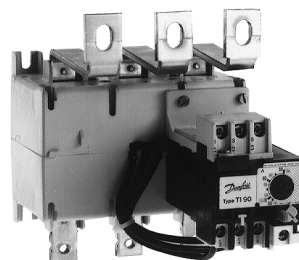
Bus bars for TI 80 - 85
[See accessories page 18](#)



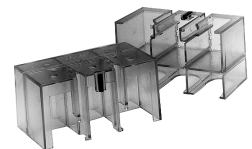
Stop button extension
[See accessories page 18](#)



**Thermal Overload Relay
TI 80 - 85**



Thermal Overload Relay TI 90 - 110



Terminal cover for TI 90 - 110
[See accessories page 17](#)

TI 180E and TI 630E Electronic Overload Relays for Contactors CI 86 - CI 420EI

Introduction



Electronic motor protection relays TI 180E and TI 630E give effective protection of electric motors exposed to thermal overload, phase failure and asymmetrical load. They therefore fulfill the requirements of IEC 947-4 and IEC 255-8. TI 180E/630E are compact units with built-in current transformers for measurement of motor operating current.

Other features of TI 180E and TI 630E:

- Galvanically isolated signal contact.
- Light emitting diodes for operating and operation functions.
- Connection for thermistor over temperature protection.
- TI 180 E can be mounted on backplate, 35 mm symmetrical DIN-rail or direct on contactors CI 86 - CI 170EI via bus bars
- Test and reset functions

For technical data, [see page 52-55](#)

Ordering Data

Electronic thermal relay, Type TI 180 E¹⁾

Control voltage U_e	Range Motor starter	With remote reset	Without remote reset
		Code no.	Code no.
24V, 50/60Hz	20 - 180 A	047H3004	047H3013
110V, 50/60Hz		047H3005	047H3014
220-230V, 50/60Hz		047H3006	047H3015
240V, 50/60Hz		047H3007	047H3016
380-400V, 50/60Hz		047H3008	047H3017
415V, 50/60Hz		047H3009	047H3018

¹⁾ TI 180E Electronic thermal relay requires bus bars to connect to Contactors

Electronic thermal relay, Type TI 630 E

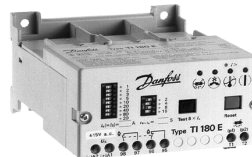
Control voltage U_e	Range Motor starter	With remote reset	Without remote reset
		Code no.	Code no.
24V, 50/60Hz	160 - 630 A	047H3053	047H3031
110V, 50/60Hz		047H3054	047H3032
220-230V, 50/60Hz		047H3055	047H3033
240V, 50/60Hz		047H3056	047H3034
380-400V, 50/60Hz		047H3057	047H3035
415V, 50/60Hz		047H3058	047H3036

With Y/D start, the motor full load current must be multiplied by 0.58

Overview



IMR Remote reset and indicator Module
[See accessories page 18](#)



TI 180E Electronic Overload Relay



Front cover for TI 180E
[See accessories page 18](#)



TI 630E Electronic Overload Relay



Bus bars for TI 180E
[See accessories page 18](#)