

Thermal Overload Relay Current transformer operated

Fig. 1

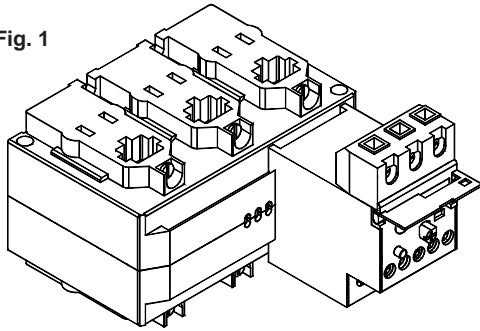
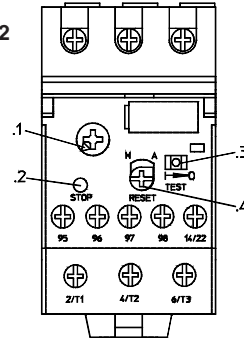
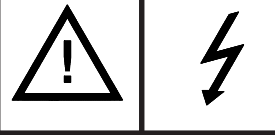


Fig. 2



WARNING: Hazard of electrical shock. Installation and maintenance by qualified personnel only. Isolate before servicing. Follow the operating instructions. Protection degree IP00 with links, IP10 with MR3 terminal box and IP20 without links.



1. Configuration

The current transformer overload relay unit is supplied as independently mounted assembly. It is provided with four fixings for panel mounting, see fig.3.

The thermal overload relay is a factory connected unit, being permanently sited on top of the 3 phase current transformer assembly mouldings. Mounting position: any vertical plane orientation within $\pm 30^\circ$.

The relay is suitable only for a.c. current 50-60Hz.

Trip class to IEC 60947-4-1: class 10A.

2. Cabling

Main	Connection size
60-90A 80-120A	Up to 50mm ² (1AWG)
120-180A	Up to 120mm ² (AWG4/0) with links for connection as independent unit or to GH15NT and GH15PT contactors With terminal box MR3-AD (optional) for connection with cable of 16-120mm ² (AWG5 -4/0) section
Auxiliary	Connection size
	Flexible or stranded cable 2 x 0,75-2,5mm ² (AWG 18-14) Flexible with multicore cable end 2 x 0,5-1,5mm ² (AWG20-16)

2.1. Main connection

Torque: M8 screws = 17Nm (150 lb.in)

For current up to 120A the current transformer unit permits the use of conductors through the central core hole for each phase connection. For higher current suitable connecting links are available. For single phase loads the three main circuits must be series connected.

2.2. Control connection

Torque: M3.5 screws = 1-1.3Nm (7 lb.in)

Using correctly size cable, connect the operating coil of the associated contactor in series with the NC contact of the relay i.e. 95-96. If a signalling device has to be energized when the relay trips, connect it in series with the NO contact, i.e. 97-98.

The NC circuit is electrically separate from the NO circuit up to 440V (150 V AC for UL standard).

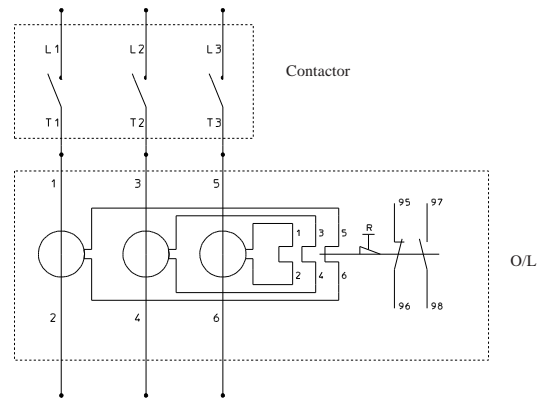
3. Setting to full load current of the motor

The relay is set to the full load current of the motor (primary current) by rotating the adjustment dial .1 (fig.2) until the arrow head correspond to the value of current.

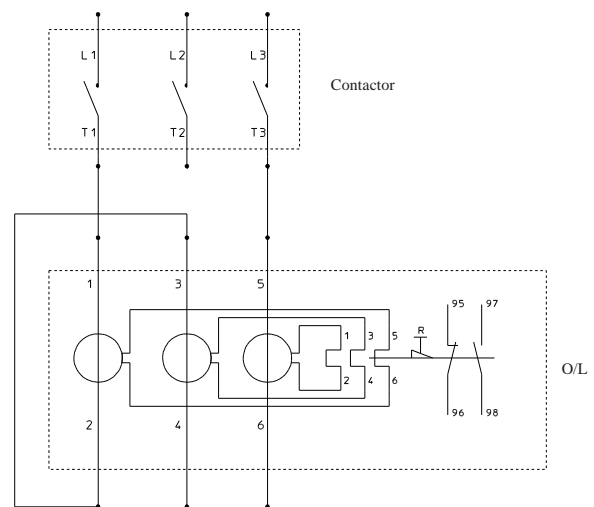
The secondary current for the adjustment of the relay is one hundredth of primary current.

Example: rated load current 120A
setting of relay 1.2A

Three phase wiring diagrams



Single phase wiring diagrams



4. Manual or automatic reset

Set the adjustment dial .4 (fig.2) in the position of arrow as follows:

M= manual reset by means of pushbutton .4 (fig.2)

A= automatic reset

By operating the pushbutton .4 (fig.2) contact (95-96) closes, if tripped.

Automatic reset is not suggested for permanent contact control devices as, when the tripping occurs, the motor is automatically reenergized after the cooling time of the relay.

5. Function of the red stop pushbutton

Stop button .2 (fig.2) allow to open momentarily the contact (95-96) but it can't be used to reset the relays when tripped.

6. Test before commissioning

Press pushbutton .4 (fig.2) to reset relay. Move the actionator .3 (fig.2) in direction of arrow marked "TEST", the relay trips. NC contact (95-96) opens and NO contact (97-98) closes. Trip indicator .3 (fig.2) shows yellow for tripped condition.

7. Fuse protection

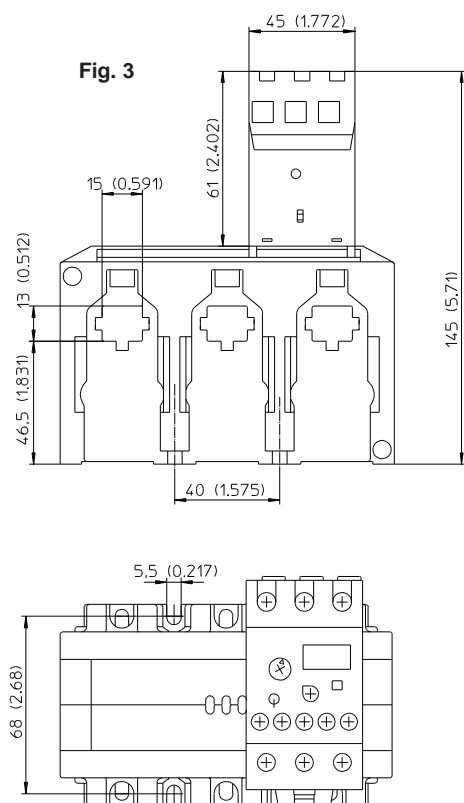
Short circuit protection of the main poles is achieved by a back up fuse as indicated on rating table. Short circuit protection of auxiliary contacts: 6AgG.

8. Permissible ambient temperature

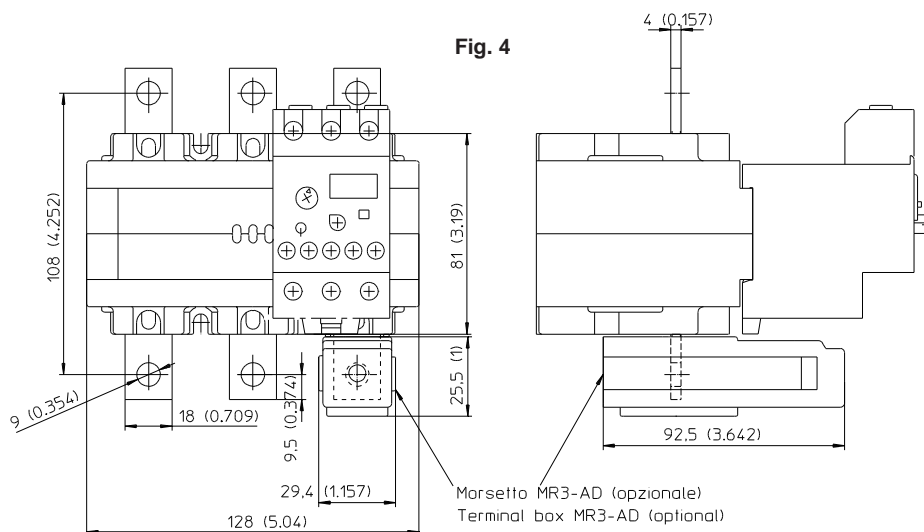
-25°C to +55°C temperature compensated.

Relays type	Setting range	Links type supplied with O/L relays
RTD180.90	60-90A	without links (fig .3)
RTD180.120	80-120A	
RTD180.180	120-180A	BRP180 for direct connection to GH15NT, GH15PT (fig.5)

Optional links type BRX180 are available for independent use (fig.4).

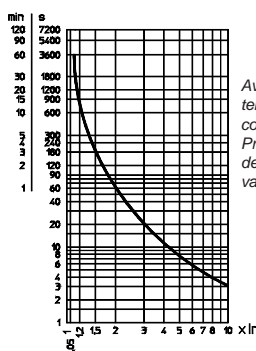


Links BRX180 for independent use



Links BRP180 for direct connection to GH15NT and GH15PT contactors

3ph typical tripping characteristics



Average values at 20°C ambient temperature, tripping three-phase from cold condition. Proceeding from service condition the times decrease to 20-30% of the characteristic values.

Current (multiples of setting current)

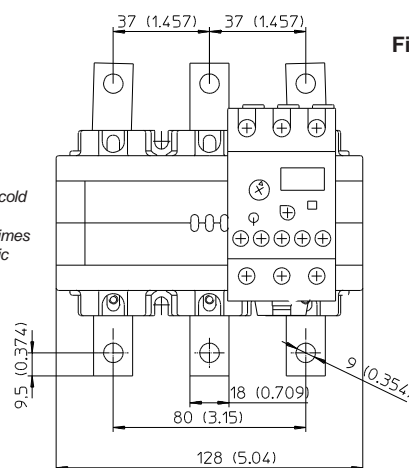


Fig. 5

