

## Thermal Overload Relay

### Current transformer operated

Fig. 1

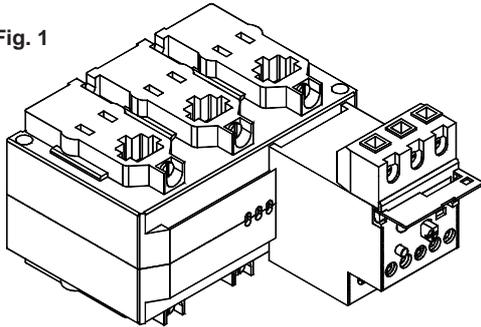
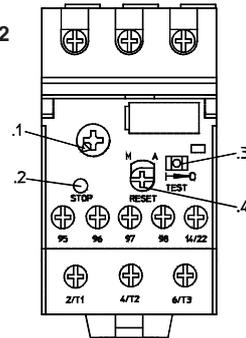


Fig. 2



**WARNING:** Hazard of electrical shock. Installation and maintenance by qualified personnel only. Isolate before servicing. Follow the operating instructions. Protection degree IP00



### 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.

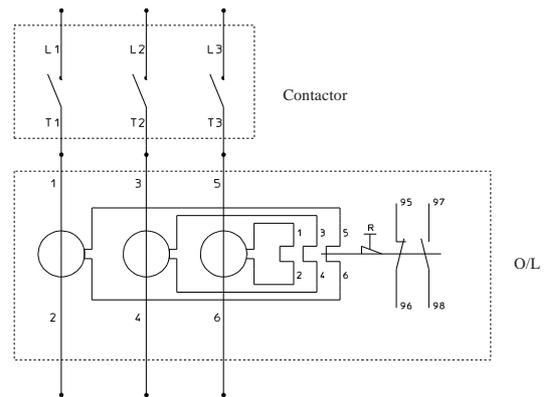
Trip class to IEC 60947-4-1: class 10A.

### 2. Cabling

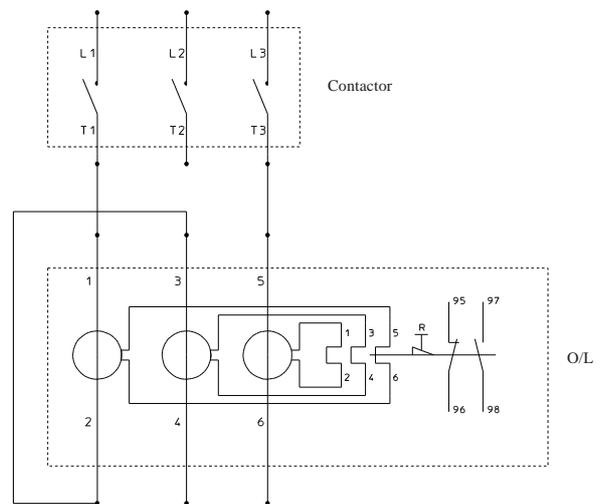
**Main Connection size**  
Up to 185 mm<sup>2</sup> (350MCM)

**Auxiliary Connection size**  
Flexible or stranded cable  
2 x 0,75-2,5 mm<sup>2</sup> (AWG 18-14)  
Flexible with multicore cable end  
2 x 0,5-1,5 mm<sup>2</sup> (AWG 20-16)

### Three phase wiring diagrams



### Single phase wiring diagrams



#### 2.1. Main connection

<sup>+</sup>Torque: M10 screws = 35 Nm (275 lb.in)

Suitable connecting links to contactor are supplied.

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).

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#### 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 eightieth of primary current.

Example: rated load current 240A

setting of relay 3A

**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.

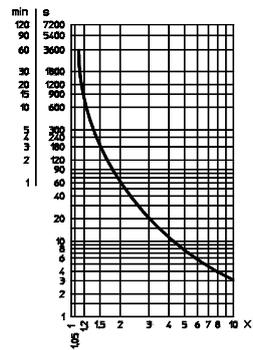
**7. Fuse protection**

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.

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)

RTD320 with links for direct connection to GH15RT, ST, TT contactors

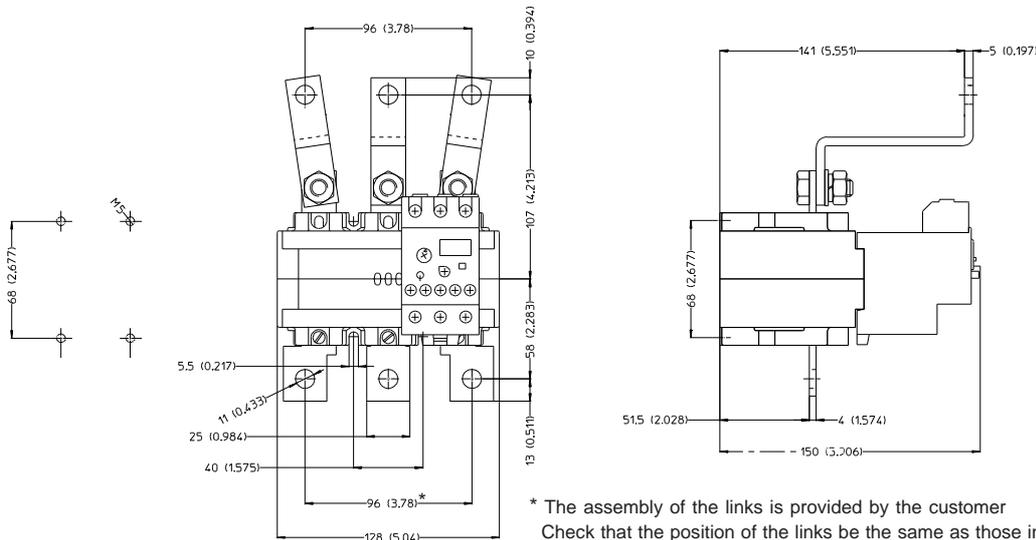


Fig. 3A

\* The assembly of the links is provided by the customer  
Check that the position of the links be the same as those indicated in the drawing

RTD320 with links for direct connection to GH15RT, ST, TT contactors and terminal lugs KAL-4 (optional)

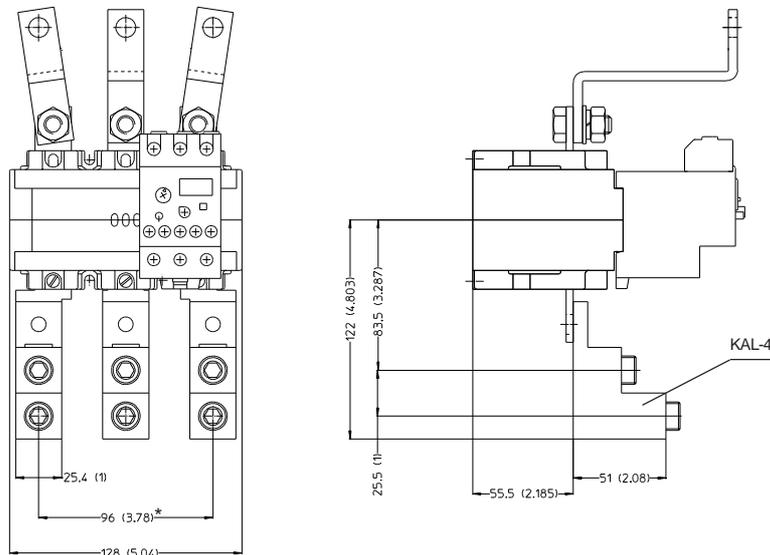


Fig. 3B