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OWNER'S MANUAL

LIQUID DILATION THERMOSTAT

REFERENCES 9014 - 31/32 (models without casing)

REFERENCES 9109 - 11/12 (models with casing)

1 - APPLICATION :

Regulation or limitation of temperature for liquids, gases or solids.

Models with housings are especially suited for heat-tracing applications on pipes (special clamp provided).

2 - DESCRIPTION :

- Liquid dilation thermostat with bulb and capillary made of copper,
- Two reverser contacts, unpowered,
- Cutting capacity : 16 Amps under 400 V AC, and 0.25 Amps under 250 V DC,
- Maximum voltage for operation : 400 V,
- Differential : 2.5% of full scale,
- Connection by means of 6.35 Faston terminals for models without casing, and by means of screw-type terminal plate for models in casing,
- Uncased models to be mounted on front panel or on mounting (inside a casing or cabinet, for example); cased models to be secured using securing lug.

	REFERENCE	Range (°C)	Bulb Ø (mm)	Bulb length (mm)	Capillary length (mm)
Uncased models	9014 - 31	+30 +110	8	100	1000
	9014 - 32	- 20 +30	8	160	1000
Cased models	9014 - 11	+30 +110	8	100	1000
	9014 - 12	-20 +30	8	160	1000

3 - PRECAUTIONS FOR USE :

- Handle the capillary with care. It must not be pierced under any circumstances : doing so will irreparably damage the appliance. Always allow a curve radius of at least 5 mm.
- Check that the material of the bulb and capillary is compatible with the product gauged, if they are in direct contact with it.

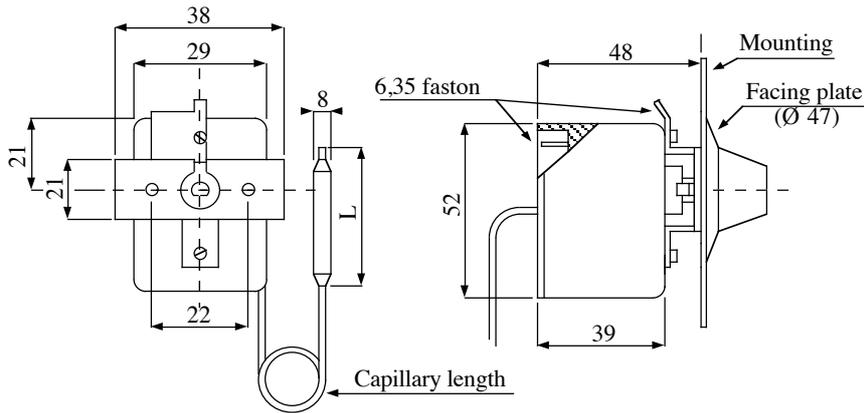
4 - ELECTRICAL CONNECTION AND MOUNTING :

4 - 1 - MOUNTING :

Uncased Models :

- To gain access to the securing system, you must remove the knob and its facing panel :
 - extract the knob by pulling it off its shaft,
 - remove the two screws securing the dial,
 - Remove the dial and its washer. The mounting for securing is then accessible.

- On the mounting that should accommodate this thermostat (front panel or securing lug), drill a hole of 7 mm diameter to provide throughway for the shaft of the knob, and two holes of 4 mm diameter (diametrically opposed) on a circle of 22 mm diameter centred on the hole for the shaft, making sure that the appliance is correctly oriented (refer to the diagram below).
- Insert the shaft of the knob through the hole drilled for the purpose.
- Put the dial and its back on the support to which the unit is fitted, while making sure that the middle of its graduated scale is aligned with the faston earth terminal, on the thermostat's housing:
- Insert and screw-in the two securing screws.
- Refit the knob on its shaft.
- Fit the bulb, generally in a probe sheath (case of liquids and gas) or in a cylindrical housing (case of solids), of a diameter slightly larger than that of the bulb, in order to ensure satisfactory heat conduction. You are recommended to ensure this conduction using an appropriate heat grease.

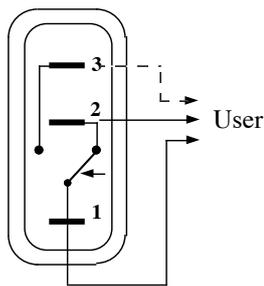


Models in casing :

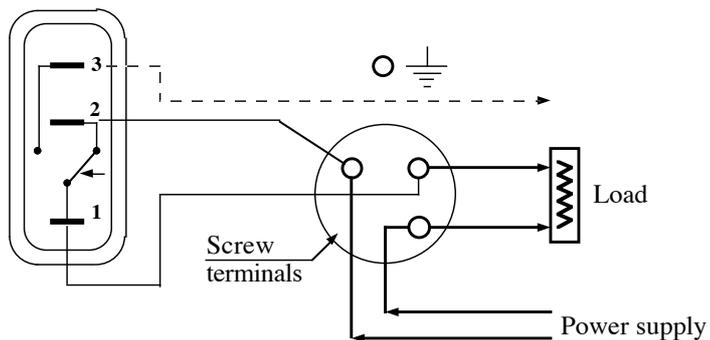
Secure the housing to a support using its mounting bracket which is particularly suited for fitting to a pipe using a band clamp.

4 - 2 - ELECTRICAL CONNECTION :

Wire according to one of the following schematics, depending on the amperage :



UNCASED MODEL



CASED MODEL

- Make sure each faston terminal on the thermostat is correctly positioned and tight, and that all screw terminals are tight (for models with housings).
- Do not omit to connect the ground terminal to the installation's ground.

5 - **START-UP PROCEDURE :**

- Using the adjustment knob (accessible after removing the cover, in the case of models with casing), position its index on the desired temperature set level of the dial.
- After checking that all conditions for satisfactory operation of the installation have been complied with, switch the heating installation on.
- Before the nominal temperature is reached, make sure that heating does indeed start-up and stop when you operate the knob of the thermostat. Then reset this knob to the temperature set for use.

NOTE : the information on the dial of the thermostat is not sufficiently precise to be certain of the exactitude of the temperature obtained. Make successive adjustments to the set level until you obtain the desired result, taking measurements with a thermometer.

6 - **RUNNING MAINTENANCE :**

Perform the following at intervals (at least once per year) :

- Make sure that the Faston terminals (and the screw-type terminals, in the case of cased models) are properly in position and tightened.
- In the case of gauging of a polluting fluid, clean the bulb (and its probe sheath, where applicable) without damaging it, to prevent the possible build-up of a deposit (clogging is likely to render temperature measurement inaccurate, due to obstruction of heat exchange).

7 - **GUARANTEE :**

The terms of our guarantee comply with the agreements for electrical engineering trades and our general sales conditions.

We will not be liable for damage caused by :

- use at greater than 10% of the nominal voltage for which the equipment was designed,
- exceeding the cut-out capacity of the appliance,
- wear due to inadequate maintenance, impacts, accidents or inexperience of the user,
- non-compliance with the instructions in this documentation, with normal trade practice and with regulations for fire- and explosion-proof appliances,
- effects of corrosion or clogging.