A19 Series Temperature Controls -- Single-Pole, Single-Throw and Single-Pole, Double-Throw Models with NEMA 1 Enclosure

Application

These controls are designed to cover a broad range of general purpose operating temperature control applications in the refrigeration, air conditioning and heating field with a minimum number of models. Typical applications are: frozen food cases, display cases, beverage coolers, milk coolers, etc. Various control ranges are available.

Controls are supplied with an adjustable range (except models with factory sealed settings) and adjustable or nonadjustable differential.

All Series A19 temperature controls are designed for use only as operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add devices (safety, limit controls) or systems (alarm, supervisory systems) that protect against, or warn of, control failure.

Installation

Follow equipment manufacturer’s instructions if provided. If instructions are not provided proceed as follows:

Mounting

Controls are normally mounted to a surface through holes in back of case.

Adjustments

The A19 temperature controls may be supplied with an external range adjustment and screwdriver slot as shown in Fig. 1, range adjustment knob or solid cover. Solid cover models with calibrated dial are adjusted by removing the cover and moving dial so the desired setting is in line with the dial pointer on the stop bracket. (See Fig. 5.) Convertible adjustment models can be field converted from concealed screwdriver slot adjustment to knob adjustment or external screwdriver slot adjustment. They are supplied with a snap-in plug in the cover to provide concealed screwdriver slot adjustment. For knob adjustment remove the snap-in plug and press the knob onto the slotted shaft. For external screwdriver slot adjustment remove the snap-in plug. The convertible adjustment models with remote bulb include a bulb mounting clip.
Dial settings normally indicate the cutout setting unless otherwise specified by the equipment manufacturer. Models with SPDT contacts are normally set so the red (common) to yellow contacts open at the dial setting.

Models with adjustable differential and ranges of 20/80°F (-5/28°C), -30/50°F (-35/10°C) and -30/100°F (-35/40°C) have a differential scale plate showing increments of differential. Other ranges have a scale plate with a multiplier. For example when "MIN" differential is 5°F (2.8°C) then x2 is 10°F (5.6°C), x3 is 15°F (8.3°C), etc. The controls are supplied with adjusting lever at minimum differential stamped on the control. To adjust move the lever to the differential required.

Low cutout or high cutout stop supplied on certain models (specified by the equipment manufacturer).

Fig. 2 -- Part No. FTG13A-600R packing nut assembly. (Used with swaged bulb with support tube for direct immersion application.)

Fig. 3 -- Bulb well for liquid immersion applications where a temperature bulb may be removed without draining tank.

If high or low cutout stop adjustment is required proceed as follows:
1. Set dial to temperature at which stop is desired.
2. Remove cover of the control.
3. Loosen the cutout stop screw, slide the screw to the front of the temperature control against the plastic step behind the dial and tighten the screw. (See Fig. 5.) Sometimes an exact stop setting is not possible and stop must be set to the closest stop corresponding to dial setting required.
4. Replace cover.

Checkout Procedure

Before applying power, make sure installation and wiring connections are according to job specifications. After the necessary mechanical adjustment and electrical connections have been made, an operational checkout is recommended.

Adjust the control setpoint to put the system in operation and observe at least three complete operating cycles to be sure that all components are functioning correctly.

If the system fails to operate, recheck the wiring and components.

Repairs and Replacement

Field repairs must not be made. For a replacement control contact the nearest Johnson Controls representative.

Wiring

All wiring should conform to the National Electrical Code and local codes. Single-pole, double-throw models should be wired as shown in Fig. 4. Use copper conductor only.

Fig. 4 -- Terminal arrangement of SPDT models.

Fig. 5 -- All models have a screw type cutout stop. The stop screw must be loosened and moved to the stop setting desired. Tighten screw after setting is made.