

A19 Series Temperature Controls Less Enclosure

Application

These "open" type temperature controls are designed for mounting in cases or enclosures that are part of the units on which they are installed. Controls are designed to cover a broad range of general purpose operating temperature control applications in the refrigeration, air conditioning and heating field. Models are available with open on rise action, close on rise action or SPDT action.

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.

Features

- Dependability--precision snap-acting contacts in a dust protected enclosure.
- Flexibility--wide choice of ranges, mounting and element styles.
- Precision repeat accuracy which is unaffected by barometric pressure and cross ambient problems.

General Description

This group of controls is available with adjustable or nonadjustable differential.

Available with 1/4 in. (6 mm) shaft and choice of 0.156 in. (3.96 mm) or 0.187 in. (4.75 mm) flat for knob mounting (knob not supplied), screwdriver adjustment or factory sealed setting on quantity orders (see Optional Constructions).

Standard shaft rotation is clockwise for warmer when facing adjusting shaft. Also available with calibrated dial and pointer.

CAUTION: Do not dent or deform the sensitive bulb of this control. A dent or deformation will change the calibration and cause the control to cycle at a temperature lower than the dial setting.

Optional Constructions

Adjustment Options

Set point adjustment changes cut-in and cut-out points alike. Adjustment options are:

1. 1/4 in. (6.4 mm) shaft with 0.156 in. (3.96 mm) or 0.187 in. (4.75 mm) milled flat for buyers' knobs (Fig. 5).



Fig. 1 -- A19 Temperature Control

2. Screwdriver slot with stops, colder-warmer dial (Fig. 3).
3. Factory sealed setting (Fig. 4).
4. Calibrated dial and pointer, with factory adjustable (not field) low cutout or high cutout stops when specified (Figs. 1 and 2).

Example: Low temperature thermostat may have a low cutout stop set from -10 to -30°F (-23 to -34°C). High cutout stop may be set from +30 to +50°F (-1.1 to 10°C)

Ambient Compensation

At extra cost, if required.

Specifications

Type Number	A19AGA	Open Low (Cooling), Standard Differential
	A19AGB	Open High (Heating), Standard Differential
	A19AGC	SPDT (Cooling-Heating), Standard Differential
	A19AGD	Open Low (Cooling), Close Differential
	A19AGE	Open High (Heating), Close Differential
	A19AGF	SPDT (Cooling-Heating), Close Differential
Switch	Snap-Acting Contacts in Dust Protected Enclosure	
Finish	Zinc Plate	
Material	Base Plate	0.063" (1.6 mm) Cold Rolled Steel
	Frame	0.050" (1.3 mm) Cold Rolled Steel
Shipping Weight	Individual Pack	0.7 lb (0.3 kg)
	Bulk Pack of 50 Units	41 lb (19 kg)

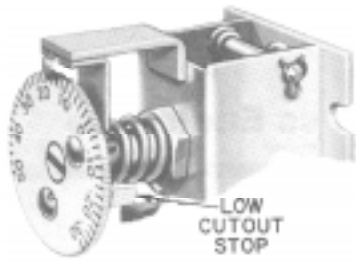


Fig. 2 -- Calibrated dial and pointer with factory adjustable low cutout stop.

Mounting

Standard back mounting plate illustrated in dimension drawing (Fig. 5) is regularly supplied. Front mounting and special brackets to customers' specifications which attach to this plate are available at extra cost.

Packaging

Bulk pack is standard. Orders for a single shipment of less than 50 controls will be individually packaged. Individual packaging charges will apply.

Packing Nut

Part No. FTG13A-600R is available for closed tank applications where the temperature is within -35 to +250°F (-37 to 121°C). Maximum liquid pressure limit is 150 PSIG (1034 kPa).

For applications where the temperature or liquid pressure exceeds these limits specify Style 4 element with all metal packing nut as an integral part of the control.

Sensing Elements

3/8 in. (9.5 mm) diameter bulb and 6 ft. (1.8 m) capillary are standard.

Optional constructions at extra cost on quantity orders include:

1. Capillary longer than 6 ft.
2. Bulbs 3/16 in. (4.8 mm), 1/4 in. (6.4 mm) or 5/16 in. (7.9 mm) O.D.
3. Coil bulbs for low movement air applications.

Terminals and Terminal Insulation

1. Number 8-32 binder head screw terminals, standard.
2. 1/4 in. x 0.032 in. male quick-connect terminals on models without calibrated dial, at extra cost.
3. Clip-on bakelite terminal cover (Fig. 9).

Repairs and Replacement

Field repairs must not be made. Controls requiring attention should be returned to the factory. When ordering a replacement control specify Product and Serial Number as shown on the control.

Electrical Ratings

A19AGA through A19AGC

Volts, AC	120	208	240
Full Load Amp	16.0	9.2	8.0
Locked Rotor Amp	96.0	55.2	48.0
Non-Inductive or Resistance Load Amp	22 Amp, 120 to 240 VAC*		
Pilot Duty	125 VA, 24 to 600 VAC		

*SPST Rating. SPDT is 16 amp, 120 to 240 VAC.

A19AGD through A19AGF

Volts, AC	120	208	240
Full Load Amp	6.0	3.4	3.0
Locked Rotor Amp	36.0	20.4	18.0
Non-Inductive or Resistance Load Amp	10 Amp, 120 to 277 VAC		
Pilot Duty	125 VA, 24 to 277 VAC		

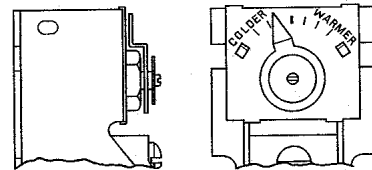


Fig. 3 — Drawing showing screwdriver slot range adjustment with stops.

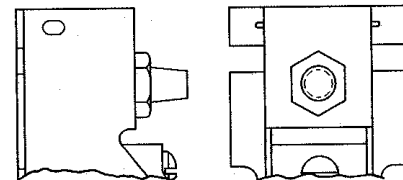


Fig. 4 — Drawing showing factory sealed setting.

Standard Refrigeration Application

Type Number	Typical Application	Adjustable Range	Minimum Differential	Maximum Bulb Temperature*	Standard Bulb Size
		F C	F C	F C	in. mm
A19AGA	Low Temperature	-30 to +50	5	140	.375 x 4
		-35 to +10	2.8	60	9.5 x 102
A19AGA	Commercial Temperature	20 to 90	3.5	140	.375 x 5
		-5 to +30	1.9	60	9.5 x 127
A19AGA	Air Conditioning	60 to 90	2.5	140	.375 x 7
		15 to 35	1.4	60	9.5 x 178
A19AGD	Milk Cooler	30 to 50	2	190	.366 x 2.50
		0 to 10	1.1	88	9.3 x 64
A19AGD	Special Close Differential	40 to 90	1.5	140	.375 x 6
		5 to 30	0.8	60	9.5 x 152

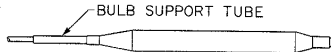
Above are typical cooling, or close high applications. These ranges will give same differentials in open high action.

*Maximum bulb temperature which the element can withstand at infrequent intervals during life of control, such as shipping conditions. This is not the temperature which the control can withstand on repeat cycles.

Ordering Information

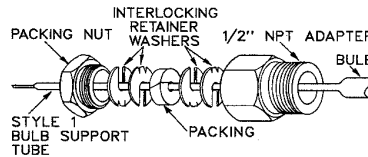
To order, specify:

1. Complete Product Number, if available.
2. If complete Product Number is not available, specify Type Number.
3. Contact action -- open low, open high or SPDT.

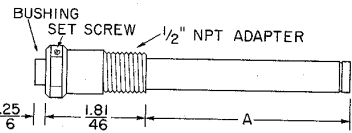


Style 1 swaged bulb with support tube for clamp-on or closed tank application.

4. Range required.
5. Adjustable differential, if required.
6. Capillary length, if other than 6 feet.
7. Type of bulb.
8. Type of mounting.



Part Number FTG13A-600R packing nut assembly. Use with Style 1 bulb with support tube for direct immersion application.



BULB WELL NUMBER	DIMENSION "A"
WEL14A-600R(MONEL)	4.75 (121)
WEL14A-602R	4.94 (125)
WEL14A-603R	5.81 (148)
WEL16A-601R	2.81 (71)

Bulb Well for liquid immersion applications where a temperature bulb may be removed without draining tank.

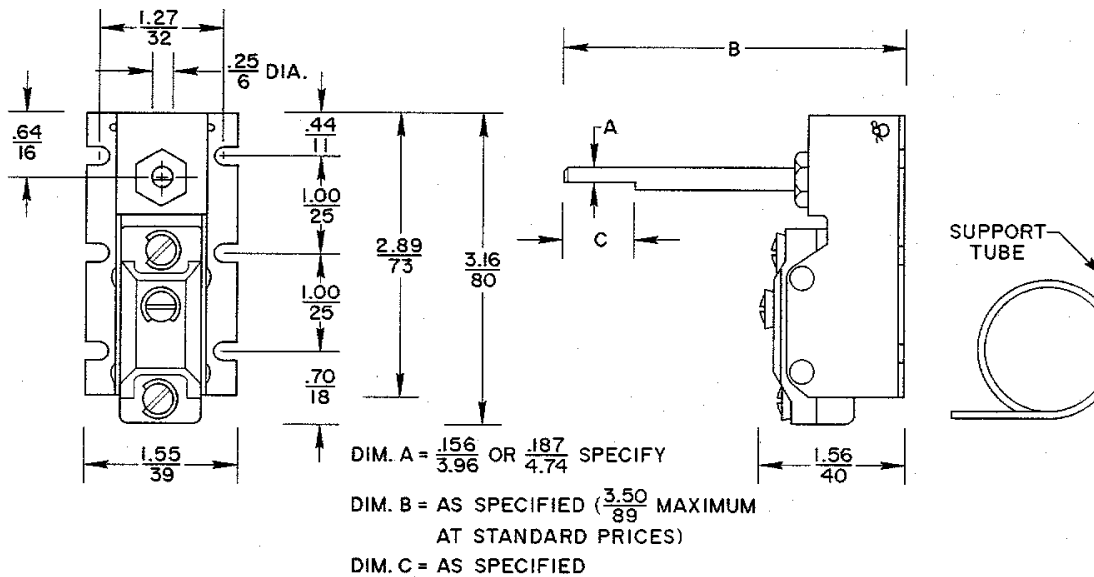


Fig. 5 — Dimension drawing showing side and front views ($\frac{1}{4}$ " [6 mm] shaft adjustment shown).

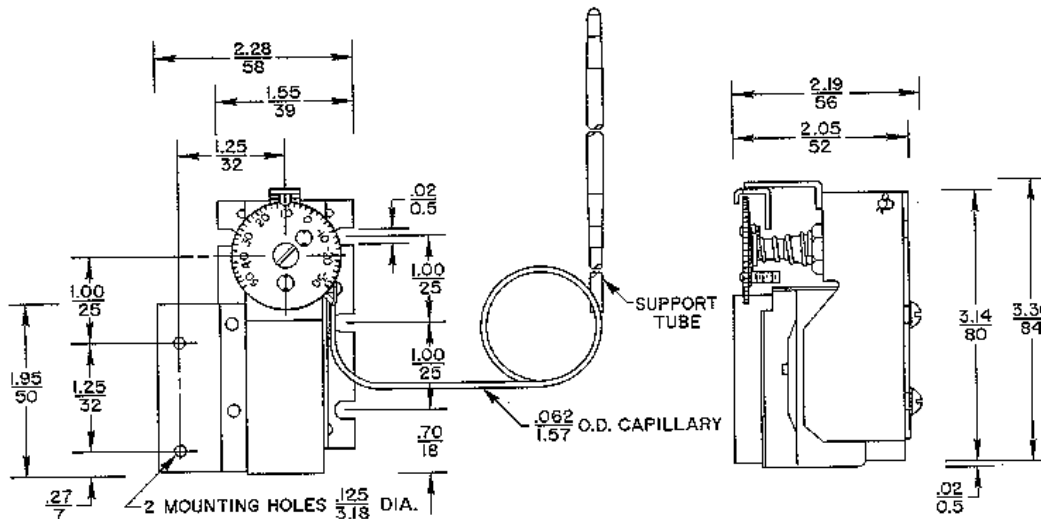


Fig. 6 — Side support, front mounting bracket, optional at extra cost.

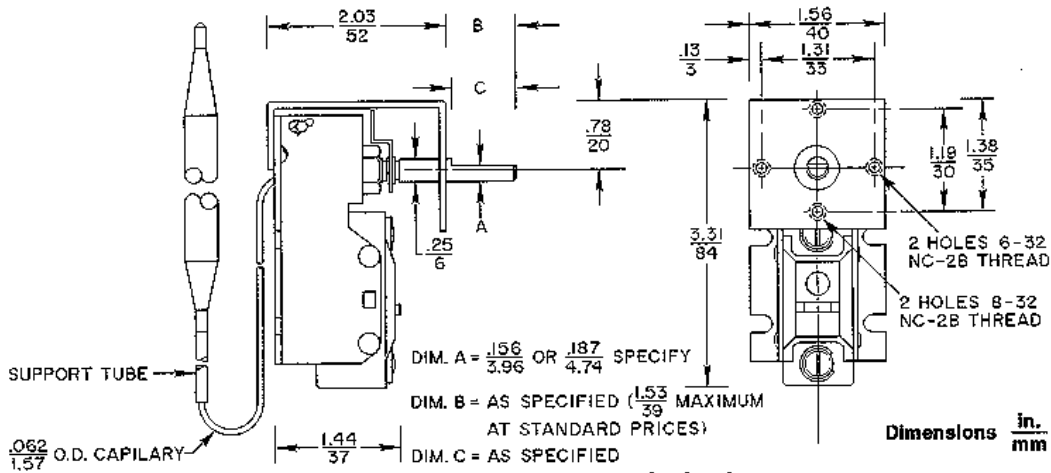


Fig. 7 — Center support, front mounting bracket, optional at extra cost.

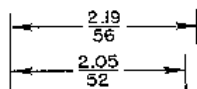


Fig. 8 (left) — Fibre insulator supplied as standard on all controls less enclosure except when clip-on terminal insulator is required. (See Fig. 9).

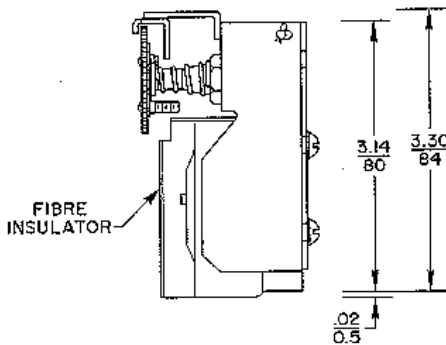


Fig. 9 (right) — Clip-on terminal insulator, optional at extra cost on models specifying adjustments shown in Figs. 3, 4 and 5, but without center support mounting (Fig. 7).

Performance specifications appearing herein are nominal and are subject to accepted manufacturing tolerances and application variables.

UL Guide No. XAPX2
 File E6688
 CSA Class 4813 02
 File LR946

JOHNSON
 CONTROLS

Controls Group
 507 E. Michigan Street
 P.O. Box 423
 Milwaukee, WI 53202

Printed in U.S.A.