

A19 Series Utility Thermostats for Farm, Industrial and Commercial Use

Application

These temperature controls are designed to cover a broad range of uses for heating and general purpose requirements. See "Application" column, "Specifications" Page 2, for typical uses. Controls have SPST contacts which open on temperature increase or they may be supplied in single-pole, double-throw contact action.

Various control ranges are available to cover working temperatures from -30 to 550° F (-34 to 288° C). Closed tank fittings and bulb wells are available for immersion applications.

These controls are designed for open low and open high applications. Where critical or high value products are to be maintained within a specific temperature differential, a single control should not be applied to function as both an open low and open high control. In these applications, a separate back-up control with alarm contacts should be wired to indicate when the back-up control operates.



Fig. 1: (Left) Control with external range scale, knob adjustment. (Right) Interior of model with adjustable differential.



Fig. 2: Space thermostat with Style 3 coiled bulb and finger-tip adjusting knob.

Features

- Dependability -- precision snap-acting dusttight contacts.
- Dependability -- low volume, responsive liquid filled sensing elements.
- Wide choice of temperature control functions with a minimum number of models.
- Precision "repeat" accuracy which is unaffected by barometric pressure and cross ambient problems.
- Special close differential models available.

General Description

The Series A19 is a small, compact control with adjustable or fixed differential. Controls supplied with adjustable differential have an internal scale plate indicating increments of differential. The controls are supplied with adjusting lever at minimum differential stamped on the control. To adjust move the lever to the differential required. Models are available with or without external range adjustment and visible scale. External range adjustment may be by screwdriver slot or range adjusting knob (Fig. 2).

A built-in high cutout stop is an integral part of these controls and may be adjusted quickly and easily in the field. Product Number A19BAG-1 is especially designed for portable heaters. It is supplied with a 6 ft cord, 120 V.A.C. polarized plug, and a chain hanger kit.

Optional Constructions

Note: For most prompt service, select controls listed under "Specifications," below. If these are not entirely suitable for your application, then the following variations are available.

Adjustable Differential: Available at extra cost.

Armored Capillary: Single braided copper armor may be supplied at extra cost.

Capillary Tube: Additional length of capillary over 6 ft available at extra cost. Extra length in 2 ft increments from 6 ft to 10 ft; over 10 ft in 5 ft increments.

Contact Unit: Close differential or special close differential may be supplied.

Mounting Bracket: Optional at extra cost.

Types A19AAB, A19AAC, A19BAB, A19BAC

Volts AC	120	208	240
Full Load Amps.	16.0	9.2	8.0
Locked Rotor Amps.	96.0	55.2	48.0
Non-inductive or Resistance Load Amps. (Not Lamp Load)	* 22 Amps. 120 to 277 VAC		
Pilot Duty - 125 VA @ 24 to 600 VAC			

* SPST Rating

Types A19AAE

Volts AC	120	208	240
Full Load Amps.	6.0	3.4	3.0
Locked Rotor Amps.	36.0	20.4	18.0
Non-inductive or Resistance Load Amps. (Not Lamp Load)	10 Amps. 120 to 277 VAC		
Pilot Duty - 125 VA @ 24 to 277 VAC			

Types A19AAB, A19AAC, A19ADB (Hot Water Models)

Volts AC	120	240
Full Load Amps.	10.0	6.0
Locked Rotor Amps.	60.0	36.0
Non-inductive or Resistance Load Amps.	10.0	6.0
Pilot Duty - 125 VA @ 24 to 600 VAC		

Specifications

Product Number	Appl.	Action	Range °F (°C)	Diff. °F (°C)	*Max. Bulb Temp. °F (°C)	Bulb Style	Bulb Size (in.)	Bulb Well	Cap. Length (ft.)	Bulb Support (in.)	Cover		Range Adjuster	
											Plain	Scale	Screw-driver	Knob
A19AAB-4	Fluid Cutout	Opens on rise	30 to 110 (-1 to 43)	3 (1.7)	140 (60)	1	3/8 x 4-15/16	WEL14A-602R	6	3		X	X	
A19AAB-7	Industrial Oven	Opens on rise	100 to 300 (38 to 149)	7 (3.9)	350 (177)	1	3/16 x 10-1/8		6			X		X
A19AAB-10	Industrial Oven	Opens on rise	200 to 550 (93 to 288)	10 (5.6)	620 (327)	1	3/16 x 5-5/8		6			X		X
A19AAC-1	Dual Fuel Change-over	SPDT	-30 to 50 (-34 to 10)	5 (2.8)	140 (60)	1	3/8 x 4-1/16	Outdoor Shield Supplied	6	3	X		X	
A19AAC-9	Fluid Cutout	SPDT	100 to 240 (38 to 121)	6 (3.3)	290 (143)	1	3/8 x 3-9/16	WEL14A-602R	6	3		X	X	
A19AAE-3	Crop Drying	Opens on rise	80 to 180 (27 to 82)	2 (1.1)	200 (93)	7	1-1/8 x 1-1/4 Copper Coil		10			X		X
A19ADB-2	Hot Water Cutout; Manual Reset	Opens on rise	100 to 240 (38 to 121)	Lockout	290 (143)	2	0.290 x 2-11/16	Direct Immersion 1/2 in. NPT Conn.	None			X		X
A19ADN-1	Warm Air; Manual Reset	Opens on rise	100 to 240 (38 to 121)	Lockout	290 (143)	1	3/8 x 3	WEL14A-602R	6	3		X	X	
A19ADP-1	Warm Air; Manual Reset	SPDT	100 to 240 (38 to 121)	Lockout	290 (143)	1	3/8 x 3	WEL14A-602R	6	3		X	X	
A19BAB-3	Heating	Opens on rise	30 to 95 (0 to 35)	3 (1.7)	140 (60)	3	Coil		None			X		X
A19BAC-1	Farm Thermostat at Heat or Ventilate	SPDT	30 to 110 (0 to 43)	3 (1.7)	140 (60)	3	Coil		None			X		X
A19BAG-1	Portable Heater	Opens on rise	35 to 95 (0 to 35)	3 (1.7)	140 (60)	3	Coil		None			X		X

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

Packing Nut: Part No. FTG13A-600R is available for closed tank applications where the temperature does not fall below -35°F (-37°C) or exceed +250°F (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.

Range Adjustments: Concealed dial with screwdriver slot (plain cover), exposed dial with screwdriver slot, dial and knob adjustment or models with factory sealed setting may be supplied.

Ranges: For ranges other than those shown in "Specifications" table, contact Customer Service.

Sealed Stop: Available at extra cost.

Miscellaneous Specifications

Case: .062 in. cold rolled steel. Gray baked enamel finish.

Cover: .025 in. cold rolled steel. Gray baked enamel finish.

Contact Unit: Precision Pennswitch. Snap acting dust-tight contacts.

Shipping Weights

Shipping weights shown below are approximate. Weights vary depending upon construction. Generally, overpack will contain 25 individually packed controls.

Individual pack: 1.0 lb.

Overpack containing 25 individually packed units: 26.0 lbs.

Ordering Information

1. Specify Product Number only, if available (see the "Specifications" chart).
2. If Product Number is not available specify Type Number.
 - a. Capillary length.
 - b. Range.
 - c. Bulb style.
 - d. Bulb well, if required.
 - e. Packing nut, if required.
 - f. Any other miscellaneous specifications.

Repairs and Replacement

Repairs must not be made in the field other than replacement of the cover, well assembly and packing nut assembly. When ordering replacement parts, give Product and Serial Numbers. Controls requiring attention should be returned to the factory or nearest Johnson Controls representative for inspection and service.

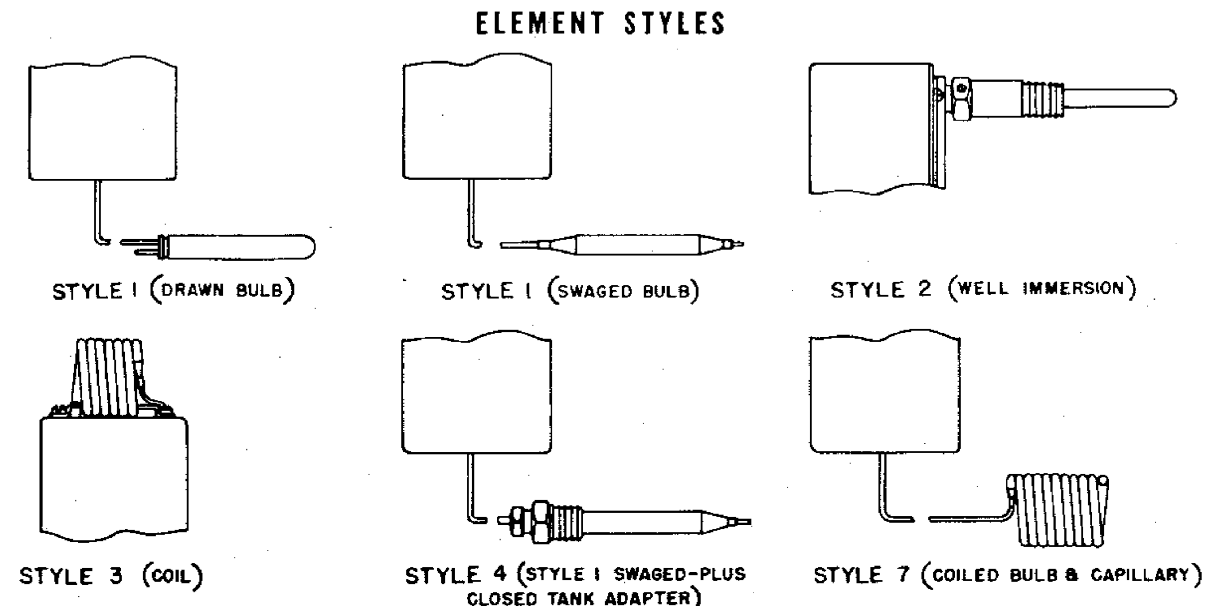
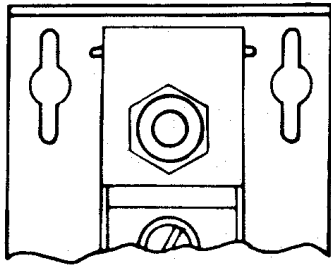
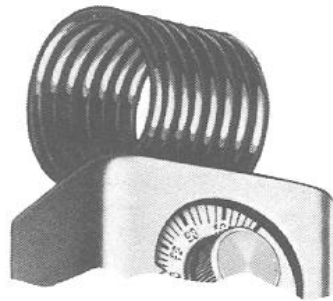


Fig. 3: Element Styles available on Series A19

Bulb and Bulb Accessories



Optional factory sealed setting available on quantity orders.

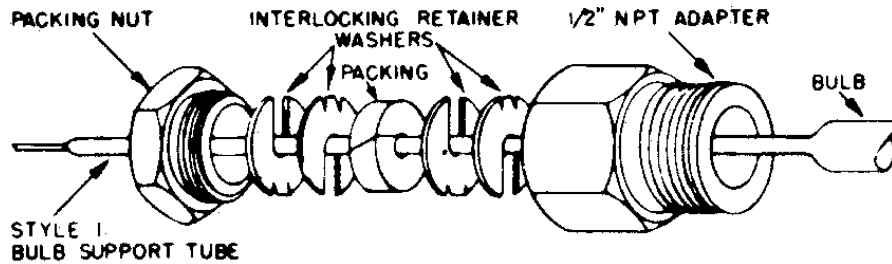


Style 3 element attached to the case.

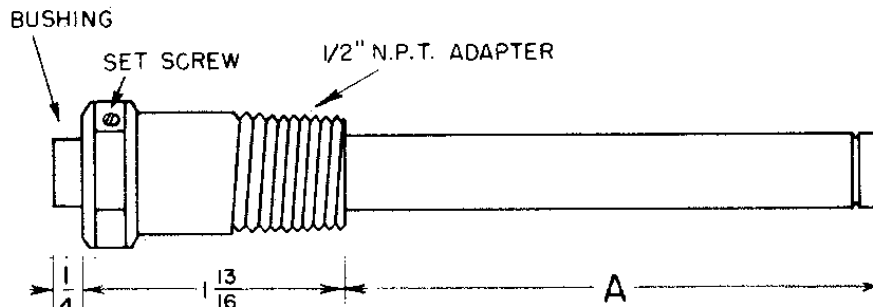
Bulb support tube



Style 1 swaged bulb with support tube.

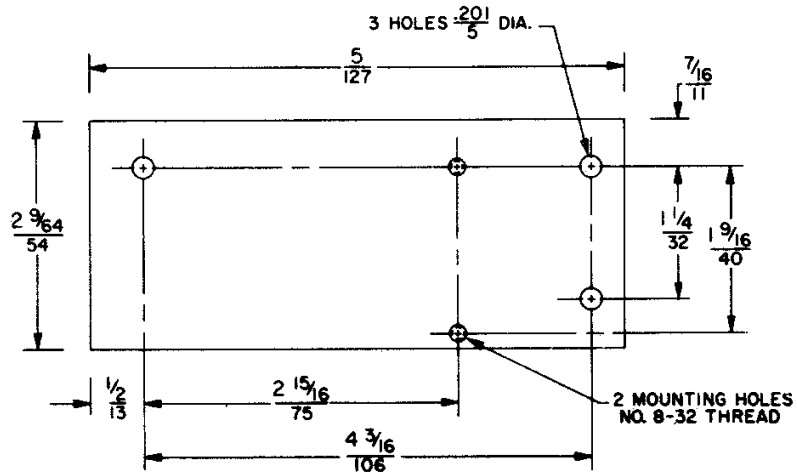
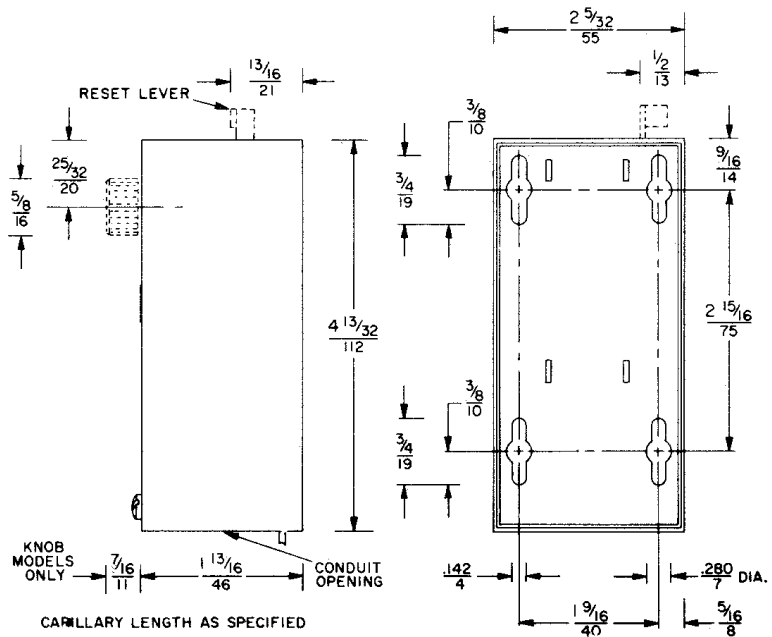


Part No. FTG13A-600R packing nut assembly. (Use with Style 1 bulb with support tube for direct immersion application.)

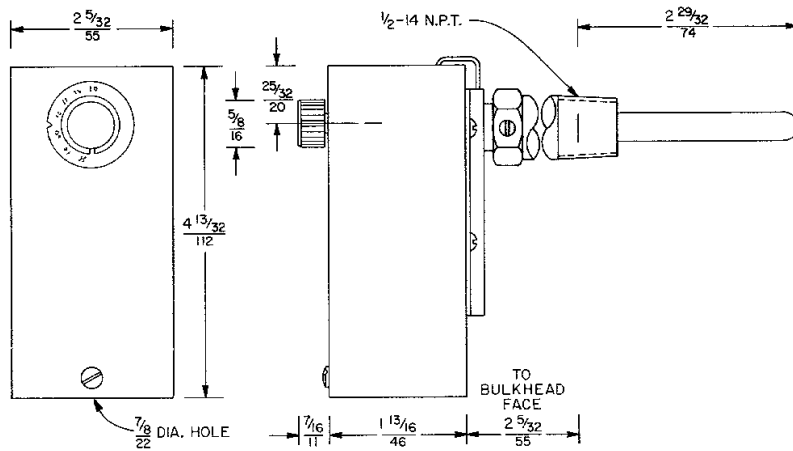


BULB WELL ASSEMBLY	DIMENSION "A"
PART NO. WEL14A-600R (MONEL)	4 3/4 (121mm)
PART NO. WEL14A-602R	4 15/16 (125mm)
PART NO. WEL14A-603R	5 13/16 (148mm)
PART NO. WEL16A-601R	2 13/16 (71mm)

Bulb well dimensions.



Optional mounting bracket.



Dimensions $\frac{\text{in.}}{\text{mm}}$

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

Notes

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