

A19ANC, A19ANF, A19APC Types General Purpose Industrial Thermostats With Rainproof Enclosure

Application

The A19ANC, A19ANF and A19APC thermostats are designed for a variety of applications where rainproof enclosures are necessary or desirable. A typical use is to control the temperature of fluid conveyed through pipes (commonly termed pipe tracing). An alarm or signal circuit can be operated by the auxiliary contacts. (See Fig. 2.)

All Series A19 thermostats 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) that protect against, or systems (alarm, supervisory systems) that warn of control failure.

Features

- Rainproof gasketed enclosure has gray U.L. listed outdoor finish.

Specifications

Type Number	A19ANC	SPDT Contact Action, Standard Differential (Fixed)
	A19ANF	SPDT Contact Action, Close Differential (Fixed)
	A19APC	SPDT Contact Action, Standard Differential (Adjustable)
Range, Maximum Temperature and Differential*	See Selection Chart	
Capillary	.062" (1.6 mm) O.D. Standard Length is 10' (3 m)	
Enclosure	Rainproof with Gasketed Cover (NEMA 3R)	
Finish	U.L. Listed Outdoor Gray Enamel	
Material	.062" (1.6 mm) Cold Drawn Steel	
Contact Unit	Snap-Acting Contacts in Dust Protected Enclosure	
Conduit Opening	Welded 3/4" Female Connector	
Wiring Connections	Screw Type Terminals	
Mounting	Three Rubber Cushioned Mounting Feet	
Shipping Weight	2.3 Lb (1.0 kg)	

*Differential is based on direct bulb immersion in liquid at 1° F per minute rate of change. In a bulb well, the differential will widen. When the bulb is clamped to a surface such as a pipe, the differential may be wider or narrower depending on several variables.

- Liquid-filled element is unaffected by barometric pressure and cross ambient temperatures.
- Dependable field proved snap-acting contacts have heavy duty rating for inductive or resistance loads. The A19ANC and A19APC thermostats have a pilot duty rating of 600 VAC.
- Wide choice of range options.
- Simple strain-free mounting on three rubber cushioned mounting feet.
- High temperature dial stop.
- Copper bulb well available.

General Description

The thermostats have an enclosed SPDT contact unit. The red terminal is common. When the red and blue terminals are wired, the circuit opens on a temperature increase (See Fig. 3).

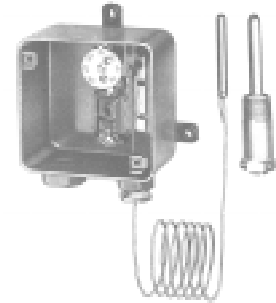


Fig. 1 – Interior of an A19ANC thermostat.

When the red and yellow terminals are wired, the circuit closes on a temperature increase.

The thermostats have an adjustable high temperature stop. A special wrench (Part 836-61) required to adjust the keyed stop is provided with each thermostat.

The A19ANC and A19ANF thermostats have a fixed differential.

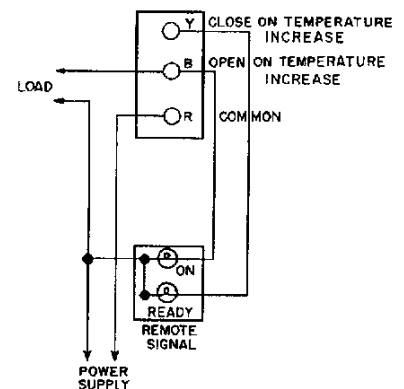


Fig. 2 — Wiring diagram showing remote signal.

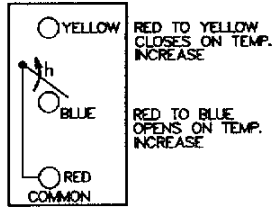


Fig. 3 — Terminal arrangement.

The A19APC thermostat has an adjustable differential with a scale plate that indicates the differential set point in degrees Fahrenheit.

Optional Constructions

Sensing Elements

Standard capillary length is 10 feet (3 m). Other lengths are available at extra cost, consult Customer Service.

Bulb Well

Copper bulb wells with a 1/2 in. NPT brass connector can be supplied when required, at extra cost. See "Specification Table" for Part Numbers. For special applications requiring a connector made with a different metallic material, contact Customer Service for availability of these bulb wells.

Ordering Information

To order specify Product Number. If Product Number is not known, specify the following:

1. Type Number.
2. Range required.
3. Capillary length if other than 10 feet (consult Customer Service).
4. Bulb well, if required.

Installation

CAUTION: To prevent possible electrical shock or damage to equipment, disconnect the power supply before wiring and mounting connections are made.

Note: Use terminal screws furnished (8-32 x 1/4 in. binder head). Substitution of other screws may cause problems in making proper connections. Make all wiring connections using copper conductors only, and in accordance with the National Electrical Code and local regulations.

Indoors, the thermostat may be mounted in any position by means of three mounting feet (rubber bushed). When the thermostat will be exposed directly to the outdoor weather, the thermostat should be mounted with the electrical connection and capillary fittings facing downward as illustrated in Fig. 1.

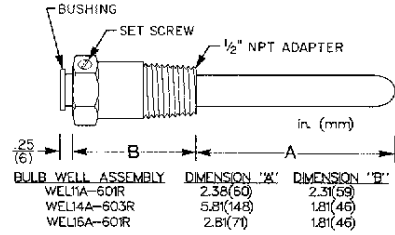


Fig. 4 — Bulb wells and dimensions.

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.

Where the capillary is exposed and subject to possible mechanical damage some means of protection should be provided. The capillary outlet is designed to permit the capillary to be run through 1/2 in. thin wall conduit or through metal hose such as 3/8 in. Anaconda "Sealtite" or equivalent. Remove the capillary outlet seal nut. (See Fig. 5.) Push the bulb and capillary through a conduit coupling or suitable hose fitting and on through the conduit or hose. By tightening the coupling to the 1/2 in. female capillary outlet fitting, the seal around the capillary will be maintained and the conduit or hose will be rigidly attached to the enclosure.

Product Selection Chart

Product Number	Range 'F'('C)	Differential 'F'('C)	Maximum Allowable Temp. 'F'('C)	Capillary Length Ft. (m)	Bulb Size	Bulb Well (If Required)
A19ANC-1	0 to 150 (-18 to 66)	5 (2.8)	190 (88)	10 (3)	0.290 x 2 1/2"	WEL11A-601R
A19ANC-2	100 to 250 (38 to 121)	6 (3.3)	290 (143)	10 (3)	0.290 x 2 1/2"	WEL11A-601R
A19ANC-3	200 to 350 (93 to 177)	5 (2.8)	390 (199)	10 (3)	0.366 x 2 1/4"	WEL16A-601R
A19ANC-4	325 to 475 (163 to 246)	5 (2.8)	515 (268)	10 (3)	0.366 x 2 1/4"	WEL16A-601R
A19ANF-3	20 to 90 (-6.7 to 32)	2 (1.1)	130 (54)	10 (3)	0.366 x 2 5/8"	WEL16A-601R
A19APC-1	20 to 90 (-6.7 to 32)	3.5 to 14 (1.9 to 7.8)	140 (60)	6 (1.8)	0.375 x 5"	WEL14A-603R

The end of the conduit or hose away from the control should be clamped and bushed and the capillary should be taped to prevent cutting or wear from any sharp edges and any strain on the capillary.

Pilot Lamp Circuits

Remote lights or other types of signal circuits may be connected as shown in Fig. 2. Self-contained pilot lamps are not available.

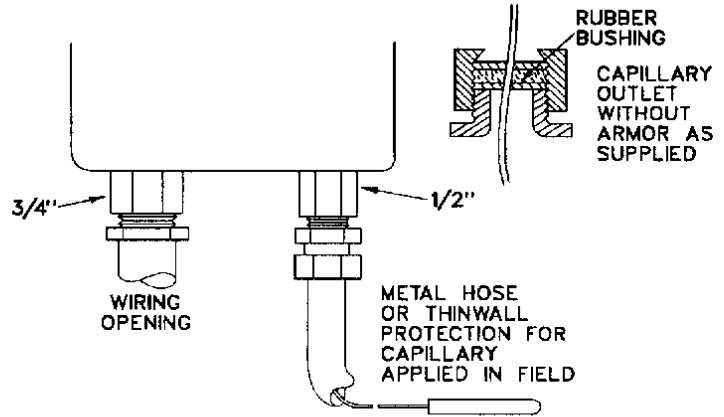


Fig. 5 — Typical installation where capillary protection is required.

Adjustments

The temperature set point may be changed to meet the requirement of the installation. Remove the cover to change the setting. Using a screwdriver, rotate the dial to the desired set point.

Adjustable Differential (A19APC only)

The A19APC thermostat with 20 to 90°F range is supplied with a differential scale plate that shows the differential set point in degrees Fahrenheit.

To adjust the set point, slide the lever to the differential set point required.

High Temperature Stop

To change the stop setting, loosen the two screws in the dial plate (see Fig. 1) with the wrench packed with the control. Turn the dial so the pointer indicates the stop setting.

Move the stop (located behind the dial plate) against the stop bracket. Tighten screws to lock the stop in position.

High cutout stop can be set between 55°F (31°C) above the bottom of the range and the top of the range. Example: The high temperature stop can be set between 255 to 350°F (124 to 277°C) on a control with a range of 200 to 350°F (93 to 177°C).

Checkout Procedure

Before leaving the installation, observe at least three complete operating cycles to be sure that all components are functioning correctly.

Repairs and Replacement

Field repairs must not be made except for replacement of the bulb well and cover. For a replacement thermostat, bulb well, or cover, contact the nearest Johnson Controls wholesaler.

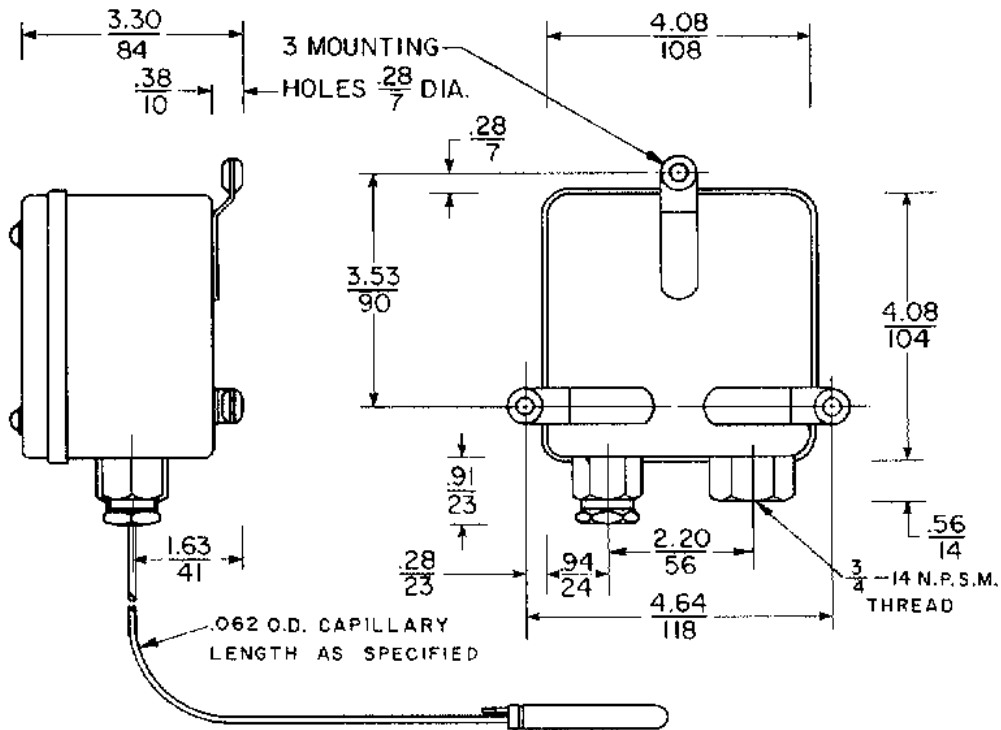
Electrical Ratings

A19ANC, A19APC

Voltage, AC Only		120	208	240	277
Full Load Amps		16.0	9.2	8.0	—
Locked Rotor Amps.		96.0	55.2	48.0	—
Non-Ind. Amps.	When connected — SPST	22.0	22.0	22.0	22.0
	When connected — SPDT	16.0	9.2	8.0	6.9
Pilot Duty — 125 VA, 24/600 VAC					

A19ANF

Voltage, AC Only		120	208	240	277
Full Load Amps.		6.0	3.4	3.0	—
Locked Rotor Amps.		36.0	20.4	18.0	—
Non-Inductive Amps.		10.0	10.0	10.0	10.0
Pilot Duty — 125 VA, 24/277 VAC					



A19 Dimensions $\frac{\text{In.}}{\text{mm}}$

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

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CONTROLS**

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