

A19 Series Hot Water Heating Controls Well Immersion

Application

Johnson Controls hot water immersion controls provide various control functions for hydronic heating systems. These include high temperature cutout, operating, circulator or low temperature cutout.

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

- Sealed, dusttight Pennswitch contact unit.
- Matching drawn bulb and well for rapid, efficient heat transfer.
- Manual reset, when supplied, is "Trip-Free." Reset must be pressed and released before operation will resume.
- Concealed dial stop permits control within maximum temperature selected or specified.
- Direct reading scales provide fast, easy "on-the-job" adjustment.



Fig. 1 -- The A19 Direct Mounting Control.

General Description

A liquid expansion temperature element with copper bulb well gives fast control response.

The control can be easily removed from the bulb well by loosening the set screws and withdrawing the sensing bulb from the well. The control can be mounted in any position around the axis of the bulb well without changing the operating characteristics.

Specifications

Type Number	A19AAB	Open on Rise, Fixed Differential
	A19AAC	SPDT, Fixed Differential
	A19ABA	Close on Rise, Adjustable Differential
	A19ABB	Open on Rise, Adjustable Differential
	A19ABC	SPDT, Adjustable Differential
	A19ADB	Open on Rise, Lockout with Manual Reset
Temperature Range	A19ADC	SPDT, Lockout with Manual Reset
		100 to 240°F (40 to 120° C)
Differential	Fixed	6 F° (3.3 C°)
	Adjustable	6 F° (3.3 C°) Min.; 24 F° (13 C°) Max.
Maximum Temperature	At Case	140°F (60°C)
	At Bulb	290°F (143°C)
Contact Action		Red to Yellow Closes on Temperature Rise Red to Blue Opens on Temperature Rise
Contact Units		Snap Acting, Enclosed Dusttight Pennswitch
Conduit Openings		One 7/8" (22 mm) Diameter Hole for 1/2" Conduit
Enclosure		NEMA Type 1 General Purpose
Finish		Gray Baked Enamel
Material	Case	.062" (1.57 mm) Cold Rolled Steel
	Cover	.025" (0.64 mm) Cold Rolled Steel
Mounting		Immersion Well Mounts Directly in Boiler Tapping. Case of Remote Bulb Models Mounts to Flat Surface
Shipping Weight	Individual Pack	1.5 lb (0.7 kg)
	Overpack of 25 Units	37.5 lb (17 kg)
Terminal Screws		No. 8—32 x 1/4" Binder Head With Cup Washers

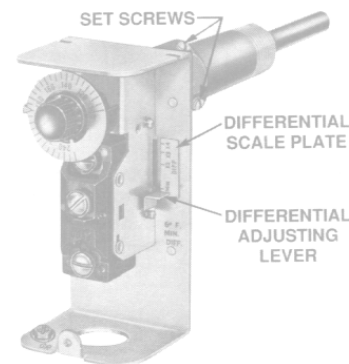


Fig. 2 -- Illustrated is the A19 with adjustable differential. Note the complete accessibility of the well assembly set screw. After loosening these screws, the control can be quickly removed from the well.



Fig. 3 -- The A19 with convertible adjustment has a snap-in plug in the cover and a knob for field installation.

The range scale, visible through the cover opening, shows the range setting. An adjustable differential or lockout with manual reset is also available.

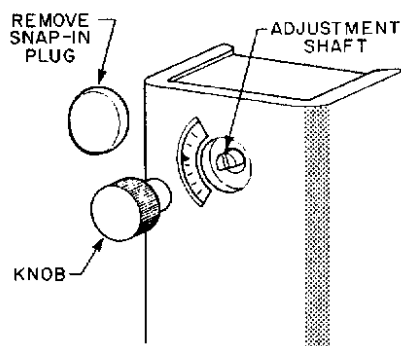


Fig. 4 — Drawing showing snap-in plug removed and the knob in line to assemble. Press the knob onto the slotted shaft.

On open high and SPDT models, the range dial pointer indicates the temperature at which the normally closed contacts open on a temperature rise. On the open low models, the dial pointer indicates the temperature at which the contacts open on drop.

Knob range adjustment and visible scale are standard. Models are available with a knob assembly for field convertible adjustment. These models are supplied with a snap-in plug in the cover for concealed screwdriver slot adjustment.

Electrical Ratings

Motor Ratings	120 V	240 V
AC Full Load Amps.	10.0	6.0
AC Locked Rotor Amps.	60.0	36.0
AC Non-Inductive Amps.	10.0	6.0
Pilot Duty — 125 VA, 24 to 600 VAC		

Optional Constructions

Immersion Style

Direct mounting or remote mounting with a 6 foot capillary and bulb well are standard. Capillary lengths of 10 or 20 ft are available at extra cost. Consult Customer Service.

Well Thread Size

1/2 in. NPT standard; 3/4 in. NPT available on request.

Range Adjuster

A screwdriver slot with visible scale or a screwdriver slot with internal scale and solid cover are optional at no extra cost (quantity orders only). Models are available with a knob for field convertible adjustment. This provides conversion to knob, concealed screwdriver slot or external screwdriver slot adjustment.

Repairs and Replacement

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

Ordering Information

1. Specify complete Product Number, if established.
2. If Product Number is not available, specify Type Number and the following:
 - a. Well thread size -- 1/2 in. or 3/4 in. NPT.
 - b. Remote well mounting, if required.
 - c. If remote mounting is required, specify length of capillary if other than 6 ft. Available on quantity orders only.
 - d. Stop settings, if required. Available on quantity orders only.

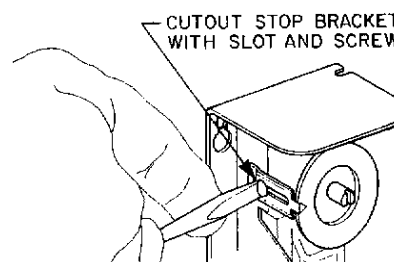


Fig. 5 — The controls have a screw type cutout stop. The stop screw must be loosened and moved to the stop setting desired. Tighten screw after setting is made.

Notes



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