

## A19E Series Warm Air Fan and Duct Controls Low or Line Voltage

### Application

These controls are for use on warm air furnaces, ventilating systems, air conditioners, reverse flow heating plants, and to control fan operation. They can be used on the following applications:

- Fan control to open the blower circuit when temperature is too low to circulate warm air. The fan control turns on the blower after the air has been heated to a suitable temperature. The blower continues to run until the air temperature drops to a predetermined level.
- Duct temperature control to sense the temperature in the furnace plenum or duct and operate the heating unit.

- Duct temperature cutout control for ventilating system, air conditioner or reverse flow heating plant, duct or plenum mounting. Must be manually reset after cutout.

**All Series A19 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 . . . snap-acting, dust protected switch and the liquid filled sensing element are field proven.

### Specifications

|                                           |                               |                                                                                       |
|-------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|
| <b>Type Number</b>                        | <b>A19EBA</b>                 | Fan Control, Contacts Open On Temperature Decrease                                    |
|                                           | <b>A19EBB</b>                 | Duct Temperature Control, Contacts Open On Temperature Rise                           |
|                                           | <b>A19EBC</b>                 | Duct Temperature Control, SPDT Contacts Red to Blue Circuit Opens On Temperature Rise |
|                                           | <b>A19EDB</b>                 | Duct Temperature Cutout Control, Manual Reset Contacts Open On Temperature Rise       |
| <b>Range</b>                              | <b>A19EBA</b>                 | 50 to 250°F (10 to 121°C)                                                             |
|                                           | <b>A19EBB, A19EBC, A19EDB</b> | 100 to 350°F (38 to 177°C)                                                            |
| <b>Differential (Adjustable)</b>          |                               | 9 to 36°F (5 to 20°C)                                                                 |
| <b>Maximum Allowable Bulb Temperature</b> | <b>50 to 250°F</b>            | 290°F (143°C)                                                                         |
|                                           | <b>100 to 350°F</b>           | 375°F (191°C)                                                                         |
| <b>Material</b>                           | <b>Case</b>                   | .062" (1.6 mm) Cold Rolled Steel                                                      |
|                                           | <b>Cover</b>                  | .028" (0.7 mm) Cold Rolled Steel                                                      |
| <b>Finish</b>                             |                               | Gray Baked Enamel                                                                     |
| <b>Switch</b>                             |                               | Snap-Acting Contacts in Dust Protected Enclosure                                      |
| <b>Terminal Screws</b>                    |                               | No. 8 - 32 x 1/4" Binder Head With Cup Washer                                         |
| <b>Conduit Opening</b>                    |                               | 7/8" (22 mm) Diameter Hole For 1/2" Conduit                                           |
| <b>Shipping Weight</b>                    | <b>Individual Pack</b>        | 1.5 lb (0.7 kg)                                                                       |
|                                           | <b>Overpack of 18</b>         | 29 lb (13 kg)                                                                         |
| <b>Mounting</b>                           |                               | Flat Flange                                                                           |



Fig. 1 -- A19 Warm Air Control.

- Special coil element has high surface to mass ratio for fast response.
- "Repeat" accuracy is unaffected by barometric pressure and cross ambient temperature problems.
- "Trip-free" manual reset . . . reset must be pressed and released before operation will resume.

Contacts cannot be blocked in the closed position.

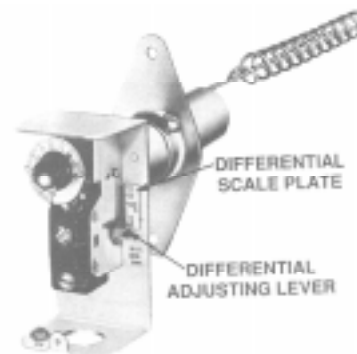


Fig. 2 -- A19 Control with cover removed showing differential adjusting lever and scale.

## General Description

These controls have adjustable differentials. Knob range adjustment and visible scale are standard. The controls have flange mounting that gives a choice of insertion depths. This makes it possible to position the element in the best location for sensing temperature changes. The element support bracket provides a firm support for the element.

Models that have lockout have a "trip-free" manual reset.

The adjustable differential models have an internal scale plate with multiplier. For example, when the minimum differential is 9°F (5°C),

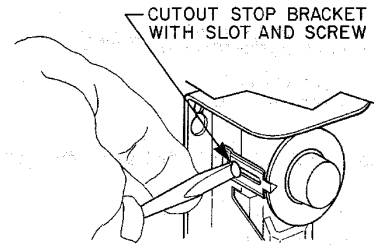
then X2 is 18°F (10°C), X3 is 27°F (15°C) and X4 is 36°F (20°C) which is the maximum differential. To adjust, move the lever to the differential required.

## Concealed Cutout Stop

The cutout stops are field adjustable. Available stop settings are:

50 to 250°F Range -- Stop settings are 250, 205, 195, 180, 165, 155 and 145°F (10 to 120°C Range -- Stop settings are 121, 96, 91, 82, 74, 68 and 63°C).

100 to 350°F Range -- Stop settings are 350, 305, 295, 280, 265, 255 and 240°F (38 to 177°C Range -- Stop settings are 177, 152, 146, 138, 129, 124 and 116°C).



**Fig. 3 — The controls have a screw type cutout stop. The stop screw must be loosened and moved to the stop setting desired. Tighten the screw after setting is made.**

## Ordering Information

1. To order, specify Product Number if available.
2. Where Product Number is not available, specify Type Number and the range.
3. Fixed cutout stop, if required. Specify cutout setting required.

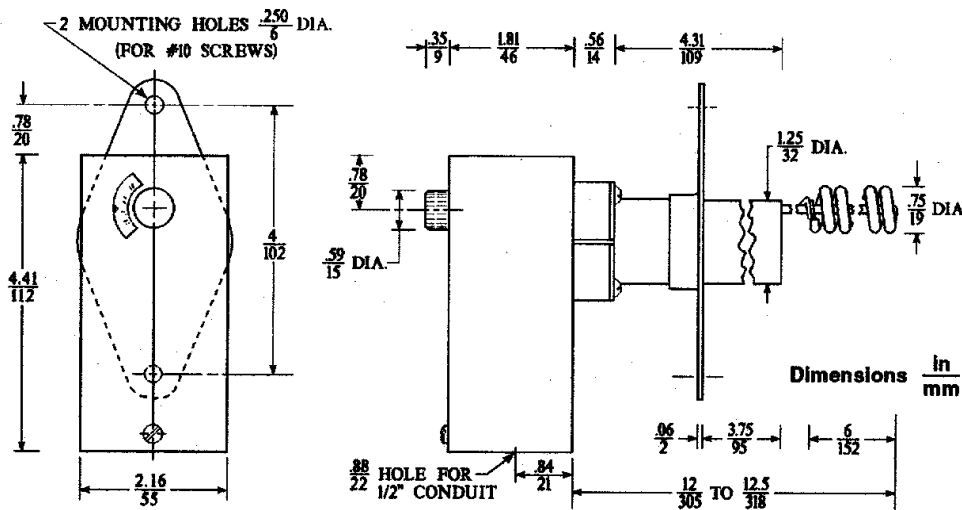
## Repairs and Replacement

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

## Electrical Ratings

| Volts, AC                                            | 120       | 208  | 240  | 277   |
|------------------------------------------------------|-----------|------|------|-------|
| Full Load Amp                                        | 16.0      | 9.2  | 8.0  | —     |
| Locked Rotor Amp                                     | 96.0      | 55.2 | 48.0 | —     |
| Non-Inductive or Resistance Load Amp (Not Lamp Load) | SPST 22.0 | 22.0 | 22.0 | 22.0* |
|                                                      | SPDT 16.0 | 16.0 | 16.0 | 16.0  |
| Pilot Duty — 125 VA, 24/600 VAC                      |           |      |      |       |

\*A19EDB has 16 Amp Non-Inductive rating at 277 VAC, SPST.



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

UL Guide No. XAPX  
File E6688

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Printed in U.S.A.