

A350R

# Electronic Temperature Reset Control (with Relay)

## Description

The A350R Reset Controller is designed to raise or lower the setpoint of supply water temperature based upon a proportionate drop or rise in temperature at the master (outdoor) sensor. The control output is a Single-Pole, Single-Throw (SPST) normally open relay with Light-Emitting Diode (LED) indication.

The adjustable differential enables the user to match the amount of control (maximum to minimum) required for a given application. An adjustable reset ratio adapts to a variety of weather zones and to the specific heat loss characteristics of most buildings.

As with all System 350 products, the A350R is housed in a NEMA 1, high-impact plastic enclosure. The modular design provides easy, plug-together connections for quick installation and future expandability.

## Features

- modular design enables stage, display, and transformer modules to be purchased and installed as necessary
- adjustable master reset setpoint (M.R.S.) enables the user to select a master (outdoor) sensor temperature starting point for the supply reset ramp

- adjustable minimum and maximum supply temperature permits compliance with equipment manufacturer's specifications
- selectable warm weather shutdown temperature saves energy by disabling equipment when the master sensor temperature rises to a point where heating is no longer required
- adjustable setback temperature saves energy by lowering the supply temperature setpoint at night or during unoccupied periods

## Applications

The A350R Temperature Reset Controller can be used as a stand-alone device or in conjunction with plug-together accessory modules. The addition of the S350A or S350C for on/off output, or an S350P for a proportional or proportional plus integral output allows this temperature system to control a variety of single or multiple stage Heating Ventilation Air Conditioning and Refrigeration (HVAC/R) applications. Typical applications include reset of single or multistage boilers.



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## Selection Charts

| Code Number | Item                            | Description  |
|-------------|---------------------------------|--|
| A350RS-1C   | A350R Temperature Reset Control | Temperature Reset Control (packaged with A99BB-300C and A99BC-25C sensors) |
| A350RT-1C   | A350R Temperature Reset Control | Temperature Reset Control (temperature sensors not included)               |

## Accessories and Replacement Parts

| Code Number  | Item   | Description  |
|--|--|--|
| D350AA-1C<br>D350BA-1C   | Display Module                                   | Fahrenheit Scale<br>Celsius Scale  |
| S350AA-1C<br>S350AB-1C   | On-Off Stage Module                              | Fahrenheit Scale<br>Celsius Scale  |
| S350CC-1C  | Slave Stage Module                               | Dual Scale (°F and °C)   |
| S350PQ-1C  | Proportional Stage Module                        | Dual Scale (°F and °C)   |
| Y350R-1C   | Power Module                                     | 120/240 VAC, 50/60 Hz input; rectified 24V Class 2 output  |
| A99BB-300C<br>A99BC-25C<br>A99BC-300C<br>A99BC-500C<br>A99BC-1500C | Temperature Sensors                              | PTC Silicon Sensor with PVC Cable; Cable length 9-3/4 ft (3m)<br>PTC Silicon Sensor with high temp. silicon cable; cable length 9-3/4 in. (0.25 m)<br>PTC Silicon Sensor with high temp. silicon cable; cable length 9-3/4 ft (3 m)<br>PTC Silicon Sensor with high temp. silicon cable; cable length 16-3/8 ft (5 m)<br>PTC Silicon Sensor with high temp. silicon cable; cable length 49 ft (15 m) |
| BOX10A-600R  | Enclosure  | PVC Sensor Enclosure   |
| WEL11A-601R  | Immersion Well                                   | For liquid sensing applications  |
| SHL10A-603R  | Sun Shield                                       | For use with outside sensors in sunny locations  |
| BKT287-1R<br>BKT287-2R   | DIN Rail Sections                                | 35 x 7.5 mm, 12 in./0.305 m long<br>35 x 7.5 mm, 36 in./0.914 m long   |
| PLT344-1R  | DIN Rail End Clamps                              | Two end clamps   |
| WHA29A-600R<br>WHA29A-603R<br>WHA29A-604R                          | Cable for Remote Mounting of D350 Display Module | 3 ft (0.9 m) <sup>1</sup><br>25 ft (7.6 m)<br>50 ft (15.2 m)   |

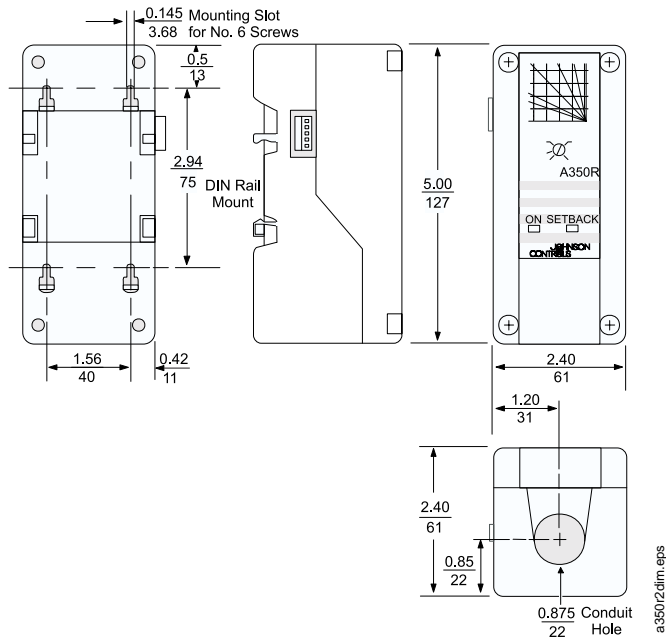
1. WHA29A-600R can also be used to daisy chain S350 Stage Modules together.

## Electronic Temperature Reset Control (With Relay) (Continued)

### Technical Specifications

| A350R Electronic Temperature Reset Control  |  |
|---|--|
| Supply Voltage <sup>1</sup>                 | Transformer: 20 to 30 VAC, Class 2, 50/60 Hz<br>Y350R: 120/240 VAC, 50/60 Hz                     |
| Power Consumption                           | 3.2 VA maximum   |
| Ambient Temperature                         | Operating: -30 to 150°F (-34 to 66°C)<br>Shipping: -40 to 185°F (-40 to 85°C)                    |
| Humidity                                    | 0 to 95% RH non-condensing, 85°F (29°C) maximum dew point  |
| Reset Ratio Adjustment Range                | 1:5 to 3:1 (master supply)   |
| Reset Action                                | Reverse acting   |
| Master Reset Setpoint Adjustment Range      | 40 to 70°F (4 to 21°C)   |
| Minimum Supply Temperature Adjustment Range | 50 to 160°F (10 to 71°C)   |
| Maximum Supply Temperature Adjustment Range | 160 to 220°F (71 to 104°C)   |
| Differential Adjustment Range               | 1 to 30°F (0.5 to 17°C)  |
| Relay On-Time                               | Jumper Selectable: OFF, 1 min., 2 min., or 3 min.  |
| Warm Weather Shutdown                       | Jumper Selectable: OFF, 60, 64, 68, or 72°F (OFF, 16, 18, 20, or 22°C)                           |
| Setback Adjustment Range                    | 0 to 30°F (0 to 17°C)<br>(Enabled by an external time clock)                                     |
| Mode of Operation                           | Heating (Differential is below the setpoint.)  |
| Relay Contact                               | SPST maximum: 4A non-inductive, 24 VAC; Pilot Duty 42.4 VA at 24 VAC<br>minimum: 100 mA at 5 VDC |
| Case and Cover Material                     | NEMA 1, high-impact thermoplastic  |
| Agency Listing                              | UL Guide No. XAPX and cUL Guide No. XAPX7, File E27734   |

1. Only one supply voltage source may be used.



A350R Dimensions, in. (mm)