

## C7650A Solid State Temperature Sensor

### PRODUCT DATA



### FEATURES

- Senses temperature of outdoor air.
- Long lasting thermistor sensing element is accurate and stable over time.
- When temperature of outdoor air increases, the outdoor air damper is closed to a preset minimum position.
- When temperature of outdoor air is low, the outdoor air damper is opened to reduce the cooling load in the building.
- Provides 10 to 20 mA output signal to W7459 Solid State Economizer Control; setpoint is located on solid state economizer control.
- Sensor is enclosed in a rugged, corrosion-resistant glass-fiber reinforced plastic case.
- Compact size and lightweight construction provide easy mounting in HVAC rooftop unit.

### GENERAL

C7650A Solid State Thermistor Sensor is used with the W7459 Solid State Economizer Control Package. The W7459 Solid State Economizer Control Package is usually mounted on an M7405/M7415 Actuator. It permits the use of outdoor air as the first stage of cooling in heating, ventilating and air conditioning (HVAC) systems. The application is for differential or single temperature economizer control on HVAC equipment up to approximately 20 tons.

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## SPECIFICATIONS

**Model:**

C7650A Solid State Temperature Sensor.

**Case:**

Duct mount.

**Temperature Sensing Element:**

Thermistor.

**Output Signal:**

10 to 20 mA current signal; increases from 10 mA to 20 mA as temperature decreases.

**Operating Ambient Temperature Range:**

+40°F to +100°F (+4°C to +38°C).

**Shipping Temperature Range:**

-40°F to +150°F (-40°C to +66°C).

**Maximum Power Consumption:**

0.45 VA.

**Supply Voltage:**

15 to 23 Vdc.

**Electrical Connections:**

Two 1/4 in. (6.5 mm) quick connect terminals.

**Approval:**

Underwriters Laboratories Inc. Flammability Rating: UL94-5V.

**Dimensions:**

See Fig. 1.

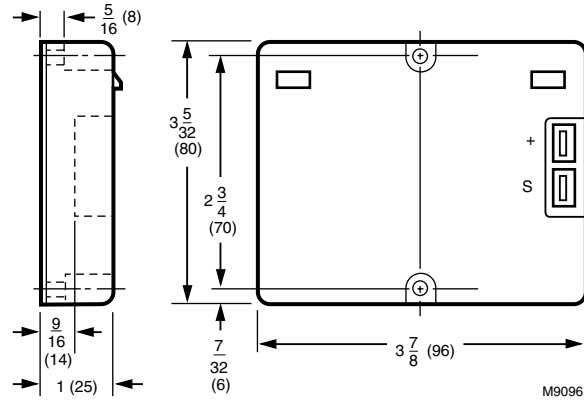


Fig. 1. C7650A Thermistor Temperature Sensor Dimensions in in. (mm).

## INSTALLATION

### When Installing this Product...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.

## ORDERING INFORMATION

When purchasing replacement and modernization products from your TRADELINE® wholesaler or distributor, refer to the TRADELINE® Catalog or price sheets for complete ordering number.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

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2. Home and Building Control Customer Relations  
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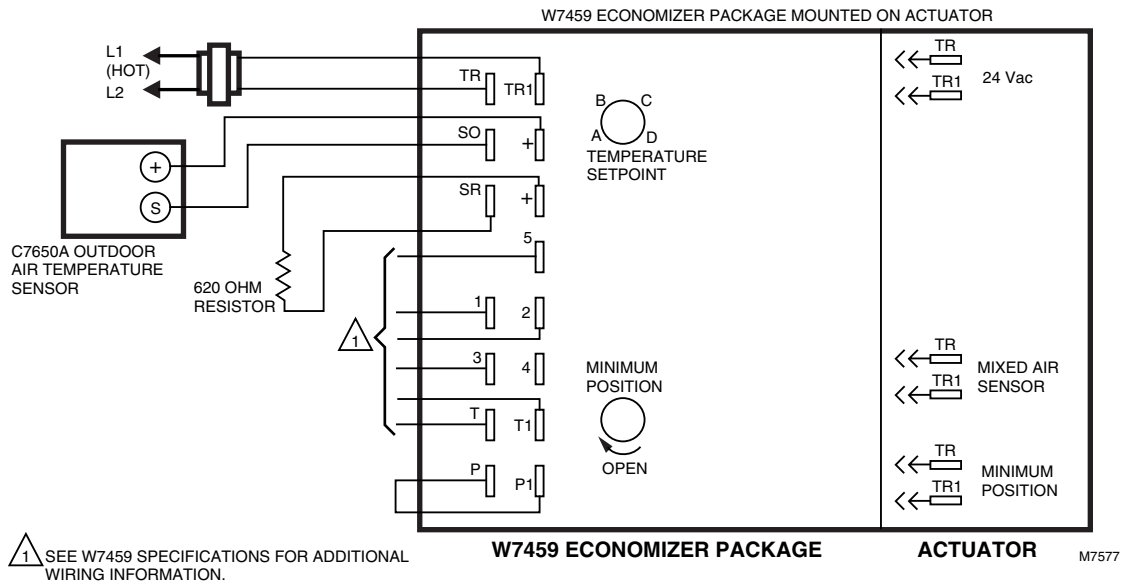


Fig. 2. Wiring Connections for C7650A Temperature Sensor.

## CAUTION

1. Before beginning installation, disconnect power supply to prevent electrical shock or equipment damage.
2. When selecting the location, make sure the sensor is not exposed to rain, snow, or direct sunlight.

## Location

The C7650A Temperature Sensor can be mounted in any position; however, the sensor must be installed where it is exposed to freely circulating air, but protected from rain and direct sunlight.

The C7650A is designed to operate in 500 ft/min minimum airflow.

## Wiring

Disconnect power supply before beginning installation to prevent electrical shock or equipment damage. All wiring must comply with applicable codes and ordinances. Follow the wiring information furnished by the equipment manufacturer or refer to Fig. 2 for typical wiring hookups.

## OPERATION

### Control Dial Setting

Control setpoint scale is located on the W7459 Solid State Economizer Control. Control points A, B, C, D are field selectable; use A, B, C, D control points for temperature sensing.

## Operation

The C7650A Solid State Temperature Sensor is used with a solid state economizer control and damper actuator to proportion an outdoor air damper in a ventilation system.

When outdoor air temperature is higher than return air temperature, the outdoor air damper closes to the minimum position. When the outdoor air temperature and the return air temperature are equal, the outdoor air damper proportions open on a call for cooling.

The relationship between the C7650A output current and the temperature is shown in Fig. 3.

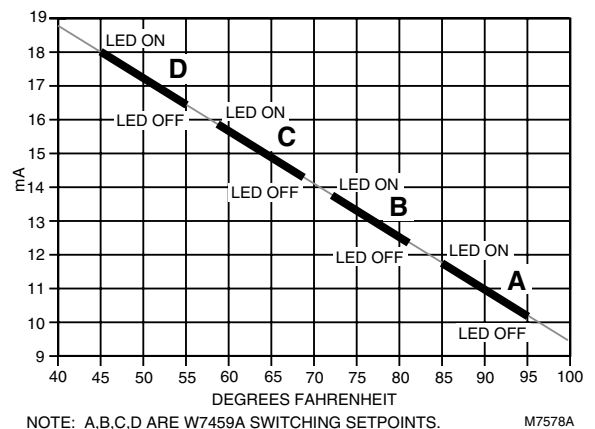


Fig. 3. C7650A Temperature Sensor Output Current.

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