

C7660 Selectable Temperature Sensor

FOR ECONOMIZERS

PRODUCT DATA



FEATURES

- Senses temperature of outdoor air and provides a signal to economizer control with OK or not OK to economize.
- Selectable dip switch provides 8 change over temperature options.
- When temperature of outdoor air is below change over temperature, the outdoor air damper is opened to reduce the cooling load in the building.
- Provides 4 OR 20 mA output signal to economizer control; At 4 mA not OK to economize, 20 mA OK to economize.
- Highly accurate microprocessor control.
- Sensor is enclosed in a rugged, corrosion-resistant plastic case.
- Replaces C7650 temperature sensors and the control function of temperature change over in the economizer control.

GENERAL

C7660 Selectable Temperature Sensor is used with the W7459, W7215, W7212, W7213 and W7214 Economizer Controls. The economizer controls are mounted on an M7415/ M7215 Actuator. They permit the use of outdoor air as the first stage of cooling in heating, ventilating and air conditioning (HVAC) systems.

The C7660 Selectable Temperature Sensor is only to be used with single temperature change over with the sensor located in the outdoor air.

Contents

| | |
|----------------------------|---|
| General | 1 |
| Features | 1 |
| Specifications | 1 |
| Ordering Information | 2 |
| Installation | 2 |
| Operation | 3 |



SPECIFICATIONS

Model: C7660 Selectable Temperature Sensor

Case: Duct mount

Temperature Sensing Element: Thermistor

Output Signal: 4mA not OK to economize, 20 mA OK to economize

Operating Ambient Temperature Range: -40° to 149° F (-40° to 65° C).

Shipping Temperature Range: -40° to 149° F (-40° to 65° C).

Supply Voltage: Power to sensor is supplied through economizer or if not used with an economizer, logic power input is 21.6 vdc \pm 1.5 vdc.

Electrical Connections: Two 1/4 in. (6.4 mm) quick connect terminals.

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

Dimensions: See Fig. 1

Hysteresis: Hysteresis \pm 1F; Economizer Cut-in 1F below setpoint, Cut-out 1F above setpoint

Accuracy: \pm 1° F

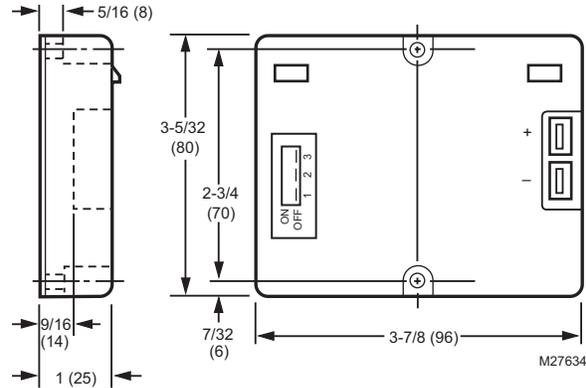


Fig. 1. C7660 Selectable Temperature Sensor Dimensions in in. (mm).

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.
5. Verify dip switch settings match desired changeover outside air temperature.
6. Verify polarity of wiring connections from sensor to controller is correct.

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:

1. Your local Honeywell Automation and Control Products Sales Office (check white pages of your phone directory).
2. Honeywell Customer Care
1885 Douglas Drive North
Minneapolis, Minnesota 55422-4386

In Canada—Honeywell Limited/Honeywell Limitée, 35 Dynamic Drive, Toronto, Ontario M1V 4Z9.

International Sales and Service Offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spain, Taiwan, United Kingdom, U.S.A.

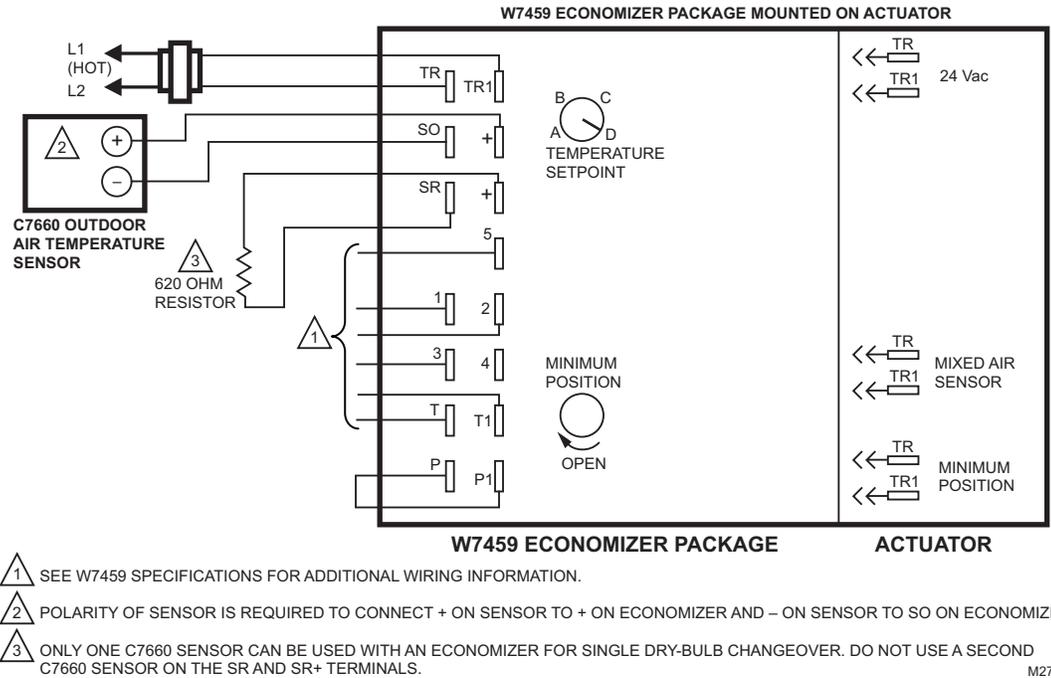


Fig. 2. Wiring Connections for C7660 Temperature Sensor.

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 C7660 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.

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 see Fig. 2 for typical wiring hookups.

OPERATION

Temperature Change Over Control Setting

The temperature change over setpoint is made by changing the setting on a 3-position dip switch through the cover of the sensor. See Fig. 3 for temperature change over settings.

Operation

The C7660 Selectable Temperature Sensor is used with an economizer control and damper actuator to proportion an outdoor air damper in a ventilation system.

When outdoor air temperature is below the change over setpoint, the sensor will provide a 20 mA signal to the economizer which translates to **OK to economize** positioning the damper open on a call for cooling. When the outdoor air is above the change over setpoint, the sensor provides a 4 mA signal to the economizer which translates to **not OK to economize** and the outdoor damper drives to minimum position.

The C7660 temperature sensors replace the control function of the temperature changeover in the economizer control.

The A, B, C, D potentiometer on the economizer does not control the changeover point when a C7660 sensor is used in place of an enthalpy sensor. This potentiometer is only adjusted when using a C7400 enthalpy sensor for single enthalpy changeover. For single dry-bulb and differential enthalpy set the potentiometer to "D".

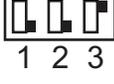
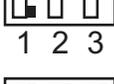
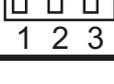
C7660 SELECTABLE TEMPERATURE SENSOR

The changeover temperature switch settings for the C7660 are shown in Fig. 3. Default and factory setpoint is 63° F. Changeover on an economizer can operate in two basic modes:

- 1) exclusive operation where either the economizer or the mechanical cooling function, but not both OR
- 2) integrated operation where the economizer and mechanical cooling operate at the same time. Integrated operation requires a two stage cooling thermostat. The integrated control will provide the most energy savings.

For exclusive operation, the changeover set point needs to allow mechanical cooling when the economizer can no longer meet the cooling load requirement. The 63 degree F setting is the most typical changeover set point for this type of control but is dependent on the building and climate.

For integrated operation, the changeover should be just at or just below the typical cooling setpoint expected in the zone served. For example, if the cooling setpoint is 74 degrees F or 75 degrees F, the changeover setpoint should be set at 73 degrees F.

| DIP SWITCH POSITION | CHANGEOVER TEMPERATURE |
|---|------------------------|
| ON OFF  1 2 3 | 48°F |
| ON OFF  1 2 3 | 53°F |
| ON OFF  1 2 3 | 55°F |
| ON OFF  1 2 3 | 58°F |
| ON OFF  1 2 3 | 63°F |
| ON OFF  1 2 3 | 68°F |
| ON OFF  1 2 3 | 73°F |
| ON OFF  1 2 3 | 78°F |

M27636

Fig. 3. C7660 Temperature Sensor Dip Switch Settings.

Automation and Control Solutions

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