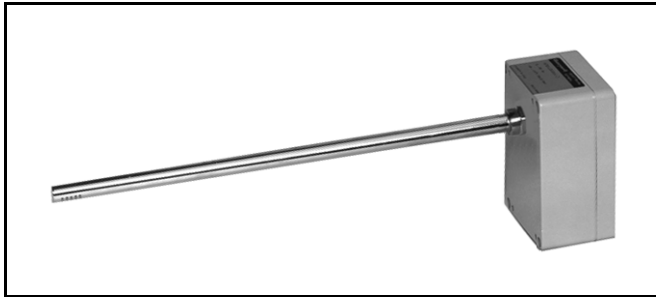


## H7015B Humidity/Temperature Duct Sensor

### PRODUCT DATA



### FEATURES

- Wide sensing range.
- Capacitance type sensing element for relative humidity.
- PT1000 or BALCO 500 temperature sensing element.

### APPLICATION

The H7015B Combined Humidity/Temperature Duct Sensor combines a capacitance-type relative humidity sensor with a PT1000 or BALCO 500 temperature sensor in one housing. These sensors can be used for discharge, outside or return air control or as a high-limit sensor in applications such as steam humidification.

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## SPECIFICATIONS

### Models:

H7015B1004 Humidity and Temperature Duct Sensor. Uses a PT1000 temperature-sensing element.

H7015B1012 Humidity and Temperature Duct Sensor. Uses a BALCO 500 temperature-sensing element.

**Sensor/Control System Compatibility:** See Table 1.

**Dimensions:** See Fig. 1.

**Weight:** 0.66 lb (300g).

**Mounting:** Duct.

**Terminal box:** Plastic (ABS).

### Electrical Ratings:

Power Supply Required: 24 Vac, +20%, -30%, 50/60Hz, or 34 Vdc, +10%, -40%.

Current Consumption: 20mA at 24V.

### Ambient Ratings:

Temperature:

Operating Range: 32 to 122°F (0 to 50°C).

Storage Range: -31 to +158°F (-35 to +70°C).

Humidity Range: 5 to 95% rh, non-condensing.

### Relative Humidity Sensor:

Sensing Range: 5 to 95% rh.

Sensitivity: 10mV per percent rh or 100mV per percent rh.

Accuracy (at 24 Vac and 77°F [25°C]):

5 to 10% rh: ±10%.

10 to 30% rh: ± 5%.

30 to 70% rh: ± 3%.

70 to 90% rh: ± 5%.

90 to 95% rh: ±10%.

Approximate Response Time at 5 m/s Air Velocity ( $\tau_{0.5}$ ):

6 seconds.

Output Ranges (0 to 100%rh): 0 to 1 Vdc, 0 to 10 Vdc.

Output Impedance:

1V Range: 183 ohms.

10V Range: 274 ohms.

NOTE: Outputs are short-circuit protected.

### Temperature Sensor:

Range: -22 to +158°F (-30 to +70°C).

Values (nominal):

PT1000: 1000 ohms at 32°F (0°C).

BALCO 500: 500 ohms at 74°F (23°C).

Accuracy:

PT1000:  $(\Delta T)/K = \pm(0.3 + 0.005 \times t)$

where t is in °C (in acc. to DIN IEC 751 Class B).

BALCO 500: ±0.4K at 74°F (23°C).

Sensitivity (approximate):

PT1000: 3.85 ohms/K

BALCO 500: 2 ohms/K

Maximum Response Time at 5 m/s Air Velocity ( $\tau_{0.5}$ ):

PT1000: 60 seconds.

Balco 500: 45 seconds.

### Approvals:

Underwriters Laboratories Inc. Flammability Rating: UL94.

(Flame retardant V1 in acc. with UL94)

CE.

Protection class III in acc. with EN60730-1

Protection standard - Terminal box IP54 in acc. with EN60529.

**Characteristic:** see EN0C-0603.

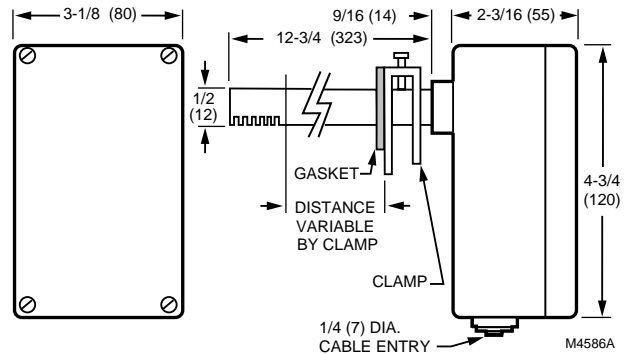


Fig. 1. H7015 dimensions in in. (mm).

## 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 Home and Building Control Sales Office (check white pages of your phone directory).
2. Home and Building Control Customer Relations  
Honeywell, 1885 Douglas Drive North  
Minneapolis, Minnesota 55422-4386 (800) 328-5111

In Canada—Honeywell Limited/Honeywell Limitée, 35 Dynamic Drive, Scarborough, 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.

Table 1. Sensor/Control System Compatibility.

Control System	Temperature		Humidity	
	PT1000	BALCO 500	0 to 1 Vdc	0 to 10 Vdc
Excel Classic	X	X	X	X
Excel Plus	X	X	X	X
High Performance Excel Plus	X	X	X	X
Excel EMC	X	X	X	X
Excel 500/600 (XF521)	X			X
Excel 500/600 (XF526)	X	X		X
Excel 20 and 50				X
Excel 80B and 100B	X			X
Excel IRC Multicontroller R7451A1030			X	
MicroniK 100		X	X	
MicroniK 100 "NEW" R7420B1036/R7420F1045	X	X	X	
MicroniK 200	X	X		X

## 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.

### Mounting

H7015B Humidity and Temperature Duct Sensors mount to the duct with a clamp. Install the clamp and sensor as follows:

1. Using the clamp template or the clamp, locate and drill the three mounting holes.
2. Align the gasket hole with the clamp hole (Fig. 2).
3. Mount the clamp and gasket to the duct using two 4 mm (or two #12 self-tapping) screws.
4. Insert the sensor shaft through the bracket hole.
5. Tighten the set screw to hold the sensor in place.

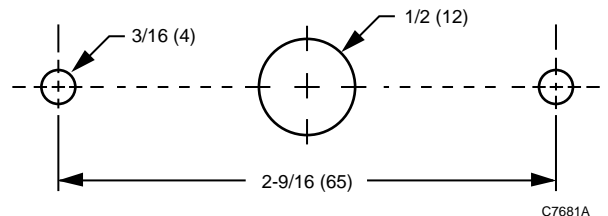


Fig. 2. Clamp template dimensions in in. (mm).

NOTE: Screw holes are for #12 self-tapping screws.

Wiring (Fig. 3)

**CAUTION**

**Electrical Shock or Equipment Damage Hazard.**  
**Can shock individuals or short equipment circuitry.**  
 Disconnect power supply before installation.

**CAUTION**

**Erratic System Operation Hazard.**  
**Failure to follow proper wiring practices can introduce disruptive electrical interference (noise).**  
 Keep wiring at least one foot away from large inductive loads such as motors, line starters, lighting ballasts, and large power distribution panels.  
 Shielded cable is required in installations where these guidelines cannot be met.  
 Ground shield only to grounded controller case.

**IMPORTANT**

All wiring must agree with applicable codes, ordinances and regulations.

NOTES:

- Maximum sensor wire length between the sensor and controller is 656 ft (200m).
- For temperature sensor offset due to wire resistance, see Table 2.
- Use two transformers: one for sensors, the other for the controller (see Fig. 3).

Table 2. Temperature Offset Due to Wire Resistance.

Wire Type in AWG (mm <sup>2</sup> )	Temperature Offset per 33 yards (10m) of Wire in °F (K)	
	PT1000	BALCO 500
20 (0.5)	0.324 (0.18)	0.54 (0.30)
17 (1.0)	0.162 (0.09)	0.27 (0.15)
15 (1.5)	0.108 (0.06)	0.18 (0.10)

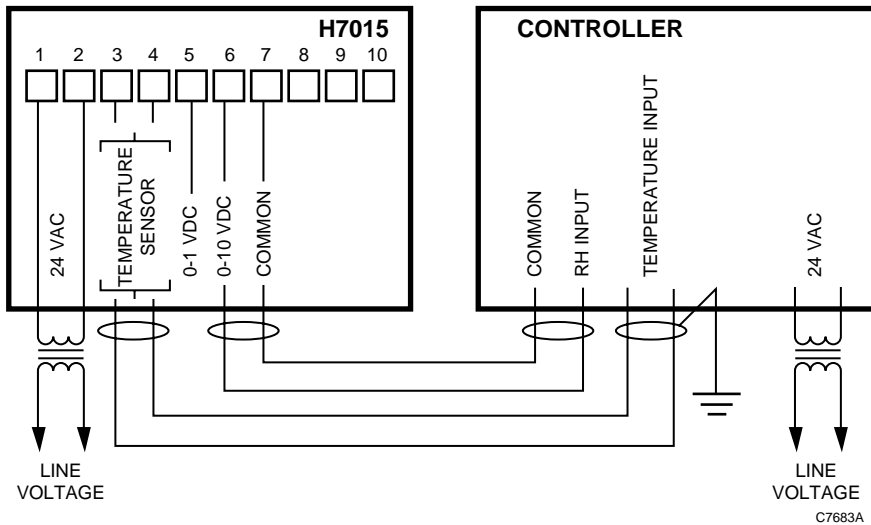


Fig. 3. Typical H7015 wiring.



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