FEATURED PRODUCTS

AIR VELOCITY TRANSMITTER

SERIES AVUL | page 229

- Field selectable ranges from 0-4000 FPM (0-20 m/s)
- 3% or 5% accuracy
- Optional BACnet MS/TP or Modbus® Communication Protocol

CARBON MONOXIDE/NITROGEN DIOXIDE GAS TRANSMITTER

SERIES GSTC | page 242

- Field selectable BACnet or Modbus® communication
- Industrial grade replaceable CO or NO_2 sensors

AIR VELOCITY
Transmitters

			
SERIES	**AVU** - page 228	**AVUB** - page 228	**AVUL** - page 229
Service	Clean air	Clean air	Clean air
Range	785 to 3150 FPM (4 to 16 MPS)	785 to 3150 FPM (4 to 16 MPS)	1,000 to 4,000 FPM (5 to 20 MPS)
Accuracy	±5% FS	±8% FS	±3 or 5% of reading
Mounting	Duct mount	Duct mount	Duct mount
Probe Length	9-7/16″ (240 mm)	9-7/16″ (240 mm)	7-41/64″
Output	4 to 20 mA or 0 to 10 VDC	0 to 10 VDC	4 to 20 mA, 0 to 5 VDC, or 0 to 10 VDC selectable
Display	None	None	Optional LCD
Process Temperature Limits	32 to 122°F (0 to 50°C)	32 to 122°F (0 to 50°C)	32 to 122°F (0 to 50°C)

HUMIDITY & HUMIDITY/TEMPERATURE
Transmitters

				
SERIES	**RHP-E/N** - page 233	**RHP** - page 234	**RHP with Shield** - page 235	**WHT** - page 235
Service	Room	Duct or outdoor	Outdoor	Room or outdoor
Accuracy	±2, 3, or 5% FS	±2, 3, or 5% FS	±2, 3, or 5% FS	±3% FS
RH Output	4 to 20 mA, 0 to 5 VDC, 0 to 10 VDC	4 to 20 mA, 0 to 5 VDC, 0 to 10 VDC	4 to 20 mA, 0 to 5 VDC, 0 to 10 VDC	4 to 20 mA, 0 to 5 VDC, 0 to 10 VDC
Temperature Output Options	None, passive sensor, 4 to 20 mA, 0 to 5 VDC, 0 to 10 VDC	None, passive sensor, 4 to 20 mA, 0 to 5 VDC, 0 to 10 VDC	None, passive sensor, 4 to 20 mA, 0 to 5 VDC, 0 to 10 VDC	None, passive sensor, 4 to 20 mA, 0 to 5 VDC, 0 to 10 VDC
Display	Optional LCD	None	None	None

These Selection Guides are for quick comparison of similar products. Please refer to the catalog page number referenced for complete product information and specifications.

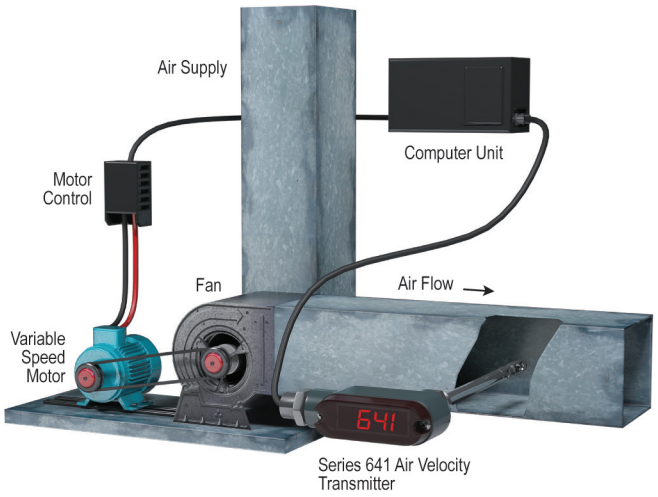
AIR VELOCITY
Transmitters

SERIES	641 - page 230	641RM - page 231	641B - page 231
			
Service	Clean air	Clean air	Clean air
Range	250 to 15000 FPM (1.25 to 75 MPS)	250 to 2000 FPM (1.25 to 10 MPS)	250 to 2000 FPM (1.25 to 10 MPS)
Accuracy	±3 to 4% FS	±3 to 4% FS	±5 to 6% FS
Mounting	Duct mount	Remote mount	Duct mount
Probe Length	6 to 36″ (152 to 915 mm)	6 to 36″ (152 to 915 mm)	4-1/4″ (108 mm)
Output	4 to 20 mA	4 to 20 mA	4 to 20 mA
Display	Optional LED	Optional LED	Optional LED
Process Temperature Limits	-40 to 212°F (-40 to 100°C)	-40 to 212°F (-40 to 100°C)	-40 to 176°F (-40 to 80°C)

HUMIDITY & HUMIDITY/TEMPERATURE
Transmitters

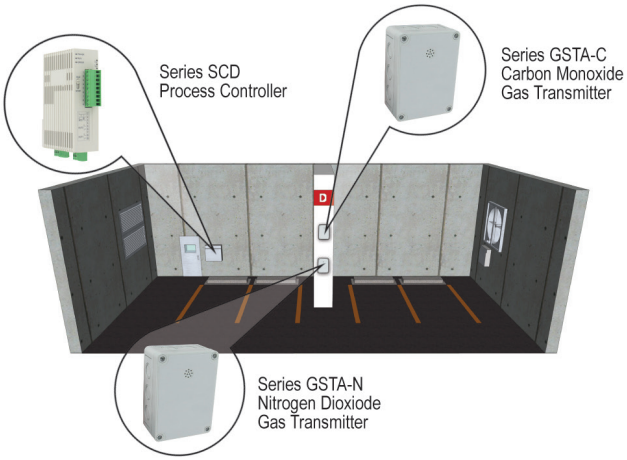
SERIES	RH-R - page 236	657 - page 236	657C - page 236	HHT - page 237
				
Service	Duct or process	Duct	Duct	Room or outdoor
Accuracy	±2% FS	±2% FS	±2% FS	±2% FS
RH Output	4 to 20 mA	4 to 20 mA	4 to 20 mA	4 to 20 mA
Temperature Output Options	None, 4 to 20 mA	4 to 20 mA	4 to 20 mA	None, 4 to 20 mA
Display	None	None	None	Optional LCD

These Selection Guides are for quick comparison of similar products. Please refer to the catalog page number referenced for complete product information and specifications.



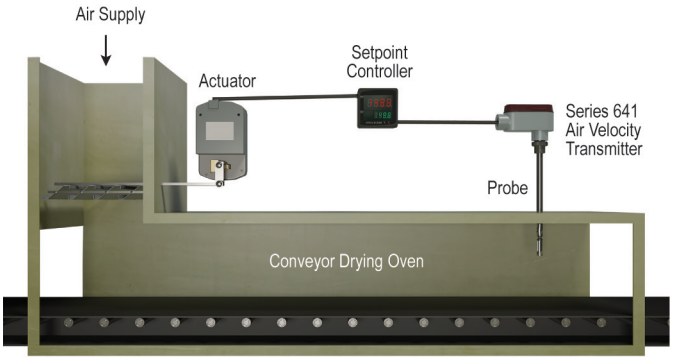
Dwyer® transmitter signals precise air velocity adjustments to computer-controlled variable-speed fan motor.

In variable air volume (VAV) HVAC systems, a computerized control provides precise adjustment of air volume to meet changing system needs with maximum energy efficiency. The Dwyer® Series 641 has an optional LED display for local indication of air flow. The LED display provides a quick, visual acknowledgment of proper system performance. The computer reacts to any change in velocity by signaling the motor control to increase or decrease fan speed to maintain the required velocity. The computer, taking inputs from other ambient condition sensors, will establish a new required air velocity and signal an appropriate adjustment in fan speed.



Automate your garage ventilation.

Carbon monoxide and Nitrogen Dioxide are by-products released in the exhaust from gasoline and diesel powered vehicles. These gases can build up in parking garages and loading dock areas where vehicles are concentrated, creating a potentially harmful environment. Ventilation is required to purge these gasses, but running fans non-stop increases building operating costs. The Dwyer® Series GSTA and GSTC can help to offer a more efficient solution to garage ventilation by transmitting CO or NO_2 concentrations via an analog output signal or digital BACnet/Modbus communication. This signal is sent to the Building Management System and the ventilation processes can then be automated to run only when the gases are present in dangerous concentrations. For stand-alone systems, the analog signal can be sent to a Series SCD process controller to provide a closed loop control system running the ventilation fans. Using the Dwyer® Series GSTA or GSTC transmitter, ventilation will occur only when needed, reducing the cost of maintaining air quality standards.

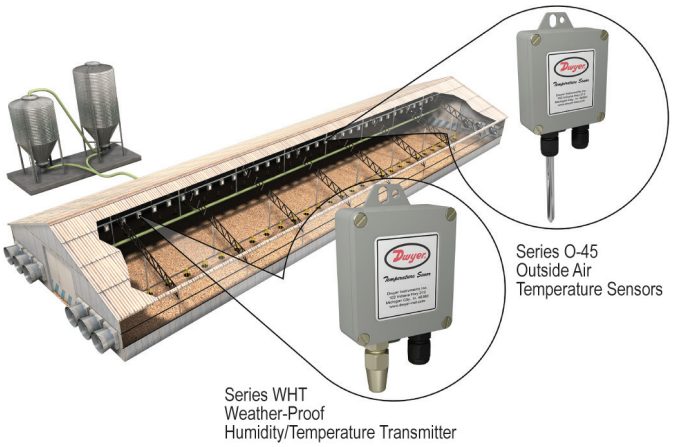


Air velocity transmitter controls drying oven air flow.

The flow of heated air is held to a constant predetermined velocity in this carefully controlled low temperature process drying oven. The constant temperature air supply is modulated by a set of inlet louvers operated by a servo-driven actuator. A Dwyer® Series 641 Air Velocity Transmitter has an optional LED display for local indication of air flow. The LED display provides a quick, visual acknowledgment of proper system performance. The controller compares the Series 641's signal to the setpoint in the controller and continuously signals appropriate louver adjustments to the actuator.

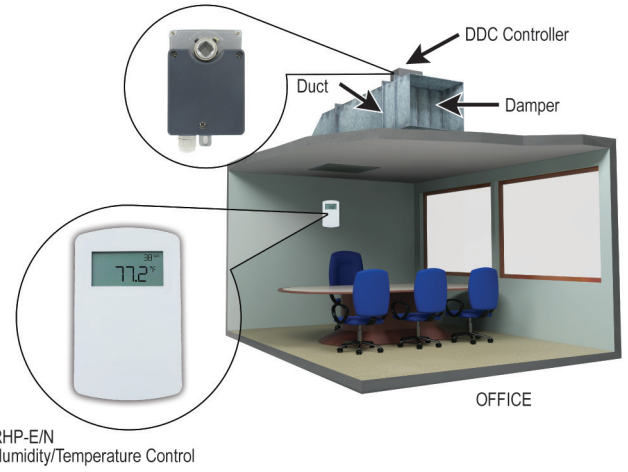
Eliminate the need for Pitot tubes, orifice plates, differential pressure sensors and temperature sensors with a Series AVUL.

Installing air velocity measurement systems can be a burdensome process – specifying Pitot tubes, static pressure tips, orifice plates, differential pressure transmitters, etc. Dwyer offers the Series AVUL Air Velocity Transmitter to consolidate these components into one convenient instrument. The Series AVUL can be easily installed into the duct or air stream to accurately measure air flow while providing local indication as well as linear analog output. Microprocessor-based technology ensures accurate, repeatable results. The Series AVUL combines these features for simple, reliable airflow measurement without the problems associated with complex, traditional systems.



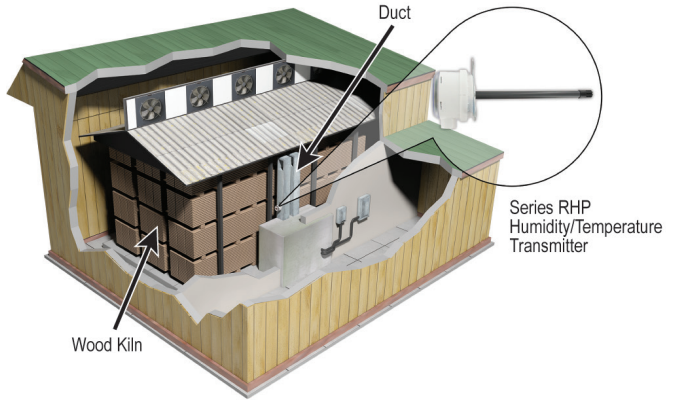
Temperature and humidity measurements used to optimize the growth of hogs and poultry.

The Dwyer® Series WHT Humidity Transmitter and Series O-4 Temperature Sensors are used to control the environmental conditions on hog and poultry farms. The amount the animals eat is linked to how comfortable the environmental conditions are. Thus the temperature, humidity, amount of light and other ambient conditions are tightly controlled to insure optimal animal growth.



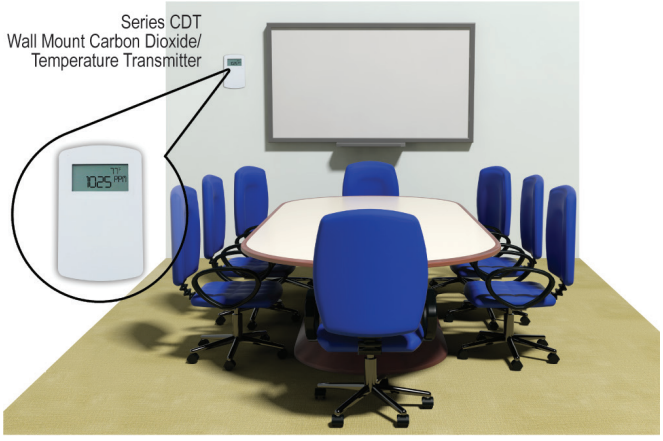
Accurately measure and control the humidity and temperature in office buildings.

The Dwyer® Series RHP-E/N wall mount humidity and temperature transmitter can be combined with a DDC controller and a damper to provide comfortable working conditions in an office building. The amount of air flow entering the room is varied based on the temperature and humidity readings of the Series RHP-E/N. The compact size and mounting configuration allow this transmitter to be discretely mounted in any room.



Greatly reduce the time it takes to dry wood.

The Dwyer® Series RHP monitors the humidity and temperature in the return air ducts in wood dehumidification rooms. Large fans are used to circulate air across the room. As dry conditioned air moves across the wood, it absorbs moisture from the wood. The humidity level of the air in the return air duct is representative of how much moisture is in the wood. When the humidity in the duct declines, it signifies that less dry conditioned air is needed to be supplied to the room.



Demand control ventilation.

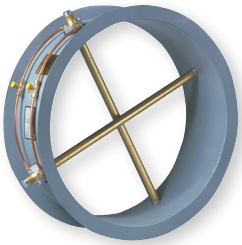
Since the number of people in a conference room or classroom varies throughout the day, the amount of conditioned air needed to properly ventilate the room varies as well. As the number of people in a room increase, the concentration of carbon dioxide in the room will also increase. The Dwyer® Series CDT, CDTR, CDTV, and CDTA carbon dioxide transmitters measures the amount of carbon dioxide that is emitted so that the VAV control system can supply enough fresh air into the space to return the concentration of carbon dioxide in the room to normal levels.

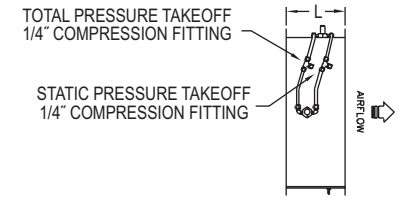
Dwyer

SERIES FLST

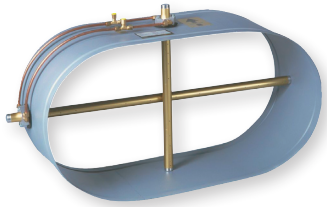
DUCT MOUNTED AIRFLOW MEASUREMENT STATION

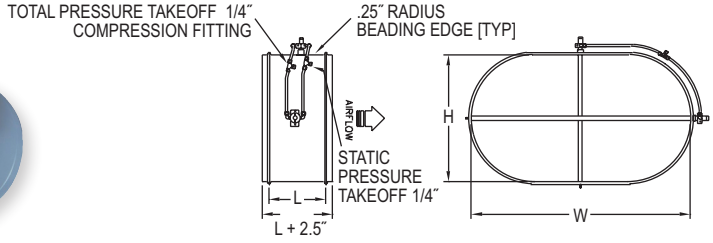
Rectangular, Oval or Circular Configurations



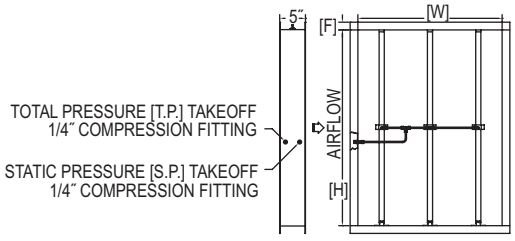


DIMENSIONS - CIRCULAR FLANGE			
Station Size "D"	**Flange Thickness**	**Flange Size "F"**	**Casing Length "L"**
8″ - 15″	.064″	1″	6″
16″ - 44″	.064″	1-1/2″	6″
45″ - 72″	.188″	1-1/2″	10″
73″ & over	.188″	2″	12″





DIMENSIONS - OVAL FLANGE			
Station Width "W"	**Flange Thickness**	**Flange Size "F"**	**Casing Length "L"**
Up to 48″	.064″	1-1/2″	6″
Over 48″	.188″	1-1/2″	8″



DIMENSIONS - RECTANGULAR FLANGE	
Station Size "H" or "W"	**Flange Size "F"**
8″ - 72″	1-1/2″
73″ & Over	2″

The **SERIES FLST** Airflow Measurement Station utilizes an airflow averaging element generating a velocity pressure signal similar to the orifice, venturi, and other primary elements. Single or multiple airflow elements are factory mounted and pre-piped in a casing designed for flanged connection to the ductwork.
Multiple elements are joined together for connection to a differential measurement device (gage, transmitter, etc.) for flow measurement and indication purposes.

FEATURES/BENEFITS

- Low signal-to-noise ratio
- Factory mounted and pre-piped in a flanged duct section (casing)
- Standard construction includes galvanized casing and 6063-T5 anodized aluminum flow sensors
- Standard airflow stations can be operated (in air) continuously in temperatures up to 350°F or intermittently in temperatures up to 400°F

APPLICATIONS

- Building air intake and exhaust flow rate measurement
- HVAC air flow measurement

SPECIFICATIONS

Accuracy: Within 2% of actual flow when installed in accordance with published recommendations.
K-Factor: 0.97.
Velocity Range: 100 to 10,000 FPM (0.51-51 m/s).
Wetted Material: Elements: 6063-T5 anodized aluminum; Casings: 16 ga G90 galvanized steel.
Temperature Limits: Galvanized casings and aluminum elements 350°F (177°C) continuous operation (in air) 400°F (204°C) intermittent operation (in air).
Humidity: All airflow stations 0 to 100% non condensing.
Process Connections: 1/4″ compression fittings.

Circular Models

FLST–C ☐

DIAMETER (IN)*

Rectangular or Oval Models

FLST – ☐ ☐ **x** ☐ **–** ☐

CONFIGURATION
R – Rectangular
O – Oval

HEIGHT (IN) x WIDTH (IN)*

OPTION
IM – Internal pressure connections
F – Flange for oval mount station

Note: When ordering rectangular or oval flow stations, pressure taps will always be located on the longer of the two dimensions.

*Metric dimensions available upon request.

Dwyer

SERIES FLST

DUCT MOUNTED AIRFLOW MEASUREMENT STATION

Rectangular, Oval or Circular Configurations

MODEL CHART - SERIES FLST RECTANGULAR OR OVAL															
Size	8″	10″	12″	14″	16″	18″	20″	22″	24″	26″	28″	30″	32″	34″	36″
8″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10″		X	X	X	X	X	X	X	X	X	X	X	X	X	X
12″			X	X	X	X	X	X	X	X	X	X	X	X	X
14″				X	X	X	X	X	X	X	X	X	X	X	X
16″					X	X	X	X	X	X	X	X	X	X	X
18″						X	X	X	X	X	X	X	X	X	X
20″							X	X	X	X	X	X	X	X	X
22″								X	X	X	X	X	X	X	X
24″									X	X	X	X	X	X	X
26″										X	X	X	X	X	X
28″											X	X	X	X	X
30″												X	X	X	X
32″													X	X	X
34″														X	X
36″															X

Note: When ordering rectangular or oval flow stations, pressure taps will always be located on the longer of the two dimensions.

MODEL CHART - SERIES FLST RECTANGULAR OR OVAL																
Size	40″	44″	48″	52″	56″	60″	66″	72″	78″	84″	90″	96″	102″	108″	114″	120″
8″	X	X	X	X	X	X	X	X	X	X	X	X				
10″	X	X	X	X	X	X	X	X	X	X	X	X	X			
12″	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
14″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
16″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
24″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
26″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
28″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
30″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
32″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
34″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
36″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
40″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
44″		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
48″			X	X	X	X	X	X	X	X	X	X	X	X	X	X
52″				X	X	X	X	X	X	X	X	X	X	X	X	X
56″					X	X	X	X	X	X	X	X	X	X	X	X
60″						X	X	X	X	X	X	X	X	X	X	X
66″							X	X	X	X	X	X	X	X	X	X
72″								X	X	X	X	X	X	X	X	X
78″									X	X	X	X	X	X	X	X
84″										X	X	X	X	X	X	X
90″											X	X	X	X	X	X
96″												X	X	X	X	X
102″													X	X	X	X
108″														X	X	X
114″															X	X
120″																X

Note: When ordering rectangular or oval flow stations, pressure taps will always be located on the longer of the two dimensions.

OPTIONS	
To order add suffix:	**Description**
-IM	Internal pressure connections (rectangular stations only)
-F	Flange (oval stations only)
-SS1	316 SS elements with 16 GA galvanized casing
-SS2	316 SS elements with 16 GA 304 SS casing
-SS3	316 SS elements with 16 GA 316 SS casing

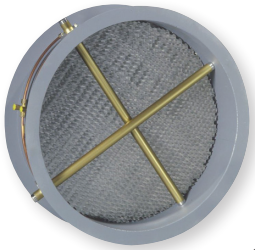
MODEL CHART - SERIES FLST CIRCULAR														
Size	8″	10″	12″	14″	16″	18″	20″	22″	24″	26″	28″	32″	36″	40″
	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Size	44″	48″	54″	60″	66″	72″	78″	84″	90″	96″	102″	108″	114″	120″
	X	X	X	X	X	X	X	X	X	X	X	X	X	X

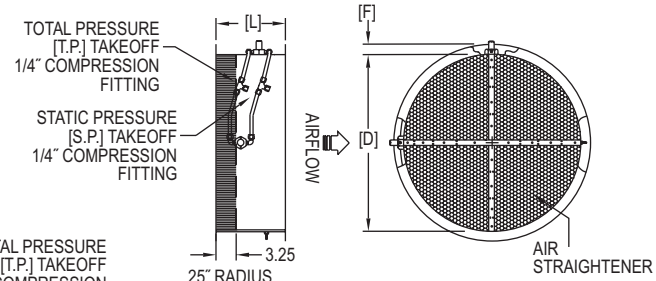
Dwyer

SERIES STRA

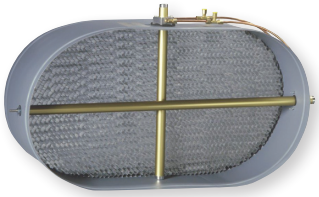
DUCT MOUNTED AIRFLOW MEASUREMENT STATION

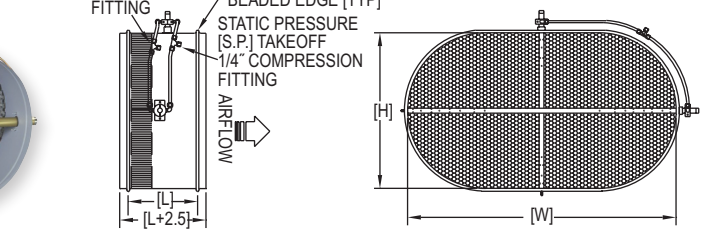
Integral Flow Straightener, Ideal for Turbulent Measuring Conditions



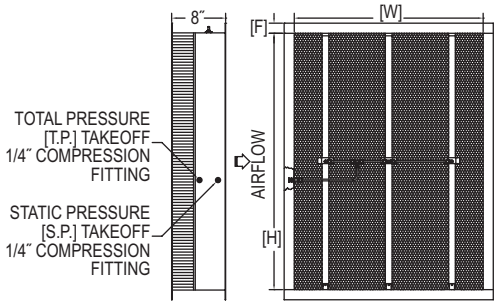


DIMENSIONS - CIRCULAR FLANGE			
Station Size "D"	**Flange Thickness**	**Flange Size "F"**	**Casing Length "L"**
8″ - 15″	.064″	1″	8″
16″ - 44″	.064″	1-1/2″	8″
45″ - 72″	.188″	1-1/2″	10″
73″ & over	.188″	2″	12″





DIMENSIONS - OVAL FLANGE (OPTIONAL)			
Station Width "W"	**Flange Thickness**	**Flange Size**	***Casing Length "L"**
Up to 44″	.064″	1-1/2″	8″
Over 44″	.188″	1-1/2″	10″
*All oval flow stations without flange have a casing length of 8″.			



DIMENSIONS - RECTANGULAR FLANGE	
Station Size "H" or "W"	**Flange Size "F"**
8″ - 72″	1-1/2″
73″ & Over	2″

The **SERIES STRA** Airflow Measurement Station utilizes an airflow averaging element generating a velocity pressure signal similar to the orifice, venturi, and other primary elements. Single or multiple airflow elements are factory mounted and pre-piped in a casing designed for flanged connection to the ductwork.
Multiple elements are joined together for connection to a differential measurement device (gage, transmitter, etc.) for flow measurement and indication purposes. It has been developed with a honeycomb airflow straightening section for use in duct systems having highly turbulent conditions at the point of measurement.

FEATURES/BENEFITS

- Honeycomb airflow straightening section with 1/2 opening by 3″depth
- Low signal-to-noise ratio
- Factory mounted and pre-piped in a flanged duct section (casing)
- Standard construction includes galvanized casing and 6063-T5 anodized aluminum flow sensors
- Standard airflow stations can be operated (in air) continuously in temperatures up to 350°F or intermittently in temperatures up to 400°F

APPLICATIONS

- Building air intake and exhaust flow rate measurement
- HVAC air flow measurement

SPECIFICATIONS

Accuracy: Within 2% of actual flow when installed in accordance with published recommendations.
K Factor: 0.97.
Velocity Range: 100 to 10,000 FPM (0.51 to 51 m/s).
Wetted Materials: Elements: 6063-T5 anodized aluminum; Casings: 16 ga G90 galvanized steel, 3003 aluminum air flow straightener.
Temperature Limits: Galvanized casings and aluminum elements 350°F (177°C) continuous operation (in air), 400°F (204°C) intermittent operation (in air).
Humidity Limits: All airflow stations 0 to 100% non condensing.
Process Connections: 1/4″ compression fittings.

Circular Models

STRA–C ☐

DIAMETER (IN)*

Rectangular or Oval Models

STRA – ☐ ☐ **x** ☐ **–** ☐

CONFIGURATION
R – Rectangular
O – Oval

HEIGHT (IN) x WIDTH (IN)*

OPTION
IM – Internal pressure connections
F – Flange for oval mount station

Note: When ordering rectangular or oval flow stations, pressure taps will always be located on the longer of the two dimensions.

*Metric dimensions available upon request.

Dwyer

SERIES STRA

DUCT MOUNTED AIRFLOW MEASUREMENT STATION

Integral Flow Straightener, Ideal for Turbulent Measuring Conditions

MODEL CHART - SERIES STRA RECTANGULAR OR OVAL															
Size	**8″**	**10″**	**12″**	**14″**	**16″**	**18″**	**20″**	**22″**	**24″**	**26″**	**28″**	**30″**	**32″**	**34″**	**36″**
8″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10″		X	X	X	X	X	X	X	X	X	X	X	X	X	X
12″			X	X	X	X	X	X	X	X	X	X	X	X	X
14″				X	X	X	X	X	X	X	X	X	X	X	X
16″					X	X	X	X	X	X	X	X	X	X	X
18″						X	X	X	X	X	X	X	X	X	X
20″							X	X	X	X	X	X	X	X	X
22″								X	X	X	X	X	X	X	X
24″									X	X	X	X	X	X	X
26″										X	X	X	X	X	X
28″											X	X	X	X	X
30″												X	X	X	X
32″													X	X	X
34″														X	X
36″															X

Note: When ordering rectangular or oval flow stations, pressure taps will always be located on the longer of the two dimensions.

MODEL CHART - SERIES STRA RECTANGULAR OR OVAL																
Size	**40″**	**44″**	**48″**	**52″**	**56″**	**60″**	**66″**	**72″**	**78″**	**84″**	**90″**	**96″**	**102″**	**108″**	**114″**	**120″**
8″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
24″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
26″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
28″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
30″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
32″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
34″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
36″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
40″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
44″		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
48″			X	X	X	X	X	X	X	X	X	X	X	X	X	X
52″				X	X	X	X	X	X	X	X	X	X	X	X	X
56″					X	X	X	X	X	X	X	X	X	X	X	X
60″						X	X	X	X	X	X	X	X	X	X	X
66″							X	X	X	X	X	X	X	X	X	X
72″								X	X	X	X	X	X	X	X	X
78″									X	X	X	X	X	X	X	X
84″										X	X	X	X	X	X	X
90″											X	X	X	X	X	X
96″												X	X	X	X	X
102″													X	X	X	X
108″														X	X	X
114″															X	X
120″																X

Note: When ordering rectangular or oval flow stations, pressure taps will always be located on the longer of the two dimensions.

OPTIONS	
To order add suffix:	**Description**
-IM	Internal pressure connections (rectangular stations only)
-F	Flange (oval stations only)

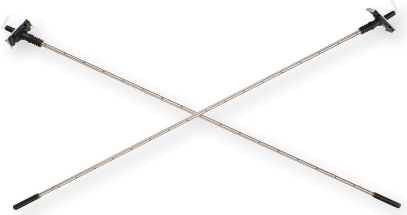
MODEL CHART - SERIES STRA CIRCULAR														
Size	**8″**	**10″**	**12″**	**14″**	**16″**	**18″**	**20″**	**22″**	**24″**	**26″**	**28″**	**32″**	**36″**	**40″**
	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Size	**44″**	**48″**	**54″**	**60″**	**66″**	**72″**	**78″**	**84″**	**90″**	**96″**	**102″**	**108″**	**114″**	**120″**
	X	X	X	X	X	X	X	X	X	X	X	X	X	X

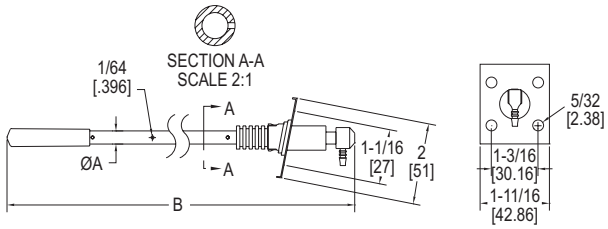
Dwyer

SERIES AFG

AVERAGING FLOW GRID

Cost Effective Air Flow Station for Ducts up to 60″





The **SERIES AFG** Flow Grid is a fundamental pressure-sensing device designed to sense velocity pressure in an air duct. When this output is connected to a suitable measuring instrument (i.e. manometer, pressure transducer, etc.) it may be used to determine air velocity or air flow rate.

FEATURES/BENEFITS
- Kit complete with 2 probes and installation hardware
- Trimmable length for any duct size up to 60″
- Alternative to costly air flow stations

APPLICATIONS
- To display differential pressure, velocity or volume flow using a micro manometer, gage or transmitter
- To give a warning of over or under flow rate using a pressure switch
- To control air supply in a system by connecting the grid to a pressure transmitter with an electrical output which can be used to feed into a control system
- To display differential pressure on a simple fluid manometer to give visual indication of changes in volume flow rate in the duct

SPECIFICATIONS

Service: Monitor air or compatible gas flow.
Wetted Materials: 304 SS, PVC, polyurethane, acetyl plastics, and neoprene rubber.
Accuracy: ±5%.
Maximum Temperature: 176ºF (80ºC).
Velocity Range: 295.2 ft/min to 5904 ft/min (1.5 to 30 m/s).
Diameter of Tubes: 5/16″ (8 mm) or 5/8″ (16 mm).
Maximum Duct Diagonal: 60.4″ (153.4 cm).
Maximum Duct Diameter: 59.4″ (150.9 cm).
Process Connections: 5/16″ barbed.
Weight: AFG-1: 1 lb (454 g); AFG-2: 3 lb (1361 g).

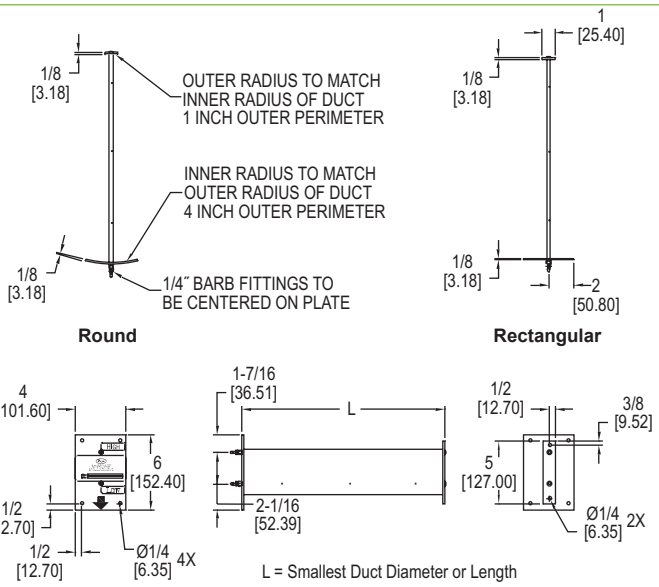
MODEL CHART

Model	Diameter Tube (Dim. A) in (mm)	Length (Dim. B) in (mm)
AFG-1	5/16 (8)	27 (688)
AFG-2	5/8 (16)	59-4/5 (1518)

SERIES DAFM

DUCT AIR FLOW MEASURING PROBE

Lightweight, Durable, and Easy to Install



The **SERIES DAFM** Duct Air Flow Measuring Probe uses evenly distributed total and static pressure measuring points to deliver an accurate measurement of velocity pressure in a duct.

FEATURES/BENEFITS
- Lightweight aluminum construction
- Can be used in rectangular duct up to 24″ by 90″ and round ducts up to 24″ diameters

APPLICATIONS
- Zone control in HVAC systems
- Building air intake and exhaust flow rate measurement

In order to ensure accurate measurements you must determine the number of probes needed for your size duct. If the duct is rectangular, then consult the chart to determine appropriate quantity of probes. If the duct is round, it is only necessary to purchase two probes for any size of duct and mount them perpendicular to each other.

Short Duct Dimension	Number of Probes
<12″	1
12″ to 23″	2
24″ to 35″	3
36″ to 59″	4
60″ to 89″	5
>89″	6

SPECIFICATIONS

Wetted Materials: Aluminum with clear anodized finish.
Accuracy: ±2% (**Note**: Field calibration may be required).
Temperature Limit: 400°F (204°C).
Minimum Design Flow: 400 fpm (2.03 m/sec).
Maximum Design Flow: 12,000 fpm (60.96 m/s).
Process Connections: 1/4″ barb.
Straight Run Requirements: 5 diameters or longest side dimensions.

MODEL CHART

Model	Duct Shape	Smallest Duct Diameter or Length (L)	Model	Duct Shape	Smallest Duct Diameter or Length (L)
DAFM-000	Round	6″ (15.24 cm)	**DAFM-100**	Rectangular	6″ (15.24 cm)
DAFM-001	Round	8″ (20.32 cm)	**DAFM-101**	Rectangular	8″ (20.32 cm)
DAFM-002	Round	10″ (25.4 cm)	**DAFM-102**	Rectangular	10″ (25.4 cm)
DAFM-003	Round	12″ (30.48 cm)	**DAFM-103**	Rectangular	12″ (30.48 cm)
DAFM-004	Round	14″ (35.56 cm)	**DAFM-104**	Rectangular	14″ (35.56 cm)
DAFM-005	Round	16″ (40.64 cm)	**DAFM-105**	Rectangular	16″ (40.64 cm)
DAFM-006	Round	18″ (45.72 cm)	**DAFM-106**	Rectangular	18″ (45.72 cm)
DAFM-007	Round	20″ (50.8 cm)	**DAFM-107**	Rectangular	20″ (50.8 cm)
DAFM-008	Round	22″ (55.88 cm)	**DAFM-108**	Rectangular	22″ (55.88 cm)
DAFM-009	Round	24″ (60.96 cm)	**DAFM-109**	Rectangular	24″ (60.96 cm)

Note: For larger sizes up to 96″ (243.84 cm), please contact factory.

Dwyer

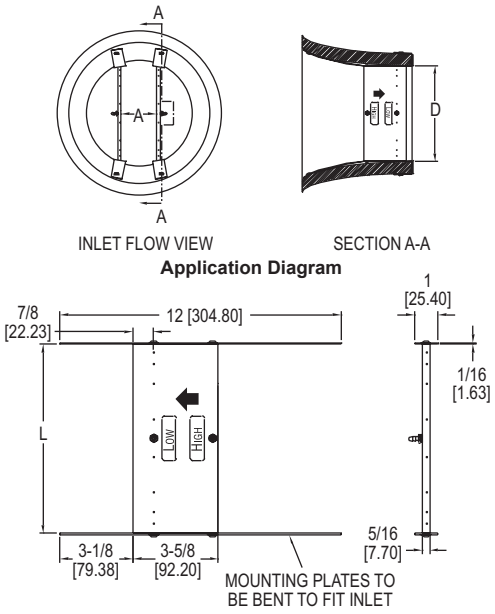
SERIES FAFM

FAN INLET AIR FLOW MEASURING PROBE

Lightweight, Durable, and Easy to Install

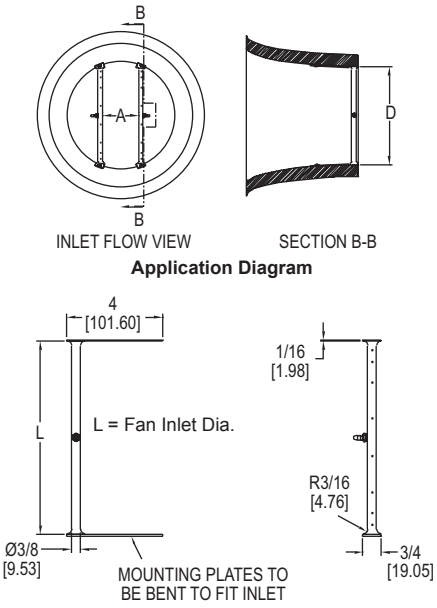
FAFM-D-xxxx

FAFM-S-xxxx



Application Diagram

Model FAFM-D



Application Diagram

Model FAFM-S

The **SERIES FAFM** Fan Inlet Air Flow Measuring Probes use evenly distributed total and static pressure measuring points to deliver an accurate measurement of velocity pressure in a fan inlet.

FEATURES/BENEFITS

- Installed on fan inlet outside of the air flow ducts
- Lightweight aluminum constructions

APPLICATIONS

- Ideal for HVAC applications where a proper location for a duct mount sensor is unavailable

There are two versions of the model FAFM fan inlet air flow probes to choose from depending on the depth of the fan inlet.

FOR FAN INLETS WITH DEPTH LESS THAN 3-1/2″ (8.89 CM)

Please order a fan inlet probe with an "S" suffix. This probe has a diameter of .375″ (.95 cm). It employs one total flow measuring tube and one static measuring tube. Each probe is covered with an extruded aluminum anodized coat. Each measuring tube has multiple sensing points.

FOR FAN INLETS WITH DEPTH GREATER THAN 3-1/2″ (8.89 CM)

Please order a fan inlet probe with a "D" suffix. This probe has a diameter of 3-1/2″ (8.89 cm). It employs extruded aluminum anodized coated probes with both total and static sensors on each tube.

FAFM – □ – □ □ □ □

FAN INLET DEPTH
S – Less than 3-1/2″
D – Greater than 3-1/2″

FAN INLET DIAMETER IN INCHES
Examples: 1200 for 12 inches
2389 for 23.89 inches
0624 for 6.24 inches

SPECIFICATIONS
Wetted Materials: Aluminum with clear anodized finish.
Accuracy: ±2% (**Note:** Field calibration may be required).
Temperature Limit: 400°F (204°C).
Minimum Design Flow: 400 fpm (2.03 m/s).
Maximum Design Flow: 12,000 fpm (60.96 m/s).
Process Connections: 1/4″ barb.

MODEL CHART
Fan Inlet Diameter (L)
6 to 12″ (15.24 to 30.48 cm)
13 to 24″ (33.02 to 60.96 cm)
25 to 36″ (63.50 to 91.44 cm)
37 to 48″ (93.88 to 121.92 cm)
49 to 60″ (124.46 to 152.40 cm)
61 to 72″ (154.94 to 182.88 cm)
73 to 84″ (185.42 to 213.36 cm)
85 to 96″ (215.90 to 243.84 cm)
Note: A set of two fan inlet air flow measurement probes comes with every model ordered. A set is necessary in order to ensure an accurate reading. No more than two air flow measurement probes will be needed to obtain an accurate reading.

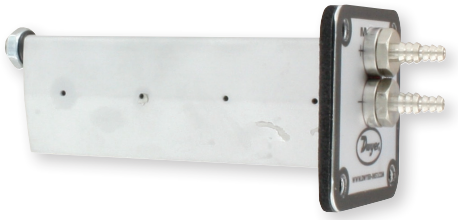
Dwyer

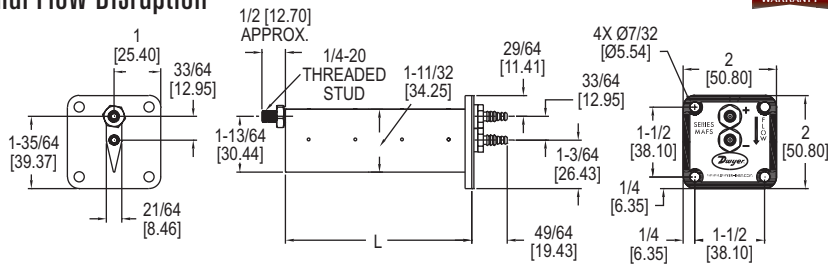
SERIES MAFS

METAL AVERAGING FLOW SENSOR

Blade Profile Provides Enhanced Performance and Minimal Flow Disruption

5 YEAR LIMITED WARRANTY





The **SERIES MAFS** Metal Averaging Flow Sensor is ideal for use with Dwyer Instruments, Inc. precision air velocity gages, transmitters and switches. The Series MAFS uses evenly distributed total and static pressure measuring points to deliver an accurate measurement of velocity pressure in a duct.

FEATURES/BENEFITS
- Blade design limits disruption of air stream
- Lightweight aluminum construction
- Flange mount for rectangular or square ducts

APPLICATIONS
- VAV air flow measurement
- Fume hood exhaust flow verification
- HVAC retrofit air flow measurement

SPECIFICATIONS

Service: Clean air.
Wetted Materials: Aluminum AA6063.
Accuracy: 400 to 9000 FPM (45.7 m/s); ±2% FS, ±3% FS for 6″ and 48″ length models.
K-Factor: 0.81, 0.80 for 6″ and 48″ lengths, 4″ length=0.82.
Maximum Temperature: 400°F (204°C); Gasket: -31 to 230°F (-35 to 110°C).
Minimum Design Flow: 400 fpm (2 m/s).
Maximum Design Flow: 12,000 fpm (60.91 m/s).
Process Connections: Dual barb for 3/16″ or 1/4″ ID tubing.
Straight Run Requirements: 5 diameters or longest side dimensions.
Agency Approvals: Meets the technical requirements of EU Directive 2011/65/EU (RoHS II).

MODEL CHART

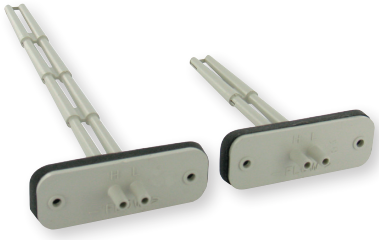
Model	Probe Length (in)	Model	Probe Length (in)	Model	Probe Length (in)
MAFS-04	4	**MAFS-18**	18	**MAFS-32**	32
MAFS-06	6	**MAFS-20**	20	**MAFS-34**	34
MAFS-08	8	**MAFS-22**	22	**MAFS-36**	36
MAFS-10	10	**MAFS-24**	24	**MAFS-40**	40
MAFS-12	12	**MAFS-26**	26	**MAFS-48**	48
MAFS-14	14	**MAFS-28**	28		
MAFS-16	16	**MAFS-30**	30		

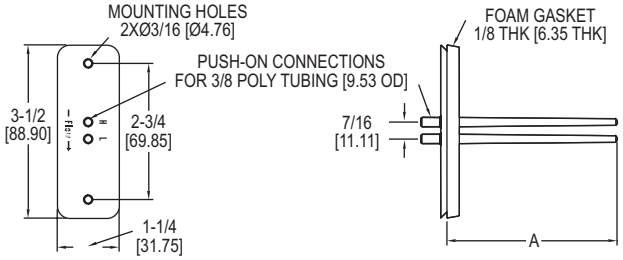
SERIES PAFS-1000

AVERAGING FLOW SENSOR

Ideal for Sensing Fan Flow Rates

5 YEAR LIMITED WARRANTY





The **SERIES PAFS-1000** Averaging Flow Sensor is ideal for sensing velocity pressure in the inlet section of variable air volume terminal units and fan terminal units.

FEATURES/BENEFITS
- Simple mounting flange works with both round or rectangular ducts

APPLICATIONS
- Zone control in HVAC systems
- Retrofit HVAC air flow measurement

SPECIFICATIONS

Service: Air and compatible gases.
Wetted Materials: ABS/polycarbonate (UL94-5V).
Temperature Limits: Operating: 40 to 120°F (4 to 49°C); Storage: -40 to 140°F (-40 to 60°C).
Process Connection: 1/4″ (6 mm) ID, 3/8″ (10 mm) OD tubing.
Mounting Orientation: Integral flange with gasket.
Weight: 1 oz (28 g).
Agency Approvals: Meets the technical requirements of EU Directive 2011/65/EU (RoHS II).

MODEL CHART

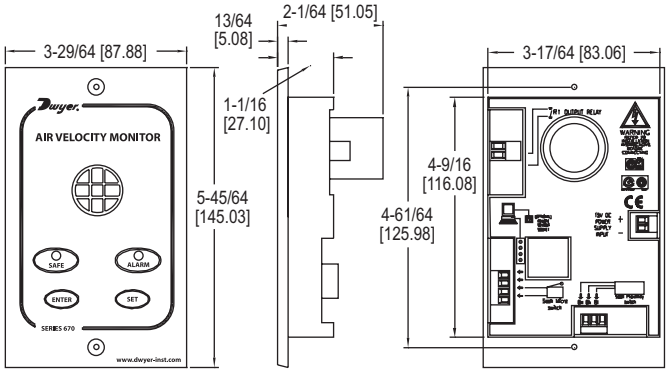
Model	Length (Dim. A) in (cm)	Model	Length (Dim. A) in (cm)
PAFS-1002	3-5/32 (8.02)	**PAFS-1007**	14-3/4 (37.47)
PAFS-1003	5-13/32 (13.73)	**PAFS-1008**	17-1/8 (43.50)
PAFS-1004	7-21/32 (19.55)	**PAFS-1009**	19-13/32 (49.29)
PAFS-1005	9-29/32 (25.26)	**PAFS-1010**	21-21/32 (55.01)
PAFS-1006	12-1/2 (31.75)	**PAFS-1011**	23-29/32 (60.72)

Dwyer

MODEL 670

FUME HOOD MONITOR

Ensures Proper Fume Hood Performance



The **MODEL 670** Fume Hood Monitor continuously senses air flow through the face of the fume hood, ensuring safe levels of fresh air are exhausting. The 670 provides a highly accurate hot wire sensor to detect very low flows common on fume hoods. The Model 670 comes with everything required to quickly install the unit including a mounting bracket, 24″ of tubing for connecting to the inside of the hood wall and a 120 Volt AC power adapter.

FEATURES/BENEFITS
- Flexible surface or flush mounting
- LED safe and alarm status indicators
- Audible alarm
- Sash alarm input
- Night time set-back

APPLICATIONS
- Fume hood ventilation monitoring

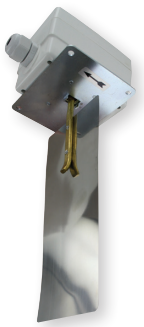
SPECIFICATIONS	
Service: Fume hood face velocity air flow. **Alarm Range:** 30-400 FPM (0.15-2.0 m/s). **Alarm Indication:** Red LED & audible alarm. **Low Air Velocity Alarm Delay:** Fixed 5 secs. **Visual LED Display:** Red: Alarm; Green: Normal. **Horn Silence:** Yes-temporary and permanent. **Accuracy:** Face velocity ±10%. **Temperature Limits:** Operating temperature: 55 to 86°F (13 to 30°C); Storage temperature: -40 to 150°F (-40 to 65°C).	**Power Requirement:** 15 VDC 500 mA; 120 VAC, 60 Hz power transformer included. **Relay Output Low Air Flow Alarm:** 5 A @ 250 VAC. **Relay Input For Night Setback:** 2 wire rated for 24 VDC usage. **Sash High Indication:** Using a two wire micro switch or 3 wire proximity switch input, rated for 24 VDC usage. **Mounting:** Semi flush, flush or surface mounted when using included bracket. **Weight:** 5.0 oz (141 g).

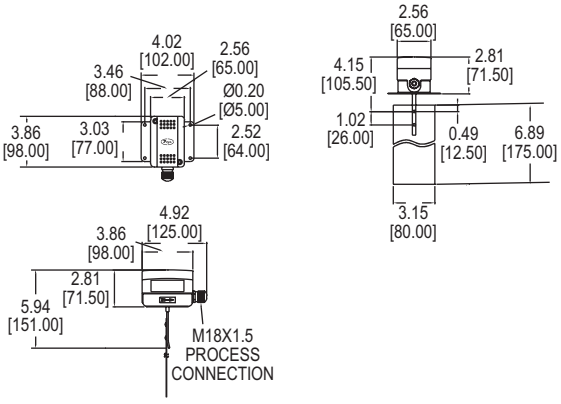
MODEL CHART	
Model	**Description**
670	Fume hood monitor

MODEL AAFS

ADJUSTABLE AIR FLOW PADDLE SWITCH

Ranges from 200 to 1800 FPM, Stainless Steel Vane, ABS Housing





The **MODEL AAFS** Adjustable Air Flow Switch is capable of detecting a wide range of air velocities with minimal user calibration. Quality features include a stainless steel vane, galvanized steel base, and ABS enclosure.

FEATURES/BENEFITS
- Adjustable air flow sensitivity from 200 to 1800 FPM
- High current (15 A) rated SPDT contact
- IP65 enclosure rating

APPLICATIONS
- Air flow proving in HVAC systems

MODEL CHART	
Model	**Description**
AAFS	Adjustable air flow paddle switch

SPECIFICATIONS	
Service: Air and compatible gas. **Wetted Materials:** Vane: SS; Lever: Brass; Base: Galvanized steel. **Housing:** ABS. **Temperature Limits:** Ambient: -40 to 180°F (-40 to 85°C); Process: -14 to 185°F (-10 to 85°C). **Humidity Limits:** 10 to 90%, non-condensing. **Switch Type:** SPDT.	**Electrical Rating:** 15 (8) A @ 250 VAC. **Electrical Connection:** Screw terminal with M18 x 1.5 cable gland. **Process Connection:** Flange. **Mounting Orientation:** Horizontal duct flow. **Set Point:** Internal screw. **Enclosure Rating:** IP65. **Weight:** 13.6 oz (380 g).

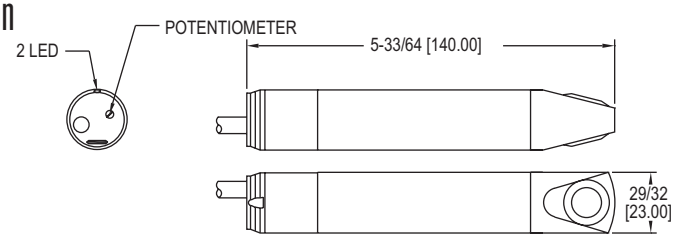
USA: California Proposition 65
⚠WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

Dwyer

SERIES AVFS

AIR FLOW SWITCH

Monitors Flow in Ducts with Contact Output and Local LED Indication



The **SERIES AVFS** Adjustable Air Flow Switch is specifically designed to monitor air flow in ducts and provides a 3 A contact output to indicate a change or loss of flow. The AVFS provides a +/-5% set-point repeatability across a full scale range of 1-10 m/s (197-1969 fpm) and includes a mounting bracket for quick duct mounting.

FEATURES/BENEFITS
- Integral red/green air flow status LED's
- Flush sensor design limits issues due to dust or particulate in the air flow
- IP65 construction

APPLICATIONS
- Fan monitoring
- Filter monitoring
- Damper feedback
- Air handlers

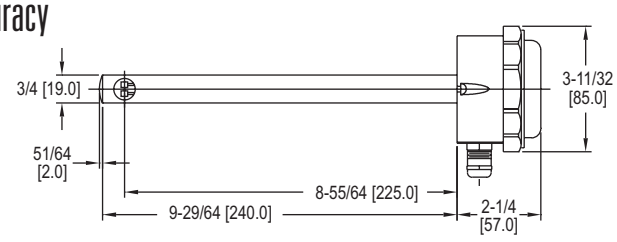
SPECIFICATIONS	
Air Velocity Range: 197-1969 FPM (1-10 m/s). **Temperature Limits:** 5 to 122°F (-10 to 50°C). **Humidity Limits:** 0-90% RH. **Wetted Materials:** PBT body, titanium sensor. **Pressure Limit:** 14.7 psig (1 bar). **Housing:** PBT. **Repeatability:** ±5% FS. **Switch Type:** N.O. SPST. **Electrical Rating:** 3 A @ 30 VDC/250 VAC.	**Response Time:** 3-60 seconds. Varies with flow and set point. **Power Requirement:** AVFS-1: 80 to 250 AC/DC (47 to 63 Hz AC); AVFS-2: 24 VDC ±25%. **Power Consumption:** 3 VA. **Electrical Connection:** 6.5´ (2 m) cable. **Enclosure Rating:** IP65. **Display:** 1 Red LED/1 Green LED. **Weight:** 7.2 oz (203 g). **Agency Approvals:** CE.

MODEL CHART	
Model	**Description**
AVFS-1	80-250 AC/DC power thermo air flow switch
AVFS-2	24 VDC power thermo air flow switch

SERIES AVU

AIR VELOCITY TRANSMITTER

Ideal for Building Automation Systems, ±5% or ±8% Full Scale Accuracy



The **SERIES AVU** Air Velocity Transmitter is ideal for a wide range of HVAC measurement and control applications, particularly in complete building control and energy management systems.
The Series AVU Transmitter operates by measuring the heat loss from one of the two sensing elements in the air stream, then calculating the air velocity. Units are virtually immune to drift due to the design of the sensing element, which makes the transmitter accurate over the whole air velocity range.

FEATURES/BENEFITS
- 4 to 20 mA or 0 to 10 V output versions
- NEMA 6 (IP67) enclosure rating
- AC or DC powered (loop version DC only)
- 5% or 8% accuracy

APPLICATIONS
- Zone control in HVAC systems
- Supply and exhaust fan tracking
- Clean room systems
- Air pollution studies and manufacturing

SPECIFICATIONS	
Service: Clean air and compatible, non-combustible gases. **Accuracy:** AVU: ±5% of FS; AVUB: ±8% of FS. **Response Time (90%):** 5 sec (typical). **Temperature Limits:** 32 to 122°F (0 to 50°C). **Humidity Limit:** 0-90% RH, non-condensing. **Power Requirements:** -A models 24 VDC +10% -15%; -V models 24 VDC or 24 VAC +10% - 15%. **Output Signal:** -A models 4 to 20 mA current loop; -V models 0-10 VDC. **Loop Resistance:** (-A models) 700 Ω. **Current Consumption:** 60 mA + output current.	**Max. Start Up Current:** 85 mA; 10 V. **Output Current Limit:** (-V models) >10 mA. **Electrical Connections:** Screw terminal. Cable gland for 4-8 mm wire (16 gauge wire). **Enclosure Rating:** NEMA 6 (IP67) except sensing point. **Probe Dimensions:** 9.45 x .75″ (240 x 19 mm). **Mounting Orientation:** Unit not position sensitive. Probe must be aligned with airflow. **Weight:** 8.8 oz (250 g). **Agency Approvals:** CE.

MODEL CHART			
Model	**Range fpm (m/s)**	**Output**	**Accuracy**
AVU-1-A	0 to 785 (0 to 4)	4 to 20 mA	5%
AVU-2-A	0 to 1575 (0 to 8)	4 to 20 mA	5%
AVU-3-A	0 to 3150 (0 to 16)	4 to 20 mA	5%
AVU-1-V	0 to 785 (0 to 4)	0 to 10 VDC	5%
AVU-2-V	0 to 1575 (0 to 8)	0 to 10 VDC	5%
AVU-3-V	0 to 3150 (0 to 16)	0 to 10 VDC	5%
AVUB-1-V	0 to 785 (0 to 4)	0 to 10 VDC	8%
AVUB-2-V	0 to 1575 (0 to 8)	0 to 10 VDC	8%
AVUB-3-V	0 to 3150 (0 to 16)	0 to 10 VDC	8%

OPTIONS	
Use order code:	**Description**
NISTCAL-AV1	NIST traceable velocity calibration certificate

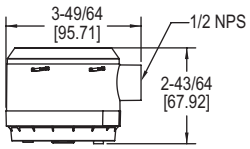
Dwyer

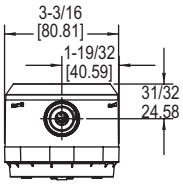
SERIES AVUL

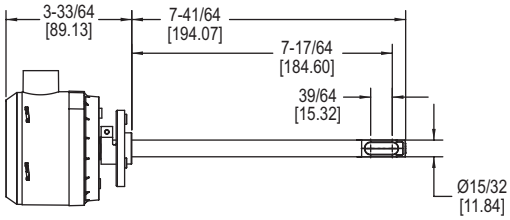
AIR VELOCITY TRANSMITTER

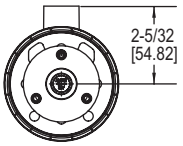
3% and 5% Models, Optional BACnet or Modbus® Communication Protocols

2017 DEALER DESIGN AWARDS
the NEWS | GOLD









The **SERIES AVUL** Air Velocity Transmitter quickly and accurately measures air velocity or volumetric flow in imperial or metric units. Simultaneous current and voltage outputs on all models provide universal inputs to monitoring equipment while the output range, units, and 0 to 5/10 VDC output can be configured via local DIP switches. The optional integral display, or the portable remote display tool, provide a convenient way to locally monitor process values and configure the unit.

Models are available in 3% and 5% accuracy models to suit a variety of needs, and the optional BACnet MS/TP or Modbus® RTU/ASCII communication protocol allows units to be daisy-chained while providing access to all of the velocity and flow data, as well as additional information such as air temperature.

FEATURES/BENEFITS

- Sensing elements have been coated with an engineered conformal coating to ensure durability and longevity
- Field selectable ranges can be quickly configured without power to the unit

APPLICATIONS

- VAV systems
- Building ducts

MODEL CHART	
Model	**Description**
AVUL-5DA1	Air velocity transmitter, 5% accuracy, duct mount, Universal current/voltage outputs
AVUL-5DA1-LCD	Air velocity transmitter, 5% accuracy, duct mount, Universal current/voltage outputs, with LCD
AVUL-5DB1	Air velocity transmitter, 5% accuracy, duct mount, BACnet communications
AVUL-5DB1-LCD	Air velocity transmitter, 5% accuracy, duct mount, BACnet communications, with LCD
AVUL-5DM1	Air velocity transmitter, 5% accuracy, duct mount, Modbus® communications
AVUL-5DM1-LCD	Air velocity transmitter, 5% accuracy, duct mount, Modbus® communications, with LCD
AVUL-3DA1	Air velocity transmitter, 3% accuracy, duct mount, Universal current/voltage outputs
AVUL-3DA1-LCD	Air velocity transmitter, 3% accuracy, duct mount, Universal current/voltage outputs, with LCD
AVUL-3DB1	Air velocity transmitter, 3% accuracy, duct mount, BACnet communications
AVUL-3DB1-LCD	Air velocity transmitter, 3% accuracy, duct mount, BACnet communications, with LCD
AVUL-3DM1	Air velocity transmitter, 3% accuracy, duct mount, Modbus® communications
AVUL-3DM1-LCD	Air velocity transmitter, 3% accuracy, duct mount, Modbus® communications, with LCD

SPECIFICATIONS

Service: Clean air and non-combustible, compatible gases.
Wetted Materials: Consult factory.
Range: 1000, 2000, 3000, 4000 FPM (5, 10, 15, 20 m/s); Field selectable.
Accuracy: ±(5% of reading + 0.2 m/s) or ±(3% of reading + 0.2 m/s) @ standard conditions, depending on model.
Temperature Limits: 32 to 122°F (0 to 50°C).
Power Requirements: 24 VDC ±20% or 24 VAC ±20%.
Humidity Limits: 5 to 95% RH, non-condensing.
Output Signals: 4 to 20 mA, 0 to 5 VDC, 0 to 10 VDC.
Response Time (90%): 10 s, typical.
Zero & Span Adjustments: Digital push buttons.
Output Load Resistance: Current output: 0 to 1100 Ω max.; Voltage output: Minimum load resistance 1 kΩ.
Current Consumption: 60 mA max.
Display (optional): 5 digit LCD.
Electrical Connections (Analog): Power and output: four wire removable European style terminal block for 16 to 26 AWG.
Communication (optional): Connections: BACnet MS/TP or Modbus® RTU/ASCII: three wire removable European style terminal block for 16 to 26 AWG; Supported baud rates: 9600, 19200, 38400, 57600, 76800, 115200.
Device Load: 1/8th unit load.
Electrical Entry: 1/2″ NPS thread. Accessory (A-151): Cable gland for 5 to 10 mm diameter cable.
Enclosure Rating: NEMA 4X (IP66).
Mounting Orientation: Flow direction must be parallel to the sensor tip.
Weight: 6.0 oz (160 g).
Agency Approval: BTL, CE.

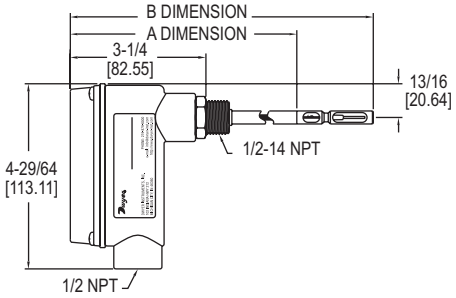
ACCESSORIES	
Model	**Description**
A-151	Cable gland for 5 to 10 mm diameter cable
A-435-A	Remote display tool
A-AVUL-LCD	Field upgradeable display
A-AVUL-MTG	Replacement mounting flange
SCD-PS	100 to 240 VAC/VDC to 24 VDC power supply

Dwyer

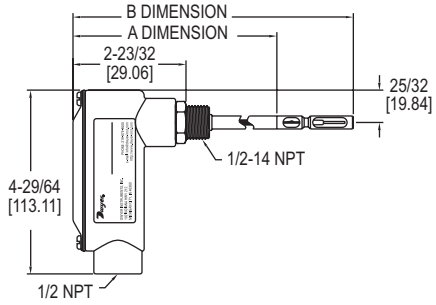
SERIES 641

AIR VELOCITY TRANSMITTER

High Accuracy, Field Selectable Ranges



641 AVT WITH DISPLAY OPTION	
A Dimension	**B Dimension**
7-63/64 [202.80]	9-13/16 [249.24]
13-63/64 [355.20]	15-13/16 [401.64]
19-63/64 [507.60]	21-13/16 [554.04]
26-63/64 [685.40]	28-13/16 [731.84]
32-63/64 [837.80]	34-13/16 [884.24]
37-63/64 [964.80]	39-13/16 [1011.24]



641 AVT WITHOUT DISPLAY OPTION	
A Dimension	**B Dimension**
7-7/16 [188.91]	9-9/32 [235.74]
13-7/16 [341.31]	15-9/32 [388.14]
19-7/16 [493.71]	21-9/32 [540.54]
26-7/16 [671.51]	28-9/32 [718.34]
29-7/16 [747.71]	34-9/32 [870.74]
37-7/16 [950.91]	39-9/32 [997.74]

The **SERIES 641** Air Velocity Transmitter is the ideal instrument for monitoring air flow. This transmitter uses a heated mass flow sensor which allows for precise velocity measurements at various flow rates and temperatures. The 641's 16 field-selectable ranges provides it the versatility to be selected for several air flow applications. The optional LED produces a complete, low-cost solution for local indication of air flow.

FEATURES/BENEFITS

- Ranges from 250 FPM (1.25 MPS) to 15,000 FPM (75 MPS)
- Optional bright LED display
- Easy push button set-up
- Compact housing
- 4 to 20 mA output
- Digital filter for signal damping

APPLICATIONS

- Exhaust stack flow monitoring
- Air control in drying processes
- HVAC air velocity measurements
- Fan supply and exhaust tracking
- Clean room ventilation monitoring

MODEL CHART	
Model	**Probe Length***
641-6	6″ (152.4 mm)
641-6-LED	6″ (152.4 mm)
641-12	12″ (304.8 mm)
641-12-LED	12″ (304.8 mm)
641-18	18″ (457.2 mm)
641-18-LED	18″ (457.2 mm)
641-24	24″ (609.6 mm)
641-24-LED	24″ (609.6 mm)
*Other probe lengths available contact factory.	

OPTIONS	
To order add suffix:	**Description**
-NIST	NIST traceable calibration certificate
Example: 641-6-NIST	

SPECIFICATIONS

Service: Clean air and compatible, non-combustible gases.
Accuracy: 3% FS process gas: 32 to 122°F (0 to 50°C); 4% FS process gas: -40 to 32°F & 122 to 212°F (-40 to 0°C & 50 to 100°C).
Response Time: Flow: 1.5 s to 95% of final value (output filter set to minimum).
Temperature Limits: Process: -40 to 212°F (-40 to 100°C); Ambient: 32 to 140°F (0 to 60°C).
Pressure Limit: 100 psi (6.89 bar) maximum.
Humidity Limit: Non-condensing.
Power Requirements: 12 to 35 VDC, 10 to 16 VAC. 1.5 A rating required on supply due to initial power surge drawn by transmitter.
Output Signal: 4 to 20 mA, isolated 24 V source, 3 or 4-wire connection.
Output Filter: Selectable 0.5 –15 (s).
Loop Resistance: 600 Ω max.
Current Consumption: 300 mA max.
Electrical Connections: Screw terminal.
Process Connections: 1/2″ male NPT.
Enclosure Rating: Designed to meet NEMA 4X (IP66) for non LED models only.
Mounting Orientation: Unit not position sensitive. Probe must be aligned with airflow.
Weight: 12.6 oz (357.2 g).
Agency Approval: CE.

OPTIONAL DISPLAY VERSION:
Display: 4-1/2 digit 1/2″ red LED.
Resolution: 1 FPM, 0.01 MPS (10 FPM @ 10,000 and 15,000 FPM ranges).
Weight: 13.3 oz (377 g).

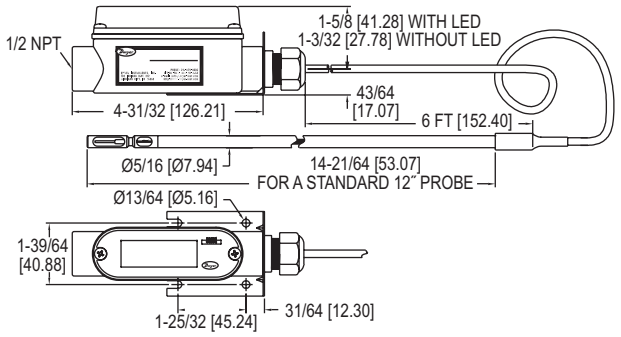
ACCESSORIES	
Model	**Description**
A-156	Universal mounting plate 1/2″ female NPT
A-158	Split flange mounting kit
A-159	Duct mounting gland
641-LED	Field-upgradeable LED

Dwyer

SERIES 641RM

AIR VELOCITY TRANSMITTER WITH REMOTE PROBE

For Remotely Mounting Electronic Enclosure



The **SERIES 641RM** features the same highly accurate heated mass flow sensor as the Series 641, with a remote probe construction. The units 6´ cable which connects the sensing probe with the electronic enclosure allows the enclosure to be mounted where it can be more easily accessed.

FEATURES/BENEFITS
- Ranges from 250 FPM (1.25 MPS) to 15,000 FPM (75 MPS)
- Optional bright LED display
- Easy push button set-up
- Compact housing
- 4 to 20 mA output
- Digital filter for signal damping

APPLICATIONS
- Exhaust stack flow monitoring
- Air control in drying processes
- HVAC air velocity measurements
- Fan supply and exhaust tracking
- Clean room ventilation monitoring

MODEL CHART	
Model	**Description**
641RM-12	Air velocity transmitter with 6´ cable
641RM-12-LED	Air velocity transmitter with 6´ cable with LED display

ACCESSORIES	
Model	**Description**
A-156	Universal mounting plate, 1/2˝ female NPT
A-158	Split flange mounting kit
A-159	Duct mounting gland
641-LED	Field-upgradeable LED

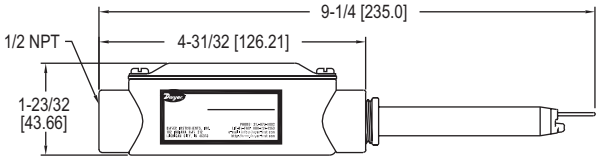
SPECIFICATIONS	
Service: Clean air and compatible, non-combustible gases. **Accuracy:** 3% FS process gas: 32 to 122°F (0 to 50°C); 4% FS process gas: -40 to 32°F & 122 to 212°F (-40 to 0°C & 50 to 100°C). **Response Time:** Flow: 1.5 s to 95% of final value (output filter set to minimum). **Temperature Limits:** Process: -40 to 212°F (-40 to 100°C); Ambient: 32 to 140°F (0 to 60°C). **Pressure Limit:** 100 psi (6.89 bar) maximum. **Humidity Limit:** Non-condensing. **Power Requirements:** 12 to 35 VDC, 10 to 16 VAC. 1.5 A rating required on supply due to initial power surge drawn by transmitter.	**Output Signal:** 4 to 20 mA, isolated 24 V source, 3 or 4-wire connection. **Output Filter:** Selectable 0.5–15 (seconds). **Loop Resistance:** 600 Ω max. **Current Consumption:** 300 mA max. **Electrical Connections:** Screw terminal. **Mounting Orientation:** Unit not position sensitive. Probe must be aligned with airflow. **Weight:** 13.2 oz (374.26 g). **Cable Length:** 6´ (1.82 m). **Probe Length:** 12˝ (30.48 cm) standard. **Probe Diameter:** 5/16˝ (0.79 cm). **OPTIONAL DISPLAY VERSION:** **Display:** 4-1/2 digit 1/2˝ red LED. **Resolution:** 1 FPM, 0.01 MPS (10 FPM @ 10,000 and 15,000 FPM ranges). **Weight:** 13.9 oz (394.16 g).

OPTIONS	
To order add suffix:	**Description**
-NIST	NIST traceable calibration certificate
Example: 641RM-12-NIST	

SERIES 641B

AIR VELOCITY TRANSMITTER

Dirty Air Flow Applications



The SERIES 641B Air Velocity Transmitter uses a heated mass flow sensor suitable for dirty air flow applications. It has user-selectable ranges from 250 FPM (1.25 MPS) to 2000 FPM (10 MPS).

FEATURES/BENEFITS
- SS sensor suitable for dirty air flow measurement
- Ranges from 250 FPM (1.25 MPS) to 2000 FPM (10 MPS)
- 4 to 20 mA output
- Digital filter for signal damping

APPLICATIONS
- Exhaust stack flow monitoring
- Air control in drying processes
- HVAC air velocity measurements
- Fan supply and exhaust tracking
- Clean room ventilation monitoring

SPECIFICATIONS	
Service: Air and compatible, non-combustible gases. **Accuracy:** 5% FS process gas: 32 to 122°F (0 to 50°C). 6% FS process gas: -40 to 32°F & 122 to 176°F (-40 to 0°C & 50 to 80°C). **Response Time:** Flow: 1.5 s to 95% of final value (output filter set to minimum). **Temperature Limits:** Process: -40 to 176°F (-40 to 80°C). Ambient: 32 to 140°F (0 to 60°C). **Humidity Limit:** Non-condensing. **Power Requirements:** 12 to 35 VDC, 10 to 16 VAC. 1.5 A rating required on supply due to initial power surge drawn by transmitter.	**Output Signal:** 4 to 20 mA, isolated 24 V source, 3- or 4-wire connection. **Output Filter:** Selectable 0.5 –15 (seconds). **Loop Resistance:** 600 Ω max. **Current Consumption:** 300 mA max*. **Electrical Connections:** Screw terminal. **Enclosure Rating:** Designed to meet NEMA 4X (IP66). **Mounting Orientation:** Unit not position sensitive. **Weight:** 12.6 oz (357.2 g).
*A brief current transient exceeding 300 mA may be seen on startup	

MODEL CHART	
Model	**Description**
641B-4	Air velocity transmitter
641B-4-LED	Air velocity transmitter with LED display

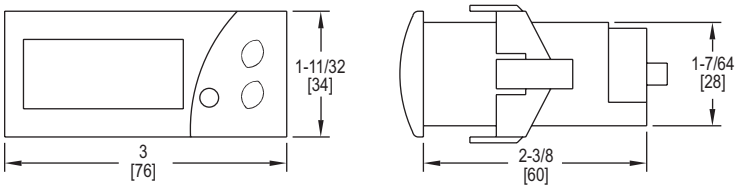
ACCESSORIES	
Model	**Description**
A-155	Mounting gland with 1/2˝ male NPT fitting
A-156	Flange mounting plate with 1/2˝ female NPT

Dwyer

SERIES HS

HUMIDITY SWITCH

Programmable, 8 A Relay, 3-Digit Display



Panel Cutout 2-51/64˝ x 1-9/64˝ (71 x 29 mm)

The **SERIES HS** Humidity Switch provides control for humidifying or dehumidifying systems. Relative humidity, output status, and error messaging can be viewed on the bright green LED. Access to programming parameters can be locked for security purposes using the password protection feature.

FEATURES/BENEFITS

- Relative humidity display and control
- Parameter protection
- 0 to 1 V, 4 to 20 mA or 3 V (THC-P) input selection

APPLICATIONS

- Environmental chambers
- Beer and wine chillers
- Greenhouses

MODEL CHART	
Model	**Supply Power**
HS-311	115 VAC
HS-312	230 VAC

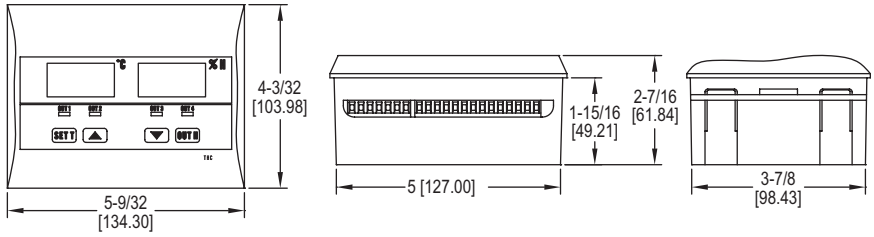
SPECIFICATIONS	
Relative Humidity Range: 10 to 100% RH.	**Output:** 16 A SPDT relay @ 250 VAC resistive.
Input: 0 to 1 V, 3 V or 4 to 20 mA.	**Horsepower Rating (HP):** 1 HP.
Accuracy: THC-P: ±5% @ 20 to 90%; HS: ±1% RH.	**Control Type:** ON/OFF.
Display: 3-digit, green, 1/2˝ (12.7 mm) digits.	**Power Requirements:** 115 VAC or 230 VAC (depending on model).
Resolution: 1 digit.	**Memory Backup:** Nonvolatile memory.
Temperature Limits: 32 to 158°F (0 to 70°C).	**Weight:** 2.3 oz (65 g).
Storage Temperature: -4 to 176°F (-20 to 80°C).	**Front Panel Rating:** IP64.
	Agency Approvals: CE, cURus.

ACCESSORIES	
Model	**Description**
THC-P	Humidity probe, 3 V output, 4´ (1.2 m) cable

SERIES THC

TEMPERATURE/HUMIDITY SWITCH

Independent Displays, 61 Programmable Parameters, 4 SPST Relays



The **SERIES THC** simultaneously measures and controls temperature and humidity. The unit offers a 3-digit red display for temperature indication and a 3-digit green display indicating humidity. The Series THC is equipped with four independent relays, two for temperature control and two relays for humidity control.
The THC Temperature/Humidity Switch accepts up to two temperature probe inputs (sold separately) and a humidity sensor. A humidity sensor with 0 to 1 V, 3 V (THC-P sold separately), or 4 to 20 mA output can be used with the Series THC.

FEATURES/BENEFITS

- Temperature and humidity control in one device
- Password protected parameter settings
- Selectable fail safe status of relay outputs

APPLICATIONS

- Isolation chambers
- Environmental chambers
- Greenhouses
- Beer and wine chillers

MODEL CHART		
Model	**Supply Power**	**Unit**
THC-10	115 VAC	°F
THC-11	115 VAC	°C
THC-20	230 VAC	°F
THC-21	230 VAC	°C

SPECIFICATIONS	
Measurement Range: Temperature: -58 to 302°F (-50 to 150°C); Humidity: 0 to 100% RH.	**Display:** Two 3-digit displays. 1/2˝ digits.
Input: Up to 2 thermistors and 1 humidity sensor.	**Resolution:** 0.1°.
Output: 4 SPST, 8 A relays @ 250 VAC.	**Memory Backup:** Nonvolatile memory.
Horsepower Rating (HP): 1/3 HP.	**Ambient Operating Temperature:** 32 to 158°F (0 to 70°C).
Control Type: ON/OFF direction, direct or reverse acting, neutral.	**Storage Temperature:** -4 to 176°F (-20 to 80°C).
Power Requirements: 110 or 230 VAC (depending on model).	**Weight:** 1.17 lb (530 g).
Accuracy: Temperature ±0.5% of probe range; Humidity: 20 to 90%.	**Panel Cutout:** 5.15˝ x 3.97˝ (131 x 101 mm).
	Front Panel Protection: IP64.
	Agency Approvals: CE.

ACCESSORIES	
Model	**Description**
THC-P	Humidity probe, 3 V output, 4 ft (1.2 m) cable
TS-5	Temperature probe, PVC with 5 ft (1.5 m) cable
TS-6	Temperature probe, metal with 5 ft (1.5 m) cable
TS-51	Temperature probe, PVC with 10 ft (3 m) cable
TS-61	Temperature probe, metal with 10 ft (3 m) cable

Dwyer

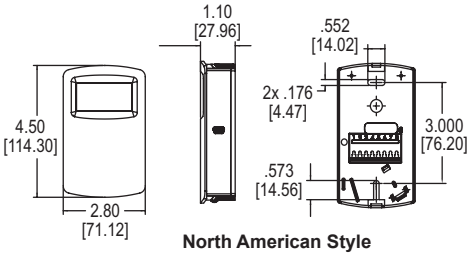
SERIES RHP-E/N

WALL MOUNT HUMIDITY/TEMPERATURE/DEW POINT TRANSMITTER

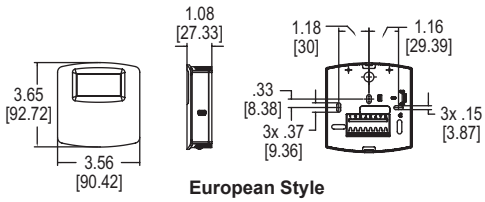
Optional LCD Display, Replaceable Sensors

European Style

North American Style



North American Style



European Style

The **SERIES RHP-E/N** Wall Mount Humidity/Temperature/Dew Point Transmitter is the most versatile room transmitter on the market. The stylish housing is well vented to provide air flow across the sensor to improve measurement accuracy.
The humidity and the dew point are measured using a capacitive polymer sensor. The humidity and dew point can have either a current or voltage output, while the optional temperature output can be a current, voltage, RTD or thermistor. For models with current or voltage for the temperature output, the temperature range is field selectable.

FEATURES/BENEFITS

- Field selectable relative humidity or dew point output
- Field replaceable relative humidity and temperature sensor elements
- Universal analog outputs
- Integral or service tool LCD display options
- Two housing designs to match North American and European aesthetics

APPLICATIONS

- Air economizers
- Room comfort monitoring
- Greenhouse monitoring

SPECIFICATIONS

Relative Humidity Range: 0 to 100% RH.
Temperature Range: -40 to 140°F (-40 to 60°C) for thermistor and RTD sensors. -20 to 140°F (-28.9 to 60°C) for solid state band gap temperature sensors.
Dew Point Temperature Range: -20 to 140°F (-28.9 to 60°C); 0 to 100°F (-17.8 to 37.8°C); 40 to 90°F (4.4 to 32.3°C); -4 to 140°F (-20 to 60°C) field-selectable ranges.
Accuracy: RH: Model RHP-2XXX ±2% 10 to 90% RH @ 25°C; Model RHP-3XXX ±3% 20 to 80% RH @ 25°C; Model RHP-5XXX ±5% 20 to 80% RH @ 25°C; Thermistor temperature sensor: ±0.36°F @ 77°F (±0.2°C @ 25°C); RTD temperature sensor: DIN Class B; ±0.54°F @ 32°F (±0.3°C @ 0°C); Solid state band gap temperature sensor: ±0.9°F @ 77°F (±0.3°C @ 25°C).
Hysteresis: ±1%.
Repeatability: ±0.1% typical.
Temperature Limits: Operating: -40 to 140°F (-40 to 60°C); Storage: -40 to 176°F (-40 to 80°C).
Compensated Temperature Range: -4 to 140°F (-20 to 60°C).
4-20 mA Loop Powered Outputs: Power requirements: 10 to 35 VDC; Output signal: 4 to 20 mA, 2 channels for humidity/solid state temperature sensor models (loop powered on RH). Switch selectable RH/dew point. Switch selectable normal or reverse output.
0-5/10V Outputs: Power requirements: 15 to 35 VDC or 15 to 29 VAC; Output load: 5 mA max., 2 channels for humidity/solid state temperature sensor models. Switch selectable 0-10 V/2-10 V or 0-5 V/1-5 V output. Switch selectable RH/dew point. Switch selectable normal or reverse output.
Solid State Band Gap Temperature Sensor Output Ranges: Switch selectable, -20 to 140°F (-28.9 to 60°C); 0 to 100°F (-17.8 to 37.8°C); 40 to 90°F (4.4 to 32.3°C); -4 to 140°F (-20 to 60°C).
Response Time: 15 s.
Electrical Connections: Screw terminal block.
Drift: <1% RH/year.
RH Sensor: Capacitance polymer.
Enclosure Material: White polycarbonate (European); Warm gray polycarbonate (North American).
Enclosure Rating: IP20.
Display: Optional LCD; Switch selectable %RH or dew point, °F/°C.
Display Resolution: RH: 1%; Temperature: 0.1°F (0.1°C); Dew Point: 1°F (1°C).
Weight: 4.4 oz (125 g).
Agency Approvals: CE.

MODEL CHART

Example	RHP	-3	N	4	A	-LCD	RHP-3N4A-LCD
Series	RHP						Humidity/temperature/ Dew point transmitter
Accuracy		2					2% accuracy
		3					3% accuracy
		5					5% accuracy
Housing			E				European style wall mount
			N				North American style wall mount
Humidity/ Dew Point Output				4			4-20 mA/0-5 VDC/0-10 VDC
Temperature Output					0		None
					4		4-20 mA/0-5 VDC/0-10 VDC
					A		10K Ω @ 25°C thermistor type III
					B		10K Ω @ 25°C thermistor type II
					C		3K Ω @ 25°C thermistor
					D		100 Ω RTD DIN 385
					E		1K Ω RTD DIN 385
					F		20K Ω @ 25°C thermistor
Options						LCD	LCD display
						NIST	NIST traceable calibration certificate

ACCESSORIES

Model	Description
A-449	Remote LCD display allows remote indication of select Dwyer wall mount transmitters for validation or certification purposes
SCD-PS	100-240 VAC/VDC to 24 VDC power supply

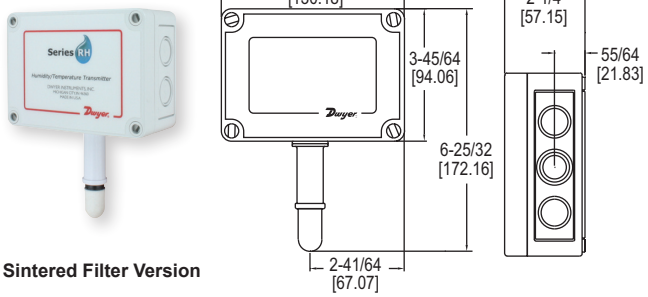
A-449

Dwyer

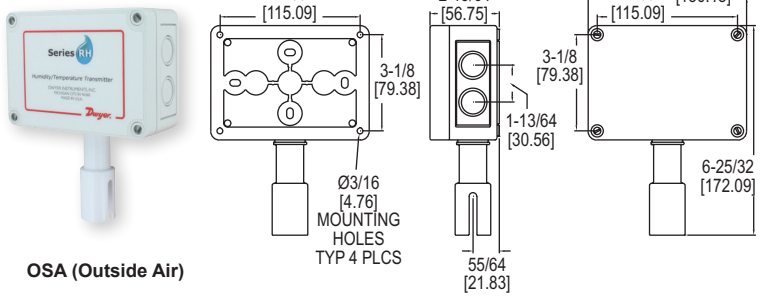
SERIES RHP

HUMIDITY/TEMPERATURE TRANSMITTER

Passive Temperature Outputs, Sintered Filter Options

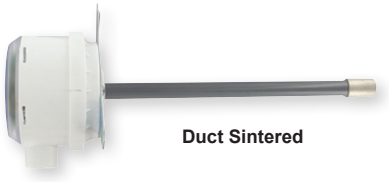


Sintered Filter Version

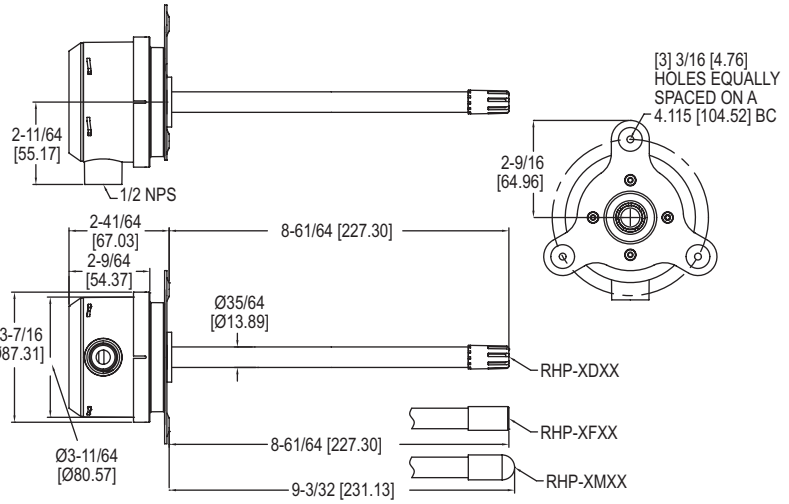


OSA (Outside Air)

Duct Mount



Duct Sintered



VIDEO ON LINE

The **SERIES RHP** Temperature and Humidity Transmitter combine the voltage or current humidity transmitter output with a passive temperature thermistor or RTD output. Featuring polymer capacitance humidity sensors, models are available with 2%, 3% or 5% accuracies. Duct mounted transmitters are available with an optional two-line alpha numeric LCD display.

FEATURES/BENEFITS

- 2%, 3%, or 5% accuracy models
- Optional LCD display on duct mount models
- Radiation shield option for outdoor installation in direct sunlight

APPLICATIONS

- Air economizers
- Outdoor temperature and relative humidity reference
- Pool room humidity monitoring

MODEL CHART							
Example	**RHP**	**-2**	**D**	**1**	**A**	**-LCD**	**RHP-2D1A-LCD**
Series	RHP						RH/passive temperature sensor transmitter
Accuracy		2 3 5					2% accuracy 3% accuracy 5% accuracy
Housing Type			D F M O S R				Duct mount w/ membrane filter Duct mount w/ SS sintered filter Duct mount w/ HDPE filter OSA (outside air) OSA w/sintered filter* Radiation shield
RH Output				1 2 3			4 to 20 mA 0 to 10 V 0 to 5 VDC
Temperature Sensor					0 1 2 3 A B C D E F		None 4 to 20 mA 0 to 10 VDC 0 to 5 VDC 10K @ 25°C thermistor type III 10K @ 25°C thermistor type II 3K @ 25°C thermistor 100 Ω RTD DIN 385 1K Ω RTD DIN 385 20K Ω @ 25°C thermistor
Options						LCD NIST	LCD display NIST traceable calibration certificate

*Use OSA with sintered filter models when purchasing Series RHRS radiation shield separately.

SPECIFICATIONS

Relative Humidity Range: 0 to 100% RH.
Temperature Range: -40 to 140°F (-40 to 60°C).
Accuracy, RH: RHP-2XXX ±2% 10-90% RH @ 25°C; RHP-3XXX ±3% 20-80% RH @ 25°C; RHP-5XXX ±5% 20-80% RH @ 25°C.
Accuracy, Thermistor Temp Sensor: ±0.2°C @ 25°C (±0.36°F @ 77°F).
Accuracy, RTD Temp Sensor: DIN Class B; ±0.3°C @ 0°C (±0.54°F @ 32°F).
Accuracy, Solid State Band Gap: ±0.9°F @ 77°F (±0.3°C @ 25°C).
Hysteresis: ±1%.
Repeatability: ±0.1% typical.
Temperature Limits: -40 to 140°F (-40 to 60°C).
Storage Temperature: -40 to 176°F (-40 to 80°C).
Compensated Temperature Range: -4 to 140°F (-20 to 60°C).
4 to 20 mA Loop Powered Models: Power requirements: 10 to 35 VDC; Output signal: 4 to 20 mA.
0-5/10V Output Models: Power requirements: 15 to 35 VDC or 15 to 29 VAC; Output signal: 0 to 10 V @ 5 mA max.
Solid State Band Gap Temperature Sensor Output Ranges: Switch selectable, -20 to 140°F (-28.9 to 60°C); 0 to 100°F (-17.8 to 37.8°C); 40 to 90°F (4.4 to 32.3°C); -4 to 140°F (-20 to 60°C).
Response Time: 15 s.
Electrical Connections: Removable screw terminal block.
Conduit Connection: Duct mount: 1/2˝ NPS; OSA: 1/2˝ (22.3 mm).
Drift: < 1% RH/year.
RH Sensor: Capacitance polymer.
Temperature Sensor: Types 1, 2, 3: Solid state band gap; Curves A, B, C: Thermistor; Curves D, E: Platinum RTD DIN 385.
Enclosure: Duct mount: PBT; OSA: Polycarbonate.
Enclosure Rating: Duct mount: NEMA 4X (IP66) for housing only; OSA: NEMA 4X (IP66).
Display: Duct mount only, optional 2-line alpha numeric, 8 characters/line.
Display Resolution: RH: 0.1%; 0.1°F (0.1°C).
Weight: Duct mount: .616 lb (.3 kg); OSA: 1 lb (.45 kg).
Agency Approvals: CE.

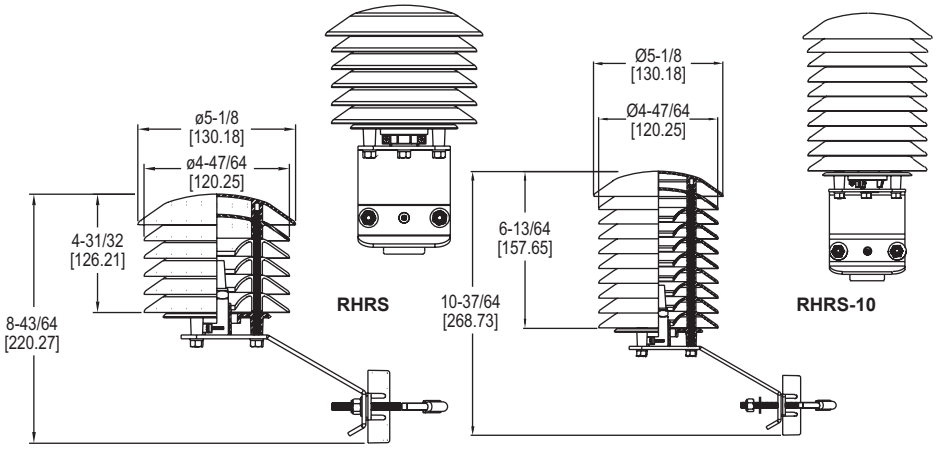
Dwyer

SERIES RHRS

OUTSIDE AIR HUMIDITY RADIATION SHIELD

6 or 10 Plate Design, Integral Pipe Mounting Kit

Picture shown with Series RHP Humidity Transmitter* (sold separately)



The **SERIES RHRS** Radiation Shield protects outside air humidity transmitters from rain and radiated heat. With the curved shape and color of the plates, air flow is able to move across the sensor to keep radiated temperatures from rooftops and surrounding surfaces from affecting humidity readings.

FEATURES/BENEFITS
- Adjustable sensor mounting collar works with Dwyer RHP sintered filter outdoor air humidity transmitters or other RH devices
- Universal mount fits 3/4″ to 1-1/2″ pipe or flat surfaces

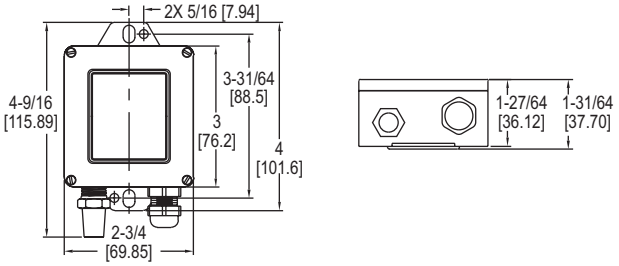
APPLICATIONS
- Building outside air reference
- Weather stations

MODEL CHART	
Model	**Description**
RHRS	6 plate radiation shield
RHRS-10	10 plate radiation shield
Note: Only sintered filter OSA models of Series RHP are compatible with the shield.	

SERIES WHT

WEATHER-RESISTANT HUMIDITY/TEMPERATURE TRANSMITTER

Compact Housing, Sintered Filter



The compact **SERIES WHT** Humidity/Temperature Transmitter is designed to withstand the elements. A removable sintered filter protects the polymer capacitance sensor from solid objects that may come in contact with the transmitter. The transmitter is available with 4 to 20 mA or 0 to 10 VDC output signals for both temperature and humidity. This transmitter is ideal for measuring outside air temperature and humidity levels for air handling economizer applications.

FEATURES/BENEFITS
- RH or RH and temperature outputs
- Compact NEMA 3S construction

APPLICATIONS
- Air handling economizers
- Air environment monitoring in agriculture or livestock cultivation houses

MODEL CHART			
Model	**Accuracy**	**RH Output**	**Temperature**
WHT-310	3%	4 to 20 mA	None
WHT-311	3%	4 to 20 mA	4 to 20 mA
WHT-320	3%	0 to 10 VDC	None
WHT-322	3%	0 to 10 VDC	0 to 10 VDC
WHT-330	3%	0 to 5 VDC	None
WHT-333	3%	0 to 5 VDC	0 to 5 VDC
WHT-31A	3%	4 to 20 mA	10K Ω Type III
WHT-32A	3%	0 to 10 VDC	10K Ω Type III
Note: For 2% accuracy, change the leading 3 to a 2. **Example:** WHT-210.			

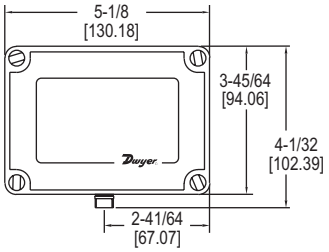
SPECIFICATIONS	
Relative Humidity Range: 0 to 100% RH. **Temperature Range:** -40 to 140°F (-40 to 60°C). **Accuracy, RH:** ±3% 20 to 80% RH, ±4% @ 10-20%, 80 to 90%. **Accuracy, Temp Models with 4 to 20 mA Temp. Output:** ±0.9°F @ 72°F (±0.3°C @ 25°C). **Accuracy, Temp Models with Passive Thermistor Temp Sensor:** ±0.36°F @ 77°F (±0.2°C @ 25°C). **Hysteresis, RH:** ±1%. **Repeatability, RH:** ±0.1% typical. **Temperature Limits:** -40 to 140°F (-40 to 60°C). **Storage Temperature:** -40 to 176°F (-40 to 80°C). **Compensated Temperature Range, RH:** -4 to 140°F (-20 to 60°C). **4 to 20 mA Loop Powered Models:** Power requirements: 10 to 35 VDC; Output signal: 4 to 20 mA.	**0 to 10 V Output Models:** Power requirements: 15 to 35 VDC or 15 to 29 VAC; Output signal: 0 to 10 V @ 5 mA max. **0 to 5 V Output Models:** Power requirements: 10 to 35 VDC or 10 to 29 VAC; Output signal: 0 to 5 V @ 5 mA max. **Response Time:** 15 s. **Electrical Connections:** Removable screw terminal block. **Drift:** < 1% RH/year. **RH Sensor:** Capacitance polymer. **Temperature Sensor:** 4 to 20 mA output, solid state band gap. Passive output: 10K @ 25°C thermistor (Dwyer curve A). **Enclosure:** ABS. **Enclosure Rating:** Designed to meet NEMA 3S (IP54). **Weight:** 0.3 oz (8.5 g). **Agency Approvals:** CE.

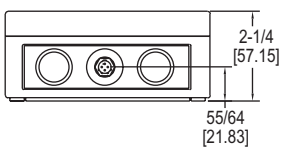
Dwyer

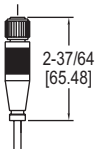
SERIES RH-R

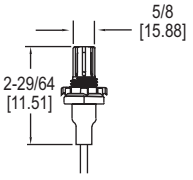
HUMIDITY/TEMPERATURE TRANSMITTER

Remote Mount, Field Replaceable Sensor Filter, Up to 16´ Cable









Electrical Process

Probe Connections

The **SERIES RH-R** Humidity Transmitter is the ideal transmitter for those applications where space is limited. The compact sensor is protected by a removable filter. It can be mounted up to 16 feet away from the weatherproof base. The Series RH-R is ideal for environmental chambers, rubber bladder burst detection and air handler applications.

FEATURES/BENEFITS
- Cable lengths from 4 to 16´
- Remote housing allows for flexibility sensing where space may be limited

APPLICATIONS
- Process system monitoring
- Environmental chambers
- Air economizers

SPECIFICATIONS	
Service: Dry clean air.	**Output Signal:** 4 to 20 mA loop powered.
Relative Humidity Range: 0 to 100% RH.	**Response Time:** Less than 15 s.
Temperature Range: -40 to 140°F (-40 to 60°C).	**Electrical Connections:** Terminal block.
Accuracy: ±2% @ 10-90%.	**Conduit Connection:** 1/2˝ NPT.
Temperature Limits: -40 to 140°F (-40 to 60°C).	**Process Connection:** 1/2 NPSM.
Storage Temperature: -40 to 176°F (-40 to 80°C).	**Drift:** < 1%/year.
Compensated Temperature Range: -4 to 140°F (-20 to 60°C).	**RH Sensor:** Capacitance polymer
Power Requirements: 10 to 35 VDC.	**Cable Length:** Up to 16´.
	Housing Material: Polycarbonate, aluminum enclosure.
	Enclosure Rating: NEMA 4X (IP66).
	Agency Approvals: CE.

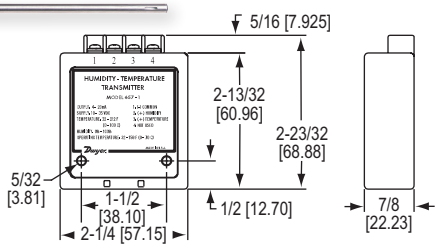
MODEL CHART							
Model	**Cable Length**	**Description**	**Output**	**Model**	**Cable Length**	**Description**	**Output**
RHU-R004	4´	Humidity	Current	**RHT-R004**	4´	Humidity/temperature	Current
RHU-R008	8´	Humidity	Current	**RHT-R008**	8´	Humidity/temperature	Current
RHU-R012	12´	Humidity	Current	**RHT-R012**	12´	Humidity/temperature	Current
RHU-R016	16´	Humidity	Current	**RHT-R016**	16´	Humidity/temperature	Current

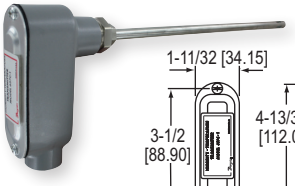
SERIES 657

RELATIVE HUMIDITY/TEMPERATURE TRANSMITTER

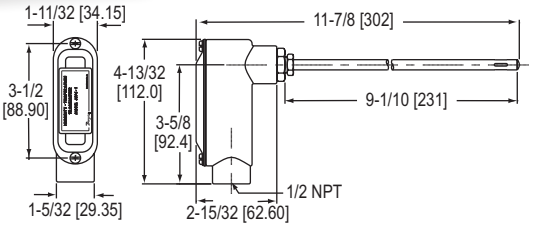
Dual Channel Design for Simultaneous 4 to 20 mA Output Signals

657





657C



The **SERIES 657** Transmitters provide two 4 to 20 mA channels to produce separate output signals for both relative humidity and temperature. These devices deliver ±2% accuracy for humidity and ±1°F for temperature measurements. Stainless steel probe can be easily mounted to most ductwork using either of the two optional kits below.

FEATURES/BENEFITS
- Polymer film humidity and thin film RTD temperature sensors offer highly reliable and stable measurements.
- Remote mount housing offers installation flexibility (657-1)
- Rugged die-cast aluminum housing is great for industrial applications (657C-1)

APPLICATIONS
- Cleanroom monitoring
- HVAC/building control monitoring

MODEL CHART	
Model	**Description**
657-1	RH/temperature transmitter
657C-1	RH/temperature transmitter - conduit housing

ACCESSORIES	
Model	**Description**
A-158	Split flange
A-159	Mounting gland

A-158

A-159

SPECIFICATIONS
Service: Dry clean air.
Range: Relative humidity: 0 to 100%; Temperature: 32 to 212°F (0 to 100°C).
Accuracy: Relative humidity: ±2% (10 to 90% RH), ±3% (0 to 10% and 90 to 100% RH); Temperature ±1°F (0.5°C).
Temperature Limits: 32 to 140°F (0 to 60°C).
Pressure Limits: 1 psi (.07 bar).
Compensated Temperature Range: 32 to 140°F (0 to 60°C).
Power Requirements: 10 to 35 VDC.
Output Signal: 2 channels each 4 to 20 mA. Loop powered on the RH channel.
Electrical Connections: 4 screw type terminals.
Mounting Orientation: Mount in any position.
Probe: 657-1: Stainless steel 5/16˝ x 10˝ (0.8 x 25.4 cm); 657C-1: 5/16˝ x 9-1/10˝ (0.8 x 23.1 cm).
Weight: 657-1: 5.5 oz (156 g); 657C-1: 10 oz (284 g).

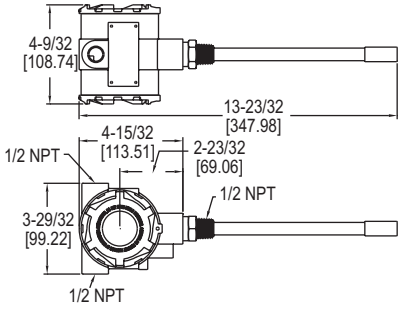
OPTIONS	
To order add suffix:	**Description**
-NIST	NIST traceable humidity calibration certificate
Example: 657C-1-NIST	

Dwyer

SERIES HHT

HAZARDOUS AREA HUMIDITY/TEMPERATURE TRANSMITTER

Intrinsically Safe or Explosion-Proof Models



The **SERIES HHT** Hazardous Area Humidity/Temperature Transmitter takes accurate measurements in the harshest of environments. The explosion-proof model is offered with 4 to 20 mA output for humidity only. The intrinsically safe version is offered with 4 to 20 mA output for humidity and temperature, and do require an intrinsically safe barrier to meet hazardous area approvals.
It is important to develop a routine schedule for replacing the RH/temperature sensor (part number A-451). The sensor should be replaced annually or sooner depending on application conditions.

FEATURES/BENEFITS
- FM approved explosion-proof and intrinsically safe models
- Integral LCD option
- Replaceable calibrated sensor for long term use in harsh environments
- Dual temperature and relative humidity output models

APPLICATIONS
- Process monitoring
- Offshore HVAC monitoring
- Dust and grain handling

SPECIFICATIONS

Relative Humidity Range: 0 to 100% RH.
Temperature Range: -40 to 140°F (-40 to 60°C).
Accuracy: ±2% 10 to 90% RH, ±0.9°F at 72°F (±0.3°C at 25°C).
Hysteresis: ±1%.
Repeatability: ±0.1% typical.
Temperature Limits: -40 to 140°F (-40 to 60°C).
Storage Temperature: -40 to 176°F (-40 to 80°C).
Compensated Temperature: -40 to 140°F (-40 to 60°C).
Power Requirements: For intrinsically safe models HHT-IX, 9.5 to 28 VDC. For explosion-proof models HHT-EX, 16.5 to 28 VDC.
Output Signal: 4 to 20 mA, 2 channels for humidity/temperature models (loop power on RH).
Response Time: 15 s.
Electrical Connections: Screw terminal block.
Conduit Connection: 1/2 female NPT.
Drift: < 1% RH/year.
RH Sensor: Capacitance polymer.
Temperature Sensor: Solid state band gap.
Housing Material: Aluminum.
Display: Optional 2 line alpha numeric, 8 characters/line. Temperature display is °F/°C selectable.
Display Resolution: RH: 0.1%; Temperature: 0.1°F (0.1°C).
Weight: 2 lb 8 oz (1134 g).
Enclosure Rating: NEMA 4X (IP66). Models HHT-EX: FM Explosion- Proof, Class I Div. 1 Group B, C, D, Class II Div. 1 Group E, F, G, Class III Div. 1; Models HHT-IX: FM Intrinsically Safe, Class I Div. 1 Group A, B, C, D, Class II Div. 1 Group E, F, G, Class III Div. 1 T4.
Agency Approvals: CE, FM.

ACCESSORIES

Model	Description
KFD0-SCS-EX1.55❶	Loop powered galvanic isolator
A-287	Mounting bracket for pipe or surface mounting (Includes bracket and two 2″ U-bolts)
A-450	Replacement sintered filter
A-451	Replacement 2% sensor

MODEL CHART

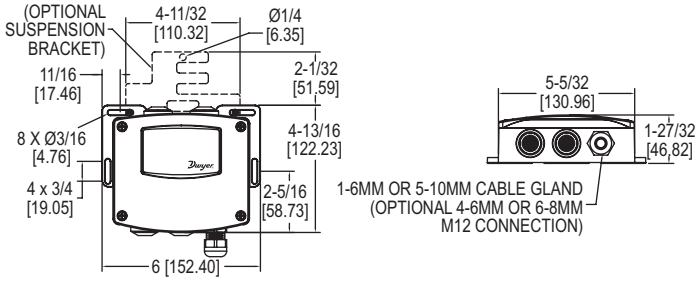
Model	Protection	Description	Display
HHT-EU	Explosion-proof	Humidity	No
HHT-IU	Intrinsically safe	Humidity	No
HHT-IT	Intrinsically safe	Humidity/temperature	No
HHT-EU-LCD	Explosion-proof	Humidity	Yes
HHT-IT-LCD	Intrinsically safe	Humidity/temperature	Yes

❶See page 398 (Model KFD0)

SERIES CDWP

CARBON DIOXIDE TRANSMITTER

NDIR CO_2 Sensor with Universal Outputs in an Industrial Housing



The **SERIES CDWP** Carbon Dioxide Transmitters accurately monitor the CO_2 concentration in industrial and indoor environments to help achieve energy savings. For increased sensor life and accuracy, a single-beam dual-wavelength non-dispersive infrared (NDIR) sensor is used to eliminate light source aging affects. This sensing technology provides the highest level of accuracy compared to Automatic Baseline Correction methods, which can unintentionally shift the calibration based on CO_2 levels and barometric pressure conditions.

MODEL CHART

Example	CDWP	-05	W	-M4	-FC	CDWP-05W-M4
Series	CDWP					Carbon dioxide transmitter
Range		02 05 10				2000 PPM 5000 PPM 10000 PPM
Mounting			W H			Wall Mount Suspended Mount
Electrical Connection				C1 C5 M4 M6		Cable Gland 1 - 6mm Cable Cable Gland 5 - 10mm Cable M12 Connection 4 - 6mm Cable M12 Connection 6 - 8mm Cable
Option					FC	Factory Calibration Certificate

ACCESSORIES

Model	Description
A-CDWP-G	4 replacement grommets with filters

SPECIFICATIONS

Sensor: Single beam, dual-wavelength NDIR.
Range: CO_2: 0 to 2000, 0 to 5000, or 0 to 10000 ppm (depending on model).
Accuracy: CO_2: ± 40 ppm ±3% of reading.
Temperature Dependence: ±8 ppm/°C at 1100 ppm.
Non-Linearity: 16 ppm.
Pressure Dependence: 0.13% of reading per mm of Hg.
Response Time: 2 min for 99% step change.
Temperature Limits: 32 to 122°F (0 to 50°C).
Humidity Limits: 10 to 95% RH (non-condensing).
Power Requirements: 16 to 35 VDC or 19 to 28 VAC.
Power Consumption: Average: 2 w; Peak: 3.75 w.
Output: Current: 4 to 20 mA (max. 500 Ω); Voltage: 0 to 5 VDC or 0 to 10 VDC (min. 500 Ω).
Enclosure Rating: IP54.
Weight: 26.24 Oz (744 g).
Agency Approvals: CE.

FEATURES/BENEFITS
- IP54 aluminum housing
- Gray finish designed to withstand 168 hour salt spray test
- Single-beam dual-wavelength sensor automatically corrects for aging effects
- Measures unfiltered light intensity directly and eliminated error from incorrect assumptions of gas concentration in theoretical logic assumption methods
- Universal outputs to work with any building management

APPLICATIONS
- Animal Husbandry
- Mechanical Room
- CO_2 Refrigeration Monitoring

Dwyer

SERIES CDT

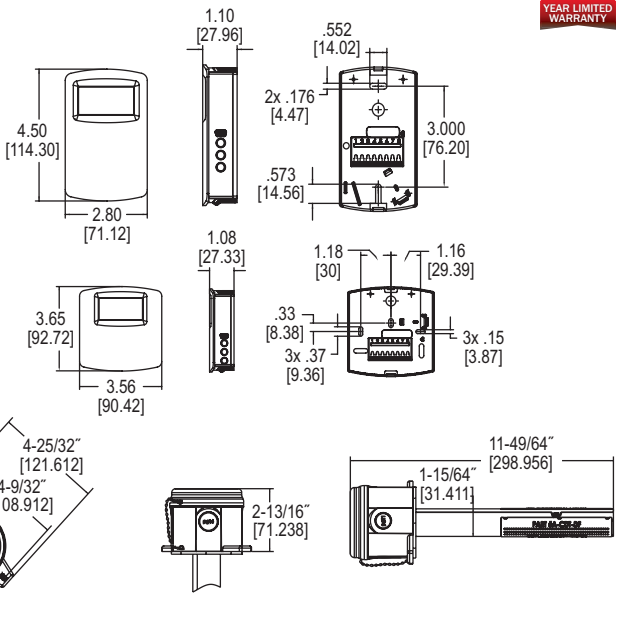
CARBON DIOXIDE/TEMPERATURE TRANSMITTER

NDIR CO_2 Sensor, Universal Outputs, Optional Relay

European Style

North American Style

Duct



The **SERIES CDT** Carbon Dioxide and Temperature Transmitters accurately monitor the CO_2 concentration and temperature in indoor environments to help achieve energy savings. For increased sensor accuracy, a single beam dual wavelength non-dispersive infrared (NDIR) sensor is used to automatically correct the measurement in both occupied* and unoccupied buildings against light source aging effects. The single beam dual wavelength sensor technology provides the highest level of accuracy compared to Automatic Baseline Correction methods which can unintentionally shift the calibration based on CO_2 levels and barometric pressure conditions. In order to achieve a higher level of accuracy, the Series CDT includes digital barometric pressure adjustment and the ability to field-calibrate the sensor.
For applications that require visual indication, the wall mount configurations of the Series CDT can be ordered with an integral LCD display. Push buttons are standard on all configurations of the transmitters for access to the menu structure, but wall mount configurations can be ordered without the buttons. To prevent tampering, the action of the buttons can be locked out using an internal dip switch selection.

FEATURES/BENEFITS

- Single beam dual wavelength NDIR sensor eliminates draft due to light source aging
- Integral passive temperature outputs reduce number of devices mounted in the space
- Service display tool available for models without an integral LED
- Optional integral display and relay output

APPLICATIONS

- Demand control ventilation in schools, office buildings, hospitals, and other indoor environments
- LEED® certification

*For buildings occupied 24 hours per day, it is recommended that calibration be verified every 6 to 12 months depending on application.

SPECIFICATIONS

Sensor: Single beam, dual wavelength NDIR.
Range: CO_2: 0 to 2000 or 0 to 5000 ppm (depending on model); Temperature: 32 to 122°F (0 to 50°C).
Accuracy: CO_2: ±40 ppm ±3% of reading; RH: ±2% (10 to 90% RH); Temperature: ±1°C @ 25°C.
Temperature Dependence: ±8 ppm/°C at 1100 ppm.
Non-Linearity: 16 ppm.
Pressure Dependence: 0.13% of reading per mm of Hg.
Response Time: 2 min for 99% step change.
Duct Air Velocity Range: 0-4000 FPM (20.32 m/s).
Temperature Limits: 32 to 122°F (0 to 50°C).
Humidity Limits: 10 to 95% RH (non-condensing).
Power Requirements: 16 to 35 VDC or 19 to 28 VAC.
Power Consumption: Average: 2 w; Peak: 3.75 w.
Output: Current: 4 to 20 mA (max. 500 Ω); Voltage: 0 to 5 VDC or 0 to 10 VDC (min. 500 Ω); Relay: SPST NO rated 2 A @ 30 VDC.
Weight: 4.4 oz (125 g).
Enclosure Rating: IP20.
Agency Approvals: CE.

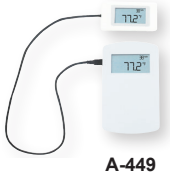
MODEL CHART

Example	CDT	-2	N	4	4	-LCD	CDT-2N44-LCD
Series	CDT						Carbon dioxide/ temperature transmitter
Range		2 5					0 to 2000 ppm CO_2 range 0 to 5000 ppm CO_2 range
Configuration			N E D				North American style wall mount European style wall mount Duct mount
CO_2				4			4 to 20 mA / 0 to (5 or 10) VDC
Temperature Output					0 4 A B C D E F		None 4 to 20 mA / 0 to (5 or 10) VDC 10 KΩ NTC thermistor type III 10 KΩ NTC thermistor type II 3 KΩ NTC thermistor Pt100 Ω RTD Pt1000 Ω RTD 20 KΩ NTC thermistor
Options						FC LCD RLY NBC	Factory calibration certificate LCD display (wall only) Relay No buttons (wall only)

ACCESSORIES

Model	Description
GCK-200CO-2000CO2	Calibration gas kit includes a 99.99% nitrogen gas cylinder for calibrating the zero point and a 200 PPM CO / 2000 PPM CO_2 gas cylinder for calibrating the span point on Dwyer's gas sensing transmitters
A-449	Remote LCD display allows remote indication of select Dwyer® wall mount transmitters for validation or certification purposes
A-449A	Remote LCD display with buttons allows remote indication and calibration of select Dwyer® wall mount transmitters for validation and certification purposes
A-CDT-KIT	Accessory kit including terminal block and power supply

GCK-200CO-2000CO2



A-449

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Dwyer

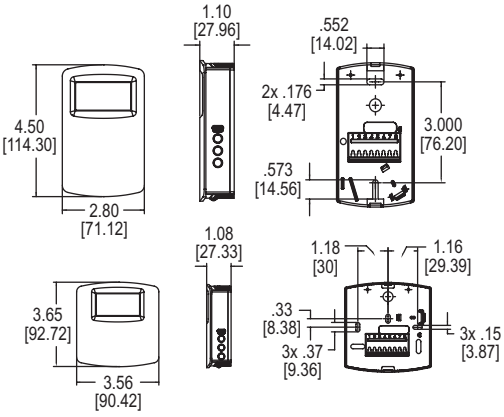
SERIES CDTA

COMMUNICATING CARBON DIOXIDE DETECTOR

Measures CO_2, Humidity, Temperature, Temperature Set Point, and Override

European Style

North American Style



The **SERIES CDTA** Communicating Carbon Dioxide Detector combines the function of three room sensors into a single, compact housing. Parameters include carbon dioxide, humidity, temperature, and temperature set point with override. By having field selectable Modbus® and BACnet Communications, only four wires are needed for power and the communication signal. The communicating detectors can be daisy chained together to further reduce installation cost. In order to reduce the set up time, the RS-485 MAC address is set up using on board dip switches. A second set of dip switches are used to select whether output is Modbus® RTU or BACnet MS/TP communication protocols and to limit access to the set up menu.

Like our Series CDT Carbon Dioxide Transmitter, the Series CDTA uses a Single Beam Dual Wavelength Non-Dispersive Infrared (NDIR) sensor to measure the carbon dioxide level. This technology can be used in installations that will be occupied 24 hours per day. For improved accuracy, the transmitter can be field calibrated to the environmental conditions of the installation. Also, the barometric pressure can be programmed to correct for altitude. The humidity uses a capacitive polymer sensor and the temperature is measured using a 10KΩ thermistor sensor. The humidity sensor is field replaceable without the need for additional calibration.

Optional local and remote displays are available to display any of the parameters. For applications in which the building occupants aren't familiar with CO_2 concentrations, the LCD can be programmed to display temperature, humidity, or temperature set point instead.

FEATURES/BENEFITS

- Digital Intelligent Temperature Compensation Algorithm (DITCA™) corrects for errors due to self heating effects of combination wall sensors
- Field selectable Modbus® and BACnet communications reduces wiring
- Single beam dual wavelength CO_2 sensor
- Replaceable humidity/temperature sensor
- Physical hardware lockout
- Optional remote display tool

APPLICATIONS

- Demand control ventilation in schools, office buildings, hospitals, and other indoor environments
- LEED® certification

SPECIFICATIONS

Sensor (CO_2): Single beam, dual wavelength NDIR; Humidity: Capacitive polymer; Temperature: 10KΩ thermistor.
Range: CO_2: 0 to 2000 or 5000 PPM CO_2 (depending on model); Humidity: 0 to 100% RH; Temperature: 32 to 122°F (0 to 50°C).
Accuracy: CO_2: ±40 ppm ±3% of reading; RH: ±2% (10 to 90% RH); Temperature: ±1°C @ 25°C.
Temperature Dependence (CO_2): ±8 ppm / °C at 1100 ppm.
Non-Linearity (CO_2): 16 ppm.
Pressure Dependence (CO_2): 0.13% of reading per mm of Hg.
Response Time (CO_2): 2 min. for 99% step change.
Temperature Limits: 32 to 122°F (0 to 50°C).
Humidity Limits: 10 to 95% RH (non-condensing).
Power Requirements: 10 to 42 VDC / 10 to 30 VAC.
Power Consumption: Average: 0.5 watts; Peak: 1.2 watts.
Output: 2-wire RS-485, Modbus® RTU or BACnet MS/TP communication protocol.
Weight: 4.4 oz (125 g).
Enclosure Rating: IP20.
Agency Approvals: BTL, CE.

MODEL CHART

Model	CO_2 Concentration	Housing Style	Display
CDTA-2N000	2000 PPM	North American	No
CDTA-2N000-LCD	2000 PPM	North American	Yes
CDTA-2E000	2000 PPM	European	No
CDTA-2E000-LCD	2000 PPM	European	Yes
CDTA-5N000	5000 PPM	North American	No
CDTA-5N000-LCD	5000 PPM	North American	Yes
CDTA-5E000	5000 PPM	European	No
CDTA-5E000-LCD	5000 PPM	European	Yes

ACCESSORIES

Model	Description
GCK-200CO-2000CO2	Calibration gas kit includes a 99.99% nitrogen gas cylinder for calibrating the zero point and a 200 PPM CO / 2000 PPM CO_2 gas cylinder for calibrating the span point on Dwyer's gas sensing transmitters
A-449	Remote LCD display allows remote indication of select Dwyer® wall mount transmitters for validation or certification purposes
A-449A	Remote LCD display with buttons allows remote indication and calibration of select Dwyer® wall mount transmitters for validation and certification purposes
A-CDT-KIT	Accessory kit including terminal block and power supply

GCK-200CO-2000CO2

A-449

OPTIONS

To order add suffix:	Description
-FC	Factory calibration certificate
Example: CDTA-2N000-FC	

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Dwyer

SERIES CDTR

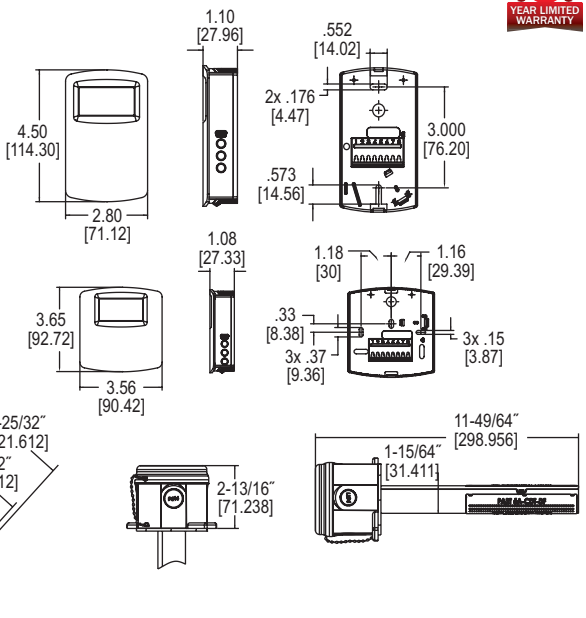
CARBON DIOXIDE/RH/TEMPERATURE TRANSMITTER

NDIR CO_2 Sensor, Universal CO2/RH Outputs, Optional Relay

European Style

North American Style

Duct



The **SERIES CDTR** Carbon Dioxide, Relative Humidity and Temperature Transmitters reduce the number of sensors mounted on a wall or in a duct. By combining CO_2, RH, and temperature in one device, system integrators are able to reduce installation time while lowering material cost at the same time.

Like our popular Series CDT Carbon Dioxide Transmitter, a single beam dual wavelength non-dispersive infrared (NDIR) sensor is used to automatically correct the measurement in both occupied* and unoccupied buildings against light source aging effects. In order to achieve the best possible accuracy, the Series CDTR also includes digital barometric pressure adjustment and the ability to field calibrate the sensor.

Universal outputs for both carbon dioxide and relative humidity allow users to select the transmitter output to be 4 to 20 mA, 0 to 5 VDC, or 0 to 10 VDC to work with virtually any building management controller. Additionally, passive thermistor or RTD sensor can be ordered for a temperature output.

For applications that require visual indication, the wall mount configurations of the Series CDTR can be ordered with an integral LCD display. The display can be configured to display temperature only, relative humidity only, CO_2 only, CO_2 and humidity, or CO_2 and temperature. Push buttons are standard on all configurations of the transmitters for access to the menu structure. To prevent tampering, the action of the buttons can be locked out using an internal jumper selection.

FEATURES/BENEFITS

- Digital Intelligence Temperature Compensation Algorithm (DITCA™) eliminates error due to the self heating effects of wall mount combination devices.
- Single beam dual wavelength NDIR CO_2 sensor
- Replaceable humidity/temperature sensors
- Physical hardware lockout
- Service display tool available for duct mount and wall mount units without an LCD
- Relay output option

APPLICATIONS

- Demand control ventilation in schools, office buildings, hospitals, and other indoor environments
- LEED® certification

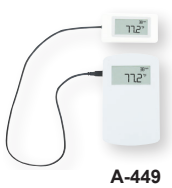
*For buildings occupied 24 hours per day, it is recommended that calibration be verified every 6 to 12 months depending on application.

SPECIFICATIONS	
Range: CO2: 0 to 2000 or 0 to 5000 ppm (depending on model); Relative humidity: 0 to 100%; Temperature: 32 to 122°F (0 to 50°C). **Accuracy:** ±40 ppm + 3% of reading (CO2); ±2% (RH). **Temperature Dependence:** ±8 ppm / °C at 1100 ppm. **Non-Linearity:** 16 ppm. **Pressure Dependence:** 0.13% of reading per mm of Hg. **Response Time:** 2 minutes for 99% step change. **Temperature Limits:** 32 to 122°F (0 to 50°C). **Duct Air Velocity Range:** 0-4000 FPM (20.32 m/s)	**Humidity Limits:** 10 to 95% RH (non-condensing). **Power Requirements:** 16 to 35 VDC / 19 to 28 VAC. **Power Consumption:** Average: 2 watts; Peak: 3.75 watts. **Sensor:** Single beam, dual wavelength NDIR. **Output:** Current: 4 to 20 mA (max 500 Ω); Voltage: 0 to 5 VDC or 0 to 10 VDC (min 500 Ω); Relay: SPST NO 2 A @ 30 VDC; RTD or thermistor per r-t curves (depending on model). **Weight:** 5.6 oz (158.8 g). **Enclosure Rating:** IP20. **Agency Approvals:** CE.

MODEL CHART								
Example	**CDTR**	**-2**	**N**	**4**	**A**	**4**	**-LCD**	**CDTR-2N4A4-LCD**
Series	CDTR							CDTR carbon dioxide/RH/ temperature transmitter
Range		2 5						0 to 2000 ppm CO_2 range 0 to 5000 ppm CO_2 range
Configuration			N E D					North American style wall mount European style wall mount Duct mount
CO_2 Output				4				4 to 20 mA / 0 to (5 or 10) VDC
Temperature Output					0 A B C D E F			None 10K Ω NTC thermistor type III 10K Ω NTC thermistor type II 3K Ω NTC thermistor Pt100 Ω RTD Pt1000 Ω RTD 20K Ω NTC thermistor
RH Output						4		4 to 20 mA / 0 to (5 or 10) VDC
Options							FC LCD RLY NBC	Factory calibration certificate LCD display (wall only) Relay No buttons (wall only)

ACCESSORIES	
Model	**Description**
GCK-200CO-2000CO2	Calibration gas kit includes a 99.99% nitrogen gas cylinder for calibrating the zero point and a 200 PPM CO / 2000 PPM CO_2 gas cylinder for calibrating the span point on Dwyer's gas sensing transmitters
A-449	Remote LCD display allows remote indication of select Dwyer® wall mount transmitters for validation or certification purposes
A-449A	Remote LCD display with buttons allows remote indication and calibration of select Dwyer® wall mount transmitters for validation and certification purposes
A-CDT-KIT	Accessory kit including terminal block and power supply

GCK-200CO-2000CO2



A-449

A-449A

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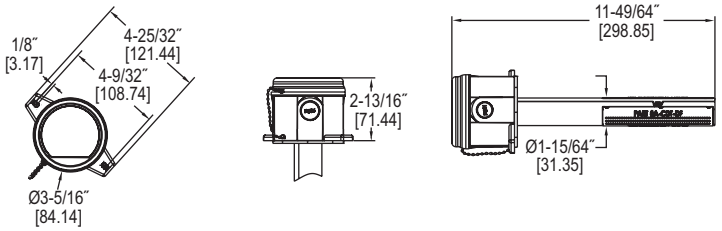
Dwyer

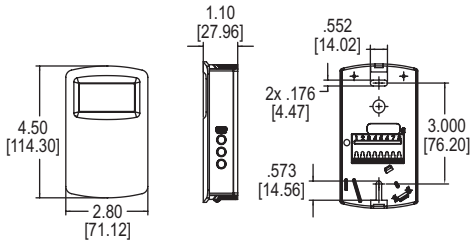
SERIES CDTV

CARBON DIOXIDE/VOLATILE ORGANIC COMPOUND TRANSMITTER

Simultaneously Outputs Both CO_2 / VOC

North American Style





The **SERIES CDTV** Carbon Dioxide/Volatile Organic Compound (VOC) Transmitter reduces energy cost in buildings by lowering the amount of conditioned air based on the occupancy of the space. By sensing both CO_2 and VOC, the transmitter can detect fumes that may need to be exhausted during lower occupancy periods.

FEATURES/BENEFITS

- Combination VOC and CO_2 outputs reduce labor and material costs
- Single beam dual wavelength NDIR CO_2 sensor allows for use in spaces that may be occupied 24 hours a day
- VOC output is correlated to be equivalent to CO_2 measurements
- Ventilate using ASHRE's occupancy-based VRP Algorithm

APPLICATIONS

- HVAC applications in hospitals, schools, and commercial buildings
- Demand control ventilation
- Odor control
- Waiting rooms or other spaces that may be occupied 24 hours a day

MODEL CHART

Example	CDTV	-2	D	4	A	4	-RLY	CDTV-2D4A4-RLY
Series	CDTV							Carbon dioxide/VOC transmitter
Range		2						0 to 2000 ppm CO_2 range
		5						0 to 5000 ppm CO_2 range
Configuration			D					Duct
			N					North American style wall mount
CO_2 Output				4				4 to 20 mA / 0 to (5 or 10) VDC
Temperature Output					0			None
					A			10 KΩ NTC thermistor type III
					B			10 KΩ NTC thermistor type II
					C			3 KΩ NTC thermistor
					D			Pt100 Ω RTD
					E			Pt1000 Ω RTD
					F			20 KΩ NTC thermistor
VOC Output						4		4 to 20 mA / 0 to (5 or 10) VDC
Options							RLY	Relay
							FC	Factory calibration certificate
							LCD	LCD display (wall only)

SPECIFICATIONS

Range: CO_2: 0 to 2000 or 0 to 5000 ppm (depending on model); VOC: 0 to 2000 ppm CO_2 equivalent.
Accuracy: CO_2: ±40 ppm ±3% of reading.
Temperature Dependence: ±8 ppm / °C at 1100 ppm.
Non-Linearity: CO_2: 16 ppm.
Pressure Dependence: CO_2: 0.13% of reading per mm of Hg.
Response Time: CO_2: 2 minutes for 99% step change; VOC: 5 minutes.
Temperature Limits: 32 to 122°F (0 to 50°C).
Duct Air Velocity Range: 0-4000 FPM (20.32 m/s).
Power Requirements: 16 to 35 VDC / 19 to 28 VAC.
Power Consumption: Average: 2 watts; Peak: 3.75 watts.
Sensor: CO_2: Single-beam, dual-wavelength NDIR; VOC: MEMS metal oxide semiconductor.
Output: Current: 0 to 20 mA, 4 to 20 mA, 0 to 10 mA, or 2 to 10 mA (depending on selection jumper, max 500 Ω); Voltage: 0 to 10 VDC, 2 to 10 VDC, 0 to 5 VDC, or 1 to 5 VDC (depending on selection jumper, min 500 Ω); Relay: SPST NO 2A @ 30 VDC.
Weight: 5.6 oz (158.8 g).
Agency Approvals: CE.

Dwyer

SERIES GSTA & GSTC

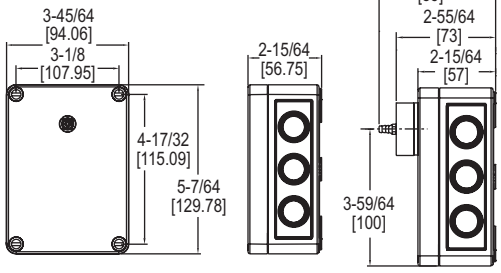
CARBON MONOXIDE/NITROGEN DIOXIDE GAS TRANSMITTER

High Accuracy Electrochemical Sensor, Universal Output or BACnet & Modbus® Communication Protocol Options

Wall Mount With LCD

Wall Mount Without LCD

Duct Mount



Wall Mount **Duct Mount**

The **SERIES GSTA & GSTC** Carbon Monoxide/Nitrogen Dioxide Gas Transmitters monitor gas concentrations in mechanical rooms, underground parking garages and loading docks. The carbon monoxide transmitter is used to measure the exhaust of gasoline engines, while the nitrogen dioxide transmitter is used for diesel engines. The Series GSTA features field selectable current and voltage outputs while the Series GSTC features BACnet or Modbus® communication protocol, allowing gas sensing solutions that can be used with almost any building management controller.

FEATURES/BENEFITS

- Industrial grade replaceable CO or NO_2 sensors
- Field selectable current or voltage output on GSTA models, and field selectable BACnet or Modbus® communication on GSTC models
- Integral LCD display option
- Service display tool for set-up and calibration of models without a LCD

APPLICATIONS

- Garage or loading dock ventilation
- Mechanical room monitoring

MODEL CHART				
Example	**GSTA**	**-C**		**GSTA-C**
Series	GSTA GSTC			Field selectable analog outputs Field selectable BACnet or Modbus®
Gas Sensed		C N		CO, carbon monoxide NO_2, nitrogen dioxide
Options			- D LCD	Wall mount without LCD Duct mount Wall mount with LCD

ACCESSORIES	
Model	**Description**
GCK-200CO-2000CO2	Calibration gas
A-449	Remote LCD display
A-505	CO replacement sensor
A-506	NO_2 replacement sensor
A-507	Calibration adapter

SPECIFICATIONS

Sensor: Field replaceable electrochemical, 4 years typical lifespan.
Range: CO: 0 to 500 PPM, NO_2: 10 PPM.
Output Drift: <5% per year in air.
Coverage Area: 5000 to 7500 sq ft typical.
Accuracy: CO: 2% FS, NO_2: 3% FS, at the time of calibration.
Resolution: CO: 1 PPM; NO_2: 0.1 PPM.
Temperature Limits: -4 to 122°F (-20 to 50°C).
Storage Temperature: For best sensor life, 32 to 68°F (0 to 20°C).
Humidity Limits: 15 to 90% RH constant; 0 to 99% RH intermittent.
Response Time: <45 s to 90% CO, <25 s to 90% NO_2.
Span and Zero Adjustment: Via pushbutton, using optional A-449 display. Zero only via BACnet or MODBUS® communication protocol.
Housing: UV resistant glass filled polycarbonate.
Output Signals: GSTA: Switch selectable 4 to 20 mA (loop powered), 0 to 5 V @ 5 mA, or 0 to 10 V@ 5 mA; Switch selectable 0 to 5 V / 1 to 5 V and 0 to 10 V / 2 to 10 V; Switch selectable normal or reverse output; GSTC: BACnet MS/TP, Modbus® RTU, or Modbus® ASCII (switch selectable) communication protocol.
Power Requirements: GSTA: Current output: 10 to 35 VDC, Voltage output: 15 to 35 VDC or 15 to 29 VAC; GSTC: 10 to 36 VDC or isolated 21.6 to 33 VAC.
Electrical Connection: Removable terminal block, knock outs for conduit fitting.
Calibration: Via pushbuttons using A-449 auxiliary display. Span gas concentration is field selectable.
Enclosure Rating: IP64.
Weight: 1 lb (0.45 kg).
Agency Approvals: CE.

GCK-200CO-2000CO2

A-449

A-505

A-506

A-507

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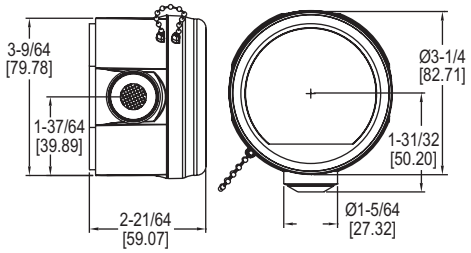
Dwyer

MODEL CMT200

CARBON MONOXIDE TRANSMITTER

Current/Voltage Selectable Output, 200 PPM Range



The **MODEL CMT200** Carbon Monoxide Transmitter provides a field selectable current or voltage output that is proportional to the gas concentration in underground parking garages, vehicle maintenance facilities, or mechanical rooms.

FEATURES/BENEFITS
- Field selectable current or voltage outputs
- Replaceable sensor
- Field calibration kits

APPLICATIONS
- Garage ventilation
- Mechanical room monitoring

MODEL CHART	
Model	**Description**
CMT200	Carbon monoxide transmitter

ACCESSORIES	
Model	**Description**
GCK-200CO-2000CO2	Calibration gas

SPECIFICATIONS

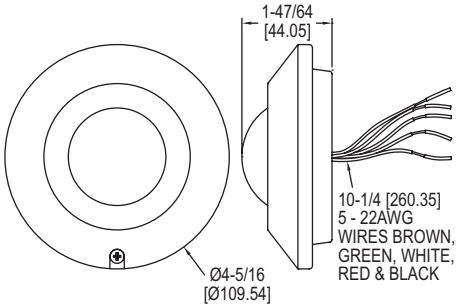
Sensor: Field replaceable electrochemical, 4 year typical lifespan.
Range: 0 to 200 ppm.
Coverage Area: 5000 to 7000 sq. ft. typical.
Accuracy: ±2% of reading at the time of calibration.
Output Drift: <5% per year in air.
Temperature Limits: -4 to 122°F (-20 to 50°C).
Storage Temperature: For best sensor life, 32 to 68°F (0 to 20°C).
Humidity Limits: 15 to 90% RH constant; 0 to 99% RH intermittent.
Response Time: <45 s to 90% of final value.
Calibration: 15 turn span and zero adjustment potentiometers.
Housing: UV resistant polycarbonate.
Output: Jumper selectable 4 to 20 mA (loop powered) or 2 to 10 V (load must be >50 KΩ).
Power Requirements: Current Output: 18 to 28 VDC; Voltage Output: 18 to 28 VDC/VAC, reverse polarity protected.
Electrical Connection: Removable terminal block, includes two PG11 and one PG 16 knockouts for conduit fitting.
Weight: 0.28 lb (0.11 kg).
Agency Approvals: CE.

MODEL OSC-200 & OSW-100

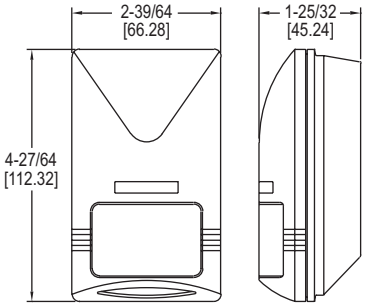
OCCUPANCY SENSOR

Wide Viewing Angle, Easy To Install

OSC-200



OSW-100



The **MODEL OSC-200** Omnidirectional Occupancy Sensor helps to automate building control systems. A spherical Fresnel lens provides a 360° detection zone with the use of infrared technology.

The **MODEL OSW-100** Wall Mount Occupancy Sensor is an infrared sensor designed to help automate building control systems. The Model OSW-100 has a wide 110° viewing angle to capture movement up to 49.2´ (15 m) away.

FEATURES/BENEFITS
- Delay processor suppresses switch activation during momentary occupancy

APPLICATIONS
- Lighting control
- Building energy conservation

SPECIFICATIONS

Infrared Sensor: Dual element.
Range: OSC-200: 34.4´ (10.5 m) diameter at 13.8´ (4.2 m) mount height; OSW-100: 49.2´ (15 m).
Detectable Speed: 0.33 to 9.8 ft/s (0.1 to 3.0 m/s).
Control Output Rating: SPDT, 0.2 A @ 30 VDC.
Ambient Operating Temperature: -4 to 140°F (-20 to 60°C).
Power Consumption: Standby: 5 mA; Operating: 18 mA.
Mounting Height: OSC-200: 7.9 to 13.8´ (2.4 to 4.2 m); OSW-100: 5.9 to 11.8´ (1.8 to 3.6 m).
Power Requirements: 22 to 26 VAC/DC.
Weight: OSC-200: 2.4 oz (68 g); OSW-100: 3.2 oz (90.7 g).
Agency Approvals: CE.

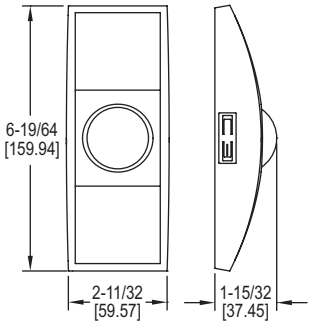
MODEL CHART	
Model	**Description**
OSC-200	Omnidirectional occupancy sensor
OSW-100	Wall mount occupancy sensor

Dwyer

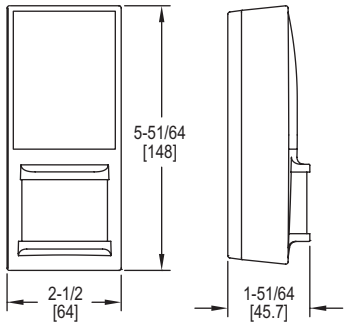
SERIES EOS

WIRELESS OCCUPANCY SENSOR

With EnOcean® Technology, Ceiling or Wall Mount



EOSC



EOSW

The **SERIES EOS** Wireless Occupancy Sensor uses EnOcean® technology to enable a new level of energy saving control for rooms, hallways, and other common areas. Using a PIR motion sensor to detect movement in a space, the EOSC models have a 360 degree viewing angle and the EOSW models offer wide angle and long range lenses in the same package. The EnOcean® technology allows for wireless communication with any other EnOcean®-enabled devices.

FEATURES/BENEFITS
- Energy harvesting, no power supply or batter necessary
- Ceiling mount option for a large coverage area or flat wall/corner mount in one design
- Energy and cost savings by determining if lights or HVAC should be turned off based on room occupancy
- Meets North American and European standards

APPLICATIONS
- Lighting or HVAC control
- Feedback to building management system that a space is occupied

MODEL CHART

Model	Mounting	RF	Approvals
EOSCU-W-EO	Ceiling	902 MHz	FCC, IC (North America)
EOSWU-W-EO	Wall	902 MHz	FCC, IC (North America)
EOSCA-W-EO	Ceiling	868 MHz	CE, IC (Europe)
EOSWA-W-EO	Wall	868 MHz	CE, IC (Europe)

SPECIFICATIONS

Range: EOSC: 40´ (12 m) diameter; EOSW with wide angle lens: 50´ (15 m); EOSW with long range lens: 100´ (30 m).
RF Communications: See model chart.
RF Transmission Range: 80´ (25 m).
Temperature Limits: 14 to 104°F (-10 to 40°C).
Humidity Limits: 20 to 95% RH (non-condensing).
Operating Light: 50 lux (min).
Mounting Height: EOSC: 7 to 10´ (2 to 3 m); EOSW: 6 to 8´ (1.8 to 2.5 m).
Power Requirements: Indoor light energy harvesting. An optional supplemental battery or 3 to 5 VDC power supply can be used.
Weight: 0.42 oz (12 g).
Agency Approvals: See model chart.

ACCESSORIES

Model	Description
USB-300U	Wireless Receiver, 902 MHz
USB-300	Wireless Receiver, 868 MHz

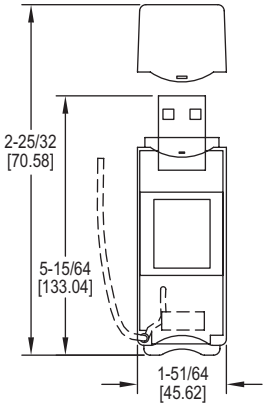
SERIES USB-300

USB WIRELESS RECEIVER

902 or 868 MHz Communications, EnOcean® Software Interface

USB-300

USB-300U



The **SERIES USB-300** USB Wireless Receiver is a simple way to allow PC's to test any EnOcean®-enabled device using wireless technology. This unit is equipped with a TCM 310 transceiver module, which provides bidirectional EnOcean® radio protocol. Radio messages are sent and received through a virtual series interface.

FEATURES/BENEFITS
- Works with any EnOcean®-enabled device
- Compact USB design
- Meets North American and European RF standards

APPLICATIONS
- Building commissioning
- Troubleshooting systems that incorporate EnOcean® communicating instruments
- Product installation trials

SPECIFICATIONS

Antenna Type: Whip antenna (USB-300U); Internal chip antenna (USB-300).
RF Communications: 902 MHz (USB-300U); 868 MHz (USB-300).
Temperature Limits: Operating: -4 to 122°F (-20 to 50°C); Storage: -13 to 158°F (-25 to 70°C).
Humidity Limits: Operating: 0 to 90% RH (non-condensing); Storage: 0 to 93% RH (non-condensing).
Weight: 0.42 oz (12 g).
Agency Approvals: FCC, IC, RoHS (USB-300U); CE, RoHS (USB-300).

MODEL CHART

Model	Description
USB-300U	North American, 902 MHz
USB-300	European, 868 MHz