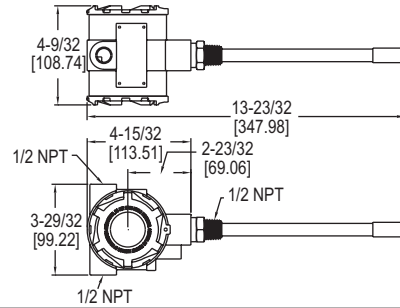# HAZARDOUS AREA HUMIDITY/TEMPERATURE TRANSMITTER
Intrinsically Safe or Explosion-Proof Models

CE   FM APPROVED

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.

FEATURES/BENEFITS
• FM approved explosion-proof and intrinsically safe models
• Integral LCD option
• Dual temperature and relative humidity output models

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

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

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

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).
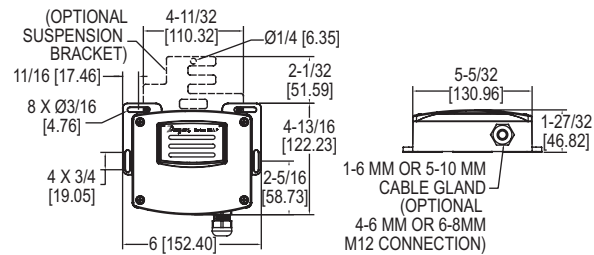**Response Time:** 15 s.

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.

❶See page 400 (Model KFD0)

CE

CARBON DIOXIDE TRANSMITTER
NDIR CO₂ Sensor with Universal Outputs in an Industrial Housing

The **Series CDWP Carbon Dioxide Transmitter** accurately monitors the CO₂ 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 effects. This sensing technology provides the highest level of accuracy compared to Automatic Baseline Correction methods, which can unintentionally shift the calibration based on CO₂ levels and barometric pressure conditions.

MODEL CHART

Example	CDWP	-05	W	-M4	-FC	CDWP-05W-M4
Series	CDWP					Carbon dioxide transmitter
Range		02				2000 PPM
		05				5000 PPM
		10				10000 PPM
Mounting			W			Wall mount
			H			Suspended mount
Electrical Connection				C1		Cable gland 1 to 6 mm cable
				C5		Cable gland 5 to 10 mm cable
				M4		M12 connection 4 to 6 mm cable
				M6		M12 connection 6 to 8 mm cable
Option					FC	Factory calibration certificate

ACCESSORIES

Model	Description
A-CDWP-L	Replacement lid with filter material
A-CDWP-H	Suspended mount bracket

SPECIFICATIONS

Sensor: Single beam, dual-wavelength NDIR.
Range: CO₂: 0 to 2000, 0 to 5000, or 0 to 10000 ppm (depending on model).
Accuracy: CO₂: ± 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: 300 s (τ_{63}).
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.
Mounting Orientation: Vertically, with electrical connections points downward.
Weight: 26.24 oz (744 g).
Agency Approvals: CE.

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

APPLICATIONS
• Animal husbandry
• Mechanical room
• CO₂ refrigeration monitoring
• Greenhouses