VAISALA

HMT360 Intrinsically Safe Wall Mount Humidity and Dewpoint Transmitter with Interchangeable Probes

CONFORMS WITH HIGH INTERNATIONAL STANDARDS

The HMT360 transmitter has been rigorously tested and conforms with all requirements for intrinsically safe instruments and EMC. It is the ideal solution for controlling humidity and dewpoint in potentially explosive applications.

SELECT THE CONFIGURATION TO SUIT YOUR APPLICATION

True flexibility is made possible by microprocessor-based electronics and a variety of options and accessories. Customers can specify the configuration of the HMT360 transmitter when ordering, if required, they can also easily make changes to the configuration in the field. In addition to the five probe types, there is a choice of:
• Local display
• Three different humidity sensors
• Two analog output channels
  (one standard, one optional)
• LonWorks® interface module

The transmitter measures relative humidity and temperature, and calculates various humidity quantities (dewpoint, wet bulb temperature, mixing ratio, and absolute humidity). All these features make the HMT360 transmitter versatile and ensure its suitability for almost any application.

INTERCHANGEABLE PROBES

The HMT360 intrinsically safe transmitters are based on a totally new approach for ease of operation, installation and maintenance. This new concept of modularity includes five different types of interchangeable probes, enabling fast and easy removal or reinstallation when required.

Calibration of the probes, for example, can be performed in a laboratory and the probe then easily replaced in the field without removing the transmitter.

SAFE INSTALLATION AND PERFORMANCE IN MOST HAZARDOUS AREAS

In hazardous environments, safe and reliable operation is a prerequisite for any instrument. Vaisala knows the humidity business and understands your need for accurate and trouble-free humidity control. In these environments, safety is of utmost importance.
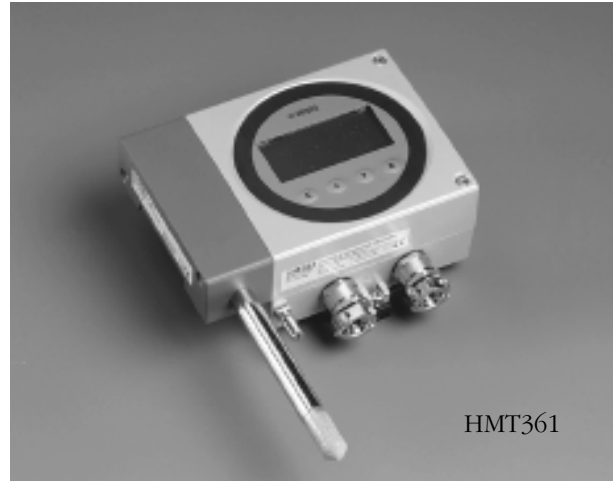
HMT361

HMT360 Transmitter shown with HMP361 wall mount probe.

Our new HMT360 transmitter is rugged and employs the latest sensor technology. It operates safely and reliably even in Class I, Division 1.

The HMT360 transmitter's proven performance and technology conform with the most rigorous international standards. And, as future standards change to reflect new knowledge, you can be confident that the HMT360 series will conform to these standards as well.

The HMT360 transmitters are an investment for the future; their longevity combined with trouble-free operation ensure a long term solution for your hazardous humidity and dewpoint monitoring requirements.

OPTIMIZED SENSORS

In addition to Vaisala's standard HUMICAP® Sensor, two application specific sensors are available:

• For environments with high concentrations of hydrogen (H_2)

• For environments with high concentrations of demanding chemicals.

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100 Commerce Way, Woburn, MA 01801
TEL: 1-888-VAISALA (824-7252)   FAX: (781) 933-8029
E-MAIL: incsales@vaisala.com   Access catalog on-line at: www.vaisala.com/inc/ssdcat

TECHNICAL DATA - HMT360 INTRINSICALLY SAFE HUMIDITY AND DEWPOINT TRANSMITTERS WITH INTERCHANGEABLE PROBES

Measured Values

Relative humidity measurement range	0…100% RH
Accuracy (including nonlinearity and repeatability) when calibrated against:	
high quality, certified humidity standards	±1% RH (0...90% RH)
	±2% RH (90...100% RH)
salt solutions	±2% RH (0...90% RH)
(ASTM E104-85)	±3% RH (90...100% RH)

Response time (90%) at +68 °F (+20 °C) in still air
(with sintered filter)   15 seconds
Sensors:
HUMICAP®180   for typical applications
HUMICAP®180J   for hydrogen applications
HUMICAP®180L   for applications with a demanding chemical environment
(max. 104 °F (+40 °C) in high humidities)

Temperature

Measurement ranges:
HMP361 probe   -40…140 °F (-40...+60 °C)
HMP363 probe   -40°F…248 °F (-40...+120 °C)
HMP364/365/368 probes   -40…356 °F (-40...+180 °C)
Typical accuracy of electronics
at +68 °F (+20 °C)   ±0.18 °F (±0.1 °C)
Typical temperature dependence
of electronics   0.005 °F/°F (0.005 °C/°C)
Sensor   Pt 1000 RTD 1/3 Class B IEC 751

Calculated Variables   (depends on model type)

Typical ranges
With HMP361 probe
dewpoint temperature   -40 °F…140 °F (-40...+60 °C)
mixing ratio   0...160 g/kg d.a.
absolute humidity   0...160 g/m³
wet bulb temperature   32…140 °F (0...+60 °C)

With HMP363, HMP364, HMP365 & HMP368 probes
dewpoint temperature   -40…212 °F (-40...+100 °C)
mixing ratio   0...500 g/kg d.a.
absolute humidity   0...600 g/m³
wet bulb temperature   0…212 °F (0...+100 °C)

Outputs

Two analog outputs   Two wire 4...20 mA
(one standard, one optional)
Typical accuracy of analog
outputs at +20 °C   ±0.05% FS
Typical temperature dependence
of analog outputs   0.003%/°F FS(0.005% /°C) FS
Optional LonWorks® channel
RS232C serial output for service use   connector type RJ45

Classification with Current Outputs

Cenelec (76/117/EEC)   EEx ia IIC T5
VTT No. Ex-99.E.005X
U.S.A., Canada, Japan and Australia   Pending

Safety factors with current outputs   Ui=28 V, Ii=100 mA,
Ci=48nF, Li=22mH

LonWorks® Module

Connections   screw terminals, 0.33...2.0 mm²
wires (AWG 14-22)
Connection type   XF78 (TP78)
Communication speed   78.125 kbit/s
Maximum cable length
with dual terminated bus topology   1000 m
with free topology (incl. Terminators)   300 m
Application power   two-wire power & signal
Signaling form (unipolar)   IS node draws 20 mA to transmit

LonWorks® module classification
EU (76/117/EEC)   Eex ia IIC T4
VTT No. Ex-99.E.006X
Safety factors with LonWorks® module   Ui=24 V, Ii=225 mA,
Pi=1.2 W, Ci= 0 F, Li=22mH

General

Operating voltage   12...28 V
with serial port (service mode)   15...28 V
Connections   screw terminals, 0.33...2.0mm²
wires (AWG 14-22)
Cable bushing   Pg11 (5...12mm)
Conduit fitting   Pg11/NPT 1/2"-14
Operating temperature range for
electronics   -40…140 °F (-40...+60 °C)
with display and/or with
LonWorks® module   -4…140 °F (-20...+60 °C)
Storage temperature range   -40…158 °F (-40...+70 °C)
Housing material   G-A1Si 10 Mg (DIN 1725)
Housing classification   NEMA 4 (IP 65)
Housing dimensions   164 x 115 x 62 mm
Housing weight   950g
Fully electromagnetically compatible
according to standards   EN50081-1 and EN50082-2

Options and Accessories

Display   two-line LCD
character size (1st line/2nd line)   12 mm/10 mm
Calculated output variables   dewpoint temperature
mixing ratio
absolute humidity
wet bulb temperature
Additional analog output   4...20 mA
LonWorks® channel   XF78 (TP78)

Duct mounting installation kit
(for HMP363 sensor head)   Order code: HMP233FAH
Installation flange (for HMP365 sensor head)
aluminium   Order code: HMP235FA
stainless steel   Order code: HMP235FS
Ball valve set (for HMP368
sensor head)   Order code: DMP248VS
pressure range at 68 °F (+20 °C)   0...70 bar
Serial interface cable for PC
connectors RJ45 - D9 female   Order code: 19446ZZ

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