

HMT360 Series Intrinsically Safe Humidity and Temperature Transmitters for hazardous areas

Technical data

Performance

RELATIVE HUMIDITY

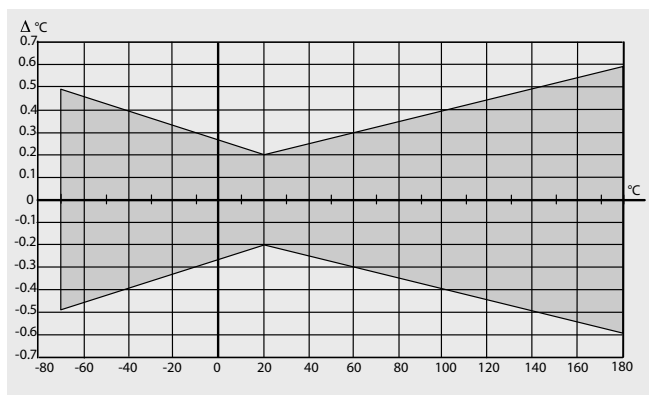
Measurement range	0 ... 100 % RH
Accuracy (including non-linearity, hysteresis, and repeatability)	
with Vaisala HUMICAP® 180 or 180R for typical applications	
at +15 ... +25 °C (59 ... +77 °F)	± 1.0 % RH (0 ... 90 %RH) ± 1.7 %RH (90 ... 100 %RH)
at -20 ... +40 °C (-4 ... +104 °F)	±(1.0 + 0.008 x reading) %RH
at -40 ... +180 °C (-40 ... +356 °F)	± (1.5 + 0.015 x reading) %RH
with Vaisala HUMICAP® 180L2 for application with demanding chemical environment	
at -10 ... +40 °C (14 ... +104 °F)	± (1.0 + 0.01 x reading) %RH
at -40 ... +180 °C (-40 ... +356 °F)	± (1.5 + 0.02 x reading) %RH
Factory calibration uncertainty (+20 °C)	± 0.6 % RH (0 ... 40 %RH) ± 1.0 % RH (40 ... 97 %RH)

(Defined as ±2 standard deviation limits. Small variations possible, see also calibration certificate.)

Response time (90 %) at +20 °C (+68 °F) in still air	
with grid filter	8 s / 17 s*
with grid + steel netting filter	20 s / 50 s*
with sintered filter	40 s / 60 s*
* with HUMICAP® 180R sensor	

TEMPERATURE

Measurement range	-40 ... +180 °C (-40 ... +356 °F) (depends on selected probe)
Typical accuracy of electronics at +20 °C (+68 °F)	±0.2 °C (0.36 °F)
Typical temperature dependence of electronics	0.005 °C/°C (0.005 °F/°F)
Sensor	Pt 1000 RTD 1/3 Class B IEC 751
Accuracy over temperature range	



OTHER VARIABLES

Optionally available dewpoint temperature, mixing ratio, absolute humidity, wet bulb temperature.

Operating environment

Temperature range	
operating temp. range for electronics	-40 ... +60 °C (-40 ... +140 °F)
with display	-20 ... +60 °C (-4 ... +140 °F)
storage	-40 ... +70 °C (-40 ... +158 °F)
Pressure range	see probe specifications

Complies with EMC standard EN61326-1, Electrical equipment for measurement, control and laboratory use - EMC requirements; Industrial Environment.

NOTE! IEC 1000-4-5 complies only when using external EXi approved surge arrester on safe area.

Technical data

Inputs and outputs

Operating voltage	12 ... 28 V
with serial port (service mode)	15 ... 28 V
Analog outputs	two-wire 4 ... 20 mA, one standard, one optional
Typical accuracy of analog outputs at +20 °C	±0.05% full scale
Typical temperature dependence of analog outputs	0.005% / °C (0.005% / °F) full scale
Analog outputs	connection via safety barriers
RS232C serial output for service use	connector type RJ45
Display	two-line LCD

Mechanics

Connections	screw terminals, 0.33...2.0 mm 2 wires (AWG 14-22)
Cable bushings	For 7.5...12mm or 10...15mm cable diameters (M20)
Conduit fitting	NPT 1/2" (M20)
Housing material	G-ALS _i 10Mg (DIN 1725)
Housing classification	IP66 (NEMA 4X)
Housing weight	950 g

Options and accessories

Duct installation kit (for HMP363/367)	210697
Mounting flange (for HMP365)	210696
Ball valve ISO 1/2 with welding joint (for HMP368)	BALLVALVE-1
pressure range at +20 °C (+68 °F):	0 ... 20 bar (0 ... 290 psia)
(during installation max. 10 bar (145 psia))	
Calibration adapter for HMK15	211302
Serial interface cable for PC	
connectors RJ45 - D9 female	25905ZZ
Galvanic isolator	212483
Zener barrier (USA & Canada)	210664
Protection cover (for use in the presence of combustible dust, ATEX)	214101
	II 1 D IP65 T = 70 °C

Classification with current outputs

EUROPE / VTT	EU (94/9/EC, ATEX100a)	II 1 G	Ex ia IIC T4 Ga
		VTT 09 ATEX 028 X	issue No: 1
Safety factors		$U_i = 28 \text{ V}$, $I_i = 100 \text{ mA}$, $P_i = 700 \text{ mW}$	$C_i = 1 \text{ nF}$, L_i negligibly low
Environmental specifications		T_{amb}	-40 ... +60 °C (-40 ... +140 °F)
		P_{amb}	0.8 ... 1.1 bar
Dust classification (with protection cover)		II 1 D (IP65 T=70 °C)	VTT 04 ATEX 023X
USA (FM)		Classes I, II, III, Division 1, Groups A-G and	Division 2, Groups A-D, F and G
			FM Project ID: 3010615
Safety factors:		$V_{max} = 28 \text{ VDC}$, $I_{max} = 100 \text{ mA}$,	$C_i = 1 \text{ nF}$, $L_i = 0$, $P_i = 0.7 \text{ W}$, $T_{amb} = 60 \text{ °C}$ (140 °F), T5
JAPAN (TIIS)			Ex ia IIC T4
			Code number: TC17897
Safety factors:		$U_i = 28 \text{ VDC}$, $I_i = 100 \text{ mA}$, $C_i = 1 \text{ nF}$,	$P_i = 0.7 \text{ W}$, $L_i = 0$, $T_{amb} = 60 \text{ °C}$ (140 °F)
CANADA (CSA)		Class I	Division 1 and Division 2, Groups A, B, C, D;
		Class II	Division 1 and Division 2, Groups G and
			Coal Dust;
Class III		CSA File No: 213862 0 000, CSA Report: 1300863	
Safety factors:		$T_{amb} = 60 \text{ °C}$, T4,	Intrinsically safe when connected as per
			Installation Drawing DRW213478.
CHINA (PCEC)			Ex ia II CT5
			Certificate No. CE042052
			Standard GB3686.1-2000 and GB3836.4-2000
IECEx (VTT)			Ex ia IIC T4 Ga
			IECEx VTT 09.0002x issue No: 1
Safety factors		$U_i = 28 \text{ V}$, $I_i = 100 \text{ mA}$, $P_i = 700 \text{ mW}$	$C_i = 1 \text{ nF}$, L_i negligibly low
Environmental specification		T_{amb}	-40 ... +60 °C (-40 ... +140 °F)
		P_{amb}	0.8 ... 1.1 bar

VAISALA

For more information, visit
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