

HYGROCLIP

HYGROCLIP[®]

Humidity goes Digital



Intrinsically Safe Humidity and Temperature Probes

- FM approved Class I, II, III
 - Division 1
 - Groups A - G
 - Temperature Class T6
- Proven sensor technology provides $\pm 1.0\%$ RH / $\pm 0.2^\circ\text{C}$ accuracy
- Long term stability of better than 1% RH per year
- Compatible with the HygroFlex industrial transmitter
- Dew point, wet bulb, and other computed values available
- Available as a stand alone 2-wire 4...20 mA transmitter
- Duct, wall, remote, and compressed air configurations

rotronic[®]

LEADING IN HUMIDITY MEASUREMENT

Digital Ex Humidity and Temperature Measurement

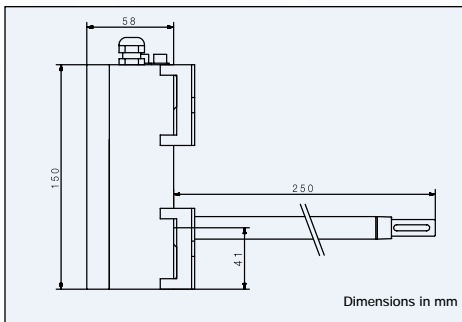
HygroClip Ex is a series of probes for the measurement of humidity and temperature in hazardous areas, incorporating the latest digital signal processing and data transmission technology. Suitable for connection to the HygroFlex range of industrial transmitters, or for use as a stand alone 4...20 mA 2-wire transmitter, the HygroClip Ex probes offer wide measurement ranges and flexible installation options.

The Ex probes are based on ROTRONIC's innovative HygroClip technology, and feature a custom ASIC to provide the highest possible accuracy with features such as digital calibration and probe interchangeability. Each probe is constructed throughout from high grade stainless steel, with

full NEMA 4 protection, and can be fitted with up to 200 m of cable to the zener barrier. Probes feature a replaceable filter system which protects the sensors from high air velocity, dust, grease etc.

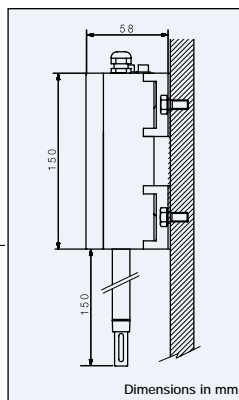
To comply with hazardous area standards, a zener barrier is required between the HygroClip Ex probes and the HygroFlex, or when used as a 2-wire 4...20 mA transmitter, between the probe and the control or monitoring system. All probes measure over the range of 0...100 % RH thanks to the well proven Hygromer humidity sensor technology.

The Hygromer humidity sensor has excellent long term stability, high tolerance to chemical contamination, and withstands exposure to condensation without any effect on calibration stability. Temperature range is dependent on the version used, with a maximum capability of -50...+200°C.



HygroClip ID-Ex

Suitable for duct or through-the-wall installation with a robust 250 x 15 mm stainless steel tube. Temperature measuring range is 0...100 °C, provided the electronics enclosure does not exceed the Ex temperature rating (-20...+40 °C).

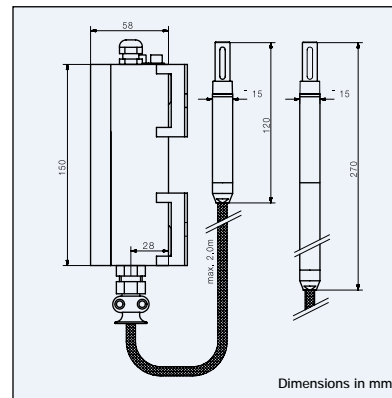
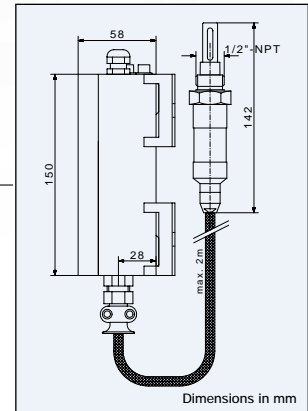


HygroClip IW-Ex

For wall mounted applications with an external stainless probe (150 x 15mm Ø).

HygroClip IE-3Ex

Measurement in compressed air. This probe has a 1/2" NPT thread and can be used at pressures up to 50 bar/725psi. Not suitable for applications where there are significant temperature differences across mounting wall.

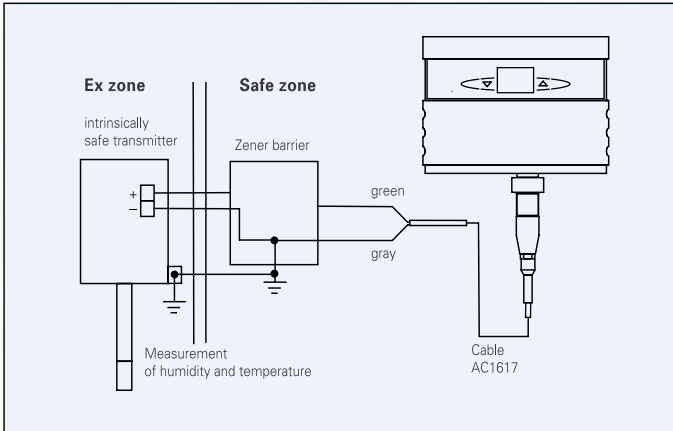


HygroClip IC-Ex

Cable mounted probe for use in applications with high or low temperatures (-50...+200 °C) or where installation flexibility is required. The robust stainless steel probe is available in two lengths, 120 and 270 mm, and both are fitted with a 2m cable.



FM: Class I, II, III Div 1 Groups A-G T6
 PTB 01 ATEX 2180
 II 1G EEx ia IIC T5
 II 2G EEx ia IIC T6



Combined Transmitter for humidity temperature measurement

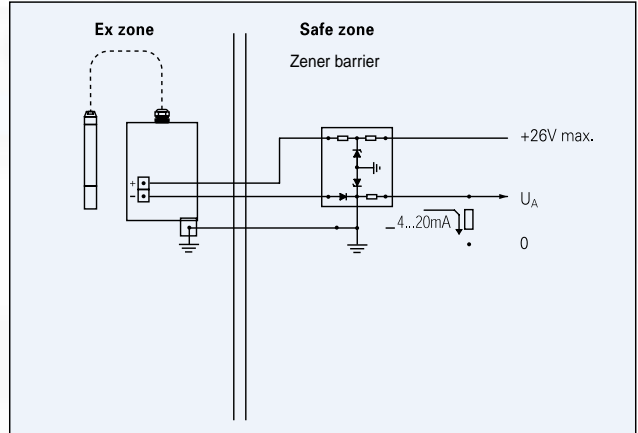
HygroClip Ex used with the HygroFlex transmitter

- Combined humidity temperature transmitter
- Temperature in °C or °F
- Computed parameter such as dew point
- Custom scaling of output signals

Ordering a HygroClip-EX with a HygroFlex

(see HygroFlex datasheet for more detailed information)

HygroClip Ex Configuration Options



Stand alone humidity or temperature transmitter

Operates on a 2-wire 4...20mA loop basis for %RH or °C

HTS	1 2 3				Use HTS2 or 3 for computed parameters	HygroFlex1 - Analog output HygroFlex2 - Digital output HygroFlex3 - Analog & Digital output
	1 2					1 12...35 VDC / 12...24 VAC Powered 2 90...250 VAC 50-60Hz Powered
		A M				A ABS enclosure M Metal enclosure - conduit only
			G C			G = Cable Grips C = 1/2" Conduit Fitting
				D N		D Digital Display and Keypad N No Digital Display
				1 2 3 N		1 %RH and Temp. to be displayed 2 Calculated Value and %RH to be displayed 3 Calculated value and Temp. to be displayed N No Digital Display
					Used on HTS1 or HTS3 only	Select Output and Enter appropriate code 1 4...20mA 4 0...5 VDC 2 0...20mA 5 0...10 VDC 3 0...1 VDC N No Analog Output
					Enter a "S" if special temperature range is desired. Also enter as separate line on purchase order	Select a Temperature Span from the following 1 0...100°F 4 0...100°C 2 0...200°F 5 0...200°C 3 0...300°F 6 -50...150°C
					Available only with HTS2 or HTS3. Enter computed parameter range as separate line on purchase order	Select Computed Parameter. Enter an "X" if none. 1 Dew Point 5 Mixing Ratio 2 Wet Bulb Temp. 6 Specific Humidity 3 Enthalpy 7 Partial Pressure 4 Absolute Humidity 8 Vapor Conc. @ sat
						Select probe to be used. A IW-Ex C IC1-Ex E IE3-Ex B ID-Ex D IC3-Ex
					X	X = No extension cable possible
HTS						Enter Ordering Code To Left



Technical Specifications and **ordering information**

SPECIFICATIONS	HYGROCLIP ID-EX	HYGROCLIP IW-EX	HYGROCLIP IC-EX	HYGROCLIP IE3-EX
Humidity measuring range	0...100 %RH			
Temperature measuring range (at sensors)	-30°C(-22°F)...100°C(212°F)	-20°C(-4°F)...40°C(104°F)	-50°C(-58°F)...200°C(392°F)	-20°C(-4°F)...40°C(104°F)
Electronics operating range	0...100% RH, -20...40°C (-4°F...104°F)			
Accuracy at 23°C	±1.0 % RH and ±0.2°C (0.4°F)			
Repeatability	Better than 0.3% RH and 0.1°C (0.2°F)			
Long Term stability	Better than 1% RH and 0.1°C per year			
Time constant at 23°C	< 15 s at 1 m/s, no filter			
Sensors	Hygromer C-94 Humidity sensor, Pt100 1/3 DIN RTD			
Output signal	Configured for stand alone use: 4...20 mA (analog current signal %RH or °C) Configured for use with HygroFlex: 4...10 mA (digital current signal %RH and °C/°F)			
Load	Max 800 Ohm at 26 VDC			
Electrical Input Data	Ui=28V, li,=195mA, Pi=830mW, Ci=11nF, Li=O			
Enclosure	NEMA 4 Stainless steel, 150 x 100 x 58 mm			
Probe dimensions	250 x 15 mm Ø	150 x 15 mm Ø	IC1: 120 x 15 mm Ø, IC3: 270 x 15 mm Ø, both with 2 m cable	1/2"NPT with 2m cable
Approvals	FM: Class I, II, Division 1, Groups A-G, T6, Project code 3015571 PTB 01 ATEX 2180, II 1G EEx ia IIC T5, II 2G EEx ia IIC T6			
ORDERING INFORMATION				
Order code:	Description			
HygroFlex transmitter	See HygroFlex datasheet for detailed information			
HygroClip ID-Ex	Duct mount probe for Ex applications			
HygroClip IW-Ex	Wall mount probe for Ex applications			
HygroClip IC1-Ex	Cable mount probe for Ex applications, tube length 120mm			
HygroClip IC3-Ex	Cable mount probe for Ex applications, tube length 270mm			
HygroClip IE3-Ex	Cable mount probe with 1/2"NPT fitting for compressed air			
AH-Config	Option: HygroClip Ex probes 4-20 mA output = 0...100%RH (no other ranges) Required when not using a HygroFlex transmitter			
AT-Config	Option: HygroClip Ex probes 4-20 mA output = 0...100°C (no other ranges) Required when not using a HygroFlex transmitter			
ZB1	Zener barrier, DIN mount, for use with HygroFlex transmitter			
ZB1-420	Zener barrier, DIN mount, for use with Ex probe only (no HygroFlex transmitter)			
AC1617-ZB-002	2 meter connection cable from HygroFlex to zener barrier			
AC1617-ZB-005	5 meter connection cable from HygroFlex to zener barrier			
ET-7018	Cable to connect HygroClip Ex probes to zener barrier, per meter			
AC1301-MEX	Probe holder to mount HygroClip IC-Ex			
HygroPalm 3	Calibrator for HygroClip Ex probes (remove probe from hazardous area)			
AC 1628	Connection cable: HygroPalm to HygroClip Ex probes			
HygroClip S	Reference probe of HygroPalm 3 calibrator			
MOK-01-B5	Connection cable: HygroClip S to HygroPalm 3			
SPB5-WIN	Calibration cable: HygroClip Ex probes to PC			
HW3	Calibration software			
ER-15	Calibration device: HygroClip ID-Ex, IW-Ex, IC-Ex			
EMG	Calibration device: Hygroclip IE3-Ex			
EAXX-SCS	Calibration standard, SCS certificate, pack of 5 single use vials xx = 00, 05, 10, 20, 35, 50, 65, 80, or 95 %RH.			