

Transmitters

ROTRONIC humidity and temperature transmitters are world renowned for their excellent precision, long-term stability and reliability. Today our transmitter range offers an unparalleled range of innovative features to compliment the core ROTRONIC abilities of accuracy, reliability and long term stability.

Transmitters are measuring instruments for fixed installation with a specific signal output; primarily made for process applications and control. In climate control applications, ROTRONIC transmitters are used to optimise energy use and create a comfortable environment. Key features are accuracy, long term stability, time/cost saving installation, and low cost maintenance; they will easily outperform the low cost products typically used in commercial BMS/HVAC systems.

Typical applications include building management systems, office buildings, storage areas, clean rooms, hospitals, computer rooms, telecommunications centres.

ROTRONIC industrial transmitters are robust – high quality products designed specifically for demanding commercial and industrial applications. They tolerate exposure to wide temperature variation, condensation and high levels of chemical pollution thanks to the unique properties of the Hygromer® humidity sensor, which ensures excellent long-term stability in the most demanding applications. The highest precision over a wide operating range is achieved with dynamic temperature compensation (-50...200°C).

The new generation of HygroClip industrial transmitters is based on the latest digital flash technology so probes can be interchanged with no effect on system accuracy. The modular probe concept means on-site calibration and maintenance is virtually eliminated. State of the art features also include calculation of a wide range of humidity parameters, user programmable scaling of output signals and networkable digital communications.

Typical applications include process monitoring and optimisation, test cells, drying processes up to 200°C, climatic chambers, and high value product environments such as the pharmaceutical and semiconductor industries.

Key features

- Excellent long term stability <1% rh per year
- High accuracy $\pm 1.5\%$ rh ($\pm 1\%$ option)
- Dynamic temperature compensation
- Chemically resistant humidity sensor
- Robust housings
- Modular construction
- Wide range of probe configurations
- Digital humidity measurement technology
- Interchangeable digital probes

- User programmable
- RS485 networking

Your benefits

- Stable measurements and low maintenance
- Precise measurements
- Precision over full operating temperature range
- Suitable for harsh industrial applications
- IP65 protection
- Easy and safe installation
- Suitable for any application
- High stability electronics, precision and flexibility
- Simple low cost maintenance and minimum down time
- Outputs and measurement values can be rescaled
- Up to 32 instruments can be connected together

Section contents

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HygroFlex Industrial Transmitter

28 to 43

- ✓ Interchangeable industrial probes
- ✓ Intrinsically safe option
- ✓ 0...100% rh, -50...200°C

M Series/Roline L-Series Transmitter

46 to 55

- ✓ Wide range of options to suit any application
- ✓ 0...100% rh, -40...100°C

I-1020 2 wire Industrial Transmitter Series

56 to 61

- ✓ 2x2 wire 4...20mA outputs
- ✓ 0...100% rh, -50...150°C

HygroClip S Probes

62 to 67

- ✓ HygroClip S probes
- ✓ Accessories for HygroClip S

Transmitter Applications



Power Stations

Power generation, whether nuclear or fossil fuelled requires carefully controlled environments for best performance and reliability.



High temperature.

HygroFlex offers the highest direct humidity measurement currently available.



Intrinsically safe.

In combination with the HygroClip EX, the HygroFlex can be used to measure humidity and temperature in the most hazardous zone 0.



Drying processes.

Monitoring and control of any industrial drying process can have significant benefits in terms of product quality, energy use and productivity.



Hazardous storage areas

Explosive materials such as weapons or chemicals also need to be kept at the correct humidity and temperature conditions.



Environmental Test.

Every product from mobile telephones to a car is today subjected to thorough climatic test conditions to establish and maintain reliability. Humidity and temperature conditions are a critical part of this process.



Ceramics Industry.

The measurement and control of the drying processes in the ceramics industry.



Paper Industry

Monitoring and control of the drying process.

The Digital Advantage

HygroFlex is a new generation of industrial humidity and temperature transmitters based on the very latest digital technology. Digital signal processing significantly benefits humidity and temperature measurement in five key areas:

1. Measurement Accuracy:

Digital processing of sensor signals provides much more scope and flexibility for the compensation of error components such as linearity and temperature coefficients. ROTRONIC sensors have always been regarded as amongst the most precise and stable in the world; with this new technology, small errors become even smaller!

2. Maintenance and Calibration:

Digital signal communication allows components to be 'hot swapped' without loss of measurement precision – calibration and sensor data are retained permanently within each digital HygroClip probe. HygroClip probes can be 'hot swapped' in seconds, significantly reducing the maintenance and downtime costs associated with the removal of instruments to laboratories or workshops for difficult, time-consuming calibration and repair. HygroFlex can also be field calibrated and adjusted directly using the HygroPalm 3 calibrator.

3. Precision and Stability:

Digital circuits are inherently more stable than analogue, and are less affected by temperature changes. Calibration adjustment is made purely by software, meaning no unstable, hard-to-reach potentiometers. The option for multiple calibration points is extended across the full measurement range.

4. Application Flexibility:

Measurement change? Need dew-point instead of %rh? Or the mixing ratio? Simply connect the HygroFlex to a PC and change the configuration!

Different installation? If your application needs change, simply fit one of the wide range of probes with an alternative configuration or temperature operating range.

Multiple point measurement? Need to expand? The HW3 software package offers a comprehensive networking solution for up to 32 instruments. HW3 features data logging (reporting), graphical and alarm functions and operates on any standard Windows based PC.

Wiring hardly possible? Or too expensive? The HygroFlex is able to communicate by means of a radio controlled interface option.

5. Measurement of Dew Point and other Parameters:

Digital technology makes it possible to obtain parameters such as dew point or the mixing ratio with economical, versatile and easy-to-maintain instruments and probes. Taking the chilled mirror technology as an example, typical requirements and problems are eliminated: no sampling system is required in most applications, there is no longer any uncertainty between dew and frost, and the requirement for frequent mirror cleaning fully disappears.

Core features

High quality electronics

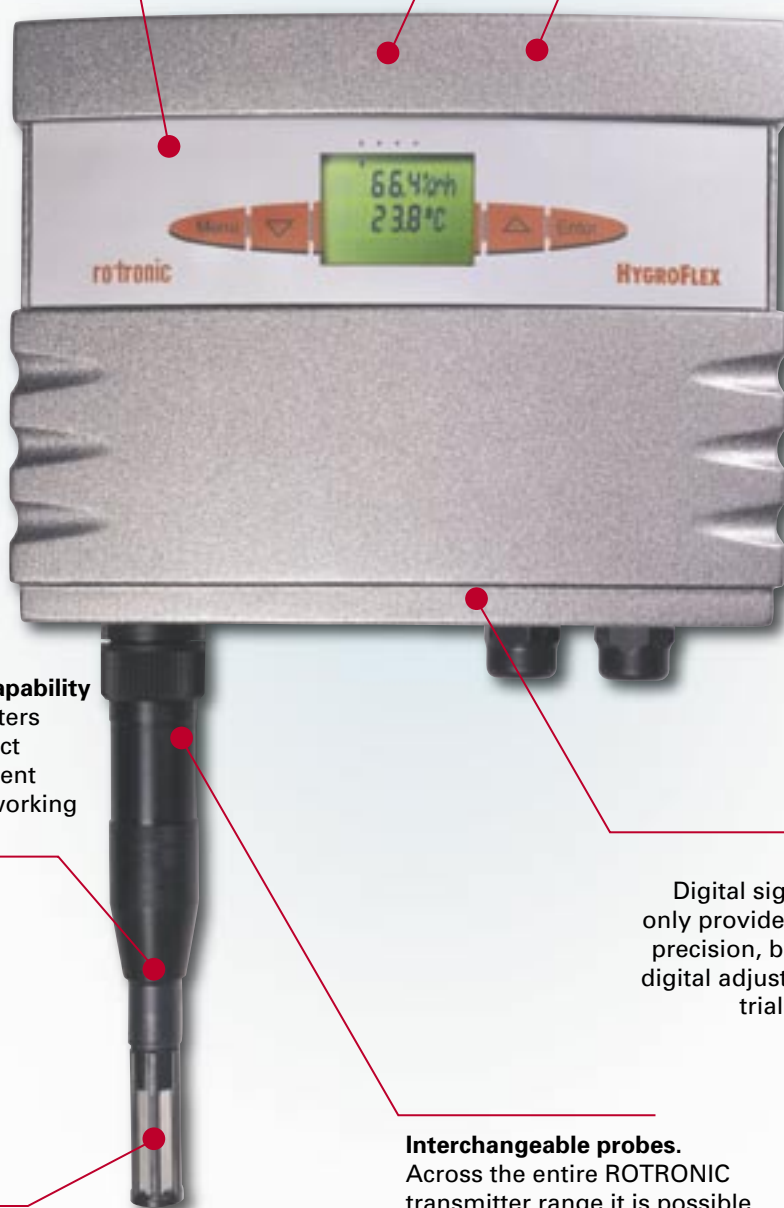
High quality, high stability electronics ensure consistent long term performance

Temperature compensated

All ROTRONIC transmitters are dynamically temperature compensated to maintain best possible humidity measurement accuracy over very wide temperature ranges.

User calibration

All ROTRONIC transmitters can be adjusted by the user to provide optimum precision throughout the product's life without expensive 'return to base' maintenance.



High temperature capability

ROTRONIC transmitters have the widest direct humidity measurement range in the world working from -50...200°C.

Digital technology

Digital signal processing not only provides the best possible precision, but also allows fully digital adjustment for all industrial HygroClip probes.

High quality sensor

The Hygromer® IN-1 humidity sensor is arguably the best in the world. Precise factory adjustment and superb long term stability provide consistent measurement results with minimum maintenance.

Interchangeable probes.

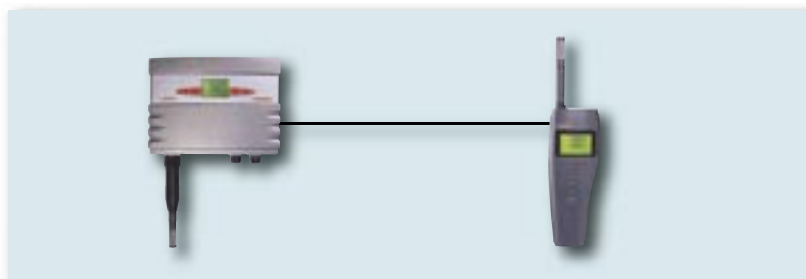
Across the entire ROTRONIC transmitter range it is possible to specify interchangeable probes; simplifying field maintenance and maximising application flexibility.

HygroFlex 1



Analogue outputs

HygroFlex 1 accepts one HygroClip probe and provides two linear analogue outputs for relative humidity and temperature. Standard factory configuration is 4...20 mA, but this can be easily changed to 0...20 mA, 0...1 V, 0...5 V or 10 V. Scaling of the output range can be modified from the standard 0...100 %rh and 0...100 °C using the internal service connection, connecting cable AC1623 and a PC running the HW3 software.



Key features:

- %rh and temperature
- Interchangeable probes
- Two linear analogue outputs
- Jumper configuration of analogue outputs
- One probe input, digital or analogue (0...2.5 V, 10 Bit A/D; 12 Bit interpolated)
- Optional display/keypad

An external test socket is standard. A HygroPalm 3 handheld instrument can be connected to provide a live display of the transmitters current measurement values. When connected, the HygroPalm 3 can also be used as a digital adjustment tool for any probe connected to the HygroFlex 1.

The optional display & keypad gives a local display of measurement values and provides access to the 1 or 4 point probe adjustment directly from the HygroFlex 1 transmitter.

For probe options, see page 34 to 35.

HygroFlex 1 Ordering Information for Standard Versions

H	T	S	1	1	X	HygroFlex 1; 4...20 mA=0...100 %rh; 0...100 °C; 12...35 VDC/24 VAC power
H	T	S	1	2	X	HygroFlex 1; 4...20 mA=0...100 %rh; 0...100 °C; 90...250 VAC power
H	T	S	1	1	D	HygroFlex 1; 4...20 mA=0...100 %rh; 0...100 °C; 12...35 VDC/24 VAC power; Display & Keypad
H	T	S	1	2	D	HygroFlex 1; 4...20 mA=0...100 %rh; 0...100 °C; 90...250 VAC power; Display & Keypad

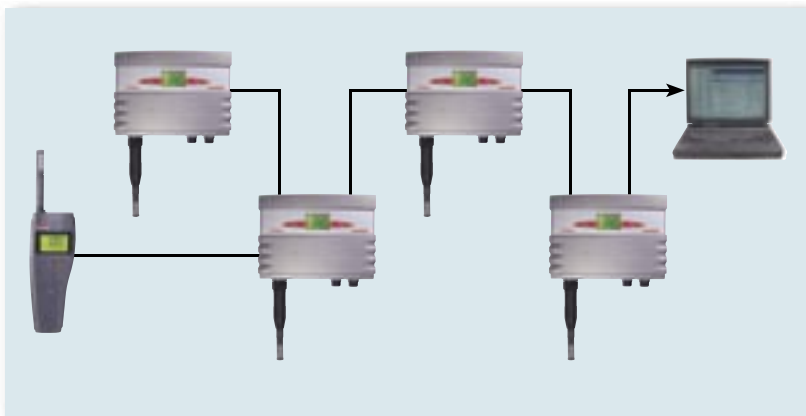
(see page 33 for order codes for special versions)

HygroFlex 1 Standard Connection Layout



Digital output, two Probes and Calculation function

HygroFlex 2 measures and transmits humidity and temperature measurements only in a digital format. The data is either output in an RS232 signal directly to a PC, or up to 32 transmitters can be networked together using RS485 for network communication, with RS232 used for PC connection. HygroFlex 2 is also supplied as standard with the capability to accept a second probe input and has integrated psychrometric calculation for parameters such as dew-point or mixing ratio. Thanks to the possibility to accept 2 probes, it is possible to set up a network with up to 64 probes = 128 measuring values at a very reasonable price. Probe-cables of up to 200m cover all applications. Standard features also include full user programmability and an external test socket.



Key features:

- %rh and temperature
- Display of calculated values; dew-point, mixing ratio, etc (with keypad/display option)
- RS232 output (%rh and temperature)
- Networkable (RS485)
- 2nd probe input (digital or analogue 0...2.5V e.g. pressure)
- Fully user programmable

An external test socket is standard. A HygroPalm handheld instrument can be connected to provide a live display of the transmitters current measurement values. When connected, the HygroPalm can also be used as a digital adjustment tool for any probe connected to the HygroFlex.

The optional display & keypad gives a local display of measurement values and provides access to the 1 or 4 point probe adjustment directly from the HygroFlex 2 transmitter.

HygroFlex 2 Ordering Information for Standard Versions

H	T	S	2	1	X	HygroFlex 2; digital output only; 12...35 VDC/24 VAC power; 2 probe inputs
H	T	S	2	2	X	HygroFlex 2; digital output only; 90...250 VAC power; 2 probe inputs
H	T	S	2	1	D	HygroFlex 2; digital output only; 12...35 VDC/24 VAC power; 2 probe inputs; Display & Keypad
H	T	S	2	2	D	HygroFlex 2; digital output only; 90...250 VAC power; 2 probe inputs; Display & Keypad

(see page 33 for order codes for special versions)

HygroFlex 2 Standard Connection Layout

Test socket
(Binder 712, 2-pin)

Serial connection RS232/485
(Binder 763/ 5-pin)



HygroFlex 3

Simultaneous Analogue and Digital Outputs with Absolute Humidity Calculation

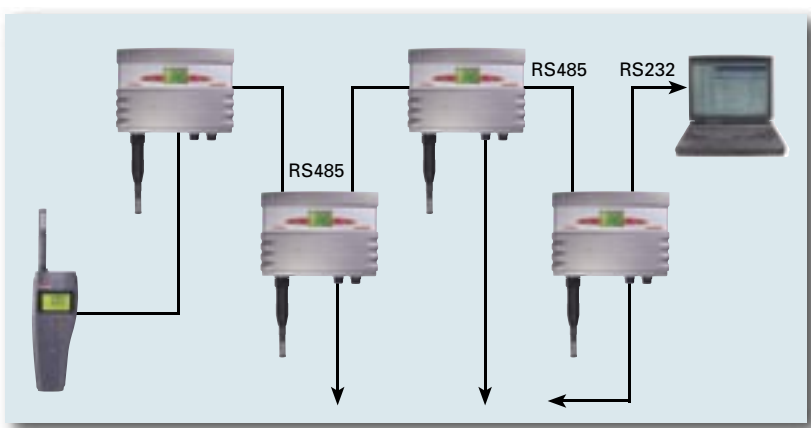
HygroFlex 3 combines all the features of the HygroFlex 1 and 2 into a highly specified instrument, and represents probably the most advanced humidity and temperature transmitter on the market. Additional features include a third analogue output for greater flexibility, a simultaneous serial output and the ability to dynamically compensate calculated humidity parameters for variations in application pressure.

The comprehensive range of outputs available makes the HygroFlex 3 particularly well suited to combined monitoring and control applications. The analogue outputs can be connected to the applications control system, whilst the digital RS232 signal interfaces with a local PC where engineers can monitor the process and set up alarms via Email or SMS text messages.

The dynamic pressure compensation feature is truly state of the art. In climatic test or research and development projects, the humidity measurements can be optimised for any condition with the inclusion of pressure measurement, and therefore compensation of pressure dependent calculated values such as enthalpy and wet-bulb temperature. All calculated parameters are based on WMO formulae.

Key features:

- % rh, temperature and calculated value (dew-point, mixing ratio, etc)
- Three linear analogue outputs (all measured and calculated parameters)
- Jumper configuration of analogue outputs
- Simultaneous digital output (% rh and temperature)
- Networkable (RS485)
- 2nd probe input (digital or analogue 0...2.5V e.g. pressure)
- Fully user programmable
- External test socket
- Optional display and keypad



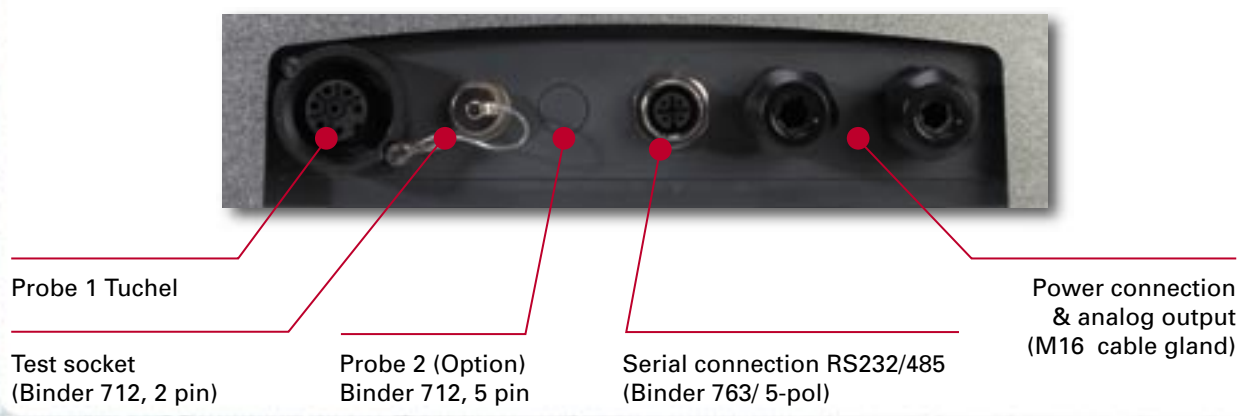
An external test socket allows the connection of a HygroPalm 3 handheld, which will display the actual values of the transmitter. With the HygroPalm 3 it is also possible to adjust the digital ROTRONIC probes connected to transmitter.

HygroFlex 3 Ordering Information for Standard Versions

H	T	S	3	1	X	HygroFlex 3; 4...20 mA = 0...100 % rh; 0...100 °C/°C dew-point; 12...35 VDC/24 VAC power; 2 probe inputs
H	T	S	3	2	X	HygroFlex 3; 4...20 mA = 0...100 % rh; 0...100 °C/°C dew-point; 90...250 VAC power; 2 probe inputs
H	T	S	3	1	D	HygroFlex 3; 4...20 mA = 0...100 % rh; 0...100 °C/°C dew-point; 12...35 VDC/24 VAC power; 2 probe inputs (1 optional); Display & Keypad
H	T	S	3	2	D	HygroFlex 3; 4...20 mA = 0...100 % rh; 0...100 °C/°C dew-point; 90...250 VAC power; 2 probe inputs (1 optional); Display & Keypad

(see page 33 for order codes for special versions)

HygroFlex 3 Standard Connection Layout



HygroFlex Probes

Fully interchangeable range of probes, simply choose the best version to suit your application. If your needs change, choose a different probe!

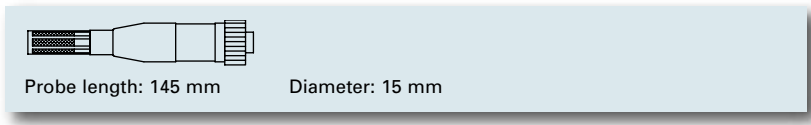


HygroClip IW / IW1

For wall mounting applications (area monitoring), lightweight construction for fast thermal response.

- Measurement range: 0...100 %rh, -40...85 °C
- Accuracy: $\pm 1\%rh/\pm 0.2\text{ K}$ for IW1; $\pm 1.5\%rh/\pm 0.3\text{ K}$ for IW
- Probe: Delrin 25/15 mm \varnothing
- Sensor protection: Wire mesh filter

Order code:
HygroClip IW1 ($\pm 1\%rh/0.2\text{ K}$) with SCS certificate
HygroClip IW

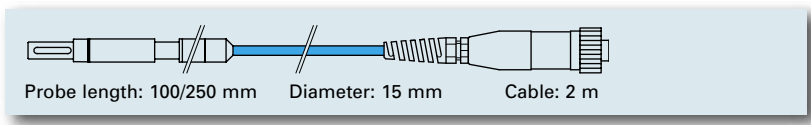


HygroClip IC

Cable mounted probe for flexible installation in varied applications such as high temperatures, climatic chambers, ducts etc. Two versions are available, 100 & 250 mm probe length. Select appropriate cable length.

- Measurement range: 0...100 %rh, -50...200 °C
- Probe: PPS 15 mm \varnothing
- Cable: 2 m / 5 m / 10 m available on request, see below

Order code:
HygroClip IC1 100 mm probe
HygroClip IC3 250 mm probe
HygroClip IC-1/X X = 2 Δ 2 m cable
 X = 5 Δ 5 m cable
 X = 10 Δ 10 m cable

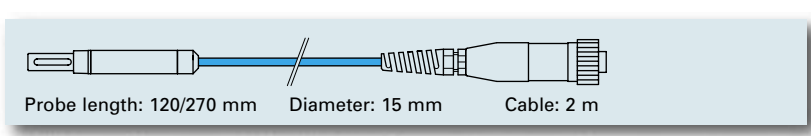


HygroClip IM

Robust stainless steel probe for duct, or through-wall installation. Suitable for use in the food industry. Select appropriate cable length. max. 200 °C. Two versions are available, 120 & 270 mm probe length.

- Measurement range: 0...100 %rh, -50...200 °C
- Probe: Stainless steel, 15 mm \varnothing
- Cable: 2 m / 5 m / 10 m available on request

Order code:
HygroClip IM1 120 mm probe
HygroClip IM3 270 mm probe
HygroClip IM-1/X X=2 Δ 2m cable
 X=5 Δ 5 m cable
 X=10 Δ 10 m cable



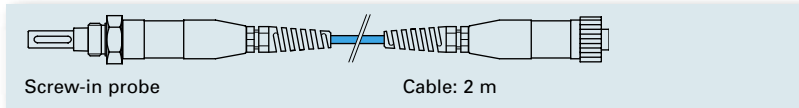
HygroClip IE

For pressurised applications up to a maximum of 50 bar and temperatures of 100 °C. Two versions are available with different threads ½" G or ½" NPT.

Measurement range: 0...100 %rh, -50...100 °C
 Probe: Stainless steel
 Cable: 2 m

Order code:

HygroClip IE-1 ½" G pressure probe
HygroClip IE-3 ½" NPT pressure probe



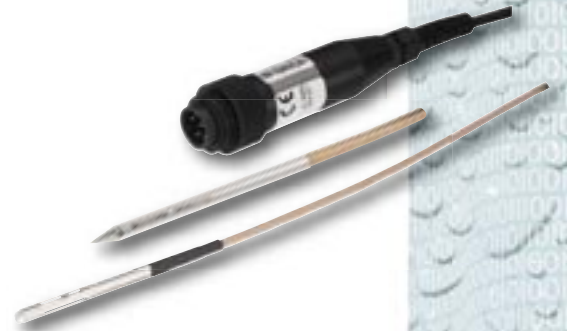
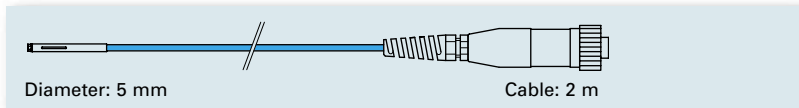
HygroClip IC-04 / 05

4/5 mm diameter probe for measurement in tight spaces such as climatic test applications, or monitoring conditions of materials. Max. 100 °C

Measurement range: 0...100 %rh, -40...100 °C
 Probe: Nickel-plated brass

Order code:

HygroClip IC-04 4 mm Ø probe with 2 m cable
HygroClip IC-05 5 mm Ø probe with 2 m cable

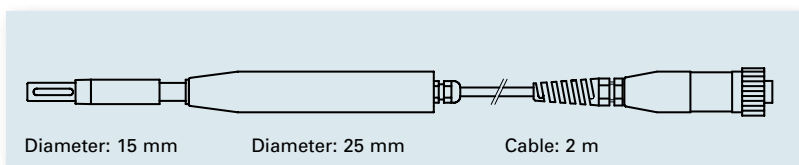


HygroClip ICx with 15/25 mm probe

HygroClip industrial probe with shaft diameter 15/25 mm to replace the old A-type duct probes of I-1000 and I-2000 series. No installation changes need to be made. Specifications are the same as for the standard HygroClip IC probes.

The order codes are the same as for the standard probes, but with the extension HygroClip IC-x/15/25. The robust mechanical construction allows probe lengths up to 700 mm.

Example: HygroClip IC-3/15/25 (Probe length = 250mm)



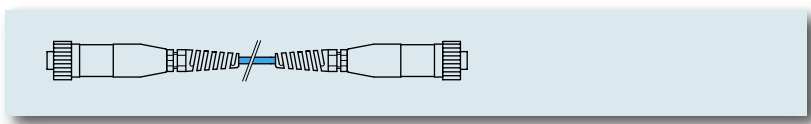
Accessories



HygroClip Industrial Probe Extension Cable

Should you wish to extend the distance between the HygroFlex transmitter and probe, the extension cable AC1616 can be specified with lengths up to 200 m thanks to an integral signal booster.

- Order code:
AC1616xxx Where required length xxx = 010 to 200 m, in steps of 10 m
AC1619 Pair of connectors with electronics for customers own cable assembly.



Probe options/filters/mounting hardware

The robust slotted cap also functions as a filter holder and provides mechanical protection when the filter element is removed.

SP-MSB15
Metal slotted cap mounted over sensor

- Steel sinter filter **SP-S15**
- Wire mesh filter **SP-M15**
- Teflon filter **SP-T15**

Order code, filter, filter type, properties

Function: Protects sensors against pollution and high air velocity (up to 40m/s).
 A filter is required for air velocity above 3m/s.

Order code	Type of filter	Properties	Max. air velocity
SP-S15	Steel sinter filter element pore size ca. 5µ	High level of filtration Marginal effect on response times. Not suitable for high humidity applications	40m/s
SP-M15	Wire mesh filter element Mesh size ca. 20-25µ	Minimal measuring delay Reduced filtration efficiency for small particles. Suitable for high humidity applications	20m/s
SP-T15	Teflon filter element pore size ca. 10µ	Good filtration effect Extends response time in low air velocity Water repellent but water vapour permeable	20m/s

HygroClip EX Digital EX Humidity and Temperature Measurement

HygroClip EX is a series of probes for the measurement of humidity and temperature in hazardous areas featuring 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, which features a custom ASIC to provide the highest possible accuracy and features such as digital calibration and probe interchange ability. Each probe is constructed throughout from high grade stainless steel, with full IP65 protection. Each probe is fitted with a replaceable filter system which protects the sensors from high air speeds, 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...20mA transmitter, between the probe and the control or monitoring system.

All three probes measure over the range of 0...100 %rh thanks to the well proven Hygromer humidity sensor technology which 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.

HygroClip ID-EX

ATEX 2180



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

Order code:
HygroClip ID-EX

HygroClip IC-EX

ATEX 2180



Cable mounted probe for use in applications with high or low temperatures (-50...200°C) and 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 2 m cable.

Order code:
HygroClip IC1-EX (120 mm)
HygroClip IC2-EX (270 mm)

HygroClip IW-EX

ATEX 2180



For wall mounted applications with an external stainless probe (150 x 15 mm). Operating temperature: -20...40°C

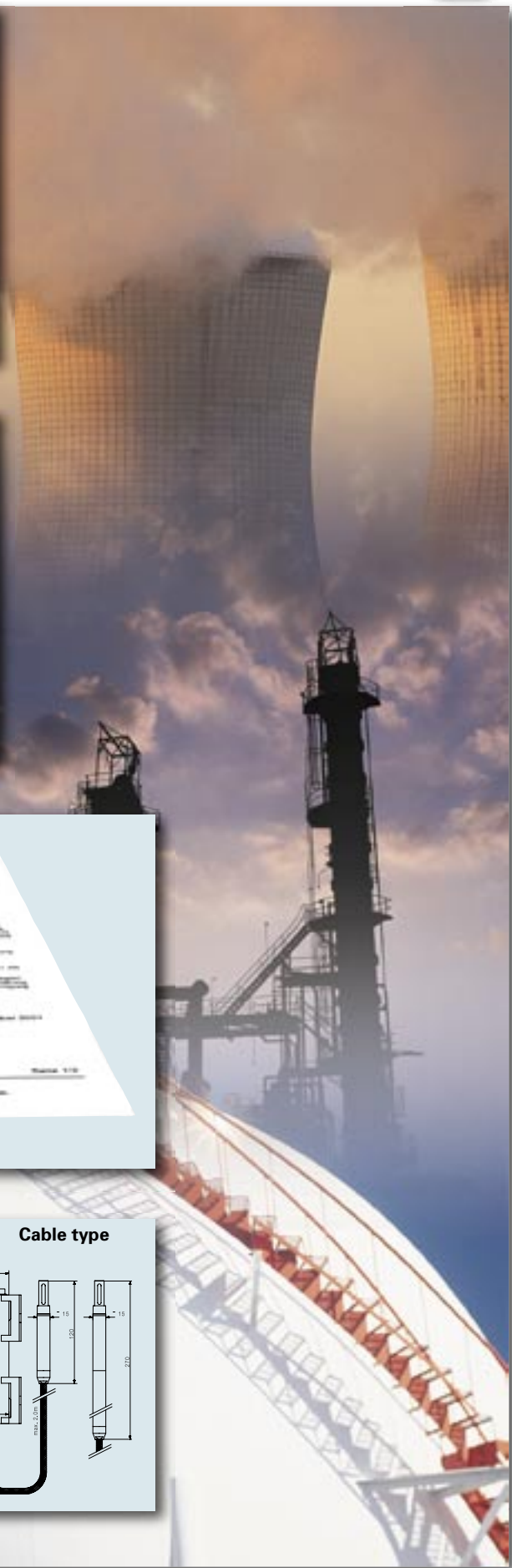
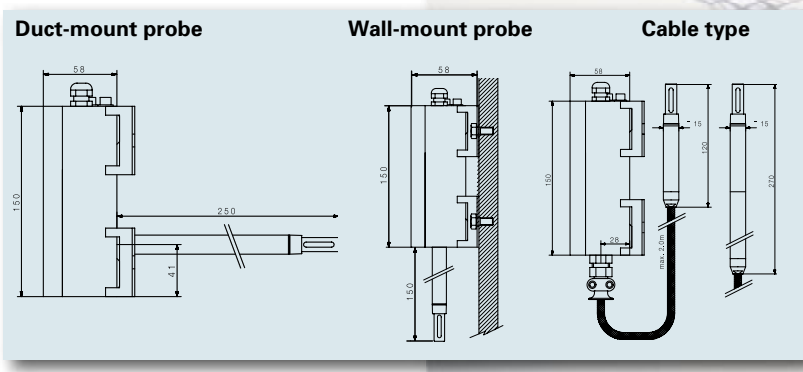
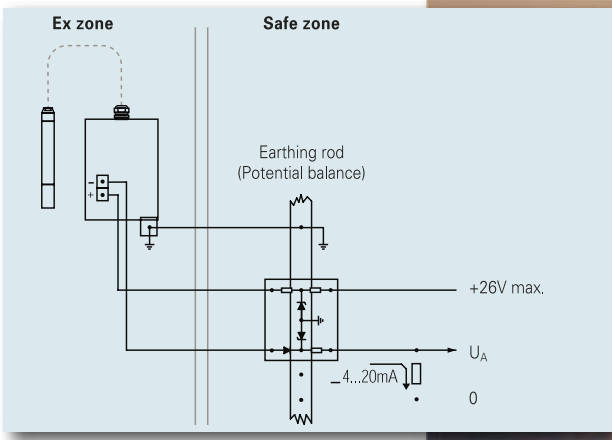
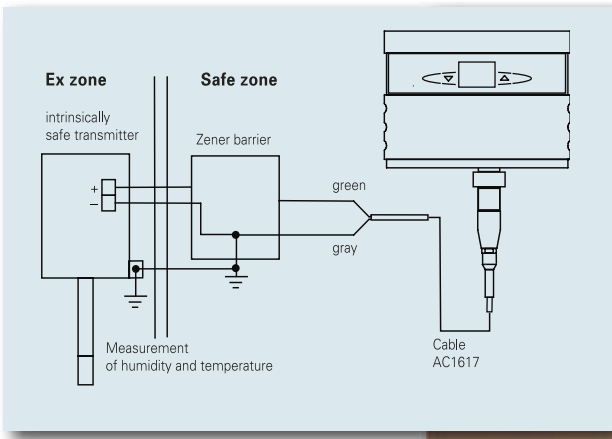
Order code:
HygroClip IW-EX

Note:
The total cable length between the HygroClip EX probe and the HygroFlex transmitter must not exceed 200 m.



Digital EX Humidity Temp. Application

Digital EX Humidity and Temperature Application Ex



HygroClip EX Technical Specifications

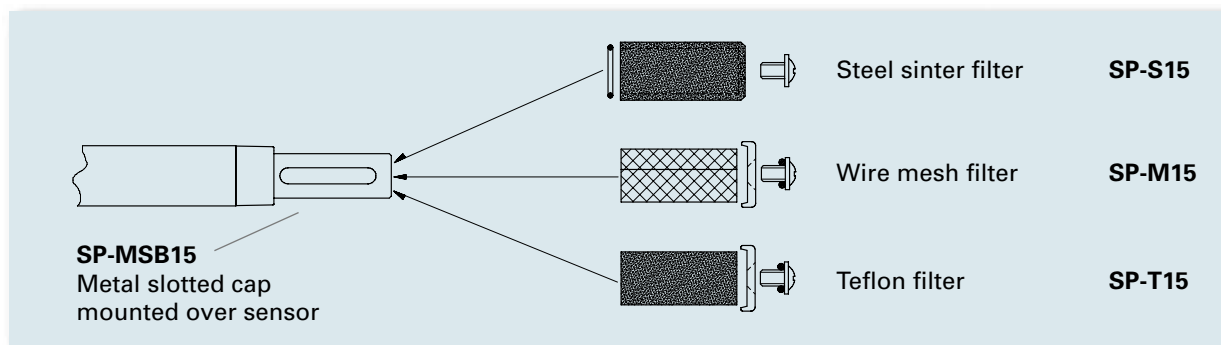
Specifications	HygroClip ID-EX	HygroClip IW-EX	HygroClip IC-EX
Humidity measuring range	0...100 %rh		
Temperature measuring range	-30...100 °C*	-20...40 °C	-50...200 °C
Accuracy at 23 °C	±1 %rh, ±0.2 K		
Repeatability	< 0.5 %rh, 0.1 °C		
Response Time	<15 s at 1 m/s air velocity at 23 °C		
Long Term Stability	< 1 %rh, 0.1 °C per year		
Sensors	Humidity: - Hygromer IN-1, Temperature: - Pt100 1/3 DIN		
Adjustment points	35, 80, 10 & 0 %rh, T0 & Tmax.		
Electronics operating range	-20...40 °C, 0...100 %rh		
Output signals	Digital 4...10 mA, Analogue 4...20 mA		
Load	Max. 800 Ω at 26 VDC		
Power	4...20 mA in loop power configuration		
Enclosure	Stainless steel, 150 x 100 x 58 mm / IP65		
Probe dimensions /cable length	250 x 15 mm Ø	150 x 15 mm Ø	IC1: 120 x 15 mm Ø, IC2: 270 x 15 mm Ø, 2 m Cable
Approvals	⚠ II 1 G E Ex ia IIC T5 resp. II 2 G E Ex ia IIC T6 ATEX 2180		

* Subject to the electronics working within the range -20...40 °C

HygroClip EX Ordering Information

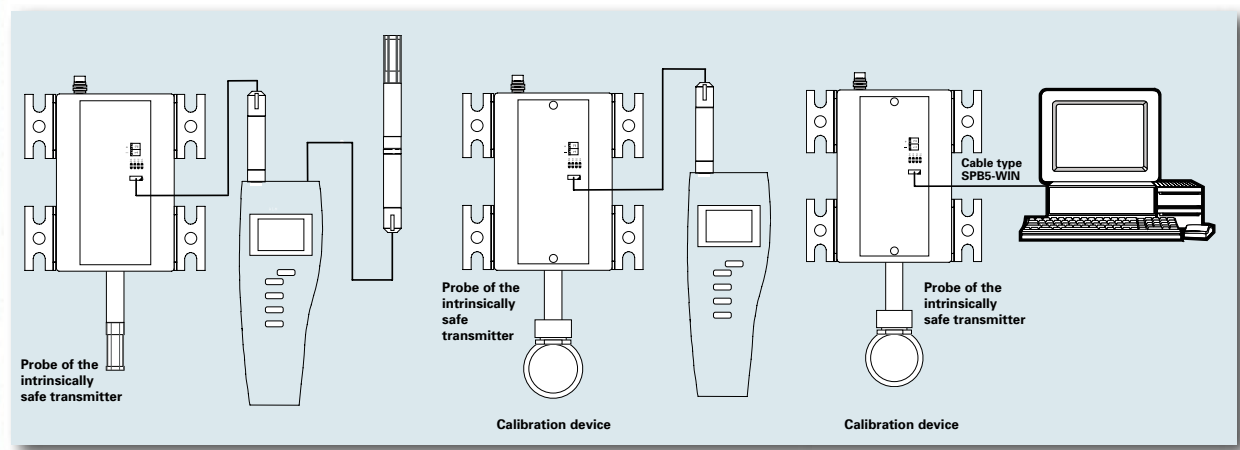
Order Code:	Description
HygroClip ID-EX	Duct mount probe for Ex applications
HygroClip IW-EX	Wall mount probe for Ex applications
HygroClip IC1-EX	Cable mount probe for Ex applications, 120 mm
HygroClip IC2-EX	Cable mount probe for Ex applications, 270 mm
XX ET-7018	Blue cable between HygroClip IC,IW,ID-EX and Zener barrier. XXX = cable length
AC1301-MEX	Fitting for mounting of HygroClip IC-EX
ZB1	Zener barrier, DIN rail mount, for applications with HygroFlex (DIO signal)
ZB1 420	Zener barrier, DIN rail mount , if 2 wire loop power application
ZB2	Zener barrier, with enclosure (space for 4 ZB1 in total), one ZB1 included
ZB2 420	Zenerbarriere, with enclosure (space for 4 ZB1 420 in total), one ZB1 420 included
ZB housing	Special enclosure for 4 Zener barriers
AC1617/ZB005	5m connecting cable for Zener Barrier to HygroFlex (Must be used in combination with HygroFlex)
SP-M15	Wire mesh filter element, fast response, ideal for high humidity
SP-S15	Sintered stainless steel filter for high air velocities up to 40ms-1
SP-T15	Teflon foam filter for the highest level of filtration
ER-15	Calibration device for all HygroClip Ex probes
EAx-SCS	Pack 5 SCS certified humidity standards, where xx = 00, 05, 10, 11, 20, 35, 50, 65, 75, 80, 95 %rh

Options, filters / mounting hardware

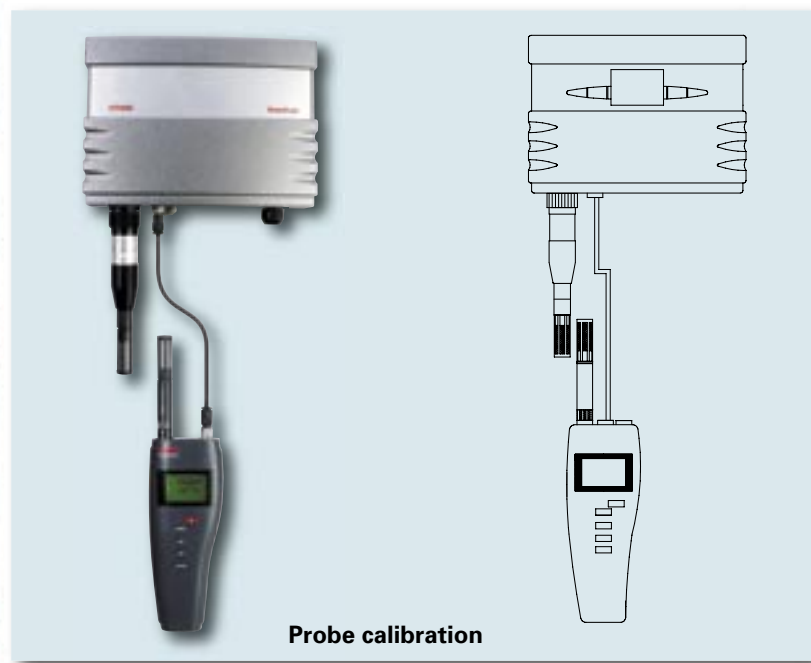


HygroFlex

HygroFlex Maintenance and Calibration



HygroPalm Remote Control of the HygroFlex



The HygroPalm handheld instrument can be connected to the HygroFlex, and depending on the version of the HygroPalm used, various tools and functions are available by remote control (see table below).

This feature is especially useful for HygroFlex transmitters which are not specified to include the display and keypad option.

Function	HygroPalm 1	HygroPalm 2	HygroPalm 3
Display the readings from any probe connected to the HygroFlex	•	•	•
Display the HygroFlex status (configuration, serial number, etc.)	N/A	•	•
1-point adjustment of any HygroClip digital probe connected to the transmitter, using the probe connected to the HygroPalm as a reference	N/A	•	•
Access the functions (except for calculate and display) of the transmitter, primarily the adjust M.PT function for multi point probe calibration	N/A	N/A	•
Connecting cable required:	AC1621	AC1620	AC1620

HygroFlex Configuration by direct PC connection

It is possible to configure the HygroFlex by direct connection to the PC using the HW3 software and a connecting cable.

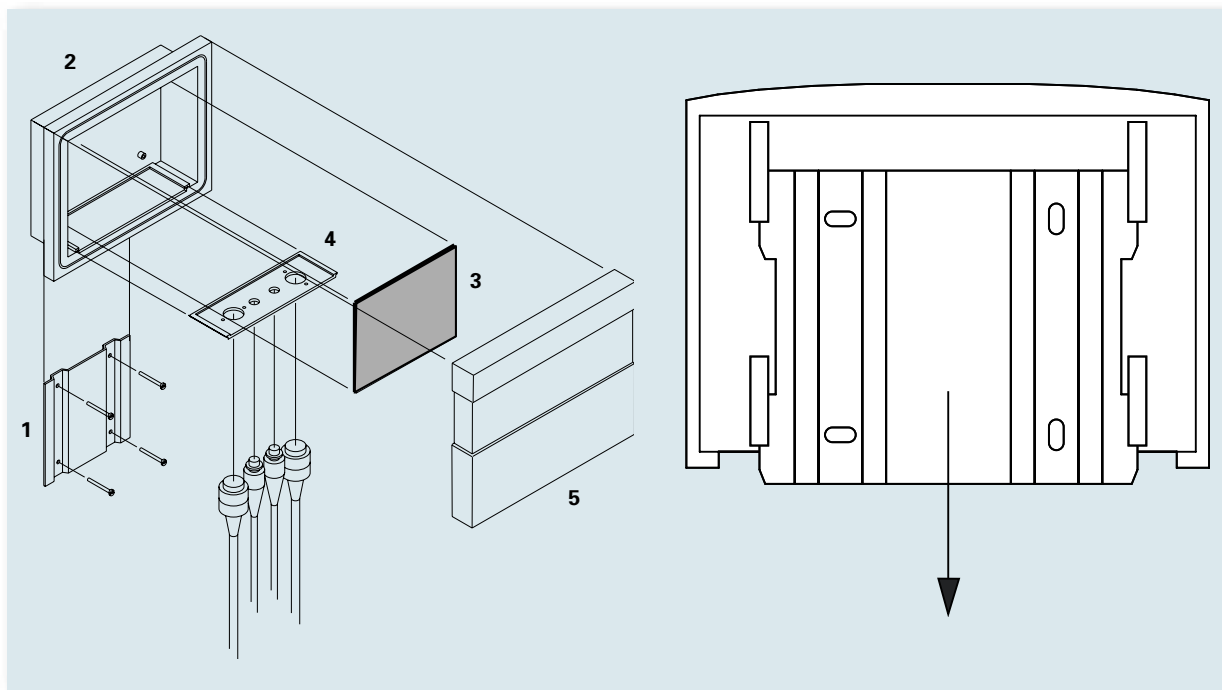
Order Code:
HygroData HTS for HygroFlex 2 and HygroFlex 3
HygroData HTS1X for HygroFlex 1



Mounting plate of the Transmitter Enclosure

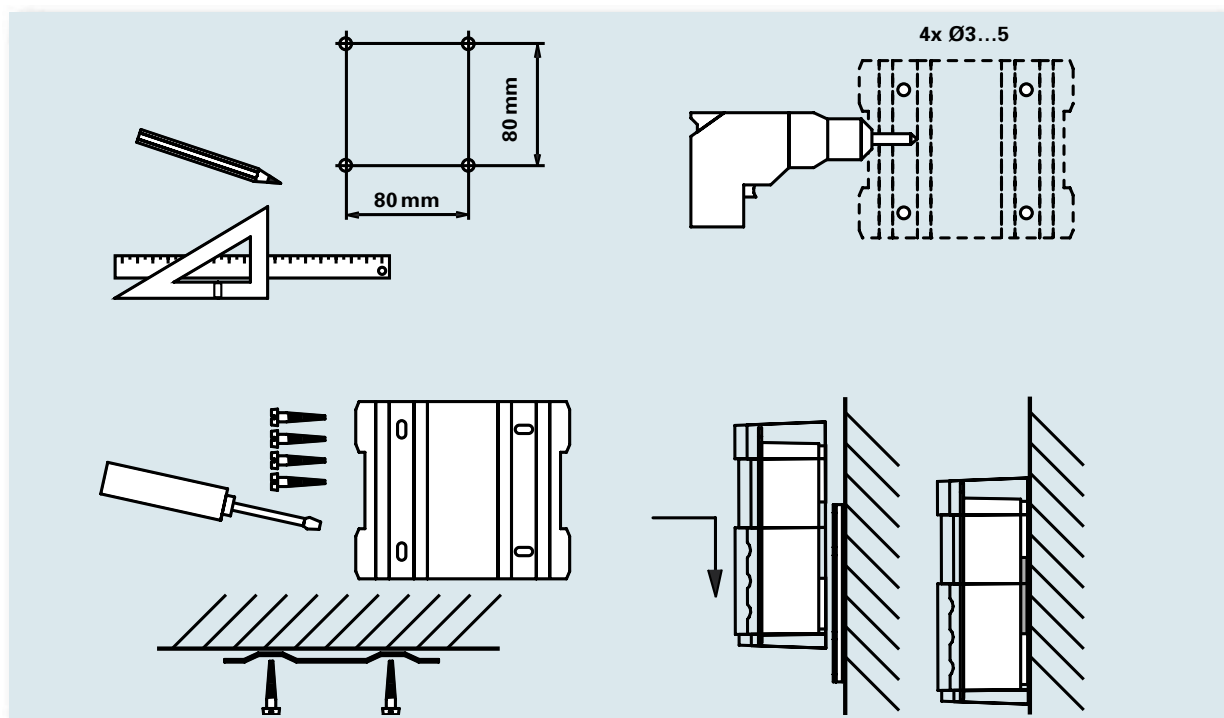
The HygroFlex is comprised of 5 parts:

- 1 mounting bracket
- 2 electronics housing
- 3 main circuit board
- 4 connector plate
- 5 front cover with or without optional display and keypad



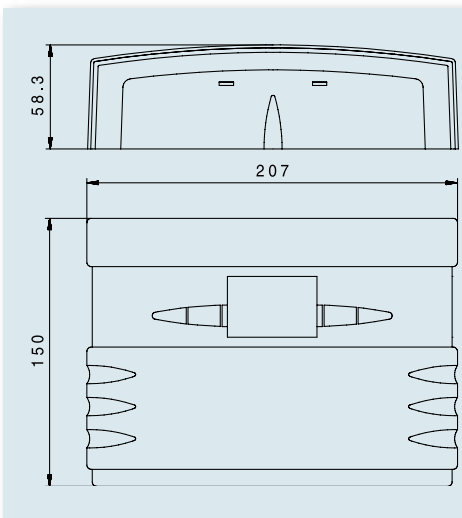
To attach the transmitter to a mounting surface:

- 1 Attach the mounting bracket to the mounting surface using 4 screws as shown below.
- 2 Slide the electronics housing down on the wall plate to the mechanical stop.

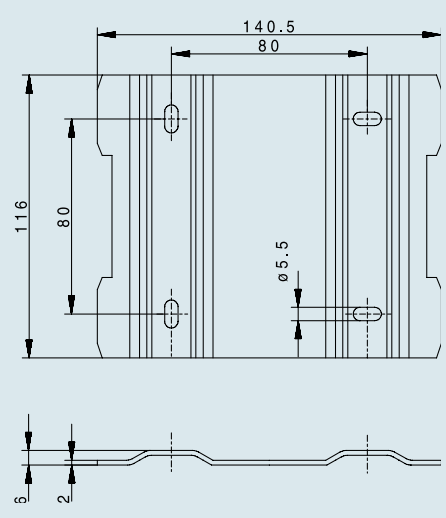


HygroFlex

Dimensional diagrams & electrical connections

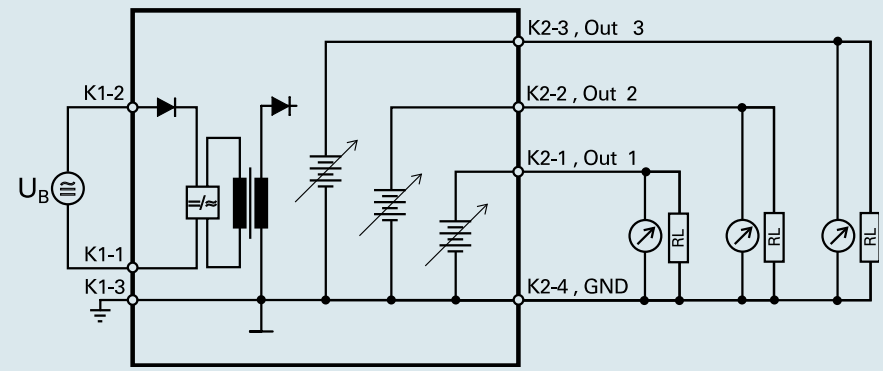


Dimensions of housing



Dimensions of mounting plate

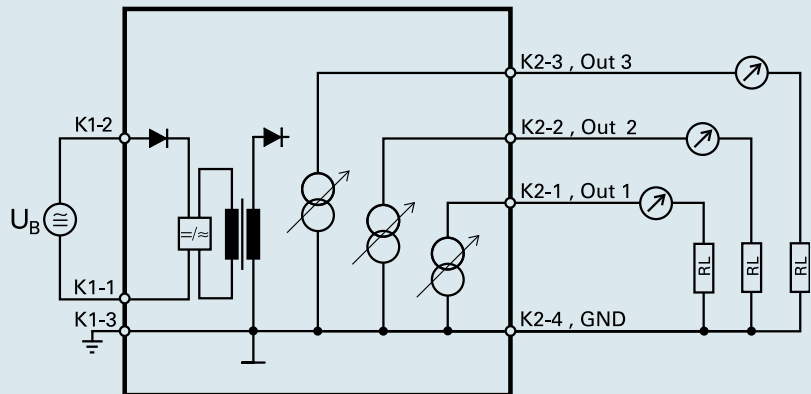
12 to 35 VDC or 12 to 24 VAC supply voltage and voltage output signals



TB1 (1) 12...35 VDC (-) or 12...24 VAC Neutral
TB1 (2) 12...35 VDC (+) or 12...24 VAC Phase
TB1 (3) Ground

TB2 (1) Relative humidity (+)
TB2 (2) Temperature (+)
TB2 (3) Calculated Parameter (+)
TB2 (4) Common (-)

90...264 VAC with optional power module and current output signals



TB1 (1) Neutral 90...264 VAC
TB1 (2) Phase 90...264 VAC
TB1 (3) Ground

TB2 (1) Relative humidity (+)
TB2 (2) Temperature (+)
TB2 (3) Calculated Parameter (+)
TB2 (4) Common (-)

HygroFlex Technical Data

Specifications	HygroFlex 1	HygroFlex 2	HygroFlex 3
Inputs			
Probe connections (combined %rh/°C)	1	2	2
Signal input	digital or analogue: 0...2,5 V, 10 Bit A/D, 15 V DC, max. 10 mA supply		
Third party probe input (1 analogue)	No	Yes	Yes
Outputs			
Analogue outputs	2	No	3
Type of output analogue (jumper selectable)	0...1 V, 0...5 V, 0...10 V, 0...20 mA or 4...20 mA	No	0...1 V, 0...5 V, 0...10 V, 0...20 mA or 4...20 mA
RS232 output	No	Yes	Yes
Networkable, RS485 (up to 32 units)	No	Yes	Yes
Adjustment of probes			
1 point %rh, °C/°F	Yes, with display/keypad option		
4 points %rh, 2 points °C/°F	Yes, with display/keypad option		
4 points %rh, 2 points °C/°F, via PC	No	Yes	Yes
Test connector for communication with HygroPalm handheld	Yes	Yes	Yes
Calculation & Unit Display			
Calculated humidity values; display and output	No	full range of calculated values including Dew-point, wet-bulb, enthalpy, mixing ratio, water vapour pressure, sturation vapour pressure. User defined scale.	
Pressure compensation for calculated values	No	Manual or automatic with optional pressure probe	
Technical Data (included probes)			
Measuring range	Probe dependent, 0...100 %rh, -50...200 °C, 0...2000 hPa		
Accuracy at 23 °C	±1,5 %rh, ±0,3 K		
Reproducibility	Better than 0.5 %rh/ 0.1 °C		
Sensors	Hygromer IN-1 (rel. humidity), Pt100 1/3 DIN (Temperature)		
Electronic operating range	0...100% rh (not condensed), -40...60 °C, with display -30...60 °C		
Display/Keypad (Option)	Liquid Crystal 3 line numeric		
Display resolution (Option)	0.1 %rF, 0.1 °C, 0.01 calculated value		
Housing, dimensions	IP65, ABS, 207 x 150 x 58,3 mm, Metal housing optional		
Weight	310 g		
Supply voltage	Standard 12...35 V DC (140 mA), 12...24 V AC Optional 90...250 V AC, 3,5 VA		
Electrical connections	M16 cable gland (7 mm cable) Connection terminals 18 AWG		
Analogue output (Factory setting 4...20 mA)	Current output (0/4...20 mA), max. load 500 Ω, others are jumper selectable Voltage (0...1, 5, 10 V), min. load 1000 Ω,		
CE-Conformity	Complies to norms: EN50081-2, EN50082-2		

Order code table for HygroFlex

Here you can specify the full range of options and configurations for the various HygroFlex models.

H	T	S	1	1	X					HygroFlex 1; 4...20 mA=0...100 %rh; 0...100 °C; 12...35 VDC/24 VAC power
H	T	S	2	1	X					HygroFlex 2; digital outputs only; DC/24 VAC power; 2 probe inputs
H	T	S	3	1	X					HygroFlex 3; 4...20 mA=0...100 %rh; 0...100 °C/°C dew-point; 12...35 VDC/24 VAC power; 2 probe inputs;
						M				Metal Housing
				1						12...35 VDC /24 VAC power
				2						90...250 VAC power
					X					No display and keypad
					D					No display and keypad
					/	9				Customized version; Parameters to be specified within the given limits (see technical data)
							R	C		Radio option