



Contents [[hide](#)]

- [1 ROTRONIC HygroFlex1 Series Transmitter](#)
- [2 Product Information](#)
- [3 GENERAL DESCRIPTION](#)
- [4 DIMENSIONS / CONNECTIONS](#)
- [5 MECHANICAL INSTALLATION](#)
- [6 PROGRAMMING](#)
- [7 SOURCES OF ERROR](#)
- [8 PERIODIC CALIBRATION OF THE TRANSMITTER](#)
- [9 DELIVERY PACKAGE](#)
- [10 Frequently Asked Questions](#)
- [11 Documents / Resources](#)
 - [11.1 References](#)

ro-tronic

ROTRONIC HygroFlex1 Series Transmitter



Product Information

Specifications

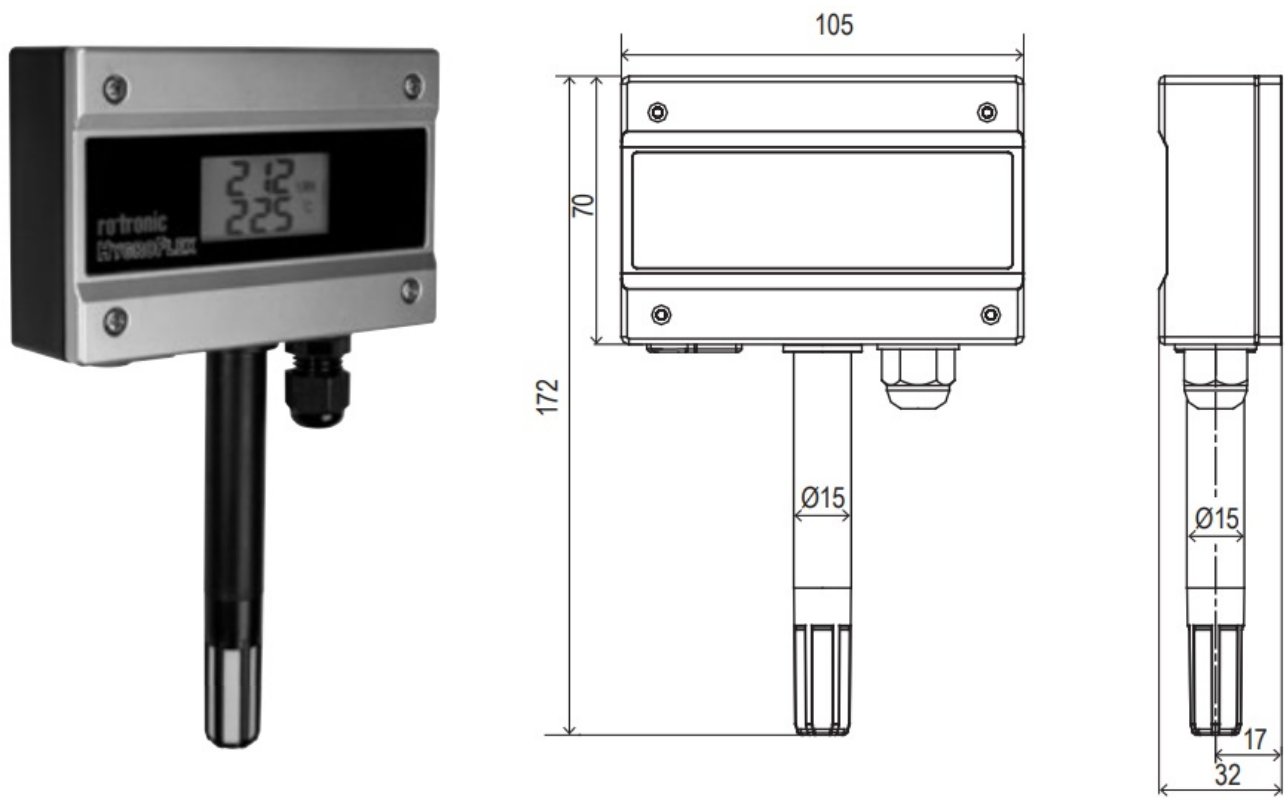
- **Product Name:** HYGROFLEX1-SERIES
- **Function:** Universal transmitters for humidity and temperature measurements
- **Probe Length:** 102 mm (Type: HF1xx-Dxxx), 300 mm (Type: HF1xx-Fxxx)

GENERAL DESCRIPTION

The HygroFlex1-Series devices are universal transmitters for transmission of humidity and (or) temperature measurements. Additional information can be found on the internet at www.processsensing, www.rotronic.com.

DIMENSIONS / CONNECTIONS

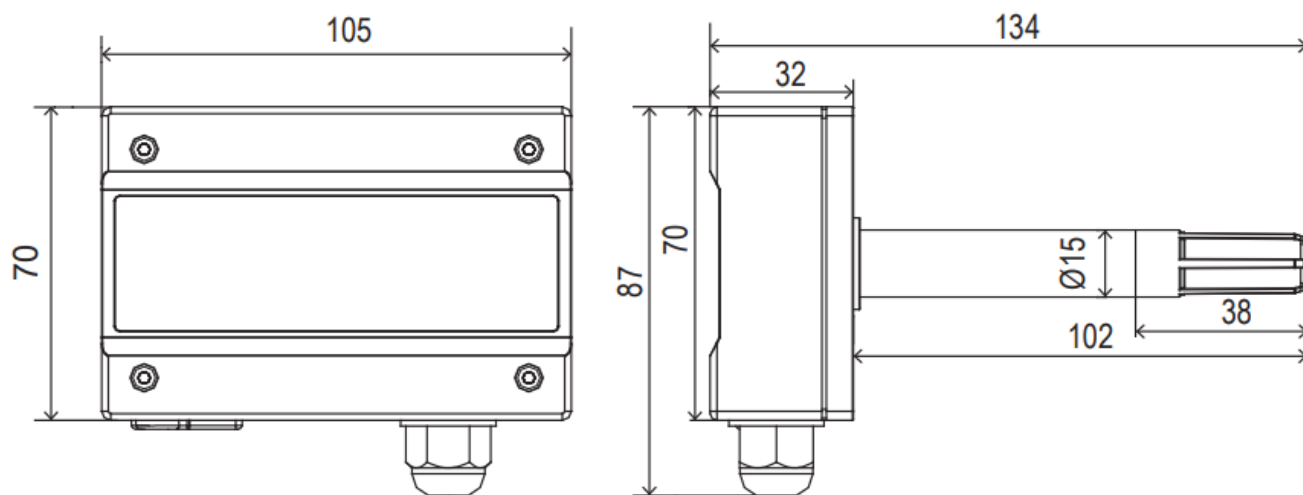
Wall version



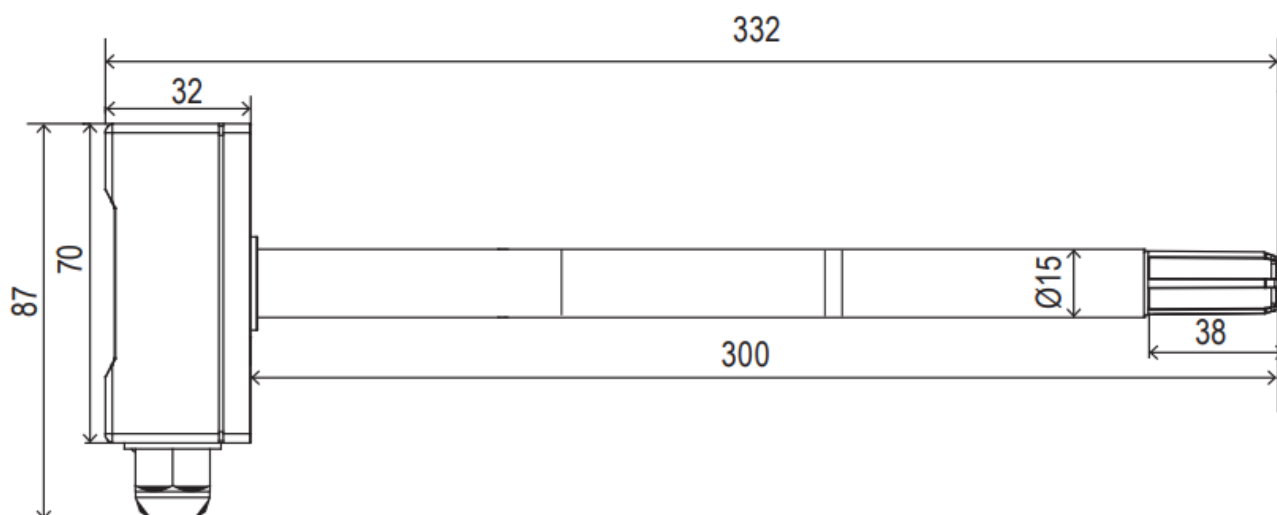
Duct version



Probe length 102 mm (Type: HF1xx-Dxxx)



Probe length 300 mm (Type: HF1xx-Fxxx)



Tools needed for the installation

- Screwdriver (Philips tip)
- Screwdriver (Standard tip)
- Drill 4 mm or scratch awl (for the housing)
- Drill 5 mm (for the wall)

MECHANICAL INSTALLATION

GENERAL RECOMMENDATIONS

Relative humidity is extremely temperature-dependent. In order to measure correctly, the probe and sensors must be at the same temperature as the environment that is to be measured. The installation site can therefore have a significant influence on the performance of the device. Follow the guidelines below to ensure optimum performance:

- Select a representative installation site:

Install the probe at a point where the humidity, temperature and pressure conditions are representative for the environment that is to be measured.

- Make sure there is sufficient air movement around the probe:

An air flow of at least 1 meter/ second accelerates and facilitates adjustment of the probe to changing temperatures.

- Avoid:

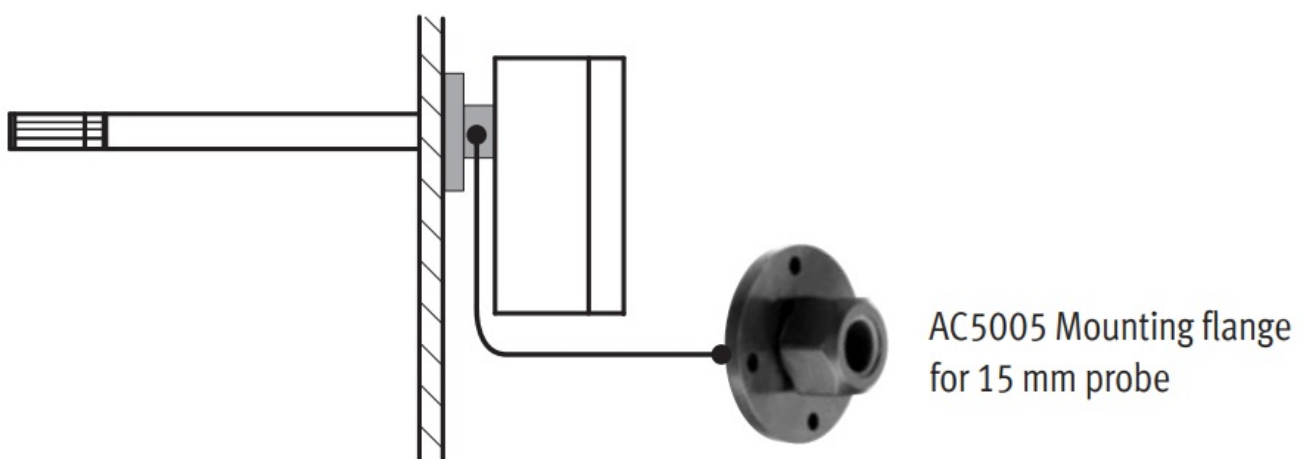
1. Installing the probe too close to heating elements, cooling coils, cold or hot walls, direct sunlight, etc.
2. Installing the probe too close to steam injectors, humidifiers or direct precipitation.
3. Unstable pressure conditions with high air turbulence.

- Insert the probe as far as possible into the environment that is to be measured.

- Avoid accumulation of condensation at the contact wires of the sensor. Install the probe so that the tip points down. If that is not possible, install it in horizontal position.

MOUNTING THE DUCT VERSION

To avoid measurement errors, at least 50 mm of the probe should be inserted into the environment that is to be measured. If necessary, use the mounting flange AC5005 to install the probe and fasten the transmitter.



MOUNTING THE WALL VERSION

Alignment

Mount the transmitter so that the probe points down.



Mounting variant 1

Hold and align the lower case to the wall. Drill two holes through the case into the wall using a 4 mm drill or a scratch awl. A drill mark in the wall is enough. Remove the lower case and drill a hole in the wall with a 5 mm drill (at least 3 cm deep) Insert the plugs delivered with the device, add the washer to the screws and mount the transmitter with the screws (2 screws) to the wall. The washers are used to seal the screw against the housing.



ELECTRICAL INSTALLATION

Caution: Wrong supply voltages and excessively high loading of the outputs can damage the transmitter.

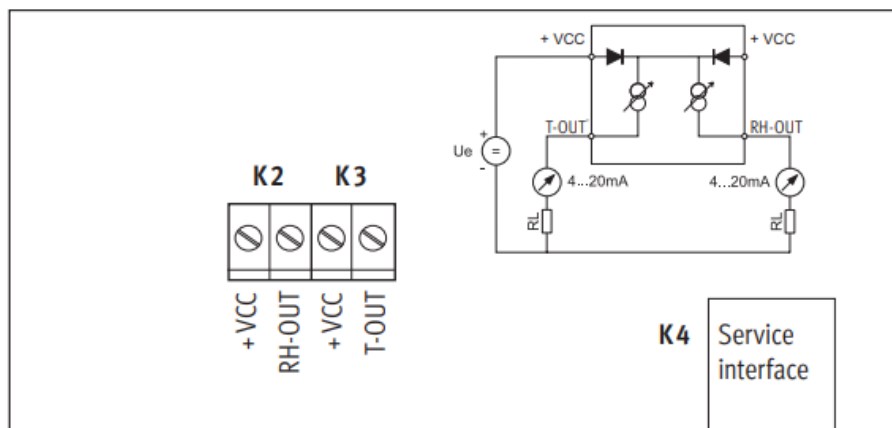
4.1 SUPPLY VOLTAGE / TECHNOLOGY			
Type	Supply voltage V+	Load	Output
2- or 2×2 wire			
HF120	10...28 VDC: 10 V + (0.02 x load)	Max 500 Ω	4...20 mA

3/4 wire			
HF132	15...40 VDC / 12... 28 VAC	Max 500 Ω	Max 500 Ω
HF135	15...40 VDC / 12... 28 VAC	Max 500 Ω	0...10 V

TERMINAL CONFIGURATION / CONNECTION DIAGRAMS

HF120 2- wire

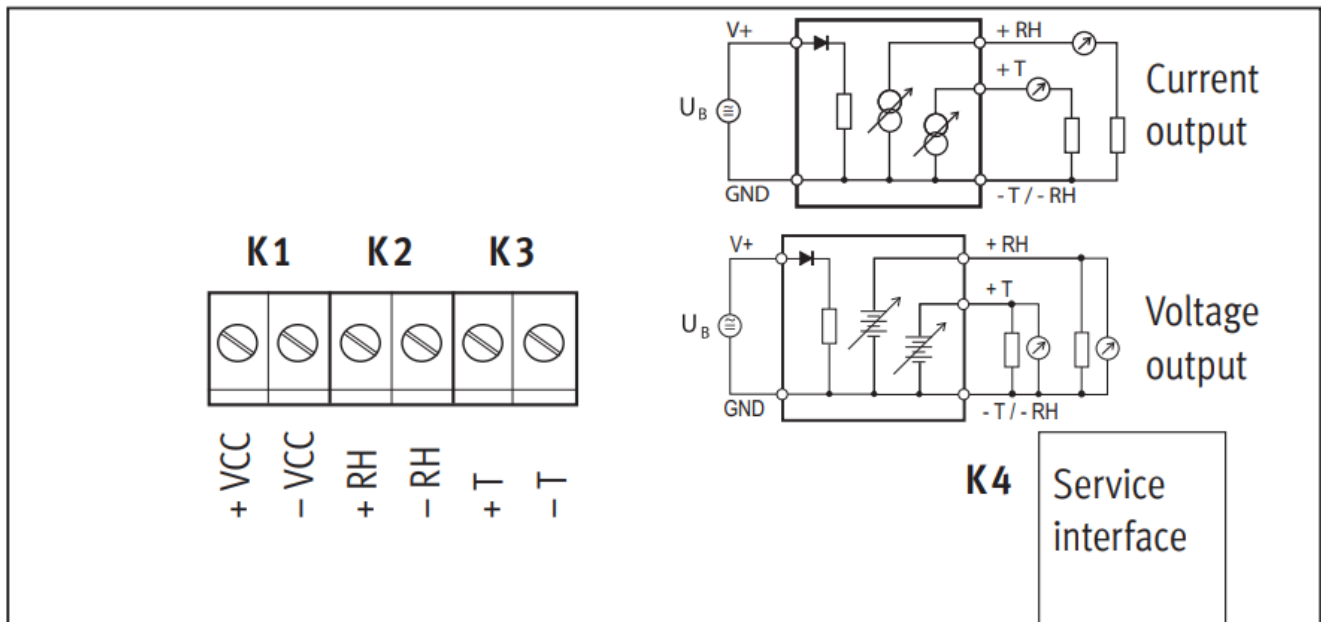
The supply voltage can be applied simultaneously to RH+ and T+.



Terminal Description

- Analogue K2 / 1 + VCC Supply voltage +
- K2 / 2 RH-OUT Analogue humidity output +
- K3 / 1 + VCC Supply voltage +
- K3 / 2 T-OUT Analogue temperature output +
- Digital K4 Service interface

HF132, HF135 ¾ wire



Terminal Description

- Power Supply K1 / 1 + VCC Supply voltage +
- K1 / 2 – VCC GND/Neutral
- Analogue K2 / 1 + RH Analogue humidity output +
- K2 / 2 – RH GND
- K3 / 1 + T Analogue temperature output +
- K3 / 2 – T GND
- Digital K4 Service interface

PROGRAMMING

The basic settings of the devices are made in the factory according to your order. The transmitters are adjusted in the factory and therefore do not need to be checked and readjusted during installation. The devices can be started immediately after installation. Using HygroSoft software and a standard mini USB cable, the following operations may be performed.

- Rescaling of the analog outputs
- Single point adjustment
- General settings

Procedure

- Connect the device to the supply voltage
- Connect the device with your PC using the mini-USB cable
- Program the device using HygroSoft software
- Disconnect the device from power for at least two seconds in order to validate the new setting

SOURCES OF ERROR

Measured values can be influenced by the following factors:

- **Temperature errors**

Equilibration time too short, cold outside wall, heating elements, sunlight, etc.

- **Humidity errors**

Steam, water spray, dripping water or condensation at the sensor, etc.

Soiling

By dust in the air. The choice of probe filter depends on the amount of soiling at the measuring point. The filter must be cleaned or replaced periodically. Measured values can be influenced by the following factors:

TROUBLE SHOOTING

Error	Messages	Solution
E01	Sensor out of order	Turn off meter and re-start again
E02	Measured value under range	Put meter in normal condition
E03	Measured value over range	Put meter in normal condition
E04	Temperature error code & Humidity error code	Put meter in normal condition
E11	RH calibration error	Retry humidity calibration
E31	Temp. sensor or AD damaged	Return to repair

E32	Memory IC damaged	Return to repair
E33	RH sensor circuit damaged	Return to repair

PERIODIC CALIBRATION OF THE TRANSMITTER

The humidity and temperature sensor including the corresponding electronics are very stable and do not normally need to be changed or calibrated after factory calibration. The long term stability of the Rotronic Hygromer humidity probes is typically better than 1 %rh per year. For maximum accuracy we recommend calibration of the probe about every six to 12 months. More frequent calibration can be necessary in applications where the sensor is exposed to pollutants. The calibration can be performed by the user himself on site or in the laboratory / workshop. For routine calibrations the probe should be checked at one or two points. The electronics of the transmitter do not normally require calibration in the field. The electronics cannot be repaired in the field and should be returned to the manufacturer in the case of problems.

8 TECHNICAL DATA (OPERATION)	
Temperature	-20...60 °C
Humidity	0...100 %rh, non-condensing
Accuracy %rh (10...90 %rh)	<2 %rh
Accuracy °C (0...50 °C)	<0.3 °C

9 TEMPERATURE AND HUMIDITY ANALOGUE OUTPUT SCALING	
Humidity	0...100 %rh
Temperature	Depends on the order code
Outputs	Current or voltage signals, service interface

DELIVERY PACKAGE

- HF1 transmitter
- Factory adjustment certificate
- 2x Screws & dowels
- Short instruction manual

Frequently Asked Questions

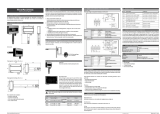
- **Q: How can I ensure accurate measurements with the HygroFlex1-Series?**

A: Follow the mechanical installation guidelines, ensure proper air movement around the probe, and avoid placing it near sources of temperature variation.

- **Q: What should I do if I encounter condensation at the sensor wires?**



A: Install the probe so that the tip points down to prevent condensation accumulation at the contact wires.

Documents / Resources

	ROTRONIC HygroFlex1 Series Transmitter [pdf] Instruction Manual HF120, HF1xx-Dxxx, HygroFlex1 Series Transmitter, HygroFlex1 Series, Transmitter
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References

- [User Manual](#)

 HF120, HF1xx-Dxxx, HygroFlex1 Series, HygroFlex1 Series Transmitter, ROTRONIC,
 ROTRONIC Transmitter

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