

HYGROFLEX1-SERIES

SHORT INSTRUCTION MANUAL

Duct & wall version

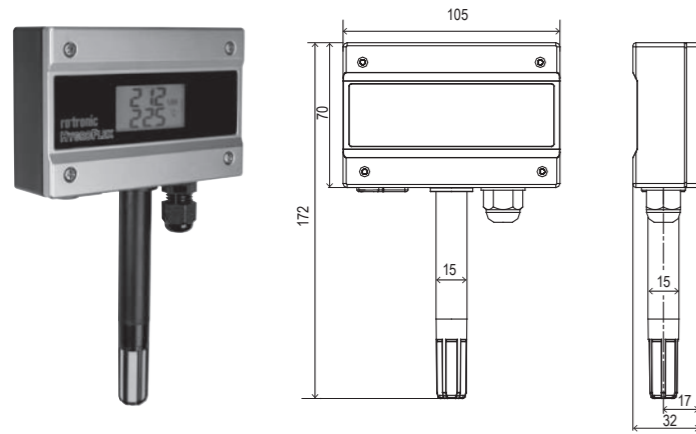
Congratulations on your purchase of the HygroFlex1-Series transmitter. Please read these short instructions carefully before installing the device.

General description

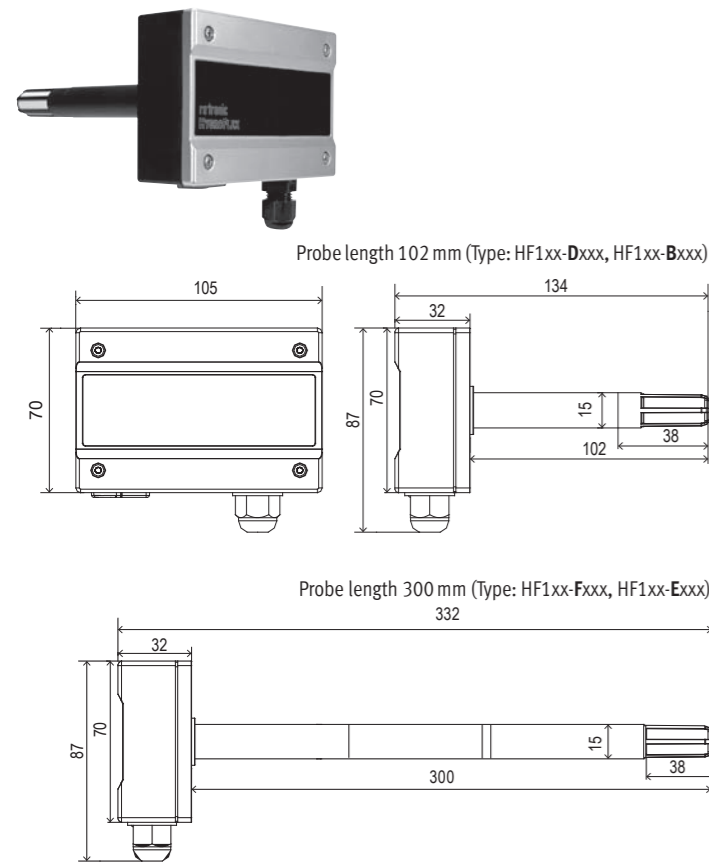
The HygroFlex1-Series devices are universal transmitters for transmission of humidity and (or) temperature measurements. Additional information can be found on the internet at: www.rotronic.com

Dimensions / connections

Wall version



Duct version



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

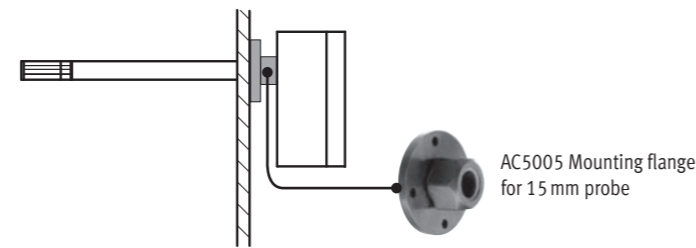
General recommendations

Relative humidity is extremely temperature-dependent. In order to measure correctly, the probe and sensors must be as the same temperature as 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:

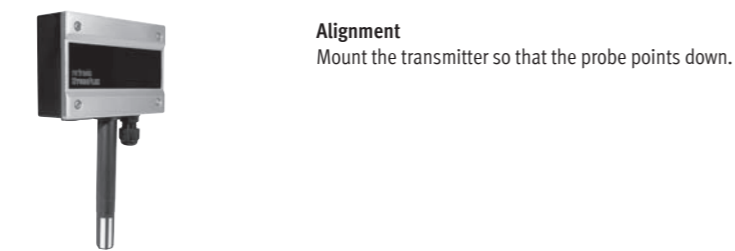
- Select a representative installation site:
Install the probe at a point where the humidity, temperature and pressure conditions are representative for the environment that is to be measured.
- Make sure there is sufficient air movement around the probe:
An air flow of at least 1 meter/ second accelerates 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

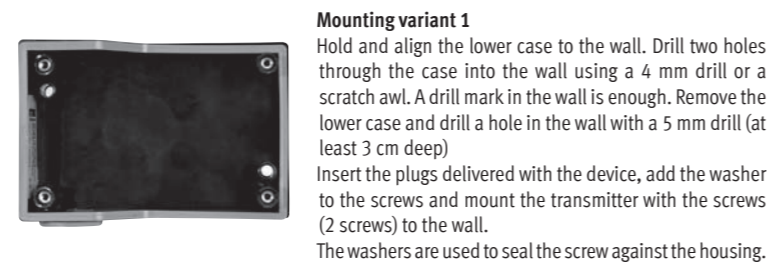
To avoid measurement errors, at least 50 mm of the probe should be inserted into the environment that is to be measured. If necessary, use the mounting flange AC5005 to install the probe and fasten the transmitter.



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

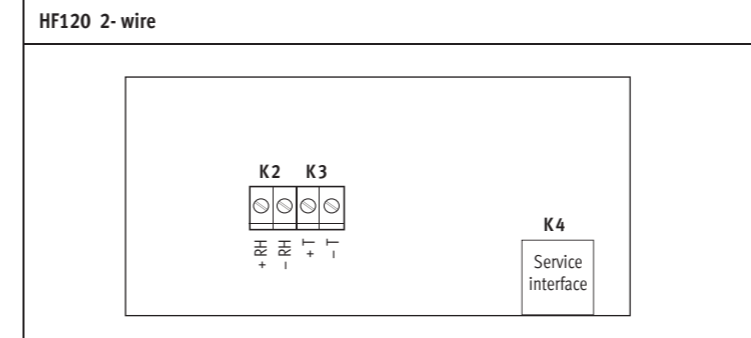


Caution:
Wrong supply voltages and excessively high loading of the outputs can damage the transmitter.

Supply voltage / Technology

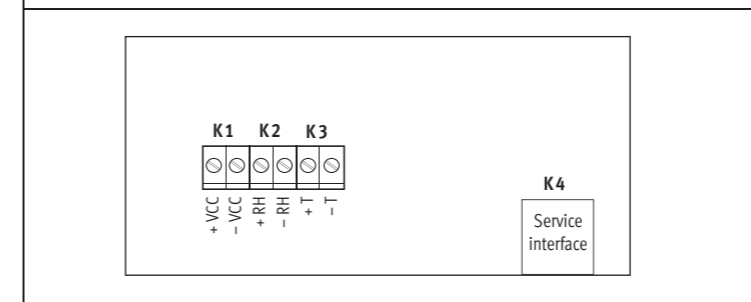
Type	Supply voltage V+	Load	Output
2- or 2x2 wire			
HF120	10...28 VDC: 10 V + (0.02 x load)	Max 500 Ω	4...20 mA
3/4 wire			
HF132	15...40 VDC / 12... 28 VAC	Max 500 Ω	4...20 mA
HF133	15...40 VDC / 12... 28 VAC	Max 500 Ω	0...1 V
HF134	15...40 VDC / 12... 28 VAC	Max 500 Ω	0...5 V
HF135	15...40 VDC / 12... 28 VAC	Max 500 Ω	0...10 V

Terminal configuration / Connection diagrams



	Terminal	Description	
Analogue	K2 / 1	+ RH	Analogue humidity output +
	K2 / 2	- RH	Analogue humidity output -
	K3 / 1	+ T	Analogue temperature output +
	K3 / 2	- T	Analogue temperature outputg -
Digital	K4		Service interface

HF132, HF133, HF134, HF135 ¾ wire



	Terminal	Description	
Power Supply	K1 / 1	+ VCC	
	K1 / 2	- VCC	
Analogue	K2 / 1	+ RH	Analogue humidity output +
	K2 / 2	- RH	Analogue humidity output -
	K3 / 1	+ T	Analogue temperature output +
	K3 / 2	- T	Analogue temperature output -
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 HW4 or SW21 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 SW21 or HW4 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.

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.

Technical data (operation)

Temperature	-20...50 °C
Humidity	0...100 %RH, non-condensing
Accuracy %RH (10...90 %RH)	<3 % RH
Accuracy °C (0...50 °C)	<0.3 °C

Temperature and humidity analogue output scaling

Humidity	0...100 %RH
Temperature	Depends on the order code
Outputs	Current or voltage signals, service interface

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