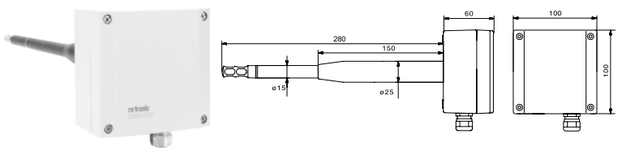
HygroFlex73A-Series
Short Instruction Manual

1 GENERAL DESCRIPTION

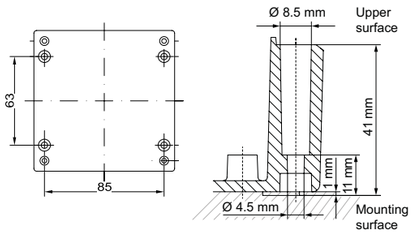
The HygroFlex73A-Series devices are universal transmitters for transmission of humidity and temperature measurements. These short instructions are limited to a description of the main functions and installation of the device. The detailed instruction manual can be found on the internet at: **www.rotronic.com**

2 DIMENSIONS / CONNECTIONS

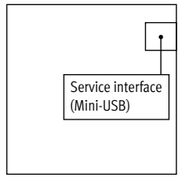
Duct-Version (Standard)
(Type-Q) for ø 25/15 mm probe



Drill template for all types



Service interface

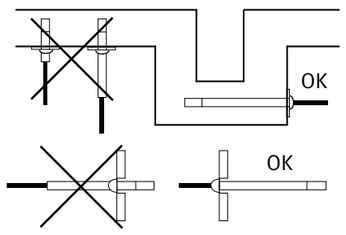


3 MECHANICAL INSTALLATION

3.1 GENERAL RECOMMENDATIONS

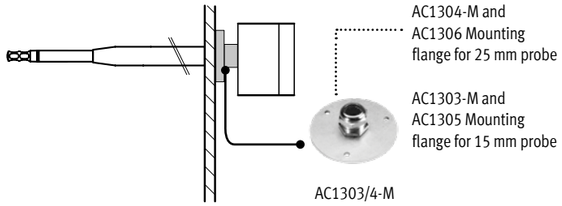
Relative humidity is extremely temperature-dependent. In order to measure it exactly, the probe and sensors must be set exactly on the temperature level of the environment that is to be measured. The installation site can therefore have a significant influence on the performance of the device. Follow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

a. 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.
b. Make sure there is sufficient air movement around the probe: An air flow of at least 1 metre/second accelerates and facilitates adjustment of the probe to changing temperatures.
c. Avoid:
   1. Probe too close to heating elements, cooling coils, cold or hot walls, direct sunlight, etc.
   2. Probe too close to steam, injectors, humidifiers or direct precipitation.
   3. Unstable pressure conditions with high air turbulence.
d. Insert the probe as far as possible into the environment that is to be measured.
e. 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.



3.2 MOUNTING THE VERSION TYPE-Q

To avoid measurement errors, at least 200 mm of the probe should be inserted into the environment that is to be measured. If necessary, use the mounting flange AC1303-M and AC1304-M (only for type-Q) to install the probe and fasten the transmitter.



4 ELECTRICAL INSTALLATION

4.1 GENERAL WIRING GUIDELINES

Heavy machinery and instrumentation should not share the same power supply wiring. If this cannot be avoided, noise filters and surge protectors should be used. Most UPS devices have those features already integrated.

4.2 LIGHTNING PROTECTION

Cabling in areas with a risk of lightning requires a lightning protection. For cabling underground in between buildings, we recommend the use of special fiber optic cables. If this is not possible, use copper cables that are suitable for underground installation.

4.3 CABLE GRIP AND CABLE SPECIFICATIONS

The HF7 is supplied either with one M16 sealing cable gland. The M16 cable gland provides effective sealing only with cables having the proper outside diameter. Preferably, use a cable with an outside diameter of 6 to 7 mm (0.236 to 0.275 inch) with 18 AWG wires.

4.4 GROUNDING

Generally it is recommend grounding the (-) side of the power supply, especially if the electronics are exposed to an environment with low humidity (35 %rh or less).

4.5 POWER SUPPLY

HF73: (3-wire with analogue outputs): 15 to 40 VDC or 12 to 28 VAC. When both outputs are connect-ed, the maximum current consumption is 50 mA.

4.6 SUPPLY VOLTAGE / TECHNOLOGY

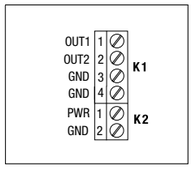
Type	Supply voltage V+	Load	Output
3-wire			
HF732	15...40 VDC / 12...28 VAC	Max 500 Ω	4...20 mA

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

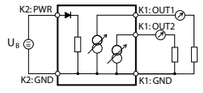
4.7 TERMINAL CONFIGURATION / CONNECTION DIAGRAMS

The type is defined using the table Supply voltage / Technology to then use the following connection diagrams:

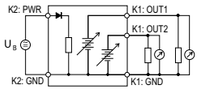
3-wire circuit / HF73A



Current output



Voltage output



Terminal	Tuchel connector	Description
K1-1 OUT1	6	Analogue humidity-/dew point output +
K1-2 OUT2	4	Analogue temperature output +
K1-3 GND	3 and 5	Analogue GND
K1-4 GND	3 and 5	Analogue GND
K2-1 PWR	1	Supply voltage + / Phase
K2-2 GND	2	GND / Neutral

5 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.

6 SOURCES OF ERROR

Measured values can be influenced by the following factors:

Temperature errors
Adaptation time too short, cold outside wall, heating elements, sunlight, etc.

Humidity errors
Steam, water spray, dripping water or condensation at the sensor, etc. Repeatability and long term stability are, however, not influenced by these factors even if the probe is exposed to high humidity or saturation with steam (condensation) over a longer period of time.

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.

7 SCALING / ADJUSTMENT / FIRMWARE UPDATE

The following settings can be made with the help of the HW4 software and either the service cable AC3006 or AC3009:
- New scaling of the outputs
- Adjustment
- Firmware update

A detailed description can be found in the manual, which can be downloaded from our website **www.rotronic.com**.

8 PERIODIC CALIBRATION OF THE PROBE / TRANSMITTER

Both the PT100 RTD temperature sensor and 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 sensors 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.

They can be checked easily with the help of the probe simulator in the HW4 software package. The electronics can not be repaired in the field and should be returned to the manufacturer in the case of problems. For details on calibration, please see the full version of the instruction manual, which you can download from the internet.

Cleaning or replacing the dust filter (optional)
Depending on the conditions of measurement, the filter should be checked from time to time. Cor-roded, discolored or clogged filters should be replaced. The probe of the HF7 has a removable filter.

9 TECHNICAL DATA

Measurement

	Temperature / Humidity
Type Q with PPS Probe	-100...200 °C / 0...100 %rh
Accuracy	±1.0 %rh, ± 0.2 K @ 23 °C
Protection	IP65 unflamable
Output	Current or voltage signals

Operation

Temperature	-40...85 °C
Humidity	0...100 %rh, non-condensing

12.0785.2101E