

# HYGROFLEX5



## THE INTELLIGENT TRANSMITTER.

INTRODUCING AIRCHIP DIGITAL TECHNOLOGY.

### INNOVATION IN HUMIDITY AND TEMPERATURE MEASUREMENT

- Relative humidity and temperature measurement
- Dew Point and other psychrometric calculations
- Outstanding accuracy and repeatability
- Interchangeable probe for easy maintenance
- Wide choice of probes to satisfy every application
- Auto-diagnostics and automatic correction
- Highest possible measuring accuracy
- Low voltage and mains versions
- Freely scalable analogue signals
- Various digital outputs available



**rotronic**  
LEADING IN HUMIDITY MEASUREMENT

## SPECIFY THE BEST: HYGROFLEX5 ADVANTAGES AT A GLANCE.

The HygroFlex5-series is the latest development in transmitters for humidity, temperature and dew point. One outstanding feature of this innovative product is the possibility to output any psychrometric calculation as an analogue signal.

The HF5-series is compatible with HygroClip2 probes with integrated AirChip3000 technology – thanks to which the probes achieve an unparalleled degree of accuracy not seen before.

In combination with advances in sensor technology and integration, the HygroFlex HF52, HF53, HF54, HF55 and HF56 transmitters provide superb precision and state-of-the-art functionality, taking humidity and temperature measurement to a whole new level of accuracy  $< 0.8\% \text{rh}$  and  $< 0.1\text{ K}$  at  $23\text{ }^{\circ}\text{C}$ .

### Easy to read display

- Display of the measured values on a clear, backlit graphic display with trend indicators
- Configuration by keypad possible

### Tried-and-tested housing

- Robust industrial housing
- Wall or duct mount versions

### Power supply

- 15...40 VDC/12...28 VAC
- 9...36 VDC/7...24 VAC (galvanically separated)
- 85...240 VAC (galvanically separated)
- Power over Ethernet (PoE)

### Output signals

- Two freely selectable and scalable analogue outputs
- Available as 2-wire (HF52), 3/4-wire (HF53) 3/4-wire (HF54, HF56 with galvanic isolation) and digital (HF55) transmitter
- Optional digital outputs allow integration on a network via RS485, or Ethernet - wired or wireless
- Combined digital and analogue output signals, allow control and monitoring of a device with one transmitter

### Wide selection of probes

- Compatible with all HygroClip2 probes
- Use of probe simulators allows easy system validation

### AirChip3000

- Compensates humidity and temperature over 30,000 reference points
- 2,000 data point memory
- Dew/frost point calculation
- Sensor auto-diagnostics and automatic correction
- Active alarming and information
- ASIC (Application Specific Integrated Circuit), micro-controller and EEPROM on one chip



## APPLICATIONS.

The HygroFlex5-series is ideal for all applications where exact measurement of humidity and temperature is of decisive importance, for example the food and pharmaceutical industries, printing and paper industries, meteorology, agricultural sector, archaeology and climatology. There is hardly a field today in which these parameters may be ignored. It is ultimately the measuring task at hand that defines the combination of transmitter and probe that best covers your needs.

### HF5 wall version



### HF5 duct version



## PROBES FOR HYGROFLEX TRANSMITTERS.

Whether you need a simple plug-in probe to measure ambient conditions, or a more sophisticated cable probe for high temperature and other special applications, we can provide you with the ideal HygroClip2 probe to suit your requirements.

All HygroClip2 probes can be individually calibrated and adjusted to increase measurement precision where you need it the most. This capability is exactly what makes every probe in the product range a high-end solution for your application.

### Standard Probe

Probe for transmitters in wall or duct versions  
Operating range -50...100 °C



### Industrial Probes

Probes for process applications. Operating range 0...100%rh,  
-100...200 °C (-148...392 °F) and 0...400 bar (0...5,800 PSI)



Interested in further information about the right choice of probe (special applications, order codes)?

A complete and up-to-date overview of all probe options is available on our web site [www.rotronic-humidity.com](http://www.rotronic-humidity.com).

## TECHNICAL INFORMATION.

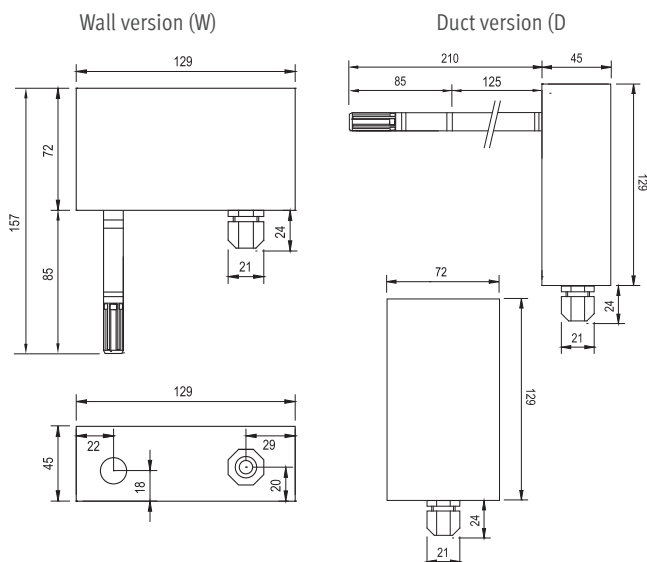
### Factory Adjustment.

Three different adjustment profiles are available from the factory for HygroClip2 probes; this means that measuring accuracy can be matched to the application need. The custom adjustment profile consists of 20 humidity values at 3 temperatures to ensure optimum performance over a required working range. The data is stored on the AirChip and can be retrieved later for audit purposes.

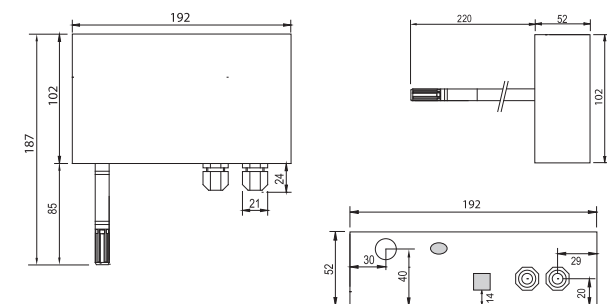
### Data Logging and Alarm Generation.

Up to 2,000 measurement values can be stored in the HygroClip2 probe; the user is able to configure the measurement interval, scale the output signal and download data using optional ROTRONIC HW4 software. The HygroFlex5 transmitter can be programmed with set limits to generate an alarm which is available when the transmitter is communicating with a PC or compatible ROTRONIC device. In the event of a major sensor failure the analogue outputs can be set to a fixed value to indicate the alarm condition. Thus, the HygroFlex5 can be integrated in any application.

### HF 52/53/54/55 Series



### HF 56 Series



	HF52 2-wire	HF53/54/56 3/4-wire	HF55 Digital
Probe type	HygroClip2 probe, all models		
Probe cable extension	Passive: max. 5 m, active 100 m		
Accuracy at 23 ±5 °C	±0.8 %rh / 0.1 K		
Response time $\tau_{63}$	3-12 s, depending on probe type		
Start-up	HF53/54/55/56: typically 3 s, HF52: 10 s		
Measurement range	-100...200 °C / 0...100 %rh, probe dependent		
Electronics operating range	-40...60 °C / 0...100 %rh (-10...60 °C with LCD)		
Display (option) (HF52: no backlight)	Graphic display, backlight Parameters configurable		
Trend indicators	Yes		
Alarm functions (programmable)	Open or shorted sensor		
Output signals (analogue)	Scalable by user 0...1 V, 0...5 V, 0...10 V, 0(4)...20 mA		
Digital outputs (optional)	Ethernet (LAN, WLAN), USB, RS485		
Change of signal output U/I	Only with HF53/54/56, without adjustment		
Power supply	HF52: 10...28 VDC: 10 V+(0.02x load) HF53/55: 15...40 VDC /12...28 VAC HF54 with galvanic isolation: 9...36 VDC 7...24 VAC HF56 with galvanic isolation: 85...240 VAC		
Power consumption	HF52: max 40 mA HF53 <100mA, HF55 <300mA		
Circuit type	HF52: 2 x 2 wires, HF53/54/56: 3/4 wires HF55: digital		
Min. / Max. load	V-signal: ≥1 kΩ/V / mA-signal: ≤500 Ω		
Load compensation	Yes		
Firmware update	Via service connector, requires HW4 software		
Sensor diagnostics (drift, state)	Programmable. Default: off		
Sensor protection	Based on probe type		
Maximum air velocity	20 m/s at probe		
Humidity adjustment	With keypad/software: multi point (HF53/54/55/56)		
Temperature adjustment	With keypad: 1 point Software: 2 points (HF53/54/55/56)		
Data logging function	External, 2000 data point memory		
Psychrometric calculations	All selectable		
PC interface	With ROTRONIC interface cable HW4 compatible		
Data processing by HW4	Graphs, statistical data and analysis, qualification etc.		
Housing material / weight	ABS / Approx. 220g		
Cable connections	1 x M16x1.5, on terminals		
Standards	CE- compliant, 2007/108/EG		
Audit trail, Electronic Records	FDA 21 CFR Part 11 and GAMP compliant		
IP protection rating & fire	IP65 / Corresponds to UL94-HB protection class		

Interested in further information (special applications, order codes)? A complete and up-to-date overview of our HygroFlex5-series is available on our web site [www.rotronic-humidity.com](http://www.rotronic-humidity.com).

Change over now to the HygroFlex5 transmitter and HygroClip2 probes with the integrated AirChip3000 for your humidity and temperature measurement needs. You can find detailed information about our probes at [www.rotronic-humidity.com](http://www.rotronic-humidity.com). We would also be happy to advise you in person or on the phone.

**rotronic**  
LEADING IN HUMIDITY MEASUREMENT

ROTRONIC AG, Grindelstrasse 6, CH - 8303 Bassersdorf, Tel. +41 44 838 11 11, Fax +41 44 836 44 24, [www.rotronic.ch](http://www.rotronic.ch)  
ROTRONIC Instruments (UK) Ltd, Crompton Fields, Crompton Way, Crawley, West Sussex, RH10 9EE, UK, Phone +44 (0)1293 571000, Fax +44 (0)1293 571008, [www.rotronic.co.uk](http://www.rotronic.co.uk)  
ROTRONIC Instrument Corp, 135 Engineers Road, Hauppauge, NY 11788, USA, Phone, +1 631 427-3898, Fax, +1 631 427-3902, [www.rotronic-usa.com](http://www.rotronic-usa.com)