HygroFlex8

AIR CHIP TECHNOLOGY

THE UNIVERSAL INDUSTRIAL TRANSMITTER.

BASED ON THE AIRCHIP3000 DIGITAL TECHNOLOGY.

INNOVATION IN HUMIDITY AND TEMPERATURE MEASUREMENT

- Highest accuracy at 0.8 %RH and 0.1˚C
- Outstanding long-term stability and chemical resistance
- Widest temperature measuring range at -100...200 ˚C
- Two Interchangeable HygroClip digital or analog probe inputs
- 10,000 point data logging with time stamp and battery back-up
- Up to 4 programmable analog outputs available
- Digital output options
- Multiple alarm relays
- Audible and visual alarms
- Galvanically isolated power supply

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SPECIFY THE BEST:
HYGROFLEX8 ADVANTAGES AT A GLANCE.

Problem-free, accurate humidity measurement results from the most stable sensor in the industry combined with our unique HygroClip® digital probe technology, designed to practically eliminate any maintenance downtime. When it is time for a scheduled calibration 'hot swap' in seconds with a calibrated probe without loss of measurement accuracy. HygroFlex8 transmitters provide superb precision and state-of-the-art functionality, taking humidity and temperature measurement to a whole new level of performance and reliability (0.8 %RH and ‹ 0.1 °C accuracy).

AirChip3000 Digital Technology - The latest generation of ROTRONIC probes and instruments use the AirChip3000 technology with features such as:

- Compensates humidity and temperature over 30,000 reference points
- Dew/frost point calculation
- Sensor auto-diagnostics and automatic correction
- Active alarming and information
- User configurable fixed output signals
- Conforms to FDA21 CFR Part 11 and GAMP4 (audit trail)

AIR CHIP TECHNOLOGY

Optional display

- The clear, backlit graphic display is easy to read and the simple menu navigation provides fast access to all the information available
- Trend indication of values
- Display resolution to 2 decimal places
- Calculates and displays delta value between the two probes
- Three programmable display formats

Flexible choice of probes

- The HygroFlex 8 can be fitted with TWO interchangeable HygroClip2 probes
- Compatible with all HygroClip2 probe types
- Connection of two analog probes
- Changing of HygroClip2 probes requires no further adjustment
- Use of probe simulators allows easy process validation

Output signals

- Four freely selectable and scalable analog outputs
- Freely selectable output type through HW4 software: 0/4...20 mA; 0...1/5/10 VDC
- Optional digital outputs allow integration on a network via Ethernet or RS-485
- Combined digital and analogue output signals, allow controlling and steering a device with one transmitter

Data logging function

- Logs up to 10,000 value pairs, relative humidity and temperature provided by a single HygroClip2 probe
- Logs up to 10,000 data values provided by a single 1-channel analog probe
- Both probe inputs can be logged at the same time
- Each record is date and time stamped (real-time clock)

Relay output

- Up to 4 relays
- Each relay can be programmed individually
- Each relay can be set to control any measured or calculated parameter

Alarm function

Visible and audible alarm can be programmed when the HF8 detects the following:

- Out-of-limits value (defined with the HW4) for each probe input
- Communication loss with the probe
- Impaired rh sensor or major sensor failure

APPLICATIONS.

The HygroFlex8-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.

PROBES FOR HYGROFLEX TRANSMITTERS.

Whether you need a more sophisticated industrial probe to measure in a high temperature range or a standard Hygroclip2 probe to measure ambient conditions, 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.

Industrial probes in general

Probes for process applications (fixed installation).

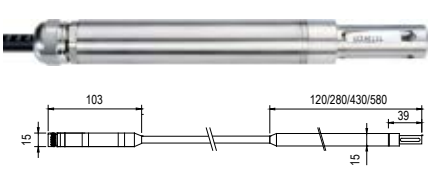
Operating range:	0...100 %RH, -100...200 °C (-148...392 °F)
Pressure:	HC2-IE Series: 0...400 bar (0...5,800 PSI)
Probe diameter:	15 mm; 25/15 mm, NPT ½" or G ½" thread

HC2-IC Series

Humidity measuring range: 0...100 %RH
Temperature limits at sensor: -100...200 °C
Barrel: PPS
Barrel diameter: 15 or 25/15mm
Barrel length: 100/250/400/550/700 mm
Probe cable length: 2 m or 5 m

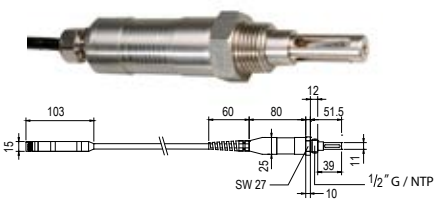
HC2-IM Series

Humidity measuring range: 0...100 %rh
Temperature limits at sensor: -100...200 °C
Barrel: Stainless steel
Barrel diameter: 15 or 25/15 mm
Barrel length: 120/280/430/580 mm
Probe cable length: 2 m or 5 m



HC2-IE Series

Humidity measuring range: 0...100 %RH
Temperature limits at sensor: -100...200 °C
Barrel: Stainless steel NPT ½" or
G ½" thread for maximum 400 bar
Probe cable length: 2 m or 5 m



Standard probe

Humidity measuring range: 0...100 %RH
Temperature limits -50...100 °C (-58...212 °F)
Diameter: 15 mm (0.6"), length: 85 mm (3.3")
Housing and filter cap: polycarbonate, black

TECHNICAL INFORMATION.

Data Logging.

View historical data. The values stored in the instrument can be displayed graphically with the optional HW4 software. You can define the storage intervals, the alarm limits, the type of alarm generated (analog or digital probes), the scaling and much more.

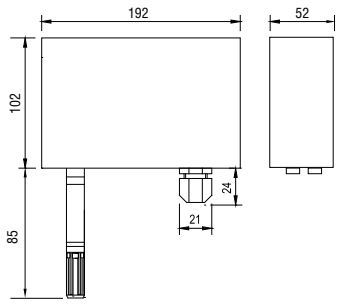
Sensor Diagnostics.

The intelligence of AirChip3000 technology enables advanced sensor diagnostics. Should the sensors deviate from factory defined parameters, the measured values are compensated electronically. You can select whether the values are to be compensated and whether an alarm is to be given. In addition 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 HygroFlex8 transmitter can be programmed with set limits to generate an alarm (audible, visible or through relays). In the event of a major sensor failure the analog outputs can be set to a fixed values to indicate the alarm condition. Thus, the HygroFlex8 can be integrated in any application.

Factory Adjustment.

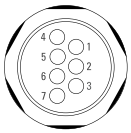
Three different adjustment profiles are available from the factory for HygroClip2 probes; this means that measuring accuracy can be matched to the application need. The custom adjustment profile consists of 20 humidity values at 3 temperatures to ensure optimum performance over a required working range.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

Dimension



Analog Probe Input

Socket (instrument): The numbers are given for illustration purposes only and are not marked on the socket.



1) RXD UART digital probe
2) GND (digital and power)
3) V+: digital probes: 3.3 VDC nominal
   analog probes: max. 5.0 VDC, 10 mA
4) AGND (analog ground)
5) Not used
6) Single channel analog probe signal: +0.0 to 3.3 VDC
7) TXD UART digital probe

Device type	Humidity temperature transmitter with analog output signals relay outputs Optional digital interface: Ethernet, RS-485
Circuit type	3-wire
Number of probe inputs	2 (digital or analog)
Digital probe	HygroClip2 probe
Analog probe (12-bit AD converter)	Supply voltage to probe: 5 VDC Maximum probe signal range: 0 to 3.3 VC Configurable measuring range and measurement unit
Probe type	All HC2 probes (digital)
Accuracy at 23 ±5 °C	±0.8 %RH / 0.1 C (typically value), probe dependent
Measurement range	-100…200 °C / 0…100 %RH, probe dependent
Psychrometric calculations	Dew point (Dp) above and below freezing Frost point (Fp) below freezing and dew point above freezing Wet bulb temperature (Tw) , Enthalpy (H) Vapor concentration (Dv) , Specific humidity (Q) Mixing ratio by weight (R), Vapor concentration at saturation (Dvs) Vapor partial pressure (E), Vapor saturation pressure (Ew)
Start-up time	1.9 s (typical)
Data refresh rate	1 s (typical)
Supply voltage HF83x	15…40 VDC or 12…28 VAC, 50-60 Hz
Supply voltage HF84x	9-36 VDC, with galvanic isolation
Supply voltage HF86x	85…265 VAC, 5 Watt, 50-60 Hz with galvanic isolation
Analogue output 1, 2, 3 and 4	Analogue output signals, scalable by user 0…20 mA 4… 20 mA 0… 1 V 0… 5 V 0… 10 V
Interface options	RS-485 and analogue output Ethernet (wired)
Relay 1, 2, 3 and 4	Can be made to correspond to any parameter and probe
Parameter, Operation	User configurable with the ROTRONIC HW4 software
Relay type	SPDT (single pole double throw) Maximum switching voltage: 250VAC* Maximum switching current: 6A* (*resistive load)
Optional display	LC, 1 or 2 decimals resolution backlight, trend and alarm indication
Housing material / Weight	ABS / 540 g (1 lb 3 oz) – depends on model
Housing protection grade	IP 65 (except models with USB or Ethernet interface)
Storage and transit	-50…+70 °C / -20…+70 °C (models with display) 0…100 %RH, non condensing
Operating limits at electronics	-40… +85 °C / -10….60 °C (models with display) 0…100 %RH, non condensing
Temperature limits at probe	Depends on probe model
Maximum humidity at sensor	100 %RH up to 80 °C (176 °F) 75 %RH at 100 °C (212 °F) 45 %RH at 125 °C (260 °F 15 %RH at 150 °C (302 °F)
CE / EMC immunity	EMC compliant 2014/30/EU: EN 61000-6-1:2007, EN 61000-6-2:2005 EN 61000-6-3:2007+A1:2011+A2:2012, EN 61000-6-4:2007+A1:2011, EN 50581:2012
Solder type	Lead free (RoHS directive)
Fire protection class	Corresponds to UL94-HB
FDA / GAMP directives	Compatible

Interested in further information (special applications, order codes)?
A complete and up-to-date overview of our HygroFlex8-series is available on our web site

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MEASUREMENT SOLUTIONS

Subject to technical change without notice. Errors and omissions excepted.

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