TRANSMITTERS

HygroFlex5 series

The HygroFlex5 series offers you ultimate performance and flexibility thanks to its interchangeable HygroClip2 probes. The transmitters come in wall and duct mount versions. Many useful functions can be accessed with optional HW4 software.

HF5-Series is available with analog and digital outputs, so compatibilty with almost any monitoring or control system is assured. Digital versions may be networked togther to form a dedicated environmental monitoring system using HW4 software.

The new generation device not only has a unique calibration and adjustment process, but also allows probes to be interchanged in just a few seconds. This easy interchangeability during operation reduces down-time and service costs to a huge extent. The possibility of using every probe as a simulator with fixed output values is a big advantage for system validation. In the case of networked devices this can even be carried out online from a remote PC workstation.

Applications

High specification HVAC applications, building management systems, museums, libraries, environmental monitoring systems.

Highlights

- Unique calibration and adjustment process
- Highest reproducibility
- Wall and duct versions; the wall version also serves for the connection of cable based probes
- Many useful functions can be activated with the optional HW4 software

HF5 WALL & DUCT VERSIONS

Applications

HVAC applications, building management systems, museums, libraries, etc.

Highlights and common features

- Probe interchangeable in just a few seconds
- Measures relative humidity, temperature and dew/frost point
- Calculates all psychrometric values
- Range of application -40...60 °C; -10...60 °C with LCD, 0...100 %rh
- Automatic sensor test & drift compensation *
- Use as a simulator for system validation *
- UART service interface
- Precision: dependent on the probe and adjustment profile used
- Can be mounted on a DIN rail (see accessories, page 102)
- Suitable probes: all HygroClip2 (HC2x) probes (ordered separately)
- Includes flange for duct mounting

Wall version	HF52-W series	HF53-W series
Type	2- or 2 x 2-wire	3/4-wire
Signals	Signals freely scalable*	Signals freely selectable and scalable*
Features	Alarm indicators, display and keypad (optional) Optional USB & RS485 interface	

Duct version	HF520-D series	HF53x-D series
Type	2- or 2 x 2-wire	3/4-wire
Signals	Signals freely scalable*	Signals freely selectable and scalable*
Features	Alarm indicators, display and keypad (optional)	

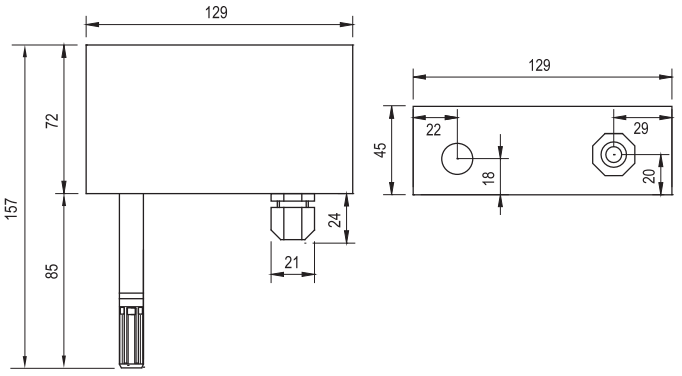
* Optional, requires HW4 software

Note: Version without display for vertical mounting

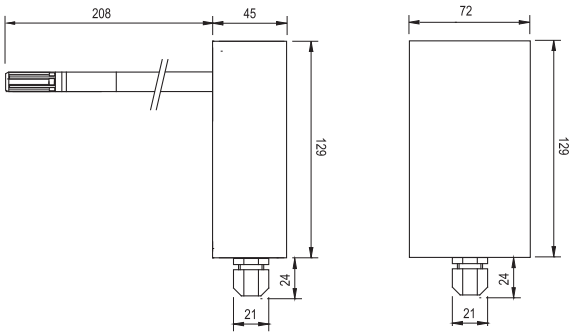
Wall version
Type W

Duct version vertical mounting
Type D

Duct version horizontal mounting
Type D



HF5x wall version

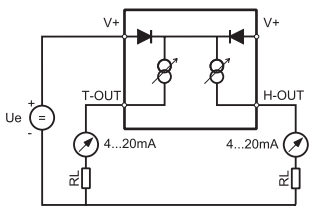


HF5x duct version (vertical mounting)

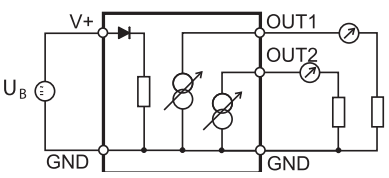
Order information (for accessories see pages 99-102)									
HF5 transmitters with analog signals									
Power supply and output signal type									
HF520-									2- or 2 x 2-wire, ‹10...28 VDC common supply V+, 4...20 mA
									Only display without backlight possible
HF531-									3/4-wire (15...40 VDC / 12...28 VAC, 0...20 mA)
HF532-									3/4-wire (15...40 VDC / 12...28 VAC, 4...20 mA)
HF533-									3/4-wire (5...40 VDC / 5...28 VAC, 0...1 V)
HF534-									3/4-wire (10...40 VDC / 8...28 VAC, 0...5 V)
HF535-									3/4-wire (15...40 VDC / 12...28 VAC, 0...10 V)
Instrument type									
	D				**X**				Duct mount , Ø 15 x 208 mm
	W								Wall mount
Output parameters *									
		B					**X**	**X**	Humidity & temperature
		H	**X**	**X**			**X**	**X**	Only humidity
		T					**X**	**X**	Only temperature
		1	**X**	**X**					Humidity & dew point
		A							Temperature & dew point
		C							Temperature & wet bulb temperature (Tw) in °C
		D							Temperature & enthalpy (H) in kJ/kg
		E							Temperature & specific humidity (Q) in g/kg
		F							Temperature & absolute humidity (Dv) in g/m3
		G							Temperature & mixing ratio (R) in g/kg
Further calculations are possible. Please consult our price list in this regard.									
Scaling of the output signals * (humidity: always 0...100 %rh)									
			X	**X**					No temperature output signal
			1	**X**					0...50 °C
			2	**X**					10...40 °C
			3	**X**					-40...60 °C
			4	**X**					-30...70 °C
			5	**X**					-40...85 °C
			6	**X**					0...100 °F
			7	**X**					0...200 °F
			8	**X**					0...300 °F
			9	**X**					-50...200 °F
Optional display									
					D				Display with backlight (only for horizontal mounting)
					X				No display
Electrical connections (analogue signals to terminals) & interfaces									
						1			M16 x 1.5 cable gland, only analogue signals, horizontal mounting
						2			M16 x 1.5 cable gland, vertical mounting without display, only analogue signals
						7			M16 x 1.5 & USB & RS485, communication interface, horizontal mounting
Scaling of the calculated output parameters *									
							X	**X**	No calculation
							B	**X**	-50...50
							C	**X**	-50...100
							D	**X**	-50...200

* Others on request

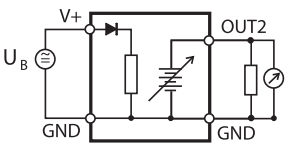
Detailed specifications		
Power supply / Connections	HF52	HF53
Supply voltage	10...28 VDC, 4...20 mA current loop V min = 10 V + (0.02 x load*)	15...40 VDC /12...28 VAC at 500 Ω
Current consumption	2 x 20 mA	‹50 mA
Electrical connections	Screw terminals and M16 cable gland or ½" conduit adapter	
Humidity measurement	HF52	HF53
Sensor	ROTRONIC Hygromer® IN-1 (depending on the HygroClip2 used)	
Measurement range	0...100 %rh	
Accuracy at 23 °C	± 0.8 %rh (probe dependent)	
Repeatability	0.3 %rh	
Long term stability	‹1 %rh/year	
Response time	Typically 10 s for 63 % of a jump 35 → 80 %rh (1 m/sec air flow at sensor)	
Temperature measurement	HF52	HF53
Sensor	Pt100 1/3 Class B (in all HygroClip2 probes)	
Measurement range	-100...200 °C / -148...392 °F	
Accuracy at 23 °C	±0.1 K (probe dependent)	
Repeatability	0.05 °C	
Long term stability	‹0.1 °C/year	
Response time	Typically 4 s for 63 % of a change from 23 to 80 °C (1 m/sec air flow at sensor)	
Calculated parameters	HF52	HF53
Psychrometric calculations	All types available	
Start-up time	Typically 3.4 s	Typically 1.9 s
Signal type (selectable by jumper)	4...20 mA	0...20 mA, 4...20 mA , 0...1 V, 0... 5 V, 0...10 V
Scale limits	-999.99...+9999.99 units, user scaleable	
* Maximum load (in Ω)	0/500 Ω	0/500 Ω (current signal), min. 1000 Ω (voltage signal)
Type of interface	USB or Ethernet TCP/IP (cable connection or wireless) & RS485	
Service interface	UART (universal asynchronous receiver transmitter) on mini USB connector	
Service cable maximum length	5 m (16.4 ft)	
Optional display	LCD, 1 or 2 decimals, without backlight	LCD, 1 or 2 decimals, with backlight and trend indicator
Probe material	Polycarbonate	
Filter material	Polyethylene	
Housing material / Protection	ABS / IP 65 (except for models with USB interface)	
Weight	Approx. 250 g	
CE/EMC compatibility	EMC Directive 2004/108/EC	EN 61000-6-1: 2001, EN 61000-6-2: 2005 EN 61000-6-3: 2005, EN 61000-6-4: 2001 + A11
Solder	Lead free (RoHS-compliant)	
Fire resistance	Conforms to UL94-HB	
FDA/GAMP compatibility	Conforms to FDA 21CFR Part 11 and GAMP4	
Electronics operating range	-40...60 °C / (models with display: -10...60 °C) 0...100 %rh, non-condensing	
Maximum wind velocity at probe	40 m/s (7,870 ft/min)	



Schematic 2-wire types



Schematic 3-wire current signal



Schematic 3-wire voltage signal