

HF3A

Humidity and Temperature Transmitter



Benefits

- Versatile design to meet diverse application needs
- Precise relative humidity and temperature measurement with additional psychrometric calculations
- Freely programmable outputs and scaling via NFC-Interface, including NFC powerless support

Applications

- HVAC systems for office buildings and storage rooms
- Museums and libraries where aesthetics matter
- Climate monitoring for greenhouses and swimming pools
- Light industrial manufacturing including electronics manufacturing, packaging, and small-scale assembly lines

New housing

- Robust, PC-ABS industrial-quality housing (IP65)
- Wall, Duct and Cable mount version
- Display with trend indicator, LED status and backlighting¹

Outputs

- The 2 analog outputs are freely selectable and scalable
- 2-wire (HF3A-2), 3- /4-wire analog (HF3A-3) and 3- /4- wire digital (HF3A-D) available
- RS485 signal on screw terminal for HF3A-D

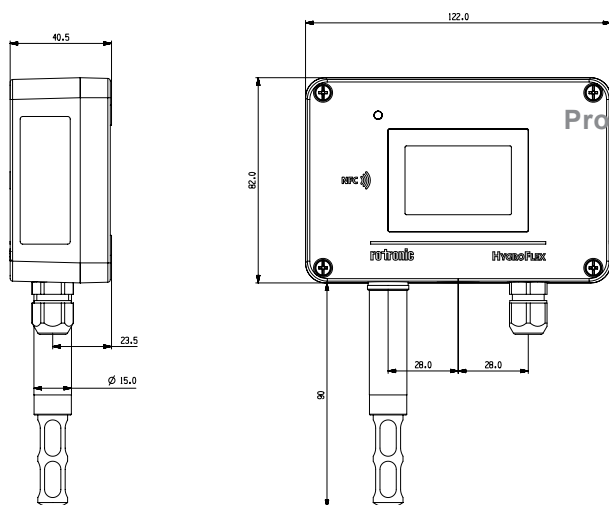
Power supply

- 2-wire: 10 VDC to 28 VDC
- 3- /4- wire: 18 VDC to 36VDC

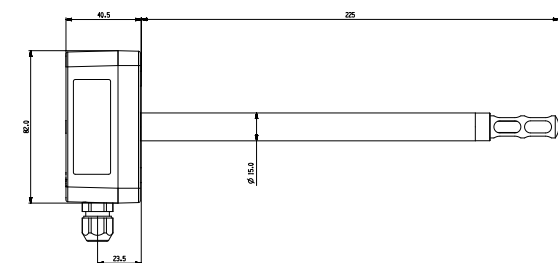
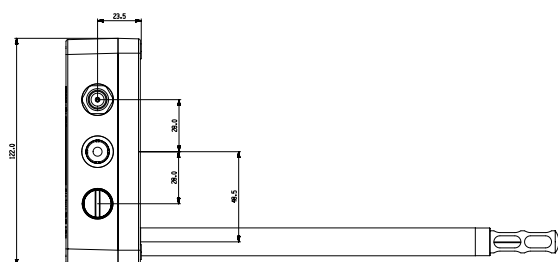


Technical information

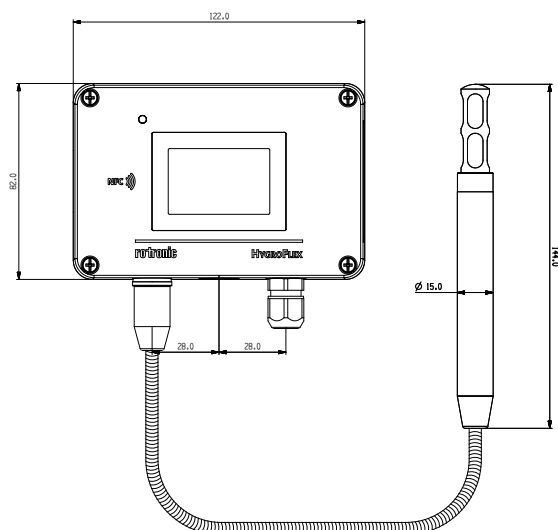
HF3A-2, HF3A-3 and HF3A-D
Wall version



Duct version



Cable version



	HF3A-2 2-wire	HF3A-3/ HF3A-D 3- /4-wire
Probe	Humidity and Temperature fix mounted	
Accuracy at 23 °C	±1.2 %rh, ±0.1 °C	
Initialization time	Typically 5 seconds.	
Measurement interval	1 s	
Measurement range	0 %rh to 100 %rh Wall ¹ : -40 °C to 85 °C/-10 °C to 60 °C Duct ² /Cable: -50 °C to 100 °C	
Range of applications	0 %rh to 100 %rh (non-condensing) -10 °C to 60 °C with display -40 °C to 85 °C without display	
Trend indicator	Yes	
Display	Resolution up to 2 decimal places without backlighting	with backlighting and LED-Status
Output signals analog	4 mA to 20 mA	Freely scalable: 0 V to 1V, V to 5V, 0 V to 10 V, 0 mA to 20, 4 mA to 20 mA
Resolution analog output	>15 Bit	
Output signal digital	-	RS-485 signals on screw terminal
Cable connections	1 x M12 screw terminals (2 x M12 for HF3A-D)	
Psychometric calculations	All	
Power supply	10 VDC to 28 VDC	18 VDC to 36 VDC
Circuit type	2-wire	3- /4-wire
Current Consumption	2x23 mA	< 50 mA
Load per analog output	Max. 500 Ω	
Humidity Sensor	ROTRONIC Hygromer® HT-1	
Temperature Sensor	Pt100 1/3 Class B	
Interface	UART, NFC and USB	
Software	HygroSoft	
Housing material	PC-ABS	
Dimensions	Wall: 122 x 172 x 40.5 mm Duct: 122 x 82 x 265.5 mm Cable: 122 x 82 x 40.5 mm (Housing only) 144 x 15 mm (Probe only)	
Weight	Wall: 204 g Duct: 226 g Cable: 332 g	
IP-Protection	IP65	
Soldering material	Lead free (RoHS-Directive 2011/65/EU)	
Standards	CE Conformity 2014/30/EU	
Conformity	GAMP5	

¹ The measurement range for the wall-mount unit is limited due to the proximity of the probe to the transmitter electronics.

² The full measurement range of the duct mount unit can only be utilized if the transmitter electronics operate within the given application range.

Versions



Accessories for Hygroflex Advanced Transmitters

Order Code

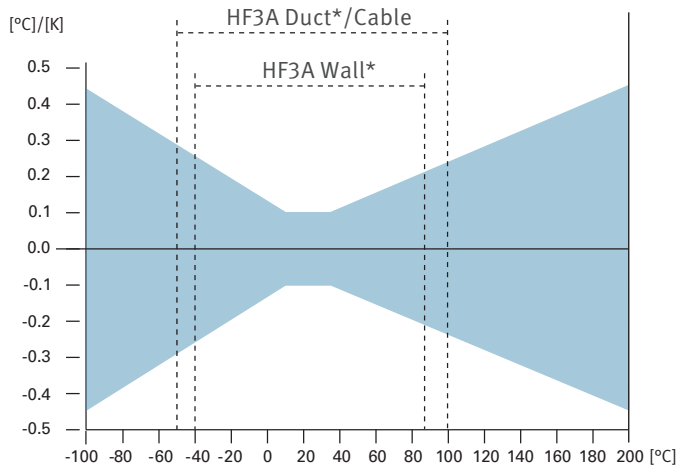
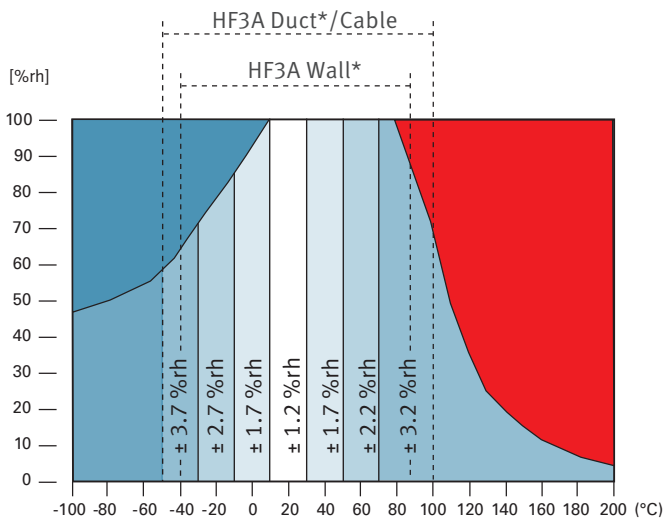
NFC-USB-READER



The Hygroflex Advanced HF3A devices are equipped with an NFC-interface¹ through which the device can be configured. The NFC-interface can be accessed by means of a mobile phone or a computer equipped with an NFC reader. The NFC-USB-READER has an USB plug to connect the Reader with a Computer and requires no further configuration. The Hygroflex Advanced Transmitter is compatible with HygroSoft software only.

¹ Rotronic AG only support the NFC-USB-READER, which can be purchased through Rotronic. Devices from third party suppliers cannot be considered.

Humidity and Temperature window



* Both the electronics and the sensor operate under identical environmental conditions.

HF3A



优势

- 多功能设计，满足多样化的应用需求
- 精确测量湿度和温度，并提供不同的湿度单位计算
- 通过 NFC 接口自由配置输出和扩展，在未通电状态下也可以使用

应用

- 办公楼宇和储存室的 HVAC 系统
- 博物馆和图书馆
- 温室和游泳池的气候监测
- 轻工业制造，包括电子生产、包装和小型装配线



新外壳

- 坚固的 PC-ABS 工业外壳 (IP65)
- 壁挂，管道，电缆安装等多种型号
- 显示带趋势指示，LED 状态和背光¹

输出

- 2 个模拟输出可自由选择和扩展
- 2 线 (HF3A-2), 3/4 线模拟 (HF3A-3) 和 3/4 线数字 (HF3A) 可选
- Modbus 485-RTU 信号位于螺丝端子 (HF3A-D)

电源

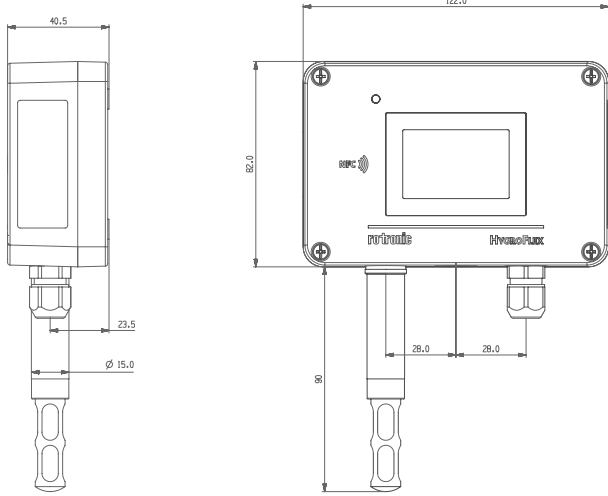
- 2 线: 10...28 VDC
- 3/4 线: 18...36VDC



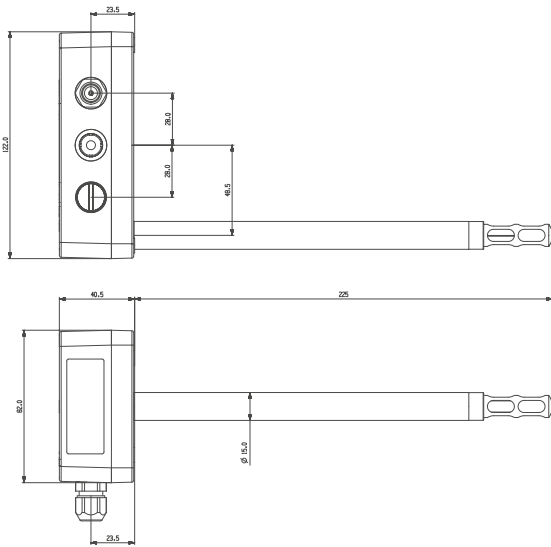
¹ LED 状态和背光仅限 HF3A-3 或 HF3A-D 型号

技术规格

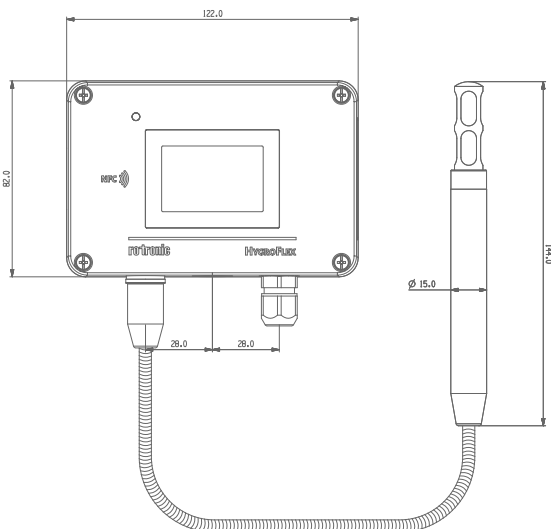
HF3A-2, HF3A-3 和 HF3A-D 壁挂版本



管道版本



电缆版本



	HF3A-2 2 线	HF3A-3/ HF3A-D 3/4 线
探头	湿度和温度探头固定安装	
精度 @ 23 °C	±1.2 %rh, ± 0.1 °C	
初始化时间	通常 5 s	
测量间隔	1 s	
测量范围	0...100 %rh 壁挂 ¹ : -40...85 °C/-10...60 °C 管道 ² /电缆: -50...100 °C	
应用范围	0...100 %rh (无冷凝) -10...60 °C 带显示 -40...85 °C 不带显示	
趋势指示	是	
显示	分辨率至小数点后 2 位	
	无背光	带背光 和 LED 状态
模拟信号输出	4...20 mA	自由扩展: 0...1, 0...5, 0...10 V, 0...20, 4...20 mA
模拟输出分辨率	>15 Bit	
数字信号输出	-	Modbus 485-RTU 信号位于螺丝端子
电缆链接	1 x M12 螺丝端子 (2 x M12 用于 HF3A-D)	
湿度计算	所有型号	
电源	10...28 VDC	18...36 VDC
电路类型	2 线	3/4 线
电流消耗	2x23 mA	< 50 mA
每个模拟输出负荷	Max. 500 Ω	
湿度传感器	ROTRONIC Hygromer® HT-1	
温度传感器	Pt100 1/3 class B	
接口	UART, NFC 和 USB	
软件	HygroSoft	
外壳材质	PC-ABS	
尺寸	壁挂: 122 x 172 x 40.5 mm 管道: 122 x 82 x 265.5 mm 电缆: 122 x 82 x 40.5 mm (仅外壳) 144 x Ø15 mm (仅探头)	
重量	壁挂: 204 g 管道: 226 g 电缆: 332 g	
IP 防护	IP65	
焊接材料	无铅 (RoHS 指令 2011/65/ EU)	
标准	CE-一致性 2014/30/EU	
符合性	GAMP5 和 FDA 21 CFR Part 11 ³	

¹ 壁挂版本的测量范围受限, 是由于探头靠近变送器电子元件。

² 只有变送器电子元件在给定的应用范围内工作时, 管道安装版本的完整测量范围才能使用。

³ 仅设备与符合 FDA 的软件一起使用时, 才适用 FDA 符合性。

型号

HF3A-2, HF3A-3 和 HF3A-D 系列

壁挂




管道



电缆



Hygroflex 高级变送器适用探头

订购号	Hygroflex 高级变送器适用配件	
NFC-USB-READER		Hygroflex 高级变送器 HF3A 配有 NFC 接口 ¹ 。设备可以通过 NFC 进行配置。NFC 接口可以通过手机或配备了 NFC 阅读器的计算机访问。NFC-USB-READER 具有 USB 插头来连接电脑与阅读器，无需进一步的设置。Hygroflex 高级变送器仅与 HygroSoft 软件兼容。

¹ 仅限瑞士 Rotronic 提供 NFC-USB-READER, 可通过 Rotronic 购买, 无法使用来自第三方的。