

PF4

THE INTELLIGENT TRANSMITTER

FOR DIFFERENTIAL-PRESSURE
AND TEMPERATURE MEASUREMENT

- High-precision measurement and long-term stability
- Fast response time and low hysteresis
- Analog signals freely configurable
- Integrated relay switch contact
- Large overload range
- Expandable with HygroClip2 sensor or analogue inputs
- High immunity to dust and humidity in the medium



BE PRECISE: THE MAIN ADVANTAGES AT A GLANCE.

The new PF4 series is the latest development from ROTRONIC. The thermal measurement technique enables top-precision measurements in the smallest of spaces. This differential-pressure transmitter gives ROTRONIC customers a device to measure a further important parameter in addition to devices for humidity, temperature and CO₂ measurement. With the optional connector for HygroClip2 probe, analog input or temperature sensor, the device is widely supported for the most diverse applications.

ROTRONIC stands for unparalleled accuracy and long-term stability. The new differential pressure series meets these requirements with a long-term stability of $<0.3\%$ /year and an accuracy of $\pm 1.0\%$ of full scale.

Functional Display

- Display of the current measured values
- Menu for configuration of all device settings

Field-Tested Housing

- Robust industrial housing
- IP65

Integrated Sensor Technology

- Thermal sensor for smallest measured values
- Large overload range of 2,000 mbar
- Fast sensor response time of 1-2 ms
- Electronic sampling rate of 0.25 s
- High accuracy $\pm 1.0\%$ of full scale
- Very low air flow of 120 - 180 $\mu\text{l}/\text{min}$

Power Supply / Outputs

- 15...40 VDC / 14...28 VAC
- 2 analog outputs, freely selectable and scalable
- Digital Ethernet interface (option)
- Configuration of the device during use thanks to a combination of digital interface and analog outputs



You need more information (special applications, order codes, etc.) in order to choose the right probe?
You can find a complete, up-to-date overview on the internet at www.rotronic.com.

APPLICATIONS

The ROTRONIC differential-pressure transmitters are ideal for clean rooms, operating rooms and applications where even minor differences in pressure can have a big effect. With its thermal mass flow measurement, the PF4 boasts very high long-term stability and is very sensitive to pressure. The additional temperature measurement is probably the most required measurement parameter, especially in the pharmaceutical and food industries.

With its digital interface, the device offers direct integration in the HW4 software. HW4 provides a complete monitoring solution fully compliant to FDA 21 CFR Part 11 regulations.



ACCESSORIES FOR PF4 TRANSMITTERS

Standard Humidity-/Temperature probe

HygroClip2 probe: HC2-S

Accuracy: ± 0.8 %RH, ± 0.1 K, at 23 °C ± 5 K

Range of application: -50...100 °C, 0...100 %RH



Industrial Humidity-/Temperature probe

HygroClip2 probe: HC2-IC

Accuracy: ± 0.8 %RH, ± 0.1 K, at 23 °C ± 5 K

Range of application: -100...200 °C¹, 0...100 %RH



¹ Short-term peak load

Fixed Probe for Air Measurement

Fixed temperature probe AC1909

Probe: 100 x 4 mm, DIN 1.4401

Range of application: -50...200 °C, τ_{90} : 20 s



Cable Probe

Thermoplastic cable AC1904, 2 m

Probe: 100 x 4 mm, waterproof, DIN 1.4301

Range of application: -50...110 °C, τ_{90} : 185 / 20 s



Adjustment

One of the most important adjustment points in differential-pressure measurement is zeroing. The PF4 offers easy zeroing at the press of a button and additionally adjustment of the measurement range with reference-value input.

Output Signal

The analog output signal is freely scalable and configurable with the software. This means you can assign the limit values to the signal freely as needed and also define the type of output signal freely (0...1 V / 0...5 V / 0...10 V / 0...20 mA / 4...20 mA).

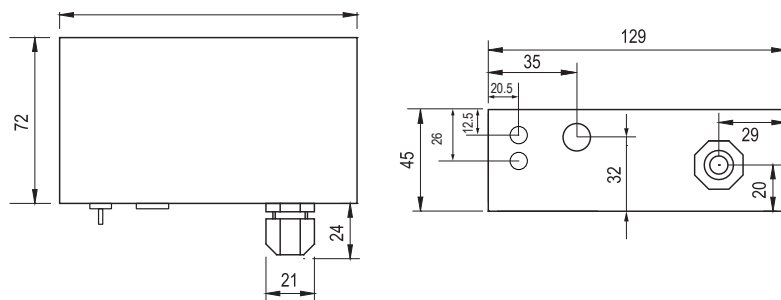
Alarms

The PF4 has an internal relay that can be configured easily with the HW4 software. Time delay, maximum duty cycle and automatic re-setting of the relay are easy to set. All alarm possibilities of the HW4 software are available to you in the known and proven ROTRONIC functionality.

TECHNICAL INFORMATION

Technical data	PF43x-1, Analog 3-wire	PF43x-L, Analog & digital 3-wire
General		
Parameters	Differential pressure, temperature and relative humidity	
Housing material	ABS	
IP protection	IP65	IP40
Mounting position	Any mounting position	
Dimensions	129 x 72 x 45 mm	
Weight	240 g	
Display	LCD, 1 or 2 decimals with backlight / Menu navigation, 4 keys	
Electrical connections	Screw terminals inside, M16 cable gland	Screw terminals inside, M16 cable gland, socket (Ethernet)
Power supply	15...40 VDC / 14...28 VAC	
Current consumption	<70 mA	<150 mA
Range of application / Storage conditions	0...70 °C / 0...90 %RH, 0...60 °C / 0...90 %RH with display	
Firmware upgrade	Via HW4 software	
Service interface	UART service interface (inside device)	
CE / EMC compatibility	EMC Directive 2004/108/EC	
Fire protection class	Corresponds to UL94-HB	
FDA / GMP compatibility	21 CFR Part 11 and GAMP5	
Differential pressure measurement		
Measurement principle	Thermal mass flow measurement	
Measurement ranges	-25...+25 Pa / -50...+50 Pa / -100...+100 Pa / -250...+250 Pa / -500...+500 Pa	
Medium	Air and non-aggressive gases	
Accuracy at 23°C ±3 K, 1,000 hPa	±1.0 % full scale	
Long-term stability	<0.3 % of reading / year	
Dependence on ambient pressure	0.1 % of reading / hPa	
Measurement interval	1 s	
Pressure resistance	2x bar (2,000 hPa)	
Leak rate	<180 µl/min.	
Pressure connections	Hose connector Ø 4 mm x 10 mm	
Measurement of temperature and relative humidity (type-dependent)		
Probe connections	Temperature: 4-pin Binder for 4-wire Pt100 probes Humidity: ROTRONIC E2 for ROTRONIC HC2 probes	
Outputs		
Analog outputs	2, freely configurable	
Analog output type	0/4...20 mA or 0...1/5/10 V	
Switch output	1x relay	
Switching capacity	<50 VAC / <75 VDC / <1 A	
Accuracy, analog output	±10 mV (voltage output), ±20 µA (current output)	
Permissible load	>10 kΩ (voltage output), <500 Ω (current output)	
Ethernet	No digital outputs	Ethernet RJ-45

Dimensions



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