

# DIFFERENTIAL PRESSURE

## DIFFERENTIAL PRESSURE AND TEMPERATURE MEASUREMENT

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The **PF4 series** is the latest development from ROTRONIC. The thermal measurement technique enables high-precision measurements in the smallest of ranges. With the differential pressure transmitter, ROTRONIC customers are now able to measure a further key parameter in addition to humidity, temperature and CO<sub>2</sub>. With its optional temperature probe, the instrument is suitable for a wide range of applications.

## PF4 SERIES

### Features

- Accuracy:  $\pm 1.0$  % of end value
- Fast response time
- Freely configurable analog signals
- Integrated relay switch contact
- High resistance to over pressure
- Thermal mass flow measurement at low flow rate
- High immunity to dust and humidity in the environment

### POWER SUPPLY

- Low voltage: 3/4-wire

### SIGNAL OUTPUTS

- Current output
- Voltage output
- Ethernet
- Relay switch output

### VERSION

- Wall version

### OUTPUT PARAMETERS

- Differential pressure & temperature
- Differential pressure

### MEASUREMENT RANGES

- $-25 \dots +25$  Pa /  $-50 \dots +50$  Pa /  $-100 \dots +100$  Pa /  $-250 \dots +250$  Pa /  $-500 \dots +500$  Pa

### DISPLAY

- Display with backlight, trend indicator and keypad
- Without display



## PF4 WALL VERSION



### Applications

Measures differential pressure and temperature in clean rooms, operating rooms and applications where small pressure differences prevail.

### 3/4-wire

	PF43x-1	PF43x-L
Output signals	0...1/5/10 V 0/4...20 mA (Customer rescaling possible*) Relay switch output	Ethernet 0...1/5/10 V 0/4...20 mA Relay switch output
Supply voltage	15...40 VDC / 14...28 VAC	
Display	Optional	

### COMPATIBLE

- HW4 software, page 148

### INCLUDED

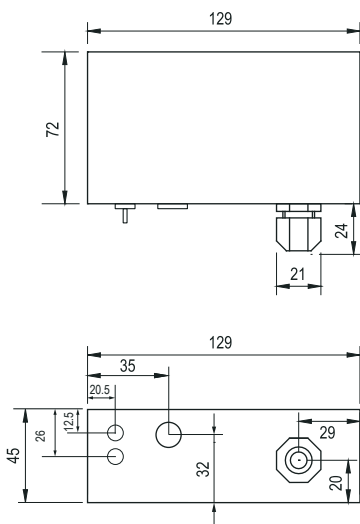
- Factory adjustment certificate
- Short instruction manual
- Screws and plugs for mounting

### TYPICAL ACCESSORIES

- |                                 |                            |
|---------------------------------|----------------------------|
| • Service cable                 | AC3006 / AC3009* (page 86) |
| • Temperature probes            | AC19xx (page 94)           |
| • Mounting kit DIN top-hat rail | AC5002                     |

### Reference

- \* Requires optional HW4 software and service cable



## TRANSMITTERS

Specifications	PF43x-1 Analog 3/4-wire	PF43x-L Analog & digital 3/4-wire
<b>General</b>		
Parameters	Differential pressure and temperature	
Housing material / Protection	ABS / IP65	IP40
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
Application temp. housing / electronics	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	Conforms to 21 CFR Part 11 and GAMP5	
<b>Differential pressure measurement</b>		
Sensor	Thermal mass flow measurement	
Measurement ranges	-25...+25 Pa / -50...+50 Pa / -100...+100 Pa / -250...+250 Pa / -500...+500 Pa	
Accuracy at 23°C ±3 K	±1.0 % of end value	
Adjustment points	Zero point, 1 freely selectable reference point	
Long-term stability	<0.3 %/year	
Pressure dependence	0.1 %/hPa	
Measurement interval	1 s	
Response time	Configurable 0 s...30 min.	
Pressure resistance	2 bar (2,000 hPa)	
Air flow	120...180 µl/min.	
Connections	Diameter 4 mm	
<b>Temperature measurement</b>		
Sensor	Pt100 connection, 4-wire	
Measurement range	-100...200 °C (probe dependent)	
Adjustment points	1	
<b>Analog output</b>		
Number	2	
Current	0/4...20 mA	
Voltage	0...1/5/10 V	
Switch output	1 relay (configurable with HW4 software) Switching capacity: <50 VAC / <75 VDC / <1 A	
Accuracy analog output	±10 mV (voltage output) ±20 µA (current output)	
<b>Digital output</b>		
Ethernet	No digital outputs	Ethernet RJ45