

# PF4/PF5 SERIES



PF4 with PT100



PF5 with HC2-A

## BENEFITS

- Flow or diaphragm differential pressure sensors
- 1 to 3 analog outputs, 1 analog input
- Network integration (Ethernet)
- Modbus TCP or RTU over RS485
- Potential-free relay with switch contacts

## APPLICATIONS

- Heating, ventilation, air conditioning
- Food industry
- Pharmaceutical industry
- Clean rooms



### Proven housing

- Robust, industrial-quality housing
- Wall mounting

### Functional display & intuitive menu

- Color TFT LCD
- Display up to 4 lines, max. 3 measured values
- Menu for configuration of all device settings

### Integrated sensor technology

- Flow-based or diaphragm differential pressure sensor
- Integrated ambient pressure sensor

### Flexible choice of probes

- Connection of a wide range of probes possible
- Connection of simulators facilitates process validation

### Technology/Functions

- Automatic zero point compensation (PF5)
- Sensor internal 0-Point compensation (PF4)
- Modbus TCP & RTU
- PowerOverEthernet (PoE)



# ACCESSORIES

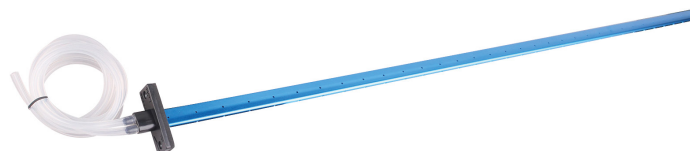
## STANDARD HUMIDITY / TEMPERATURE PROBE

HygroClip2 probe: HC2A-S  
 Accuracy:  $\pm 0.8\% \text{RH}$ ,  $\pm 0.1 \text{ K}$ , at  $23\text{ °C} \pm 5 \text{ K}$   
 Range of application:  $-50\text{...}100\text{ °C}$  /  $0\text{...}100\% \text{RH}$



## FLOW / VOLUME FLOW RATE PITOT TUBE

Order code	Length
PT-100	100 mm / 4"
PT-150	150 mm / 6"
PT-200	200 mm / 8"
PT-250	250 mm / 10"
PT-350	300 mm / 12"



# TECHNICAL INFORMATION

General specifications	
Housing material	ABS
IP protection class	IP65 (without Ethernet) / IP40 (with Ethernet)
Mounting position	Wall mount
Display	Color TFT display (27 x 40 mm)
Dimensions	129 mm x 72 mm x 45 mm
Weight	243 g with display & Ethernet
Altitude	Up to 2000 m ASL
Application range	$-5\text{...}60\text{ °C}$ / $0\text{...}100\% \text{RH}$ , non-condensing
Electrical connections	Screw terminals in housing
Power supply	18...48 VDC / 16...35 VAC (galvanically isolated) Optional: Power over Ethernet
Rated current consumption	$< 300 \text{ mA}$ @ 24 VDC
Digital communication	Ethernet (TCP) / RS-485 (Modbus RTU)
Software compatibility	HW4 V3.9
FDA / GAMP compatibility	21 CFR part 11 / GAMP 5
Fire protection class	Corresponds to UL94-HB
Analog outputs	
Analog outputs	Min. 1, max. 3, freely configurable
Analog output type	0 to 1 V 0 to 5 V 0 to 10 V 0 to 20 mA 4 to 20 mA
Analog output accuracy (@ 23 °C)	Voltage output: $\pm 1 \text{ mV/V}$ Current output: $\pm 20 \mu\text{A}$
Maximum load	$> 1 \text{ k}\Omega/\text{V}$ (voltage output)
Maximum load	$< 500 \Omega$ (current output)
Resolution	0 to 1 V 13 bit, otherwise 16 bit
Relays / Switch outputs	
Switch outputs	1 relay potential-free change-over switch (NC - COM - NO)
Switching capacity	30 VDC/1 A or 35 VAC/1 A

Analog input		
Analog input	1, freely configurable	
Analog input type	0...10 V, input resistance $> 50 \text{ k}$ 0...24 mA, measurement resistance $412.5 \Omega$	
Accuracy offset	0.5 % of current measured value	
Differential pressure	PF4	PF5
Sensor type	Flow sensor	Diaphragm sensor
Zero point compensation <sup>2</sup>	Automatic, every 5 ms in the sensor	Automatic, configurable via HW4
Measurement ranges	$\pm 10 \text{ Pa} / \pm 25 \text{ Pa} / \pm 50 \text{ Pa} / \pm 100 \text{ Pa} / \pm 250 \text{ Pa} / \pm 500 \text{ Pa}$	$\pm 25 \text{ Pa} / \pm 50 \text{ Pa} / \pm 100 \text{ Pa} / \pm 250 \text{ Pa} / \pm 500 \text{ Pa}$
Leak rate	180 $\mu\text{l}/\text{min}$	0 $\mu\text{l}/\text{min}$
Accuracy <sup>1</sup>	$\pm 1.0\% \text{FSS}$	
Response time $\tau_{63}$	$< 1 \text{ s}$ , typical	
Ambient pressure dependence	Compensated	None
Pressure resistance	5 bar	0.7 bar
Resolution	0.01 Pa	
Long-term stability <sup>1</sup>	<b>PF4:</b> $\pm 0.05\% \text{FSS}/\text{year}$ (typ.) / $\pm 0.1\% \text{FSS}/\text{year}$ (max.) <b>PF5:</b> $\pm 0.25\% \text{FSS}$ (typ.) per year @ $\pm 250$ and $\pm 500 \text{ Pa}$ measurement range $\pm 0.3125\% \text{FSS}$ (typ.) per year @ $\pm 100 \text{ Pa}$ measurement range $\pm 0.625\% \text{FSS}$ (typ.) per year @ $\pm 50 \text{ Pa}$ measurement range $\pm 1.25\% \text{FSS}$ (typ.) per year @ $\pm 25 \text{ Pa}$ measurement range	
Ambient pressure sensor		
Absolute accuracy	$\pm 1 \text{ hPa}$ ( $0\text{...}65\text{ °C}$ ; $950\text{...}1100 \text{ hPa}$ ) max.	
Working range - pressure	300...1100 hPa	
Working range - temperature	$-5\text{...}65\text{ °C}$	

<sup>1</sup> For maximum accuracy, Rotronic recommends you carry out a zero point compensation after installation and commissioning and repeat this every year. Zero point compensation should be carried out more often in aggressive environments/gas media. See the device manual for more detailed information.

<sup>2</sup> Zero point compensation is recommended after every change in position and installation (PF5).

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