

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: $\pm 0.8\%RH$, $\pm 0.1\text{ K}$, at $23\text{ }^\circ\text{C} \pm 5\text{ K}$
 Range of application: $-50\dots 100\text{ }^\circ\text{C}$ / $0\dots 100\%RH$



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	$-5\dots 60\text{ }^\circ\text{C}$ / $0\dots 100\%RH$, 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 mA @ 24 VDC
Digital communication	Ethernet (TCP) / RS-485 (Modbus RTU)
Software compatibility	HygroSoft
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: $\pm 20\text{ }\mu\text{A}$
Maximum load	> 1 k Ω /V (voltage output)
Maximum load	< 500 Ω (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 k 0...24 mA, measurement resistance 412.5 Ω	
Accuracy offset	0.5 % of current measured value	
Differential pressure	PF4	PF5
Sensor type	Flow sensor	Diaphragm sensor
Zero point compensation ²	Automatic, every 5 ms in the sensor	Automatic, configurable via HygroSoft
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 $\mu\text{ l/min}$	0 $\mu\text{ l/min}$
Accuracy ¹	$\pm 1.0\%FSS$	
Response time τ_{63}	< 1 s, typical	
Ambient pressure dependence	Compensated	None
Pressure resistance	5 bar	0.7 bar
Resolution	0.01 Pa	
Long-term stability ¹	PF4: $\pm 0.05\% FSS/\text{year}$ (typ.) / $\pm 0.1\% FSS/\text{year}$ (max.) PF5: $\pm 0.25\% FSS$ (typ.) per year @ ± 250 and $\pm 500\text{ Pa}$ measurement range $\pm 0.3125\% FSS$ (typ.) per year @ $\pm 100\text{ Pa}$ measurement range $\pm 0.625\% FSS$ (typ.) per year @ $\pm 50\text{ Pa}$ measurement range $\pm 1.25\% FSS$ (typ.) per year @ $\pm 25\text{ Pa}$ measurement range	
Ambient pressure sensor		
Absolute accuracy	$\pm 1\text{ hPa}$ ($0\dots 65\text{ }^\circ\text{C}$; 950...1100 hPa) max.	
Working range - pressure	300...1100 hPa	
Working range - temperature	$-5\dots 65\text{ }^\circ\text{C}$	

¹ 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.

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