

ifm electronic



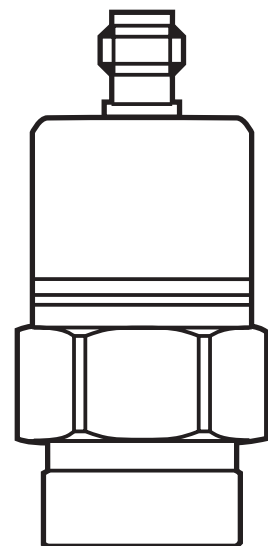
Installation Instructions  
Electronic pressure sensor

**efector500<sup>®</sup>**

**PA32xx**

**UK**

704091 / 01 08 / 2010



# Contents

1 Safety instructions .....	2
2 Function and features.....	3
2.1 Applications .....	3
3 Installation .....	4
4 Electrical connection.....	4
5 Scale drawing.....	5
6 Technical data.....	6

## 1 Safety instructions

- Please read the product description prior to installing the unit.
- Ensure that the product is suitable for your application without any restrictions.
- If the operating instructions or the technical data are not adhered to, personal injury and/or damage to property may occur.
- Please check for all applications that the product materials (see Technical data) are compatible with the media to be measured.
- Use in gases at pressures > 25 bar only after contacting the manufacturer ifm.

For units with cULus approval and the scope of validity cULus:

The device shall be supplied from an isolating transformer having a secondary Listed fuse rated as noted in the following table.

Overcurrent protection		
Control-circuit wire size		Maximum protective device rating Ampere
AWG	(mm <sup>2</sup> )	
26	(0.13)	1
24	(0.20)	2
22	(0.32)	3
20	(0.52)	5
18	(0.82)	7
16	(1.3)	10

The Sensor shall be connected only by using any R/C (CYJV2) cord, having suitable ratings.

## 2 Function and features

The pressure sensor detects the system pressure and converts it into an analog output signal.

- 4 ... 20 mA

### 2.1 Applications

- Type of pressure: relative pressure

Order no.	Measuring range		Permissible overload pressure		Bursting pressure	
	bar	PSI	bar	PSI	bar	PSI
PA3220	0...400	0...5 800	600	8 700	1 000	14 500
PA3221	0...250	0...3 625	400	5 800	850	12 300
PA3222	0...100	0...1 450	300	4 350	650	9 400
PA3223	0...25	0...363	150	2 175	350	5 075
PA3224	0...10	0...145	75	1 087	150	2 175
PA3226	0...2.5	0...36.3	20	290	50	725
PA3227	0...1	0...14.5	10	145	30	450
PA3228	0...0.25	0...3.63	10	145	30	450

UK

$$\text{MPa} = \text{bar} \div 10 \quad / \quad \text{kPa} = \text{bar} \times 100$$



Static and dynamic overpressures exceeding the indicated overload pressure are to be avoided by taking appropriate measures.

The indicated bursting pressure must not be exceeded. Even if the bursting pressure is exceeded only for a short time, the unit can be destroyed.

NOTE: Risk of injury!

Use in gases at pressures > 25 bar only after contacting the manufacturer ifm.

High-pressure units (400 bar) are supplied with an integrated damping device to avoid any risk of injury in case of bursting when bursting pressure is exceeded.

When the damping device is removed it can become unusable.

If you have any questions, please contact ifm electronic's sales specialists.

### 3 Installation



Before mounting and removing the sensor, make sure that no pressure is applied to the system.

- ▶ Insert the unit in a 1/4" NPT process connection.
- ▶ Tighten firmly.

### 4 Electrical connection

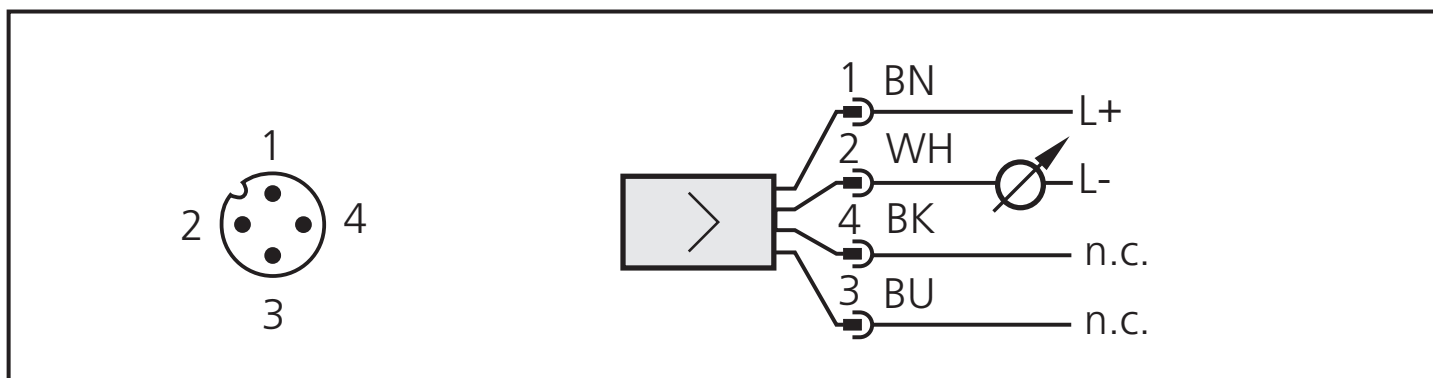


The unit must only be connected by an electrician.

The national and international regulations for the installation of electrical equipment must be observed.

Voltage supply to EN50178, SELV, PELV.

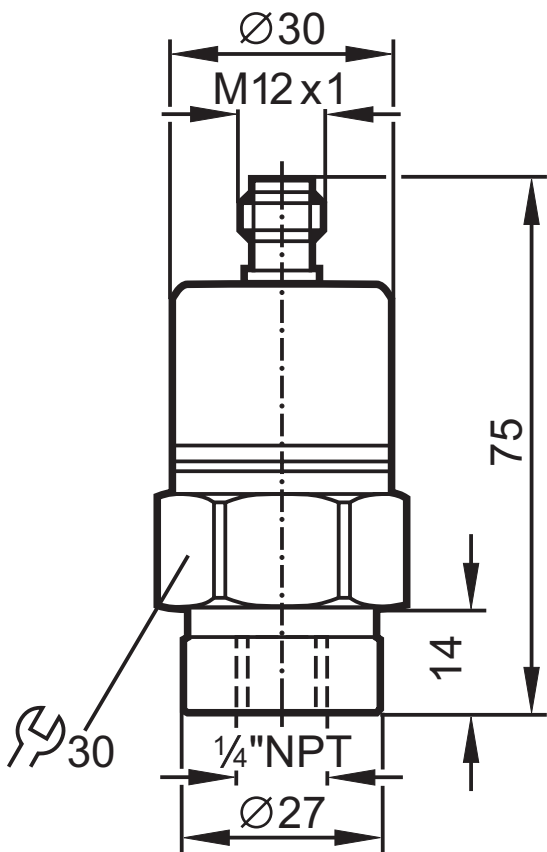
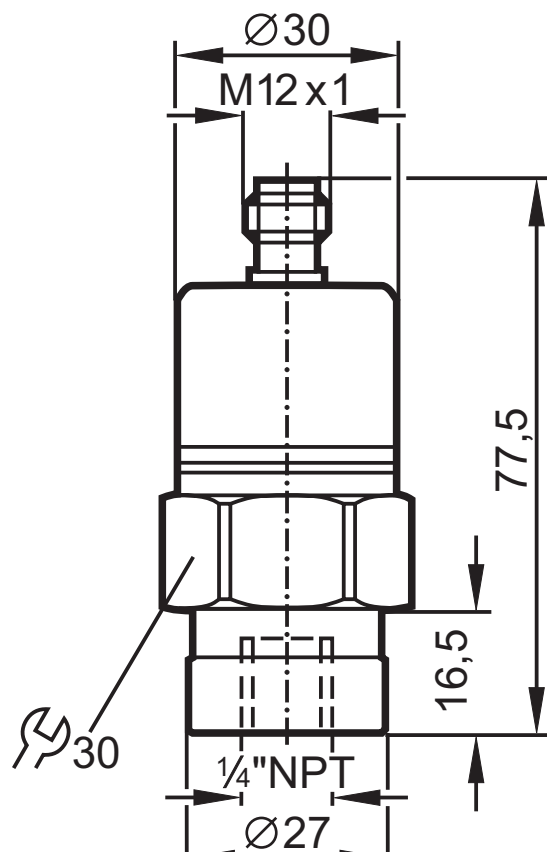
- ▶ Disconnect power.
- ▶ Connect the unit as follows:



Core colours of ifm sockets:

1 = BN (brown), 2 = WH (white), 3 = BU (blue), 4 = BK (black),  
n.c. = not connected.

5 Scale drawing

PA3221 ... PA3228	PA3220
 <p>Technical drawing of the PA3221 ... PA3228 valve assembly. The drawing shows a vertical assembly with a top flange of diameter <math>\varnothing 30</math> and a central screw with thread M12 x 1. The main body has a total height of 75 mm. Below the main body is a threaded section with a height of 14 mm, which is connected to a bottom flange of diameter <math>\varnothing 27</math> and 1/4" NPT thread. A wrench symbol with the number 30 indicates the required wrench size for the top flange.</p>	 <p>Technical drawing of the PA3220 valve assembly. The drawing shows a vertical assembly with a top flange of diameter <math>\varnothing 30</math> and a central screw with thread M12 x 1. The main body has a total height of 77,5 mm. Below the main body is a threaded section with a height of 16,5 mm, which is connected to a bottom flange of diameter <math>\varnothing 27</math> and 1/4" NPT thread. A wrench symbol with the number 30 indicates the required wrench size for the top flange.</p>

Dimensions are in millimeters

UK

## 6 Technical data

Operating voltage [V].....	9,6 ... 32 DC <sup>1)</sup>	
Analogue output .....	4 ... 20 mA	
Load [ $\Omega$ ].....	max. (UB - 9.6) x 50; 720 at UB = 24 V	
Step response time analogue output [ms].....	3	
Characteristics deviation [%] .....	< $\pm 0.25$ (BFSL) / < $\pm 0.5$ (LS)	
Repeatability [%].....	< 0.1	
Long-term stability [% of value of measuring range / 6 months].....	< $\pm 0.05$	
Temperature coefficients (TEMPCO) in the compensated temperature range 0 ... 80°C (in% of the span/10K) <sup>2)</sup>		
	PA3220...PA3227	PA3228
greatest TEMPCO of the zero point	0.1	0.2
greatest TEMPCO of the span	0.2	0.3
Housing material.....stainless steel (316S12); FPM (Viton); PA; EPDM/X (Santoprene)		
Materials (wetted parts).....stainless steel (303S22); ceramics; FPM (Viton)		
Operating temperature [°C] .....	-25 ... +80	
Medium temperature [°C] .....	-25 ... +90 <sup>2)</sup>	
Storage temperature [°C].....	-40 ... +100	
Protection PA3220 ... PA3222 .....	IP 68 / IP 69K	
Protection PA3223 ... PA3228 .....	IP 65	
Protection class .....	III	
Insulation resistance [ $M\Omega$ ] .....	> 100 (500 V DC)	
Shock resistance [g] .....	50 (DIN / IEC 68-2-27, 11 ms)	
Vibration resistance [g] .....	20 (DIN / IEC 68-2-6, 10 - 2000 Hz)	
EMC		
EN 61000-4-2 ESD:.....	4 kV CD / 8 kV AD	
EN 61000-4-3 HF radiated: .....	30 V/m	
EN 61000-4-4 Burst:.....	2 kV	
EN 61000-4-6 HF conducted:.....	10 V	
radiation of interference .....	according to the automotive directive 2004/104/EC / CISPR25	
noise immunity.....	according to the automotive directive 2004/104/EC / ISO 11452-2	
HF radiated.....	100 V/m	
pulse resistance.....	according to ISO7637-2 / severity level 3	

<sup>1)</sup> to EN50178, SELV, PELV

<sup>2)</sup> -40...90°C upon request

BFSL = Best Fit Straight Line / LS = Limit Value Setting

More information at [www.ifm.com](http://www.ifm.com)