

Pressure sensors with CANopen[®]- or J1939 interface

for mobile hydraulic applications

Accuracy 0.5 % or 1 %
Protection type IP 6K9K



CANopen[®]

Description

The pressure sensors P3427 are equipped with a CANopen[®] or a J1939-interface. They are designed for the rugged use in the field of mobile hydraulics.

It is possible to order these sensors preconfigured so that they can be installed without further effort. The housing and the medium wetted parts are made of stainless steel and are resistant to chemically aggressive media. The pressure connection and measuring element are welded together, so the measuring system is extremely resistant to mechanical shock and vibration effects.

In addition, a version with an integrated input and output connector (Y-connector) offers a very easy and secure installation. Both connector variants come with an IP 6K9K ingress protection and meet the electro-magnetic requirements according to EN 61326.

Features

- CANopen[®] and J1939 output signals
- High EMC protection
- Highly resistant to shock and vibration
- High long term stability
- Corrosion resistant, stainless steel design
- Protection range IP 6K9K
- RoHS-conformity
- Integrated Y-connector optional

Measuring range

Positive gauge pressure 0...60 bar to 0...1,000 bar

Applications

- Agricultural machinery
- Construction machinery
- Cranes
- Industrial trucks

Model: P3427

Technical data

| | | |
|--------------------------------|---|--|
| Model | P3427 | |
| Output signal | CANopen® protocoll, profil DS-404 J1939 protocoll, profil SAE J1939 | |
| Power supply | 10... 30 VDC | |
| Total current consumption | ≤ 40 mA | |
| Accuracy ¹⁾ | 1 % of Span 0.5% of Span | |
| Measuring ranges | 0 ... 60 bar 0... 100 bar 0... 160 bar 0... 250 bar 0... 400 bar 0... 600 bar 0 ... 1,000 bar | 0 ... 1,000 psi 0... 1,500 psi 0... 2,000 psi 0... 3,000 psi 0... 5,000 psi 0 ...10,000 psi |
| Overload | 2-times, >600 bar (>5,000 psi): 1.5-times | |
| Burst pressure | 4-times, >600 bar (>5,000 psi): 3-times | |
| Measuring cell | Thin film | |
| Measuring rate | max. 1 kHz | |
| Annual stability | ≤ ± 0.2 % of Span | |
| Case | Stainless steel Sealing gasket FKM, NBR or O-Ring BOSS | |
| Electrical connection | Circuit connector M12 x 1 Circuit connector M12 x 1 and M12 x 1 female | |
| Electrical protection | Short-circuit: CAN – High / CAN – Low vs. U+ / U- Reverse polarity: U+ vs. U- Overvoltage protection: 36 VDC Insulation voltage: 500VDC EMC: RF-Field: 80...1,000 MHz:100 V/m 1,000... 4,200 MHz: 60 V/m | |
| Mech. protection ²⁾ | Vibration resistance: 20 g Shock resistance: 500 g | |
| Service life | 10 million load cycles | |
| Temp. compensated range | -40 ... 85°C | |
| Temperature error | ± 0.2 % /10 K | |
| Temperature range | 0...60°C – 0.5% of Span -40...+85°C – 1.0% of Span | |
| Settling time | ≤ 1.5 ms (baud rate ≥ 125K) | |
| Process connection | Connection: G1/4 A (DIN 3852-E) M14x1.5 (DIN 3852-E) 1/4 NPT 7/16-20 UNF SAE | Sealing gasket: NBR (Option FKM) NBR (Option FKM) O-Ring: Boss |
| Protection range | IP 6K9K | |
| RoHS-conformity | Yes | |
| Temperatures | -40 100 °C -40 125 °C -40 85 °C | |
| Weight | ~ 0.2 kg | |

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1) Including non-linearity, hysteresis, zero offset and end value deviation (corresponds to measured error per IEC 61298-2).

2) Acc. to IEC 60068-2-6 or IEC 60068-2-27

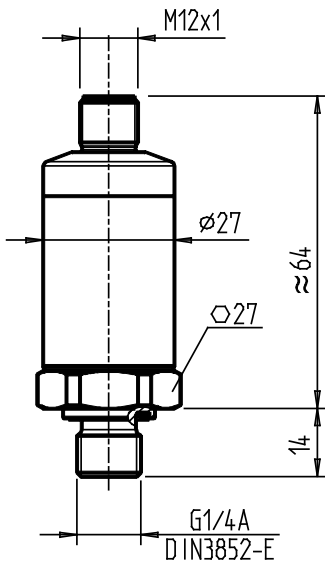
3) Declaration of Conformity on request

Reference conditions (per IEC 61298-1)

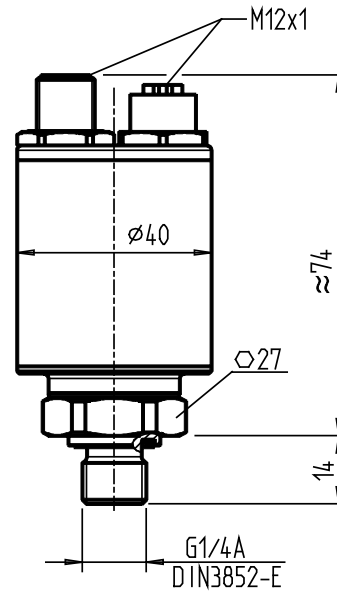
Temperature: 15...25°C
 Atmospheric pressure: 860... 1,060 mbar
 Humidity: 45... 75 % relativ
 Power supply: 24 VDC
 Mounting position: Calibrated in vertical mounting position with pressure connection facing downwards

Dimensions in mm

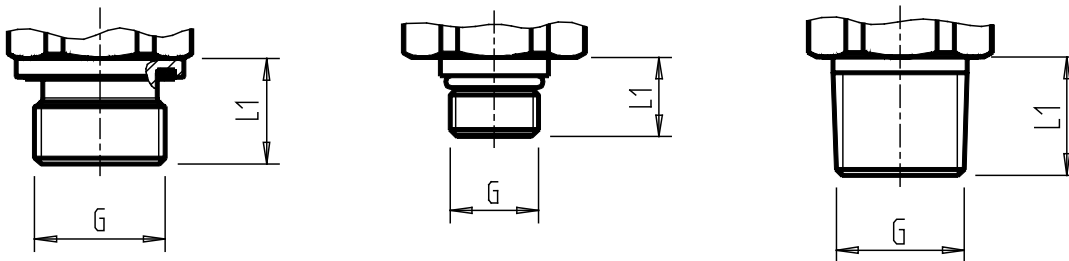
Single connection with M12 x 1 circular connector



Double connection with integrated Y-connector
Circular connector M12 x 1 and female connector M12 x 1



Process connection



| G | L1 | G | L1 | G | L1 |
|----------------------|----|-------------------|----|---------|----|
| G 1/4 A DIN 3852-E | 14 | 7/16-20-2A UNF 12 | 12 | 1/4 NPT | 13 |
| M14 x 1.5 DIN 3852-E | 14 | | | | |

alle Angaben in mm

Configuration of CANopen[®] interface

| Baud rate | |
|-----------|------------------------------|
| 0 | 1,000 kbit/s |
| 1 | 800 kbit/s |
| 2 | 500 kbit/s |
| 3 | 250 kbit/s (standard) |
| 4 | 125 kbit/s |
| 5 | 100 kbit/s |
| 6 | 50 kbit/s |
| 7 | 20 kbit/s |

| Node-ID | |
|-------------|-------------------------------------|
| 001 ... 127 | 001 (standard) ¹⁾ |

¹⁾ Select one numerical value

| PDO mapping | |
|-------------|--|
| I | Object 0x9130 Subindex 1 (32 bit-Integer format) (standard) |
| F | Objekt 0x6130 subindex 1 (IEEE754-float format) |

| Decimal points | |
|----------------|--|
| A | Automatic (standard) |
| 0 ... 9 | Number of decimal points ¹⁾ |

¹⁾ Select one numerical value

| Transmission type | |
|-------------------|--|
| 001 ... 240 | Synchronous transmission 001 (standard) ¹⁾ |
| 253 | Remote transmission request |
| 254 | Asynchronous cyclic transmission |

¹⁾ Select one numerical value

| Event-Timer | |
|-----------------|---|
| 0 | Without (standard) |
| 00001 ... 65535 | Event timer in milliseconds ¹⁾ |

¹⁾ Select one numerical value

| Auto-Operational | |
|------------------|-----------------------|
| Z | Off (standard) |
| A | On |

| COB-ID SYNC | |
|-------------|------------------------|
| Z | 0x80 (standard) |
| A | 0x100 |

| COB-ID used by PDO | |
|--------------------|-------------------------|
| A | 0x180 (standard) |
| B | 0x200 |
| C | 0x280 |
| D | 0x300 |
| E | 0x380 |
| F | 0x400 |
| G | 0x480 |
| H | 0x500 |

| Heartbeat | |
|-----------------|---|
| 0 | Without (standard) |
| 00001 ... 65535 | Heartbeat in milliseconds ¹⁾ |

The listed parameters are also adjustable with the tecsis software EasyCom or any standard CANopen[®] software tool.

For further information on the configuration see software instruction manual and the EDS file (Electronic Data Sheet).

Subject of technical changes