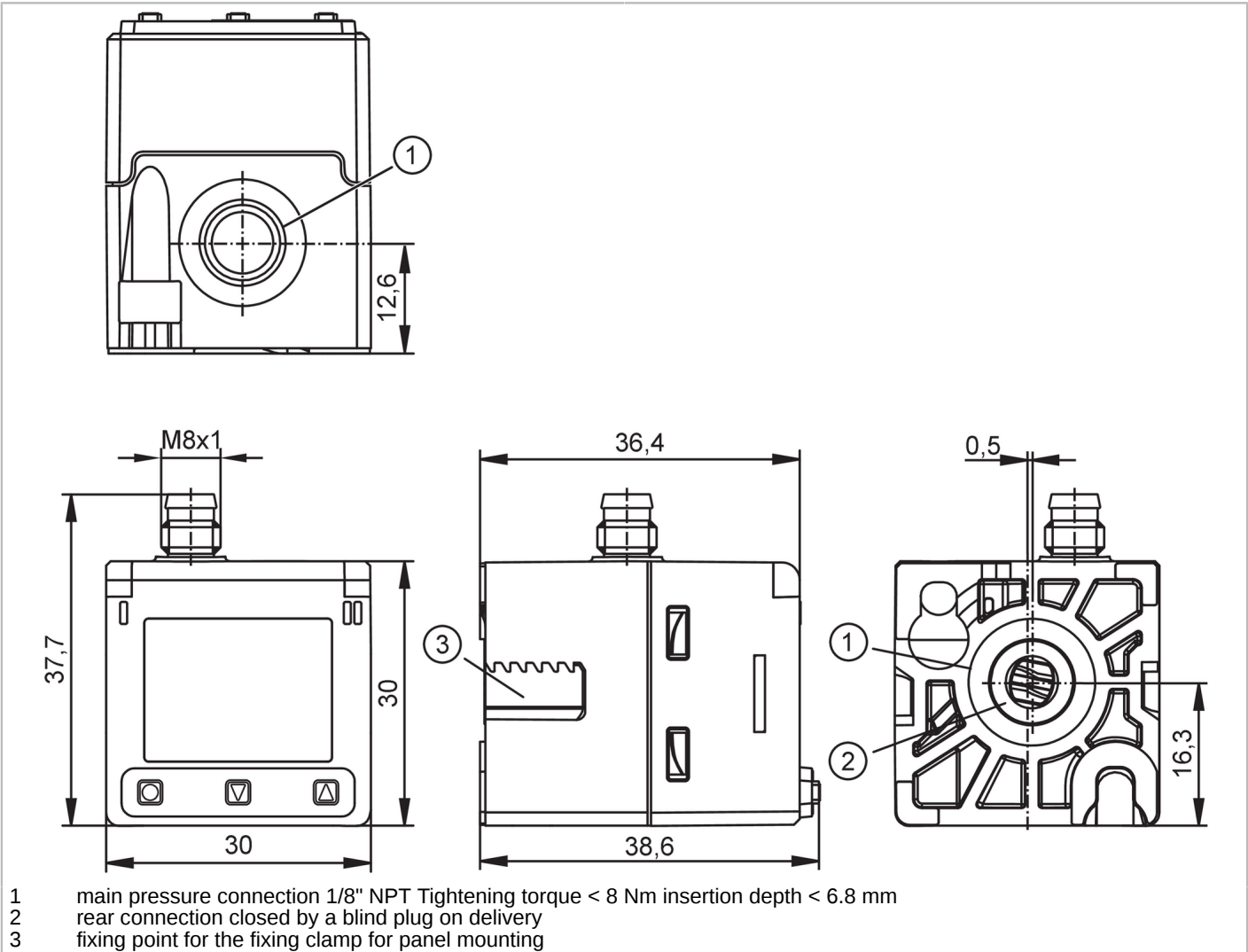


# PQS616



## Pressure sensor for pneumatics

PQ-001BKHN18-QFPKG/AS/



### Product characteristics

|                              |                                                   |                   |                  |
|------------------------------|---------------------------------------------------|-------------------|------------------|
| Number of inputs and outputs | Number of digital outputs: 2                      |                   |                  |
| Measuring range              | -1...1 bar                                        | -1000...1000 mbar | -14.5...14.5 psi |
| Process connection           | threaded connection 1/8" NPT Internal thread (2x) |                   |                  |

### Application

|                            |                               |             |
|----------------------------|-------------------------------|-------------|
| Special feature            | gold-plated contacts          |             |
| Application                | for industrial applications   |             |
| Media                      | compressed air; nitrogen (N2) |             |
| Conditionally suitable for | other media on request        |             |
| Medium temperature         | 0...60 °C                     | 32...140 °F |
| Min. burst pressure        | 20 bar                        | 290 psi     |
| Pressure rating            | 10 bar                        | 145 psi     |
| Vacuum resistance          | -1000 mbar                    | -14.5 psi   |
| Type of pressure           | relative pressure; vacuum     |             |

### Electrical data

|                   |     |            |
|-------------------|-----|------------|
| Operating voltage | [V] | 18...30 DC |
|-------------------|-----|------------|



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|                             |      |                 |
|-----------------------------|------|-----------------|
| Current consumption         | [mA] | < 30            |
| Min. insulation resistance  | [MΩ] | 100; (500 V DC) |
| Protection class            |      | III             |
| Reverse polarity protection |      | yes             |
| Power-on delay time         | [s]  | 0.3             |
| Integrated watchdog         |      | yes             |

## Inputs / outputs

|                              |                              |
|------------------------------|------------------------------|
| Number of inputs and outputs | Number of digital outputs: 2 |
|------------------------------|------------------------------|

## Outputs

|                                                 |                                           |
|-------------------------------------------------|-------------------------------------------|
| Total number of outputs                         | 2                                         |
| Output signal                                   | switching signal; IO-Link; (configurable) |
| Electrical design                               | PNP/NPN; (configurable)                   |
| Number of digital outputs                       | 2                                         |
| Output function                                 | normally open / closed; (configurable)    |
| Max. voltage drop switching output DC           | [V]<br>2.5                                |
| Permanent current rating of switching output DC | [mA]<br>100                               |
| Switching frequency DC                          | [Hz]<br>< 170                             |
| Short-circuit protection                        | yes                                       |
| Type of short-circuit protection                | yes (non-latching)                        |
| Overload protection                             | yes                                       |

## Measuring/setting range

|                 |            |                   |                  |
|-----------------|------------|-------------------|------------------|
| Measuring range | -1...1 bar | -1000...1000 mbar | -14.5...14.5 psi |
| Set point SP    | -1...1 bar | -1000...1000 mbar | -14.5...14.5 psi |
| In steps of     | 0.001 bar  | 1 mbar            | 0.01 psi         |

## Accuracy / deviations

|                                    |                                                                                    |
|------------------------------------|------------------------------------------------------------------------------------|
| Switch point accuracy              | [% of the span]<br>< ± 0,5                                                         |
| Repeatability                      | [% of the span]<br>< ± 0,1; (with temperature fluctuations < 10 K:)                |
| Characteristics deviation          | [% of the span]<br>< ± 0,5; (including linearity, hysteresis and repeatability)    |
| Linearity deviation                | [% of the span]<br>< ± 0.5 % (limit value setting according to DIN EN IEC 62828-1) |
| Hysteresis deviation               | [% of the span]<br>< ± 0,25                                                        |
| Long-term stability                | [% of the span]<br>< ± 0,1; (per year)                                             |
| Temperature coefficient zero point | [% of the span / 10 K]<br>0,2                                                      |
| Temperature coefficient span       | [% of the span / 10 K]<br>0,2                                                      |

## Reaction times

|               |           |
|---------------|-----------|
| Response time | [ms]<br>6 |
|---------------|-----------|



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|                                   |     |           |
|-----------------------------------|-----|-----------|
| Damping process value dAP         | [s] | 0...4     |
| Damping for the analog output dAA | [s] | 0...99.99 |

## Software / programming

|                           |                                                                                                   |
|---------------------------|---------------------------------------------------------------------------------------------------|
| Parameter setting options | display can be rotated and switched off; Teach function; simulation function; Diagnostic function |
|---------------------------|---------------------------------------------------------------------------------------------------|

## Interfaces

|                                 |                                                                    |                   |
|---------------------------------|--------------------------------------------------------------------|-------------------|
| Communication interface         | IO-Link                                                            |                   |
| IO-Link revision                | 1.1.3                                                              |                   |
| SDCI standard                   | IEC 61131-9: 2019-06                                               |                   |
| SIO mode                        | yes                                                                |                   |
| Required master port class      | A                                                                  |                   |
| Process data analog             | 1                                                                  |                   |
| Process data binary             | 2                                                                  |                   |
| IO-Link resolution pressure     | [bar]                                                              | 0.0001            |
| IO-Link process data (cyclical) | <b>Function</b>                                                    | <b>bit length</b> |
|                                 | pressure                                                           | 16                |
|                                 | device status                                                      | 4                 |
|                                 | SSC1.1                                                             | 1                 |
|                                 | SSC1.2                                                             | 1                 |
| IO-Link functions (acyclical)   | application specific tag; internal temperature; Medium temperature |                   |
| Supported DeviceIDs             | <b>Type of operation</b>                                           | <b>DeviceID</b>   |
|                                 | default                                                            | 1737              |

## Operating conditions

|                     |             |              |
|---------------------|-------------|--------------|
| Ambient temperature | 0...60 °C   | 32...140 °F  |
| Storage temperature | -25...85 °C | -13...185 °F |
| Protection          | IP 65       |              |

## Tests / approvals

|                              |                                                                        |                     |
|------------------------------|------------------------------------------------------------------------|---------------------|
| EMC                          | DIN EN 61326-1                                                         |                     |
| Shock resistance             | DIN EN 60068-2-27                                                      | 50 g (11 ms)        |
| Vibration resistance         | DIN EN 60068-2-6                                                       | 20 g (10...2000 Hz) |
| UL approval                  | UL approval number                                                     | J065                |
|                              | File number UL                                                         | E174189             |
| Pressure equipment directive | sound engineering practice; can be used for stable gases fluid group 2 |                     |

## Mechanical data

|                          |                                                   |                  |
|--------------------------|---------------------------------------------------|------------------|
| Weight                   | [g]                                               | 56               |
| Housing                  | rectangular                                       |                  |
| Dimensions               | [mm]                                              | 37.7 x 30 x 38.6 |
| Material                 | PBT; PC; TPE; NBR; FKM; brass; silicon (coated)   |                  |
| Materials (wetted parts) | PBT; FKM; brass; silicon (coated)                 |                  |
| Min. pressure cycles     | 50 million                                        |                  |
| Process connection       | threaded connection 1/8" NPT Internal thread (2x) |                  |

## Displays / operating elements

|              |                                     |                 |
|--------------|-------------------------------------|-----------------|
| Display      | Display 1"                          | 128 x 96 pixels |
|              | Switching status                    | 2 x LED, yellow |
| Display unit | mbar; kPa; psi; mmHg; inHg; kgf/cm² |                 |

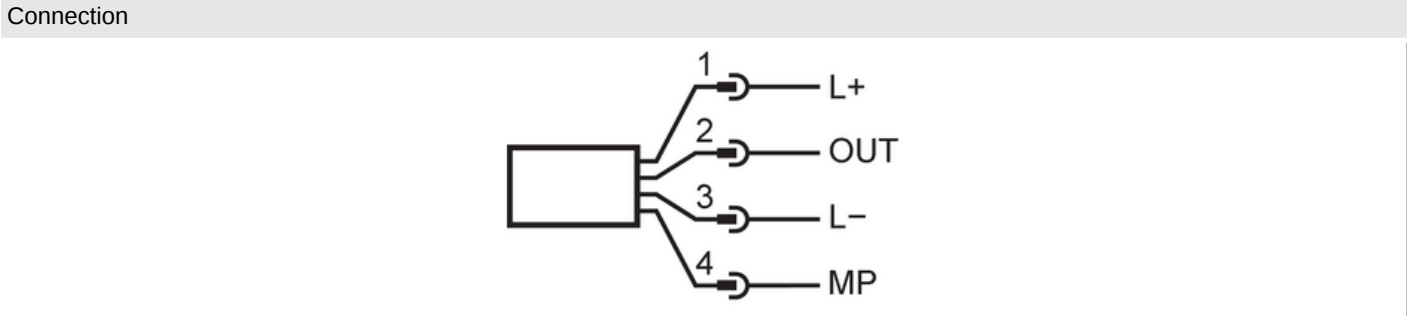
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| Accessories                                            |                                 |
|--------------------------------------------------------|---------------------------------|
| Items supplied                                         | head cap screw: 2 x (M3 x 8 mm) |
| Remarks                                                |                                 |
| Pack quantity                                          | 1 pcs.                          |
| Electrical connection                                  |                                 |
| Connector: 1 x M8; coding: A; Contacts: 4, gold-plated |                                 |
|                                                        |                                 |



| Electrical connection - plug                      |     |             |
|---------------------------------------------------|-----|-------------|
| 1                                                 | L+  |             |
| 2                                                 | OUT | DO          |
| 3                                                 | L-  |             |
| 4                                                 | MP  | DO, IO-Link |
| DO: digital output; MP: multi-function connection |     |             |

Diagrams and graphs

drilling template