

# PG2451



## Pressure sensor with analogue display

PG-250-REB12-MFRKG/US/ /P



| Product characteristics         |                                                             |              |
|---------------------------------|-------------------------------------------------------------|--------------|
| Number of inputs and outputs    | Number of digital outputs: 1; Number of analogue outputs: 1 |              |
| Measuring range                 | 0...250 bar                                                 | 0...3625 psi |
| Process connection              | threaded connection G 1/2 external thread                   |              |
| Application                     |                                                             |              |
| Special feature                 | Gold-plated contacts                                        |              |
| Application                     | for industrial applications                                 |              |
| Media                           | liquids and gases                                           |              |
| Conditionally suitable for      | use in gases at pressures > 25 bar only on request          |              |
| Medium temperature [°C]         | -25...80                                                    |              |
| Min. bursting pressure          | 1000 bar                                                    | 14500 psi    |
| Pressure rating                 | 600 bar                                                     | 8700 psi     |
| Type of pressure                | relative pressure                                           |              |
| Electrical data                 |                                                             |              |
| Operating voltage [V]           | 18...32 DC                                                  |              |
| Current consumption [mA]        | < 70; (24 V)                                                |              |
| Min. insulation resistance [MΩ] | 100; (500 V DC)                                             |              |
| Protection class                | III                                                         |              |



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|                             |     |
|-----------------------------|-----|
| Reverse polarity protection | yes |
| Power-on delay time [s]     | 6   |
| Integrated watchdog         | yes |

### Inputs / outputs

|                              |                                                             |
|------------------------------|-------------------------------------------------------------|
| Number of inputs and outputs | Number of digital outputs: 1; Number of analogue outputs: 1 |
|------------------------------|-------------------------------------------------------------|

### Outputs

|                                                      |                                                    |
|------------------------------------------------------|----------------------------------------------------|
| Total number of outputs                              | 2                                                  |
| Output signal                                        | switching signal; analogue signal; (configurable)  |
| Electrical design                                    | PNP/NPN                                            |
| Number of digital outputs                            | 1                                                  |
| Output function                                      | normally open / normally closed; (parameterisable) |
| Max. voltage drop switching output DC [V]            | 2                                                  |
| Permanent current rating of switching output DC [mA] | 250                                                |
| Switching frequency DC [Hz]                          | 75                                                 |
| Number of analogue outputs                           | 1                                                  |
| Analogue current output [mA]                         | 4...20, invertible; (scalable)                     |
| Max. load [Ω]                                        | (U <sub>b</sub> - 10 V) / 20 mA                    |
| Short-circuit protection                             | yes                                                |
| Type of short-circuit protection                     | pulsed                                             |
| Overload protection                                  | yes                                                |

### Measuring/setting range

|                      |              |                |
|----------------------|--------------|----------------|
| Measuring range      | 0...250 bar  | 0...3625 psi   |
| Set point SP         | 1...400 bar  | 15...5800 psi  |
| Reset point rP       | 0...399 bar  | 0...5785 psi   |
| Analogue start point | 0...350 bar  | 0...5075 psi   |
| Analogue end point   | 50...400 bar | 725...5800 psi |
| In steps of          | 0.5 bar      | 5 psi          |

### Accuracy / deviations

|                                          |                                                                                |
|------------------------------------------|--------------------------------------------------------------------------------|
| Switch point accuracy [X21]              | < ± 0,6; (Turn down 1:1)                                                       |
| Repeatability [X21]                      | < ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)                 |
| Characteristics deviation [X21]          | < ± 0,35 (BFSL) / < ± 0,6 (LS); (Turn down 1:1; BFSL = Best Fit Straight Line) |
| Hysteresis deviation [X21]               | < ± 0,5; (Turn down 1:1)                                                       |
| Long-term stability [X21]                | < ± 0,1; (Turn down 1:1; per 6 months)                                         |
| Temperature coefficient zero point [X22] | < ± 0,3; (0...70 °C)                                                           |
| Temperature coefficient span [X22]       | < ± 0,3; (0...70 °C)                                                           |

### Response times

|                                         |           |
|-----------------------------------------|-----------|
| Response time [ms]                      | < 9       |
| Damping process value dAP [s]           | 0.01...30 |
| Damping for the analogue output dAA [s] | 0.01...30 |
| Step response time analogue output [ms] | 28        |



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| Operating conditions                                 |                           |                                                                                          |
|------------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------|
| Ambient temperature                                  | [°C]                      | -20...80                                                                                 |
| Storage temperature                                  | [°C]                      | -40...100                                                                                |
| Protection                                           |                           | IP 67; IP 69K                                                                            |
| Tests / approvals                                    |                           |                                                                                          |
| EMC                                                  | EN 61000-4-2 ESD          | 4 kV CD / 8 kV AD                                                                        |
|                                                      | EN 61000-4-3 HF radiated  | 10 V/m                                                                                   |
|                                                      | EN 61000-4-4 Burst        | 2 kV                                                                                     |
|                                                      | EN 61000-4-5 Surge        | 0,5/1 kV                                                                                 |
|                                                      | EN 61000-4-6 HF conducted | 10 V                                                                                     |
| Shock resistance                                     | DIN IEC 68-2-27           | 50 g (11 ms)                                                                             |
| Vibration resistance                                 | DIN IEC 68-2-6            | 20 g (10...2000 Hz)                                                                      |
| MTTF                                                 | [ANN]                     | 100                                                                                      |
| Pressure Equipment Directive                         |                           | Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request    |
| Mechanical data                                      |                           |                                                                                          |
| Weight                                               | [g]                       | 563                                                                                      |
| Materials                                            |                           | stainless steel (316L/1.4404); PA; FKM; PTFE; viewing glass: laminated safety glass 4 mm |
| Materials (wetted parts)                             |                           | Al2O3 (ceramics); FKM; stainless steel (316L/1.4404)                                     |
| Min. pressure cycles                                 |                           | 100 million                                                                              |
| Process connection                                   |                           | threaded connection G 1/2 external thread                                                |
| Restrictor element integrated                        |                           | yes                                                                                      |
| Displays / operating elements                        |                           |                                                                                          |
| Display                                              | Display unit              | 2 x LED, green                                                                           |
|                                                      | switching status          | LED, yellow                                                                              |
|                                                      | switch points             | LED ring, red                                                                            |
|                                                      | function display          | alphanumeric display, red 4-digit                                                        |
|                                                      | measured values           | analogue display, 0...350° rotatable, pointer not visible when unit disconnected         |
|                                                      | measured values           | alphanumeric display, red 4-digit                                                        |
| With scale                                           |                           | yes                                                                                      |
| Extended display range (max.)                        | 400 bar                   | 5800 psi                                                                                 |
| Remarks                                              |                           |                                                                                          |
| Remarks                                              |                           | switch point accuracy in the extended display range: 1.5 % of the span                   |
| Pack quantity                                        |                           | 1 pcs.                                                                                   |
| Electrical connection                                |                           |                                                                                          |
| Connector: 1 x M12; coding: A; Contacts: gold-plated |                           |                                                                                          |
|                                                      |                           |                                                                                          |

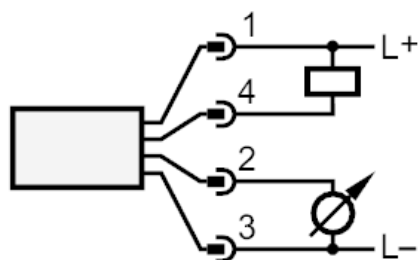
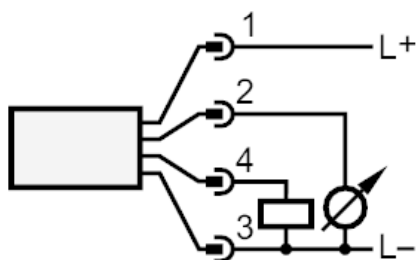
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### Connection



OUT1  
OUT2

switching output  
analogue output