



## Pressure switch with IO-Link

PV-025MSER14-UFRVG/US/ /



### Application

|                              |                             |
|------------------------------|-----------------------------|
| Measuring element            | metallic thin film cell     |
| Application                  | for industrial applications |
| Media                        | liquids and gases           |
| Medium temperature [°C]      | -40...90                    |
| Pressure rating [MPa]        | 6.5                         |
| Note on pressure rating      | static                      |
| Min. bursting pressure [MPa] | 60                          |
| Vacuum resistance [mbar]     | -1000                       |
| Type of pressure             | relative pressure           |

### Electrical data

|                                 |                 |
|---------------------------------|-----------------|
| Operating voltage [V]           | 18...30 DC      |
| Current consumption [mA]        | < 15            |
| Min. insulation resistance [MΩ] | 100; (500 V DC) |
| Protection class                | III             |
| Reverse polarity protection     | yes             |
| Power-on delay time [s]         | < 0.3           |

### Inputs / outputs

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



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| Outputs                                         |                        |                                                                                                                       |            |
|-------------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------|------------|
| Total number of outputs                         |                        | 2                                                                                                                     |            |
| Output signal                                   |                        | switching signal; IO-Link; (configurable)                                                                             |            |
| Electrical design                               |                        | PNP/NPN                                                                                                               |            |
| Number of digital outputs                       |                        | 2                                                                                                                     |            |
| Output function                                 |                        | normally open / normally closed; (parameterisable)                                                                    |            |
| Max. voltage drop switching output DC           | [V]                    | 2                                                                                                                     |            |
| Permanent current rating of switching output DC | [mA]                   | 100                                                                                                                   |            |
| Switching frequency DC                          | [Hz]                   | < 170                                                                                                                 |            |
| Short-circuit protection                        |                        | yes                                                                                                                   |            |
| Type of short-circuit protection                |                        | pulsed                                                                                                                |            |
| Overload protection                             |                        | yes                                                                                                                   |            |
| Measuring/setting range                         |                        |                                                                                                                       |            |
| Measuring range                                 | [MPa]                  | -0.1...2.5                                                                                                            |            |
| Set point SP                                    | [MPa]                  | -0.075...2.5                                                                                                          |            |
| Reset point rP                                  | [MPa]                  | -0.087...2.488                                                                                                        |            |
| In steps of                                     | [MPa]                  | 0.001                                                                                                                 |            |
| Factory setting                                 |                        | SP1 = 0.625 MPa                                                                                                       | ou1 = Hno; |
|                                                 |                        | SP2 = 1.875 MPa                                                                                                       | ou2 = Hno; |
|                                                 |                        | dS1/dS2 = 0 ms                                                                                                        |            |
|                                                 |                        | coF = 0 %                                                                                                             |            |
|                                                 |                        | rP1 = 0.575 MPa                                                                                                       |            |
|                                                 |                        | rP2 = 1.825 MPa                                                                                                       |            |
|                                                 |                        | dr1/dr2 = 0 ms                                                                                                        |            |
|                                                 |                        | P-n = PnP                                                                                                             | dAP= 60 ms |
| Accuracy / deviations                           |                        |                                                                                                                       |            |
| Switch point accuracy                           | [% of the span]        | < ± 0,5 (nach DIN EN 61298-2)                                                                                         |            |
| Repeatability                                   | [% of the span]        | < ± 0,05; (with temperature fluctuations < 10 K)                                                                      |            |
| Characteristics deviation                       | [% of the span]        | < ± 0,5 (nach DIN EN 61298-2); (incl. drift when overtightened, zero point and span error, non-linearity, hysteresis) |            |
| Linearity deviation                             | [% of the span]        | < ± 0,1 (BFSL) / < ± 0,2 (LS)                                                                                         |            |
| Hysteresis deviation                            | [% of the span]        | < ± 0,2                                                                                                               |            |
| Long-term stability                             | [% of the span]        | < ± 0,1; (per 6 months)                                                                                               |            |
| Temperature coefficient zero point              | [% of the span / 10 K] | < 0,1 (-25...90 °C) / < 0,2 (-40...-25 °C)                                                                            |            |
| Temperature coefficient span                    | [% of the span / 10 K] | < 0,1 (-25...90 °C) / < 0,2 (-40...-25 °C)                                                                            |            |
| Response times                                  |                        |                                                                                                                       |            |
| Response time                                   | [ms]                   | < 3                                                                                                                   |            |
| Software / programming                          |                        |                                                                                                                       |            |
| Parameter setting options                       |                        | hysteresis / window; normally open / normally closed; switching logic; switch-on/switch-off delay; Damping            |            |

# PV7703



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| Interfaces                                                                          |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Communication interface                                                             | IO-Link                                                                               |                                                                                       |
| Transmission type                                                                   | COM2 (38,4 kBaud)                                                                     |                                                                                       |
| IO-Link revision                                                                    | 1.1                                                                                   |                                                                                       |
| SDCI standard                                                                       | IEC 61131-9                                                                           |                                                                                       |
| IO-Link device ID                                                                   | 783 d / 00 03 Of h                                                                    |                                                                                       |
| Profiles                                                                            | Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis          |                                                                                       |
| SIO mode                                                                            | yes                                                                                   |                                                                                       |
| Required master port type                                                           | A                                                                                     |                                                                                       |
| Process data analogue                                                               | 2                                                                                     |                                                                                       |
| Process data binary                                                                 | 2                                                                                     |                                                                                       |
| Min. process cycle time                                                             | [ms]                                                                                  | 5                                                                                     |
| Operating conditions                                                                |                                                                                       |                                                                                       |
| Ambient temperature                                                                 | [°C]                                                                                  | -40...90                                                                              |
| Storage temperature                                                                 | [°C]                                                                                  | -40...100                                                                             |
| Protection                                                                          | IP 67; IP 69K                                                                         |                                                                                       |
| Tests / approvals                                                                   |                                                                                       |                                                                                       |
| EMC                                                                                 | DIN EN 61326-1                                                                        |                                                                                       |
| Shock resistance                                                                    | DIN EN 60068-2-27                                                                     | 500 g (1 ms)                                                                          |
| Vibration resistance                                                                | DIN EN 60068-2-6                                                                      | 20 g (10...2000 Hz)                                                                   |
| MTTF                                                                                | [years]                                                                               | 667.77                                                                                |
| Pressure Equipment Directive                                                        | Sound Engineering Practice; can be used for group 2 fluids; group 1 fluids on request |                                                                                       |
| Mechanical data                                                                     |                                                                                       |                                                                                       |
| Weight                                                                              | [g]                                                                                   | 63                                                                                    |
| Materials                                                                           | 1.4542 (17-4 PH / 630); stainless steel (1.4404 / 316L); PEI                          |                                                                                       |
| Materials (wetted parts)                                                            | stainless steel (1.4305 / 303); 1.4542 (17-4 PH / 630)                                |                                                                                       |
| Min. pressure cycles                                                                | 60 million; (at 1.2 times nominal pressure)                                           |                                                                                       |
| Tightening torque                                                                   | [Nm]                                                                                  | 50; (recommended tightening torque; depends on lubrication, seal and pressure rating) |
| Process connection                                                                  | threaded connection R 1/4 external thread internal threadM5                           |                                                                                       |
| Restrictor element integrated                                                       | yes                                                                                   |                                                                                       |
| Remarks                                                                             |                                                                                       |                                                                                       |
| Remarks                                                                             | BFSL = Best Fit Straight Line                                                         |                                                                                       |
|                                                                                     | LS = limit value setting                                                              |                                                                                       |
| Pack quantity                                                                       | 1 pcs.                                                                                |                                                                                       |
| Electrical connection                                                               |                                                                                       |                                                                                       |
| Connector: 1 x M12                                                                  |                                                                                       |                                                                                       |
|  |                                                                                       |                                                                                       |

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### Connection



OUT1            switching output  
                 IO-Link

OUT2            switching output  
                 colours to DIN EN 60947-5-2  
                 Core colours :

BK =            black  
BN =            brown  
BU =            blue  
WH =            white