# Pressure Transmitter with Flush Diaphragm

S M F

## Main features

- Measuring ranges 0…0.6 bar to 0…200 bar
- All standard signals for industry, hydraulics and pneumatics
- Media temperature range -40°C to 100°C
- Shock and vibration-resistant > 1000 g shock, > 20 g vibration
- Compact and robust stainless steel design
- Degree of protection from IP65 (special version up to IP69K)
- Precision class 0.5 %

## Applications

- Plant engineering and automation
- General industrial applications
- Food industry
- Dosage pumps
- Sanitary engineering
- Mechanical engineering
- Pneumatics
- Chemistry

## Description

The flush pressure transmitter has an oil-filled silicone sensor, which is laser-welded in stainless steel design. This robust and compact design is suited for relative, absolute or excess pressure measuring. It distinguishes itself by its high reliability, its media temperature range up to +100° C as well as its versatility.

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## Specifications

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Pressure range** | | | | | | | | | | |
| **Measuring range*, relative pressure** | | p [bar] | **0,6** | **1,0** | **1,6** | **2,0** | **2,5** | **4,0** | **6,0** | **10,0** | **20,0** |
| Overload pressure | | p [bar] | 3,0 | 3,0 | 4,0 | 4,0 | 7,0 | 7,0 | 15,0 | 15,0 | 30,0 |
| **Measuring range*, absolute pressure** | | $p_{abs}$ [bar] | **1,0** | **2,0** | **2,5** | **6,0** | **10,0** | **20,0** | **40,0** | | |
| Overload pressure | | $p_{abs}$ [bar] | 3 | 4 | 7 | 15 | 15 | 30 | 100 | | |
| **Measuring range*, absolute pressure** | | $p_{abs}$ [bar] | **60** | **100** | **160** | **200** | | | | | |
| Overload pressure | | $p_{abs}$ [bar] | 200 | 200 | 300 | 300 | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Electrical parameter** | | | | | | |
| | | signal | | $U_S$ [$V_{DC}$] | $R_L$ [kΩ] | RA [Ω] |
| Output signal * and | $R_A$ in Ohm | 4...20 mA | (2-wire, 3-wire) | 9...32 | | acc. to $R_A$ = < ($U_S$ - 10V) / 0,02 A |
| maximum acceptable burden $R_A$ | | 0...10 $V_{DC}$ | (3-wire) | 12...32 | > 5,0 | |
| | | 1...5 $V_{DC}$ | | 8...32 | > 1,0 | |
| | | 0,5...4,5 $V_{DC}$ | ratiometric | 5 ±10% | > 4,7 | |
| Response time * (10-90%) | t [ms] | < 1 | | | | |
| Withstand voltage | U [$V_{DC}$] | 350 | option 710 | | | |

| | | | |
|---|---|---|---|
| **Accuracy** | | | |
| Accuracy @RT | % of the range | ≤ 0,50** | option ≤ 0,25 |
| | BFSL | ≤ 0,125 | |
| Non-linearity | % of the range | ≤ 0,15 | |
| Repeatability | % of the range | ≤ 0,10 | |
| Stability/year | % of the range | ≤ 0,10 | |

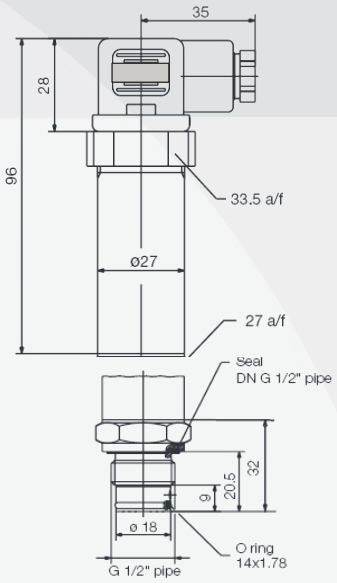
** incl. nonlinearity, hysteresis, repeatability, zero-offset- and final-offset (acc. to IEC 61298-2)

| | | |
|---|---|---|
| **Acceptable temperature ranges** | | |
| Measuring medium | T [°C] | -30...100 |
| Ambience | T [°C] | -30...100 |
| Storage | T [°C] | -40...100 |
| Compensated range* | T [°C] | -20...85 |
| Temperature coefficient within the compensated range | | |
| Mean TC offset | % of the range | ≤ 0,15 / 10K |
| Mean TC range | % of the range | ≤ 0,15 / 10K |
| Total error | % of the range | -30°C 2,00% |
| | % of the range | 100°C 2,00% |

| | | | |
|---|---|---|---|
| **Mechanical parameter** | | | |
| Parts in contact with the measuring medium* | stainless steel 316L | | |
| Housing* | | stainless steel | |
| Shock resistance | g | 1000 | acc. to IEC 68-2-32 |
| Vibration resistance | g | 20 | acc. to IEC 68-2-6 and IEC 68-2-36 |
| Mass | m [g] | 80-120 | depending on design |
| CE - conformity | | EC Directive 89/336/EWG | |
| IP system of protection | The IP system of protection as specified in the data sheets generally applies, with their mating plug connected. Relative pressure transmitters usually require a ventilated mating plug and/or cable to aloow for pressure compensation. From a pressure range of 60bar, a ventilated mating plug and/or cable is not necessarily required. | | |

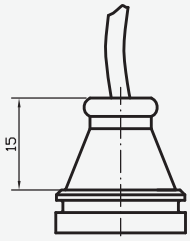
## Configurations -examples- SMF with MVS/C

G1/2" - MVS/C

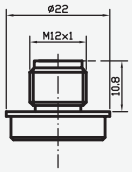



## Connectors*

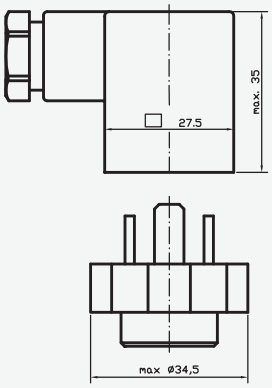
cable output



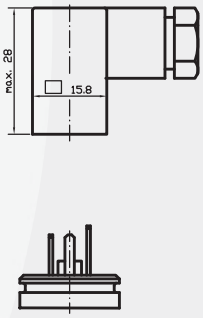

male socket
M12x1 (S 763)




MVS/A
DIN EN 175301-803

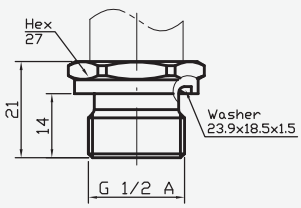



MVS/C
DIN EN 175301-803

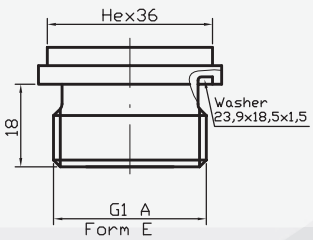



## Pressure Connections*

G ½ A; DIN 3852; Form E




G 1 A; DIN 3852; Form E




* custom-made adjustments acc. to pressure connections and connecting options are possible

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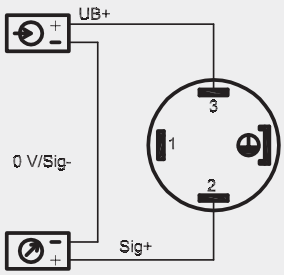
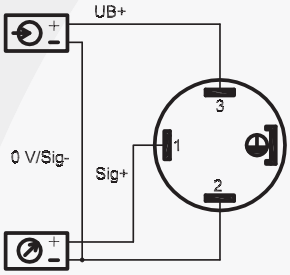
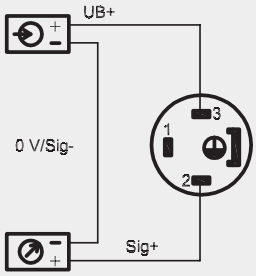
## Electrical Connections*

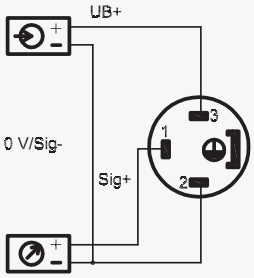
MVS/A
DIN EN
175301-803




MVS/C
DIN EN
175301-803




**Legend**

power supply
consumer

(1) white
(2) black
(3) red

* custom-made adjustments acc. to pressure connections and connecting options are possible

## Product line

| | | | |
|---|---|---|---|
| DS4 | Electronic Pressure Switch | SMC | Pressure Transmitter with CANopen Interface |
| DPSX9I | Intrinsically Safe Electronic Pressure Switch for Current | SME | Pressure Transmitter in Miniature Design |
| DPSX9U | Intrinsically Safe Electronic Pressure Switch for Voltage | SMF | Pressure Transmitter with Flush Diaphragm |
| PS1 | Level Sensor | SMH | High Pressure Transmitter |
| PSX2 | Intrinsically Safe Level Sensor | SML | Pressure Transmitter for Industrial Application |
| SHP | High Precision Pressure Transmitter | SMO | Pressure Transmitter in Mobile Hydraulics |
| SIS | Low Pressure Transmitter in Short and Compact Design | SMS | OEM Pressure Transmitter for Hydraulics and Pneumatics |
| SIL | Low Pressure Transmitter for Industrial Application | SMX | Intrinsically Safe Pressure Transmitter for Industrial Application |
| SKE | High Temperature Pressure Transmitter with Detached Electronics | TPS | Multi-Function Transmitter for Pressure and Temperature |
| SKL | High Temperature Pressure Transmitter with Cooling Fins | | |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