

Pressure Transmitter with CAN-Interface

SMC

Main features

- Measuring ranges -1...0 bar; 0...1 bar and to 0...5000 bar
- Available protocols: CANopen CiA DS 404, SAE J1939
- Media temperature range -40°C to 125° C
- Shock and vibration resistance > 1000 g shock, > 20 g vibration
- No internal transmitting media (fully welded, "dry" measuring cell)
- Degree of protection from IP67 to IP69K
- Compact and robust stainless steel design
- Highly reliable

Applications

- General industrial applications
- Hydraulics
- Pneumatics
- Mechanical engineering
- Plant engineering and automation
- Automotive industry
- Environmental engineering
- Air conditioning
- Agricultural engineering

Description

The SMC pressure transmitter is equipped with an intelligent signal conditioning, which can be adjusted to flexible and customized needs. Due to the bus-structure of the CAN bus multiple transmitters can be connected to the same network. The communication and data transmission for all transmitters is guaranteed. The SMC provides many flexible features and configurations and provide high media flexibility, if stainless steel sensing elements are selected. The robust design guarantees reliable application in harsh environments.

The SMC complies to the DIN ISO 11898 standard and allows data rates up to 1Mbit/s. The protocol ISO J1939 is also supported and is used in truck-trailer-communication.



CANopen®

SAE J1939

CE

DZ VAGANO
Sensortechnik

Specifications

PRESSURE RANGE

| | | | | | | | | | |
|-------------------|---------|------|------|------|------|------|------|------|------|
| Measuring range* | p [bar] | 0,2 | 1,0 | 1,6 | 2,5 | 4,0 | 6,0 | 10,0 | 16,0 |
| Overload pressure | p [bar] | 0,5 | 6 | 6 | 6 | 10 | 20 | 20 | 40 |
| Burst pressure | p [bar] | 1,0 | 9 | 9 | 9 | 15 | 30 | 30 | 60 |
| Measuring range* | p [bar] | 20 | 25 | 40 | 60 | 100 | 160 | 200 | 250 |
| Overload pressure | p [bar] | 40 | 100 | 100 | 200 | 200 | 400 | 400 | 750 |
| Burst pressure | p [bar] | 60 | 150 | 150 | 300 | 300 | 600 | 600 | 1000 |
| Measuring range* | p [bar] | 400 | 600 | 1000 | 1600 | 2000 | 4000 | 5000 | |
| Overload pressure | p [bar] | 750 | 840 | 1200 | 2400 | 2400 | 5000 | 6000 | |
| Burst pressure | p [bar] | 1000 | 1050 | 1500 | 3000 | 3000 | 6000 | 7000 | |

(other pressure range as -1...0 bar, -1...9/24 bar etc. or absolute pressure are available. > 1000 bar with thread M18x1,5)

ELECTRICAL PARAMETER

| | | | | | | | | | |
|------------------------|----------------------|-----------------------|--|--|--|-------------------------------|--|--|--|
| | | 4-wire | | | | | | | |
| Output signal* | | | | | | | | | |
| Supply voltage | U [V _{DC}] | 10...32** | | | | | | | |
| CAN interface | | acc. to DIN ISO 11898 | | | | | | | |
| CAN protocol | | CANopen, SAE J1939 | | | | | | | |
| Response time* | t [ms] | < 1 | | | | ** > AppNote (see www.adz.de) | | | |
| Maximum supply current | I [mA] | < 30 | | | | | | | |
| Isolation voltage* | U [V _{DC}] | 50 | | | | | | | |

ACCURACY

Accuracy applies only up to 2000 bar; above 2000 bar 1% applies

| | | | | | | | | | |
|----------------|----------------|-----------|---------------|--|--|--|--|--|--|
| Accuracy @ RT | % of the range | ≤ 0,50*** | option ≤ 0,25 | *** incl. nonlinearity, hysteresis, repeatability, zero-offset- and final-offset (acc. to IEC 61298-2) | | | | | |
| | BFSL | ≤ 0,125 | | | | | | | |
| Non-linearity | % of the range | ≤ 0,15 | | | | | | | |
| Stability/year | % of the range | ≤ 0,10 | | | | | | | |

ACCEPTABLE TEMPERATURE RANGES

| | | | | | | | | | |
|--------------------|----------------|--------------|--|-------|--|--|--|--|--|
| Media | T [°C] | -40...125 | | | | | | | |
| Ambience | T [°C] | -40...105 | | | | | | | |
| Storage | T [°C] | -40...125 | | | | | | | |
| Compensated range* | T [°C] | -20...85 | | | | | | | |
| Mean TC offset | % of the range | ≤ 0,15 / 10K | | | | | | | |
| Mean TC range | % of the range | ≤ 0,15 / 10K | | | | | | | |
| Total error | % of the range | -40°C | | 2,00% | | | | | |
| | % of the range | 105°C | | 2,00% | | | | | |

MECHANICAL PARAMETER

| | | | | | | | | | |
|--|---|--------|---|--|--|--|--|--|--|
| Parts in contact with the measuring medium* | stainless steel, silicon and titanium | | | | | | | | |
| Housing* | stainless steel, silicon and titanium | | | | | | | | |
| Weight | m [g] | 80-120 | depending on design | | | | | | |
| Shock resistance/drop | g | 1000 | acc. to DIN EN 60068-2-32 – free fall | | | | | | |
| Vibration resistance | g | 20 | acc. to DIN EN 60068-2-6 – vibration (sinusoidal) | | | | | | |
| Shock resistance/constant | g | 50 | acc. to DIN EN 60068-2-27 – shock resistance | | | | | | |
| Approval | CE Declaration of conformity 2014/30/EU, 2014/68/EU | | | | | | | | |
| IP system of protection (IEC 60529) to IP69K | IP rating applies with appropriate mating connector only. | | | | | | | | |

Configurations -examples-

SMC with M12-conn.



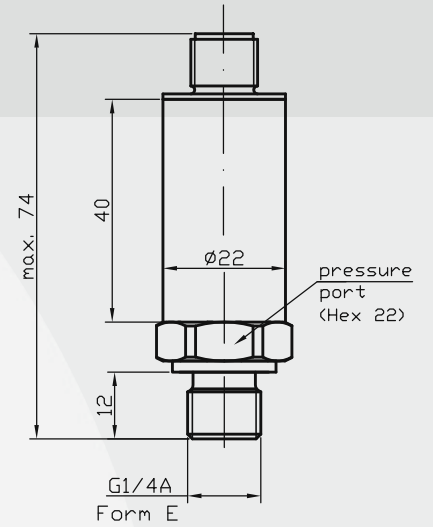
M5x0,5
(S 707)



integrated
y-piece



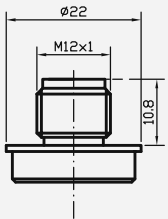
M12x1
(S 763)



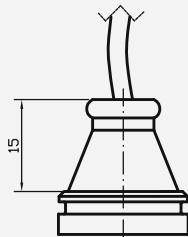
(deviations for absolute pressure are possible)

Connectors* -examples-

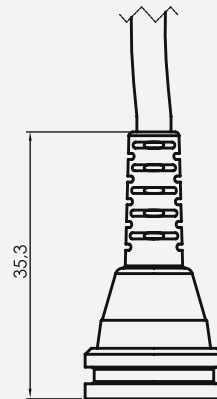
male socket
M12x1 (S763)
(IP67)



cable output
(IP67 / IP69K)

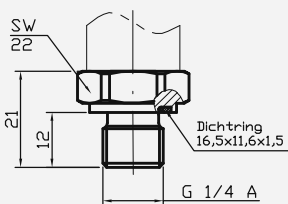


cable output
with bend protection
(IP67)

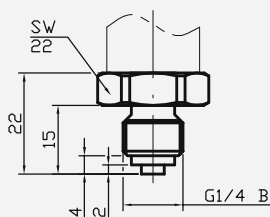


Pressure Connections* -examples-

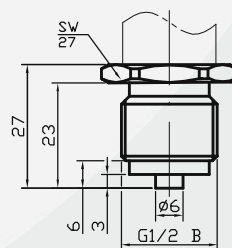
G 1/4 A; Form E



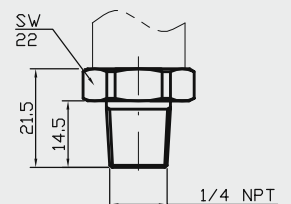
G 1/4 B



G 1/2 B

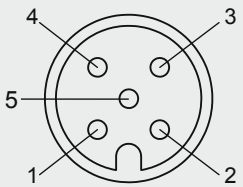


1/4 NPT



* customer specific configurations available

Electrical Configuration*

| Plug M 12x1 (S 763) | Cable port |
|--|--|
|  | |
| 4-wire 1: nc 2: UB+ 3: GND 4: CAN HIGH 5: CAN LOW | 4-wire red: UB+ black: GND white: CAN HIGH green: CAN LOW |

nc = not connected

* custom-made adjustments are possible

Product line

| | | | |
|--------|---|------|---|
| DS5 | Electronic Pressure Switch | SME | Pressure Transmitter in Miniature Design |
| DPSX9I | Intrinsically Safe Electronic Pressure Switch for Current | SMF | Pressure Transmitter with Flush Diaphragm |
| DPSX9U | Intrinsically Safe Electronic Pressure Switch for Voltage | SMH | High Pressure Transmitter |
| PS1 | Level Sensor | SML | Pressure Transmitter for Industrial Application |
| PSX2 | Intrinsically Safe Level Sensor | SMO | Pressure Transmitter in Mobile Hydraulics |
| SHP | High Precision Pressure Transmitter | SMS | OEM Pressure Transmitter for Hydraulics and Pneumatics |
| SIS | Low Pressure Transmitter in Short and Compact Design | SMX | Intrinsically Safe Pressure Transmitter for Industrial Application |
| SIL | Low Pressure Transmitter for Industrial Application | SMX2 | Intrinsically Safe Pressure Transmitter for Industrial Application |
| SKE | High Temperature Pressure Transmitter with Detached Electronics | TPSE | Multi-Function Transmitter for Pressure and Temperature – external sensor |
| SKL | High Temperature Pressure Transmitter with Cooling Fins | TPSI | Multi-Function Transmitter for Pressure and Temperature – internal sensor |
| SMC | Pressure Transmitter with CANopen Interface and J1939 | | |

