# Pressure Transmitter in Miniature Design

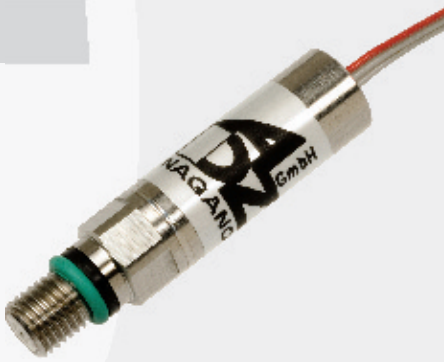
**S M E**

## Main features

- Measuring ranges 0...1 to 0...20 bar (housing Ø ~ 14 mm)
- Measuring ranges 0...25 to 0...400 bar (housing Ø ~ 12 mm)
- Output signal 0.5...4.5 V ratiometric, 0...5 V non-ratiometric
- Media temperature range -40°C to 125°C
- No internal transmitting media (fully welded, "dry" measuring cell)
- Round plug, ribbon cable
- Degree of protection IP67
- Highly reliable
- **Miniature design – length ~ 50 mm / housing Ø ~ 14 mm / weight ~ 20 g**

## Applications

- General industrial applications
- Hydraulics
- Pneumatics
- Mechanical engineering
- Automotive industry
- Plant engineering and automation technology



## Description

Its **miniature design** permits **application in confined space** and, thanks to its stainless steel diaphragm and semiconductor thin-film technology, **has excellent properties** regarding excess pressure, hysteresis and repeat accuracy.

The stainless steel diaphragm is fully vacuum-tight, extremely burst-resistant and applicable with all **standard media in automotive engineering, hydraulics, pneumatics, etc.,** as long as they are compatible with stainless steel. Its robust design guarantees a high level of reliability and safety, also in rugged conditions.

AGANO Sensortechnik

## Specifications

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Pressure range** | | | | | | | | | | |
| **Measuring range*,** | | | | | | | | | | |
| **housing Ø ~ 14 mm** | p [bar] | **1,0** | **1,6** | **2,0** | **2,5** | **4,0** | **6,0** | **10,0** | **16,0** | **20,0** |
| Overload pressure | p [bar] | 6 | 6 | 6 | 6 | 10 | 20 | 20 | 40 | 40 |
| Burst pressure | p [bar] | 9 | 9 | 9 | 9 | 15 | 30 | 30 | 60 | 60 |
| **Measuring range*,** | | | | | | | | | | |
| **housing Ø ~ 12 mm** | p [bar] | **25** | **40** | **60** | **100** | **160** | **200** | **250** | **400** | |
| Overload pressure | p [bar] | 100 | 100 | 200 | 200 | 400 | 400 | 750 | 750 | |
| Burst pressure | p [bar] | 150 | 150 | 300 | 300 | 600 | 600 | 1000 | 1000 | |

| | | | | | |
|---|---|---|---|---|---|
| **Electrical parameter** | | signal | $U_S$ [$V_{DC}$] | $R_L$ [kΩ] | |
| Output signal * | $R_A$ in Ohm | 0...5 $V_{DC}$ | 8...32 | > 2,5 | |
| | | 0,5...4,5 $V_{DC}$ ratiometric | | 5 ±10% | > 4,7 |
| Response time * (10-90%) | t [ms] | < 1 | | | |
| Withstand voltage | U [$V_{DC}$] | 350 | | | |

| | | | | |
|---|---|---|---|---|
| **Accuracy** | | | | |
| 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 | | |
| Repeatability | % of the range | ≤ 0,10 | | |
| Stability/year | % of the range | ≤ 0,10 | | |

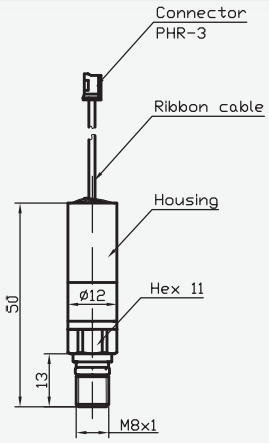
| | | | |
|---|---|---|---|
| **Acceptable temperature ranges** | | | |
| Measuring medium | T [°C] | -40...125 | |
| Ambience | T [°C] | -40...85 | |
| Storage | T [°C] | -40...125 | |
| Compensated range* | T [°C] | -20...85 | |
| Temperature coefficient within the compensated range | | | |
| Mean TC offset | % of the range | ≤ 0,15 / 10K | |
| Mean TC range | % of the range | ≤ 0,15 / 10K | |
| Total error | % of the range | -40°C 2,00% | |
| | % of the range | 105°C 2,00% | |

| | | | |
|---|---|---|---|
| **Mechanical parameter** | | | |
| Parts in contact with the measuring medium* | | stainless steel | |
| Housing* | | stainless steel | |
| Shock resistance | g | 1000 | acc. to IEC 68-2-32 |
| Vibration resistance | g | 5 | acc. to IEC 68-2-6 and IEC 68-2-36 |
| Mass | m [g] | ~ 20 | (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. | | |

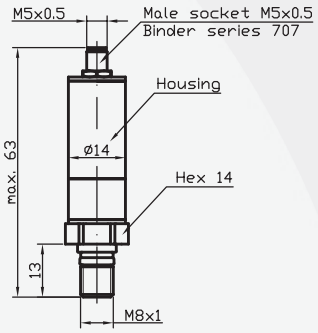
* other upon request

## Configurations -examples- SME with

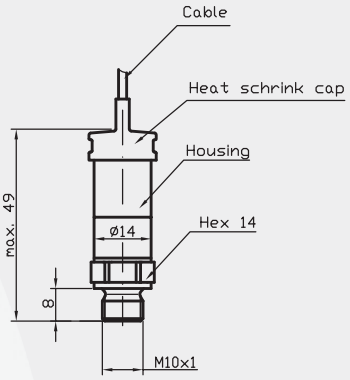
ribbon cable
with connector




M5x0,5- S707

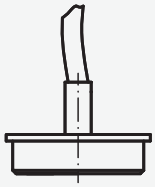



cable output

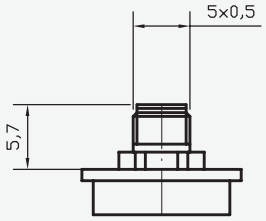



## Connectors*

cable output
steel

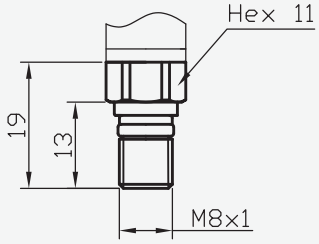


male socket
M5x0,5 (S707)

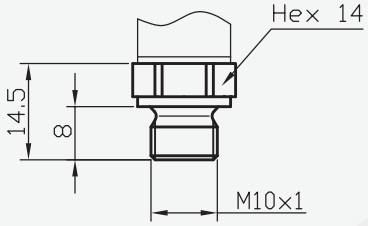



## Pressure Connections*

M 8x1




M 10x1



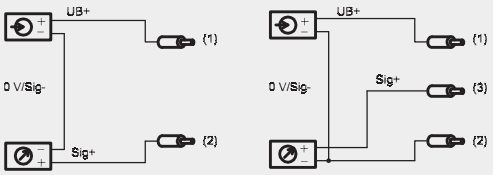

*** custom-made adjustments acc. to pressure connections and connecting options are possible**

# S M E

Pressure Transmitter
in Miniature Design

## Electrical Connections* (left: 2-wire, right: 3-wire)

cable output




### Legend

power supply
consumer

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

*** 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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