

Pressure Sensor - SMO3100 Variohm

Eurosensor

- Up to 5000 bar pressure range
- High strength, rugged stainless steel design
- E1 automotive approved

The **SMO3100** is a high quality all stainless steel pressure transducer, intended for use in the measurement of gases and liquids compatible with stainless steel. The sensor has received **E1 certification** from the ECE, allowing its use as an approved part for the European automotive industry.

The excellent EMC-properties of SMO3100 transmitters allow their use in demanding applications in the automotive environment; the ratiometric version of the SMO3100 has been tested successfully up to 300V/m.

Due to the proven, robust mechanical construction of the whole 3100-range, the SMO3100 series is predestined to be used in harsh environments - for example off-road, construction and agricultural vehicles.

With additional EMI / RFI protection, low static and thermal errors and high resistance to shock and vibration as standard, the SMO3100 assures trouble free operation at temperatures up to 125°C.

The SMO3100 piezo resistive sensing element coupled with the latest ASIC circuitry, assures excellent accuracy, choice of high level outputs and long stability, protected within a rugged stainless steel housing.

The SMO3100 high strength stainless steel construction contains no silicone oil and no internal O- rings. Measurements are available in gauge and absolute pressure, with ranges up to 5000 bar and are backed by a one-year warranty.



Specification

Performance

Accuracy @ RT	% of the range (gauge and vacuum sensors) < 0.5 BFSL ≤ 0.125 % of the range (absolute sensors) < 1.0	(incl. nonlinearity, hysteresis, repeatability, zero-offset and final offset acc. to IEC 61298-2)
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Non-linearity % of the range ≤ 0.15

Repeatability % of the range ≤ 0.10

Stability/year % of the range ≤ 0.10

For pressure ranges above 2000 bar:

Accuracy @ RT	% of the range (gauge and vacuum sensors) < 1.0 BFSL ≤ 0.5 % of the range (absolute sensors) < 1.0	(incl. nonlinearity, hysteresis, repeatability, zero-offset and final offset acc. to IEC 61298-2)
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Non-linearity % of the range ≤ 0.30

Repeatability % of the range ≤ 0.20

Stability/year % of the range ≤ 0.20

Response time (10..90%) t(ms)1

Overrange pressure up to 2x rated pressure

Burst pressure up to 5x rated pressure

Pressure cycles > 10 million

MTTFd > 100 years

Environment

Temperature [°C]:	
Measuring medium	-40...125
Ambience	-40...125
Storage	-40...125
Compensated range	-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

Shock 1000 G, 11 msec., 1/2 Sine

Vibration 25 G peak, 20 to 2000 Hz

Sealing IP 66, optional IP69K

Electronics

Output → Supply 0.5 - 4.5 V --> 5 V DC ratiometric

Output impedance < 100 Ω

Current consumption < 10 mA

Reverse voltage protection Yes

Mechanics

Housing 304 stainless steel

Wetted parts 17-4PH stainless steel

Pressure port see select table

Electrical connection see select table

Weight ca. 60 g

Ordering Information

(Please use the characters in the chart below to construct your product code)

Sample Code: **SMO3100 - A - 01000 - B - 5 - A**

Series	Port Configuration	Pressure Range	Pressure Unit	Output Signal	Electrical Interface
SMO3100	A* - G 1/4" Male B* - 1/4" NPT Male C - 1/8" NPT Male D - 7/16" -20 UNF Male E - 9/16" -18 UNF Male F - M14x1.5 Male G - 1/4" SAE Female H - 3/8x24 UNF Male (Dash Size 3) M10 - M10 x 1	Please use code from table below	A - absolute pressure B - gauge pressure V - vacuum pressure	5 = 0.5..4.5 V - (with 5V supply voltage)	A - 600 mm cable B - Miniature EN175301-803-C connector C - Packard Metripac connector D - Standard EN175301-803-A connector F - M12x1 Round connector K** - Moulded cable

Custom options available on request

* Standard option
** Sealing IP69K

Pressure Range

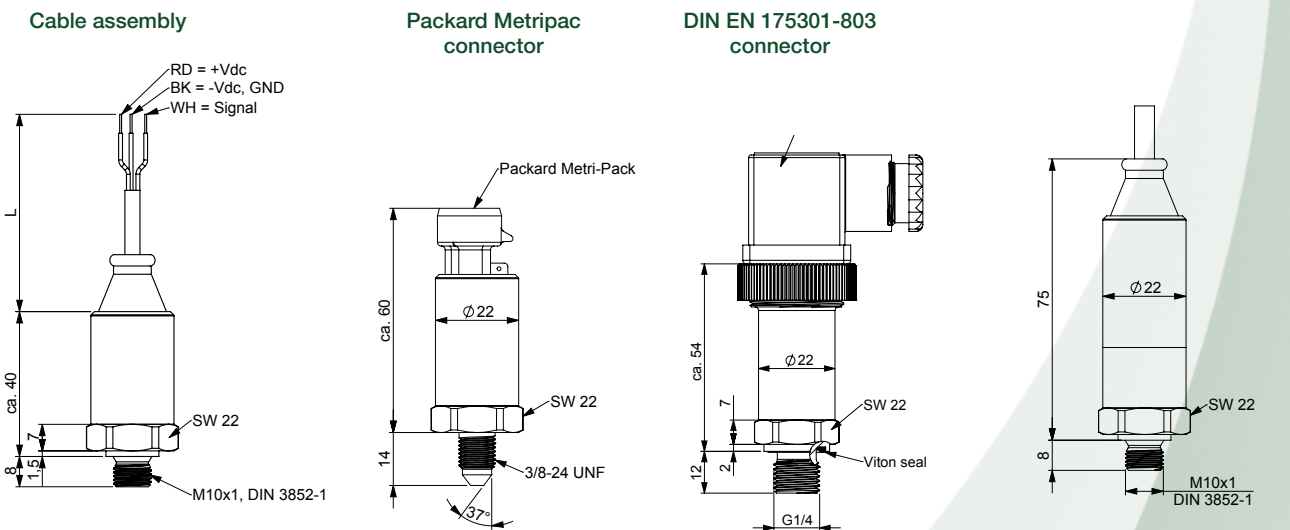
Bar	0.6	1.0	1.6	2.5	4	6	10	16	25	40	50	60	100	160	250	400	600	1000	1600	2000	4000	5000
Order Code	00060	00100	00160	00250	00400	00600	01000	01600	02500	04000	05000	06000	10000	16000	25000	40000	60000	100000	160000	200000	400000	500000

The SMO3100 series is backed by a 1 Year Warranty. The purchaser is responsible for compatibility of the media, functional adequacy and correct installation of the transmitter.

Dimensions

Gauge pressure dimensions

Absolute pressure dimensions



Wiring

Type	Output	PIN 1	PIN 2	PIN 3	PIN 4
DIN EN 175301- 803-A and C	0.5 - 4.5V	+ Supply	- Supply	Output +	-
Round connector M12x1 A	0.5 - 4.5V	+ Supply	N/A	- Supply	Output +
Packard Metripac	Output	PIN A	PIN B	PIN C	-
	0.5 - 4.5V	- Supply	+ Supply	Output +	-
Cable assembly	Output	Red	Black	White	Green
	0.5 - 4.5V	+ Supply	- Supply	Output +	-