



## Pressure Sensor with Ceramic Sensor Element



measuring  
•  
monitoring  
•  
analysing

### SEN-86

Option:  
Pluggable Sandwich  
Display Model AUF



- Gauge pressure
- Internal diaphragm
- Measuring range:  
-1... 0 to 0 ...600 bar
- Temperature (medium):  
max. 85 °C
- Accuracy class:  
0,5 or 1,0
- Material:  
Stainless steel and ceramic
- Connection: G 1/2



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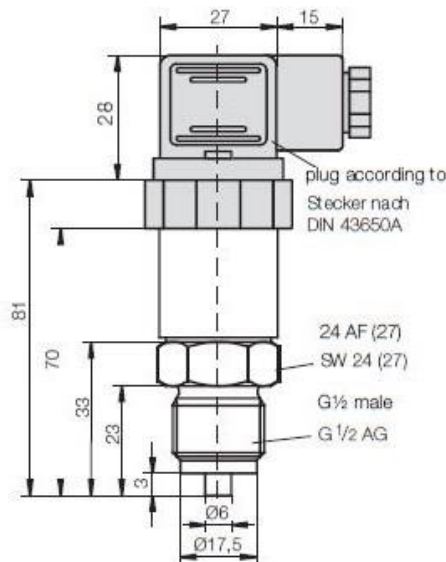
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**Description**

KOBOLD Pressure sensors model SEN-86 are inexpensive pressure sensors with thick film ceramic pressure element. With their accuracy, reliability and compact design, they are perfectly suitable for OEM applications in medium to high quantities.

The materials and technology used make these pressure sensors insensitive to chemically aggressive media and mechanical load. Particularly hydraulics systems with their high and fast pressure peaks are thus preferred applications.

**Dimensions (in mm)**



**Anwendungen**

- Plant engineering
- Environmental engineering
- Machine Building
- Cooling circuit

**Order Details Sensor (Example: SEN-8600 C315)**

Electrical connection	Class	Model	Output	Measuring range	Connection
DIN plug; IP 65	0.5	SEN-8600..	without = 4 - 20 mA /1 = 0 - 5 V /2 = 0 - 10 V	C 315 = -1 ... 0 bar	H 315 = -30 ... 0 in Hg
M12 plug; IP 65	0.5	SEN-8630..		C 505 = -1 ... 0.6 bar	P 025 = 0 ... 15 psi g
				C 515 = -1 ... 1.5 bar	P 045 = 0 ... 30 psi g
Cable connection; IP 68	0.5	SEN-8650..		C 525 = -1 ... 3 bar	P 055 = 0 ... 50 psi g
				C 535 = -1 ... 5 bar	P 060 = 0 ... 60 psi g
DIN plug; IP 65	1.0	SEN-8601..		C 545 = -1 ... 9 bar	P 065 = 0 ... 100 psi g
				C 555 = -1 ... 15 bar	P 075 = 0 ... 150 psi g
M12 plug; IP 65	1.0	SEN-8631..		B 025 = 0 ... 1 bar	P 085 = 0 ... 200 psi g
				B 035 = 0 ... 1.6 bar	P 095 = 0 ... 350 psi g
Cable connection; IP 68	1.0	SEN-8651..		B 045 = 0 ... 2.5 bar	P 100 = 0 ... 500 psi g
				B 055 = 0 ... 4 bar	P 105 = 0 ... 600 psi g
				B 065 = 0 ... 6 bar	P 115 = 0 ... 1000 psi g
				B 075 = 0 ... 10 bar	P 125 = 0 ... 1450 psi g
				B 085 = 0 ... 16 bar	P 130 = 0 ... 2000 psi g
				A 095 = 0 ... 25 bar	P 135 = 0 ... 2300 psi g
				A 105 = 0 ... 40 bar	P 140 = 0 ... 3000 psi g
				A 115 = 0 ... 60 bar	P 145 = 0 ... 3600 psi g
				A 125 = 0 ... 100 bar	P 150 = 0 ... 5000 psi g
				A 135 = 0 ... 160 bar	P 155 = 0 ... 5800 psi g
				A 140 = 0 ... 200 bar	P 160 = 0 ... 7500 psi g
				A 145 = 0 ... 250 bar	P 165 = 0 ... 10000 psi g
				A 155 = 0 ... 400 bar	
				A 165 = 0 ... 600 bar	

**Technical Data**

Technology: Internal diaphragm  
 Pressure type: Gauge pressure  
 Housing: Stainless steel 1.4305  
 Connection: G 1/2 male, stainless steel 1.4301 (NPT, UNF on request)  
 Sensor element: Ceramic (Al<sub>2</sub>O<sub>3</sub>)  
 Measuring principle: Thick film technology (DMS)  
 O-Ring: NBR  
 Max. Temperature: Storage: -40 ... +100 °C  
 medium: -20 ... +85 °C  
 ambient: -40 ... +85 °C  
 Pressure limitation: < 60 bar: 2 x range  
 > 60 bar: 1.5 x range  
 Accuracy class: SEN-86\*0: 0.5  
 SEN-86\*1: 1.0  
 Repeatability: SEN-86\*0: ≤ ± 0.15 % of full scale  
 SEN-86\*1: ≤ ± 0.3 % of full scale  
 Characteristic deviation: SEN-86\*0: ≤ ± 0.3 % of full scale  
 SEN-86\*1: ≤ ± 0.6 % of full scale  
 Stability per year: ≤ ± 0.2 % of full scale (under reference conditions)  
 Electrical connection: Plug according to DIN 43 650 A, plug M12x1, cable connection  
 Auxiliary power: 15 ... 32 V<sub>DC</sub>  
 Output: 4 - 20 mA (2-wire),  
 0-5 V<sub>DC</sub>, 0-10 V<sub>DC</sub>  
 Load (Ω): ≤ (U<sub>B</sub>-15V) / 0,02 A (for 4 - 20 mA)  
 Response time: ≤ 1 ms (within 10-90% of full scale)  
 Compensated range: -25 ... +85 °C  
 Temperature drift: Zero point:  
 SEN-86\*0: ≤ ± 0.02 % full scale/K  
 SEN-86\*1: ≤ ± 0.04 % full scale/K  
 auf Messspanne:  
 SEN-86\*0: ≤ ± 0.01 % full scale/K  
 SEN-86\*1: ≤ ± 0.02 % full scale/K  
 Protection: IP 65 (SEN-860..; SEN-863..)  
 IP 68 (SEN-865..)



## Pressure Sensor with Ceramic Sensor Element



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### SEN-87

Option:  
Pluggable Sandwich  
Display Model AUF



- Gauge pressure
- Internal diaphragm
- Measuring range:  
-1... 0 to 0 ...600 bar
- Temperature (medium):  
max. 85 °C
- Accuracy class:  
0.5 or 1.0
- Material:  
Stainless steel and ceramic
- Connection: G 1/4



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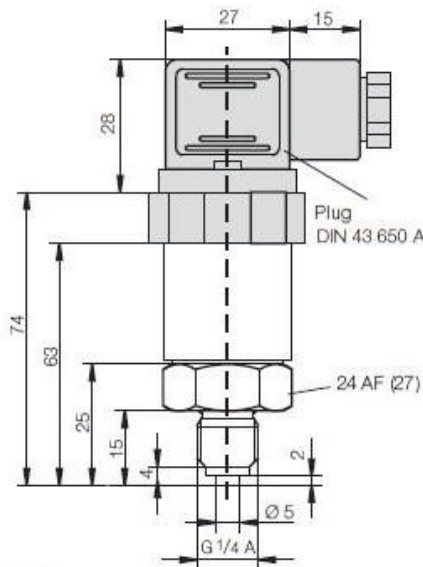
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**Dimensions**



**Applications**

- Plant engineering
- Environmental engineering
- Machine Building
- Cooling circuit

**Technical Data**

Technology: Internal diaphragm  
 Pressure type: Gauge pressure  
 Housing: Stainless steel 1.4305  
 Connection: G 1/4 male, stainless steel 1.4301 (NPT, UNF on request)  
 Sensor element: Ceramic (Al<sub>2</sub>O<sub>3</sub>)  
 Measuring principle: Thick film technology (DMS)  
 O-Ring: NBR  
 Max. Temperature: Storage: -40...+100 °C  
 medium: -20...+85 °C  
 ambient: -40...+85 °C  
 Pressure limitation: < 60 bar: 2 x range  
 > 60 bar: 1.5 x range  
 Accuracy class: SEN-87\*0: 0.5  
 SEN-87\*1: 1.0  
 Repeatability: SEN-87\*0: ≤ ± 0.15 % of full scale  
 SEN-87\*1: ≤ ± 0.3 % of full scale  
 Characteristic deviation: SEN-87\*0: ≤ ± 0.3 % of full scale  
 SEN-87\*1: ≤ ± 0.6 % of full scale  
 Stability per year: ≤ ± 0.2 % of full scale (under reference conditions)  
 Electrical connection: Plug according to DIN 43 650 A, plug M12x1, cable connection  
 Auxiliary power: 15 ... 32 V<sub>DC</sub>  
 Output: 4-20 mA (2-wire), 0-5 V<sub>DC</sub>, 0-10 V<sub>DC</sub>  
 Load (Ω): ≤ (U<sub>B</sub>-15V)/0,02 A (für 4-20 mA)  
 Response time: ≤ 1 ms (within 10-90 % of full scale)  
 Temp. comp. range: -25...+85 °C  
 Temperature drift: Zero point: SEN-87\*0: ≤ ± 0.02 % FS/K  
 SEN-87\*1: ≤ ± 0.04 % FS/K  
 span: SEN-87\*0: ≤ ± 0.01 % FS/K  
 SEN-87\*1: ≤ ± 0.02 % FS/K  
 Protection: IP 65 (SEN-870..; SEN-873..) IP 68 (SEN-875..)

**Order Details Sensor (Example: SEN-8700 C315)**

Electrical connection	Class	Model	Output	Measuring range	Connection	
DIN plug; IP 65	0.5	SEN-8700..	without = 4 - 20 mA /1 = 0 - 5 V /2 = 0 - 10 V	C 315 = -1 ... 0 bar C 505 = -1 ... 0,6 bar C 515 = -1 ... 1,5 bar C 525 = -1 ... 3 bar C 535 = -1 ... 5 bar C 545 = -1 ... 9 bar C 555 = -1 ... 15 bar B 025 = 0 ... 1 bar B 035 = 0 ... 1,6 bar B 045 = 0 ... 2,5 bar B 055 = 0 ... 4 bar B 065 = 0 ... 6 bar B 075 = 0 ... 10 bar B 085 = 0 ... 16 bar A 095 = 0 ... 25 bar A 105 = 0 ... 40 bar A 115 = 0 ... 60 bar A 125 = 0 ... 100 bar A 135 = 0 ... 160 bar A 140 = 0 ... 200 bar A 145 = 0 ... 250 bar A 155 = 0 ... 400 bar A 165 = 0 ... 600 bar	H 315 = -30 ... 0 in Hg P 025 = 0 ... 15 psi g P 045 = 0 ... 30 psi g P 055 = 0 ... 50 psi g P 060 = 0 ... 60 psi g P 065 = 0 ... 100 psi g P 075 = 0 ... 150 psi g P 085 = 0 ... 200 psi g P 095 = 0 ... 350 psi g P 100 = 0 ... 500 psi g P 105 = 0 ... 600 psi g P 115 = 0 ... 1000 psi g P 125 = 0 ... 1450 psi g P 130 = 0 ... 2000 psi g P 135 = 0 ... 2300 psi g P 140 = 0 ... 3000 psi g P 145 = 0 ... 3600 psi g P 150 = 0 ... 5000 psi g P 155 = 0 ... 5800 psi g P 160 = 0 ... 7500 psi g P 165 = 0 ... 10000 psi g	Thread without = G 1/4 male N = 1/4" NPT male
M12 plug; IP 65	0.5	SEN-8730..				
Cable connection; IP 68	0.5	SEN-8750..				
DIN plug; IP 65	1.0	SEN-8701..				
M12 plug; IP 65	1.0	SEN-8731..				
Cable connection; IP 68	1.0	SEN-8751..				