M-Zert
Zertifiziertes QM-System
DIN EN ISO 9001
Zertifikat-Nr. 01017

Pressure Sensor with Ceramic Sensor Element

KOBOLD

measuring • monitoring • analysing

SEN-86

Option:
Pluggable Sandwich
Display Model AUF

- Gauge pressure
- Absolute pressure
- Internal diaphragm
- Measuring range: -1...0 to 0...800 bar
- Measuring span from 600 mbar
- Temperature (medium): max. 125 °C
- Accuracy class: 0.5
- Material: stainless steel and ceramic
- Connection: G ½
- Options

P2

KOBOLD companies worldwide:
AUSTRALIA, AUSTRIA, BELGIUM, BULGARIA, CANADA, CHINA, CZECHIA, FRANCE, GERMANY, GREAT BRITAIN, HUNGARY, INDIA, INDONESIA, ITALY, MALAYSIA, MEXICO, NETHERLANDS, PERU, POLAND, REPUBLIC OF KOREA, SPAIN, SWITZERLAND, THAILAND, TUNISIA, TURKEY, USA, VIETNAM

KOBOLD Messring GmbH
Nordring 22-24
D-65719 Hofheim/Ts.
Head Office:
+49(0)6192 299-0
+49(0)6192 23398
info.de@kobold.com
www.kobold.com

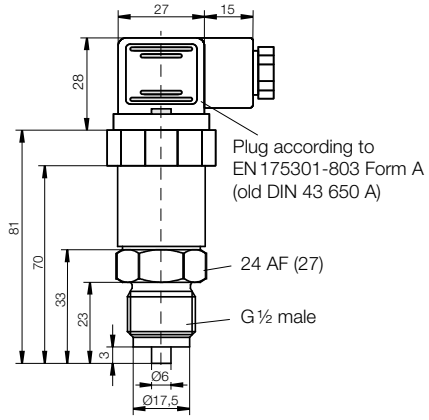
1/08 - 2024

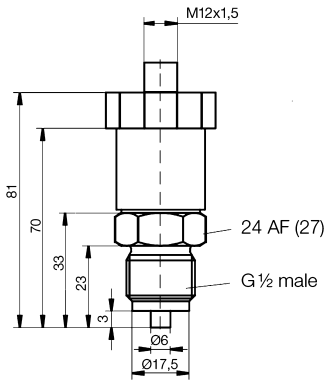
Description

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 insensitve to chemically aggressive media and mechanical load. Particularly hydraulics systems with their high and fast pressure peaks are thus preferred applications.

Dimensions [mm]





Applications

- Plant engineering
- Machine building
- Environmental engineering
- Cooling circuit

Technical Details

Technology:	internal diaphragm
Pressure type:	gauge pressure
Housing:	stainless steel 1.4305
Connection:	G ½ male, stainless steel 1.4301 (NPT, UNF on request)
Sensor element:	ceramic (Al_2O_3)
Measuring principle:	thick film technology (DMS)
O-ring:	NBR
Max. temperature:	storage: -30 ... +100 °C medium: -20 ... +85 °C (Option max. 125 °C) ambient: -30 ... +100 °C
Pressure limitation:	< 60 bar: 2 x range ≥ 60 bar: 1.5 x range
Accuracy class:	SEN-86*0: 0.5
Repeatability:	SEN-86*0: ≤ ± 0.15 % of full scale
Characteristic deviation:	SEN-86*0: ≤ ± 0.3 % of full scale
Stability per year:	≤ ± 0.2 % of full scale (under reference conditions)
Electrical connection:	plug according to EN 175301-803 Form A (old DIN 43 650 A), plug M12x1, cable connection
Auxiliary power:	15 ... 32 V_{DC}
Output:	4 - 20 mA (2-wire), 0 - 10 V_{DC}
Load (Ω):	≤ (U_B-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 span: SEN-86*0: ≤ ± 0.01 % full scale/K
Protection:	IP 65 (SEN-860..) IP 67 (SEN-863..; SEN-864..) IP 68 (SEN-865..)
Options:	Absolute pressure for ranges 1,0 ... 25 bar Oil- and free of grease for oxygen Silicone- and LABS-free Connection with 50 mm cooling fins t_{max} 125° C Connection and housing SS 1.4539[1] instead of 1.4305 Connection and housing SS 1.4571 instead of 1.4305 O-ring FPM instead of NBR O-ring PTFE (Kalrez) instead of NBR <100 bar ½" NPT thread instead of »G« Special connection[2] on request

[1] Seawater resistant
[2] Please specify in writing

No responsibility taken for errors;
subject to change without prior notice.

1/08 - 2024

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

Electrical connection	Class	Model	Output	Measuring range		Options
DIN plug; IP 65	0.5	**SEN-8600..**	**without** = 4 - 20 mA **/2** = 0 - 10 V	**C 305** = -0.6 ... 0 bar **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 015** = 0 ... 0.6 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 **A 170** = 0 ... 700 bar **A 175** = 0 ... 800 bar	**H 315** = -30 ... 0 in Hg **P 020** = 0 ... 10 psi g **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 090** = 0 ... 300 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 **YYY** = special range, please specify in writing	**Thread** **without** = G ½ male **Y** = absolute pressure for ranges 1.0 ... 25 bar **Y** = oil- and free of grease for oxygen **Y** = silicone- and LABS-free **Y** = connection with 50 mm cooling fins t_{max} 125° C **Y** = connection and housing ss 1.4539 (seawater resistant) instead of 1.4305 **Y** = connection and housing ss 1.4571 instead of 1.4305 **Y** = O-ring FPM instead of NBR **Y** = O-ring PTFE (Kalrez) instead of NBR <100 bar **Y** = special connection on request, please specify in writing **N** = ½" NPT male
M12 plug; IP 67	0.5	**SEN-8630..**				
Cable connection; IP 67 Standard cable 1 m (other length on request)	0.5	**SEN-8640..**				
Cable connection; IP 68 Standard cable 1 m (other length on request)	0.5	**SEN-8650..**				

No responsibility taken for errors;
subject to change without prior notice.

Pressure Sensor with Ceramic Sensor Element

SEN-87

Option:
Pluggable Sandwich
Display Model AUF

- Gauge pressure
- Absolute pressure
- Internal diaphragm
- Measuring range: -1...0 to 0...800 bar
- Measuring span from 600 mbar
- Temperature (medium): max. 125 °C
- Accuracy class: 0.5
- Material: stainless steel and ceramic
- Connection: G ¼
- Options

KOBOLD Messring GmbH
Nordring 22-24
D-65719 Hofheim/Ts.
Head Office:
+49(0)6192 299-0
+49(0)6192 23398
info.de@kobold.com
www.kobold.com

1/08 - 2024

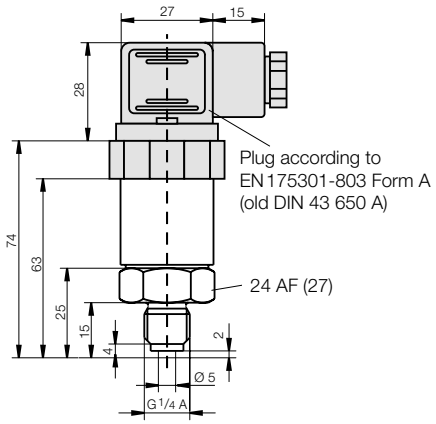
Description

KOBOLD Pressure sensors model SEN-87 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 [mm]



Applications

- Plant engineering
- Machine building
- Environmental engineering
- Cooling circuit

Technical Details

Technology:	internal diaphragm
Pressure type:	gauge pressure
Housing:	stainless steel 1.4305
Connection:	G¼ male, stainless steel 1.4301 (NPT, UNF on request)
Sensor element:	ceramic (Al_2O_3)
Measuring principle:	thick film technology (DMS)
O-ring:	NBR
Max. temperature:	storage: -30 ... +100 °C medium: -20 ... +85 °C (Option max. 125 °C) ambient: -30 ... +100 °C
Pressure limitation:	< 60 bar: 2 x range ≥ 60 bar: 1.5 x range
Accuracy class:	SEN-87*0: 0.5
Repeatability:	SEN-87*0: ≤ ± 0.15 % of full scale
Characteristic deviation:	SEN-87*0: ≤ ± 0.3 % of full scale
Stability per year:	≤ ± 0.2 % of full scale (under reference conditions)
Electrical connection:	plug according to EN 75301-803 Form A (old DIN 43 650 A), plug M12x1, cable connection
Auxiliary power:	15 ... 32 V_{DC}
Output:	4 - 20 mA (2-wire), 0 - 10 V_{DC}
Load (Ω):	≤ (U_B-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 span: SEN-87*0: ≤ ± 0.01 % FS/K
Protection:	IP 65 (SEN-870..) IP 67 (SEN-873..; SEN-874..) IP 68 (SEN-875..)
Options:	Absolute pressure for ranges 1,0 ... 25 bar Oil- and free of grease for oxygen Silicone- and LABS-free Connection with 50 mm cooling fins t_{max} 125° C Connection and housing SS 1.4539[1] instead of 1.4305 Connection and housing SS 1.4571 instead of 1.4305 O-ring FPM instead of NBR O-ring PTFE (Kalrez) instead of NBR <100 bar ¼" NPT thread instead of »G« G¼ DIN 385-E inclusive seal ring[3] Special connection[2] on request

[1] Seawater resistant
[2] Please specify in writing
[3] Adapter of PSD usable

No responsibility taken for errors;
subject to change without prior notice.

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

Electrical connection	Class	Model	Output	Measuring range		Options
DIN plug; IP 65	0.5	**SEN-8700..**	**without** = 4 - 20 mA **/2** = 0 - 10 V	**C 305** = -0.6 ... 0 bar **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 015** = 0 ... 0.6 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 **A 170** = 0 ... 700 bar **A 175** = 0 ... 800 bar	**H 315** =- 30 ... 0 in Hg **P 020** = 0 ... 10 psi g **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 090** = 0 ... 300 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 **YYY** = special range, please specify in writing	**Thread** **without** = G ¼ male **Y** = absolute pressure for ranges 1,0 ... 25 bar **Y** = oil- and free of grease for oxygen **Y** = silicone- and LABS-free **Y** = connection with 50 mm cooling fins t_{max} 125 °C **Y** = connection and housing ss 1.4539[1] instead of 1.4305 **Y** = connection and housing ss 1.4571 instead of 1.4305 **Y** = O-ring FPM instead of NBR **Y** = O-ring PTFE (Kalrez) instead of NBR <100 bar **Y** = G ¼ DIN 385-E inclusive seal ring[3] **Y** = special connection[2] on request **N** = ¼" NPT male
M12 plug; IP 67	0.5	**SEN-8730..**				
Cable connection; IP 67 Standard cable 1 m (other length on request)	0.5	**SEN-8740..**				
Cable connection; IP 68 Standard cable 1 m (other length on request)	0.5	**SEN-8750..**				

[1] Seawater resistant
[2] Please specify in writing
[3] Adapter of PSD usable

No responsibility taken for errors;
subject to change without prior notice.
1/08 - 2024