

Operating Instructions

for

Pressure Sensor

Model: SEN-Y48382/3B95



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2. Note

Please read these operating instructions before unpacking and putting the unit into operation. Follow the instructions precisely as described herein.

The instruction manuals on our website <u>www.kobold.com</u> are always for currently manufactured version of our products. Due to technical changes, the instruction manuals available online may not always correspond to the product version you have purchased. If you need an instruction manual that corresponds to the purchased product version, you can request it from us free of charge by email (<u>info.de@kobold.com</u>) in PDF format, specifying the relevant invoice number and serial number. If you wish, the operating instructions can also be sent to you by post in paper form against an applicable postage fee.

The devices are only to be used, maintained and serviced by persons familiar with these operating instructions and in accordance with local regulations applying to Health & Safety and prevention of accidents.

Notes on the machine and pressure equipment directive:

When used in machines, the measuring unit should be used only when the machines fulfil the EC-machine guidelines.

as per PED 2014/68/EU

"Pressure gauges with a volume ≤ 0.1 L" In acc. with Article 4 Paragraph (3), "Sound Engineering Practice", of the PED 2014/68/EU no CE mark.

Diagram 2 Vessels referred to in Article 4(1)(a)(i), second indent

3. Regulation Use

Any use of the Pressure Sensors Model: SEN-Y48382/3B95 which exceeds the manufacturer's specification may invalidate its warranty. Therefore, any resulting damage is not the responsibility of the manufacturer. The user assumes all risk for such usage.

4. Operating Principle

Pressure sensors transmit the mechanical quantity pressure into an electrical output signal. The media's which are in contact with the instrument should be chemically compatible with the instrument materials used. Do not use standard sensors in hazardous areas and for oxygen applications.

Special hazards:

WARNING!

For hazardous media such as oxygen, acetylene, flammable or toxic gases or liquids, and refrigeration plants, compressors, etc., in addition to all standard regulations, the appropriate existing codes or regulations must also be followed.

WARNING!

Residual media in dismounted pressure transmitters can result in a risk to persons, the environment and equipment. Take sufficient precautionary measures.

5. Instrument Inspection

Instruments are inspected before shipping and sent out in perfect condition. Should the damage to a device be visible, we recommend a thorough inspection of the delivery packing. In case of damage, please inform your parcel service / forwarding agent immediately, since they are responsible for damages during transit.

Scope of delivery:

• Pressure Sensor model: SEN-Y48382/3B95

6. Mechanical Connection

Only use the pressure transmitter if it is in perfect condition with respect to safety. Prior to commissioning, the pressure transmitter must be subjected to a visual inspection.

• Leaking fluid is indicative of damage.

6.1. Requirements for mounting point

The mounting point must meet the following conditions:

- Sealing faces are clean and undamaged.
- Sufficient space for a safe electrical installation.
- Environment corresponds to a max. pollution degree of 2.
- Permissible ambient and medium temperatures remain within the performance limits. Consider possible restrictions on the ambient temperature range caused by mating connector used.

6.2. Sealing the process connection

Process connection of SEN-Y48382/3B95 is tapered thread (1/8" NPT). For sealing process connections with tapered threads, the sealing must be made in the threads using additional sealing material, e.g. PTFE tape (EN 837-2).



6.3. Installing the instrument

When screwing the instrument in, the force required to do this must not be applied through the case or the cap ring, but only through the spanner flats provided for this purpose and using a suitable tool.

The correct torque depends on the dimensions of the process connection and the gasket used (form/material). When screwing in, do not cross the threads.



If the instrument is mounted upside down, it must be ensured that no water can collect on the electrical connection and on the cap ring. Water can block the pressure compensation diaphragm.

7. Electrical Connection

- Ensure that the power is disconnected during connection of the cable.
- To connect the instrument, the cable outlet must be assembled in advance.
- Only use cables with suitable characteristics for the particular operating conditions.
- Select a cable diameter that matches the cable bushing of the connector.

Meaning of the different connector markings

UB+	positive pole of the supply voltage
UB-	negative pole of the supply voltage
S	output signal
Shield	Cable protection enclosure-earth

The sensor could be supplied with an unregulated DC source with the specified voltage range. The minimum supply voltage for pressure sensors with current output, should be the minimum UB plus the minimum voltage, which is needed to operate the external indicator or input device.

Current output of 2-wire system

Output signal	420 mA
Supply voltage	UB= 8 35 V _{DC}
Permissible load	RA[Ohm] = (UB[V] – 7.5 V) / 0,023 A
Wiring scheme	see scheme below

The 2-wire system connects the power supply, transmitter and indicating/recording instrument in a series circuit. This creates a "current loop" with the transmitter functioning as a current regulating device.

Wiring of 2-wire system (cable with free ends)



8. Trouble Shooting

Trouble	Possible reason	What's to do
No/wrong output signal	no supply voltage broken wire	Check your power supply and wiring. If necessary replace defective parts
	Sensor has been wired improperly	Check the wiring according to the sketches and adjust wiring if necessary.
	No pressure	Check your tubing, valves open?
	Defective electronics caused by excessive supply voltage or by external voltage	Return sensor to us for repair
Constant output signal upon change in pressure	Mechanical overload caused by overpressure	Replace instrument; if it fails repeatedly
Signal span too small/drops	Mechanical overload caused by overpressure	Replace instrument; if it fails repeatedly
	Abrasive/ aggressive medium; corrosion at process connection	Clean the face of process connection
Signal span varies/inaccurate	EMC interference sources in the environment (e.g. by frequency converters)	Shield instrument; cable shield; Remove source of interference
	Operating temperature too high/low	Lower/increase the temperature
	Instrument not grounded	Ground the instrument
	Strongly varying pressure of the process medium	Damp pressure
Deviating zero-point signal	Operating temperature too high/low	Lower/increase the temperature
	Other mounting position	Adjust the zero point
	Overpressure limit exceeded	Reduce the pressure

9. Technical Information

Sensor element:	Model: SEN-Y48382/3B95 High precision pressure sensor for industrial application
Material housing/ wetted parts:	Stainless steel 316L
Non-linearity	\leq ±0.25 % of span, per BFSL per IEC 61298-2
Zero-point error:	≤ ±0.2 % of span, factory set
Stability/year:	≤ ±0.1 % of full scale
Overload limit:	2 times of 25 bar (maximum measuring value)
Protection class:	IP 68
Temperature range:	Measured media temperature: -40+125°C maximum ambient temperature: +125°C
Shock/vibration resistance:	100 g, 6 ms per IEC 60068-2-27 / 20g standard/ 10g cooling element 102,000 Hz as per IEC 60068-2-6
Service life:	100 million load cycles
Electrical connection:	Cable outlet, 2.0 m FEP cable, free cable ends Power supply: 8 35 VDC Output signal: 420 mA, 2-wire

Dimensions in mm



Weight:

approximately 220g

10. Maintenance

The pressure sensor described in this manual is maintenance free! It does not contain any components which may be repaired or exchanged locally. Repairs are only possible in our factory.

11. Disposal

Note!

- Avoid environmental damage caused by media-contaminated parts.
- Dispose of the device and packaging in an environmentally friendly manner.
- Comply with applicable national and international disposal regulations and environmental regulations.

Batteries

Batteries containing pollutants are marked with a sign consisting of a crossed-out garbage can and the chemical symbol (Cd, Hg, Li or Pb) of the heavy metal that is decisive for the classification as containing pollutants:



- 1. "Cd" stands for cadmium
- 2. "Hg" stands for mercury
- 3. "Pb" stands for lead
- 4. "Li" stands for lithium

Electrical and electronic equipment



12. EU Declaration of Conformance

We, KOBOLD Messring GmbH, Nordring 22-24, 65719 Hofheim, Germany, declare under our sole responsibility that the product:

Pressure Sensor Model: SEN-Y48382/3B95

to which this declaration relates is in conformity with the following EU directives stated below:

 2014/30/EU
 EMC Directive

 2011/65/EU
 RoHS (category 9)

Also, the following standards are fulfilled:

EN 61326-1:2013

Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements

EN 61326-2-3:2013

Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-3: Particular requirements - Test configuration, operational conditions and performance criteria for transducers with integrated or remote signal conditioning

EN IEC 63000:2018 Technische Dokumentation zur Beurteilung von Elektround Elektronikgeräten hinsichtlich der Beschränkung gefährlicher Stoffe

Hofheim, 26 March 2024

H. Volz General Manager

J. Burke Compliance Manager

13. UK Declaration of Conformity

We, KOBOLD Messring GmbH, Nordring 22-24, 65719 Hofheim, Germany, declare under our sole responsibility that the product:

Pressure Sensor Model: SEN-Y48382/3B95

to which this declaration relates is in conformity with the following UK directives stated below:

S.I. 2016/1101Electrical Equipment (Safety) Regulations 2016S.I. 2012/3032The Restriction of the Use of Certain Hazardous
Substances in Electrical and Electronic Equipment
Regulations 2012

Also, the following standards are fulfilled:

BS EN 61326-1:2013

Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements

BS EN 61326-2-3:2013

Electrical equipment for measurement, control and laboratory use. EMC requirements. Particular requirements. Test configuration, operational conditions and performance criteria for transducers with integrated or remote signal conditioning

BS EN IEC 63000:2018

Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.

Hofheim, 26 March 2024

H. Volz General Manager

J. Burke Compliance Manager