1. General information

1.1 Information on the operating manual

This operating manual contains important information on proper usage of the device. Read this operating manual carefully before installing and starting up the pressure measuring device.

Adhere to the safety notes and operating instructions which are given in the operating manual. Additionally applicable regulations regarding occupational safety, accident prevention as well as national installation standards and engineering rules must be complied with!

This operating manual is part of the device, must be kept nearest its location, always accessible to all employees.

This operating manual is copyrighted. The contents of this operating manual reflect the version available at the time of printing. BD SENSORS is not liable for any incorrect statements and their effects.

– Technical modifications reserved –

1.2 Symbols used

DANGER! – dangerous situation, which may result in death or serious injuries

WARNING! – potentially dangerous situation, which may result in death or serious injuries

CAUTION! – potentially dangerous situation, which may result in minor injuries

CAUTION! – potentially dangerous situation, which may result in physical damage

NOTE! – tips and information to ensure a failure-free operation

1.3 Target group

WARNING! To avoid operator hazards and damages of the device, the following instructions have to be worked out by qualified technical personnel.

1.4 Limitation of liability

By non-observance of the operating manual, inappropriate use, modification or damage, no liability is assumed and warranty claims will be excluded.

1.5 Intended use

• The pressure transmitter DMP 303 / DMP 304 has been especially designed for the overpressure measuring.

• It is the operator's responsibility to check and verify the suitability of the device for the intended application. If any doubts remain, please contact our sales department in order to ensure proper usage. BD SENSORS is not liable for any incorrect selections and their effects!

• Permissible media are gases or liquids, which are compatible with the media wetted parts described in the data sheets. In addition it has to be ensured, that this media is compatible with the media wetted parts. For questions please contact our sales team.

The technical data listed in the current data sheet are engaging. If the data sheet is not available, please order or download it from our homepage.

WARNING! Danger through improper usage!

1.6 Package contents

Please verify that all listed parts are undamaged included in the delivery and check for consistency specified in your order:

• pressure transmitter

• mounting instructions

2. Product identification

The device can be identified by its manufacturing label. It provides the most important data. By the ordering code the product can be clearly identified.

3. Mechanical installation

3.1 Mounting and safety instructions

WARNING! Install the device only when depressurized and currentless!

WARNING! This device may only be installed by qualified technical personnel who has read and understood the operating manual!

Handle this high-sensitive electronic precision measuring device with care, both in packed and unpacked condition.

There are no modifications/changes to be made on the device.

Do not throw the package/device!

To avoid damaging the diaphragm, remove packaging and protective cap directly after starting assembly. The delivered protective cap has to be stored!

3.2 Symbols used

DANGER! – dangerous situation, which may result in death or serious injuries

WARNING! – potentially dangerous situation, which may result in death or serious injuries

CAUTION! – potentially dangerous situation, which may result in minor injuries

CAUTION! – potentially dangerous situation, which may result in physical damage

NOTE! – tips and information to ensure a failure-free operation

3.3 Mounting

WARNING! The high pressure tube seals metal-to-metal in the chamfer of the pressure port. No further seal is allowed with this high pressure connection. A wrong installation can cause enormous danger!

4. Electrical Installation

WARNING! Install the device in currentless condition only!

Establish the electrical connection of the device according to the technical data shown on the manufacturing label, the following table and the respective wiring diagram.

After the installation it is recommended to adjust the offset of the pressure transmitter (see chapter offset and span). The calibration is not affected by postadjustment of the offset.
Pin configuration

<table>
<thead>
<tr>
<th>Electrical connections</th>
<th>ISO 4400</th>
<th>Binder 753</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>(5-pin)</td>
<td></td>
</tr>
<tr>
<td>Supply +</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Supply -</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Signal + (3-wire)</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Shield</td>
<td></td>
<td>5</td>
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Electrical connections

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<tr>
<th>Connections</th>
<th>Pin A</th>
<th>Pin B</th>
<th>Pin C</th>
<th>Pin D</th>
<th>Pin E</th>
<th>Pin F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>supply +</td>
<td>supply -</td>
<td>supply -</td>
<td>calibration</td>
<td>calibration</td>
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<tr>
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</table>

Supply + (white) Signal + (green / yellow) Schirm 4

Supply - (brown) Signal - (green / yellow) Schirm 3

M12x1 (4-pin) cable colours (DIN 47100)

- Supply + / signal +
- Supply - / signal -
- calibration + (80+)
- calibration - (80-)

Wiring diagrams:

2-wire-system (current)

3-wire-system (current / voltage)

Generation of the 80 % calibration signal:

For the generation of the 80 % calibration signal you have to put on the connection contacts 80+ and 80- a voltage about minimal 5 V in the pressureless condition. The maximum voltage has to be the same as the maximum supply voltage of the device. By feeding the voltage on 80+ and 80- an additional current about 12.8 mA is given out and there flows a complete current about 16.8 mA. Please note for IS-devices that the activation of the calibration signal has to run about the same supply as the supply of the signal circuit.

For devices with cable socket, you have to make sure that the external diameter of the used cable is within the allowed clamping range. Moreover you have to ensure that it lies in the cable gland firmly and cleftlessly!

Please note for devices with ISO 4400 plug, that the cable socket has to be mounted properly to ensure the ingress protection mentioned in the data sheet. Please check if the delivered seal is placed between plug and cable socket. After connecting the cable fasten the cable socket on the device by using the screw.

On devices with field housings, the terminal clamps are situated under the metal cap. To install the device electrically, the cap must be screwed off. Before the cover is screwed on again, the O-ring and the sealing surface on the housing have to be checked for damages and if necessary to be changed! Afterwards screw the metal cap on by hand and make sure that the field housing is firmly locked again.

Prevent the damage or removal of the PTFE filter which is fixed over the end of the air tube on devices with cable outlet and integrated air tube.

For the electrical connection a shielded and twisted multicore cable is recommended.

For a transition is desired from a transmitter cable with rubber tube to a cable without gauge tube, we recommend our terminal box KL 1 or KL 2.

5. Initial start-up

WARNING! Before start-up, the user has to check for proper installation and for any visible defects.

WARNING! The device can be started and operated by authorized personnel only, who have read and understood the operating manual!

WARNING! The device has to be used within the technical specifications, or only (compare the data in the data sheet)

6. Placing out of service

WARNING! Disassemble the device only in current and pressure less condition! Check before disassembly, if it is necessary to drained off the media before dismantling!

WARNING! Depending on the medium, it may cause danger for the user. Comply therefore with adequate precautions for purification.

7. Maintenance

In principle, this device is maintenance-free. If desired, the housing of the device can be cleaned using a damp cloth and non-aggressive cleaning solutions, in switched-off state.

With certain media, however, the diaphragm may be polluted or coated with deposit. It is recommended to define corresponding service intervals for control. After placing the device out of service correctly, the diaphragm can usually be cleaned carefully with a non-aggressive cleaning solution and a soft brush or sponge. If the diaphragm is calcified, it is recommended to send the device to BD SENSORS for decalcification. Please note the chapter “Service/Repair” below.

A false cleaning of the device can cause an irreparable damage on the diaphragm. Therefore never use pointed objects or pressured air for cleaning the diaphragm.

8. Service / Repair

8.1 Recalibration

During the life-time of a transmitter, the value of offset and span may shift. As a consequence, a deviating signal value in reference to the nominal pressure range starting point or end point may be transmitted. If one of these two phenomena occurs after prolonged use, a recalibration is recommended to ensure furthermore high accuracy.

8.2 Return

Before every return of your device, whether for recalibration, decalcification, modifications or repair, it has to be cleaned carefully and packaged shatter-proofed. You have to enclose a notice of return with detailed defect description when sending the device. If your device came in contact with harmful substances, a declaration of decontamination is additionally required. Appropriate forms can be downloaded from our homepage www.bdsensors.com. Should you dispatch a device without a declaration of decontamination and if there are any doubts in our service department regarding the used medium, repair will not be started until an acceptable declaration is sent.

If the device came in contact with hazardous substances, certain precautions have to be complied with for purification.

8.3 Offset and span

The offset configuration can be performed after loosening and opening of the upper closing screw via the upper potentiometer (both direction electrical connection). Use for the offset configuration a clockmaker screwdriver 0.5.

9. Disposal

The device has to be disposed of according to the European Directives 2002/96/EG and 2003/108/EG (on waste electrical and electronic equipment). It is prohibited to place electrical and electronic equipment in domestic refuse!

WARNING! Depending on the used medium, deposit on the device may cause danger for the user and the environment. Comply with adequate precautions for purification and dispose of it properly.

10. Warranty conditions

The warranty conditions are subject to the legal warranty period of 24 months from the date of delivery. In case of improper use, modifications of or damages to the device, we do not accept warranty claims. Damaged diaphragms will also not be accepted. Furthermore, defects due to normal wear are not subject to warranty services.