1.2 Symbols used

- Nature and source of danger - Measures to prevent danger

1.4 Safety technical maximum values

Supply and signal circuit

<table>
<thead>
<tr>
<th>LMK 457</th>
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</tr>
</thead>
<tbody>
<tr>
<td>U = 28 V, I = 30 mA, P = 0.53 W, C = 147 nF, I = 0.24 A, cable capacitance 100 pF (for cable by factory)</td>
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1.6 Safety technical maximum values

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<th>Number of EC examination certificate</th>
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<th>Safety specific technical max. values</th>
</tr>
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</tbody>
</table>

- Make sure that the entire interconnection of intrinsically safe components remains electrically safe. The operator is responsible for the intrinsic safety of the overall installation. - Do not mount the device in a pneumatic flame! The device may be used as a protective zone in the presence of an explosion hazard.

- The state of the installation must be checked at any time because the intrinsic safety of the device depends on its proper functioning. - The device shall be equipped with protective insulation against moisture and/or dust. This would prevent the installation of the device.

- Do not operate the device in a pneumatic flame! The device may be used as a protective zone in the presence of an explosion hazard. - The device shall be equipped with protective insulation against moisture and/or dust. This would prevent the installation of the device.

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4.7 Calculation example for the selection of the Zener barrier

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

- The device can be started and operated by authorized personnel, who have read and understood the operating manual.

- The device has to be used within the technical specifications, only (compare the data in the data sheet and the EC-type-examination certificate).

8. Placing out of service

- The terminal voltage of the probe with Zener barrier lies at 16.3 V and is therefore higher than the minimum supply voltage of the probe which lies at 12 V. Hence, the Zener barrier has been selected correctly regarding the supply voltage.

- Note that the resistances have been listed in this calculation. However, there will lead to an additional voltage-drop that must be taken into account.

5. Electrical Installation

### 6.1 HART communication (in-device)

#### Danger of death from electric shock
- Switch off the power supply before installing the device.

#### Danger of death from explosion
- Risks of explosion if the operating voltage is too high (max. 280V),
- Connect the device as described in the technical information.

#### Warning
- The technical information contains the technical data according to the device according to the manufacturing label, the following table and the wiring diagram:

<table>
<thead>
<tr>
<th>Pin configuration</th>
<th>Supply +</th>
<th>Supply -</th>
<th>Signal</th>
<th>Ground</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>p</td>
<td>l</td>
<td>p</td>
<td>l</td>
</tr>
</tbody>
</table>

### 6.2 Accuracy 0.1 % FSO

Devices with an accuracy of 0.1 % FSO have micro-controlled electronics for processing and improving the accuracy of the measurement. This means, the analog output signal is overridden by an additional signal according to the HART communication protocol. Therefore, we suggest our programming kit CS 150 (available as an accessory).

The resistance must be at least 240 \( \Omega \) for high linearity. **Note that no line resistances have been listed in this calculation. However, these will lead to an additional voltage drop that must be taken into account.**

**Warning:**
- The terminal voltage of the probe with Zener barrier lies at 16.3 V and in therefore higher than the minimum supply voltage of the probe which lies at 12 V. Hence, the Zener barrier has been selected correctly regarding the supply voltage.

**Note:**
- The resistances have been listed in this calculation. However, these will lead to an additional voltage-drop that must be taken into account.

### 13. Declaration of conformity / CE

The delivered device fulfills all legal requirements. The applied directives, harmonized standards and documents are listed in the EC declaration of conformity, which is available online at: http://www.bdsensors.com. Additionally, the operational safety is confirmed by the CE sign on the manufacturing label.

### 15. Error handling

- If you detect an error, please try to eliminate it using this table or send the device to our service address for repair.

**DANGER**
- Warning for the electrical supply voltage at the device as well as configuration software and allows a simple and time-saving configuration of all parameters (The software is compatible with all Windows® systems from Windows 98 and higher).

**WARNING**
- Devices with TPE-cable - Application in water with a temperature >70°C destroys the cable - Applications at media temperatures >70°C have to be clarified with BdS Sensors in advance.

**CAUTION**
- Devices with TPE-cable - Application in water with a temperature >70°C have to be clarified with BdS Sensors in advance.