

# Operating Instructions



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## 1 General Information

This document contains necessary information for the proper installation and use of this device. In addition to this instruction, be sure to observe all statutory requirements, applicable standards, the additional technical specifications on the accompanying data sheet (see [www.labom.com](http://www.labom.com)) as well as the specifications indicated on the type plate.

### 1.1 General Safety Notes

The installation, set up, service or disassembly of this device must only be done by trained, qualified personnel using suitable equipment and authorized to do so.



#### Warning

Media can escape if unsuitable devices are used or if the installation is not correct.

Danger of severe injury or damage

- Ensure that the device is suitable for the process and undamaged.

### 1.2 Intended Use

The device is intended to measure temperature in technical processes as specified in the data sheet.

### 1.3 Conformity with EU Regulations

The CE-marking on the device certifies its compliance with the applicable EU Directives for placing products on the market within the European Union.

You find the complete EU Declaration of Conformity (document no. KE\_041) at [www.labom.com](http://www.labom.com).

### 1.4 ATEX Approval

If you purchased a device with ATEX approval, please refer to the accompanying document XA\_013, XA\_014 or XA\_021 for ATEX-relevant information.

## 2 Transportation and Storage

Store and transport the device only under clean and dry conditions preferably in the original packaging. Avoid exposure to shocks and excessive vibrations.


Permissible storage temperature:      -20...60 °C


## 3 Installation and Commissioning

Ensure that the device is suitable for the intended application with respect to temperature range, pressure range, medium compatibility and process connection.

### 3.1 Mechanical Installation

Before starting operation, check the process connection carefully for leaks under pressure. Use gaskets, if required, that are suitable for the process connection and resistant to the media.

Measuring devices where oil or grease residues in the measuring element are not permitted are marked on the scale with the oil can  icon.

Measuring devices for use with oxygen are marked on the scale with the oil can  icon and the word “oxygen” directly below this.

### 3.2 Options for gas expansion thermometer

#### 3.2.1 Operation with capillary

Route the capillary in a fixed and low-vibration manner. Note the specified maximum permissible ambient temperature on the data sheet. Exceeding the specified temperature limits can affect the measuring result.

#### 3.2.2 Operation with contact sensor

Fix the slightly U-shaped temperature probe to the pipe with steel strips. Insulate the measuring point and the temperature probe to the ambient temperature to ensure that the measuring result is not affected. With the “adjustable display” option it is possible to rotate the housing around  $\pm 180^\circ$  to the pipe after installation by loosening the screw connections, thereby achieving the optimum position.

### 3.3 Electrical Connection

Complete the mechanical installation before you connect the device electrically. Set up all electrical connections while the voltage supply is switched off.

### 3.4 Adjusting of contacts

Setting the contact can be done by using the adjustment lock in the centre of the sight glass. Just press down the separate or permanently mounted key (Figure 1) until the pointer of the lock catches the adjusting pin of the contact (Figure 2).



*Figure 1: Key*



*Figure 2: Setting the contact*

The set pointer can be adjusted over the entire scale range. It must be ensured that the contact will be set in a clockwise direction only. If the contact is accidentally set behind the desired value, turn back the contact at least 5% below the desired value and make the setting again in a clockwise direction.

The functionality and thus the switching reliability of the built-in switch contacts is guaranteed within the entire nominal range. Following valid standards though the accuracy stated in the data sheet is assured for switching points that are set between 10% and 90% of the nominal range only.

Operating the contact outside of the scale range is not permitted.

You can find additional information on contacts in the document TA\_039, available on our website at [www.labom.com](http://www.labom.com).

## 4 Operation

During operation, take care that the device remains within its intended pressure and temperature ranges. No other monitoring is necessary.

The permissible ambient and media temperature depends on the type of device and its design. This information can be found in the relevant data sheet.

### 4.1 Zero-point correction

Small measuring errors or deviations caused by difference in level between pressure gauge and point of measurement can be corrected on measuring devices with micro control position pointers. To do so turn the adjusting screw on the pointer hub (see figure 3).

Similarly, a displacement of the zero point caused by use and long service life can be corrected if necessary.



Figure 3: Zero-point correction

### 4.2 Maintenance / Service

When properly installed in accordance with applicable specifications, this device is maintenance-free. However, we recommend an annual recalibration of the device.

## 5 Disassembly

When measuring hot media, make sure that the device has cooled down prior to any dismounting or wear appropriate protective clothing to avoid burns.

Switch off the power supply to the device before disconnecting the electrical connections. Once this is done, the device may be mechanically removed.



### Warning

Opening pressurized lines might cause severe injuries.

Danger of severe injuries or damage

- Relieve the process pressure before attempting to remove the device. Shut off the pressure supply for all feed lines to the device and relieve the pressure in them.



### Warning

Hazardous deposits and residues might remain on opened process connections and removed devices.

Danger of injury

- After the device has been removed, seal off the measuring point and mark the open process connection accordingly. Consider a possible danger due to residues when handling the removed device.