

Digital Pressure Gauge DM 80

Rel. 20220518



Described product

Manufacturer

LEITENBERGER GmbH, Bahnhofstraße 33
72138 Kirchentellinsfurt, Germany

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1. Safety

1.1 Safety notes and regulations

To ensure safe and reliable work with the digital pressure gauge and to protect the user from injuries, the following points are to be observed:



- **Read the operating instructions carefully.**



- The digital pressure gauge may only be operated and installed in systems by trained specialists who possess the necessary expertise and qualifications to perform these tasks, and who are familiar with the applicable standards, regulations and requirements of the field of application.
- The operating instructions are an integral part of the digital pressure gauge. Store the operating instructions in a safe location so that you can quickly find the desired information if necessary.
- The legal provisions and regulations as well as those of the system/vehicle manufacturer are generally to be observed.



- Prior to commissioning, perform a check to ensure that the digital pressure gauge is in faultless condition. Do NOT operate the digital pressure gauge if damaged. No technical modifications to the digital pressure gauge may be made.
- Protection class according to DIN 60529: The ambient conditions at the place of use must not exceed the requirements for the specified protection class (see Technical data).



- Do not subject the digital pressure gauge to any extreme temperatures, direct sunlight, extreme humidity or wet.
- Observe the measurement range limits and temperature ranges.
- Do not exceed the maxim measurement range limits and temperature ranges of the digital pressure gauge at any time.
- The maximum pressure/load range of the system or component with the lowest value is the decisive maximum value for the overall pressure/load range.
- Do not exceed the maximum pressure/load value of the smallest component of the system at any time.



- Always observe the nominal pressure specifications of the built-in measuring connections and lines as well as the specified safety factors.
- Repairs to the digital pressure gauge may only be performed by the manufacturer. Use only original spare parts and accessories.



- Non-specified use of the product or failure to observe the safety and operating notes may lead to severe malfunctions as well as personal injury and property damage.
- The discharge of media or hot liquids that are under pressure may cause injuries. Pressurised systems may burst and cause parts to be ejected.
- Wear personal protective equipment, such as protective goggles, gloves, safety shoes, etc. when working on pressurised systems and components.

1.2 Explanation of symbols

Warning notices and important information are marked in this document with symbols for better identification.

The notices begin with signal words that indicate the extent of the danger. You must absolutely comply with these notices and information and handle the device with care to prevent accidents and avoid personal injury and property damage.



DANGER

Notice indicating a dangerous situation which, if not avoided, will result in death or severe injury.



WARNING

Notice indicating a dangerous situation which, if not avoided, could result in death or severe injury.



CAUTION

Notice indicating a dangerous situation which, if not avoided, could result in minor to moderate injury.



Attention

Notice indicating a dangerous situation which, if not avoided, could result in property damage.



Note

Notice including useful tips, recommendations and information for efficient and trouble-free operation of the digital pressure gauge.

1.3 Intended use

The DM 80 digital pressure gauge is used for the mobile and stationary measurement of pressures, within the approved ranges (see technical data).



WARNING

Danger from improper use.

Any improper use and failure to observe safety and operating notices can result in serious malfunctions as well as personal injury and property damage.

- Only use the DM 80 digital pressure gauge as intended.
- All information in the operating instructions and safety data sheets must be strictly complied with.

1.4 Disclaimer

Failure to comply with the intended use will immediately void any warranty and guarantee claims against the manufacturer. No liability is accepted for damage or malfunctions caused by improper use, assembly errors or failure to observe the operating instructions.

1.5 Ambient conditions

The DM 80 digital pressure gauge is only intended for use in commercial workshops. The DM 80 is not approved for ATEX areas and therefore must not be used in potentially explosive areas.

The climatic requirements correspond to the conditions typically prevailing in Central Europe. Optimum function is ensured between -10 °C and +50 °C. The device must be stored within a temperature range of -20 °C to + 50 °C.

The DM 80 digital pressure gauge must be secured against falling down.

2. Product description

The DM 80 is a digital pressure gauge with actual value display as well as min/max display and accuracy class 0.5 FSO. The MIN/MAX memory is permanently updated and overwritten. The sampling rate is 10 milliseconds (100 measurement values/second) for measuring dynamic pressure peaks.

2.1 Device versions / delivery scope

- DM 80, Digital pressure gauge with rubber protection cap (black) and measurement connection 1/4"
- delivery in solid plastic case

2.2 Device view, buttons and functions





Display:

4.5-digit display with background lighting. Display of measurement values and menu functions.

Display mode:

The actual value display shows the current pressure. The measured value is displayed in the set unit. The MIN, MAX or FS value and battery status are shown at the bottom of the display.



| Item | Designation | Button | Function |
|------|--|---|--|
| ① | Bargraph | | The bar graph graphically depicts the maximum measuring span. The stored MAX value is displayed as a static, individual bar (= drag pointer function). The display is updated at an interval of 10 milliseconds. (100 measurements / second) |
| ② | Actual value display, measured value and pressure unit | | Displays the current pressure. This display is updated at an interval of 300 milliseconds. (3 displays / second) Displays the unit set. |
| ③ | Display MIN/MAX/FS | | Displays the display value selected: MIN, MAX or full scale (FS). |
| ④ | RESET/OK button |  | Deleting the MIN and MAX measured data storage. Confirmation of the MENU functions |
| ⑤ | MENU/ZERO button |  | Short press of button: menu Long press of button (3 seconds): nullification |
| ⑥ | MIN/MAX/FS button |  | Selection of the display value: MIN, MAX or full scale (FS) minimum value / maximum value: Pressure peak / Display of the maximum measuring span (e.g. 60,00 bar) |
| ⑦ | ON/OFF button |  | Short press of button: switch device on/off Long press of button (3 seconds): background lighting on/off |
| ⑧ | Battery symbol | | Displays the battery status (fully charged = 5 segments) |
| ⑨ | Rubber protective cap | | |

2.3 Menu functions

The following settings are made using the MENU function

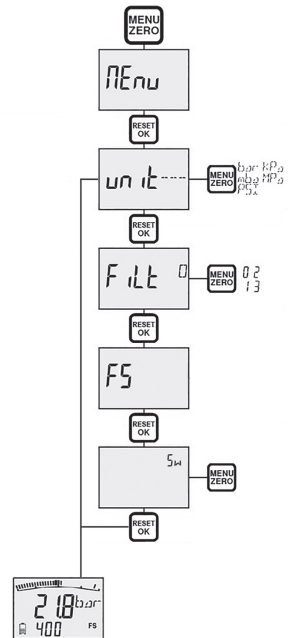
- unit: Set the measurement unit (bar, mbar, PSI, kPa, MPa)
 - Filt: Set the filter function (attenuation)
 - FS: Function menu reserved by the manufacturer (locked)
 - Sw: Shows the software version
- Press the "MENU" button to adjust the parameters and the "RESET/OK" button to save the respective parameter. Will then jump to the next parameter.
 - Press the "RESET/OK" button continuously (approx. 3 seconds) to exit the function menu.

If the user is in the function menu and does not activate any action for 20 seconds, he also exits from the function menu and all set parameters are saved.

Overflow

If the device displays "OFL" (overflow), this means that the existing pressure is too high.

The device switches off automatically after 5 minutes if there is a maximum pressure change of 2 % of the respective end value.



3. Prior to commissioning

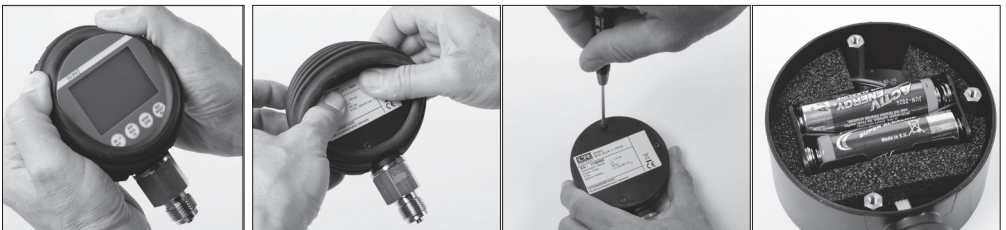
3.1 Check the scope of delivery.



The batteries are included in the delivery condition and are not in the instrument.
The batteries must be inserted before use.

3.2 Battery replacement

- Switch the device off and push the rubber cap towards the rear over the housing.
- Open the rear side of the device: Loosen and remove the 3 screws (hexagon socket 2.5 mm), lift the cover off.



- Replace the batteries. Pay attention to the polarity! Batteries 2 x 1.5 V (LR6 - AA).



The power supply cables are designed to be placed over the upper anchorage of the screw.

- Restore the original state. The DM 80 is now completely ready for use.

3.3 Connecting the digital pressure gauge



CAUTION

Risk of injury due to leaking liquids or gases.

The discharge of media or hot liquids that are under pressure may cause injuries.

Risk of injury due to ejected parts.

Pressurised systems may burst and cause parts to be ejected.

Do not exceed the maximum pressure/load value of the smallest component of the system at any time.

Never open pressurised fittings. Wear personal protective equipment, such as protective goggles, gloves and safety shoes when working on pressurised systems.



Attention

Follow the instructions and specifications of the system manufacturer regarding the tightening torques for fittings, adapters, etc.

Install the pressure gauge at the measuring point of the system. To do so, loosen or open the fitting and install the pressure gauge. Tighten fittings to the specified torque. Do not exceed the maximum torque of the pressure gauge connection.

4. Operation

4.1 Commissioning (switching on)



Switching on the pressure gauge:

Briefly press the ON/OFF button. The pressure gauge is ready.

4.2 Switching off



Briefly press the ON/OFF button.

4.3 Switching the lighting on/off



Press and hold the ON/OFF button for approx. 3 seconds.

4.4 Setting/resetting the measurement unit



Measurement units: bar, PSI, kPa, MPa, mbar
Press the MENU/ZERO button to start the menu function.



Press the RESET/OK button and open the  menu item.



Briefly press the MENU/ZERO button to call up the desired measurement unit.
(The next unit is called up by briefly pressing the MENU/ZERO button again)



Briefly press the RESET/OK button, save the selection and call up the filter function.
Option: Press and hold the RESET/OK button for 3 seconds to exit the menu.

4.5 Setting the filter function (attenuation)

The filter function serves to attenuate the measurement value display.

The following filter functions can be set:

0 = no attenuation

1 = weak attenuation


2 = medium attenuation,

3 = strong attenuation



Press the MENU/ZERO button to start the menu function.
(This does not apply if the menu item is already open)



Keep pressing the RESET/OK button until the  menu item is displayed.
(This does not apply if the menu item is already open)



Briefly press the MENU/ZERO button to call up the desired attenuation value.
(The next value is called up by briefly pressing the MENU/ZERO button again)




Briefly press the RESET/OK button, save the selection and call up the logging function.
Option: Press and hold the RESET/OK button for 3 seconds to exit the menu.

4.6 FS (function menu reserved by the manufacturer)



Press the MENU/ZERO button to start the menu function.



Keep pressing the RESET/OK button until the  menu item is displayed.



Briefly press the RESET/OK button and call up the date/time.


Option: Press and hold the RESET/OK button for 3 seconds to exit the menu.

4.7 Displaying the software version



Press the MENU/ZERO button to start the menu function.



Keep pressing the RESET/OK button until the  menu item is displayed. The software version is displayed.

Briefly press the RESET/OK button, confirm the measurement unit and call up the measurement unit.

Option: Press and hold the RESET/OK button for 3 seconds to exit the menu.

4.8 Displaying the MIN/MAX pressure



Press the MIN/MAX/FS button to call up the following values:

MIN (lowest measured pressure)

MAX (highest measured pressure)

FS (full scale = maximum measuring span)

5. Handling instructions



The device must only be mounted and tightened on the pressure connection using a suitable open-end wrench.

Never screw into the pressure connection while holding on to the housing - **Caution:** Risk of breakage.

5.1 Care and storage

To enable effective working, we designed the digital pressure gauge to be low maintenance. Nevertheless, you should still observe a few notes. This helps to ensure trouble-free operation and to preserve the value of the technology.



Note:

Aggressive cleaning agents or solvents may damage the digital pressure gauge or individual components.

Do not use aggressive or abrasive cleaning agents, solvents or similar chemicals for cleaning.

- Keep dust and dirt away from the digital pressure gauge.
- Clean the digital pressure gauge with a soft, slightly moistened cloth.
- Store your product in a dry, dust-protected environment. Avoid places with higher temperatures and moisture or places which can become wet, also for maintenance.
- Keep the original packaging to avoid damage during transportation.

5.2 Environmentally friendly disposal



Recycling according to WEEE (EU Directive 2002/96 EC)

You can optionally return the digital pressure gauge to us for disposal.

This digital pressure gauge or its components must not be disposed of as normal waste.

If you prefer not to return the digital pressure gauge to us for disposal, you are required to bring the device to a specialised centre for the separate collection and disposal of hazardous and special waste. The digital pressure gauge contains an electronic circuit board and a battery. These parts must be removed before the device is scrapped.

6. Accessories

- Rubber protection cap
red, blue, orange, green, black
1 black rubber cup included, but to
be ordered seperately.



- Rubber protection cap
with hook and wire rope 340 mm
red, blue, orange, green, black



- Hydraulic adapter
 - ① M 16x2 i x G1/4 i
 - ② M 16x2 o x G1/4 i



7. Technical data, specifications

| Feature | | Unit | | | | | |
|---|--------------------------|-----------|-----------------------------|-------------|--------------------------|---------------|--------|
| Measurement range relative | | bar | - | - | - | -1...+16 | 0...25 |
| Measurement range absolute | | bar | - | - | 0...4 | - | - |
| Measurement range relative | | mbar | - 50...+50 | -200...+200 | - | - | - |
| Overpressure Pmax | | bar | 2 | 4 | 8 | 32 | 50 |
| Bursting pressure | | bar | 3 | 5 | 20 | 80 | 125 |
| Accuracy | | % FS | | | | | |
| Ambient temperature | | °C | | | | | |
| Storage temperature | | °C | | | | | |
| Media temperature | | °C | -10...+50 dry gases only | | -20...+80 | | |
| Maximum relative humidity | | % RH | | | | | |
| Materials | Pressure connection | | 2.0401 | | 1.4404 | | |
| | Membrane | - | Ceramics | | | | |
| | Seal | - | Epoxy | | EPDM | | |
| | Test connection | - | - | - | - | 1.078 | - |
| | Seal for test connection | - | - | - | - | NBR | - |
| Compensated range | | °C | | | | | |
| Error in compensated range | | % FS / °C | < ±0.03 | < ±0.03 | ≥ ±0.005 | | |
| Pressure cycles minimum | | - | 10 x 10 ⁶ | | | | |
| Battery | | - | | | | | |
| Max. battery life | | h | | | | | |
| Units | | - | mbar | mbar | bar, PSI, kPa, MPa, mbar | | |
| Standard pressure connection | | - | G1/4" EN837 | | | | |
| Approx. weight | | g | | | | | |
| Approx. dimensions L x W x H | | mm | | | | | |
| Approx. dimensions L x W x H (with test connection) | | mm | - | - | - | 180 x 90 x 45 | - |

| | | | | | | | | |
|-----------------------|--------|--------|--------------------|---------|------------------|------------------|------------------|----------|
| | | | | | | | | |
| | | | | | | | | |
| Measurement range | | | | | | | | |
| | 0...40 | 0...60 | 0...100 | 0...250 | 0...400 | 0...600 | 0...1000 | 0...2500 |
| | - | - | - | - | - | - | - | - |
| | - | - | - | - | - | - | - | - |
| | 80 | 120 | 200 | 500 | 800 | 1200 | 2000 | 3750 |
| | 200 | 300 | 500 | 1000 | 2000 | 3000 | 5000 | 5000 |
| ±0.5 | | | | | | | | |
| -10...+50 | | | | | | | | |
| -20...+60 | | | | | | | | |
| -40...+125 | | | | | | | | |
| 85 | | | | | | | | |
| 1.4301 | | | | | | | | |
| 1.4548 | | | | | | | | |
| welded | | | | | | | | |
| | - | - | 1.078 | - | 1.078 | 1.078 | 1.078 | - |
| | - | - | NBR | - | NBR | NBR | NBR | - |
| 0...+50 | | | | | | | | |
| ≥ ±0.035 | | | | | | | | |
| 100 x 10 ⁶ | | | | | | | | |
| 2 x 1.5 VDC LR6-AA | | | | | | | | |
| 1.500 | | | | | | | | |
| | | | bar, PSI, kPa, MPa | | | | bar, PSI, MPa | |
| G1/2" EN837 | | | | | | | | |
| 450 | | | | | | | | |
| 140 x 90 x 45 | | | | | | | | |
| | - | - | 180 x 90 x 45 | - | 180 x 90 x 45 | 180 x 90 x 45 | 180 x 90 x 45 | - |



DRUCK & TEMPERATUR Leitenberger GmbH

Bahnhofstr. 33

72138 Kirchentellinsfurt

Tel.: +49 - 71 21 - 909 20-0

Fax: -49 - 71 21 - 909 20-99

E-Mail: DT-Export@Leitenberger.de

Internet: <https://www.druck-temperatur.de>

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LEITENBERGER GmbH, Bahnhofstr. 32/33, 72138 Kirchentellinsfurt, Germany

WWW.LEITENBERGER.DE

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