

Digital pressure gauge
For general industrial applications
Model DG-05



Smart in sensing

Contents

1. General information
2. Design and function
3. Safety
4. Transport, packaging and storage
5. Commissioning, operation
6. Faults
7. Maintenance and cleaning
8. Dismounting, return and disposal
9. Specifications

© 2021 WIKA Alexander Wiegand SE & Co. KG

All rights reserved.

WIKA® is a registered trademark in various countries.

Prior to starting any work, read the operating instructions!

Keep for later use!

WIKA Instruments India Pvt. Ltd.

128 SIDCO North Phase

Ambattur Industrial Estate, Chennai 600 098

Tel. +91 44 2625 2017 / 2018 / 9840919318

switch.sales@wika.com

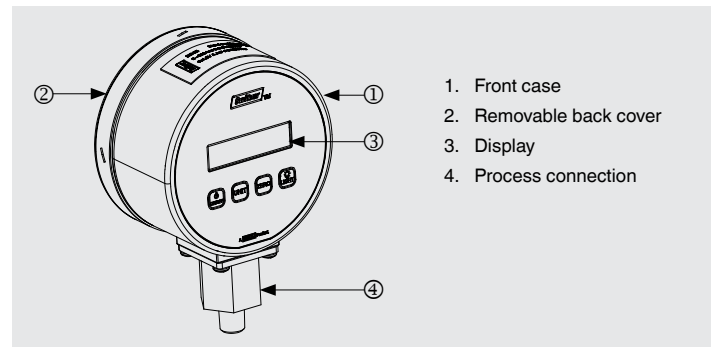
www.wika.co.in

1. General information

- The DG-05 digital pressure gauge described in the operating instructions has been designed and manufactured using state-of-the-art technology. All components are subject to stringent quality and environmental criteria during production. Our management systems are certified to ISO 9001.
- These operating instructions contain important information on handling the DG-05 digital pressure gauge. Working safely requires that all safety instructions and work instructions are observed.
- Observe the relevant local accident prevention regulations and general safety regulations of use of the DG-05 digital pressure gauge.
- The operating instructions are part of the instrument and must be kept in the immediate vicinity of the DG-05 digital pressure gauge and readily accessible to skilled personnel at any time.
- Skilled personnel must have carefully read and understood the operating instructions, prior to beginning any work.
- The manufacturer's liability is void in the case of any damage caused by using the product contrary to its intended use, non-compliance with these operating instructions, assignment of insufficiently qualified skilled personnel or unauthorized modifications to the DG-05 digital pressure gauge.
- The general terms and conditions contained in the sales documentation shall apply.
- Subject to technical modifications.
- Further information:
 - Internet address: www.wika.co.in
 - Relevant data sheet: Data sheet PV 91.21 - 09/2021

2. Design and function

2.1 Overview



1. Front case
2. Removable back cover
3. Display
4. Process connection

2.2 Description

The prevailing pressure is measured at the sensor element through the deformation of a diaphragm. By supplying power, this deformation of the diaphragm is converted into an electrical signal. This signal is displayed via a digital indicator.

The DG-05 is a digital pressure gauge and Full scale (FS) accuracy is $\pm 0.5\%$ based on the upper limit of the measurement range.

2.3 Scope of delivery

Digital pressure gauge, operating instructions
Cross-check scope of delivery with delivery note.

2.4 Keys and Functions



Turns the device on / off



Press to change the display unit



Press for 2 seconds to zero the display value



Press to turn on the backlight

3. Safety

3.1 Explanation of symbols



WARNING!

... indicates a potentially dangerous situation that can result in serious injury or death, if not avoided.



CAUTION!

... indicates a potentially dangerous situation that can result in light injuries or damage to property or the environment, if not avoided.



WARNING!

... indicates a potentially dangerous situation that can result in burns, caused by hot surfaces or liquids, if not avoided.



Information

... points out useful tips, recommendations and information for efficient and trouble-free operation.

3.2 Intended use

The DG-05 digital pressure gauge acts as the display for the applied pressure. The pressure value is displayed via a digital indicator.



WARNING!

Injuries due to incorrect application

Use in the wrong application can lead to considerable personal injury and damage to equipment.

- ▶ Only use the instrument in applications that lie within its technical performance limits (e.g. max. ambient temperature, material compatibility, ...).
- ▶ For performance limits see chapter 9 "Specifications".
- ▶ This instrument is not permitted to be used in hazardous areas!

The instrument has been designed and built solely for the intended use described here, and may only be used accordingly.

The technical specifications contained in these operating instructions must be observed. Improper handling or operating of the digital pressure gauge outside of its technical specifications require the digital pressure gauge to be taken out of service immediately and inspected by an authorized WIKA service engineer.

The manufacturer shall not be liable for claims of any type based on operation contrary to the intended use.

3.3 Personnel qualification



WARNING!

Risk of injury should qualification be insufficient!

Improper handling can result in considerable injury and damage to equipment.

- ▶ The activities described in these operating instructions may only be carried out by skilled personnel who have the qualifications described below.

Skilled electrical personnel

Skilled electrical personnel are understood to be personnel who, based on their technical training, know-how and experience as well as their knowledge of country-specific regulations, current standards and directives, are capable of carrying out work on electrical systems and independently recognising and avoiding potential hazards.

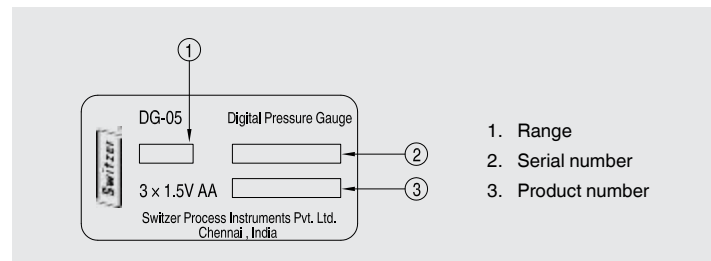
Special knowledge for working with instruments for hazardous areas:

The skilled personnel must have knowledge of ignition protection types, regulations and provisions for equipment in hazardous areas.

Special operating conditions require further appropriate knowledge, e.g. of aggressive media.

3.4 Labelling, safety marks

Product label (example)



1. Range
2. Serial number
3. Product number



Before mounting and commissioning the instrument, ensure you read the operating instructions!

4. Transport, packaging and storage

4.1 Transport

Check the instrument for any damage that may have been caused by transport. Obvious damage must be reported immediately.



CAUTION!

Damage through improper transport

With improper transport, a high level of damage to property can occur.

- ▶ When unloading packed goods upon delivery as well as during internal transport, proceed carefully and observe the symbols on the packaging.
- ▶ With internal transport, observe the instructions in chapter 4.2 "Packaging and storage".

If the instrument is transported from a cold into a warm environment, the formation of condensation may result in instrument malfunction. Before putting it back into operation, wait for the instrument temperature and the room temperature to equalise.

4.2 Packaging and storage

Do not remove packaging until just before mounting.

Keep the packaging as it will provide optimum protection during transport (e.g. change in installation site, sending for repair).

Permissible conditions at the place of storage:

- Storage temperature: 0 ... +50 °C (32 ... +122 °F)
- Humidity: <95% relative humidity (non-condensing)

Avoid exposure to the following factors:

- Direct sunlight or proximity to hot objects
- Mechanical vibration, mechanical shock (putting it down hard)
- Soot, vapour, dust and corrosive gases
- Hazardous environments, flammable atmospheres

Store the instrument in its original packaging in a location that fulfils the conditions listed above.

5. Commissioning, operation



CAUTION!

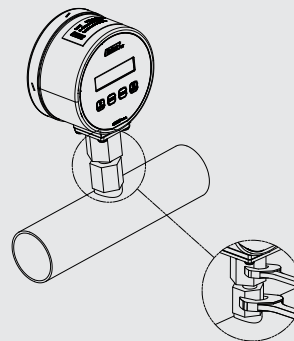
Prior to commissioning, the digital pressure gauge must be subjected to a visual inspection. Only use the digital pressure gauge if it is in perfect condition with respect to safety. With improper transport, a high level of damage to property can occur.



Required tool: Open-ended spanner (spanner width 28 mm)

5.1 Mechanical mounting

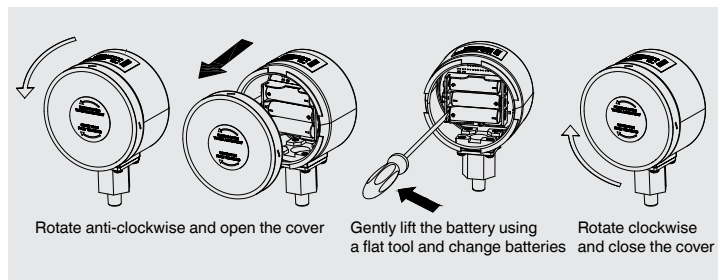
- The DG-05 digital pressure gauge is available with male thread 1/4" NPT(M).
- When fitting the DG-05 digital pressure gauge, the force required to mount / seal must not be applied through the case, but only through the spanner flat provided for this purpose and using a suitable tool.
- The correct torque depends on the dimensions of the process connection.
- Do not overwind the process connection.



5.2 Voltage supply

The power supply for the digital pressure gauge is provided via 3x1.5 V AA batteries. The operating time is approx. 1000 hours, when using batteries with a capacity of 2000 mAh.

Change the batteries as follows, as soon as the low battery indication "LOW BAT" shows in the display.



5.3 Operating the DG-05 digital pressure gauge



Turning on (ON)

Press ON/OFF button to power up the DG-05.

Below sequence will be displayed during boot up.

Display	Description
Switzer	Manufacturer
↓	↓
DG-05	Model number
↓	↓
VER 1.00	Program version
↓	↓
CalRange	Calibration range
↓	↓
10.00bar	Instrument calibrated range



Turn off (OFF)

Press ON/OFF button for 2 seconds to turn off.



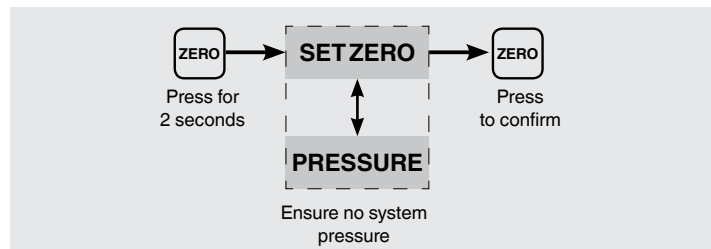
Turn on backlight

Press Light button once to turn on the backlight. The backlight is shut off automatically after 120 seconds. Press again to turn on the backlight.



Zero-point correction (ZERO)

The zero point can be corrected manually if undesired deviations occur when no system pressure is being applied (atmospheric pressure).



Obvious damage must be reported immediately.



CAUTION!

- ▶ The zero-point correction sets the current actual value to zero. In order to exclude faulty measurements, ensure no system pressure is being applied when carrying out this function.
- ▶ This initiates the zero-point correction. The actual value is indicated in the display as 0.0 bar. The correction remains active until the device is turned off.
- ▶ ZeroErr. is displayed for 2 seconds if the measured pressure (0 bar) is greater than 5% of the measurement range.
- ▶ Zero-point correction cannot be carried out. Please ensure that no system pressure is being applied.


UNIT

Changing the unit

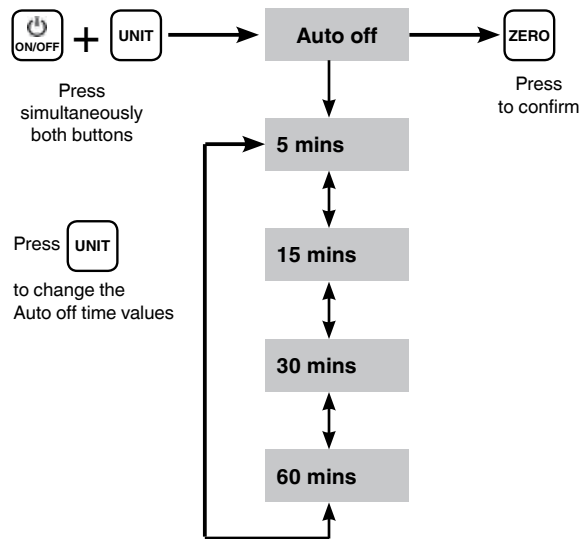
Press Unit button to change the units. Below are the displayed alphabets for each unit

Unit	Displayed Unit
bar	bar
psi	psi
Kg/Cm ²	ksc
kPa	kPa
MPa	MPa
cmWC	cmW
mmWC	mmW
mbar	mbr
Torr	Tor

Auto-OFF Menu

Press  and  buttons simultaneously to enter into auto-off settings.

The DG-05 auto power-off can be set as 5, 15, 30, 60 minutes.



6. Faults

In the event of any faults, first check whether the digital pressure gauge is mounted correctly, mechanically and electrically.

Faults	Causes	Measures
No display	Batteries discharged	Change batteries
	Batteries inserted the wrong way around	Insert the batteries with the polarity correct
Constant display signal upon change in pressure	Mechanical overload caused by overpressure	Replace instrument
Deviating zero point signal	Medium or ambient temperature too high/low	Observe the permissible temperatures

For the exchange of the instrument chapters 8 "Dismounting, return and disposal" and 5 "Commissioning, operation" must be observed.

If complaint is unjustified, we will charge you the complaint processing fees.

CAUTION!



- ▶ If faults cannot be eliminated by means of measures listed above, shut down the digital pressure gauge immediately, and ensure that pressure and /or signal are no longer present, and secure the instruments from being put back into operation inadvertently.
- ▶ Contact the manufacturer.
- ▶ If a return is needed, please follow the instructions given in chapter 8.2 "Return".



For contact details see chapter 1 "General information".

7. Maintenance and cleaning

7.1 Maintenance

The instrument is maintenance-free. Repairs must only be carried out by the manufacturer. Except for battery replacement.

7.2 Cleaning

Before cleaning, correctly disconnect the DG-05 digital pressure gauge from the pressure supply and switch it off.



CAUTION!

- ▶ Clean the DG-05 digital pressure gauge with a moist cloth.
- ▶ Clean the dismantled DG-05 digital pressure gauge before returning it, in order to protect staff and the environment from exposure to residual media.
- ▶ Residual media in dismantled DG-05 digital pressure gauge can result in a risk to persons, the environment and equipment. Take sufficient precautionary measures.



For information on returning the DG-05 digital pressure gauge see chapter "8.2 Return"

7.3 Recalibration

We recommend that the instrument is regularly recalibrated by the manufacturer, with time intervals of approx. 12 months. Every factory recalibration includes, additionally, an extensive check of all system parameters with respect to their compliance with the specification. The basic setting will be corrected if necessary.

8. Dismounting, return and disposal



WARNING!

Physical injuries and damage to property and the environment through residual media

Residual media in the dismantled instrument can result in a risk to persons, the environment and equipment.

- ▶ Observe the information in the material safety data sheet for the corresponding medium.
- ▶ Wash or clean the dismantled instrument, in order to protect persons and the environment from exposure to residual media.

8.1 Dismounting

Only disconnect test- and calibration installations when the system has been depressurized!

8.2 Return

Strictly observe the following when shipping the instrument:

All instruments delivered to WIKA must be free from any kind of hazardous substances (acids, bases, solutions, etc.) and must therefore be cleaned before being returned.



WARNING!

Physical injuries and damage to property and the environment through residual media

Residual media in the dismantled instrument can result in a risk to persons, the environment and equipment.

- ▶ With hazardous substances, include the material safety data sheet for the corresponding medium.
- ▶ Clean the instrument, see chapter 7.2 "Cleaning".

When returning the instrument, use the original packaging or a suitable transport packaging.

8.3 Disposal

Incorrect disposal can put the environment at risk.

Dispose of instrument components and packaging materials in an environmentally compatible way and in accordance with the country-specific waste disposal regulations.

9. Specifications

Indicator	
Display	Four character numeral with one decimal point and three character for unit
Character size	12 mm [0.47 in]
Measuring rate	200 ms
Backlighting	Yes
Dimensions	50 x 14 mm [1.97 x 0.55 in]

Functions	
Automatic power-off	Adjustable
Zero function	Yes
Pressure Units	bar, psi, Kg/cm ² , kPa, Mpa, cmWC, mmWC, mbar, Torr *

Accuracy	
Accuracy	±0.5 % of span (including non-linearity, hysteresis, repeatability)
Temperature error at 0 ... 60°C	
Mean temperature coefficient of zero point	±0.15 % of span / 10 K
Mean temperature coefficient of span	±0.15 % of span / 10 K
Long-term stability	±0.2 % of span / year

Voltage supply	
Power supply	3 x 1.5 V AA batteries
Battery life	Approx. 1000 hours

Process connection	
Thread size	1/4" NPT (M) per ASME B1.20.1 Others through adaptors

★ Torr unit applicable only for vacuum range

Material	
Wetted parts	
Process connection	Stainless steel 316
Sealing material	Viton
Sensor element	Stainless steel 316L
Non-wetted parts	
Case	Stainless steel 304
Front foil and membrane	Polycarbonate

Operating condition	
Ambient temperature	0 ... 60°C [32 ... 140 °F]
Medium temperature	0 ... 80°C [32 ... 176 °F]
Storage temperature	0 ... 50°C [32 ... 122 °F]
Relative humidity	< 95% (non-condensing)
Ingress protection	IP65 per IS/IEC 60529
Weight	Approx. 550 grams

Measuring ranges

Range	Over pressure limit	Burst pressure
Unit : bar		
-1 ... 0	3	6
0 ... 1	2	5
0 ... 2.5	5	12.5
0 ... 4	8	20
0 ... 10	20	50
0 ... 16	32	80
0 ... 25	50	125
0 ... 40	80	160
0 ... 100	200	400
0 ... 250	375	1,000
0 ... 400	600	1,200

Range	Over pressure limit	Burst pressure
Unit : cmWC		
0 ... 200	600	1200
0 ... 350	1050	2100
0 ... 700	2100	4200