

Instruction Manual

English



CE

Applied Standard:

Accuracy: ASME B40.7

InstruMate[®]

InstruMate digital pressure gauge

Model: 3203

Contents (English)

1) Introduction	3
2) Overview	3
3) Proper Application & Safety Measures	4
4) Specifications	5
5) Storage, Package & Transport	7
6) Installation	7
7) Operation – Step By Step Guide	8
8) Maintenance & Cleaning	11
9) Uninstallation & Disposal	11
10) EC Declaration of Conformity	12

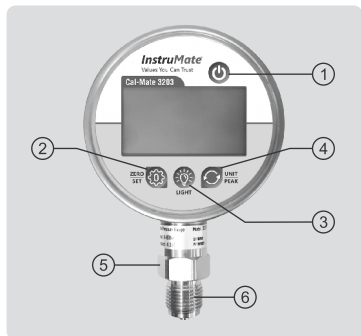
1) Introduction





- 1-1) All InstruMate digital pressure gauges are made under the management system certified to ISO 9001 and strictly controlled in production process.
- 1-2) Installation site regulations and local safety requirements are to be observed prior to this instruction manual.
- 1-3) It is recommended to skilled worker or personnel to study instruction manual before handling the instrument. This manual must be easily accessible at any time and shall be passed to new personnel.
- 1-4) The instrument in your hands is suitable for the applications and specifications given in the corresponding product datasheet.
- 1-5) InstruMate Co., Limited insists on permanent improvement. As a result, the technical info are subject to modifications.

Data sheets and more information can be found at: www.instrumate.com

Technical consults: info@instrumate.com

2) Overview



- ① Power On-Off / Enter 
- ② Zero / Set 
- ③ Backlight 
- ④ Unit (Change units of pressure) / Peak (Maximum value) 
- ⑤ Spanner Flats for Installation
- ⑥ Thread

3) Proper Application & Safety Measures

3-1) Applications:

A digital pressure gauge is intended to display the applied pressure via a digital indicator, a LCD screen in this case.

Digital pressure gauges generally have better accuracy than mechanical pressure gauges and are widely used for testing in industrial applications or precise reading of the applied pressure.

The manufacturer shall not be held responsible for any claims arising from improper usage.

3-2) Proper Usage:

3-2-1) Only skilled personnel shall carry out handling of this instrument based on their training or technical knowledge.

3-2-2) Before installation, ensure that you have chosen model 3203 with the appropriate pressure range.

3-2-3) The instrument shall not be in direct contact with viscous or crystallizing media. In such case, InstruMate diaphragm seals must be used in combination with the digital pressure gauge.

3-2-4) Avoid excessive overpressure, excessive vibration, or excessive instrument temperature.

3-2-5) Fluid hammer or pressure surges can destroy any pressure sensor and in case they exist in your system, you must use a pressure snubber.

3-2-6) Avoid Freezing of the media at instrument process connection.

3-2-7) The manufacturer liability is void if damages happen because of wrong use in contrary to this instruction manual or unauthorized modifications to model 3203 digital pressure gauge.

3-2-8) The manufacturer does not guarantee the properties not mentioned in the sales contract.

3-3) Safety measures:

3-3-1) The activities described in the instruction manual may only be carried out by skilled personnel who has proper knowledge of measurement technology, regulations, and standards.

3-3-2) In case the instrument is going to be used with Oxygen, acetylene, or flammable gases, special cleaning of wetted parts are required which better requested at the time of the order and be carried out by the manufacturer.

3-3-3) Handle this instrument with care. Protect it from humidity, strong magnetic fields, static electricity, and high temperatures.

3-4) Information on product:

The necessary information on InstruMate digital pressure gauges are laser marked on them to avoid problems with label damage.

An example of the laser marked Information is as below:

InstruMate CE
 Model: 3203 0...10bar
 Item number:
 Serial number:
 2 x AAA 1.5V Alkaline

4) Specifications**Display**

Screen:	5 digit with backlight and bargraph
Screen size:	64 x 35 mm
Digit height:	17 mm
Resolution:	Pressure ranges between -1 to +60 bar → 0.001 Pressure ranges between 100 bar to 600 bar → 0.01 1000 bar → 0.1

Power

Battery:	2 x AAA 1.5v Alkaline, Do not use other type of battery
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Reference conditions

Temperature:	0...60°C
Atmospheric pressure:	860...1060 mbar
Humidity:	< 90% (non-condensing)

Accuracy at reference conditions

≤ 0.25% of span (measured error per IEC 61298-2)
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Adjustability of Zero point

Yes, via tare function

Temperature Error $\pm 0.02 \times (t_2 - t_1) \%$ of the span t_1 is the Reference temperature in degrees celsius. t_2 is the Medium temperature in degrees celsius.**Long-term stability** $\leq 0.1\%$ of span**Permissible temperatures**

Medium: -20...+80°C

Ambient: -20...+60°C

Ingress protection

IP65

Process connection

SS316

Case

SS304

5) Storage, Package & Transport

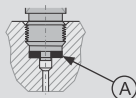
- 5-1) Storage temperature: -20...+60°C, Storage humidity: non-condensing
- 5-2) Package is specially designed to protect the Instrument from shock and possible damage while transportation. It is advised to keep the package if there is a chance to change the installation site.
- 5-3) Before mounting the instrument, check its appearance for obvious damages possibly caused in transportation.
- 5-4) The process and ambient temperature shall not exceed the permissible ranges.
- 5-5) Avoid mechanical vibration and shocks. Handle this instrument with care.
- 5-6) If you are going to store it for a prolonged time, use a desiccant bag inside the package.

6) Installation

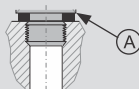
- 6-1) Carry out a visual inspection before installation. There must be standard sealing faces; cleaned and undamaged.

Parallel threads

Seal the sealing face (A) with flat gasket, lens-type sealing ring or InstruMate profile sealing materials.



per EN 837



DIN EN ISO 1179-2
Formerly DIN 3852-E

Tapered Threads

Wrap threads with sealing material (e.g.PTFE tape).

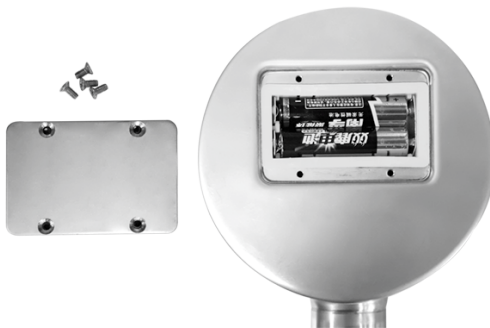


NPT, R and PT

- 6-2) Use the proper sealing according to above diagram.
- 6-3) Tighten on spanner flats using a torque spanner. Do not tighten by grasping the case of the digital gauge.

7) Operation – Step By Step Guide

- 7-1)** insert 2 x 1.5 V AAA Alkaline battery into the battery compartment considering the polarity of the batteries. Keep the compartment lid closed for ingress protection purpose unless you need to change batteries.

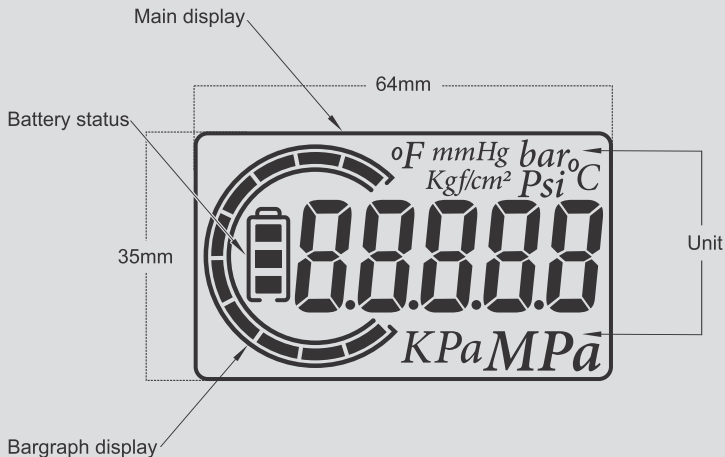


- 7-2)** Check battery status on the screen. Change the batteries as soon as you notice the 3rd status on the display.



Change batteries

7-3) Digital display



7-4) buttons and menu navigation

Key presses

If key icon is followed by \rightarrow sign, it means pressing less than 0.5 second.

If key icon is followed by \longrightarrow sign, it means pressing more than 3 seconds.

Turn the instrument On / Off



\longrightarrow to turn the instrument on or off

Change units of pressure

➔ to switch pressure units between 7 measuring units of "bar, Pa, mmHg, kgf/cm², psi, Mpa, Kpa"

Check Maximum value (Peak)

➔ to see the maximum pressure value sensed by the instrument.

Note: this mode will show the peak value in the same pressure unit experienced by the instrument.

Make Peak value to be zero again

➔ to make the maximum (Peak) value to become zero.

Note: Each of these functions will make peak value to become zero as well: tare function, calibration, Zeroing, Power off.

Zero function

Used only when the instrument is **NOT** pressurized.



➔ after you release the key, the display should read zero and zero value is stored in the memory.

Zero function more than $\pm 1.5\%$ of full scale value is not available for safety reasons.

Tare function

Used only when the instrument is pressurized and you need to neglect the current pressure value.

So Tare Function will subtract the current pressure value from the value displayed.

When the desired pressure is applied, then  ➔ , after you release the key, the display should read zero.

Disable Tare function

First depressurize the instrument completely.

Then  → , after you release the key, tare function is disabled.

Backlight



→ to turn on the backlight. It will automatically turn off for battery saving purpose

8) Maintenance & Cleaning

InstruMate digital pressure gauge is maintenance free. Only manufacturer can handle repairs. Recalibrations can also can be carried out by the manufacturer.

Only the surface of this digital pressure gauge can be cleaned with water, normal dishwashing detergent and a soft towel. The digital pressure gauge must be dismantled from process before cleaning. Take the batteries out before cleaning.

9) Uninstallation & Disposal

Due to the process media characteristics, digital pressure gauge might be infected with hazardous media like corrosive, toxic or flammable substances. So special care shall be taken while dismantling the instrument.

Only dismantle the instrument after it is depressurized.

You shall follow your country regulations in case of the disposal of the instrument.

10) EC Declaration of Conformity

Values You Can Trust

InstruMate®

EC Declaration of Conformity

Manufacturer: InstruMate Co., Limited

Product: Digital Pressure Gauge

Models: 3203, 3204

We hereby declare that the above products, under the sole responsibility of the manufacturer, are in compliance with the essential requirements of the following directives:

2004/108/EC (EMC)

97/23/EC (PED)

The aforementioned models have been tested according to the requirements of the following standards:

EN 61326-1:2013

EN 61326-2-3:2013

Place and date of issue:

2020-05-12

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