



Operating Instructions
for
Level Meters with Diaphragm
for Liquids

Model: NPF



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2. Note

Please read these operating instructions before unpacking and putting the unit into operation. Follow the instructions precisely as described herein.

The instruction manuals on our website www.kobold.com are always for currently manufactured version of our products. Due to technical changes, the instruction manuals available online may not always correspond to the product version you have purchased. If you need an instruction manual that corresponds to the purchased product version, you can request it from us free of charge by email (info.de@kobold.com) in PDF format, specifying the relevant invoice number and serial number. If you wish, the operating instructions can also be sent to you by post in paper form against an applicable postage fee.

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

The devices are only to be used, maintained and serviced by persons familiar with these operating instructions and in accordance with local regulations applying to Health & Safety and prevention of accidents.

When used in machines, the measuring unit should be used only when the machines fulfil the EC machinery directive.

as per PED 2014/68/EU

In acc. with Article 4, Paragraph (3), "Sound Engineering Practice", of the PED 2014/68/EU no CE mark.

3. Instrument Inspection

Instruments are inspected before shipping and sent out in perfect condition.

Should damage to a device be visible, we recommend a thorough inspection of the delivery packaging. In case of damage, please inform your parcel service / forwarding agent immediately, since they are responsible for damages during transit.

Scope of delivery:

The standard delivery includes:

- Level Metres with Diaphragm model: NPF

4. Regulation Use

Any use of the Membrane Level Monitor, model: NPF, which exceeds the manufacturer's specifications may invalidate its warranty. Therefore, any resulting damage is not the responsibility of the manufacturer. The user assumes all risk for such usage.

5. Operation Principle

Due to their design and the materials used, KOBOLD level meters of model NPF with diaphragm satisfy the tough service demands in the chemical and petrochemical industry. They are used for level measuring of low-viscosity, non-sticking media in open, unpressurised vessels. The specific weight of the medium should be taken into account. The fixed annular diaphragm is quite insensitive to vibrations. Diaphragm pressure gauges have a relatively high actuating force. Their stainless steel construction renders the instrument resistant to aggressive environmental conditions.

6. Installation

6.1. General

The assembly has to be carried out following the corresponding general technical regulations for pressure measuring devices (e.g. DIN 16255 or EN 837-2).



While screwing in at the connection point, the required force must not be applied using the housing, instead only use the key areas designated for this purpose.

The installation location of the Level Meters should be easily accessible.

To avoid display deceleration time the distance between pressure withdrawal and pressure connection should be kept small.

Between the pressure withdrawal point and the measuring unit, a shut-off device should be introduced which allows a renewal and null-point check of the running system. Up to the final commissioning, the shut-off equipment should remain closed in the measurement piping. If pressure peaks are expected, suitable protective equipment may be considered, such as a pressure peak suppressor or a similar device. Alternatively, pressure measuring units with damping-liquid filling such as a glycerine manometer may be provided.

The piping up to the measuring unit should provide a vibration-free, stable attachment; otherwise, a wall bracket should be provided

The attachment of the Level Meters is to be executed in such a way that the admissible operating temperature does not violate min. and max. limits. In addition, Level Meters and stop valve should be protected through sufficiently long dimensional piping or water-bag pipes. The temperature conditions can influence the display accuracy.

An additional liquid column may affect the gauge only if this pressure is noted on the scale. In the unfavourable case, the result of measurement is falsified.

For sealing of measuring unit's connections, sealing disks or sealing-edge-rings are utilised. The connection is recommended with stress-sockets or union-nuts; with that the Level Meter can be placed in the best reading position. During screw-in or screw-out, the force must not be exerted on the Level Meter housing, rather applied only over the four hexagonal connection-clips.

Before attaching the gauges, the Level Meter piping should be cleaned with the Medium to be measured or with clean compressed air. While squeezing off or blowing through the piping or containers, the gauge may not be over-pressed. If the expected pressure is higher, the Level Meter must be removed or locked off.

6.2 Disassembly

Before disassembling the Level Meter unit, ensure the machine/equipment is depressurised or that the Level Meter is thoroughly isolated from the system. If possible, the measuring pipe should be emptied. In case of diaphragm type manometers, upper and lower flanges should not be loosened. Hydraulic liquid inside disassembled measuring unit can be dangerous for the environment, in which case corresponding safety precautions should be used. Pressure-measuring units, whose measuring elements are filled with water or water-based chemicals, must be protected from freezing.

7. Commissioning

7.1. General

Pressure should be applied to the gauge slowly, in order to avoid damage to the measuring unit. Thereby the unit must be monitored continuously. The maximum permitted pressure must not be exceeded.

After commissioning of the unit, all piping connected to the measurement unit must be checked for proper sealing. Moreover, if present, the shut-off valve for the system pressure at the pressure-intake point must be closed.

If the pointer moves towards the zero-point direction (possible temperature changes, condensation, to be considered), a leakage exists.

Please search for the leakage and eliminate it with appropriate actions. After that an overall check must be repeated. For the zero point testing during operation the blocking device must be closed and the measuring unit must be pressure released.

The pointer must then stand within the tolerated area of the zero point on the scale. If it is located outside this area, one can generally talk about a damage of the measuring device. The pressure gauge should then be thoroughly inspected in order to avoid any measuring failures or resulting accidents.

For display testing during operation, the pressure measuring device must be closed off by a blocking device and then exposed to some testing pressure via the testing connection.

Indicating pressure gauges generally work completely without any maintenance.



Attention! With dangerous materials, such as Oxygen, Acetylene, flammable or poisonous materials, as well as chillers, compressors etc. all the general regulations, along with the existing relevant regulatory directions must be observed.

8. Maintenance

If the medium to be measured is not contaminated, the unit is maintenance-free. An examination of the display and the switching function should take place about 1 to 2 times per year. In order to check the display and switching function, the device is to be separated from the process and be subjected with a test pressure with appropriate inspection temperature.

8.1. Cleaning

Clean the devices with a dry or soap-water solution dampened cloth.

9. Technical Information

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

10. Order Codes

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

11. Dimension

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

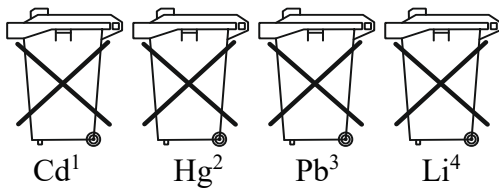
12. Disposal

Note!

- Avoid environmental damage caused by media-contaminated parts
- Dispose of the device and packaging in an environmentally friendly manner
- Comply with applicable national and international disposal regulations and environmental regulations.

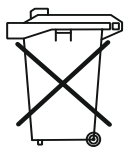
Batteries

Batteries containing pollutants are marked with a sign consisting of a crossed-out garbage can and the chemical symbol (Cd, Hg, Li or Pb) of the heavy metal that is decisive for the classification as containing pollutants:



1. „Cd" stands for cadmium
2. „Hg" stands for mercury
3. „Pb" stands for lead
4. „Li" stands for lithium

Electrical and electronic equipment



13. EU Declaration of Conformance

We, KOBOLD Messring GmbH, Hofheim-Ts, Germany, declare under our sole responsibility that the product:

Level Metres with Diaphragm

model: NPF

to which this declaration relates is in conformity with the standards noted below:

EN 61010-1:2011 Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements

EN 60529:2014 Degrees of protection provided by enclosures (IP Code)

EN 50581:2012 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Also the following EC guidelines are fulfilled:

2014/35/EU
2011/65/EU

Low Voltage Directive
RoHS (category 9)



H. Peters
General Manager



M. Wenzel
Proxy Holder

Hofheim, 15 March 2018