Operating Instructions

for

Differential Pressure Sensor

Model: PMP

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2. Note

Please read these operating instructions before unpacking and putting the unit in 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 correspond 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.

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-machine guidelines.

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:

- Differential Pressure Sensor model: PMP

All parts falling under the standard scope of delivery are properly assembled within the unit.

4. Regulation Use

Any use of the Differential Pressure Sensor, model: PMP, which exceeds the manufacturer's specification, may invalidate its warranty. Therefore, any resulting damage is not the responsibility of the manufacturer. The user assumes all risk for such usage.

5. Operating Principle

The differential pressure sensor PMP is used for controlling and measuring the differential pressure of air or non-corrosive gases. It is mainly used for the monitoring of filters and filter cartridges.

The devices are equipped as follows:

Differential Pressure Measurement
The differential pressure is shown on a four-digit LED display.

Limit Value Contact
The devices are provided with two programmable relays for monitoring the differential pressure. Thus, the magnetic valves for the cleaning cycles can be piloted or used for programming the alarm pressure.

Analogue Output
For a remote transmission, a 4 to 20 mA output signal is provided.

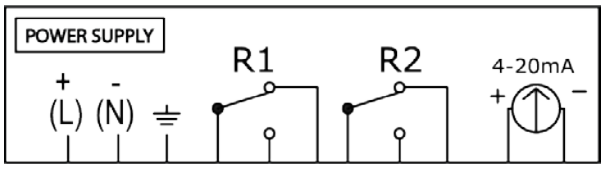
6. Mechanical Connection

Before installation:

- Make sure that the max. allowed operating pressures and service temperatures are not exceeded (see section Technical Information)
- Connect your tube to both screw connections.
  The over-pressure side is marked with a “+” symbol,
  the low-pressure side with a “-“ symbol.

7. Electrical Connection

- Make sure that the supply wires are de-energised.
- Plug in the system according to the following connecting drawing.
-



- All connecting operations are completed, if the planned external devices are connected to both limit contacts and to the analogue output.
- The device can now be put into operation.
- The adjustment of the output signals is described in the following sections.

8. Operation

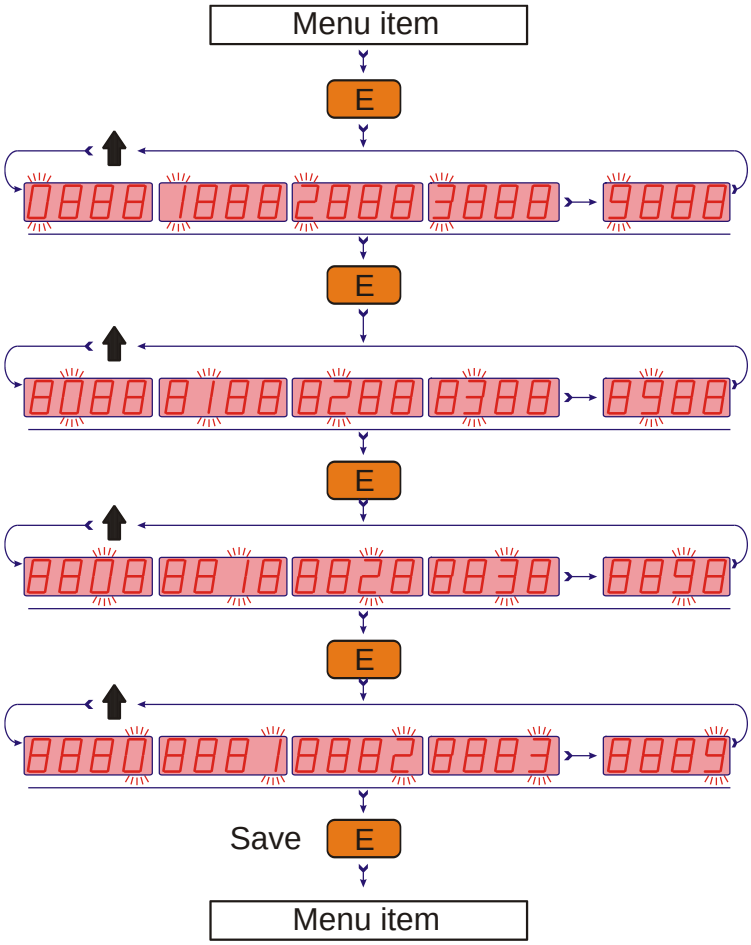
8.1 General

E -button: Change display value -> main menu item
Change main menu item -> main menu
Change menu item -> submenu item
Change menu item/submenu item -> value setting
Change of digit at value setting

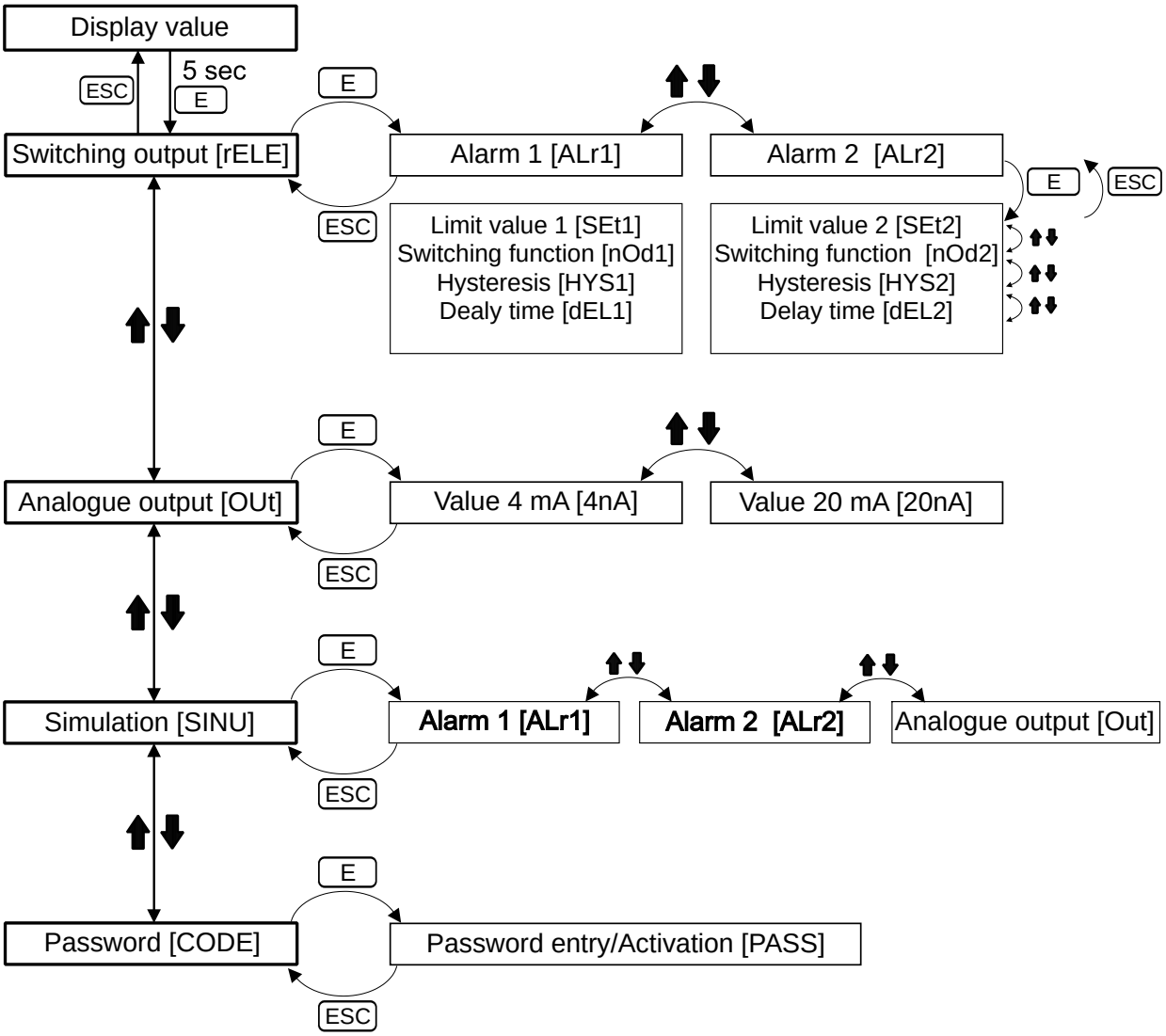
ESC -button: Change main menu item -> display value
Change menu item -> main menu item
Change submenu item -> menu item
Change value setting -> menu item/submenu item

Automatic return to displayed value after 1 min without keypress!

8.2 Value setting



8.3 Function matrix



9. Adjustment

9.1 Switching outputs [rELE]

In the menu item Alarm 1 [Alr1] and Alarm [Alr2] the following items are adjustable:

Submenu item [Set1] + [Set2]: limit value

- value setting 0…500,0 mm$H_2$0
- at this value the relay changes its status (active/passive)
- factory setting: [200.00]

Submenu item [nOd1] + [nOd2]: switching function.

- [Hi] or [LO] changeable with ⬆⬇
- [Hi] = The relay 1 or 2 is active, if the displayed value has been reached.
- [LO] = The relay 1 or 2 is inactive, if the displayed value has been reached.
- factory setting: [Hi]

Submenu item [HYS1] + [HYS2]: hysteresis

- value setting 0…500,0 mmH20
- shift-in point is related to the limit value
  shift-in point relay 1 = [Set1] – [HYS1]
  shift-in point relay 2 = [Set2] – [HYS2]
  condition: hysteresis value less than limit value
- factory setting: [000.0]

Submenu item [dEL1] + [dEL2]: delay time

- value setting 0…999,9 sec
- The relay output activates when the limit value is exceeded after this time. The shift-in is carried out immediately.
- factory setting: [000.0]

9.2 Analogue output [Out]

Menu item [4nA]: display value at 4 mA
- factory setting 0…500,0 mmH_20
- factory setting: [000.0]

Menu item [20nA]: display value at 20 mA
- factory setting 0…500,0 mmH_20
- factory setting: [500.0]

The 4 mA and 20 mA – value of the analogue output can be related to any differential pressures.
Condition: [4nA] < [20nA]

Factory setting: 4mA = 000,0; 20 mA = 500,0

9.3 Simulation [SINU]

The main menu Simulation is used to test the switching of the relays and the analogue output 4-20mA is adjusted manually to the current. During installation, this simplifies the testing of the connection to the downstream analysing unit in the control cabinet or master display.

Menu item [Alr1]: simulation Alarm 1
Menu item [Alr2]: simulation Alarm 2
- Value setting: [OFF] or [ON] (OFF/ON changeable with ⬆⬇)
  Press ESC-button to finish.
- Basic setting: [OFF]

Menu item [Out]: simulation analogue output
- Value setting: [4, 5, 6, 7 …20] mA changeable with ⬆⬇)
  Press ESC-button to finish.
- Basic setting: [4] mA

When leaving the main menu item Simulation [SINU] the menu item Alarm 1 [ALr1], Alarm 2 [ALr2] and Analogue Output [OUt] are resetted to the basic setting and the outputs behave according the display.

9.4 Password [CODE]

The adjusted parameters can be protected by a password.

Menu item [PASS]: Password entry/activation
- Value setting activation: [YES] and [nO]
- Value setting password: [0000…9999]
- Value setting: [nO] + [0000]

Password activation

Menu item [PASS] -> E -> display: [nO] -> ⇧ -> display: [YES]
-> E -> display is e.g. password: [0000] -> E

Password deactivation

Menu item [PASS] -> E -> display e.g. password: [0000] -> E
Menu item [PASS] -> E -> display: [YES] -> ⇧ -> display: [nO] -> E

Attention: If the password is activated, all setting functions are locked (password query for changing display mode -> set-up mode)! In case of losing the password, please contact your responsible KOBOLD office.

10. Commissioning

When used in machines according to the guideline 93/44/EEC, the commissioning is forbidden until the machine fulfils the regulations of the guideline.

Attention! The max. allowable pressure of 750 mbar is not allowed to be exceeded.

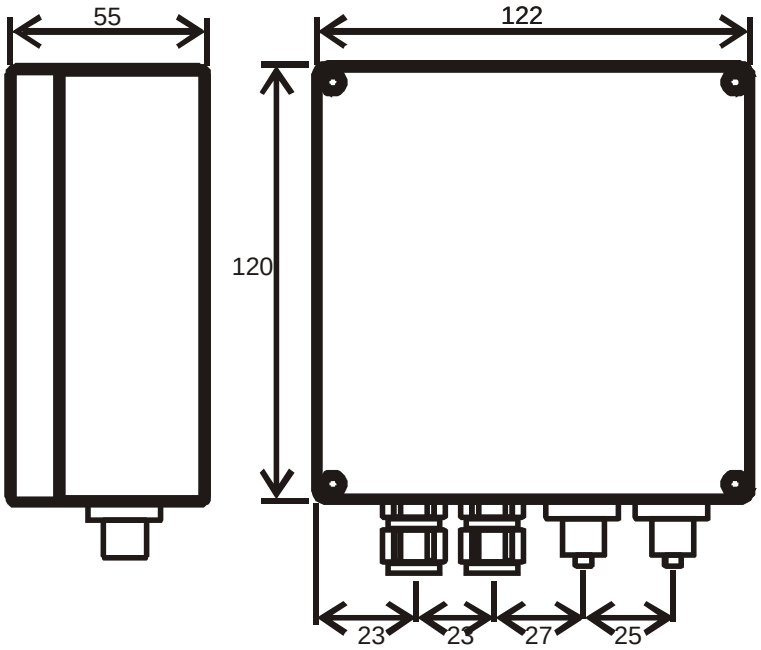
11. Maintenance

In case the medium to be measured is not polluted, the unit PMP is maintenance-free.

12. Technical Information

Measuring range:	0 … 500 mm H_2O (50 mbar)
LED-indication:	4 digits, 15 mm high
2 relay outputs:	max. 230 V_{AC}, 0.5 A
Output:	4-20 mA (load max. 500 Ω)
Power supply:	24, 110, 230 V_{AC} 50/60 Hz or 24 V_{DC}
Max. power consumption:	4 VA
Max. pressure:	750 mbar, one-sided or two-sided
Ambient temperature:	-10 to +60 °C
Housing:	polycarbonate
Protection:	IP65
Max. cable cross section:	2.5 mm²
2 hose connectors:	for hose 6 x 8 mm

13. Dimensions



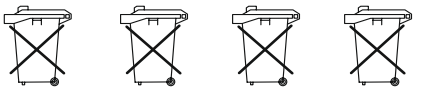
14. Disposal

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:



Cd[1] Hg[2] Pb[3] Li[4]

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

Electrical and electronic equipment

15. Technical Information

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

16. Order Codes

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

17. Dimensions

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

18. EU Declaration of Conformance

DT0325

DECLARACIÓN DE CONFORMIDAD EU

EU DECLARATION OF CONFORMITY
EU-KONFOMITÄTSERKLÄRUNG
DÉCLARATION DE CONFORMITÉ
DICHIARAZIONE DI CONFORMITÀ EU

KOBOLD MESURA S.L.U.
Avda. Conflent 68 nave 15, 08915 Badalona (España)

Declara, bajo la propia responsabilidad, que el producto
Declares under our sole responsibility, that the product
Erklärt in alleiniger Verantwortung, dass das produkt
Déclare sous sa seule responsabilité, que le produit
Dichiara sotto la propia responsabilità, che il prodotto

MPD...
PMP...

A los cuales se refiere esta declaración, son conformes a las siguiente Directivas Europeas:
To which this declaration relates is in conformity with the following European Directives:
mit folgenden Euroäiscen Richtilinien Konform ist:
À auxquels se réfère cette déclaration, ils sont conformes aux Directives Européennes suivant :
A ai quali si riferisce questa dichiarazione, sono conformi alle direttive europee seguente:

EMC2014/30/EU LVD2014/35/EU RoSH2011/65/EU

Normas armonizadas y documentos de la normativa aplicados:
Applied harmonised standards and normative documents:
Angewandte harmonisierte Normen oder normativer Dokumente:
Normes harmonisées et documents normatifs appliqués
Norme armonizzate e documenti normativi applicati:

EN55011:2016:A11:2020+A2:2021
EN61000-6-2 :2019
EN61000-3-2:2019+A1:2021
EN61000-6-4:2021
EN61326-1:2021
EN60529:1991/A2:2013/AC:2019-02
EN61000-3-3:2013+A1:2020+A2:2022

Fabricado en: **KOBOLD MESURA SLU Avda. Conflent 68 nave 15 08915 BADALONA (Spain**)
Made in:
Hergestellt in:
Fabriqué dans:
Fabbricato in:

Badalona May 2024

Gerente

ıand

19. UK Declaration of Conformance

DT0726

DECLARACIÓN DE CONFORMIDAD UK

UK DECLARATION OF CONFORMITY
UK-KONFOMITÄTSERKLÄRUNG
DÉCLARATION DE CONFORMITÉ UK
DICHIARAZIONE DI CONFORMITÀ UK

KOBOLD MESURA SLU
Avda. Conflent, 68 nave 15 08915 Badalona (España)

We Kobold Mesura S.L.U. declare under our sole responsibility that the product:

PMP
MPD

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

BS EN IEC61000-3-2:2019+A1:2021
BS EN IEC61000-3-3:2013+A2:2021
BS EN 61000-6-2:2019
BS EN 61000-6-4:2019
BS EN IEC 61326-1:2021
BS EN 55011:2016+A2:2021
BS EN 60529:1992+A2:2013

Also, the following UK guidelines are fulfilled:

S.I. 2016/1091 Electromagnetic Compatibility Regulations 2016.

S.I. 2016/1101 Electrical Equipment (Safety) Regulations 2016.

S.I. 2012/3032 The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012.

Badalona Mary 2024

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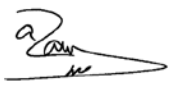

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Technical data
Subject to change without prior notice