Operating Instructions

for

Plug-On Display

Model: AUF-1...

AUF-3...

AUF-4...

1. Contents

Manufactured and sold by:

Kobold Messring GmbH
Nordring 22-24
D-65719 Hofheim
Tel.: +49(0)6192-2990
Fax: +49(0)6192-23398
E-Mail: info.de@kobold.com
Internet: www.kobold.com

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 EU-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:
- Plug-On Display model: AUF-1.../AUF-3.../AUF-4...

4. Regulation Use

Any use of the Plug-On Display, model: AUF-..., 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 model AUF-... plug-on display is a universal local display suitable for use with various transmitters. The transmitter must be fitted with an analogue output 4-20 mA and a connector in accordance with DIN 43 650. The plug-on display is simply plugged in between the connector and socket; it is then ready for operation. Scaling, the position of the decimal point, gate time and switch point (optional) may be set with two keys. The menu steps are output to the LED display field.
The Auf-4000 transforms the input pulses into a 4-20mA output signal.

6. Mechanical Connection

The plug-on display is simply plugged in between the connector and the socket; it is then ready for operation. The mounting screw must be replaced with the longer screw that is part of the delivery scope. The seals must be located between the sensor/AUF and AUF/sensor.

The indicating unit can be rotated in 90° steps.

Beneath the LED-display a dimension-band can be mounted.

7. Electrical Connection

Connect the plug-on display as shown in the wiring diagram.

Connector assignment

	AUF-1000	AUF-1001	AUF-3000 AUF-4000
PIN 1	$+V_S$/S+	$+V_S$/S+	$+V_S$
PIN 2	GND/S-	GND/S-	GND
PIN 3	-	Switch out	Signal

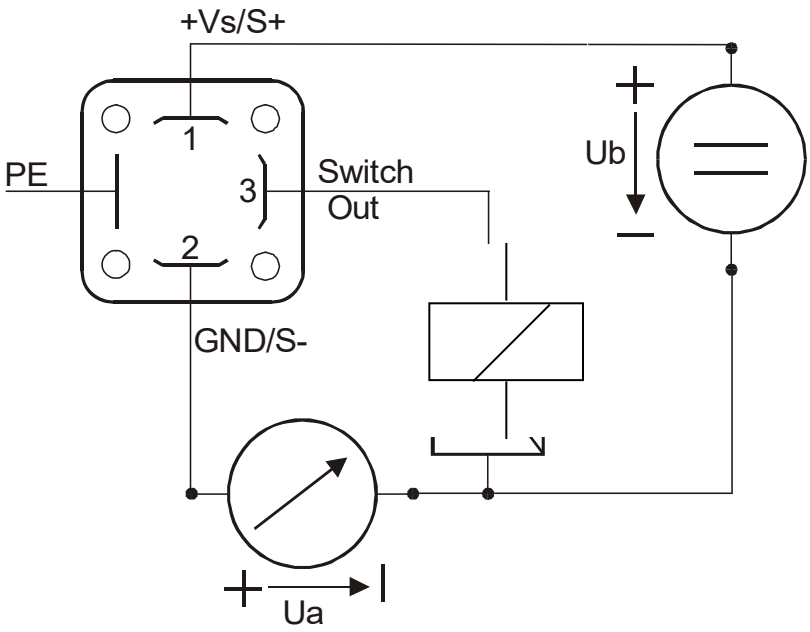
Signal	AUF-1000	AUF-1001	AUF-3000	AUF-4000
Input	4-20 mA, 2-wire	4-20 mA, 2-wire	4-20 mA, 3-wire	pulses
Output	4-20 mA, 2-wire	4-20 mA, 2-wire + switch out	4-20 mA, 3-wire	4-20 mA, 3-wire

Auxiliary power (only AUF-1...)
The auxiliary power (typically 24 V_{DC}) must be greater than the voltage drop across the sensor, the voltage drop across the display (5 V) and any other voltage losses (additional evaluation, cable losses).

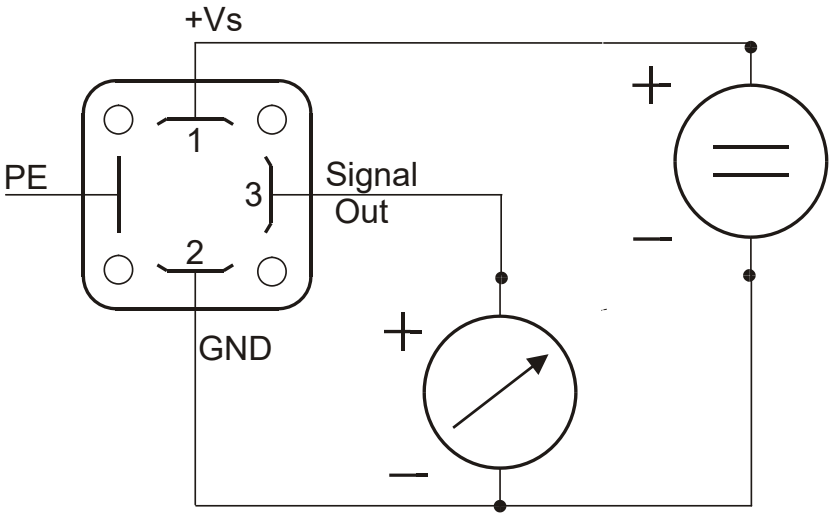
Ub ≥ Us + (Ua) +5V (Us = voltage drop across sensor)

Switching output (only AUF-1001)
The operating voltage Ub at PIN 3 is connected through via a PNP-transistor when reaching the switching threshold. The max. current load constitutes 60 mA.

Connection example AUF-1001



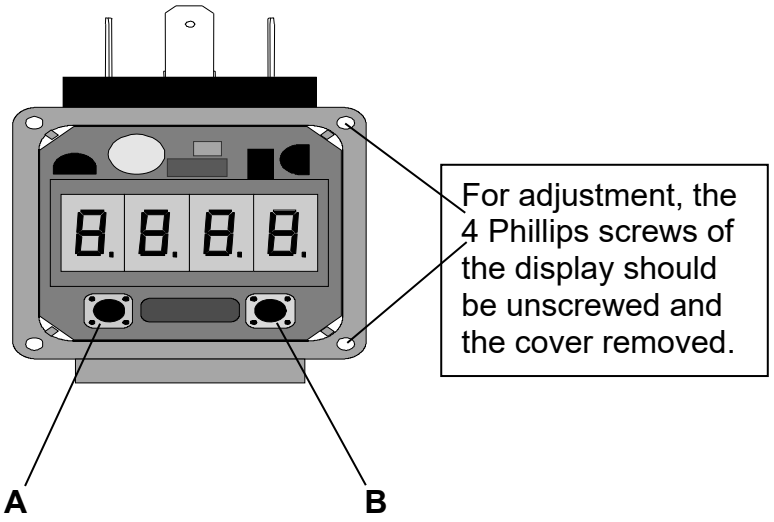
Connection example AUF-3000, AUF-4000



If the signal output is not used, the signal output (PIN 3) needs to be short-circuited with GND (PIN 2).

8. Commissioning

8.1 Adjusting the Display



A ⇒ Downward and selection of menu items
B ⇒ Upward and selection menu items
A+B ⇒ Enter menu selection for adjustment or to exit acknowledge setting

8.2 Decimal Point

Press key B until: [d P _ _] is displayed.

Press **A+B** to enter adjustment menu: [- - - -]

Press **B** or **A** for up and down: [- - - -]

Press **A+B** to acknowledge setting and return to menu item “dP”

8.3 Zero-Point (value to be displayed for 4 mA)

Press key **B** until: [Z P _ 4] is displayed.

Press **A+B** to enter adjustment menu: [_ 0. 0 0] for example: (0 bar)

Press **B** or **A** for up and down

Press **A+B** to acknowledge setting and return to menu item “ZP”

8.4 Span (value to be displayed for 20 mA)

Press key **B** until: [E|P|2|0] is displayed.

Press **A+B** to enter adjustment menu: [|0.|0|0]

Press **B or A** for up and down: [6|0.|0|0] (for example: 60 bar)

Press **A+B** to acknowledge setting and return to menu item “EP”

8.5 Damping

Press key **B** until: [F|I|L|t] is displayed.

Press **A+B** to enter adjustment menu: [| |0.|3]
(min. = 0.3 s; max. = 20.0 s)

Press **B** or **A** for up and down: [| |1.|5] (for example: 1,5 sec)

Press **A+B** to acknowledge setting and return to menu item “FILt”

8.6 Range Exceeded (indication of less than 4 mA or greater than 20 mA)

Indicates “HI” if the upper limit or “LO” if the lower limit is exceeded

Press key **B** until: [H|I|L|O] is displayed.

Press **A+B** to enter adjustment menu: [|o|F|F] message disabled

Press **B** or **A** for up and down: [| |o|n] message enabled

Press **A+B** to acknowledge setting and return to menu item “HILO”

Indication: “HI” = Upper range exceeded, “LO” = Lower range exceeded

Attention: When the “HILO” indication is disabled, error code “Er06” is displayed if the scale range (-1999 to +9999) is exceeded.

8.7 Switching Point (only model: AUF-1001, optional)

Press key **B** until: | S | P | t | | is displayed.

Press **A+B** to enter adjustment menu: | | 0. | 0 | 0 |

Press **B** or **A** for up and down | 2 | 0, | 0 | 0 | (20 bar)

Press **A+B** to acknowledge setting and return to menu item “SPt”

Attention: The standard hysteresis is the adjusted switching point minus 3 digits (first digit resp. first position right). On customer request the hysteresis can be factory-set.

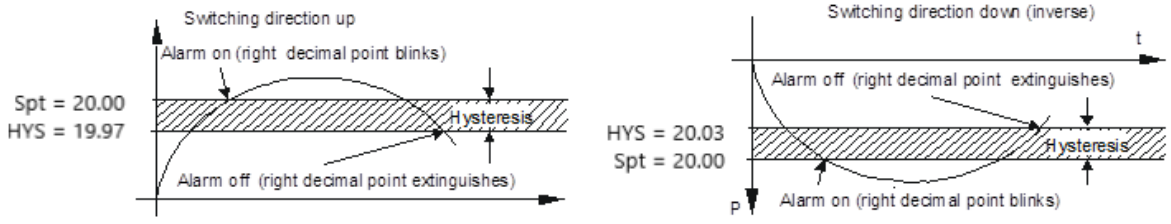
8.8 Switching direction (only model AUF-1001, optional)

Press key **B** until: | D | I | R | | is displayed.

Press **A+B** to enter adjustment menu: | | | d | n |
(hysteresis via switching point, inverse)

Press **B** or **A** for up and down | | | u | p |
(hysteresis below switching point)

Press **A+B** to acknowledge setting and return to menu item “dir”



8.9 Return to Measuring Mode

Depending on the selected menu point, press key **A** or **B** from one to eight times.

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. Dimensions

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

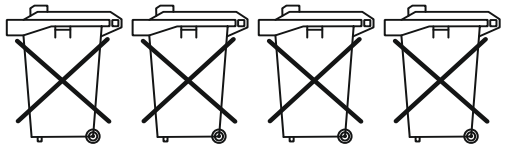
12. Disposal

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

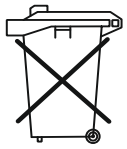
Batteries containing pollutants are marked with a sign consisting of a crossed-out garbage can and the chemical symbol (Cd, Hg, Li or Pb) of the heavy metal that is decisive for the classification as containing pollutants:



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



13. EU Declaration of Conformance

We, KOBOLD Messring GmbH, Nordring 22-24, 65719 Hofheim, Germany, declare under our sole responsibility that the product:

Plug-On Display **Model: AUF-...**

to which this declaration relates is in conformity with the following EU directives stated below:

2014/30/EU	**EMC Directive**
2011/65/EU	**RoHS** (category 9)
2015/863/EU	Delegated Directive (RoHS III)

Also, the following standards are fulfilled:

EN IEC 61326-1:2021 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements, industrial area (Immunity to HF field in the range 80 to 120 MHz: 3 V/m)

EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Hofheim, 19 Jan. 2024

H. Volz
General Manager

J. Burke
Compliance Manager

14. UK Declaration of Conformity

We, KOBOLD Messring GmbH, Nordring 22-24, 65719 Hofheim, Germany, declare under our sole responsibility that the product:

Plug-On Display **Model: AUF-...**

to which this declaration relates is in conformity with the following UK directives stated below:

S.I. 2016/1091	**Electromagnetic Compatibility Regulations 2016**
S.I. 2012/3032	The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Also, the following standards are fulfilled:

BS EN IEC 61326-1:2021 Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements, industrial area (Immunity to HF field in the range 80 to 120 MHz: 3 V/m)

BS EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.

Hofheim, 15 March 2024

H. Volz
General Manager

J. Burke
Compliance Manager