Operating Instruction

for

Plug-On Display

Model: AUF-2000

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 EC-machine guidelines.

3. Regulated Usage

The KOBOLD Plug-On Display is to be installed only in the specified applications. Every usage, which exceeds the specifications, is considered to be non-specified. Therefore, any resulting damage is not the responsibility of the manufacturer.

When installing, commissioning and operating these instruments, observe the following: Any applicable national product safety standards (for example VDE 0100), the certificate of conformity specifications for plug-on displays with Ex protection, and the relevant national standards for Ex service (for example: VDE 0165) are to be observed. Only competent personnel should work on the instruments.

4. Operating Principle

The model AUF-2000 Plug-On Display is a universal local display suitable for use with various transmitters. The transmitter must be fitted with an analogue output and a connector in accordance with DIN 43 650. The plug-on display is simply plugged in between connector and socket; it is then ready for operation. Upon removal of the cover, scaling, the position of the decimal point and damping may be set with two keys. The setup menu steps are displayed in the LED display field.

5. 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-2000
- Mounting screw
- Units adhesive label

6. Mechanical Connection

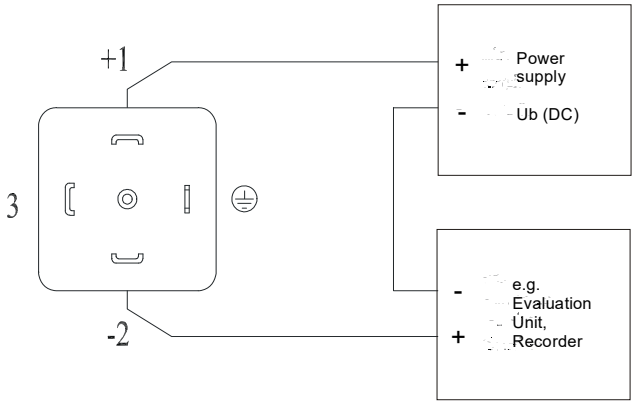
The Plug-On Display is simply plugged in between the existing connector and socket and is then ready for operation. The existing mounting screw must be replaced with the longer screw which is part of the delivery. If desired, the display can be rotated 90° in either direction.

7. Electrical Connection

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

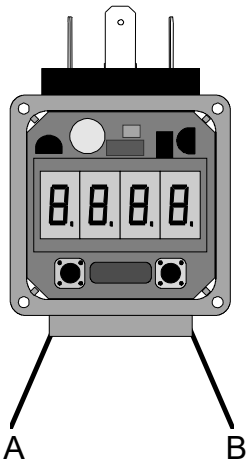
Connector pin assignment

UB+ (+V Supply) = PIN 1
0 V (-V Supply) = PIN 2



Power Supply Requirements
The power supply voltage *(Ub),* typically 24 VDC, must be greater than the sum of the: voltage drop across the sensor *(Us)*, the voltage drops across the display *(5V)* and any other voltage losses *(Ua)* (evaluation units, cable losses, etc.).
Commissioning $Ub > Us + 5V + Ua$

7.1. Adjusting the Display



To adjust settings: Loosen and remove the four Phillips screws on the display and then remove the display cover hood.

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

7.2. 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”

7.3. 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: [0.00] for example: (0 bar)

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

Press **A+B** to acknowledge setting and return to menu item “ZP 4”

7.4. Span

(value to be displayed for 20 mA, “End Point”)

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 “EP20”

7.5. 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”

7.6. Range Exceeded

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

7.7. Return to Measuring Mode

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

8. Technical Information

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

9. Order Codes

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

10. Dimensions

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

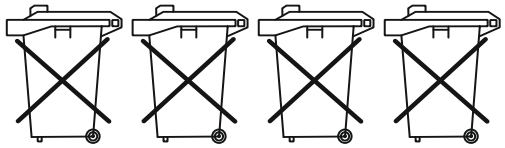
11. Disposal

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

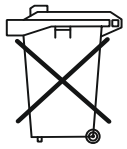
Batteries containing pollutants are marked with a sign consisting of a crossed-out garbage can and the chemical symbol (Cd, Hg, Li or Pb) of the heavy metal that is decisive for the classification as containing pollutants:



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



12. 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-2000**

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

2014/35/EU	**Low Voltage Directive**
2011/65/EU	**RoHS** (category 9)
2015/863/EU	Delegated Directive (RoHS III)

Also, the following standards are fulfilled:

EN 61010-1:2010 + A1:2019 + A1:2019/AC:2019 Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements

EN IEC 61326-1:2021
Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements, industrial area, immunity to RF 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, 07 March 2024

H. Volz
General Manager

J. Burke
Compliance Manager

13. EU declaration of conformity (ATEX)

We, Kobold Messring GmbH, Nordring 22-24, 65719 Hofheim, Germany, hereby declare under our sole responsibility and with the aim of traceability that the product

Product type: **Plug-On Display**
Model: AUF-2000

EU type examination certificate: **BVS 17ATEX E022**

Complies with all relevant requirements of the following directive(s):

2014/34/EU Equipment and Protective systems intended for use in potentially Explosive Atmospheres

The following harmonized standards were applied for conformity assessment:

EN IEC 60079-0:2018 Equipment – General requirements
EN 60079-11:2012 Device protection through intrinsic safety “i”

According to the type test certificate, the device marking is:

Ⓔx II 2G Ex ib IIC T4 Gb

The above-mentioned product complies with Directive 2014/34/EU. New editions may have already replaced one or more of the standards mentioned in the EU type examination certificates. Kobold Messring declares that the product mentioned in this declaration of conformity either meets the requirements of the new editions or is not affected by the changes.

The notified body DEKRA Testing and Certification GmbH, identification number: 0158, was activated, in accordance with Article 17 of Directive 2014/34/EU, to monitor quality assurance related to the production process.

Hofheim, 07 March 2024

H. Volz
General Manager

J. Burke
Compliance Manager

14. EU Type Examination Certificate

Translation

1 **EU-Type Examination Certificate**

2 **Equipment intended for use in potentially explosive atmospheres Directive 2014/34/EU**

3 EU-Type Examination Certificate Number: **BVS 17 ATEX E 022**

4 Product: **Plug-on Display type AUF-2000**

5 Manufacturer: **KOBOLD Messring GmbH**

6 Address: **Nordring 22-24, 65719 Hofheim/Ts., Germany**

7 This product and any acceptable variations thereto are specified in the appendix to this certificate and the documents referred to therein.

8 DEKRA EXAM GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential Report No. BVS PP 17.2040 EU.

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2012 + A11:2013 **General requirements**
EN 60079-11:2012 **Intrinsic Safety "i"**

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following:

Ex **II 2G Ex ib IIC T4 Gb**

DEKRA EXAM GmbH
Bochum, 2017-03-10

Signed: Dr Franz Eickhoff
Certifier

Signed: Dr Michael Wittler
Approver

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
telephone +49.234.3696-105, Fax +49.234.3696-110, zs-exam@dekra.com

13 **Appendix**

14 **EU-Type Examination Certificate**
BVS 17 ATEX E 022

15 **Product description**

15.1 **Subject and type**

Plug-on Display type AUF-2000

15.2 **Description**

The display device type AUF-2000 is used in intrinsically safe 4-20 mA circuits for the visualization of parameters.

The display device type AUF-2000 is inserted between the plug and the socket of a compatible 4-20 mA device.

15.3 **Parameters**

15.3.1 Electrical data

15.3.1.1 I.S. circuit input connector (1 / 2 – plug)

Maximum input voltage	U_i	30	V
Maximum input current	I_i	100	mA
Maximum input power	P_i	1.1	W
Maximum internal capacitance	C_i	negligible	
Maximum internal inductance	L_i	negligible	

15.3.1.2 I.S. circuit output connector (1 / 2 – socket)

Maximum output voltage	U_o	30	V
Maximum output current	I_o	100	mA
Maximum output power	P_o	1.1	W
Maximum external capacitance	C_o	depending on power supply	
Maximum external inductance	L_o	depending on power supply	

15.3.2 Thermal Parameters

Ambient temperature $-20\ °C \leq T_{amb} \leq 40\ °C$

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
telephone +49.234.3696-105, Fax +49.234.3696-110, zs-exam@dekra.com

16 **Report Number**

BVS PP 17.2040 EU, as of 2017-03-10

17 **Special Conditions for Use**

None

18 **Essential Health and Safety Requirements**

The Essential Health and Safety Requirements are covered by the standards listed under item 9.

19 **Drawings and Documents**

Drawings and documents are listed in the confidential report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

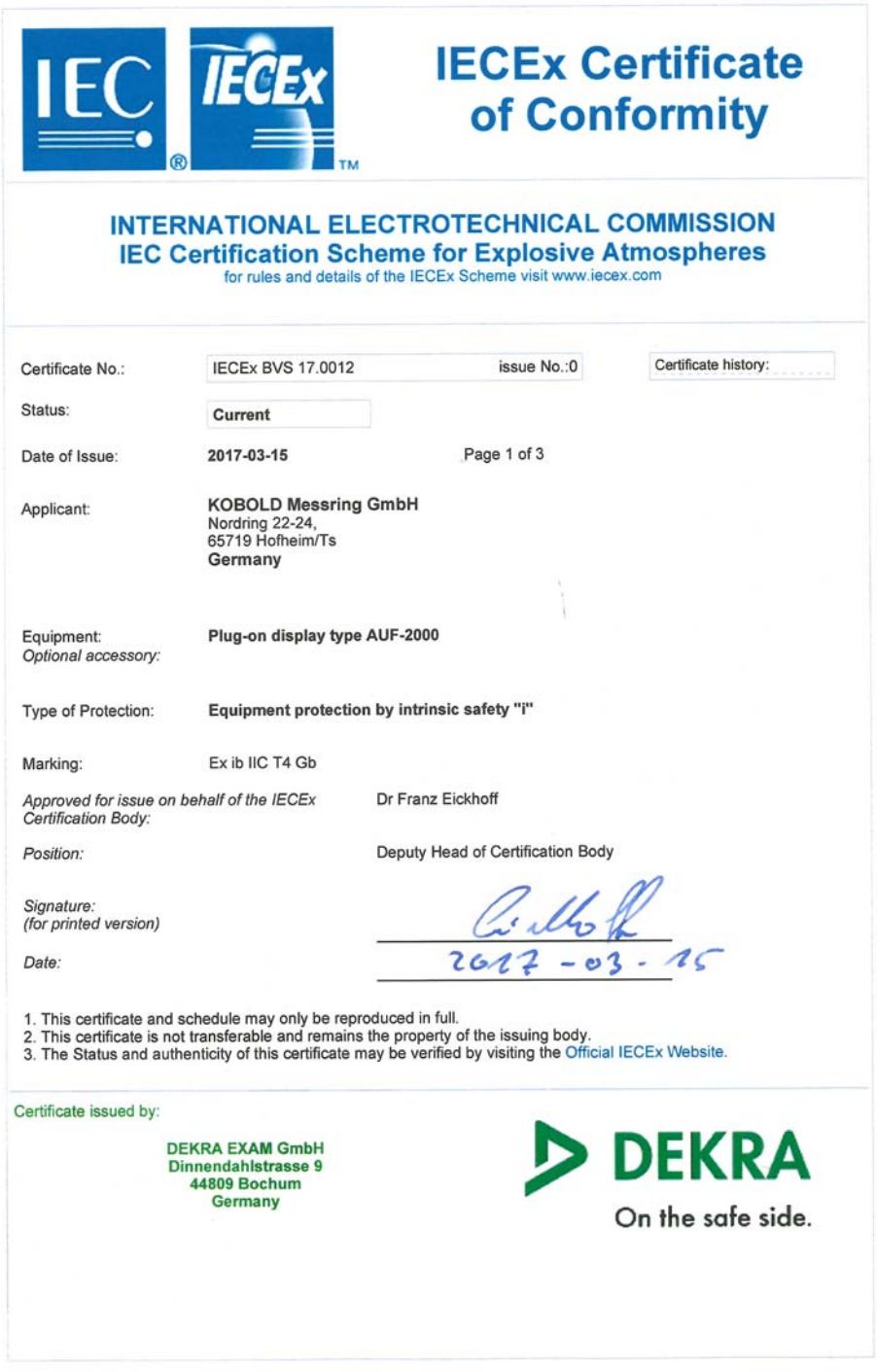
DEKRA EXAM GmbH
Bochum, dated 2017-03-10
BVS-Scho/Rip/Nu A 20161103

Certifier

Approver

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
telephone +49.234.3696-105, Fax +49.234.3696-110, zs-exam@dekra.com

15. IECEx Certificate



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx BVS 17.0012 issue No.:0 Certificate history:

Status: Current

Date of Issue: 2017-03-15 Page 1 of 3

Applicant: KOBOLD Messring GmbH
Nordring 22-24,
65719 Hofheim/Ts
Germany

Equipment: Plug-on display type AUF-2000
Optional accessory:

Type of Protection: Equipment protection by intrinsic safety "i"

Marking: Ex ib IIC T4 Gb

Approved for issue on behalf of the IECEx Certification Body: Dr Franz Eickhoff

Position: Deputy Head of Certification Body

Signature: (for printed version)

Date: 2017-03-15

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA
On the safe side.

IECEx Certificate of Conformity

Certificate No.: IECEx BVS 17.0012

Date of Issue: **2017-03-15** Issue No.: **0**

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Manufacturer: **KOBOLD Messring GmbH**
Nordring 22-24,
65719 Hofheim/Ts.
Germany

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:
DE/BVS/ExTR17.0019/00

Quality Assessment Report:

DE/BVS/QAR09.0001/07

IECEx Certificate of Conformity

Certificate No.: IECEx BVS 17.0012

Date of Issue: **2017-03-15** Issue No.: **0**

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Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

General product information:

The display device type AUF-2000 is used in intrinsically safe 4-20 mA circuits for the visualization of parameters.
The display device type AUF-2000 is inserted between the plug and the socket of a compatible 4-20 mA device.

Type:
AUF-2000

Ratings:

See Annex

SPECIFIC CONDITIONS OF USE: NO

Annex: BVS_17_0012_Kobold_Annex.pdf