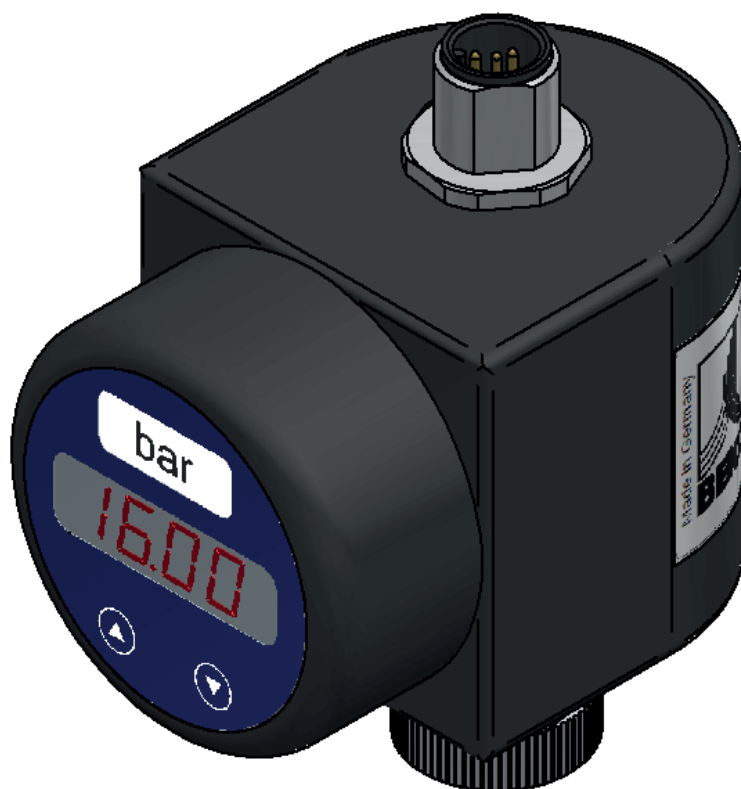


Installation and operating manual

Plug-on display for METPOINT® transducer

METPOINT® UDO 1



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1. Safety instructions

1.1. Pictograms and symbols



General instruction



Observe installation and operating instructions



Observe installation and operating instructions
(on type plate)



General hazard symbol (danger, warning, caution)

1.2. Signal words according to ISO 3864 and ANSI Z.535

DANGER

Imminent danger

Consequences of non-compliance: serious or even fatal injury

WARNING

Potential danger

Consequences of non-compliance: serious or even fatal injury

CAUTION

Imminent danger


Consequences of non-compliance: injury and/or damage to property


NOTE

Additional notes, tips and hints

Consequences of non-compliance: inefficient operation, extra maintenance work.
No risk to persons.


1.3. General safety instructions

NOTE	Installation and operating manual
	<p>Before reading this manual, make sure that it refers to your device model. This document contains important information and instructions for the safe operation of the device. Before carrying out any work with or on the device, all specialist technical personnel ¹ must have read this manual.</p> <p>A copy of this installation and operating manual must be kept near the device where it is at all times accessible to staff.</p> <p>In addition to the instructions in this document, always comply with the statutory regulations for machine operation, accident prevention and safety. This also applies to the use of accessories and spare parts.</p>

DANGER	Insufficient qualification
	<p>Improper handling and operation of the device can result in serious or even fatal injury, and/or damage to property.</p> <ul style="list-style-type: none"> • All tasks described in this installation and operating manual must be performed by specialist technical personnel¹ who meet the following criteria: • Before carrying out any work with or on the device, all specialist technical personnel¹ must have read and understood the contents of this installation and operating manual. It is the responsibility of the owner of the device to ensure that the above requirement is complied with.

¹ Specialist technical personnel

Specialist technical personnel are persons who, due to their professional qualification and knowledge in the field of measuring, control and pneumatic technology, and their knowledge of the applicable statutory regulations, guidelines and standards are in a position to foresee potential dangers in relation to the use of the device and who are qualified to perform the tasks described in this manual. Special operating conditions (e.g. aggressive media) require additional knowledge.

DANGER	Operation of device outside limit range
	<p>If the specified limits are exceeded, there is a risk of device malfunction, potentially resulting in injury and damage to materials.</p> <ul style="list-style-type: none"> • The device must only be operated for the intended purpose and within the permissible limits specified on the type plate and in the technical data.

2. Product information

2.1. Intended use

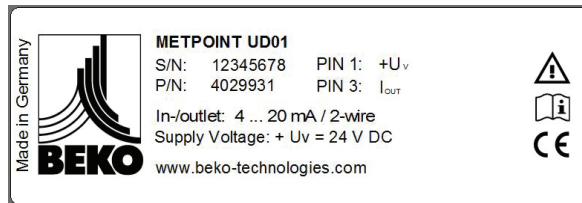
The METPOINT® UD01 plug-on display is compatible with all 4 ... 20 mA transducers equipped with a 2-wire analogue output. It is designed for installation between the transducer and the cable box and is instantly ready for use. The METPOINT® UD01 is freely programmable using a menu system operated by two buttons. The programmed parameters are stored in EEPROM so that they are not lost in the event of a power failure. A dialogue warning is displayed if the limits at either end of the range are exceeded. The integrated diagnostic system continuously monitors all display functions.

The device is not suitable for operation in potentially explosive atmospheres

and must only be used for the intended use. The manufacturer shall not be liable for damage caused by improper use or unauthorised modification of the device. Any such use or modification shall void all warranty.

2.2. Type plate

The type plate is attached to the device housing. It contains all relevant technical data of the METPOINT® UD01 plug-on display. Please have these details to hand when contacting the manufacturer or supplier. The operating system software version (e.g. P07) of the device is displayed for approx. 1 second on the display after switching on. Please note down the version code to have it to hand for any queries.



METPOINT® UD01	Product description
S/N	Serial number
P/N	Product number
PIN 1: +U_v	Voltage input (+U _v)
PIN 3: I_{OUT}	Current output (I _{OUT})
Input/output: 4 ... 20mA / 2-wire	Input/output signal
Supply voltage: +U_v=24 VDC	Power supply

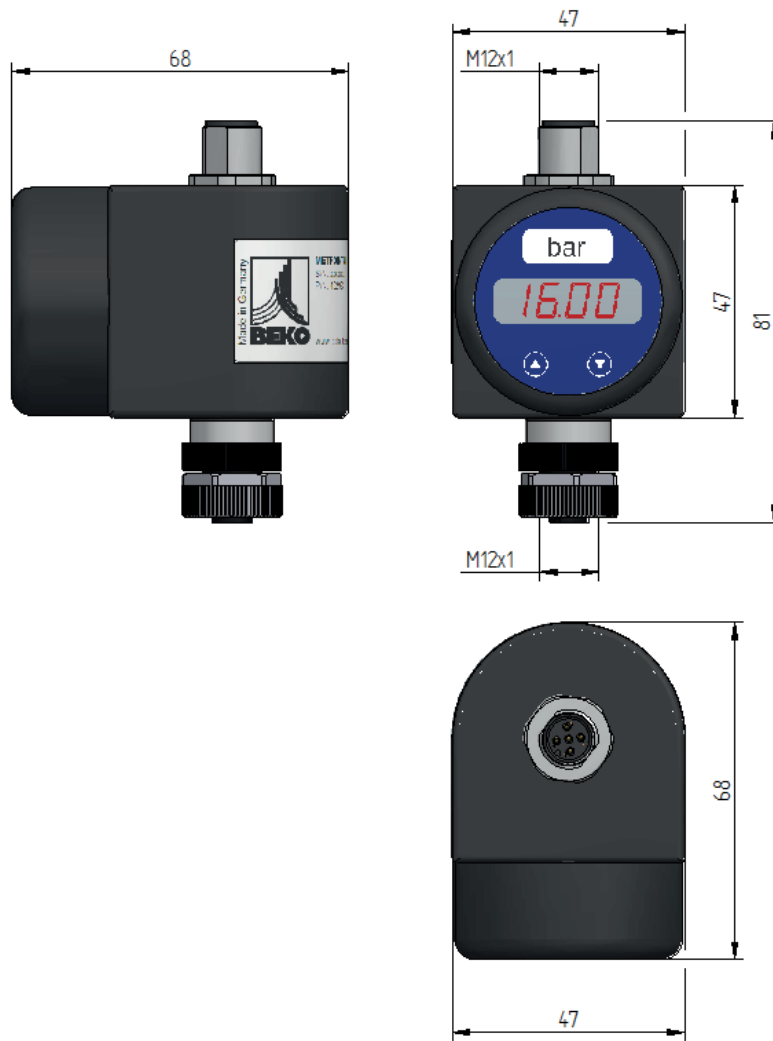
NOTE	Type plate
	Do not remove or cover the type plate and protect it against damage.

2.3. Technical data


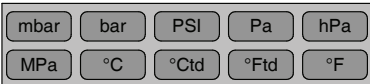

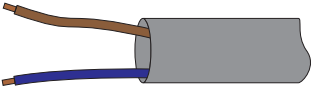
Input and output signals	
Input and output signal:	4 ... 20 mA (2 conductors)
Electrical protection:	
Short-circuit resistance:	permanent
Polarity reversal protection:	No damage, no function
Electromagnetic compatibility:	Emitted interference and interference resistance according to EN 61326
Safety limits:	$U_i = 28 \text{ V}$, $\sum I_i = 93 \text{ mA}$, $\sum P_i = 660 \text{ mW}$
Display	
Type:	Four-digit red LED display, digit height 7 mm, digit width 4.85 mm
Range:	-1999 ... +9999
Accuracy:	0.1 % \pm 1 digit
Digital attenuation:	0.3 ... 30 s (programmable)
Display update frequency:	0.0 ... 10 s (programmable)
Mechanical resistance:	
Vibration	5 g RMS (20 ... 2000 Hz)
Shock:	100 g / 11 ms
Temperature range	
Operating ambient temperature:	-25 ... 85 °C
Storage and transport temperature:	-40 ... 85 °C
Materials	
Display housing:	PA 6.6, polycarbonate
Miscellaneous	
Weight:	approx. 100 g
Data memory:	EEPROM, non-volatile
Protection category:	IP 65

2.4. Dimensions

Dimensions in mm




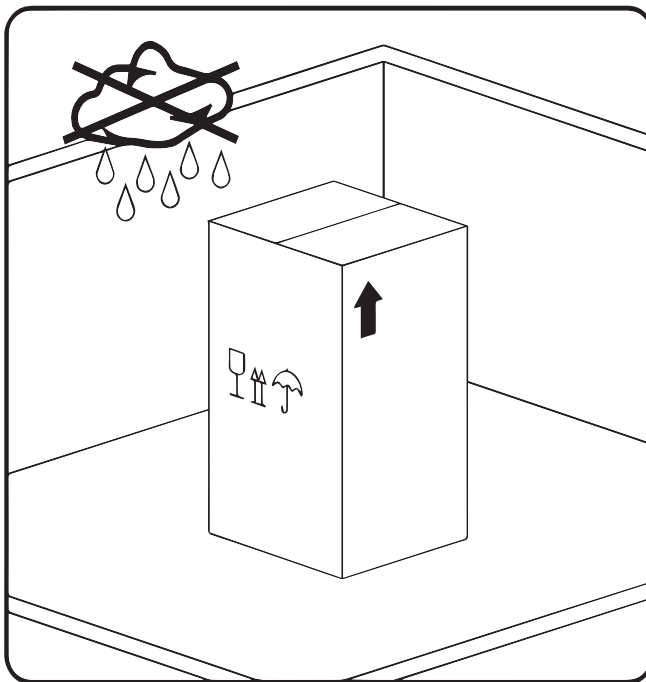
2.5. Scope of delivery

Figure	Description
	<p>Plug-on display</p>
	<p>Unit label sheet</p>
	<p>Installation and operating manual</p>
	<p>Connecting cable</p>

2.6. Transport and storage

Despite our best efforts regarding packaging, etc., the device is susceptible to damage during transport. Upon receipt, please remove all packaging material and inspect the device for visible damage. If you detect any such damage, immediately notify the carrier company and BEKO TECHNOLOGIES GMBH or one of its agents.



CAUTION	Damage caused during transport or storage
	<p>Incorrect transport or storage, or the use of unsuitable lifting equipment might cause damage to the device.</p> <ul style="list-style-type: none"> • The device must only be transported and stored by authorised and suitably trained specialist technical personnel. • If you detect any damage, do not start the device. • Always adhere to the specified transport and storage temperatures.



To store the device, place it in its original packaging and store it in an enclosed, dry and frost-free room. Ensure that the storage temperature does not exceed the limits specified on the type plate.

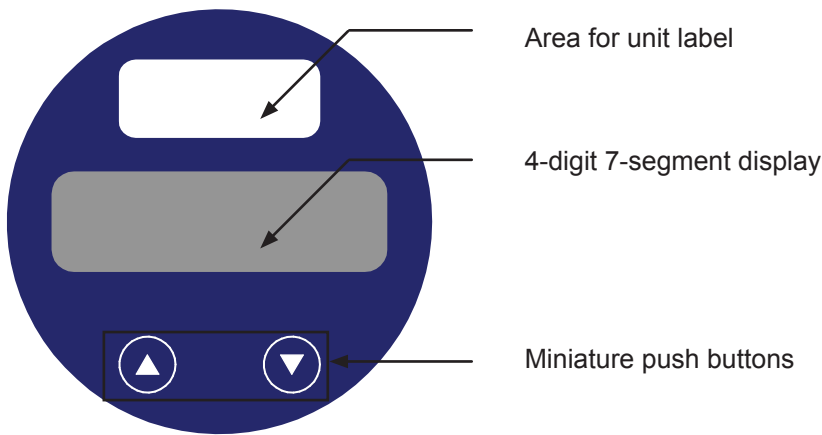
Even when packaged, take suitable measures to protect the device against the elements.

While in storage, secure the device so that it cannot topple over or fall, and protect it against vibration.

NOTE	Recycling of packaging material
 	<ul style="list-style-type: none"> • The packaging material is recyclable. Dispose of the packaging material according to the applicable statutory regulations.

2.7. Control and display elements

The measured value is displayed on a 4-digit, 7-segment display panel that is also used to configure the device.



2.8. Menu control

The device menu is operated through the miniature push buttons. All settings are stored in EEPROM and thus remain available even after a power failure.

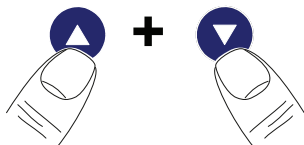


- Menu >>▲<< UP
- Increase displayed value



- Menu >>▼<< DOWN
- Reduce displayed value

The stepping speed for the adjustment of the displayed value can be increased by pressing and holding the respective push button for minimum 5 seconds.



- Confirm set value
- Change between configuration and display mode
- Open selected value

After adjusting the parameter value, confirm the entry and exit the respective menu. The new parameter value is now applied.

2.9. Password protection

The device menu is password-protected.

Factory-set password:

Enable/disable password protection:

Change password:

Reset password:

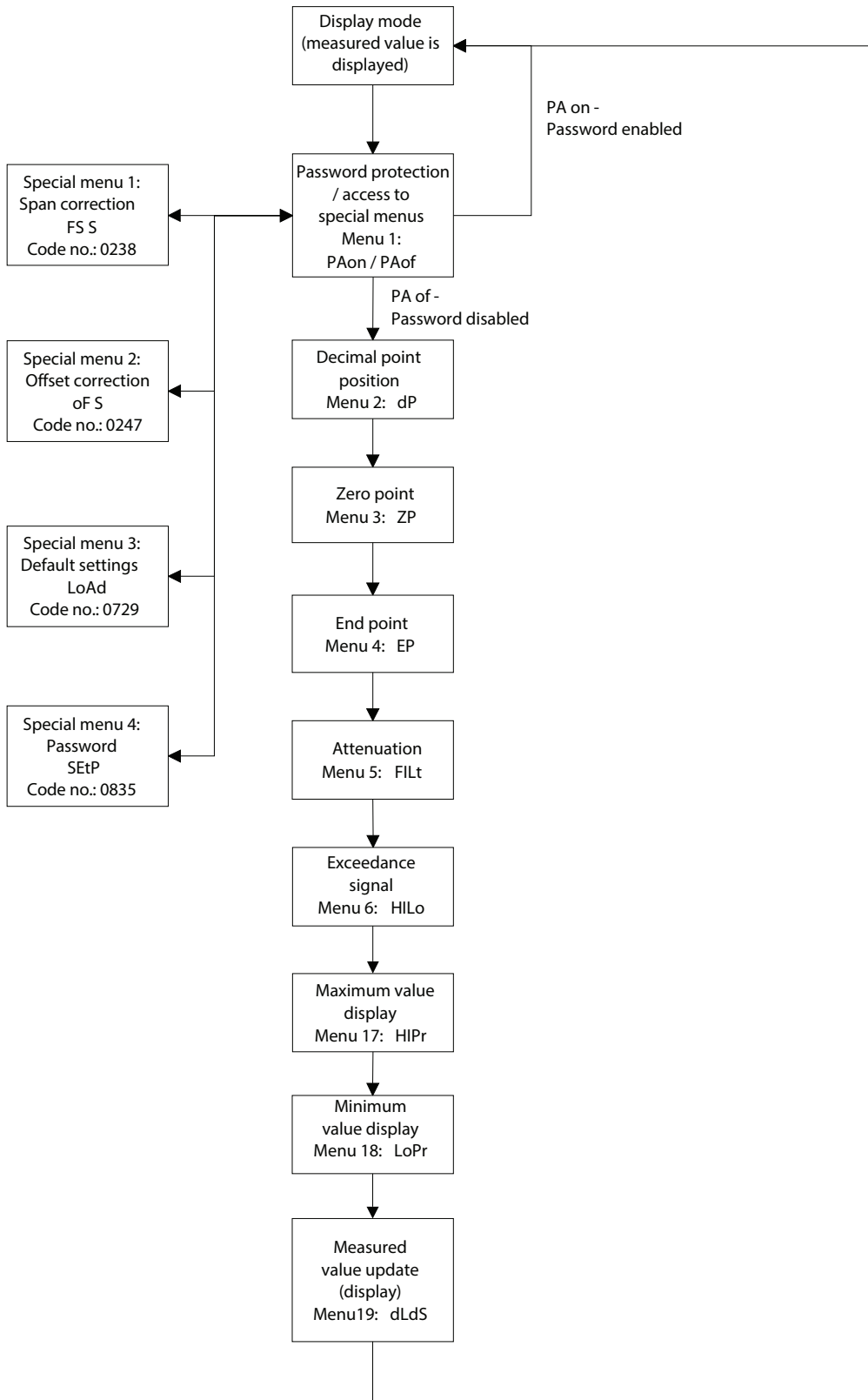
0005

see >>Menu 1<<

see >>Special menu 4<<

see >>Special menu 3<<

2.10. Menu layout



2.11. Unit

The unit of the displayed value is factory-set and indicated on the area where the unit label can be placed.

2.12. Menu list

PAon

Menu 1 – Password protection

If password protection is enabled, "PAon" is shown on the display.

To disable password protection: Simultaneously press $\gg\blacktriangle\ll$ and $\gg\blacktriangledown\ll$ to confirm menu option "PAon". Then press $\gg\blacktriangle\ll$ or $\gg\blacktriangledown\ll$ to enter the password and confirm by pressing both buttons. Password protection is now disabled and "PAof" is shown on the display.

PAof

If password protection is disabled, "PAof" is shown on the display.

To enable password protection: Simultaneously press $\gg\blacktriangle\ll$ and $\gg\blacktriangledown\ll$ to confirm menu option "PAof". Then press $\gg\blacktriangle\ll$ or $\gg\blacktriangledown\ll$ to enter the password and confirm by pressing both buttons. Password protection is now enabled and "PAon" is shown on the display.

The factory-set password is "0005".

The password can be changed in special menu 4.

dP

Menu 2 – Setting decimal point position

Simultaneously press $\gg\blacktriangle\ll$ and $\gg\blacktriangledown\ll$ to confirm menu option "dP". Then press $\gg\blacktriangle\ll$ or $\gg\blacktriangledown\ll$ to set the decimal point to the correct position and confirm by pressing both buttons.

ZP

Menu 3 – Setting zero point

Simultaneously press $\gg\blacktriangle\ll$ and $\gg\blacktriangledown\ll$ to confirm menu option "ZP".

Then press $\gg\blacktriangle\ll$ or $\gg\blacktriangledown\ll$ to set the zero point and confirm by pressing both buttons.

The set value is displayed when the electric output signal of the transducer is 4 mA (zero point).

EP

Menu 4 – Setting end point

Simultaneously press $\gg\blacktriangle\ll$ and $\gg\blacktriangledown\ll$ to confirm menu option "EP".

Then press $\gg\blacktriangle\ll$ or $\gg\blacktriangledown\ll$ to set the end point and confirm by pressing both buttons.

The set value is displayed when the electric output signal of the transducer is 20 mA (end point).

FILt

Menu 5 – Setting attenuation (filter)

Simultaneously press $\gg\blacktriangle\ll$ and $\gg\blacktriangledown\ll$ to confirm menu option "FILt".

Then press $\gg\blacktriangle\ll$ or $\gg\blacktriangledown\ll$ to set the time constant of the analogue low-pass filter and confirm by pressing both buttons.

Value range: **0.3 ... 30 s**

This parameter ensures constant display, even if the measured values fluctuate greatly.

HILo

Menu 6 – Enabling/disabling range exceedance alarm

Enable/disable alarm: Simultaneously press $\gg\blacktriangle\ll$ and $\gg\blacktriangledown\ll$ to confirm menu option "HILo". Then press $\gg\blacktriangle\ll$ or $\gg\blacktriangledown\ll$ to set the exceedance alarm function to "on" or "off" and confirm by pressing both buttons.

The image shows a seven-segment LED display with the character 'H' on the left and the number '19.1' on the right.

Menu 17 – Maximum value display

Simultaneously press >>▲<< and >>▼<< to confirm menu option "HiPr". The highest value measuring during the current measuring series is displayed.

Reset maximum value: Simultaneously press >>▲<< and >>▼<< within 1 second after confirmation of the menu option.

The maximum value is automatically reset when the device is de-energized.

The image shows a seven-segment LED display with the character 'L' on the left and the number '0.1' on the right.

Menu 18 – Minimum value display

Simultaneously press >>▲<< and >>▼<< to confirm menu option "LoPr". The lowest value measuring during the current measuring series is displayed.

Reset minimum value: Simultaneously press >>▲<< and >>▼<< within 1 second after confirmation of the menu option.

The minimum value is automatically reset when the device is de-energized.

The image shows a seven-segment LED display with the character 'dL' on the left and the number '05' on the right.

Menu 19 – Measured value update (display)

Simultaneously press >>▲<< and >>▼<< to confirm menu option "dLdS". Press >>▲<< and/or >>▼<< to set the time interval for the update of the display and confirm by simultaneously pressing the two buttons.

Value range: 0 ... 10 s

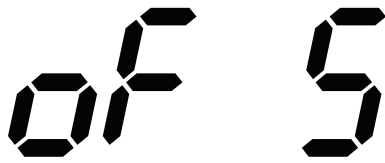
2.12.1. Special menus

The special menus can be accessed through menu 1. All settings described below must be made in menu 1.



Special menu 1 – Display correction for deviating span signal (span correction). To correct the display in the event of a deviating span, press >>▲<< and >>▼<< to set the display value to "0238". Confirm by pressing the two buttons simultaneously. "FS S" is shown on the display. Pressurize the device with a reference pressure that corresponds to the upper measuring range end point value. Press the two buttons again to save the current output signal from the transmitter as the span signal. From now on, the display shows the set end point value, although the sensor signal is offset from the span signal.

Please note that the output signal is not affected by this configuration.



Special menu 2 – Zeroing display in the event of a deviating offset (offset correction)

To zero the display in the event of a deviating offset, press >>▲<< and >>▼<< to set the display value to "0247". Confirm by pressing the two buttons simultaneously. "of S" is shown on the display. If the offset deviates from the ambient pressure, pressurize the device with a reference pressure that corresponds to the lower measuring range end point value. Press the two buttons again to save the current output signal from the transmitter as the offset signal. From now on, the display shows the set end point value (zero point), although the sensor signal is offset from the span signal. Please note that the output signal is not affected by this configuration. This offset correction also results in an offset of the span value (full scale).



Special menu 3 – Resetting to factory settings (loading defaults)

To load the default settings, press >>▲<< and >>▼<< to set the display to value "0729". Confirm by pressing the two buttons simultaneously. Confirm again by pressing the two buttons simultaneously.

When the default values (factory settings) are loaded, all previously made adjustments, the recorded measuring results and the password are reset.




Special menu 4 – Changing password

To change the password, press >>▲<< and >>▼<< to set the display to value "0835". Confirm by pressing the two buttons simultaneously. Then press >>▲<< or >>▼<< to enter the new password and confirm by pressing both buttons.

Value range: 0 ... 9999

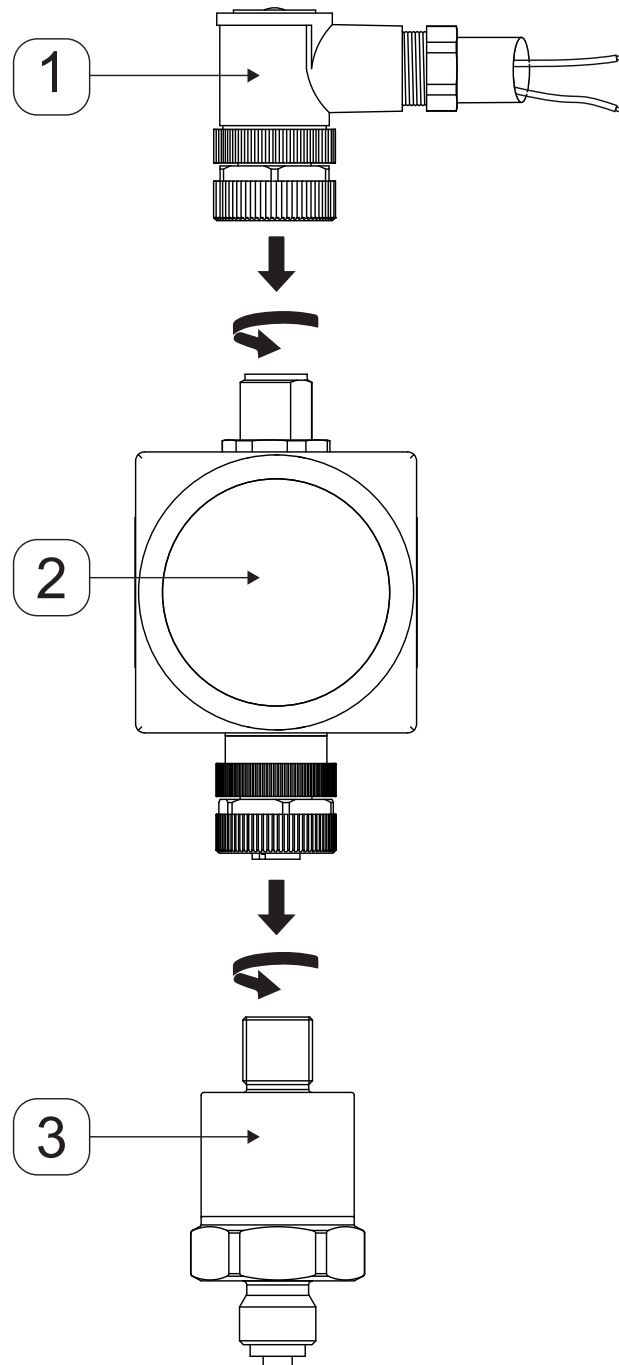
NOTE	The values below are already assigned and cannot be used as passwords:
	0238, 0247, 0729 and 0835

3. Installation

NOTE	Risk of damage to device
	<ul style="list-style-type: none">• Before installing and connecting the device, ensure that the entire system is de-energized.• Never exceed the rotation and tightening limits of the components.

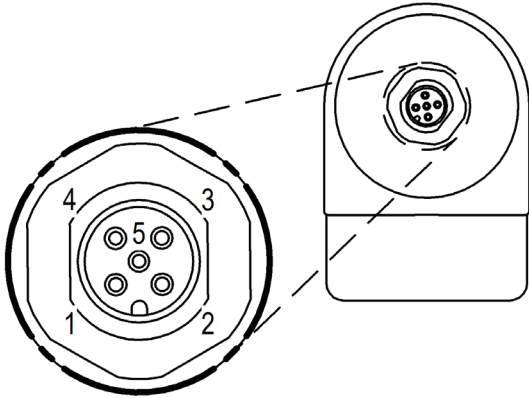
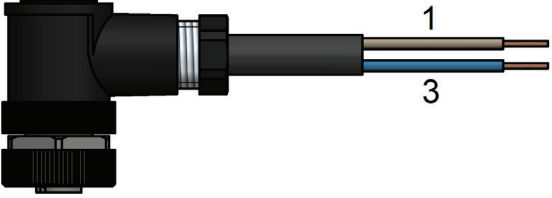
3.1. Installation

1. Screw the plug-on display (2) onto the compatible transducer (3).
2. Screw the cable box (1) onto the plug-on display (2).



4. Electrical installation

For the electrical installation, refer to the table and wiring diagrams below.

Electrical connections	
Diagram	Pin assignment
	<p>1 – power supply (+) 24V DC</p> <p>2 – not assigned</p> <p>3 – power supply (-) 0V or GND</p> <p>4 – not assigned</p> <p>5 – ground</p>
	<p>1 – power supply (+) 24V DC Wire colour: BROWN</p> <p>3 – power supply (-) 0V or GND Wire colour: BLUE</p>

4.1. Connection to power supply

The voltage drop caused by the electronics in the device is approx. 6 VDC. This must be taken into account when dimensioning the power supply. The limit values are calculated as follows:

Minimum operating voltage:
$$U_{B \min} = U_{\min \text{ MU}} + 6 \text{ V}$$

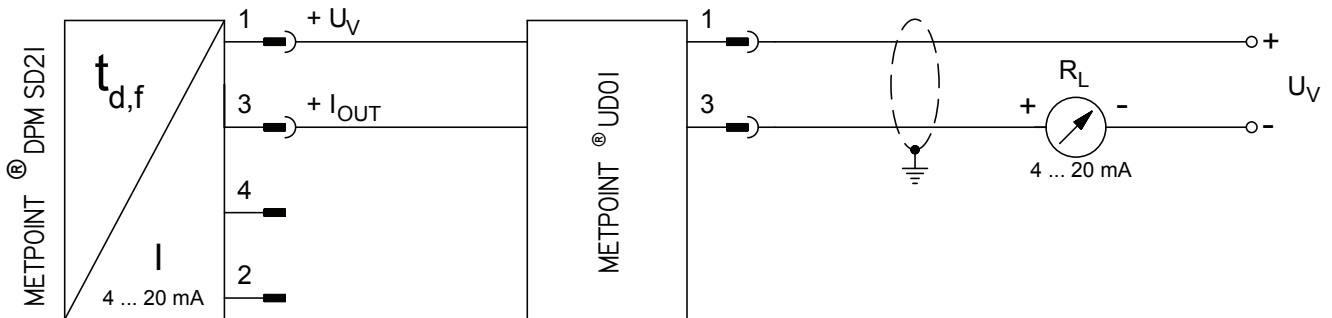
Maximum operating voltage:
$$U_{B \max} = U_{\max \text{ MU}} + 6 \text{ V}$$

Key:

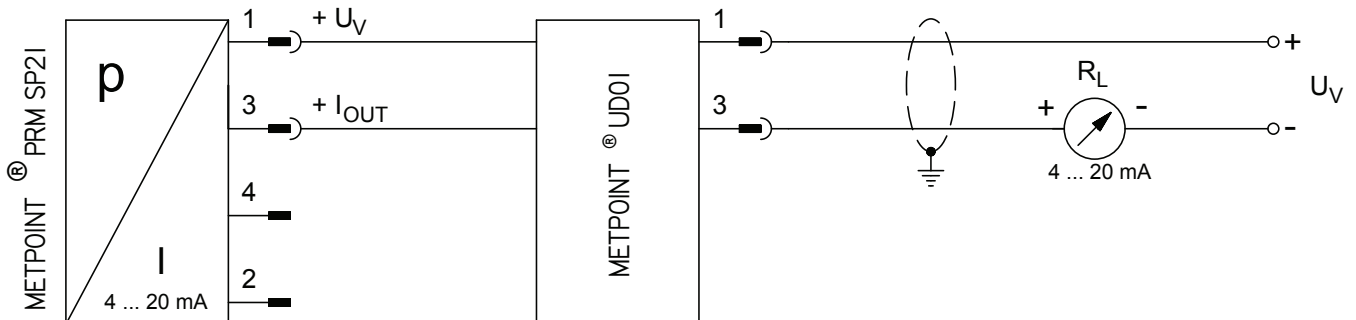
$U_{\min \text{ MU}}$ = minimum operating voltage of installed 2-wire transducer

$U_{\max \text{ MU}}$ = maximum operating voltage of installed 2-wire transducer

4.2. Power supply for METPOINT® DPM SD21 2-wire transducer



4.3. Power supply for METPOINT® DPM SP21 2-wire transducer



5. Commissioning

After the METPOINT® UD01 plug-on display has been correctly installed and connected, it is ready for operation.

6. Decommissioning

To decommissioning the plug-on display, disconnect it from the power supply, remove it from the transducer by performing the installation steps in reverse order and dispose of it according to the disposal instructions in chapter “9. Dismantling and disposal”, page 18.


7. Maintenance and servicing

The plug-on display does not need any maintenance. From time to time, it might need to be cleaned as described below.

7.1. Cleaning

To clean the METPOINT® UD01 plug-on display, use a damp (but not wet) cotton cloth or disposable tissue and a mild conventional detergent.

Spray a little detergent onto the clean cotton cloth or tissue and carefully wipe the component. Dry it with a clean cloth. Observe all hygiene instructions application on site.

NOTE	Damage caused by improper cleaning
	<p>Cleaning with a wet cloth, pointed implement or aggressive detergent can cause damage to the plug-on display and its electronic components.</p> <ul style="list-style-type: none"> • Never clean the device with a wet cloth. • Do not use aggressive detergents. • Do not clean the display with a pointed or sharp-edged implement

8. Troubleshooting and repair

In the event of a malfunction of the device, return it to the manufacturer for repair. Clean the device carefully and pack it so that it is protected against impact. Return the device to the manufacturer, enclosing a return declaration with a detailed description of the error/malfunction. If your device has come into contact with a hazardous substance, also enclose a declaration of decontamination. The relevant templates can be downloaded from our homepage at www.beko-technologies.de. If your device arrives at our service workshop without a declaration of decontamination, and should our personnel be concerned about any media with which it might have come into contact, we will contact you. A repair will only be performed after we have received the relevant declaration of decontamination. If the device has been exposed to a hazardous substance, take all necessary safety precautions when cleaning it!

9. Dismantling and disposal

Dispose of the device according to the European Directives 2002/96/EC and 2003/108/EC (waste electrical and electronic equipment (WEEE)). Never dispose of it with normal household waste!

If the device has been in contact with a hazardous substance, it might need to be disposed of through a specialist hazardous waste disposal contractor!

10. Declaration of Conformity

BEKO TECHNOLOGIES GMBH
 41468 Neuss, GERMANY
 Tel: +49 2131 988-0
 www.beko-technologies.de



EG-Konformitätserklärung

Wir erklären hiermit, dass die nachfolgend bezeichneten Produkte den Anforderungen der einschlägigen Richtlinien und technischen Normen entsprechen. Diese Erklärung bezieht sich nur auf die Produkte in dem Zustand, in dem sie von uns in Verkehr gebracht wurden. Nicht vom Hersteller angebrachte Teile und/oder nachträglich vorgenommene Eingriffe bleiben unberücksichtigt.

Produktbezeichnung:	METPOINT® UD01
Typ:	4032114
Anzeigebereich:	-1999 ... +9999
Versorgungsspannung:	24 V DC
Max. Versorgungsspannung:	30 V DC
Datenblatt:	UD01-880-0515-FP-A
Zeichnungs-Nr.:	UD01_ALG_R00
Schutzart:	IP65
Min. / Max. Umgebungstemperatur:	-25°C / +85°C
Produktbeschreibung und Funktion:	Aufsteckanzeige für METPOINT Messumformer

EMV-Richtlinie 2004/108/EG

Angewandte Normen: EN 61326-1:2013

ROHS II-Richtlinie 2011/65/EU

Die Vorschriften der Richtlinie 2011/65/EU zur Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten werden erfüllt.

Die Produkte sind mit dem abgebildeten Zeichen gekennzeichnet:



Neuss, 30.06.2015

BEKO TECHNOLOGIES GMBH

i.V. Christian Riedel
 Leiter Qualitätsmanagement

Archiving: CE_ UD01-881-0615-FP-A

BEKO TECHNOLOGIES GMBH
41468 Neuss, GERMANY
Phone: +49 2131 988-0
www.beko-technologies.de



EC Declaration of Conformity

We herewith declare that products named below conform to the applicable directives and technical standards. This declaration applies exclusively to the products as delivered. It does not cover components added at a later stage or modifications made after delivery.

Product designation:	METPOINT® UD01
Type:	4032114
Display range:	-1999 / +9999
Supply voltage:	24 V DC
Max. supply voltage:	30 V DC
Data sheet:	UD01-880-0515-FP-A
Drawing no.:	UD01_AGL_R00
Protection category:	IP65
Min./max. ambient temperature:	-25 °C / +85 °C
Product description and function:	Plug-on display for METPOINT transducers

EMC Directive 2004/108/EC

Applied standards: EN 61326-1:2013

RoHS II Directive 2011/65/EU

The products meet the requirements laid down in European Directive 2011/65/EU concerning the restriction of the use of certain hazardous substances in electrical and electronic devices.

The products bear the CE Mark.



Neuss, 30/06/2015

BEKO TECHNOLOGIES GMBH

ppa Christian Riedel
Head of Quality Management

Archiving: UD01-881-0615-FP-A

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