

EN-US - english

Instructions for installation and operation

Mobile hand-held measuring device METPOINT[®] BDL portable



Dear customer,

Thank you for deciding in favor of the **METPOINT[®] BDL portable**. Please read these installation and operating instructions carefully before mounting and starting up the device and follow our directions. Perfect functioning and safe operation of the **METPOINT[®] BDL portable** can only be guaranteed when the provisions and notes stipulated here are strictly adhered to.

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1 Pictograms and symbols



General danger symbol (danger, warning, caution)



General note



Observe the installation and operating instructions (on the type plate)



Observe the installation and operating instructions

2 Signal words in accordance with ISO 3864 and ANSI Z 535

Danger!	Imminent hazard Consequences of non-observance: serious injury or death
Warning!	Potential hazard Consequences of non-observance: possible serious injury or death
Caution!	Imminent hazard Consequences of non-observance: possible injury or property damage
Notice!	Potential hazard Consequences of non-observance: possible injury or property damage
Important!	Additional advice, info, hints Consequences of non-observance: disadvantages during operation and maintenance, no dan- ger

3 Safety instructions



Please check whether or not these instructions correspond to the device type.

Please adhere to all advice given in these operating instructions. They include basic information which needs to be observed during installation, operation and maintenance. Therefore, it is vital for the technician and the responsible operator/qualified personnel to read these operating instructions prior to installation, start-up and maintenance.

The operating instructions must be accessible at all times at the place of application of the **METPOINT**[®] **BDL portable**. In addition to these operating instructions, local and national regulations need to be observed, where required.

If you have any queries regarding these instructions or the device, please contact the manufacturer.



Danger!

Supply voltage!

The contact with non-insulated parts carrying supply voltage involves the risk of an electric shock resulting in severe injuries and death.

Measures:

- Observe all regulations in effect during the electrical installation (e.g. VDE 0100)!
- Maintenance works must only be carried out when the system is de-energized!
- Any electrical works must only be carried out by authorised and skilled personnel.



Danger!

Inadmissible operating parameters!

Under-running or exceeding the limit values involves risks for persons and the material, and malfunction and service failures may occur.

Measures:

- Make sure that the **METPOINT[®] BDL portable** is operated only within the permissible limit values that are indicated on the type plate.
- Exact compliance with the performance data of the **METPOINT**[®] **BDL portable** in connection with the case of application.
- Do not exceed the permissible storage and transport temperature.

Further safety advice:

- During installation and operation, the national regulations and safety instructions in force also need to be observed.
- The METPOINT[®] BDL portable must not be employed in hazardous areas.

Additional instructions:

- Do not overheat the device!
- The METPOINT® BDL portable must not be disassembled!



Caution!

Malfunctions of the METPOINT[®] BDL portable

Through incorrect installation and insufficient maintenance, malfunctions of the **METPOINT**[®] **BDL portable** may occur. These can affect the indications and lead to misinterpretations.

4 Field of application

The new **METPOINT[®] BDL portable** is a universally employable hand-held measuring device for many applications in the industry like, for example:

- ► Consumption/flow measurement
- ▶ Pressure/vacuum measurement
- ► Temperature measurement
- ▶ Residual moisture/dew point measurement

With the 3.5" graphics display with a touch screen, operation is very easy. The graphical presentation of the colored measuring curve is unique. Up to 100 million measured values can be stored with a date and measuring point. The measured values can be transmitted to the PC via USB stick.

At the freely configurable sensor input, the following sensors can optionally be connected:

- Pressure transducers (overpressure and negative pressure)
- Consumption sensors, FS 109/211
- Temperature sensors PT 100, 4 ... 20 mA
- Dew point sensors DP 109/110 and SD 21/23
- Electr. power meters
- Any external sensors with the following signals:

0 ... 1/10/30V, 0/4 ... 20mA, Pt100, PT1000,

5 Proper use

The **METPOINT[®] BDL portable** hand-held measuring device serves for the mobile measured data acquisition and storage of analogue and digital input signals in non-hazardous areas.

The **METPOINT® BDL portable** hand-held measuring device is exclusively designed and constructed for the proper application purpose that is described herein and must only be used correspondingly.

A check in order to ascertain whether or not the device is suitable for the chosen employment must be carried out by the user. It must be ensured that the medium is compatible with the components which come into contact with it. **The technical data listed in the data sheet are binding.**

Improper handling or operation outside the technical specifications is impermissible. Claims of any kind on the basis of improper use are excluded.

Type plate/product identification

6 Type plate/product identification

The type plate is on the housing. It includes all the important data regarding the **METPOINT® BDL portable** hand-held measuring device which must be communicated to the manufacturer or supplier upon request.



METPOINT [®] BDL portable	Produktbezeichnung
Supply Voltage:	Versorgungsspannung
Frequency Range:	Frequenzbereich
Degree of Protection:	IP-Schutzart
Ambient Temperature:	Umgebungstemperatur
Weight:	Gewicht
Туре:	Interne Artikelnummer (Beispiel)
S/N:	Seriennummer (Beispiel)



Note:

Never remove, damage, or obliterate the type plate!

7 Storage and transport

Despite all due care and attention, transport damage cannot be excluded. Therefore, check the METPOINT[®] BDL portable for possible transport damage subsequent to transport and removal of the packaging material. The forwarding agent and BEKO TECHNOLOGIES or the BEKO TECHNOLOGIES agency shall be informed immediately about any kind of damage.



Warning!

Overheating!

Overheating will destroy the evaluation unit. Observe the permissible storage and transport temperature, as well as the permissible operating temperature (e.g. protect the measuring device against direct sunlight).



Warning!

Damage possible!

Damage may occur to the METPOINT® BDL portable through improper transport or storage.

Measures

- The METPOINT[®] BDL portable must only be transported or stored by authorised and trained skilled personnel.
- In addition, observe the respectively valid regional provisions and directives.



Caution!

Danger through damaged components!

Do not start-up a damaged METPOINT[®] BDL portable. Defective components can impair the operational reliability, falsify the measuring results, and cause further damage.



Store the METPOINT[®] BDL portable in its original packaging in a closed, dry, and frost-protected room. The ambient temperatures must not exceed/underrun the values indicated on the type plate.

Protect the device against atmospheric influences even when packaged.

Technical data METPOINT® BDL portable8Technical data METPOINT® BDL portable

CE	
Color display	3.5" touch panel, TFT transmissive, graphics, curves, statistics
Interfaces	USB interface
Power supply for sensors	Output voltage: 24 VDC ± 10% Output current: 120 mA in continuous operation
Current supply	Internally chargeable Li-ion batteries, charging time approximately 4 h METPOINT [®] BDL portable continuous operation > 4 h depending on the power consumption for ext. sensor
Power supply unit	100 – 240 VAC/50 – 60 Hz, 12VDC – 1A Safety class 2 only for the application in dry rooms
Dimensions	82 x 96 x 245 mm
Housing material	PC/ABS
Weight	450 g
Employment temperature	-20 +70 °C measuring-gas temperature 0 +50 °C ambient temperature
Storage temperature	-20 +70°C
Optional	Data logger, memory capacity 2 GB memory card standard, optional up to 4 GB
EMC	DIN EN 61326

9 Input signals ext. sensor METPOINT[®] BDL portable

Input signals		
Signal current	Measuring range	0 – 20 mA/4 – 20 mA
(0 - 20 mA/4 - 20 mA)	Resolution	0.0001 mA
internal or external	Accuracy	\pm 0.003 mA \pm 0.05%
power supply	Input resistance	50 Ω
	Measuring range	0 – 1 V
Signal voltage	Resolution	0.05 mV
(0 – 1 V)	Accuracy	\pm 0.2 mV \pm 0.05%
	Input resistance	100 kΩ
	Measuring range	0 – 10 V/30 V
Signal voltage	Resolution	0.5 mV
(0 – 10 V/30 V)	Accuracy	\pm 2 mV \pm 0.05%
	Input resistance	1 MΩ
	Measuring range	-200 – 850°C
RTD	Resolution	0.1 °C
Pt100	Accuracy	± 0.2°C at -100 … 400 °C ± 0.3°C (remaining range)
	Measuring range	-200 – 850°C
RTD	Resolution	0.1°C
Pt1000	Accuracy	± 0.2 °C at -100 – 400°C ± 0.3 °C (remaining range)
Pulse	Measuring range	Min. pulse duration 100 µS Frequency 0 – 1 kHz Max. 30 VDC

Installation

10 Installation



NOTE!

The plug of the power supply unit (charger) is used as a separator. This separator must be clearly recognizable and easily accessible by the user. A plug connector with a CEE7/7 system is necessary.



NOTE!

Only use the included type GE12I12-P1J power supply unit.

10.1 Line cross-sections

For the sensor connections/output signals, the following line cross-section needs to be used: AWG16 – AWG28, line cross-sections $0.14 - 1.5 \text{ mm}^2$

11 Connection diagrams of the different sensor types

11.1 PIN assignment for the sensor connection

An ODU Medi Snap 8 pin is used as a sensor interface connector - reference: K11M07-P08LFD0-6550

These are the available connecting leads from BEKO TECHNOLOGIES GMBH:

ODU connector with open ends: order no. 4028338, cable length 5 m.

ODU connector with an SDI connecting plug: or

order no. 4028337, cable length 5 m.

Plug and cable configuration:



View on welding pins of Medi Snap Connector



Absoblusswiderstand 7		
RS485		+ RS485
(+)A/RS485 ⊖ ←	White	- RS485
(-)B/RS485 ⊖ ∾	Brown	SDI (BEKO-internal data transmission for all the dew point/consumption sen-
SDI \ominus က	Green	sors)
Analog IN + \ominus 🔫	Yellow	ANALOGUE IN + (current signal and voltage signal)
مە ⊖ _{ھەق} Analog IN	Grey	ANALOGUE IN – (current signal and voltage signal)
ں ⊖ (500µA) ن	Pink	POWER SUPPLY 500 µA
+Uv 24VDC \ominus ト	Blue	+Uv, 24V DC power supply for sensors
-Uv GND 🛛 🕁 🗙	Red	-Uv, GND sensor
65 - 26		

DP series: dew point sensors

FS series: consumption sensors

SD series: pressure dew point transmitters

11.2 Connection dew point sensors DP series



11.3 Connection dew point sensors DP/FS series



11.4 Connection dew point sensors SD series



Signal level 0: Abschlusswiderstand Z low = 0 - 0.7 VDC(+) A / RS485 🕀 🖛 (-)B/RS485 ⊖ ∾ Signal level 1: 1 = 2.5V - 30 V 0 = 0V - 0.7 V SDI () () high = 2.5 - 30 VDC + Analog IN + \ominus 🔫 Gelb Analog IN 🛺 🖯 🕠 Grau t = 400 µs I (500µA) **9 9** +Uv 24VDC 🕀 ト max. frequency -Uv GND $\Theta \infty$ (pulse duty factor 1:1) = 1000 Ηz Input resistance: min. 100 kOhm Abschlusswiderstand O (+)A/RS485 ⊖ ← Externally required (-) B / RS485 ⊖ ∾ R = 4K7SDI \ominus \circ Analog IN + \ominus 🛪 Gelb مع 🖯 Analog IN Grau I (500µA) 0 O Caution: +Uv 24VDC \ominus ト Blau Counts one unit of consump--Uv GND ⊖ ∞ tion when switching on the Rot DP510 Abschlusswiderstand C (+) A / RS485 🕀 🖛 (-) B / RS485 ⊖ ∾ SDI $\ominus \mathbf{m}$ Analog IN + \ominus 🔫 Gelb Externally required Analog IN _{ຣັກD} 🖯 ທ ŧ Grau R = 4K7I (500µA) 0 🕀 +Uv 24VDC \ominus ト Blau -Uv GND $\ominus \infty$ Rot Abschlusswiderstand C (+) A / RS485 🕀 🔫 (-) B / RS485 ⊖ ∾ SDI \ominus \circ Analog IN + 🕀 🛪 Gelb مە 🖯 Analog IN Grau This is impossible! I (500µA) 0 O +Uv 24VDC \ominus ト -Uv GND ⊖ ∞

11.5 Connection pulse sensors

11.6 Analogue 2-wire, 3-wire, and 4-wire current signal



11.7 3 and 4-wire voltage supply 0 - 1/10/30 VDC



11.8 2, 3, and 4-wire terminal assignment of PT100/PT1000/KTY81



11.9 Assignment with RS485



12 Operation METPOINT[®] BDL portable

The operation of the METPOINT[®] BDL portable is implemented by means of a membrane keyboard and touch panel.

12.1 Membrane keyboard

12.1.1 On and off key

Switching on or off by pressing the U button and holding it.

12.1.2 Brightness keys

With the display can be modified.

12.1.3 Screenshot button

By pressing the screenshot button, the current screen display is stored. An SD card or USB stick serve as a storage medium.

12.1.3.1 Storing a screenshot

store Bitmap (17 KByte) to USB/SdCard ?	Here, the storage location USB stick or SD card can be selected.
/D130910/B00000.bmp SdCard USB Cancel	The pictures are stored in a directory per day and are consecutively numbered.
Hume Ø Jr ++ 27 01 2012	Directory designation; DJJMMTT D=fix(for the date)
	JJ = Year MM- Month
	TT= Day
Bitmap stored to	Path: DEV0003/PI500/Bitmap
SDCARD	Example: first picture 10 September 2013
Sucard USB Cancel	\\DEV0003/BDL/Bitmap/D130910/B00000.bmp

12.1.3.2 Exporting screenshots

The screenshots that are stored on the SD card can be exported to a USB stick.

Main menu → Export data

*** Exportions Datap	
Exportiere Logger Daten	
Export Screenshots	With <i>Export screenshots,</i> the stored screenshots can be transmitted to a USB stick.
Exportiere System Einstellungen	
💼 Home	

Main menu → Export data → Export screenshots





Main menu → Export data → Export screenshots → Selection

Мо	Di	Mi	Do	Fr	Sa	So
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						
_	10 Se	otembe	er 2013			
			2010			UK



Main menu → Export data → Export screenshots → Exporting

*** Export Scrennshots ***				
Start	10.09.2013	Auswahl		
Ende	10.09.2013	Auswahl		
Ausgewählte Dateien: 5				
Tot. Size(Kbyte): 83				
	Exportieren			
Zurück				

The screenshots of the selected period of time are exported to a USB stick.

12.2 Touch panel

The operation is menu-driven to the largest possible extent via the touch panel.

The selection of the respective menu items is realized via short "tapping" with the finger or using a soft-pointed pen.

<u>Caution:</u> Please do not use pens or other objects with sharp edges! The foil may be damaged!

In the event that a sensor was connected, the latter also needs to be configured.

Entries or changes can be made in all the fields with a white background. The measured values can be displayed as a curve or as values.

Words in *green letters* mainly point to the illustration(s) in the chapter section. But also related important menu paths or menu items are marked in *green letters*.

The menu navigation is generally shown in green letters!

The table of contents and the chapter references in <u>blue letters</u> contain links to the respective chapter headers.

12.3 Main menu (home)

You can go to every available sub item via the main menu.

12.3.1 Initialization



Subsequent to the switching-on of the METPOINT[®] BDL portable, the channel is initialized and the "*Current values*" menu appears.

Caution:

At the first start-up of a METPOINT[®] BDL portable, an ext. channel may not be preset.

Please select the suitable configurations in Chapter 7.3.2.1.2 Sensor Einstellung and set them!

12.3.2 Main menu





Important:

Prior to carrying out the first sensor settings, the language and time should be set.

Note:

Chapter <u>7.3.2.1.4.1 Sprache</u> (English menu navigation: *Main* → *Settings* → *Device Settings* → *Set Language*)

Chapter <u>7.3.2.1.4.2 Datum & Uhrzeit</u> (English menu navigation: *Main* → *Settings* → *Device Settings* → *Date* & *Time*)

12.3.2.1 Settings

All the settings are password-protected! Settings or changes must generally be confirmed by OK!

Note:

When returning to the main menu and calling again one of the setting menus afterwards, the password must be re-entered!

Main menu → Settings





12.3.2.1.1 Password setting

Main menu → Settings → Password setting





Password when delivered: 0000 (4 x zero).

If required, it can be changed under: *Password settings*.

The new password must be entered twice and confirmed by *OK*.

In the event that a wrong password is entered, *Enter password* or *Repeat new password* will appear in red letters.

In the event of a forgotten password, a new password can be created by entering the master password.

The master password is supplied along with the device documentation.

12.3.2.1.2 Sensor settings

Important:

Sensors from BEKO TECHNOLGIES GMBH are generally pre-configured and can be directly connected to the sensor channel!

Main menu → Settings → Sensor settings



After having entered the password, the overview window of the channel will appear.

Note:

Normally, the ext. channel is not preset!

12.3.2.1.2.1 Selection of the ext. sensor type (example: BEKO digital sensor type)

Main menu → Settings → Sensor settings → C1

ttt Konsl od ttt s 0.0 V	
Kanal C1 - 0 mA	
Typ kein Sens	
	If no sensor was configured yet, the, <i>Type</i> no sensor will appear.
No Value defined	By pressing on the text field <i>Type</i> no sensor , you will go to the selection list of the sensor types (see next step).
OK Abbruch	

Main menu → Settings → Sensor settings → C1 → Text field type → BEKO digital

	BEKO-Digital	
0 - 1 V	0 - 10 V	0 - 30 V
0 - 20 mA	4 - 20 mA	PT100
PT1000	KTY81	Impuls
BEKO-Digital	Modbus	PM710

Now, the <i>Type</i> BEKO digital is selected for the VA/FA 400 series and confirmed by <i>OK</i> .
--

Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow C1 \rightarrow Right arrow (2nd page) \rightarrow Text field diameter

		** Kanal C1 ***	- 0.0 V - 0 mA	···· Kanal C1 ····
Гур	BEKO-Digital	Name		Type BEKO-Digital VA-Sensor 04mA = 0.000 m/s V.max 92.7 m/s 20mA = 0.000 m/s 20mA = 0.000 m/s
	Ala Alb Alc	0,00 iteimin 2345678 ite 0,00 m/s	Alarm >	Unit Diameter *C *F 100.00 mm Gas Constant Ref. Pressure Air (287.0) J/Kg*k 1000.00 hPa Ref. Temp. Consumption 20.00 *C Itr
(ОК АЬЬ	ruch	Info	OK Cancel More-Settings Inf



Here, the *Inner diameter* of the flow pipe can be entered in the event that it was not automatically correctly set.

In addition, the *counter reading* of the previous sensor can be entered when replacing the sensor.

Please confirm with *OK* and go back with the *left arrow (1st page)*.

Important:

The *inner diameter* should be entered as exactly as possible, since, otherwise, the measuring results will be falsified!

No uniform standard exists for the inner diameter of the pipe! (Please ask the manufacturer or, if possible, check the measurements yourself!) Main menu → Settings → Sensor settings → C1

Typ BEKO-Digital Name	
Aufzeichnen	Alarm
A1a0,0	00 Itelman
A1b 234567	78 tr >
A1c 0,0	00 m/s



Main menu → Settings → Sensor settings → C1

Тур	BEKO-Digital	Name	Ai	r 1	
Aufzei	ichnen		2	Alarm	
~	P C1a	0.0	00 ltr/min	\checkmark	
~	₽ C1b	23456	78 itr		>
~	8 C1c	0.	00 m/s		

Subsequent to marking and confirming by <i>OK</i> , the configuration of the sensor is completed.	

Further configuration possibilities regarding sensors, see Chapters 12.2.2.5 to 12.2.2.8!

See also Chapter 7.3.2.1.2.7 Textfelder beschriften und einstellen

Note:

After having confirmed by OK, the lettering is switched to black again. The values and settings have been accepted.

Caution:

Reference temperature and reference pressure (setting ex works 20°C, 1000 hPa):

All the volume flow (m³/h) and consumption values (m³) that are indicated on the display refer to 20°C and 1000 hPa (according to ISO 1217 suction condition).

Alternatively, 0°C and 1013 hPa (=standard cubic meter according to DIN 1343) can also be entered as the reference. Under no circumstances must the operating pressure or the operating temperature be entered into the reference conditions!

Operation METPOINT® BDL portable

12.3.2.2 Denoting the measuring data and determining the resolution of the decimal places

Note:

The resolution of the decimal places, short name and value name can be found below the tool button!

Tool button:



Parameter Kanal C1 Wert 1 (Einheit °C) Wert Name: C1a Kurzname: C1a Auflösung: 1.00 °C < >		For the <i>value</i> to be recorded, a <i>name</i> with 10 characters can be entered in order to simplify its identification at a later moment in the menu items <i>Graphics</i> and <i>Graphics/current values</i> . Otherwise, the designation would be C1a, for example. <i>C1</i> is the channel name and <i>a</i> is the first measured value in the channel, while <i>b</i>
OK Abbrush 1		would be the second, and <i>c</i> the third.
OK Abbruch		The resolution of the decimal places is easi-
	Parameter Kanal C1 Wert 1 (Einheit °C) Wert Name: C1a Kurzname: C1a Auflösung: 1.00 °C < > OK Abbruch	Parameter Kanal C1 Wert 1 (Einheit °C) Wert Name: C1a Kurzname: C1a Auflösung: 1.00 °C > OK Abbruch

See Chapter 7.3.2.1.2.7 Textfelder beschriften und einstellen

12.3.2.2.1.1 Recording measuring data

Main menu → Settings → Sensor settings → C1 → Recording button



Caution:

Prior to recording the selected measuring data, the data logger must be activated subsequent to the completion of the settings (see Chapter 7.3.2.1.3.2 Logger-Einstellung (Datenlogger)).

12.3.2.2.1.2 Alarm settings (alarm pop-up)

Main menu → Settings → Sensor settings → C1 → Alarm button

By pressing an alarm button, the following window will appear:

– Obere Grenze –	Wert	Hysterese +/-	Alam Popup					
Alarm 1	0.000	0.000						
Alarm 2	0.000	0.000						
Untere Grenze								
Alarm 1	0.000	0.000						
Alarm 2	0.000	0.000						
	ок	Abbruch						

In the alarm settings, an *alarm-1* and *alarm-2* incl. hysteresis can be entered for each channel.

Via the alarm overview menu item (via the main menu), the alarm settings can also be configured or changed.

Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow C1 \rightarrow Alarm button \rightarrow Alarm 1 and Alarm 2 buttons + Alarm pop-up buttons

Alarm-Ei	nstellung	für Kanal C1 (C1a)
Obere Grenze	Wert	Hysterese +/-	Alam Popup
Alarm 1 🖌	100.000	3.000	use
Alarm 2	110.000	2.000	use
Alarm 1	85.000	2.000	use
Alarm 2	75.000	3.000	use
	ок	Abbruch	



Main menu → Settings → Sensor settings → C1

BEK	O-Digital	Name	A	ir 1	
Aufzeichnen				Alarm	-
V 8	C1a		0.000 Itr/min	~	
V 8	C16	234	5678 ltr		>
2 8	Cle		0.00 m/s		
- P	C1c		0.00 m/s		38



The settings are completed by means of the *OK* buttons!

12.3.2.2.1.3 Advanced settings (scaling analogue output)

Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow C1 \rightarrow Right arrow (2nd page) \rightarrow Advanced settings



The settings are completed by means of the OK buttons!

Note:

After having confirmed by *OK*, the lettering is switched to black again. The values and settings have been accepted.

12.3.2.3 Dew point sensor with the BEKO digital type

First step: select a free sensor channel Main menu → Settings → Sensor settings → C1

Second step: Select type BEKO Digital Main menu → Settings → Sensor settings → C1 → Type text field → BEKO digital

Third step: confirm twice with OK

Now, a name (see Chapter 7.3.2.1.2.7 Textfelder beschriften und einstellen), the alarm settings (see Chapter 7.3.2.1.2.4 Alarm-Einstellung), and recording settings (see Chapter 7.3.2.1.2.3 Messdaten aufzeichnen), as well as the resolution of the decimal places (see Chapter 7.3.2.1.2.2 Die Messdaten bezeichnen und Auflösung der Nachkommastellen bestimmen) can be determined.

Main menu → Settings → Sensor settings → C1



The METPOINT® BDL portable recognizes whether the connected sensor is a flow rate or a dew point sensor from BEKO TECHNOLOGIES GMBH and automatically sets the **BEKO** subtype correctly.

12.3.2.3.1.1 Marking and setting text fields

Main menu → Settings → Sensor settings → C1

Logger	stoppen?	
Ja	Nein	
*** Kani	i c1 ***	X
yp BEKO-Digital VA-S	ENSOF 04mA = 0.000 m/s 2.7 m/s 20mA = -1.#IO m/s	16
C	Durchmesser 100.00 mm	n

Ref. Druc

Verbrauch

Erweiterte Einst.

1000.00

hPa

Info

If the data logger is activated, the following window appears. By pressing *yes*, the data logger can be deactivated.

(Only activated when settings and recordings were already implemented)

Note:

When sensor settings are implemented or changed, the data logger must be on *STOP*.

By pressing on fields with a white background, changes or entries can be made.

The alarm (see Chapter <u>12.2.2.4 Alarm settings</u>) and recording buttons (see Chapter <u>12.2.2.3 Recording</u> <u>measuring data</u>), the resolution of the decimal places and the short name or the value name (see Chapter <u>12.2.2.2 Denoting the measuring data and determining the resolution of the decimal places</u>), as well as the advanced settings (see Chapter <u>12.2.2.5 Advanced settings</u>) are all described in Chapter <u>12.2.2.2 Sensor settings</u>.

Main menu → Settings → Sensor settings → C1 → Text field name

-											_	
	8/24			Ta	upun	kt			←	Clr		
	1	2	3	4	5	6	7	8	9	0		
	q	w	e	r	t	z	u	i	0	р		
	а	s	d	f	g	h	j	k	Ι	+		It is possible to enter a name with up to 24 characters
	у	x	c	v	b	n	m	,		-		
	AB	c /	Abc							@#\$		
				ок		A	bbru	ch				
L									_			

<

OK

Air (287.0) J/Kg*

Abbruch

*C

20.00

Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow C1 \rightarrow Text field type

L	BEKO-digital	
BEKO-digital	Modbus	PM710
ESMn-D6	PM600	kein Sensor



See also Chapter 7.3.2.1.2.8 Konfiguration von Analogsensoren

Main menu → Settings → Sensor settings → C1 → Text field unit



A preset selection of suitable <i>units</i> .	

Main menu → Settings → Sensor settings → C1 → Right arrow (2nd page) → Text field diameter

	D	urchmes	ser		
	27.5		←	Clr	
1	2	3	4	5	
6	7	8	9	0	
	0	K At	bruch		

Important:

Here, the *inner diameter* of the flow pipe can be entered in the event that it was not automatically correctly set.

Here, 27.5 mm, for example, are entered for the *inner diameter*.

Important:

The *inner diameter* should be entered as exactly as possible, since, otherwise, the measuring results will be falsified!

No uniform standard exists for the inner diameter of the pipe! (Please ask the manufacturer or, if possible, check the measurements yourself!) Main menu → Settings → Sensor settings → C1 → Right arrow (2nd page) → Text field gas constant

L		
Air (287.0)	CO2 (188.9)	N2O (187.8)
N2 (296.8)	O2 (259.8)	NG (446.0)
Ar (208.0)	He	H2
C3H8	CH4	



The remaining text fields can be marked in the same manner as is described here, in Chapter 7.3.2.1.2.7 Textfelder beschriften und einstellen

Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow C1 \rightarrow Right arrow (2nd page)



The text fields with red letters show that different values, such as the diameter and the <i>name</i> , were changed or added.

See also Chapter 7.3.2.1.2.2.1 Auswahl des Sensortyps (Beispiel Typ BEKO-Digital Sensor)

Note:

After having confirmed with OK, the lettering returns to black and the values and settings are accepted.

Caution:

Reference temperature and reference pressure (setting ex works 20°C, 1000 hPa):

All the volume flow (m³/h) and consumption values (m³) that are indicated on the display refer to 20°C and 1000 hPa (according to ISO 1217 suction condition).

Alternatively, 0°C and 1013 hPa (=standard cubic meter according to DIN 1343) can also be entered as the reference. Under no circumstances must the operating pressure or the operating temperature be entered into the reference conditions!
12.3.2.3.1.2 Configuration of analogue sensors

Short overview of the possible *Type* settings including examples. For *BEKO-Digital*, see *Chapters* <u>7.3.2.1.2.1</u> <u>Auswahl des Sensortyps (Beispiel Typ BEKO-Digital Sensor)</u> *and* <u>7.3.2.1.2.6</u> <u>Taupunktsensor mit dem Typ BEKO-Digital</u>.

The *alarm settings, recording* buttons, the *resolution* of the decimal places as well as the *short name* and *value name* are all described in Chapter 7.3.2.1.2 Sensor-Einstellung.

For the marking of the text fields, see Chapter 7.3.2.1.2.7 Textfelder beschriften und einstellen!

12.3.2.3.1.3 Types 0 - 1/10/30 Volt and 0/4 - 20 mA

Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow C1 \rightarrow Type text field \rightarrow 0 - 1/10/30 V





Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow C1 \rightarrow Right arrow (2nd page)

		*** Kana	I C1 ***		~ 0.0 V ~ 0 mA
Тур	0 - 10 V				
	Einheit	°C]
	Skal. OV		Skal. 10V		
	0.	000	250	.000	°C
<	Offset	0.0	000 °C		
	(Offset)	setze We	rt auf	R	leset
	set Total to				Power
C	K Ab	bruch			Info

	*** Cha	annel B1 ***	~ 0.0 V ~ 0 mA
Туре	0 - 10 V		
	Unit Scale 0V	°C Scale 10V 250.00	00 °C
<	Offset (Offset) Set V	0.000 °C ∕alue to	Reset
	set Total to		V Power
E	Back		Info

For *scal.* 0 V, please enter the lower scale value and for *scal.* 10 V the upper scale value.

The *ext. sensor supply voltage* is switched on when the sensor type requires this.

Please confirm with OK.

With the *Set-value-to* button *(offset)*, the measured data of the sensor can be set to a certain value.

The positive or negative difference of the *offset* is indicated.

With the *reset* button, the *offset* can be reset to zero.

Main menu → Settings → Sensor settings → C1 → Unit text field

°C °F %RH °Ctd °Ftd mg/kg mg/m³ g/kg g/m³ m/s Ft/min m³/h m³/min ltr/min ltr/s cfm m³ ltr cf ppm Page OK Cancel Cancel	A preset selection of suitable units for <i>types</i> 0 - 1/10/30 V and $0/4 - 20$ mA.
	By pressing the <i>page</i> button, paging forward is possible.
User_5 Edit User_2User_3User_4User_5User_6 User_7User_8User_9User_1User_1 User_1User_1User_1 User_1	In addition, internal " <i>user</i> " units can be defined, if required. Here, the user unit is defined by selecting the <i>Edit</i> button, analogously to the edition of
Page OK Cancel	a text field.

Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow C1 \rightarrow Type text field \rightarrow 0/4-20mA





12.3.2.3.1.4 Types PT100x and KTY81

Main menu → Settings → Sensor settings → C1 → Type text field → PT100x

***	Channel B1 ***	~ 0.0 V ~ 0 mA
Typ PT100	Name Mes	sung 4
Record		Alarm
🖌 🦹 B1a	90.34 ∘c	
∦ R	120.45 ∘c	>
%	150.56 ∘c	
OK Can	cel	Info

	*** Channel B1 *** - 0.0 V - 0 mA
Туре	PT100
	Unit °C
<	Sensortype: PT100 PT1000 KTY81
	Offset 0.00 °C
	(Offset) Set Temp. to Reset
0	K Cancel Info



12.3.2.3.1.5 Type pulse (pulse value)

Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow C1 \rightarrow Type text field \rightarrow Pulse





Normally, the numerical value with the unit stands for *1 pulse* on the sensor and can directly be entered into the **1 pulse =** text field.

Note:

Here, all of the text fields are already lettered or assigned.

Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow C1 \rightarrow Right arrow (2nd page) \rightarrow Unit pulse

	ltr	m³	Nltr	Nm ³		
cf	Ncf	kg	kWh	PCS		
	ок	Ab	bruch			



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Main menu → Settings → Sensor settings → C1 → Right arrow (2nd page) → Consumption

m³/h					
m³/h	m³/min				
	OK	C Abbruch			

Units for the *current consumption* for the **pulse** *type*.

Note: Example with the unit cubic meter!

Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow C1 \rightarrow Right arrow (2nd page) \rightarrow Unit meter



The available units for the unit of the <i>counter</i> for the <i>type</i> pulse	
The counter reading can, at all times, be set to any or a desired value.	

Please refer to Chapter 7.3.2.1.2.9 Typ 0 - 1/10/30 Volt und 0/4 - 20 mA for further setting possibilities!

12.3.2.3.1.6 Type no sensor

Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow C1 \rightarrow Type text field \rightarrow No sensor

*** Kanal A2 *** - 0.0 V	
Typ kein Sensor No Value defined	Serves to declare a channel which is currently not required as <i>not configured</i> .
Zurück	
frei Zurück Alarm Lg.stop 17.03.2014	When <i>returning</i> from <i>Type</i> no sensor to sensor sor settings, the channel is displayed as <i>free</i> .

12.3.2.3.1.7 Type Modbus

12.3.2.3.2 Selection and activation of the sensor type

First step: select a free sensor channel Main menu → Settings → Sensor settings → C1

Second step: select the Modbus type Main menu → Settings → Sensor settings → C1 → Type text field → Modbus

Third step: confirm with OK

Now, a *name* (see Chapter 7.3.2.1.2.7 Textfelder beschriften und einstellen) can be entered.

```
Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow C1 \rightarrow Right arrow (2<sup>nd</sup> page) \rightarrow VA \rightarrow Use
```



12.3.2.3.2.1.1 General Modbus settings

Via Modbus, up to eight registry values (from input or holding registers) of the sensor can be read out.

Selection via the register tabs Va - Vh and activation by means of the respective use button.

Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow C1 \rightarrow Right arrow (2nd page) \rightarrow Modbus settings \rightarrow ID text field

	Мо	dbus E	instellu	ngen	
Modbus	s ID	12			
		Bau	drate		
1200	2400	4800	9600	19.2	38.4
F	Parität		Stoppbit	Ter	m Bias
none	even o	id	1 2		
Antwort	tzeitlimi	it 🗌	100	msec	
ок	Abl	oruch		Standa	ardwerte

Here the Modbus ID is entered which is determined for the sensor, permissible values are 1-247, (ex. here *Modbus* ID = 12) In addition, the serial transmission settings baud rate, stop bit, parity bit, and timeout time need to be defined When the PI 510 is connected to the end of the bus, the termination can be activated via the Term button. Grundsätzlich sollte ein BIAS vom BUS-Master erfolgen kann bei Bedarf kann aber über Bias Knopf ein BIAS zugeschaltet werden Sorry, Satz nicht identifizierbar – bitte Rücksprache! Confirmation with OK. Resetting to the initial settings by means of the Set to default button. Please refer to the data sheet of the sensor for the setting of the Modbus ID and the transmission settings. Bitte deutsches Feld löschen

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	*** Kanal A1 *** 0.0 V					
Тур	Typ Modbus Generischer Modbus Id:1 9600N1 To:100msec					
	Register Einstellungen benutz	æ				
	Va Vb Vc Vd Ve Vf Vg Vh 🖌	ĺ				
	Reg.Adresse Reg.Format Einheit					
	0 [HR] R4					
	, , , , , ,					
	Skal. keine Skal. Power					
_		-				
0	K Abbruch Modbus Einstellu Info					

Main menu → Settings → Sensor settings → C1 → Reg. address text field

The sensor provides the measured values in registers. The values can be located and read out by the METPOINT[®] BDL PORTABLE via Modbus.

For this purpose, the desired register addresses need to be set in the METPOINT[®] BDL PORTABLE.

The entry of the *register/data address* is implemented in decimal values from 0 to 65535.

Important:

Here, the correct register address is required.

It must be observed that the register number may differ from the register address (offset). Please refer to the sensor/transducer data sheet for this purpose.

Main menu → Settings → Sensor settings → C1 → Reg. format text field

Datenformat						
Registertyp						
Input Register Holding Register						
Datentyp						
UI1-8	UI1-8 I1-8 UI2-16 I2-16 UI4-32 I4-32 R4-32					
		Byte	Anord	nung		
A-B-C-D D-C-B-A B-A-D-C C-D-A-B						
OK Abbruch						

By means of the *input register* and *holding register* buttons, the respective Modbus register type is selected.

With the *data type* and *byte order*, the number format and the order of transmission of the individual number bytes is determined. These must be used in combination.

Supported data types:

Data Type:	UI1(8b) = unsigned Integer	=>	0	-	255
	I1 (8b) = signed integer	=>	-128	-	127
	UI2 (16b) = unsigned Integer	=>	0	-	65535
	I2 (16b) = signed integer	=>	-32768	-	32767
	UI4 (32b) = unsigned Integer	=>	0	-	4294967295
	I4 (32b) = signed integer	=>	-2147483648	-	2147483647
	R4 (32b) = floatig point numbe	r			

Byte Order:

The size of a Modbus register is 2 bytes. For a 32 bit value, two Modbus registers are read out by the METPOINT[®] BDL portable. Correspondingly, only one register is read out for a 16 bit value.

The Modbus specification only insufficiently defines the byte order with which the values are transmitted. In order to cover all of the possible cases, the byte order is freely adjustable in the METPOINT[®] BDL portable, and must be adapted to the order of the respective sensor (see sensor/transducer data sheet).

Example: high byte before low byte, high word before low word etc.

Therefore, settings must be defined in accordance with the sensor/transducer data sheet.

Examples :

Holding Register - UI1(8b) - numerical value: 18



Selection register type <i>Holding register</i> , data type $U1(8b)$ and byte order A / B							
18 =>	HByte 00	LByte 12					
Data order A B	1. byte 00 12	2. byte 12 00					

Holding Register – UI4(32) - numerical value: 29235175522 → AE41 5652



Selection register type <i>Holding register</i> , data type <i>U1 (32b)</i> and byte order <i>A-B-C-D</i>						
		HWor	d	LWo	ord	
	Н	IByte L	Byte	HByte	LByte	
292351755	22 =>	AE	41	56	52	
Data order A-B-C-D D-C-B-A	1.byte AE 52	2.byte 41 56	ə 3.by 56 41	te 4.byt 52 AE	e	

Main menu → Settings → Sensor settings → C1 → Unit text field

			Kanal A1					
Typ Modbus Generischer Modbus Id:1 9600N1 To:100msec								
		Register	Einstellung	jen	benut	ze		
	Va Vb Vc Vd Ve Vf Vg Vh							
	Reg.Adresse Reg.Format Einheit							
<		0		34		-		
	1		1 [l		
	Skal.	keine S	kal.		Power			
<u> </u>					-	. 1		
	ж	Abbrud	cn Moa	bus Einst		2		
j∕r Edit								
				0	Edit			
			۹E	% =E				
		°C	۴	%rF	°Ctd			
	Ftd	°C mg/kg	°F mg/m³	%rF g/kg	°Ctd g/m³			
。 	Ftd m/s	°C mg/kg Ft/min	°F mg/m³ Nm/s	%rF g/kg Nft/min	°Ctd g/m ³ m ³ /h			
	Ftd m/s ³/min	°C mg/kg Ft/min Itr/min	°F mg/m ³ Nm/s Itr/s	%rF g/kg Nft/min cfm	°Ctd g/m ³ m ³ /h Nm ³ /h			



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Main menu → Settings → Sensor settings → C1 → Scal. text field





Main menu → Settings → Sensor settings → C1 → OK



Operation METPOINT® BDL portable

12.3.2.3.3 Modbus settings for the METPOINT® SD23

When connecting the ${\sf METPOINT}^{\circledast}$ SD23 via Modbus, the following settings are required:

First step: select a free sensor channel

Main menu → Settings → Sensor settings → Select a free channel (example: channel A1)

Second step: select Modbus type

Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow A1 \rightarrow Type text field \rightarrow Select Modbus and confirm with >OK<.

Third step: define a name

Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow A1 \rightarrow Name text field Now, a *name* needs to be entered.

Fourth step: define the Modbus settings

Main menu → Settings → Sensor settings → A1 → Modbus settings

Aodbus	ID	1			
		Bau	drate		
1200	2400	4800	9600	19.2	38.4
P	arität		Stoppbit	Tei	rm Bia
none	ven o	id	1 2		-
Antwort	zeitlimi		100	msec	

The corresponding Modbus ID can be taken from the data sheet of the sensor (here, for example, 1).

Adjust the other parameters according to the illustration.

Fifth step: define the register

Main menu → Settings → Sensor settings → A1 → Va → Use





The definition of other registers is implement- ed in the same manner.

The settings of the reg./data format are the same for all the registers.

Sixth step: enter the Modbus parameters

Reg.Adresse	1216	1
Reg.Format	[HR] R4	2
Einheit	°C	3
Skal.	keine Ska	.4

The entry of the Modbus parameters is implemented via the white buttons (1) - (4).

The following parameters can be retrieved via the corresponding registers:

Register	Designation	Address register	Reg. format	Unit	Scal.
<mark>Va</mark>	Temperature	<mark>1216</mark>	[HR] R4	°C	No scal.
<mark>(Vb</mark>	Rel. humidity	<mark>1152</mark>	[HR] R4	<mark>% rH</mark>	No scal.
<mark>(Vc</mark>	Dew/freezing point	<mark>1536</mark>	[HR] R4	°Ctd	No scal.
<mark>Vd</mark>	Dew point	<mark>1472</mark>	[HR] R4	°Ctd	No scal.

VALUES FOR THE MONITOR SENSOR.

12.3.2.3.4 Data logger settings

Main menu → Settings → Logger settings







A deviating individual *time interval* can be entered into the text field with the white background on the upper right where the currently set *time interval* is always indicated (here, for example, 20 seconds).

Note:

The largest possible *time interval* is 300 seconds (five minutes).

Note:

When more than 12 measuring data are simultaneously recorded, the smallest possible data logger interval is two seconds.

When more than 25 measuring data are simultaneously recorded, the smallest possible data logger interval is five seconds.

Main menu → Settings → Logger settings → Force-new-logger-file button

or

Main menu → Settings → Logger settings → Force-new-logger-file button → Comment text field

*** Logger Einstellung ***	
Zeitintervall (sec) 1 2 5 10 15 30 60 120 20 Image: Erzwinge neue Logger Datei Image: Erzwinge neue Logger Datei Image: Erzwinge neue Logger Datei Kommentar: no comment Logger gestoppt Startzeit Stoppzeit START STOPP verbleibende Logger Kapazität = 9999 Tage Logging: 0 Kanäle ausgewählt Zurück Zeitintervall (min 1 sec) Sec)	By pressing the <i>Force new logger-file</i> button, a new recording file is created, and with the selection of the <i>Comment</i> text field, a name or comment can be entered.
	Important:
*** Logger Einstellung ***	When a new recording file is to be created,
Zeitintervall (sec)	the Force-new-logger-file button must be
1 2 5 10 15 30 60 120 20	activated.
Erzwinge neue Logger Datei	Otherwise, the recording file that was cre-
Messung	
Logger gestoppt Startzeit Stoppzeit START STOPP	
verbleibende Logger Kapazität = 9999 Tage Logging: 0 Kanäle ausgewählt Zeitintervall (min 1 sec)	

Main menu → Settings → Logger settings → Start time button

*** Logger Einstellung ***								
Zeitintervall (sec)								
1 2	5 10 15 30 60 120 20							
Erzwinge neue Logger Datei								
Kommentar	" Messung 1							
Logger ge	Logger gestoppt Startzeit Stoppzeit							
START S	TOPP 06:20:00 - 21.0							
verbleibende Logger Kapazität = 9999 Tage								
Zurück	Logging: 0 Kanale ausgewählt Zeitintervall (min 1 sec)							

By pressing the *Start time* button and subsequently pressing the date/time text field below, the date and the *start time* of the data logger recording can be set.

Note:

When activating the *start time*, the latter will automatically be set to the current time plus one minute.

Main menu → Settings → Logger settings → Stop time button

*** Logger Einstellung ***								
Zeitintervall (sec)								
1 2 5 10 15 30 60 120 20								
Erzwinge neue Logger Datei								
Kommentar:	Kommentar: Messung 1							
Logger gesto	ppt 🖌 Startzeit 🖌 Stoppzeit							
START STO	0PP 06:20:00 - 21.0 07:20:00 - 21.0							
verbleibende Logger Kapazität = 9999 Tage Logging: 0 Kanäle ausgewählt Zeitintervall (min 1 sec)								

By pressing the *Stop time* button and subsequently pressing the date/time text field below, the date and the time for the end of the data logger recording can be set.

Note:

When activating the *stop time*, the latter will automatically be set to the current time plus one hour.

Main menu -> Settings -> Logger settings -> Start time button/Stop time button -> Date/time text field

		Stoppze	it	
07:	20 : 00	21	06 · 13	Cal
1	2	3	4	5
6	7	8	9	0
	0		bruch	

After having pressed the *Date/time text field,* the input window will appear, in which the zone of the time or date which is highlighted in yellow can always be set or changed.

Main menu → Settings → Logger settings → Start time button/Stop time button → Date/time text field → Cal button



By means of the *Cal* button, the desired date can easily be chosen from the calendar.

Main menu → Settings → Logger settings → Start button

	*** Logg	er Eins		g **		
Zeitintervall (sec)						
1 2	5 10	15	30	60	120	20
Erzwinge neue Logger Datei						
Änderungen nur bei gestopptem Logger möglich						
Logger aktiv						
START	торр	06.20	00 - 21		6.20.1	00 - 21.0
verbleibende Logger Kapazität = 9999 Tage						
Zurück	Logging	0 Kanäle all /min 1	ausgew	ahit		

Subsequent to the *start* or *stop time* activation and the implemented settings, the *Start* button is pressed and the data logger is on *active*.

The data logger will start recording at the set time!

Main menu → Settings → Logger settings → Start button/stop button

*** Logger Einstellung ***			
Zeitintervall (sec)			
1 2 5 10 15 30 60 120 20			
Erzwinge neue Logger Datei			
Änderungen nur bei gestopptem Logger möglich			
Logger aktiv Startzeit Stoppzeit			
START STOPP			
verbleibende Logger Kapazität = 9999 Tage Zurück Zeitintervali (min 1 sec)			

The data logger can also be activated and deactivated without activated time settings, namely by means of the *Start* and *Stop buttons*.

On the lower left, it is indicated, how many values are being recorded, and for how long recording can be continued.

Note:

Settings cannot be changed when the data logger is active.

Important:

When a new recording file is to be created, the *Force-new-logger file* button must be activated. Otherwise, the recording file that was created last will be used.

12.3.2.3.5 Device settings

Main menu → Settings → Device settings

*** Geräte Einstellung ***			
Sprache	SD-Karte		
Datum & Zeit	System Update		
	Werkseinst. Reset		
	Touchscreen kalibrieren		
Zurück	Alarm Lg.stop		



12.3.2.3.5.1 Language

Main menu → Settings → Device settings → Language

*** Sprache auswählen ***			
Können Sie diesen Text lesen?			
English	Deutsch	Spanish	
Italian	Danish	Русский	
Polski	French	Portuguese	
Romanian			
Zurück			

Here, one out of 10 languages can be select- ed for the METPOINT [®] BDL portable.

12.3.2.3.5.2 Date & time

Main menu → Settings → Device settings → Date & time

*** Zeit & Datum Einstellungen ***	
Aktuelle Zeit 06:28:29 / 21.06.2013 Start	
Zeitzone UTC ± 0	By pressing the <i>Time zone</i> text field and entry of the correct <i>UTC</i> , the correct time can be set worldwide
Sommerzeit	
Zurück Alarm Lg.stop 21.06.2013 9 days, In 06:28:29	
*** Zeit & Datum Einstellungen ***	
Aktuelle Zeit 07:29:11 / 21.06.2013 Start	
Zeitzone UTC ± 0	Changeover to summer/winter time is imple- mented by pressing the <i>Summer time</i> button.
Sommerzeit	
Zurück Alarm Lg.stop 21.06.2013 Image: State of the	

12.3.2.3.5.3 SD card

Main menu → Settings → Device settings → SD card → Reset logger data base

Main menu → Settings → Device settings → SD card → Erase SD card



By pressing the *Reset logger data base,* the currently stored data are blocked from use in the DP500. However, the data remain stored on the SD card, and are available for external use.

By pressing the *Erase SD card* button, all of the data are completely deleted from the SD card.

12.3.2.3.5.4 System update

Important!

A system update can only be implemented when the power supply plug is connected in order to ensure the continuous power supply during the update.



Main menu → Settings → Device settings → System → System update

he system update function
ne system update function

12.3.2.3.5.4.1 Securing the device settings

Main menu \rightarrow Settings \rightarrow Device settings \rightarrow System update \rightarrow Securing the device settings





12.3.2.3.5.4.2 Check for available updates (USB)

Main menu → Settings → Device settings → System update → Check USB stick for available updates

*** System Update ***		
Geräteeinstellungen siche	rn Geräteeinstellungen laden	
prüfe USB Stick auf vorhandene Updates		
act. SW = V99.88	Ch.Vers.	
Software <no file=""></no>	A1: V0.00 <new></new>	
Sprachen <no file=""></no>	A2: V0.01 <new></new>	
ChSW Dig. <no file=""></no>	B1: V0.02 <new></new>	
ChSW Ana <no file=""></no>	B2: V0.03 <new></new>	
Update Auswahl	Update Kanäle	
Zurück		

When, after having pressed the <i>Check US</i> stick for available updates button, the following messages (no file) appear in the wirdow, the METPOINT [®] BDL portable is not correctly connected with the USB stick or no data are available.	ש ע- ו- וס

*** System Update ***				
Geräteeins	tellungen sichern	Geräteeinstellungen laden		
prüfe	prüfe USB Stick auf vorhandene Updates			
act. SW	= V0.48	Ch.Vers.		
Software	V0.66 <v0.48></v0.48>	A1: V0.27 <new></new>		
Sprachen	V0.36 <v0.33></v0.33>	A2: V0.27 <new></new>		
ChSW Dig.	V0.27 <v0.25></v0.25>	B1: V0.27 <new></new>		
ChSW Ana	V0.27 <v0.25></v0.25>	B2: V0.27 <new></new>		
Update	Update Auswahl Update Kanäle			
Zurück				

When the METPOINT[®] BDL portable is correctly connected with the USB stick and newer versions are found, these are indicated.

To the right, the current (old) and the newly available (new) versions are shown.

Main menu → Settings → Device settings → System → System update → Update selection Main menu → Settings → Device settings → System → System update → Update channels

Important:

If, subsequent to the update, the *Restart* button appears, it must be pressed to restart the METPOINT[®] BDL PORTABLE!

Main menu → Settings → Device settings → System → System update → Update channels

**** System Update **** Geräteeinstellungen sichern Geräteeinstellungen laden Station Station Station Station Station Station	
Cr Cr	METPOINT® BDL portable.

Important:

If, subsequent to the channel update, the *Restart* button appears, it must be pressed to restart the METPOINT[®] BDL portable!

The update of the channels may require a double run and a new start of the system. In this case, a message (pop-up) will be displayed at the restart.

12.3.2.3.5.4.3 Loading device settings

Main menu → Settings → Device settings → System → Loading device settings





Important:

When the channel and system settings have been reset, the *OK* button and afterwards the *Restart* button must be pressed.



12.3.2.3.5.5 Reset factory defaults

Main menu \rightarrow Settings \rightarrow Device settings \rightarrow fa	actory def. reset 🗲 Reset to defaults
*** Auf Werkseinstellung zurücksetzen *** Zurücksetzen auf Standardeinst	If required, the METPOINT [®] BDL portable
neu Starten Zurück	can be re-booted by pressing the <i>Restart</i> -button.

Reset all Settings to Factory-Default ?	Einstellungen wieder hergestellt, bitte Gerät neu starten
JaNein	ок
Zurock	

12.3.2.4 Calibrating the touch screen

Main menu → Settings → Calibration touch screen

*** Touchscreen Kalibierung ***	If required, the screen calibration can be changed here.
Bitte Positionierung überprüfen oder neu kalibrieren [0/0] <0/0> <0/0> <0/0> <0/0> <0/0> <0/0> Abbruc Kalibrieren	Press <i>Calibrate</i> , and a calibration cross will appear 1. on the upper left, 2. on the lower right, and 3. in the middle. These crosses must be pressed consecutively.
	When calibration is completed and the indica- tion is averaged, confirm with <i>OK</i> .
	If this is not the case, calibration can be re- peated by means of <i>Cancel</i> and by pressing <i>Calibrate</i> again.

12.3.2.4.1 Brightness

Main menu → Settings → Brightness

*** Helligkeit eins	stellen ***					
Helligkeit	50%					
Abdunkeln nach 15 Minuten						
Backlight off after 45 Minuten						
Zurück Alarm Lg.stop 29.11.2013 s. Interva 14:14:26						
*** Helligkeit eins	stellen ***					



Here, the desired <i>brightness</i> (15 100%) of the display can directly be set.
E.g.: brightness to 50%.

By means of the *Darken-after* button, the *brightness* can be reduced to a minimum at the end of a time interval to be defined (here after 15 minutes), or completely switched off.

In addition, in order to preserve battery life, the display backlight can be completely switched off by means of the *Backlight off after* button at the end of the defined time interval (here after 45 minutes)

As soon as the dimmed screen is activated again, the *brightness* automatically goes back to the value that was last set prior to dimming.

Note: at the first touch, the *brightness* in our example is reset to 50%.

Afterwards, "normal" functional operation is possible again.

Important: when the *Darken-after* button is not activated, the backlighting is continuously on, at the currently set *brightness*.

12.3.2.4.2 Cleaning

Main menu → Settings → Cleaning



12.3.2.4.3 System overview

Main menu → Settings → System overview

*** 5	System (Übersicht ***
Geräte Status —		Battery Status
Temperatur	22.3 °C	
Netzteil Main	7.83 V	
Netzteil USB	5.05 V	
Betriebsst 5d 14h	04m 11s	Kalibrier Status
Kanal Status		
1	C1	Gesamt
5,01	0.0	v
10	0	0 mA
Zurück		

The system overview menu item provides information on the applied voltages and currents of the individual and the entire *channels*, as well as on the voltage supply of the *power supply units*.

Moreover, one can always see, by means of the *operating hours*, for how long the METPOINT[®] BDL portable was in operation on the whole.

12.3.2.4.4 About METPOINT[®] BDL portable

Main menu → Settings → About METPOINT[®] BDL portable

- Gerät	Optionen
Geräte Typ: BDL portable Serien Numme 00000000 Hardware Version: 1.00 Software Version: 99.88	kaufen Virtual Kanäle kaufen Analog Total
Kontakt: www.bek	o-technologies.com



12.3.2.5 Graphics

Main menu → Graphics

Caution:

In the graphics, only those records can be displayed which are already completed!

The currently running recordings can be observed in graphics/current values.

(see Chapter 7.3.2.3 Grafik/Aktuelle Werte)





Zoom and scroll possibilities in the time range of the graphics:



Maximally, an entire day can be displayed (24h).



The smallest possible range is displayed, depending on the time interval of the record.

Additional zoom and scroll possibilities in graphics and graphics/current values:

	Larger time sp	an
Later moment	- 2m -	Earlier moment
	Smaller time s	span

5	6	7	1 8 15	2 9 16
5	6	7	8	9
1 12	13	14	15	16
		_		
5 19	20	21	22	23
5 26	27	28	29	30
21 Juni	>	1	ок	
	5 26 21 Juni	5 26 27 21 Juni 2013	5 26 27 28 21 Juni 2013 >	5 26 27 28 29 21 Juni 2013 >

Main menu → Graphics → Date text field

m					- 6
		4 Date		26.07.2011, Bitte auswählen	
	Dateiname	Start	Stopp	Kommentar	
	S110726B	14:33:41	14:34:34	Messung 1	
	04407004				
	S110726A	14:31:15	14:33:32	Messung 2	
	S110726B	15:49:31	16:17:55	no comment	
	S110726A	15:48:17	15:49:22	no comment	
]		
				OK	



Main menu → Graphics → Set-up

In the *set-up*, you can apply two different assignments to the y-axis, and select a *unit*, the y-axis scaling (min, max, grid), several channels (*curve*), and a *color*.

		Grafik E			
-Y-Ach	se links —				
	Einheit	Farbe	Grafi	ken	A.Scale
			- no	ne -	
min	0.000	max	100.000	Raste	10.000
Y-Ach	se rechts				
	Einheit	Farbe	Grafi	ken	A.Scale
			- no	ne -	
min	0.000	max	100.000	Raste	10.000

1.

The *left* y-axis is already activated, and a *color* can now be assigned to it.

Note:

The grid setting is already possible at this moment but it is more useful at a later moment, for example when the recording was selected!

Main menu → Graphics → Set-up → Unit text field

			m³/h				
m³/h	m³	m/s	m³/min	°Ctd	%rF	mbar	
°C							
		0	K Abb	ruch			
						14.3	







Now, the y-axis scaling with *min, max,* and *grid* can be set.

By means of the *A.Scale* button, a calculated autoscaling can be defined.

Assignments to the remaining y-axis are implemented in the same manner!

	*** Char	Setup ***	
Y-Axis left		D 1 /	
	nit Colour	Plots	A.Scale
– m	ı³/h	A1a	
min	0.000 max	100.000 step	10.000
Y-Axis rigi	ht		
	nit Colour	Plots	A.Scale
m	/s	A2a	
min	0.000 max	100.000 step	10.000
		1	



Main menu -> Graphics

12.4 Graphics/current values

Main menu → Graphics/current values





— Auswahl Kanal —	Auswahl Farbe
Y-Achse	
min max	Raster
0.00000 0.00000	0.00000

Under this menu item, up to six measured values can be activated simultaneously and viewed under *Main menu* → *Graphics/current*.

Here, channel C1 was selected.

For each channel, one value for the representation in the *graphics* can be selected.

In addition, like in the Main menu \rightarrow Graphics, a color and the y-axis scaling (min, max, grid) can be determined.

Main menu → Graphics/current values



Channel C1: The flow volume as <i>graphics</i> .
When several channels are occupied, all the graphics are displayed. It must be observed that only the y-axis of the selected channel is displayed in each case.
When no y-axis scaling is entered into the set-up, <i>min</i> is set to 0, <i>max</i> to 100, and grid to 10.

Assignments to the remaining set-ups are implemented in the same manner!

12.4.1.1 Channels

Main menu \rightarrow Channels

C1a	0.000 m³/h
C1b	648195 m³
	0.000 m/s
C1c	
the Home	Alarm Lg.stop 14.03.201

Main menu → Channels→ C1

The *Channels* view shows the current measured values of the connected sensor.

In the event that the adjusted alarm limits are exceeded or underrun, the respective measured value flashes yellow (*alarm-1*) or red (*alarm-2*).



The individual channels can be selected and the settings viewed and checked, but **no** changes can be implemented here.

Note: Changes must be effectuated in the *settings*!

12.4.1.1.1 Min./max. function

This functions allows for the readout of the min. or max. values of the running measurement for each connected sensor. The start of recording is the setting and connection of the sensor, however, it is possible at all times to reset the min. and max. values.

Main menu → Cha	nnels → I1 →	~ 3, 5 V - 10 mA			Min/Max I1-	
Type DP 109	Vame		DewPoint	↑ ↓	2.10 -1.40 °Ctd	Reset
Record DewPoint	1.82 °Ctd	Alarm	Rel.Humid.	↑ ↓	24.1378 % 17.6198	Reset
Rel.Humid.	23.5774 %		Temperatur	↑	25.19 °C 23.80	Reset
Temperatu	23.87 °c		Abs.Humid.	↑ ↓	5.1857 3.9628 g/m³	Reset
Back	5.0011 g/m ³ Min/Max		Zurück			14

 \uparrow = Max, value \downarrow = Min. value





It is possible to reset an individual meas- ured value such as the pressure dew point here, or all of the <i>min. and max.</i> values of the sensor, if required.
Reset of the individual value by pressing the <i>Reset Value</i> button or of all the values by pressing the <i>Reset All Values</i> button.

12.4.1.2 Current values

Main menu → Current values

A1a Luft-1	Flow 🗵			
	1145,55 ^{m³/h}			
A1c Luft-1	Temperatur 🗹			
	46.2 °C			
A1b Luft-1 RF 5	A2a Power-1 P			
9.5 %rH	30.825 ·c			
🔒 Home Setup	Alarm Lo.stop 25.06.2013			

The *current values* view allows for the indication of 1 to 5 freely selectable measured values.

In the event that the adjusted alarm limits are exceeded or underrun, the respective measured value flashes yellow (*alarm-1*) or red (*alarm-2*).

Note:

Changes regarding the indication must be effectuated under <u>set-up</u>!

Main menu → Current values → Setup → Next layout



Here, the desired layout can be selected by pressing the *Next Layout* button.
It is possible to choose between six different layouts with the indication of between one and five measured values. Variants see below.

By pressing the fields with a white background (*Val.1 to Val.5*), the required measured values can be selected.

Possible variants:



12.4.1.3 Alarm overview

Main menu → Alarm overview



This is an Alarm-1 for channel I1!

Main menu \rightarrow Alarm overview \rightarrow C1

***	Kanal A1 ***	~ 0.0 V ~ 0 mA
Typ CS-Digital	Name L	uft-1
Aufzeichnen		Alarm
J Flow	26.600	
Feuchte	261744 ℃	>
Temperatu	79.8	
Zurück		Info

In the *alarm overview*, you can immediately see whether the alarm is an *alarm-1* or an *alarm-2*.

This is also evident in other menu items:

Main menu → Channels and in Main menu → Settings → Sensor settings

The channel indication flashes yellow for an *alarm-1 and* red for an *alarm-2*.

Moreover, one can see which pop-ups were set for which channel as an *alarm-1* and/or as an *alarm-2*.



which measured value has exceeded or underrun the alarm range.

Note:

The alarm parameters can also be set and/or changed here.

12.4.1.4 Export data

With export data, recorded data can be transmitted to a USB stick.

Main menu → Export data

*** Exportiere Daten ***	
Exportiere Logger Daten	
Export Screenshots	With Export lo settings, the red
Exportiere System Einstellungen	stored settings stick.
💼 Home	

With *Export logger data* and *Export system settings,* the recorded measuring data and the stored settings can be transmitted to a USB stick.

Main menu → Export data → Export logger data



By means of the *Selection* buttons, a period between *start* and *end* can be set. Stored measured data within this period are exported.

Main menu → Export data → Export logger data → Selection

Мо	Di	Mi	Do	Fr	Sa	So
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
< 21 Juni 2013			>		OK	

The selected date is always highlighted in green, and the date figures of the Sundays are red, as is the case in a calendar.

On days on which the measuring data were recorded, the date figures are optically raised.
		6 Date	i(en) am	28.07.2011, Bitte auswählen	
	Dateiname	Start	Stopp	Kommentar	1-5
	S110726D	15:38:43	15:58:31	Messung 1	
	S110726C	14:39:30	15:17:40	Messung 1	
	S110726B	14:33:41	14:39:20	Messung 1	
	S110726A	14:31:15	14:33:32	Messung 2	
	S110726B	15:49:31	16:17:55	no comment	
				ок	
z_					

When several measurements were recorded on the same day, these will appear subsequent to having selected the date with *OK*.

The desired record can easily be chosen now.

Main menu → Export data → Export logger data → Exporting

The measuring data of the selected period are exported to a USB stick.

Main menu → Export data → Export system settings

By means of export system settings, all the available sensor settings can be exported to a USB stick.

Virtual channels (optional)

13 Virtual channels (optional)

The "virtual channels" option offers two additional channels (no HW channels) for the description of calculations regarding HW channels, virtual channels, and freely definable constants with each other. Per each virtual channel, up to eight value calculations with three operands each and 2 operations can be realized.

Possible applications are the calculations of:

- The specific performance of a system
- Total consumption of the system (several compressors)
- Energy costs etc.

13.1 Activate the option "virtual channels"

After having acquired the "virtual channels" option, the latter needs to be activated first.

Main menu → Settings → Via METPOINT[®] BDL portable

Gerät Gerät Typ: PI500 Serien Numme 00000000 Hardware Version: 1.00 Software Version: 99.88 Zurück	By pressing the <i>Buy</i> button for "virtual chan- nels", you will be requested to enter the activa- tion code.
Enter Code für Option 1 ← ← 1 2 3 4 5 6 7 8 9 0 OK Abbruch	Please enter your activation code into the text field and activate it by pressing the <i>OK</i> button.

13.2 Virtual channels setting

Main menu → Settings → Sensor settings → Virtual channels



After having activated the "virtual channels" button in the sensor setting menu, an overview of the available four channels will appear.

Note:

Channels are not preset as a standard.

13.2.1 Selection of the sensor type

Main menu → Settings → Sensor settings → Virtual channels → V1





Select Type of Virtual Channel kein Sensor Generic kein Sensor	lf no sensor was configu sensor will appear.
	By pressing the Gener channel is selected.
	By pressing the No sen nel is reset.
OK Abbruch	The selection is confirme button.



Virtual channels (optional)

Main menu → Settings → Sensor settings → Virtual channels → V1 → Name text field



13.2.2 Configuration of the individual virtual values

Per each individual channel, up to eight virtual values can be calculated which need to be activated separately:

13.2.3 Activation of the individual virtual values

Main menu → Settings → Sensor settings → Virtual channels → V1→ Right arrow (2nd page) → V1a→ Use





13.2.4 Definition of the operands

Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow Virtual channels \rightarrow V1 \rightarrow Right arrow (2nd page) \rightarrow 1st operand



By pressing the 1 st operand field, you will go to a selection list with the available hardware channels, virtual channels, and constant val- ues.

Main menu → Settings → Sensor settings → Virtual channels → V1 → 1st operand → C1



By pressing a hardware or virtual channel button, e.g. *11*, a selection list will open, showing the measuring channels or measured values that are available per channel, including defined virtual channels.

Selec	t Value
C1a C1a (°Ctd)	C1b C1b (% RH)
C1c C1c (°C)	C1d C1d (% RH)
C1e	C1f
C1g	C1h
	Zurück



The same procedure applies analogously to all op

By pressing the desired channel button, e.g. *C1b*, the selection is accepted.

If the *Const. value* button was pressed, the value needs to be determined via the numeric keypad. By pressing the *OK* button, the value is accepted.

By means of buttons \leftarrow and *Clr*, the values can be corrected.

Button \leftarrow erases the last character Button *Clr* erases the entire value

13.2.5 Definitions of the operations

Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow Virtual channels \rightarrow V1 \rightarrow Right arrow (2nd page) \rightarrow 1st operation





The same procedure applies analogously to both operators (1st operation and 2nd operation)

13.2.6 Definition of the unit

Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow Virtual channels \rightarrow V1 \rightarrow Right arrow (2nd page) \rightarrow Unit

Γ



By pressing the text field <i>Unit</i> , a list with the available units will appear.	
---	--

m³/h 🧗 Edit					
	°C	°F	%rF	°Ctd	
°Ftd	mg/kg	mg/m³	g/kg	g/m³	
m/s	Ft/min	Nm/s	Nft/min	m³/h	
m³/min	ltr/min	ltr/s	cfm	Nm³/h	
Page OK Abbruch					

The selection of the unit is implemented by pressing the desired unit button. The unit is accepted by pressing the *OK* button.

A change between the individual list pages is effectuated by pressing the *Page* button.

In the event that units cannot be selected, you can create the unit yourself.

For this purpose, one of the free pre-defined *User_x* user buttons must be chosen. Paging is effectuated with the *Page* button.



Important

When all of the values and operators are applied, calculations with three values and 2 operands are possible, which are solved according to the following formula:

V1a = (1st operand 1st operation 2nd operand) 2nd operation 3rd operand Example:

V1a = (A1c - A2a) * 4.6

13.2.7 Resolution of the decimal places – designating and recording data values

Main menu → Settings → Sensor settings → Virtual channels → V1→ Tool button

*** Channel V1 ***	
Type Generic Name KH-Test1	
Record Alarm	The <i>resolution</i> of the decimal places, <i>short name</i> and <i>value name</i> can be found below the <i>Tool button.</i>
OK Cancel Info	
Parameter Channel V1 Value 1 (Unit cnt) Value Name: A1a Short Name: A1a Resolution: 1.000 cnt > OK Cancel	For the <i>value</i> to be recorded, a <i>name</i> with 10 characters can be entered in order to simplify its identification at a later moment in the menu items <i>Graphics</i> and <i>Graphics/current values</i> . Otherwise, the designation would be <i>V1a</i> , for example. <i>V1</i> is the channel name and <i>a</i> the first measured value in the channel, <i>b</i> would be the second, and <i>c</i> the third. The <i>resolution</i> of the decimal places is easily adjustable by pressing right and left (0 to 5
	decimal places).

Main menu → Settings → Sensor settings → Virtual channels → V1→ Recording button



With the <i>Rec</i> are selected data logger.	<i>ording</i> buttons, the measuring data which are stored at an activated

Caution:

Prior to recording the selected measuring data, the data logger must be activated subsequent to the completion of the settings (see Chapter <u>7.3.2.1.3 Logger-Einstellung (Datenlogger))</u>.

See also Chapter 7.3.2.1.2.2 Messdaten bezeichnen und 7.3.2.1.2.3 Messdaten aufzeichnen

14 Analogue total (optional)

The "analogue total" option offers the possibility of a consumption determination also for sensors with analogue outputs, e.g.: 0-1/10/30 V or 0/4 - 20 mA.

14.1 Activating the "analogue total" option

Subsequent to the acquisition of the "analogue total" option, the latter first needs to be activated.

Main menu → Settings → via METPOINT[®] BDL portable



If no sensor was configured yet, the, *Type* **no sensor** will appear.

14.2 Selection of the sensor type

See also Chapter 7.3.2.1.2.8 Konfiguration von Analogsensoren

Main menu → Settings → Sensor settings → C1

Main menu \rightarrow Settings \rightarrow Sensor settings \rightarrow C1 \rightarrow Type text field

Select Type of Analog Channel				
4 - 20 mA				
0 - 1 V 0 - 10 V 0 - 30 V				
0 - 20 mA	4 - 20 mA	PT100		
PT1000	KTY81	Impuls		
kein Sensor				
OK Abbruch				

Selection of the required sensor type by press- ing the respective button, here, for example 4-
20 mA.
button.

٦

	*** Kanal B1 *** 0.0 V			
Тур	4 - 20 mA ↓ Einheit ↓			
	Messwert Verbrauchsmenge			
	Einheit m ³ /h m ³			
	Skal. 4mA Skal. 20mA			
	0.000 170.000 m ³ /h			
<	Offset 0.000 m³/h			
	(Offset) setze Wert auf Reset			
	set Total to m ³ Power			
Zı	Zurück Info			

Selection of the units by pressing the respective unit, **Measured value** or **Consumption rate** text fields.

Enter scale values for 4 mA and 20 mA, here 0 m³/h and 170m³/h.

If required, it is possible to enter a start value for the consumption rate, for the takeover of a counter reading. For this, enter the value into the Set total to text field.

Confirmation of the entries by pressing the OK button.

Note:

The text field "unit-consumption rate" is only editable in case of measurement values (units) with volume or amounts per time unit and thus also the consumption calculation.

For the marking and setting of the text fields see also Chapter <u>7.3.2.1.2.7 Textfelder beschriften und einstel-</u> len

15 Cleaning/decontamination



Note:

The METPOINT[®] BDL portable has a cleaning function which protects the display against unintentional operation in the event of cleaning measures. Please refer to Chapter 12.3.2.4.2 for further information.

Cleaning of the METPOINT[®] BDL portable must be undertaken using a slightly damp (not wet) cotton cloth or one-way wipe, and mild, commercially available cleaner/soap.

For decontamination, spray the cleaner on an unused cotton cloth or one-way wipe, and wipe the component comprehensively. Effectuate subsequent drying using a clean cloth or via air drying.

In addition, the local hygiene provisions need to be observed.



Damage possible!

Warning!

A too high degree of humidity and hard and pointed objects as well as aggressive cleaners cause damage to the data logger and to the integrated electronic components.

Measures

- Never clean with a soaked cloth.
- Do not use aggressive cleaners.
- Do not use pointed or hard objects for cleaning.

16 Dismantling and disposal

Disposal in accordance with the WEEE Directive (Waste Electrical and Electronic Equipment):

The waste of electrical and electronic components (WEE) must not be disposed of in the waste containers intended for city refuse or household waste. At the end of its usability, the product must be disposed of in an appropriate manner. Materials such as glass, plastic and some chemical compositions are, for the most part, recoverable, reusable, and can be reutilized.

According to the aforementioned directive, the METPOINT[®] BDL portable comes under category 9 and is, according to §5, Law 1 (the German ElektroG), not affected by the substance prohibition of marketing. According to §9, Law 7 (ElektroG), the METPOINT[®] BDL portable from BEKO TECHNOLOGIES GmbH is taken back to be disposed of.

If the BDL portable is not returned to BEKO TECHNOLOGIES GmbH for disposal, it must be disposed of in accordance with waste code:

20 01 36 Used electrical and electronic devices with the exception of those which come under 20 01 21, 20 01 23, and 20 01 35.



Batteries must not be disposed of with the residual waste. They need to be delivered to suitable recycling centers or collecting points.



Warning!

Danger for persons and the environment!

Old appliances must not be disposed of with normal household waste!

Depending on the used medium, residues on the device may represent a danger to the operator or the environment. Therefore, undertake suitable protective measures and dispose of the device properly.

Measures:

Immediately clean the removed components from media residues when suitable protective measures cannot be undertaken.

17 SD card and battery

For the storage and further processing of the recorded measuring results, there is an SD card slot inside the housing of the METPOINT[®] BDL portable.

An integrated battery (button cell) ensures the preservation of the configuration data even in the event of a voltage drop.



DANGER!

Battery and SD card!

The replacement of the battery or of the SD card must only be carried out by authorised and skilled personnel, and when the device is de-energized.



Danger!

Damage through ESD possible

The device contains electronic components which may be sensitive to electrostatic discharge (ESD) or that may even be damaged by ESD.

Measures

For any servicing measures that require an open housing, the instructions regarding the prevention of electrostatic discharge need to be observed.

18 Declaration of conformity

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



EC Declaration of Conformity

We hereby declare that the products indicated hereafter comply with the stipulations of the relevant directives and technical standards. This declaration only refers to products in the condition in which they have been placed into circulation. Parts which have not been installed by the manufacturer and/or modifications which have been implemented subsequently remain unconsidered.

Product designation: Type: Supply voltage : IP degree of protection Ambient temperature: Product description and function: tions	METPOINT [®] BDL portable 4024289 100 240 V AC / 12 V DC IP 20 0 + 50°C mobile hand-held measuring device for industrial applica-		
		Low-Voltage-Directive 2006/95/EC	
		Standards applied:	EN 61010-1:2010
		Year of CE labelling :	14
		EMC Directive 2004/108/EC	
		Standards applied:	EN 61326-1:2013

ROHS II Directive 2011/65/EU

The stipulations of the 2011/65/EU Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment are observed.

The products are labeled with the sign shown below:

CE

Neuss, 6 October 2014

BEKO TECHNOLOGIES GMBH

p.p. Christian Riedel Head of Quality Department

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Original instructions in German. Subject to technical changes / errors excepted. metpoint_bdl_portable_manual_en-us_10-133_1501_v04.