

Operating instructions



KRAL display and processing unit BEM 200

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1 About this document

1.1 General information

These instructions form part of the product and must be kept for future reference. Furthermore please observe the associated documents.

Note In these operating instructions the designation "Electronic unit" is used for the "Display and processing unit".

1.2 Target groups

The instructions are intended for the following persons:

- □ Persons who work with the product
- Operator-owners who are responsible for the use of the product

Persons who work with the product must be qualified. The qualification ensures that possible dangers and damage to property that are connected to the activity are detected and avoided. These persons are qualified personnel who carry out the work properly due to their training, knowledge and experience and on the basis of the relevant provisions.

Information on the qualification of the personnel is provided separately at the beginning of the individual chapters in these instructions. The following table provides an overview.

Target group	Activity	Qualification
Fitter	Mounting, connection	Qualified personnel for mounting
Electrician	Electrical connec- tion	Qualified personnel for electric installation
Trained personnel	Delegated task	Personnel trained by the operator-owner who know the task delegated to them and the possible dangers arising through improper behaviour.

Tab. 1: Target groups

1.3 Associated documents

- □ Declaration of conformity according to EU Directive 2014/30/EU
- □ Corresponding operating instructions of the flowmeter
- □ Corresponding operating instructions of the sensor
- Calibration certificate

1.4 Symbols

1.4.1 Danger levels

Signal word	Danger level	Consequences of non-observance
DANGER	Immediate threat of danger	Serious personal injury, death
WARNING	Possible threat of danger	Serious personal injury, invalidity
CAUTION	Potentially dangerous situation	Slight personal injury
ATTENTION	Potentially dangerous situation	Material damage

1.4.2 Danger signs

	Meaning	Source and possible consequences of non-observance
4	Electrical voltage	Electrical voltage causes serious physical injury or death.

2.1 Proper use

1.4.3 Symbols in this document

	Meaning
	Warning personal injury
	Safety instruction
	Request for action
1. 2. 3.	Multi-step instructions for actions
⇔	Action result
♦	Cross-reference

2 Safety

2.1 Proper use

- □ The electronic unit is provided for usage with a KRAL flowmeter.
- □ Use the electronic unit only within the operating limits specified in the "Technical data" chapter.

2.2 Foreseeable misuse

□ Any use that extends beyond the proper use or any other use is misuse.

2.3 Fundamental safety instructions



The following safety instructions must be observed:

- □ Read the operating instructions carefully and observe them.
- □ Have work only carried out by qualified personnel/trained personnel.
- □ Wear personal protective equipment and work carefully.
- Observe the operating instructions of the flowmeter and of the sensors.

3 Identification

3.1 Rating plate



Fig. 1: Electronic unit data plate

- Serial number
- Type Connection assignments

4 Technical data

4.1 Dimensional drawing





- A Opening 20.5 mm for connecting tube (electronic unit flow meter OME connection)
- **B** Opening 16.5 mm for connection of power supply or pick up
- **C** Opening 16.5 mm for connection of power supply or pick up

4.2 Connection field

4.2 Connection field



Fig. 3: Connection panel for PNP sensors (left) / connection panel for NAMUR sensors (right)

4.3 Pin assignment

The following terminals are electrically connected internally:

□ 1 + 5 + 7 + 9 = Gnd

	Connection	Function	Terminal
PNP/NAMUR sensor	Flow meter transducer	Gnd	1
		Signal	2
		Sensor supply	10 (PNP)
			4 (NAMUR)
Output	Analog output Pulse output	Gnd	5
		Signal	6
		Transistor -	7
		Transistor +	8
Power supply	Ipply Electronic unit	Gnd	9
		Power supply 10 – 30 V DC	10

4.4 Connection data

4.4.1 Supply

Parameter	Unit	Value
Power supply, type PD	[V DC]	10 30
Power consumption max.	[W]	0.625

4.4.2 Pulse input

Parameter	Unit	Value
Frequency max.	[kHz]	6 (PNP)
		4 (NAMUR)
Input impedance	[kΩ]	47 (PNP, pull-down resistor)
		0.82 (NAMUR, pull-down resistor)
Level high	[V]	> 6.3
Level low	[V]	< 2.5

4.4.3 Pulse output

Parameter l		Value
Туре		NPN transistor, non-isolated
Frequency max.	[Hz]	100
Voltage max.	[V]	30
Current max.	[mA]	300
Pulse width	[ms]	0 / 5 / 100, adjustable

4.4.4 Analog output

Parameter	Unit	Value
Туре		Loop powered, set to ground (-)
Output	[mA]	4 20
Power supply	[VDC]	12 30
Load	[Ω]	500 (at 24 V DC), max. 800
Accuracy	[%]	0.5
incl. temperature drift		
Resolution	[bit]	10

4.4.5 Ambient conditions

Parameter	Unit	Value
Storage temperature min. – max.	[°C]	-20 +80
Operating temperature min max.	[°C]	-20 +70
Air humidity (relative humidity, non-condensing)	[%]	90
EMC interference emission/interference im- munity		□ EN 61000-6- 2 □ EN 61000-6- 3 □ EN 61326
Protection class		IP 65

4.5 Display

Designation	Data
Туре	Transflective LCD, with LED backlighting
Text display	2 lines / 7 characters (15 mm / 8 mm),
	plus status information and keyword messages
Display language	English

4.6 Weight

Parameter	Unit	Value
Weight	[g]	225

4.7 Screw terminals

Parameter	Unit	Value
Cable cross-section max.	[mm ²]	1.5

4.8 Data storage

Parameter	Value
Data storage for totals and settings	At each shutdown

5.1 Functional principle

5 Function description

5.1 Functional principle

5.1.1 Usage

The electronic unit is designed for use with a KRAL flow meter.

Flow meters generate a specific number of pulses per flow volume unit – depending on the size and working point. This device-specific characteristic is called the K factor (unit: pulses/litre) and is specified on the calibration certificate.

The pulse signals from a flow meter can be evaluated. Due to the pull-down resistor at the signal input, the following signals are available:

D PNP / push-pull / active signals

□ Namur

5.1.2 Volume measurement

The instantaneous value of the flow rate is calculated and displayed by measuring the time between a series of pulses and the stored K-factor. In addition, the total number of measured pulses can be used to display the total flow (volume) as a total value since the last reset of the unit. Values for the flow rate represent the current instantaneous values, total values correspond to the totals since the last reset.

5.1.3 Electronic evaluation

The electronic unit receives signals from the pick up and calculates the measurements, which are shown in the display and can be called up at the pulse output.

- Electronic unit options:
- Display the measured volume in different units (I, m³, kg, lb, gal, galUS, bbl)
- □ Fault information
- □ 1 scalable pulse output (non-isolated transistor)
- □ 1 scalable analogue output

5.1.4 Applications

The electronic unit is intended for use in a single-line measurement in combination with a flow meter.

Single-line measurement	Components	Functions
	 1 flow meter 1 pick up 1 electronic unit BEM 200 	 Electronic evaluation Volume measurement 1 pulse output, passive 1 analogue output, passive

Tab. 2: Single-line measurement

5.1.5 Control panel



Fig. 4: Control panel For information on operation. ∜ Operation, Page 14

6 Transportation, storage

6.1 Scope of delivery

The scope of delivery depends on the order option selected:

Order option	Included in delivery
Standard	 Electronic unit BEM 200 + flow meter OME (mounted) or - Electronic unit BEM 200 + flow meter OMP (mounted)
Accessories	 Electronic unit BEM 200 + connecting element (not mounted) or - Electronic unit BEM 200 (not mounted, for wall mounting)

Tab. 3: Included in delivery

6.2 Unpacking and checking the state of delivery

Personnel qualification:	Trained personnel
1. Upon delivery sheak the product for demage during transportation	

1. Upon delivery check the product for damage during transportation.

2. Report damage during transportation immediately to the manufacturer.

3. Dispose of packing material in accordance with the locally applicable regulations.

6.3 Transporting the electronic unit

Transport the electronic unit in the original packaging. Observe ambient conditions in the process Technical data, Page 5.

6.4 Storing the electronic unit

▲ Store the electronic unit in the original packaging in a cool and dry place. Observe ambient conditions in the process Structures Technical data, Page 5.

7.1 Dangers during installation, removal

7 Installation, removal

7.1 Dangers during installation, removal



The following safety instructions must be strictly observed:

□ Have all work only carried out by electricians.

Do not take apart the electronic unit.

7.2 Installing the electronic unit

In the standard scope of supply, the electronic unit is offered in conjunction with the OME or OMP flow meter. The electronic unit is already mounted on the flow meter. In this case, no additional installation work is required.

For flow meters already in use, the electronic unit can be ordered as an accessory. Always observe the corresponding operating instructions when mounting the electronic unit on the OME or OMP flow meter.

7.3 Dismantling the electronic unit from OME

Personnel qualification:	Electrician
Personal protective equipment:	Work clothing
Aids:	Open-end spanner

Requirement:

✓ Power supply switched off



1. Loosen the Phillips screws 5 and remove the front cover 4 of the electronic unit.

- 2. Remove the connection cable of the power supply **7**, the pick up **2** and the pulse output (if used) from the connection panel **6**.
- 3. Unscrew the hexagon nut 1 in the housing 8 of the electronic unit to loosen the connecting tube 10 and remove the electronic unit.
- 4. Unscrew the connecting tube from the flow meter 12.

8 Connection

7.4 Dismantling the electronic unit from OMP

7.4 Dismantling the electronic unit from OMP

Personnel qualification:	Electrician
Personal protective equipment:	Work clothing
Aids:	Allen key

Requirement:

✓ Power supply switched off



- 1. Loosen the Phillips screws 1 and remove the front cover 2 of the electronic unit.
- 2. Remove the connection cable of the power supply **4**, the pick up **12** and the pulse output (if used) from the connection panel **3**.
- 3. Loosen the hexagon nuts 9 on the connecting bracket 6 and remove the lock washers 8.
- 4. Pull the hexagon socket screws **14** out of the housing **5** of the electronic unit and remove the electronic unit from the connecting bracket.
- 5. Unscrew the screw plug **11** and connection cable of the pick up **7** on flow meter **10** and remove connecting bracket from the flow meter.

8 Connection

8.1 Dangers during connection work



The following safety instructions must be strictly observed:

- □ All work must only be carried out by electricians.
- □ Shield the connecting lines of the sensor connections and lay them separately from the supply and measuring lines.
- □ Ensure the correct voltage supply (10 30 V DC).
- □ Note the connection assignment in the connection panel the Technical data, Page 5.

8 Connection

8.2 Overview

8.2 Overview



Fig. 5: Electronic unit with OME (left) / Electronic unit with OMP (right)



Fig. 6: Cable connections (example)

- 1 Electronic unit BEM 200
- 2 Pick up connection cable
- **3** Connecting element
- 4 Flow meter OME or OMP
- 5 Front cover
- 6 Phillips screw

- 7 Connection panel
- 8 Power supply connection cable
- A Opening 20.5 mm (connecting tube or cable inlet)
- **B** Side opening 16.5 mm (cable entry)
- C Side opening 16.5 mm (cable entry)

8.3 Connecting the pick up

Personnel qualification:	Electrician
Personal protective equipment:	Work clothing
Aids:	 Wire stripper Wire cutter Screwdriver

Note With flow meter OME or OMP the pick up is already connected.

- 1. For flow meters other than OME or OMP, use one of the side openings **B** or **C of** the electronic unit as the cable entry for the pick up connection.
- 2. Unscrew the Phillips screws 6 and remove the front cover 5 of the electronic unit.

- 3. Pull the connection cable of the pick up through the cable inlet and connect it to the connection panel **7**, see the Technical data, Page 5.
- 4. Replace the front cover of the electronic unit.
- 5. Make sure that the front cover and cable entries are properly sealed.

8.4 Connecting the pulse output

Personnel qualification:	Electrician
Personal protective equipment:	Work clothing
Aids:	 Wire stripper Wire cutter Screwdriver



Damage to the equipment due to faulty wiring of the pulse output.

Do not overload pulse output (max. 30 V and 300 mA).

The pulse output signal can be used for external processing purposes on the customer side.

- 1. Use one of the openings **A**, **B** or **C** of the electronic unit as the cable input for the pulse output connection.
 - Note: Opening **A** is only available in the wall-mounted version.
- 2. Unscrew the Phillips screws 6 and remove the front cover 5 of the electronic unit,
- 3. Pull the cable for the pulse output through the cable input.
- 4. Connect the cable for the pulse output to the connection panel, & Technical data, Page 5.
- 5. Pull the cable for the pulse output towards the external device on the customer side.
- 6. Connect the external device.
- 7. Replace the front cover of the electronic unit.
- 8. Make sure that the front cover and cable entries are properly sealed.

8.5 Connecting the power supply

Personnel qualification:	Electrician
Personal protective equipment:	Work clothing
Aids:	Diagonal cutter



Damage to the equipment due to faulty wiring of the pick up or pulse output.

Before connecting the electronic unit to the power supply, make sure that the pick up and the pulse output are properly connected. S Technical data, Page 5

Requirement:

- ✓ Pick up properly connected
- ✓ Pulse output correctly connected if used on customer side
- ✓ System is de-energised
- Use one of the free openings A, B or C of the electronic unit as a cable input for connecting the power supply.
 - Note: Opening A is only available in the wall-mounted version.
- 2. Unscrew the Phillips screws 6 and remove the front cover 5 of the electronic unit.
- 3. Pull the power supply cable (10 30 V DC) through the cable inlet and connect it to the connection panel **7**. STechnical data, Page 5.
- 4. Connect the supply cable (10 30 V DC) 8 to the power supply of the system.
- 5. Replace the front cover of the electronic unit.

9.1 Checking the electronic unit

9 Commissioning

9.1 Checking the electronic unit

Before putting the electronic unit into operation, some basic checks must be carried out:

Test	Procedure
Installation	1. Check that the electronic unit is firmly seated.
	2. Ensure that the front cover and cable entries seal properly.
Electrical installation	1. Ensure that the system is de-energized.
	2. Remove the front cover of the electronic unit.
	3. Check whether the wiring of the pick up on the connection panel is secure.
	4. If used, check that the wiring of the pulse output on the connection panel is secure.
	5. If used, check the connection of the pulse output to the system.
	6. Check whether the wiring of the power supply at the connection panel is secure.
	7. Check the connection of the power supply to the system.
Functional test	Electronic unit:
	▶ Switch on the power supply.
	⇒ Operator mode is activated and the flow rate is displayed,

10 Decommissioning

10.1 Taking the electronic unit out of operation



\Lambda DANGER

Risk of death resulting from electric shock.

► The electronic unit may only be separated from the power supply by an authorized electrician.

→ Switch off the power supply to the system.

Note When the electronic unit is switched off or in the event of a power failure, all settings and total values are retained.

11 Operation

11.1 Basic functions

The electronic unit provides three modes:

- □ Setup mode for configuring the electronic unit
- Programming mode for selecting or entering setup values (the programming mode is part of the setup mode)
- □ Operator mode for operation

11.2 Key assignment

The electronic unit is operated via two keys.

Кеу	Designation	Function
soloed	SELECT	 Selects the desired menu: Flow rate Total Accumulated total Increasing a value after activating the setup mode Unit configuration
elear	CLEAR	 Deletes the value for Total Press the key twice to delete the value. Selecting a digit after activating the setup mode Unit configuration

Tab. 4: Key functions

11.3 General operating steps

The following table describes general operating steps, such as changing values and units.

Aim	Operating step
Activate setup mode	Press SELECT for 7 seconds.
Scrolling through the setup menu	 Press CLEAR to select the desired setup menu. Press SELECT to select the desired setup submenu.
	Note: Each menu function has a number indicating the menu and submenu, e.g. 2.1 for RATE > UNIT. This menu number is displayed on the menu screen along with a keyword.
Activating programming mode	→ Press SELECT and CLEAR briefly. ⇒ PROG starts flashing.
Select or enter a setup value in programming mode	 Press CLEAR to select or enter a value. or - To change a value, use CLEAR to select the digits and SE-LECT to increase this value. Press SELECT and CLEAR briefly to confirm the selection or change of value. or - Undo modification by taking no further action for 20 seconds or by pressing SELECT for 3 seconds. The programming mode is automatically exited and the previous values are restored. Note: Changes are only set if SELECT and CLEAR have been pressed simultaneously!
Returning to Operator Mode	 Press SELECT for 3 seconds. - or - End automatically if no key is pressed for 2 minutes.

Tab. 5: General operating steps

11.4 Setup mode

Setup mode is used to configure the electronic unit. The programming mode is part of the setup mode.

11.5 Operator mode

In general, the electronic unit operates in operator mode. RUN is displayed.

The information displayed in this mode depends on the configuration settings, see "Setup functions and variables", The following functions are available for the operator to display and reset.

11.6 Display flow rate, total or accumulated total

11.6 Display flow rate, total or accumulated total



Fig. 7: Display data for flow rate (left) / display data for total (right) (examples)



Fig. 8: Display data for accumulated total (example)

There are three different screens with display data. When you press the SELECT key, flow rate, total or accumulated total are displayed. The accumulated total is counted up to the value 9999999. The unit and the number of decimal places are displayed according to the configuration settings for Total.

Note If "-----" is displayed, the flow rate value is too high to be displayed.

11.7 Reset Total

Aim	Operating steps
Reset Total	1. Select menu 1 (TOTAL).
	2. Press CLEAR.
	"CLEAR TOTAL" starts to flash.
	3. Press CLEAR briefly to confirm the reset of Total.
	press
	- or -
	SELECT to cancel this action.
	Note: Resetting Total has no effect on the accumulated Total.

Tab. 6: Reset Total

11.8 Alarm status

NoteA flashing alarm flag indicates an internal alarm condition.Alarm conditions are processed internally in most cases.Information on alarms
♦ Troubleshooting, Page 21.

12 Menu description

12.1 Setup functions and variables

Note The setup values can be protected by setting a password. See menu 6 - OTHER. When a password is set, it must be kept in a safe place. After setting a password, the setup values can only be accessed with a password.

No.	Menu	Submenu
1	TOTAL	□ 1.1 UNIT □ 1.2 DECS □ 1.3 K-F □ 1.4 K-FD
2	RATE	 2.1 UNIT 2.2 TIME 2.3 DECS 2.4 K-F 2.5 K-FD
3	METER	□ 3.1 SIGN
4	A-OUT	□ 4.1 MODE □ 4.2 R.MIN □ 4.3 R.MAX □ 4.4 T.MIN □ 4.5 T.MAX
5	D-OUT	□ 5.1 MODE □ 5.2 DECS □ 5.3 AMNT
6	OTHER	□ 6.1 BEM □ 6.2 V-NO □ 6.3 S-NO □ 6.4 PIN □ 6.5 BL

Note The settings for total and flow rate are completely independent of each other. This allows different measurement units to be used, e.g. cubic metres for total and litres for flow rate.

12.2 Menu 1 - TOTAL

12.2 Menu 1 - TOTAL

No.	Submenu	Page (Information)	Values	Preset
1.1	UNIT	Measurement unit for total and accumulated total. Changing the measurement unit affects the val- ues in the operator and setup mode, the K-factor must be adjusted accordingly.	L; m³; kg; lb; GAL; US- GAL; bbl	L
1.2	DECS	Display format of decimal values for total and ac- cumulated total	0 0.1 0.02 0,003	0
1.3	K-F	K-factor for Total	0.000010 9999999	1
1.4	K-FD	Display format of the decimal values of the K- factor for Total	0 0.1 0.02 0,003 0.0004 0.00005 0.000006	0

Tab. 7: Menu 1 - TOTAL

12.3 Menu 2 - RATE

No.	Submenu	Page (Information)	Values	Preset
2.1	UNIT	Measurement unit for the flow rate. Changing the measurement unit affects the values in the oper- ator and setup mode, the K-factor must be adjus- ted accordingly.	mL: L; m³; g; kg; ton; GAL; bbl; lb; cf	L
2.2	TIME	Time unit for calculating the flow rate (flow rate/ time unit): /SEC = per second /MIN = per minute /HOUR = per hour /DAY = per day	/SEC /MIN /HOUR /DAY	/MIN
2.3	DECS	Display format of the decimal values of the flow rate	0 0.1 0.02 0,003 0.0004	0
2.4	K-F	K-factor for flow rate	0.000010 9999999	1
2.5	K-FD	Display format of the decimal values of the K- factor for flow rate	0 0.1 0.02 0,003 0.0004 0.00005 0.000006	0

Tab. 8: Menu 2 - RATE

12.4 Menu 3 - METER

No.	Submenu	Page (Information)	Values	Preset
3.1	SIGN	Output signal type	PNP	PNP
			NAMUR	

Tab. 9: Menu 3 - METER

12.5 Menu 4 - A-OUT

Note If the operating conditions require it, the minimum and maximum value of the output signal can be adjusted. However, an adjustment may only be made if the analogue output is deactivated.
 Changing the values when the analogue output is activated can produce undesired measurement results and consequently damage to the unit.

No.	Submenu	Page (Information)	Values	Preset
4.1	MODE	Activate or deactivate analogue output	DISABLE ENABLE	DISABLE
4.2	R.MIN	Flow rate that generates the minimum output signal (default = 4 mA)	0,000 9999999	0
4.3	R.MAX	Flow rate that generates the maximum output signal (default = 20 mA)	0,000 9999999.	Q _{rated} *
4.4	T.MIN	Minimum output signal Note: The value can be adjusted if the analogue output is deactivated.	0 9999	1365
4.5	T.MAX	Maximum output signal Note : The value can be adjusted if the analogue output is deactivated.	0 9999	5461
*	Nominal flow rate of the flow meter			

Tab. 10: Menu 4 - A-OUT

12.6 Menu 5 - D-OUT

No.	Submenu	Page (Information)	Values	Preset
5.1	MODE	The mode determines the length of the pulse:	OFF	OFF
		OFF = Pulse output deactivated	SHORT	
		SHORT = Pulse length 5 ms (max. 100 Hz)	INTER	
		INTER = Pulse length 15 ms (max. 33 Hz)	LONG	
		LONG = Pulse length 100 ms (max. 5 Hz)		
5.2	DECS	Display format of the decimal values of the flow rate	0	0
		per pulse	0.1	
			0.02	
			0,003	
5.3	AMNT	Flow rate per pulse	0,001 99999999.	1000

Tab. 11: Menu 5 - D-OUT

12.7 Menu 6 - OTHER

12.7 Menu 6 - OTHER

No.	Submenu	Page (Information)	Values	Preset
6.1	BEM	Model: For support and maintenance, information on the characteristics of the electronic unit must be provided. The manufacturer will request this inform- ation in the event of a serious malfunction.	200	-
6.2	V-NO	Software version: For support and maintenance, information on the characteristics of the electronic unit must be provided. The manufacturer will request this inform- ation in the event of a serious malfunction.	XX.XX.XX	_
6.3	S-NO	Serial number: For support and maintenance, information on the characteristics of the electronic unit must be provided. The manufacturer will request this inform- ation in the event of a serious malfunction.	XXXXXX	-
6.4	PIN	Password: All setup values can be password-protected. Up to 4 digits can be programmed, e.g. 1234. 0000 = no password protection Note : When a password is set, it must be kept in a safe place. After setting a password, the setup val- ues can only be accessed with a password.	0000 9999	1000
6.5	BL	Display backlight	ON; OFF	ON

Tab. 12: Menu 6 - OTHER

13 Maintenance

13.1 Required maintenance

When operating under approved conditions, the electronic unit is maintenance-free.

- 1. Check the condition of the housing and cables at regular intervals.
- 2. Periodically check the input/output wiring for reliability and signs of wear.
- 3. Periodically check process accuracy. It may be necessary to recalibrate the flow meter as a result of wear and tear. If this results in a change in the K-factor, it must be entered again.
- **Note** If the relative humidity exceeds 90%, a bag of silica gel in the housing of the electronic unit is recommended.

13.2 Cleaning the electronic unit

ATTENTION

Device damage through water.

- Ensure that no water enters the electronic unit.
- Wipe the housing with a soft cloth. In the case of strong soiling wipe off the housing surface slightly moist with a common detergent.

14 Disposal

14.1 Disposing of the electronic unit

ATTENTION

Environmental damage through improper disposal.

Dispose of all the components in an environmentally friendly manner in accordance with the applicable local regulations.

As electronic waste the electronic unit has to be disposed of properly.

15 Troubleshooting

15.1 Fault table

Fault information

Electronic unit faults are very rare due to its high quality standard. Implausible display values therefore normally indicate faults in the system. The following fault table lists the various fault messages as well as their cause and remedy.

Alarm messages

Alarm conditions are processed internally in most cases. If all the above values still appear correct, no operator intervention is required. If the alarm appears more frequently or remains active for a longer period of time, contact the manufacturer.

Other faults

Fault	Cause and remedy
	 Password not known. Setup values can be protected by setting a password, see "Menu 6 - OTHER". If a password is set, it must be kept in a safe place. After setting a password, the setup values can only be accessed with a password.
Analogue output does not work or does not work correctly.	 No current or incorrect current can be measured between terminals 10 and 6. → Check supply voltage for BEM 200 and for analogue output for impermissible connection. Use analogue isolators if necessary.
"0 / zero" is displayed as the flow rate.	A flow rate of 0 is displayed after a transducer fault. → Check wiring, replace pick up. If there is a flow (Total is counting): → Check setup values under menu 2.
The flow rate is displayed as "".	The flow rate is too high to be displayed.

16.1 Installation

16 Accessories

16.1 Installation

16.1.1 Connecting items

The electronic unit can be assembled on an OME or OMP flow meter using the connecting item.

Fastening set	Application	Article no.	Suitable for
The second second	Connecting tube for assembly on flow meter OME	UZA 91	Electronic unit BEM 200
**************************************	Connecting bracket for assembly on OMP flow meter	UZA100 UZA101 UZA102	Electronic unit BEM 200





Assembly: M20

Fig. 9: Fastening set UZA 91: Dimensions



UZA100 for OMP 20 UZA101 for OMP 32 UZA102 for OMP 52

Fig. 10: Fastening set UZA100 - UZA102

16.2 Electrical connection

16.2.1 Alternative power supply

The electronic unit operates with a power supply of 10 - 30 V DC. If a different voltage is available in the system, a suitable power supply unit can be used.

16.2.2 Plug-in power supply unit EEN 13

The accessory set includes exchangeable connectors that can be used in most countries of the world.



Fig. 11: Plug-in power supply unit EEN 13

Component	Parameter	Unit	Value
Input	Power consumption	[W]	20
	Input voltage	[V AC]	90 – 264
	Frequency	[Hz]	47 – 63
	Max. current consumption	[A]	0.4.
	Leak flow max.	[mA]	0.25
Output	Output voltage	[V DC]	24 ± 2 %
	Output current max.	[mA]	625
	Output power	[W]	15
	Short-circuit protection		Continuous (auto recovery)
	Overvoltage protection		Yes
Environment	Operating temperature	[°C]	0 ~ +40
	Storage temperature	[°C]	-20 °C ~ +85
	Dimensions	[mm]	80.6 x 47.9 x 43.3
	Weight	[g]	130

Tab. 14: Technical data EEN 13

Cable assignment

Connection	Function	Color
Output	+ 24 V	White
	GND	Black





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