

# Differential measurement



**Important installation information**

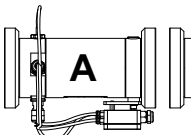
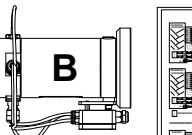
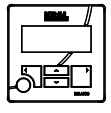
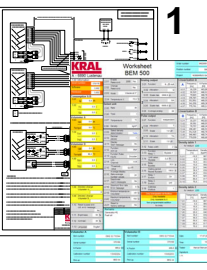
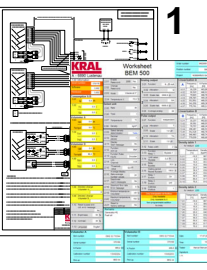
Installing the differential measurement system

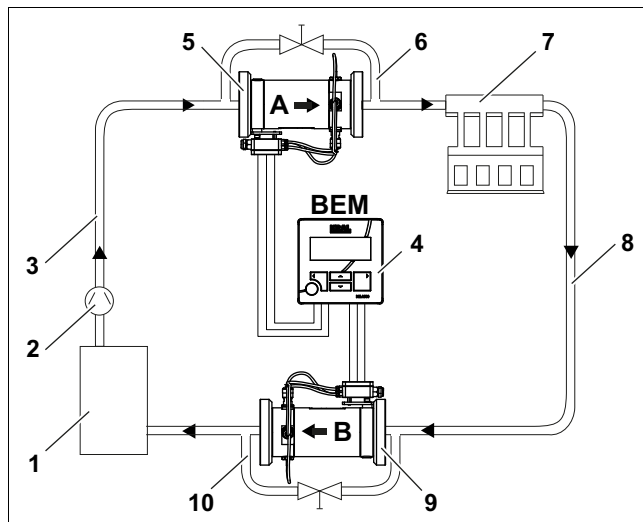


Observe information on installation of differential measurement systems:

- This quick guide contains information on installing, and is only valid together with the corresponding operating instructions for the flowmeters and the electronic unit.

Identifying and assigning components

Scope of delivery	Pcs.	Pos.	Component
	1	<b>A</b>	Flowmeter A (supply line)
	1	<b>B</b>	Flowmeter B (return line)
	1	<b>BEM</b>	Electronic unit
	1	<b>1</b>	Wiring diagram
	1	<b>2</b>	Work sheet



- 1 Tank
- 2 Feed pump
- 3 Supply line
- 4 Electronic unit
- 5 Flowmeter A
- 6 Bypass flowmeter A
- 7 Motor (consumer)
- 8 Return line
- 9 Flowmeter B
- 10 Bypass flowmeter B

Fig. 1 Installation diagram

**Identifying the components via serial number (SN)**

Example: Differential measurement system consisting of

- Electronic unit with SN 425001
- Flowmeter A with SN 425002
- Flowmeter B with SN 425003

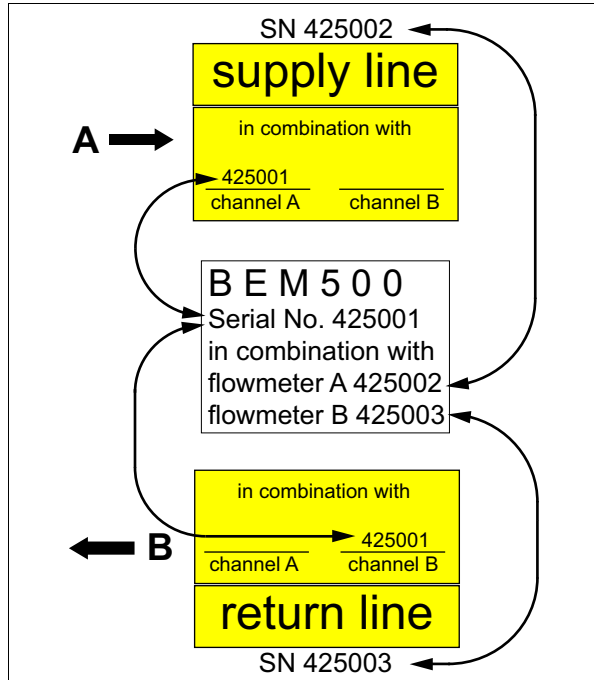


Fig. 2 Assignment via marking on sticker (flowmeter) and rating plate (electronic unit)

**Notice:**

The yellow stickers are located on the flowmeter above the rating plates. On the electronic unit the assignment is located at the backside of the housing.

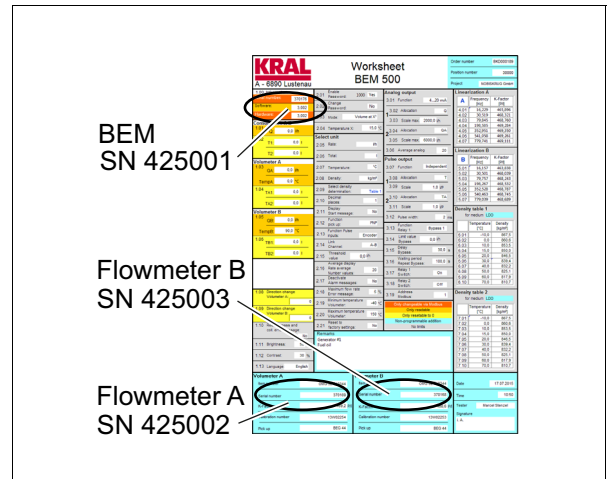


Fig. 3 Assignment on the work sheet

**CAUTION**

Error of measurement through wrong assignment of electronic unit and flowmeter.

- ▶ Electronic unit, flowmeter A and flowmeter B build a unit, and must be installed together as one differential measurement system.
- ▶ The corresponding components have to be identified via their serial numbers, see Fig.2 and Fig. 3.

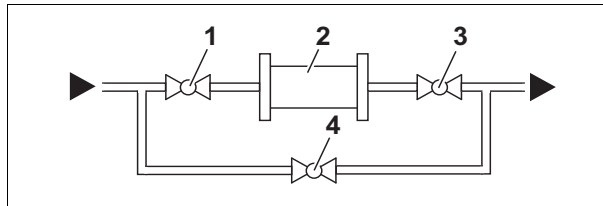


- ▶ Install all components of the flow measurement system according to installation diagram, and assignment on work sheet and devices: Flowmeter A in the supply line, and flowmeter B in the return line.

**Further recommendations of the manufacturer for installation**

- When choosing the installation position ensure that all connections remain accessible, and that the cables are laid protected.
- Install a bypass in the supply line and in the return line.
- Install stop valves before and after the flowmeter.
- For use with HFO: Ensure that flowmeter, junction box, pick up, temperature sensor, and corresponding cables are not heat insulated.

### Rinsing the flowmeter before commissioning



- 1 Shut-off device before flowmeter
- 2 Flowmeter
- 3 Shut-off device after flowmeter
- 4 Shut-off device bypass

Fig. 4 Flowmeter with bypass

#### CAUTION

Damage and error of measurement through impurities in the pipe system.

- ▶ Clean the pipe system thoroughly before installing the flowmeters.
- ▶ Further installation types with or without bypass are possible, see operating instructions of the flowmeter. In any case the pipe system has to be rinsed thoroughly without the flowmeter before commissioning to avoid damage to the device.



1. Before rinsing remove flowmeter **2** from the main line and replace by a dummy.
2. Open shut-off devices **1** and **3** in the main line before and after the dummy, as well as shut-off device **4** in the bypass.
3. Rinse the whole pipe system thoroughly.
4. Remove the dummy, install the flowmeter in the main line, and close the shut-off device in the bypass.



#### Notice:

For further installation types with or without bypass see the corresponding operating instructions of the flowmeter.

#### Further recommendations of the manufacturer for commissioning

- Enter density of the measured liquid.
  - 1) Menu 2.01: Enter password "1000".
  - 2) Menu 2.09: Select "Calculation fuel oil".
  - 3) Menu 6.20: Enter density of the measured liquid at 15 °C.
- Enter threshold value A-B in menu 2.15 while the measured medium is circulating without consumption. With the threshold function a falsification of total values due to minimal measurement deviation in both flowmeters can be avoided.

#### Contact data in case of problems

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