

Type 8025 UNIVERSAL



Quickstart

English - Deutsch - Français

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Technische Änderungen vorbehalten.
Sous réserve de modifications techniques.

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Operating Instructions_1903/04 00564360 ORIGINAL_FR

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1 ABOUT THE QUICKSTART

The Quickstart describes the life cycle of the device. Please keep this Quickstart in a safe place, accessible to all users and any new owners.

The Quickstart contains important safety information.

Failure to comply with these instructions can lead to hazardous situations. Pay attention in particular to the chapters "[3 Basic safety information](#)" and "[2 Intended use](#)".

- Whatever the version of the device, this Quickstart must be read and understood.

The Quickstart explains how to install, set, and start-up the device.

A detailed description of the device can be found in the related Operating Instructions available on the internet under:

www.burkert.com

1.1 Symbols used



DANGER

Warns against an imminent danger.

- Failure to observe this warning results in death or in serious injury.



WARNING

Warns against a potentially dangerous situation.

- Failure to observe this warning can result in serious injury or even death.



CAUTION

Warns against a possible risk.

- Failure to observe this warning can result in substantial or minor injuries.

NOTICE

Warns against material damage.



Indicates additional information, advice or important recommendations.



Refers to information contained in these Quickstart or in other documents.

- Indicates an instruction to be carried out to avoid a danger, a warning or a possible risk.

→ Indicates a procedure to be carried out.

1.2 Definition of the word "device"

The word "device" used within this Quickstart refers to the transmitter type 8025 UNIVERSAL with serial numbers higher or equal to 20 000.

2 INTENDED USE

Use of the device that does not comply with the instructions could present risks to people, nearby installations and the environment.

The transmitter 8025 UNIVERSAL has been designed to process a frequency signal, received from a flow sensor connected to the transmitter.

- ▶ Use the device in compliance with the characteristics and commissioning and use conditions specified in the contractual documents and in the Operating Instructions.
- ▶ Never use the device for security applications.
- ▶ Use the device only in combination with foreign devices or foreign components recommended or approved by Bürkert.
- ▶ Protect the device against electromagnetic interference, ultra-violet rays and, when installed outdoors, the effects of climatic conditions.
- ▶ Only operate a device in perfect working order.
- ▶ Store, transport, install and operate the device properly.
- ▶ Only use the device as intended.

3 BASIC SAFETY INFORMATION

This safety information does not take into account any contingencies or occurrences that may arise during installation, use and maintenance of the device.

The operating company is responsible for the respect of the local safety regulations including for the staff safety.



Danger due to electrical voltage.

- ▶ If a 12...36 V DC energized version is installed either in a wet environment or outdoors, all the electrical voltages must be of max. 35 V DC.
- ▶ Before carrying out work on the system, disconnect the electrical power for all the conductors and isolate it.
- ▶ All equipment connected to the device must be double insulated with respect to the mains according to the standard IEC 61010-1:2010.
- ▶ Observe all applicable accident protection and safety regulations for electrical equipment.



Various dangerous situations

To avoid injury:

- ▶ Do not use the device in explosive atmospheres.
- ▶ Do not use the device in an environment incompatible with the materials it is made of.
- ▶ Do not subject the device to mechanical stress.



Various dangerous situations

To avoid injury:

- ▶ Do not make any modifications to the device.
- ▶ Prevent any unintentional power supply switch-on.
- ▶ Only qualified and skilled staff can carry out the installation and maintenance work.
- ▶ Guarantee a defined or controlled restarting of the process, after a power supply interruption.
- ▶ Observe the general technical rules.

NOTICE

Elements / Components sensitive to electrostatic discharges

The device contains electronic components sensitive to electrostatic discharges. They may be damaged if they are touched by an electrostatically charged person or object. In the worst case scenario, these components are instantly destroyed or go out of order as soon as they are activated.

- ▶ To minimise or even avoid all damage due to an electrostatic discharge, take all the precautions described in standard EN 61340-5-1.
- ▶ Also ensure that you do not touch any of the live electrical components.

4 GENERAL INFORMATION

4.1 Manufacturer's address and international contacts

To contact the manufacturer of the device, use following address:

Bürkert SAS

Rue du Giessen

BP 21

F-67220 TRIEMBACH-AU-VAL

You may also contact your local Bürkert sales office.

The addresses of our international sales offices are available on the internet at: www.burkert.com

4.2 Warranty conditions

The condition governing the legal warranty is the conforming use of the device in observance of the operating conditions specified in the Operating Instructions.

4.3 Information on the Internet

You can find the Operating Instructions and technical data sheets regarding the type 8025 UNIVERSAL at: www.burkert.com

Type 8025 UNIVERSAL

Description of the rating plateE

5 DESCRIPTION OF THE RATING PLATE

1. Measured value

2. Type of the device, housing

3. Specifications of the digital output DO1 (transistor)

4. Specifications of the analogue output AO1

5. Supply voltage and max. current consumption

6. Protection class of the device

7. Manufacturing code

8. Conformity marking

9. Certification

10. Warning: Before using the device, take into account the technical specifications described in this Quickstart.

11. Specifications of the relay outputs DO2 and DO3

12. Serial number

13. Article number

Fig. 1 : Rating plate of the device (example)

6 TECHNICAL DATA

6.1 Conditions of use

Ambiant temperature	-10...+60 °C
Air humidity	< 80 %, non condensated
Height above sea level	max. 2000 m
Operating conditions	Continuous operation
Equipment mobility	Fixed device
Use	Indoor and outdoor (Protect the device against electro-magnetic interference, ultraviolet rays and, when installed outdoors, against the effects of climatic conditions)
Installation category	Category I according to UL/EN 61010-1
Degree of pollution	Degree 2 according to UL/EN 61010-1
Protection rating according to IEC/EN 60529	
▪ wall-mounted version	▪ IP65 ¹⁾ , device wired, cable glands tightened, cover lid screwed tight and entry item nuts of the cable glands tightened at a screwing torque of 1.5 N·m
▪ panel version	▪ front side IP65 ¹⁾ , rear side IP20 ¹⁾

¹⁾ not evaluated by UL



6.2 Conformity to standards and directives

The applied standards, which verify conformity with the EU directives, can be found on the EU-type examination certificate and/or the EU declaration of conformity (if applicable).

UL-Certification

Devices with variable key PU01 or PU02 are UL-certified devices and comply also with the following standards:

- UL 61010-1
- CAN/CSA-C22.2 n°61010-1

Identification on the device	Certification	Variable key
	UL-recognized	PU01
 Measuring Equipment EXXXXXX	UL-listed	PU02

6.3 Mechanical data

Part	Material
Housing and cover, wall-mounted version	ABS
Cable glands, wall-mounted version	PA
Open housing, panel version	PC
Foil	polyester
4 screws	Stainless steel
Cable clips	PA

6.4 Dimensions

→ Please refer to the technical data sheets related to the device at:

www.burkert.com

6.5 Electrical data

Power supply 12...36 V DC	<ul style="list-style-type: none"> ▪ filtered and regulated ▪ max. tolerance 12 V DC: -5 % or +10 % ▪ max. tolerance 36 V DC: ±10 % ▪ Connection to main supply: permanent (through external SELV (safety extra-low voltage) and through LPS (limited power source))
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Power source (not supplied)	<ul style="list-style-type: none"> ▪ Limited power source according to UL / EN 60950-1 standards ▪ or limited energy circuit according to UL / EN 61010-1, Paragraph 9.4
------------------------------------	--

115/230 V AC power supply	
▪ frequency	▪ 50/60 Hz
▪ supplied voltage	▪ 27 V DC, regulated
▪ maximum current	▪ 250 mA
▪ integrated protection	▪ 250 mA time-delay fuse
▪ power	▪ 6 VA

Current consumption

(without the consumption of the 4...20 mA output)

- | | |
|---|---|
| ▪ version without relays, energized with 12...36 V DC | ▪ 50 mA (at 12 V DC) and 30 mA (at 36 V DC) |
| ▪ version with relays, energized with 12...36 V DC | ▪ 70 mA (at 12 V DC) and 45 mA (at 36 V DC) |
| ▪ version without relays, energized with 115/230 V AC | ▪ 35 mA |
| ▪ version with relays, energized with 115/230 V AC | ▪ 50 mA |

Digital output DO1 (transistor)

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ type ▪ function ▪ frequency (f) ▪ Electrical data ▪ duty cycle if $0.6 < f < 300 \text{ Hz}$ ▪ duty cycle if $300 < f < 1500 \text{ Hz}$ ▪ duty cycle if $1500 < f < 2200 \text{ Hz}$ ▪ protection | <p>polarized, potential-free</p> <ul style="list-style-type: none"> ▪ NPN / PNP (wiring dependent), open collector ▪ pulse output (by default), user configurable ▪ 0.6...2200 Hz ▪ 5...36 V DC, 100 mA max., voltage drop 2.7 V DC at 100 mA ▪ > 0.45 ▪ > 0.4 ▪ < 0.4 ▪ galvanically isolated, and protected against over-voltages, polarity reversals and short-circuits |
|--|---|

Digital outputs DO2 and DO3 (relays) <ul style="list-style-type: none"> operating electrical data of the load (non UL devices) electrical data of the load (UL devices) max. breaking capacity life span 	<ul style="list-style-type: none"> hysteresis (by default), user configurable, normally open 230 V AC / 3 A or 40 V DC / 3 A max. 30 V AC and 42 V_{peak}, 3 A or max. 60 V DC, 1 A <p>To use the relay outputs in a wet location, observe the following DANGER safety instruction.</p> <ul style="list-style-type: none"> 750 VA (resistive load) min. 100000 cycles
Current output AO1 <ul style="list-style-type: none"> specification max. loop impedance 	<ul style="list-style-type: none"> 4...20 mA, sink or source (wiring dependent), 22 mA to indicate a fault (can be activated) 1300 Ω at 36 V DC, 1000 Ω at 30 V DC, 750 Ω at 24 V DC, 300 Ω at 15 V DC, 200 Ω at 12 V DC 900 Ω if the device is energized with 115/230 V AC



DANGER

Danger due to the operation of the relay outputs of a UL device in a wet location.

- ▶ If a UL device is used in a wet location:
 - energize the relay outputs with an alternating voltage of max. 16 V_{rms} and 22.6 V_{peak}.
 - or energize the relay outputs with a direct voltage of max. 35 V DC.

6.6 Specifications of the connected flow sensor

Signal originating from the remote sensor <ul style="list-style-type: none"> type frequency max. voltage 	<ul style="list-style-type: none"> pulse, sine-wave (typical sensitivity 50 mV peak-to-peak at 250 Hz), "on/off", or standard voltage 0...5 V DC 0.6 Hz to 2.2 kHz, can be adjusted 36 V DC
Input impedance	depends on the position of selector "LOAD" on the electronic board of the 8025. See chap. 7.4.11

Power supply	<p>supplied by the transmitter depending on the position of selector "SENSOR SUPPLY" of the 8025, either:</p> <ul style="list-style-type: none"> ▪ 5 V DC, 30 mA max. ▪ (L+)-12V: supply voltage (L+) of the transmitter minus 12 V DC (minus 12.5 V DC max.), 80 mA max. ▪ L+: supply voltage (L+) of the transmitter (minus 1.5 V DC max.), 140 mA max. (if the device is energized with 12...36 V DC), 80 mA max. (if the device is energized with 115/230 V AC)
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7 INSTALLATION AND WIRING

7.1 Safety instructions



DANGER

Risk of injury due to electrical voltage.

- ▶ If a 12...36 V DC energized version is installed either in a wet environment or outdoors, all the electrical voltages must be of max. 35 V DC.
- ▶ Disconnect the electrical power for all the conductors and isolate it before carrying out work on the system.
- ▶ All equipment connected to the wall-mounted or panel version of the flow transmitter 8025 UNIVERSAL must be double insulated in relation to the mains in accordance with IEC standard 61010-1:2010.
- ▶ Observe all applicable accident protection and safety regulations for electrical equipment.



WARNING

Risk of injury due to non-conforming installation.

- ▶ The electrical installation can only be carried out by qualified and skilled staff with the appropriate tools.
- ▶ Fit a circuit breaker or a switch to the electrical installation in which the device is installed.
- ▶ Install the circuit breaker or switch in a place which is easy to reach.
- ▶ Identify the circuit breaker or switch as the electrical power cut-off system for the device.



WARNING

Risk of injury due to non-conforming installation.

- ▶ Install appropriate overload safety devices. For a version energized by 115/230 V AC, insert overcurrent protective devices in the live conductor and in the neutral conductor.
- ▶ Do not energize a device, version 12...36 V DC, with an alternating voltage or with a direct voltage higher than 36 V DC.
- ▶ Observe the standard NF C 15-100 / IEC 60364.



WARNING

Risk of injury due to unintentional switch on of power supply or uncontrolled restarting of the installation.

- ▶ Take appropriate measures to avoid unintentional activation of the installation.
- ▶ Guarantee a set or controlled restarting of the process subsequent to any intervention on the device.

NOTICE

Risk of damage to the device if the incorrect supply voltage is applied.

- ▶ Energize the device with a supply voltage in accordance with the position of the selector. See Fig. 11, chap. 7.4.5.



Protect this device against electromagnetic interference, ultraviolet rays and, when installed outdoors, the effects of the climatic conditions.

7.2 Installation of a panel version



Install the panel version of the device in a cabinet with a protection class at least IP54 to ensure a degree of pollution 2 inside the cabinet.

→ To cut the opening in the cabinet door, use the supplied drilling jig, respecting the dimensions indicated in Fig. 2.

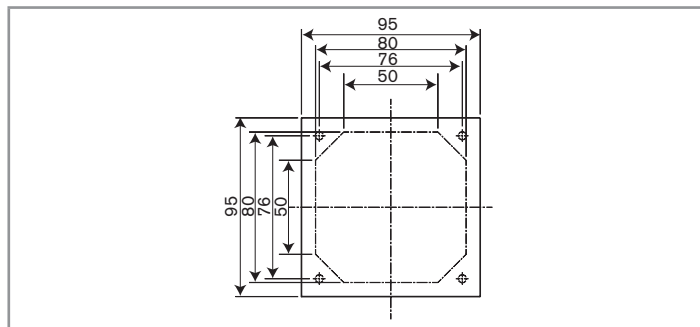


Fig. 2 : Dimensions of the drilling jig [mm]

- Insert the 4 screws in the housing (from the front).
- Insert the seal on the external threads of the 4 screws (rear of the housing).
- Put the assembly on the cutout, electronics turned to the inside of the cabinet.
- Put the 4 washers on the 4 screws.
- Put a nut on each of the 4 screws and tighten the nuts to secure the device to the cabinet.

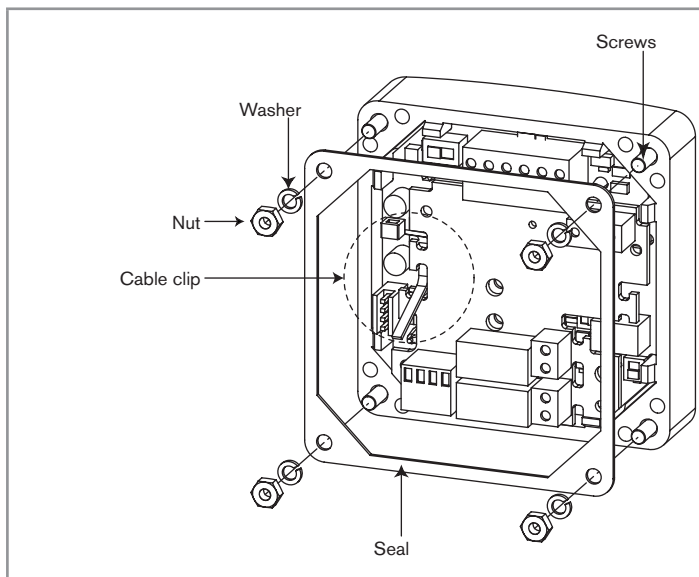


Fig. 3 : Installation of a 8025, panel version

7.3 Installation of a wall-mounted version

NOTICE

Risk of material damage if the cable glands are not tightly screwed on the housing

- Before installing the wall-mounted housing on its support, tighten the nuts of the entry item of the cables glands at a torque of 1.5 N·m.

The flow transmitter in a wall-mounted version has 4 holes in the bottom of the housing.

→ Remove the covering strips covering the screws.

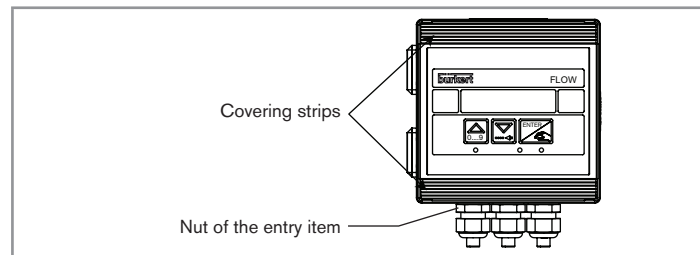


Fig. 4 : Location of the fastening nuts and the covering strips

→ Loosen the 4 screws and open the cover to get access to the holes [1].

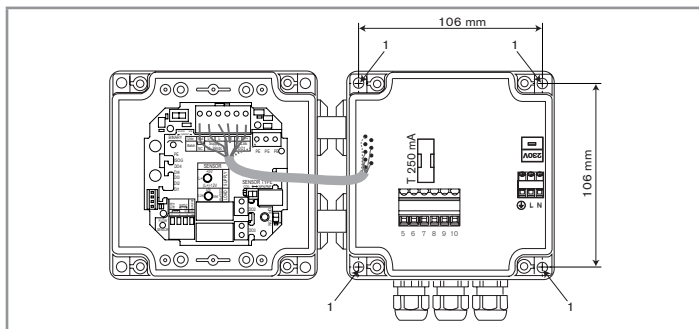


Fig. 5 : Installation of a wall-mounted version

- Secure the housing to the support respecting the dimensions indicated in Fig. 5.
- Wire according to instructions in chap. 7.4.
- Close the housing and tighten the 4 screws of the cover.

7.4 Wiring



DANGER

Risk of injury due to electrical voltage.

- ▶ If a 12...36 V DC energized version is installed either in a wet environment or outdoors, all the electrical voltages must be of max. 35 V DC.
- ▶ Disconnect the electrical power for all the conductors and isolate it before carrying out work on the system.
- ▶ All equipment connected to the device must be double insulated in relation to the mains in accordance with IEC standard 61010-1:2010.



DANGER

Risk of injury due to electrical voltage.

- ▶ Observe all applicable accident protection and safety regulations for electrical equipment.



DANGER

Danger due to the operation of the relay outputs of a UL device in a wet location.

- ▶ If a UL device is used in a wet location:
 - energize the relay outputs with an alternating voltage of max. 16 Vrms and 22.6 Vpeak.
 - or energize the relay outputs with a direct voltage of max. 35 V DC.

NOTICE

Risk of damage to the device if the incorrect supply voltage is applied.

- ▶ Energize the device with a supply voltage in accordance with the position of the selector. See Fig. 11, chap. 7.4.5.



The device can be damaged if it is not tight.

- Insert the supplied stopper gaskets into the unused cable glands to ensure the tightness of the device.



Only move the selectors when the power supply is off.



Protect this device against electromagnetic interference, ultraviolet rays and, when installed outdoors, the effects of the climatic conditions.



For a correct operation of the device, respect the following recommendations during the electrical installation:

- Make sure the installation is equipotential. See chap. [7.4.2](#).
- Do not install the cables near high voltage or high frequency cables; if a combined installation cannot be avoided, a minimum clearance of 30 cm should be respected.



For a device fed at 12...36 V DC, respect the following recommendations for the electrical installation:

- Use a filtered and regulated 12...36 V DC power supply. The circuit has to be safety extra low voltage (SELV), with a safe energy level.



The power supply of the device can be damaged if it is not protected.

- Protect the device power supply by means of a 300 mA fuse and a switch.



The power supply of a transistor output can be damaged if it is not protected.

- Protect the power supply of each transistor output by means of a 125 mA fuse.



The relays can be damaged if not protected.

- Protect the relays by means of a max. 3 A fuse and a circuit breaker (depending on the process).
- Do not apply both a dangerous voltage and a safety extra-low voltage to the relays.

7.4.1 Specifications of the connection cables

Tab. 1 : Specifications of the cables and wires for the direct wiring to the terminal blocks of a panel-mounted version

Specification of the cables and the conductors (not supplied)	Recommended value
Shielded cable	yes
Length of the cable	max. 50 m
Operating temperature, UL device	min. 90 °C
Operating temperature, non UL device	min. 80 °C
Cross section of the conductors	0.2...1.5 mm ²

Tab. 2 : Specifications of the cables and wires for the wiring through the M16x1,5 cable glands

Specification of the cables and the conductors (not supplied)	Recommended value
Shielded cable	yes
Length of the cable	max. 50 m
External diameter of the cable, if 1 cable per cable gland	4...8 mm
Operating temperature, UL device	min. 90 °C
Operating temperature, non UL device	min. 80 °C
Cross section of the conductors	0.2...1.5 mm ²

7.4.2 Equipotentiality of the installation

To ensure the equipotentiality of the installation (power supply - device - fluid):

- Connect together the various earth spots in the installation to eliminate the potential differences that may occur between different earthes.
- Observe faultless earthing of the shield of the power supply cable, at both ends.
- Connect the negative power supply terminal to the earth to suppress the effects of common mode currents. If this connection cannot be made directly, a 100 nF / 50 V capacitor can be fitted between the negative power supply terminal and the earth.

→ Special attention has to be paid if the device is installed on plastic pipes because there is no direct earthing possible. Proper earthing is performed by earthing together the metallic instruments such as pumps or valves, that are as close as possible to the device. If no such instrument is near the device, insert metallic earth rings inside the plastic pipes upstream and downstream the device and connect these parts to the same earth. The earthing rings must be in contact with the fluid.

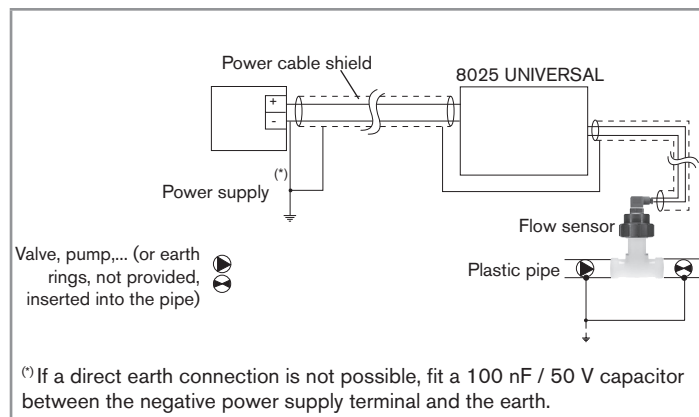


Fig. 6 : Equipotentiality skeleton diagram with pipes in plastic

Type 8025 UNIVERSAL

Installation and wiring

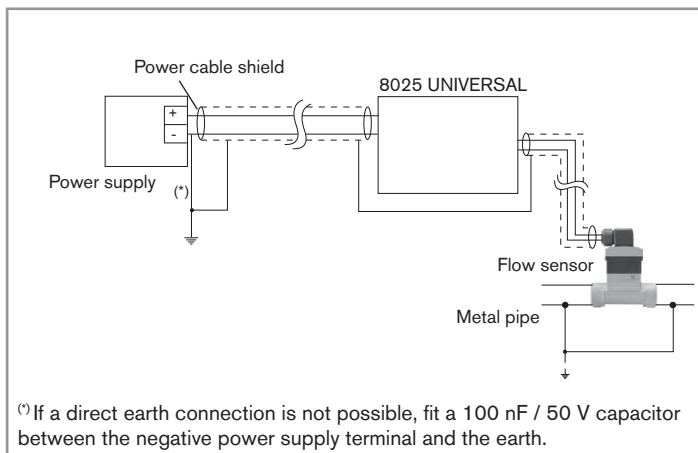
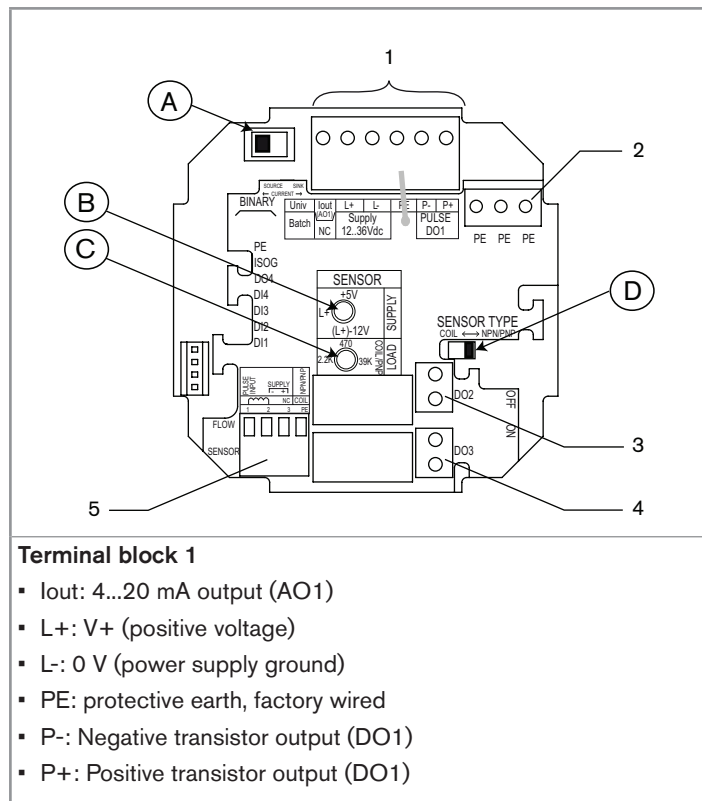


Fig. 7 : Equipotentiality skeleton diagram with pipes in metal

7.4.3 Terminal assignment and use of the selectors



Terminal block 2

PE: Shieldings of both the power supply cable and the AO1 and DO1 output cables

Terminal block 3: Wiring of the relay output DO2 (if the device has relays).

Terminal block 4: Wiring of the relay output DO3 (if the device has relays).

Terminal block 5 "FLOW SENSOR": Wiring the remote flow sensor. The wiring depends on the type of output signal originating from the flow sensor: see chap. 7.4.11.

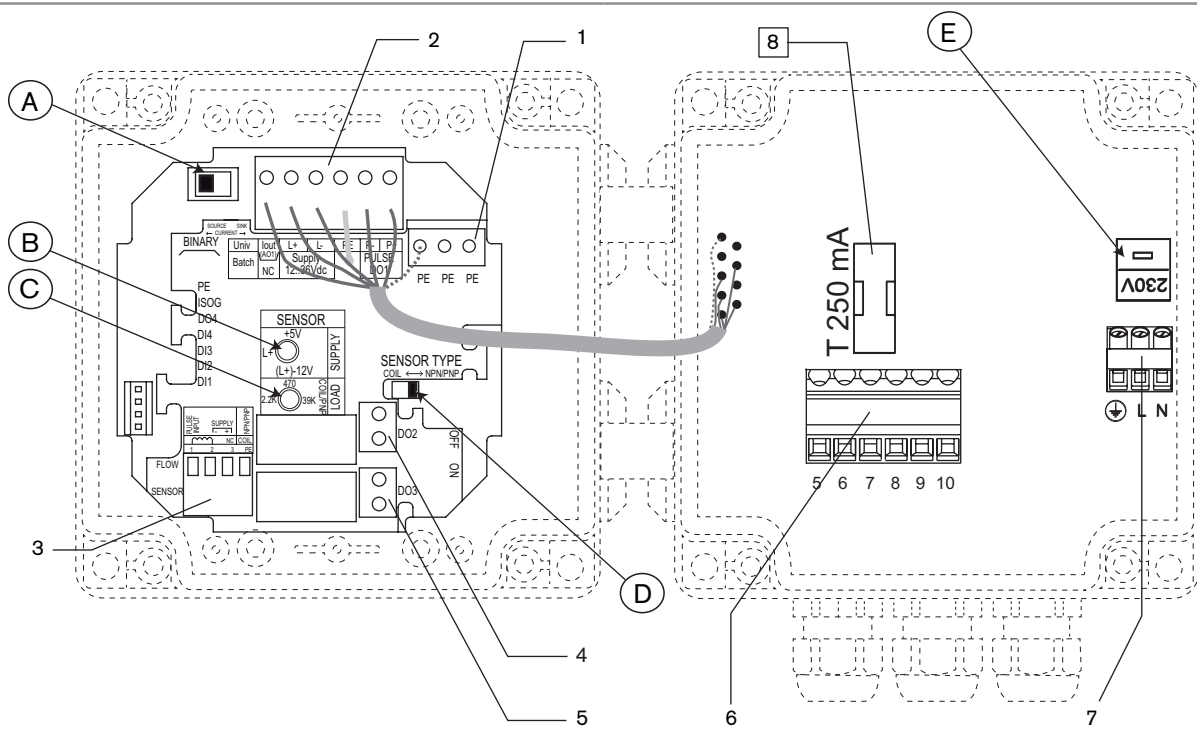
Switch **A**: see Fig. 14, page 23

Switch **B**: see chap. 7.4.11

Switch **C**: see Tab. 3, page 31

Switch **D**: see chap. 7.4.11

Fig. 8 : Terminal assignment of a panel version or a wall-mounted version, 12...36 V DC



Terminal block 1

PE: factory wired shield

Terminal block 2

- Iout: 4...20 mA output (green wire, factory wired)
- L+: V+ (red wire, factory wired)
- L-: 0 V (black wire, factory wired)
- PE: protective earth, factory wired
- P-: negative transistor output (brown wire, factory wired)
- P+: positive transistor output (white wire, factory wired)

Terminal block 3 "FLOW SENSOR": Wiring the remote flow sensor. The wiring depends on the type of output signal originating from the flow sensor: see chap. [7.4.11](#)

Switch **(A)**: see [Fig. 14, page 23](#)

Switch **(B)**: see chap. [7.4.11](#)

Switch **(C)**: see [Tab. 3, page 31](#)

Switch **(D)**: see chap. [7.4.11](#)

Switch **(E)**: see chap. [7.4.5](#)

Terminal block 4: Wiring of the relay output DO2 (if the device has relays)

Terminal block 5: Wiring of the relay output DO3 (if the device has relays)

Terminal block 6

- Terminal 5: 4...20 mA output (AO1)
- Terminal 6: positive 27 V DC power supply, available to energize an external instrument
- Terminal 7: 0 V (earth of the power supply available to energize an external instrument)
- Terminal 8: protective earth: shields of the AO1 and DO1 output cables
- Terminal 9: Negative transistor output (DO1)
- Terminal 10: Positive transistor output (DO1)

Terminal block 7: Wiring of the 115/230 V AC power supply

Mark **8**: time-delay fuse to protect the 115/230 V AC power supply

Fig. 9 : Terminal assignment of a wall-mounted version, 115/230 V AC

7.4.4 Wiring a panel version

! Only move the selectors when the power supply is off.

- Install the device as described in chap. 7.2.
- Set the selectors "SENSOR TYPE", "SENSOR SUPPLY" and "LOAD": see chap. 7.4.11.

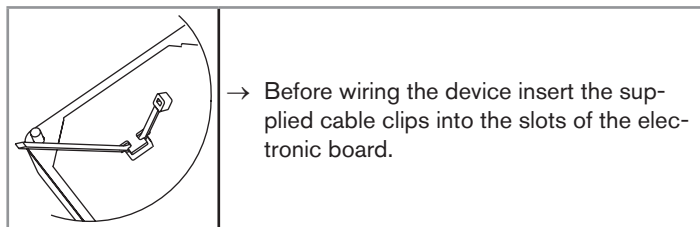


Fig. 10 : Inserting the cable clips

- Wire according to chap. 7.4.6, 7.4.7, 7.4.10 and 7.4.11.
- Secure the power supply cable, the flow sensor connection cable and, depending on the version, the relay connection cables, with the cable clips.

7.4.5 Wiring a wall-mounted version

! Only move the selectors when the power supply is off.

! Insert the supplied stopper gaskets into the unused cable glands to ensure the tightness of the device.

- Unscrew the unused cable gland.
- Remove the transparent disk.
- Insert the supplied stopper gasket.
- Screw the nut of the cable gland.

- Install the device as described in chap. 7.3.
- Set the selectors "SENSOR TYPE", "SENSOR SUPPLY" and "LOAD": see chap. 7.4.11.
- If the wall-mounted version is energized with a 115/230 V AC power supply, set selector **E** as shown in Fig. 11.

Selector **E** makes it possible to configure the supply voltage of the device in a 115/230 V AC version.

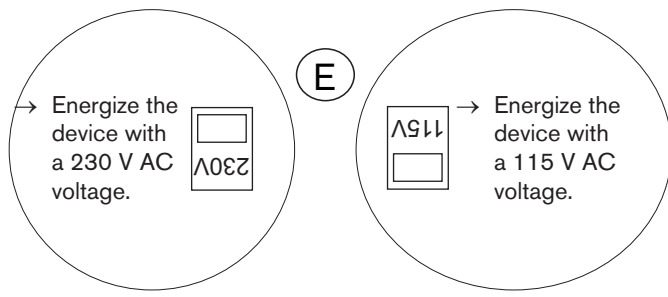


Fig. 11 : Selector of the supply voltage on a 115/230 V AC version

- Loosen the nuts of the cable glands.
- Insert each cable through a nut than through the cable gland, using the cable glands as shown in [Fig. 12](#).

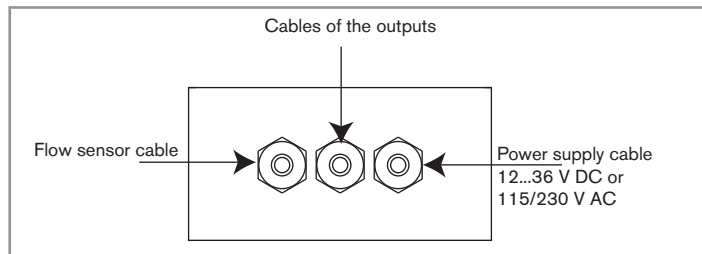


Fig. 12 : Using the cable glands

- Remove the two terminal blocks (marked 6 and 7 in [Fig. 9](#)) from the housing.

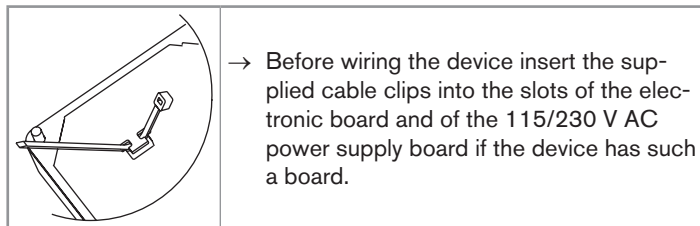


Fig. 13 : Inserting the cable clips

- Insert the two terminal blocks (marked 6 and 7 in [Fig. 9](#)) into their original position.
- Letting the housing stay completely open, secure the power supply cable, the flow sensor connection cable and, depending on the version, the relay connection cables, with the cable clips.
- Tighten the cable glands making sure the cable in the housing is long enough to allow complete opening of the housing.
- Close the cover.
- Tighten the 4 screws.
- Put the covering strips on the housing.

- Depending on the operating voltage of the device, wire according to chap. [7.4.6](#) to [7.4.11](#).

7.4.6 Wiring the AO1 current output of a panel version or a wall-mounted version, 12...36 V DC

! Only move the selectors when the power supply is off.

The 4...20 mA output can be wired in either sourcing or sinking mode.

Use switch (A) to configure the wiring of the 4...20 mA current output in sinking or sourcing mode.

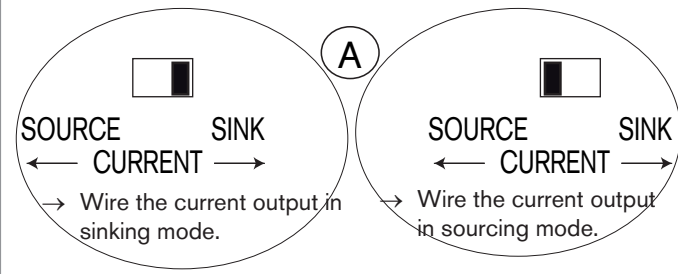


Fig. 14 : Using the sink/source switch

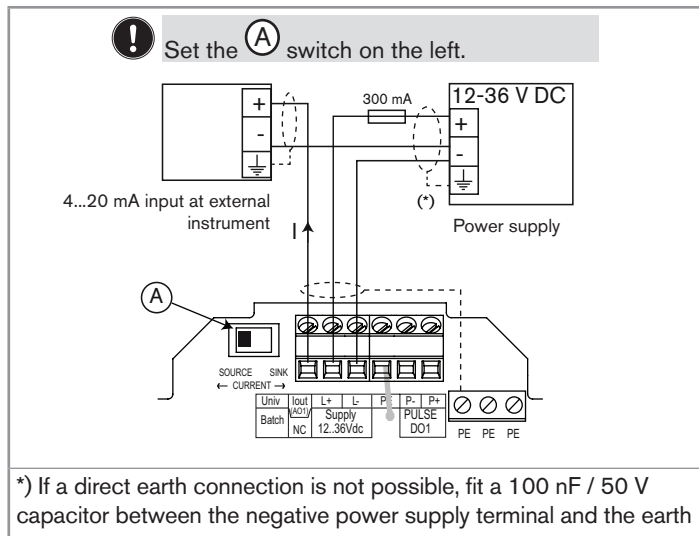


Fig. 15 : Wiring of the 4...20 mA output (AO1) in sourcing mode

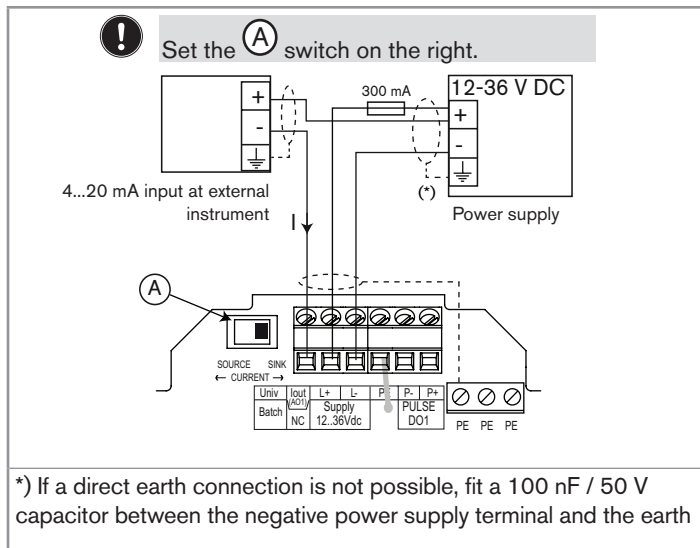


Fig. 16 : Wiring of the 4...20 mA output (AO1) in sinking mode

7.4.7 Wiring the DO1 transistor output of a panel version or a wall-mounted version, 12...36 V DC

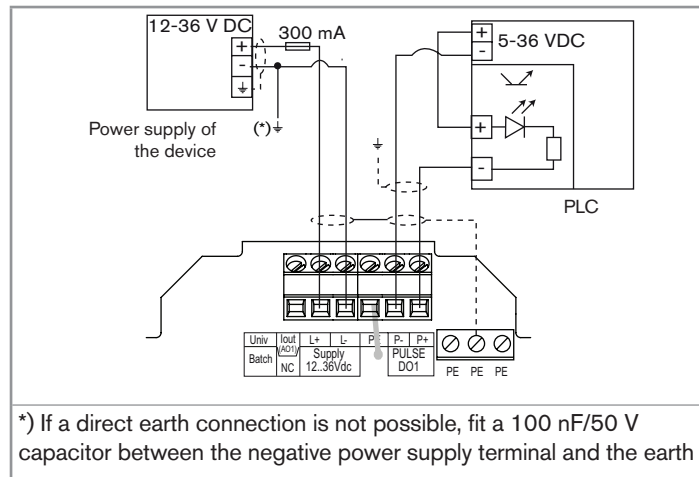


Fig. 17 : NPN wiring of the DO1 transistor output

Type 8025 UNIVERSAL

Installation and wiring

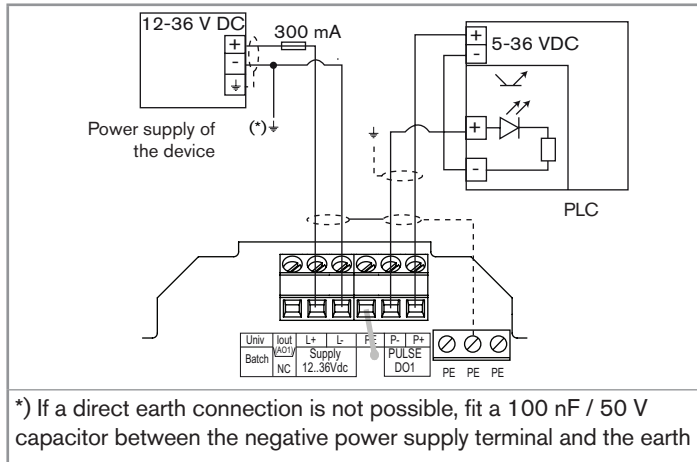


Fig. 18 : PNP wiring of the DO1 transistor output

7.4.8 Wiring the AO1 current output of a wall-mounted version, 115/230 V AC



Only move the selectors when the power supply is off.

The 4...20 mA output can be wired in either sourcing or sinking mode.



- Set the (A) switch on the left.
- Set selector (E) depending on the value of the power supply.

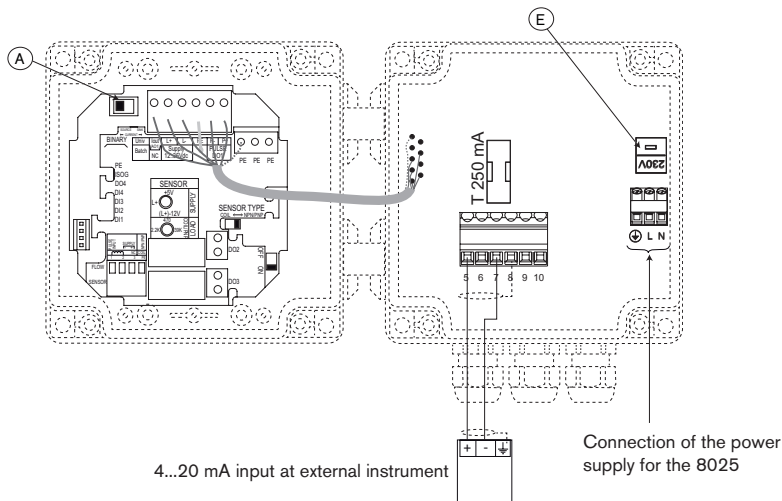


Fig. 19 : Wiring of the 4...20 mA output (AO1) of a wall-mounted version, 115/230 V AC, in sourcing mode



- Set the **(A)** switch on the right.
- Set selector **(E)** depending on the value of the power supply.

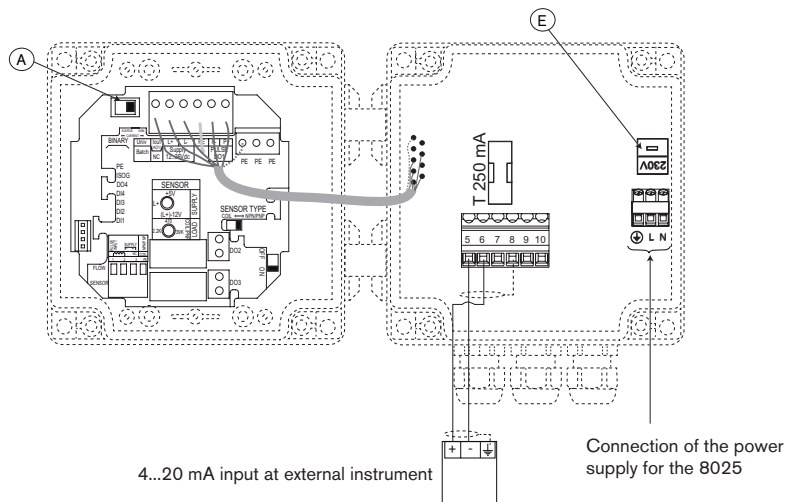


Fig. 20 : Wiring of the 4...20 mA output (AO1) of a wall-mounted version, 115/230 V AC, in sinking mode

7.4.9 Wiring the DO1 transistor output of a wall-mounted version, 115/230 V AC

! Only move the selectors when the power supply is off.

! Set of selector **E** depending on the value of the power supply.

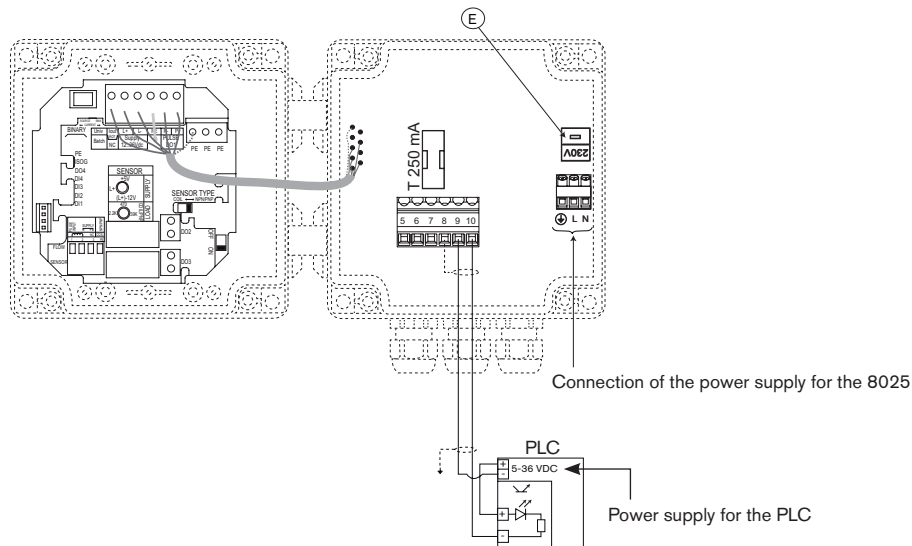


Fig. 21 : NPN wiring of the DO1 transistor output of a wall-mounted version, 115/230 V AC



Set selector **E** depending on the value of the power supply.

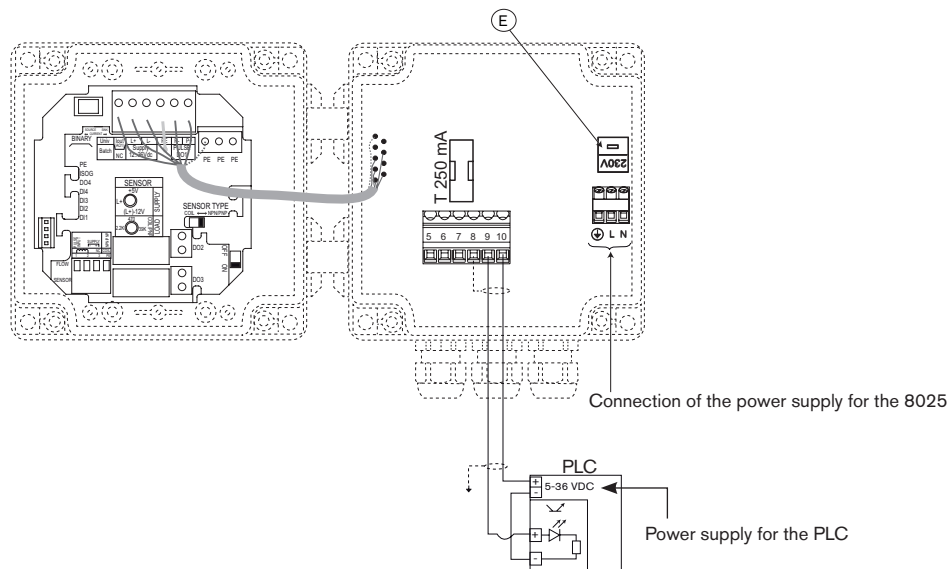


Fig. 22 : PNP wiring of the DO1 transistor output of a wall-mounted version, 115/230 V AC

7.4.10 Wiring the relay outputs DO2 and DO3 of the panel or a wall-mounted version

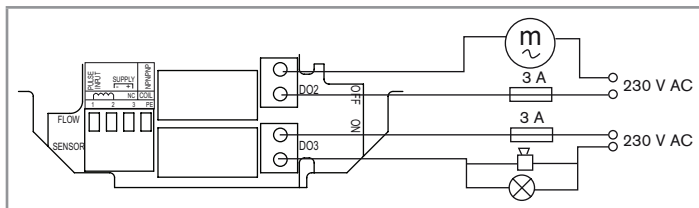


Fig. 23 : Wiring of the DO2 and DO3 relay outputs

7.4.11 Connecting the flow sensor to the transmitter



Before connecting the flow sensor to the transmitter 8025 UNIVERSAL:

- set selector "SENSOR TYPE" depending on the output signal providing from the flow sensor. See [Fig. 24](#) and [Tab. 3, page 31](#).
- if the selector "SENSOR TYPE" is set on "NPN/PNP", set the selector "SENSOR SUPPLY" depending on the transmitter supply voltage. See [Fig. 25](#).
- set selector "LOAD" depending on the type of signal sent out by the flow sensor and on the load wanted on terminal 1 "PULSE INPUT" of terminal block "FLOW SENSOR". See [Tab. 3, page 31](#).

Selector **D** makes it possible to configure the type of signal the 8025 UNIVERSAL receives from the flow sensor.

SENSOR TYPE
COIL ↔ NPN/PNP



→ Set the selector on the right (default position) when the signal from the flow sensor which is connected to the 8025 UNIVERSAL is either:

- a pulse signal, NPN or PNP
- an "on/off" signal (Reed relay for example)
- a 0...5 V DC standard voltage signal (TTL, for example)



SENSOR TYPE
COIL ↔ NPN/PNP



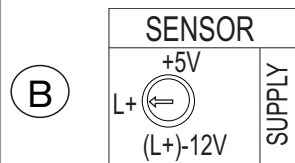
→ Set the selector on the left when the signal from the flow sensor which is connected to the 8025 UNIVERSAL is a sine-wave signal (coil)

Fig. 24 : Using selector "SENSOR TYPE"

Type 8025 UNIVERSAL

Installation and wiring

When selector "SENSOR TYPE" above is set on "NPN/PNP", selector (B) makes it possible to configure the supply voltage for the flow sensor.




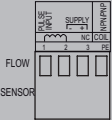
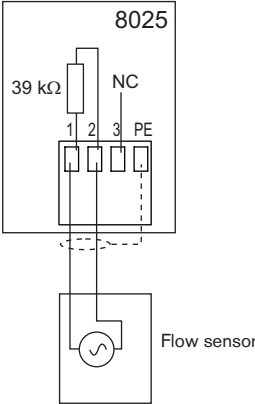
- If the 8025 UNIVERSAL is energized with a 115/230 V AC power supply, set selector "SENSOR SUPPLY" on "L+" (default position).
- If the 8025 UNIVERSAL is energized with a 12...36 V DC power supply, set the voltage selector "SENSOR SUPPLY" depending on the voltage supply needed by the remote flow sensor: "+5V", "L+" or "(L+)-12V" (default position).

Fig. 25 : Using selector "SENSOR SUPPLY"

Tab. 3 : Default positions of selectors "SENSOR SUPPLY", "LOAD" and "SENSOR TYPE"

Selector	Default position
SENSOR SUPPLY (B)	L+
LOAD (C)	2.2K
SENSOR TYPE (D)	NPN/PNP

Tab. 4 : Position of selectors "SENSOR TYPE" and "LOAD" and terminal assignment of terminal block "FLOW SENSOR" depending on the signal emitted by the flow sensor

Type of signal emitted by the flow sensor	Selector "SENSOR TYPE" (D)	Selector "SENSOR SUPPLY" (B)	Selector "LOAD" 	Terminal assignment of terminal block "FLOW SENSOR" 
sine-wave (coil)	→ Set the selector on "COIL" (Fig. 24)	→ Any position	→ Set selector "LOAD" on "39K": the input impedance on terminals 1 and 2 of terminal block "FLOW SENSOR" will then be 39 kΩ	

Type of signal emitted by the flow sensor	Selector "SENSOR TYPE" (D)	Selector "SENSOR SUPPLY" (B)	Selector "LOAD" <div data-bbox="767 241 1031 362"> </div>	Terminal assignment of terminal block "FLOW SENSOR" <div data-bbox="1235 255 1347 376"> </div>
pulse, PNP	→ Set the selector on "NPN/PNP" (Fig. 24)	→ Set the selector as shown in Fig. 25	→ Set selector "LOAD" on "39K": the input impedance on terminals 1 and 2 of terminal block "FLOW SENSOR" will then be 39 kΩ	<div data-bbox="1174 393 1401 866"> </div>

Type of signal emitted by the flow sensor	Selector "SENSOR TYPE" (D)	Selector "SENSOR SUPPLY" (B)	Selector "LOAD" <div data-bbox="767 241 1031 362"> </div>	Terminal assignment of terminal block "FLOW SENSOR" <div data-bbox="1235 255 1347 376"> </div>
0...5 V DC standard voltage signal (TTL, for example)	→ Set the selector on "NPN/PNP" (Fig. 24)	→ Set the selector as shown in Fig. 25	→ Set selector "LOAD" on "39K": the input impedance on terminals 1 and 2 of terminal block "FLOW SENSOR" will then be 39 kΩ	<div data-bbox="1177 393 1401 866"> </div>

Type of signal emitted by the flow sensor	Selector "SENSOR TYPE" (D)	Selector "SENSOR SUPPLY" (B)	Selector "LOAD" <div data-bbox="767 244 1029 364"> </div>	Terminal assignment of terminal block "FLOW SENSOR" <div data-bbox="1230 258 1345 378"> </div>
pulse, NPN	→ Set the selector on "NPN/PNP" (Fig. 24)	→ Set the selector as shown in Fig. 25	→ Set selector "LOAD": <ul style="list-style-type: none"> ▪ either on "2.2K": the load resistance R is then 2.2 kΩ ▪ either on "470": the load resistance R is then 470 Ω 	<div data-bbox="1173 393 1348 624"> </div> <div data-bbox="1173 722 1404 871"> <p>Flow sensor</p> </div>

Type of signal emitted by the flow sensor	Selector "SENSOR TYPE" (D)	Selector "SENSOR SUPPLY" (B)	Selector "LOAD" <div data-bbox="767 244 1031 365"> </div>	Terminal assignment of terminal block "FLOW SENSOR" <div data-bbox="1235 258 1347 376"> </div>
"on/off" signal (Reed relay for example)	→ Set the selector on "NPN/PNP" (Fig. 24)	→ Set the selector as shown in Fig. 25	→ Set selector "LOAD": <ul style="list-style-type: none"> • either on "2.2K": the load resistance R is then 2.2 kΩ • either on "470": the load resistance R is then 470 Ω 	<div data-bbox="1177 393 1353 628"> </div> <div data-bbox="1177 661 1401 841"> </div> <p>Flow sensor</p>

8 ADJUSTMENT AND COMMISSIONING

8.1 Safety instructions



WARNING

Risk of injury due to nonconforming operating.

Nonconforming operating could lead to injuries and damage the device and its surroundings.

- ▶ The operators in charge of operating must have read and understood the contents of this Quickstart.
- ▶ In particular, observe the safety recommendations and intended use.
- ▶ The device/installation must only be operated by suitably trained staff.



WARNING

Danger due to nonconforming commissioning.

Nonconforming commissioning could lead to injuries and damage the device and its surroundings.

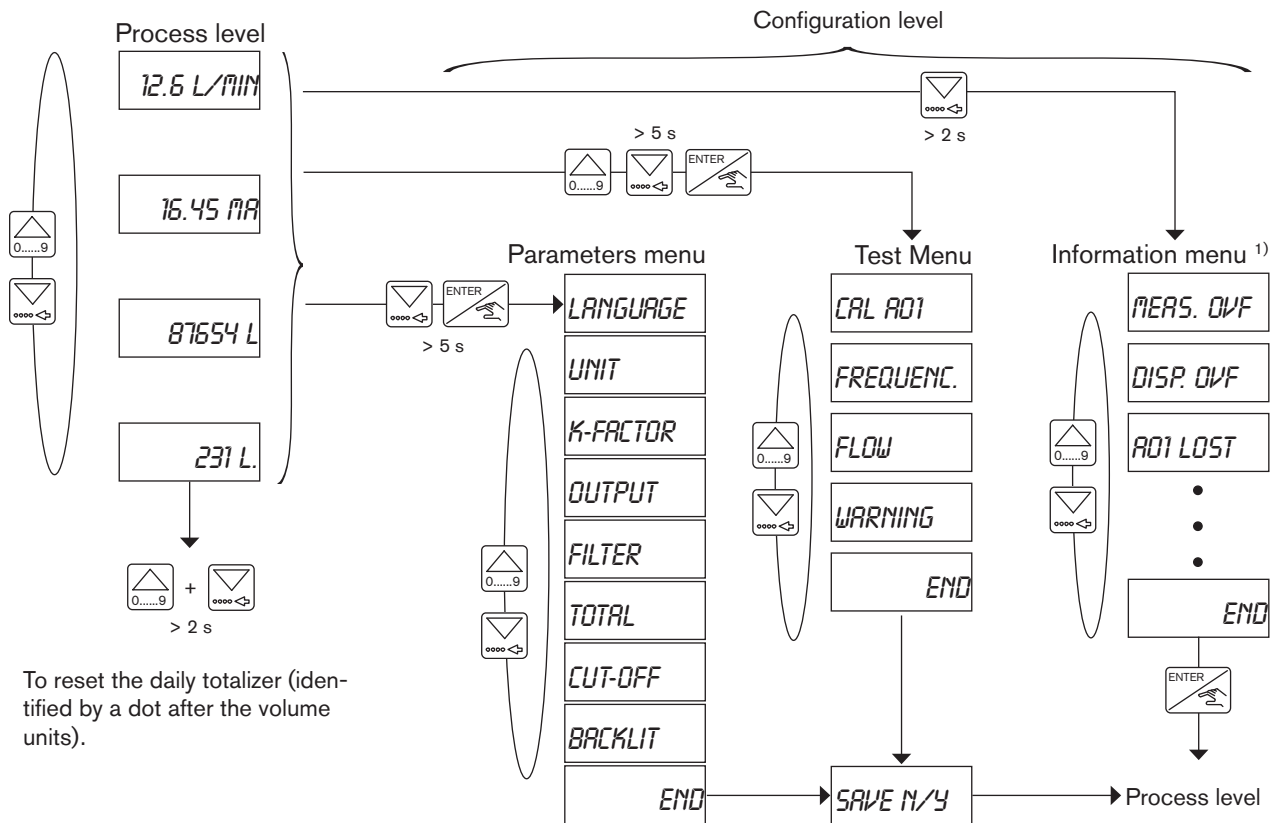
- ▶ Before commissioning, make sure that the staff in charge have read and fully understood the contents of this Quickstart.
- ▶ In particular, observe the safety recommendations and intended use.
- ▶ The device / the installation must only be commissioned by suitably trained staff.
- ▶ Before commissioning the device, enter the K factor of the fitting used. See chap. ["8.7 Entering the K factor of the fitting used"](#).

8.2 Operating levels of the device

The device has two operating levels: the Process level and the Configuration level.

Tab. 5 : Default settings of the device

Function	Default value
LANGUAGE	English
UNIT of the flow rate	l/min
UNIT of the totalizers	litre
OUTPUT AO1	4mA= 0.000
	20mA= 0.000
	ERR. 22mA disabled
OUTPUT DO1	pulse
	PU= 0.00 litre
OUTPUTS DO2 and DO3	Hysteresis, not inverted
	2- = 3- = 0.000
	2+ = 3+ = 0.000
	time delays 2 and 3 = 0
K FACTOR	1
FILTER	2, fast
CUT-OFF	0.000
BACKLIGHT	level 9, activated for 30 s
FLOW-WARNING	W- = W+ = 0.000
VOLUME-WARNING	000000

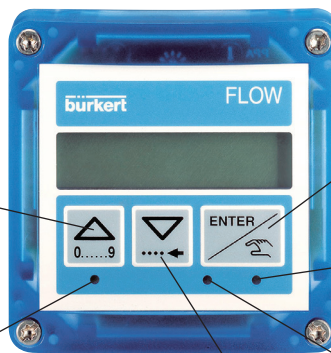


¹⁾ Accessible when the device status LED is orange or red.

8.3 Description of the navigation keys and the status LEDs

- Scrolling up the parameters
- Incrementing the figure selected

Device status LED: see following table.





- Selecting the displayed parameter
- Confirming the settings

















Status LED of relay DO3 (LED ON = contact closed)

Status LED of relay DO2 (LED ON = contact closed)

- Reading the messages
- Scrolling through the parameters
- Selecting the figure on the left

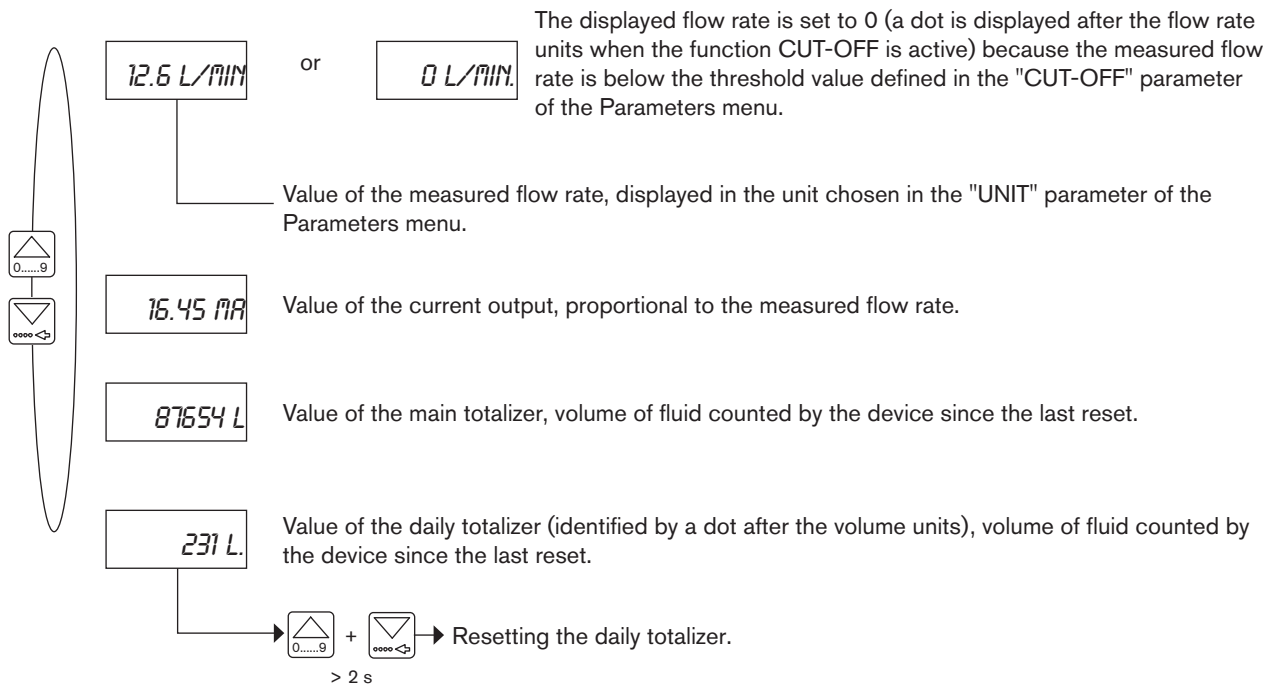
Device status LED	Status of the device
Green	The device operates correctly.
Orange	<p>A warning message is generated.</p> <p>→ Press the  key for 2 seconds in the Process level to access the message. See the complete Operating Instructions for the meaning.</p> <p>Furthermore, a relay output (DO2 or DO3) or the transistor output DO1 switches if it is configured in the "WARNING" mode (see the complete Operating Instructions)</p>
Red	<p>An error message has been generated and the current output sends out a 22 mA current (if parameter "ERR. 22mA" is set to "ENABLED". See the complete Operating Instructions.</p> <p>→ Press the  key for 2 seconds in the Process level to access the message. See the complete Operating Instructions for the meaning.</p>
Blinking, whatever the colour	A check for the correct behaviour of the outputs is running (see the complete Operating Instructions).

8.4 Using the navigation keys

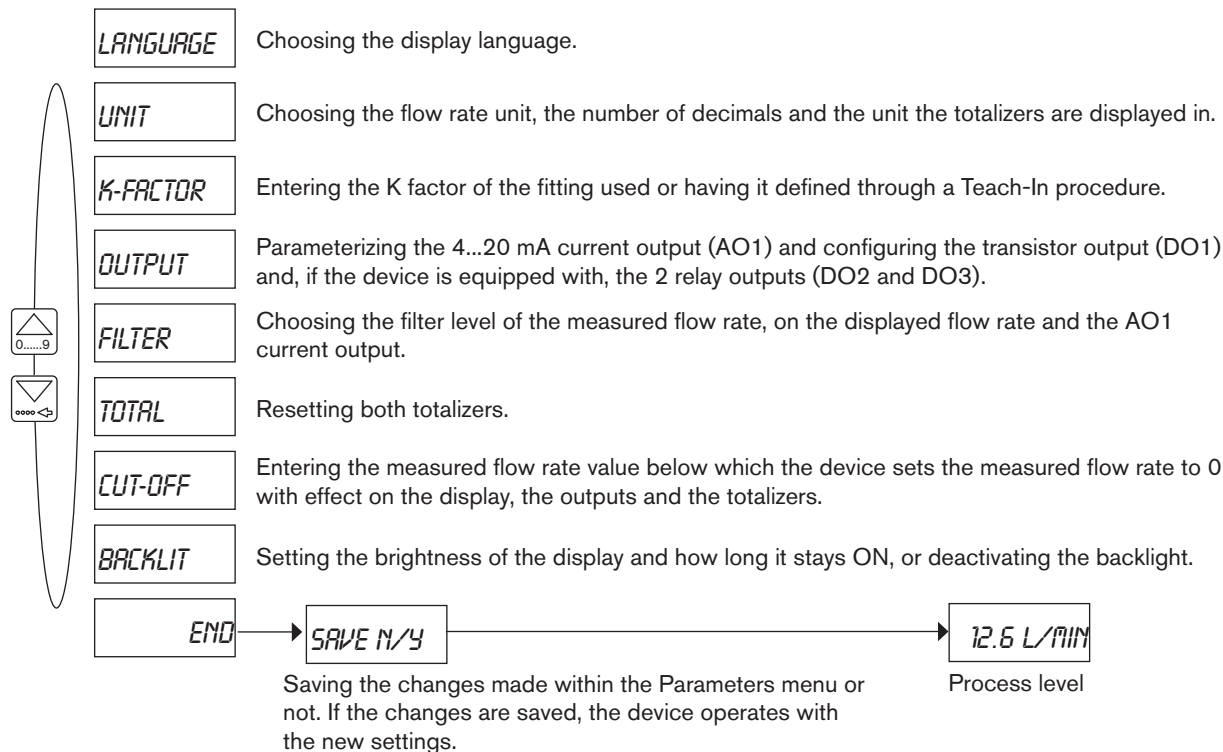
You want to...	Press...
move between parameters within a level or a menu.	<ul style="list-style-type: none">  to go to the next parameter.  to go to the previous parameter.
access the Parameters menu.	 +  simultaneously for 5 s, in the Process level
access the Test menu.	 +  +  simultaneously for 5 s, in the Process level
access the Information menu.	 for 2 s, in the Process level, when the device status LED is orange or red.
reset the daily totalizer.	 +  simultaneously for 2 s, when the daily totalizer is displayed in the Process level
select the displayed parameter.	
confirm the displayed value.	
modify a numerical value.	<ul style="list-style-type: none">  to increase the blinking digit.  to select the digit at the left of the blinking digit.  +  to move the decimal point.

8.5 Details of the Process level

This level is active by default when the device is energized.



8.6 Details of the Parameters menu



8.7 Entering the K factor of the fitting used

The device determines the flow rate in the pipe using the fitting K factor.

The K factor of the fitting used can be entered here. The device may also determine the K factor using a Teach-In procedure: See the complete Operating Instructions.



The device will use the new K factor as soon as "SAVE YES" is confirmed when leaving the Parameters menu.



The K factor of the fitting used is in the Operating Instructions of the fitting.

The Operating Instructions of the Bürkert fittings can be found on the internet at www.burkert.com.

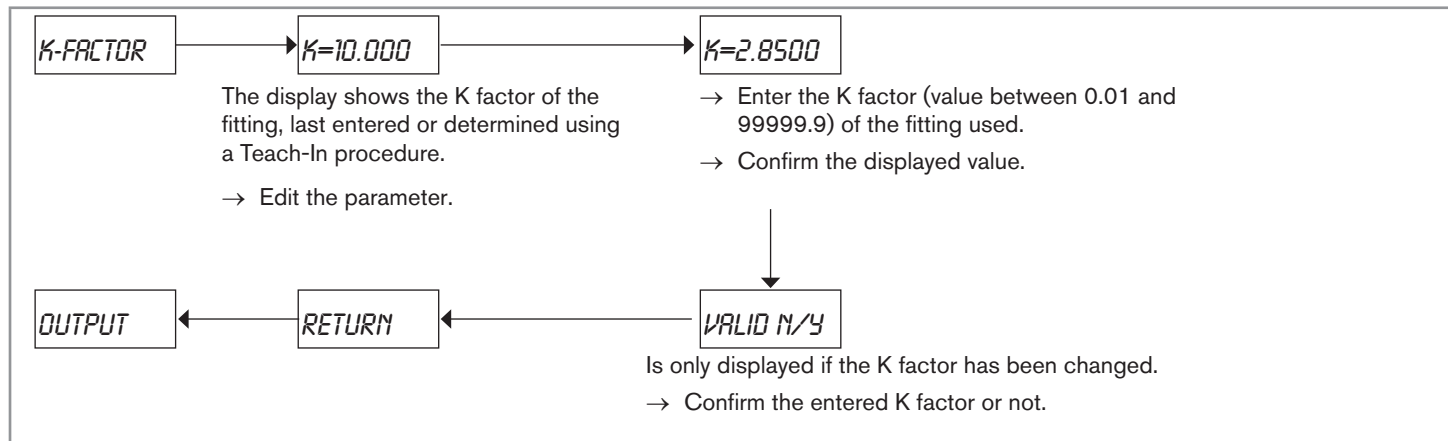
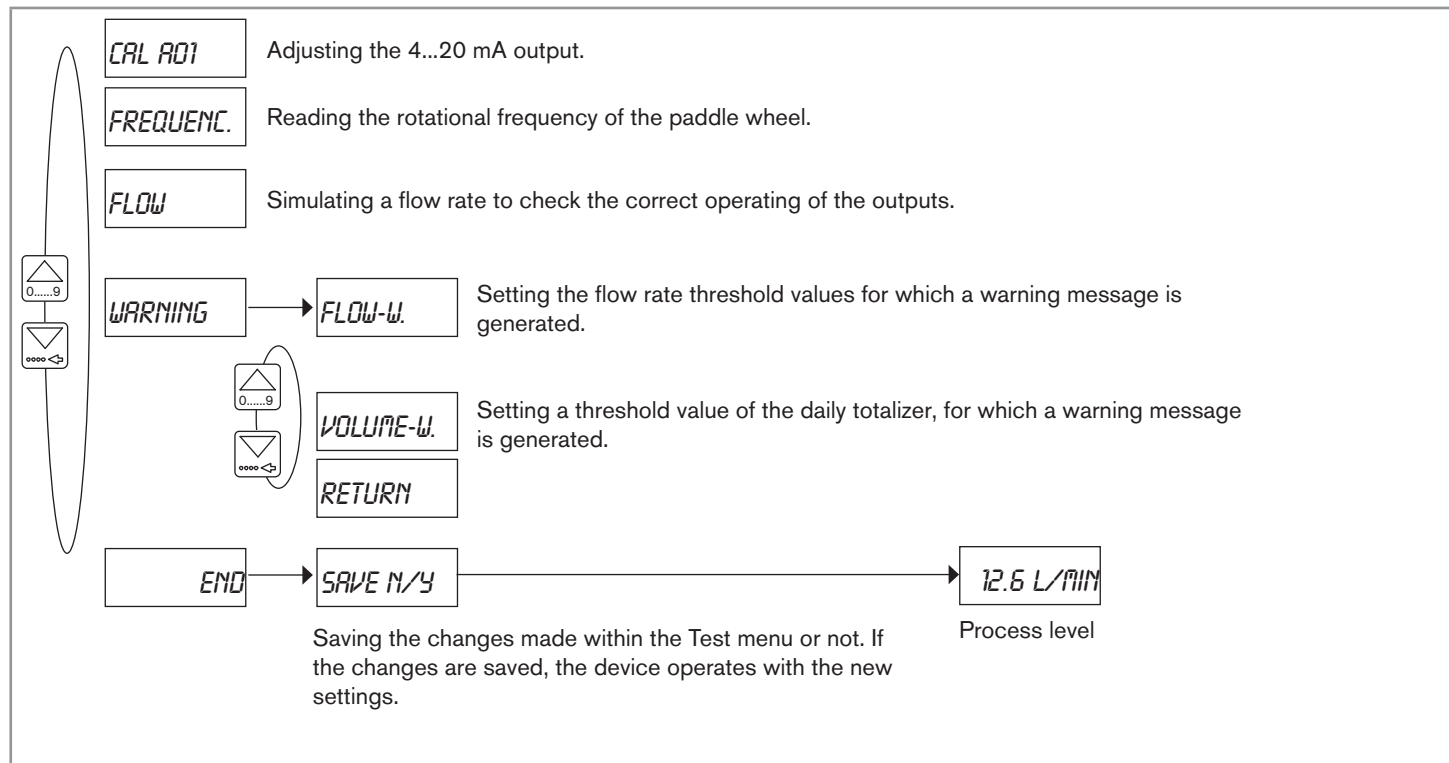


Fig. 26 : Entering the K factor of the fitting used

8.8 Details of the Test menu



9 PACKAGING, TRANSPORT

NOTICE

Damage due to transport

Transport may damage an insufficiently protected device.

- ▶ Transport the device in shock-resistant packaging and away from humidity and dirt.
- ▶ Do not expose the device to temperatures that may exceed the admissible storage temperature range.
- ▶ Protect the electrical interfaces using protective plugs.

10 STORAGE

NOTICE

Poor storage can damage the device.

- ▶ Store the device in a dry place away from dust.
- ▶ Storage temperature of the device: $-10...+60\text{ }^{\circ}\text{C}$.

11 DISPOSAL OF THE DEVICE

→ Dispose of the device and its packaging in an environmentally-friendly way.

NOTICE

Damage to the environment caused by parts contaminated by the fluid.

- ▶ Comply with the national and/or local regulations which concern the area of waste disposal.

www.burkert.com