bürkert
FLUID CONTROL SYSTEMS

# Typ SE58 S

Transmitter

Operating Instructions

MAN 1000527767 EN Version: A Status: RL (released | freigegeben) printed: 01.04.2022

DE

Ausführliche Informationen finden Sie in der Bedienungsanleitung
unter der Internetadresse:
country.burkert.com > SE58
oder
scannen Sie folgenden QR-Code ein:

EN

Detailed information can be found in the operating instructions
at the Internet address:
country.burkert.com > SE58
or
scan the following QR code:

FR

Vous trouverez des informations détaillées dans le mode d'emploi
à l'adresse Internet suivante :
country.burkert.com > SE58
ou
scannez le code QR suivant :

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# INDEX



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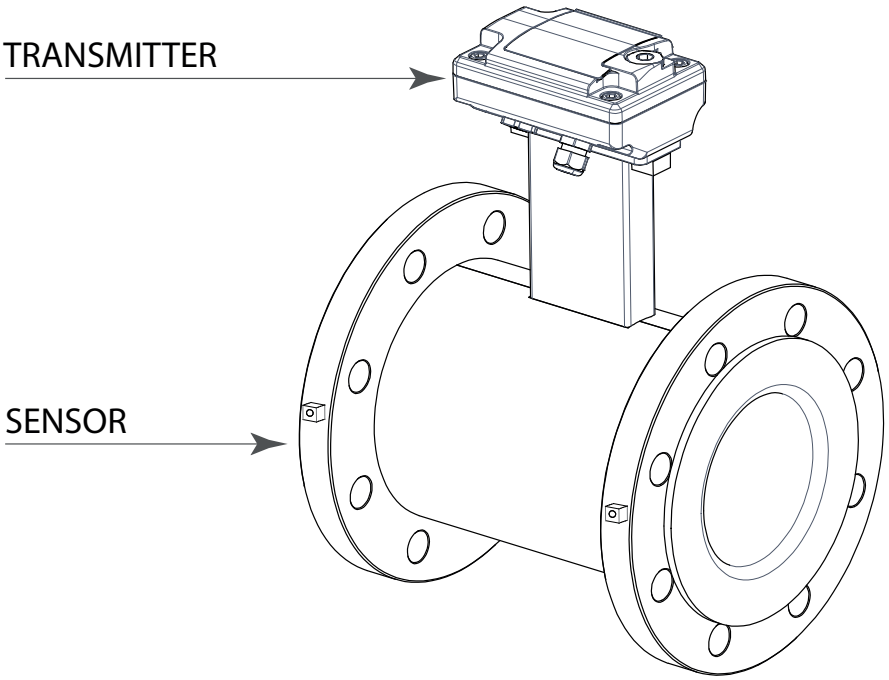
(*) Any changes using MCP are not recommended, unless:
- after receiving corresponding training by Burkert,
- done by professional,
- agreed by the end user, and done inline with the MCP manual

# INTRODUCTION

- These operating instructions and the description of device functions are provided as part of the scope of supply.
- They could be modified without prior notice. The improper use, possible tampering of the device or parts of it and substitutions of any components not original, renders the warranty automatically void.
- The flow meter realizes a measure with liquids of conductivity greater than 20µS/cm in closed conduits, and is composed of a transmitter (described in this manual) and a sensor (refer to the specific manual).
- The transmitter could be coupled directly on the sensor (compact version).




# SAFETY INFORMATION

Any other use than the one described in this manual affects the protection provided by the manufacturer and compromises the safety of people and the entire measuring system and is, therefore, not permitted.
The manufacturer is not liable for damaged caused by improper or non-designated use.

Transport the measuring device to the measuring point in the original packaging. In case of carton packaging it is possible to place one above the other but no more than three cartons. In case of wooden packaging don't place one above the other.
Disposal of this product or parts of it must be carried out according to the local public or private waste collection service regulations.
The electromagnetic flow meter must only be installed, connected and maintained by qualified and authorized specialists (e.g. electrical technicians) in full compliance with the instructions in these Operating Instructions, the applicable norms, legal regulations and certificates (depending on the application).

The specialists must have read and understood these Operating Instructions and must follow the instructions it contains. If something isn't clear to you in these Operating Instructions, you must call the Bürkert service. The Operating Instructions provide detailed information about the device.

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- The flow meter should only be installed after having verified technical data provided in this operating instructions and on the data plate.
- Specialists must take care during installation and use personal protective equipment as provided by any related security plan about risk assessment.
- Never mount or wire SE58 S while it is connected to the power supply and avoid any liquid contact with the device's internal components.
- Before connecting the power supply check the safety equipment.
- Repairs may only be performed if a genuine spare parts kit is available and this repair work is expressly permitted.
- For the cleaning of the device use only a damp cloth, and for the maintenance/repairs contact the service center.

**Before starting up the equipment please verify the following:**

- Power supply voltage must correspond to that specified on the data plate
- Electric connections must be completed as described
- Ground (earth) connections must be completed as specified

**Verify periodically (every 3-4 months):**

- The power supply cables integrity, wiring and other connected electrical parts
- The housing integrity
- The suitable tightness of the sealing elements
- The front panel integrity (display and keyboard)
- The mechanical fixing of the transmitter to the pipe or wall stand

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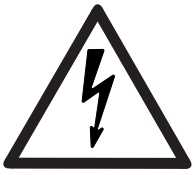
## SAFETY CONVENTION



DANGER ELECTRIC SHOCK

WARNING

PRECAUTIONS

ATTENTION

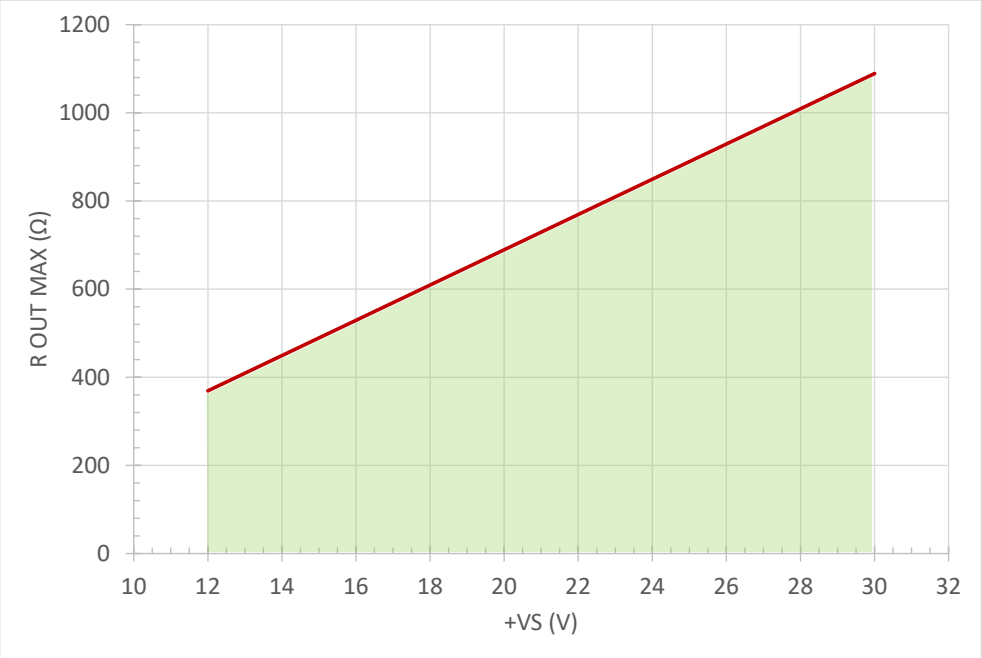
# TECHNICAL CHARACTERISTICS

## Electrical Characteristic

**Device classification:** class I, IP67/IP68 installation category II, rated pollution degree 2.

| Power supply voltage | Power Max |
|---|---|
| min10 / max30 V DC | 1W |

- Voltage variations must not exceed ±10% of the nominal one.
- Digital input/outputs are insulated up to 500V.
- 4-20mA max load: see graph here below; not insulated from power supply.




## Environmental Use Conditions

- The device can be installed inside or outside buildings
- Altitude: from –200m to 2000m (from -656 to 5602 feet)
- Humidity range: 0-100% (IP 67)

| ENVIRONMENTAL TEMPERATURE | | | LIQUID TEMPERATURE | | |
|---|---|---|---|---|---|
| | Min * | Max | | Min* | Max |
| °C | -20** | 60 | °C | -10 | 100 |
| °F | -4** | 140 | °F | 14 | 212 |

[*] For discontinuous use, a thermostat heat source installation may be necessary
[**] -10 °C, 14 °F if no analog output used

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## Data Plate

On the data plate there is some technical information

| | | | | | |
|---|---|---|---|---|---|
| *Transmitter data* | **Transmitter** | | | | *Transmitter data* |
| Transmitter model | Type | **SE58 S (B0B1A0A)** | | | |
| Transmitter serial number | S/N | **AAZ000004** | | | |
| Identification code | ID | **XXXXXX** | | | |
| | Power | **18-30 V DC 1W** | | | Min-Max supply voltage range-supply voltage type-max. power consumption |
| Protection grade | IP | **67** | MaxTa | **60°C** | Maximum ambient operation temperature |
| *Sensor data* | **Sensor** | | | | *Sensor data* |
| Sensor model | Type | **SO56 (T10-3B1A)** | | | |
| Sensor serial number | S/N | **09Y006468** | | | |
| Identification code | ID | **XXXXXX** | | | |
| Nominal Diameter | DN | **10** | PN | **1600 kPa** | Maximum nominal pressure |
| Lining material | Liner | **PTFE** | Conn. | **ISO 2852** | Process connection |
| Electrodes number and type | Electr. | **2-AISI316L** | | | |
| Protection grade | IP | **67** | MaxTm | **130 °C** | Maximum supported medium temperature |
| Coefficent of calibration | KA | **-2.4682** | | | |

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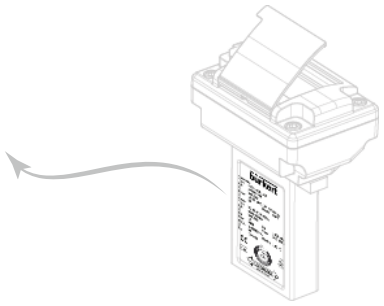
FLOW DIRECTION

MADE IN ITALY



## Maintenance

**ATTENTION**

In case of the maintenance involving the change of SE58 transmitter or sensor, an additional measurement deviation can occur.
To ensure the original accuracy announced in the datasheet, a flow calibration of the full instrument must be performed by Burkert.

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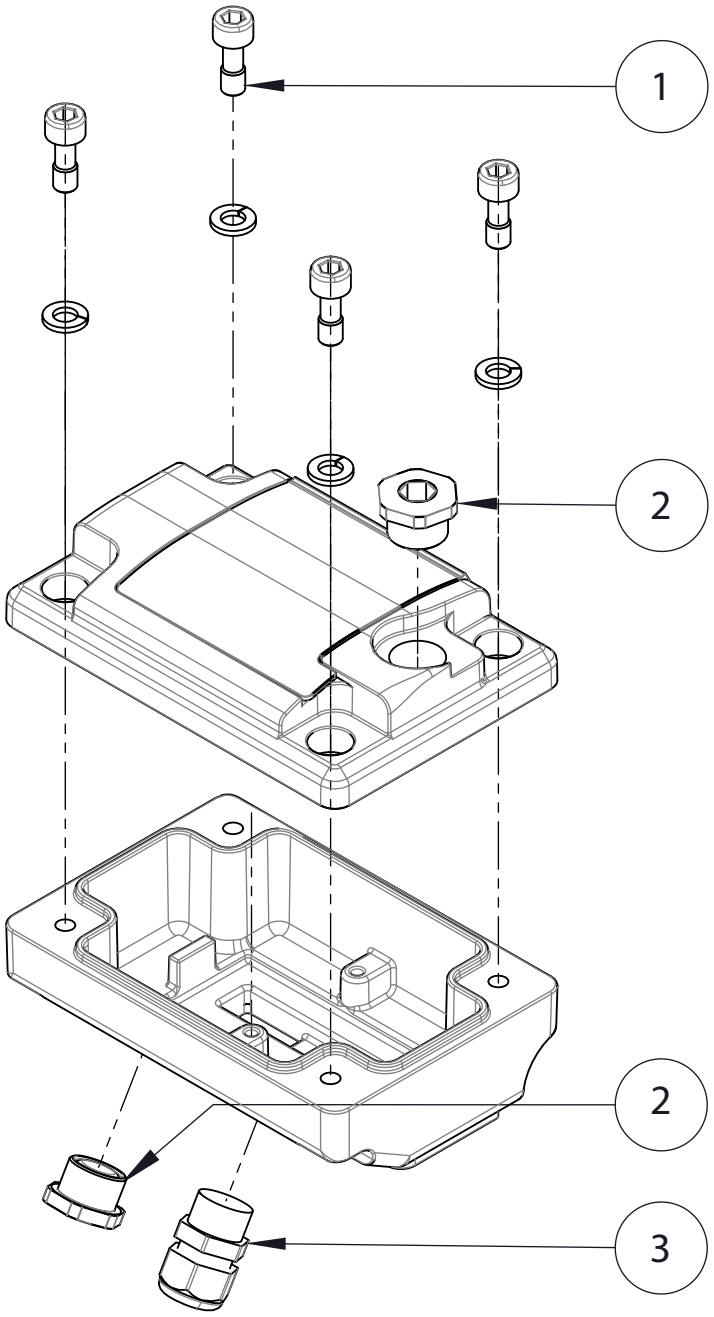
## TORQUES

| POS. | DESCRIPTION | TIGHTENING TORQUE Nm |
|---|---|---|
| 1 | SCREW M6x16 | 3.5 |
| 2 | PG9 PLUG | 4 |
| 3 | CABLE GLAND PG11 | 4 |

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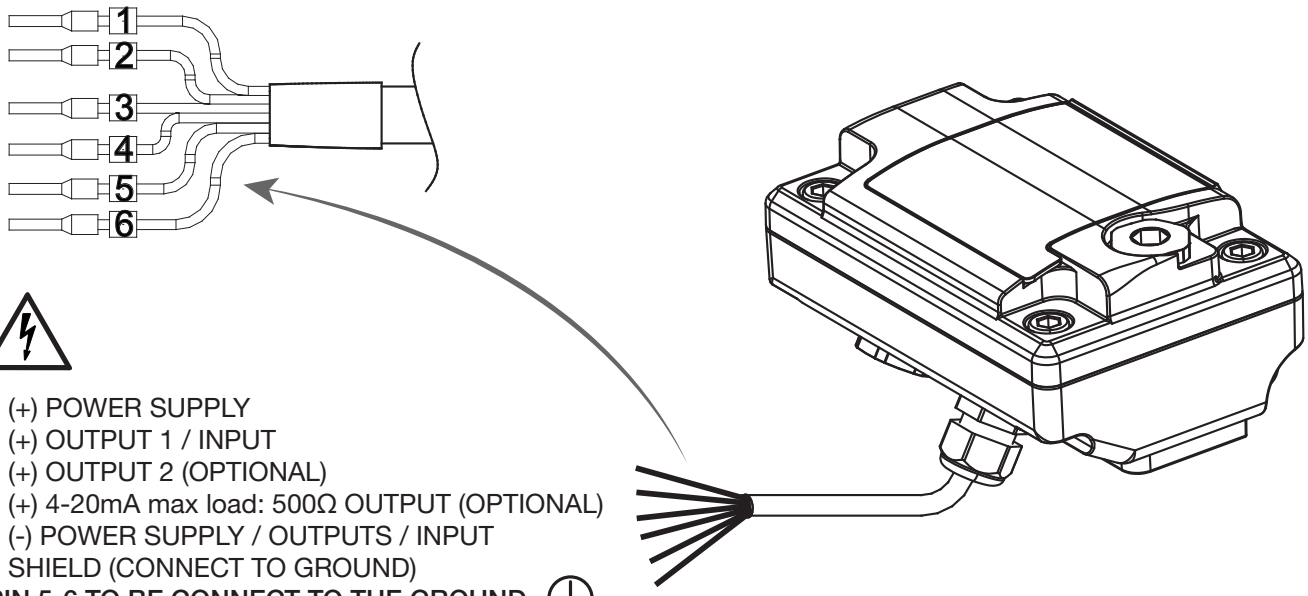
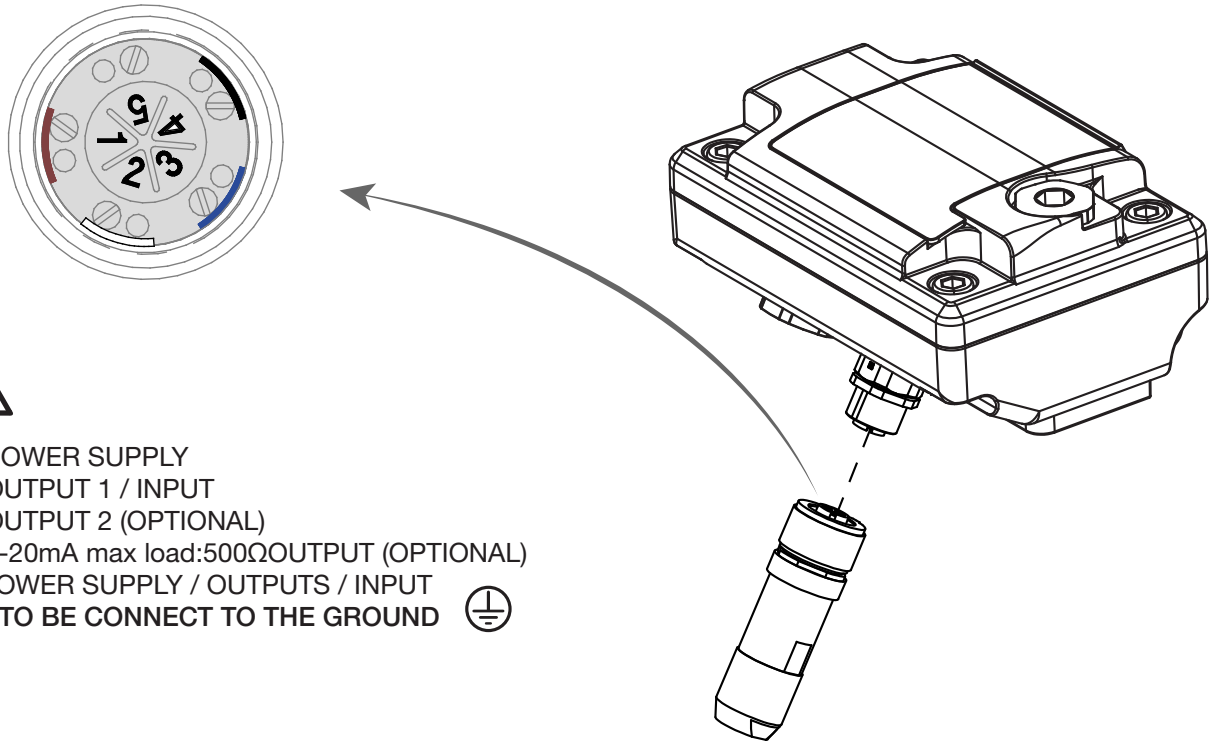
# ELECTRICAL CONNECTIONS

## VERSION WITH CABLE




1 (+) POWER SUPPLY
2 (+) OUTPUT 1 / INPUT
3 (+) OUTPUT 2 (OPTIONAL)
4 (+) 4-20mA max load: 500Ω OUTPUT (OPTIONAL)
5 (-) POWER SUPPLY / OUTPUTS / INPUT
6 SHIELD (CONNECT TO GROUND)
**PIN 5-6 TO BE CONNECT TO THE GROUND**

## VERSION WITH CONNECTOR




1 (+) POWER SUPPLY
2 (+) OUTPUT 1 / INPUT
3 (+) OUTPUT 2 (OPTIONAL)
4 (+) 4-20mA max load:500ΩOUTPUT (OPTIONAL)
5 (-) POWER SUPPLY / OUTPUTS / INPUT
**PIN 5 TO BE CONNECT TO THE GROUND**

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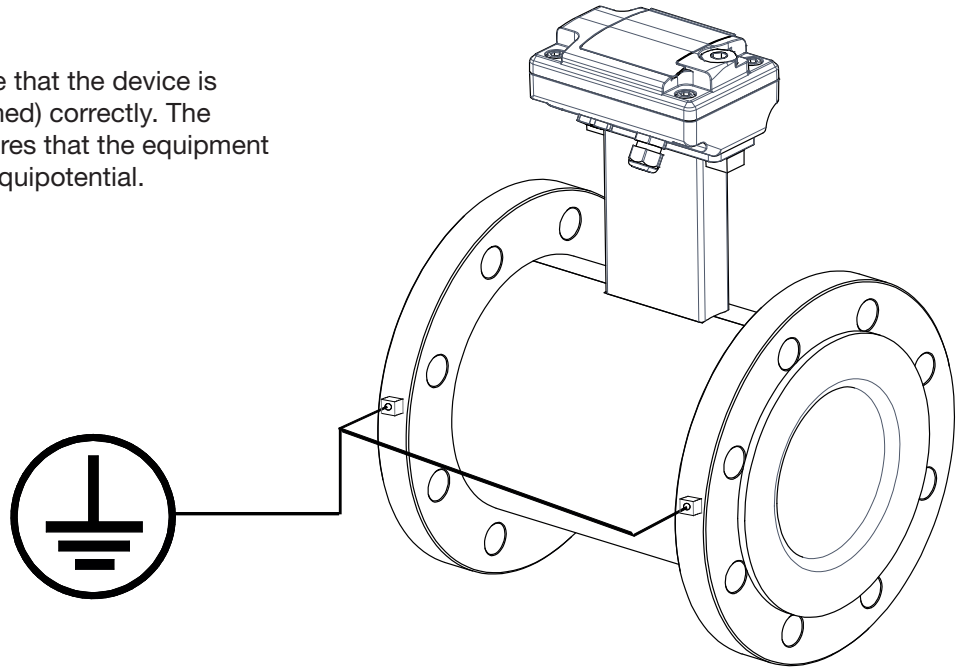
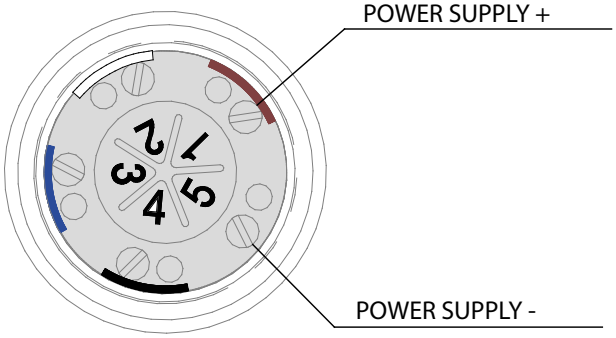
## GROUNDING

ALWAYS ensure that the device is grounded (earthed) correctly. The grounding ensures that the equipment and liquid are equipotential.



## POWER SUPPLY




- Before connecting the power supply, verify that the main voltage is within the limits indicated on data plate.
- For the connections use only approved conductors, with fire-proof properties, whose section varies from 0.25 mm2 to 2.50 mm2, based on distance/power; additionally fix the power supply wires with an additional fastening system located close to the terminal.
- The power supply line must be equipped with an external protection for overload current (fuse or automatic line breaker).
- Provide in close proximity the transmitter a circuit breaker easily accessible for the operator and clearly identified; whose symbols must conform to the electrical safety and local electrical requirements.
- Ensure that the component complies with the requirements of the standard for electrical safety distance.
- Check chemical compatibility of materials used in the connection security systems in order to minimize electrochemical corrosion.

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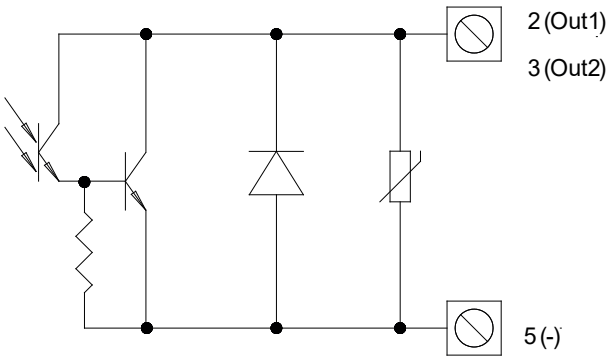
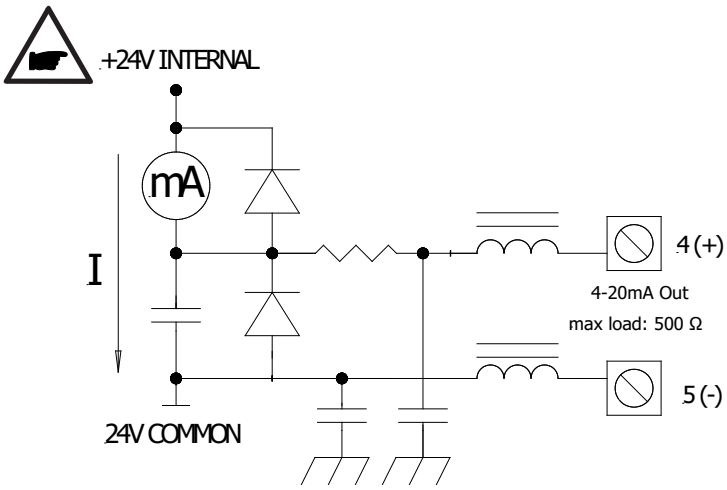
# OUTPUTS WIRING




## DIGITAL OUTPUTS

- Opto-insulated output
- Maximum switching voltage: 30V ⎓
  Maximum switching current: 100mA @ 25°C
- Maximum saturation voltage between collector and emitter @100mA: 1.2V ⎓
- Maximum switching frequency (load on the collector or emitter, RL=470Ω, VOUT=24V ): 1250Hz
- Maximum reverse current bearable on the input during and accidental polarity reversion (VEC): 100mA
- Insulation from other secondary circuits: 500V ⎓




## ANALOG OUTPUT

- Maximum load: see “Electrical Characteristic” page 4
- Refresh frequency equal to the sample frequency
- Protected against persistent over voltages up to 30V ⎓

**NOTE:** shielded cables are recommended for input and output wiring

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# ACCESS TO THE CONFIGURATION MENU

## Access Via Mcp interface (Virtual Display)

You can access the device configuration menu by MCP.
MCP is a software that can be installed on Microsoft Windows® and allows you to set all the functions of the transmtter and customize the menu. To use the MCP interface, see its own manual.

However any changes using MCP are not recommended, unless:

- after receiving corresponding training by burkert,
- done by professional,
- agreed by the end user, and done inline with the MCP manual

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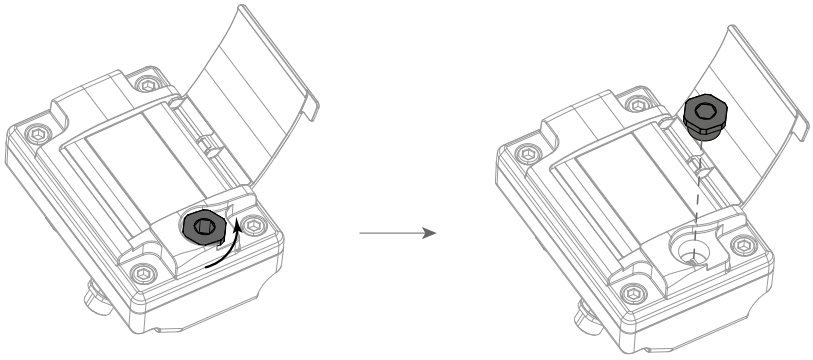
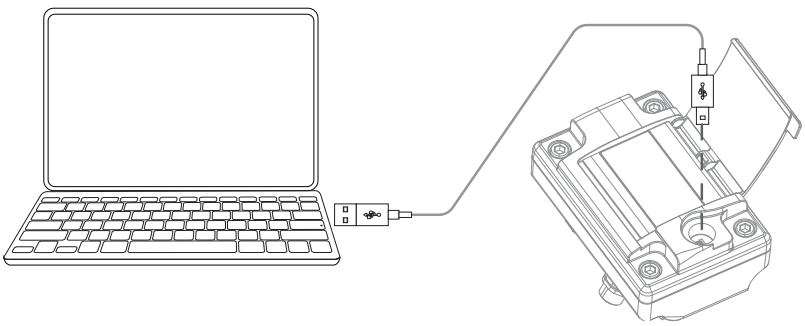
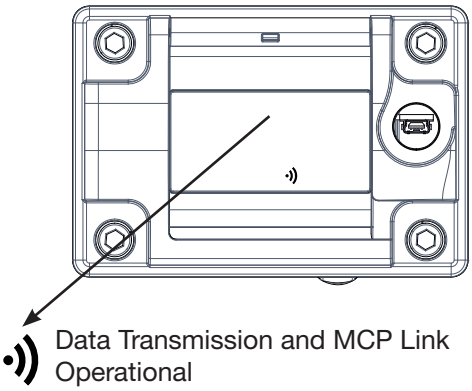
To connect the transmitter to the computer, connect the USB cable as shown below.
Remove the PG9 cap.



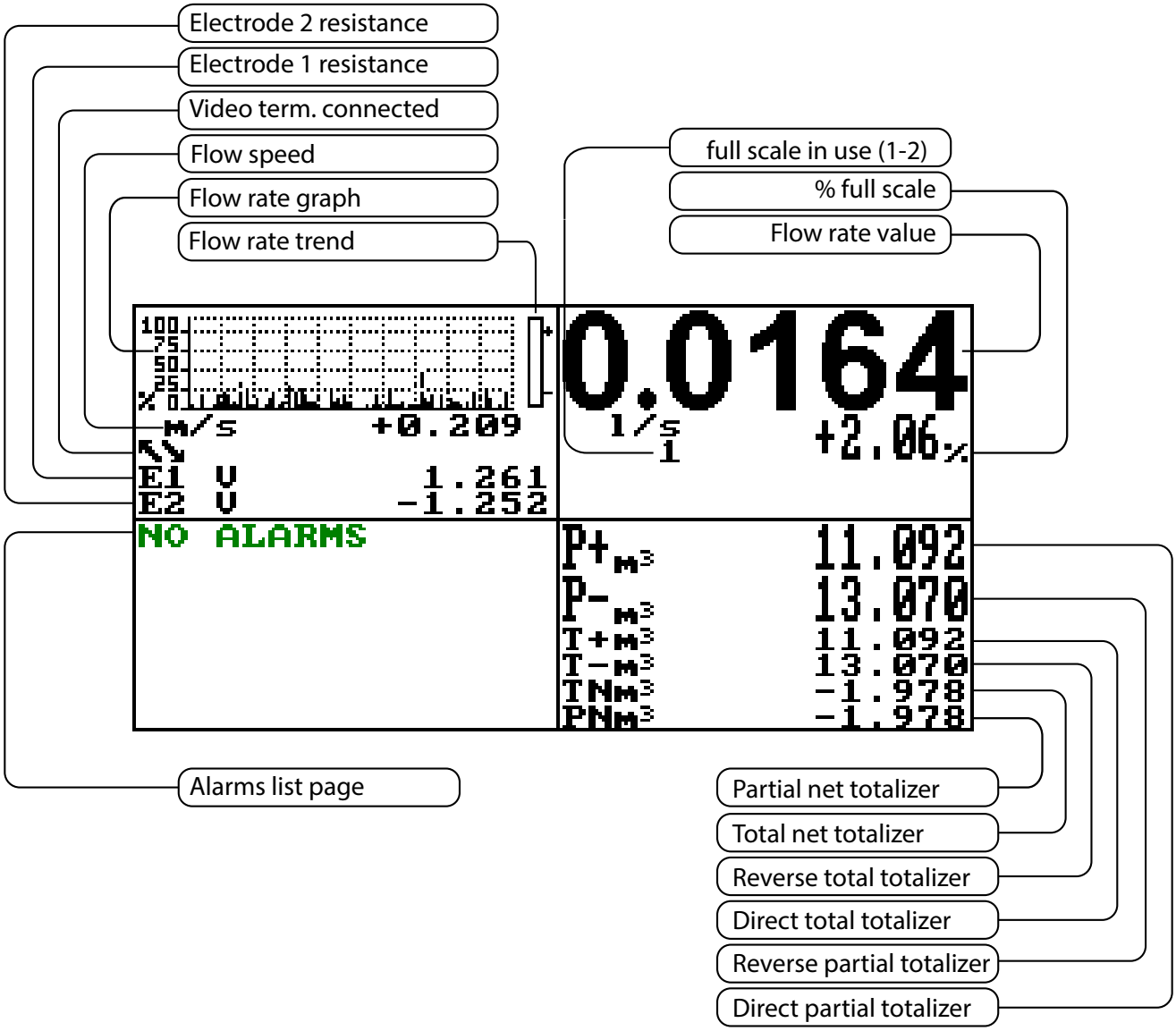
Connect USB cable type mini B. Verify connection symbol on display.





Data Transmission and MCP Link Operational

# START VISUALIZATION PAGES ON MCP INTERFACE

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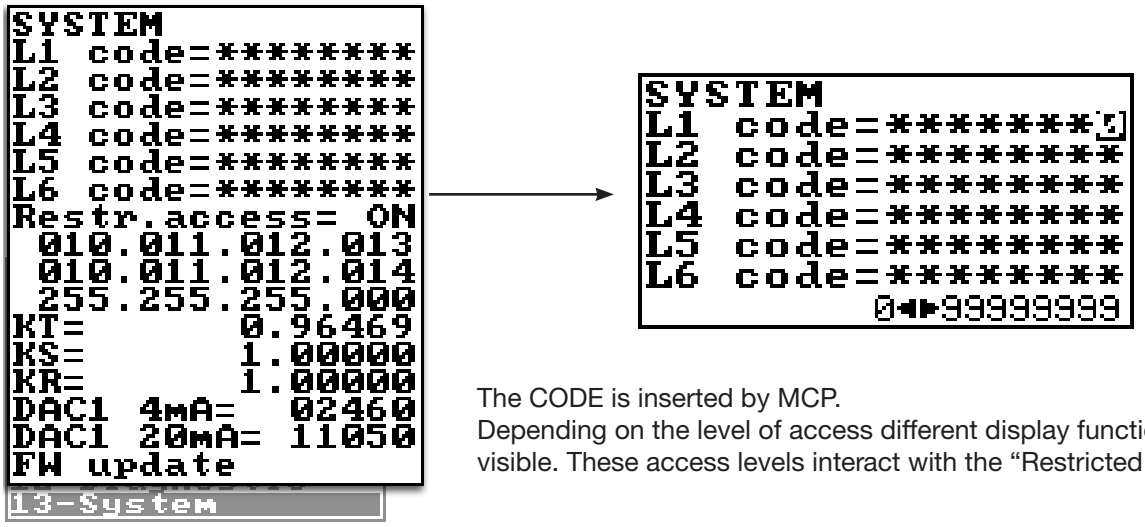
# TRANSMITTER ACCESS CODE

The access for the device configuration is regulated by six access levels logically grouped.
Every level is protected by a different code.

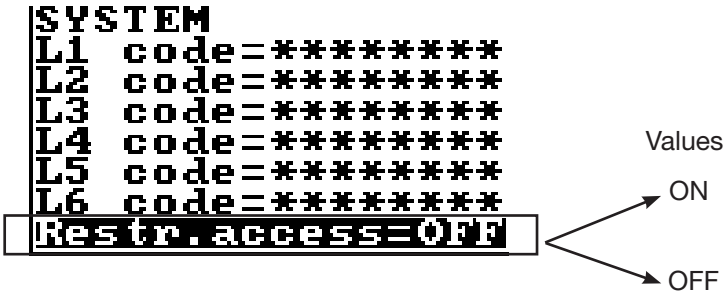
Access Levels 1-2-3-4 Freely configurable by user

### Access Code Set : Menu 13 System




The CODE is inserted by MCP.
Depending on the level of access different display functions will be visible. These access levels interact with the “Restricted access”

### Restricted Access Set : Menu 13 System




**Restrict = ON:** Access permitted only to functions provided for a specific level;
Example: If the operator has a code of access level 3, after having set it, he can change only the functions with level 3 access.

**Restrict = OFF:** It enables to change functions for the selected level and ALL the functions with lower access level.

**Example:** If the operator has the code of level 3, after having set it, he can change all the functions at level 3 and those at lower levels.

* **WARNING:** take careful note of the customized code, since there is no way for the user to retrieve or reset it if lost.

**Factory preset access codes:**

- L1: 10000000
- L2: 20000000
- L3: 30000000
- L4: 40000000

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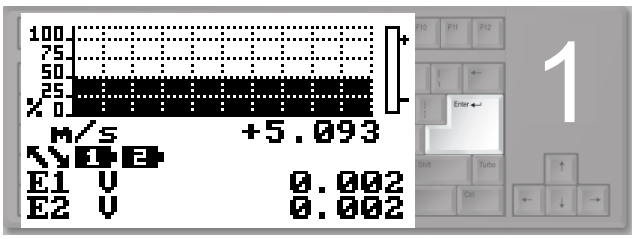
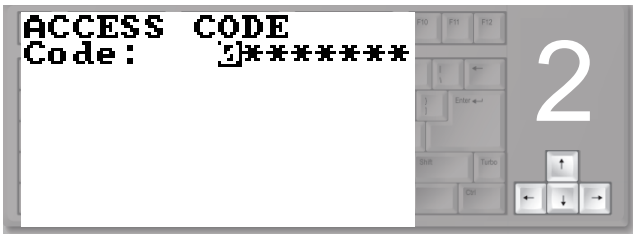
The following example shows how to change the Full scale by Quick Start menu; the second illustrates how to change the function by the Main menu.

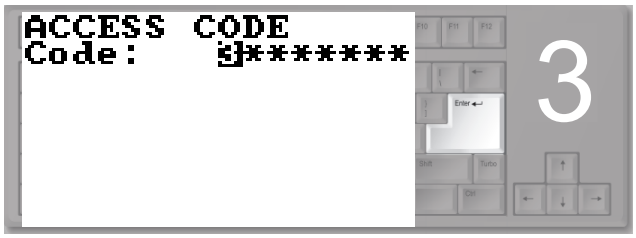
**EXAMPLE: modifying the full scale value from 4.0 l/s to 5.0 dm3/s, from the “Quick start menu”**



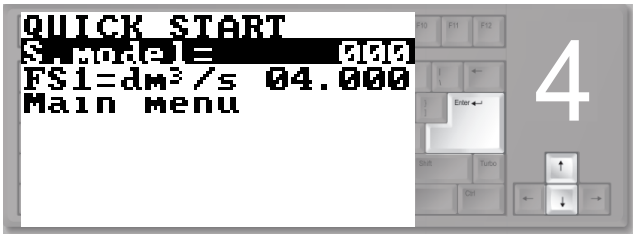

Press enter key to access in the “Quick Start menu”



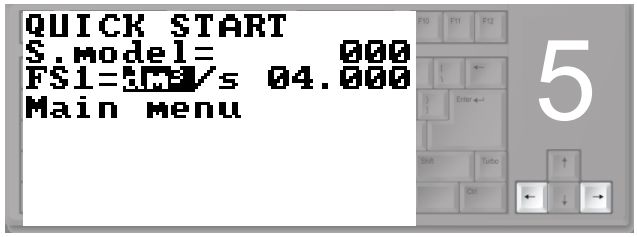

Use the right-left arrow keys to select the character and the up-down arrow key to assign the numeric value of the access code



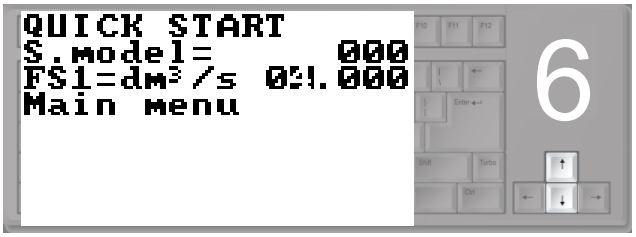

Press the enter key to confirm the access code



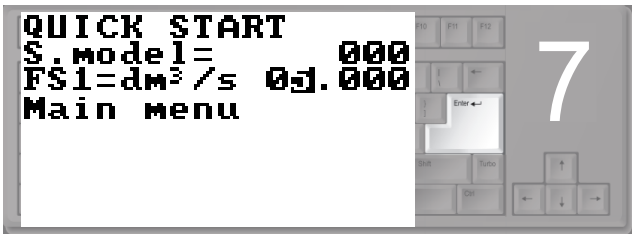

Select the FS1 function with the arrow keys
Press the enter key to modify the function




Press the indicated arrow keys to select the character

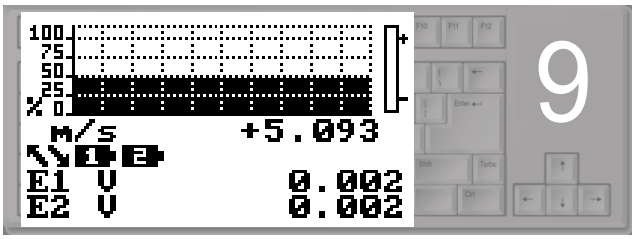



Press the arrow keys indicated to change the value




Press the enter button to confirm the changed value


Press the esc key to exit from to the “quick start menu” and return to the main page




Main Page

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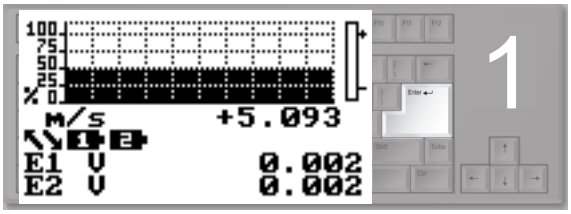
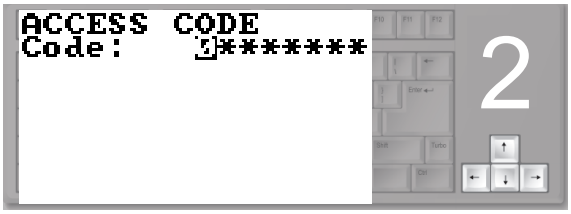
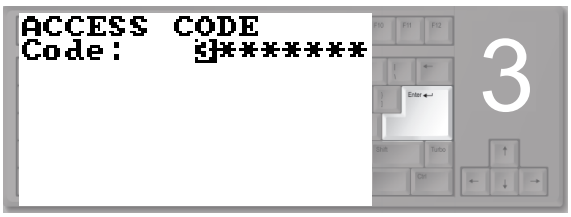
EXAMPLE: modifying the full scale value from 4.0 l/s to 5.0 dm3/s, from the “Main Menu” (quick start menu enabled)



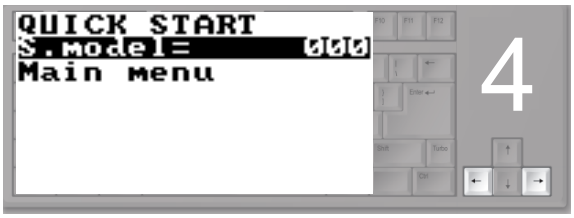

Press enter key to access in the “Quick Start menu”



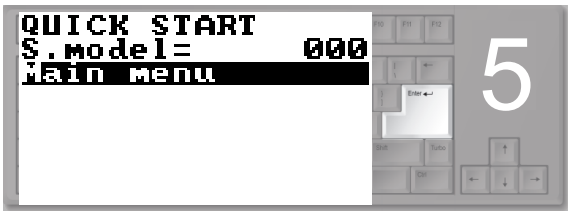

Use the right-left arrow keys to select the character and the up-down arrow key to assign the numeric value of the access code



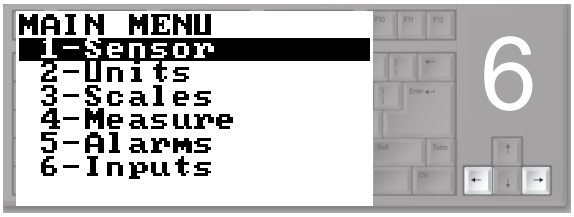

Press the enter key to confirm the access code



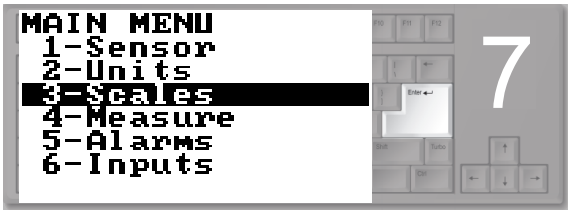

Select the Main Menu function with the arrow keys



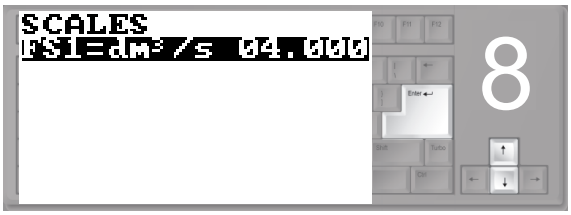

Press the enter key to access the main menu



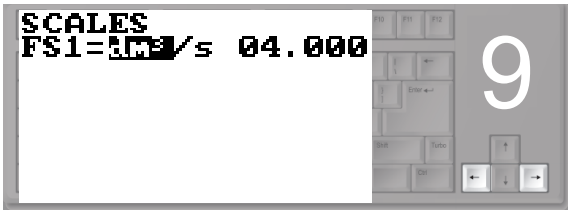

Select menu 3 with the arrow keys



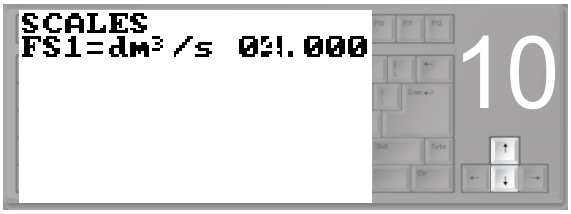

Press the enter key to access menu 3




Select the FS1 function with the arrow keys and press the enter key to confirm




Press the indicated arrow keys to select the character




Press the indicated arrow keys to change the value

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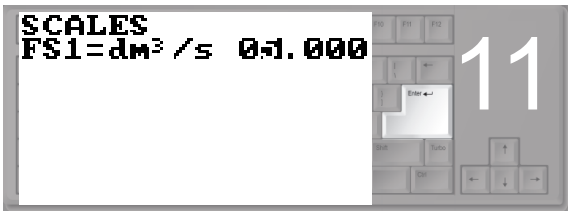
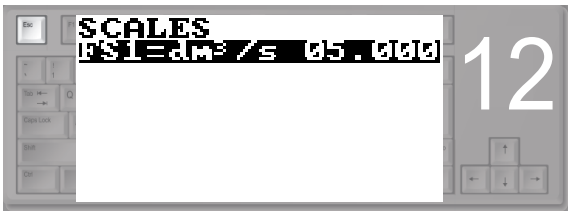
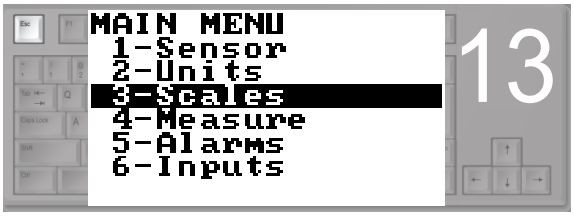


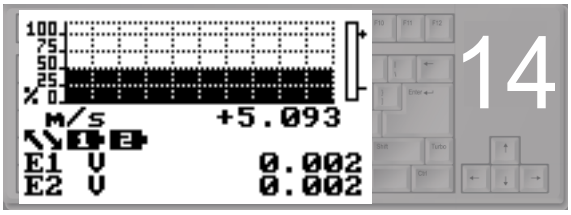

Press the enter key to confirm the changed value




Press the esc key to exit from the "quick start menu"




Press the esc key to exit from the menu and return to the main page




Main Page

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At the end of its lifetime, this product shall be disposed of in full compliance with the environmental regulations of the state in which it is located.

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# MANUAL REVIEWS

| REVIEW | DATE | DESCRIPTION |
|---|---|---|
| SE58S_EN_DE_BURKERT_R00_1.02.XXXX | 25/02/2021 | FIRST EDITION |
| SE58S_QUICK_EN_BU_R01_1.04.XXXX | 08/10/2021 | Changes to data relating to digital output |
| SE58S_QUICK_EN_BU_R02_1.04.XXXX | 03/12/2021 | Added note for maintenance |
| SE58S_QUICK_EN_BU_R02_1.04.XXXX | 26/02/2022 | Added notes for MCP and made some corrections on texts |

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