bürkert
FLUID CONTROL SYSTEMS

Type 8619
multiCELL

Modular transmitter/controller
Modularer Transmitter/Controller
Transmetteur/contrôleur modulaire



Quickstart

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We reserve the right to make technical changes without notice.
Technische Änderungen vorbehalten.
Sous réserve de modifications techniques.

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Operating Instructions 1303/3_EU-ML 00561095 Original_FR

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1. ABOUT THE QUICKSTART

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

Important safety information.

Failure to comply with the information mentioned especially at chapters *Intended use* and *Basic safety instructions* can lead to hazardous situations.

- This Quickstart must be read and understood.

The Quickstart describes the main steps to be carried out when installing, commissioning and programming the device.

Refer to the corresponding instruction manual to get a complete description of the device.

The instruction manual for type 8619 can be found on the CD provided with the device or on internet under:

www.burkert.com → Type 8619

1.1. Symbols used

DANGER

Warns against an imminent danger.

- Failure to observe this warning can result 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.

NOTE

Warns against material damage.

- Failure to observe this warning may result in damage to the device or system.

Indicates additional information, advice or important recommendations.

Refers to information contained in this manual or in other documents.

→ Indicates a procedure to be carried out.

1.2. Definition of the word "device"

The word "device" used within this manual refers to the controller/transmitter type 8619.

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2. INTENDED USE

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

- The device is intended, depending on the modules fitted and the measurement sensors connected, for the acquisition, processing, transmission and regulation of physical parameters such as pH, conductivity, temperature or flow rate... .
- This device must be protected against electromagnetic interference, ultraviolet rays and, when installed outdoors, the effects of climatic conditions.
- This device must be used in compliance with the characteristics and commissioning and use conditions specified in the contractual documents and in the user manual.
- Requirements for the safe and proper operation of the device are proper transport, storage and installation, as well as careful operation and maintenance.
- Only use the device as intended.

→ Observe any existing restraints when the device is exported.

3. BASIC SAFETY INFORMATION

This safety information does not take into account:

- any contingencies or occurrences that may arise during assembly, use and maintenance of the device.
- the local safety regulations that the operator must ensure the staff in charge of installation and maintenance observe.

Danger due to electrical voltage.

- Shut down and isolate the electrical power source before carrying out work on the system.
- Observe all applicable accident protection and safety regulations for electrical equipment.

Various dangerous situations.

To avoid injury take care:

- to prevent any unintentional power supply switch-on.
- to carry out the installation and maintenance work by qualified and skilled staff with the appropriate tools.
- to guarantee a set or controlled restarting of the process after a power supply interruption.
- to use the device only if in perfect working order and in compliance with the instructions provided in the user manual.
- to observe the general technical rules during the planning and use of the device.
- not to use this device in explosive atmospheres.
- not to use this device in an environment incompatible with the materials from which it is made.
- not to make any external modifications to the device such as for instance painting or varnishing any part of the device.
- not to power the device with an AC voltage or a DC voltage higher than 36V DC.

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NOTE

Elements / Components sensitive to electrostatic discharges

- This 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 the EN 100 015-1 norm.
- Also ensure that you do not touch any of the live electrical components.

This device was developed with due consideration given to accepted safety rules and is state-of-the-art. However, risks may arise.

Failure to observe these instructions as well as any unauthorised work on the device excludes us from any liability and also nullifies the warranty which covers the device and its accessories.

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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 multiCELL 8619 in observance of the operating conditions specified in this manual.

4.3. Information on the Internet

You can find the Operating instructions and technical data sheets regarding the type 8619 at: www.burkert.com

5. DESCRIPTION

5.1. Area of application

The 8619 multiCELL is a multifunction device intended to display, transmit and regulate various physical parameters. It can be used, for example, to manage a water treatment system (a boiler, a cooling tower or a reverse osmosis system).

5.2. Description of the device name plate

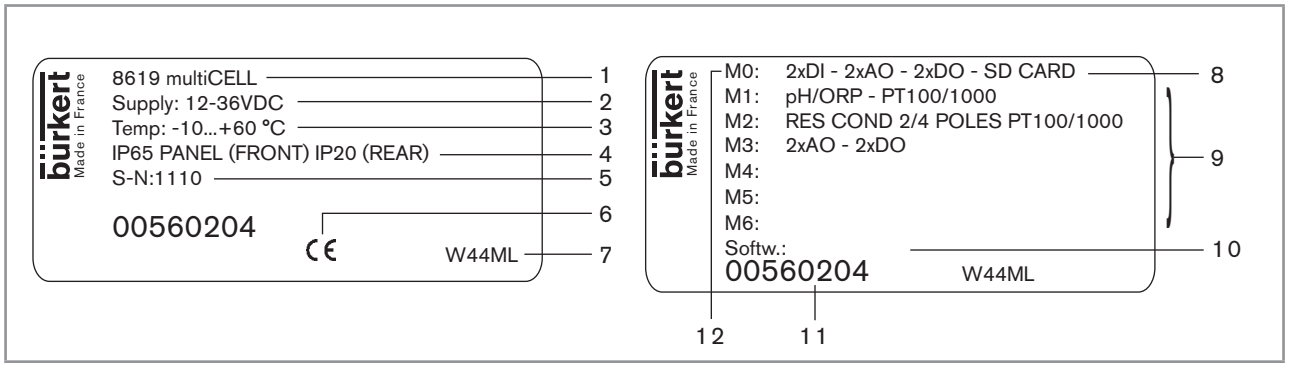


Figure 1 : Example of a name plate

1. Type of device
2. Electrical power supply
3. Ambient temperature range
4. Protection rating
5. Serial number
6. Conformity logo
7. Manufacturing code
8. Device fitted with a memory card reader
9. Properties of the additional modules
10. Software options
11. Order code
12. Properties of the M0:MAIN board

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6. TECHNICAL DATA

6.1. Conditions of use

Ambient temperature	-10 to +70 °C (operating, without memory card), restricted to 0 ... +70°C if a memory card is used
Air humidity	< 85 %, non condensated
Height above sea level	max. 2000 m
Protection rating	▪ IP65 and NEMA4X (on front, once built in, housing closed) ▪ IP20 (non front parts inside the housing)

6.2. Compliance to standards and directives

The device conforms to the EC directives through the following standards:

- EMC: EN 61000-6-2, EN 61000-6-3
- Vibration: EN 60068-2-6
- Shock: EN 60068-2-27

UL recognised devices ( ) for the United States of America and Canada comply to the following standards:

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

6.3. General technical data

6.3.1. Mechanical data

Mechanical data	Material
Built in and locking system / seal	PPO / silicone
Front cover, upper layer, and keys / front cover, sublayer, and display	Silicone / PC
Rear plate	Stainless steel 304
Terminal blocks	PBT, contacts in gold-plated copper alloy
Ground screw + spring washer	Stainless steel 316 (A4)

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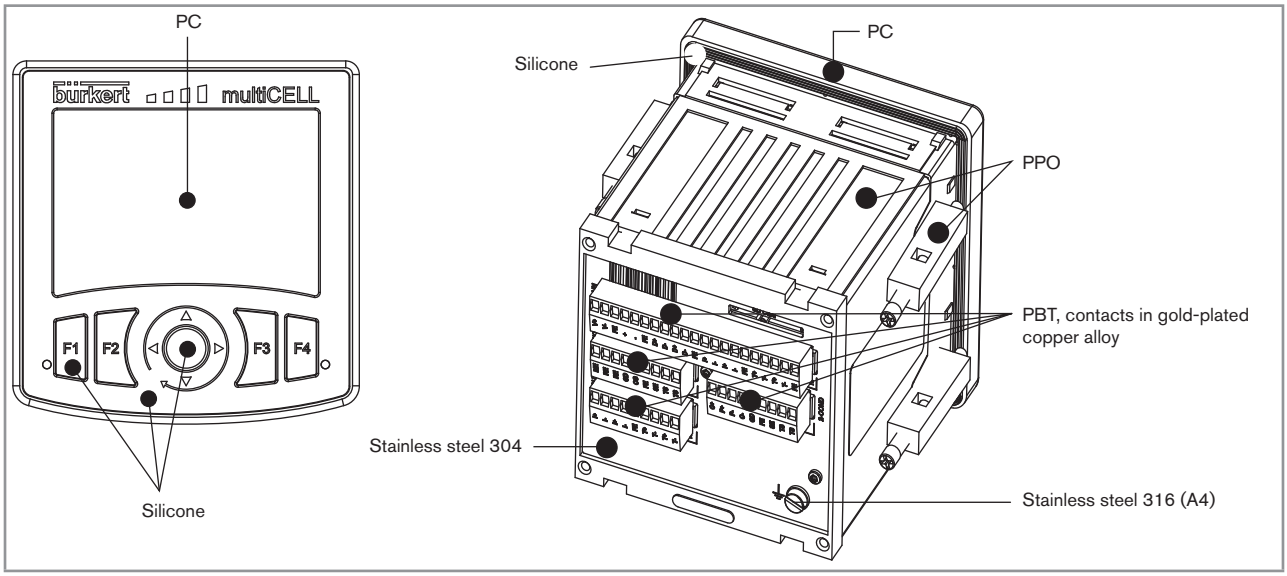


Figure 2 : Materials used for the multiCELL

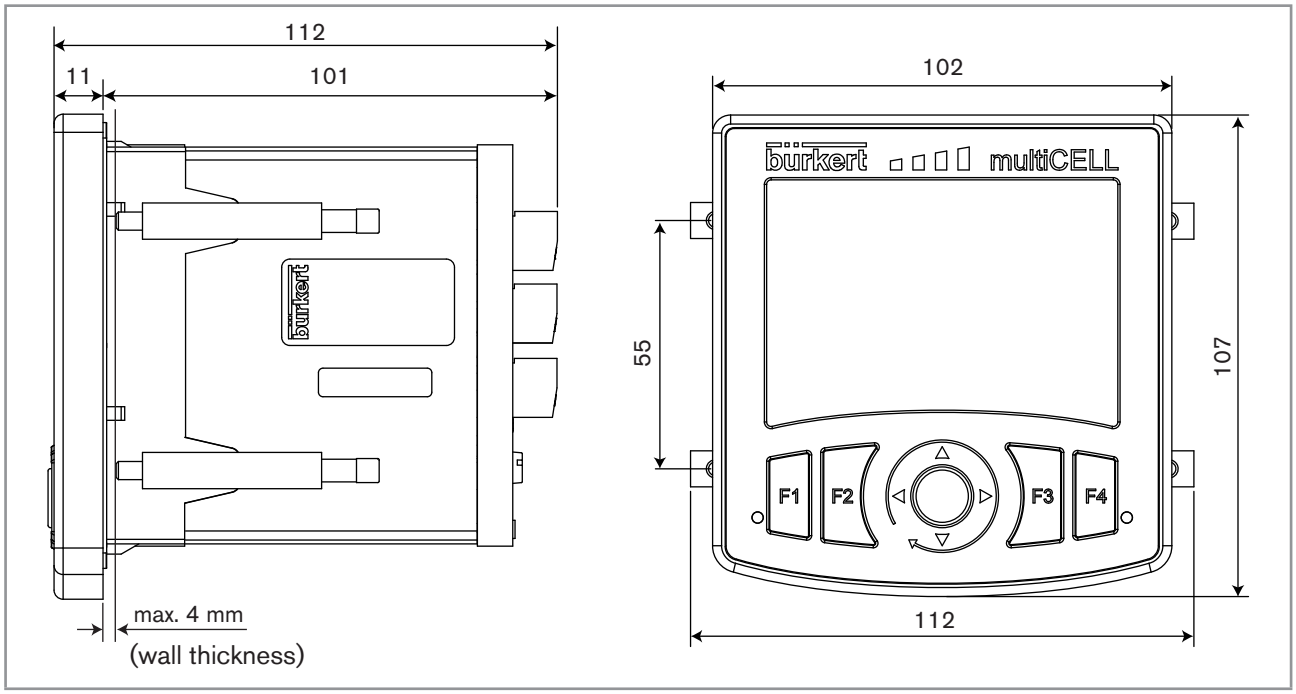


Figure 3 : Dimensions of the multiCELL [mm]

6.3.2. Specifications of the "M0:MAIN" board

Power supply	12-36 V DC, filtered and regulated
Specifications of the power source (not provided) of UL-recognised devices, with variable key PE72	▪ Limited power source (in accordance with chap. 9.3 of the UL 61010-1 standard) ▪ or class 2 type power source (according to the 1310/1585 and 60950-1 standards)

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Max. power consumption (without additional module, outputs not connected)	1.5VA
Power distribution ("PWR OUT")	12-36 V DC, 1.8A max.
All digital inputs ("DI")	▪ Switching threshold V_{on}: 5 à 36 V DC ▪ Switching threshold V_{off}: < 2 V DC ▪ Input impedance: 3kΩ ▪ Galvanically insulated ▪ Protected against polarity reversal and voltage spikes ▪ Frequency: 0.5 to 2500Hz
All analogue outputs ("AO")	▪ 4-20mA current ▪ Any connection mode, in sink or source mode ▪ Galvanically insulated ▪ Protected against polarity reversal ▪ Max. loop impedance: 1100Ω at 36V DC, 610Ω at 24V DC, 100Ω at 12V DC
All digital outputs ("DO")	▪ Transistor ▪ Connection mode unimportant in NPN or PNP mode ▪ Galvanically insulated ▪ Protected against short circuits ▪ Max. voltage: 36V DC ▪ max. 700mA if one transistor is connected but max. 1A for both transistors connected ▪ Max. frequency: 2000Hz
Electrical connection	▪ Per detachable 21-point set-screw connector, orange ▪ Refer to chap. 6.3.8 for the specifications of the connection cables
Flow rate measurement (software option)	Refer to the user manual for the flow sensor connected to the 8619

6.3.3. Specifications of the input board "Input"

Power consumption	0.1 VA
Digital inputs ("DI")	▪ Switching threshold V_{on}: 5 à 36 V DC ▪ Switching threshold V_{off}: < 2 V DC ▪ Input impedance: 3 kΩ ▪ Galvanically insulated ▪ Protected against polarity reversal and voltage spikes ▪ Frequency: 0.5 to 2500 Hz

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Analogue inputs ("AI")	▪ Any connection mode, in sink or source mode ▪ Galvanically insulated ▪ Accuracy: ±0,25% ▪ Current input: 0 - 22 mA or 3,5 - 22 mA. Max. voltage: 36 V DC. Impedance: 50 Ω. Resolution : 1.5 µA ▪ Voltage input: 0 - 5 V DC or 0 - 10 V DC. Max. voltage: 36 V DC. Impedance: 110 kΩ. Resolution: 1 mV
Electrical connection	▪ Per detachable 9-point set-screw connector, orange ▪ Refer to chap. 6.3.8 for the specifications of the connection cables

6.3.4. Specifications of the additional outputs board "OUT"

Power consumption	0.1VA
All digital outputs ("DOx")	▪ Transistor ▪ Any connection mode, in NPN or PNP mode ▪ Galvanically insulated ▪ Protected against short circuits ▪ Max. voltage: 36V DC ▪ max. 700mA per transistor but max. 1A if both transistors are connected ▪ Max. frequency 2000Hz
All analogue outputs ("AOx")	▪ 4-20mA current ▪ Any connection mode, in sink or source mode ▪ Galvanically insulated ▪ Protected against polarity reversal ▪ Max. loop impedance: 1100Ω at 36V DC, 610Ω at 24V DC, 100Ω at 12V DC
Electrical connection	▪ Per detachable 9-point set-screw connector, black ▪ Refer to chap. 6.3.8 for the specifications of the connection cables

6.3.5. Specifications of the memory card reader/recorder

▪ Memory card type	▪ SD (Secure Digital)
▪ Capacity	▪ 2 Go max.
▪ File system	▪ FAT16

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6.3.6. Specifications of the "pH/redox" module

pH measurement ▪ pH measurement range ▪ Resolution of pH measurement ▪ Accuracy of pH measurement ▪ Potential difference measurement range ▪ Resolution of potential difference measurement ▪ Accuracy of potential difference measurement ▪ pH probe type	 ▪ -2.00...+16.00 ▪ 0.01pH ▪ 0.02pH ▪ -600...+600mV ▪ 0.1mV ▪ 1mV ▪ Electrochemical
Power consumption	0.1VA
Measurement of the oxidation reduction potential ▪ Oxidation reduction potential measurement range ▪ Resolution of the potential difference measurement ▪ Accuracy of potential difference measurement ▪ Oxidation reduction potential probe type	 ▪ -2000 ... +2000mV ▪ 0.1mV ▪ 1mV ▪ Electrochemical
Temperature measurement ▪ Measurement range ▪ Measurement resolution ▪ Measurement accuracy ▪ Temperature sensor type	 ▪ -25°C ... +130°C ▪ 0.1°C ▪ 1°C ▪ Pt100 or Pt1000, with 2 or 3 wires
Electrical connection	▪ Per detachable 9-point set-screw connector, grey ▪ Refer to chap. 6.3.8 for the specifications of connection cables

6.3.7. Specifications of the "COND" conductivity module

Resistance measurement (without conductivity sensor connected)	5Ω ... 1MΩ
Power consumption	0.25VA
Conductivity cell type	With 2 or 4 electrodes; the specifications of Bürkert cells are described in the related operating instructions.

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Conductivity measurement (with connected conductivity sensor)	
▪ Measurement range	▪ 0.000 µS/cm...2 S/cm (depends on the conductivity sensor)
▪ Measurement resolution	▪ 10^{-9}S/cm
▪ Measurement error	▪ < 0.5% of measured value + sensor error
Resistivity measurement (with connected conductivity sensor)	
▪ Measurement range	▪ 0.500Ω.cm...100MΩ.cm (depends on the conductivity sensor)
▪ Measurement resolution	▪ 10^{-1}Ω.cm
▪ Measurement error (without sensor)	▪ < 0.5% of measured value
Temperature measurement	
▪ Measurement range	▪ -40°C ... 200°C
▪ Measurement resolution	▪ 0.1°C
▪ Measurement error	▪ ±1°C
▪ Temperature sensor type	▪ Pt100 or Pt1000, with 2 or 3 wires
Electrical connection	▪ Per detachable 9-point set-screw connector, green ▪ Refer to chap. 6.3.8 for the specifications of the connection cables

6.3.8. Specifications of the connection cables

- Use shielded cables for the electrical connection.
- Be sure to use cables in which the wires present the specifications described in the table below.

Wire specifications	Dimensions of the max. clamping area
▪ Single core H05(07) V-U	0.2...1.5 mm²
▪ Flexible wire H05(07) V-K	0.2...1.5 mm²
▪ With non-insulated end connection	0.2...1.5 mm²
▪ With insulated end connection	0.2...0.75 mm²

Table 1: Specifications of the wires making up the connection cables

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7. INSTALLATION AND WIRING

7.1. Safety instructions

DANGER

Risk of injury due to electrical discharge.

- Shut down and isolate the electrical power source before carrying out work on the system.
- Observe all applicable accident protection and safety regulations for electrical equipment.

WARNING

Risk of injury due to non-conforming installation.

- Electrical installation can only be carried out by qualified and authorised personnel with the appropriate tools.
- Install appropriate safety devices (correctly rated fuse and/or circuit-breaker).
- The use of probes/sensors sold by Bürkert is preferable.
- Follow the instructions on installation and wiring of remote sensors connected to the multiCELL.

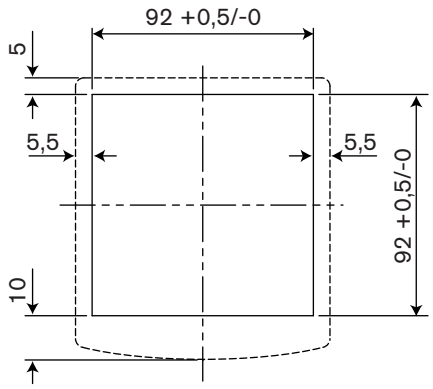
Risk of injury due to unintentional switch on of power supply or uncontrolled restarting of the installation.

- Take appropriate measures to avoid unintentional activation of the installation.
- Guarantee a set or controlled restart of the process subsequent to the installation of the device.

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

7.2. Building the device into a housing or cabinet

→ Follow the instructions below to build the multiCELL delivered fully assembled, into a housing or cabinet.



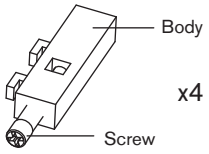
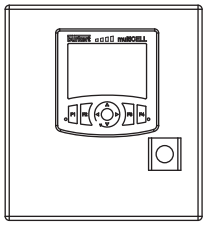
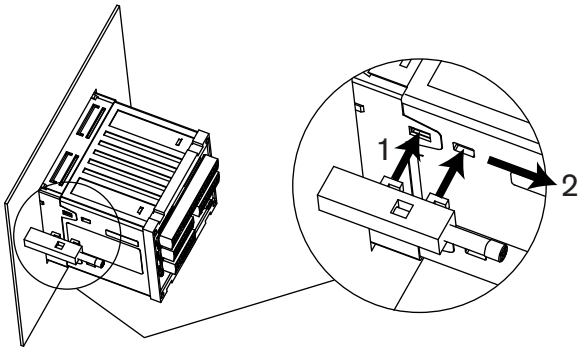
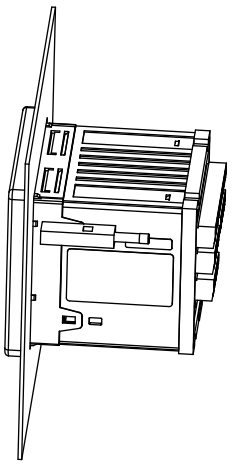
This diagram is not to scale. The dimensions are given in mm.

Stage 1:

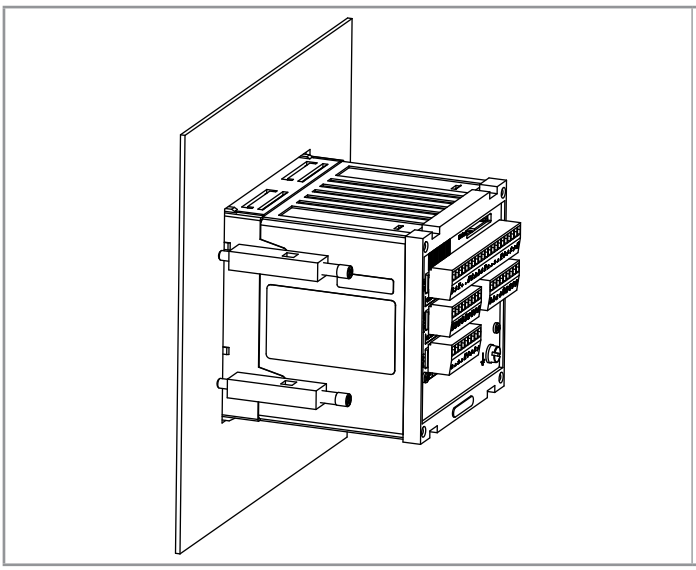
→ Check that the thickness of the door of the housing or cabinet is 4 mm max.

→ Cut out the hole in the door of the electrical housing or cabinet in accordance with the standard, IEC 61554:1999 (DIN 43700), allowing the space required around the cut-out and inside the cabinet to easily handle the 4 locking systems, delivered with the multiCELL.

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	Stage 2: Prepare the 4 locking systems: → Insert a screw into each device. → Tighten the screw until the end of the shaft of the screw is flush with the device.
	Stage 3: → Slide the housing into the cut-out with the connectors to the back until it can go no further.
	Stage 4: → Insert (1) the hooks on the first locking system into the slots on the housing. → Pull the locking system (2) until you hear a click. The click may be heared when tightening the locking system at stage 6.
	Stage 5: → Place the locking system flush against the multiCELL by hand, so that the hooks remain in place.

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Stage 6:

→ Fully tighten the screws using an appropriate screwdriver.

→ Repeat stages 4 to 6 to fit the other 3 locking systems.

Figure 4 : Insertion of the 8619 into a housing or cabinet

7.3. Electrical wiring

DANGER

Risk of injury due to electrical discharge.

- Shut down and isolate the electrical power source before carrying out work on the system.
- Observe all applicable accident protection and safety regulations for electrical equipment.

- Use a high quality electrical power supply (filtered and regulated).
- Connect the functional earth on the installation to the ground screw on the device.
- Connect the shielding on each wire to an "FE" (functional earth) terminal to guarantee the equipotentiality of the installation.
- Use shielded cables that respect the specifications described in "Table 1: Specifications of the wires making up the connection cables".

7.3.1. Electrical connections

For all versions of the multiCELL, the electrical connection is made by set-screw connectors.

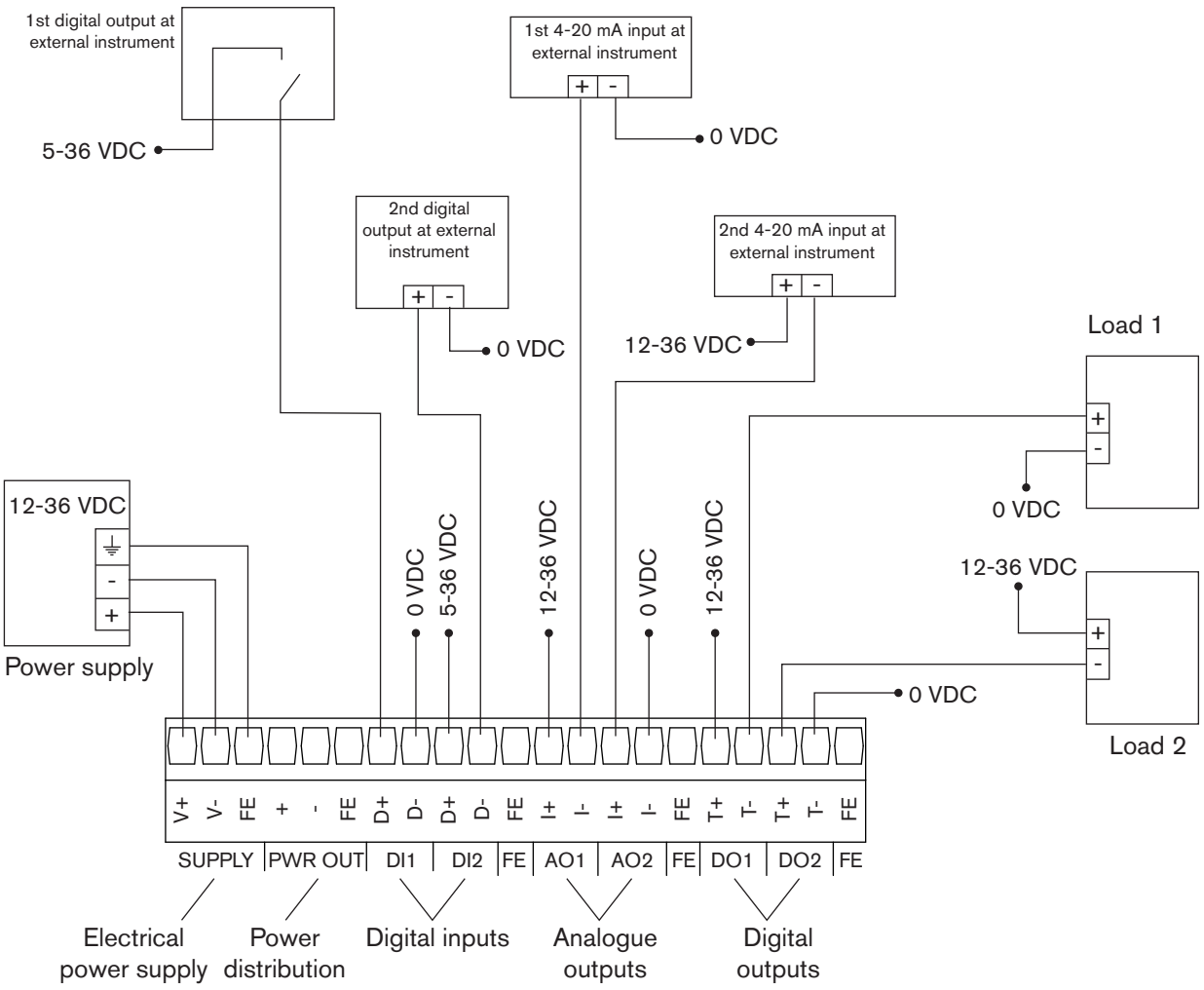
7.3.2. Wiring the M0:MAIN board

The M0:MAIN board is used to connect the multiCELL's electrical power source. It has:

- 2 digital inputs (marked DI1 and DI2), for connecting a flow sensor for example
- Two 4-20 mA analogue outputs (marked AO1 and AO2)
- 2 digital outputs (marked DO1 and DO2)

The inputs and outputs are galvanically insulated and therefore voltage free.

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DI1, DI2, AO1, AO2, DO1 and DO2: designation in the configuration menus of the M0 main board.

FE = functional earth

Figure 5 : Wiring of the "M0:MAIN" board

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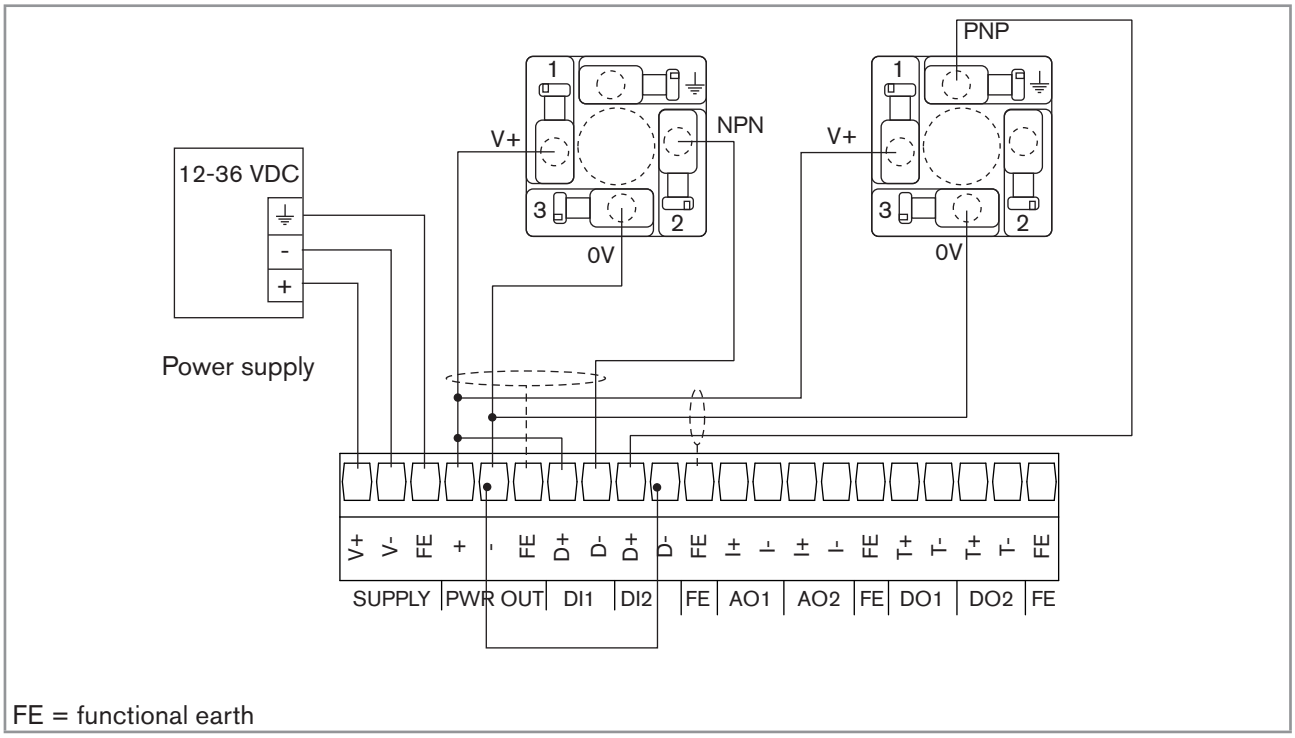


Figure 6 : Connection example for the 8619 with two flow sensors, type 8030

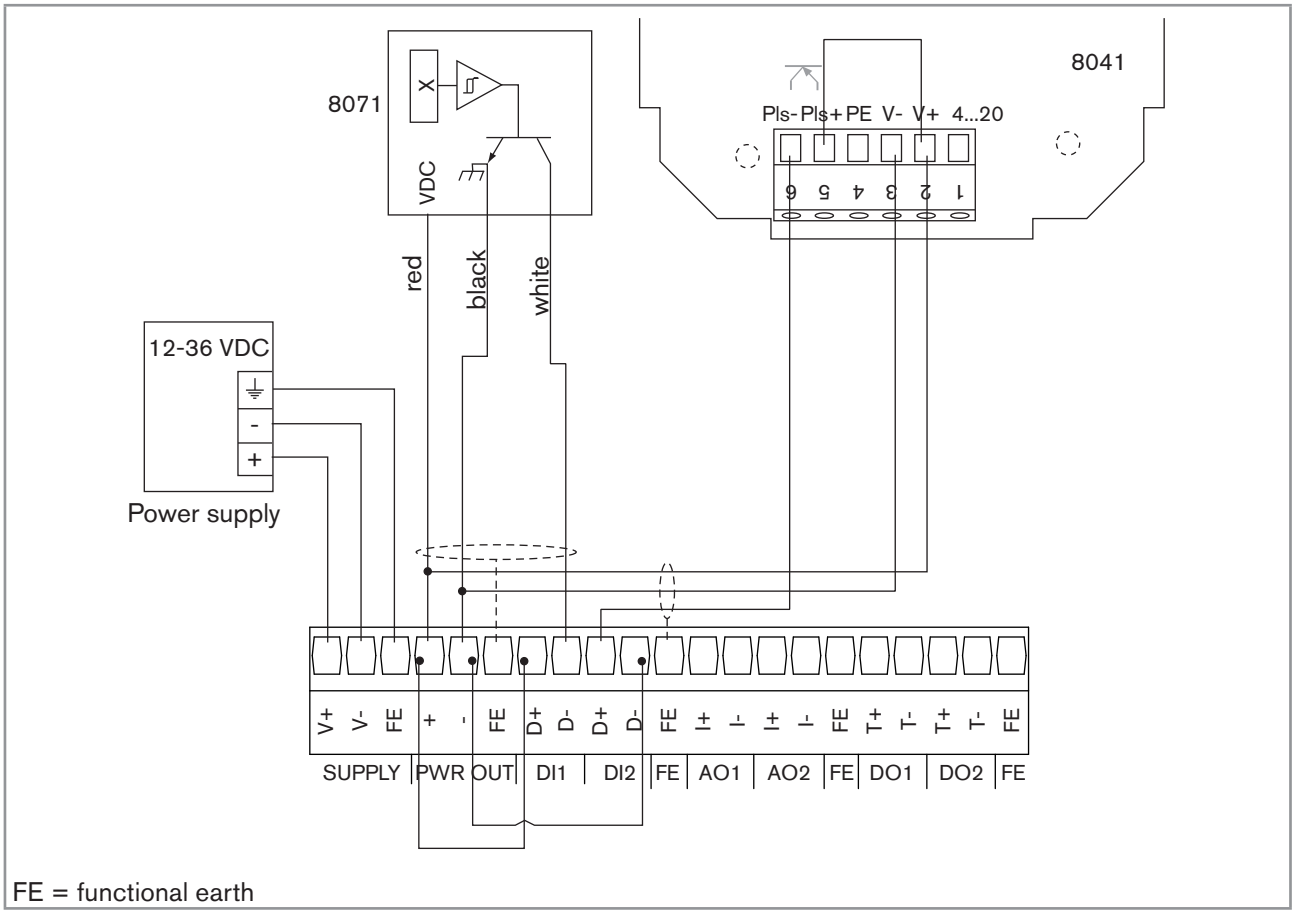


Figure 7 : Connection example for the 8619 with 2 flow sensors, types 8071 and 8041

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7.3.3. Wiring the input module "INPUT"

The "INPUT" inputs module has:

- Two analogue inputs;
- Two digital inputs.

The inputs are galvanically insulated, and therefore voltage free.

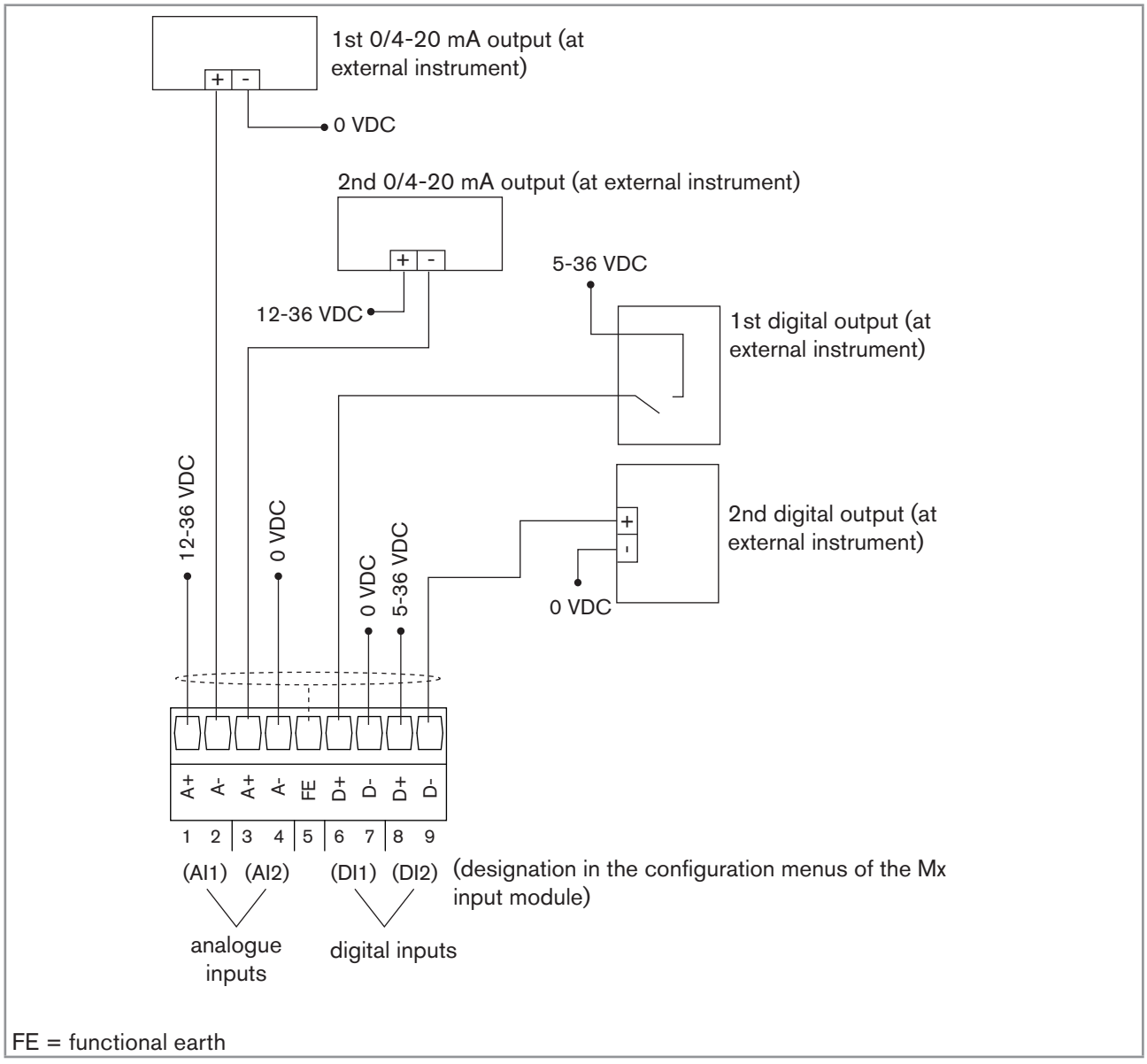


Figure 8 : Connecting the analogue inputs to a 2-wire current transmitter and connecting the digital inputs of the input module

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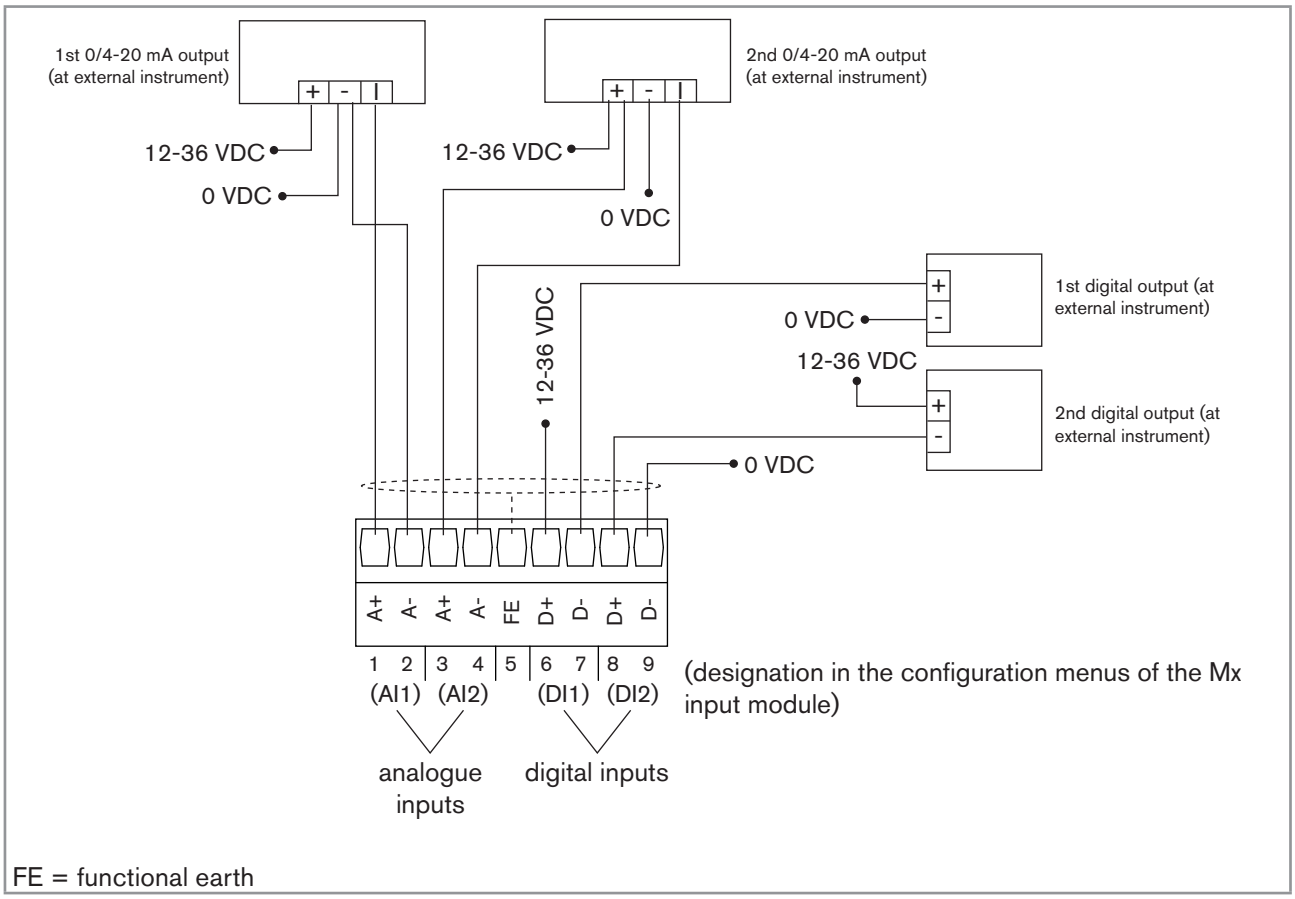


Figure 9 : Connecting the AI1 analogue input in source mode and the analogue input AI2 in sinking mode to a 3-wire current transmitter (for example type 8025 with relay outputs) and connecting the digital inputs of the input module

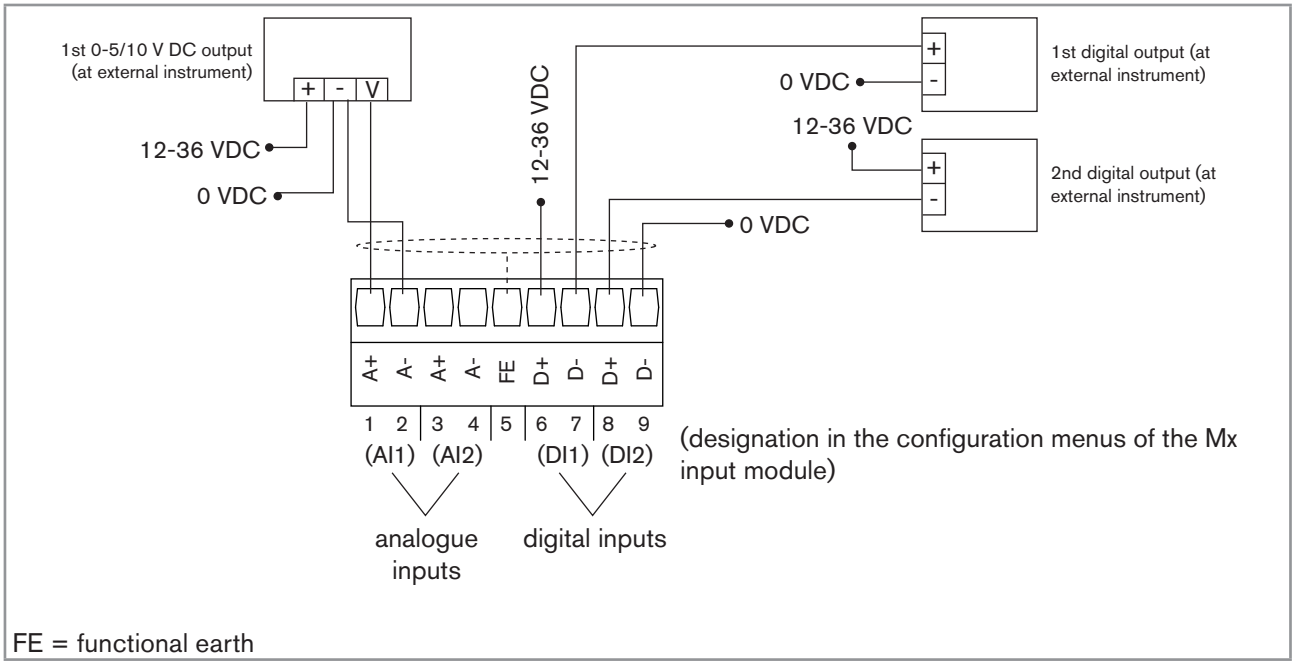


Figure 10 : Connecting the analogue inputs to a voltage transmitter and connecting the digital inputs of the input module

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7.3.4. Wiring the output module "OUT"

The "OUT" outputs module has two 4-20 mA analogue outputs and two digital outputs. The outputs are galvanically insulated, and therefore voltage free.

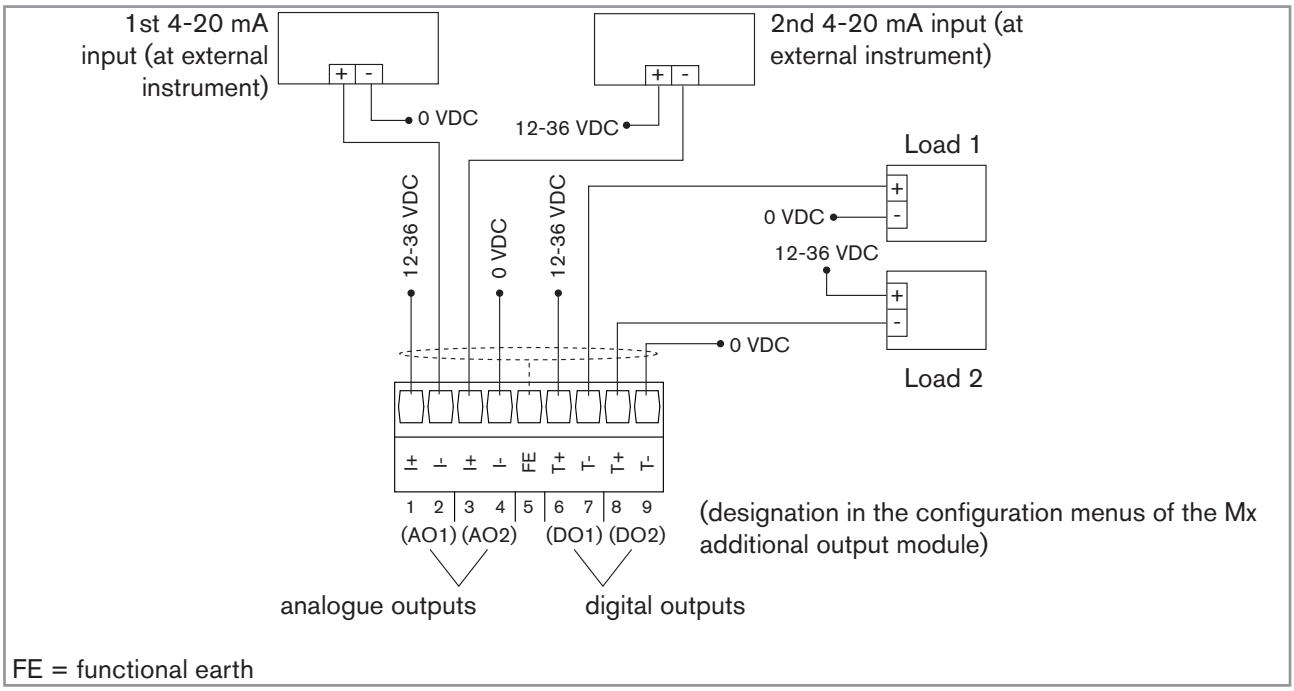
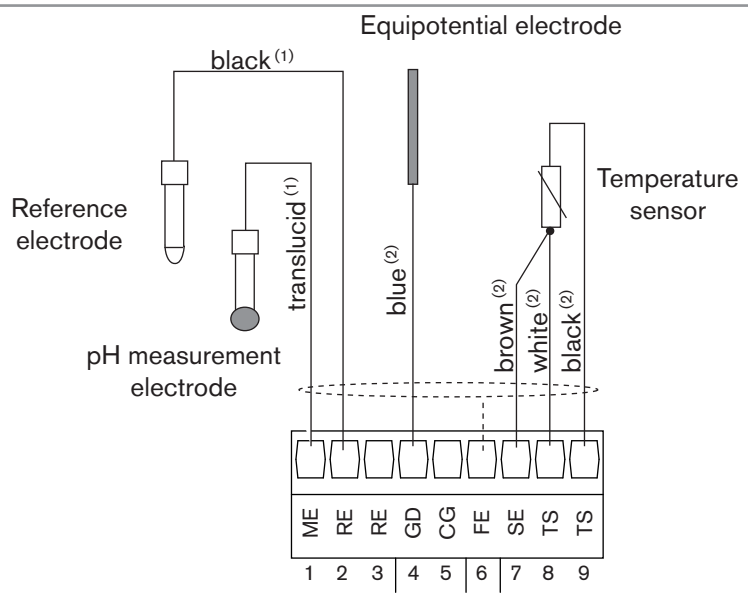


Figure 11 : Wiring the "OUT" output module

7.3.5. Wiring the "pH/ORP" module

- Wire a pH/redox sensor in symmetrical mode to obviate the influence of interference and, in this case, wire the equipotential electrode (compulsory).
- When the pH/redox sensor is wired in asymmetrical mode, measurement of the pH or the oxidation reduction potential may drift over time when the equipotential electrode is not wired.

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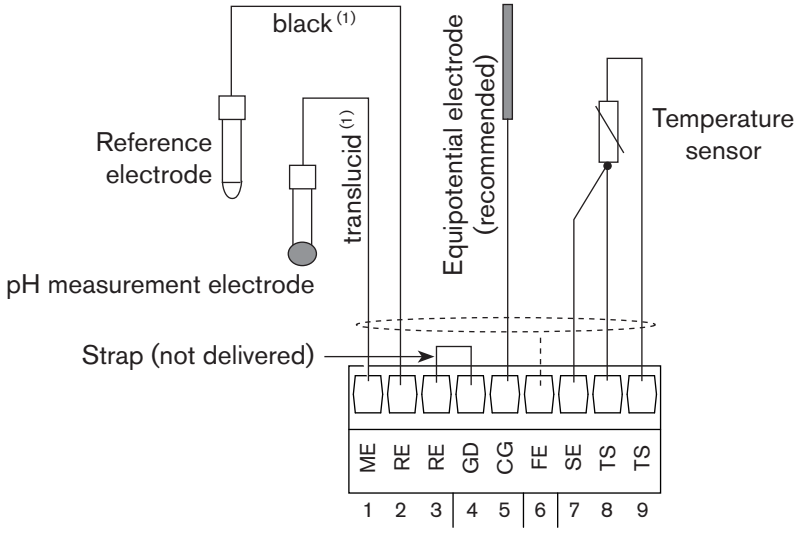


FE = functional earth

(1) Colour of the wires in the Bürkert connection cables with order codes 561904, 561905 or 561906.

(2) Colour of the wires in the Pt1000 sensor with order code 427023 and its Bürkert connection cable with order code 427113.

Figure 12 : Wiring a Bürkert 8200 type sensor and a Pt1000 temperature sensor in symmetrical mode



FE = functional earth

(1) Colour of the wires in Bürkert connection cables with order codes 561904, 561905 or 561906.

Figure 13 : Wiring a pH sensor and a Pt100 or Pt1000 temperature sensor in asymmetrical mode to a pH/ORP module

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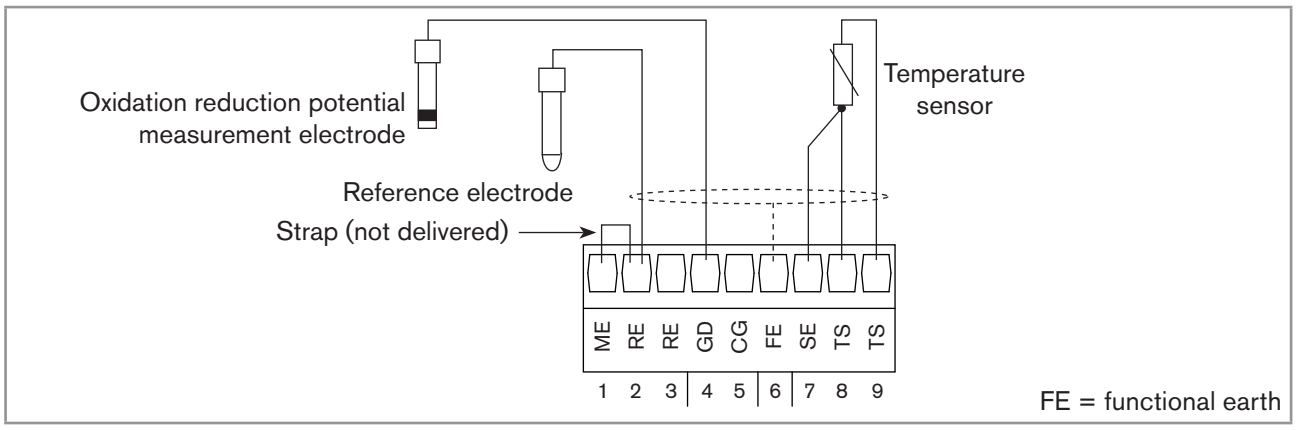


Figure 14 : Wiring an oxidation reduction potential sensor and a Pt100 or Pt1000 temperature sensor in a pH/ORP module

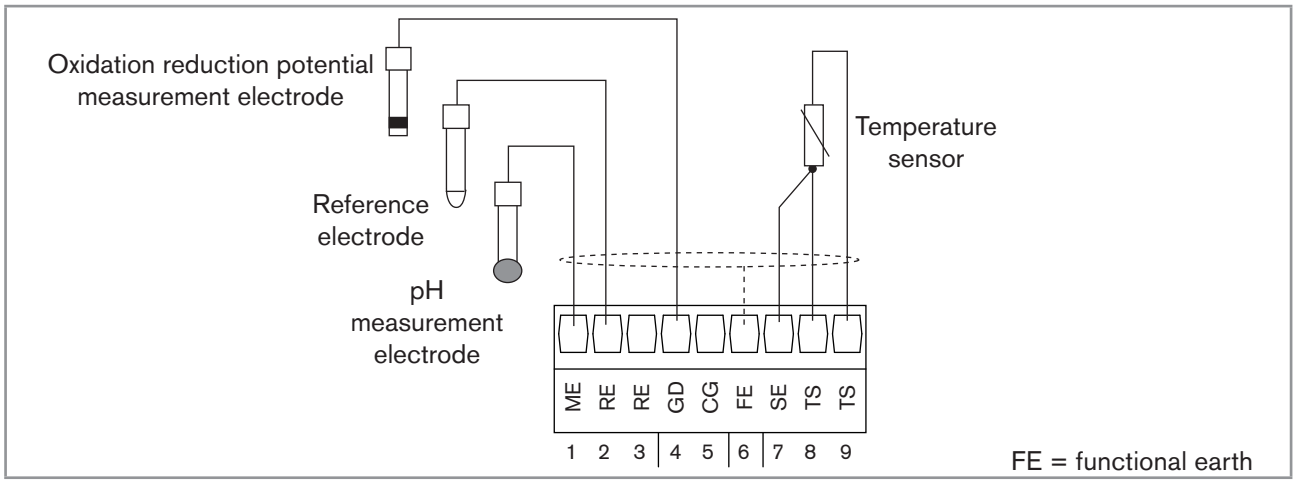


Figure 15 : Wiring a pH sensor, an oxidation reduction potential sensor and a Pt100 or Pt1000 temperature sensor in a pH/ORP module

7.3.6. Wiring the "COND" conductivity module

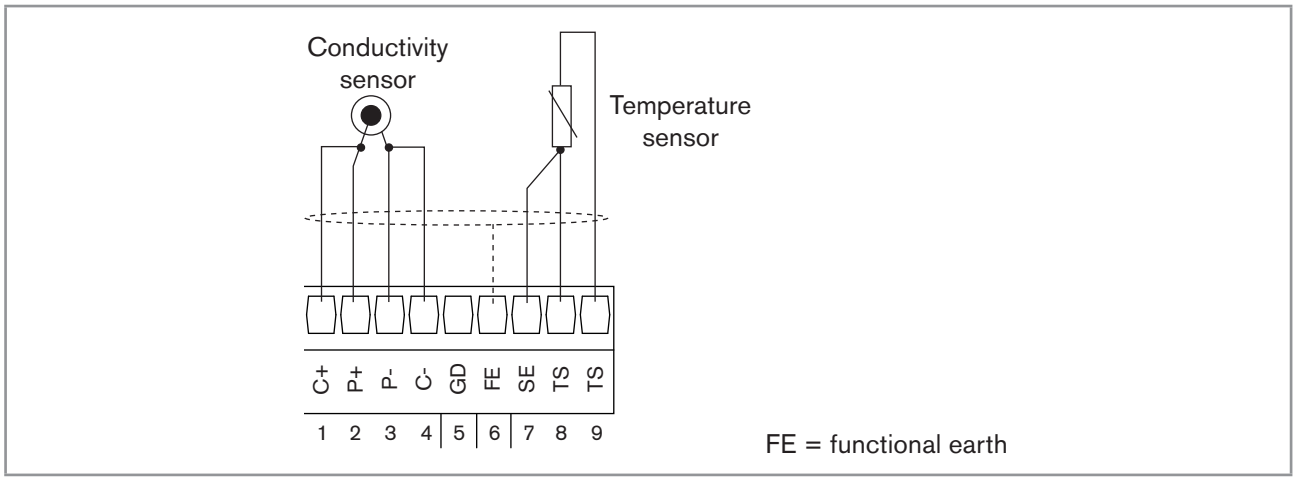


Figure 16 : Wiring a resistive conductivity cell with 2 electrodes and a Pt100 or Pt1000 temperature sensor in a conductivity module

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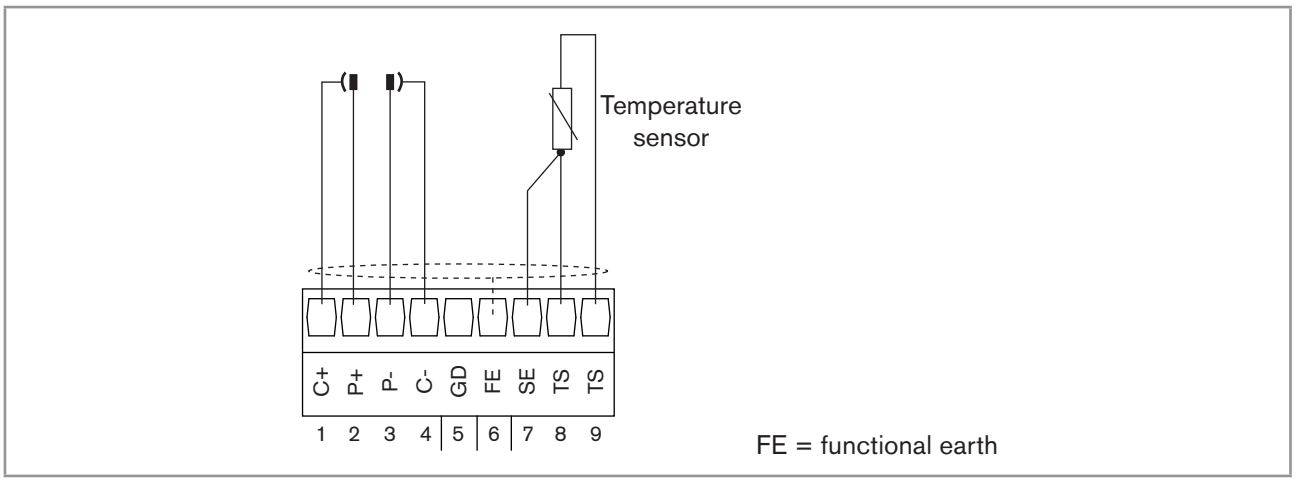


Figure 17 : Wiring a resistive conductivity cell with 4 electrodes and a Pt100 or Pt1000 temperature sensor in a conductivity module

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8. ADJUSTMENT AND COMMISSIONING

8.1. Safety instructions

WARNING

Risk of injury due to non-conforming adjustment.

Non conforming adjustment could lead to injuries and damage the device and its environment.

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

WARNING

Danger due to non-conforming commissioning.

Non-conforming 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 the manual.
- In particular, observe the safety recommendations and intended use.
- The device/installation must only be commissioned by suitably trained staff.

Before commissioning, calibrate each measuring sensor connected to the device.

8.2. Switching on the device for the first time

When switching on the device for the first time, the display shows the first view in Process level:

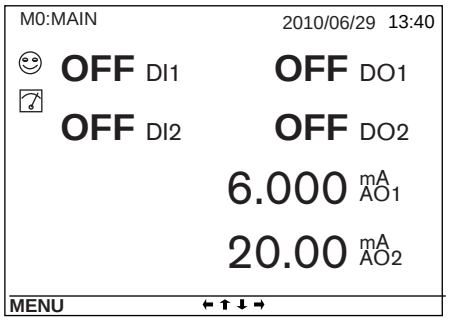


Figure 18 : Display when switching on for the first time

When switched on subsequently, the last active view in the Process leve is displayed. See chap. 8.7 to browse in all views in Process level.

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8.3. Description of the icons

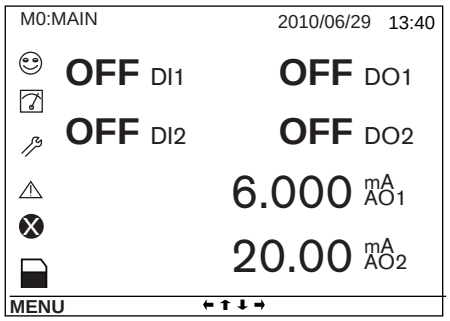


Figure 19 : Position of the icons

Icon	Meaning and alternatives
	Default icon when process monitoring is not activated via the "Diagnostics" menu; if monitoring is activated, this icon indicates that the parameters monitored are not out of range. If at least one monitoring is activated, the alternative icons in this position are: ▪ , combined with ⚠ : go to the menu "Information -> System log" to read the associated warning message. ▪ , combined with ⊗ : go to the menu "Information -> System log" to read the associated error message.
	Device currently measuring. The alternative icons in this position are: ▪ H flashing: HOLD mode activated. ▪ T flashing: running check that an output is working and behaving correctly.
	"Maintenance" event; Go to the menu "Information -> System log" to read the associated message.
⚠	"Warning" event; Go to the menu "Information -> System log" to read the associated message.
⊗	Error" event; Go to the menu "Information -> System log" to read the associated message.
	Memory card inserted and datalogger activated. The alternative to this position is the icon X indicating an error. Go to the menu "Information -> System log", to read the associated error message.

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8.4. Using the navigation button and the dynamic keys

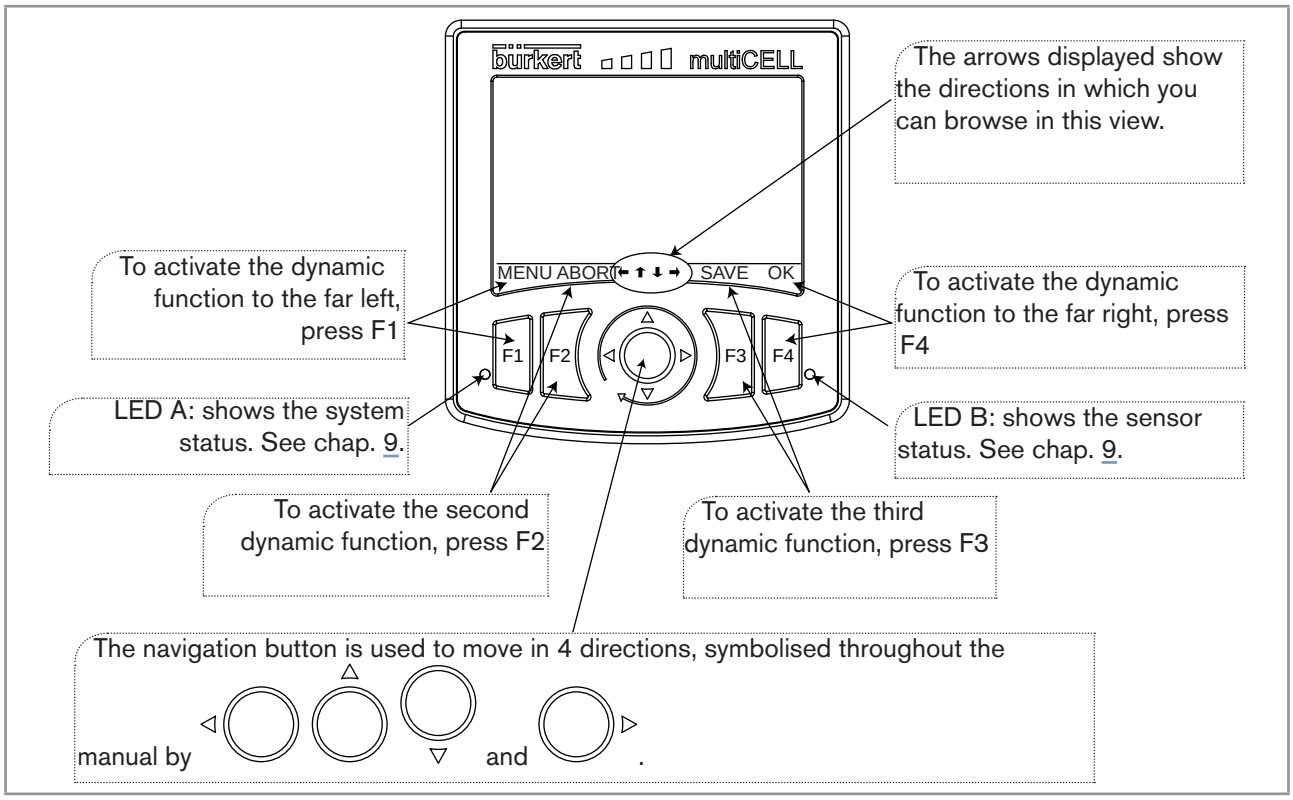
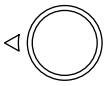
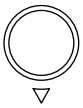
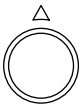
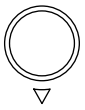
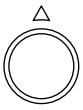
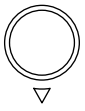
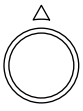
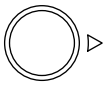
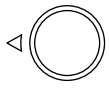
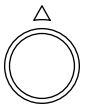
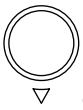
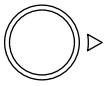
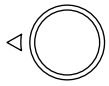
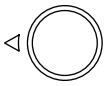
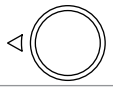
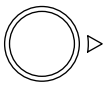


Figure 20 : Using the navigation button and the dynamic keys

You want to...	Press...
....access the Configuration level	Dynamic function, "MENU", from any view in Process level
...go back to Process level	Dynamic function, "MEAS"
...access the menu displayed	Dynamic function, "OK"
...access the highlighted function	Dynamic function, "OK"
...confirm the enter	Dynamic function, "OK"
...save modifications	Dynamic function "SAVE"
...go back to the parent menu	Dynamic function "BACK"
...cancel the current operation	Dynamic function "ABORT"
...set a setpoint value	Dynamic function "SETP"
...activate manual mode in a configured and activated function	Dynamic function "MANU"
...manually set the percentage of the function	Dynamic function "CMD"
...force the result of a function to 0%	Dynamic function "0%"
...force the result of a function to 100%	Dynamic function "100%"
...activate automatic mode in a configured and activated function	Dynamic function "AUTO"
...start teach-in	Dynamic function "START"
...end teach-in	Dynamic function "END"
...answer the question asked in the affirmative	Dynamic function "YES"
...answer the question asked in the negative	Dynamic function "NO"
...select the highlighted character or mode	Dynamic function "SEL"

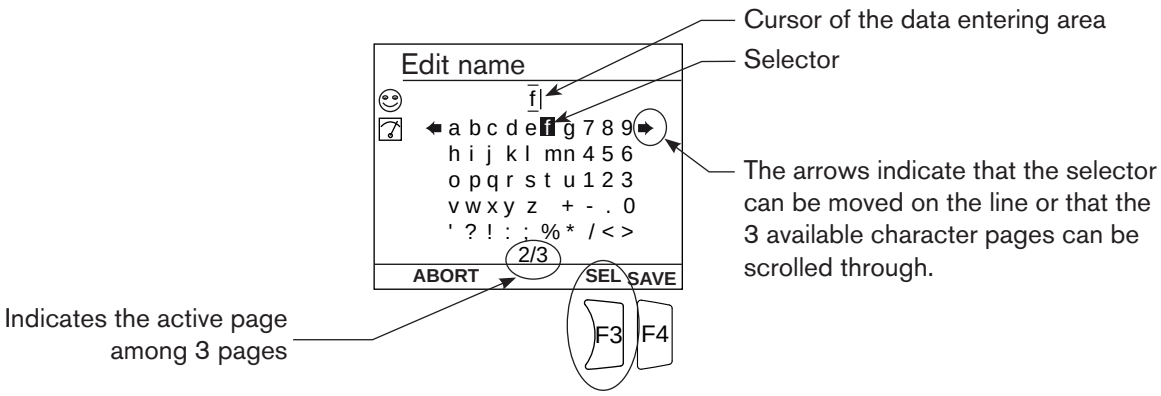
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You want to...	Press...			
...browse in Process level	 next view	 previous view	 next level	 previous level
...browse in the Configuration level menus	 display the next menu		 display the previous menu	
...browse in the menu functions	 highlight the next function		 highlight the previous function	
...set the contrast or brightness percentage for the display (after accessing the function in the "Parameters" menu)	 increase the percentage		 reduce the percentage	
...modify a numerical value or the units	 increment the figure selected or modify the units		 decrement the figure selected or modify the units	
	 select the next figure		 select the previous figure	
...allocate the "+" or "-" sign to a numerical value	 to the extreme left of the numerical value then  until the desired sign is displayed			
...move the decimal point in a numerical value	 to the extreme right of the numerical value then  until the decimal point is in the desired place			

8.5. Entering some text

This chap. describes how to use the keyboard displayed to modify the name of a process variable (13 characters max.), a function (12 characters max.) or the title of a view (12 characters max.).

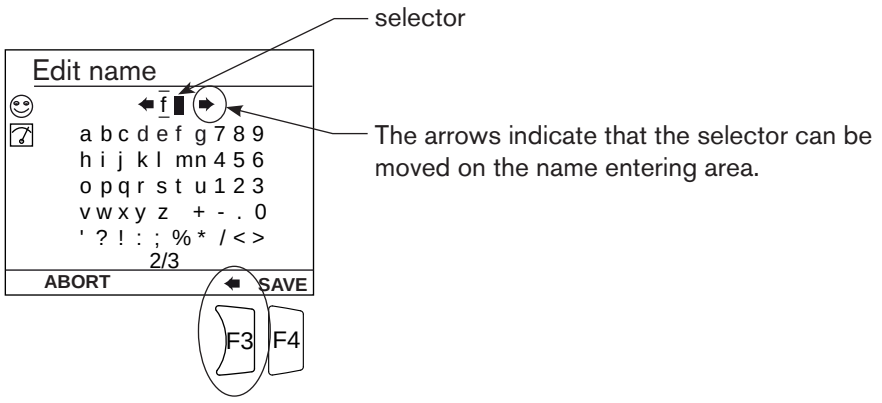
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→ To move the cursor in the data entering area using keys ◁ and ▷, first move the selector into the data entering area using the keys ▽ and △.

→ To insert a character in place of the cursor, move the selector over this character and press key F3 (function "SEL").

→ To remove the character before the cursor, move the selector into the data entering area then press key F3 (function "backspace"):



To retrieve the original name of a variable, even after modification and saving:

→ move the selector into the customized name entering area.

→ delete all the characters.

→ save.

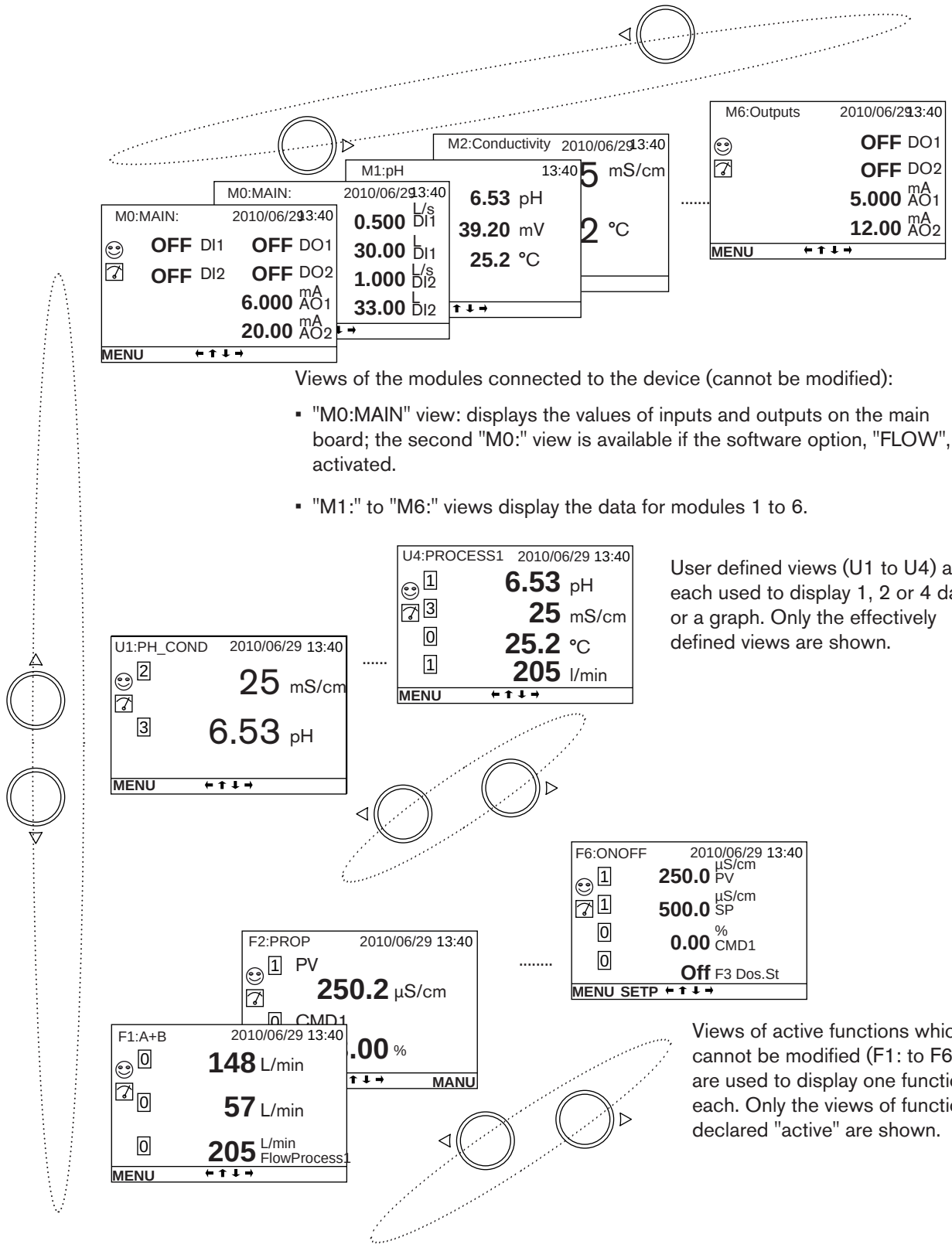
8.6. Operating levels

The device has 2 operating levels: the **Process level** and the **Configuration level** which is made of the following 5 menus : "Parameters", "Calibration", "Diagnostics", "Tests" and "Information".

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8.7. Process level



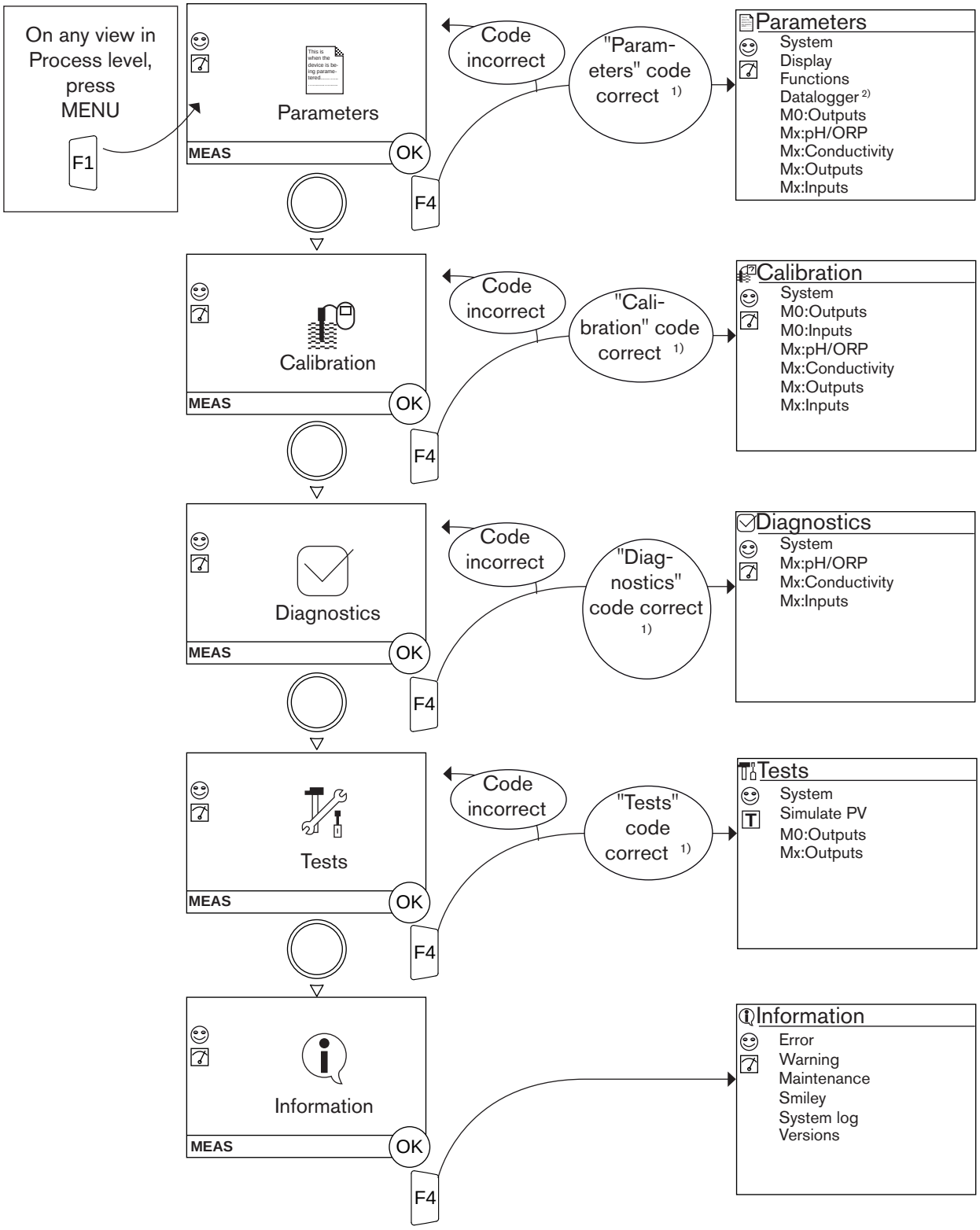
Views of the modules connected to the device (cannot be modified):

- "M0:MAIN" view: displays the values of inputs and outputs on the main board; the second "M0:" view is available if the software option, "FLOW", is activated.
- "M1:" to "M6:" views display the data for modules 1 to 6.

User defined views (U1 to U4) are each used to display 1, 2 or 4 data or a graph. Only the effectively defined views are shown.

Views of active functions which cannot be modified (F1: to F6:) are used to display one function each. Only the views of functions declared "active" are shown.

8.8. Configuration level access



1) The code is not requested if the default code "0000" is used.

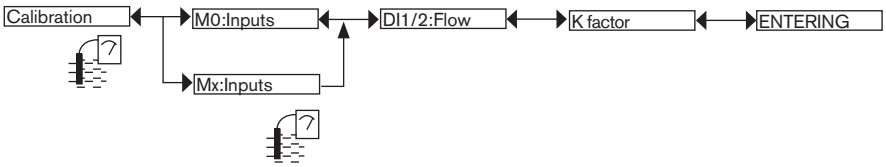
2) This menu is available as an option.

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8.9. Calibrating the measuring sensors

8.9.1. Calibrating a flow sensor

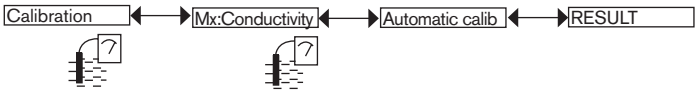
→ Enter the K factor in pulse/liter unique to the fitting used. Refer to the user manual of the fitting used.



8.9.2. Calibrating a conductivity sensor

→ Choose the reference solution used in the menu "Parameters -> Mx:Conductivity -> Buffer".

→ Calibrate the conductivity sensor by automatically determining its specific C constant.

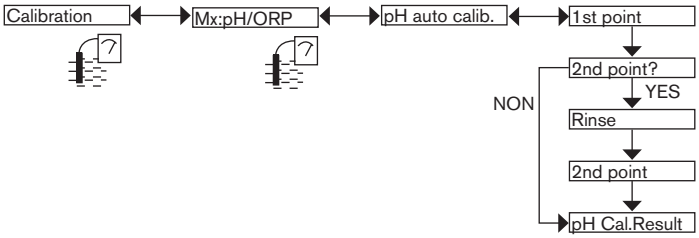


8.9.3. Calibrating a pH sensor

- In order not to interrupt the process, activate the HOLD function in the menu "Calibration -> System -> Hold". The Hold mode is automatically deactivated when the multiCELL restarts after a power interruption, if the Hold mode was activated at the moment of the power cut-off.
- Before each calibration, correctly clean the electrode with a suitable product.

→ Choose the buffer solution used, in the menu "Parameters -> Mx:pH/ORP -> Buffer". The multiCELL automatically recognizes the pH of the buffer used.

→ Automatically calibrate the pH sensor:



The calibration may fail:

- a possible "warning" message indicates either an error in the buffer solution or the ageing of the probe.
- a possible "error" message indicates that the probe must be replaced.

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8.9.4. Calibrating a redox sensor

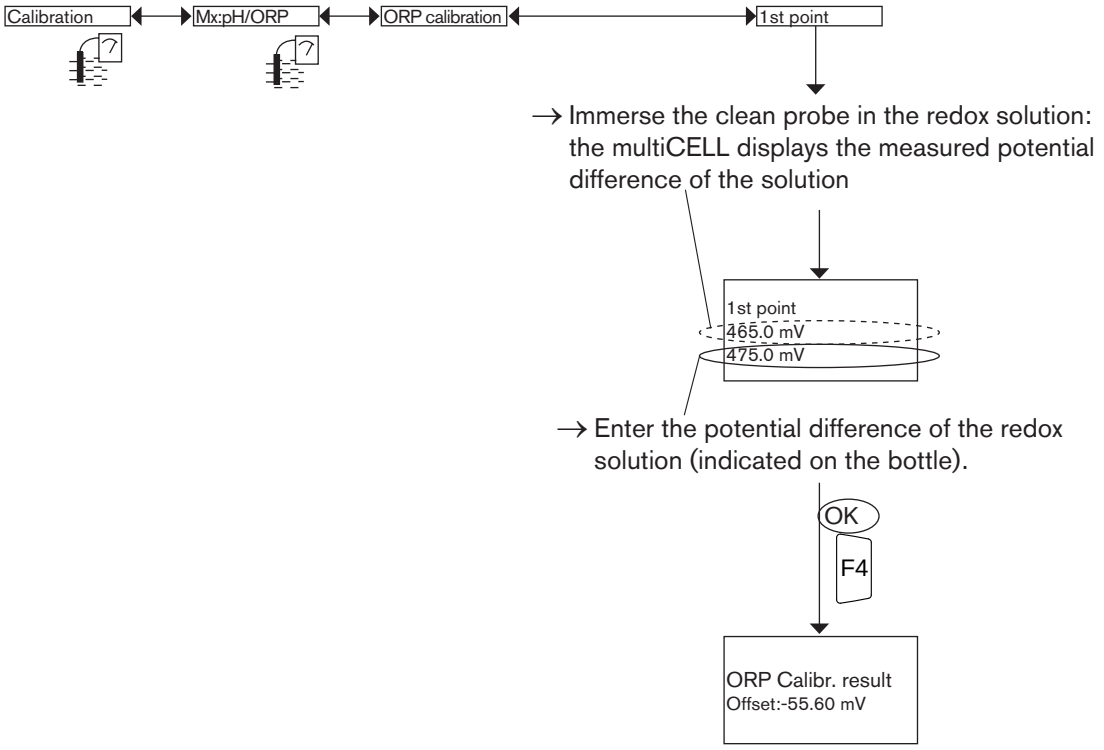
- Modify the default calibration limits before calibrating your sensor in the menu "Parameters" -> "Mx:pH/ORP" -> "Calibration limits" -> "Offset ORP".
- In order not to interrupt the process, activate the HOLD function in the menu "Calibration -> System -> Hold". The Hold mode is automatically deactivated when the multiCELL restarts after a power interruption, if the Hold mode was activated at the moment of the power cut-off.
- Before each calibration, correctly clean the electrode with a suitable product.

→ Calibrate the redox sensor using a 1-point procedure.

The calibration may fail:

- a possible "warning" message indicates either an error in the buffer solution or the ageing of the probe.
- a possible "error" message indicates that the probe must be replaced.

The 1-point calibration procedure is used for a quick calibration by adjusting the zero of the measurement graph with a buffer solution with a known oxidation reduction potential.

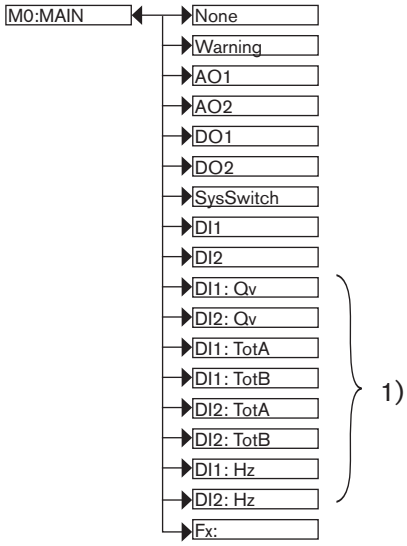


The multiCELL displays the calibration result. [1)]

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8.10. Process inputs or values

8.10.1. On the M0:MAIN board



1) Available on the device if the software option "FLOW" is active

"Warning" = event generated by the multiCELL

"AOx" = analogue output

"DOx" = digital output

"System switch" = when the corresponding event is configured and activated

"DIx" = digital input

"DIx Qv" = flow rate on digital input DIx

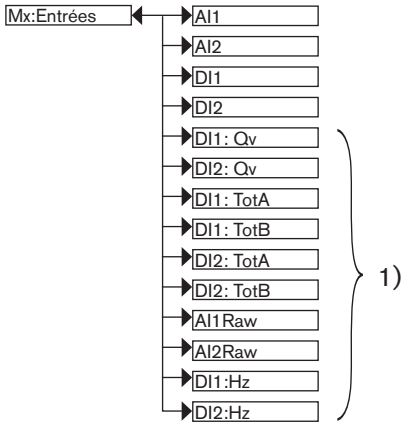
"DIx TotA" = totalizer A on digital input DIx

"DIx TotB" = totalizer B on digital input DIx

"DIx Hz" = frequency on digital input DIx

"Fx:" = result of configured and activated functions

8.10.2. On the input module



1) Available on the device if the software option "FLOW" is active

"AIx" = scaled process variable.

"DIx" = digital input

"DIx Qv" = flow rate on digital input DIx

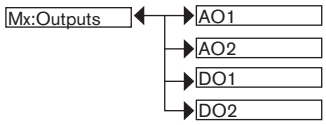
"DIx TotA" = totalizer A on digital input DIx

"DIx TotB" = totalizer B on digital input DIx

"AIxRaw" = current or voltage standard signal on analogue input AIx

"DIx Hz" = frequency on digital input DIx

8.10.3. On the additional outputs module

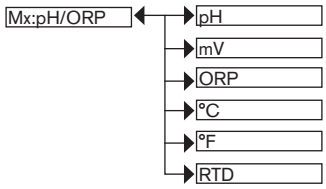


"AOx" = analogue output

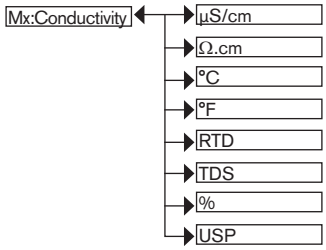
"DOx" = digital output

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8.10.4. On the pH/redox module

	"pH" = measured pH of the fluid "mV" = measured pH of the fluid in mV "ORP" = measured oxidation reduction potential of the fluid in mV "°C" = measured temperature of the fluid in °C "°F" = measured temperature of the fluid in °F "RTD" = resistance of the temperature input in Ω

8.10.5. On the conductivity module

	"µS/cm" = measured conductivity of the fluid " Ω.cm" = resistivity "°C" = measured temperature of the fluid in °C "°F" = measured temperature of the fluid in °F "RTD" = input resistance of the temperature stage in Ω "TDS" = quantity of dissolved solids in the fluid in ppm "%" = mass concentration of the fluid (software option) "USP" = state of the USP function

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9. MAINTENANCE AND TROUBLESHOOTING

9.1. Safety instructions

DANGER

Risk of injury due to electrical discharge.

- Shut down and isolate the electrical power source before carrying out work on the system.
- Observe all applicable accident protection and safety regulations for electrical equipment.

WARNING

Risk of injury due to non-conforming maintenance.

- Maintenance must only be carried out by qualified and skilled staff with the appropriate tools.
- Guarantee a set or controlled restarting of the process, after a power supply interruption.

9.2. Maintenance of the multiCELL

The multiCELL can be cleaned with a duster slightly moistened with water with possible addition of a detergent compatible with the materials it is made of.

Please feel free to contact your Bürkert supplier for any additional information.

9.3. If you encounter problems

The following table gives the association between the LEDs, the icons and the types of events generated by the device.

The messages generated in the system log are detailled in the complete instruction manual.

LEDs		Displayed icons					Type of event and possible cause
left	right	Smiley	Error	Warning	Maintenance		
green	green	☺					Normal operating and default icon if no diagnostic function is active on the device.
green	red	☹	⊗				"Error" event linked to the diagnostic.
red	green	☺	⊗				"Error" event linked to the device.
green	orange	☺		⚠			"Warning" event linked to the diagnostic.
orange	green	☺		⚠			"Warning" event linked to the device.
red	green	☺		⚠	🔧		"Maintenance" event linked to the calibration.
any colour	any colour	any colour				☒	Problem linked to the datalogger

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10. SPARE PARTS AND ACCESSORIES

CAUTION

Risk of injury and/or material damage caused by the use of unsuitable parts.

Incorrect accessories and unsuitable replacement parts may cause injuries and damage the device and the surrounding area.

- Use only original accessories and original replacement parts from Bürkert.

11. PACKAGING, TRANSPORT

ATTENTION

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.

12. STORAGE

CAUTION

Poor storage can damage the device.

- Store the device in a dry place away from dust.
- Storage temperature: -20 ... +70°C, restricted to 0 ... +70°C if a memory card is inserted

13. DISPOSAL OF THE DEVICE

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

CAUTION

Damage to the environment caused by products contaminated by fluids.

- Keep to the existing provisions on the subject of waste disposal and environmental protection.

Note

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

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