



multiCELL - multi-channel/multi-function transmitter/controller

- Compatible with most common flow, pH/ORP, chlorine and conductivity sensors
- Simple, intuitive user interface with a large adjustable backlit graphics display (4 user defined views)
- Hardware extension possibilities (up to 6 free slots)
- Industrial Ethernet (Modbus TCP, PROFINET or EtherNet/IP) option available
- Functionality extendable by software options

Product variants described in the data sheet may differ from the product presentation and description.

Can be combined with

	Type 8200 Armatures for analysis sensors	►
	Type 8201 pH measuring system for hygienic applications	►
	Type 8203 pH- and ORP-probes	►
	Type 8221 Conductivity sensor for hygienic applications	►
	Type 8030 Inline flowmeter for continuous measurements	►
	Type 8232 Chlorine sensor	►

Type description

The Type 8619 multichannel and multifunction transmitter/controller, available in two housing variants for panel or wall mounting, is a microprocessor transmitter/controller for connection of sensors which deliver raw signals for pH, ORP, conductivity and flow via pulses or sensors (like pressure, level, chlorine...) which deliver analogue signals (0...20 mA, 4...20 mA, 0...2 V, 0...5 V, 0...10 V).

Type 8619 is the ideal device for measurement and control, as well as dosing processes e.g. in applications of water treatment plants (like boiler, cooling tower or reverse osmosis systems) and food and pharma plants. Modularity in hardware and software offers high flexibility for adjusting it to the applications resulting in a very good price to functionality relation. Sophisticated electronics and state of the art control algorithms ensure that optimum process control is maintained at all times with minimal operator intervention while achieving the highest quality.

Thanks to full support of the Modbus TCP, PROFINET (Conformance Class B) or EtherNet/IP, the Type 8619 can be integrated into most Industrial Ethernet environments. Therefore all important process values like measurement data, process diagnostics or device status can be easily integrated into the automation system.

Table of contents

1. General technical data	4
1.1. About the device.....	4
1.2. All variants.....	4
1.3. Transmitter/controller multiCELL	6
1.4. Transmitter/controller multiCELL WM DC	7
1.5. Transmitter/controller multiCELL WM AC.....	8
2. Product variants	9
2.1. Input module.....	9
2.2. Output module	10
2.3. Inputs module for pH/ORP and Pt100/Pt1000 sensors.....	10
2.4. Inputs module for conductivity and Pt100/Pt1000 sensors.....	11
2.5. Ethernet module (industrial communication).....	11
3. Approvals and conformities	13
3.1. General notes	13
3.2. Conformity	13
3.3. Standards.....	13
3.4. North America (USA/Canada)	13
3.5. Others	13
Network protocol.....	13
4. Materials	14
4.1. Material specifications	14
Panel-mounted variant	14
Wall-mounted variant.....	15
5. Dimensions	16
5.1. Panel-mounted variant	16
5.2. Wall-mounted variant.....	17
6. Performance specifications	18
6.1. Current temperature diagram.....	18
7. Product operation	18
7.1. Principle of operation	18
7.2. Functional overview	19
Process diagram	19
List of available functions.....	19
Concentration table multiCELL	21
8. Product design and assembly	21
8.1. Product features	21
Panel-mounted variant	21
Wall-mounted variant.....	22
9. Networking and combination with other Bürkert products	23
10. Ordering information	24
10.1. Bürkert eShop	24
10.2. Recommendation regarding product selection.....	24
10.3. Bürkert product filter.....	24
10.4. Bürkert Product Enquiry Form	24

10.5.	Ordering chart	25
	Panel-mounted variant, 12...36 V DC.....	25
	Wall-mounted variant, 12...36 V DC	26
	Wall-mounted variant, 110...240 V AC	27
	Additional software functions for Type 8619.....	28
10.6.	Ordering chart accessories.....	28

1. General technical data

1.1. About the device

The Type 8619 is a multifunction device intended to display, record, transmit, exchange and regulate various physical parameters. It is available in two housing variants:

- The panel-mounted variant with a DC operating voltage, called multiCELL, is in a standardized ¼ DIN housing for 92 × 92 mm cutout to be mounted in the door of the electrical enclosure or cabinet and attached using 4 fastening elements.



- The wall-mounted variant with a DC or an AC operating voltage, respectively called multiCELL WM DC or multiCELL WM AC is in a housing to be mounted on a wall with help of mounting plate.



1.2. All variants

The following data applies to all variants.

Product properties	
Material	
Further information on the materials can be found in chapter “4.1. Material specifications” on page 14.	
Front panel film	Front panel coating and keys in silicone
Cover	PC (transparent, polished for display)
Cover seal	Silicone
Support plate for terminal strip	Stainless steel 304
Terminal strip	PBT, contact in gold-plated copper alloy
Protective cap	PA66 (for a slot without connection terminal)
Grounding screw and spring washer	Stainless steel 316 (A4)
Port for an RJ45 connector	• Housing: copper alloy and thermoplastic • Contacts: gold-plated
Display	• LC graphic display • Light blue backlighted • 128 × 168 pixels resolution • German, English, French languages
Keypad	• 4 soft keys [F1] [F2] [F3] [F4] for dynamic functions • 1 central navigation key with [↑] [↓] [→] [←] assignments
Dimensions	Further information can be found in chapter “5. Dimensions” on page 16.
Module slot	6
Sensor monitor	Direct display and verification of measured sensor values
Data logger	Up to 16 values
Clock	Real-time clock with date
Memory card	SD (Secure Digital) or SDHC (Secure Digital High Capacity), max. 8 GB capacity
Note: We recommend using the 8 GB SDHC memory card available at Bürkert (see chapter “10.6. Ordering chart accessories” on page 28) because it has been tested with and validated for the Type 8619 transmitter/controller. Another memory card may not operate correctly. With 8 values recorded every 10 sec., the 8 GB card allows continuous recording over 500 days.	
Performance data	
4...20 mA output resolution	6 µA

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Electrical data

Input/Output

Digital input	DI1, DI2 - Voltage: 0...36 V DC ^{1.)} - Switching threshold: V_{on}: 5...36 V DC ^{1.)} V_{off}: < 2 V DC - Input impedance: 3 kΩ - Frequency: 0.5...2500 Hz - Galvanically isolated - Protected against DC polarity reversal and voltage spikes
Digital output	DO1, DO2 - Transistor - Any connection in PNP or NPN mode - Galvanically isolated - Protected against short circuit - Max. 36 V DC ^{1.)} - Frequency: max. 2000 Hz - Current consumption allowed: - max. 700 mA if 1 DO per module is activated - max. 1 A if the 2 DO's per module are activated - max. 4 A for an Ethernet variant if the device has 4 output modules - Operating modes: On/Off, Hysteresis, Window, fast PWM, PWM, PFM, Pulse
Analogue output	AO1, AO2 - Current: 4...20 mA - Any connection in source or sink mode - Galvanically isolated - Protected against DC polarity reversal - Max. loop impedance: 1100 Ω at 36 V DC ^{1.)}, 860 Ω at 30 V DC, 610 Ω at 24 V DC, 100 Ω at 12 V DC

Connections & communication

Electrical connection	Terminal blocks, RJ45 connector (hybrid for panel-mounted variant)
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Approvals and conformities

Directives

CE directive	Further information on the CE Directive can be found in chapter "3.3. Standards" on page 13.
North America (USA/Canada)	- UL Listed for the USA and Canada - UL Recognized for the USA and Canada Further information can be found in chapter "3.4. North America (USA/Canada)" on page 13.
Others	Network protocol: - PROFINET - EtherNet/IP Further information can be found in chapter "Network protocol" on page 13.

Environment and installation

Ambient temperature	Storage: - 20...+ 70 °C (- 4...+ 140 °F), limited to - 10...+ 70 °C (+ 14...+ 140 °F) if memory card is inserted
Relative air humidity	< 85 %, without condensation
Height above sea level	Max. 2000 m
Operating condition	Continuous
Equipment mobility	Fixed device
Application range	Indoor and outdoor Protect the device against electromagnetic interference, ultraviolet rays and, when installed outdoors, against the effects of climatic conditions.

1.) If the device is mounted in a humid environment or outside, then the maximum voltage allowed is 35 V DC instead of 36 V DC.

1.3. Transmitter/controller multiCELL

Note:

If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Product properties

Material

Further information on the materials can be found in chapter **"Panel-mounted variant" on page 14.**

Housing	PPO
Fastening element	PPO

Electrical data

Operating voltage	- Marked "SUPPLY" on terminal block 12...36 V DC $\pm 10\%$, max. 2 A, filtered and regulated - Connection to main supply: permanent, through external SELV (Safety Extra Low Voltage) and LPS (Limited Power Source) power supply
Power source (not supplied)	Limited power source according to UL/EN 62368-1 standards or limited energy circuit according to UL/EN 61010-1 §9.4
Power consumption	- Device: without additional modules and outputs not connected - Max. 1.5 VA
Power distribution	- Marked "PWR OUT" on terminal block 12...36 V DC, max. 1.8 A - Protected against polarity reversals of DC
Voltage supply cable	- Cable with maximum operating temperature greater than +90 °C (+194 °F) - Cross section of - Earth connection conductor: 0.75...1.5 mm² - Rigid H05(07) V-U: 0.2...1.5 mm², stripped over 7 mm, shielded cable - Flexible H05(07) V-K: 0.2...1.5 mm², stripped over 7 mm, shielded cable - Conductor with non-insulated lug: 0.2...1.5 mm², stripped over 7 mm, shielded cable - Conductor with an insulated lug: 0.2...0.75 mm², stripped over 7 mm, shielded cable

Environment and installation

Ambient temperature	Operation (with/without memory card ¹⁾): - Only with main module: -10...+70 °C (+14...+158 °F) - With min. one additional module: -10...+60 °C (+14...+140 °F)
Degree of protection	- IP65 ²⁾ according to IEC/EN 60529 (panel-mounted, cabinet closed) - IP20 ²⁾ according to IEC/EN 60529 (panel-mounted, inside the cabinet) - NEMA250 4X (panel-mounted, in front of the closed cabinet)
Installation category	Category I according to UL/EN 61010-1
Pollution degree	Degree 2 according to UL/EN 61010-1

1.) If a different memory card is used, observe the operating temperatures specified by its manufacturer.

2.) Not evaluated by UL

1.4. Transmitter/controller multiCELL WM DC

Note:

If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Product properties

Material

Further information on the materials can be found in chapter **"Wall-mounted variant"** on page 15.

Cover screw	PVC
Reinforcement hinge	PA66
Housing	PA66
Fastening element	PA66
Cable gland	PA66
Protecting cover (for display)	PA66

Electrical data

Operating voltage	- Marked "12...36 V DC" on terminal block 12...36 V DC $\pm 10\%$, max. 2 A, filtered and regulated - Connection to main supply: permanent, through external SELV (Safety Extra Low Voltage) and LPS (Limited Power Source) power supply
Power source (not supplied)	Limited power source according to UL/EN 62368-1 standards or limited energy circuit according to UL/EN 61010-1 §9.4
Power consumption	- Device: without additional modules and outputs not connected - Max. 2 VA
Power distribution	- Marked "POWER OUT" on terminal block 12...36 V DC, max. 1.8 A - Protected against polarity reversals of DC
Voltage supply cable	- Cable with maximum operating temperature greater than +90 °C (+194 °F) - External diameter: 6...12 mm (4 mm if using a multiple entry seal) - Cross section of - Earth connection conductor: min. 1.5 mm² - Rigid conductor H05(07) V-U: 0.2...1.5 mm², stripped over 7 mm, shielded cable - Flexible conductor H05(07) V-K: 0.2...1.5 mm², stripped over 7 mm, shielded cable - Conductor with non-insulated lug: 0.2...1.5 mm², stripped over 7 mm, shielded cable - Conductor with an insulated lug: 0.2...0.75 mm², stripped over 7 mm, shielded cable

Environment and installation

Ambient temperature	Operation (with/without memory card ¹⁾): - Only with main module: -10...+75 °C (+14...+167 °F) - With min. one additional module: -10...+60 °C (+14...+140 °F)
Degree of protection ²⁾ according to IEC/EN 60529	IP65, IP67, if the following conditions are met: - Glands body tightened with a tightening torque of 5.5 Nm $\pm 20\%$, made at factory - Glands blanked off or wired - Gland nuts tightened with a tightening torque of 4.5 Nm $\pm 20\%$ - Housing closed and 4 screws of cover cross tightened with a tightening torque of 1.4 Nm $\pm 20\%$
Installation category	Category I according to UL/EN 61010-1
Pollution degree	Degree 2 according to UL/EN 61010-1

1.) If a different memory card is used, observe the operating temperatures specified by its manufacturer.

2.) Not evaluated by UL

1.5 Transmitter/controller multiCELL WM AC

Product properties

Material

Further information on the materials can be found in chapter ["Wall-mounted variant" on page 15](#).

Cover screw	PVC
Reinforcement hinge	PA66
Housing	PA66
Fastening element	PA66
Cable gland	PA66
Protecting cover (for display)	PA66
Protective cover of AC terminal strip	Stainless steel 304

Electrical data

Operating voltage	- Marked "110-240 V~ / 50/60 Hz" on terminal block 110...240 V AC, 50...60 Hz, max. 550 mA - Integrated protection: 3.15 A time delay fuse
Power consumption	- Device: without additional modules and outputs not connected - Max. 2 VA
Power distribution	- Marked "POWER OUT" on terminal block 24 V DC $\pm 2\%$, filtered and regulated, max. 1.3 A - SELV (safety extra low voltage) circuit with a non-dangerous energy level - Protected against polarity reversals of DC - The allowed maximal current depends on the ambient temperature: see chapter "6.1. Current temperature diagram" on page 18
Voltage supply cable	- Cable with maximum operating temperature greater than + 90 °C (+ 194 °F) - External diameter: 6...12 mm (4 mm if using a multiple entry seal) - Cross section of - Earth connection conductor: min. 1.5 mm² - Rigid conductor H05(07) V-U: 0.2...1.5 mm², stripped over 7 mm, shielded cable - Flexible conductor H05(07) V-K: 0.2...1.5 mm², stripped over 7 mm, shielded cable - Conductor with non-insulated lug: 0.2...1.5 mm², stripped over 7 mm, shielded cable - Conductor with an insulated lug: 0.2...0.75 mm², stripped over 7 mm, shielded cable

Environment and installation

Ambient temperature	Operation (with/without memory card ¹⁾): - Only with main module: - 10...+ 70 °C (+ 14...+ 158 °F) - With min. one additional module: - 10...+ 60 °C (+ 14...+ 140 °F)
Degree of protection ²⁾ according to IEC/EN 60529	IP65, IP67, if the following conditions are met: - Glands body tightened with a tightening torque of 5.5 Nm $\pm 20\%$, made at factory - Glands blanked off or wired - Gland nuts tightened with a tightening torque of 4.5 Nm $\pm 20\%$ - Housing closed and 4 screws of cover cross tightened with a tightening torque of 1.4 Nm $\pm 20\%$
Installation category	Category II according to UL/EN 61010-1
Pollution degree	Degree 3 according to UL/EN 61010-1 if the following conditions are met: housing tightly closed and the 4 screws of the cover are tightened crosswise at a torque of 1.4 Nm $\pm 20\%$

1.) If a different memory card is used, observe the operating temperatures specified by its manufacturer.

2.) Not evaluated by UL

2. Product variants

Five different types of modules are available and can be inserted into any of the 6 slots (preconfigured at the factory).

- Input module:
 - 2 analogue inputs (4...20 mA or 0...20 mA or 0...2 V or 0...5 V or 0...10 V) and
 - 2 digital inputs (static or frequency/pulse)
- Output module:
 - 2 transistor outputs and
 - 2 analogue 4...20 mA outputs
- Inputs module for pH/ORP and Pt100/Pt1000 sensors
- Inputs module for conductivity and Pt100/Pt1000 sensors
- Ethernet module: Modbus TCP, PROFINET Conformance Class B and EtherNet/IP

2.1. Input module

Electrical data	
Power consumption	0.1 VA
Digital input	DI1, DI2 • Voltage: 0...36 V DC ¹⁾ • Switching threshold: – V_{on}: = 5...36 V DC ¹⁾ – V_{off}: < 2 V DC • Input impedance: 3 kΩ • Frequency: 0.5...2500 Hz • Galvanically isolated • Protected against DC polarity reversal and voltage spikes
Analogue input	AI1, AI2 • Any connection in source or sink mode • Galvanically isolated • Current – Range: 0 or 3.5...22 mA – Maximal voltage: 36 V DC ¹⁾ – Impedance: 50 Ω – Resolution: 1.5 μA • Voltage – Range: 0...2 or 5 or 10 V DC – Maximal voltage: 36 V DC ¹⁾ – Impedance: 110 kΩ – Resolution: 1 mV • Measuring deviation: $\pm 0.25\%$ of measured value

2.2. Output module

Electrical data	
Power consumption	0.1 VA
Digital output	DO1, DO2 • Transistor • Any connection in PNP or NPN mode • Galvanically isolated • Protected against short circuit • Max. 36 V DC ^{1.)} • Frequency: max. 2000 Hz • Current consumption allowed: – max. 700 mA if 1 DO per module is activated – max. 1 A if the 2 DO's per module are activated – max. 4 A for an Ethernet variant if the device has 4 output modules • Operating modes: On/Off, Hysteresis, Window, PWM, PFM
Analogue output	AO1, AO2 • Current: 4...20 mA • Any connection in source or sink mode • Galvanically isolated • Protected against DC polarity reversal • Max. loop impedance: 1100 Ω at 36 V DC ^{1.)}, 610 Ω at 24 V DC, 100 Ω at 12 V DC • Resolution: 6 µA • 4...20 mA output uncertainty: ± 0.5 % of the transmitted value

2.3. Inputs module for pH/ORP and Pt100/Pt1000 sensors

Electrical data	
Power consumption	0.1 VA
pH/ORP input	Simultaneous pH and ORP measurement with input for electrochemical pH/ORP • pH measurement – Probe type: electrochemical – Measuring range: - 2.0...+ 16 pH or - 600...+ 600 mV – Measurement deviation: ± 0.02 pH or 1 mV + error of the pH probe ^{1.)} – Resolution: 0.01 pH or 0.1 mV • ORP measurement – Probe type: electrochemical – Measuring range: - 2000...+ 2000 mV – Measurement deviation: ± 1 mV + error of the ORP probe ^{1.)} – Resolution: 0.1 mV
Temperature input	Temperature measurement • Probe type: Pt100/Pt1000, 2 or 3 wires • Measuring range: - 25...+ 130 °C (- 20...+ 266 °F) • Measurement deviation: ± 1 °C (1.8 °F) + error of the temperature probe ^{1.)} • Resolution: 0.1 °C (0.18 °F)

1.) See corresponding probe data sheet

2.4. Inputs module for conductivity and Pt100/Pt1000 sensors

Electrical data	
Power consumption	0.25 VA
Resistance measurement	5.0 Ω...1 MΩ (without conductivity probe connected)
Conductivity input	• Operation with 2 or 4-pin technology sensors • Conductivity measurement – With connected conductivity probe – Measuring range: 0 μS/cm...2 S/cm (depending on the conductivity cell) – Measurement deviation: ± 0.5 % of measured value + error of the conductivity probe ^{1.)} – Resolution: 1 nS/cm • Resistivity measurement – With connected conductivity probe – Measuring range: 0.5 Ω-cm...100 MΩ-cm (depending on the conductivity cell) – Measurement deviation: ± 0.5 % of measured value + error of the conductivity probe ^{1.)} – Resolution: 0.1 Ω-cm
Temperature input	Temperature measurement • Probe type: Pt100/Pt1000, 2 or 3 wires • Measuring range: - 40...+ 200 °C (- 40...+ 392 °F) • Measurement deviation: ± 1 °C (1.8 °F) + error of the temperature probe ^{1.)} • Resolution: 0.1 °C (0.18 °F)

1.) See corresponding probe data sheet

2.5. Ethernet module (industrial communication)

Electrical data	
Power consumption	2.2 VA
Connection cable	• Shielded cable: FTP minimum required • Minimum category: 5e / CAT-5 • Length: max. 100 m
Connections & communication	
Electrical connection	2 ports for an RJ45 connector (not provided) Note: to make sure the door of a wall-mounted Ethernet variant can be fully closed, use RJ45 male connectors with maximum dimensions of 45 mm, including the bend radius of the Ethernet cable.
Industrial Communication	
Supported network protocol	• Modbus TCP • PROFINET • EtherNet/IP
Light-emitting diode	• 2 Link/Act LEDs (yellow) • 2 Link LEDs (green)
Modbus TCP protocol	
Protocol	Internet protocol, version 4 (IPv4)
Network topology	• Tree • Star • Line (open daisy chain)
IP configuration	• Static IP address • BOOTP (Bootstrap Protocol) • DHCP (Dynamic Host Configuration Protocol)
Transmission speed	10 or 100 MBit/s

PROFINET protocol

PROFINET IO specification	V2.3
Network topology	• Tree • Star • Ring (closed daisy chain) • Line (open daisy chain)
Network management	• LLDP (Link Layer Discovery Protocol) • SNMP V1 (Simple Network Management Protocol) • MIB (Management Information Base)
IP configuration	• DCP (Discovery and Configuration Protocol) • Manual (Device naming and IP setting)
Transmission speed	100 MBit/s full duplex
Maximum supported conformance class	CC-B
Media Redundancy (for ring topology)	MRP client is supported
GSDml file	See "Device Description Files" on the website in the Software chapter Type 8619 ►

EtherNet/IP protocol

Protocol	Internet protocol, version 4 (IPv4)
Network topology	• Tree • Star • Ring (closed daisy chain) • Line (open daisy chain)
IP configuration	• Static IP address • BOOTP (Bootstrap Protocol) • DHCP (Dynamic Host Configuration Protocol)
Transmission speed	10 or 100 MBit/s
Duplex mode	Half duplex, full duplex, auto-negotiation
MDI mode (Medium Dependant Interface)	Auto-MDIX
Predefined standard object	• Identity • Message Router • Assembly • Connection Manager • DLR • QoS • TCP/IP Interface • EtherNet Link object
Device specified object	• I/O main board M0 • Functions • Extension modules • Ethernet module
EDS file	See "Device Description Files" on the website in the Software chapter Type 8619 ►

3. Approvals and conformities

3.1. General notes

- The approvals and conformities listed below must be stated when making enquiries. This is the only way to ensure that the product complies with all required specifications.
- Not all available variants can be supplied with the below mentioned approvals or conformities.

3.2. Conformity

In accordance with the Declaration of Conformity, the product is compliant with the EU Directives.

3.3. Standards

The applied standards which are used to demonstrate compliance with the EU Directives are listed in the EU Type Examination Certificate and/or the EU Declaration of Conformity.

3.4. North America (USA/Canada)

Approval	Description
	Optional: UL Listed for the USA and Canada The products with the variable code PU02 are UL Listed for the USA and Canada according to: • UL 61010-1 (ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL, AND LABORATORY USE – Part 1: General Requirements) • CAN/CSA-C22.2 No. 61010-1 Certificate number: 2017-10-27-E237737
	Optional: UL Recognized for the USA and Canada The products with the variable code PU01 are UL Recognized for the USA and Canada according to: • UL 61010-1 (ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL, AND LABORATORY USE – Part 1: General Requirements) • CAN/CSA-C22.2 No. 61010-1

3.5. Others

Network protocol

Approval	Description
	PROFINET Certificate number: Z11949
	EtherNet/IP Document number: 11654

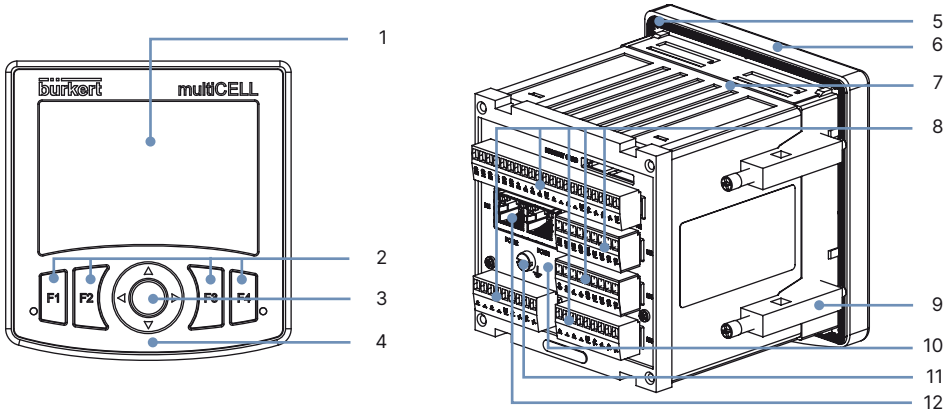
4. Materials

4.1. Material specifications

Panel-mounted variant

Note:

The following picture describes a device in the Ethernet variant.

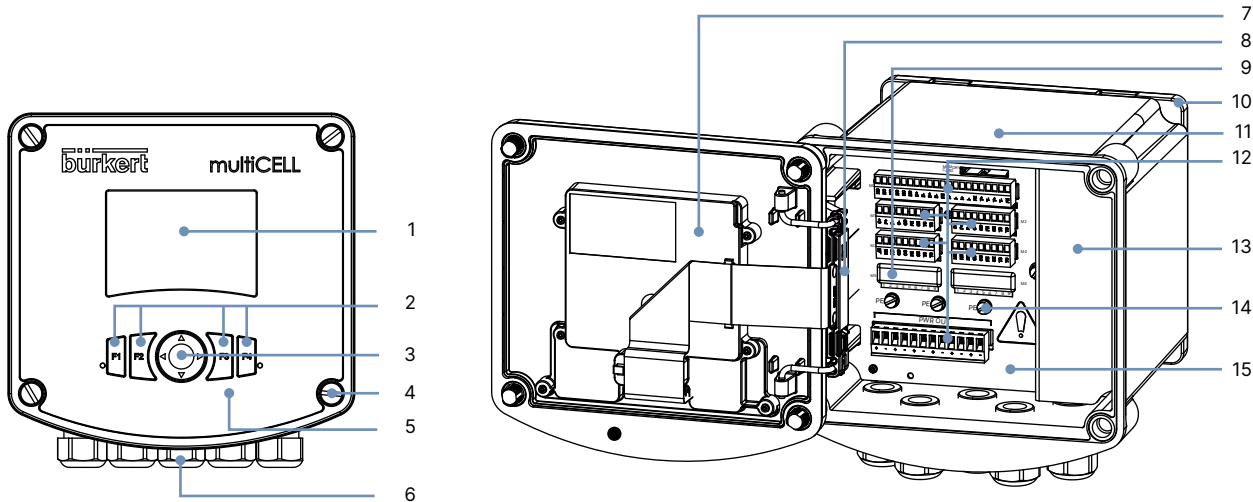


No.	Element	Material
1	Display	PC
2	Dynamic keys	Silicone
3	Navigation key	Silicone
4	Front panel coating	Silicone
5	Seal	Silicone
6	Front panel	PC
7	Housing	PPO
8	Terminal blocks	PBT, gold-plated copper alloy contact
9	Fastening element	PPO
10	Support plate for terminals	Stainless steel 304
11	Ground screw	Stainless steel 316 (A4)
12	Port for an RJ45 connector	Gold-plated copper alloy contact, thermoplastic

Wall-mounted variant

Note:

The following picture describes a device in the Ethernet variant.



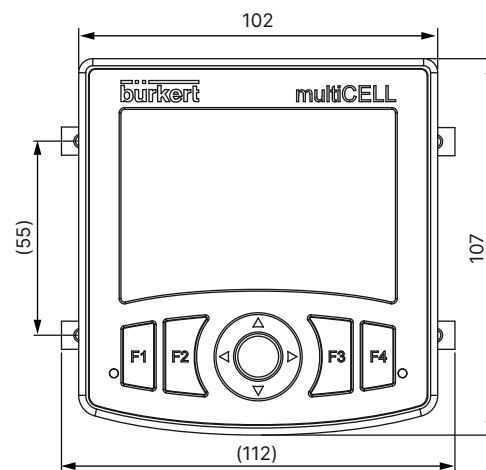
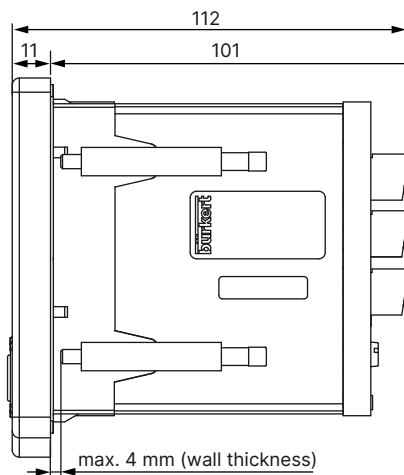
No.	Element	Material
1	Display	PC
2	Dynamic keys	Silicone
3	Navigation key	Silicone
4	Cover screws	PVC
5	Front panel coating	Silicone
6	Cable glands	PA66
7	Protecting cover (for display)	PA66
8	Stiffener hinge	PA66
9	Protecting cap (free terminal place)	PA66
10	Fastening plate	PA66
11	Housing	PA66
12	Terminal blocks	PBT, gold-plated copper alloy contact
13	Protective cap of AC terminal block	Stainless steel 304
14	Ground screw	Stainless steel 316 (A4)
15	Support plate for terminals	Stainless steel 304

5. Dimensions

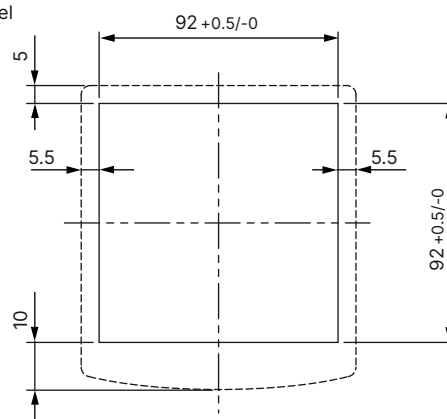
5.1. Panel-mounted variant

Note:

Dimensions in mm, unless otherwise stated



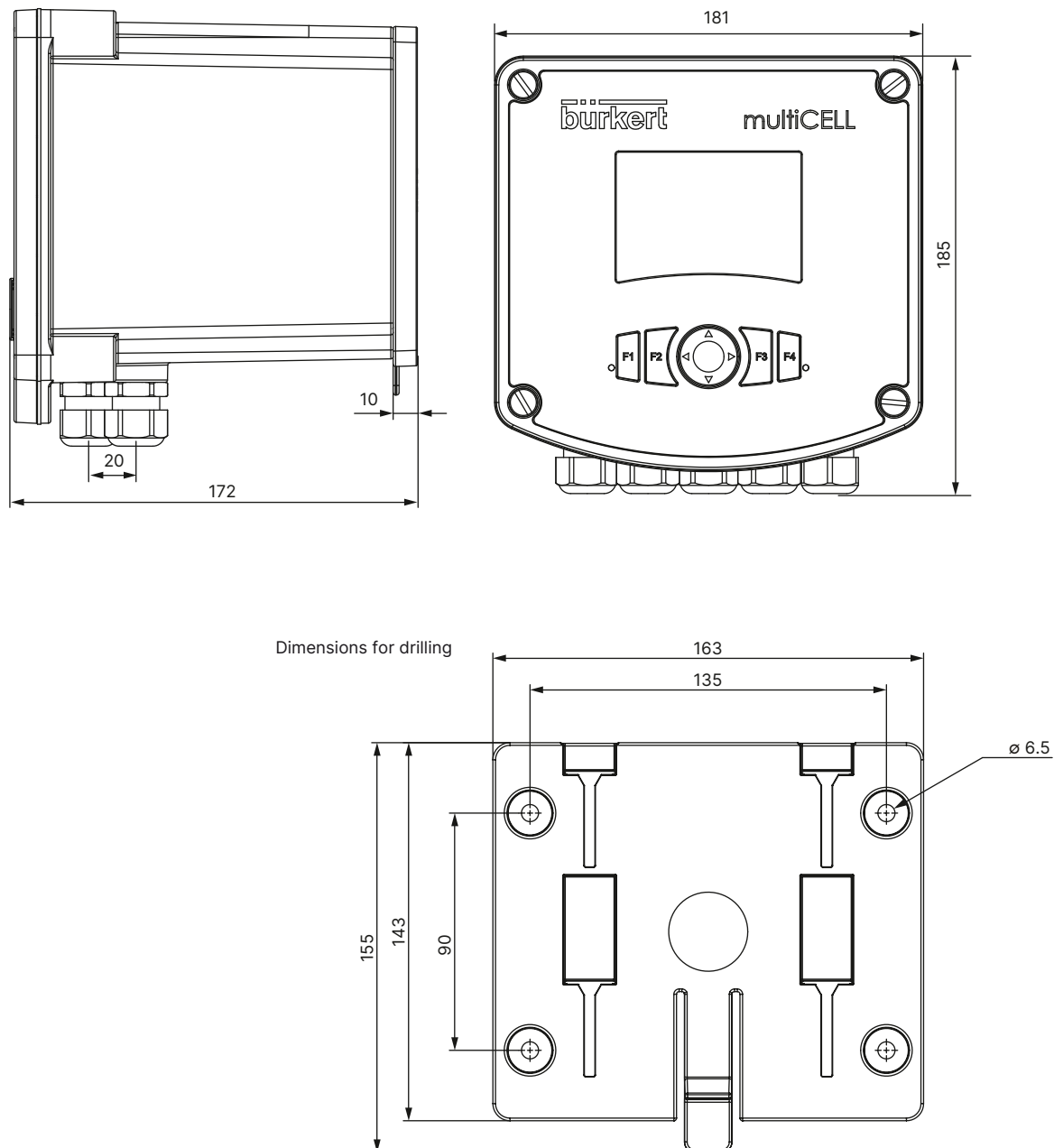
Cut-off panel



5.2. Wall-mounted variant

Note:

- Dimensions in mm, unless otherwise stated
- The wall mounted housing variant can also be fastened to on a pipeline with a mounting set (must be ordered separately, see chapter ["10.6. Ordering chart accessories" on page 28](#)).

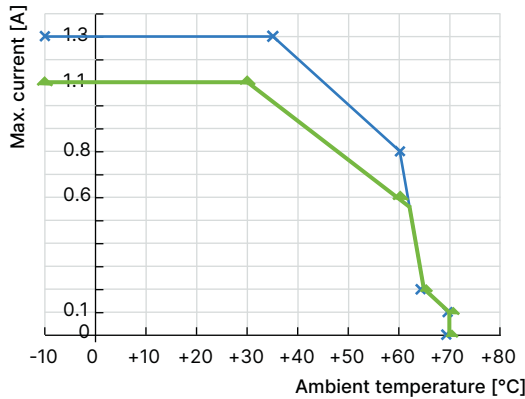


6. Performance specifications

6.1. Current temperature diagram

Note:

Maximum permitted current in dependence of the ambient temperature (for wall-mounted variant, 110...240 V AC)



— Wall-mounted variant, 110...240 V AC, without extension module

— Wall-mounted variant, 110...240 V AC, with extension module

7. Product operation

7.1. Principle of operation

Thanks to its modular internal structure, the transmitter/controller is able to manage, in parallel, different types of sensors and selectively perform operations on the measured values. Multiple tasks can be performed in parallel; from a simple measurement, to a standard output signal, to the assignment of mathematical formulas for selectable values for controlling and dosing. The signal and function modules can be easily connected to each other by configuration. Thanks to individual parameterization, all functions can be adapted to the actual process conditions.

The basic unit is either a panel-mounted variant or a wall-mounted variant. It has analogue and digital outputs, digital inputs and its front panel has a backlit graphic display. Depending on the application, up to 6 slots are available in which pH/Redox, conductivity, analogue and digital output modules, additional analogue and digital input boards, and industrial Ethernet modules can be installed. There is no need for a separate 4...20 mA transmitter: the pH, conductivity modules accept raw signals from sensors.

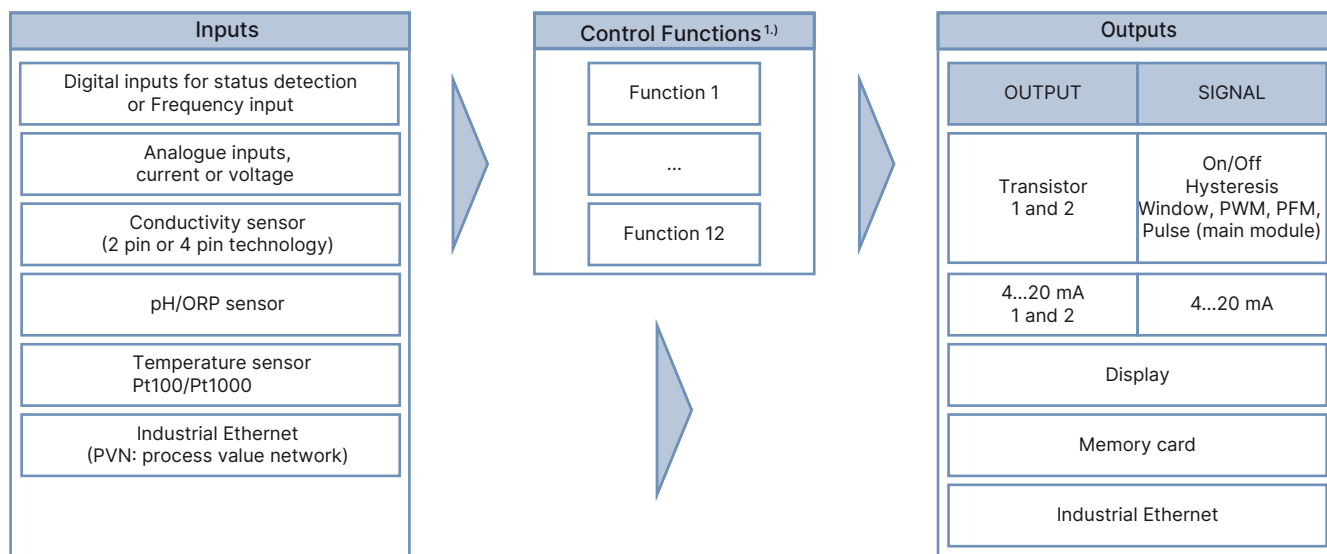
Though highly functional, the multiCELL can be operated easily and intuitively. The base for this is the large graphical display and the dynamically assigned function keys. Clearly arranged menu and module structures allow for easy configuration and setup of parameters and offer a high transparency for the functions in use. Four user views can be configured. This allows the user to design a view himself displaying a value arrangement which he likes to see simultaneously, and this can be available 4 times and independent from each other.

For data collection and storage e.g. of measurement values there is an optional "data logger" available which uses the memory card if inserted in the card slot. Uploading and restoring the complete database of the complete Type 8619, including the special parameter settings of the application and the updating firmware via the memory card is available as standard.

Fully integration into the automation system can be realized with the optional available Industrial Ethernet Module. The protocols Modbus TCP and PROFINET Conformance Class B and EtherNet/IP are fully supported. Thanks to generic configuration files, routing within the PLC can be easily done.

7.2. Functional overview

Process diagram

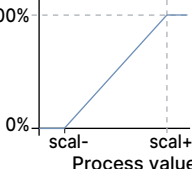


1.) The 12 functions can operate simultaneously and independently of each other, and if the PID option is selected, up to 6 PID functions can be activated simultaneously.

List of available functions

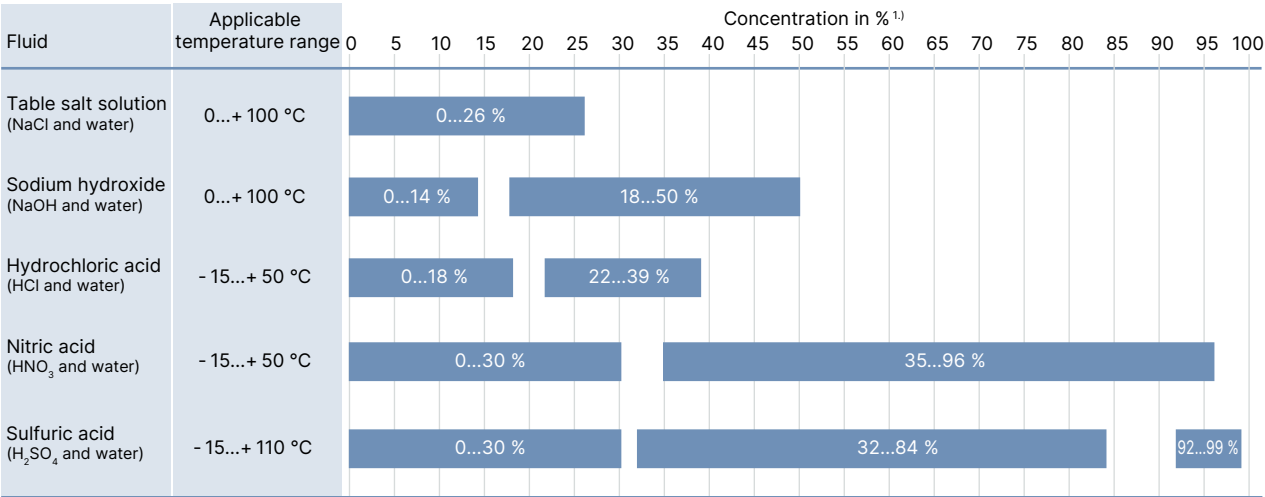
The transmitter/controller allows each input to be associated with a function (such as dosing, for example) that can be fully configured by the user. Depending on the model chosen, the following functions are offered as standard or as options.

Function	Availability	Formula	Example for usage
Arithmetic	Basic for all models	$A + B, A - B, A * B, A / B$	Arithmetic operation (addition, subtraction, multiplication and division) between 2 values. For addition and subtraction, the 2 values must have the same units, but for multiplication and division not necessarily. A and B can be - Constants - Measured physical parameters - Results of other active configured functions - The previous result of the same function - Values sent by a PLC (PVN). The multiplication function is available from Software version B.00.01
PASS	Basic for all models	$A / B [\%]$	A and B must have the same units and can be - Constants - Measured physical parameters - Results of other active configured functions - The previous result of the same function - Values sent by a PLC (PVN). Calculates a flow ratio between 2 values, e.g.: reverse osmosis
REJECT	Basic for all models	$(1 - A / B) [\%]$	A and B must have the same units and can be - Constants - Measured physical parameters - Results of other active configured functions - The previous result of the same function - Values sent by a PLC (PVN). Calculates a reject ratio between 2 values, e.g.: reverse osmosis
DEVIAT	Basic for all models	$(A / B - 1) [\%]$	Calculates a deviation ratio between 2 values

Function	Availability	Formula	Example for usage
MATH	As option	Permits to enter an equation which respects the following rules: - Up to 125 characters - Up to 5 process values (A, B, C, D & E) - With possible operators: $() ! \pm ^ \times \div \% + - < > \leq \geq$	A, B, C, D, E can be - Constants - Measured physical parameters - Results of other active configured functions - The previous result of the same function - Values sent by a PLC (PVN) e.g.: $(A * B) + (C * D) - E$
PROP	Basic for all models		Calculates an output in proportion to a scaled input
ON/OFF	Basic for all models	On/Off control loop	For any type of input
Flow rate measurement	As base for model article no. 560205, 560213, 565984, 565985, 565986, 565987 for others as option	–	Allows both digital inputs to be used as frequency inputs for flow measurement (in standard for base unit) or coexistent with analytical modules (in option for others devices)
PID control	As option	Continuous control loop	For any type of input and with internal or external setpoint
Time dosing	As option	–	e.g. for cooling tower application. Dosing of 1 or 2 biocides in the circuits, at fixed time intervals or by defining dosing during one week, with 2 dosings per day. Can be connected to an ON/OFF conductivity function for pre-purge.
Special Chemical batch (Volume dosing)	As option	–	Specifically for cooling tower application. A defined volume of water is counted, then an actuator is energized during a defined time to add a chemical and finally reset the water volume counter.
Concentration	As option	–	The concentration curves of NaCl, H ₂ SO ₄ , HNO ₃ , NaOH, HCl are implemented for use in complete concentration range and not only in low concentration.
Data logging on memory card	As option	–	Up to 16 values can be stored at a defined time interval.

Concentration table multiCELL

If multiCELL Type 8619 is equipped with a conductivity module, multiCELL is able to calculate the concentration depending on the measured conductivity and temperature. Therefore, concentration tables for binary mixtures of (five) different substances and water are available. Determine the best suited concentration range (out of ten ranges) for your application.

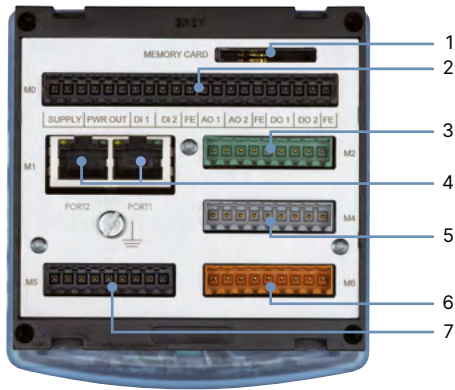


¹⁾ The "%" involved on the x-axis refers to "% mass".

8. Product design and assembly

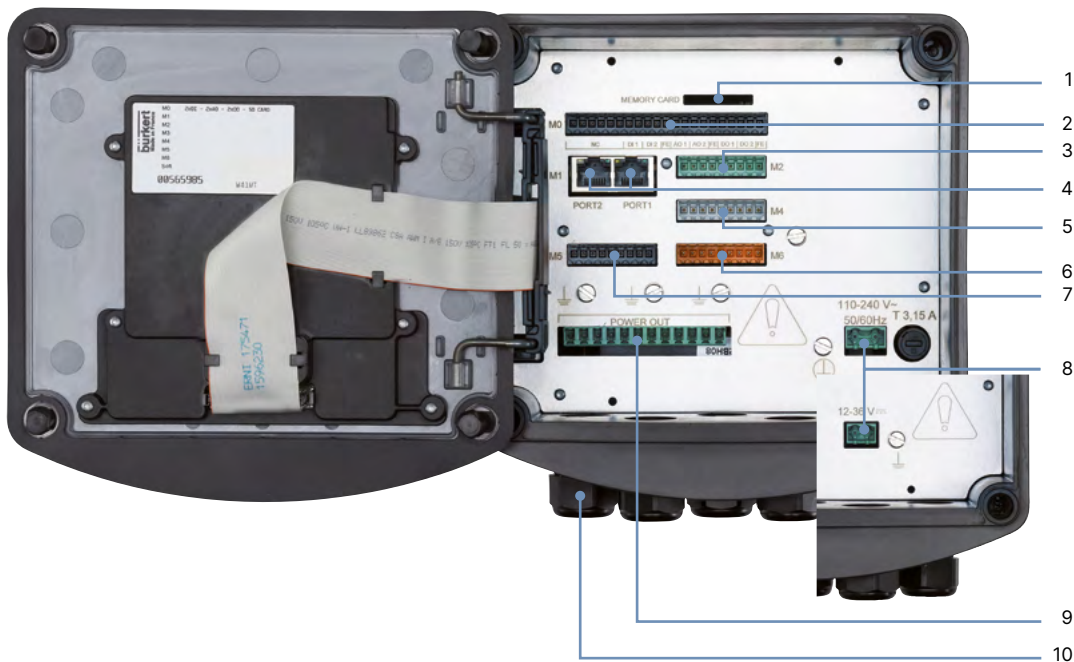
8.1. Product features

Panel-mounted variant



Memory card slot	
1	- For upload and download of parameter settings - Software updates and functional upgrades Simple operation: insert the memory card into the slot on the rear of the device.
Main module slot	
2	Enables: - Connection to the transmitter/controller power supply - To power another device - The use of 2 digital inputs (DI), 2 analogue (AO) and 2 digital (DO) outputs
Additional module slots (up to 6) to choose among	
3	Module for conductivity sensor and/or temperature sensor (green connector)
4	Module for Industrial Ethernet (2 RJ45 connectors) Ethernet module takes two slots and is available from Software version B.00.01
5	Module for pH/ORP sensor and/or temperature sensor (light grey connector)
6	Module for 2 analogue and 2 digital inputs (orange connector)
7	Module for 2 analogue and 2 digital outputs (black connector)

Wall-mounted variant



Memory card slot	
1	- For upload and download of parameter settings - Software updates and functional upgrades Simple operation: insert the memory card into the slot on the rear of the device.
Main module slot	
2	Enables the use of 2 digital inputs (DI), 2 analogue (AO) and 2 digital (DO) outputs
Additional module slots (up to 6) to choose among	
3	Module for conductivity sensor and/or temperature sensor (green connector)
4	Module for Industrial Ethernet (2 RJ45 connectors) Ethernet module takes two slots and is available from Software version B.00.01
5	Module for pH/ORP sensor and/or temperature sensor (light grey connector)
6	Module for 2 analogue and 2 digital inputs (orange connector)
7	Module for 2 analogue and 2 digital outputs (black connector)
Power supply slot	
8	Enables connection to the transmitter/controller power supply (behind the protecting cover for 110...240 V AC variant)
Power charges slot	
9	Enables to power another device
Optional M12 connector	
10	For industrial Ethernet

9. Networking and combination with other Bürkert products

Example:



Type 8619

Flow		Input signal			Pressure	Output signal	
Type 8031 ▶ Flowmeter for low flow rates Type 8030 ▶ Inline flowmeter with paddle wheel Type 8077 ▶ Inline flowmeter with oval gears Type 8020 ▶ Insertion flowmeter with paddle wheel		Type 8200 ▶ Probes holder with Type 8203 ▶ pH or ORP probe and temperature sensor Type 8201 ▶ Hygienic pH measuring system			Type 8220 ▶ Resistive conductivity sensor Type 8221 ▶ Hygienic conductivity sensor Type 8232 ▶ Chlorine sensor	Type 8316 ▶ Pressure meter	Type 2030 ▶ Diaphragm valve with pilot valve Type 8802 ▶ Diaphragm control valve with TopControl

10. Ordering information

10.1. Bürkert eShop



Bürkert eShop – Easy ordering and quick delivery

You want to find your desired Bürkert product or spare part quickly and order directly? Our online shop is available for you 24/7. Sign up and enjoy all the benefits.

[Order online now](#)

10.2. Recommendation regarding product selection

Note:

- The devices listed in the tables in chapter **“10.5. Ordering chart” on page 25** are equipped with the arithmetic, PASS, REJECT, DEVIAT, MATH, PROP, ON/OFF functions as standard (see chapter **“List of available functions” on page 19**).
- Only the BASE unit and the device equipped with a main module and an Ethernet module have the flow measurement function as a standard function, the other functions are available as options.
For customised devices with additional options, use the product enquiry form, see chapter **“10.4. Bürkert Product Enquiry Form” on page 24**.
- If a totalizer function is required, then a flowmeter has to be connected via a digital input (main module or input module).

10.3. Bürkert product filter

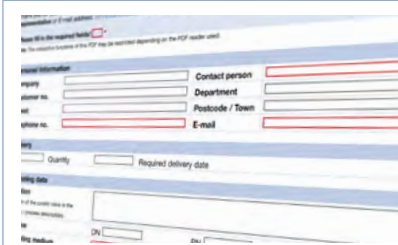


Bürkert product filter – Get quickly to the right product

You want to select products comfortably based on your technical requirements? Use the Bürkert product filter and find suitable articles for your application quickly and easily.

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10.4. Bürkert Product Enquiry Form



Bürkert Product Enquiry Form – Your enquiry quickly and compactly

Would you like to make a specific product enquiry based on your technical requirements? Use our Product Enquiry Form for this purpose. There you will find all the relevant information for your Bürkert contact. This will enable us to provide you with the best possible advice.

[Fill out the form now](#)

10.5. Ordering chart

Panel-mounted variant, 12...36 V DC

Note:

If the device is mounted in a humid environment or outside, then the maximum voltage allowed is 35 V DC instead of 36 V DC.

Description	Input				Output		Network protocol	UL approval ^{5.)}	Article no.
	Digital (DI) ^{1.)}	Ana- logue (AI) ^{2.)}	Number and type of sensor raw signals	Pt100/ Pt1000	Transistor (DO) ^{3.)}	Analogue (AO) ^{4.)}			
Base unit (only main module) with flow measurement	2	–	–	–	2	2	–	No	560205 
								Yes	560213 
Main module + 1 pH/ORP module	2	–	1 (pH/ORP)	1	2	2	–	No	560200 
								Yes	560208 
Main module + 2 pH/ORP modules + 1 output module	2	–	2 (pH/ORP)	2	4	4	–	No	560202 
								Yes	560210 
Main module + 1 conductivity module	2	–	1 (cond.)	1	2	2	–	No	560201 
								Yes	560209 
Main module + 2 conductivity modules + 1 output module	2	–	2 (cond.)	2	4	4	–	No	560203 
								Yes	560211 
Main module + 1 pH/ORP module + 1 conductivity module + 1 output module	2	–	1 (pH/ORP) + 1 (cond.)	2	4	4	–	No	560204 
								Yes	560212 
Main module + 1 input module	4	2	–	–	2	2	–	No	563960 
								Yes	563961 
Main module + 1 pH/ORP module + 1 input module + 1 output module	4	2	1 (pH/ORP)	1	4	4	–	No	563962 
								Yes	563963 
Main module + 1 conductivity module + 1 input module + 1 output module	4	2	1 (cond.)	1	4	4	–	No	563964 
								Yes	563912 
Main module with flow measurement + 1 Ethernet module	2	–	–	–	2	2	Modbus TCP ^{6.)}	No	569259 
							PROFINET ^{7.)}	No	569260 
							EtherNet/IP ^{7.)}	Yes	569261 
Main module + 1 pH/ORP module + 1 Ethernet module	2	–	1 (pH/ORP)	1	2	2	Modbus TCP ^{6.)}	No	569265 
							PROFINET ^{7.)}	No	569266 
							EtherNet/IP ^{7.)}	Yes	569267 
Main module + 1 conductivity module + 1 Ethernet module	2	–	1 (cond.)	1	2	2	Modbus TCP ^{6.)}	No	569262 
							PROFINET ^{7.)}	No	569263 
							EtherNet/IP ^{7.)}	Yes	569264 

1.) On/Off or frequency

2.) 0/4...20 mA current and/or 0...2, 0...5, 0...10 V DC voltage

3.) PWM or PFM or On/Off or pulse

4.) 4...20 mA

5.) UL Listed (Measuring Equipment E237737)

6.) If you order a device with a Modbus TCP network protocol, it does not include the other 2. If you would like to change it with a PROFINET or EtherNet/IP network, the Ethernet protocol must be ordered (see chapter [“Additional software functions for Type 8619” on page 28](#)).

7.) If you order a device with a PROFINET or EtherNet/IP network protocol, it also contains the other two.

Wall-mounted variant, 12...36 V DC

Note:

If the device is mounted in a humid environment or outside, then the maximum voltage allowed is 35 V DC instead of 36 V DC

Description	Input				Output		Network protocol	UL approval ^{5.)}	Article no.
	Digital (DI) ^{1.)}	Ana-logue (AI) ^{2.)}	Number and type of sensor raw signals	Pt100/ Pt1000	Transistor (DO) ^{3.)}	Analogue (AO) ^{4.)}			
Base unit (only main module) with flow measurement	2	–	–	–	2	2	–	No	565984 
								Yes	565986 
Main module + 1 pH/ORP module	2	–	1 (pH/ORP)	1	2	2	–	No	565988 
								Yes	565990 
Main module + 2 pH/ORP modules + 1 output module	2	–	2 (pH/ORP)	2	4	4	–	No	565992 
								Yes	565994 
Main module + 1 conductivity module	2	–	1 (cond.)	1	2	2	–	No	565996 
								Yes	565998 
Main module + 2 conductivity modules + 1 output module	2	–	2 (cond.)	2	4	4	–	No	566000 
								Yes	566002 
Main module + 1 pH/ORP module + 1 conductivity module + 1 output module	2	–	1 (pH/ORP) + 1 (cond.)	2	4	4	–	No	566004 
								Yes	566006 
Main module + 1 input module	4	2	–	–	2	2	–	No	566008 
								Yes	566010 
Main module + 1 pH/ORP module + 1 input module + 1 output module	4	2	1 (pH/ORP)	1	4	4	–	No	566012 
								Yes	566014 
Main module + 1 conductivity module + 1 input module + 1 output module	4	2	1 (cond.)	1	4	4	–	No	566016 
								Yes	566018 
Main module with flow measurement + 1 Ethernet module	2	–	–	–	2	2	Modbus TCP ^{6.)}	No	569268 
							PROFINET ^{7.)}	No	569269 
							EtherNet/IP ^{7.)}	Yes	569270 
Main module + 1 pH/ORP module + 1 Ethernet module	2	–	1 (pH/ORP)	1	2	2	Modbus TCP ^{6.)}	No	569274 
							PROFINET ^{7.)}	No	569275 
							EtherNet/IP ^{7.)}	Yes	569276 
Main module + 1 conductivity module + 1 Ethernet module	2	–	1 (cond.)	1	2	2	Modbus TCP ^{6.)}	No	569271 
							PROFINET ^{7.)}	No	569272 
							EtherNet/IP ^{7.)}	Yes	569273 

1.) On/Off or frequency

2.) 0/4...20 mA current and/or 0...2, 0...5, 0...10 V DC voltage

3.) PWM or PFM or On/Off or pulse

4.) 4...20 mA

5.) UL Listed (Measuring Equipment E237737)

6.) If you order a device with a Modbus TCP network protocol, it does not include the other 2. If you would like to change it with a PROFINET or EtherNet/IP network, the Ethernet protocol must be ordered (see chapter "Additional software functions for Type 8619" on page 28).

7.) If you order a device with a PROFINET or EtherNet/IP network protocol, it also contains the other two.

Wall-mounted variant, 110...240 V AC

Description	Input				Output		Network protocol	UL approval ^{5.)}	Article no.
	Digital (DI) ^{1.)}	Ana- logue (AI) ^{2.)}	Number and type of sensor raw signals	Pt100/ Pt1000	Transistor (DO) ^{3.)}	Analogue (AO) ^{4.)}			
Base unit (only main module) with flow measurement	2	–	–	–	2	2	–	No	565985 
								Yes	565987 
Main module + 1 pH/ORP module	2	–	1 (pH/ORP)	1	2	2	–	No	565989 
								Yes	565991 
Main module + 2 pH/ORP modules + 1 output module	2	–	2 (pH/ORP)	2	4	4	–	No	565993 
								Yes	565995 
Main module + 1 conductivity module	2	–	1 (cond.)	1	2	2	–	No	565997 
								Yes	565999 
Main module + 2 conductivity modules + 1 output module	2	–	2 (cond.)	2	4	4	–	No	566001 
								Yes	566003 
Main module + 1 pH/ORP module + 1 conductivity module + 1 output module	2	–	1 (pH/ORP) + 1 (cond.)	2	4	4	–	No	566005 
								Yes	566007 
Main module + 1 input module	4	2	–	–	2	2	–	No	566009 
								Yes	566011 
Main module + 1 pH/ORP module + 1 input module + 1 output module	4	2	1 (pH/ORP)	1	4	4	–	No	566013 
								Yes	566015 
Main module + 1 conductivity module + 1 input module + 1 output module	4	2	1 (cond.)	1	4	4	–	No	566017 
								Yes	566019 
Main module with flow measurement + 1 Ethernet module	2	–	–	–	2	2	Modbus TCP ^{6.)}	No	569277 
							PROFINET ^{7.)}	No	569278 
							EtherNet/IP ^{7.)}	Yes	569279 
Main module + 1 pH/ORP module + 1 Ethernet module	2	–	1 (pH/ORP)	1	2	2	Modbus TCP ^{6.)}	No	569283 
							PROFINET ^{7.)}	No	569284 
							EtherNet/IP ^{7.)}	Yes	569285 
Main module + 1 conductivity module + 1 Ethernet module	2	–	1 (cond.)	1	2	2	Modbus TCP ^{6.)}	No	569280 
							PROFINET ^{7.)}	No	569281 
							EtherNet/IP ^{7.)}	Yes	569282 

1.) On/Off or frequency

2.) 0/4...20 mA current and/or 0...2, 0...5, 0...10 V DC voltage

3.) PWM or PFM or On/Off or pulse

4.) 4...20 mA

5.) UL Listed (Measuring Equipment E237737)

6.) If you order a device with a Modbus TCP network protocol, it does not include the other 2. If you would like to change it with a PROFINET or EtherNet/IP network, the Ethernet protocol must be ordered (see chapter "Additional software functions for Type 8619" on page 28).

7.) If you order a device with a PROFINET or EtherNet/IP network protocol, it also contains the other two.

Additional software functions for Type 8619

Note:

- Use the following article no.s. only if you already own a Type 8619 device to which you want to add one or more functions.
- Indicate the article no. of your multiCELL Type 8619 transmitter/controller and its serial number (shown on the product label) on the order.
- The functions "Save settings on" and "Load settings from" the memory card of the complete configuration parameters of the Type 8619 are available as standard and does not require the "Data logger" option.

Software option	Remark	Article no.
PID control	–	561836 
Data Logger	SD card is not included	561837 
Chemical dosing (e.g. cooling tower)	The "Dosing" option also activates the "Flow" option if it does not exist by default in the device.	561838 
Flow measurement	Is already included in the base unit device (article no. 560205 and 560213)	561839 
Concentration measurement of selected fluids	Requires at least one conductivity hardware module	561840 
Protocols Ethernet: Modbus TCP, PROFINET, EtherNet/IP	Ethernet-Module takes 2 slots (available only from Software version B.00.01; already included in the device with a PROFINET or EtherNet/IP network protocol)	569286 
MATH function	–	569848 

10.6. Ordering chart accessories

Note:

Further information on the connection cables between the sensor and the multiCELL transmitter/controller can be found in the data sheet of the selected sensor type.

Description	Article no.
SDHC Memory Card, Class 10, 8 GB	564072 
Mounting set for pipeline installation	564596 
 Adapter for cable glands M20 × 1.5 with RJ45-M12 interface connector D-coded	569242 