50 Series plug & play Instruments
Data Sheet

MAIN CHARACTERISTICS

- Up to four simultaneous digital measurements. Turbidity \ Suspended Solids \ pH \ diff. pH \ ORP \ diff. ORP \ Oxygen \ Inductive and Conductive Conductivity \ Chlorine \ NH_4^+ \ NO_3^- \ Low range flowing Turbidity
- J-Box junction box for third an fourth measure executing
- Measuring of Temperature using the PT100/PT1000 probe
- Programming key pad with 5 keys
- "CAL" Function Key to direct access to the calibration menu
- "GRAPH" Function Key to direct access to the graphs of measure
- "USB" Function Key for data download on USB support
- "MODE" Function Key for self-recognition probes
- LCD Graphic color display 480(R.G.B.) (W) x 272(H)
- Internal Data Logger (flash 32 Mbit) with the possibility of graphic and table visualisation of measurement trends
- PID adjustment
- 2 Serial outputs RS485 MOD BUS RTU
- Data download on USB support
- 4 Programmable Analogical Outlets (with two equal measures the 3rd output can be set as average)
- 4 Relay Outlets for intervention thresholds (2 for each measurement) freely programmable
- 1 Relay Outlet for Instrument Anomaly Alarm
- 1 Relay Outlet for Probe Washing or Temperature Set Point
- 2 Digital Inputs for disabling of doses
- 1 4-20mA Analogue Input freely programmable

> ### *Main hardware characteristics of the electronic device*

The hardware structure of this periphery is based on the adoption of extremely new CPU CMOS with 32 bits developed specifically for the execution of the so-called "embedded" applications.

The card uses an EEPROM to store the Set-up data and flash memories for storage of the archives of historical data and LOG files of events.

The Card has 1 RS485 gate for sensors and 1 RS485 gate (opto-isolated) for local networks used for connections with local communication devices (configuration computer, terminals and remote controls etc).
The card integrates a Real Time Clock (clock with date) that allows the software to storage figures in a chronological order.

➤ *The device has been designed to be fitted onto a panel, and is built with IP66 protection panel.*

➤ *Controller maximum capability*

Power Supply
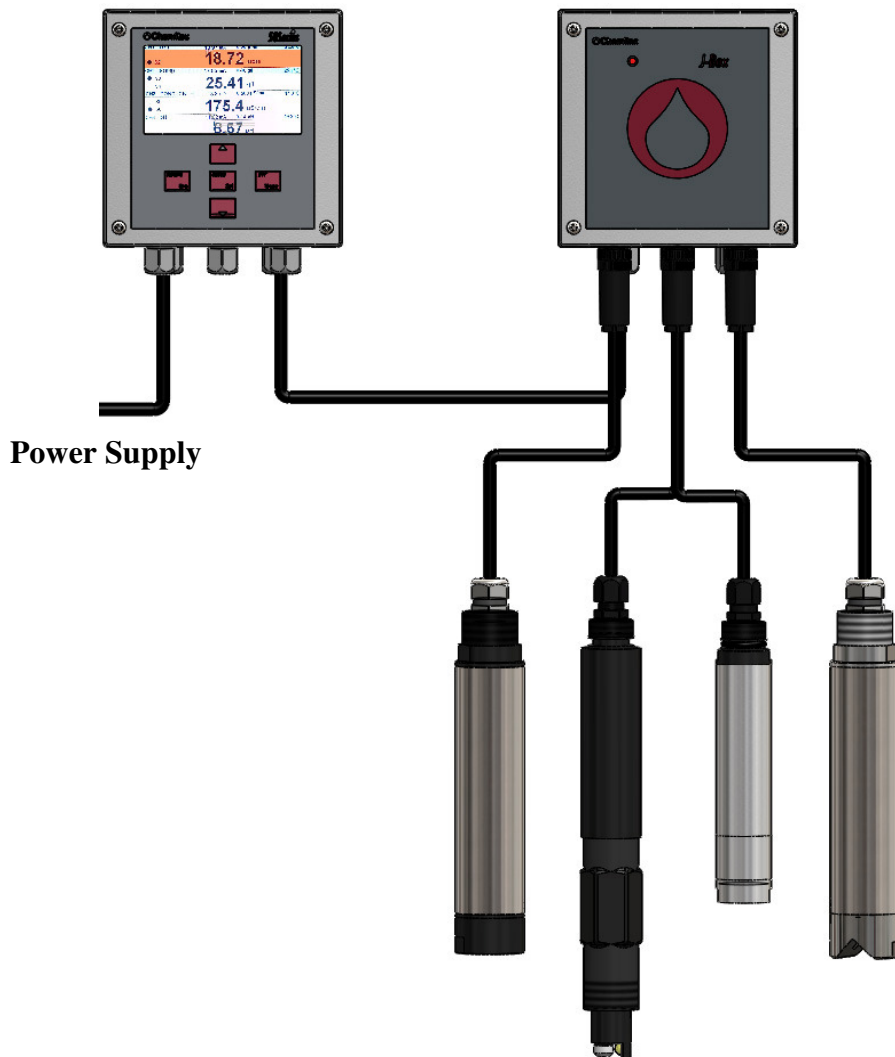
Characteristics of the measure

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Measurement Ranges (depending on the connected sensor)	See the characteristics of every probe
Temperature Compensation	The probes which provide for the temperature are already self compensated
Visualization	Simultaneous values of up to four measurements, numeric + bargraph, Current outputs, Analogue outputs and Alarms.

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Software features and functions

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Data storage	Internal Flash 32Mbit Memory (near to 128000 records). Records interval: 01:00 ÷ 99:99 min Type: Circular (F.I.F.O.) or Filling Possibility of visualization of the stored data in tabular and graphic form, with indication of max, min and average values of the selected period. Zoom function
PID Regulation	Functions: P – PI – PID. Activated on the analogue or the digital output. Proportional range: 0 ÷ 500% Time of integral: 0:00 ÷ 5:00 min Time of derivative: 0:00 ÷ 5:00 min
4 Analogue Outputs	1 for each measure with possibility of PID management
2 Command Digital Outputs **Max 2 For each measure**	Set Point ON – OFF : working range setting (Hysteresys / direction) and pause/working time setting: 000 ÷ 999 Seconds PID Regulation (only on Set point 1): PWM
Alarm digital output / Alarm digital output / Washing output	Reporting: Instrumental anomalies, minimum, maximum, set point's delay, permanence time (live check) Delay time: 00:00 ÷ 59:99mm:ss at minimum steps of 15sec Permanence time: 00:00 ÷ 99:99 hh:mm Set Point disableing (in case of alarm): Enable / Disable
Digital output for electrode washing or temperature set point	Programming of the time leg Frequency: 00:00 ÷ 24:00 hh:mm minimum time leg: 15 min During the washing phase, all digital and analogue outputs are freezed
Digital input	To disable dosages or activate washing cycle
RS485 Serial output	For set-up and real-time data acquisition from remote or for stored data download (using a dedicate-SW) . MODBUS RTU communication protocol
Manual controls	Possibility to simulate all the analogue and digital outputs using the keyboard

Hardware Features

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Visualization	LCD Graphic color display 480(R.G.B.) (W) x 272(H)
Programming	5 bubble-Keys keyboard
Data Logger	Flash 32Mbit Memory (near to 128000 records).
Analogue Outputs	0 / 4.00 ÷ 20.00 mA Galvanic separation: 1KV Optoisolator Maximum load 500 Ohm Second Alarm output: NAMUR 2.4 mA (with 4/20mA Range)
Digital Outputs	Switching Relays Max resistive load 3A a 230Vac Usable as NO contact
Digital Input	Active and already supplied Possibility to link with a 3 wires - inductive sensor
Analogue Input	4-20mA Analogue Input freely programmable
Serial Output	RS485 with 1200÷38400 Baud Rate programmable speed MOD BUS RTU Protocol
Operating conditions	Operating temperature -20÷65°C Storage and transport -25÷65°C Humidity 10-95% (non-condensing)
Power Supply/ Electrical protections	Power supply 100÷240Vac/dc 50- 60 Hz – (Optional 24Vac/dc) – Transformer isolation4KV – Absorbing average < 7W – Electrical Protection: EMI / RFI CEI-EN55011 – 05/99 – According to UL, not connect to relay outputs a voltage exceeding 115V

➢ *Mechanical dimensions*
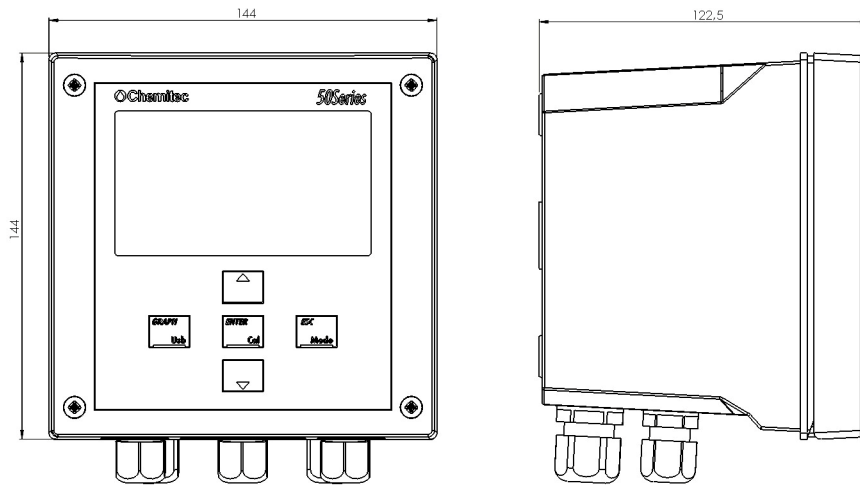
Mechanical Dimensions	50Series Wall IP66
Dimensions (L x H x P)	144x144x122,5mm
Mounting thickness	122,5mm
Material	Grey ABS RAL 7045
Mounting	Wall
Weight	1 Kg
Front Panel	UV resistant Polycarbonate
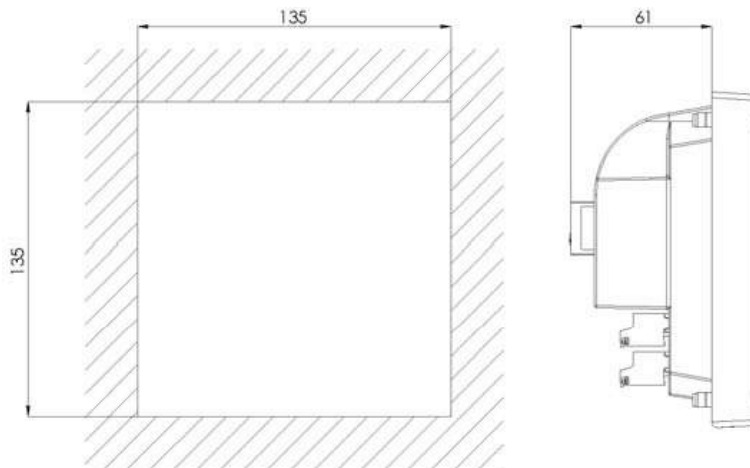
Mechanical Dimensions	50Series Panel 144x144
Dimensions (L x H x P)	144x144x86,5mm
Mounting thickness	61mm
Material	Grey ABS RAL 7045
Mounting	Panel
Weight	0,7 Kg
Front Panel	UV resistant Polycarbonate

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➢ *Controls, indicators and connections*
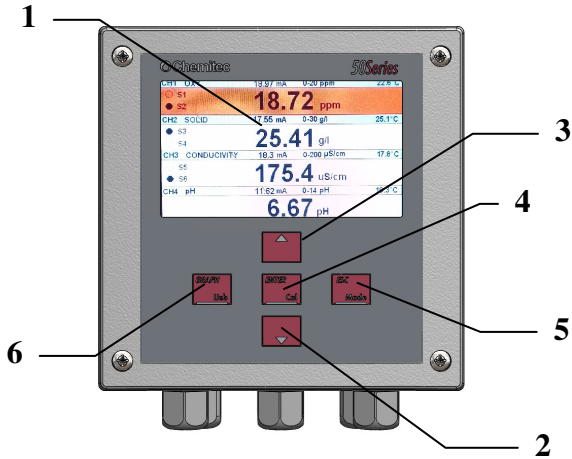
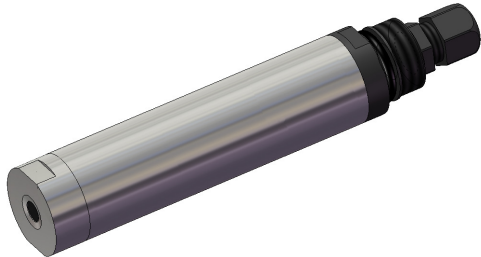**Front panel, wall mounting version**
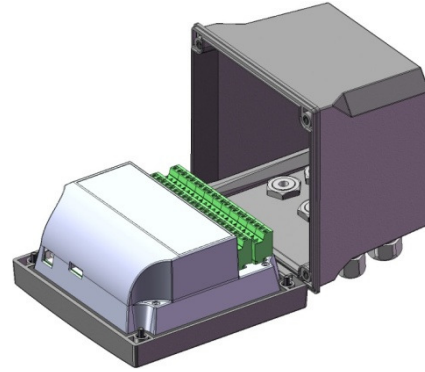
Access to terminal box

1. LCD Display
2. DOWN
3. UP
4. ENTER
5. ESC
6. GRAPH-USB

➢ *Modbus-RTU serial interface*

• Real-time data communication
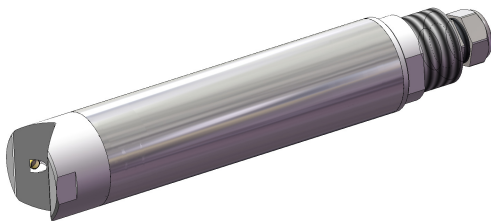• Download of the stored data on a PC via SW or directly on an USB support

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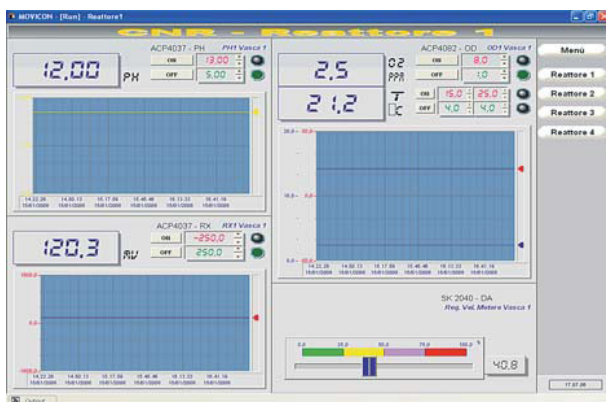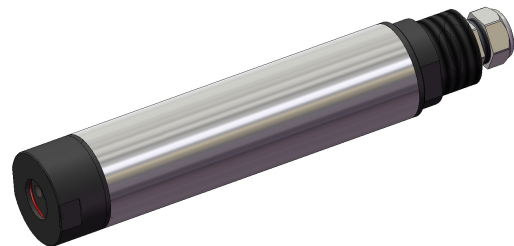
> ➢ *Plug & play sensors*

9700830067
S423 C OPT Oxygen optical probe

9700831067
S423 C OPT PVC Oxygen optical probe

9700620063
S461 S Suspended solids probe
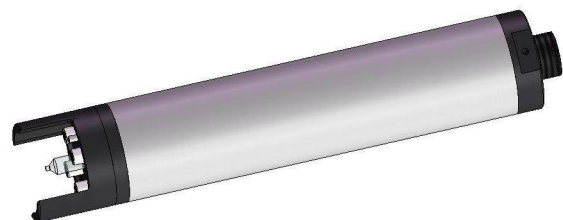
9700590063
S461 T Infrared turbidity sensor

9700720097 – 9700730097
S401-S406 Diff pH-ORP differential electrodes

9700770097 – 9700780097
S401-S406 Dig pH-ORP digital electrodes

9700913097
S411 DIG Conductivity probe

9700880067
ISE Probe for Nitrates, Ammonia, etc.

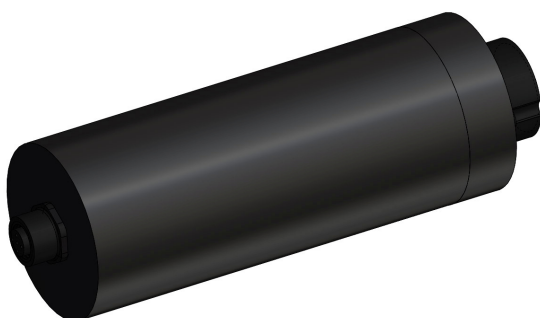**world class water monitoring series 50**

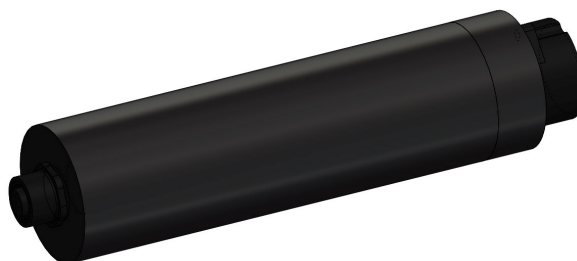> ➤ *Digitizer kits for Analogue sensors*

9400411037
AD / 494 / C
Digitizer Kit for Chlorine Probe

9400411021 & 9400411022
AD / PH & AD / RX
Digitizer Kit for pH / Rx probe

9400411036
AD / CD / IND
Digitizer Kit for inductive Conductivity probe

9400411045
AD / CD / COND
Digitizer Kit for conductive Conductivity probe