Chemitec
world class water monitoring series 42

# 4238 pH/ORP and Temperature

*Data Sheet*


**MAIN CHARACTERISTICS**

- Measurement of pH and ORP
- Measuring of Temperature using the PT100/PT1000 probe
- Automatic Compensation of Temperature
- 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
- LCD Graphic display 128x64 with background illumination
- Internal Data Logger (flash 4 Mbit) with the possibility of graphic and table visualisation of measurement trends
- PID adjustment
- Serial outlet RS485 MOD BUS RTU
- Data download on USB key (optional)
- 2 Programmable Analogical Outlets
- 2 Relay Outlets for intervention thresholds
- 1 Relay Outlet for Instrument Anomaly Alarm or Temperature Set Point
- 1 Relay Outlet for Probe Washing or Temperature Set Point
- 1 Digital Entrance for disabling of doses

- ***Main hardware characteristics of the electronic device***

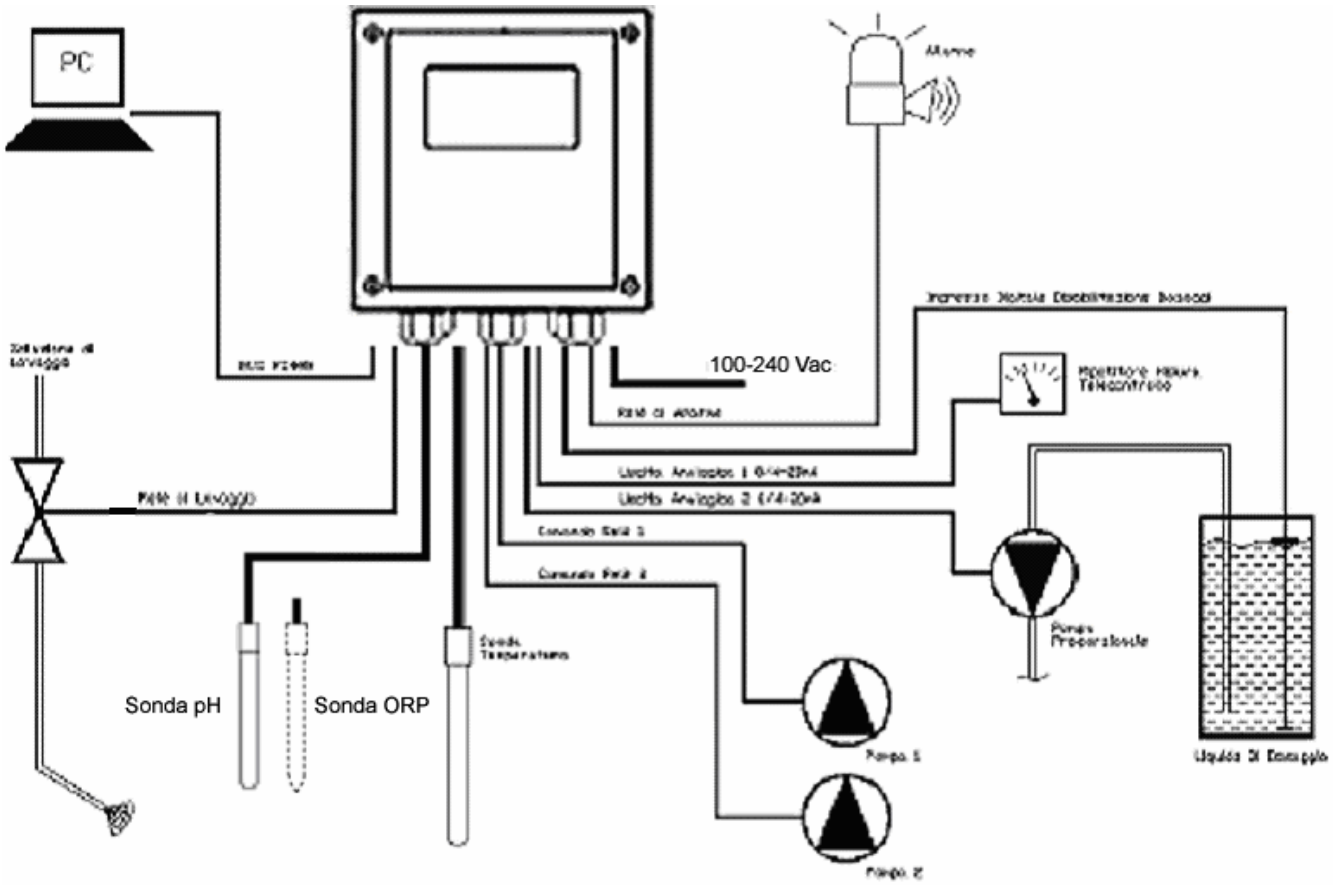
  The hardware structure of this periphery is based on the adoption of extremely new CPU CMOS with 8 bits developed specifically for the execution of the so-called "embedded" applications.

  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 (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***



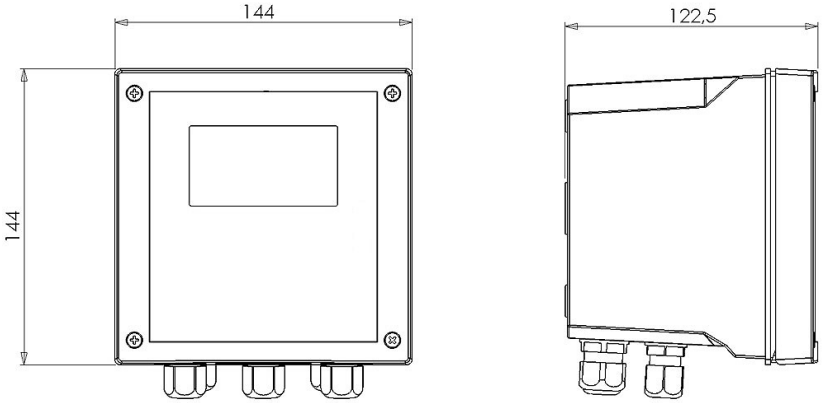

**Characteristics of the measure**

| | |
|---|---|
| **Measurement Ranges / Resolution / Accuracy** | pH : 00.0 ÷ 14.0pH Resolution ± 0.01 pH Precision ± 0,2% f.s.<br>ORP: ± 1500mV Resolution ± 1mV Accuracy: ± 0,2% f.s.<br>Temperature: 0.00 ÷ +50,0°C Resolution:± 0,1°C Accuracy: ± 1% f.s. |
| **Temperature Compensation** | Automatic with a sensor connected to the unit, manual with key pad setting |
| **Visualization** | Simultaneous values of the Conductivitymeasure: numeric + bargraph.<br>Temperature values and anolgue outputs values in scrolling.<br>Graphic icons showing: digital outputs' state, data storage, washing cycle, alarms |

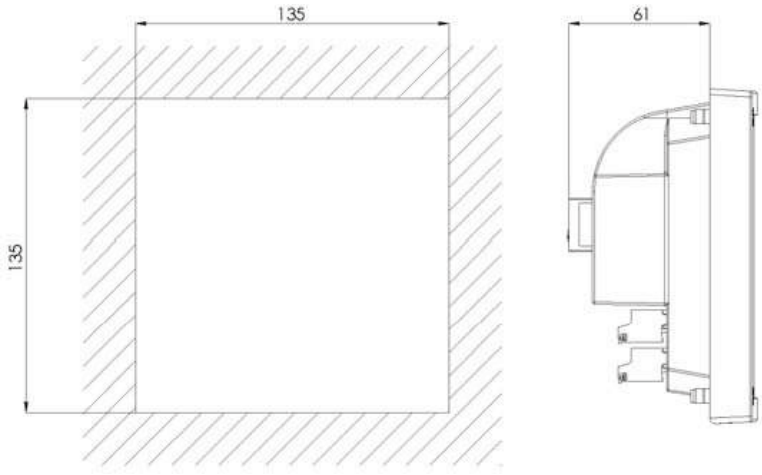
| Software features and functions | |
|---|---|
| **Data storage** | Internal Flash 4Mbit Memory (near to 16000 records).<br>Records interval: 01:00 ÷ 99:99 min<br>Type: Circular (F.I.F.O.) or Filling<br>Possibility of visualization of the stored data in tabular and graphic form, with indication of maximum, minimum and average values of the selected period.<br>Zoom function |
| **PID Regulation** | Functions: P – PI – PID. Activated on the analogue or the digital output.<br>Proportional range: 0 ÷ 500%<br>Time of integral: 0:00 ÷ 5:00 min Time of derivative: 0:00 ÷ 5:00 min |
| **2 Analogue Outputs** | Output 1 programmable for pH/ORP<br>Output 2 programmable for ORP/pH / Temperature / PID regulation<br>Output limits freely programmable between measuring ranges. |
| **2 Active Digital Outputs** | Set Point ON – OFF : working range setting (Hysteresys / direction) and pause/working time setting: 000 ÷ 999 Seconds<br>PID Regulation ( only on Set point 1 ): Pulse Frequency or PWM |
| **Alarm digital output** | Reporting: Instrumental anomalies, minimum, maximum, set point's delay, permanence time (live check)<br>Delay time: 00:00 ÷ 59:99mm:ss at minimum steps of 15sec<br>Permanence time: 00:00 ÷ 99:99 hh:mm<br>Set Point disableing (in case of alarm): Enable / Disable<br>Relays functioning: Closed / Open |
| **Digital output for electrode washing** | Programming of the time leg<br>Frequency: 00:00 ÷ 24:00 hh:mm minimum time leg: 15 min<br>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) .<br>MODBUS RTU communication protocol |
| **Manual controls** | Possibility to simulate all the analogue and digital outputs using the keyboard |

| Hardware Features | |
|---|---|
| **Visualization** | LCD graphic backlit Display STN 128x64 |
| **Programming** | 5 bubble-Keys keyboard |
| **Data Logger** | Flash 4Mbit Memory (near to 16000 records). |
| **Analogue Outputs** | 0 / 4.00 ÷ 20.00 mA<br>Galvanic separation: 1KV Optoisolator<br>Maximum load 500 Ohm<br>Second Alarm output: NAMUR 2.4 mA (with 4/20mA Range) |
| **Digital Outputs** | Switching Relays<br>Max resistive load 3A a 230Vac<br>Usable as NO contact |
| **Digital Input** | Active and already supplied<br>Possibility to link with a 3 wires - inductive sensor |
| **Serial Output** | RS485 with 1200÷38400 Baud Rate programmable speed<br>MOD BUS RTU Protocol |
| **Operating conditions** | Operating temperature 0÷50°C<br>Storage and transport -25÷65°C<br>Humidity 10-95% (non-condensing) |
| **Power Supply/ Electrical protections** | Power supply 90÷260Vac/dc 50-60Hz – (Optional 24Vac/dc)<br>– Transformer isolation4KV<br>– Absorbing average < 6W<br>– Electrical Protection: EMI / RFI CEI-EN55011 – 05/99 |

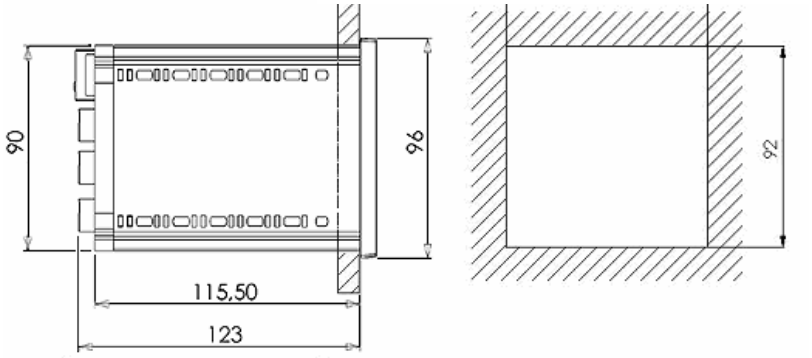
## ➢ *Mechanical dimensions*




| Mechanical Dimensions | 4238 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 |

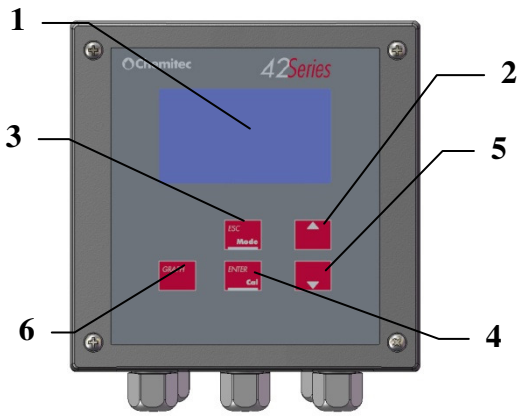



| Mechanical Dimensions | 4238 Panel 144x144 |
|---|---|
| Dimensions (L x H x P) | 144x144x86,5mm |
| Mounting thickness | 61mm |
| Material | Grey ABS RAL 7045 |
| Mounting | Panel |
| Weight | 0,7 Kg |
| Front Panel | UV resistant Polycarbonate |

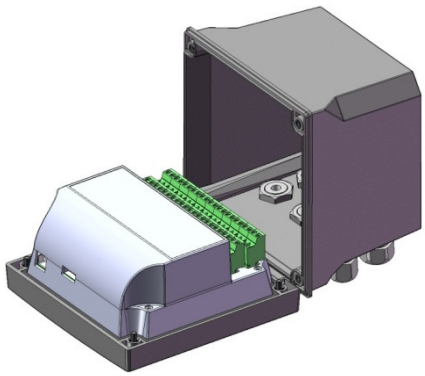



| Mechanical Dimensions | 4238 Panel 96x96 |
|---|---|
| Dimensions (L x H x P) | 96x96x115,5mm |
| Mounting thickness | 130mm |
| Material | Black ABS |
| Mounting | Panel |
| Weight | 0.7 Kg |
| Front Panel | UV resistant Polycarbonate |

## ➢ *Controls, indicators and connections*




**Front panel, wall mounting version**



**Access to terminal box**

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

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