

RANGE DESIGNS

PHEHT : PH, REDOX & TEMPERATURE

Digital Technology for optimized measures

- **Combination pH/Redox/Temp sensor**
- **Digital Sensor : Modbus RS 485 / SDI-12**
- **Calibration data inside**
- **pH/ORP Cartridge**



- **Range :**
 - **pH :** 0 to 14 units
 - **Redox :** - 1000 to + 1000 mV ;
 - **T°C :** -10°C to +50°C

Introduction :

The PHEH sensor has been designed to perform under hard conditions from pure mountains water with conductivity as low as 20 $\mu\text{S}/\text{cm}$, lakes and rivers (100 – 2000 $\mu\text{S}/\text{cm}$), seawater with conductivities of 50 mS/cm and to wastewater with conductivity higher than 200 mS/cm.

This sensor features a “long life” reference. The Plastogel® PONSEL technology increase the lifetime of the probe the need to refill.

This sensor has been designed also for handheld and in situ applications which have been the most difficult situations for a pH/ORP sensor in term of sensor resistance, quick time response, minimal flow dependence and low power consumption.

Digital Technology

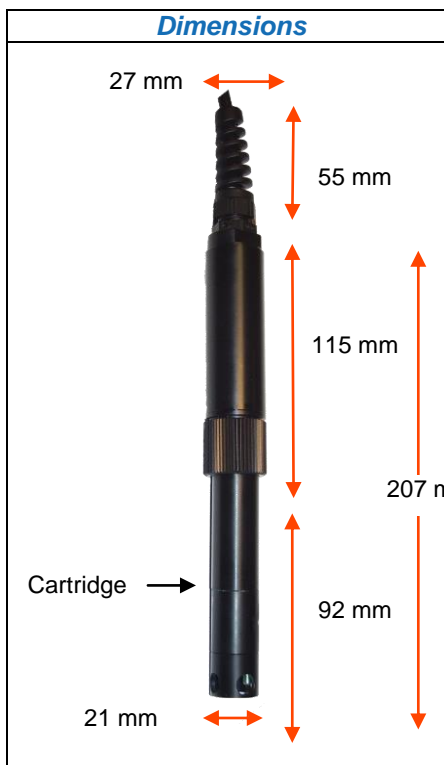
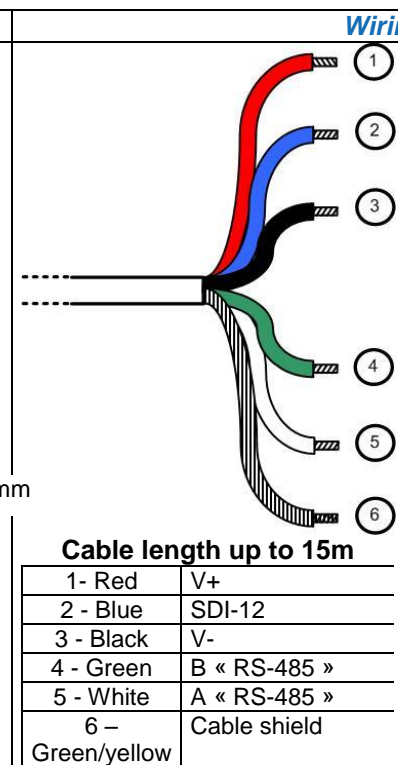
The “smart” pH/Redox/Temp sensor stores calibration and history data within the sensor. This allows you a “plug and play” system without re-calibration.

Thanks to the Universal Modbus RS485 protocol, the PONSEL pH/Redox/T sensor can be connected to all devices commonly used (Datalogger, Controller, Automat, Remote System...).

Technical features

| pH | |
|---------------------|--|
| Measure principle | Combined electrode (pH/ref) : special glass, Ag/AgCl ref. Gelled electrolyte (KCl) |
| Range | 0 – 14 pH |
| Resolution | 0,01 pH |
| Accuracy | +/- 0,1 pH |
| Redox | |
| Measure principle | Combined electrode (Redox/reference) : Platinum tip, Ag/AgCl AgAgCl. Gelled reference (KCl) |
| Range | - 1000 to + 1000 mV |
| Resolution | 0,1 mV |
| Accuracy | ± 2 mV |
| Temperature | |
| Technology | NTC |
| Range | 0,00 °C à + 50,00°C |
| Resolution | 0,01 °C |
| Accuracy | ± 0,5 °C |
| Response time | < 5 s |
| Storage temperature | 0°C to + 60°C |
| Protection | IP 68 |
| Interface | Modbus RS-485 / SDI-12 (option) |
| Power supply | 5 to 12 volts |
| Power consumption | Standby : 25µA Average RS485 (1 mesure/seconde) : 3,9 mA Average SDI12 (1 mesure/seconde) : 6,8 mA Current pulse : 500 mA |

| Sensor | |
|------------|---|
| Dimensions | Diameter : 27 / 21 mm ; Lenght : 207 mm |
| Weight | 350 g (sensor + 3 m cable) |
| Material | PVC, DELRIN, special pH glass, platinum, polyamide |
| Pressure | 5 bars |
| Cable | Coaxial armoured, Polyurethane, bare wire or Fisher connector |
| Protection | IP68 |

| Dimensions | Wiring diagram | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--------|----|----------|--------|-----------|----|-----------|--------------|-----------|--------------|------------------|--------------|-----|-----------------|--------|--------|--------|------|----------|--------|-----------|-----------------|-----------|--------------|-----------|--------------|------------------|--------------|
|  <p>27 mm 55 mm 115 mm 207 mm 92 mm 21 mm Cartridge</p> |  <p>Cable length up to 15m</p> <table border="1"> <tr><td>1- Red</td><td>V+</td></tr> <tr><td>2 - Blue</td><td>SDI-12</td></tr> <tr><td>3 - Black</td><td>V-</td></tr> <tr><td>4 - Green</td><td>B « RS-485 »</td></tr> <tr><td>5 - White</td><td>A « RS-485 »</td></tr> <tr><td>6 - Green/yellow</td><td>Cable shield</td></tr> </table> <p>Cable length 15 to 100 meters</p> <table border="1"> <tr><td>Red</td><td rowspan="5">Power supply V+</td></tr> <tr><td>Purple</td></tr> <tr><td>Yellow</td></tr> <tr><td>Orange</td></tr> <tr><td>pink</td></tr> <tr><td>2 - Blue</td><td>SDI-12</td></tr> <tr><td>3 - Black</td><td>Power supply V-</td></tr> <tr><td>4 - Green</td><td>B " RS-485 "</td></tr> <tr><td>5 - White</td><td>A " RS-485 "</td></tr> <tr><td>6 - Green/yellow</td><td>Cable shield</td></tr> </table> | 1- Red | V+ | 2 - Blue | SDI-12 | 3 - Black | V- | 4 - Green | B « RS-485 » | 5 - White | A « RS-485 » | 6 - Green/yellow | Cable shield | Red | Power supply V+ | Purple | Yellow | Orange | pink | 2 - Blue | SDI-12 | 3 - Black | Power supply V- | 4 - Green | B " RS-485 " | 5 - White | A " RS-485 " | 6 - Green/yellow | Cable shield |
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| 2 - Blue | SDI-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 - Black | V- | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 - Green | B « RS-485 » | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 - White | A « RS-485 » | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 - Green/yellow | Cable shield | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Red | Power supply V+ | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Purple | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Yellow | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Orange | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pink | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 - Blue | SDI-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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