EL200

Mono & Multi-Channel Water Controller

TETHYS INSTRUMENTS

Specialist Of UV Spectroscopy

> EL200 Multi-Channel Water Controller

The EL200 *is a configurable water controller that can adapt to many different probes and configurations, mono or multi-channel, among pH, ORP, dissolved oxygen, conductivity, chlorine, turbidity, total suspended solids (TSS) and temperature.*

It includes basically:
- one pH/ORP input
- two 4-20 mA inputs for analogic probes (dissolved oxygen, chlorine, turbidity)
- one RS485 port for up to 4 digital probes (dissolved oxygen, turbidity, pH, ORP).
- two 4-20 mA outputs
- four relays contacts for high/low alarms, multiplexing or probe default
- one RS232 port for Modbus communication or web server with an Ethernet or Wi-Fi interface
- one RS485 port for Modbus communication

One or two modules can be added for conductivity probe, additional 4-20 mA inputs or additional 4-20 mA outputs.

A user-friendly interface can display all the values as well as graphs of the recorded measurements over the last 24 hours.

A USB port allows to transfer the recorded measurements that may be imported to Excel for treatments or graphs. The USB port can also be used to save the configuration or to update the internal software.

A web-based interface allows the control and the troubleshooting at distance with an internet browser on a computer, tablet or smart phone.

TETHYS INSTRUMENTS

Designed for rugged environment *with lightning protection*

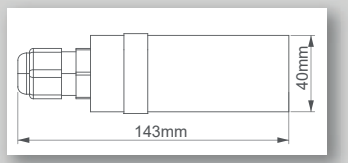
The EL200 controller is designed to be use outside if necessary thanks to an aluminium casted IP65 enclosure.

Special protection against lightning are installed on each probe inputs as well as on the power input and communication ports.

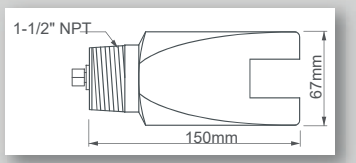
The touch screen is protected by an acid resistant protection film to assume a efficient long term protection .

Robust *Industrial Probes*

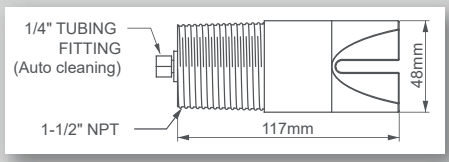
All the probes are specially designed for harsh environments with high level of suspended solid.



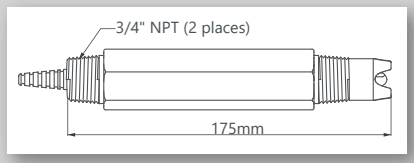
Turbidity Probe Low Range



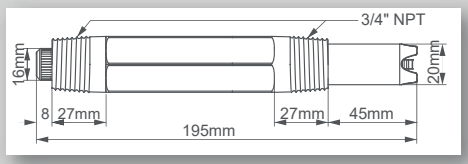
TSS Probe Medium Range



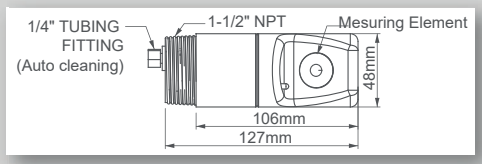
TSS Probe High Range



pH Probe



Conductivity Probe

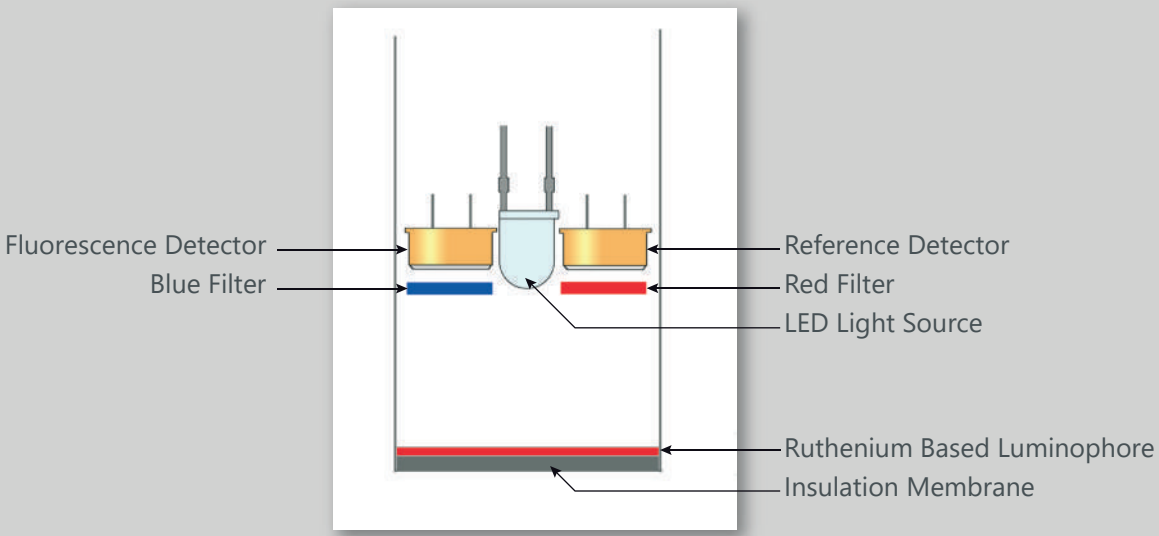


Dissolved Oxygen Probe

Probes and dimensions are only for illustrations

Quenching Fluorescence *based Oxygen Probe*

- The dissolved oxygen probe is based on the fluorescence method for a lower maintenance and higher stability.
- At the opposite of galvanic and polarographic probes, the fluorescence based probes requires no electrolyte refill, no membrane change and no routine calibration. No flow is needed because there is no oxygen consumption.
- They also perform very well in harsh environments that normally destroy other conventional sensors.



DO principle

Auto-cleaning Probes

The EL200 delivers a free potential contact to drive solenoid valve on compressed air to clean the probes equipped with air cleaning.

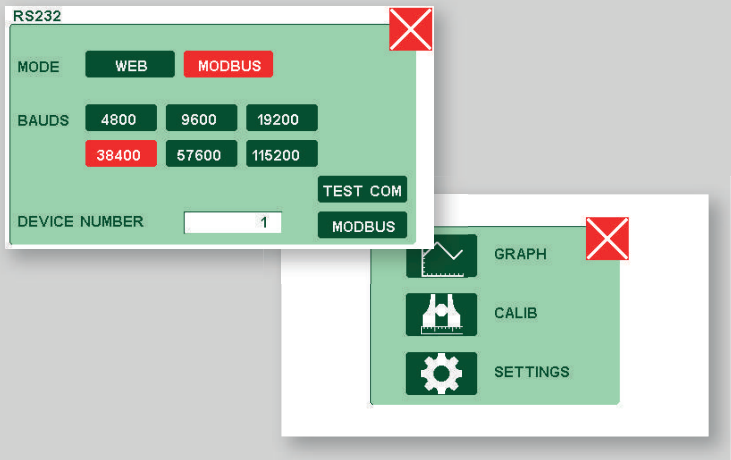
The period and cleaning time are adjustable to adapt to different applications

*User-Friendly **Interface***

The colour touch screen and intuitive interface available in 8 different languages (Chinese, English, French, German, Italian, Portuguese, Spanish, Turkish) makes very easy to test or configure the analyser.

A number of test functions allows to test and troubleshoot each element of the controller to setup quickly a maintenance diagnostic.

The complete configuration can be saved on a USB key and reload if necessary.



Communication

Two 4-20 mA output are available on the main board, and two additional 4-20 mA modules can be plugged.

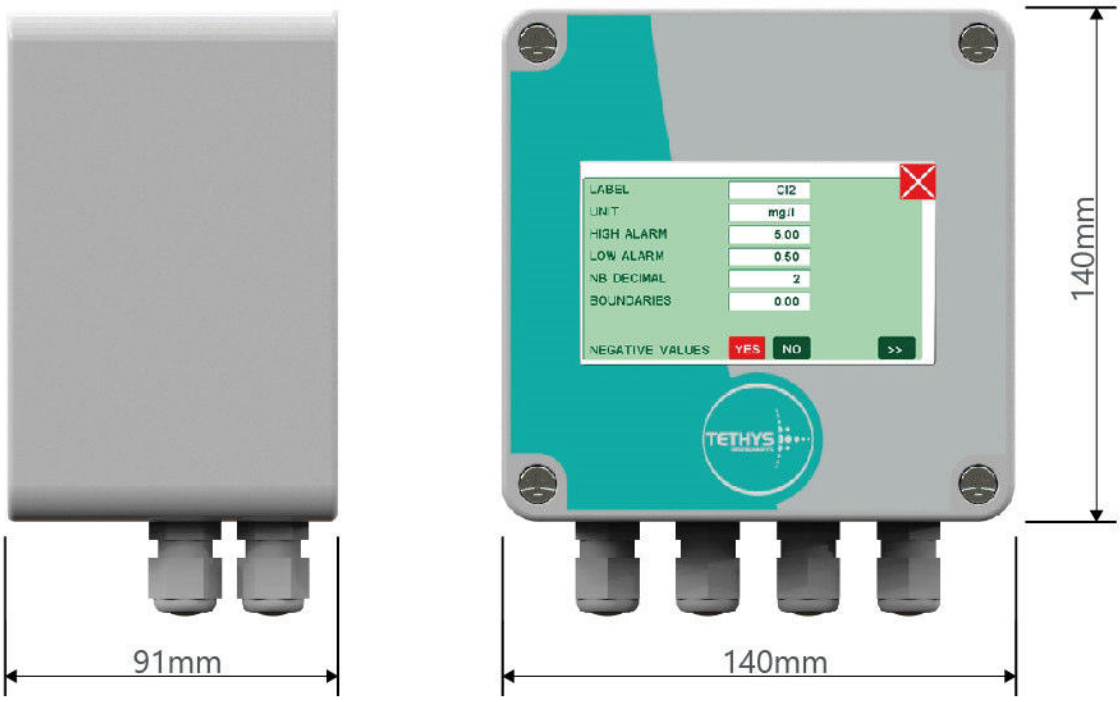
The RS232 port and the RS485 port support the MODBUS protocol to transmit each measuring channel value to a SCADA system. Additional parameters are available like status code, error code, calibration values.

A web interface makes possible to drive remotely the analyser from any computer, tablet or smart phone with a web browser. For this, an external Wi-Fi or Ethernet module must be added to connect it to an existing network with an internet gateway.

A USB port enable to download on any USB key the last 24 hours recorded measurements as well as a diagnostic file containing the configuration and useful information for remote troubleshooting.

The recorded measurements file can be imported to Excel for graphs or other treatments.
The software of the controller can be upgraded by connecting a USB key.

> EL200 Parameters Specifications



Parameter	Standard range Other ranges on request	Repeatability
pH	0 -14	+/- 0.01 pH
ORP	+/-2000 mV	+/- 1 mV
Dissolved oxygen	0-25 mg/l O2	+/- 0.02 mg/l O2
Conductivity	0 - 20 µS (K=0.01) 0 - 200 µS (K=0.1) 0 - 2000 µS (K=1) 0 - 20 mS (K=10)	+/- 0.01 µS +/- 0.1 µS +/- 1 µS +/- 0.01mS
Chlorine	0-5 mg/l	+/- 0.01 mg/l
TSS (Total Suspended Solid)	0-1500 mg/l TSS 0-30000 mg/l TSS	+/- 1% of reading or +/- 2 mg/l TSS +/- 1% of reading or +/- 2 mg/l TSS
Turbidity	0 - 40 NTU 0 - 400 NTU	+/- 0.4 NTU +/- 2 NTU
Temperature	0 - 80°C	+/- 0.1 °C

> EL200 General Specifications

Inputs	pH / ORP 2 X 4-20 mA input, 2-wire or 4-wire (15v DC galvanically isolated source, 50 mA maxi)
Outputs	2 x 4-20mA active output (load of 500 ohm maxi)
Relays	4x electromechanical SPDT (form C) contact, 5 A Programmable individually for high or low alarm, probe default or stream multiplexing
Free sockets	2x free sockets for additional modules among : Conductivity module 4-20mA input module, 2-wire or 4-wire (15v DC source, 50 mA maxi) 4-20mA active output (load of 500 ohm maxi)
Measuring mode	Continuous
Memory	288 lines of measurements (up to 16 channels) with time
Power supply	90 - 265 VAC 47/63 Hz 10 VA or 24V DC 0.5 A maxi Protection for peak current 8/20 µS up to 8 kA
Touch Screen	Colour TFT LCD 480x272 pixels with LED backlight
Communication	RS232, MODBUS or HTTP/Web interface *(Windows with IE9/10/11, Android with Opera, Apple i-phone with Safari)* RS485 port for MODBUS communication RS485 port for digital probes (DO, TSS, pH, ORP) USB Optional Wi-Fi and Ethernet interfaces
Certifications	CE, EN 61010-1, EN 61326
Enclosure	IP65, Aluminium with epoxy coating for wall mounting Optional pipe mounting brackets
Dimensions	140 x 140 x 91 mm
Weight	2 kg approx.

> EL200 Parts references

Basic unit

EL200 — ***Mono & multi channel water controller***

One pH/ORP input
Two 4-20 mA input, 2-wire or 4-wire (15V DC galvanically isolated source)
Two 4-20 mA outputs
Four relays, SPTD contacts (form C)
RS232 included with screw terminal (Modbus or Web)
RS485 included with screw terminal (Modbus)
RS485 included with screw terminal (for external digital probes)
USB port included for USB key connection
2 free sockets for input or output modules (not included, refer options)
Color graphic display 480x272 pixel with touch screen
Built-in data logger, memory 288 measurements for each parameter
7 available glands for inputs / outputs
Power supply 90-265 VAC 47-63 Hz with power cord 2 meters or 24V DC, 0.5A
Enclosure IP65/Nema4X 140x140x91mm

Measurement module by electrode

PH500 — ***pH module***
Range: 0 – 14
ATC input for platinum RTD 100 Ohm

ELPH — ***pH online electrode, general purpose***
Range: 0 – 14
6 meters of cable
Built-in ATC RTD 100 Ohm

ELPH-D — ***pH online electrode, differential sensor***
Range: 0-14
6 meters of cable length
Built-in ATC RTD 100 ohm

CHLSET — ***Amperometric chlorine set***
Range: 0 – 20 mg/l Cl2
Built-in temperature compensation,
Includes chlorine electrode, pH electrode, electrode holder, flow meter, mounting plate, and 3 feet cable.

ORP500 — ***ORP module***
Range: -2000 mV – +2000 mV

ELORP — ***ORP online electrode, general purpose***
Range: -2000 mV – +2000 mV
6 meters of cable

COND500 — ***Conductivity module***
Range: 0 – 100 µS to 0 – 100 mS
ATC input for platinum RTD 100 Ohm

ELCOND-1 — ***Conductivity online electrode***
Range: 0 – 20 mS
Cell constant k=1.0 cm-1 (medium range)
6 meters of cable
Built-in ATC RTD 100 Ohm

ELCOND-0.01 — ***Conductivity online electrode***
Range: 0 – 200 µS
Cell constant k=0.01 cm-1 (very low range)
6 meters of cable
Built-in ATC RTD 100 Ohm

ELCOND-0.1 — ***Conductivity online electrode***
Range: 0 – 2000 µS
Cell constant k=0.1 cm-1 (low range)
6 meters of cable
Built-in ATC RTD 100 Ohm

ELCOND-10 — ***Conductivity online electrode***
Range: 0 – 200 mS
Cell constant k=10.0 cm-1 (high range)
6 meters of cable
Built-in ATC RTD 100 Ohm

ICOND — ***Inductive conductivity online probe***
Range: 0 – 100 mS
3 meters of cable
Built-in temperature compensation at 2.2%/°C
4-20 mA output

Input modules

IN4-20-500 — ***4-20 mA input module***
Isolated 4-20 mA input
Impedance: 100 Ohm

Output modules

OUT4-20-500 — ***4-20 mA output module***
Isolated 4-20 mA output
Active output, Max load 500 Ohm

> EL200 Parts references

Measurement by Optical method

DO-F ***Dissolved oxygen probe by fluorescence***
Range: 0 - 25 mg/l O2
10 meters of cable

DO-F-AC ***Dissolved oxygen probe by fluorescence with automatic cleaning***
Range 0 – 25 mg/l O2
10 meters of cable

EXT-TURB-H ***Total suspended solid (TSS) probes high range***
High range: 0 – 30,000 mg/l TSS
10 meters cable

EXT-TURB-L ***Total suspended solid (TSS) probes low range***
Low range: 0 – 1500 mg/l TSS
10 meters cable

EXT-TURBNEPH-H ***Nephelometric turbidity probes high range***
Range: 0 – 400 NTU
10 meters cable

EXT-TURBNEPH-L ***Nephelometric turbidity probes medium range***
Range: 0 – 40 NTU
10 meters cable

The manufacturer reserves the right to modify and/or change any specifications, dimensions, design or drawing at any time without prior notice

TETHYS Instruments
57, Chemin du vieux Chêne, 38240 MEYLAN -France-

Tel : +33 4 76 41 86 39 - Fax : +33 4 76 41 92 27
Mail : sales@tethys-instruments.com
Web : www.tethys-instruments.com

IND#D - E.COM.18