

PROBES



Specialist Of UV Spectroscopy

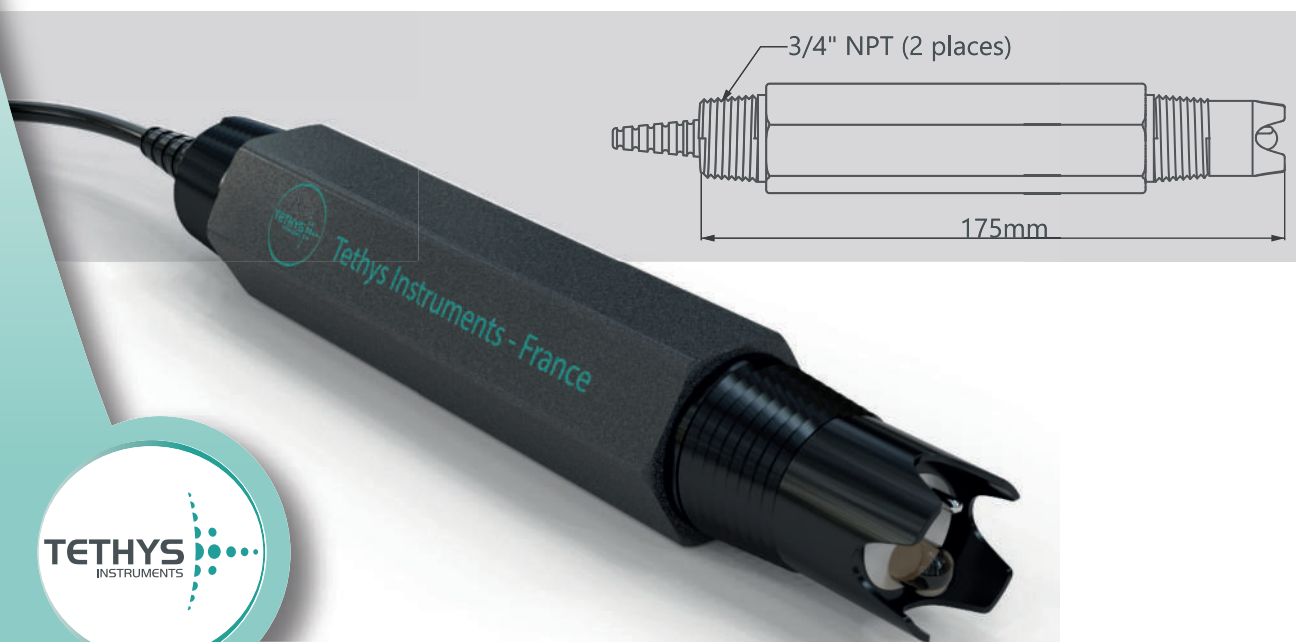


> **PH SENSOR** general purpose

Tethys General Purpose pH Sensor with 3/4" NPT thread on both front & back is a heavy-duty pH probe with Ryton body suitable for many industrial water application. Mounting thread on both front and back allow for in-pipe (continuous measurement) or submersible installations of pH Sensor. This pH sensor offers excellent chemical and impact resistance.

specifications

pH Range	0-14 pH
Response Time	5 seconds to 95% of full response
pH Sensor Type	Convertible style combination pH sensor
Body Material	Ryton
Reference	Double Junction with porous Teflon
Mounting	Immersion or In-Line
Temperature Range	0-80 °C
Maximum Operating Pressure	100 psi
Temperature Element	Pt-100 Ohm RTD
Temperature Compensation	Automatic
Integral Sensor Cable Length	6 meter
Mounting Thread on Sensor Body	3/4" NPT threads, front & back



ELPH pH online electrode, general purpose
Range : 0-14
6 meters of cable length
Built-in ATC RTD 100 ohm

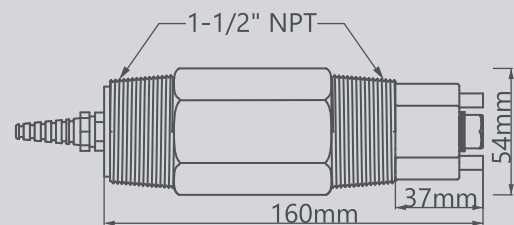


> **PH SENSOR** differential

Tethys Differential pH Sensor with 1 ½"NPT thread on both front & back is a heavy-duty pH probe with Ryton Polyphenylene Sulfide body suitable for many industrial water application. The differential design provides unsurpassed accuracy by virtually eliminating ground loops. Mounting thread on both front and back allow for in-pipe (continuous measurement) or submersible installations of pH Sensor. You can replace the salt bridge and refill the reference solution to keep pH electrode working longer. This pH sensor offers excellent chemical resistance for harsh application.

specifications

pH Range	0-14 pH
pH Sensor Type	Differential pH sensor
Body Material	Ryton @PPS body
pH stability (per 24 hour)	0.03 pH
Mounting	Immersion or In-Line
Temperature Range	0-85 °C
Temperature Element	10K NTC
Temperature Compensation	Automatic
Maximum Pressure	100 psi
Integral Sensor Cable Length	6 meter
Mounting Thread on Sensor Body	1 ½" NPT threads, front & back



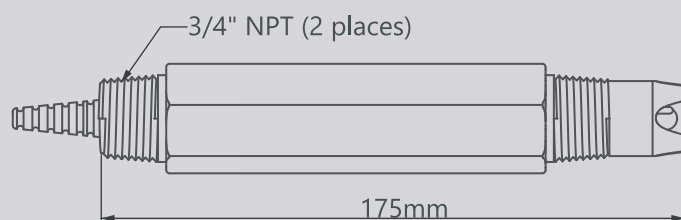
- ELPH-D** pH online electrode, differential sensor
Range: 0-14
6 meters of cable length
Built-in ATC RTD 100 ohm
- ELPH-D-S** Replacement salt bridge for differential pH Sensor
- ELPH-D-R** Refill solution for standard cell, 125 mL

> ORP SENSOR

Tethys General Purpose ORP Sensor with 3/4" NPT thread on both front & back is a heavy-duty ORP probe with Ryton body suitable for many industrial water applications. Mounting thread on both front and back allow for in-pipe (continuous measurement) or submersible installations of ORP Sensor. This ORP sensor offers excellent chemical and impact resistance.

specifications

ORP Range	-2000 to +2000 mV
Sensor Type	Convertible style combination ORP sensor
Body Material	Ryton
Sensing element	Platinum
Reference	Double Junction with porous Teflon
Mounting	Immersion or In-Line
Operating temperature range	0-80 °C
Maximum operating pressure	100 psi
Integral Sensor Cable Length	6 meter
Mounting Thread on Sensor Body	3/4" NPT threads, front & back



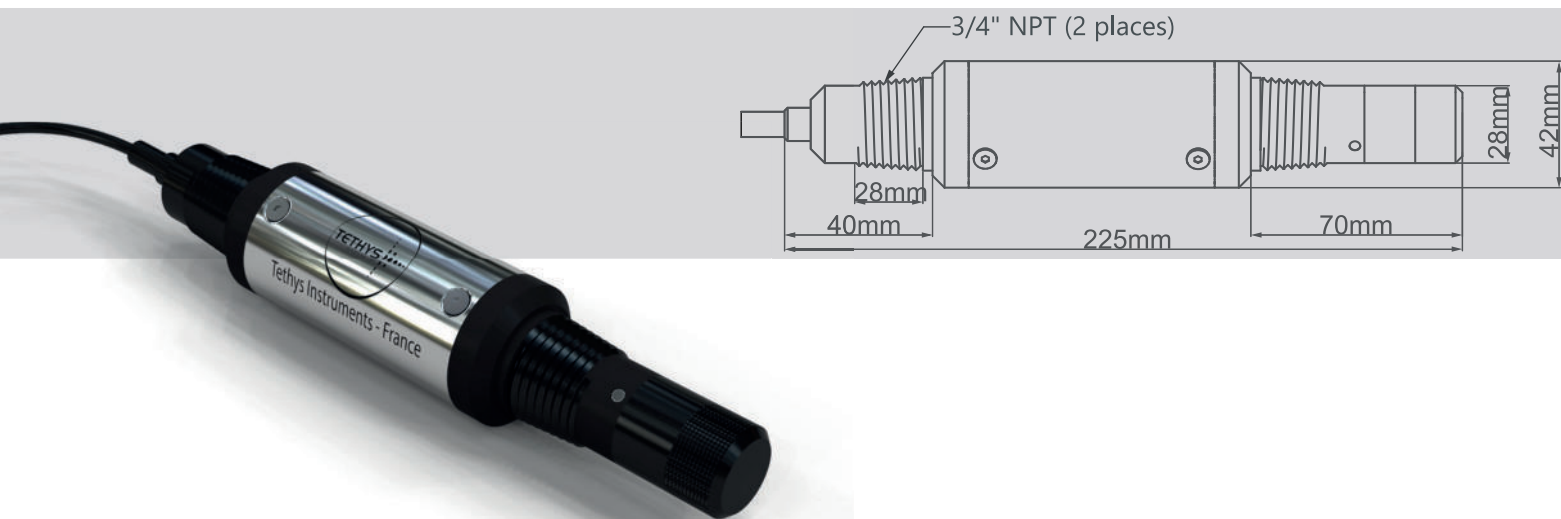
ELORP ORP online electrode
Range: -2000 mV to +2000 mV
6 meters of cable

> DISSOLVED OXYGEN PROBE

Tethys Process Optical DO Probe is based on proven Luminescent Optical Technology suitable for most industrial application. It provides full featured performance, replaceable sensor caps, and long life. Mounting thread on both front and back allow for in-pipe (continuous measurement) or submersible installations of DO probe. Optical DO probe is suitable for measurement of dissolved oxygen measurement in various water and waste water application.

specifications

Measurement Range DO	0-20 mg/L
Working Temperature Range	-5 to 50 °C
Measurement Technique	Luminescent Optical Technology
Accuracy DO :	± 0.1 mg/L
Accuracy Temperature	± 0.2 °C
Response Time	40 second to 90% (T-90)
Body Material	Stainless Steel 316 body
Sensor Protection	IP-68
Maximum operating pressure	100 psi
Maximum operating temperature	80 °C
Temperature Compensation	In-built, Automatic
Integral Sensor Cable Length	10 meter
Mounting	Immersion or In-Line
Mounting Thread on Sensor Body	1" NPT threads, front & back
Sensor Cap	Replaceable, Pre-calibrated
Expected Sensor Cap Life	2 Year
Probe Warrantee	1 Year



DO-F Dissolved oxygen probe by fluorescence

Range: 0-20 mg/l O₂

10 meters of cable length

DO-F-S Replacement Sensor cap with matched microSD card

DO-F-C Replacement converter box

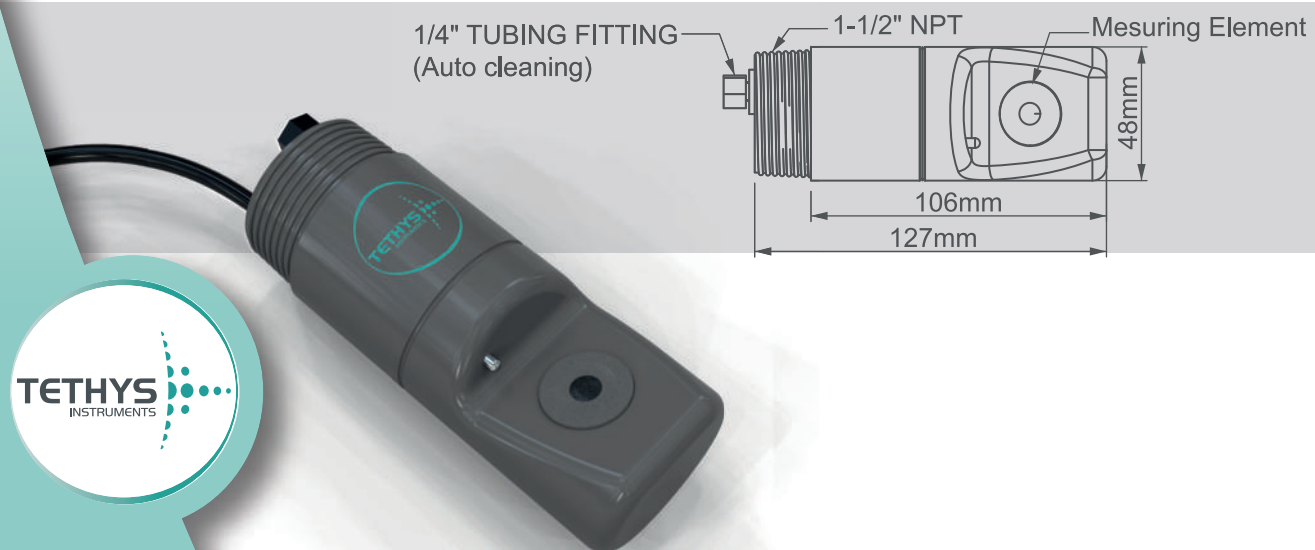
> DISSOLVED OXYGEN PROBE

Auto Cleaning

Tethys Process Optical DO Probe is based on proven Fluorescence Optical Technology suitable for most industrial application. It is rugged, without replacement sensor cap and having auto-cleaning feature. It is designed for submersible mounting in open basin. Optical DO probe is suitable for measurement of dissolved oxygen measurement in various water and waste water application.

specifications

Measurement Range	0-25 mg/L
Working Temperature Range	0 to 60 °C
Measurement Technique	Fluorescence Optical Technology
Accuracy	1% of reading or 0.05 ppm, whichever is greater
Response Time	60 second to 90% (T-90)
Wetted Material	Epoxy, polyurethane, and PVC
Sensor Drift	Less than 2% per year
Repeatability	0.02 ppm
Stability (per 24 hour period)	0.02 ppm
Maximum Pressure	100 PSI
Temperature Compensation	In-built, Automatic
Integral Sensor Cable Length	10 meters
Sensor Cleaning System	air or water wash option available
Mounting	Submersible
Mounting Thread on Sensor Body	1-1/2" NPT
Probe Warrantee	1 Year



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

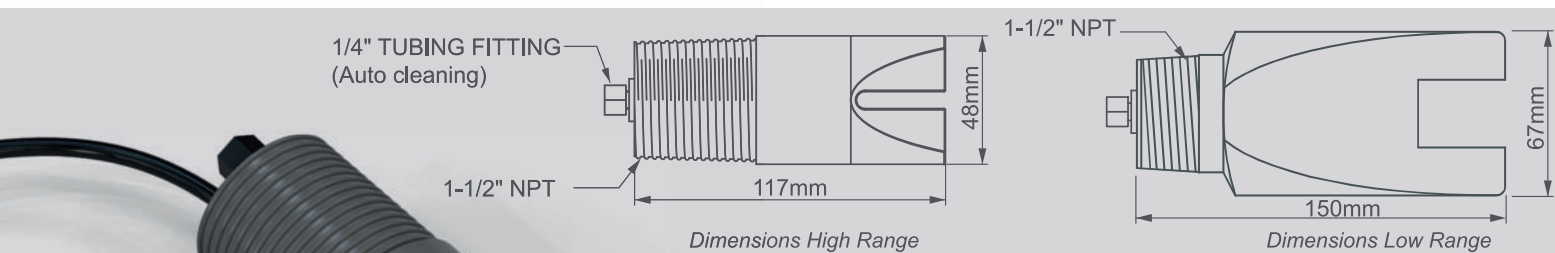


> TOTAL SUSPENDED SOLIDS PROBE

Tethys Total Suspended Solid (TSS) Probe operate on the principle of single gap light absorption as a means of detecting the presence of suspended solids. The sensors incorporate self-cleaning optics via air or water jet. The application involves measurement of total suspended solids concentration from Mixed Liquor Suspended Solid (MLSS), Return Activated Sludge (RAS), Waste Activated Sludge (WAS), clarifier effluent and plant effluent.

specifications

Measurement Low Range	0-1500 mg/L
Measurement High Range	250 – 30,000 mg/L
Accuracy Low Range Sensor	5% of reading or 5 mg/l whichever is higher
Accuracy High Range Sensor	5% of reading or 50 mg/l whichever is higher
Stability	2% of reading
Repeatability	2% of reading
Working Temperature Range	0 to 60 °C
Measurement Technique	IR light absorption
Response Time	60 second to 90% (T-90)
Wetted Material	Epoxy, polyurethane and PVC
Sensor Drift	Less than 1% per year
Integral Sensor Cable Length	10 meter
Sensor Cleaning System	air or water wash option available
Maximum Pressure	100 psi
Mounting	Submersible
Mounting Thread on Sensor Body	1-1/2" NPT
Probe Warrantee	1 Year



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

> **TURBIDITY SENSOR**

Tethys turbidity sensor is based on nephelometric method (ISO 7027 – EN 27027). A light beam from a laser diode is sent to the sample through an optical lens. The 90 degree scattered light by suspended particles is collected by a photo detector and converted to an electric signal proportional to the turbidity of the sample.

The sensor uses a 650 nm red laser light or on request a 860 nm infrared laser light so that the measuring is not affected by the color of the sample (ISO7027). It is suitable for measurement of turbidity in drinking water and aquaculture as well as for the outlet of municipal or industrial water treatment plants.

A integrated bubble trap avoid the effect of bubbles on the measurement.

The sensor can be easily opened for calibration on a formazine solution. A valve at the bottom allows to empty the cylinder during calibration operations or for a manual cleaning.

The turbidity sensor must be connected to the EL200 controller for display, calibration and measurement transmission though RS232/RS485 under Modbus protocol or by analog 4-20 mA output.



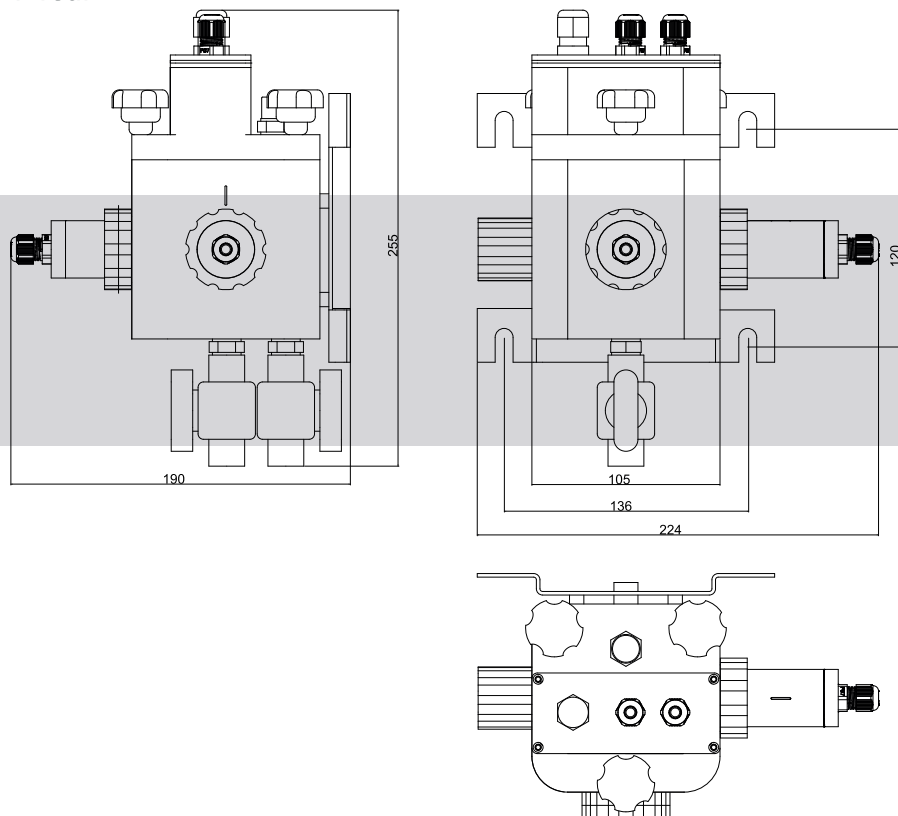
TETHYS
INSTRUMENTS

TURB200 Nephelometric turbidity sensor low range
Range: 0 – 100 NTU
3 meters cable

specifications

Measurement method	Nephelometric
Measurement range:	0 - 100 NTU (other ranges on request)
Detection limit:	0.015 NTU
Repeatability:	+/- 0.01 NTU
Accuracy:	+/- 2% or +/- 0.015 NTU whichever is greater up to 20 NTU, +/- 5% above 20 NTU
Detector:	90° scattered light detector
Light source:	visible laser diode (or infrared laser diode on request), lifetime > 5 years
Bubble Trap:	integrated
Capacity:	250 ml
Inlet/outlet fittings:	for 9.6 mm external diameter plastic tubing
Ambient temperature range:	-5 to 60 °C
Working pressure:	6 Bar maximum at 25 °C
Body material:	POM
Wet material:	POM, PP, FKM, quartz
Sensor cable Length:	3 meters (to EL200 controller)
Associated controller:	EL200 (to order separately)
Mounting:	on wall by 4 screws

Sensor warrantee: 1 Year



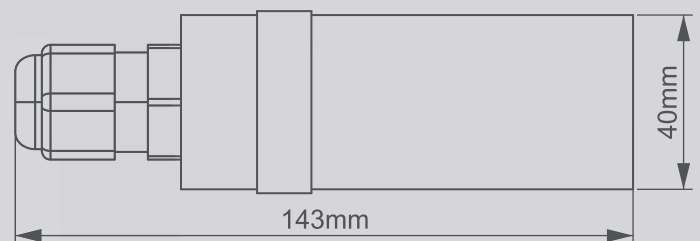
> **TURBIDITY PROBE**

Tethys Turbidity probes are based on Nephelometric Method (ISO 7027 – EN 27027). A light beam is sent to the sample through an optical lens. The 90 degree scattered light by suspended particle is collected by the probe through a second lens and it is converted in an electric signal proportional to the turbidity of the sample.

The probe uses an infrared light and the measuring is not affected by the color of the sample. They are suitable for measurement of turbidity in water quality monitoring, municipal and industrial water treatment and Aquaculture.

specifications

Measurement Range	0 – 40.00 NTU, 0 – 400.0 NTU
Measurement Technique	Nephelometric
Detector	90° scattered light detector
Light Source	Infrared
Ambient Temperature Range	-5 to 50°C
Working Pressure	6 bar maximum at 25°C
Body material	PVC
Integral Sensor Cable Length	10 meter
Mounting	In-line or In-flow
Probe Warrantee	1 Year



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

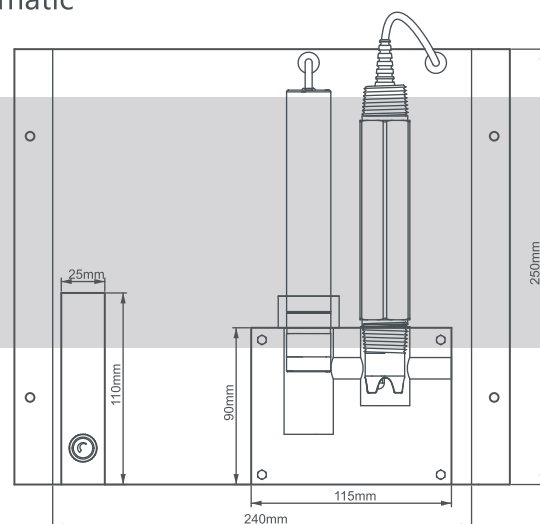
EXT-TURBNEPH-L Nephelometric turbidity probes medium range
Range: 0 – 40 NTU
10 meters cable

> CHLORINE SENSOR

Tethys Chlorine Sensor is based on proven amperometric measurement technology. It is factory calibrated and zero calibration is not required. It's long life membrane cap is replaceable with refillable gel electrolyte. It is suitable for measurement of residual chlorine (free or total) in various Industrial water and waste water application.



Measurement Range	0-20 mg/L (or ppm)
Measurement Technique	Membrane-covered, three electrode amperometric technology
Accuracy	± 0.1 mg/L
Repeatability	± 0.05 mg/L (25 °C)
Reproducibility	± 4%
Resolution	0.01
Response Time	90 second to 90% (T-90), 25 °C
Operating Temperature	0 to 50 °C
Operating Pressure	Maximum 15 PSI
Sample pH	4-12, greatly reduced pH interference
Flow Requirement Minimum	30 L/hr (0.6 cm/s)
Flow Requirement Maximum	60 L/hr (1.3 cm/s)
Material	Body Housing : PVC, ABS Membrane : Hydrophilic PTFE Electrode : Silver-Silver Halide/ Gold/316SS
Temperature Compensation	In-built, Automatic
Warranty	1 Year



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.

ELCHL Amperometric chlorine electrode
ELCHL-M Membrane cap for ELCHL chlorine electrode
ELCHL-R Refillable electrolyte for ELCHL chlorine electrode
ELPH pH online electrode, general purpose

> CONDUCTIVITY PROBE

Tethys Conductivity Sensor with 3/4" NPT thread is a heavy-duty probe with Polypropylene body suitable for many industrial water application. Mounting thread allow for in-pipe (flow through) installations of conductivity sensor. These conductivity sensor offers excellent chemical and impact resistance.

specifications

Measurement Range and Cell constant

Cell Constant, K	Conductivity measurement range
0.01	0 - 200 μ S
0.1	0 - 2000 μ S
1	0 - 20 mS
10	0 - 200 mS

Body Material

Polypropylene

Mounting

In-Line (Flow-through)

Temperature Range

0-80 °C

Maximum operating pressure

100 psi

Temperature Element

Pt-100 Ohm RTD

Temperature Compensation

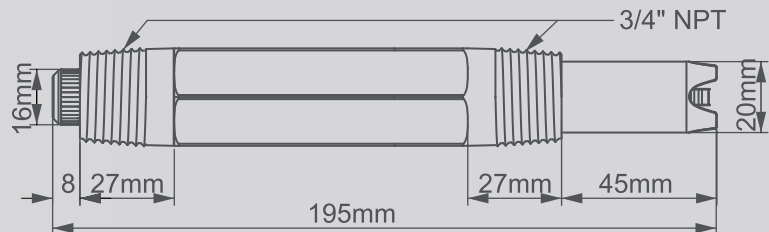
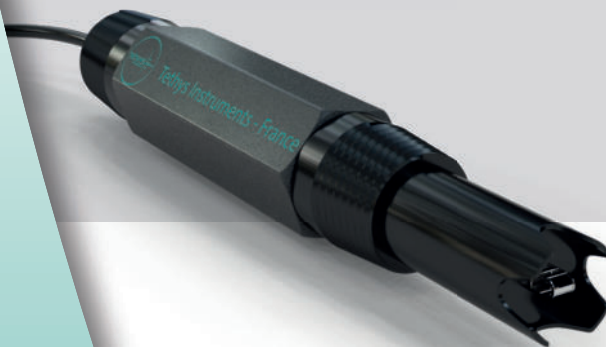
Automatic

Integral Sensor Cable Length

6 meter

Mounting Thread on Sensor Body

3/4" NPT threads



Dimensions and Specifications above apply only for ELCOND-1 / ELCOND-10 / ELCOND-0.1



ELCOND-1 Conductivity online electrode - 6 meters cable

Range: 0 – 20 mS
Cell constant k=1.0 cm⁻¹ (medium range)
Built-in ATC RTD 100 Ohm

ELCOND-0.01 Range: 0 – 200 μ S
Cell constant k=0.01 cm⁻¹ (very low range)
Built-in ATC RTD 100 Ohm

ELCOND-0.1 Range: 0 – 2000 μ S
Cell constant k=0.1 cm⁻¹ (low range)
Built-in ATC RTD 100 Ohm

ELCOND-10 Range: 0 – 200 mS
Cell constant k=10.0 cm⁻¹ (high range)
Built-in ATC RTD 100 Ohm

ICOND Inductive conductivity online probe
Range: 0 – 100 mS
3 meters cable
Built-in temperature compensation at 2.2%/°C

> UV PROBE

for COD BOD TOC equivalent measurement

Tethys UV probe provides a simple way to measure organic matter for surface water or industrial/municipal waste water. It must be calibrated for each application to give a COD or BOD or TOC equivalent measurement depending on the sample composition. It is based on a new light source technology offering a compact and cost effective solution with a long lifetime.

specifications

Measuring range	With 3 mm path: 0 - 600 Abs/m (equivalent to 0-5000 mg/l COD on rough municipal waste water) With 10 mm path: 0 - 200 Abs/m (equivalent to 0-100 mg/l COD on surface water)
Optical path	3 mm or 10 mm
Measurement technique	UV light absorbance
Accuracy	+/- 2% on standard solution
Response time	10 sec
Turbidity compensation	Integrated by dual-beam method
Light source life time	> 5 years
Mounting	Immersion
Probe cleaning system	Air cleaning option available
Cable length	10 meters
Sensor protection	IP68
Temperature range	-20°C to 70°C
Body material	Stainless steel 316L
Wet materials	PTFE, quartz, FKM (Viton), PU, Brass Nickel Plated, Neoprene
Probe warranty	1 year



UV200-H UV probe with 3 mm optical path
Range: 0-600 Abs/m
(0-5000 mg/l COD on rough municipal waste water)
10 meters cable

UV200-L UV probe with 10 mm optical path
Range: 0-200 Abs/m
(0-100 mg/l COD on surface water)
10 meters cable

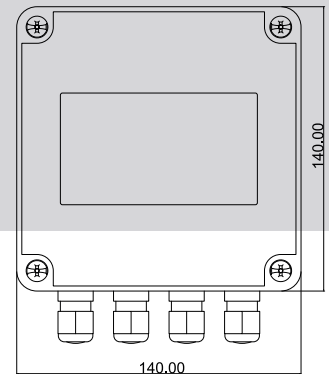
> EL200

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.

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.



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

> APPLICATIONS








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

The EL300 is a universal water controller based on a modular concept. It can adapt to many different probes and configurations, mono or multi-channel.

The UV300 is a cost effective water analyser for applications focused on one or two parameters.

The UV400, based on a modular concept, allows to monitor simultaneously many different parameters for waste water or drinking water treatment plants as well as river monitoring stations.

The UV500 is a on-line water analyser based on a high resolution UV-visible spectrograph.

PARAMETERS	 UV 500	 UV 400	 UV 300	 EL 300	 EL 200
UV254 (COD by correlation)	●	●	●		
Ammonia	●	●	●		
Nitrate	●	●	●		
Colour	●	●	●		
Aromatics Hydrocarbons (PAH)	●	●	●		
Chlorophyll A		●	●		
Phosphate	●	●	●		
Chlorine			●		●
Nitrite			●		
Aluminium			●		
Iron			●		
Silica			●		
Hydrogen Sulphide	●	●			
Cr (VI)	●		●		
Turbidity (TSS by correlation)	●	●	●		●
pH	●	●		●	●
ORP	●	●	●	●	●
Dissolved Oxygen	●	●		●	●
Conductivity	●	●		●	●
Extrenal Turbidity (TSS by correlation)	●	●	●	●	●
Temperature 0-80°C	●	●	●	●	●

> They Trust In Us



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Management System
ISO 9001:2008



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