Measuring and Control Instruments

ISO 9001:2000 CERTIFIED COMPANY

seko

innovation > technology > future

Measuring and *control instruments*, *Probes* and *Accessories*

kontrol 20

A technologically advanced instrument which allows accurate adjustments of water treatment applications.

kontrol PR20 pH/Redox
kontrol CD20 Conductivity

Standard Functions

- Multilingual menu
- Password protection for setting menu
- Quality indication of measuring probes

Output 4…20mA

The ideal solution for connecting to a logger or data acquisition system.

Selectable measurement scales

Using the programming menu, it is possible to select the available measurement scale to ensure operating versatility with a single instrument.

Easy to read

The instrument displays the chemical measurement and the temperature via the 2-line, 16-character Display.

Easy to calibrate

This instrument is capable of recognising the buffer solutions, performing automatic calibration for **2 points (7 - 4 or 9.22 pH)**, stopping the dosage and indicating the state of efficiency of the probe. Conductivity Calibration is performed using a reference value.

Panel version
(96x96x92 mm)

pH/Redox-meter characteristics

Measurement scales(*)	**pH:** 0÷14,00 **Redox:** ±1000 mV	**Precision** 1% FS **Precision** 1% FS
Temperature Resolution	0÷100°C (**Precision** 1% FS) with PT100	
Current output(*)	0/4÷20 • 20÷4/0 mA (±2%)	
Set Points *(2 independent)*	through 10 A 250 V dry contact relay (resistance load)	
Power supply	100÷240 Vac 50Hz/60Hz (12÷24 AC/DC with accessory cable)	

Conductivity-meter characteristics

Measurement scales(*)	10÷20000 µS	**Precision** 1% FS
with K10 probe	10÷2000 µS ± 1% FS	
with K5 probe	20÷4000 µS ± 1% FS	
with K1 probe	100÷20000 µS ±1% FS	
Temperature Resolution	0÷100°C (**Precision** 1% FS) with PT100	
Current output(*)	0/4÷20 • 20÷4/0 mA (±2%)	
Set Points *(2 independent)*	through 10 A 250 V dry contact relay (resistance load)	
Power supply	100÷240 Vac 50Hz/60Hz (12÷24 AC/DC with accessory cable)	

(*)Selectable via software

Wall-mounted Version with IP65 degree protection **(144x144x90 mm)**

Panel version
(48x96x100 mm)

DIN Rail Version
(6 EN50022 modules)

pH/Redox *and* ***conductivity*** *measuring and control instruments*

Wall-mounted version with IP65 degree protection **(144x144x90 mm)**

kontrol 40

A technologically advanced instrument which allows accurate adjustments of applications such as:

- mineral waters
- water treatment
- galvanic processes
- the food industry
- swimming pools
- biotechnologies
- osmosis plants

kontrol PR40 pH/Redox
kontrol CD40 Conductivity

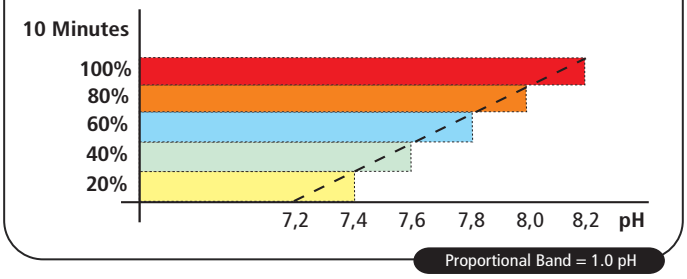
DIN Rail Version **(6 EN50022 modules)**

Panel version **(96x96x92 mm)**

Panel version **(48x96x100 mm)**

Standard Functions

- Multilingual menu
- Password protection for setting menu
- Relay activation statistics
- Manual control of all the instrument's functions
- Quality control of measurement probes
- OFA (Over Feed Alarm): timed excess dosage alarm
- Alarm band can be set with minimum and maximum values
- Proportional dosing through Set Points:



Voltage input from remote system

The instrument is equipped with a voltage input **(ranging from 15 to 30 Vac/Vdc)** for suspending the measurement and dosage functions via a remote control system.

Galvanic separation of output 4…20mA

The ideal solution for connecting to a logger or data acquisition system without any interference.

Selectable measurement scales

Using the programming menu, it is possible to select the available measurement scale to ensure operating versatility with a single instrument.

Easy to read

The instrument displays the chemical measurement, the temperature and any alarms via the 2-line, 16-character Display.

Easy to calibrate

This instrument is capable of recognising the buffer solutions, performing automatic calibration for **2 points (7 - 4 or 9.22 pH)**, stopping the dosage and indicating the state of efficiency of the probe. Conductivity Calibration is performed using a reference value.

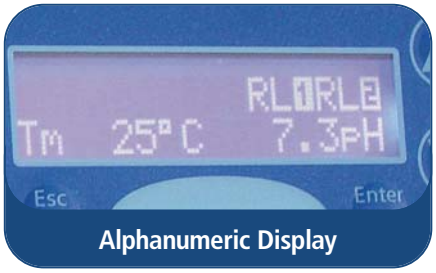
pH/Redox-meter characteristics

Measurement scales(*)	**pH:** 0÷14,00	**Precision** 1% FS
	Redox: ±1.000 mV	**Precision** 1% FS
Temperature Resolution	0÷100°C (**Precision** 1% FS) with PT100	
Current output(*) *(galvanically isolated)*		0/4÷20 • 20÷4/0 mA (±2%)
Set Points *(2 independent)*	through 10 A 250 V dry contact relay (resistance load)	
Voltage	15÷30 Vac/Vdc	
Power supply	100÷240 Vac 50Hz/60Hz (12÷24 AC/DC with accessory cable)	

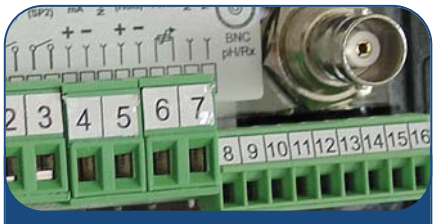
Conductivity-meter characteristics

Measurement scales(*)	1÷50000 µS	**Precision** 1% FS
with K10 probe	1÷200 µS ± 1% FS	
	10÷2000 µS ± 1% FS	
with K5 probe	20÷4000 µS ± 1% FS	
with K1 probe	100÷20000 µS ±1% FS	
	200÷50000 µS ± 1% FS	
Temperature Resolution	0÷100°C (**Precision** 1% FS) with PT100	
Current output(*) *(galvanically isolated)*		0/4÷20 • 20÷4/0 mA (±2%)
Set Points *(2 independent)*	through 10 A 250 V dry contact relay (resistance load)	
Voltage 15÷30 Vac/Vdc		
Power supply	100÷240 Vac 50Hz/60Hz (12÷24 AC/DC with accessory cable)	

(*)Selectable via software



Alphanumeric Display


Easy connections


DIN Mounting

pH/Redox, chlorine, conductivity, oxygen *and* ***turbidity*** *measuring and control instruments*

kontrol 500

A line of instruments for measurement and control designed specifically for the industrial and water treatment sector. The available measurements are:

pH/Redox	**kontrol PR500**
Chlorine	**kontrol CL500**
Conductivity	**kontrol CD500**
Oxygen	**kontrol OX500**
Turbidity	**kontrol TB500**

Control outputs

Each instrument has 2 current outputs and 4 relays allowing management of up to **six different peripherals**, to create an automatic measurement and control system.

PID control functions

The instruments are provided with settable software functions to control the Proportional-Integral-Derivative (PID), Timed and Pause-Operation remote devices.

Graphic Display

The graphic display with 128x64 pixel resolution allows simultaneous display of the chemical measurement, the temperature measurement and the status of the various control outputs through the graphics of the icon throughout the entire process.

Multilingual Communication

The devices are equipped with a simple mnemonic interface with the option of selecting the communication language from English, French, Spanish, German and Italian.

Power-assisted calibration with probe quality control

The software functions designed for the various calibrations with **2 points (7 - 4 or 9.22 pH)** provide the operator with effective assistance, always ensuring an excellent operating service and displaying a valuable message about the quality of the probe used.

Serial Communication (RS485)

All the devices are equipped for RS485 serial port communication for monitoring measurements and storing data.

Panel version **(96x96 mm)**

Wall - or pole-mounted panel version with IP65 degree protection **(144x144 mm)**

Measurement scales

kontrol PR500

pH	0 ÷ 14 pH
Resolution	0,01 pH
Redox	± 1500 mV
Resolution	1 mV

kontrol CL500

Chlorine	0÷2 ppm; 0÷5 ppm; 0÷10 ppm; 0÷20 ppm
Resolution	0,01 ppm

kontrol CD500

Conductivity (with K1 probe)
0÷20 µS; 0÷200 µS; 0÷2000 µS; 0÷20000 µS

Resolution	0,01 µS; 0,1 µS; 1 µS; 10 µS

kontrol OX500

Oxygen	0÷20 ppm
Resolution	0,1 ppm

kontrol TB500

Turbidity	0,00÷1,00 FTU; 0,0÷10,0 FTU; 0÷100 FTU
Resolution	0,01 FTU; 0,1 FTU; 1 FTU

Common specifications

Temperature	-10 °C ÷ +150 °C (+14 °F ÷ +302 °F)
Resolution	0,1°C (0,1°F)
Measurement accuracy (pH, RX, Cl, CD, O_2, Turbidity)	98%

User-Friendly Keyboard

Graphic Display

Descriptive Display

Mounted on a pole with a bracket and shelter (accessories)

Mechanical characteristics

Sizes	144x144x112 mm and 96x96x130 mm
Box material	ABS (96x96) and PP (144x144)
Degree protection	IP65 (144x144) and IP54 (96x96)
Mounting	Wall - Panel - Pole

Electrical characteristics

Universal power supply	80÷265 Vac (24 Vac on request)
Consumption	10 VA

Control outputs

Double current output	galvanically separated
Double Relay with double exchange for dosing Set Points(*)	Dry contact
Relay dedicated to probe cleaning(*)	Dry contact
Remote alarm relay(*)	Dry contact
Serial interface	RS485 port

(*) (6A 250Vac resistive load)

Inputs

Voltage 15÷30 Vac/dc (to keep the instrument in "Hold" mode)

Control functions and settings

Controls
1. PID (available at current output no. 2)
2. Timed
3. ON/OFF

Delay function for relay activation

Manual control of all outputs

Assisted calibration with probe quality evaluation

Set Point value modification with special menu (Quick menu)

Setup protection with passwords

Interface

Number of keys	4 for setting parameters
Graphic Display	128x64 pixels with backlighting

Panels for measurement and setting of pH value, Redox potential (ORP) and Chlorine concentration

Compact and easy to use, the Kontrol series panels include the accessories required for immediate installation (buffer solutions for pH and Rx calibration, and DPD colorimetric system for CI calibration).

- Autocalibration of all measurements (pH; Redox; Chlorine)
- Compact probe holder complete with flow sensor, valve for adjusting the flow rate and tap for drawing off the liquid
- Alarm signal water flow lack
- Instrument with IP65 degree of protection
- Two alarm relays (5 A - 250 Vac)
- 4÷20 mA outputs for each parameter measured, with option of selecting the interval
- 230 Vac power supply (standard) or 115 Vac (on request)
- Programmable Set points and alarm
- Pump pause function during the calibration phases
- Temperature reading and compensation (automatic with optional PT100)
- Set point adjustment: On/Off, pause/operation, and proportional pulse regulation

kontrol PRC

Panel for measurement and adjustment of **pH value, Redox Potential (ORP)** and **Chlorine concentration**

Consisting of:
- PC95 and PR40 instruments
- pH and Redox (ORP) probes
- Probe holder complete with self-cleaning amperometric cell (Pt-Cu)
- Mechanical filter on water input
- Solenoid valve to shut off the water flow for autocalibration

This instrument allows autocalibration directly with the chemical and physical characteristics of the water to be measured, and indicates the quality of the probes

Measurement scales
0÷5,00 ppm Free Chlorine / 0÷14,00 pH / ±999 mV Redox

kontrol CL

Panel for measuring and adjustment of **Chlorine concentration**

Consisting of:
- Probe holder complete with self-cleaning amperometric cell (Pt-Cu)
- Mechanical filter on water input
- Solenoid valve to shut off the water flow for autocalibration

This instrument allows autocalibration directly with the chemical and physical characteristics of the water to be measured and indicates the quality of the probes

Measurement scales 0÷5,00 ppm Free Chlorine

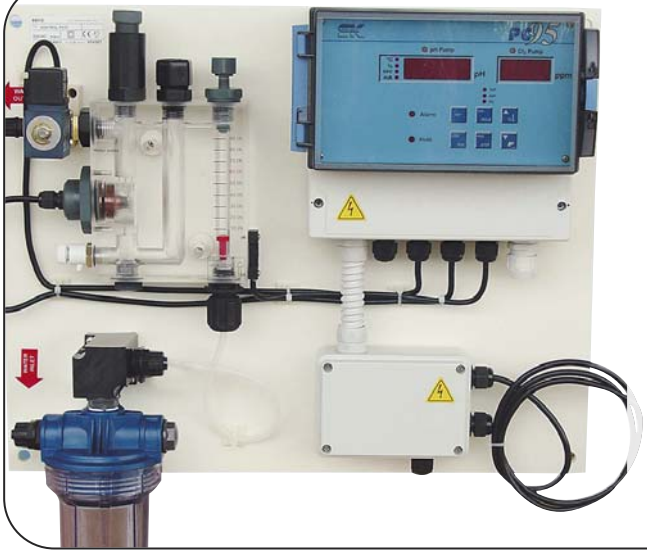
kontrol PR

Panel for measurement and adjustment of **pH value** and **Redox Potential (ORP)**

Consisting of:
- PR95 instrument
- pH and Redox (ORP) probes
- Probe holder
- Mechanical filter on water input

The instrument indicates the quality of the probes

Measurement scales 0÷14,00 pH / ±999 mV Redox



kontrol PC

Panel for measurement and adjustment of **pH value** and **Chlorine concentration**

Consisting of:
- PC95 instrument
- pH probe
- Probe holder complete with self-cleaning amperometric cell (Pt-Cu)
- Mechanical filter on water input
- Solenoid valve to shut off the water flow for autocalibration

This instrument allows autocalibration directly with the chemical and physical characteristics of the water to be measured and indicates the quality of the probes

Measurement scales 0÷14,00 pH / 0÷5,00 ppm Free Chlorine

photometer system

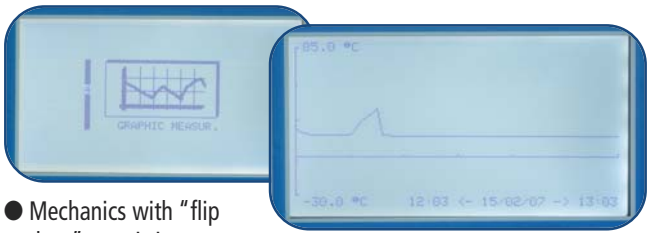
In response to the recent market demand for compact, easy-to-use, low-maintenance systems.

The system is equipped with a graphic display subdivided into areas for simultaneous display of all the required measurements.

The **removable cover** guarantees the accessibility of the system and also allows:

- Protection of the chemical reagents from ultraviolet rays
- High display visibility in the event of incident light

- **IP65 container** protects from humid environments
- **User-friendly interface** with messages in various languages. The wide display allows the creation of graphics for each available measurement thanks to the internal Data Logger function.



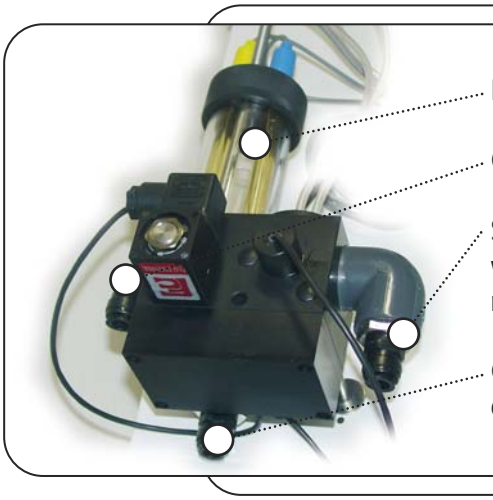
- Mechanics with "flip door" permitting easy access to the electrical connections
- BNC connectors on side of box facilitate quick maintenance of the pH and Redox probes

The peristaltic pump, which has 4 pressure points, saves on reagents

Continual monitoring of reagents using level probes

The DPD reagent in powder form, to be diluted before use, is an excellent solution for safely storing the product in any location

th photometric method, pH, Redox and Temperature



- Hydraulics **with outlet of water containing reagents for chlorine measurement.** This allows a considerable reduction in the quantity of water used for the measurement. The water used for checking the pH and Redox can be channelled towards the buffer tank, while only the water polluted by the DPD reagents will be drained off and managed separately in accordance with local regulations
- **Installation time reduced thanks** to quick-coupling connections for sampling and outlet pipes
- The Unit has self-calibration for optical unit and ensures **a high level of Chlorine measurement** precision using a 520 nm sensor and light source emitted by a LED

Technical Characteristics

Free or total chlorine	**Measurement** 0÷ 5,00 ppm	**Resolution** 0,01ppm	**Precision** 1% FS
pH	**Measurement** 0÷14,00 pH	**Resolution** 0,01 pH	**Precision** 1% FS
Redox	**Measurement** ±1500 mV	**Resolution** 1 mV	**Precision** 1% FS
Temperature	**Measurement** 0÷50 °C	**Resolution** 0.1°C	**Precision** 1% FS
Display	240x128 pixel backlit graphic		
Programming	Via keypad with 4 bubble keys		
Digital Input	Dry contact for disabling dosages		
Analogue Input	0/4÷20 mA for auxiliary measurements		
Power supply	90÷264Vac 50-60Hz 66 Watt		
Internal Data Logger	**Flash Memory** 16,000 records **Recording interval** 00:00 ÷ 99:99 minutes **Type** circular / refill Tabular / graphic **display**		
4 Analogue Outputs	**Size** Chlorine, pH, Redox, Temperature **Type** 0/4÷20 mA galvanically separated Lower / upper / inversion **limit programming** **Maximum load** 500 Ohms		
4 Set Point Relay Outputs	nr. 2 per measurement di Cloro + nr. 2 per measurement pH Max. relay load 3A (resistive) 230Vac		
Alarm Relay Output	Lack of sample water Reagents run out Floodlight burned out Dirty cell Relay max. resistive load 3A at 230Vac		
2 Auxiliary Relay Outputs	**Programmable as** Set Points for Redox measurement, Set Points for Temperature measurement, Timed activation for cell cleaning Relay max. resistive load 3A at 230Vac		
Serial Port Output (RS485)	RTU MODBUS protocol with programmable Baud rate 1200 ÷ 38400		

Products

Total Chlorine + Temperature

Free chlorine + Temperature

Free chlorine+ pH + Temperature

Free chlorine + pH + Redox + Temperature

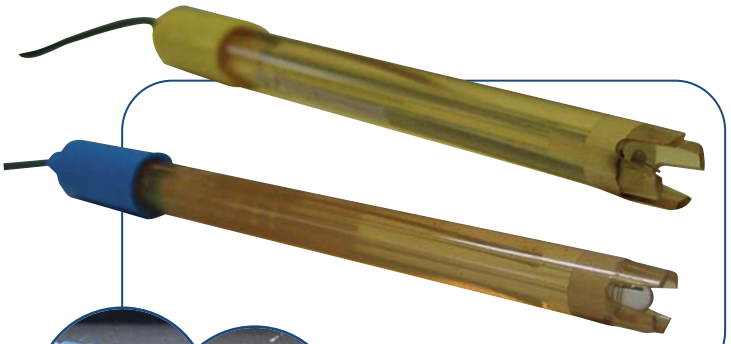
pH/Redox Probes

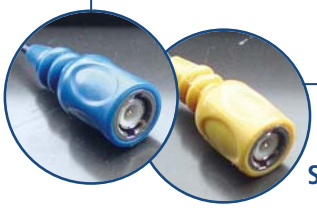
pH and Redox measurements take place through the transformation of a chemical phenomenon into electrical potential which is read by a special sensor called a probe. Probes are active elements with a limited lifespan and must be periodically calibrated with known solutions (buffer solutions).

The probes illustrated below are all of the combined type (Measurement + Reference) and are classified by their chemical and physical characteristics which make them suitable for multiple applications.

The following elements must be considered when choosing a probe: field of measurement , temperature, pressure, chemical substances present during the process and type of mounting within the system.

Series 3-4 PG 13.5 S7





Series 1 with cable+BNC

Standard BNC Boot

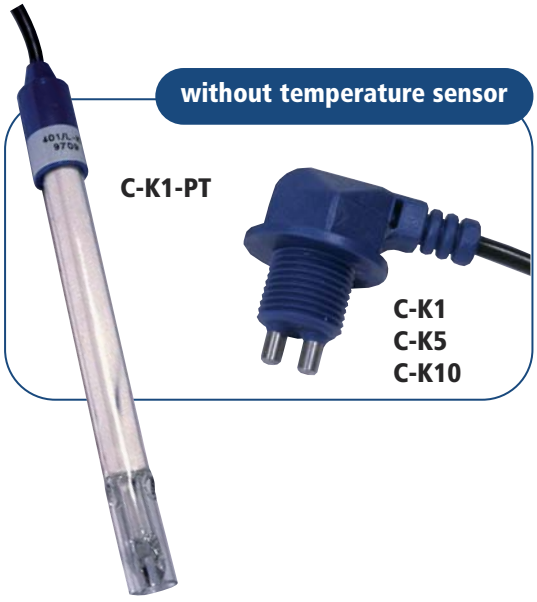
Conductivity Probes

Our range of conductivity probes is specially designed for use in industrial environments in conjunction with our measurement instruments. The various available models make it possible to cover an extremely wide measurement range. There are versions with temperature sensors and special versions with graphite or platinum probes, PTFE cell bodies and IP67 connectors.

Measurement of conductivity is performed by dipping the two metallic electrodes of the probe in the solution to be measured. The passage of the current between the two electrodes allows the electrical resistance of the liquid, and therefore its conductivity, to be measured.

The measurement is influenced by the temperature. In saline solutions, measurement variations of 2% / °C can occur. This variation can even reach 7% / °C. Therefore, conductivity probes without temperature sensors should only be used if the solution being tested is maintained at a temperature between 15°C and 25 °C, making an error of approximately 10%.

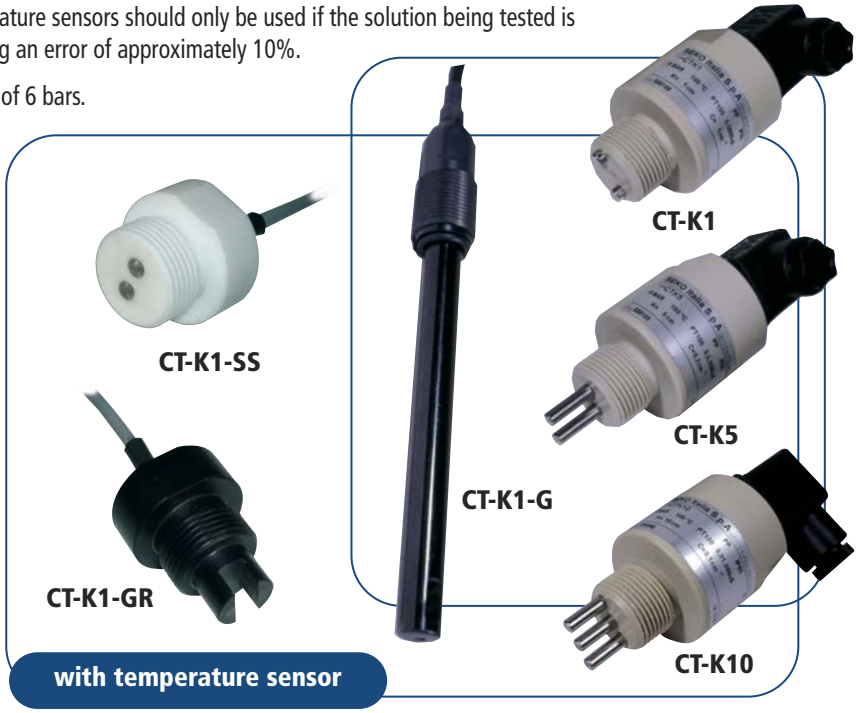
Note All the models are guaranteed for a maximum pressure of 6 bars.



without temperature sensor

C-K1-PT

C-K1
C-K5
C-K10



CT-K1

CT-K1-SS

CT-K5

CT-K1-G

CT-K1-GR

CT-K10

with temperature sensor

Model	Range Measur.	Min Conduc.	Max Temp.	Max Press.	Porous septum	Ref.	Connection	Mounting onto the process	Material Body
pH									
General applications									
SPH-1-S1,5	0÷14 pH	50 µS	60 °C	7 bar	1 Standard	GEL	1,5m cable+BNC	Standard Ø 12	Epoxy 12x120
SPH-1-S6	0÷14 pH	50 µS	60 °C	7 bar	1 Standard	GEL	6m cable+BNC	Standard Ø 12	Epoxy 12x120
Dirty water - Harsh environments									
SPH-3-WW	2÷14 pH	5 µS	80 °C	6 bar	Open hole	GEL	S7	PG 13,5	Glass 12x120
Lime milk - Sulphates - Proteins - Ammonia									
SPH-4-HP	2÷14 pH	5 µS	90 °C	6 bar	2 Open holes	GEL	S7	PG 13,5	Glass 12x120
High temperature and pressure - Chromium plating - Bisulphite									
SPH-4-HT	0÷14 pH	50 µS	130 °C	16 bar(*)	3 Ceramic	GEL	S7	PG 13,5	Glass 12x120
Highly acidic solutions									
SPH-4-LC	0÷14 pH	< 0,2 µS	0÷40°C	6 bar	3 Ceramic	GEL	S7	PG 13,5	Glass 12x120
Redox									
For oxidants - chromium-plated - chlorates - bromides									
SRH-1-PT-1,5	±2000 mV	-	60 °C	7 bar	1 Standard	GEL	1,5m cable+BNC	Standard Ø 12	Epoxy 12x120
SRH-1-PT-6	±2000 mV	-	60 °C	7 bar	1 Standard	GEL	6m cable+BNC	Standard Ø 12	Epoxy 12x120
For reductants - cyanides and harsh environments									
SRH-3-PT	±1000 mV	-	80 °C	6 bar	Open hole	GEL	S7	PG 13,5	Glass 12x120
SRH-4-HT-PT	±1000 mV	-	130 °C	16 bar(*)	3 Ceramic	GEL	S7	PG 13,5	Glass 12x120

(*) The maximum pressure of 16 bars is guaranteed at 5 °C. As the temperature increases, the pressure decreases linearly and, at 100 °C, the maximum pressure is 6 bars

Model	Range Measurement	C -K	Max Temp.	Material Body	Mounting onto the process	Connection
Conductivity						
Without temperature sensor						
C-K10	0,01÷500 µS	C=0,1cm-1 K=10 cm	80°C	PP-AISI 316	1/2" G.M.	5 m bipolar cable Ø 5 mm
C-K5	0,1÷1000 µS	C=0,2 cm-1 K=5 cm	80°C	PP-AISI 316	1/2" G.M.	5 m bipolar cable Ø 5 mm
C-K1	1÷5000 µS	C=1 cm-1 K=1 cm	80°C	PP- AISI 316	1/2" G.M.	5 m bipolar cable Ø 5 mm
C-K1-PT	1 µS÷20 mS	C=1 cm-1 K=1 cm	120°C	Glass - Platinum	Ø12 mm L=120 mm	6 m bipolar cable
With temperature sensor (PT100)						
CT-K10	0,01÷500 µS	C=0,1 cm-1 K=10 cm	100 °C	PP- AISI 316	3/4" G.M.	4-pole M. connector(**)
CT-K5	0,5÷2000 µS	C=0,2 cm-1 K=5 cm	100 °C	PP -AISI 316	3/4" G.M.	4-pole M. connector(**)
CT-K1	5.÷5000 µS	C=1 cm-1 K=1 cm	100 °C	PP- AISI 316	3/4" G.M.	4-pole M. connector(**)
CT-K1-G	5 µS.÷20 mS	C=1 cm-1 K=1 cm	60 °C	PVC Graphite	PG 13,5	4-pole cable Ø 5 mm
With temperature sensor (2.2 Kohm NTC) - for 500 Series only						
CT-K1-SS(*)	0,01 µS÷20 mS	C=1 cm-1 K=1 cm	100°C	PTFE	1"GAS	5 m or 10 m bipolar cable
CT-K1-GR(*)	0,01 µS÷20 mS	C=1 cm-1 K=1 cm	50°C	PVC	1"GAS	5 m or 10 m bipolar cable

(*) The maximum pressure of 6 bars is guaranteed at 25 °C. As the temperature increases, the pressure decreases linearly and at 50° or 100 °C, the maximum pressure is 1 bar
(**) To be used in conjunction with CC series cables

Oxygen and *Turbidity* Probes

The **OX500** instrument allows measurement of dissolved oxygen concentration (expressed in mg/l) in liquids, using a polarographic type, non-restorable combined measurement probe combined with a temperature sensor.

The instrument measures the partial pressure of oxygen in water by measuring the current generated by the polarographic probe.

The instrument automatically compensates, at -10÷150°C, for the permeability of the membrane using the temperature sensor inside the oxygen probe, taking into account the salinity of the liquid being tested. The automatic or manual calibration function of the dissolved oxygen probe permits high precision over time of the measurements taken

Oxysens® Probe

Probe body material	Silver - Platinum	**Probe body diameter**	12 mm
Electrolyte	Alkaline solution	**Mounting**	pitch PG 13.5 mm
Membrane	OPTIFLOW™	**Flow**	minimum 0.03 m/sec
Temperature sensor	2.2 Kohm NTC	**Flow dependence**	<5% at 25°C
Sensitivity	40÷80 nA at 25°C	**Consumption**	20 ngr/hour in air at 25 °C
Stabilisation time	average 15 minutes, maximum 1 hour	**Residual current**	<0.5% in air
Operating temperature	0÷60 °C	**Variation of zero**	<0.5% of current every two months at 25°C in stable water
Temperature range	-10 ÷ 60 °C with water contained in a probe holder	**Variation of sensitivity**	>10% every 2 months in stable water
Pressure	0÷4 Bars inserted into a pipe, 0.5 Bars totally submerged	**Cable**	5 m

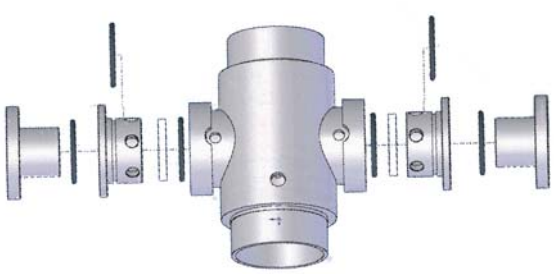
The measurement method used to determine the turbidity is measurement of the radiation diffused within the "Turby Sensor" Turbidimetric probe. The turbidity measured using this method is expressed in formazine nephelometric units (FNU or NTU). With the **TB500** instrument it is possible to determine turbidity ranging from 0 to 100 FTU in three settable scales.

Using the available accessories it is possible to achieve good installation versatility with the reduction flanges. Using the Dehumidifier, it is possible to maintain the measurement optics functioning perfectly in humid environments.

The measurement unit can be installed in line with the outflow pipe. It consists of mechanical components that are easily accessible for inspection purposes. The unit also features automatic washing equipment. **Maximum pressure for the system is 1 bar.**

Turby Sensor Probe

Material	AISI 304 steel
Cell buffed externally and Black Teflon internally	
Hydraulic Connection	IN/OUT 2 1/2" GAS M
Maximum operating pressure	1 Bar
Floodlight Unit and Incandescent Bulb	1.5W 6V
Photoresistance measurement sensor unit	
Equipped for 1/4" Gas connection for cleaning with liquids and/or air	
Attachments for 4x6 mm pipe for Anti-condensate Air input	

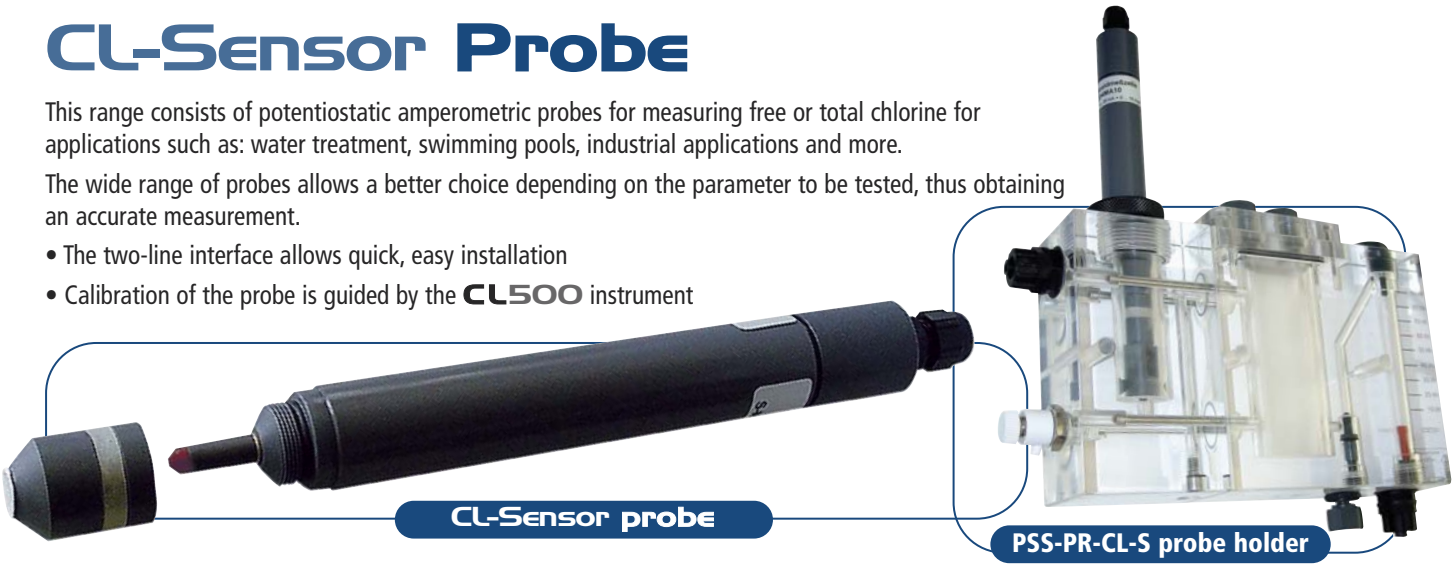


CL-Sensor Probe

This range consists of potentiostatic amperometric probes for measuring free or total chlorine for applications such as: water treatment, swimming pools, industrial applications and more.

The wide range of probes allows a better choice depending on the parameter to be tested, thus obtaining an accurate measurement.

- The two-line interface allows quick, easy installation
- Calibration of the probe is guided by the **CL500** instrument



CL-Sensor probe

PSS-PR-CL-S probe holder

	F-CL-1	F-CL-2	F-CL-3	T-CL	D-CL
Measurement	0÷10 ppm	0÷10 ppm	0÷10 ppm	0÷10 ppm	0÷10 ppm
Resolution	±0.01 ppm	±0.01 ppm	±0.01 ppm	±0.01 ppm	±0.01 ppm
pH Scale	4÷8 pH	4÷12 pH	4÷11 pH	0÷14 pH	0÷14 pH
Flow(*)	>=30 lt/h	>=30 lt/h	>=30 lt/h	>=30 lt/h	>=30 lt/h
Temperature	45°C	45°C	45°C	45°C	45°C
Pressure	1 Bar	0,5 Bar	0,5 Bar	0,5 Bar	1 Bar
Power supply	12÷30 Vdc	12÷30 Vdc	12÷30 Vdc	12÷30 Vdc	12÷30 Vdc
Output signal	4÷20 mA(**)	4÷20 mA(**)	4÷20 mA(**)	4÷20 mA(**)	4÷20 mA(**)
Diameter	25 mm	25 mm	25 mm	25 mm	25 mm
Length	225 mm	225 mm	225 mm	225 mm	225 mm
Body material	PVC	PVC	PVC	PVC	PVC
Membrane	**M20** 	**M48** 	**M48G** 	**M48** 	**M20** 
Electrolyte	**ECL1** 	**ECC1** 	**ECS1/Gel** 	**ECP1/Gel** 	**ECD4** 
Cavo	Max. 15 metres	Max. 15 metres	Max. 15 metres	Max. 15 metres	Max. 15 metres
Treatment type	Free chlorine Inorganic	Organic free chlorine (Chloroisocyanurate)	Free chlorine Inorganic	Total Chlorine (Inorganic or Organic)	Chlorine Dioxide

(*) **Stabilization time** average 15 minutes, maximum 1 hour

(**) Output of current signal proportional to the measurement

pH, Redox and Conductivity probe holders

The sensors for measuring pH, Redox and Conductivity must be installed in the system using special probe holders that ensure the correct mechanical protection and degree of impermeability.

The pH and Redox measurement probes can be submerged in tanks, inserted into pipes or placed in containers for the sample drawn from the system.

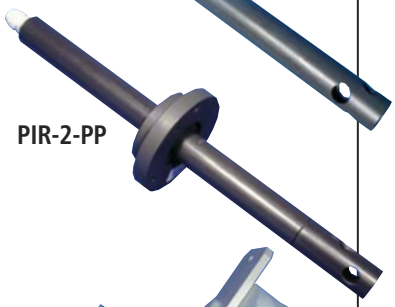
The immersion models with adjustable flange which can be used in conjunction with the counter-flange which makes them quick to remove. The version with floating platform adapts to the varying level of water in deep tanks.

The polypropylene versions for two probes can house two sensors, e.g. for pH and Redox.

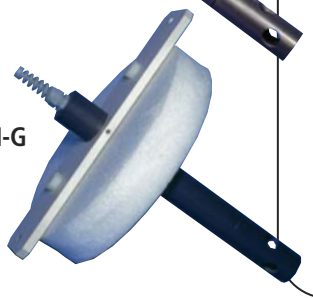
PI

PIR-PVC

PIR-2-PP



PI-G

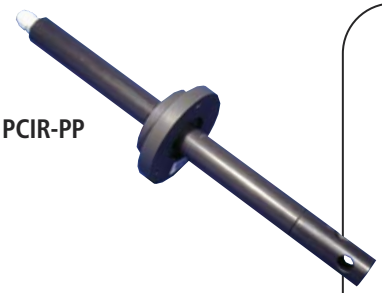


Immersion probe holders

Model	Immersion	No. of probes	Max Temp.	Material
PI-PVC-400	400 mm	1	40 °C	PVC
PI-PVC-800	800 mm	1	40 °C	PVC
PI-PVC-1000(*)	1000 mm	1	40 °C	PVC
PI-PVC-1500(*)	1500 mm	1	40 °C	PVC
PIR-PVC-200	100÷250 mm	1	40 °C	PVC
PIR-PVC-400	100÷450 mm	1	40 °C	PVC
PIR-PVC-800	100÷850 mm	1	40 °C	PVC
PIR-PVC-1000(*)	100÷1050 mm	1	40 °C	PVC
PIR-PVC-1500(*)	100÷1550 mm	1	40 °C	PVC
PIR-2-PP-400	100÷450 mm	2	80 °C	PP
PIR-2-PP-800	100÷850 mm	2	80 °C	PP
PIR-2-PP-1000(*)	100÷1050 mm	2	80 °C	PP
PIR-2-PP-1500(*)	100÷1550 mm	2	80 °C	PP
PI-G(*)	floating	1	40 °C	PVC
B/PI-G(*)	2 m anchorage arm		40 °C	PVC

(*)Product made to order

PCIR-PP



Probe holders with 3/4" probe attachment without protection

These can house conductivity probes with threaded 3/4" G. attachment with output cable or IP67 connector.

Model	Immersion	No. of probes	Max Temp.	Material
PCIR-PP-400	100÷450 mm	1	80 °C	PP
PCIR-PP-800	100÷850 mm	1	80 °C	PP
PCIR-PP-1000(*)	100÷1050 mm	1	80 °C	PP
PCIR-PP-1500(*)	100÷1550 mm	1	80 °C	PP

(*)Product made to order

FER

Counter-flange for quick removal

Model	Int. diameter	Ext. diameter	Material	Attachment
FER	65 mm	140 mm	PVC	4 holes Ø 6 mm

Immersion probe holders with spray cleaning

These special probe holders can be connected with a cleaning liquid injection unit. Regular cleaning of the probe ensures linearity and stability of the measurement over time, preventing the need for time-consuming manual intervention.

Model	Immersion	No. of probes	Max Temp.	Bar	1/h min-max
PIA-PVC-400(*)	400 mm	1	40 °C	2...6	100...600
PIA-PVC-800(*)	800 mm	1	40 °C	2...6	100...600

(*)Product made to order

PIA-PVC

Tap probe holders

Tap probe holders are used for in-line measurements where part of the sample is re-directed from the main pipe to the probe holder. The water can be drawn off into the sampling circuit at a pressure of 6 bars.

Model	Description	No. of probes	Max Temp.	Max Press.
PSS 7-Single	transparent beaker	1	40 °C	6 bar
PSS 7	transparent beaker	3	40 °C	6 bar
PSS 7-A(*)	Anti-acid PVC beaker	3	40 °C	6 bar

(*)Product made to order

PSS 7 Single

PSS 7

PSS 7A

Outflow probe holders for conductivity probes

For CT-K1-SS and CT-K1-GR probes (500 series)
Made of black PVC with 1" mechanical connection and 3/4" GAS IN/OUT hydraulics.
1. With cleaning (PSS-COND-W) • 2. Standard (PSS-COND)
3. Probe cable protection (included)

For CK 1/5/10, CT-K1, CT-K5 and CT-K10 probes
Made of black PVC with 3/4" mechanical connection and 1" GAS IN/OUT hydraulics.
4. Outflow section (PSS-COND-T)

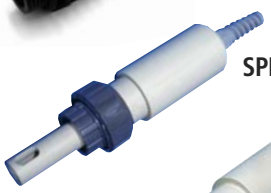
Pressurised probe holders

Pressurised probe holders are used to immerse the probe directly into the pipe where the sample to be measured passes. The probe must always be positioned vertically or slanting in the direction of the flow at a maximum of 45°. The probe holder connection line must be intercepted by two valves (input and output) in order to permit the interruption of the flow during maintenance of the probes.

Model	Description	Max Temp.	Max Press.	Connection to the process	Probe attachment
PSS 3	PVC	60 °C	7 bar	1/2" G.M.	PG 13,5 o Ø 12 mm
SPP(*)	PP + PVC	60 °C	16 bar	1" G.F.	PG 13,5
SPP-FIL(*)	PP	80 °C	16 bar	3/4" o 1" 1/4 G.M.	PG 13,5

(*)Product made to order

PSS 3



SPP

SPP-FIL

Cables, buffer solutions and probe accessories

PT100 temperature sensor

In order to correctly measure the pH in environments with variable temperatures, it is necessary to correct the response error of the probe resulting from the temperature. The measuring instrument must therefore be connected to a special temperature sensor.

Model	Material	Connection	Attachment
PT100V	Pyrex	5 m 3-wire cable	Standard Ø 12
PT100V-PG	Pyrex	6 m 3-wire cable	PG 13,5
PT100-NUT	PVC	1 m 2-wire cable	1/2" GAS

NTC-Sensor Temperature sensor for 500 Series

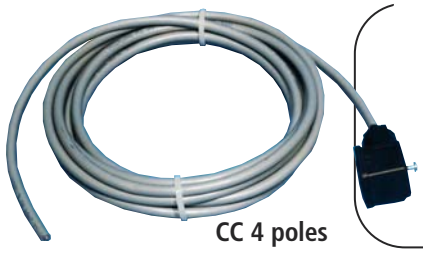
Measurement field		**Maximum pressure**	7 bar
-10 °C ÷ +150 °C (+14 °F ÷ +302 °F)		**Body**	12x100 mm (Ø-L)
Cable	3 m	**Material**	AISI 304

RNC Electrical surge suppressor

Allows the elimination of eddy currents - **AISI 304 material** - **Ø 12 mm**

Probe cables with S7 heads

Model	Length	Type of Cable	Ending
CE-1	1 m	Mod. 58 5 mm	Crimping BNC
CE-5	5 m	Mod. 58 5 mm	
CE-10	10 m	Mod. 58 5 mm	
CE-20	20 m	Mod. 58 5 mm	
CE-10-HT	10 m	Mod. HT 5 mm	
CE-20-HT	20 m	Mod. HT 5 mm	
CE-30-HT	30 m	Mod. HT 5 mm	
CE-1-B	1 m	Mod. 58 5 mm	Soldered BNC
CE-5-B	5 m	Mod. 58 5 mm	
CE-10-B	10 m	Mod. 58 5 mm	
CE-20-B	20 m	Mod. 58 5 mm	
CE-10-HT-B	10 m	Mod. HT 5 mm	
CE-20-HT-B	20 m	Mod. HT 5 mm	
CE-30-HT-B	30 m	Mod. HT 5 mm	



Cables for probes model CTK with 4-pole connectors

5-pole cable (3 PT100, 2 sensor) with screen and PVC sheath complete with female connector.

Model	Length	No. poles	Version
CC-5	5 m	4	standard
CC-10	10 m	4	standard
CC-15	15 m	4	standard

Extension Cables for BNC-F / BNC-M Probes

Model	Length	Type of Cable	Ending
PE-10	10 m	Mod. 58 5 mm	Crimping BNC
PE-20	20 m	Mod. 58 5 mm	
PE-20-HT	20 m	Mod. HT 5 mm	
PE-30-HT	30 m	Mod. HT 5 mm	
PE-10/B	10 m	Mod. 58 5 mm	Soldered BNC
PE-20/B	20 m	Mod. 58 5 mm	
PE-20-HT-B	20 m	Mod. HT 5 mm	
PE-30-HT-B	30 m	Mod. HT 5 mm	

PE-10/B

Certified buffer solutions

The precision and reliability of a pH, Redox or Conductivity measurement is determined by the buffer solution used for calibrating the probe. The special double-plug container ensures that a new unpolluted buffer is always available

ST-PH

pH - Redox

Model	Value	Quantity	Expiry
ST-PH-4	4,00 pH 20 °C	250 ml	24 mesi
ST-PH-7	7,00 pH 20 °C	250 ml	24 mesi
ST-PH-9	9,22 pH 20 °C	250 ml	24 mesi
ST-RX-465	465 mV 25 °C	250 ml	24 mesi

ST-RX

Conductivity

Model	Value	Quantity	Expiry
ST-MS-8	84 µS/cm 25°C	500 ml	24 mesi
ST-MS-14	1423 µS/cm 25°C	500 ml	24 mesi
ST-MS-128	12880 µS/cm 25°C	500 ml	24 mesi

ST-MS

Signal amplifiers

Battery-powered live ASV signal amplifier

In order to connect a pH or Redox measurement probe at a distance of over 20 metres, it is necessary to use the special signal amplifier to be connected between the probe cable and the extension cable of the measurement instrument.

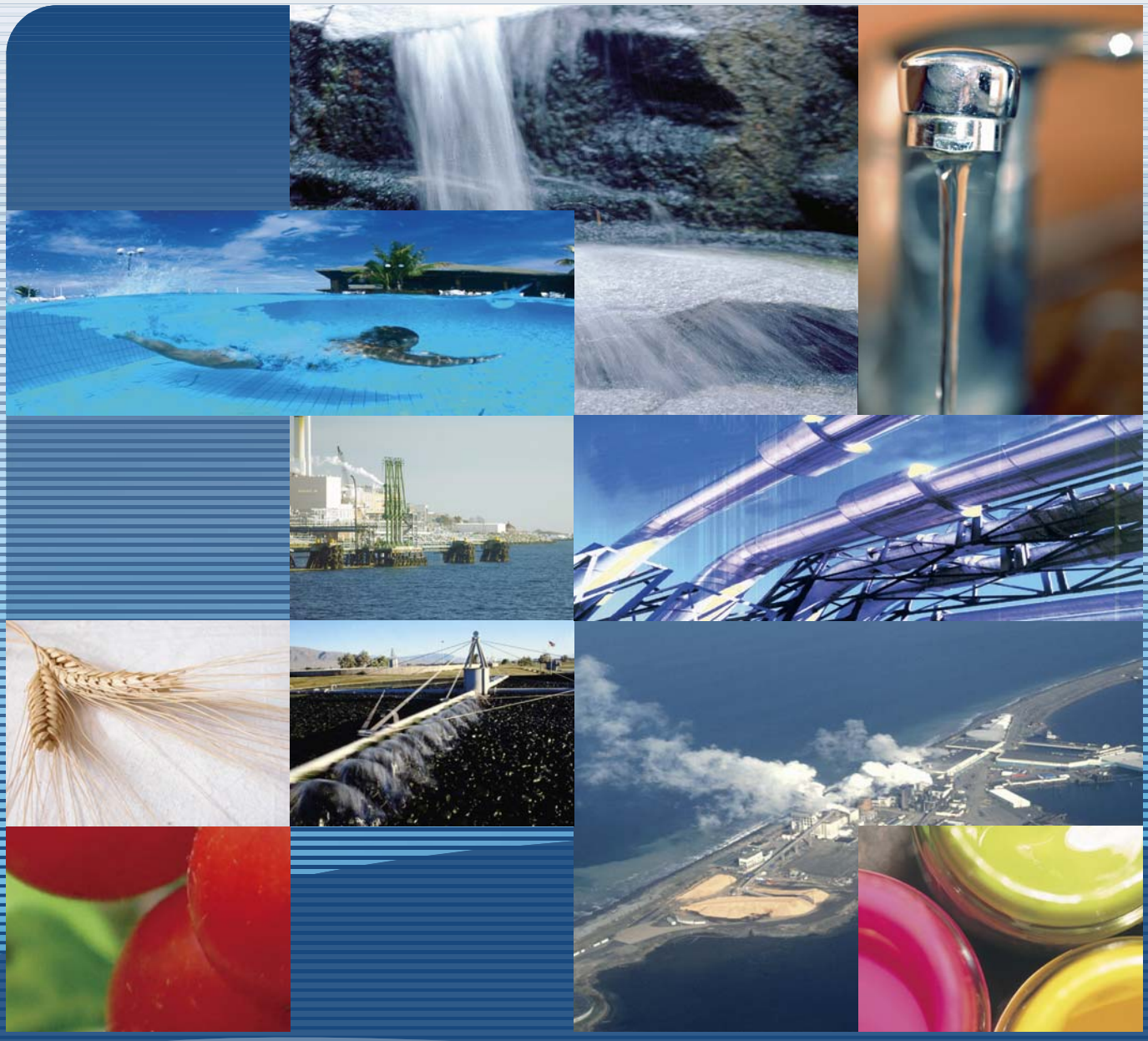
Model	Measurement	Function	Output	Power supply
ASV	pH / Redox	amplifier	voltage	Battery (lasts 5 years)

ASV

Dehumidifier and reduction flange for Turby Sensor

REDUCTION FLANGE
2"1/2 to 1/2" GAS F IN/OUT

DEHUMIDIFIER
Power supply 230 Vac 50Hz
4x6 mm hydraulic connections



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