MEASURE AND CONTROL
INSTRUMENTS

ISO 9001:2000 CERTIFIED COMPANY

seko

innovation > technology > future

Innovation > Technology > Future

Research and Development

Seko R&D staff of 23 people includes engineers and technicians that assure constant product development, complying with the ISO 9001 standard quality guidelines.

your dosing partner

Seko is the Italian leader in the dosing system industry with more than 25 years' experience.

Seko is at the head of the industry with operations in the world wide market and substantial investments in research and product development.

Customer Service

Seko's world wide sales network and customer service department provide information and technical support to its clients wherever they are.

Quality

A competent team supervises the manufacturing process so that the products are shipped to our customers only after rigorous quality control tests, perfomed by means of computerized trial systems.

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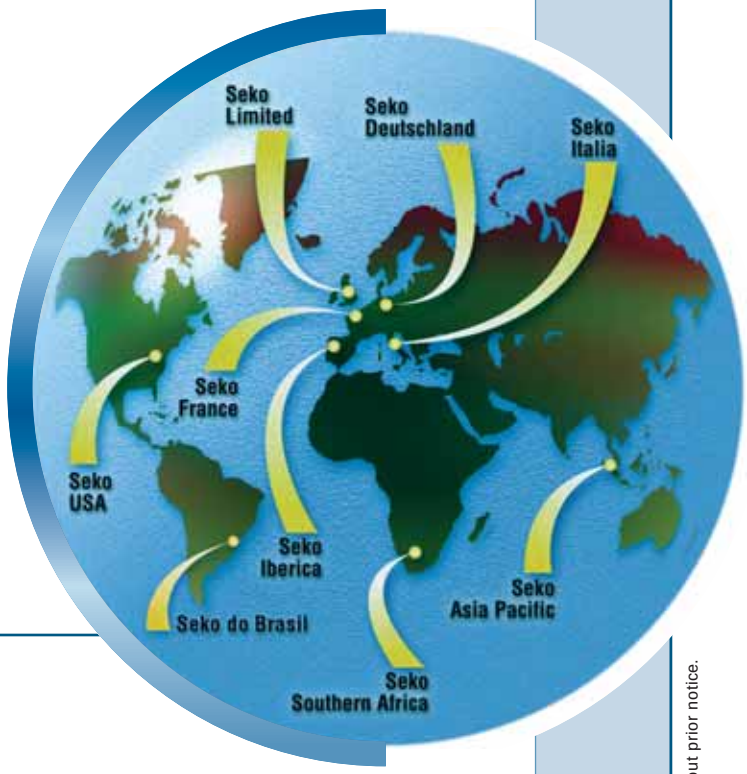


Seko ensures product distribution by its strong sales network composed of nine subsidiaries and world

DNV

DET NORSKE VERITAS

QUALITY SYSTEM CERTIFICATE

Certificate No. CERT-04022-99-AQ-ROM-SINCERT

Si attesta che / This is to certify that

IL SISTEMA QUALITA' DI / THE QUALITY SYSTEM OF

SEKO ITALIA S.p.A.
Via Salaria Km. 92,200 - 02010 S. Rufina di Cittaducale (RI) - Italy

E' CONFORME AI REQUISITI DELLA NORMATIVA
HAS BEEN FOUND TO CONFORM TO THE QUALITY SYSTEM STANDARD

UNI EN ISO 9001: 1994 (ISO 9001: 1994)

Questa certificazione è valida per il seguente campo applicativo:
This certificate is valid for the following product or service ranges:

PH20

PH METER

PH20 is a control instrument for installation on DIN rail and allows accurate pH regulations in industrial installations.

Control instrument use is very easy; the regulation of the SET POINT and the electrode CALIBRATION are possible by means of the precise multi revolving trimmer.

Regulation of the LO/HI set point hysteresis and mA output are obtained with jumpers situated in the upper right-hand space (see fig. 1).

The measure of the pH can be thermically compensated by PT 100 sensor.

Technical data:

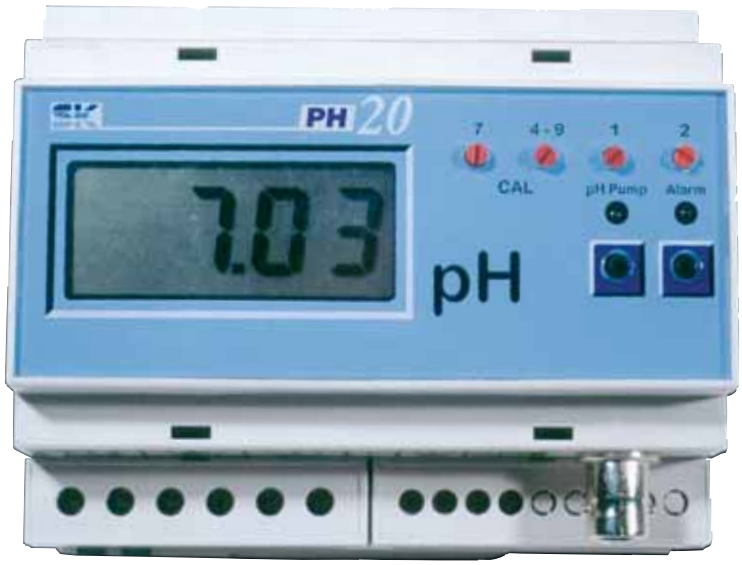
Dimensions / Weight	91x106H 53 mm - 6 modules - 368 gr.
Protection degree	IP20
Connections	By screwed terminal board, BNC input
Power supply	Standard 230V 50-60 Hz 3 W (115 Vac on request)
Relay contacts	3A 250 Vac
Output in mA	0/4...20 mA maximum load 400 ohm (measure range)
Input	High impedance > 10^{13} Ω BNC
pH measure	0...14,00 pH ±0,01 pH
Calibration	Offset -2...+2 pH gain -5...+20%
Temperature compensation	Automatic with PT100
Regulation of the set	2 Set Points ON/OFF - LO/HI
Hysteresis on the set	0,05...0,5 pH (adjustable)

Available version:

Model	*Characteristic*
PH20	0…14.00 pH

Fig. 1

Internal view configuration area



MV20

REDOX METER

MV20 is a control instrument for installation on DIN rail and allows accurate REDOX regulations in industrial installations.

Control instrument's use is very easy; the regulation of the SET POINT and the electrode CALIBRATION are possible by means of the precise multi revolving trimmer.

Regulation of the LO/HI set point hysteresis and mA output are obtained with jumpers situated in the upper right-hand space (see fig. 1).

Technical data:

Dimensions / Weight	91x106H 53 mm - 6 modules - 368 gr.
Protection degree	IP20
Connections	By screwed terminal board, BNC input
Power supply	Standard 230V 50-60 Hz 3 W (115 Vac on request)
Relay contactsé	3A 250 Vac
Output in mA	0/4...20 mA maximum load 400 ohm -1000...+1000 mV / 0...1500 mV
Input	High impedance > 10^{13} Ω BNC
Redox measure	-1000...+1000 mV or 0...1500 mV
Calibration	Offset -150...+150 mV
Regulation of the set	2 Set Points ON/OFF - LO/HI
Hysteresis on the set	0...1500 mV = 6...40 mV (adjustable) -1000...+1000 mV = 8...80 mV (adjustable)

Available versions:

Model	*Characteristics*
MV20-1500	0...1500 mV
MV20-1000	-1000...+1000 mV

Fig. 1

Internal view configuration area

Series 60

Control instruments

Serie 60

Panel (96x96) and wall (144x144) mounting control instruments user friendly advance technology, for accurate measurement in industrial applications.

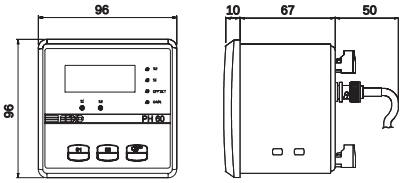
PH 60
pH measurement and control from 0 to 14 pH with resolution 0,1 pH

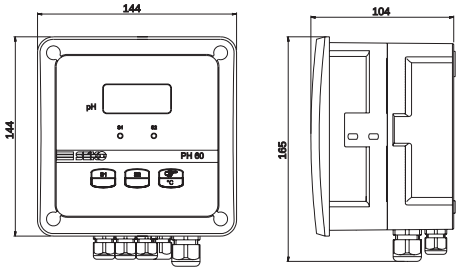
RX 60
Redox measurement and control: two measure ranges available: 0…1500 and -1000…1000 mV (resolution 1mV)

EASY TO USE
Accurate multiple revolution trimmers allow separate set point and calibration setting, without entering the programming mode.

EASY TO CONFIGURE
Micro-switches allow simple and fast configuration of the main options, ensuring a permanent memory.

- Two HI/LO set points with delay function on set point 2
- Proportional current output 4/20 or 0/20 mA (measure range)
- Manual or automatic temperature compensation
- Galvanic insulation of for current output (on demand)





Specification

Connections	Screwed terminal board and BNC input for probe
Power supply	Standard 230 VAC 50-60 Hz
Current consumption	5W max
Relay contacts	3A 250 VAC
Input impedance	> 10^{13} Ohm BNC
Output	0/20, 4/20 mA, maximum load 400 Ohm

pH measure range	0...14
Redox measure range	0...1500, -1000...+1000 mV
pH calibration	Offset –2.5...+2.5 pH, gain –0.8...+0.8%
Redox calibration	Offset -11%....+11%
Temperature compensation (pH only)	Manual or automatic with PT100 from 0 to 125 °C

PR75

PH METER
REDOX (ORP) METER

PR75 is a state of the art control instrument that allows accurate pH or Redox (ORP) measurement in industrial applications.

EASY TO CONFIGURE

Thanks to its micro switches it is easy to configure and it does not need to enter upon a programming phase.

EASY TO CALIBRATE

The calibration has never been so easy: the instrument recognizes the buffer solutions, carries out the calibration suspending the dosage and indicating the state of efficiency of the electrode.

UNIVERSAL POWER SUPPLY

The instrument accepts power supplies from 22 to 265 Vac.

PROTECTION DEGREE IP 65

The PR-75 series is protected by the polypropylene molded enclosure that protects the cables and the electronics, included the BNC connector for the connection of the electrode.

GALVANIC SEPARATION OF THE 4...mA OUTPUT

This is the ideal solution for connecting with a recorder or a data acquisition system without any interference.

The high technology of the microprocessor allows the control instrument to perform the following functions:

pH Measure	0…14,00 with decimal or centesimal resolution
REDOX Measure	-1000…+1000
Calibration	Automatic with electrode quality indication
2 programmable SET POINTS	Minimum – Maximum or Alarm
REGULATIONS	See table available models
mA output	4…20 mA not isolated for Measure or Regulation (mA output with galvanic separation on request)

Mod. A

Mod. B

Mod. C

Depth 95 mm

Two available models:

Model		*Regulations*	
PR75A	*wall 144x144x90*	***T***	On-Off, Time control
		P	On-Off, Proportional 4...20 mA
PR75B	*panel 144x144x90*	***T***	On-Off, Time control
		P	On-Off, Proportional 4...20 mA
PR75C	*panel 96x96x95*	***T***	On-Off, Time control
		P	On-Off, Proportional 4...20 mA

CALIBRATION

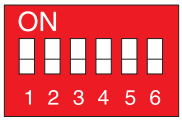
During the simple operations of calibration, the instrument automatically:

- Blocks the dosage;
- Recognizes the buffer solutions;
- Carries out the calibration procedure.

QUALITY OF THE ELECTRODE

At the end of the calibration phase, the instrument indicates the state of efficiency of the electrode with a per cent value.

SIMPLICITY OF CONFIGURATION



The use of micro switches allows to configure the principal options in a simple and immediate way:

- Type of measure: pH or Redox
- Function of the set point: high or low
- Alarm: NO or NC
- Programming of the parameters: Enabled or disabled

UNIVERSAL POWER SUPPLY

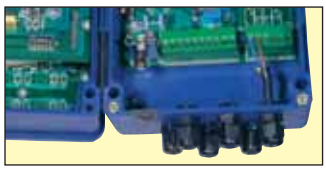
22...265V

The instrument works indifferently with power supply from 22 to 265V - 50/60 Hz - 4W.

DIRECT KEYBOARD FUNCTIONS

The simplicity of use of this instrument is highly exalted by the possibility of direct keyboard access to many fundamental functions.

PROTECTION DEGREE IP65

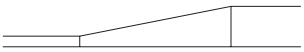


The instruments enclosure are protected in order to allow the use in industrial environments, thanks to the sturdy container that protects both the cabling connectors and the connection of the electrode.

The specially designed gaskets for diameter size wires 3 and 5 mm allows to connect the cable directly inside the instrument with the BNC connector on it.

REGULATION

Version T (time control)



Version P (proportional 4...20 mA)

The 75 series can carry out different types of regulation, choosing between the following versions:

- *Model T with output of regulation ON/OFF or proportional time control;*
- *Model P with output of regulation ON/OFF or proportional 4-20mA*

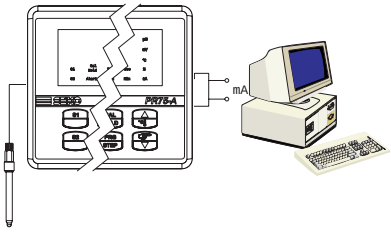
DISPLAY

The instrument uses a LCD display with high contrast with characters of 15mm. An important characteristic of the display is the possibility of visualizing, without any alteration, at temperatures from -20 to +70°C. The flashing backlighting indicates the alarm state making it visible in any application condition.

RESOLUTION

During the reading of the pH value, it is possible to configure the instrument in order to have a decimal or centesimal resolution.

GALVANIC SEPARATION



The galvanic separation of the output 4-20 mA is the ideal solution in order to avoid interference when you have to connect with a data acquisition system, PLC or recorder. It is supplied, on request, on the whole range.

ELECTRODES FOR PH AND REDOX

The measure of the pH and of the Redox is due to the transformation of a chemical phenomenon in electric potential that is read by a proper sensor called electrode. The electrodes are active elements that have limited life; they have to be periodically calibrated with buffer solutions.

The electrodes in the illustration that follows, are of the combined type (measure+reference) without maintenance and differentiate owing to their chemical and physical characteristics that make them suitable for general applications.

Seko selected, among the most skilled manufactures, a range of electrodes that have been tested for a long time in several and different applications.

The elements that have to be considered in the choice of the electrodes are: range of measure, temperature, pressure, chemical substances present in the process, type of assembly of the electrode in the system.

Series 3-4 PG 13,5 S7

Series 2 PG 13,5 S7

Series 1 with cable+BNC

Electrodes for pH and Redox

ph

GENERAL USE

Electrode type	pH/Redox range	Minimum conductivity	Max temperature	Max pressure	Diaphragm type	Referenc	Connections	Mounting	Body
SPH-1-S-1,5	0... 14 pH	50 µS	60 °C	7 bar	1 Standard	GEL	Cable 1,5m+BNC	Standard Ø 12	Epoxy 12x120
SPH-1-S-6	0... 14 pH	50 µS	60 °C	7 bar	1 Standard	GEL	Cable 6m+BNC	Standard Ø 12	Epoxy 12x120
SPH-2-S	0... 14 pH	50 µS	60 °C	7 bar	1 Standard	GEL	S7	Standard Ø 12	Epoxy 12x120

WASTE WATER - EXTREME ENVIRONMENTS

SPH-3-WW	2... 14 pH	5 µS	80 °C	6 bar	Single Pore	GEL	S7	PG 13,5	Glass 12x120

LIME - SULPHATE - PROTEIN - AMMONIA

SPH-4-HP	2... 14 pH	5 µS	90 °C	6 bar	Double Pore	GEL Polilyte	S7	PG 13,5	Glass 12x120

HIGH TEMPERATURE AND PRESSURE, GALVANIC, BISULPHATE

SPH-4-HT	0... 14 pH	50 µS	130 °C	16 bar(*)	3 Ceramic	GEL	S7	PG 13,5	Glass 12x120

HIGH ACIDITY SOLUTIONS

SPH-4-AC	0... 9 pH	5 µS	0...+ 90 °C	6 bar	2 Ceramic	EVEREF-L	S7	PG 13,5	Glass 12x120

Redox

REDOX ELECTRODES FOR OXIDING MEDIA, CHROMATE, CHLORATE, BROMIDE

SRH-1-PT-1,5m	±2000 mV	-	60 °C	7 bar	1 Standard	GEL	Cable 1,5m+BNC	Standard Ø 12	Epoxy 12x120
SRH-1-PT-6m	±2000 mV	-	60 °C	7 bar	1 Standard	GEL	Cable 6m+BNC	Standard Ø 12	Epoxy 12x120

EXTREME ENVIRONMENTS

SRH-3-PT	±1000 mV	-	80 °C	6 bar	Single Pore	GEL	S7	PG 13,5	Glass 12x120
SRH-4HT-PT	±1000 mV	-	130 °C	16 bar(*)	3 Ceramic	GEL EVEREF	S7	PG 13,5	Glass 12x120

REDOX ELECTRODES FOR REDUCING MEDIA, CYANIDE

SRH-4-AU	±1000 mV	-	130 °C	16 bar(*)	3 Ceramic	GEL	S7	PG 13,5	Glass 12x120

(*) Maximum pressure is 16 bar at 25 °C and drops linearly with temperature increases at 100 °C the maximum pressure is 6 bar.

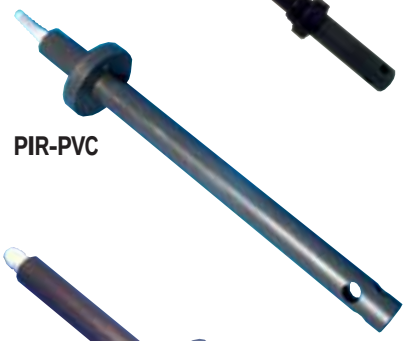
ELECTRODE-HOLDERS

The sensors for pH, Redox and Conductivity have to be installed on the system using proper electrode-
holder that guarantee the correct mechanical protection and the impermeability degree.
The electrodes of pH and Redox can be immersed in tanks, inserted in pipes or put in proper containers for the passage of sample liquid drawn from the system.

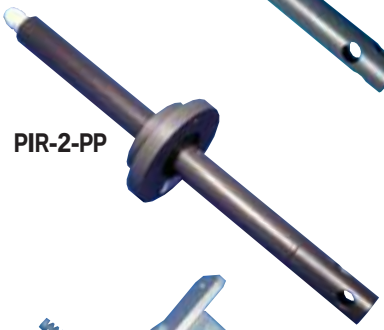
It is very important to lay stress on the immersion models with adjustable flange that has to be linked together with the counterflange that allows their fast extraction. The version with floating platform suits to follow the free water surface in deep tanks. The versions for two electrodes in polypropylene allow to put in the same armature two sensors example pH and Redox).

PI

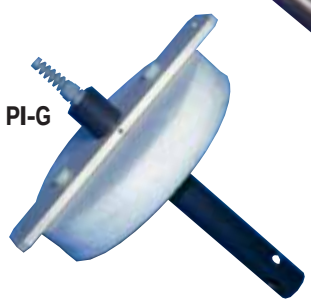
PIR-PVC



PIR-2-PP



PI-G



IMMERSION ELECTRODE-HOLDERS

Mode	Immersion	Electrodes	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

(*) product available upon request

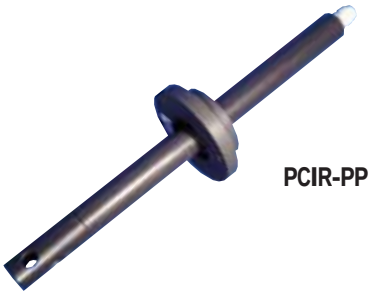
PI-G (*)	float	1	40 °C	PVC
B/PI-G (*)	fixing bracket 2 m		40 °C	PVC

Electrode-holders

ELECTRODE-HOLDER WITH 3/4" G. ELECTRODE CONNECTION, WITHOUT PROTECTION

For use with conductivity cells with 3/4" G. connector with cable or with IP67 connector.

Model	Insertion depht	Cells	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


PCIR-PP

FLANGE FOR RAPID EXTRACTION

Model	Inside diameter	Outside diameter	Material	Fixing
FER	65 mm	140 mm	PVC	4 pore Ø 6 mm


FER

IMMERSION ELECTRODE-HOLDER WITH SPRAY CLEANING

Special electrode-holders for connection to cleaning liquid injector. Periodic electrode cleaning guarantees linaerity and stability of measurement without manual maintenance.

Model	Insertion depht	Electrodes	Max .Temp.	Bar l/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


PIA-PVC

ELECTRODE-HOLDERS WITH BLEED ASSEMBLY

They are used for in-line measurements the line in which a part of the sample is deviated from the main flow to the electrode-holder; the input can be disposed at atmospheric pressure or on the sample recirculation at a 6 bar maximum pressure.

Model	Description	Electrodes	Max temperature	Max pressure
PSS 7 (*)	transparent cell	3	40 °C	6 bar
PSS 7-A (*)	acid resistant PVC cell	3	40 °C	6 bar


PSS 7


PSS 7A

ELECTRODE-HOLDERS PRESSURE

Pressure electrode-holders are used for in-line mounting; the electrode always has to be put vertically or inclined to the flow at a maximum of 45°. The connection line of the electrode-holder has to be intercepted by two valves in input and in output in order to interrupt the flow during the maintenance of the electrodes.

Model	Description	Max temperature	Max pressure	Mounting	Mounting
PSS 3	PP	80 °C	7 bar	1/2" G.M.	Epoxy
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


PSS 3


SPP


SPP-FIL

(*) product available upon request

CABLES, BUFFER SOLUTIONS AND ACCESSORIES

PT100 TEMPERATURE SENSORS

PT 100

PT 100V-PG

In order to measure correctly the pH in environments with variable temperature the instrument must correct for the effects of temperature changes. A proper temperature sensor has to be connected with the instrument. IMPORTANT The non thermic compensation of the pH measure causes an error in the measure; the error is nil around 7 pH and increases towards the extremes, at pH 4 with a variation of 40 °C the error is 0,5 pH.
Two temperature sensors with the same dimensions of the electrode are available; a model is provided with PG 13,5 thread for assembly in pressure.

Model	Material	Connections	Mounting
PT100V	Pirex	Cable 3 FILI 5 m	Standard Ø 12
PT100V-PG	Pirex	Cable 3 FILI 6 m	PG 13,5

CONNECTION CABLES WITH S7 PLUG

CE

Model	Length	Cable type	Plug
CE-1	1 m	Mod. 58 5 mm	BNC to connect
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-B

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, buffer solutions and accessories

EXTENSION CORD FOR BNC-F / BNC-M ELECTRODES

PE-10/B

Model	Length	Cable type	Plug
PE-10	10 m	Mod. 58 5 mm	BNC to connect
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	

SIGNAL AMPLIFIERS

ASV

The connection to the electrode of measure for pH or Redox at distances superior to 20 m., causes some problems of reliability as regards the signal generated by the sensor, so it is necessary to use proper signal amplifier that have to be linked between the sensor and the instrument.

ASV voltage signal amplifier with battery power supply

Model	Measure	Function	Output	Power supply
ASV	pH / Redox	amplifier	voltage	5 year battery

CERTIFIED PH - REDOX BUFFER SOLUTIONS

ST-RX

ST-PH

The precision and the reliability of a measure of pH or Redox, is influenced by the buffer solution used for the calibration of the electrode.

The special double cap bottle, protects the new buffer solution from pollution.

The solutions are available with a quality certificate in compliance with ISO9000.

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

CD60

CONTROL INSTRUMENTS

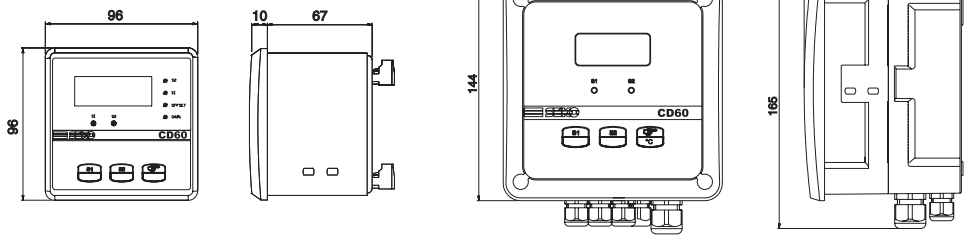
Panel (96x96) and wall (144x144) mounting control instruments user friendly advance technology, for accurate measurement in industrial applications.

Conductivity measurement
and control.
Three measure ranges available: 0..10mS (standard), 0..20mS, 0..5mS. (probe K=1)

EASY TO USE
Accurate multiple revolution trimmers allow separate set point and calibration setting, without entering the programming mode.

EASY TO CONFIGURE
Micro-switches allow simple and fast configuration of the main options, ensuring a permanent memory.

- Two HI/LO set points with delay function on set point 2
- Proportional current output 4/20 or 0/20 mA (measure range)
- Manual or automatic temperature compensation
- Galvanic insulation of for current output (on demand)



Technical Data

Power supply Standard 230 VAC 50-60 Hz, upon request 24 or 115 Vac	
Current consumption	5W max
Relay contacts	3A 250 VAC
Delay time (set-point 2)	30..15 sec.
Output (on measure range) 0/20, 4/20 mA, maximum load 400 Ohm	

Connections	Screwed terminal board
Measure range	0..20 (standard), 0..10, 0..5 mS
Probe	K = 1
Calibration (scale 0..10 mS) Offset +/- 20%, gain -20% +30%	
Temperature compensation Manual or automatic with PT100 (0 to 100 °C)	

MCS

CONDUCTIVITYMETER

MCS is a control instrument particularly useful for industrial applications. Reduced dimensions and simplicity of use make it very interesting for utilization in small resins treatment system or osmosis.

Available versions MCS, MCS/L, MCS/S and MCS/HC.

MCS/L and MCS versions have two working scales that can be selected by the user. An important characteristic of these two versions is the AUTORANGE function that allow to visualize up to 25 times the conductivity of the set end of scale value.

MCS/S and MCS/HC has one working scale.

The control instrument has a set point supplied by two relays, one istantaneous measure and one delayed (delay time can be selected). Delayed relay can be used as an alarm indicator; the intervention of the relay can be defused by pressing the key for the set reading.

The instrument has a 0/4...20mA output, and measure repetition.

Technical data:

Dimensions / Weight	48 x 96 x 100 mm / 439 gr.
Protection degree	IP20
Panel cut-out	45 x 93 mm (- 0...+ 1.5)
Connections	On the back, with extractable terminal board
Display	LCD 12 mm
Power Supply	115/230V 50-60 Hz 4 W (24 Vac on request)
Relay	3A 250 Vac
Output in mA	0/4...20 mA max. Load 500 ohm. Repetition of the measure 0...Full Scale
Cell constant	K =5 per MCS/L , MCS K = 1 per MCS/S, MCS/HC
Measure Resolution	0,5% of the Full scale
Calibration	Gain ±30% Full scale
Temperature compensation	None
Regulation of the Set	ON / OFF settable NO / NC
Alarm	ON / OFF settable NO / NC Delayable; The set key enables the silence alarm

N.B. MCS series doesn't allow to make conductivity temperature compensation. It is suggested the use on installation with costant temperature.

It is produced in 4 versions:

Modello	*Characteristics*
MCS	2 autorange scales 0…20 / 0…200 µS
MCS/L	2 autorange scales 0…2 / 0…20 µS
MCS/S	1 scale 0…2000 µS
MCS/HC	1 scale 0…20.000 µS for K=1 Cell in platinum or graphite*

* The 20.000 µS scale works only if the cell measure has electrodes in platinum or in graphite

MCL500

LED CONDUCTIVITYMETER WITH 6 SECTABLE SCALE

MCL500 is a small, simple and precise instrument extremely useful in applications that require a conductivity alarm. The instrument can be totally set up by the user and it is provided with conductivity probe.

The 4 leds on the front show the measure at 25-50-75-100% of the full scale; a relay allows the achievement of the selected threshold.

The front panel can be adapted to the selected scale; serigraphies are applied on the inner side and are totally sheltered from any aggression.

Technical data:

Dimensions / Weight	36 x 72 x 110 mm / 218 gr.
Protection degree	IP54
Panel cut-out	32,5 x 67,5 mm (- 0...+ 1.5)
Connections	On the back with extractable clip board
Display	High LED brilliance
Power Supply	Standard 230V 50-60 Hz 3 W (115 Vac on Request)
Relay contacts	3A 250 Vac
Selectable scales	10 - 20 - 50 - 100 - 200 - 500 µS
Cell constant	K: 5 cm. C: 0,2 $cm.^{-1}$
Measure Resolution	25% of the Full scale
Conductivity cell	Body PP, électrodes AISI 316, cable 5 mt., connexions 1/2" G.M.

Conductivity cell
C: K: 5 cm. 0,2 $cm.^{-1}$

Available version:

Model	*Range*	*Cell costant*
MCL500	10 - 500 µS	K: 5 cm. 0,2 $cm.^{-1}$

CD75

INDUSTRIAL CONDUCTIVITYMETER

CD75 is a state of the art control instrument that allows accurate conductivity measurement in industrial applications.

Thanks to the LCD display, 15 mm high, it is possible to read clearly the control instrument with direct light on it or up to 5 mt distance.

Strong plastic enclosure IP65.

This is a ***user friendly*** control instrument. The basic configuration is achieved by six ***microswitches*** which define the reference temperature 20 or 25°C, intervention relay type, alarm intervention NO or NC and the protection of programming and calibration functions. The cell calibration is very easy to do.

The temperature compensation of the measured conductivity can be manual or automatic with PT 100 three wires.

Temperature can be displayed by pressing the °C key.

The high technology of the microprocessor allows the control instrument to perform the following functions:

Calibration	AUTOMATIC	
Temperature Reference Setting	20 / 25 °C	
Compensation Coefficient	0…7 % / °C	
2 programmable SET POINTS	ON-OFF; Minimum – Maximum, programmable hysteresis of set	
DELAY	Set 2: 0…99 min	
mA output	4…20 mA not isolated for Measure (galvanic separation on request)	
Cell constant	C= 0,1 / 0,2 / 1 cm $^{-1}$	
Measure	K=10	0…500 µS Scale: 2 – 5 – 20 – 50 – 200 – 500
	K=5	0…1000 µS Scale: 20 – 50 – 200 – 500 – 1.000
	*K=1	0…20.000 µS Scale: 2.000 – 5.000 – 10.000 – 20.000

*To measure the range 0...10.000 µS and 0...20.000 µS, is necessary use conductivity probe CTK-1 and CTK1-G model

Three available models:

Model	*Characteristics*	*Dimensions*
CD75A	Industrial control instrument IP65	144 x 144 x P = 90
CD75B	Panel mounting control instrument DIN	144 x 144 x P = 90
CD75C	Panel mounting control instrument DIN	96 x 96 x P = 95

CONDUCTIVITY CELLS

Our range of conductivity cells, has been properly designed for application in industrial environments together with our measure instruments.
The available models have a wide conductivity measure range, there are versions with temperature sensors; there are also particular versions with electrodes in graphite or platinum, cell bodies in PTFE with IP67 connectors.
The measure of conductivity takes place immersing two metallic electrodes in the solution you have to measure; the current between the electrodes allows to measure the electrical resistance of the liquid and its conductivity.
The measure depends on the temperature. In salt solutions there are variations of measure of 2% / °C; this variation can reach also 7% / °C;
consequently the use of conductivity cells without temperature sensors is effective only if the solution under examination keeps its temperature between 15 °C and 25 °C, making an error of 10%.
IMP. All the models are guaranteed for a maximum working pressure of 6 bar.

Conductivity cells

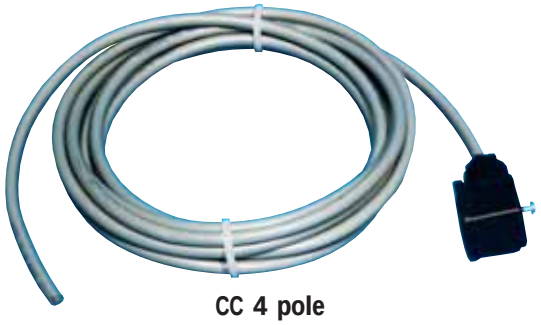
Cell type	Conductivity range	C - K	Max temperature	Material	Mounting	Connections
CONDUCTIVITY CELLS WITHOUT TEMPERATURE PROBES						
C K-10	0,01... 500 µS	C=0,1cm^{-1} K=10 cm	80°C	PP-AISI 316	1/2" G.M.	5 m Ø 5 mm two wire cable
C K-5	0,1... 1000 µS	C=0,2 cm^{-1} K=5 cm	80°C	PP-AISI 316	1/2" G.M.	5 m Ø 5 mm two wire cable
C K-1	1... 5000 µS	C=1 cm^{-1} K=1 cm	80°C	PP- AISI 316	1/2" G.M.	5 m Ø 5 mm two wire cable
C K-1-PT	1 µS... 20 mS	C=1 cm^{-1} K=1 cm	120°C	Glass/Platinum	Ø 12 mm L=120 mm	6 m two wire cable
CONDUCTIVITY CELLS WITH PT100						
C T-K10	0,01... 500 µS	C=0,1 cm^{-1} K=10 cm	100 °C	PP- AISI 316	3/4" G.M.	M. connector 4 pole(*)
C T-K5	0,5... 2000 µS	C=0,2 cm^{-1} K=5 cm	100 °C	PP -AISI 316	3/4" G.M.	M. connector 4 pole(*)
C T-K1	5... 5000 µS	C=1 cm^{-1} K=1 cm	100 °C	PP- AISI 316	3/4" G.M.	M. connector 4 pole(*)
C T-K1-G	5 µS... 20 mS	C=1 cm^{-1} K=1 cm	60 °C	PVC Grafite	PG 13,5	4 pole cable 8 m Ø 5 mm

* Add cable series CC

CABLE FOR CTXX MODEL CELLS WITH 4 OR 6 POLE CONNECTORS

5 pole cable (3 PT100, 2 sensor) with shield, PVC sheat, included female connector

Model	Length	Poles	Version
CC-5	5 m	4	standard
CC-10	10 m	4	standard
CC-15	15 m	4	standard



CC 4 pole

CERTIFIED CONDUCTIVITY BUFFER SOLUTIONS

Name	Value	Quantity	Expiration date
ST-MS-1	10 µS/cm 25°C	5x100 ml	18 months
ST-MS-8	84 µS/cm 25°C	500 ml	18 months
ST-MS-14	1423 µS/cm 25°C	500 ml	18 months

ST-MS

IP200

PROGRAMMABLE INDICATOR

IP200 is an instrument with input 0/4…20 mA or 0…10V, that allows showing and setting the chemical and physical parameters measured by a transducer or an instrument with output in current or voltage.

Visualization range can be programmed between -5000... +5000.

The IP 200 can be used as a double set point controller with ON - OFF relay output.

IP 200 provides a 24V stabilized power supply for the transducer.

IP 200 is available upon request with 0/4…20 mA current output.

Technical data:

Dimensions / Weight	48 x 96 x 140 mm / 488 gr.
Protection degree	IP65
Panel cut-out	45 x 93 mm (- 0…+ 1.5)
Connections	On the back, by extractable terminal board
Display	High brilliance LED
Power supply	Standard 115-230V 50-60Hz 7 W (24 Vac on request)
Relay contacts	3A 250 Vac
Selectable input	0/4...20 mA (100 ohm), 0...10V (800K ohm)
Display	Programmable -5000…+5000
Resolution	Programmable
Measure resolution	4000 points
Set point	2 programmable LO/HI, NO/NC
Hysteresis	Programmable
Delay set point	Programmable
Manual function	Override of the set by the keyboard
Optional	Output 0/4...20 mA - Resolution 12 BIT

It is produced in 2 versions:

Modello	*Characteristics*
IP200	Basic model
IP200/C	Version with 0/4...20 mA output

Panel **KONTROL** Series

Compact and simply to use, panel Kontrol series are complete of accessories for immediate installation (pH and Reox buffer solution, DPD system for chlorine calibration...).

- Self-calibration for all measure
- Probe-holder with water flow sensor, flow-rate regulation valve.
- Alarm signal for water flow missing
- Instruments with IP65 protection degree
- Two alarm relay (5 A – 250 Vac)
- 4-20 mA outputs for each measuring parameter, possibility to set the range
- Power supply: 230 Vac (standard) or 115 Vac (on request)
- Set point and alarm settable
- Pumps in pause-mode during the calibration
- Temperature measure and compensation (automatic by PT100 probe)
- set-point regulations mode: On/Off, work/pause, proportional by pulse signal

KONTROL PRC

Panel to measure and control pH value, chlorine concentration and Redox value.

- PC95 instrument
- PR75 instrument
- Self-cleaning amperometric cell (Pt-Cu)
- Self-calibration system on the basis of the chemical and physical properties of the water
- Redox (ORP) probe
- pH probe
- Self-calibration with probes efficiency control
- Solenoid valve for self-calibration
- Washable cleaning filter

KONTROL CL

Panel to measure and control chlorine concentration.

- CL95 instrument
- Self-cleaning amperometric cell (Pt-Cu)
- Self-calibration system on the basis of the chemical and physical properties of the water
- Solenoid valve for self-calibration

KONTROL PR

Panel to measure and control pH and Redox value.

- PR95 instrument
- Redox (ORP) probe
- pH probe
- Self-calibration with probes efficiency control
- Washable cleaning filter

KONTROL PC

Panel to measure and control pH value and chlorine concentration.

- PC95 instrument
- Self-cleaning amperometric cell (Pt-Cu)
- Self-calibration system on the basis of the chemical and physical properties of the water
- pH probe
- Self-calibration with probe efficiency control
- Solenoid valve for self-calibration
- Washable cleaning filter

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