

Sensors and Transmitters

Water Quality Measurements

Turbidity & Suspended

Immersion and In-Line
Auto Cleaning Options



Dissolved Oxygen

Immersion and In-Line
Auto Air Blast Cleaning



ISE Probes (ppm):

Ammonia
Potassium
Nitrates
Chlorides



Colour (S480)

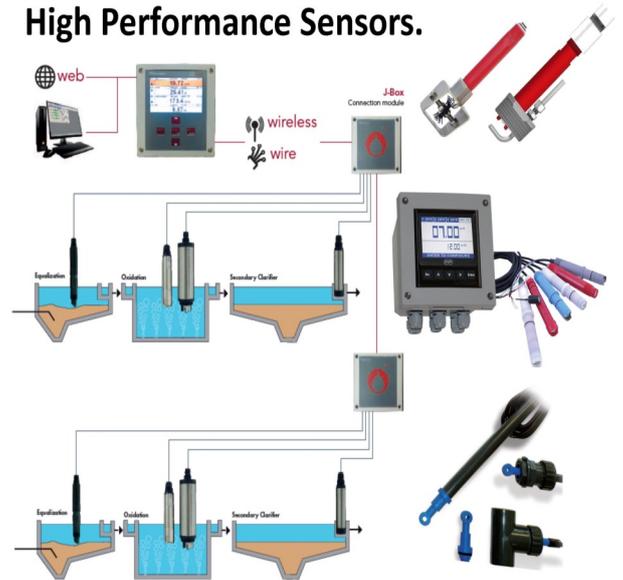


UV Transmittance



pH, ORP, Conductivity

Single & Multi-Channel Transmitters
Simple, mid Range and
High Performance Sensors.



Concentration (ppm):

Chlorine (Cl₂): Free & Total
Chlorine Dioxide (ClO₂)
Hydrogen Peroxide (H₂O₂)
Ozone (O₃)
Bromine (Br)



Sensors and Transmitters

Water Quality Measurements

Chemitec Water Monitoring Solutions:

Disolved Oxygen
Turbidity - In Line
ISE Electrodes
Sensors for pH, ORP and Conductivity
Single and Multi-Channel Electronics

HF Scientific:

Turbidity - Off Line
Free and Total Chlorine
UV Transmittence
Standards and Reagents

Dosatronic ppm Sensors:

Free & Total Chlorine
Chlorine Dioxide
Hydrogen Peroxide
Ozone
Bromine

Barben Heavy Duty Sensors:

For pH and ORP
Long Life, high performance sensors
And installation accessories.

Chemitec

Water Monitoring Solutions



PRODUCT CATALOG

About us

Founded in 1984, in Florence (Italy), **Chemitec** operates in more than 80 Countries and expand its international direct presence by opening a subsidiary in Shanghai (China) in 2015.

Chemitec has a vast range of experience and expertise in Water Treatment and Liquid Chemical analysis.

Chemitec designs, manufactures and distributes analyzers, probes, level and flowrate detection systems to industries worldwide.

With a reputation for quality and service, we specialize in developing highly specific, customized and user friendly products to our discerning clients.



Our Mission to turn knowledge into innovation

Everyone at **Chemitec** is driven by a single purpose - to translate our knowledge and expertise into new and innovative products using our probe/senor technology that not only fulfill customer requirements but provide user-friendly, cost saving water monitoring solutions.

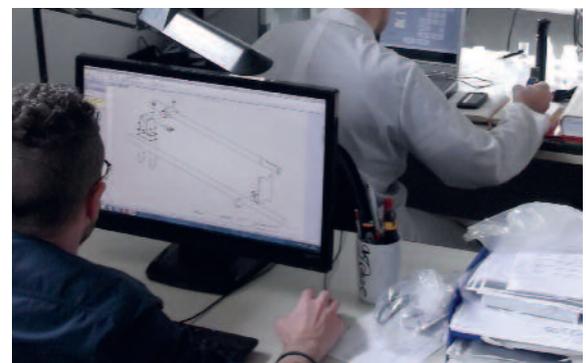
Our Vision leading the world in high-tech on-line water and liquid analysis

Our aim is to be the worldwide leader in on-line water and liquid analysis through new specific sensor development, ensuring an international direct presence, a customer focused approach and a philosophy of continuous appraisal and improvement.

Research & Development

Research and Development is at the heart of everything that we do at **Chemitec**.

With 30 years of R&D experience in the field, uncompromising quality and top brand components, our team of highly skilled engineers develop all of our products in accordance with individual customer specifications, ensuring optimum performance and reliability at the right cost.



Quality Assurance & Quality Control



Chemitec is oriented to quality, by monitoring and evaluating systemically the different aspects of the design, planning (MRP), production (Kaizen) and after-sales support in order to guarantee customer satisfaction.

Quality standards

Chemitec develops its products according to the most demanding international quality standards (CE, UL, CSA, TR CU). The company's quality management system UNI EN ISO 9001:2008 is certified by DNV (DET NORSKE VERITAS).

Chemitec applies policies of the environmental quality and safety, making it an element of development and it's certified ISO14001 and OHSAS ISO18001 by DNV (DET NORSKE VERITAS).

Committed to customer satisfaction

Chemitec provides an experienced, professional and comprehensive technical consultancy service. We are focused on the individual needs of each customer, from the preliminary stages of the project, through to the design, manufacture and after sales technical support.

Customer needs **our priority**

Customer satisfaction **our target**

Application fields



Chemical Process
Drinking water
Waste water
Industrial water
Cooling towers
Swimming pools
Fish Farming

Chemical industry
Pulp & Paper
Food & Beverage
CIP (Clean in Place)
Electroplating
Irrigation



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Sensors and Controllers

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Sensors and Controllers

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote
control

Accessories

50 SERIES

Plug & Play multi-parametric control instrument
for digital sensor, plug & play system set up

8

42 SERIES

Process control instrument
for analogue and digital sensors

12

S4xx Sensors

Electrochemical, amperometric, optical
and UV photometer

14

pH/ORP | Conductivity | Inductive conductivity
Dissolved oxygen | Chlorine and other oxidants | Turbidity & Suspended
Solids | Ammonia, Nitrate, Chloride, Potassium (I.S.E. Electrodes)

OXYSMART

Hardware and software system
for the complete management of small WWTP

40

Utilizing I.S.E. and Optical Oxygen sensors in unique control algorithm

30 SERIES

pH / redox - Conductivity control instrument

42

Basic Controllers dedicated to pH/redox and conductivity panel mounting and DIN Rail version

S250

O.U.R. Test
Complete portable system to measure Oxygen Uptake Rate in biomass

44

SELECTION TABLE FOR PROBES/INSTRUMENTS

Parameters	Probe models	Applications				Instruments	
		Water treatment	Depuration	Industry	Swimming pool	50 SERIES	42 SERIES
pH	S401 VG	■	■	■	■	■ ■	■
	S408 MEC	■	■	■		■ ■	■
	S408 POL HT		■	■		■ ■	■
	S401 LC	■		■		■ ■	■
	S402 PS		■	■		■ ■	■
	S401 DIG	■	■	■		■	
	S401 DIFF		■	■		■	
Redox (ORP)	S406 VG	■	■	■	■	■ ■	■
	S406 POL / S406 OXT		■	■		■ ■	■
	S403 PS		■	■		■ ■	■
	S406 DIG	■	■	■		■	
	S406 DIFF		■	■		■	
Conductivity	S411 / S411 C	■		■		■ ■	■
	S411 TEF / S411 TEF C	■		■		■ ■	■
	S428	■		■		■ ■	■
	S411 U / S411 P / S411 4E	■		■		■ ■	■
	S411 IND / S411 IND HT	■	■	■		■ ■	■
	S411 DIG	■		■		■	
Disinfectants	S494 CL ₂ / S494 CL ₂ ORG	■	■	■	■	■ ■	■
	S494 CLO ₂	■		■		■ ■	■
	S494 PAA	■		■		■ ■	■
	S494 CIO ₂ ⁻	■				■ ■	■
	S494 H ₂ O ₂	■		■		■ ■	■
Oxygen Dissolved	S423	■	■	■			■
	S423 C OPT	■	■	■		■	■
Turbidity	S461 LT	■		■	■	■	
	S461 N	■	■	■		■	
	S461 TN / S461 TN INS	■	■	■		■	
Suspended Solids	S461 S / S461 S INS	■	■	■		■	
Nutrients	S470 NH ₄ ⁺	■	■	■		■	
	S470 NO ₃	■	■	■		■	
	S470 Combined (NO ₃ ⁻ NH ₄ ⁺)	■	■	■		■	
	S480 UV NO ₃	■	■	■		■	
	S480 UV SAC ₂₅₄	■	■	■		■	
Organic Substances/ Color	S480 COLOR	■	■	■		■	
	S480 UV PAH	■	■	■		■	

* Polycyclic Aromatic Hydrocarbons

■ ■ through digitizer

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories

PLUG & PLAY MULTIPARAMETRIC INSTRUMENT

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories



Connectable to

the whole range of Chemitec digital sensors and expandable to the traditional electrodes/probes through digitizers AD Series

Measures

pH/ORP
Dissolved Oxygen
Conductivity
Turbidity
Suspended Solids
Chlorine
Chlorine Dioxide
Ozone
Chlorites
Hydrogen Peroxide
Peracetic Acid
Nitrates (ISE)
Nitrates (UV)
Organic Substances (UV)
Color (UV)
PAH*/OIL (UV-Fluorescence)
*Polycyclic Aromatic Hydrocarbon

Complete and flexible system for a wide range of applications in water treatment with easy to use software and automatic recognition of sensors: **available in three configurations, up to two (2), four (4) and eight (8) simultaneous measurements, freely selectable.**

Equipped with two RS485 serial ports: one (1) for **sensors with RS485 digital interface and MODBUS RTU protocol** and one (1) opto-isolated for the connection with the communication devices (Setup Computer, Remote Control Terminals etc.) of the local networks.

Incorporates a **Real Time Clock (clock with date)** which allows the software to archive the data chronologically to the flash memories also used for storing LOG files of the events.

50 SERIES

User Interface (HMI)

Programming keypad with 5 bubble-keys with

- CAL Key for direct access to the Calibration menu
- GRAPH/USB Key for direct access to the Measure graphs and for data download to USB PENDRIVE
- MODE Key for self-recognition of sensors

Graphic TFT color LCD resolution 480x272 visible area 95x93 which allows the simultaneous display of digital measurements

Software & Functions

Internal Data Logger (flash 64 Mbit) with possibility to store up to 250.000 records and to display stored data in tabular and graphic form. Data download to USB PENDRIVE or through RS485 and C_NET dedicated SW.

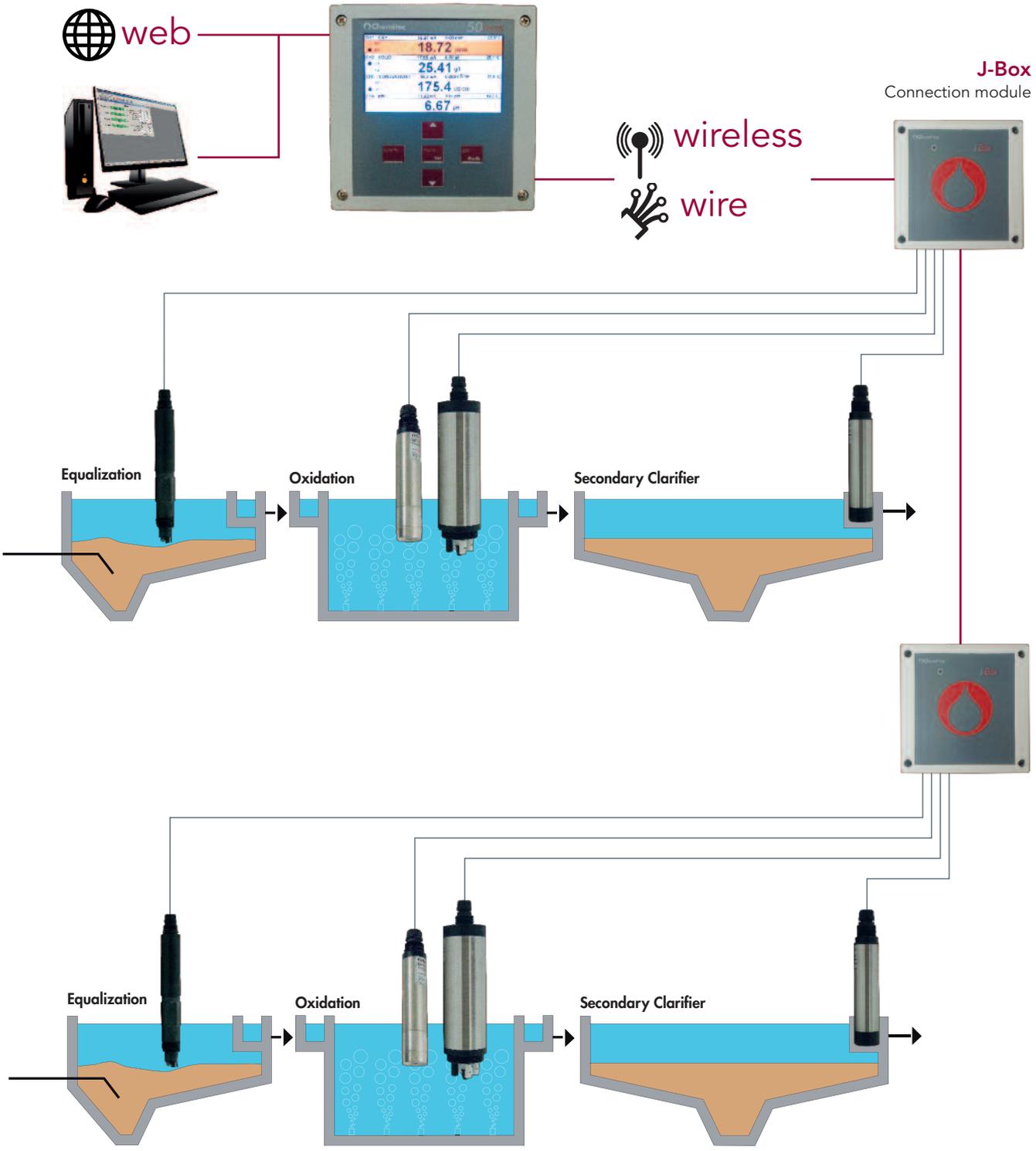
Programmable Analog Outputs for repeating the measurements, PID control and temperature; with the first and the second set on the measurement of the same parameter, the third can be set as the average of the other two.

Digital Output Relays to adjust the Set Points for the measures, the alarm for instrument anomaly, the probe washing or the Set Point for temperature

Analog Input for perturbative functions or engineered display of additional measuring

Digital Input for disabling of dosage

50 SERIES Possible layout up to 8 sensors



PLUG & PLAY MULTIPARAMETRIC INSTRUMENT

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories

Hardware features, software features and functions 50 SERIES

Display	Graphic TFT color LCD
Resolution	480 X 272 (Visible Area 95x93)
Languages	Italian, English, French, German, Spanish, Russian
Keypad	5 bubble-keys [▼] [▲] single keys and [GRAPH/USB] [ESC/MODE] [ENTER/CAL] keys with double functions available
Data Logger	Internal Flash 64Mbit Memory up to 250,000 records with a recording interval of 15 sec up to 120 minutes
Recording method	Circular (F.I.F.O.) or Filling
Display of stored data	In tabular and graphic form, with indication of maximum, minimum and average values of the selected period. Zoom function.
PID Control	Settable functions P [Proportional] ; PI [Proportional – Integral] and PID [Proportional – Integral – Derivative]
Activation	On analog or digital output
Proportional range	0...500%
Time	Integral and/or derivative 0:00...5:00 min
Analog Outputs	Four (4) programmable ; 0/4...20 mA ; Galvanic separation ; 1KV Optoisolator ; Maximum load 500 Ohm ; Output limits user programmable between measuring ranges
Alarm output	NAMUR ; 2.4 mA [with range 4...20 mA]
Digital Outputs	Six (6) ; Switching Relays usable as NO ; Maximum resistive load 3A at 230Vac
Set Point (4)	Working range setting (Hysteresis/direction) ; pause/working time setting 000...999 Seconds ; PID Control ; Pulse Frequency or PWM
Alarm/Wash (2)	Alarm: Instrument failure, min/max value, set point delay, permanence time (live check) ; Delay time ; Set Point disabling (in case of alarm): Enable/Disable Wash: Programmable interval (minimum 15 minuts) and duration between 00:00...24:00 hh:mm; during the washing phase, all digital and analog outputs are frozen

Hardware features, software features and functions 50 SERIES

Digital Inputs (2) for Free contact	To disable dosing or activate wash cycle
Power consumption	5mA max
Serial Ports/Outputs	RS485 programmable for set-up and Real Time data acquisition from remote or download stored data (using dedicated SW)
Baud Rate	1200...38400
Communication protocol	MODBUS RTU ; on request PROFIBUS DP SLAVE, CANopen, Ethernet, Devicenet, Modbus TCP, Profinet
Manual controls	Possibility to simulate all the analogue and digital outputs using the keyboard
Power Supply	90...240 Vac/dc 47– 63 Hz [on request 24Vac/dc]
Transformer isolation	4KV
Power consumption	< 6W
Electrical protection	EMI / RFI CEI-EN55011 – 05/99
Mounting	Wall
Housing material	ABS Gray RAL 7045
Dimensions (L x H x P)	144 x 144 x 122.5 mm
Mounting depth	122.5 mm
Mechanical protection	IP 66
Weight	1 Kg
Operating temperature	0...50 °C
Humidity	10...95% non-condensing
Storage and transport	-25...65 °C

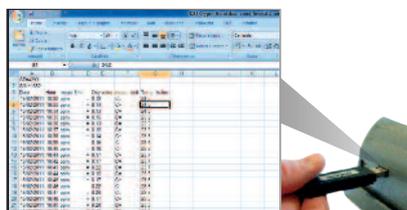
Communication protocol

MODBUS RTU (standard) for set-up, Real Time data communication or download of the stored data through C_NET dedicated software

Upon request PROFIBUS DP ; CANopen; Ethernet; Devicenet; Modbus TCP ; Profinet



C_NET SW



Data Download to USB

PROCESS CONTROL INSTRUMENT

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories



Measures

pH/ORP
Dissolved Oxygen
Conductivity
Turbidity
Suspended Solids
Chlorine
Chlorine Dioxide
Ozone
Hydrogen Peroxide
Peracetic Acid
Chlorites
Bromine

42 SERIES

Developed by Chemitec for industrial applications, it is equipped with an output for proportional control, control functions of the probe conditions and other various outputs. The user has full control of the programming.

User Interface (HMI)

Programming keypad with 5 bubble-keys for calibration and instrument configuration with:

- GRAPH key to display the stored data in tabular and graphic form.

Monochromatic display 128 x 64 pixel with graphic icons to display the status of the digital output, the recording data, the wash cycle and the alarm. Scrolling output values.

Software & Functions

Manual controls thanks to the intuitive programming menu it is very easy to start and control the dosing system.

Data Logger of Circular (F.I.F.O.) or Filling type on an internal flash memory with a recording interval of 1 to 99 min. (about 16000 records).

RS485 Serial Port for set-up and remote real time acquisition or for downloading the stored data on a portable or desktop PC (using dedicated software), through MODBUS RTU communication protocol.

USB Port to download measurement data directly on a removable PEN DRIVE memory (on request).

Analog Input for perturbative functions (interactions between two parameters).

Digital Input for disabling of dosage or comand for washing from remote.

Temperature compensation through PT100 sensor with 3 or 4 wires, or PT 1000

Hardware features, software features and functions 42 SERIES

PID Control	Settable functions P ; PI and PID
Activation	On analog or digital output
Proportional Range	0...500%
Time	Integral and/or derivative 0:00...5:00 min
Analog Outputs	Two (2) programmable ; 4...20mA galvanically isolated ; Output limits user programmable between measuring ranges
Output 1	programmable for measure
Output 2	programmable for measure / Temperature / PID Control
Digital Outputs	Four (4) ; Switching Relays usable as NO ; Maximum resistive load 3A at 230Vac
Set Point On – Off	Two (2) for each of the two measures ; working range setting (Hysteresis/direction) ; pause/working time setting 000...999 Seconds ; PID Control ; Pulse Frequency or PWM
Alarm or Set Point for Temperature	One (1) programmable for: minimum/maximum value, set point delay, permanence time (live check) ; delay time 00:00...59:99 mm:ss at minimum steps of 15 sec ; permanence time 00:00...99:99 hh:mm ; Set Point disabling in case of alarm: Enable/Disable
Automatic sensor washing or Set Point for Temperature	One (1) to program the interval (minimum 15 minuts) and the duration from 00:00...24:00 hh:mm; during the washing phase, the digital and analog outputs and the temperature are frozen
Power supply	100...240 Vac/dc 50-60 Hz (optional 24 Vac/dc)
Power consumption	< 7W
Electrical protection	EMI / RFI CEI-EN55011 – 05/99
Mounting	Wall / Panel
Housing material	ABS Grey RAL 7045
Dimensions (L x H x P)	144 x 144 x 122.5 mm with a mounting depth of 122.5 mm
Mechanical protection	IP 66
Weight	1 Kg
Mounting	Panel
Housing material	ABS Black
Dimensions (L x H x P)	96 x 96 x 115.5 mm with a mounting depth of 130 mm
Mechanical protection	IP 54
Weight	0.7 Kg

ELECTRODES FOR PH AND ORP MEASUREMENT

Controllers

Sensors

Analysers

Samplers

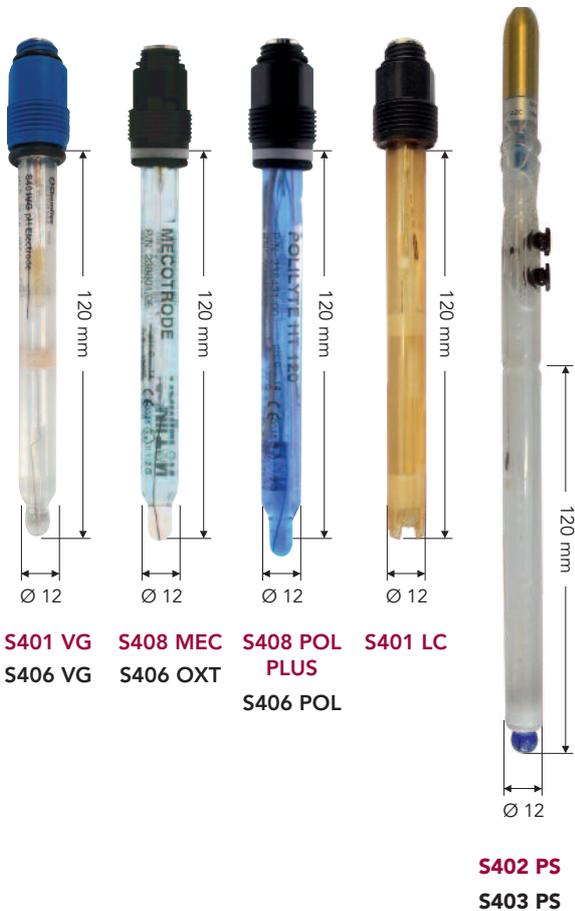
Flow

Level

Pressure

Web remote control

Accessories



Digitizer for pH and ORP electrodes

The AD Series Chemitec digitizers convert the signals of the common pH and ORP electrodes into serial signal with standard Modbus RTU protocol, allowing the connection to the 50Series plug & play multiparametric instrument



General features

The electrodes listed below are all of the combined type (Measurement+Reference), without maintenance, and are classified by their construction features, which makes them adaptable to multiple applications.

Models and Applications

S401 VG

Combined pH electrode for general use

S406 VG

Combined ORP electrode for general use

S408 MEC

Combined pH electrode for high temperature liquids and/or installations under pressure

S408 POL PLUS

Combined pH electrode for harsh chemical applications

S406 POL

Combined ORP electrode for harsh chemical applications

S406 OXT

Combined ORP electrode for high temperature liquids and/or installations under pressure

S401 LC

Combined pH electrode for waters with low electrical conductivity

S402 PS

pH electrode for applications involving liquids with a high suspended solids content

S403 PS

ORP electrode for applications involving liquids with a high suspended solids content

Technical specifications Electrodes for pH measurement

Models	S401 VG	S408 MEC 	S408 POL PLUS 	S401 LC	S402 PS
Measuring range	0...14 pH	0...14 pH	0...14 pH	2...14 pH	0...14 pH
Operating temperature	0...80 °C	0...130 °C	0...130 °C	0...60 °C	0...50 °C
Maximum pressure	6 bar	16 bar	6 bar	16 bar	2 bar
Min. liquid conductivity	5 µS/cm	50 µS/cm	2 µS/cm	2 µS/cm	5 µS/cm
Body material	Glass	Glass	Glass	Epoxy	Glass
Electrolyte	GEL	GEL	Polisolve	GEL	KCl - KNO3
Junction	single open hole	3 ceramic diaphragm	double open hole	single open hole	single pore increased
Cable connection	"S7" screw	"S7" screw	"S7" screw	"S7" screw	fixed
Connection to process	Pg 13.5	Pg 13.5	Pg 13.5	Pg 13.5	standard Ø 12
Cable	5 mt	5 mt	5 mt	5 mt	integral 5 mt

Technical specifications Electrodes for ORP measurement

Models	S406 VG	S406 POL 	S406 OXT 	S403 PS
Measuring range	±2000 mV	±2000 mV	±2000 mV	±2000 mV
Operating temperature	0...80 °C	-10...60 °C	0...130 °C	0...50 °C
Maximum pressure	6 bar	6 bar	16 bar	2 bar
Min. liquid conductivity	5 µS/cm	2 µS/cm	50 µS/cm	5 µS/cm
Body material	Glass	Glass	Glass	Glass
Electrolyte	GEL	Polysolve	GEL	KCl - KNO3
Junction	single open hole	single open hole	3 ceramic diaphragm	single pore increased
Cable connection	"S7" screw	"S7" screw	"S7" screw	fixed
Connection to process	Pg 13.5	Pg 13.5	Pg 13.5	standard Ø 12
Cable	5 mt	5 mt	5 mt	integral 5 mt

DIGITAL PH AND ORP ELECTRODES

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories



General features

The pH electrode **S401 DIG** and the ORP electrode **S406 DIG** are suitable for the measurement of pH and ORP in various applications.

The porous liquid junction resists fouling and chemical attack. The double junction of the reference electrode increases the operating life in applications containing sulphides (H₂S) and metals such as lead, mercury and silver.

The new type of solid reference electrolyte allows a reference potential constant in time and at pressure and temperature variations.

The new capillary temperature sensor design places the Pt100 behind the (pH or ORP) sensitive membrane for accurate temperature compensation and measurement.

The mechanical protection IP68 protects the high impedance signal of the electrodes from moisture that can be generated in immersion applications (condensation).

Applications

Drinking water, process water, wastewater, samples containing sulphides and metals such as mercury, lead and silver.

Technical specifications

Models	S401 DIG	S406 DIG
Measuring range	0...14 pH	-1500.....+1500 mV
Measuring method	Potentiostatic	
Accuracy	0.05 pH	± 5 mV
Repeatability	± 0.05 pH	
Response time	T ₉₀ < 60s	
Operating temperature	0...80 °C in insertion/by-pass – 0...50 °C in immersion	
Maximum pressure	6.9 bar	
Body material	Ryton® and PVC	
Measuring electrode	hemispherical glass membrane	
Other materials	Teflon®, carbon, epoxy	
Mechanical protection	IP68 Sensor + cable	
Power supply	12...24Vdc	
Power consumption	max. 2W	
Cable	10m integral with the sensor (other on request)	
Signal interface	Modbus RTU Standard Protocol	

DIGITAL DIFFERENTIAL PH AND ORP ELECTRODES



General features

S401 DIFF and **S406 DIFF** are differential electrodes designed for pH and ORP measurement in heavy duty applications, where the electrodes with traditional reference system would have a life too short.

They consist of a PVC body which houses the glass electrode for pH or ORP measurement, the reference electrode with a salt bridge and a KCL reserve which guarantees a high stability of the reference signal in time and at operating conditions variations. The measuring and reference electrodes are connected to an earth contact for an excellent measurement accuracy even in extreme conditions.

The reference electrode is replaceable.

Applications

Input, output and biological treatment of waste water. Industrial heavy duty applications.

Technical specifications

Models	S401 DIFF	S406 DIFF
Measuring range	0...14 pH	-1500.....+ 1500 mV
Measuring method	potentiostatic differential	
Sensitivity	± 0.05 pH	± 5 mV
Repeatability	± 0.05 pH	
Response time	T ₉₀ < 60s	
Operating temperature	0 ...80 °C in insertion/by-pass – 0 ...50 °C in immersion	
Maximum pressure	6.9 Bar	
Body material	Ryton® and PVC	
Measuring electrode	hemispherical glass membrane	
Other materials	Teflon®, carbon, epoxy	
Mechanical protection	IP68 Sensor + cable	
Power supply	12...24Vdc	
Power consumption	max. 2W	
Cable	10m integral with the sensor (other on request)	
Equipotential contact	included	
Signal interface	Modbus RTU Standard Protocol	

CONDUCTIVITY MEASURING CELLS

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories



S411
S411 C



S411 TEF
S411 TEF C



S411 U
S411 P



AD SERIES DIGITIZER to convert the conductivity measurement into serial signal with standard MODBUS RTU protocol



S411 4E

General features

Wide range of conductive cells designed both for water treatment and for industrial applications.

Thanks to the combination between the cell constant (k) and the construction materials it is possible to cover a wide spectrum of applications with different measurement ranges.

Applications

Untreated water, drinking water, ultra pure water, demineralization, reverse osmosis, ion exchanger, water from conditioning systems and boilers, process water.

Technical specifications

Models	S411	S411 C	S411 TEF	S411 TEF C
Constant	1	1	1	1
Measuring range	0...50.000 µS	0...50.000 µS	0...10.000 µS	0...10.000 µS
Temp. compensation	-	yes	-	yes
Operating temperature	5...100 °C	5...100 °C	0...100 °C	0...100 °C
Maximum pressure	5 bar	5 bar	2 bar	4 bar
Body material	PP	PP	PTFE	PTFE
Electrode material	Graphite	Graphite	SS316	SS316
Connector	Integral cable			
Connection to process	1/2" GAS	1/2" GAS	1" GAS	1" GAS
Standard cable	5 mt	5 mt	5 mt	5 mt

Technical specifications

Models	S411 U	S411 P	S411 4E		
Constant	1	10	10	100	0.7
Measuring range	0...50.000 µS	10...200 mS	0...1000 µS	0.04...20 µS	0...500 mS
Temp. compensation	yes	yes	yes	yes	yes
Operating temperature	0...120 °C	0...120 °C	0...130 °C	0...130 °C	0...100 °C
Maximum pressure	6 bar	6 bar	16 bar	16 bar	4 bar
Body material	PES	PES	SS316	SS316	Polycarbonate
Electrode material	Graphite	Graphite	SS316	SS316	Platinum on ceramic base
Connector	with connector				
Connection to process	1/2" GAS ^(*)	1/2" GAS ^(*)	1/2" NPT ^(*)	1/2" NPT ^(*)	Pg 13.5
Cable	5 mt (other on request)				
Applications	Industrial at middle range	Industrial at high range	Industrial at low range	Industrial at very low range	Industrial for wide range

(*) ON REQUEST CLAMP CONNECTIONS, FOOD GRADE FLANGES, DIN

INDUCTIVE CONDUCTIVITY MEASURING CELLS

General features

The conductivity measuring system using inductive sensors has many advantages over other conventional methods. The absence of electrodes in contact with the fluid to be measured makes the system recalibration and maintenance virtually useless over long periods of time. The **S411-IND** sensors have a great tolerance with respect to the coating phenomena, probably the most common problem encountered when measuring with conventional electrodes.



S411 IND

The inductive sensor has been engineered to produce a low cost sensor, without sacrificing performance or quality. The result has been obtained by moulding the sensor using polypropylene reinforced with fibreglass. The sensor provides all of the benefits that the method of inductive conductivity measurement provides.

Applications

Polluted surface waters, process monitoring, means very contaminated or aggressive, influential water of treatment plants and wastewater.

Models

S411 IND
sensor only

S411 IND T
for immersion

S411 IND E
for insertion with T-fitting

S411 IND T INS
for direct insertion on flat wall

Digitizer for inductive measuring cells

The AD Series Chemitec digitizers convert the conductivity measurement into serial signal with standard Modbus RTU protocol

Technical specifications S411-IND

Sensore	
Operating temperature	- 5...60 °C (not freezing)
Measuring range	1000 uS...1000 mS
Temp. compensation	Temperature sensor Pt1000 with 2 wires
Cable	Standard 5 meters
Operating pressure	Vacuum to 6.5 bar (100 psi)
Mechanical construction	
Material	PVC with Viton® seals
Contact materials	Glass-reinforced polypropylene
Immersion length	600 or 1200 mm
Mounting	Standard bracket or optional flange
Connection	0.5" BSP male
Protection grade	IP68

INDUCTIVE CONDUCTIVITY MEASURING CELLS

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories



S411 IND HT

These sensors are manufactured of PEEK™, a food grade material with excellent aggressive chemical resistance and high temperature performance. The construction allows the sensors to operate at 100 °C continuously, withstanding thermal shocks commonly associated with CIP applications. The sensors can be sterilized at up to 135 °C.

Applications

Ideal for food and process applications
Conductivity and concentration measurements
Wide range of process connections

Models

S411 IND HT
for insertion

S411 IND HT 60/120
for immersion

S411 IND HT TP
for By-pass with PVC T-fitting

S411 IND HT TS
for By-pass with SS T-fitting

Digitizer for inductive measuring cells

The AD Series Chemitec digitizers convert the conductivity measurement into serial signal with standard Modbus RTU protocol.

Technical specifications S411IND-HT

Sensore

Operating temperature	- 5...100 °C / up to 135 °C for short periods (CIP process)
Measuring range	1000 uS...1000 mS
Temp. compensation	Temperature sensor Pt1000 with 2 wires
Cable	Disconnectable Standard 5 meters
Operating pressure	Vacuum to 10 bar (150 psi)

Mechanical construction

Materials	PEEK / AISI
Contact materials	Body PEEK – Temperature sensor INOX (PEEK on request)
Immersion length	600 or 1200 mm
Mounting	Standard bracket or optional flange
Connections	RJT 2", 2.5", 3" – Tri clamp 2", 3" – IDF/ISS 2", 2.5", 3" DIN 1185: 50mm, 80mm (other on request)
Protection grade	IP67

DIGITAL CONDUCTIVITY PROBE



General features

The **S411 DIG** probe is used for measuring conductive conductivity in pure and process waters.

- Reliable conductivity measurement using graphite electrodes
- Conductive measuring method with two electrodes and temperature compensation
- PVC sensor body and graphite electrodes
- No mechanically moving parts
- Immediate installation and easy maintenance
- MODBUS RTU serial communication protocol

Applications

Untreated water, drinking water, demineralization, reverse osmosis, ion exchanger, water from conditioning systems and boilers, artesian wells

Technical specifications

Measuring range	0.00...20/ 200/ 2000/ 20000 μ S
Measuring method	conductive with two electrodes
Resolution	0.01/ 0.1/ 1/ 10 (range 0...20/ 200/ 2000/ 20000) μ S
Accuracy	\pm 2.5 % of full scale
Response time	90% of the value in less than 60 seconds
Refresh time	$T_{90} < 60s$
Temp. compensation	via internal NTC (external NTC optional)
Operating temperature	0...50 $^{\circ}$ C
Maximum pressure	10 bar
Body material	PVC
Electrode	Graphite
	The probe is completely resinated inside
Mechanical protection	IP68 Sensor + cable
Power supply	12...24Vdc
Power consumption	max. 2W
Cable	10m integral (other on request) – 10m disconnectable cable
Equipotential contact	for solution included
Signal interface	RS 485 Modbus RTU Protocol

AMPEROMETRIC SENSORS FOR CHLORINE MEASUREMENT

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories



General features

The **S494** are amperometric probes with two (2) or three (3) electrodes covered with membrane with integrated temperature sensor for signal compensation.

Applications

Swimming pool, drinking water, waste water, process water.



Digitizer for amperometric sensors

The AD Series Chemitec digitizer converts the S494 sensor signals into serial signal with standard Modbus RTU protocol allowing the connection to the **50 SERIES** plug & play digital instrument.



Technical specifications

Measuring parameters	Free Chlorine ; Total Chlorine ; Organic and Inorganic Free Chlorine ; Chlorine Dioxide ; Ozone ; Peracetic Acid ; Hydrogen Peroxide ; Chlorites
Measuring error	±2 % of the indicated value
Repeatability	±2 %
Stability	±1 % of the analytical determination after 4 weeks from the calibration
Operating conditions	Sample speed on the membrane 15 cm/sec Costant flow rate of the hydraulic supply 30...40 l/h Acceptable overpressure 1 bar
Operating temperature	>5 ...45 °C (other on request)
Temp. compensation	automatic through NTC integrated sensor
Time	First polarization from 1 to 3 h ; Repolarization 30 min
Response	60 sec for 90% f.s.
Body material	PVC, silicon, PTFE
Membrane	PTFE (Teflon) semipermeable
Measuring electrode	(Cathode) Gold
Reference electrode	(Anode) Silver/Silver Chloride
Calibration point	Zero not necessary Work according to user requirement, through analytical determination (colorimetric with DPD)
Warnings	Maintenance interval 2 weeks or more Life time of the electrolyte solution approx. 1 year

Measuring parameters	Measuring range	pH operating range
Free Chlorine	0.01...2.00 ppm; 0.01...5.00 ppm; 0.01...10.00 ppm; 0.1...200.00 ppm	6...8 pH
Total Chlorine	0.01...0.50 ppm; 0.01...2.00 ppm; 0.01...5.00 ppm; 0.01...10.00 ppm	4...12 pH
Organic and Inorganic Free Chlorine	0.01...2.00 ppm; 0.01...5.00 ppm; 0.01...10.00 ppm	4...12 pH
Chlorine Dioxide	0.01...0.50 ppm; 0.01...2.00 ppm; 0.01...5.00 ppm; 0.01...10.00 ppm	1...11 pH
Ozone	0.01...0.50 ppm; 0.01...2.00 ppm; 0.01...5.00 ppm	2...11 pH
Peracetic Acid	0...500 ppm; 0...1000 ppm; 0...2000 ppm; 0...10000 ppm; 0...20000 ppm;	1...6 pH
Hydrogen Peroxide	0...500 ppm; 0...1000 ppm; 0...2000 ppm; 0...10000 ppm	2...11 pH
Chlorites	0.05...2 ppm	6...9 pH

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories



Mounting in constant flow-through electrode holder for Chlorine, Chlorine Dioxide, Ozone, Chlorites, PAA, H₂O₂ and other membrane sensors.

S305PX494

Materials

Cell and mounting brackets	Plexiglass
Connections and valves	PVC
Floating system	SS
O-Ring	NBR

Operating conditions

Operating temperature	max 60 °C (80 °C on request)
Operating pressure	maximum 4 bar

OXYGEN AND TEMPERATURE ELECTRODE

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories



General features

The oxygen content in liquids is measured with a system called Clark's cells. These cells generate an electrical current proportional to the oxygen partial pressure which can be evaluated with a suitable measurement converter.

In order to prevent interference effects on measuring, the Clark's cells are covered with a gas-permeable membrane. The membranes typically used are made from PTFE but, as this material is mechanically fragile, frequent changing is often necessary, along with the related "demanding" operations (interruption of measurement, electrolyte replacement, regeneration of the electrodes).

The **S423** solves this problem by using an OPTIFLOW™ membrane. This membrane is very mechanically stable, is manufactured as a laminate around a steel mesh and is very resistant to chemically aggressive environments as well as high pressures.

Thanks to the special construction of the measuring electrodes, this system also makes the sensor totally "maintenance free".

Applications

Surface waters, drinking water, biological treatment of waste water.

Technical specifications

Measuring range	0,4...40,0 mg/l
Measuring method	measure of the electric current influenced by the oxygen partial pressure
Sensitivity	40...80 nA a 25 °C in air
Stabilization time	typical 15 min., max. 1 h
Required flow rate	≥ 0.03 m/s
Temperature sensor	NTC 30 kOhm Oxysens W (NTC 22 kOhm Oxysens – optional)
Operating temperature	0...60 °C
Maximum pressure	4 bar
Body material	SS1.4435, PEEK, Silicon, NBR
Electrode material	Silver-Platinum combination
Membrane material	OPTIFLOW
Reference electrolyte	Alkaline solution
Electrical connector	Integral cable 5 mt
Connection to process	Pg 13.5 threaded
Polarisation current	-670 +/- 50 mV



OPTICAL OXYGEN AND TEMPERATURE PROBE

General features

S423 C OPT is an oxygen measuring sensor with integrated temperature probe. The measuring technique is based on the following optical principle: a diode emits a blue light towards a support on which a fluorescent substrate is applied. The substrate reacts by emitting initially a red light (luminescence), then returns to its initial state. The intensity of the produced red light and the return rate to the initial state are related to the present oxygen concentration. This innovative method allows reliable, accurate measurements with no drift over time, so that the system calibration is no longer necessary. No maintenance is required except for the replacement of the luminescent support about every two years. The system does not consume oxygen, therefore it is suitable for the most varied fields of application, including those in which the measuring liquid is almost stationary.



Applications

Surface waters, fish farms, drinking water, waste water, sea water

Available versions with PVC body, with 4...20mA outputs

Technical specifications

Measuring range	0.00...20.00 mg/l
Measuring method	Optical measure by luminescence
Accuracy	± 0,2 mg/l when < 5mg/L ± 0,3 mg/l when > 5mg/L
Response	T ₉₀ < 60s
Refresh time	< 1s
Temp. compensation	with internal NTC probe
Operating temperature	0...50 °C
Maximum pressure	5 bar
Body material	SS316 (PVC body optional)
Electrode material	Special optical glasses
O-Rings	NBR and Silicon
Mechanical protection	IP68 Sensor + cable
Power supply	12...24Vdc
Power consumption	max. 2W
Cable	10 m integral with the sensor
Signal interface	RS 485 Modbus RTU Protocol

LOW RANGE TURBIDITY SENSOR

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

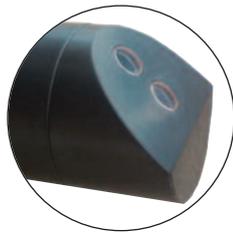
Accessories



General features S461 LT

Turbidity refers to the scattered component of a light beam which is diverted away from its natural course e by optically denser particles in the medium (e.g. solid matter particles).

The measurement is performed by using a 90° scattered light method compliant with ISO 7027 / EN 27027. The measuring method is based on the Tyndall effect. The turbidity of the medium is determined by the amount of scattered light.



Applications

Drinking water, process industrial water, low turbidity waters, immersion or by-pass installation

Standard version

PVC Body and Modbus RTU RS485 interface

On request

SS316 body;
4...20 mA outputs

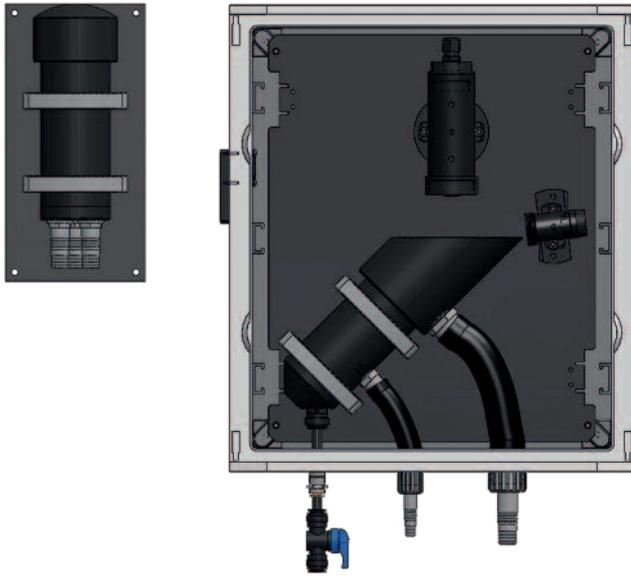
Technical specifications

Measuring range	0...10 NTU / 0...100 NTU
Measuring method	90° Scattered light
Resolution	0,01 NTU for 0...10 NTU range 0,1 NTU for 0...100 NTU range
Accuracy	±1% for 0...10 NTU range ±5% for 0...100 NTU range
Ripeatability	±0.05 NTU for 0...100 NTU range ±0.5 NTU for 0...100 NTU range
Response time	$T_{90} < 60s$
Operating temperature	0...50 °C (0...75 °C with SS316 optional body)
Maximum pressure	4 bar
Body material	Black PVC (on request only SS316)
O-ring	Viton® and Silicon
Optics	Special Glass with oleophobic treatment
Mechanical protection	IP68 Sensor + cable
Power supply	12...24Vdc
Power consumption	max. 3W
Cable	10 mt integral with the sensor
Calibration	1-point and/or 2-point for scale
Signal interface	Modbus RTU Standard Protocol RS485



S461-LT
with Flow cell

NEPHELOMETRIC TURBIDITY MEASURING CELL



S461 N Nephelometric cell



Technical specifications

Measuring ranges	0...100 NTU / 0...1000 NTU (optional 0...9999 NTU)
Measuring method	Nephelometric
Resolution	0.1 NTU for 0...100 NTU range 1 NTU for 0...1000 NTU range
Accuracy	±10% f.s.
Maximum flow rate	60 l/h
Operating temperature	0...50 °C
Maximum pressure	0.5 bar
Materials	ABS case Black PVC measuring cell, receiver assembly and spotlight assembly
O-ring	NBR and Silicon
Optics	Special Glass with oleophobic treatment
Power supply	24Vdc
Power consumption	max. 5W
Cable	5m with connector
Calibration	1-point for scale
Signal interface	Modbus RTU Standard Protocol RS485

General features S461 N

Turbidity measurement without contact with the sample.

90° scattering method compliant with ISO 7027 / EN 27027 with visible light beam.

Black rigid PVC sensor body.

Optional debubbler device applicable externally.

No mechanically moving parts.

Measurement pre-processed in the sensor which provides high sensitivity in low-signal transmission.

Applications

Measuring turbidity in primary water upstream of treatment plants, industrial or municipal water treatment plant discharge

TURBIDITY SENSOR

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

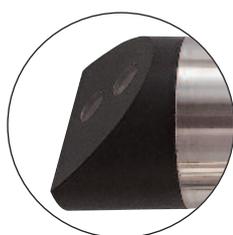
Accessories



General features S461 TN

Turbidity refers to the scattered component of a light beam which is diverted away from its natural course e by optically denser particles in the medium (e.g. solid matter particles).

The measurement is performed by using a 90° scattered light method compliant with ISO 7027 / EN 27027. The measuring method is based on the Tyndall effect. The turbidity of the medium is determined by the amount of scattered light.



Applications

Untreated water, surface water, process water, industrial or municipal water treatment plant discharge

Standard version

PVC and SS316 body with Modbus RTU RS485 interface

On request

Only SS316 body ; 4...20 mA outputs

2 models available

S461 TN for immersion

S461 TN INS for insertion (in combination with S305-INS)

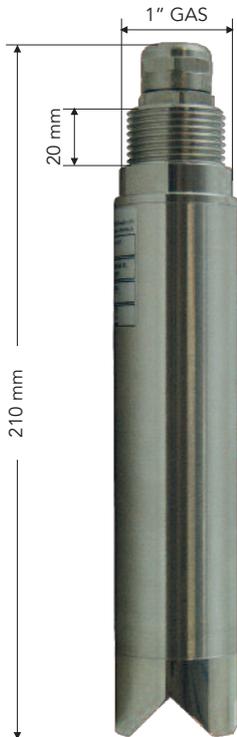
Technical specifications

Measuring range	0...1000 NTU / 0...4000 NTU
Measuring method	90° Scattered light
Resolution	0,01 NTU for 0...1000 NTU range 0,01 NTU for 0...4000 NTU range
Accuracy	±2% for 0...1000 NTU range ±5% for 0...4000 NTU range
Ripeatability	±5 NTU for 0...1000 NTU range ±20 NTU for 0...4000 NTU range
Response time	$T_{90} < 60s$
Operating temperature	0...50 °C (0...75 °C with body in SS316)
Maximum pressure	4 bar
Body material	Black PVC and SS316 (on request only SS316)
O-ring	Viton® and Silicon
Optics	Special Glass with oleophobic treatment
Mechanical protection	IP68 Sensor + cable
Power supply	12...24Vdc
Power consumption	max. 3W
Cable	10 mt integral with the sensor
Calibration	1-point and/or 2-point for scale
Signal interface	Modbus RTU Standard Protocol RS485



S305-INS
probeholder for insertion into the pipe

PROBE FOR SUSPENDED SOLIDS



General features S461 S

Turbidity is a decrease of water transparency due to the presence of suspended solid, t consist of very fine particles, unable to settle in a reasonably short time. The particles in suspension determine an absorption of light radiation according to the number and size of the particles themselves.



Applications

Sludges from biological processes, chemical industry paper mills, food, extraction systems: quarries, tunnels, aggregate extraction

Standard version

SS316 body with Modbus RTU RS485 interface

On request

Only PVC body ;
4...20 mA outputs

2 models available

S461 S for immersion

S461 S INS for insertion
(in combination with S305-INS)

Technical specifications

Measuring range	0...30 g/l MLSS of WWTP - on request 0...100 g/l Kaolin reference
Measuring method	Absorption of light
Resolution	0.1 g/l
Accuracy	± 0.3 g/l
Repeatability	± 0.5 g/l
Response time	T ₉₀ < 60s
Operating temperature	0...50 °C
Maximum pressure	4 bar
Body material	SS316 (on request only Black PVC)
O-ring	Viton®
Optics	Special Epoxy
Mechanical protection	IP68 Sensor + cable
Power supply	12...24Vdc
Power consumption	max. 3W
Cable	10 mt integral with the sensor
Calibration	by points
Signal interface	Modbus RTU Standard Protocol RS485



S305-INS
probeholder
for insertion
into the pipe

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories

PROCESS ISE PROBE FOR AMMONIA, POTASSIUM, NITRATES, CHLORIDES AND TEMPERATURE MEASURING

Controllers

Sensors

Analysers

Samplers

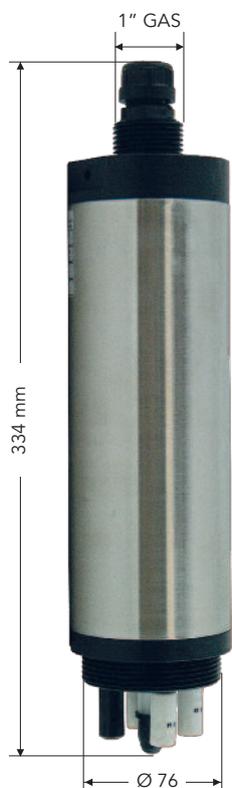
Flow

Level

Pressure

Web remote control

Accessories



S470 is a complete family of ion-selective (**ISE: Ion-selective electrodes**) probes suitable for monitoring the performance of the ammonium ion (as NH_4^+ or $\text{NH}_4\text{-N}$) and nitrate ion (as NO_3^- or $\text{NO}_3\text{-N}$) into a liquid matrix.



Particular attention has been paid to identify a set of sensors stable and at the same time sensitive. For this purpose, it has also been introduced a reference electrode with a particularly high performance and a high capacity of compensation of the pollutants.

The used sensors allow a correct reading of the above analytes in the following applications:

- surface waters
- wastewater
- zootechnical and industrial process water

The S470 family consists of 3 elements:

S470 NH_4^+ Sensor for ammonium ion (0...100ppm) with compensation of the potassium ion (0...1000ppm)

S470 NO_3^- Sensor for nitrate ion (0...100ppm) with compensation of the chloride ion (0...5000ppm)

S470 Combined Sensor for ammonium (0...100ppm) and nitrate (0...100ppm) ions with compensation of the potassium (0...1000ppm) and chloride (0...5000ppm) ions

All the specific electrodes are individually replaceable.

The main ISE (ammonium and nitrate) are placed alongside the secondary sensors (potassium and chloride ISE) that have the task of monitoring the most important interferers and allow the instrument to have a correct compensation of the data.

Installation and commissioning are extremely easy to perform, as well as the routine maintenance and the replacement of the finished sensors.

In the protection ring nut of the probe holder there are integrated cleaning nozzles, which can be connected to a line compressed air or water. The cleaning system is controlled directly from the control unit.

The configuration and calibration operations of the sensors on the **50 SERIES** control unit have been simplified to the maximum in order to ensure an extreme ease of use to all the operators.



The sensor is composed by 3 or 5 (depending on the configuration) ion-selective electrodes housed in an SS316 / PVC sensor body, realized in order to offer the maximum chemical compatibility with the project environments.

These sensors are individually replaceable and have been constructed in such a way to ensure maximum efficiency and response speed.

Nozzles for automatic cleaning (managed by the control unit) are integrated into the probe.

Communication with the controller is made via digital RS485 Modbus protocol. In this way, the field interferences are virtually void and the sensor can be installed even at considerable distances from the control unit.

Calibration

The probe is factory pre-calibrated using standard solutions. The curve stored in this way can be customized by entering the analysis values of the customer (the correction of the field allows to take into consideration any peculiarities of the matrix).

It's possible to enter a table of custom values (6 points) and let the probe work on a custom curve. The factory calibration curve, however, remains always available and could be set again as default.

Technical specifications

Measuring range	NH ₄ ⁺	K ⁺	NO ₃ ⁻	Cl ⁻	Temperature
	0...100 ppm ^(*)	0...1000ppm	0...100 ppm ^(*)	0...1000 ppm	0...50 °C
Measuring method	Ion-selective sensors				
Accuracy	± 5 mg/l				
Response	T ₉₀ < 60s				
Refresh time	maximum < 1 second				
Operating pH range	4...10 pH				
Temp. compensation	with internal PT 100 probe				
Operating temperature	5...40 °C				
Maximum pressure	1 bar				
Body material	SS316				
O-ring	NBR				
Protection, electrodes' housing and superior cap	Black PVC				
Mechanical protection	IP68 Sensor+cable				
Power supply	12...24Vdc				
Cable	10m submersible				
Signal interface	Modbus RTU Standard Protocol				

^(*) on request 0...20ppm

UV PHOTOMETER SENSOR

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories



S480 UV NO₃ new low-cost nitrate meter

Based on the innovative device platform concept of Chemitec S480UV sensors, Chemitec has now developed S480UV-NO₃ : a UV photometer for the determination of nitrate.

The four detection channels enable a precise optical determination of nitrate by absorption, taking into account turbidity and organic substances that pose a problem for many products currently on the market.

An internal temperature correction additionally increases stability of the measured values.

Benefits

- Proven UV-absorption method
- Without sampling and preparation of test samples
- Real-time sensor
- Without reagents
- Optical window with nano coating

Applications

- Sewage treatment plants
- Environmental monitoring
- Drinking water monitoring

Technical Specifications

Measurement technology	light source	Xenon flash lamp
	detector	4 photo diodes + filter
Measurement principle	Attenuation	
Optical path	0.3 mm, 1 mm, 2 mm, 5 mm, 10 mm, 50 mm	
Parameter	NO ₃ -N	
Measuring range	0...100 mg/l	
Measurement accuracy	± (5 % + 0.1)	
Turbidity compensation	Yes	
T100 response time	2 min	
Measurement interval	≥ 1 min	

Technical Specifications

Housing material		SS (1.4571 / 1.4404) or titanium (3.7035)
Dimensions (L x Ø)		470 mm x 48 mm (10 mm path)
Weight	SS	~ 3 kg
	titanium	~ 2 kg
Interface	digital	Ethernet (TCP/IP)
		RS-232 or RS-485 (Modbus RTU, ASCII)
	analog	Ethernet (TCP/IP) 4...20 mA
Power consumption		≤ 8 W
Power supply		12-24 VDC (± 10 %)
Maintenance effort		Typically ≤ 0.5 h/month
Calibration/maintenance interval		24 months
Signal interface		Modbus RTU Standard Protocol

Installation

Max. pressure	with SubConn	30 bar
	with fixed cable	3 bar
	in FlowCell	1 bar, 2-4 l/min
Protection type		IP68
Sample temperature		2...40 °C
Ambient temperature		2...40 °C
Storage temperature		20...80 °C
Inflow velocity		0.1...10 m/s

UV PHOTOMETER SENSOR

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories



S480 UV SAC₂₅₄ the innovative sensor

Long-lasting and energy-efficient UV-LED technology and a robust design are the outstanding features of S480UV-SAC₂₅₄.

Like all Chemitec sensors S480UV-SAC₂₅₄ uses the unique nano-coated windows in conjunction with compressed air flushing to achieve long operating times without cleaning.

Benefits

- Without sampling and preparation of test samples
- Real-time sensor
- Without reagents
- Optical window with nano coating
- LED technology

Technical Specifications

Measurement technology	light source	2 LED (254 nm, 530 nm)
	detector	Photo diode + filter
Measurement principle		Attenuation, transmission
Optical path		1 mm, 2 mm, 5 mm, 10 mm, 50 mm
Parameter		SAC ₂₅₄ , CODEq, BODEq, TOCEq
Measuring range		See parameter list
Measurement accuracy		0.2 %
Turbidity compensation		at 530 nm
Data logger		~ 2 GB
T100 response time		4 s
Measurement interval		≥ 2 s

The optical path length can be adapted to the application at any time by various adapters. An automatic turbidity compensation is carried out via a second measuring channel.

S480UV-SAC₂₅₄ can be configured through application-specific correlation for direct output of BODEq, CODEq, TOCEq.

S480UV-SAC₂₅₄, Cutting-edge measurement technology at low investment and operating costs.

Applications

- Sewage treatment plants
- Environmental monitoring
- Drinking water
- Monitoring of UV-disinfection systems

Technical Specifications

Housing material	SS (1.4571 / 1.4404) or titanium (3.7035)		
Dimensions (L x Ø)	300 mm x 48 mm (with 10 mm path)		
Weight	SS	~ 2.3 kg (with 10 mm path)	
	titanium	~ 2.1 kg (with 10 mm path)	
Interface	digital	Ethernet (TCP/IP)	
		RS-232 or RS-485 (Modbus RTU, ASCII)	
	analog	Ethernet (TCP/IP)	
		4...20 mA	
Power consumption	≤ 1 W		
Power supply	12-24 VDC (± 10 %)		
Maintenance effort	≤ 0.5 h/month (typical)		
Calibration/maintenance interval	24 months		
Signal interface	Modbus RTU Standard Protocol		

Installation

Max. pressure	with SubConn	30 bar
	with fixed cable	3 bar
	in FlowCell	1 bar, 2...4 l/min
Protection type	IP68	
Sample temperature	2...40 °C	
Ambient temperature	2...40 °C	
Storage temperature	20...80 °C	
Inflow velocity	0.1...10 m/s	

Measuring range

Parameter	Path (mm)	1		10	
		Measuring range	Detection limit	Measuring range	Detection limit
Parameter	SAC254nm	5...1500/m	5 /m	0.5...150 /m	0.4 /m
	CODeq	8...2200 mg/l	8 mg/l	0.8...220 mg/l	0.8 mg/l
	BODeq	2.5...700 mg/l	2.5 mg/l	0.25...70 mg/l	0.25 mg/l
	TOCeq	3...880 mg/l	3 mg/l	0.3...90 mg/l	0.3 mg/l

UV PHOTOMETER SENSOR

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories



Colorimetry S480 COLOR enables reliable low-cost color measurements.

S480 COLOR uses two different LEDs for longterm stable measurements of SAC or colors at different wavelengths. The second channel is used for turbidity/ background correction.

Benefits

- Low investment
- Low maintenance (nano coating, air blast cleaning)
- Simple integrations into third-party systems
- Robust housing

The cutting-edge device platform, used in all other Chemitec photometers, enables optical path lengths of 1, 2, 5, 10, 50, 100, 150 and 250 mm, so that almost any application can be easily implemented.

S480 COLOR also enables applications in aggressive media (e.g. high chloride concentrations) thanks to the optional titanium housing.

Applications

- Environmental monitoring
- Drinking water monitoring
- Industrial applications

Technical Specifications

Measurement technology	light source	2 LEDs
	detector	Photo diodes
Measurement principle		Attenuation, transmission
Optical path		50 mm, 100 mm, 150 mm, 250 mm
Parameter		SAC ₄₃₆
		Colouring (based on DIN EN ISO 7887 (410 nm, 525 nm, 620 nm))
		Pt-Co color number (APHA/Hazen) (390 nm or 455 nm)
		Cr-Co color number (390 nm or 413 nm)
Measuring range		See parameter list
Measurement accuracy		0.5 %
Turbidity compensation		Yes, 740 nm
T100 response time		4 s
Measurement interval		≥ 2 s

Technical Specifications

Housing material	SS (1.4571 / 1.4404) or titanium (3.7035)	
Dimensions (L x Ø)	340 mm x 48 mm (with 50 mm path)	
Weight	SS	~ 2.4 kg (with 50 mm path)
	titanium	~ 1.3 kg (with 50 mm path)
Interface	digital	Ethernet (TCP/IP) RS-232 or RS-485 (Modbus RTU, ASCII)
	analog	Ethernet (TCP/IP)
		4...20 mA
Power consumption	≤ 1 W	
Power supply	12...24 VDC (± 10 %)	
Maintenance effort	≤ 0.5 h/month (typical)	
Calibration/maintenance interval	24 months	
Signal interface	Modbus RTU Standard Protocol	

Installation

Max. pressure	with SubConn	30 bar
	with fixed cable	3 bar
	in FlowCell	1 bar, 2...4 l/min
Protection type	IP68	
Sample temperature	2...40 °C	
Ambient temperature	2...40 °C	
Storage temperature	-20...80 °C	
Inflow velocity	0.1...10 m/s	

Measuring range

Parameter	According to the standard	Unit	Measuring range	
			10 mm	50 mm
SAC 436 nm	DIN EN ISO 7887:2012-04_method B	1/m	0.5...150	0.1...30
SAC 525 nm	DIN EN ISO 7887:2012-04_method B	1/m	0.5...150	0.1...30
SAC 620 nm	DIN EN ISO 7887:2012-04_method B	1/m	0.5...150	0.1...30
True Color 410 nm	DIN EN ISO 7887:2012-04_method C	mg/l Pt	10...2800	2...560
Hazen 390 nm	DIN EN ISO 6271-2:2005-03	mg/l Pt	4...1100	0.8...220
Hazen 455 nm	DIN EN ISO 6271-2:2005-03	mg/l Pt	20...5500	4...1100
Cr-Co 380 nm	None	° (color grade)	5...1500	1...300
Cr-Co 413 nm	GOST 3351:1974	° (color grade)	20...5500	4...1100

UV FLUORESCENCE SENSOR

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories



S480 UV PAH, oil-in-water using UV fluorescence is the new generation of immersion sensors for measurement of oil-in-water.

The used measuring principle of UV fluorescence is many times more sensitive than the conventionally used infrared scattering or absorption process. This makes it possible to determine even the slightest traces of PAH's, such as in drinking water, but also in cooling water condensates.

Application areas include the petrochemical industry, leakage detection in cooling and wastewater streams as well as environmental monitoring.

The devices enable both stationary use in shafts, flows or piping, and mobile use through an optional hand-held measuring instrument.

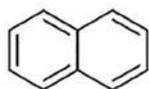
An innovative coating reduces fouling of the optical measuring window and minimizes the maintenance required.

Benefits

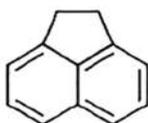
- Without sampling and preparation of test samples
- Real time sensor
- Without reagents
- High sensitivity and selectivity
- Optical window with nano coating

Applications

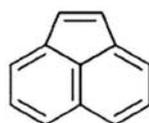
- Drinking water
- Wastewater
- Airports
- Cooling water
- Desalination plants
- Refineries
- Pipeline monitoring
- Bilge water monitoring
- Exhaust gas cleaning with approval for ship use according to IMO regulation MEPC.184(59)



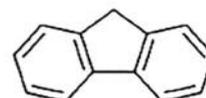
1. Naphthalene



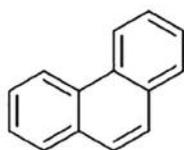
2. Acenaphthene



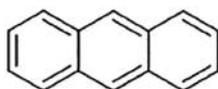
3. Acenaphthylene



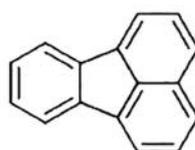
4. Fluorene



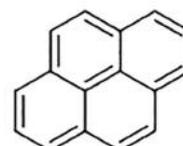
5. Phenanthrene



6. Anthracene



7. Fluoranthene



8. Pyrene

Technical Specifications

Measurement technology	light source	Xenon flash lamp + filter (254 nm)
	detector	Photo diode + filter (360 nm)
Measurement principle		Fluorescence
Parameter		PAH, Oil
Measuring range	500 version	PAH: 0...50 ppb, 0...500 ppb / Oil: 0...1.5 ppm, 0...15 ppm typical
	5000 version	PAH: 0...500 ppb, 0...5000 ppb / Oil: 0...15 ppm, 0...150 ppm typical
Measurement accuracy		500 version 0.3 ppb / 5000 version 0.5 ppb
Turbidity compensation		No
T100 response time		≤ 10 s
Measurement interval		≤ 5 s
Housing material		SS (1.4571 / 1.4404) or titanium (3.7035)
Dimensions (L x Ø)		311 mm x 68 mm
Weight	SS	~ 2.7 kg
	titanium	~ 1.9 kg
Interface	analog	4...20 mA
Power consumption		≤ 3.5 W
Power supply		12...24 VDC (± 10 %)
Maintenance effort		Typically ≤ 0.5 h/month
Calibration/maintenance interval		24 months
Signal interface		Analog Out 4...20 mA

Installation

Max. pressure	with SubConn	30 bar
	with fixed cable	3 bar
	in FlowCell	1 bar, 2-4 L/min
Protection type		IP68
Sample temperature		2...40 °C
Ambient temperature		-5...55 °C (0...40 °C for specified accuracy)
Storage temperature		-20...80 °C
Inflow velocity		0.1...10 m/s

PLUG & PLAY AUTOMATION FOR BIOLOGICAL SEWAGE TREATMENT PLANTS

Controllers

Proper management of the nitrogen and the carbon cycle is crucial to get the respect of the limits of the law and, at the same time, avoid wasting resources.

Sensors

The market offers many dedicated solutions, with varying degrees of effectiveness, but mostly targeted -for the kind of the investment- to plants of important dimensions (>10Kae).

Analysers

Chemitec worked hard to find a performing solution even where it's not possible to apply the usual systems of supervision and control.

Samplers

Flow

Level

Pressure

Web remote control

Accessories

OXYSMART Chemitec

Oxysmart is a control algorithm. It is based on the assumption, verified in a first approximation, that it is possible, in a civil treatment plant, to monitor the incoming load by controlling the concentration of ammonia nitrogen.

Loaded on a 50 SERIES Controller, this algorithm transforms the control unit into a system capable to manage compressors, inverters and mixers, to optimize the process and adapt it to load variations.

The **50 SERIES OXYSMART** is installed at the poolside and is operative from the start. The logic is adaptable to any plant, regardless of the electromechanical equipment, but, however, optimizing the operation.

The oxygen setpoint is varied in a continuous manner according to the load detected by the ammonia-ion selective probe **Chemitec S470-NH₄** and its abatement.

The **Chemitec S423 C OPT** oxygen probe is responsible for monitoring the achievement of the imposed target.



Plug & play multiparametric instrument

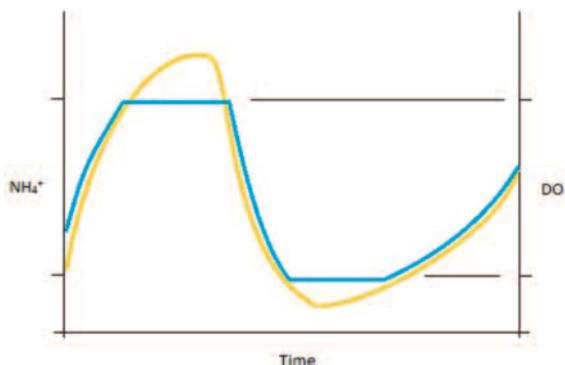


Process ISE probe

There are three logics, adaptable to any plant:

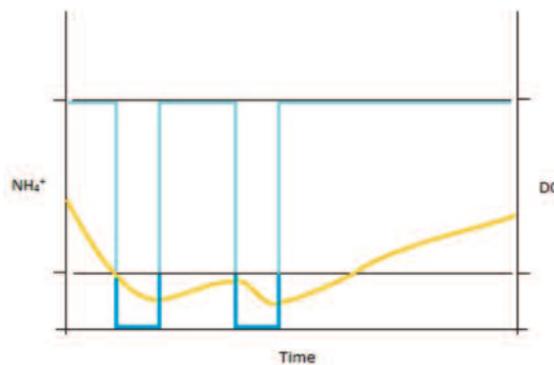
Smart DO

In conditions of low load, the DO threshold is maintained at low levels, and then it grows when the load increases.



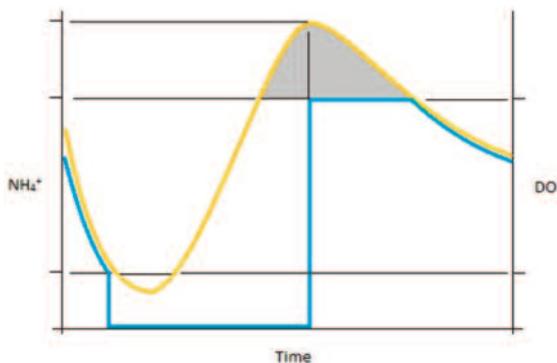
Smart ON/OFF

In conditions of low load, the system goes in pause/work mode, ready to modulate the oxygen when the load increases.



Smart N/DN

At the end of an oxidation cycle, the system activates the mixer, turns off the compressors and waits for a peak of ammonia nitrogen; when the peak is reached, the system reactivates oxidation



Oxysmart provides a series of safeties to protect the compressors and inverters, as well as to compensate the failure of the probes. Alarm functions are provided in case of malfunction of some component: the system automatically positions the adjustments of the safety values.

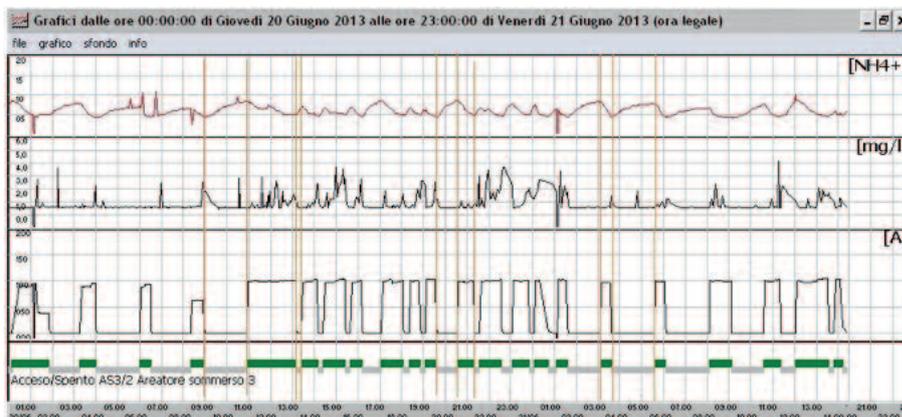
The benefits of Oxysmart system are::

Economical: reduced intervention costs

Technical: immediate start, ease of installation and management

Managerial: energy consumption optimization, stability of the effluent's parameters

Operating example (Smart N/DN logic, simulation of inverter failure, 4000ae)



PH/ORP – CONDUCTIVITY CONTROL INSTRUMENTS

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote
control

Accessories

Panel version (96 x 96 x 65 mm)

3037 for pH or ORP measuring
3022 for conductivity measuring

DIN Rail version (6 modules)

3037 D for pH or ORP measuring
3022 D for conductivity measuring



30 SERIES

User Interface (HMI)

3037 / 3022

Programming keypad with 5 bubble-keys for instrument calibration and configuration with single keys [ESC] [▲][MODE][▼][CAL]

Graphic display 128 by 128 pixel resolution monochrome display with graphic icons to show digital output status, washing cycle, alarms menu.

3037 D / 3022 D

Programming keypad with 4 bubble-keys for instrument calibration and configuration with single keys [▼][▲] and keys with double functions available [ESC/MODE] [ENTER/CAL]

2-line 16-character alphanumeric display for simultaneously display of chemical measure, temperature and alarms

Software & Functions

Automatic temperature compensation

Two (2) digital outputs for set point, with programmable hysteresis or for set point delay alarm remote and back washing probe. On/OFF, Timed routine function setting.

Analogue output 0/4...20mA galvanically isolated, programmable within the measuring range

Solid State Relay (SSR) (only 3037 and 3022): One (1) frequency output signal, two set points with Proportional routine regulation.

Enclosure Box and Power Supply

3037 / 3022

Mechanical protection IP65 front panel only; black ABS housing

Universal Power Supply 100-240 Vac 50/60 Hz. CE compliant.

3037 D – 3022 D

Mechanical protection IP40; gray ABS housing

Power supply 100...240 Vac 50/60 Hz and 24 Vac/dc

Measuring parameters

	3037	3022	3037 D	3022 D
pH	0...14 pH		0...14 pH	
Resolution	± 0.10 pH		± 0.01 ; ± 0.1 pH	
ORP	± 2000 mV		± 1500 mV	
Resolution	± 5 mV		± 1 mV	
Conductivity		0.054...200.000 µS Setting by software following unit measures: µS, mS, KΩ, MΩ, ppm, ppb		1...200 µS 10...2000 µS 100...20000 µS 200...50000 µS
Resolution		±5% of measuring point		
Measuring accuracy	± 1% F.S.			
Temperature	0...100 °C	0...100 °C	0...60 °C	0...100 °C
Resolution	± 1 °C		± 1 °C	
Temp. compensation	Automatic			

ph/ORP electrodes



Measuring range	0...14 pH
Operating temperature	0...80 °C
Maximum pressure	6 bar
Materials	Glass body; GEL electrolyte
Threaded connection	Pg 13.5

S401 VG

Measuring range	0...14 pH
Operating temperature	0...80 °C
Maximum pressure	6 bar
Materials	Glass body; GEL electrolyte
Threaded connection	Pg 13.5

S406 VG

Measuring range	±2000 mV
Operating temperature	0...80 °C
Maximum pressure	6 bar
Materials	Glass body; GEL electrolyte
Threaded connection	Pg 13.5

conductivity electrodes



Measuring range	0...50.000 µS
Operating temperature	5...100 °C
Maximum pressure	5 bar
Materials	PP body; Graphite electrode
Threaded connection	1/2" GAS

S411

Measuring range	0...50.000 µS
Operating temperature	5...100 °C
Maximum pressure	5 bar
Materials	PP body; Graphite electrode
Threaded connection	1/2" GAS

S411 TEF

Measuring range	0...10.000 µS
Operating temperature	0...100 °C
Maximum pressure	2 bar
Materials	PTFE body; SS316 electrode
Threaded connection	1" GAS

S411 S

Measuring range	0...2000 µS
Operating temperature	0...50 °C
Maximum pressure	2 bar
Materials	PVC body and cap; SS316 electrode
Threaded connection	1" GAS

PORTABLE METER TO MEASURE THE BIOMASS RESPIRATORY ACTIVITY

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote
control

Accessories

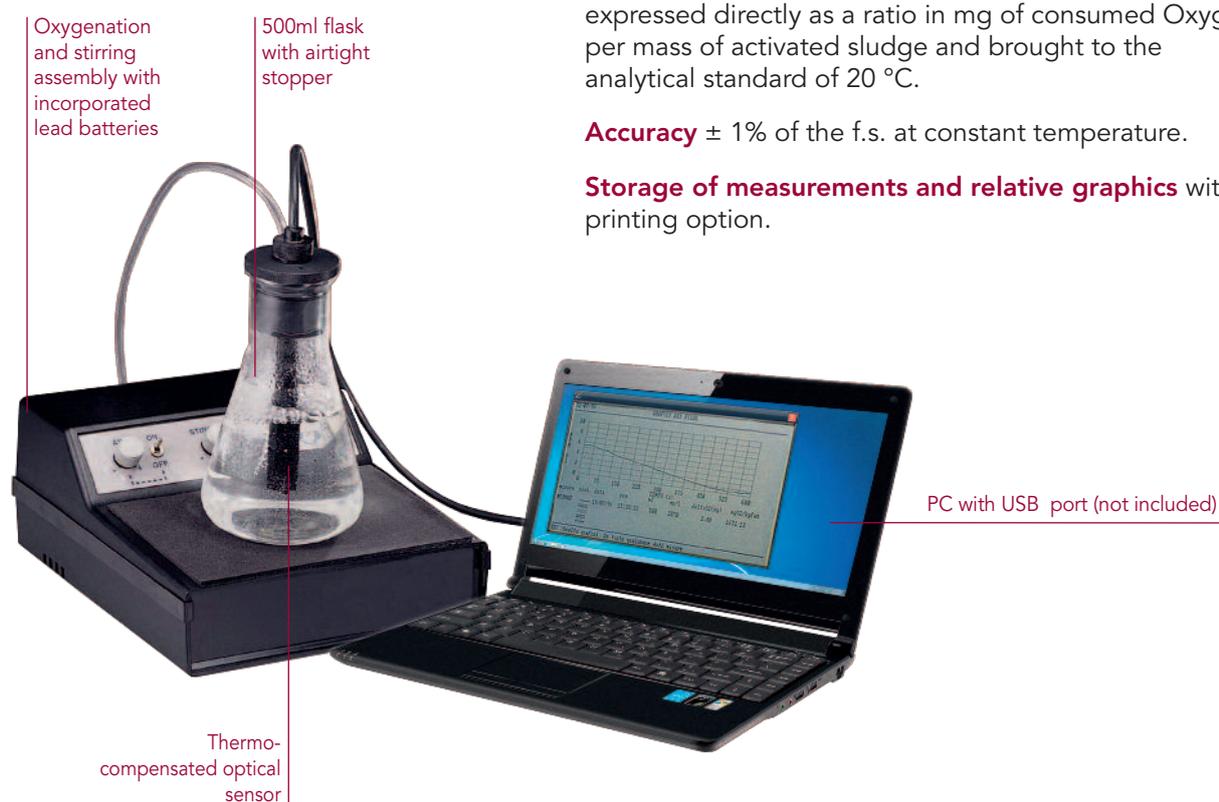
Complete system for taking respirometric measurements with parameter setting via dedicated software.

S250

Measurements displayed in graphical and tabular form (O₂ consumption/time) with the final result expressed directly as a ratio in mg of consumed Oxygen per mass of activated sludge and brought to the analytical standard of 20 °C.

Accuracy ± 1% of the f.s. at constant temperature.

Storage of measurements and relative graphics with printing option.



Selectable measuring ranges
0.00...3.00/ 5.00/ 10.0/ 20.0 ppm of O₂

Selectable measuring times
Min 1 minute - max 60 minutes

Fully-portable system housed in shock-resistant aluminium case

Thermo-compensated fluorescent optical sensor

500 ml flask with airtight stopper

Stirring/oxygenation unit powered by rechargeable batteries or 220 V mains power

Display and measurement management software (for PCs running Windows 98 operating system or higher). The program supplied can be used on PCs, portable or desktops, with an USB port.

O.U.R. TEST (OXYGEN UPTAKE RATE)

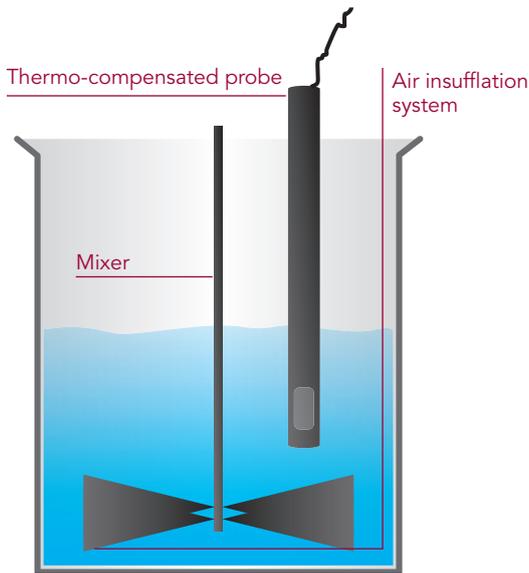


figure 1

The measurement of OUR

To control the efficiency of a biological activated sludge treatment plant, the test for determining the Oxygen Uptake Rate is performed on a sample taken directly from the oxidation/nitrification basin.

The classic method provides for the registration, at regular time intervals, of the consumption of dissolved oxygen by a sample of activated sludge, with known MLSS concentration and volume, previously brought to a rapid saturation with a forced ventilation system and kept constantly mixing (as schematically shown in figure 1).

The time/concentration of oxygen pairs are then turned into a graph, and a descending, almost straight curve is obtained, whose slope represents the rate of consumption of oxygen by the biomass (see figure 2).

The OUR value obtained in this way is generally expressed as **mg O₂/g SSV*h**.

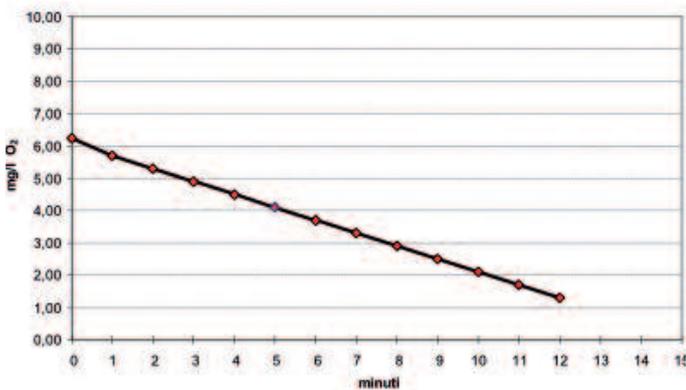


figure 2
sample graph of an OUR measurement conducted in the laboratory

Some typical applications of the OUR test are listed below :

Test

Biological activity test

Assessment of the degree of inhibition

Biodegradability test on special waste water

Characterisation of organic substrates

Use

Checking the degree of activity of the biomass in breaking down a certain organic substrate in relation to the endogenous OUR

Determining the possible toxic effect of sewage containing potentially inhibitory substances by making use of the OUR test

Testing the behaviour of the activated sludge when fed with a compound, the effect of whose biomass is not known for certain; for example the acceptance of special waste water at the treatment plant

Quantification of the organic substrate present in influent waste water, in order to determine the fraction of readily biodegradable COD of waste water for the integration of a carbonaceous substrate in a state of denitrification or biological dephosphating

Analyzers and Samplers

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote
control

Accessories

Analyzer

4001 SERIES

Photometric measuring instrument

Chlorine | Chlorine dioxide | Ozone | Peracetic acid

48

COLOR MASTER

Photometric system for
determination of color

52

COLOR TEC

Process Analyzer

Aluminum | Ammonia | Cyanides | Chlorides | Chrome VI | Iron | Phosphates | Manganese
Nickel | Nitrites | Copper | Silica | Zinc ... and other

54

UV METER

Automatic on-line analyser

C.O.D. | Nitrate | Hydrocarbons and Oil in water

58

Filtration systems

for analysers

extraction or immersion type

62

Samplers

SP5 B/S/A

Thermostat-controlled and self-draining stationary samplers

64

P6

Portable compact unit

66

TP5 W

Portable samplers and sampling heads

66

TP5 C/P

Portable samplers and sampling heads

67

MULTIPARAMETER PHOTOMETRIC SYSTEM

Controllers

Sensors

Analysers

Samplers

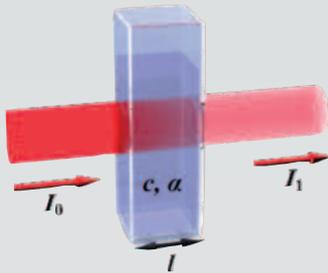
Flow

Level

Pressure

Web remote control

Accessories



THE PHOTOMETRIC METHOD

In the last decades, Photometry has developed as an essential method of analysis because it enables the "quantitative" determination of both organic and inorganic compounds.

The technique uses the colorimetric methods characteristic of certain analytes, i.e. the properties of certain chemical reagents to develop colour with an intensity proportional to the concentration of a given substance, at a particular wavelength of the spectrum visible between the UV and IR (from 400 to 800 nm).

Compared to UV or IR spectrophotometry, the colorimetric technique has the extraordinary advantage of relying on well-defined linear reactions and with few well-known interfering substances.

The Palin method employs the interactive DPD principle to determine the concentration of certain oxidants such as: Free Chlorine, Total Chlorine, Chlorine Dioxide, Ozone, Peracetic Acid, Bromine, Permanganate etc...

The DPD reacts with the oxidant present in the water, producing almost instantly a pink colour, making sure that all those factors that may affect measurement (pH, μ S, $^{\circ}$ C, organic matter etc.) have no influence on the analytical methodology.

Our photometric system is a reference point in the DPD chlorine control thanks to the combination between reagents and water sampling that guarantees a maximum measurement accuracy, making it a compact analytical mini laboratory, dedicated to the chlorine measurement.

4001 SERIES

Phases of the measuring cycle

Entry of the sample in the measuring cell for washing/priming

First measurement on the sample as is (Photometric Zero)

Reagent addition using the peristaltic pump

Development of the reaction through stirring

Reading of the colour (Absorbance) the differential measurement between the Zero and the Absorbance is processed by the electronic processor and converted into a concentration value, using specific correlation tables developed in our laboratories



The **electronic controller displays** the measured substance in mg/l and provides whether or not to activate the dosing components designed to control or correct it.

The operating and maintenance costs are very low and, above all, the **system calibration** is performed automatically at each measuring cycle.

User Interface (HMI)

Programming keypad with 4 bubble-keys

STN 240x128 backlit graphic LCD to display measurements (simultaneous measurement and temperature parameter + trend line), digital output status, storage status, faults, photometric measurement phase.

Software & Functions

Data logger of Circular (F.I.F.O.) or Filling type, on an internal 4 Mbit flash memory, equal to 16000 records, with a recording interval from 1 to 99 min.

RS485 serial output for set-up and Real Time status from remote or to download stored data on a PC or laptop (using dedicated software), via MODBUS RTU communication protocol.

Digital input for disabling dosages

Application fields

Industrial applications include the analysis of drinking and waste water as well as the analysis of food products, pharmaceuticals, chemicals etc.

Measuring cell



Photometric measuring cell complete with RS485 serial interface card

Body made of PVC; Plexiglass; Glass

Light-Emitting Diode

Silicon photosensor

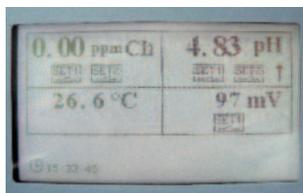
Electrode holder cup for housing pH, Rx electrodes, temperature/flow sensors

Hydraulic supply 60 l/h

Max pressure 1 bar

Gravity drain for clean water or for polluted water

Features



Intuitive interface with messages about the status of the method; the large display enables the creation of graphs to display the measurements stored in the internal Data Logger



The peristaltic pump using four pressure points ensures reagent saving



Continuous monitoring of the reagents through level probes. The powder DPD reagent to be diluted before use is an excellent solution for storing the product safely in any place.

MULTIPARAMETER PHOTOMETRIC SYSTEM

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories

Available versions 4001 SERIES

4001 2 Cl₂

Photometric Free (or Total) Chlorine and Temperature meter

Free Chlorine	0...5.0 ppm (0...2.0 ppm on request)
Resolution	0.01 ppm
Accuracy	1% f.s. (colorimetric method with DPD)
Temperature	0...50.0 °C – Resol. 0.1 °C – Accuracy 1% f.s.

4001 2 PPA

Photometric Peracetic Acid and Temperature meter

Peracetic Acid	0...5.0 ppm (0...2.0 ppm on request)
Resolution	0.01 ppm
Accuracy	1% f.s. (colorimetric method with DPD)
Temperature	0...50.0 °C – Resol. 0.1 °C – Accuracy 1% f.s.

4001 2 ClO₂

Photometric Chlorine Dioxide and Temperature meter

Chlorine Dioxide	0...5.0 ppm (0...2.0 ppm on request)
Resolution	0.01 ppm
Accuracy	1% f.s. (colorimetric method with DPD)
Temperature	0...50.0 °C – Resol. 0.1 °C – Accuracy 1% f.s.

4001 2 O₃

Photometric Ozone and Temperature meter

Ozone	0...5.0 ppm (0...2.0 ppm on request)
Resolution	0.01 ppm
Accuracy	1% f.s. (colorimetric method with DPD)
Temperature	0...50.0 °C – Resol. 0.1 °C – Accuracy 1% f.s.

4001 3 Cl₂ - pH - T

Multiparameter control unit for determination of Free Chlorine with photometric method and pH

Free Chlorine	0...5.0 ppm (0...2.0 ppm on request)
Resolution	0.01 ppm
Accuracy	1% f.s. (colorimetric method with DPD)
pH	0...14.00 pH
Resolution	0.01 pH
Accuracy	1% f.s. (colorimetric method with DPD)
Temperature	0...50.0 °C – Resol. 0.1 °C – Accuracy 1% f.s.

Other available versions 4001-SERIES

Photometric Bromine meter

Integration with Conductivity measurement

6 Paramter: Total,Free, Combined* Chlorine, pH, ORP, T
*as calculation (Total less Free)

Operating conditions, power supply/electrical protection 4001-SERIES

Operating temperature	0...50 °C
Storage and transport	-25...65 °C
Humidity	10...95% non-condensing
Power supply	100...240Vac 50-60Hz
Power consumption	66 W
Electrical protection	UL6950-1 TUV EN60950 EN 55022 Class B EN61000 ENV50204 EN55024

Hardware features, software features and functions 4001 SERIES

Display	LCD STN with white backlight
Resolution	240 x 128 pixels
Languages	Italian, English, French, German, Spanish
Keypad	4 bubble-keys [▼] [▲] [GRAPH/USB] [ESC/MODE] [ENTER/CAL]
Data logger	Internal Flash 4Mbit Memory equal to 16000 records with a recording interval of 01:00...99:99 min
Recording method	Circular (F.I.F.O.) or Filling
Display of stored data	in tabular and graphic form (1 for each parameter)
Analogue outputs	1 for each parameter measured (excluding Comb. Chlorine)
Type	0/ 4...20 mA galvanically isolated
Programming limits	lower / upper / reverse
Maximum load	500 Ohm
Alarm output	according to NAMUR 2.4 mA (with range 4/20mA)
PID Control	activation on the pH output
Set point relay outputs	two (2) for primary measure + two (2) for pH measure (only mod. 4001-3)
Programming	Hysteresis, Working time and Daily/hourly activation non subject to the measured value: ON – OFF: 00.00...05.00 ppm Cl ₂ / 00.00...14.00 pH
Working time	0...999 sec.
Max resistive load relay	5A at 230Vac
Alarm relay output	Cumulative ON-OFF for: Min/Max, set point delay, faults (no water, reagents finished, projector burned, cell dirty)
Delay time	00:00...59:99 mm:ss with minimum steps of 15 seconds
Max resistive load relay	5A at 230Vac
Auxiliary relay output	Programmable as: Set point for Temperature measurement or Timed activation (programmable frequency and activation time)
Max resistive load relay	5A at 230Vac
Digital Input	Clean contact for disabling dosages
RS485 serial output	MODBUS RTU Protocol (1200... 38400 Baud Rate) for set-up, Real Time status or downloading data
Dimensions (L x H x P)	598 x 601 x 190 mm
Total width	598 mm
Total height	601 mm (including valves)

PHOTOMETRIC SYSTEM FOR DETERMINATION OF COLOUR

Controllers

Sensors

Analysers

Samplers

Flow

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Web remote
control

Accessories



The analytical procedure is used for spring waters, groundwater, water from rivers and lakes and water destined for human consumption after an appropriate treatment. The method can be applied to samples with the base color similar to that of the platinum - cobalt reference solution (yellow - brown).

The color of a water is generally given by organic substances, such as humic and fulvic acids (to which a yellow - brown coloring may be assigned) or by salts of some metals such as iron, copper and manganese.

Observing the light transmitted through a thickness of a few meters, the color of water is of course variable in blue shades. The presence of colored foreign substances causes a variation of color in infinite shades.

The apparent color, due to substances dissolved and suspended into the water, must be distinguished from the real one, only due to dissolved substances.

COLOR MASTER

User Interface (HMI)

Programming keypad with 4 bubble-keys

STN 128x64 pixels backlit graphic LCD, to display measurements (simultaneous of 4 values + trend line), digital output status, storage status, faults, photometric measurement

Software & Functions

Data Logger (optional) of Circular (F.I.F.O.) or Filling type on internal 4 Mbit Flash memory equal to 16000 records, with recording interval from 1 to 99 min. Data display in graphical and tabular form (1 for each parameter).

RS485 Serial Output (optional) (opto-isolated) for set-up and remote real time acquisition or for downloading the stored data on a portable or desktop PC (using dedicated software), through MODBUS RTU communication protocol at programmable speed 1200...38400 Baud Rate.

Hardware features, software features and functions COLOR MASTER

Absorbance measuring	0...500 ABS
Resolution	0.01 ABS
Accuracy	1% f.s.
Temperature measuring	0...50.0 °C
Resolution	0.1 °C
Accuracy	1% f.s.
Wavelength	445 nm (others on demand)
Analogue outputs	Four (4) 0/ 4...20 mA galvanically isolated
Quantity	Absorbance, Temperature
Programming limits	lower / upper / reverse
Maximum load	500 Ohm
Alarm output	NAMUR 2.4 mA (with range 4...20mA)
Set point relay outputs	Four (4) with direct feeding of users max 100VA Two (2) for Absorbance; One (1) for Temperature; One (1) for Alarm
ON – OFF	0...500 ABS
Programming	Daily activation with programming of switching on and off hour. Relay max resistive load 3A at 230Vac
Alarm relay output	closed / open relay max resistive load 3A at 230Vac
ON – OFF	cumulative for min/max, set point delay, faults (no water sample, reagents finished, projector burned, cell dirty)
Delay time	00:00...59:99 mm:ss with minimum steps of 15 seconds
Thresholds disabling	active
Digital inputs	Two (2) clean contact and 220 Vac for disabling dosages
Analogue input	One (1) optional 0/4...20 mA for auxiliary measurements
Power supply	85...265Vac 50-60Hz
Power consumption	30 W
Electrical protection	CEI EN 61010-1
Mounting	Wall
Dimensions (L x H x P)	276 x 514 x 126.5 mm
Mounting depth	126.5 mm
Housing	ABS Grey RAL 7045
Front panel	UV Resistant Polycarbonate
Weight	4 Kg
Operating temperature	0...50 °C
Recording interval	-25...65 °C
Humidity	10...95% non-condensing

Controllers

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Accessories

PROCESS ANALYZER

Controllers

Sensors

Analysers

Samplers

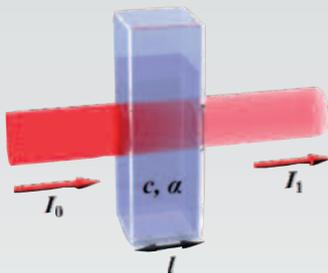
Flow

Level

Pressure

Web remote control

Accessories



GENERAL PRINCIPLES OF THE LAMBERT-BEER LAW

The Lambert-Beer law is an empirical relation that correlates the amount of light absorbed by a medium to the chemical nature (molar extinction coefficient α), to the concentration (c) and to the thickness of the crossed medium.

When a light beam (monochromatic) of intensity I_0 passes through a layer with the thickness l of the medium, a part of it is absorbed by the medium itself and another part of it is transmitted with residual intensity I_1 .



Analyzer for chemical parameters such as Al, NH_4^+ , Cr^{+6} , PO_4^{3-} , Fe, Mn, SiO_2 and other on request.

COLOR TEC

It consists of two sections, hydraulic/analytical and electronics. These two sections are separated from each other so as to ensure efficiency and durability of all the parts

User Interface (HMI)

The user interface consists of an **industrial PC with touch screen**.

Software & Functions

The **control software**, simple and intuitive, allows the immediate understanding of all the commands and functions.

It is possible to perform measurements at programmed intervals, at a specific time or at an external event.

The software archives and makes available in graphical form all the measurements.

The instrument is **designed for connection to an existing LAN**.

Phases of the measuring cycle

The analyzer automatically reproduces the colorimetric determination, as well as carried out in the laboratory, according to the following steps:

Emptying of the reading cell

The cell is emptied by use of an air pump

Zero measurement

The fresh sample is inputted and the instrument performs a first reading of the sample as received (or, if required by the methodology, with the addition of reagents) to acquire the photometric Zero.

Emptying of the reading cell

The cell is emptied again

Colouring reagent(s) and sample dosing

Depending on the specific methodology, one or more colorimetric reagents are dosed

Absorbance measurement and calculation of the concentration

Reading of light intensity value of the coloured liquid after proper mixing of the reagents

Emptying, rinsing of the hydraulic circuit and of the measuring cell

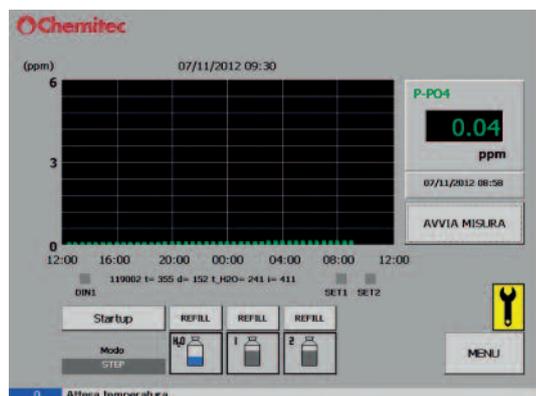
The reading cell is emptied and flushed with cleaning water together with the entire hydraulic circuit. At the end the reading cell will be left full of clean water until the next measurement.

Calibration

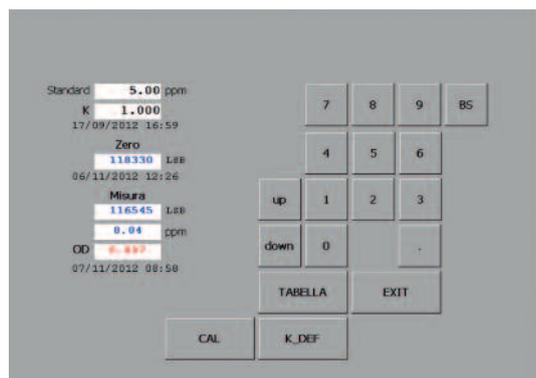
The instrument is supplied with factory calibration, performed using certified standard solutions; however, the user has the possibility to change this calibration by acting directly on the coefficient K (1,000 by default).

The coefficient "k" can be automatically determined by the instrument after making a measurement of known value, set in the "STANDARD" box.

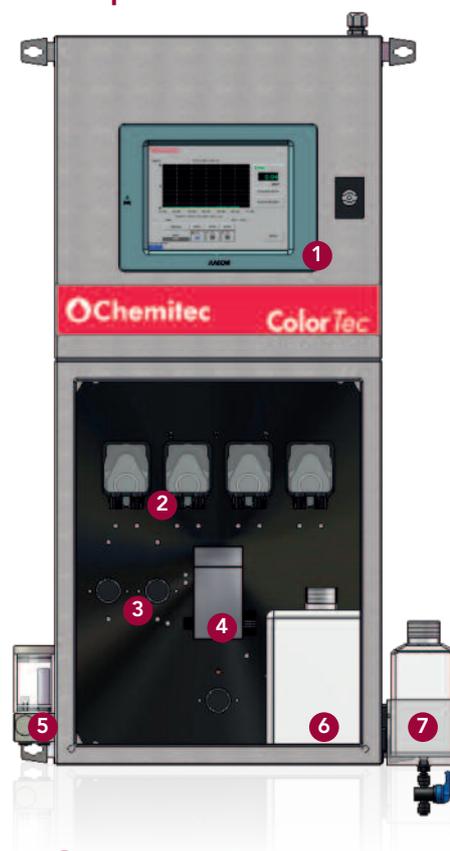
Alternatively, the calibration can be changed by using an ABS/PPM correlation table (up to a maximum of 50 points).



1 Touch screen controller



System composition



- 1 Touch screen controller
- 2 Peristaltic pump for dosing reagents / sample / cleaning water
- 3 Sample/Cleaning water solenoid valves
- 4 Measuring cell
- 5 Sample inflow cell
- 6 Cleaning water tank
- 7 Reagent bottles

PROCESS ANALYZER

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

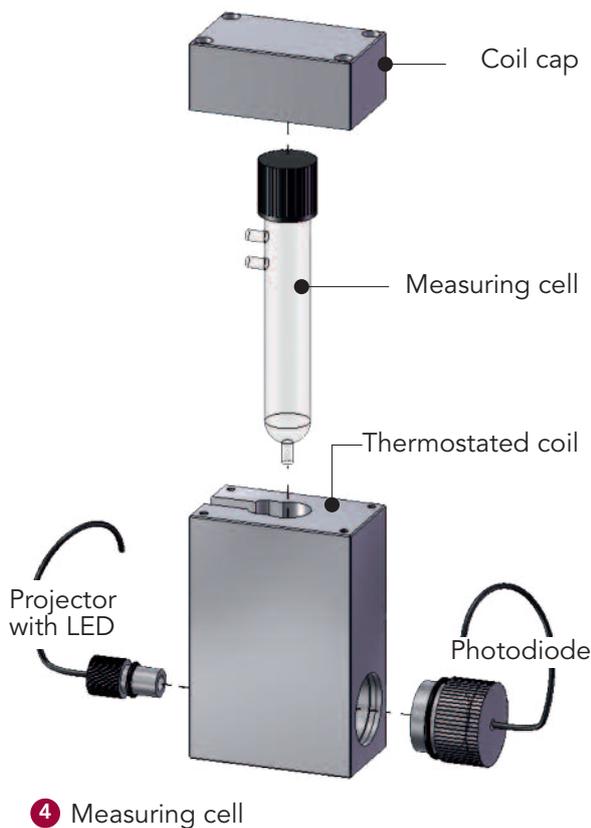
Web remote control

Accessories

Measuring cell

The measuring cell consists of a thermostated aluminum coil inside of which is contained a test tube into which flows the liquid to be analysed.

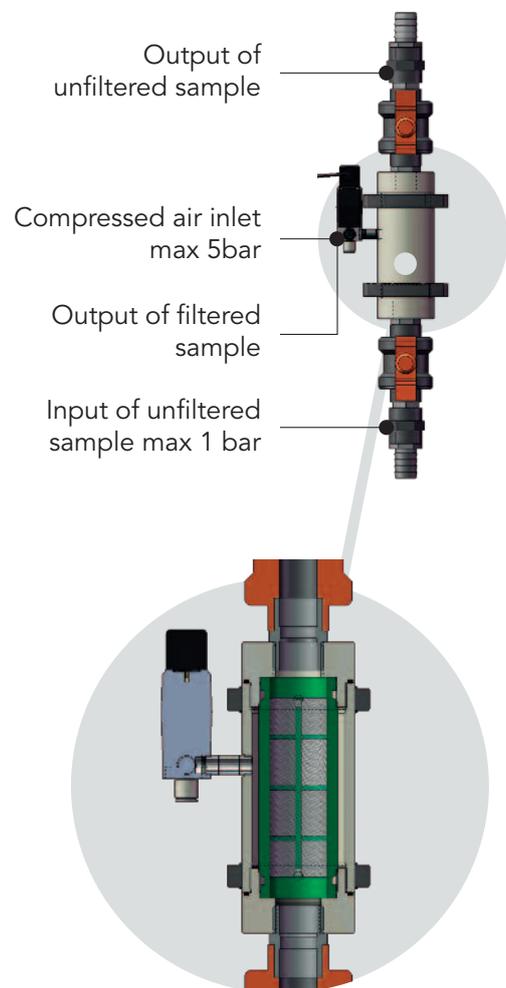
A projector with LED sends a light beam that passes through the medium, while a photodiode, located on the opposite side of the projector relative to liquid to be analysed, receives the signal given by the emitted light beam, according to the Lambert-Beer law.



Filtering system (OPTIONAL)

In particular applications, it is necessary to perform a pretreatment of the sample to remove suspended particles present into the liquid to be analysed.

Chemitec can provide a filtration system at 100 μm , complete with self-cleaning system (with compressed air) disposed on perforated panel to be installed comfortably on the wall.



Hardware features, software features and functions COLOR TEC

Photometric range	2.5 Optical density
Accuracy	± 3 % of the full scale
Repeatability	90 % of the measure
Frequency of the analysis	Hourly or by step (20 minutes minimum)
Turbidity of the sample	Max 10 FTU/NTU. For higher turb. it's recommended to use the filtration syst. (optional)
Liquid pressure	0.1...0.3 Atm. stable
H ₂ O or air pressure for filter washing	0.1...0.5 Atm. stable
Measuring sensor	Standard Silicon sensor with 17-bit digital converter
Wave length	445...800 nm with led
Light source	Led
Reading cell	made of PIREX® Ø 16 mm
Mixer	Reaction Coil in thermostated Aluminum
Dosage of reagents	Peristaltic pumps with variable speed
Hydraulic system cleaning	Automatic washing with distilled H ₂ O
Visualization	LCD 8.4 colour display
Data insertion	Resistive TOUCH SCREEN
Computer CPU	Atom with 4GB flash disk
Access to the system	through password
Archive	Circular, with date and value storage
Visualization of measures	Via SW it is possible to view the daily, weekly and / or monthly chart of all the archived measures
Data download	Possible via USB mass storage device
Set-Points	Two (2) ON-OFF programmable as min. or max. via SW
Output relay contacts	Max 2A 220V resistive load
Current output	0/ 4...20 mA programmable via software
Load	maximum 500 ohm
Serial interface	Two (2) ON-OFF programmable as min. or max. via SW
Calibration	Manual with activation from menu
Calibration curve	Creation of the calibration curve using a table from 2 to 50 points in which it is possible to enter arbitrary values
Dimensions (L x H x P)	1000 x 400 x 200 mm
Weight	45 Kg
Power supply	220 Vac 50 Hz (110Vac on request)
Power consumption	100 W max

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Accessories

AUTOMATIC ON-LINE ANALYZERS

Controllers

Sensors

Analysers

Samplers

Flow

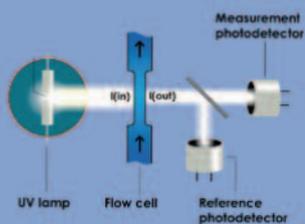
Level

Pressure

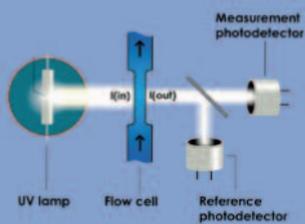
Web remote control

Accessories

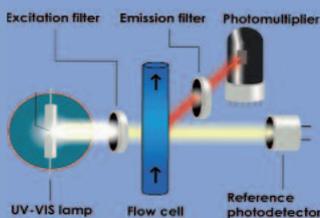
Measurements



COD



Nitrates

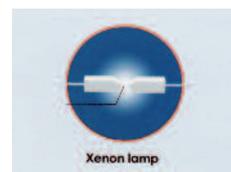


Hydrocarbons; Oils in water

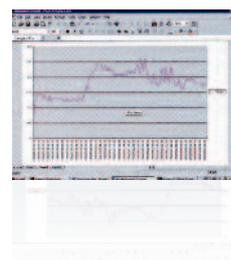
UV METER



Control with Touch Screen Display



Long life UV Lamp - 10 years of operation

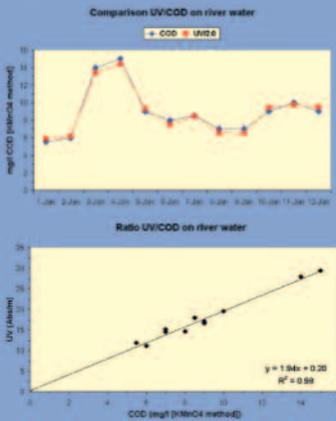
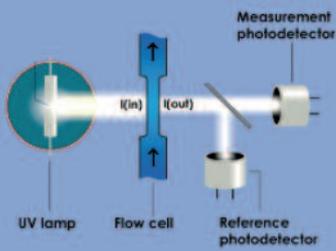


Internal Data Logger with data download via RS 232 (optional)

Features

- Compact size
- No reagent (except for NaOH for Ammonia)
- Built-in automatic washing system
- Extremely fast response time
- The running costs are very low as the UV spectrophotometric measurement principle does not require the use of analysis reagents
- Extremely simple hydraulic system with pipes with large diameter
- The automatic cleaning system keeps the measuring cell clean for long periods with no need for intervention. The tank only needs to be filled with cleaning solution (5% sulphuric acid) once a month
- Built-in peristaltic pump for sampling

C.O.D. ANALYZER



The measuring principle is based on the intense UV absorption of the organic molecules at 254 nm in accordance with the Lambert-Beer law:

$$[C] = k \cdot \log \left(\frac{I_{in}}{I_{out}} \right)$$

- [C]: sample concentration
- k: extinction coefficient
- I_{in} : intensity of light input sample
- I_{out} : intensity of light output sample

Turbidity, organic substances, suspended solids or dirt into the measuring cell are automatically compensated by means of a differential measurement with a second detector at a different wavelength.

Compliant with AFNOR X PT 90-210 – DIN38404-C3.

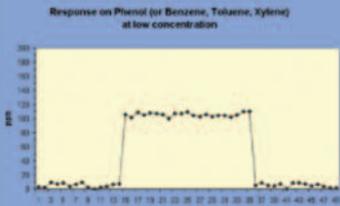
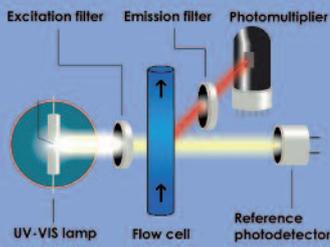
Applications

- Surface water monitoring
- Water purifiers
- Water treatment plants

Hardware features, software features and functions UV METER COD

Measuring ranges	0...200 mg/l – 0...800 mg/l – 0...2.000 mg/l – 0...5000 mg/l – 0...20000 mg/l other on request	
Measuring principle	UV spectrophotometry	
Analysis frequency	Settable	
Accuracy	10% of f.s.	
Drift	on zero 5%	Full range 10%
Temperature	Ambient > 0...50 °C	Sample > 0...80 °C
Analogue output	4...20 mA	
Serial output	RS232	
Alarms	4 relays	
Data logger	Built-in – data download via RS232	
Power supply	110...130 Vac or 220...240 Vac/30 VA/ 50...60 Hz; 12...15 Vdc 3A	
Dimensions (L x H x P)	600 x 420 x 230 mm	
Weight	Approx. 20 kg	
Peculiarities	Interference in the presence of chlorides	No
	Reagents or consumables	No
	Filtration	Not necessary
	Self-cleaning	Integrated
	Operating costs	Extremely limited

ANALYZERS FOR HYDROCARBONS IN WATER



The measuring principle is based on the UV fluorescence.

Thanks to the use of a high sensitivity photomultiplier, even very low concentrations can be determined (of the order of micrograms/litre).

The table shows the relative intensity measurements of certain aromatic hydrocarbons:

Anthracene	42
Benzene	10
Biphenyl	20
Chlorobenzene	7
Fluorobenzene	10
Naphthalene	35
Phenanthrene	25
Phenol	18
Propylbenzene	17
Styrene	10
Toluene	17
Xylene	22

Applications

Aromatic hydrocarbons in water (BTEX, PAH, phenol, oil, fuel etc.)

Surface water
Yard water

Ground water
Underground water
Cooling water
Drinking water
Process water

Hardware features, software features and functions UV METER HYDROCARBONS

Measuring ranges	0...1 mg/l – 0...10 mg/l – 0...100 mg/l – 0...1000 mg/l (other on request)	
Measuring principle	Fluorescence	
Repeatability	±0.1 ppm ± 1 ppm	
Accuracy	10% of f.s.	
Drift	on zero 5%	Full range 10%
Temperature	Ambient > 0...50 °C	Sample > 0...80 °C
Analogue output	4...20 mA	
Serial output	RS232	
Alarms	4 relays	
Data logger	Built-in – data download via RS232	
Power supply	110...130 Vac or 220...240 Vac/30 VA/ 50...60 Hz; 12...15 Vdc 3A	
Dimensions (L x H x P)	600 x 420 x 230 mm	
Weight	Approx. 20 kg	
Peculiarities	Interference in the presence of chlorides	No
	Reagents or consumables	No
	Filtration	Not necessary
	Self-cleaning	Integrated
	Operating costs	Extremely limited

Controllers

Sensors

Analysers

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Web remote control

Accessories

FILTRATION SYSTEM FOR ANALYZERS

Controllers

Sensors

Analysers

Samplers

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Accessories

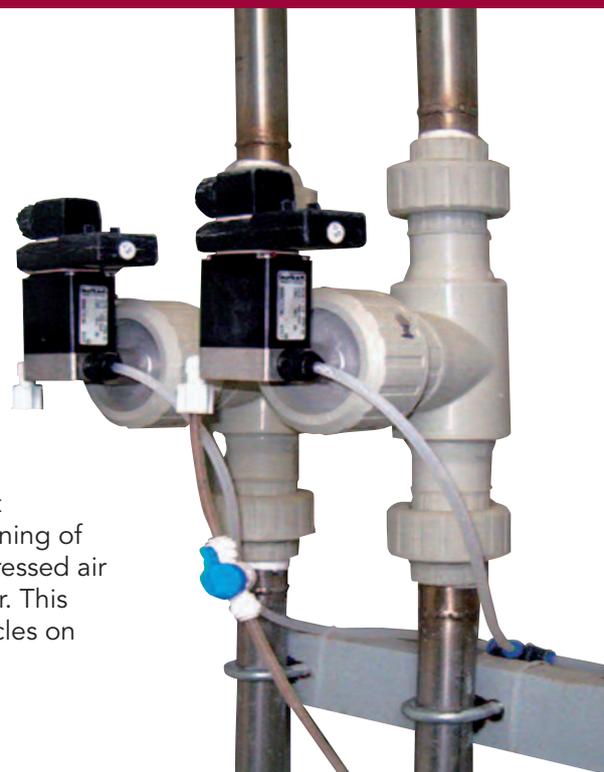
Self-cleaning filter SF 100

The filtration system SF-100, often used upstream of a line analysis systems, is a self-cleaning device that uses compressed air with programmable frequency to maintain the stainless steel filter element clean.

While most of the liquid under analysis goes much faster through the polypropylene filter body, only the amount needed by the analyzer is filtered through the stainless steel special profile filter element. This prevents a rapid accumulation of dirt and deposits on the filter.

In addition to this, the filtration system uses an electronic timer that periodically, at intervals programmed by the user, provides the opening of the NC of the three-way solenoid valve allowing the entry of compressed air at suitable pressure, which provide a powerful backwash of the filter. This proves to be a very effective backwashing to remove trapped particles on the outer surface of the filter.

The frequency and duration of the automatic washing cycle can be programmed by the user in a wide range of values.



Technical specifications SF 100

Filter body material	PP (polypropylene)
Filter element	SS316 – Passage size 100 micron
Solenoid valve	Parts in contact with the liquid SS SS316 - Viton
Protection grade	Timer and Solenoid valve IP 65
Filter weight	1 kg
Temperature	Sample and Ambient 2...55 °C
Pressure	Minimum sample line 0.3 Bar Maximum sample line 2.5 Bar Backwashing compressed air pressure minimum 20% above sample line pressure, up to 3 bar max.
Flow	Minimum sample line flow 0.1 mc/h Filtered sample 0.1 - 2 L/min depending on the sample line pressure
Hydraulic connections	for input/output filter 1" NPT Compressed air inlet connection for washing tube ¼"
Power supply	220...240 Vac
Power consumption	20VA
Washing frequency	Programmable from 1 to 45 min
Washing time	Programmable from 1 to 30 sec.



Candel



Hollow fiber

Immersion filtration system UF TEC

UF TEC is a filtration system which allows sample feeding of COLORTEC or similar analyzers.

It consists of a control panel and an immersion filtering element that can be installed in any section of a water treatment plant because its operation is independent of the sample condition: biological sludge, presence of foams, algae, bloated or floating sludge. Suction of the sample occurs using the peristaltic pump located inside the control panel, which is also used to push the filtered liquid to the analyzer.

Start of the peristaltic pump and duration of suction is controlled by the COLORTEC analyzer in relation to the predetermined frequency of analysis and the distance between analyzer and the sampling point. A cleaning system is provided, controlled by the analyzer or through a timer (optional), which by means of a compressor and a 3-way valve directs, on the same sampling tube, pressurized air which allows to purge both the line and the pipes of the filtering element.

Technical specifications UF TEC

Components	Wall mounting control panel; Immersion filter candle; suction / delivery tube 10m
Filtration	Porosity 0.02 µm with candel / 0.1µm with hollow fiber
	Capacity 1l/h with a 3m head between control panel and candle filter
Temperature	Sample 4...40 °C; Ambient 4...45 °C, max humidity 95% non-condensing
Installation conditions	<ul style="list-style-type: none"> ■ Maximum mounting depth of the immersed filter: 2m ■ Maximum distance Control panel - Immersed filter: 10m ■ Maximum distance Analyzer - Control panel: 5m ■ Maximum head Control panel - Immersed filter: 5m ■ Maximum head Analyzer - Control panel: 5m
Cleaning system	Integrated with compressed air at 4 bar. Automatic control from COLOR TEC analyzer or timer (opt.)
Materials	Control panel made of ABS
Candle filter	Body housing of white PVC-U ; Covers made of Noryl GTX Filtering material PESM
Suction tube	PE
Power supply	220 Vac – Power consumption 50 VA
Dimensions	Control panel (lxhxp) 900 x 600 x 300 mm – Weight 10 kg Candle filter (lxØ) 425 x 95 mm – Weight 4 kg

SAMPLING SYSTEMS

Controllers

Sensors

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Flow

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Accessories



Chemitec markets MAXX GmbH sampling systems in Italy. This company's experience, gained over the last 20 years, means that it is now possible to offer a wide range of equipment and technical solutions for operation in a variety of system conditions

- Wide range of models, for fixed installation or portable
- Electronic control unit is the same for all models in the range
- Internal data logger for storing sampling and fault data.
- Possibility to connect to a remote PC for programming or data download.

Electronic control unit

Microprocessor control, Sleep-Mode (<5 mA), power supply 8-16 V, membrane keyboard (with 0-9, ESC, ORL, cursor keys), graphic display (128 x 64 pixel), backlight

Mini-USB interface, RS422/485, RS 232; Ethernet RJ45 (Optional)

Optional communication Modbus, connection via PROFIBUS DP; LAN / WLAN through TCP / IP RJ45, with IE-Browser, 4-32GB SD / SDHC memory

Analogue input 0/ 4...20 mA

Digital inputs for remote control, event and pulse launch flow meter

Digital outputs for reporting status and faults

Programming

Twelve (12) different sampling programs that can be set freely, with linking programs function

In relation to time range between 1' and 99h 59' with 1 minute step

In relation to flow using a flow meter with a 0/ 4...20 mA analogue or digital output

In relation to an event contact activated by set point from pH, °C, Conductivity, Oxygen meters etc., also in combination with time and flow rate

Filling each bottle in relation to time or number of samples

Memorisation of the sampling and fault events with date and time and possibility of **remote data acquisition and programming** via serial port, LAN, UMTS/GPRS modem with dedicated software (optional)

Sampling system

Dosage system

Vacuum pump 20...350 ml or 20...250 ml

VAR (variable) vacuum pump 5... 250 ml

Peristaltic pump 20...10.000 ml

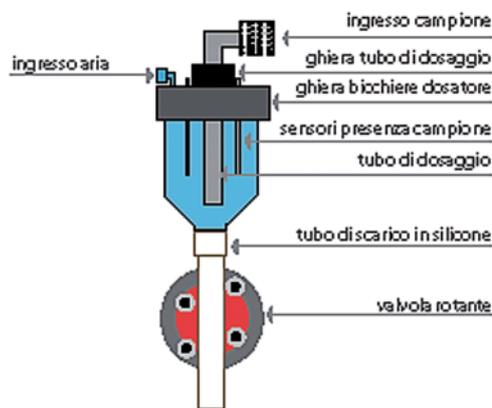
Accuracy Vacuum pump : < 2.5 % or ±3 ml;
Peristaltic pump ±5 % or ±5 ml

Suction speed >0.5 m/s at a height of 7.8 m (at 1013hPa); the pump capacity can be electronically adjusted

Maximum suction height 8 m

Sampling mode Time, flow, event, manual sampling, variable volume proportional to the flow

Motorised torsion discharge valve with no interruption of the discharge pipe, open at the front with no parts in contact with the liquid



Thermostat-controlled and self-draining stationary samplers

SP5 B **Thermostat-controlled stationary sampler in Plastic Container**

Housing	PE material with 50mm insulation / PS/PC (GF10)
Upper part	Control unit and dosing unit with lid
Lower part	Distribution system and sample collection bottles, with door and handle with lock, insulated
Dimensions	1100 (1640 with lid open) x 760 x 7450 mm
Weight	approx. Kg. 75 (with a single bottle)
Operating temp.	Ambient -20...40 °C ; Sample 0...40 °C
Power supply	230V – 50/60Hz. ; Consumption 350VA
Standard bottles included	1X25L of PE; 4X14L of PE; 12X2.9L of PE; 12X2L of Glass; 24X1L of PE; S24X1L- of Glass (other on request)



SP5 S **Thermostat-controlled stationary sampler in stainless steel cabinet**

Housing	Two (2) separate SS 1.4301 compartments, each with door and lock
Upper part	Control unit and dosing unit, with door and window, upper canopy made of plastic material (Styrosun) can be opened for inspection and maintenance
Lower part	Distribution system and bottles for collecting the samples with blind door, double wall insulation, thermostat-controlled
Dimensions	1290 (1890 with canopy open) x 690 x 645 mm
Weight	approx. Kg. 90 (with a single bottle)
Operating temp.	Ambient -20...40 °C ; Sample 0...40 °C
Power supply	230V – 50/60Hz. ; Consumption 350VA
Standard bottles included	1X25L of PE; 1X50L of PE; 2X10L of PE; 4 S 4X6L PE; 4X10L PE; 4X14L of PE; 12X2.9L of PE; 12X2L of glass; 24X1L of PE; S24X1L- of glass (other on request)



SAMPLING SYSTEMS

Controllers

Sensors

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SP5 A

Thermostat-controlled self-draining stationary sampler in stainless steel cabinet

Housing	Two (2) separate SS 1.4301 compart-ments, each with door and lock.
Upper part	Control unit and dosing unit, with door and window, upper canopy made of plastic material (Styrosun) can be opened for inspection and maintenance
Lower part	Distribution system and bottles for collecting the samples with blind door, double wall insulation, thermostat-controlled
Dimensions	1290 (1930 with lid open) x 690 x 645 mm Version with 24 bottles of 2L 1400 (2175 with canopy open) x 800 x 850 mm
Weight	Kg 115 version with 2 bottles; greater for versions with more bottles
Operating temp.	Ambient -20...40 °C ; Sample 0...40 °C
Power supply	230V – 50/60Hz. ; Consumption 350VA
Standard bottles included	2X10L of PE; 4X5L of PE; 12X1.6L of glass; 16X2L of glass; 24X2L of glass (other on request)



Portable samplers and sampling heads

P6

Portable compact unit. Available with distributor and various types of bottles.

Housing	Double wall, lower part insulated (P6 L) with ABS
Dimensions	P6 L 500 x 740 millimeters (diam xh.) P6 Mini Maxx (. Ø x h) 400 x 605 millimeters
Weight	P6 L approx. 15 kg – P6 Mini Maxx approx. 10 kg
Operating temp.	Ambient 0...45 °C ; Sample 0...40 °C
Power supply	230V – 50/60Hz. ; Consumption 350VA
Standard bottles included	P6 L: of PE 24 x 1 L / 1 x 10 L / 4 x 4 L / 8 x 2 L ; of glass 24 x 350 ml / 12 x 950 ml / 8 x 2 L P6 Mini Maxx: of PE: 1 x 10 L; of glass: 1 x 4 L



TP5 W

Sampling head for wall mounting

Housing	Electronic control unit, suction and dosing unit, assembled in a PS/PC (GF 10) plastic structure for wall mounting
Dimensions	362 x 442 x 222 mm – Weight approx. 10 Kg.
Control unit	Inserted in IP 65 container Microprocessor with 128KB Eprom, 32KB di ram, 16KB Eeprom. 16 digital I/O , 8 analogue I/O. Real-time clock Waterproof keypad – Display LCD 4 x 20 backlit
Power supply	230 / 115 Vac – Power consumption approx. 25VA



TP5 C

Compact portable sampler

Housing	PE/PC (GF10) consisting of 3 parts Base containing the bottles, insulated (40 mm), with possibility to insert ice to refrigerate the samples Control and sample dosing unit Lid with latches
Dimensions	787 x 510 x 468 mm – Weight approx. 23Kg
Operating temp.	Ambient 0...45 °C ; Sample 0...40 °C
Power supply	Electronic control unit, suction and dosing unit: 12VDC with internal rechargeable battery or direct from the mains via battery charger
Autonomy	with battery fully charged, at least 2000 sampling operations in the following conditions: ambient temp. 20 °C, sampling depth 1.5 m, sampling interval 1 min.
Standard bottles included	1X13L of PE; 1X25L of PE; 4X5L of PE; 16X1L of PE; 24X1L of PE



TP5 P

Portable sampling head

Housing	Electronic control unit , suction and dosing unit, assembled in a PS/PC (GF 10) plastic structure with carrying handle
Optional	Optional ISOBOX insulated container for bottles with passive or active cooling
Dimensions	Sampling head 442 x 452 x 222 mm Weight approx. 12Kg battery included Container for bottles ISOBOX 534 x 510 x 430 mm – Weight approx. 12Kg Active ISOBOX 775 x 550 x 468 mm Weight approx. 24Kg
Operating temp.	Ambient 0...45 °C ; Sample 0...40 °C
Power supply	Electronic control unit, suction and dosing unit: 12VDC with internal rechargeable battery or direct from the mains via battery charger
Autonomy	with battery fully charged, at least 2000 sampling operations in the following conditions: ambient temp. 20 °C, sampling depth 1.5 m, sampling interval 1 min.
Standard bottles included	1X13L of PE; 1X25L of PE; 4X5L of PE; 16X1L of PE; 24X1L of PE



Flow Level and Pressure

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories

Flow

4204 P

Ultrasonic meters

70

For measurements in open channels to be installed upstream of constricted sections or shaped weirs

S103 C

Electromagnetic meters

73

For measurements in pressurised full section piping
Suitable for clean and dirty water with conductivity of at least 5 μ S
Available with different types of flanges, Wafer, food connections
High power / low voltage or battery

CH2300

Measuring pipe U0-D0

78

With a innovative inner part that increase considerably the speedy of liquid and allows high accuracy with low flow rate

Ultrasonic "transit time"

Meters

80

For measurements in pressurised full section piping
Suitable for clean and dirty water with suspended solids up to a maximum of 10 g/l,
non-conductive liquids, chemically aggressive roducts, oils

Ultrasonic "Doppler" effect

Meters

82

For pressurised piping with liquids with a high content of suspended solids and sludge

"Area x velocity"

Meters

84

For measurements in open channels without restrictions, partially filled piping

Level

4204 L/U

Level/differential meter to control up to 5 pumps

86

Ultrasonic and Piezometric

Sensors

88

Radar and guided microwave

Transmitters

89

ECHOSMART™

Sludge interface level measurement
Ultrasonic measuring system with submerged sensor (Sonar)

92

Piezoresistive

Transmitters

94

Pressure

Piezoresistive

Transmitters
for applications in the water treatment and industrial processes

96

FLOW METERS FOR OPEN CHANNELS WITH ULTRASONIC OR PIEZOMETRIC SENSOR

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories



4204 P

Main features

- Flow rate measurements on channels with constrictions or weirs
- Preset calculation exponents or freely programmable by user
- Possibility of calibration with table of up to 20 points, for nonlinear functions
- Dual data logger for instantaneous measurements and totalized volumes
- Graphic display with indication of real-time values and stored values in graphical or tabular mode
- MODBUS RTU communication protocol

Hardware features, software features and functions 4204 P

Measurement features

Measurement unit	Flow: mc/h, lt/sec – Level: mt, cm, mm – Temperature: °C
Measuring ranges	Flow 0...9999 mc/h – Level 0.30...5 mt. – Temperature 0...100 °C
Accuracy	± 0.2% F.S.
Types of devices / exponents for calculating PMD (primary measuring device) flow	RETTANG (rectangular weir) / TRAPEZ (Cipolletti weir) / VENTURI (Venturi channel) / PARSHALL (Parshall channel) / L LEOPOLD (Leopold Lagco channel) / STRAM. V (V-shaped weir) / BAZIN (Rectangular weir without lateral constrictions) / OTHER (freely programmable exponent). Table with 20 points for free programming
Two (2) totalizers	Absolute 9-digit (saved on non-resettable Flash PROM) – Partial 9-digit resettable

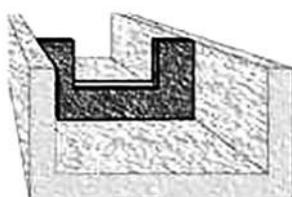
Hardware features

Display	Backlit 128x64 graphic STN LCD
	Simultaneous indication of: Instantaneous flow (absolute + bar graph for percentage of full scale), Totalized volume, Temperature, Status of digital outputs, Alarm events.
	In scrolling: Level, Status of analogue outputs, Resettable totalizer
Controls	6 keys
DATA LOGGER	Internal with 4 Mbit Flash
Serial output	One (1) RS485 MODBUS RTU galvanically isolated
Analogue outputs	Two (2) Programmable galvanically isolated
Relay outputs	Five (5) for Thresholds – One (1) for Alarm (max.load 1A at 230Vac resistive)
Digital inputs	Five (5) programmable
Power supply	100...240Vac/dc 50-60Hz (Optional 24Vac/dc) – Transformer Insulation 4KV
Power consumption	< 12W
Dimensions /Weight	Dimensions: (L x H x P) 144 x 144 x 122.5 mm – Weight: 1 Kg

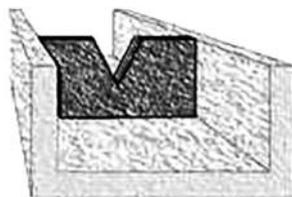
Hardware features, software features and functions 4204-P

Measurement recording	Instantaneous flow rate	Totalized volume
Recording interval	1/ 2/ 5/ 10/ 15/ 20/ 30/ 60 min	5/ 10/ 30 min. 1/ 2/ 6/ 12/ 24 h.
Type	Circular / Filling	Circular / Filling
Display	Graph: minimum, maximum and average values for the period and Zoom	Tabular
Analogue outputs	Primary	Secondary
Quantity	Flow / Temperature	Flow / Temperature / Level
Type	0...20 mA / 4...20 mA	
Range	Programming limits: Lower / Upper	
Maximum load	500 Ohm	
Alarm output	NAMUR 2.4 mA (with range 4/20mA)	
Relay outputs (5)		
Function – selectable	Thresholds	Pulses
Programming	ON-OFF with hysteresis	Scaler: 1, 10, 100 mc/h Duration: 250, 500, 1000, 2000 msec
Alarm		
Function	Echo loss alarm	
Programming	Time out (echo absence time): 00:00...24:00 h	
Operating conditions		
Temperature	operating 0...50 °C ; storage and transport -25...65 °C	
Humidity	10...95% non-condensing	
Mechanical protection	Closed IP66 EN60529	
EMI / RFI	CEI-EN55011 – 05/99	

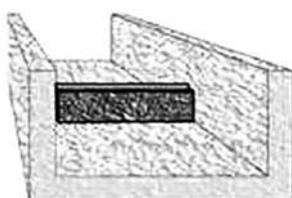
Weirs



Regular weir with lateral constrictions



V-shaped weir



Rectangular weir without lateral constrictions



Trapezoidal weir

"Venturi" type constriction



ULTRASOUND LEVEL PROBE

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories



Ultrasonic level measurement, without contact, suitable for measurement of liquids, with integrated temperature sensor for temperature compensation.

S425 C

Features and advantages

PVDF body resistant to aggressive environments

High resolution measurement 1mm

Double threaded connection

Immediate installation with disconnectable connector (IP67)

Modbus RTU Protocol

Technical specifications S425 C

Measuring ranges	30...500 cm
Measuring method	Ultrasonic with automatic temperature compensation
Emission angle	14° ±1°
Accuracy	± 0.2% of the measured distance (but not better than 2 mm)
Resolution	1 mm
Operating temperature	-10...75 °C
Maximum pressure	0.5...1.5 bar
Body materials	PVDF – PCV
Thread	1" g.m and 1.5" g.m.
Protection grade	IP67 (IP68 optional)
Electrical connection	IP67 connector
Power supply	24 Vdc
Power consumption	2 W
Cable	5 meters (other on request)
Signal interface	Modbus RTU Standard Protocol RS485

PIEZOMETRIC TRANSDUCER



The absence of a separation liquid between the membrane and the pressure sensor, the "Dry-Pressure" measuring technology, allows you to have superior technological overpressure performance, small thermal drifts, high stability and accuracy.

KPL / 36 XKY

ELECTROMAGNETIC FLOW METERS



The electromagnetic flow meter is used to measure the flow rate of conductive fluids and waste water.

The measurement is independent of the density, viscosity, temperature and pressure. The conductivity of the fluid must be greater than $5\mu\text{S}/\text{cm}$.

The measuring tube must not be crossed by fluids carrying solid bodies of high dimension that cannot be considered suspended solids. Load losses are absent and straight stretches reduced upstream and downstream of the instrument are necessary.

Main application fields

- Sludge and water (primary, drinking and waste) treatment
- Control of civil and industrial wastes
- Measurement of industrial process water: chemical, paper, tanning, pharmaceutical, food
- Control of the chemical dosage
- Energy industry: generation and distribution
- Extractive industry: quarries, mines
- Environmental protection

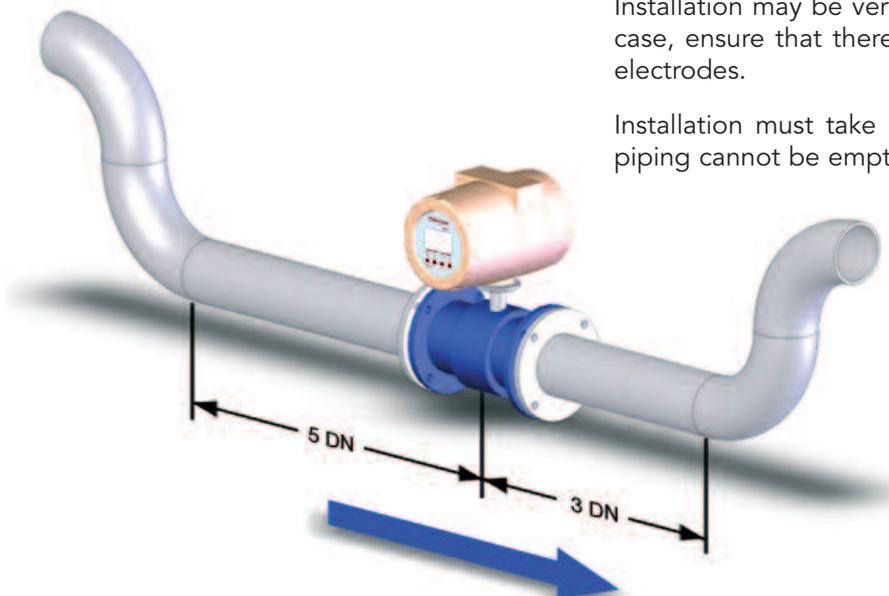
S103 C

MOUNTING

The electromagnetic meter must be installed so that the pipe is always completely filled with fluid. In the case of a half-empty pipe, the meter must be installed in an underground channel, or in a "goose neck", to achieve a siphon effect.

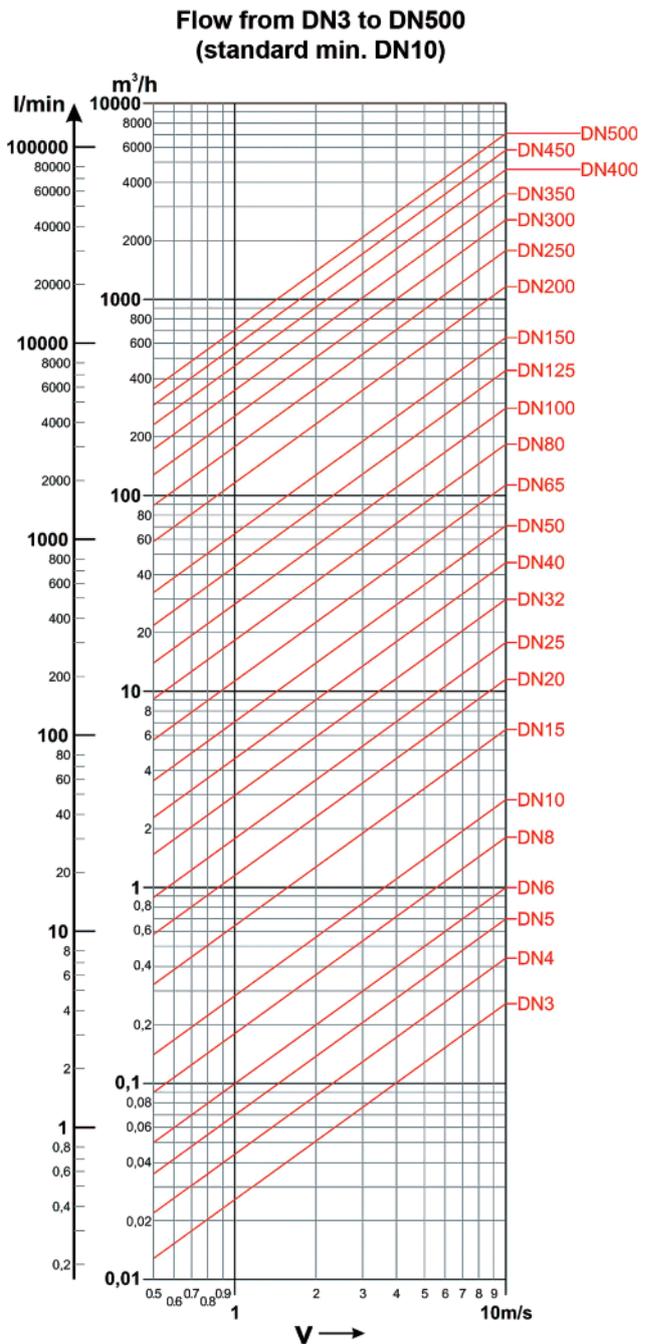
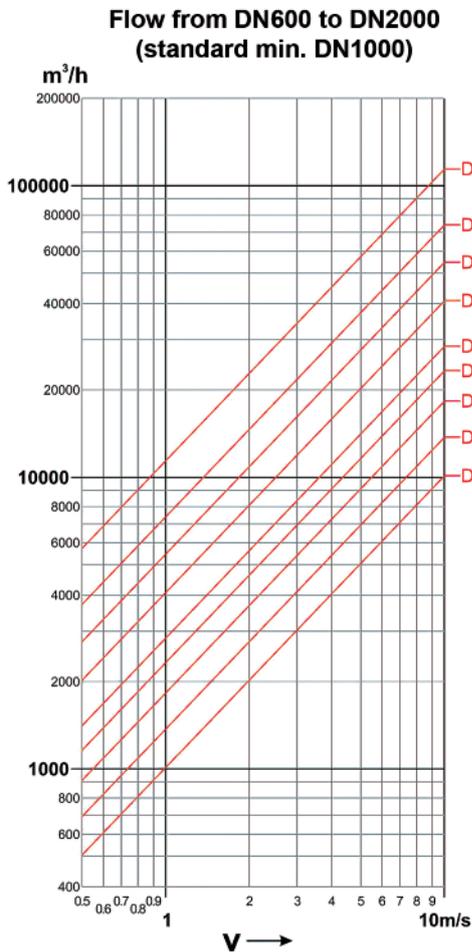
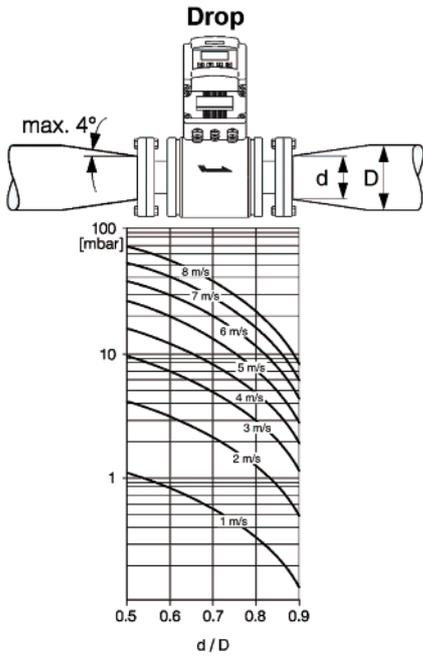
Installation may be vertical or horizontal but in the latter case, ensure that there is no deposit of material on the electrodes.

Installation must take place in such a position that the piping cannot be emptied.



ELECTROMAGNETIC FLOW METERS DIAMETER SELECTION TABLE

ABACUS FOR THE OPTIMAL SELECTION OF THE MEASURING TUBE



ELECTROMAGNETIC FLOW METERS



CH608 A/B/R Converter

The CH608 converter has been designed with the purpose of meeting all the requirements of modern water management systems.

It supports extended functions which make it perfectly suitable for measuring and billing in civil, industrial and agricultural sector and for flow measurement in residual water treatment.

Hardware features, software features and functions CH608-A/B/R

Converter installation	Compact on the sensor or remote on support, up to 100 m far from the sensor
Converter case	Epoxy painted aluminum, IP68 . With front window in toughened glass.
Power supply	<p>CH608A 90...264 Vac; 12/24 Vac/dc; Max. consumption 10 Watt</p> <p>CH608B Battery powered or 12/24 Vac/dc ; Expected battery life T=0 / 50 °C (32 / 122 °F) ; Internal battery pack 6-10 years</p> <p>CH608R Rechargeable battery + 10 Watt photovoltaic panel</p>
Output signals	<p>Active analogue output 4...20 mA ; Digital output for pulses maxim 1000 Hz duty cycle max 50% for instant flow, positive only, positive and negative</p> <p>Programmable digital output for: – Maximum pulses 1000 Hz duty cycle max 50% for negative flow; – Negative flow indication; – Cumulative alarm</p> <p>Digital output in active frequency 0...10 kHz</p>
Temperature	Process -10...70 °C ; Ambient -20...60 °C; Storing -30...70 °C
Display	<p>graphic LCD 128x64 pixels, visual area 50x25mm, backlit</p> <p>simultaneous indications: counter, instant variable and status flags</p> <p>4 totalizers available (2 positive totals and 2 negative totals)</p>
Programming	<p>– with 4 push buttons for non-billing applications</p> <p>– through IrCOM interface and dedicated software</p> <p>– via RS485 MODBUS RTU protocol</p>
Process data logger	4 MB flash memory, 200000 lines of data (one line includes: instant flow, 2 counters, date, time, temperature)
Diagnostics data logger	64 kB EEPROM, 2000 lines of data (one line includes: date, time, temperature, error codes, user actions with changes made)

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories

ELECTROMAGNETIC FLOW METERS

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories

	CH2200	CH2200	CH2400	CH1000
				
Connection to process				
Dimensions	DN15...DN400	DN 450...DN2000	DN25...DN100	DN25...DN300
Connections	UNI 2223 on request ANSI 150; ANSI 300; AWWA CI.D; ANSI 600		TRICLAMP on request DIN 11851; SMS fil. male	WAFER
Pressure	PN10...PN64		PN10...PN40	PN16...PN40
Accuracy				
With liquid speed ≥ 0.2 m/s	0.2%	0.2%	0.2%	0.2%
Materials				
Inner lining	PTFE on request EBANITE	EBANITE on request PTFE	PTFE	PTFE on request EBANITE
Electrodes	HASTELLOY C on request Titanium, Tantalum, Platinum		HASTELLOY C on request Titanium, Tantalum	
No. of electrodes	3 x DN15...40 4 x DN50...400	4	2	3 x DN15...40 4 x DN50...300
Body	Carbon steel		SS304	Carbon steel
Flange	Carbon steel		SS304	–
Process temperature				
Compact version with converter integral with the sensor	-25...80 °C	-25...80 °C	-25...80 °C	-25...80 °C
Separated version with converter separated from the sensor	-25...200 °C	-25...200 °C	-25...130 °C	-25...130 °C
Protection grade				
Compact version with converter integral with the sensor	IP68	IP68	IP68	IP68
Separated version with converter separated from the sensor	IP68	IP68	IP68	IP68
Certifications				
ATEX II 2 GD EEx mb IIC T4 U	on request	on request	on request	on request

CH500	CH2660	CH2770	CH1222
			
Connection to process			
DN6...DN20	DN80...DN500	DN80...DN4000	DN5...DN2000
GAS on request NPT; TRICLAMP; DIN 11851	INSERTION THREADED	INSERTION FLANGED UNI2278 DN40	INSERTION 1" BALL VALVE
PN16	PN10	PN25	PN20
Accuracy			
0,2%	2%	2%	2%
Materials			
PTFE	-	-	-
SS316 L	SS316 L	SS316 L	SS316 L
2	2	2	2
SS304	SS304	SS304	SS304
SS316 L	-	Carbon steel	Ball valve SS316 L
Process temperature			
-25...80 °C	-25...80 °C	-25...80 °C	-25...80 °C
-25...130 °C	-25...130 °C	-25...130 °C	-25...130 °C
Protection grade			
IP68	IP68	IP68	IP68
IP68	IP68	IP68	IP68
Certifications			
on request	on request	on request	on request

ELECTROMAGNETIC FLOW METERS

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

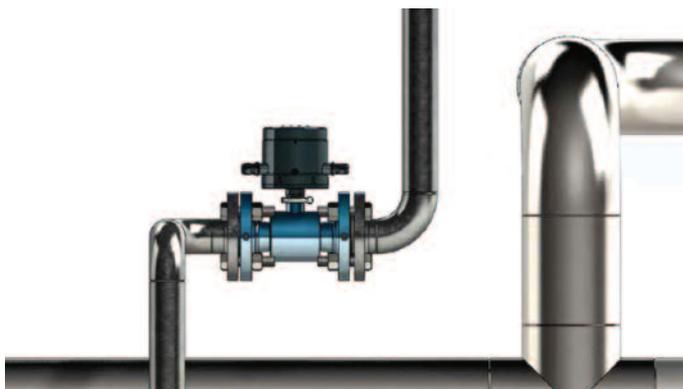
Accessories



CH2300 Measuring pipe U0 D0

The CH2300 sensors represent the state of the art of Chemitec production for water cycle and process applications. The innovative inner part of the sensor that increase considerably the liquid flow rate and the reading accuracy of sign generated to the electrodes, enables an extremely wide range of measurement.

These performances allow to measure also low flow rates precisely and repeatable, even in difficult/ problematic applications with solid parts.



Installation with no upstream and downstream distances

The cone shaped section of the internal part of the sensor, allows an optimized and accelerated flow profile which permits to install the sensor in any kind of condition; no need to have straight sections/ segments of pipes upstream and downstream.

This U0-D0 condition enables to have an extreme flexibility on the flowmeter installation position.

Technical features CH2300

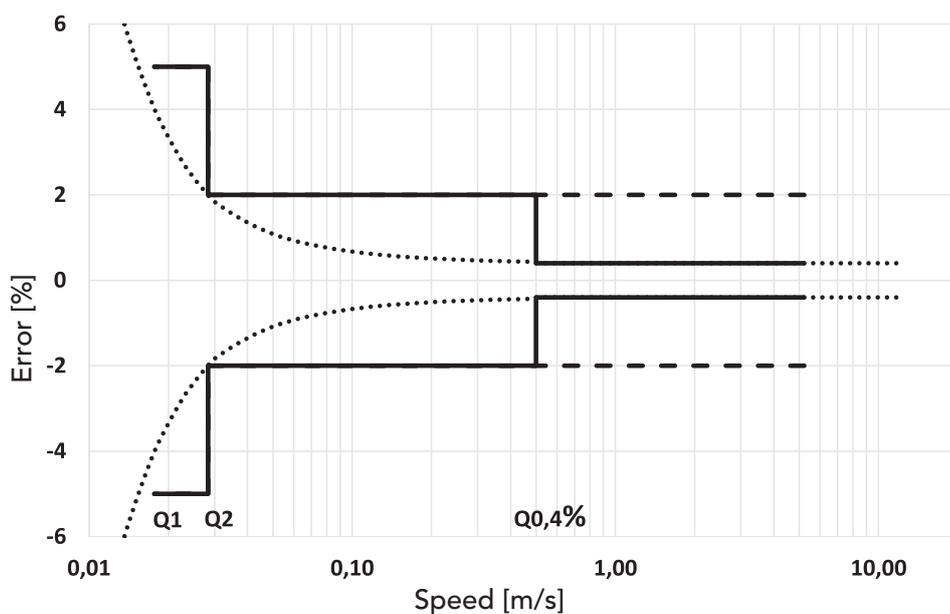
Flow tube material	AISI 304, SS316 (optional)									
Flanges material	Carbon steel (S235JR - 1.0037), AISI 304 optional, SS316 optional									
Available electrodes	Hastelloy C (standard), Hastelloy B, Titanium, Tantalum, Platinum									
Internal lining	Ebonite									
Liquid temperature	-40... 80 °C									
Available diameters	mm	50	65	80	100	125	150	200	250	300
	inches	2"	2½"	3"	4"	5"	6"	8"	10"	12"
Standard flanged connections	EN1092-1 PN 16, ANSI 150									
Flanged connections on request	AS 2129 (Table D, E, F), AS 4087 (PN 16, 21), KS10K, others on request									
Standard operation pressure	16 bar									
Pressure drop class	ΔP25 (< 0,25 bar)									
Installation requirements/conditions	U0-D0									
Protection Degree	IP68 permanent submersion at 1,5 m (EN 60529)									

Calibration and maximum error

CH2300 sensors belong to the reference Group B1 (ISO 11631). Each sensor is calibrated by an hydraulic bench equipped with a reference weighting system and ACCREDIA certified. The uncertainty of the measure is defined by the terms of OIML R49 regulation. The repeatability of the measure is about 0,1%. Bi-directional measure. Furthermore the sensors are certified OIMLR49.



The maximum permissible error is within the limits shown in the following graph:



Flow table CH2300

Sensor diameter	Flow [m ³ /h]					Ratio Q3/Q1
	Min. Q1	Trans. Q2	Q0.4%	Perm. Q3	Overl. Q4	
DN 50 - 2"	0,125	0,20	3,50	25,00	31,25	200
DN 65 - 2½"	0,2	0,32	6,00	40,00	50,00	200
DN 80 - 3"	0,315	0,50	9,00	63,00	78,75	200
DN 100 - 4"	0,50	0,80	14,00	100,00	125,00	200
DN 125 - 5"	0,80	1,28	22,00	160,00	200,00	200
DN 150 - 6"	1,25	2,00	32,00	250,00	312,50	200
DN 200 - 8"	3,15	5,04	57,00	630,00	787,50	200
DN 250 - 10"	5,0	8,00	90,00	1000,00	1250,00	200
DN 300 - 12"	8,0	12,50	128,00	1000,00	1250,00	125

FIXED OR PORTABLE ULTRASONIC "TRANSIT TIME" FLOW METERS FOR PRESSURIZED LINES

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories



Mod. **S101 F** for fixed installation



The flow measurement systems **S101 F** and **200 H** consist of a digital converter and two ultrasonic **clamp-on** or **insertion** transducers.

The transit time of a fluid inside a pipe with a cylindrical section is the operating principle on which the instrument is based to calculate the value of the instantaneous flow rate.

DSP technology

Digital Signal Processing technology (DSP), ensures low sensitivity of the system to any potential disturbing factors.

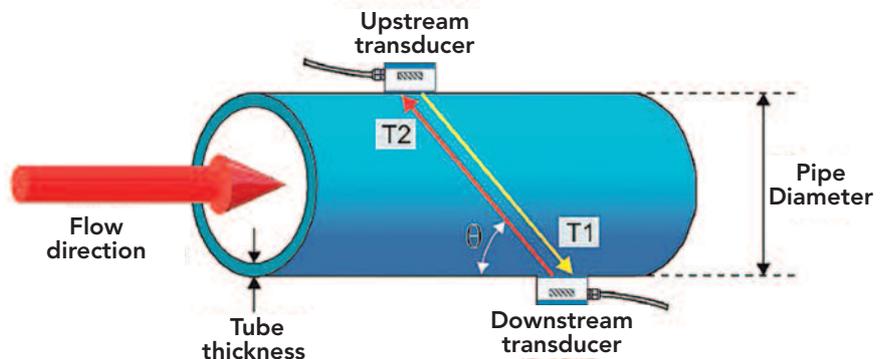
The pipe dimensions may vary from 20 to 4000 mm (by using different transducers) while liquids can be: ultra-pure, drinking water, chemicals, dirty water, cooling water, river water etc.

As far as the transducers are applied externally to the pipe, are not in contact with the liquid and have no moving parts, the transmitter will not be damaged by wear, deposits or pressure.

All the configuration values entered by user are saved on the EEPROM, which is password-protected to prevent accidental changes.



Mod. **200 H** portable



DSP technology - diagram

Hardware features, software features and functions

Models	S101 F	200 H
Measurement on pipes	DN 20...4000 mm	DN 20...4000 mm
Piping material	steel, stainless steel, cast iron, copper, PVC, aluminium, fibreglass-reinforced plastic (cement with insertion transducers)	
Measurement units (user selectable)	metres, cubic metres, litres, feet, cubic feet, U.S. gallons, imperial gallons, oil barrels, U.S. oil barrels, imperial oil barrels, millions of U.S. gallons	
Type of liquid	conductive fluids and not, even with the presence of suspended material (< 10g / l; < Ø1mm)	
Speed range	± 12m/s	
Linearity	0.5% ; repeatability: 0.2% ; total accuracy ± 1%	
Display	2 x 20 alphanumeric characters	3.5" 320 x 240 px
Keypad	4 membrane buttons	8 buttons
Internal data logger	optional	storage capacity up to 32GB with SD card
Displayed data	instantaneous flow rate; total flow; other	
Safety	setup and change settings password protected	
Selectable output	4...20 mA or 0...20 mA	–
Frequency output	programmable 0...5000 Hz	–
Output relay	for pulse or alarm totalizer	–
Signal interface	RS485	
Communication protocol	MODBUS RTU; ASCII+ (Opt.)	
Power supply	230Vac / 24Vdc (Opt.)	external p. supply 100 ± 253Vac
Rechargeable batteries	–	three (3) AAA Ni-mH integrated with autonomy >24 hours
Mounting	wall-mounted IP66	portable
Housing	aluminium	ABS
Dimensions (L x H x P)	200 x 120 x 77 mm	case 218 x 103 x 35 mm
Weight	1 kg	0.4 kg
Operating temperature	-20...60 °C	–
Maximum humidity	85% RH non-condensing (40 °C)	
Process temperature	sensor -40...160 °C in reference to sensor type	
Sensor protection	IP68	

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories

FIXED OR PORTABLE "DOPPLER" EFFECT FLOW METERS FOR PRESSURIZED LINES

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

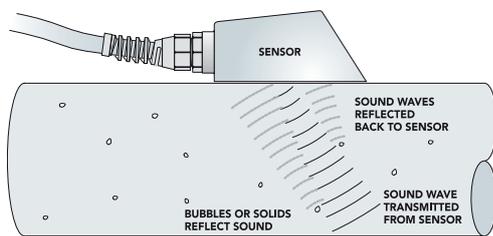
Accessories



DFM 5.1 fixed meter



PDFM 5.1 portable meter



operating principle - diagram

The **DFM 5.1** Doppler effect flow transmitter is suitable for most liquids, such as water, waste water, chemical liquids, sludge and viscous liquids. It controls, indicates, totalizes and transmits the flow rate in gallons, liters or other measurement units.

The **PDFM 5.1** Doppler effect flow meter is suitable for monitoring a flow rate or to identify problems encountered in a closed pipe.

Operating principle

The sensor transmits high frequency sounds into the liquid, through the pipe wall. The pulses are reflected and sent back to the sensor by solid particles and air bubbles present into the fluid. Because of the fluid's movement, the reflected sounds return to the sensor with an altered frequency (Doppler effect). **DFM 5.1** and **PDFM 5.1** continuously measures the frequency deviation in order to ensure very precise measurement of the velocity of the fluid and thus the flow rate.

Installation

Can be done without stopping the plant. There is no contact between the sensitive element and the fluid whose flow rate is to be measured and no cutting or drilling are required on the pipe. The sensor is of a parallelepiped shape, is not affected by dirt or deposits and is easy to mount on the outside of a pipe using a tape.

Easy programming

Using the program buttons can be easily accessed the programming menu where it is possible to select the diameter of the pipe, to set the engineering units (gallons, litres etc.), the totalization velocity, the relays, the sensitivity and the damping. Totalisation and calibration data are password-protected and also protected against power failures.

Application

DFM 5.1 is recommended for liquids containing solids or air bubbles; the sensor is mounted on the outside of a pipe made off steel, iron, PVC or ABS.

PDFM 5.1 is an ideal instrument for evaluating the performance of flow meters inserted in line. Can be installed, calibrated and commissioned in a few minutes and, therefore, used as a temporary substitution of an in line transmitter.

General Specifications

Flow Rate Range
Pipe Size
Accuracy
Display
Calibration
Power Input
Output
Control Relays
Enclosure
Operating Temperature
Shipping Weight

DFM 5.1 Doppler Flow Meter

± 0.03...12.2 m/sec
Any pipe ID: ½" ...180" (12.7 mm...4.5 m)
±2% of reading or 0.05 ft/sec (0.015 m/sec). Requires solids or bubbles minimum size of 100 microns, minimum concentration 75 ppm. Repeatability: ±0.1%, Linearity ±0.5%
White, backlit matrix - displays flow rate, relay states, 16-digit totalizer
built-in 5-key calibrator
100...240VAC 50-60Hz (see Options), 5 Watts maximum
Isolated 4...20mA (1000 ohm load max.)
Qty 2, rated 5 amp SPDT, programmable flow alarm and/or proportional pulse
watertight, dust tight NEMA4X (IP 66) polyester with a clear polycarbonate face
-23... 60 °C (-10...140°F)
6.3 kg

Sensor Specifications

Model PSE4
Operating Temperature

single-head ultrasonic with 6 m cable and SS mounting kit for pipes ½" (12.7 mm) ID or larger. Certified non-incendive for Class I Division 2, Groups A,B,C,D hazardous locations
-40...150 °C (-40...300°F)

General Specifications

Flow Rate Range
Pipe Size
Display
Power Input
Outputs
Data Logger
PC Software
Electronics Operating Temperature
Electronics Enclosure
Carry Case
Accuracy
Calibration
Sensitivity

PDFM 5.1 Portable Doppler Flow Meter

± 0.03...12.2 m/sec
Ultrasonic Sensor mounts on any pipe ID: ½" ...80" (12.5 mm...4.5 m)
White, backlit matrix - displays flow rate, totalizer
Built-in NiMH battery for up to 18 hours continuous operation External charger with 100-240VAC 50/60Hz input
4...20mA (500 ohm) when AC powered USB for Data Log transfer by direct PC connection
Programmable 300000 data point capacity, time and date stamped or formatted flow reports including total, average, minimum, maximum and times of occurrence
for Windows 98 or higher. Retrieves, displays and saves data log files
-23° to 60 °C (-10° to 140°F)
Portable, ABS enclosure
Rated IP67 with protective molded foam insert
±2% of full scale, requires solids or bubbles minimum size of 100 microns, minimum concentration 75 ppm. Repeatability: ±0.25%, Linearity: ±0.5%
Built-in 5-key programming with user-friendly calibration menu. Password protected
Adjustable cut-off, Damping: adjustable

Sensor Specifications

Model PSE4
Sensor Mounting Kit
Operating Temperature

Clamp-on, single-head ultrasonic for pipes ID: ½" ...180" (12.5 mm...4.5 m) with 3.4 m shielded dual-coaxial cable
SS pipe clamp and 5.3 oz. (150 g) silicone coupling compound
-40...150 °C (-40...300 °F)

FIXED OR PORTABLE "AREA X VELOCITY" FLOW METERS

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

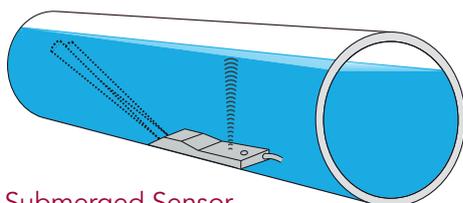
Accessories



AVFM 5.0 fixed meter



STINGRAY 2.0 portable meter



**Submerged Sensor
Measures Level And Velocity**

The **AVFM 5.0** system simultaneously measures the level and the velocity of the fluid in order to calculate the flow rate into an open channel or a pipe.

The **STINGRAY 2.0** portable instrument works for a very long period of time powered by alkaline batteries and stores measurements of water level, velocity and temperature in open channels and in partially filled or pressurised pipes without the need for constrictions or weirs.

Operating principle

The immersible ultrasonic sensor continuously monitors both the velocity and the level of the channel or piping by transmitting high frequency sounds into the liquid, through the pipe wall. The pulses are reflected and sent back to the sensor by solid particles and air bubbles present into the fluid. Because of the fluid's movement, the reflected sounds return to the sensor with an altered frequency (Doppler effect).

The best accuracy is achieved if the flow does not have an excessive turbulence and the velocity on the sensor is not less than 1 m/sec. The channel, right upstream of the sensor, must not have abrupt changes in the level of the bottom and a slope of no more than 3%. The conditions downstream of the sensor do not affect the measurement if the surface profile is not changed right above the sensor itself.

Easy calibration

To calibrate **AVFM 5.0** just insert the pipe diameter or the channel width and choose the measurement unit from the menu. The flow rate, level and velocity can be expressed in gallons, litres, ft³ or m³. The calibration parameters remain stored even in the absence of tension.

For **STINGRAY 2.0** no calibration is required. On the front there is a bar indicating the velocity, level, temperature, battery status and finally the used/available memory. The display automatically turns off after 60 seconds to save power. The software allows the user to set the sampling intervals, to download the files and to get an indication of the variables. The logger displays the files and the calculated velocity in trend graphs and tables, including the minimum and maximum values, the average and total flow rate in normal measurement units.

General Specifications

Channel Types
Electronics Enclosure
Accuracy
Display Programming
Power Input
Outputs
Operating Temperature
Approx. Shipping Weight

AVFM 5.0 Area-Velocity Flow Monitor

Round pipe, Rectangular, trapezoid , egg or custom shapes
Watertight and dust tight NEMA4X (IP 66) polycarbonate with clear, shatterproof cover
Level: $\pm 0.25\%$ of Range. Velocity: $\pm 2\%$ of Reading. Repeatability and Linearity: $\pm 0.1\%$
White, backlit matrix - displays flow rate, totalizer, relay states built-in 5-key calibrator
100...240VAC 50-60Hz, 5.28 Watts maximum (with standard features)
3 Isolated 4...20mA, 1000 ohm, (Flow, Level and Velocity) or 0...5VDC by menu selection
-20°...60 °C (-4°...140°F)
4.5 kg

QZ02L Sensor Specifications

Velocity Measurement Range
Level Measurement Range
Operating Temperature
Exposed Materials
Sensor Cable
Sensor Mounting
Temperature Comp.

0.03...6.2 m/sec and reverse flow to -1.5 m/sec in fluids containing bubbles or solids with a minimum size of 100 microns and a minimum concentration of 75 ppm to act as acoustic reflectors
Minimum Head: 25.4 m). Maximum Head: 4.57 m
-15...65 °C (5...50°F)
PVC, epoxy resin, polyurethane
7.6 m submersible polyurethane jacket, shielded, 3-coaxial includes MB-QZ SS mounting bracket
Automatic, continuous

General Specifications

Electronics Enclosure
Accuracy
Display
Operating Temperature
Instrument Set-up
Logger Interval
Data Logger Capacity
Power
Output/Communications
USB Cable
Software
Approx. Shipping Weight

STINGRAY 2.0 Level-Velocity Logger

Watertight, airtight, dust proof (IP 67) polycarbonate
Level: $\pm 0.25\%$ of Range. Velocity: $\pm 2\%$ of Reading
LCD displays: Level, Velocity, Water Temperature, Battery and Memory capacity
-20° to 60 °C (-4° to 140°F)
via software for Windows: Logging Time Interval, Site Name
10 sec (15 days), 30 sec (45 days), 1 min (3 months), 2 min (6 months), 5 min (1 year), 10 min (2 years), 15 min (3 years), 30 min (4 years) or 60 min (4 years)
130,000 data points
4 Alkaline 'D' cell batteries
USB
1 m shielded
for Windows. Supports real-time monitoring, log file download and export, graph and data table presentation, level/velocity to flow conversion
4.5 kg

QZ02L Sensor Specifications

Velocity Measurement Range
Level Measurement Range
Operating Temperature
Exposed Materials
Sensor Cable
Sensor Mounting
Temperature Comp.

0.03...3.8 m/sec in fluids containing bubbles or solids with a minimum size of 100 microns and a minimum concentration of 75 ppm to act as acoustic reflectors
Minimum Head: 25.4 mm. Maximum Head: 4.5 m
-15...65 °C (5...50°F)
PVC, polyurethane, epoxy
7.6 msubmersible polyurethane jacket, shielded, 3-coaxial includes MB-QZ SS mounting bracket
Automatic, continuous

LEVEL METER WITH ULTRASONIC OR PIEZOMETRIC SENSOR

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote
control

Accessories

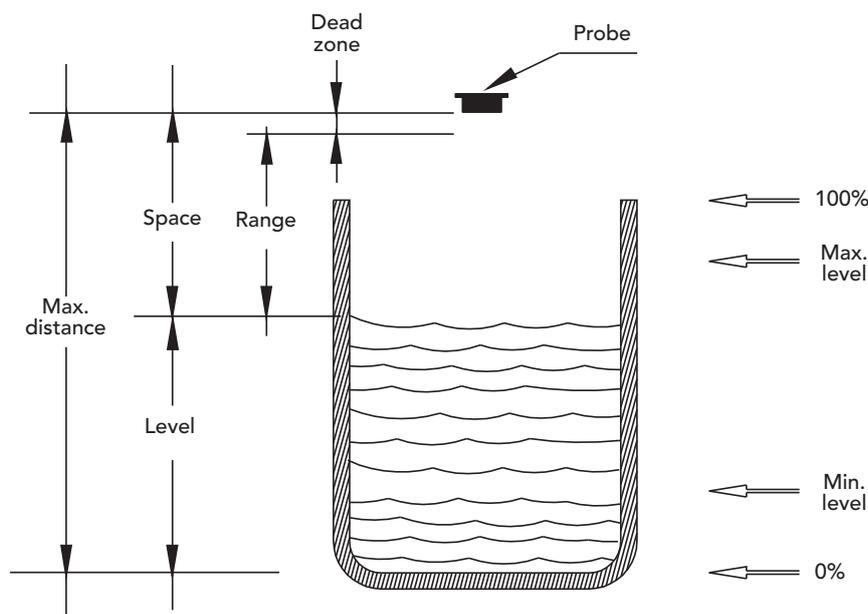


4204 L/U

Main features

- Ultrasonic level measurement, single level, double level, differential level
- Automatic temperature compensation
- Programming keypad with 6 bubble-keys
- Graphic display
- Pumps operation: single, rotation or timed
- RS485 MODBUS RTU serial output
- 2 Programmable analogue outputs
- 5 Relay outputs for intervention thresholds for pumps control
- 1 Relay output for instrument anomaly alarm / for flow totalization / or level 2 alarm
- 5 Digital inputs pumps operation / anomaly

Main operating settings



DEAD ZONE Distance of insensitivity of the transducer measured from the active surface of the transducer. (~ 30/40/70 cm in relation to the type of probe connected)

DISTANCE Interval between the transducer face and the liquid surface inside the tank or equivalent. The distance cannot be higher than the range of the transducer.

RANGE Measurement interval. Freely programmable within the range of the transducer - dead zone; is therefore the theoretical operating range of the System.

LEVEL The interval between the zero level and the liquid surface level inside the tank or equivalent.

MAX LEV It is the MAX operating level above which the system gives an alarm.

MIN LEV It is the MIN operating level below which the system gives an alarm.

MAX DISTANCE Max distance between the transducer surface and the vacuum level (zero).

SPACE Interval between the surface of the liquid inside the tank or equivalent and the dead zone.

Hardware features, software features and functions 4204 L/U

Measurement features	
Measurement unit	Level: mt, cm, mm – Temperature: °C
Measuring ranges	Level 0.30...5.00/ 0.40...8.00/ 0.70...12.00 mt (in relation to the probe connected) Temperature -25°... 75 °C
Accuracy	± 0.2% F.S.
Hardware features	
Display	Backlit 128x64 graphic STN LCD Simultaneous indication of: Level (absolute / differential + bar graph for percentage of full scale), Temperature, Status of digital outputs (led), Alarm events. In scrolling: Level 2, Status of analogue outputs
Controls	6 keys
DATA LOGGER	Internal with 4 Mbit Flash
Serial output	One (1) RS485 MODBUS RTU galvanically isolated
Analogue outputs	Two (2) Programmable galvanically isolated 1°Output: Level / Temperature – 2° Output: level 2, differential, temperature
Relay outputs	Five (5) for Thresholds – One (1) for Alarm (max.load 1A at 230Vac resistive)
Digital inputs	Five (5) programmable
Power supply	100...240Vac/dc 50-60Hz (Optional 24Vac/dc) – Transformer Insulation 4KV
Power consumption	< 12W
Dimensions /Weight	Dimensions: (L x H x P) 144 x 144 x 122.5mm – Weight: 1 Kg
Analogue outputs	Primary Secondary
Quantity	Level Level / Temperature
Type	0...20 mA / 4...20 mA
Range	Programming limits: Lower / Upper
Maximum load	500 Ohm
Alarm output	NAMUR 2.4 mA (with range 4/20mA)
Relay outputs (5)	
Function – selectable	Thresholds Pulses
Alarm	
Function	Echo loss alarm
Programming	Time out (echo absence time): 00:00...24:00 h
Operating conditions	
Temperature	operating 0...50 °C ; storage and transport -25...65 °C
Humidity	10...95% non-condensing
Mechanical protection	Closed IP66 EN60529
EMI / RFI	CEI-EN55011 – 05/99

ULTRASOUND LEVEL PROBE

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories



Ultrasonic level measurement, without contact, suitable for measurement of liquids, with integrated temperature sensor for temperature compensation.

S425 C

Features and advantages

PVDF body resistant to aggressive environments

High resolution measurement 1mm

Double threaded connection

Immediate installation with disconnectable connector (IP67)

Modbus RTU Protocol

Technical specifications S425-C

Models	S425 C5	S425 C8	S425 C12
Measuring ranges	30...500 cm	40...800 cm	70...1200 cm
Measuring method	Ultrasonic with automatic temperature compensation		
Emission angle	14° ±1°		7° ±1°
Accuracy	± 0.2% of the measured distance (but not better than 2 mm)		
Resolution	1 mm		
Operating temperature	-10...75 °C		
Maximum pressure	0.5...1.5 bar		
Body materials	PVDF – PCV		
Thread	1" g.m ; 1.5" g.m.		1" g.m
Protection grade	IP67 (IP68 optional)		
Electrical connection	screw connector		
Power supply	24 Vdc		
Power consumption	2 W		
Cable	5 meters	8 meters	12 meters
Current output	optional max load 500 ohm		
Signal interface	Modbus RTU Standard Protocol RS485		

PIEZOMETRIC TRANSDUCER



The absence of a separation liquid between the membrane and the pressure sensor, the "Dry-Pressure" measuring technology, allows you to have superior technological overpressure performance, small thermal drifts, high stability and accuracy.

KPL / 36 XKY

ULTRASONIC LEVEL TRANSMITTERS



The measurement technology used by the METER level transmitter is the emission of a short ultrasonic pulse. The ultrasonic wave propagates towards the surface of the product to be measured, bouncing back on its surface towards the sensor. The time interval that elapses between the emission and the reception of the wave is called the flight time and it is proportional to the distance measured, therefore to the level.

METER

Available versions

RANGE 6 m 2 wires; 2 wires HART; 2 wires ATEX
4 wires, 2 relays, MODBUS

RANGE 10 m 2 wires; 2 wires HART; 2 wires ATEX
4 wires, 2 relays, MODBUS

Programming takes place via a removable module (keypad/display). Once programming is complete, it is possible to remove the module (keypad/display), leaving the level transmitter operational but with no display on board.

Technical features METER

Measuring range	0.25...6 m ; max. 0.4...10 m (Distances expressed are valid for measurements of perfectly reflective surfaces, otherwise the maximum measurable distance is reduced)
Temp. compensation	digital between -30...80 °C
Accuracy	±0.2% (of the measured distance) but not less than ±3mm
Resolution	1 mm
Operating temperature	-30...70 °C; 80 °C non-continuous
Pressure	0.5...1.5 bar (absolute)
Programming / Display	removable module with 4 keys and dot matrix LCD (or via HART / MODBUS RTU on request)
Housing material	PC or Al / PP or PVDF wetted part (ATEX certified versions only of PVDF)
Mechanical installation	2" GAS M (PP flange DN80 opt.)
Protection grade	IP67/IP68 (sensor)
Power supply	24Vdc (20...30Vdc); 12Vdc (only 2 wires version)
Power Consumption	2 wires version 0.6 W ; 4 wires version 1.5 W
Analogue output	4...20mA, max 750ohm (4 wires version)
Output relays	nr.2 - 3A 230Vac (n.a.) (only 4 wires version)
Digital communication	2 wires version (opt.) HART ; 4 wires version MODBUS RTU

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories

MICROWAVE LEVEL TRANSMITTERS (RADAR)

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories



RPL devices are instruments for level measurement without contact with the product. The radar pulses emitted by the antenna are reflected from the surface of the product and subsequently received by the antenna itself. The integrated management system of the RPL devices uses the flight time to obtain the distance of the surface of the product from the probe and, consequently, the level.

RPL

Features

- Continuous level measurement without contact of solids, liquids, pastes and sludges
- Measurement independent from physical features variations of the product
- Dust, vapours and temperature variations do not interfere with measurement
- Configuration with guided menu using the alphanumeric display
- 2/4 wires technology

Hardware features, software features and functions RPL

Models	RPL 51	RPL 52	RPL 55	RPL 56	RPL 58
Type	with threaded fitting			with threaded fitting and emission cone	
Applications	Highly aggressive liquids with nondemanding process conditions	Highly aggressive liquids	Highly aggressive liquids	Extreme process conditions	Extreme process conditions
Measuring range	30 m	30 m	10 m	30 m	70 m
Accuracy	±10 mm	±10 mm	±5 mm	±3 mm	±15 mm
Operating temperature	-20 ... 100 °C -20...120 °C	-40...150 °C	-40...120 °C	-40...200 °C	-40...200 °C
Process pressure	-1...3 bar	-1...16 bar	-1...3 bar	-1...40 bar	-1...16 bar
Connection to process	G 1" ½ A PVDF	Flange SS316L DN50, DN80, DN100, DN150 PN16	G 1" ½ A PTFE	G 1" ½ A SS316L Additional flange	G 1" ½ A Additional flange
Antenna material	PP PTFE	PTFE	PTFE	SS316L PTFE	SS316L PTFE
Frequency range	6GHz	6GHz	6GHz	26GHz	26GHz
Output signal	2/4 wires ; 4...20mA ; HART				
Protection grade	IP67				

MICROWAVE LEVEL TRANSMITTERS (RADAR)



The instrument emits high frequency pulses. The "GODA" measuring technique, combined with the management system, allows the RWL units to be used even in particularly demanding process conditions such as: high temperature, high pressure, low dielectric constant etc.

RWL

Features

Continuous measurement of dust levels on solid materials of variable consistency and liquids (dust, vapours and temperature variations do not interfere with the measurement)

Available probes:

- rope probes for measuring loose solids, measuring range up to 30 m
- rod probes in particular for measuring liquids, measuring range up to 6m
- coaxial probes for liquid products, measuring range up to 6m

Configuration with guided menu and calibration by means of entering the empty and full distances without product movement, through alphanumeric display

Storage and recognition system of false signals

Hardware features, software features and functions RWL

Models	RWL 51	RWL 52	RWL 53	RWL 54
Probe type	rope Ø 4/6mm rod Ø 10mm	rod Ø 10mm	coaxial Ø 28mm	rope Ø 4/6mm rod Ø 10mm
Applications	for liquids/solids	for liquids/solids	for liquids with low dielectric constant	for liquids with high process temperatures / pressures
Measuring range	rope 30 m rod 3 m	rod 3 m	coaxial 3 m	rope 30 m rod 3 m
Accuracy	± 10 mm			
Operating temperature	-40...150 °C			-40...250 °C
Process pressure	-1...40 bar			
Connection to process (SS316L)	1 ½" G 2" G	DN50 PN16 DN80 PN16 DN100 PN16 DN150 PN16	1 ½" G 2" G	1 ½" G 2" G
Display	level and curve measurement of echo signal shown on alphanumeric display			
Rope/Rod material	SS316L / PTFE			
Gaskets	Viton (-30...130 °C) ; Kalrez (-40...150 °C)			
Protection grade	IP67			
Communication protocol	HART optional			
Certifications	CENELEC			

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories

SLUDGE INTERFACE LEVEL METER

Controllers



Control unit

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories



Power supply unit



Level Sensor

Level (otp. Turbidity) Sensor with wiper

ECHOSMART™

Ultrasonic measuring system with submerged sensor (Sonar)

ECHOSMART™ Sensors

ECHOSMART sensors generate and process the ultrasound signal for real-time measurement with maximum flexibility of the liquid/solid interface.

They have greater signal control and the performance of the control algorithms, specifically developed and field tested, has been confirmed in the U.S. and around the world.

Flexibility

Available options

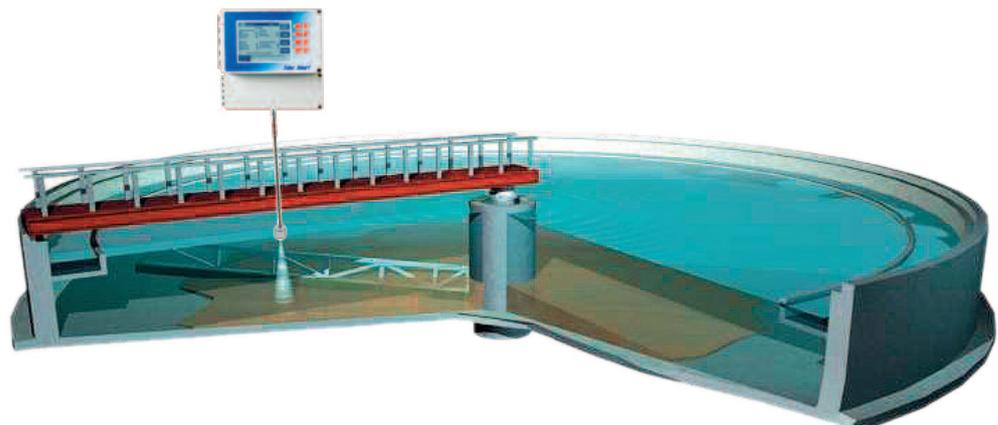
- EchoSmart sensor in conjunction with the EchoSmart control unit
- EchoSmart with sensor in conjunction with the power supply unit (remote programming via EchoSmart Console SW)

EchoSmart Networks

- Network interconnection of up to 128 EchoSmart sensors
- Communication via RS-485 or Ethernet
- RF compatible ZigBee network integration

Easy to use

- Large display with intuitive screens for quick entry of parameters
- Soft Keys operation with Guide for all settings
- Initialisation and automatic calibration for quick start-up with no process interruption



EchoSmart Network

- An EchoSmart network consists of 2 and up to 128 sensors interconnected with a wired or wireless network
- For the wired networks here are available **RS-485 Serial - MODBUS RTU** or Ethernet connections
- The ZigBee wireless system is also available and it is the ideal choice, considering the enormous reduction plant engineering (wiring and piping) costs

Features

- Up to 16 EchoSmart sensors can be connected in a network with a single EchoSmart controller with optimised operation and significantly reduced costs
- ZigBee with "self-healing" mesh technology ensures reliable communication by eliminating unnecessary piping and wiring costs

Hardware features, software features and functions ECHOSMART™

	Sensor	Control unit	Power supply unit
Measuring range	0.305...10 mt	-	-
Measuring principle	Ultrasonic submersion	-	-
Measuring interval	Adjustable	-	-
Resolution	3.05 mm at 3 m	-	-
Accuracy	0.03 m at 3 m	-	-
Operating temperature	1...52 °C	-	-
Calibration	Factory calibrated; Adjustable speed of sound	-	-
Display	-	Monochrome graphic Backlit 320 x 240 pixels ; visual area 92 x 122 mm	-
Material	ABS and Epoxy	Polycarbonate NEMA 4X with IP65 protection	
Self-cleaning wiper	Silicon (Optional)	-	-
Environmental conditions	-	- 40... 60 °C	- 40... 60 °C
Power supply	15 VDC	100...240 VAC, 50/60 Hz 1A – optional 24VDC	
Power	3W with wiper 6W	65 W (fuse)	20 W 1.34A
Relay (optional)	-	four (4) 10A @ 250 VAC; 10A@ 30VDC	-
Mounting	Fixed or flexible	wall or pipe	-
Dimensions (L x H x P)	standard 62 x 75 mm with wiper 146 x 75 mm	235 x 229 x 115 mm	181 x 181 x 61 mm
Weight	standard 1.02 kg with wiper 1.25 kg	approx. 1.36 kg	approx. 0.68 kg

PIEZORESISTIVE LEVEL TRANSMITTERS

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories



KPL

An ideal instrument for automating the process for measuring levels with hydrostatic head in duty applications. The absence of a separation liquid between the membrane and the pressure sensor, "Dry-Pressure" measurement technology, allows getting of superior technological performance in terms of overpressure, small temperature drifts, high stability and accuracy.

Measurement	0.1 (1m H ₂ O)...20 bar (200m H ₂ O)
Accuracy / Stability	±0.5 % FS / ±0.1 % FS
Operating temperature	product -20...60 °C ; ambient -20...70 °C ; storing -40...80 °C
Output signal	4...20mA
Power supply	10...36Vdc, 2 wires
Material	membrane SS316L ; probe submerged SS304 ; cable PU (polyurethane)
Protection grade	IP68
Dimensions	probe submerged Ø 27 mm ; cable Ø 8 mm



Series 36 XKY

Specifically designed for extended service in sewage lift station environments, the 36 XKY features a relatively wide sensing diaphragm yet small overall size. The 36 XKY incorporates a monolithic diaphragm made of Kynar® which combines the non-stick quality of Teflon with superior toughness and abrasion resistance that simplify installation and eliminate the need for bulky and expensive protective cages.

Standard pressure ranges (FS) and Overpressure in Bar			
PR 36-XKY	1	3	10
Overpressure	3	5	20
	2-cables analogue		RS485 only
Output	4...20 mA		RS 485
Digital interface	RS485 ¹⁾		RS485
Power supply (VDC) ²⁾	8...28 V		6...28 V
Accuracy at ambient temperature ³⁾	±0.3 % FS		±0.3 % FS
Total error band ⁴⁾ 0...50 °C	8...28 V		6...28 V

¹⁾ During RS485 communication the analog signal will be influenced

²⁾ With lightning protection: minimum supply voltage increase by 1 V

³⁾ Includes linearity (BFSL), hysteresis and repeatability

⁴⁾ Includes accuracy as well as temperature coefficients of zero and span tolerance.

Resolution	0.002 % FS
Linearity (BFSL)	±0.2 % FS
Temperature	storage -10...80 °C ; compensated 0...50 °C
Communication	MODBUS RTU, 9600 baud and 115200 baud
Material in contact	SS316L / Kynar®
Dimensions	Ø 32 mm

PIEZORESISTIVE LEVEL TRANSMITTERS



Series 36 XS (STRAIT LINE)

These pressure transmitters are designed for level measurement in applications such as downhole in limited spaces, where the highest accuracy is required. Diameter of only 16 mm. The 36-XS level transmitter is available in two different versions:

- PAA 36-XS Absolute pressure, when the atmospheric pressure is measured by a separate barometer
- PR 36-XS Relative pressure, through tube for pressure compensation

Standard pressure ranges (FS) and Overpressure in Bar			
PR 36-XS	1	3	10
PAA 36-XS		0.8...3	0.8...10
Overpressure	3	5	20
Output	4...20 mA / RS 485		
Power supply (U)	10...30 Vdc		
Error band ^(*)	0.2 % f.s. (within the compensated temperature range)		
<small>(*) Linearity + Hysteresis + Repeatability + Temperature Coefficients + Zero + Span Tolerance</small>			
Linearity / Resolution	0.025 % FS / 0.002 % FS		
Long term stability	Range ≤ 1 bar 2 mbar ; Range > 1 bar 0.2 % f.s.		
Temperature	storage / operating -20...80 °C ; compensated 0...50 °C		
Material in contact	SS316L / Viton® / PE		
Protection grade	IP68		



Series 36 XW

High accuracy level transmitter digitally compensated / variable range / analogue and digital output. It is based on the stable, piezoresistive transducer and a micro-processor electronics with integrated 16 bit A/D converter. Temperature dependencies and non-linearities of the sensor are mathematically compensate.

Standard pressure ranges (FS) and Overpressure in Bar				
PR 36-XW	1	3	10	30
PAA 36-XW	1	3	10	30
Overpressure	3	5	20	60
Output	(digital) RS 485	(analogue) 4...20 mA (2 wires)	(analogue) 0...10 V (3 wires)	
Power supply (U)	8...28 Vdc	8...28 Vdc	13...28 Vdc	
Accuracy, Error band ^(*) 0...50 °C	0.1 % FS	0.15 % FS	0.15 % FS	
<small>(*) Linearity + Hysteresis + Repeatability + Temperature Coefficients + Zero + Span Tolerance</small>				
Linearity / Resolution	0.025 % FS / 0.002 % FS			
Long term stability	Range ≤ 1 bar 1 mbar ; Range > 1 bar 0.1 % FS			
Temperature	storage/operating -20...80 °C			
Pressure endurance	10 million pressure cycles 0...100 % FS at 25 °C			
Contact material	SS316L (DIN 1.4435) / Viton® / PE			
Protection grade	IP 68, resistant to ice			

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories

PIEZORESISTIVE PRESSURE TRANSMITTERS

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

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Accessories



Series 21 Y

The Y-line transmitters have an extremely small temperature error. This result is achieved by using an additional circuit containing a temperature sensor that subdivides the temperature range into fields that are 1.5 Kelvin (K) wide. The TK zero and TK compensation values are calculated for each field and programmed into the additional circuit.

Pressure ranges (all intermediate ranges possible)	PR 21-Y 2...10 bar FS	PAA 21-Y / PA 21-Y 2...1000 bar FS
Overpressure	2 x pressure range, max 1100 bar	
<small>PAA: absolute values, zero at vacuum PA: sealed gauge, zero at 1000 mbar absolute PR: vented gauge, zero at atmospheric pressure</small>		
Accuracy		
Linearity (best fitted straight line) ¹⁾	standard ± 0.25 % FS ; max. ± 0.5 % FS	
Total error band ²⁾	0...50 °C max. ± 1.0 % FS ; 10...80 °C max. ± 1.5 % FS	
<small>¹⁾Including hysteresis + repeatability ²⁾Linearity + hysteresis + repeatability + temperature coefficients + zero + span tolerance</small>		
Temperature	storage / operating -40...100 °C	
Stability	PR Version max. ± 0.5 % FS ; PAA/PA Version max. ± 0.3 % FS	
Signal output	2-cable model	4...20 mA
Power supply	2-cable model	8...32 VDC



Series 33 X / Series 35 X

This high accuracy 0.01 %FS is available as an option (the standard Series 33-X has an accuracy of 0.05% FS). These Series are based on the stable, floating piezoresistive transducer and a newly developed micro-processor with integrated 16 bit A/D converter. With the READ30 software and with the cable K-107, the calculated pressure can be displayed on a Laptop or a PC.

Standard pressure ranges (FS) and Overpressure in Bar									
PR 33-X / PD 33-X / PR 35-X		1	3	10	30				
PA(A) 33-X / PA(A) 35-X	0.8...1.2	1	3	10	30	100	300	700	1000
Overpressure	2	2	5	20	60	200	400	1000	1000
Overpr. referential press. side PD		2	5	7	20				
PD, static line pressure ^(*) / standard / high pressure						200 bar / 600 bar			
Output	(digital) RS 485	(2-cables analogue) 4...20 mA							
Power supply (U)	8...28 V / 3.5...12 V	8...28 V							
Accuracy, Error band	(10...40 °C) 0.05 % FS (-10...80 °C) 0.1 % FS	(10...40 °C) 0.1 % FS (-10...80 °C) 0.15 % FS							
Optional: Accuracy ^(**)	(10...40 °C) 0.01 % FS								
<small>^(*)Influence static line pressure < 0.005 %FS/bar ^(**)Only for Series 33 X and for ranges ≥ 10 bar.</small>									
Resolution	0.002 % FS								
Typical long term stability	Relative: 1 mbar or 0.05 % FS Absolute: 0.5 mbar or 0.025 % FS (10...40 °C)								
Temperature	storage / operating -40...120 °C								
Material in contact	SS316L (DIN 1.4435) / Viton								
Protection grade	IP 65 on request: IP 67 or IP 68 (with cable)								

PIEZORESISTIVE PRESSURE TRANSMITTERS



Series 41 X / Series 41 XEi

The Series 41X combines the ceramic measurement cell for low pressure ranges with the μ P electronics of the digital transmitter. The values can be displayed and stored on a PC via an RS485 interface. It is also available as intrinsically safe version (Series 41-XEi) category 1 and 2.

Standard FS pressure ranges in mbar			
PR 41-X (relative) • PD 41-X (differential)	30	100	300
Overpressure	300	1000	1500
Negative overpressure	30	100	300
Power supply (U) 41-X / 41-XEi	(2-cables version) 8...28 VDC / 10...28 VDC		
Analogue output (scaleable)	(2-cables version) 4...20 mA		
Stability	FS \geq 100 mbar: \pm 0.1 % FS / FS \leq 100 mbar: \pm 0.1 mbar		
Temperature	operating -20...80 °C ; compensated 10...50 °C		
Error band ^(*)	\pm 0.1 % FS standard		\pm 0.2 % FS max.
^(*) Within the compensated temperature range			
Pressure connection	G1/4" male, Viton® flat seal		
Material in contact	SS316L; Nitrile O-ring; Gold-coated ceramic diaphragm		
Protection grade	IP40		
Special versions IP 67 ; alternative plugs ; with cable ; negative/positive pressure ranges: e.g. -10...+10 bar			



Series PRD33 X

The Series PRD33-X has been developed for applications that require a high accuracy differential pressure measurement. Thanks to a second integrated pressure sensor, the line, or common mode, pressure can now be measured along with the differential pressure.

Differential pressure measurement (P1)			
Pressure range ^(*)	0...350 mbar	0...1 bar	0...3 bar
Accuracy ^(**) / Resolution	\pm 0.1 % FS / 0.01 % FS	\pm 0.05 % FS / 0.005 % FS	\pm 0.05 % FS / 0.005 % FS
Total error band ^(***)	\pm 1 % FS	\pm 0.4 % FS	\pm 0.2 % FS
Commune mode / line	0...40 bar abs	0...40 bar abs	0...40 bar abs
Line / Absolute pressure measurement (P2) ⁽¹⁾			
Pressure range	0...40 bar absolute		
Accuracy ^(**) / Resolution	\pm 0.1 % FS / 0.005 % FS		
Total error band ^(***)	0.3 % FS		
⁽¹⁾ Measured at the High (+) pressure connection ^(*) Other pressure ranges on request ^(**) Includes linearity (BFSL) + Repeatability + Hysteresis ^(***) With temperature -30...60 °C, includes Accuracy, Temperature error, Static line dependence			
Interface	Standard RS485	Low voltage RS485	
Network voltage	Standard 8...32 VDC	Low voltage 3.2...32 VDC	
Pressure connection	G1/4" female		
Temperature	storage/operating -40...80 °C ; compensated -30... 60 °C		
Material in contact with media	Positive pole: SS316L, silicon O-ring Negative pole: additionally gold, silicon		
Protection grade	IP 65, IP 67 or IP 68 optional		

Web remote control

CHEMITECWEB

Instrument monitoring and set-up through HTTPS protocol via GPRS

99

Controllers

Sensors

Analysers

Samplers

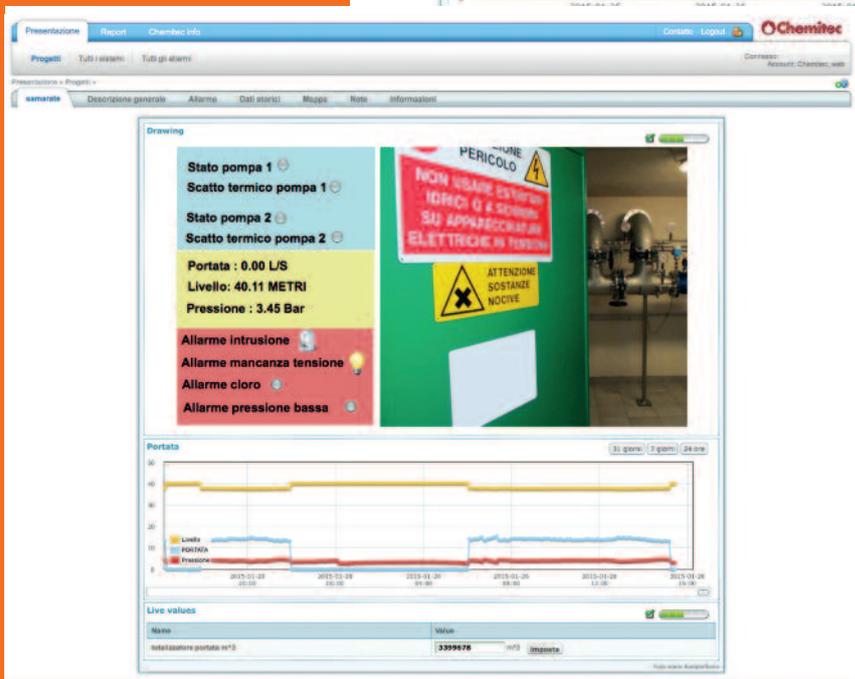
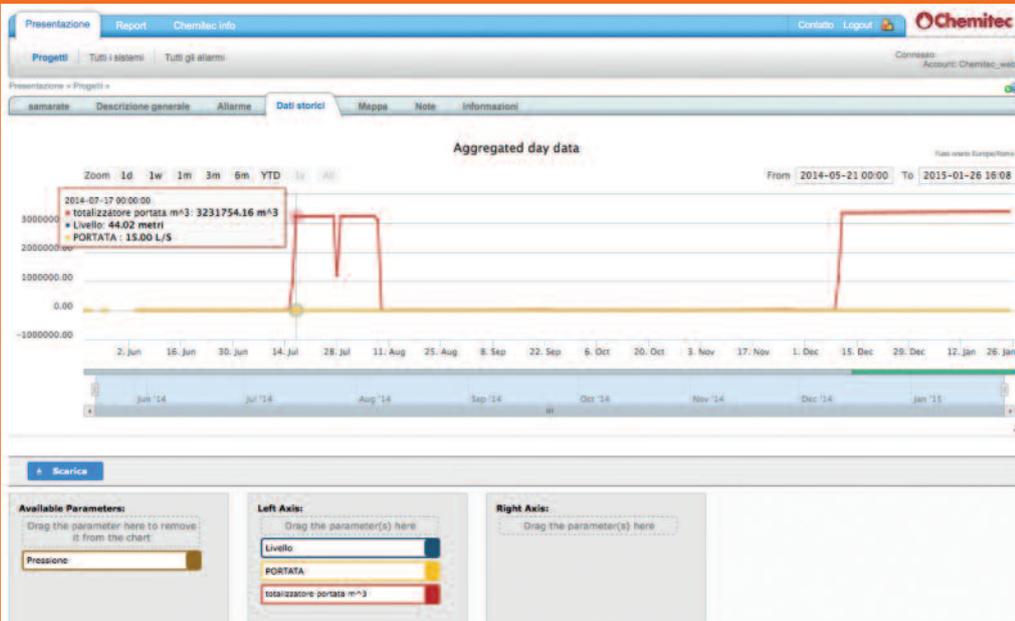
Flow

Level

Pressure

Web remote control

Accessories



CHEMITECWEB

WebApp to monitoring and set-up through HTTPS

Controllers

Sensors

Analysers

Samplers

Flow

Level

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Accessories

MONITORING USING HTTPS VIA GPRS

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Accessories

CHEMITECWEB

For a water quality control plant to be really a reliable system, its proper operation must be monitored during its entire activity.

To do this, the **CHEMITECWEB** system uses specific tools that can remotely control each individual plant, alerting the customer immediately in case of anomalies or eventual deficit of regulation and control.

Functions

Monitoring up to 50 water quality parameters via web for up to 30 instruments

Report Download

Alerts via e-mail for exceeding maximum / minimum thresholds of the monitored parameters

Trend graph of the parameters in electronic format

The remote control system of your equipment

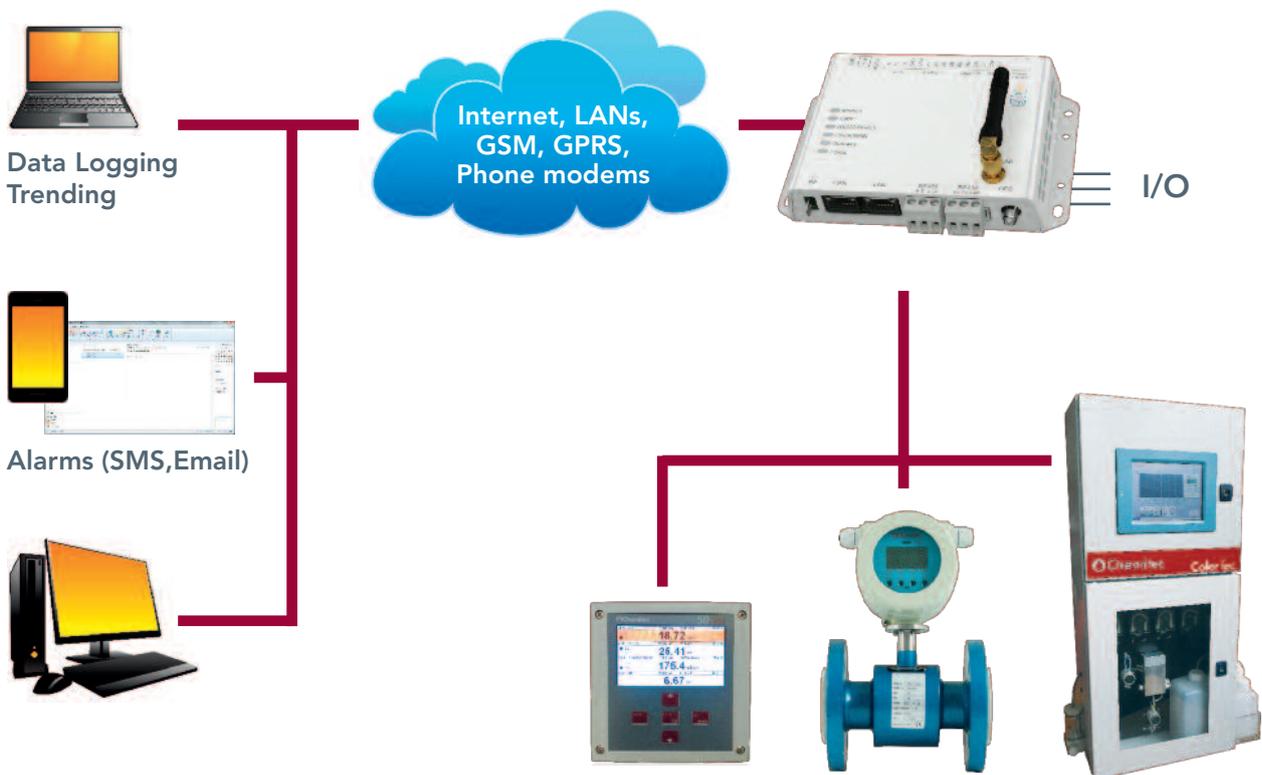
Historical trends report

Event log and alarm history

Instant user interface

Thanks to a constant control of all functionality parameters and to a frequent update, **CHEMITECWEB** allows you to view, thanks also to the graphs, the trend of the monitored variables of plant, typically the trend of the analysis, flow rates and levels.

These variables are always available in time with an immediate buffer of at least 30 days, and a history buffer from plant commissioning of 50000 records. The data will always be available from PC via Web, Smartphone and Tablet.





Quick and easy setup

Wherever your equipment is on the field, simply connect it to the gateway, and you'll be able to access real-time data on-line via a normal web browser.

The plug-&-play functionality allows you to perform large installations in minutes.

Technical features

Communication Gateway with automatic connectivity

Support for GPRS Quad band communication or Ethernet communication

Device connectivity via RS232 and RS485 serial ports

Extendable, through add-in boards dedicated to instrumentation with analogue output (4...20mA) and equipment with digital outputs (ON-OFF status, alarm, etc.)

Temperature sensor integrated

Status LED for diagnostics

The communication gateway connects to the field devices through different connection methods: RS-232/485 serial ports, ASCII or Modbus RTU. The gateway sends the data to the cloud-based data center via Ethernet or a GSM / GPRS cellular network.

The SIM card for connection is provided by Chemitec and allows you a data traffic of 5 MB per month.

Hardware specifications CHEMITECWEB

Connection	Ethernet and 2G/GSM/GPRS
Ethernet	10/100 Mbit/s
2G/GSM/GPRS	GPRS: Quad-Band GPRS Class 12 (850/900/1800/1900 MHz)
Antenna connector	SMA female
Relay output	1 (max 24 V, AC/DC, 1A)
Digital inputs	2 (Dry contact)
Analog inputs (PT100, 0-10 V or 0-20 mA)	4, all supporting 0-10 V or 0-20 mA and 2 supporting PT100
Analog output	0-10 V
Serial port	#1 RS-232, 1,2 kbit/s to 115,2 kbit/s / #2 RS-485, 1,2 kbit/s to 115,2 kbit/s
GPS	Built-in (antenna via SMA female)
Protocols	Modbus-RTU (with TCP conversion), Modbus TCP, EtherNet/IP
Proxy support	SOCKS / WEB
Wall mounting / DIN rail	YES / YES
Dimensions (lxhxp)	92 x 135 x 27 mm
Housing	Metal
Operating temperature	-40 to +65 °C
Power supply	9 - 32 VDC
Power consumption	(max at 24 Vdc) 4.5 W

Accessories

Controllers

Sensors

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Accessories

S315 xx

Immersion probeholders
for single, double or triple electrodes | with KCl tank |
for turbidity/suspended solids probes | for oxygen probe and pH
and redox digital/differential electrodes

104

Nozzles for sensor clearing
Articulated support for probe holder

105

PSS3 / SPP / SPP FIL

Pressurized Probeholders

106

S305 INS

Insertion Probeholder for Turbidity/SS

107

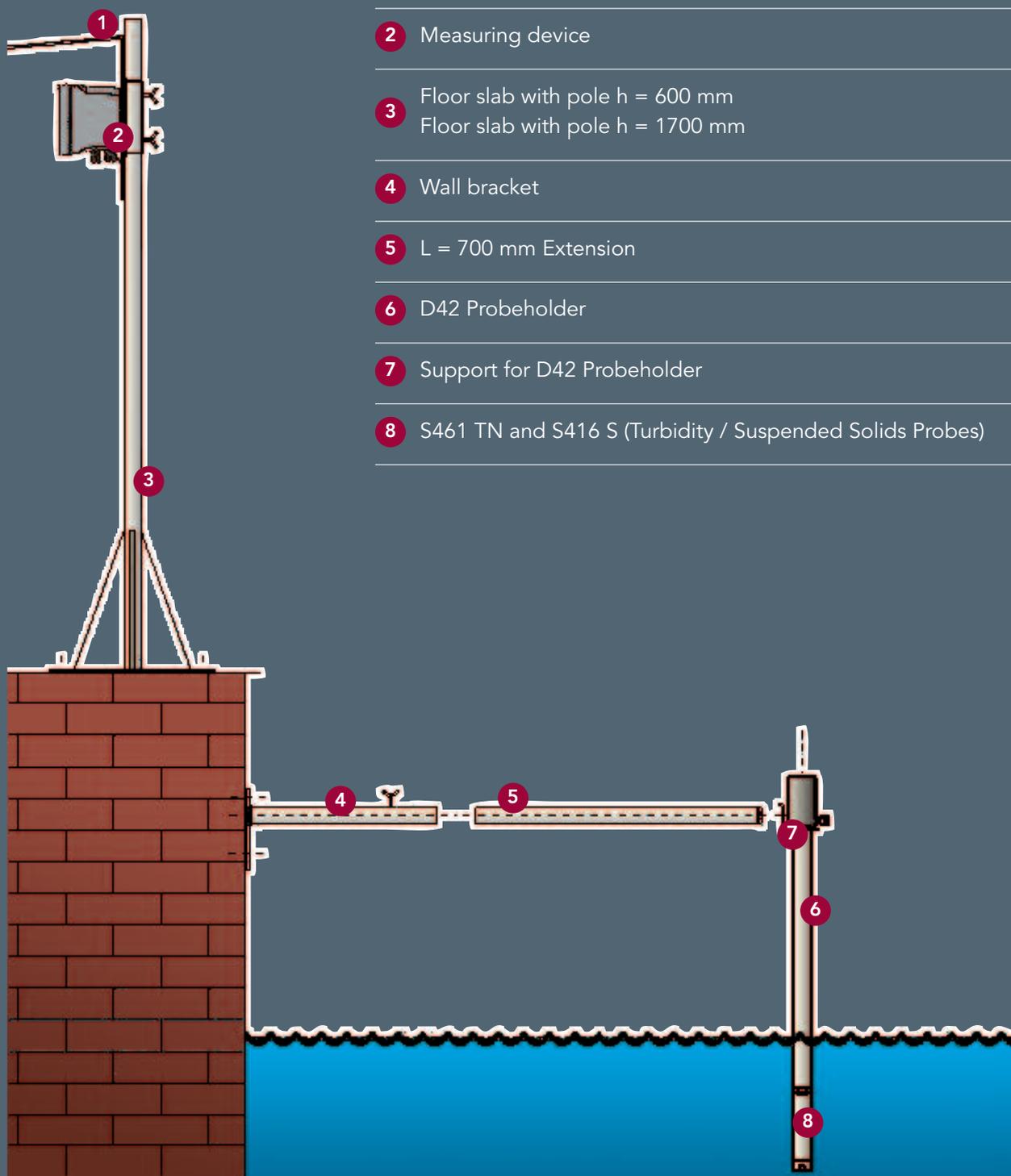
PSS8 xx

Bypass probeholders

108

Floor, Canopy and telescopic pole

109



- 1 Protection canopy
- 2 Measuring device
- 3 Floor slab with pole h = 600 mm
Floor slab with pole h = 1700 mm
- 4 Wall bracket
- 5 L = 700 mm Extension
- 6 D42 Probeholder
- 7 Support for D42 Probeholder
- 8 S461 TN and S416 S (Turbidity / Suspended Solids Probes)

IMMERSION PROBEHOLDERS

Controllers

Sensors

Analysers

Samplers

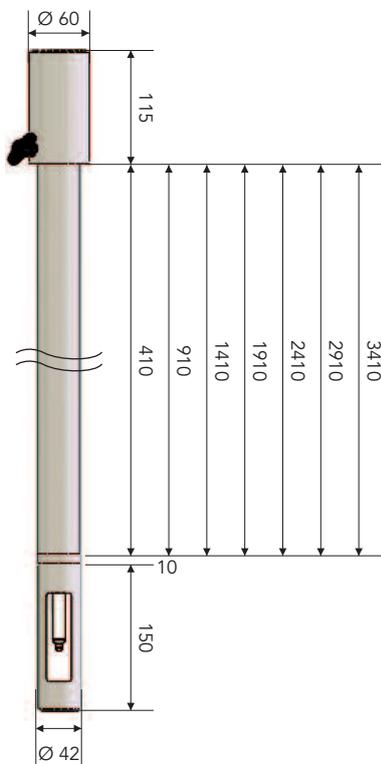
Flow

Level

Pressure

Web remote control

Accessories



S315 2 Immersion probeholder for single D42 Electrode

S315 2 Immersion probeholder for two D63 Electrodes

S315 3 Immersion probeholder for three D63 Electrodes

Materials

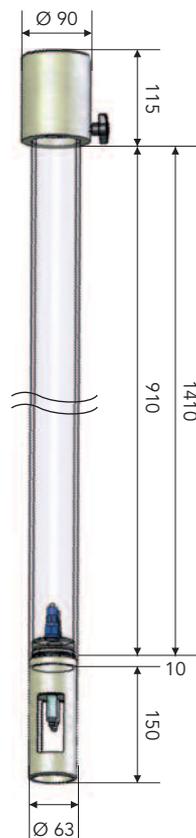
- Polypropilene (PP) body
- Nylon fixing screw
- NBR O-Rings

Working Temperature

- max 80 °C

Available lengths

- See drawing



S315 T Immersion probeholder with KCl tank

S315 T2 Immersion probeholder for two D12 electrodes and KCl tank

Materials

- Plexiglass tube
- Polypropilene (PP) protection and cap
- Nylon fixing screw
- NBR O-Rings

Working Temperature

- max 80 °C

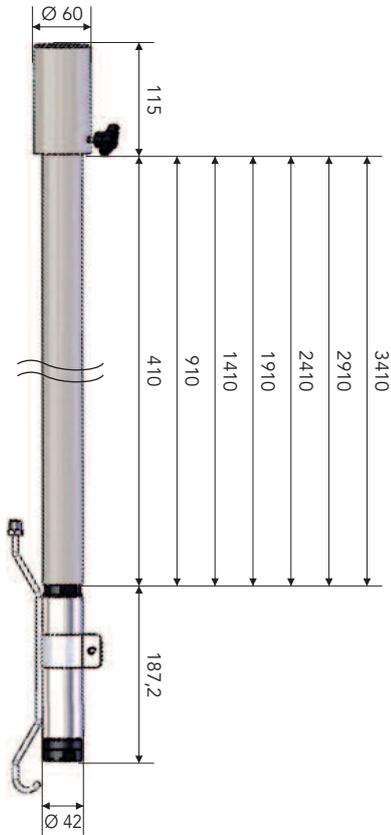
Available lengths

- See drawing

The Plexiglass tube/tank allows to constantly verify the KCl quantity



IMMERSION PROBEHOLDERS



S315 F Immersion probeholder for turbidity/suspended solids probes

Materials

- Polipropilene (PP) Tube and cap
- Nylon fixing screw
- NBR o-Rings

Working Temperature

- max 80 °C

Available lengths

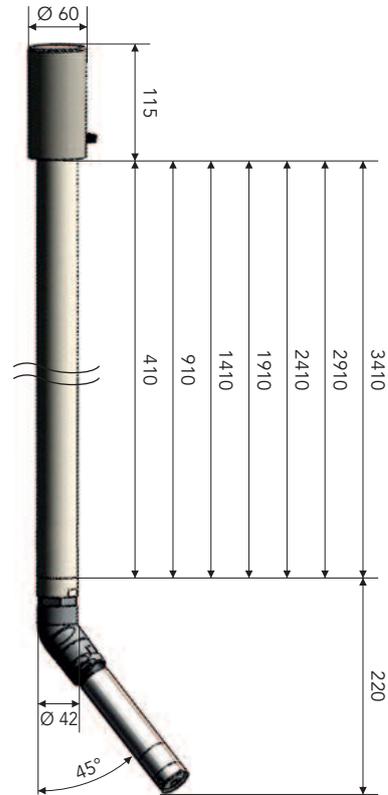
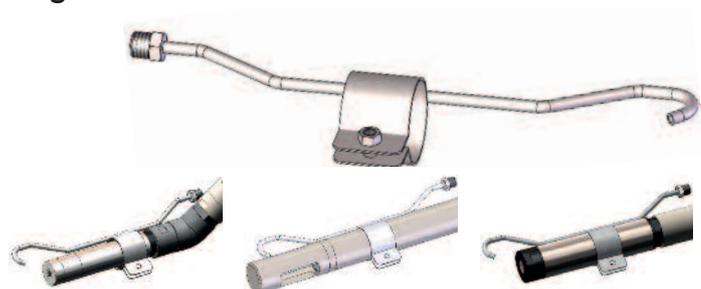
- See drawing

SS316 nozzle for immersion probes' cleaning

Materials

- SS316 tube
- SS316 nozzle
- SS316 fittings and nuts

The washing conduit is connected to the nozzle via the 1/4" BSP male threaded fitting. The system can be adapted to all Chemitec immersion probes and probeholders.



S315 O Immersion probeholder for S423-C-OPT Oxygen probe and S401/6 DF/DG pH and redox digital/differential electrodes

Materials

- Polipropilene (PP) Tube and cap
- Nylon fixing screw
- PVC 45° Fitting
- NBR o-Rings

Working Temperature

- max 80 °C

Available lengths

- See drawing

Controllers

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INSERTION PROBEHOLDERS

Controllers

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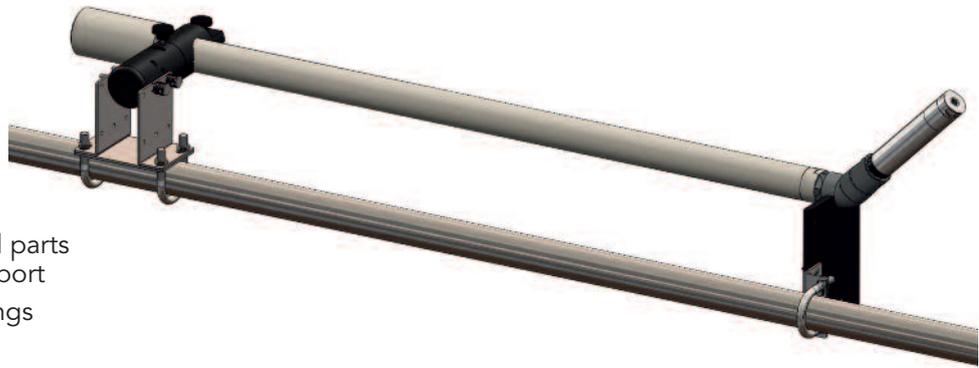
Level

Pressure

Web remote control

Accessories

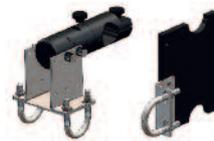
Articulated support for probeholders



Materiali

- Black PVC Articulated parts and probeholder support
- SS316 plates and fixings
- SS316 fixing screws

Suitable for chemitec Diameter 42 probeholder supporting, the articulated support is able to rotate and tilt around the X and Y axis, allowing a remarkable possibility of configurations.



Pressurized Probeholders

The pressurized Probe holders are used to insert the electrode directly into process pipe lines.

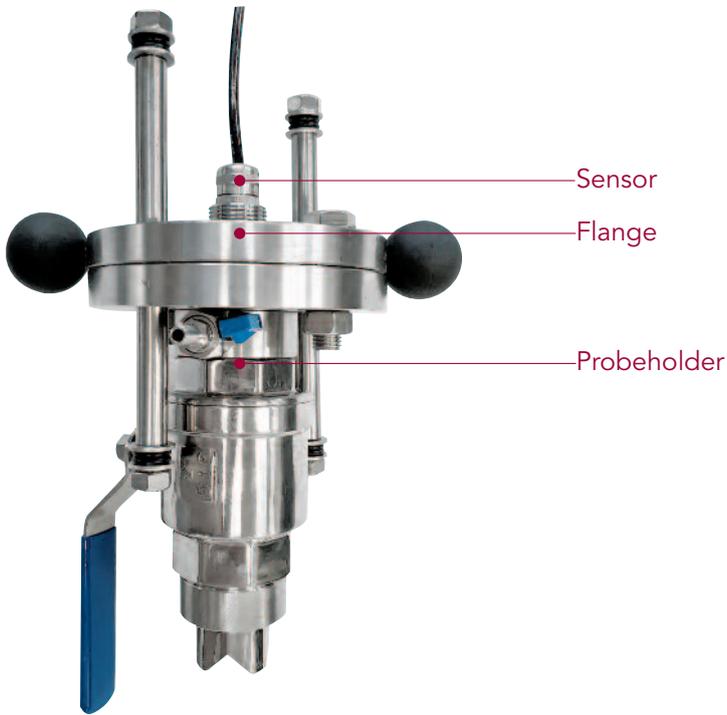
The Probe holder must be placed between two isolation valves to prevent lack of process liquid during maintenance operations.



Insertion probeholders

	PSS3	SPP	SPP FIL
Connection	1/2" G.M.	1" G.F.	3/4" or 1 1/4 G.M.
Probe connection	PG 13.5 or Ø 12mm	PG 13.5	PG 13.5
Maximum Temperature	60° C	60 °C	80 °C
Maximum Pressure	7 bar	16 bar	16 bar
Materials	PVC	PP and PVC	PP

INSERTION PROBEHOLDER FOR TURBIDITY/SS



General features

The probe holder **S305 INS** for insertion into the pipe is used for Turbidity/Suspended Solids sensors.

Technical specifications

Body material	SS316
Ball valve	DN 40 for extraction of the probe without interruption of the process
Connection	welded for mounting on pipe
Complete with	fixing brackets of the safety sensor



Controllers

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BYPASS PROBEHOLDERS

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Flow

Level

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Accessories

PSS8 By-pass probeholder

The electrode/sensor installed in remains always immersed in the liquid to guarantee stable and accurate measures.

Applications

- Wastewater
- Drinking water
- Cooling towers
- Reverse osmosis
- Irrigation

Technical data

Input/Output	8x12 mm (tube)
Probe connections	PG 13,5mm, 42mm, 35mm, 24mm
Head Material	Black PP
Wessel Material	Transparent PMMA / Black PP
Pressure range	1 bar at 50 °C 2 bar at 40 °C
Control sensor	Reed flux at 0,5 bar of min. pressure
pH range	4,0...10 pH transparent body 2,7...12 pH black body
chemically compatible	



PSS8 A

- Bypass probeholder for three (3) probes diameter 12 mm
- Pressure up to 2 bar
- Temperature up to 50 °C
- Transparent wessel
- pH range 4,0...10 pH

Probe types

- pH and redox 12 mm
- pH and redox 13.5 mm
- Temperature 12 or 13,5 mm
- Conductivity 12 or 13.5 mm
- Oxygen 13,5 mm



PSS8 A1

- Bypass probeholder for three (3) probes diameter 12 mm
- Pressure up to 2 bar
- Temperature up to 50 °C
- Black wessel
- pH range 2,7...12 pH

Probe types

- pH e Redox 12 mm
- pH e Redox 13.5 mm
- Temperature 12 or 13,5 mm
- Conductivity 12 or 13.5 mm
- Oxygen 13,5 mm



PSS8 B1

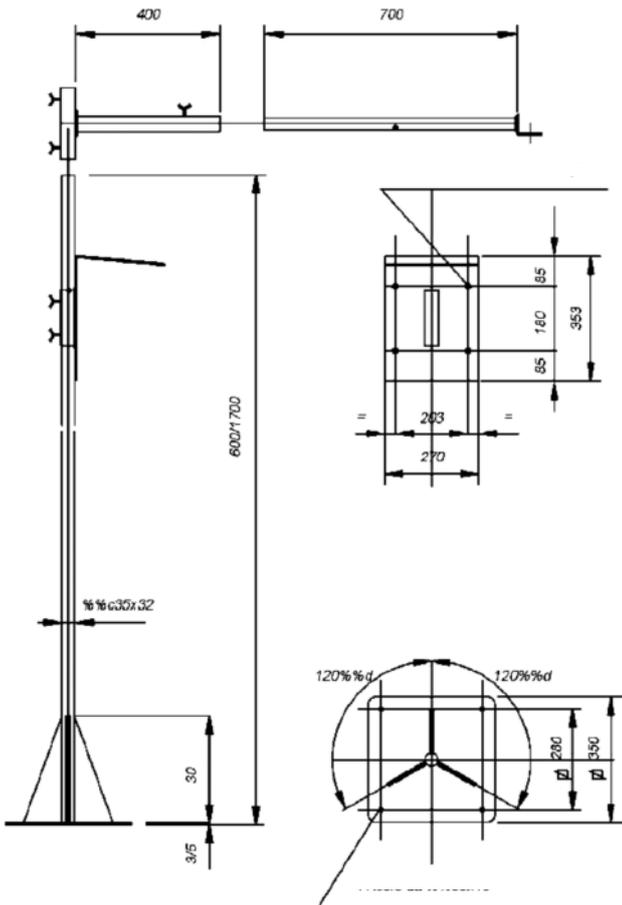
- Bypass probeholder for one (1) probe diameter 35 or 42 mm
- Pressure up to 2 bar
- Temperature up to 50 °C
- Black wessel
- pH range 2,7...12 pH

Probe types

- Turbidity 42mm
- Oxygen 35mm

ACCESSORIES FOR INSTALLATIONS

SS316 standing Pole for poolside fixing



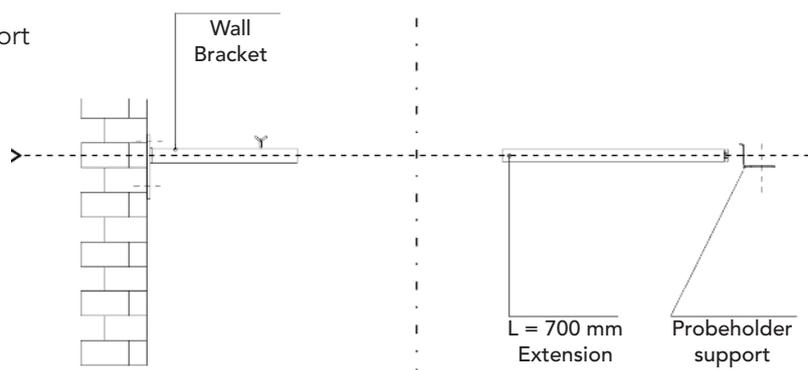
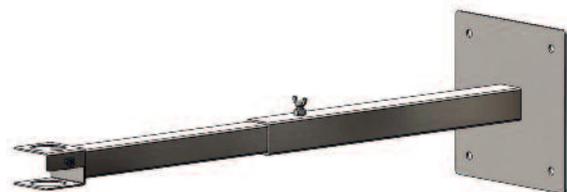
- Available with
 - Controller Shed Protection
 - Telescopic pole for immersion probeholder

- Materials
 - SS316 body
 - AISI fixing screws
- Probeholder support
 - via telescopic pole
- Available length
 - 600/1700 mm



SS316 standing pole for wall mounting/poolside. D42 or 63 mm immersion probeholder

- Materials
 - SS316 Mounting plate
 - SS316 Pole and Probeholders support
 - SS316 Fixing screws



Controllers

Sensors

Analysers

Samplers

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Pressure

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Accessories

Pre-assembled panels



The wide range of Chemitec products is enriched with new integrated systems for ease of use and operation.

Paneltec with one (1) S494 Chlorine Sensor and Controller 4293

PANELTEC SERIES

The wide range of Chemitec products is enriched with new integrated systems for ease of use and operation.

Controllers, sensors and measuring cell are pre-assembled on polypropylene panels, with small dimension. The only required operations are the link to the electric and hydraulic network.

The features of the PANELTEC series is a modular system, which can be expanded up to 4 measuring parameters and related controller.

The standardized solutions of the PANELTEC series meet the needs of the most advanced operators and can be integrated with additional modules for the dosing or analysis of specific parameters, configuring the system according to customer requirements



Paneltec with two (2) S461N Turbidity Cell (In-Out) and one (1) S494 Chlorine Sensor



Paneltec with two (2) S494 Chlorine, one (1) S461LT Turbidity Sensor and one (1) S401VG pH Electrode

Worldwide Distributor Network

Thanks to flexible and reliable instruments, user friendly solutions, high technical skills and continuous improvement, we are selected as an ideal partner and we fastly increase our International presence:



Chemitec srl

Via Isaac Newton 28
50018 Scandicci
Firenze (ITALY)
Phone +39 055 7576801
Fax +39 055 756697
sales@chemitec.it
www.chemitec.it

Chemitec Ltd

Room 901, Floor 9
108, Yuyuan Road
Shanghai (PRC)
Phone +86 021 3331 1193
Fax +86 021 3331 1193-808
info@chemitec.asia
www.chemitec.asia

Management System Certification





II. Sensors

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Legal notice

DOSATRONIC GmbH

Zuppingerstrasse 8

88213 Ravensburg / Germany

Phone: +49 (751) 2 95 12 – 0

Fax: +49 (751) 2 95 12 – 190

info@dosatronik.de

www.dosatronic.de

Registered office: Ravensburg HRB 552723

VAT Reg. No.: DE812973283

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Note

We are committed to continuously improving our products. The information provided in these Operating Instructions may occasionally be at variance with the product itself if technological are made or in order to comply with safety related requirements.



II. Sensors

2.3 Amperometric Sensors

2.3.1 DOSASens Chlorine Sensor CL2.2

Chlorine sensor with membrane-covered, amperometric 2-electrode system. For the measurement of free inorganic chlorine at constant pH.



Product description:

- Measurand(s): NaClO (sodium hypochlorite), Ca(ClO)₂ (calcium hypochlorite), Cl₂ (chlorine gas), chlorine generated by membrane-electrolysis
- Calibration: at the controller, via analytical chlorine determination by DPD-1 method
- Interferences: ClO₂ is being registered with factor 9 of its measured value; O₃ is registered; with membrane-less chlorine electrolysis interferences may occur
- resolution: 0,001; 0,01 ppm (depends on type)
- pH range: 6 ... 8
- Pressure range: 0 ... 1 bar, no pressure surges or fluctuations
- Temperature range: 0 ... 45 °C (no ice crystals in the measuring water)
- Integrated automatic temperature compensation (avoid temperature jumps!)
- Absence of the disinfectant: max. 24 h
- Response time: T₉₀ ca. 30 sec
- Flow rate: approx. 30 l/h, low flow-dependence
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug; for mA-version 2-pole terminal
- Material: PVC-U and semipermeable membrhmane

Einsatzgebiete:

- Salt or Seawater to about 26% salinity, free of surfactants and with constant pH

Lieferumfang:

- **CL2.2:** Sensor, Membrankappe, Elektrolyt

Bestellung:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
CL2.2N	0,05 ... 20,00	0,01	0 ... -2000 mV 1 kΩ	±5 ... ±15 VDC 10 mA	3326024
CL2.2MA2	0,005 ... 2,00	0,001	4 ... 20 mA	12 ... 30 VDC R _L 50Ω ... 900 R _L	3326032
CL2.2MA20	0,05 ... 20,00	0,01			3326013
CL2.2MA2-M12	0,005 ... 2,00	0,001			3326008
CL2.2MA20-M12	0,05 ... 20,00	0,01			3326009

Additional technical data:

Type:	Slope:	Connection :	Special characteristics :
CL2.2N	-100 mV/ppm	4-pin socket	-
CL2.2MA2	8,0 mA/ppm	2-pin terminal (2 x 1 mm ²)	Connection only to a controller with galvanically separated power supply .
CL2.2MA20	0,8 mA/ppm		
CL2.2MA2-M12	8,0 mA/ppm	5-pin M12 connector	
CL2.2MA20-M12	0,8 mA/ppm		

Spare parts:

Spare parts :	For sensor type:	Item number :
Membrane cap M20.2	CL2.2	9026001
Electrolyte ECL2.1 for CL2.2	CL2.2 (100 ml)	9026058

Accessories:

Type:	For sensor type :	Item number :
DOSA<i>Sens</i> Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSA<i>Sens</i> Sensor simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSA<i>Sens</i> Sensor simulator 4 ... 20 mA, current sensor	all sensors with mA signal	90249000
DOSA<i>Sens</i> mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105
DOSA<i>Control</i> Photometer for calibration	chlorine, total chlorine, isocyanuric, pH	90231000

2.3.2 DOSASens Chlorine Sensor CL4.2

Chlorine sensor with membrane-covered, amperometric 2-electrode system. For the measurement of free inorganic chlorine at constant pH.



Product description:

- Measurand(s): NaClO (sodium hypochlorite), Ca(ClO)₂ (calcium hypochlorite), Cl₂ (chlorine gas), chlorine generated by membrane-electrolysis
- Calibration: at the controller, via analytical chlorine determination by DPD-1 method
- Interferences: ClO₂ is being registered with factor 9 of its measured value; O₃ is registered; with membrane-less chlorine electrolysis interferences may occur
- pH range: 6 ... 8
- Pressure range: 0 ... 1 bar, no pressure surges or fluctuations
- Temperature range: 0 ... 45 °C (no ice crystals in measurement water)
- Integrated automatic temperature compensation
- Response time: T₉₀ ca. 30 seconds
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 30 l/h, low flow-dependence
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug; for mA-version 2-pole terminal, M12 male or Modbus RTU with M12 male
- Material: PVC-U and semipermeable membrane

Areas of application:

- Fresh water free of surfactants and with constant pH

Scope of supply:

- **DOSASens CL4.2:** sensor, membrane cap, electrolyte

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
CL4.2H	0.005 ... 2.000	0.001	0 ... -2000 mV 1 kΩ	±5 ... ±15 V DC 10 mA	3326210
CL4.2DW	0.005 ... 5.00	0.001			3326211
CL4.2N	0.05 ... 20.00	0.01			3326212
CL4.2L	0.5 ... 200.0	0.1			3326213
CL4.2H-An	0.005 ... 2.000	0.001			3326215
CL4.2N-An	0.05 ... 20.00	0.01			3326216
CL4.2L-An	0.5 ... 200.0	0.1			3326217
CL4.2H-M0c	0.005 ... 2.000	0.001	Modbus RTU	9 ... 30 V DC approx. 20 ... 56 mA	3326225
CL4.2N-M0c	0.05 ... 20.00	0.01			3326226
CL4.2L-M0c	0.5 ... 200.0	0.1			3326227

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
18-03-2019

Ordering data:

Type:	Measuring range:	Resolution: ppm	Output signal:	Power supply:	Item number:
CL4.2MA0,5	0.01 ... 0.50	0.01	4 ... 20 mA	12...30 VDC Ri: 50 ... 900 Ω	3326240
CL4.2MA2	0.01 ... 2.00	0.01			3326241
CL4.2MA5	0.01 ... 5.00	0.01			3326242
CL4.2MA10	0.01 ... 10.00	0.01			3326243
CL4.2MA20	0.01 ... 20.00	0.01			3326244
CL4.2MA-100	0.1 ... 100	0.1			3326245
CL4.2MA-200	0,1 ... 200	0,1			3326246
CL4.2MA0,5-M12	0.01 ... 0.50	0.01	4 ... 20 mA	12...30 VDC Ri: 50 ... 900 Ω	3326250
CL4.2MA2-M12	0.01 ... 2.00	0.01			3326251
CL4.2MA5-M12	0.01 ... 5.00	0.01			3326252
CL4.2MA10-M12	0.01 ... 10.00	0.01			3326253
CL4.2MA20-M12	0.01 ... 20.00	0.01			3326254
CL4.2MA-100-M12	0.1 ... 100	0.1			3326255
CL4.2MA-200-M12	0.1 ... 200	0.1			3326256

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
CL4.2H	-1000 mV/ppm	4-pole plug	Connection only to a controller with galvanically separated power supply.
CL4.2DW	-300 mV/ppm		
CL4.2N	-100 mV/ppm		
CL4.2L	-10 mV/ppm		
CL4.2H-An	-1000 mV/ppm		
CL4.2N-An	-100 mV/ppm		
CL4.2L-An	-10 mV/ppm		
CL4.2H-M0c	Modbus RTU	M12 male	
CL4.2N-M0c			
CL4.2L-M0c			
CL4.2MA0,5	32.0 mA/ppm	2-pole terminal	Connection only to a controller with galvanically separated power supply.
CL4.2MA2	8.0 mA/ppm		
CL4.2MA5	3.20 mA/ppm		
CL4.2MA10	1.6 mA/ppm		
CL4.2MA20	0.8 mA/ppm		
CL4.2MA-100	0.16 mA/ppm		
CL4.2MA-200	0.08 mA/ppm		

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
18-03-2019

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
CL4.2MA0,5-M12	32.0 mA/ppm	M12 male	-
CL4.2MA2-M12	8.0 mA/ppm		
CL4.2MA5-M12	3.20 mA/ppm		
CL4.2MA10-M12	1.6 mA/ppm		
CL4.2MA20-M12	0.8 mA/ppm		
CL4.2MA-100-M12	0.16 mA/ppm		
CL4.2MA-200-M12	0.08 mA/ppm		

Spare parts:

Spare part:	For sensor type:	Item number:
Membrane cap M20.2	CL4.2 all types	9026001
Electrolyte ECL1	CL4.2 all types	9026050

Accessories:

Type:	For sensor type:	Item number:
DOSA Sens Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSA Sens Sensor simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSA Sens Sensor simulator 4 ... 20 mA, current sensor	all sensors with mA signal	90249000
DOSA Sens mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105
DOSA Control Photometer for calibration	chlorine, total chlorine, isocyanuric, pH	90231000

2.3.3 DOSASens Chlorine Sensor CC1

Chlorine sensor with membrane-covered, amperometric 3-electrode system. For the measurement of free chlorine on the basis of iso-cyanuric acid, also in seawater.



Product description:

- Measurand(s): NaClO (sodium hypochlorite), Ca(ClO)₂ (calcium hypochlorite), Cl₂ (chlorine gas), electrolytically generated chlorine, and organic combined chlorine based on iso-cyanuric acid (tested up to an iso-cyanuric acid concentration of 500 mg/l)
- in the presence of isocyanuric acid, the sensor measures the total bound organic chlorine (within the isocyanuric acid) and the free chlorine already released from it
- Calibration: at the controller, via analytical chlorine determination by DPD 1 method. Observe the isocyanuric acid concentration when determining the free chlorine
- Interferences: ClO₂ is 100 % detected, O₃ is detected
- pH range: 4 ... 12, greatly reduced pH dependence
- Pressure range: 0... 0.5 bar, no pressure surges and/or fluctuations
- Temperature range: 0 ... 45 °C, (no ice crystals in test water allowed)
- Integrated automatic temperature compensation
- Response time: T₉₀ approx. 2 min.
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 30 l/h, low flow dependence
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug; for mA-version 2-pole terminal, M12 male or Modbus RTU with M12 male
- Material: PVC-U, PEEK, stainless steel 1.4571, microporous hydrophilic membrane

Areas of application:

- Fresh water and seawater; surfactants are tolerated in part

Scope of supply:

- **DOSASens Chlorine Sensor CC1:**
sensor, membrane cap, electrolyte for use in fresh water use

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
CC1H	0.005 ... 2.000	0.001	0 ... -2000 mV 1 kΩ	±5 ... ±15 V DC 10 mA	3326102
CC1N	0.05 ... 20.00	0.01			3326090
CC1H-An	0.005 ... 2.000	0.001	0 ... +2000 mV 1 kΩ	9 ... 30 V DC 20 ... 56 mA	3426600
CC1N-An	0.05 ... 20.00	0.01			3426601
CC1H-M0c	0.005 ... 2.000	0.001	Modbus RTU		3426610
CC1N-M0c	0.05 ... 20.00	0.01			3426611

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27-08-2018

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
CC1MA2	0.01 ... 2.00	0.01	4 ... 20 mA	12 ... 30 V DC R _L 50Ω ... R _L 900Ω	3326094
CC1MA5	0.01 ... 5.00	0.01			3326096
CC1MA10	0.01 ... 10.00	0.01			3326095
CC1MA20	0.01 ... 20.00	0.01			3326107
CC1MA2-M12	0.01 ... 2.00	0.01	4 ... 20 mA	12 ... 30 V DC R _L 50Ω ... R _L 900Ω	3426615
CC1MA5-M12	0.01 ... 5.00	0.01			3426616
CC1MA10-M12	0.01 ... 10.00	0.01			3426617
CC1MA20-M12	0.01 ... 20.00	0.01			3426618

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
CC1H	-1000 mV/ppm	4-pole plug	Connection only to a controller with galvanically separated power supply.
CC1N	-100 mV/ppm		
CC1H-An	-1000 mV/ppm		
CC1N-An	-100 mV/ppm		
CC1H-M0c	-1000 mV/ppm	M12 male	-
CC1N-M0c	-100 mV/ppm		
CC1MA2	8.0 mA/ppm	2-pole terminal	Connection only to a controller with galvanically separated power supply.
CC1MA5	3.2 mA/ppm		
CC1MA10	1.6 mA/ppm		
CC1MA20	0.8 mA/ppm		
CC1MA2-M12	8.0 mA/ppm	M12 male	
CC1MA5-M12	3.2 mA/ppm		
CC1MA10-M12	1.6 mA/ppm		
CC1MA20-M12	0.8 mA/ppm		

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
27-08-2018

Spare parts:

Spare part:	Item number:
Membrane cap M48.2	9026020
Electrolyte ECC1.1/GEL	9026075

Accessories:

Type:	For sensor type:	Item number:
DOSA<i>Sens</i> Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSA<i>Sens</i> Sensor simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSA<i>Sens</i> Simulator 4 ... 20 mA , current sensor	all sensors with mA signal	90249000
DOSA<i>Sens</i> mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105
DOSA<i>Control</i> Photometer for calibration	chlorine, total chlorine, isocyanuric, pH	90231000

2.3.4 DOSASens Chlorine Sensor CS4

Chlorine sensor with membrane-covered, amperometric 3-electrode system. For the measurement of free inorganic chlorine with reduced pH-dependence.



Product description:

- Measurand(s): NaClO (sodium hypochlorite), Ca(OCl)₂ (calcium hypochlorite), Cl₂ (chlorine gas), electrolytically generated chlorine
- Calibration: at the controller, via analytical chlorine determination by DPD-1 method
- Interferences: 75 % of ClO₂-concentration, 80 % of O₃-concentration, combined chlorine may increase the measuring value
- pH range: 4 ... 9
- Pressure range: 0 ... 3.0 bar, no pressure surges and/or fluctuations,
- Temperature range: 0 ... 45 °C
- Integrated automatic temperature compensation
- Response time: T₉₀ approx. 2 min.
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 30 l/h, low flow-dependence
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug; for mA-version 2-pole terminal, M12 male or Modbus RTU with M12 male
- Material: PVC-U, PEEK, stainless steel 1.4571, microporous hydrophilic membrane

Areas of application:

- Fresh water, surfactants are partially tolerated

Scope of supply:

- DOSASens Chlorine Sensor CS4:
sensor, membrane cap, electrolyte

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
CS4H	0.005 ... 2.000	0.001	0 ... -2000 mV 1 kΩ	±5 ... ±15 V DC 10 mA	3426300
CS4N	0.05 ... 20.00	0.01			3426301
CS4L	0.5 ... 200.0	0.1			3426302
CS4H-An	0.005 ... 2.000	0.001			3426320
CS4N-An	0.05 ... 20.00	0.01			3426321
CS4L-An	0.5 ... 200.0	0.1			3426322
CS4H-M0c	0.005 ... 2.000	0.001	ModBus RTU	9 ... 30 V DC 20 ... 56 mA	3426360
CS4N-M0c	0.05 ... 20.00	0.01			3426361
CS4L-M0c	0.5 ... 200.0	0.1			3426362

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
CS4MA2	0.01 ... 2.00	0.01	4 ... 20 mA	12...30 V DC R: 50Ω ... 900Ω	3426303
CS4MA5	0.01 ... 5.00	0.01			3426304
CS4MA10	0.01 ... 10.00	0.01			3426305
CS4MA20	0.01 ... 20.00	0.01			3426306
CS4MA200	0.5 ... 200.0	0.1			3426307
CS4MA2-M12	0.01 ... 2.00	0.01	4 ... 20 mA	12...30 V DC R: 50Ω ... 900Ω	3426313
CS4MA5-M12	0.01 ... 5.00	0.01			3426314
CS4MA10-M12	0.01 ... 10.00	0.01			3426315
CS4MA20-M12	0.01 ... 20.00	0.01			3426316
CS4MA200-M12	0.5 ... 200.0	0.1			3426317

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
CS4H	-1000 mV/ppm	4-pin plug	Connection only to a controller with galvanically separated power supply.
CS4N	-100 mV/ppm		
CS4L	-10 mV/ppm		
CS4H-An	-1000 mV/ppm		
CS4N-An	-100 mV/ppm		
CS4L-An	-10 mV/ppm		
CS4H-M1c	Modbus RTU	M12 female	Connection only to a controller with galvanically separated power supply.
CS4N-M1c			
CS4L-M1c			
CS4 MA2	8.0 mA/ppm	2-pole terminal	
CS4 MA5	3.2 mA/ppm		
CS4 MA10	1.6 mA/ppm		
CS4 MA20	0.8 mA/ppm		
CS4 MA200	0.08 mA/ppm		
CS4 MA2-M12	8.0 mA/ppm	M12 female	
CS4 MA5-M12	3.2 mA/ppm		
CS4 MA10-M12	1.6 mA/ppm		
CS4 MA20-M12	0.8 mA/ppm		
CS4 MA200-M12	0.08 mA/ppm		

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
27-08-2018

Spare parts:

Spare part:	For sensor type:	Item number:
Membrane cap M48.4E	CS4 all types	9026023
Electrolyte ECS2.1	CS4 all types	9026060

Accessories:

Type:	For sensor type:	Item number:
DOSA<i>Sens</i> Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSA<i>Sens</i> Sensor simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSA<i>Sens</i> Sensor simulator 4 ... 20 mA, current sensor	all sensors with mA signal	90249000
DOSA<i>Sens</i> mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105
DOSA<i>Control</i> Photometer for calibration	chlorine, total chlorine, isocyanuric, pH	90231000

2.3.5 DOSASens Chlorine Sensor CS4-...-SW

Chlorine sensor with membrane-covered, amperometric 3-electrode system. For the measurement of free inorganic chlorine with reduced pH-dependence in sea water.



Product description:

- Measurand(s): NaClO (sodium hypochlorite), Ca(OCl)₂ (calcium hypochlorite), Cl₂ (chlorine gas), electrolytically generated chlorine
- Calibration: at the controller, via analytical chlorine determination by DPD-1 method
- Interferences: 75 % of ClO₂-concentration, 80 % of O₃-concentration, combined chlorine may increase the measuring value
- pH range: 4 ... 9
- Pressure range: 0 ... 3.0 bar, no pressure surges and/or fluctuations,
- Temperature range: 0 ... 45 °C
- Integrated automatic temperature compensation
- Response time: T₉₀ approx. 2 min.
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 30 l/h, low flow-dependence
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug; for mA-version 2-pole terminal, M12 male or Modbus RTU with M12 male
- Material: PVC-U, PEEK, stainless steel 1.4571, microporous hydrophilic membrane

Areas of application:

- Sea water at 10 µS/cm ... 50 mS/cm, surfactants are partially tolerated

Scope of supply:

- DOSASens Chlorine Sensor CS4-...-SW: sensor, membrane cap, electrolyte

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
CS4H-SW	0.005 ... 2.000	0.001	0 ... -2000 mV 1 kΩ	±5 ... ±15 V DC 10 mA	3426900
CS4N-SW	0.05 ... 20.00	0.01			3426901
CS4L-SW	0.5 ... 200.0	0.1			3426902
CS4H-An-SW	0.005 ... 2.000	0.001		9 ... 30 V DC 20 ... 56 mA	3426920
CS4N-An-SW	0.05 ... 20.00	0.01			3426921
CS4L-An-SW	0.5 ... 200.0	0.1			3426922
CS4H-M0c-SW	0.005 ... 2.000	0.001	ModBus RTU	3426960	
CS4N-M0c-SW	0.05 ... 20.00	0.01		3426961	
CS4L-M0c-SW	0.5 ... 200.0	0.1		3426962	

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28-08-2018

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
CS4MA2-SW	0.01 ... 2.00	0.01	4 ... 20 mA	12...30 V DC R: 50Ω ... 900Ω	3426903
CS4MA5-SW	0.01 ... 5.00	0.01			3426904
CS4MA10-SW	0.01 ... 10.00	0.01			3426905
CS4MA20-SW	0.01 ... 20.00	0.01			3426906
CS4MA200-SW	0.5 ... 200.0	0.1			3426907
CS4MA2-M12-SW	0.01 ... 2.00	0.01	4 ... 20 mA	12...30 V DC R: 50Ω ... 900Ω	3426913
CS4MA5-M12-SW	0.01 ... 5.00	0.01			3426914
CS4MA10-M12-SW	0.01 ... 10.00	0.01			3426915
CS4MA20-M12-SW	0.01 ... 20.00	0.01			3426916
CS4MA200-M12-SW	0.5 ... 200.0	0.1			3426917

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
CS4H-SW	-1000 mV/ppm	4-pin plug	Connection only to a controller with galvanically separated power supply.
CS4N-SW	-100 mV/ppm		
CS4L-SW	-10 mV/ppm		
CS4H-An-SW	-1000 mV/ppm		
CS4N-An-SW	-100 mV/ppm		
CS4L-An-SW	-10 mV/ppm		
CS4H-M1c-SW	Modbus RTU	M12 female	
CS4N-M1c-SW			
CS4L-M1c-SW			
CS4 MA2-SW	8.0 mA/ppm	2-pole terminal	Connection only to a controller with galvanically separated power supply.
CS4 MA5-SW	3.2 mA/ppm		
CS4 MA10-SW	1.6 mA/ppm		
CS4 MA20-SW	0.8 mA/ppm		
CS4 MA200-SW	0.08 mA/ppm		
CS4 MA2-M12-SW	8.0 mA/ppm	M12 female	
CS4 MA5-M12-SW	3.2 mA/ppm		
CS4 MA10-M12-SW	1.6 mA/ppm		
CS4 MA20-M12-SW	0.8 mA/ppm		
CS4 MA200-M12-SW	0.08 mA/ppm		

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
28-08-2018

Spare parts:

Spare part:	For sensor type:	Item number:
Membrane cap M48.4S	CS4 all types, for use in sea water	9026026
Electrolyte ECS2.1	CS4 all types	9026060

Accessories:

Type:	For sensor type:	Item number:
DOSA <i>Sens</i> Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSA <i>Sens</i> Sensor simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSA <i>Sens</i> Sensor simulator 4 ... 20 mA, current sensor	all sensors with mA signal	90249000
DOSA <i>Sens</i> mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105
DOSA <i>Control</i> Photometer for calibration	chlorine, total chlorine, isocyanuric, pH	90231000

2.3.6 DOSASens Chlorine Sensor AS2, AS3

Sensor for the measurement of free, inorganic chlorine with open measuring cell. Optional with cleaning device.



Produktbeschreibung:

- Measurand(s): free chlorine made of chlorine bleaching or chlorine gas and electrolytically generated chlorine
- Calibration: at the controller, via analytical determination by DPD-1 method,
- Interferences: ozone, chlorine dioxide, chlorite are also registered
- pH range: 5 ... 9
- Pressure range: 0 ... 8 bar
- Temperature range: 0 ... 50 °C (AS2), 0 ... 70 °C (AS3)
- Integrated automatic temperature compensation
- Response time: T_{90} approx. 30 s
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 30 l/h (with RV1 increased to approx. 45 l/h)
- with the cleaning device (RV1) there is a restriction of the measuring range to 0,7 or 7 ppm
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug; for mA-version 2-pole terminal, M12 male or Modbus RTU with M12 male
- Material: PVC-U (AS2), PEEK (AS3)

Areas of application:

- Fresh water, especially drinking water, up to max. 70 °C

Scope of supply:

- DOSASens Chlorine Sensor AS2, AS3:
sensor, electrolyte hull, electrolyt

Ordering data:

Type: (up to 50°C)	Measuring range*: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
AS2H-CL	0.005 ... approx.. 2,00	0.001	0 ... -2000 mV 1 kΩ	±5 ... ± 15 V DC 10 mA	3326128
AS2N-CL	0.03 ... approx. 20.00	0.01			3326110
AS2H-CL-An	0.005 ... approx. 2.00	0.001		9 ... 30 V DC 20 ... 56 mA	3426750
AS2N-CL-An	0.03 ... approx. 10.00	0.01			3426751
AS2H-CL-M0c	0.005 ... approx. 2.00	0.001	Modbus RTU		3426770
AS2N-CL-M0c	0.03 ... approx. 20.00	0.01			3426771

Ordering data:

Type: (up to 50°C)	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
AS2MA1-CL	0.03 ... approx. 1.00	0.01	4 ... 20 mA	12 ... 30 V DC RL 50Ω ... RL 900Ω	3326111
AS2MA2-CL	0.03 ... approx. 2.00	0.01			3326113
AS2MA5-CL	0.03 ... approx. 5.00	0.01			3326112
AS2MA10-CL	0.03 ... approx. 10.00	0.01			3326115
AS2MA20-CL	0.03 ... approx. 20.00	0.01			3326116
AS2MA1-CL-M12	0.03 ... approx. 1.00	0.01			3426790
AS2MA2-CL-M12	0.03 ... approx. 2.00	0.01			3426791
AS2MA5-CL-M12	0.03 ... approx. 5.00	0.01			3426792
AS2MA10-CL-M12	0.03 ... approx. 10.00	0.01			3426793
AS2MA20-CL-M12	0.03 ... approx. 20.00	0.01			3426794
Type: (up to 70°C)	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
AS3H-CL	0.005 ... approx. 2.00	0.001	0 ... -2000 mV 1 kΩ	±5 ... ± 15 V DC 10 mA	3326126
AS3N-CL	0.03 ... approx. 20.00	0.01			3326120
AS3H-CL-An	0.005 ... approx. 2.00	0.001		9 ... ± 30 V DC 20 ... 56 mA	3426700
AS3N-CL-An	0.03 ... approx. 20.00	0.01			3426701
AS3H-CL-M0c	0.005 ... approx. 2.00	0.001	Modbus RTU	9 ... ± 30 V DC 20 ... 56 mA	3426720
AS3N-CL-M0c	0.03 ... approx. 20.00	0.01			3426721
AS3MA1-CL	0.03 ... approx. 1.00	0.01	4 ... 20 mA	12 ... 30 VDC RL 50Ω ... RL 900Ω	3326121
AS3MA2-CL	0.03 ... approx. 2.00	0.01			3326123
AS3MA5-CL	0.03 ... approx. 5.00	0.01			3326122
AS3MA10-CL	0.03 ... approx. 10.00	0.01			3326125
AS3MA20-CL	0.03 ... approx. 20.00	0.01			3326127
AS3MA1-CL-M12	0.03 ... approx. 1.00	0.01			3426740
AS3MA2-CL-M12	0.03 ... approx. 2.00	0.01			3426741
AS3MA5-CL-M12	0.03 ... approx. 5.00	0.01			3426742
AS3MA10-CL-M12	0.03 ... approx. 10.00	0.01			3426743
AS3MA20-CL-M12	0.03 ... approx. 20.00	0.01			3426744

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29-08-2018

Additional technical data:

Type: (up to 50°C)	Slope:	Connection:	Special characteristics:
AS2H-CL	-1000 mV/ppm	4-pin plug	Connection only to a controller with galvanically separated power supply.
AS2N-CL	-100 mV/ppm		
AS2H-CL-An	-1000 mV/ppm		
AS2N-CL-An	-100 mV/ppm		
AS2H-CL-M0c	Modbus RTU	M12 female	
AS2N-CL-M0c			
AS2MA1-CL	16 mA/ppm	2 pole terminal	Connection only to a controller with galvanically separated power supply.
AS2MA2-CL	8.0 mA/ppm		
AS2MA5-CL	3.2 mA/ppm		
AS2MA10-CL	1.6 mA/ppm		
AS2MA20-CL	0.8 mA/ppm		
AS2MA1-CL-M12	16 mA/ppm	M12 female	
AS2MA2-CL-M12	8.0 mA/ppm		
AS2MA5-CL-M12	3.2 mA/ppm		
AS2MA10-CL-M12	1.6 mA/ppm		
AS2MA20-CL-M12	0.8 mA/ppm		
Type: (up to 70°C)	Slope:	Connection:	Special characteristics:
AS3H-CL	-1000 mV/ppm	4-pole plug	Connection only to a controller with galvanically separated power supply.
AS3N-CL	-100 mV/ppm		
AS3H-CL-An	-1000 mV/ppm		
AS3N-CL-An	-100 mV/ppm		
AS3H-CL-M0c	Modbus RTU	M12 male	-
AS3N-CL-M0c			
AS3MA1-CL	16 mA/ppm	2-pole terminal	Connection only to a controller with galvanically separated power supply.
AS3MA2-CL	8.0 mA/ppm		
AS3MA5-CL	3.2 mA/ppm		
AS3MA10-CL	1.6 mA/ppm		
AS3MA20-CL	0.8 mA/ppm		
AS3MA1-CL-M12	16 mA/ppm	M12 male	
AS3MA2-CL-M12	8.0 mA/ppm		
AS3MA5-CL-M12	3.2 mA/ppm		
AS3MA10-CL-M12	1.6 mA/ppm		
AS3MA20-CL-M12	0.8 mA/ppm		

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29-08-2018

Spare parts:

Spare part:	For sensor type:	Item number:
Abrasive paper S3	AS (all types),	9026103
Electrolyte hull PVC	AS2 (all types)	9026154
Electrolyte hull PEEK	AS3 (all types)	9026220
Electrolyte EAS1/Gel	AS (all types)	9026066

Accessories:

Type:	For sensor:	Item number:
DOSA Sens Cleaning device RV1	AS (all types), *with RV1 there is a restriction of the measuring range to 0,7 or 7 ppm	9026180
DOSA Sens Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSA Sens Sensor simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSA Sens Sensor simulator 4 ... 20 mA, current sensor	all sensors with mA signal	90249000
DOSA Sens mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105
DOSA Control Photometer for calibration	chlorine, total chlorine, isocyanuric, pH	90231000

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29-08-2018

2.3.7 DOSASens Chlorine Sensor CP4.0

Chlorine sensor with membrane-covered, amperometric 3-electrode system. For the measurement of total chlorine with greatly reduced pH-dependence.



Product description:

- Measurand(s): NaClO (sodium hypochlorite), Ca(ClO)₂ (calcium hypochlorite), Cl₂ (chlorine gas), electrolytically generated chlorine
- Calibration: at the controller, via analytical chlorine determination by DPD-4 method (DPD-1 + DPD-3)
- Interferences: ClO₂ is registered with 100 %, O₃ is measured with a slope of approx. 130% (factor 1.3 with regard to the chlorine slope)
- Resolution: depending on the sensor type 0.1 ... 0.001 ppm
- pH range: 4 ... 12 (linear decrease with approx. 5 % per increasing pH-unit)
- Pressure range:
 - 0.5 bar, no pressure surges and/or fluctuations (without securing collar)
 - 3,0 bar, no pressure surges and/or fluctuations (with securing collar)
- Temperature range: 0 ... 45 °C (no ice crystals are allowed in the water)
- Sensor with automatic temperature compensation
- Response time: T₉₀ approx. 3 min.
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 15 ... 30 l/h, low flow-dependence
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug; for mA-version 2-pole terminal, M12 male, or Modbus RTU with M12 male
- Material: microporous hydrophilic membrane, PVC-U, Peek, stainless steel 1.4571

Areas of Application:

- Swimming-pool-, drinking-water, surfactants are partially tolerated

Scope of supply:

- **DOSASens Chlorine Sensor CP4.0:**
sensor, membrane cap, electrolyte

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
CP4.0H	0,005 ... 2,000	0,001 ppm	0 ... -2000 mV/ 1 kΩ	±5 ... ± 15 V DC 10 mA	3226300
CP4.0N	0,05 ... 20,00	0,01 ppm			3226301
CP4.0MA0,5	0,05 ... 0,50	0,01 ppm	4 ... 20 mA	12 ... 30 V DC Ri: 50Ω ... 900Ω	3226310
CP4.0MA2	0,01 ... 2,00	0,01 ppm			3226311
CP4.0MA5	0,01 ... 5,00	0,01 ppm			3226312
CP4.0MA10	0,01 ... 10,00	0,01 ppm			3226313
CP4.0MA20	0,01 ... 20,00	0,01 ppm			3226314

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28-08-2018

Ordering data:

Typ:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
CP4.0MA0,5-M12	0,05 ... 0,50	0,01 ppm	4 ... 20 mA	12 ... 30 V DC R _i : 50Ω ... 900Ω	3226320
CP4.0MA2-M12	0,01 ... 2,00	0,01 ppm			3226321
CP4.0MA5-M12	0,01 ... 5,00	0,01 ppm			3226322
CP4.0MA10-M12	0,01 ... 10,00	0,01 ppm			3226323
CP4.0MA20-M12	0,01 ... 20,00	0,01 ppm			3226324
CP4.0H-An	0,005 ... 2,000	0,001	0 ... -2000 mV/ (max. -2500 mV) 1 kΩ	9 ... 30 V DC ca. 20 ... 56 mA	3226330
CP4.0N-An	0,05 ... 20,00	0,01			3226331
CP4.0H-M0c	0,005 ... 2,000	0,001	Modbus RTU		3226340
CP4.0N-M0c	0,05 ... 20,00	0,01			3226341

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
CP4.0H	-1000 mV/ppm	4-pin plug	Connection only to a controller with galvanically separated power supply.
CP4.0N	-100 mV/ppm		
CP4.0MA0,5	32.0 mA/ppm	2-pole terminal	
CP4.0MA2	8.0 mA/ppm		
CP4.0MA5	3.2 mA/ppm		
CP4.0MA10	1.6 mA/ppm		
CP4.0MA20	0.8 mA/ppm		
CP4.0MA0,5-M12	32.0 mA/ppm		
CP4.0MA2-M12	8.0 mA/ppm		
CP4.0MA5-M12	3.2 mA/ppm		
CP4.0MA10-M12	1.6 mA/ppm		
CP4.0MA20-M12	0.8 mA/ppm		
CP4.0H-An	-1000 mV/ppm	4-pin plug	
CP4.0N-An	-100 mV/ppm		
CP4.0H-M0c	Modbus RTU	5-pin plug	
CP4.0N-M0c			

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
28-08-2018

Spare parts:

Spare part:	For sensor type:	Item number:
Membrane cap M48.4E	CP4.0	9026023
Electrolyte ECP1.4/GEL salt water)	CP4.0	9026074

Accessories:

Type:	For sensor type:	Item number:
DOSA Sens Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSA Sens Sensor simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSA Sens Sensor simulator 4 ... 20 mA, current sensor	all sensors with mA signal	90249000
DOSA Sens mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105
DOSA Control Photometer for calibration	chlorine, total chlorine, isocyanuric, pH	90231000

2.3.8 DOSASens Chlorine Sensor CP4.0-SW

Chlorine sensor with membrane-covered, amperometric 3-electrode system. For the measurement of total chlorine with greatly reduced pH-dependence. Suitable for Seawater.



Product description:

- Measurand(s): NaClO (sodium hypochlorite), Ca(ClO)₂ (calcium hypochlorite), Cl₂ (chlorine gas), electrolytically generated chlorine
- Calibration: at the controller, via analytical chlorine determination by DPD-4 method (DPD-1 + DPD-3)
- Interferences: ClO₂ is registered with 100 %, O₃ is measured with a slope of approx. 130% (factor 1.3 with regard to the chlorine slope)
- Resolution: depending on the sensor type 0.1 ... 0.001 ppm
- pH range: 4 ... 12 (linear decrease with approx. 5 % per increasing pH-unit)
- Pressure range:
 - 0.5 bar, no pressure surges and/or fluctuations (without securing collar)
 - 3,0 bar, no pressure surges and/or fluctuations (with securing collar)
- Temperature range: 0 ... 45 °C (no ice crystals are allowed in the water)
- Sensor with automatic temperature compensation
- Response time: T₉₀ approx. 5 min.
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 15 ... 30 l/h, low flow-dependence
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug; for mA-version 2-pole terminal, M12 male, or Modbus RTU with M12 male
- Material: microporous hydrophilic membrane, PVC-U, Peek, stainless steel

Areas of Application:

- Seawater, brine (15 % NaCl) surfactants are partially tolerated

Scope of supply:

- DOSASens Chlorine Sensor CP4.0-SW: sensor, membrane cap, electrolyte

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
CP4.0H-SW	0,005 ... 2,000	0,001	0 ... -2000 mV/ 1 kΩ	±5 ... ± 15 V DC 10 mA	3226350
CP4.0N-SW	0,05 ... 20,00	0,01			3226351
CP4.0MA0,5-SW	0,05 ... 0,50	0,01	4 ... 20 mA	12 ... 30 V DC R _L : 50Ω ... 900Ω	3226360
CP4.0MA2-SW	0,01 ... 2,00	0,01			3226361
CP4.0MA5-SW	0,01 ... 5,00	0,01			3226362
CP4.0MA10-SW	0,01 ... 10,00	0,01			3226363
CP4.0MA20-SW	0,01 ... 20,00	0,01			3226364

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08-04-2019

Ordering data:

Typ:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
CP4.0MA0,5-SW-M12	0,05 ... 0,50	0,01	4 ... 20 mA	12 ... 30 V DC R _i : 50Ω ... 900Ω	3226370
CP4.0MA2-SW-M12	0,01 ... 2,00	0,01			3226371
CP4.0MA5-SW_M12	0,01 ... 5,00	0,01			3226372
CP4.0MA10-SW-M12	0,01 ... 10,00	0,01			3226373
CP4.0MA20-SW-M12	0,01 ... 20,00	0,01			3226374
CP4.0H-An-SW	0,005 ... 2,000	0,001	0 ... -2000 mV/ (max. -2500 mV) 1 kΩ	9 ... 30 V DC ca. 20 ... 56 mA	3226380
CP4.0N-An-SW	0,05 ... 20,00	0,01			3226381
CP4.0H-M0c-SW	0,005 ... 2,000	0,001	Modbus RTU		3226390
CP4.0N-M0c-SW	0,05 ... 20,00	0,01			3226391

Additional technical data:

Type:	Slope:	Conductivity: μS/cm (brine)	Connection:	Special characteristics:	
CP4.0H-SW	-1000 mV/ppm	approx. 10 ... 200	4-pin plug	Connection only to a controller with galvanically separated power supply.	
CP4.0N-SW	-100 mV/ppm				
CP4.0MA0,5-SW	32,0 mA/ppm		2-pole terminal		
CP4.0MA2-SW	8,0 mA/ppm				
CP4.0MA5-SW	3,2 mA/ppm				
CP4.0MA10-SW	1,6 mA/ppm				
CP4.0MA20-SW	0,8 mA/ppm				
CP4.0MA0,5-SW-M12	32,0 mA/ppm				
CP4.0MA2-SW-M12	8,0 mA/ppm		M12 female		
CP4.0MA5-SW-M12	3,2 mA/ppm				
CP4.0MA10-SW-M12	1,6 mA/ppm				
CP4.0MA20-SW-M12	0,8 mA/ppm				
CP4.0H-An-SW	-1000 mV/ppm				4-pin plug
CP4.0N-An-SW	-100 mV/ppm				
CP4.0H-M0c-SW	Modbus RTU	5-pin plug			
CP4.0N-M0c-SW					

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08-04-2019

Spare parts:

Spare part:	For sensor type:	Item number:
Membrane cap M48.4S	CP4.0-SW	9026026
Electrolyte ECP1.4/GEL (Solewasser)	CP4.0 all	9026074

Accessories:

Type:	For sensor type:	Item number:
DOSASens Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSASens Sensor simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSASens Sensor simulator 4 ... 20 mA, current sensor	all sensors with mA signal	90249000
DOSASens mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105
DOSAControl Photometer for calibration	chlorine, total chlorine, isocyanuric, pH	90231000

2.3.9 DOSASens Chlorine Sensor CN1.1

Checks for the absence of chlorine in drinking water in order to protect equipment; operating period in water without chlorine maximum four weeks.



Product description:

- Measurand(s): NaOCl (sodium hypochlorite), Cl₂ (chlorine gas), electrolytically generated chlorine
- Examination: by means of analytic determination of chlorine by DPD 1 method
Calibrate the sensor with chlorinated water, establish a separate measurement circuit if required
- Interferences: ClO₂, O₃, bound chlorine may increase the value measured, reducing agent may cause slope loss
- Resolution: 0.001 ppm
- pH range: 6.5 ... 9
- Pressure range: 0... 0.5 bar, no pressure surges and/or fluctuations
- Temperature range: 0 ... 40 °C, (not any ice cristall in water)
- Integrated automatic temperature compensation
- Response time: T₉₀ approx. 2 min
- Absence of the disinfectant: max. 4 weeks
- Flow rate: approx. 30 l/h, low flow dependence
- Shaft length: standard 195 mm, and 205 mm (Modbus version)
- Connection: standard 4-pole plug, Modbus RTU M12 male
- Material: PVC-U, PEEK, stainless steel 1.4571, microporous membrane

Areas of application:

- Check for the absence of chlorine in water

Scope of supply:

- **DOSASens Chlorine Sensor CN1.1:**
sensor, membrane cap, electrolyte

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
CN1.1H-An	0.005 ... 2.000	0.001	0 ... -2000 mV (max. -2500 mV) 1 kΩ	9 ... 30 VDC approx. 20 ... 56 mA	3326620
CN1.1N-An	0.05 ... 20	0.1			3326621
CN1.1H-M0c	0.005 ... 2.000	0.001	Modbus RTU		3326610
CN1.1N-M0c	0.05 ... 20.00				3326612

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
CN1.1H-An	-1000 mV/ppm	4-pole plug	
CN1.1N-An	-100 mV/ppm		
CN1.1H-M0c	Modbus RTU	M12 male	
CN1.1H-M0c	Modbus RTU		

Spare parts:

Spare part:	For sensor type:	Item number:
Membrane cap M48.2G	CN1.1 (all types)	9026021
Electrolyte EMST1/GEL	CN1.1 (all types)	9026053

Accessories:

Type:	For sensor type:	Item number:
DOSA <i>Sens</i> Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSA <i>Sens</i> Sensor simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSA <i>Sens</i> Sensor simulator 4 ... 20 mA, current sensor	all sensors with mA signal	90249000
DOSA <i>Sens</i> mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105
DOSA <i>Control</i> Photometer for calibration	chlorine, total chlorine, isocyanuric, pH	90231000

2.3.10 DOSASens Chlorine dioxide Sensor CD4.2

Sensor for the measurement of chlorine dioxide. Membrane-covered, amperometric 2-electrode system.



Product description:

- Measurand(s): chlorine dioxide
- Calibration: at the controller, am Controller, via analytical chlorine-dioxide determination by DPD-1 method
- Interferences: Cl₂ is being registered with factor 0,03 of ist measured value, O₃ is also registered
- pH range: 1 ... 11
- Pressure range: 0 ... 1 bar, no pressure surges and/or fluctuations
- Temperature range: 0 ... 45 °C (no ice crystals in measurement water)
- Integrated automatic temperature compensation
- Response time: T₉₀ approx. 15 s
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 30 l/h, low flow-dependence
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version),
- Connection: standard 4-pole plug; for mA-version 2-pole terminal, M12 male or Modbus RTU with M12 male
- Material: PVC-U, semipermeable membrane

Areas of application:

- Fresh water, surfactants must not be contained

Scope of supply:

- DOSASens Chlorine dioxide Sensor CD4.2: sensor, membrane cap, electrolyte

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
CD4.2H	0.005 ... 2.000	0.001	0 ... -2000 mV 1 kΩ	±5 ... ±15 VDC 10 mA	3326450
CD4.2N	0.05 ... 20.00	0.01			3326451
CD4.2H-An	0.005 ... 2.000	0.001		9 ... 30 VDC 20 ... 56 mA	3326455
CD4.2N-An	0.05 ... 20.00	0.01			3326456
CD4.2H-M0c	0.005 ... 2.000	0.001	Modbus RTU		3326465
CD4.2N-M0c	0.05 ... 20.00	0.01			3326466
CD4.2MA0,5	0.005 ... 0.500	0.001	4 ... 20 mA	12 ... 30 VDC RL 50Ω ... 900Ω	3326480
CD4.2MA2	0.05 ... 2.00	0.01			3326481
CD4.2MA5	0.05 ... 5.00	0.01			3326482
CD4.2MA10	0.05...10.00	0.01			3326483
CD4.2MA0,5-M12	0.005 ... 0.500	0.001			3326490

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
CD4.2MA2-M12	0.05 ... 2.00	0.01	4 ... 20 mA	12 ... 30 VDC RL 50Ω ... 900Ω	3326491
CD4.2MA5-M12	0.05 ... 5.00	0.01			3326492
CD4.2MA10-M12	0.05...10.00	0.01			3326493

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
CD4.2H	-1000 mV/ppm	4-pin plug	Connection only to a controller with galvanically separated power supply
CD4.2N	-100 mV/ppm		
CD4.2H-An	-1000 mV/ppm		
CD4.2N-An	-100 mV/ppm		
CD4.2H-M0c	Modbus RTU	M12 female	Connection only to a controller with galvanically separated power supply
CD4.2N-M0c			
CD4.2MA0.5	32.0 mA/ppm	2 pole terminal	
CD4.2MA2	8.0 mA/ppm		
CD4.2MA5	3.2 mA/ppm		
CD4.2MA10	1.6 mA/ppm		
CD4.2MA0.5-M12	32.0 mA/ppm	M12 female	
CD4.2MA2-M12	8.0 mA/ppm		
CD4.2MA5-M12	3.2 mA/ppm		
CD4.2MA10-M12	1.6 mA/ppm		

Spare parts:

Spare part:	for sensor type:	Item number:
Membrane cap M20.2	CD4.2 (all types)	9026001
Electrolyte ECD4 – ECD7/W	CD4.2 (all types)	9026073

Accessories:

Type:	for sensor:	Item number:
DOSA <i>Sens</i> Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSA <i>Sens</i> Sensor simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSA <i>Sens</i> Sensor simulator 4 ... 20 m, current sensor	all sensors with mA signal	90249000
DOSA <i>Sens</i> mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105
DOSA <i>Control</i> Photometer for calibration	chlorine, total chlorine, isocyanuric, pH, chlorine dioxide	90231060

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
29-08-2018

2.3.11 DOSASens Chlorine dioxide Sensor CD7

Sensor for the measurement of chlorine dioxide, amperometric 2-electrode system with surfactant-resistant membrane.



Product description:

- Measurand(s): Chlorine dioxide
- Calibration: at the controller, via analytical chlorine dioxide determination by DPD-1 method
- Interferences: O₃ is measured with a 25-times higher sensitivity as ClO₂, Cl₂ does not interfere
- pH range: 1 ... 11
- Pressure range: 0 ... 1 bar, no pressure surges and/or fluctuations
- Temperature range: 0 ... 50 °C, (no ice crystals in test water allowed)
- Integrated automatic temperature compensation
- Response time: T₉₀ approx. 90s
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 30 l/h, low flow-dependence
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug; for mA-version 2-pole terminal, M12 male or Modbus RTU with M12 male
- Material: PVC-U, stainless steel 1.4571, semipermeable membrane

Areas of application:

- All types of water treatment

Scope of supply:

- DOSASens Chlorine dioxide Sensor CD7:
sensor, membrane cap, electrolyte

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
CD7H	0.005 ... 2.000	0.001	0 ... -2000 mV 1 kΩ	±5 ... ±15 VDC 10 mA	3326049
CD7N	0.05 ... 20.00	0.01			3326044
CD7L	0.5 ... 200.0	0.1			3326087
CD7H-An	0.005 ... 2.000	0.001		9 ... 30 VDC 20 ... 56 mA	3326560
CD7N-An	0.05 ... 20.00	0.01			3326561
CD7L-An	0.5 ... 200.0	0.1			3326562
CD7H-M0c	0.005 ... 2.000	0.001	Modbus RTU		3226620
CD7N-M0c	0.05 ... 20.00	0.01			3226621
CD7L-M0c	0.5 ... 200.0	0.1			3226622

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18-10-2018

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
CD7MA0.5	0 ... 0.50	0.01	4 ... 20 mA	12 ... 30 VDC RL 50Ω ... 900Ω	3326045
CD7MA2	0 ... 2.00	0.01			3326046
CD7MA5	0 ... 5.00	0.01			3326047
CD7MA10	0 ... 10.00	0.01			3326048
CD7MA20	0 ... 20.00	0.01			3326086
CD7MA200	0.5 ... 200.00	0.1			3326104
CD7MA0.5-M12	0 ... 0.50	0.01			3226610
CD7MA2-M12	0 ... 2.00	0.01			3226611
CD7MA5-M12	0 ... 5.00	0.01			3226612
CD7MA10-M12	0 ... 10.00	0.01			3226613
CD7MA20-M12	0 ... 20.00	0.01			3226614
CD7MA200-M12	0.5 ... 200.00	0.1			3226615

Additional technical data:

Typ:	Slope:	Connection:	Special characteristics:
CD7H	-1000 mV/ppm	4-pin plug	Connection only to a controller with galvanically separated power supply.
CD7N	-100 mV/ppm		
CD7L	-10 mV/ppm		
CD7H-An	-1000 mV/ppm		
CD7N-An	-100 mV/ppm		
CD7L-An	-10 mV/ppm		
CD7H-M0c	Modbus RTU	M12 female	
CD7N-M0c			
CD7L-M0c			
CD7MA0.5	32.0 mA/ppm	2 pole terminal	
CD7MA2	8.0 mA/ppm		
CD7MA5	3.2 mA/ppm		
CD7MA10	1.6 mA/ppm		
CD7MA20	0.8 mA/ppm		
CD7MA200	0.08 mA/ppm		
CD7MA0.5-M12	32.0 mA/ppm	M12 female	
CD7MA2-M12	8.0 mA/ppm		
CD7MA5-M12	3.2 mA/ppm		
CD7MA10-M12	1.6 mA/ppm		
CD7MA20-M12	0.8 mA/ppm		
CD7MA200-M12	0.08 mA/ppm		

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18-10-2018

Spare parts:

Spare part:	for sensor:	Item number:
DOSA<i>Sens</i> Membrane cap M7.1N	CD7 (all types except CD7L + CD7 MA200)	9026010
DOSA<i>Sens</i> Membrane cap M7.1L	CD7L + DC7 MA200	9026012
DOSA<i>Sens</i> Electrolyte ECD4 - ECD7/W	CD7 (all types)	9026073

Accessories:

Type:	for sensor :	Item number:
DOSA<i>Sens</i> Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSA<i>Sens</i> Sensor simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSA<i>Sens</i> Sensor simulator 4 ... 20 mA, current sensor	all sensors with mA signal	90249000
DOSA<i>Sens</i> mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105
DOSA<i>Control</i> Photometer for calibration	chlorine, total chlorine, isocyanuric, pH, chlorine dioxide	90231060

2.3.12 DOSASens Chlorine dioxide Sensor CD10

Sensor for the measurement of chlorine dioxide. Membrane-covered, amperometric, 2-electrode measuring system.



Product description:

- Measurand(s): chlorine dioxide
- Calibration: at the controller, via analytical chlorine dioxide determination by DPD-1 method
- Interferences: Cl₂ does not interfere, O₃ is measured with factor 25 to ClO₂
- pH range: 2 ... 11
- Pressure range: 0 ... 1 bar, no pressure surges and/or fluctuations
- Temperature range: 0 ... 50 °C, (not any ice crystal in water)
- Integrated automatic temperature compensation
- Response time: T₉₀ approx. 60 s
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 30 l/h, low flow-dependence
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug; for mA-version 2-pole terminal, M12 male or Modbus RTU with M12 male
- Material: PVC-U, semipermeable membrane

Areas of application:

- Fresh water, surfactants will be tolerated

Scope of supply:

- **DOSASens Chlorine dioxide Sensor CD10:** sensor, membrane cap, electrolyte

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
CD10H	0.005 ... 2.000	0.001	0 ... -2000 mV 1 kΩ	±5 ... ±15 VDC 10 mA	3426200
CD10N	0.05 ... 20.00	0.01			3426201
CD10H-An	0.005 ... 2.000	0.001		9 ... 30 VDC 20 ... 56 mA	3426210
CD10N-An	0.05 ... 20.00	0.01			3426211
CD10H-M0c	0.005 ... 2.000	0.001	Modbus RTU		3426220
CD10N-M0c	0.05 ... 20.00	0.01			3426221
CD10MA2	0.005 ... 2.000	0.001	4 ... 20 mA	12 ... 30 VDC RL 50Ω ... 900Ω	3426205
CD10MA5	0.05 ... 5.00	0.01			3426206
CD10MA10	0.05...10.00	0.01			3426207
CD10MA20	0.05...20.00	0.01			3426208

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
CD10MA2-M12	0.005 ... 2.000	0.001	4 ... 20 mA	12 ... 30 VDC RL 50Ω ... 900Ω	3426230
CD10MA5-M12	0.05 ... 5.00	0.01			3426231
CD10MA10-M12	0.05...10.00	0.01			3426232
CD10MA20-M12	0.05...20.00	0.01			3426233

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
CD10H	-1000 mV/ppm	4-pin plug	Connection only to a controller with galvanically separated power supply.
CD10N	-100 mV/ppm		
CD10H-An	-1000 mV/ppm		
CD10N-An	-100 mV/ppm		
CD10H-M0c	Modbus RTU	M12 female	-
CD10N-M0c			
CD10MA2	8.0 mA/ppm	2 pole terminal	Connection only to a controller with galvanically separated power supply.
CD10MA5	3.2 mA/ppm		
CD10MA10	1.6 mA/ppm		
CD10MA20	0.8 mA/ppm		
CD10MA2-M12	8.0 mA/ppm	M12 female	
CD10MA5-M12	3.2 mA/ppm		
CD10MA10-M12	1.6 mA/ppm		
CD10MA20-M12	0.8 mA/ppm		

Spare parts:

Spare part:	for sensor type:	Item number:
Membrane cap M10N+G	CD10 (all types)	9026017
Electrolyte ECD4 – ECD7/W	CD10 (all types)	9026073

Accessories:

Type:	for sensor:	Item number:
DOSASens Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSASens Sensor simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSASens Sensor simulator 4 ... 20 mA, current sensor	all sensors with mA signal	90249000
DOSASens mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105
DOSAControl Photometer for calibration	chlorine, total chlorine, isocyanuric, pH, chlorine dioxide	90231060

2.3.13 DOSASens Chlorine dioxide Sensor AS2, AS3

Sensor for the measurement of chlorine dioxide with open measuring cell. Optional with cleaning device.



Product description:

- Measurand(s): chlorine dioxide
- Calibration: at the controller, via analytical determination by DPD-1 method
- Interferences: ozone, chlorine, chlorite are registered with less than 2%
- pH range: 1 ... 9, Pressure range: 0 ... 8 bar
- Temperature range: 0 ... 50 °C (AS2), 0 ... 70 °C (AS3)
- Automatic temperature compensation
- Response time: T₉₀ approx. 30 s
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 30 l/h (with RV1 increased to approx. 45 l/h)
- with the cleaning device (RV1) there is a restriction of the measuring range to 0,7 or 7 ppm
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug; for mA-version 2-pole terminal, M12 male or Modbus RTU with M12 male
- Material: PVC-U (AS2), PEEK (AS3)

Areas of application:

- Fresh water, especially drinking water, up to max. 70 °C

Scope of supply:

- **DOSASens Chlorine dioxide Sensor AS2, AS3:**
sensor, electrolyte hull, electrolyte

Ordering data:

Type: (bis 50°C)	Measuring range*: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
AS2H-CD	0.005 ... approx. 2.00	0.001	0 ... -2000 mV 1 kΩ	±5 ... ±15 V DC 10 mA	3326154
AS2N-CD	0.03 ... approx. 10.00	0.01			3326150
AS2H-CD-An	0.005 ... approx. 2.00	0.001	Modbus RTU	9 ... 30 V DC ca. 20 ... 56 mA	3426800
AS2N-CD-An	0.03 ... approx. 10.00	0.01			3426801
AS2H-CD-M0c	0.005 ... approx. 2.00	0.001			3426820
AS2N-CD-M0c	0.03 ... approx. 10.00	0.01			3426821
AS2MA1-CD	0.03 ... approx. 1.00	0.01	4 ... 20 mA	12 ... 30 V DC RL 50Ω ... RL 900Ω	3326151
AS2MA2-CD	0.03 ... approx. 2.00	0.01			3326152
AS2MA5-CD	0.03 ... approx. 5.00	0.01			3326153
AS2MA1-CD-M12	0.03 ... approx. 1.00	0.01	4 ... 20 mA	12 ... 30 V DC RL 50Ω ... RL 900Ω	3426840
AS2MA2-CD-M12	0.03 ... approx. 2.00	0.01			3426841
AS2MA5-CD-M12	0.03 ... approx. 5.00	0.01			3426842

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29-08-2018

Ordering data:

Type: (bis 70°C)	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:	
AS3H-CD	0.005 ... approx. 2.00	0.001	0 ... -2000 mV 1 kΩ	±5 ... ±15 VDC 10 mA	3326164	
AS3N-CD	0.03 ... approx. 10.00	0.01			3326160	
AS3H-CD-An	0.005 ... approx. 2.00	0.001		Modbus RTU	9 ... 30 V DC ca. 20 ... 56 mA	3426850
AS3N-CD-An	0.03 ... approx. 10.00	0.01				3426851
AS3H-CD-M0c	0.005 ... approx. 2.00	0.001	3426870			
AS3N-CD-M0c	0.03 ... approx. 10.00	0.01	3426871			
AS3MA1-CD	0.03 ... approx. 1.00	0.01	4 ... 20 mA		12 ... 30 VDC RL 50Ω ... RL 900Ω	3326161
AS3MA2-CD	0.03 ... approx. 2.00	0.01				3326162
AS3MA5-CD	0.03 ... approx. 5.00	0.01		3326163		
AS3MA1-CD-M12	0.03 ... approx. 1.00	0.01		3426890		
AS3MA2-CD-M12	0.03 ... approx. 2.00	0.01		3426891		
AS3MA5-CD-M12	0.03 ... approx. 5.00	0.01		3426892		

Additional technical data:

Type: (up to 50°C)	Slope:	Connection:	Special characteristics:
AS2H-CD	-1000 mV/ppm	4-pin plug	Connection only to a controller with galvanically separated power supply.
AS2N-CD	-100 mV/ppm		
AS2H-CD-An	-1000 mV/ppm		
AS2N-CD-An	-100 mV/ppm		
AS2H-CD-M0c	Modbus RTU	M12 female	Connection only to a controller with galvanically separated power supply.
AS2N-CD-M0c			
AS2MA1-CD	16 mA/ppm	2 pole terminal	
AS2MA2-CD	8.0 mA/ppm		
AS2MA5-CD	3.2 mA/ppm		
AS2MA1-CD-M12	16 mA/ppm	M12 female	
AS2MA2-CD-M12	8.0 mA/ppm		
AS2MA5-CD-M12	3.2 mA/ppm		

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29-08-2018

Additional technical data:

Type: (up to 70°C)	Slope:	Connection:	Special characteristics:
AS3H-CD	-1000 mV/ppm	4-pin plug	Connection only to a controller with galvanically separated power supply.
AS3N-CD	-100 mV/ppm		
AS3H-CD-An	-1000 mV/ppm		
AS3N-CD-An	-100 mV/ppm		
AS3H-CD-M0c	Modbus RTU	M12 female	
AS3N-CD-M0c			
AS3MA1-CD	16 mA/ppm	2 pole terminal	Connection only to a controller with galvanically separated power supply.
AS3MA2-CD	8.0 mA/ppm		
AS3MA5-CD	3.2 mA/ppm		
AS3MA1-CD-M12	16 mA/ppm	M12 female	
AS3MA2-CD-M12	8.0 mA/ppm		
AS3MA5-CD-M12	3.2 mA/ppm		

Spare parts:

Spare part:	for sensor type:	Item number:
Abrasive paper S3	AS (all types)	9026103
Electrolyte hull PVC	AS2 (all types)	9026154
Electrolyte hull PEEK	AS3 (all types)	9026220
Electrolyte EAS1/Gel	AS (all types)	9026066

Accessories:

Type:	for sensor:	Item number:
DOSA Sens Cleaning device RV1	AS (all types), *with RV1 there is a restriction of the measuring range to 0,7 or 7 ppm	9026180
DOSA Sens Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSA Sens Sensor simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSA Sens Sensor simulator 4 ... 20 mA, current sensor	all sensors with mA signal	90249000
DOSA Sens mV Simulator and mA tester	all sensors with mV signal or mA signal	21131105
DOSA Control Photometer for calibration	chlorine, total chlorine, isocyanuric, pH, chlorine dioxide	90231060

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
29-08-2018

2.3.14 DOSASens open amperometric Sensor KC

Sensor for the measurement of the free inorganic chlorine, chlorine dioxide or ozone.



Product description:

- Measurand(s): Natriumhypochlorit (NaOCl), Calciumhypochlorit (Ca(OCl)₂), chlorine gas (Cl₂), electrolytically produced chlorine, chlorine dioxide, ozone
- pH range: 5 ... 9
- Pressure range: 6 bar
- Flow rate: 30 ... 40 l/h (min.)
- Shaft length: 120 mm (12 mm Ø)
- Material: glass body with gold electrode

Areas of application:

- Drink-, service- and industrial water, legionella bacteria

Scope of supply:

- DOSASens open amperometric Sensor KC

Ordering data:

Type:	Measuring range: mg/l	Resolution: ppm	recommended controller/measuring instrument:	Item number:
KCL (free chlorine)	0,01 ... 20,00	0,01	DOSAControl DCW 105 (ehemals: DOSAControl DC 96-CL, CLD und O ₃ , DOSAControl DCW 100-CL, CLD und O ₃ , DOSAControl DCW 300-CL, CLD und O ₃ .)	2189200
KCLD (chlorine dioxide)	0,01 ... 4,00			2189201
KCOZ (ozone)				2189202

Additional technical data:

Type:	Temperatur range: °C	Installation: Threads	Connection:	Particularity:
KCL (free chlorine)	5 ... 70	PG 13,5	5-pin screwed connectors	In conjunction with a DOSAControl DCW 105, it is possible to run the sensor with a automatically cleaning function.
KCLD (chlorine dioxide)				
KCOZ (ozone)				

2.3.15 DOSASens Chlorite Sensor MST1

Sensor for the measurement of chlorite. Membrane-covered, amperometric 3-electrode measuring system.



Product description:

- Measurand(s): Chlorite from acid/chlorite process, chlorine/chlorite-process chlorite/oxidant-process
- Calibration: at the controller, via analytical determination of chlorite
- Interferences: Mn²⁺, nitrite, Fe²⁺
- No cross-interference to chlorine dioxide, chlorine and chlorate
- pH range: 6 ... 9
- Pressure range: 0 ... 5 bar, without outgassing, no pressure surges and/or fluctuations
- Temperature range: 0 ... 40 °C (not any ice crystal in water)
- Integrated automatic temperature compensation
- Response time: T₉₀ approx. 1 min.
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 30 l/h
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug or Modbus RTU with M12 male
- Material: PVC, Peek, stainless steel 1.4571, membrane

Areas of application:

- Fresh water

Scope of supply:

- **DOSASens Chlorite Sensor MST1:**
sensor, membrane cap, electrolyte

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
MST1H-An	0.05 ... 2.000	0.001	0 ... -2000 mV (max. -2500 mV) 1 kΩ	9 ... 30 VDC approx. 20 ... 56 mA	3326420
MST1N-An		0.01			3326421
MST1H-M0c		0.001	Modbus RTU		3326410
MST1N-M0c		0.01			3326411
MST1MA2	0,005 ... 2,00	0,1	4 ... 20 mA	12 ... 30 VDC RL 50Ω ... RL 900Ω	3326440

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
MST1H-An	-100 mV/ppm	4-pole plug	-
MST1N-An			
MST1H-M0c	Modbus RTU	M12 male	
MST1N-M0c			
MST1MA2	8,0 mA/ppm	two pole terminal	

Spare parts:

Spare part:	for sensor:	Item number:
Membrane cap M48.2	MST1 (all types)	9026020
Electrolyte EMST1/Gel	MST1 (all types)	9026053

Accessories:

Type:	for sensor:	Item number:
DOSA Sens Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSA Sens Simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSA Sens Simulator 4 ... 20 mA, current sensor	all sensors with mA signal	90249000
DOSA Sens mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105
DOSA Control Photometer for calibration	chlorine, total chlorine, isocyanuric, pH, chlorite	90231010

2.3.16 DOSASens Bromine Sensor BR1

Detects free bromine as hypobromous acid and BCDMH, also in sea water.



Product description:

- Measurand(s): free bromine, 1-bromo-3-chloro-5,5-dimethyl-hydantoin (BCDMH), hypobromous acid HOBr
- Calibration: at the controller, by means of analytic bromine determination, depending on the brominating agent, free bromine: DPD1 method, BCDMH: DPD4 method
- Interferences: Cl₂, ClO₂, O₃, are measured as well
- pH range: 6.5 ... 9.5, greatly reduced pH dependence
- Pressure range: 0... 0.5 bar, no pressure surges and/or fluctuations
- Temperature range: 0 ... 45 °C
- Integrated automatic temperature compensation
- Response time: T₉₀ approx. 2 min
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 30 l/h
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug; for mA-version 2-pole terminal, M12 male or Modbus RTU with M12 male
- Material: PVC, Peek, stainless steel 1.4571, microporous hydrophilic membrane

Areas of application:

- Drinking-, pool-, industrial-, process- and sea water

Scope of supply:

- DOSASens Bromine Sensor BR1: sensor, membrane cap, electrolyte

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
BR1H	0.005 ... 2.000	0.001	0 ... -2000 mV 1 kΩ	±5 ... +15 V DC 10 mA	3326526
BR1N	0.05 ... 20.00	0.01			3326525
BR1H-An	0.005 ... 2.000	0.001	0 ... -2000 mV (max. 2.500 mV), 1 kΩ	9 ... 30 V DC; approx. 20 ... 56 mA	3326502
BR1N-An	0.005 ... 2.000	0.001			3326503
BR1H-M0c	0.005 ... 2.000	0.001			Modbus RTU
BR1N-M0c	0.05 ... 20.00	0.01	3326530		
BR1MA-2	0.05 ... 2.00	0.1	4 ... 20 mA	12 ... 30 VDC R _L = 50Ω (12V)... 900Ω (30V)	3326505
BR1MA-5	0.05 ... 5.00				3326515
BR1MA-10	0.05 ... 10.00				3326520
BR1MA-2-M12	0.05 ... 2.00	0.1	4 ... 20 mA	12 ... 30 V DC R _L = 50Ω ... 900Ω	3326540
BR1MA-5-M12	0.05 ... 5.00				3326541
BR1MA-10-M12	0.05 ... 10.00				3326542

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28-08-2018

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
BR1H	-1000 mV/ppm	4-pole plug	Connection only to a controller with galvanically separated power supply.
BR1N	-100 mV/ppm		
BR1H-An	-1000 mV/ppm		
BR1N-An	-100 mV/ppm		
BR1H-M0c	Modbus RTU	M12 male	
BR1N-M0c			
BR1MA-2	8.0 mA/ppm	2-pole terminal	Connection only to a controller with galvanically separated power supply.
BR1MA-5	3.2 mA/ppm		
BR1MA-10	1.6 mA/ppm		
BR1MA-2-M12	8.0 mA/ppm	M12 male	
BR1MA-5-M12	3.2 mA/ppm		
BR1MA-10-M12	1.6 mA/ppm		

Spare parts:

Spare part:	For sensor type:	Item number:
Membrane cap M48.2	BR1 (all types)	9026020
Electrolyte ECP1.4 Gel	BR1 for measurement with / without salts <1 g/l in the water (all types)	9026074

Accessories:

Type:	For sensor type:	Item number:
DOSA <i>Sens</i> Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSA <i>Sens</i> Sensor simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSA <i>Sens</i> Sensor simulator 4 ... 20 mA, current sensor	all sensors with mA signal	90249000
DOSA <i>Sens</i> mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105
DOSA <i>Control</i> Photometer for calibration	chlorine, total chlorine, isocyanuric, pH, bromine	90231020

2.3.17 DOSASens Ozone Sensor OZ1.2

Sensor for the measurement of dissolved ozone in water.



Product description:

- Calibration: at the controller, analytical determination by DPD-method
- Interferences: Cl₂ is measured with factor 0.03 of its measuring value, ClO₂ is measured with factor 0.7 of its measuring value
- pH range: 2 ... 11
- Pressure range: 0 ... 1 bar, no pressure surges and/or fluctuations
- Temperature range: 0 ... 45 °C (no ice crystals in measurement water)
- Integrated automatic temperature compensation
- Response time: T₉₀ approx. 15 sec.
- Flow rate: approx. 30 l/h, low flow-dependence
- Absence of the disinfectant: max. 24 h
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug; for mA-version 2-pole terminal, M12 male or Modbus RTU with M12 male
- Material: PVC, semipermeable membrane

Areas of application:

- Fresh water, surfactants must not be contained

Scope of supply:

- **DOSASens Ozone Sensor OZ1.2:**
sensor, membrane cap, electrolyte

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:	
OZ1.2H	0.005 ... 2.000	0.001	0 ... -2000 mV 1 kΩ	±5 ... ±15 VDC 10 mA	3426540	
OZ1.2N	0.05 ... 20.00	0.01			3426541	
OZ1.2H-An	0.005 ... 2.000	0.001		Modbus RTU	9 ... 30 VDC 20 ... 56 mA	3426480
OZ1.2N-An	0.05 ... 20.00	0.01				3426481
OZ1.2H-M0c	0.005 ... 2.000	0.001	4 ... 20 mA		12 ... 30 VDC RL 50Ω ... 900Ω	3426530
OZ1.2N-M0c	0.05 ... 20.00	0.01				3426531
OZ1.2MA0,5	0.001 ... 0.500	0.001		3426550		
OZ1.2MA2	0.01 ... 2.00	0.01		3426551		
OZ1.2MA5	0.01 ... 5.00	0.01		3426552		
OZ1.2MA10	0.01...10.00	0.01		3426553		
OZ1.2MA20	0.01...20.00	0.01		3426554		
OZ1.2MA0,5-M12	0.001 ... 0.500	0.001		3426520		
OZ1.2MA2-M12	0.01 ... 2.00	0.01		3426521		
OZ1.2MA5-M12	0.01 ... 5.00	0.01		3426522		
OZ1.2MA10-M12	0.01...10.00	0.01		3426523		
OZ1.2MA20-M12	0.01...20.00	0.01		3426524		

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30-08-2018

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
OZ1.2H	-1000 mV/ppm	4-pin plug	Connection only to a controller with galvanically separated power supply.
OZ1.2N	-100 mV/ppm		
OZ1.2H-An	-1000 mV/ppm		
OZ1.2N-An	-100 mV/ppm		
OZ1.2H-M0c	Modbus RTU	M12 female	
OZ1.2N-M0c			
OZ1.2MA0.5	32.0 mA/ppm	2 pole terminal	Connection only to a controller with galvanically separated power supply.
OZ1.2MA2	8.0 mA/ppm		
OZ1.2MA5	3.2 mA/ppm		
OZ1.2MA10	1.6 mA/ppm		
OZ1.2MA20	0.8 mA/ppm		
OZ1.2MA0.5-M12	32.0 mA/ppm	M12 female	
OZ1.2MA2-M12	8.0 mA/ppm		
OZ1.2MA5-M12	3.2 mA/ppm		
OZ1.2MA10-M12	1.6 mA/ppm		
OZ1.2MA20-M12	0.8 mA/ppm		

Spare parts:

Spare part:	for sensor:	Item number:
Membrane cap M20.2	OZ1.2 (all types)	9026001
Electrolyte EOZ1	OZ1.2 (all types)	9026054

Accessories:

Type:	for sensor:	Item number:
DOSA Sens Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSA Sens Simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSA Sens Simulator 4 ... 20 mA, current sensor	all sensors with mA signal	90249000
DOSA Sens mV Simulator and mA tester	all sensors with mV signal or mA signal	21131105
DOSA Control Photometer for calibration	chlorine, total chlorine, isocyanuric, pH, ozone	90231030

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
30-30-2018

2.3.18 DOSASens Ozonsensor OZ7

Sensor for the measurement of dissolved ozone in water – with surfactant-resistant membrane.



Product description:

- Measurand(s): Ozone
- Calibration: at the controller, analytical determination by DPD-method e.g. DPD-4 method, Note: when used in seawater is the DPD-4 method (DPD-1 + DPD-4) non-selective to ozone
- Interferences:
 - Cl₂: OZ7H: increase of measuring value by 1.5%
 - Cl₂: OZ7N: negligible
 - ClO₂: for OZ7N-version it leads to an increase of the measuring value of about 6 %
- pH range: 2 ... 11
- Pressure range: 0 ... 1 bar, no pressure surges and/or fluctuations
- Temperature range: 0 ... 45 °C
- Integrated automatic temperature compensation
- Response time: T₉₀ approx. 50 s
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 30 l/h, low flow-dependence
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug; for mA-version 2-pole terminal, M12 male or Modbus RTU with M12 male
- Material: PVC-U, stainless steel 1.4571

Areas of application:

- Fresh water, salt water, also sea water; surfactants are tolerated

Scope of supply:

- **DOSASens Ozonsensor OZ7:**
sensor, membrane cap, electrolyte

Ordering data:

Typ:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
OZ7H	0.005 ... 2.000	0.001	0 ... -2000 mV 1 kΩ	±5 ... ±15 VDC 10 mA	3326054
OZ7N	0.05 ... 20.00	0.01			3326055
OZ7H-An	0.005 ... 2.000	0.001	Modbus RTU	9 ... 30 VDC 20 ... 56 mA	3226000
OZ7N-An	0.05 ... 20.00	0.01			3226001
OZ7H-M0c	0.005 ... 2.000	0.001			3226040
OZ7N-M0c	0.05 ... 20.00	0.01			3226041
OZ7MA0,2	0.005 ... 0.20	0.01	4 ... 20 mA	12 ... 30 VDC R _L 50Ω ... 900Ω	3326088
OZ7MA0,5	0.005 ... 0.50	0.01			3326058

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
19-03-2019

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
OZ7MA2	0,005 ... 2,00	0,01	4 ... 20 mA	12 – 30 V DC RL 50 Ω –...900 Ω	3326056
OZ7MA5	0.05 ... 5.00	0.01			3326059
OZ7MA10	0.05 ...10.00	0.01			3326077
OZ7MA20	0.05 ...20.00	0.01			3326103
OZ7MA0.2-M12	0.05 ... 0.20	0.01			3226030
OZ7MA0.5-M12	0.05 ... 0.50	0.01			3226031
OZ7MA2-M12	0.05 ... 2.00	0.01			3226032
OZ7MA5-M12	0.05 ... 5.00	0.01			3226033
OZ7MA10-M12	0.05 ...10.00	0.01			3226034
OZ7MA20-M12	0.05 ...20.00	0.01			3226035

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
OZ7H	-1000 mV/ppm	4-pin plug	Connection only to a controller with galvanically separated power supply.
OZ7N	-100 mV/ppm		
OZ7H-An	-1000 mV/ppm		
OZ7N-An	-100 mV/ppm		
OZ7H-M0c	Modbus RTU	M12 female	-
OZ7N-M0c			
OZ7MA0.2	80.0 mA/ppm	2 pole terminal	Connection only to a controller with galvanically separated power supply.
OZ7MA0.5	32.0 mA/ppm		
OZ7MA2	8.0 mA/ppm		
OZ7MA5	3.2 mA/ppm		
OZ7MA10	1.6 mA/ppm		
OZ7MA20	0.8 mA/ppm		
OZ7MA0.2-M12	80.0 mA/ppm	M12 female	
OZ7MA0.5-M12	32.0 mA/ppm		
OZ7MA2-M12	8.0 mA/ppm		
OZ7MA5-M12	3.2 mA/ppm		
OZ7MA10-M12	1.6 mA/ppm		
OZ7MA20-M12	0.8 mA/ppm		

Spare parts:

Spare part:	for sensor:	Item number:
Membrane cap M7.1N O3	OZ7H, OZ7MA0.2, OZ7MA0.5	9026011
Membrane cap M7.1D O3	OZ7N, OZ7MA2, OZ7MA5, OZ7MA10, OZ7MA20	9026013
Electrolyte EOZ7/W	OZ7 (all types)	9026049

Accessories:

Type:	for sensor:	Item number:
DOSA<i>Sens</i> Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSA<i>Sens</i> Sensor simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSA<i>Sens</i> Sensor simulator 4 ... 20 mA, current sensor	all sensors with mA signal	90249000
DOSA<i>Sens</i> mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105
DOSA<i>Control</i> Photometer for calibration	chlorine, total chlorine, isocyanuric, pH, ozone	90231030

2.3.19 DOSASens Ozone Sensor OZ10

Sensor for the measurement of dissolved ozone in water.



Product description:

- Calibration: at the controller, analytical determination by DPD-method
- Interferences:
 - Cl₂ an OZ10H: increase of measuring value by 1.5%
 - Cl₂ an OZ10N: negligible
 - ClO₂ an OZ10N for OZ7N-version it leads to an increase of the measuring value of about 6 %,
- pH range: 2 ... 11
- Pressure range: 0 ... 1 bar, no pressure surges and/or fluctuations
- Temperature range: 0 ... 45 °C
- Integrated automatic temperature compensation
- Response time: T₉₀ approx. 15 sec.
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 30 l/h, low flow-dependence,
- Shaft length: Standard 175 mm, and up to 220 mm (mA-Version)
- Connection: standard 4-pole plug; mA-Version 2-pole terminal, M12 male or Modbus RTU with M12 male
- Material: PVC, semipermeable membrane for mA-version 2-pole terminal

Areas of application:

- Fresh water, salt water, also sea water; surfactants are tolerated

Scope of supply:

- **DOSASens Ozone Sensor OZ10:** sensor, membrane cap, electrolyte

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
OZ10H	0.005 ... 2.000	0.01	0 ... -2000 mV 1 kΩ	±5 ... ±15 VDC 10 mA	3426400
OZ10N	0.05 ... 20.00	0.01			3426401
OZ10H-An	0.005 ... 2.000	0.01		9 ... 30 VDC 20 ... 56 mA	3426405
OZ10N-An	0.05 ... 20.00	0.01			3426406
OZ10H-M0c	0.005 ... 2.000	0.01	Modbus RTU	9 ... 30 VDC 20 ... 56 mA	3426410
OZ10N-M0c	0.05 ... 20.00	0.01			3426411
OZ10MA0,5	0.05 ... 0.500	0.01	4 ... 20 mA	12 ... 30 VDC RL 50Ω ... 900Ω	3426415
OZ10MA2	0.05 ... 2.00	0.01			3426416
OZ10MA5	0.05 ... 5.00	0.01			3426417
OZ10MA10	0.05 ... 10.00	0.01			3426418
OZ10MA20	0.05 ... 20.00	0.01			3426419
OZ10MA0,5-M12	0.05 ... 0.500	0.01			3426420
OZ10MA2-M12	0.05 ... 2.00	0.01			3426421
OZ10MA5-M12	0.05 ... 5.00	0.01			3426422
OZ10MA10-M12	0.05 ... 10.00	0.01			3426423
OZ10MA20-M12	0.05 ... 20.00	0.01			3426424

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
30-08-2018

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
OZ10H	-1000 mV/ppm	4-pole plug	Connection only to a controller with galvanically separated power supply
OZ10N	-100 mV/ppm		
OZ10H-An	-1000 mV/ppm		
OZ10N-An	-100 mV/ppm		
OZ10H-M1c	Modbus RTU	M12 male	-
OZ10N-M1c			
OZ10MA0.5	32.0 mA/ppm	2-pole terminal	Connection only to a controller with galvanically separated power supply
OZ10MA2	8.0 mA/ppm		
OZ10MA5	3.2 mA/ppm		
OZ10MA10	1.6 mA/ppm		
OZ10MA20	0.8 mA/ppm		
OZ10MA0.5-M12	32.0 mA/ppm	M12-Buchse	
OZ10MA2-M12	8.0 mA/ppm		
OZ10MA5-M12	3.2 mA/ppm		
OZ10MA10-M12	1.6 mA/ppm		
OZ10MA20-M12	0.8 mA/ppm		

Spare parts:

Spare part:	for sensor:	Item number:
Membrane cap M10G O3 + G-Holder	OZ10 (all types)	9026019
Electrolyte EOZ7/W	OZ10 (all types)	9026049

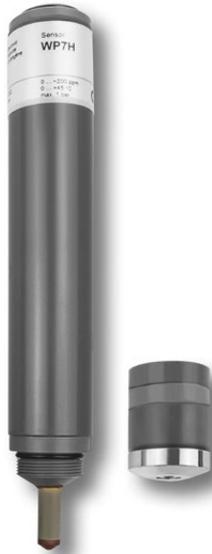
Accessories:

Type:	for sensor:	Item number:
DOSA Sens Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSA Sens Sensor simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSA Sens Sensor simulator 4 ... 20 mA, current sensor	all sensors with mA signal	90249000
DOSA Sens mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105
DOSA Control Photometer for calibration	chlorine, total chlorine, isocyanuric, pH, ozone	90231030

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
30-08-2018

2.3.20 **DOSA**Sens Hydrogen peroxide Sensor **WP7**

Sensor for the measurement of hydrogen peroxide, with surfactant-resistant membrane.



Product description:

- Measurand(s): Hydrogen peroxide
- Calibration:
 - DIN 38409-15 "Determination of hydrogen peroxide"
 - ISO/DIS 7157 "Determination of hydrogen peroxide – titrimetric method"
- Interferences:
 - Cl₂ must not be existent
 - Peroxyacetic acid C₂H₄O₃ must not be existent
 - O₃ must not be existent
 - Sulfides must not be existent
 - Phenoles aquaous solution >3 % must not be existent
- pH range: 2 ... 11
- Pressure range: 0 ... 1 bar, no pressure surges and/or fluctuations
- Temperature range: 0 ... 45 °C
- Integrated automatic temperature compensation
- Response time: T₉₀ approx. 5 ... 10 min
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 30 l/h, low flow-dependence
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug; M12 male, mA-version 2-pole terminal or M12 male
- Material: PVC-U, stainless steel 1.4571

Areas of application:

- Fresh water, tensides are tolerated

Scope of supply:

- **DOSA**Sens Hydrogen peroxide Sensor **WP7**:
sensor, membrane cap, electrolyte

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:	
WP7H	0.0 ... 200.0	0.1	0 ... -2000 mV 1 kΩ	±5 ... ±15 VDC 10 mA	3326083	
WP7N	0 ... 2000	1			3326084	
WP7H-An	0.0 ... 200.0	0.1		Modbus RTU	9 ... 30 VDC 20 ... 56 mA	3226110
WP7N-An	0 ... 2000	1				3226111
WP7H-M0c	0.0 ... 200.0	0.1	3226130			
WP7N- M0c	0 ... 2000	1	3226131			

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
WP7MA-CC	0.0 ... 200.0	0.1	4 ... 20 mA	12 ... 30 VDC RL 50Ω ... RL 900Ω	3326081
WP7MA-D	0.0 ... 500.0	0.1			3326075
WP7MA-M	0.0 ... 1000	1			3326099
WP7MA-MM	0 ... 2000	1			3326074
WP7MA-XM	0 ... 10000	10			3326072
WP7MA-CC-M12	0.0 ... 200.0	0.1	4 ... 20 mA	12 ... 30 VDC RL 50Ω ... RL 900Ω	3226100
WP7MA-D-M12	0.0 ... 500.0	0.1			3226101
WP7MA-M-M12	0.0 ... 1000	1			3226102
WP7MA-MM-M12	0 ... 2000	1			3226103
WP7MA-XM-M12	0 ... 10000	10			3226104

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
WP7H	-10 mV/ppm	4-pin plug	Connection only to a controller with galvanically separated power supply.
WP7N	-1 mV/ppm		
WP7H-An	-10 mV/ppm		
WP7N-An	-1 mV/ppm		
WP7H-M0c	-10 mV/ppm	M12 female	-
WP7N- M0c	-1 mV/ppm		
WP7MA-CC	0.08 mA/ppm	2-pole terminal	Connection only to a controller with galvanically separated power supply.
WP7MA-D	0.032 mA/ppm		
WP7MA-M	0.016 mA/ppm		
WP7MA-MM	0.008 mA/ppm		
WP7MA-XM	0.0016 mA/ppm		
WP7MA-CC-M12	0.08 mA/ppm	M12 female	
WP7MA-D-M12	0.032 mA/ppm		
WP7MA-M-M12	0.016 mA/ppm		
WP7MA-MM-M12	0.008 mA/ppm		
WP7MA-XM-M12	0.0016 mA/ppm		

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
18-10-2018

Spare parts:

Spare part:	for sensor:	Item number:
Membrane cap M7.1N	WP7 (all types except WP7MA-XM, WP7MA-XM-M12)	9026010
Membrane cap M7.1D	WP7MA-XM, WP7MA-XM-M12	9026007
Electrolyte EWP7/W	WP7 all types	9026062

Accessories:

Type:	for sensor:	Item number:
DOSASens Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSASens Simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSASens Simulator 4 ... 20 mA , current sensor	all sensors with mA signal	90249000
DOSASens mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105
DOSAControl Photometer for calibration	chlorine, total chlorine, isocyanuric, pH, hydrogen peroxide	90231040

2.3.21 **DOSA**Sens Hydrogen peroxide Sensor **WP10**

Sensor for the measurement of hydrogen peroxide – especially for high concentrations.



Product description:

- Measurand(s): hydrogen peroxide
- Calibration:
 - DIN 38409-15 "Determination of hydrogen peroxide"
 - ISO/DIS 7157 "Determination of hydrogen peroxide – titrimetric method"
- Interferences:
 - Cl₂ must not be existent
 - PES must not be existent
 - O₃ must not be existent
 - Sulfide must not be existent
 - Phenoles aquaous solution >3 % must not be existent
- pH range: 2 ... 11
- Pressure range: 0 ... 1 bar, no pressure surges and/or fluctuations
- Temperature range: 5 ... 45 °C
- Integrated automatic temperature compensation
- Response time: T₉₀ approx. 8 min
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 30 l/h, low flow-dependence,
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug; for mA-version 2-pole terminal, M12 male or Modbus RTU with M12 male
- Material: PVC-U, stainless steel 1.4571

Areas of application:

- All types of water treatment, surfactants are tolerated to the greatest possible extent

Scope of supply:

- **DOSA**Sens Hydrogen peroxide Sensor **WP10**: sensor, membrane cap, electrolyte

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
WP10H	0 ... 200 ppm	0.1 ppm	0 ... -2000 mV 1 kΩ	±5 ... ±15 VDC 10 mA	3326380
WP10N	0 ... 2000 ppm	1 ppm			3326383
WP10L	0 ... 2 % (20000 ppm)	0,001 % (10 ppm)			3326381
WP10-20%	0 ... 20 % (200000 ppm)	0,01% (100 ppm)			3326382
WP10H-An	0 ... 200 ppm	0.1 ppm	0 ... -2000 mV (max -2500 mV) 1 kΩ	9 ... 30 VDC 20 ... 56 mA	3326304
WP10N-An	0 ... 2000 ppm	1 ppm			3326306
WP10L-An	0 ... 2 % (20000 ppm)	0.001 % (10 ppm)			3326300

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31-08-2018

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
WP10-20%-An	0 ... 20 % (200000 ppm)	0.01 % (100 ppm)	0 ... -2000 mV (max -2500 mV) 1 kΩ	9 ... 30 VDC 20 ... 56 mA	3326301
WP10H-M0c	0 ... 200 ppm	0.1 ppm	Modbus RTU		3326350
WP10N-M0c	0 ... 2000 ppm	1 ppm			3326353
WP10L-M0c	0 ... 2 % (20000 ppm)	0.001 % (10 ppm)			3326351
WP10-20%-M0c	0 ... 20 % (200000 ppm)	0.01 % (100 ppm)			3326352
WP10MA-200	0 ... 200 ppm	0.1 ppm		4 ... 20 mA	12 ... 30 VDC RL 50Ω ... RL 900Ω
WP10MA-2000	0 ... 2000 ppm	1 ppm	3326314		
WP10MA-2%	0 ... 2 % (20000) ppm	0.001 % (10 ppm)	3326310		
WP10MA-5%	0 ... 5 % (50000) ppm	0.01 % (100 ppm)	3326311		
WP10MA-10%	0 ... 10 % (100000) ppm	0.01 % (100 ppm)	3326312		
WP10MA-200-M12	0 ... 200 ppm	0.1 ppm	4 ... 20 mA	12 ... 30 VDC RL 50Ω ... RL 900Ω	3326323
WP10MA-2000-M12	0 – 2000 ppm	1 ppm			3326324
WP10MA-2%-M12	0 ... 2 % (20000) ppm	0.001 % (10 ppm)			3326320
WP10MA-5%-M12	0 – 5 % (50000) ppm	0.01 % (100 ppm)			3326321
WP10MA-10%-M12	0 ... 10 % (100000) ppm	0.01 % (100 ppm)			3326322

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
WP10H	-10 mV/ppm	4-pin plug	Connection only to a controller with galvanically separated power supply.
WP10N	-1 mV/ppm		
WP10L	-1000 mV/% (-0.1 mV/ppm)		
WP10-10-20%	-100 mV/% (-0.01 mV/ppm)		
WP10H-An	-10 mV/ppm		
WP10N-An	-1 mV/ppm		
WP10L-An	-1000 mV/% (-0.1 mV/ppm)		
WP10-20%-An	-100 mV/% (-0.01 mV/ppm)		

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31-08-2018

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
WP10H-M0c	Modbus RTU	M12 female	-
WP10N-M0c			
WP10L-M0c			
WP10-20%-M0c			
WP10MA-200	0.08 mA/ppm	2-pole terminal	Connection only to a controller with galvanically separated power supply.
WP10MA-2000	0.8 mA/ppm		
WP10MA-2%	8 mA/% (0.0008 mA/ppm)		
WP10MA-5%	3.2 mA/% (0.00032 mA/ppm)		
WP10MA-10%	1.6 mA/% (0.00016 mA/ppm)		
WP10MA-200-M12	0.08 mA/ppm	M12 female	
WP10MA-2000-M12	0.8 mA/ppm		
WP10MA-2%-M12	8 mA/% (0.0008 mA/ppm)		
WP10MA-5%-M12	3.2 mA/% (0.00032 mA/ppm)		
WP10MA-10%-M12	1.6 mA/% (0.00016 mA/ppm)		

Spare parts:

Spare part:	for sensor :	Item number:
Membrane cap M10.1H + G	WP10H, WP10N, WP10MA-200, WP10MA2000 (all)	9026018
Membrane cap M10.1D + G	WP10L, WP10-20%, WP10MA-2%, WP10MA-5%, WP10MA-10%, WP10MA-20%; (all)	9026015
Electrolyte EWP7/W	WP10 all types	9026062

Accessories:

Type:	for sensor:	Item number:
DOSASens Simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSASens Simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSASens Simulator 4 ... 20 mA, current sensor	all sensors with mA signal	90249000
DOSASens mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105
DOSAControl Photometer for calibration	chlorine, total chlorine, isocyanuric, pH, hydrogen peroxide	90231040

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
31-08-2018

2.3.22 DOSASens Peracetic acid Sensor P9.2

Sensor for the measurement of peracetic acid, surfactants and lead acids are tolerated.



Product description:

- Measurand(s): Peracetic acid
- Calibration:
 - DIN 38409-15 "Determination of hydrogen peroxide"
 - ISO/DIS 7157 "Determination of hydrogen peroxide – titrimetric method"
- Interferences:
 - ClO₂ increases the measuring value
 - H₂O₂ very low influence on the measuring value, reduces the PES signal
 - O₃ increases the measuring value greatly
- pH range: 1 ... 6
- Pressure range: 0 ... 1 bar, no pressure surges and/or fluctuations
- Temperature range: 0 ... 60 °C
- Integrated automatic temperature compensation
- Run-in period at first start: 30 ... 180 min
- Response time: T₉₀ approx. 3.5 min at 10 °C, approx. 45 s at 50 °C
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 30l/h, low flow-dependence
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug; for mA-version 2-pole terminal, M12 male or Modbus RTU with M12 male
- Material: PEEK, stainless steel 1.4571

Areas of application:

- Fresh water, all types of water treatment
- Lead acids: up to 1% sulfur, saltpetre and phosphoric acid have no influence on the measuring results
- Surfactants are tolerated

Scope of supply:

- **DOSASens** Peracetic acid Sensor **P9.2**:
sensor, membrane cap, electrolyte

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
P9.2H	0 ... 200	0.1	0 ... 2000 mV 1 kΩ	±5 ... ±15 VDC 10 mA	3326068
P9.2N	0 ... 2000	1			3326067
P9.2L	0 ... 2 % (20000 ppm)	0.001 % (10 ppm)			3326082
P9.2H-An	0 ... 200	0.1	0 ... -2000 mV (max. -2500 mV) 1 kΩ	9 ... 30 VDC 20 ... 56 mA	3426110
P9.2N-An	0 ... 2000	1			3426111
P9.2L-An	0 ... 2 % (20000 ppm)	0.001 % (10 ppm)			3426112

Subject to technical modifications and printing errors. Images may vary slightly from actual product.

03-09-2018

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
P9.2H-M0c	0 ... 200	0.1	Modbus RTU	9 ... 30 VDC 20 ... 56 mA	3426130
P9.2N-M0c	0 ... 2000	1			3426131
P9.2L-M0c	0 ... 2 % (20000 ppm)	0.001 % (10 ppm)			3426132
P9.2-MA-200	0 ... 200	0.1	4 ... 20 mA	12 ... 30 VDC RL= 50Ω (12 V) ... 900Ω (30 V)	3426100
P9.2-MA-2000	0 ... 2000	1			3426101
P9.2-MA-2%	0 ... 2 % (20000 ppm)	0.001 % (10 ppm)			3426102
P9.2-MA-200-M12	0 ... 200	0.1			3426160
P9.2-MA-2000-M12	0 ... 2000	1			3426161
P9.2-MA-2%-M12	0 ... 2 % (20000 ppm)	0.001 % (10 ppm)			3426162

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
P9.2H	-10 mV/ppm	4-pin plug	Connection only to a controller with galvanically separated power supply.
P9.2N	-1 mV/ppm		
P9.2L	-1000 mV/% (-0.1 mV/ppm)		
P9.2H-An	-10 mV/ppm	4-pin plug	
P9.2N-An	-1 mV/ppm		
P9.2L-An	-0.1 mV/ppm (-1000 mV/%)		
P9.2H-M0c	Modbus RTU	M12 female	
P9.2N-M0c	Modbus RTU		
P9.2L-M0c	Modbus RTU		
P9.2-MA-200	0.08 mA/ppm	2 pole terminal	Connection only to a controller with galvanically separated power supply.
P9.2-MA-2000	0.008 mA/ppm		
P9.2-MA-2%	8 mA/% (0.0008 mA/ppm)		
P9.2-MA-200-M12	0.08 mA/ppm	M12 female	
P9.2-MA-2000-M12	0.008 mA/ppm		
P9.2-MA-2%-M12	8 mA/% (0.0008 mA/ppm)		

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
03-09-2018

Spare parts:

Spare part:	for sensor :	Item number:
Membrane cap M9.1N + G-Holder	P9.2 all types	9026016
Electrolyte EPS9H/W	P9.2N, P9.2H, P9.2MA-200, P9.2MA-2000,	9026071
Electrolyte EPS9L/W	P9.2L, P9.2 MA-2%,	9026072

Accessories:

Type:	for sensor:	Item number:
DOSA Sens Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSA Sens Sensor simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSA Sens Sensor simulator 4 ... 20 mA, current sensor	all sensors with mA signal	90249000
DOSA Sens mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105

2.3.23 DOSASens Peracetic acid Sensor PES7

Sensor for the measurement of peracetic acid $C_2H_4O_3$, up to 1%ige sulfur- and nitric acid are tolerated.



Product description:

- Measurand(s): Peracetic acid
- Calibration:
 - titrimetric method or with PES standard solution e.g.
- Interferences:
 - ClO_2 is registered with factor 1 of its measuring value
 - H_2O_2 is registered with factor 0.005 of its measuring value
 - O_3 is registered with factor 2500 of its measuring value
- pH range: 1 ... 6
- Pressure range: 0 ... 1 bar, no pressure surges and/or fluctuations
- Temperature range: 0 ... 45 °C (not any ice crystal in test water)
- Integrated automatic temperature compensation
- Response time: T_{90} approx. 3 min.
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 30 l/h, low flow-dependence
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug, M12 male, for mA-version 2-pole terminal
- Material: PVC-U, stainless steel 1.4571

Areas of application:

- Fresh water, all types of water treatment,
- Lead acids are tolerated,
- Surfactants must not be existent

Scope of supply:

- DOSASens Peracetic acid Sensor PES7:
- sensor, membrane cap, electrolyte

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal	Power supply:	Item number:
PES7H	0 ... 200	0,1	0 ... -2000 mV 1 kΩ	±5 ... ±15 VDC, 10 mA	3326062
PES7N	0 ... 2000	1			3326060
PES7L	0 ... 2% (20000)	0,001% (10)			3326064
PES7H-An	0 ... 200	0,1		9 ... 30 VDC, 20 – 56 mA	3226200
PES7N-An	0 ... 2000	1			3226201
PES7L-An	0 ... 2% (20000)	0,001% (10)			3226202
PES7Up	0 ... 2000	1		±5 ... ±12,5 VDC, 10 ... 25 VDC, 25 mA	3326061
PES7Up5000	0 ... 5000	5			±5 ... ±15 VDC, 10 mA

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
18-10-2018

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal	Power supply:	Item number:
PES7H-M0c	0 ... 200	0,1	Modbus RTU	9 ... 30 VDC 20 ... 56 mA	3226220
PES7N-M0c	0 ... 2000	1			3226221
PES7L-M0c	0 ... 2% (20000)	0,001% (10)			3226222
PES7MA-CC	0 ... 200	0,1	4 ... 20 mA	12 ... 30 VDC RL 50Ω ... 900Ω	3326069
PES7MA-D	0 ... 500	1			3326065
PES7MA-M	0 ... 1000	1			3326097
PES7MA-MM	0 ... 2000	1			3326063
PES7MA-5M	0 ... 5000	1			3326066
PES7MA-CC-M12	0 ... 200	0,1			3226240
PES7MA-D-M12	0 ... 500	1			3226241
PES7MA-M-M12	0 ... 1000	1			3226242
PES7MA-MM-M12	0 ... 2000	1			3226243
PES7MA-5M-M12	0 ... 5000	1			3226244

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
PES7H	-10 mV/ppm	4-pin plug	Connection only to a controller with galvanically separated power supply
PES7N	-1 mV/ppm		
PES7L	-1000 mV/% (-0,1 mV/ppm)		
PES7H-An	-10 mV/ppm		
PES7N-An	-1 mV/ppm		
PES7L-An	-1000 mV/% (-0,1 mV/ppm)		
PES7H-M0c	-10 mV/ppm	M12 female	-
PES7N-M0c	-1 mV/ppm		
PES7L-M0c	-1000 mV/% (-0,1 mV/ppm)		
PES7MA-CC	0,08 mA/ppm	2 pole terminal	Connection only to a controller with galvanically separated power supply
PES7MA-D	0,032 mA/ppm		
PES7MA-M	0,016 mA/ppm		
PES7MA-MM	0,008 mA/ppm		
PES7MA-5M	32 mA/% (0,0032 mA/ppm)		
PES7Up	+1 mV/ppm	4-pin plug	-
PES7Up5000	+0,4 mV/ppm		

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
18-10-2018

Spare parts:

Spare part:	for sensor:	Item number:
Membrane cap M7.1N	PES7: H, Hup ,N, Un, Up, MA-CC, MA-D, MA-M, MA-MM	9026010
Membrane cap M7.1L	PES7: L, Up5000, MA-XM, MA-XXM, MA-5M	9026012
Electrolyte EPS7/W	PES7 (100 ml)	9026064
Electrolyte EPS7L/W	PES7L, PES7 Up5000 (100 ml)	9026068

Accessories:

Type:	for sensor:	Item number:
DOSA <i>Sens</i> Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSA <i>Sens</i> Sensor simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSA <i>Sens</i> Sensor simulator 4 ... 20 mA, current sensor	all sensors with mA signal	90249000
DOSA <i>Sens</i> mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105

2.3.24 DOSASens Peracetic acid Sensor P10

Sensor for the measurement of peracetic acid – surfactants and lead acids are tolerated.



Product description:

- Measurand(s): Peracetic acid
- Calibration of the controller:
 - DIN 38409-15 "Determination of hydrogen peroxide"
 - ISO/DIS 7157 "Determination of hydrogen peroxide – titrimetric method"
- Interferences:
 - ClO₂ is registered with factor 1 of its measuring value
 - H₂O₂ does not interfere
 - O₃ is registered with factor 2500 of its measuring value
- pH range: 1 ... 6
- Pressure range: 0 ... 1 bar, no pressure surges and/or fluctuations,
- Temperature range: 0 ... 45 °C
- Sensor with automatic temperature compensation
- Response time: T₉₀ approx. 1.5 - 5 min, depending on type and temperature
- Absence of the disinfectant: max. 24 h
- Flow rate: approx. 45 l/h, low flow-dependence
- Shaft length: standard 175 mm, and up to 220 mm in length (mA-Version)
- Connection: standard 4-pole plug; for mA-version 2-pole terminal, M12 male or Modbus RTU with M12 male
- Material: PVC-U, stainless steel 1.4571

Areas of application:

- Fresh water, all types of water treatment
- Lead acids: up to 1% sulfur, saltpetre and phosphoric acid have no influence on the measuring results
- Surfactants are tolerated

Scope of supply:

- **DOSASens** Peracetic acid Sensor **P10**:
sensor, membrane cap, electrolyte

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
P10H	0 ... 200	0.1	0 ... -2000 mV 1 kΩ	±5 ... ±15 VDC 10 mA	3426000
P10N	0 ... 2000	1			3426001
P10L	0 ... 2 % (20000 ppm)	0.001 % (10 ppm)			3426002
P10H-An	0 ... 200	0.1	0 ... -2000 mV (max. -2500 mV) 1 kΩ	9 ... 30 VDC 20 ... 56 mA	3426010
P10N-An	0 ... 2000	1			3426011
P10L-An	0 ... 2 % (20000 ppm)	0.001 % (10 ppm)			3426013

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
03-09-2018

Ordering data:

Type:	Measuring range: ppm	Resolution: ppm	Output signal:	Power supply:	Item number:
P10H-M0c	0 ... 200	0.1	Modbus RTU	9 ... 30 VDC 20 ... 56 mA	3426030
P10N-M0c	0 ... 2000	1			3426031
P10L-M0c	0 ... 2 % (20000 ppm)	0.001 % (10 ppm)			3426032
P10MA-200	0 ... 200	0.1	4 ... 20 mA	12 ... 30 VDC RL = 50Ω (12V) ... RL 900Ω (30V)	3426054
P10MA-2000	0 ... 2000	1			3426050
P10MA-2%	0 ... 2 % (20000 ppm)	0.001 % (10 ppm)			3426051
P10MA-5%	0 ... 5 % (50000 ppm)	0.01 % (100 ppm)			3426052
P10MA-200-M12	0 ... 200	0.1			3426064
P10MA-2000-M12	0 ... 2000	1			3426060
P10MA-2%-M12	0 ... 2 % (20000 ppm)	0.001 % (10 ppm)			3426061
P10MA-5%-M12	0 ... 5 % (50000 ppm)	0.01 % (100 ppm)			3426062

Additional technical data:

Type:	Slope:	Connection:	Special characteristics:
P10H	-10 mV/ppm	4-pin plug	Connection only to a controller with galvanically separated power supply.
P10N	-1 mV/ppm		
P10L	-1000 mV/% (-0,1 mV/ppm)		
P10H-An	-10 mV/ppm	4-pin plug	
P10N-An	1 mV/ppm		
P10L-An	-1000 mV/% (-0.1 mV/ppm)		
P10H-M0c	Modbus RTU	M12 female	
P10N-M0c	Modbus RTU		
P10L-M0c	Modbus RTU		
P10MA-200	0.08 mA/ppm	2 pole terminal	Connection only to a controller with galvanically separated power supply.
P10MA-2000	0.008 mA/ppm		
P10MA-2%	8 mA/% (0,0008 mA/ppm)		
P10MA-5%	3.2 mA/% (0,00032 mA/ppm)		
P10MA-200-M12	0.08 mA/ppm	M12 female	
P10MA-2000-M12	0.008 mA/ppm		
P10MA-2%-M12	8 mA/% (0,0008 mA/ppm)		
P10MA-5%-M12	3.2 mA/% (0,00032 mA/ppm)		

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
03-09-2018

Spare parts:

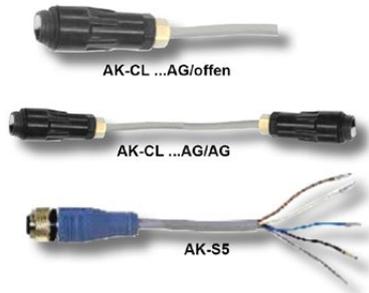
Type:	for sensor:	Item number:
Membrane cap M10.1N+G	P10H, P10N, P10L (all types), P10 MA-200, MA-2000, MA2%	9026017
Membrane cap M10.1G+G	P10MA5%	9026015
Electrolyte EPS9H/W	P10H, P10N all types, P10MA-2000	9026071
Electrolyte EPS9L/W	P10 L, all P10MA-2%	9026072
Electrolyte EPS7/W	P10MA-5%	9026064

Accessories:

Type:	for sensor:	Item number:
DOSA<i>Sens</i> Sensor simulator pH, Redox, Cl	all sensors with mV signal	21131100
DOSA<i>Sens</i> Sensor simulator SIM11.1n	0 mV, -100 mV, -1000mV	9026205
DOSA<i>Sens</i> Sensor simulator 4... 20 mA, current sensor	all sensors with mA signal	90249000
DOSA<i>Sens</i> mV Simulator and mA Tester	all sensors with mV signal or mA signal	21131105

2.3.25 DOSASens Connection cable AK

Connection cable for amperometric sensors



Product description:

- Signal-transmitting cable
- 4-pin threaded coupling connector
- Male
- Easy connection
- Available with cable lengths ranging from 0.5 to 30 m
- Tested by the manufacturer

Areas of application:

- Amperometric sensors

Scope of supply:

- DOSASens Connection cable AK

Ordering data:

Type:	Length: m	Amount of poles:	Item number:
AK-CL0.5 male/open	0.5	4	3188052
AK-CL1 male/open	1		3188053
AK-CL2 male/open	2		3188054
AK-CL3 male/open	3		31107001
AK-CL5 male/open	5		3188056
AK-CL10 male/open	10		3188057
AK-CL15 male/open	15		3188058
AK-CL0,5 male/male	0,5		3188062
AK-CL1 male/male	1		3188063
AK-CL2 male/male	2		3188064
AK-CL3 male/male	3		3188065
AK-CL5 male/male	5		3188066
AK-CL10 male/male	10		3188067
AK-CL15 male/male	15		3188068
AK-S5-5 for KCL-Sensors	5	5	3331010
AK-CL 2, Modbus / mA, male/open (M12 plug)	2		3110700
AK-CL 5, Modbus / mA, male/open (M12 plug)	5		3110701
AK-CL 10, Modbus / mA, male/open (M12 plug)	10		3110702

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
16-08-2016

2.3.26 DOSASens Replacement Electrolytes

Electrolytes for amperometric sensors.



Product description:

- Suitable for amperometric sensors
- Make sure you choose the right electrolyte for your sensor

Areas of application:

- Amperometric sensors

Scope of supply:

- DOSASens Replacement Electrolytes E, 100 ml, 50 ml
-
-
-
-
-
-
-

Ordering data:

Type:	Sensor type	Volume: ml	Item number:
ECL1	Chlorine: CL3, CL4.1, CL4.2	100	9026050
ECL2.1	Chlorine: CL2.1		9026058
ECS2.1/Gel	Chlorine: CS 2.3, CS4		9026060
EAS1/Gel	Chlorine: AS (all)	50	9026066
ECP1.4/Gel	Chlorine: CP/CH1 (all), Bromine: BR1	100	9026074
ECC1.1/Gel	Chlorine: CC1 (all)		9026075
ECD4/W - 7/W	Chlorine dioxide: CD4, CD4.2 and CD7		9026073
EMST1/Gel	Chlorite: MST1N, zero chlorine sensor CN1		9026053
EOZ1/W	Ozone: OZ1, OZ1.2		9026054
EOZ7/W	Ozone: OZ7		9026049
EWP7/W	Hydrogen peroxide: WP7, WP10		9026062
EPS7/W	Peracetic acid: PES7		9026064
EPS7L/W	Peracetic acid: PES7L, PES7Up5000		9026068
EPS9H/W	Peracetic acid: P9.1 / P9.2 (H/N/MA-200/MA-2000/Up2000/ Up5000), P10 (H/N/MA-200/MA-2000/Up2000)		9026071
EPS9L/W	Peracetic acid: P9.2L, P10L		9026072

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
26-07-2016

2.3.27 DOSASens Membrane caps M

Membrane caps for amperometric sensors.



Product description:

- Preserves the functionality and sensitivity of the sensors
- We recommend the membrane caps should be changed twice a year
- or sooner if damaged or soiled
- Keep spares in stock for emergencies

Areas of application:

- Amperometric sensors

Scope of supply:

- DOSASens Membrane cap M, sandpaper (for the anode in the tip of the sensor)
- Depending on the model: Tweezers for G holder, silicone O-ring (20 x 1.5), shock protection, pressure equalising membrane

Ordering data:

Model:	Sensor type	G holder:	Sandpaper:	Item number:
M20.2	Chlorine: CL2.1: N, MA2, MA20; CL3.1: DW; CL6.0; CL4.1: N, Up, H, L, MA0.5, MA2, MA5, MA10, MA20, MA-100, MA-200; CL4.2: N, Up, H, L, MA0.5, MA2, MA5, MA10, MA20, MA-100, MA-200 Chlorine dioxide: CD4: N, H, MA0.5, MA2, MA5, MA10; CD4.2: N, H, MA0.5, MA2, MA5, MA10 Ozone: OZ1: N, H, MA0.5, MA2, MA5, MA10, MA20; OZ1.2: N, H, MA0.5, MA2, MA5, MA10, MA20	No	S1	9026001
M48.2	Chlorine: CP, CC Chlorite: MST Bromine: BR	No	S1	9026020
M48.2G	Chlorine: CS2.3, CS3, CN1	Yes	S1	9026021
M48.2D	Chlorine: CP2.1 HUn, CP2.1 H	No	S1	9026022
M48.4E	Chlorine: CS4, CP4.0	No	S1	9026023
M48.4S	Chlorine: CS4 SW, CP4.0 SW (salt water)	No	S1	9026026
M7.1D	Hydrogen peroxide: WP7 MA-XM	No	S2	9026007
M7.1N	Chlorine dioxide: CD7: H, HUp, N, Up, MA0.5, MA2, MA5, MA10, MA20) Peracetic acid: PES7: H, HUp, N, Un, Up, MA-CC, MA-D, MA-M, MA-MM Hydrogen peroxide: WP7: H, HUn, Un, Up, MA-CC, MA-D, MA-M, MA-MM, N	No	S2	9026010

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
18-10-2018

Ordering data:

Model:	Sensor type	G holder:	Sandpaper:	Item number:
M7.1N O3	Ozone: OZ7H, OZ7HUp, OZ7MA0.2, OZ7MA0.5	No	S2	9026011
M7.1L	Peracetic acid: <i>PES7</i> : L, Up5000, MA-XM, MA-XXM, MA-5M Hydrogen peroxide: <i>WP7</i> : CUn, LUn, Up-CM, MA-CM, MA-LM, MA-XXM Chlorine dioxide: <i>CD7</i> : L, MA-200		S2	9026012
M7.1D O3	Ozone: OZ7N : OZ7MA2/5/10/20 - OZ7Up		S2	9026013
M9G	Peracetic acid: <i>P9</i> : D, L, N, Up2000, Up5000,-20%	Yes	S2	9026009
M9.1N	Peracetic acid: <i>P9.2</i> : H, N, L, MA-200, MA-2000, MA-2%	Yes	S2	9026016
M10.1D	Peracetic acid: <i>P10</i> : MA-5%; <i>WP10</i> : L,-20%, MA-2%, MA-5%	Yes	S2	9026015
M10.1N	Peracetic acid: <i>P10</i> : H, N, L, MA-200, MA-2000, MA-2%, Up5000 Chlordioxid: <i>CD10</i> : H, N, MA2, MA5, MA10, MA20	Yes	S2	9026017
M10.1H	Hydrogen peroxide: WP10H / WP10MA-200	Yes	S2	9026018
M10D O3	Ozone: OZ10	Yes	S2	9026019
MT1.1	For all CH1L chlorine sensors	No	S1	9026024
G-Holder	Chlorine: CS2.3 / CS3 / FC1 / CN1 Peracetic acid: P9 / P10 Hydrogen peroxide: WP10			9026070

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
18-10-2018

2.3.28 DOSASens Simulator pH, redox and chlorine

Simulation of sensors with pH, redox or chlorine output.



Product description:

- Simulator for signals from pH, redox or amperometric sensors such as: chlorine, bromine, ozone, hydrogen peroxide, etc.
- Selection of multiple simulation ranges
- pH simulation range 0 ... 14 or 6.4 ... 8.0
- Redox simulation range 0 ... 1400 mV
- 0 to -600 mV output for amperometric sensors
- SN6 socket for pH or redox
- 4-pin socket mV signal
- 9 V monobloc battery (please replace annually, not included)

Areas of application:

- Simulation of sensors with pH, redox or chlorine output

Scope of supply:

- **DOSASens Simulator pH, redox and chlorine**, dimensions 135 x 80 x 45 mm (L x W x H)

Ordering data:

Model:	Item No.:
DOSASens Simulator pH, redox and chlorine	21131100
pH or redox connection lead, AK 1 SN6/BNC , 1.0 m, Ø. 5 mm	3184082
mV signal connection lead, chlorine, plug AK-CL 1 AG/open	3188053

2.3.29 DOSASens Simulator SIM11.1n

Simulation of sensors with -100- and -1000 mV output.



Product description:

- Simulator for sensors with mV output
- Selection of simulation range
- Available signals: 0 mV, -100 mV, -1000 mV
- Connection identical to the sensor (AK-CL)
- Power supply ± 5 to ± 15 V DC (from the controller)
- EMC testing in accordance with DIN EN 61326-1

Areas of application:

- Simulation of sensors with pH, redox or mV output

Scope of supply:

- DOSASens Simulator SIM11.1n

Ordering data:

Model:	Item No.:
DOSASens Simulator SIM11.1n	9026205

2.3.30 **DOSASens simulator: 4 ... 20 mA current transmitter (passive)**

Simulator for initial setting/testing of the controller when using 4 ... 20 mA sensors.



Product description:

- **DOSASens Simulator: 4 ... 20 mA current transmitter (passive)** developed for troubleshooting, testing the controller and for initial setting of systems in process engineering and automation, as well as for equivalent 4 ... 20 mA sensors
- In use, the simulator is clamped into the current loop instead of the required sensor
- Operating mode:
 - passive current transmitter:
The simulator is inserted into the sensor cable in place of a sensor
The operating voltage comes from the controller and flows into the sensor input of the controller via the current transmitter
 - Operation as a loop current display:
In this operating mode the simulator is looped in as a sensor branch in series, the current loop current can be read off the display
- Input voltage: 0 ... 32 V DC
- Loop current: 4 ... 20 mA
- Maximum load: 650 Ω, 24 V, basic accuracy: 0.05 %
- Add. display deviation: ± 3 digits, operating temperature: 0 ... 60 °C
- Relative humidity: 0 ... 95%
- Dimensions: 186 x 80 x 45 mm
- Weight: 210 g

Areas of application:

- Passive simulator for initial setting/testing of the controller when using 4 ... 20 mA sensors.

Scope of supply:

- **DOSASens simulator: 4 ... 20 mA current transmitter (passive)**

Ordering data:

Photometer:	Item No:
DOSASens simulator: 4 ... 20 mA current transmitter (passive)	90249000

2.3.31 DOSASens Simulator/Tester pH, Redox, mV or mA signal

Simulation/testing of sensors with pH, redox, mV or mA signal.



Product description:

- Digital display of the measured values
- Simple switching from measurement to testing
- Infinitely variable
- Simulator/tester for signals from pH, redox, mV or mA sensors
- Measuring range: (measuring and simulation)
 - pH: 0 ... 14
 - Redox: 0 to ± 1400 mV
 - Amperometric sensors: 0 to -100 mV
 - Amperometric sensors: 0 to -1000 mV
 - mA input 4 ... 20 mA measuring cells
- Continuity tester
- Cable connection:
 - pH/Redox 2 x SN 6
 - mV 4-pin external thread
 - mA with 5-pin with a 2-pin assignment
 - continuity tester, 5-pin with a 2-pin assignment

Areas of application:

- Simulation of sensors with pH, redox and mV
- Test of pH, redox, continuity, mV or mA signal

Scope of supply:

- **DOSASens Simulator/Tester pH, Redox, mV or mA signal**
- Cables are included

Ordering data:

Model:	Item No.:
DOSASens Simulator/Tester pH, Redox, mV or mA Signal	21131105



II. Sensors

2.4 Probe holder

2.4.1 DOSASens Durchflussarmatur DOSAFlow DF

Durchflussarmatur aus hochwertigem, transparentem Acryl (PMMA), zur Aufnahme elektrochemischer Sensoren.

Produktbeschreibung:



- sehr hochwertige Qualität aus transparentem Acrylglas (PMMA)
- das Nadelventil dient zur Justierung des Durchflusses und der Schwimmer zur Anzeige des momentanen Durchflusses (außer DF01LC)
- optional ist zur Überwachung des Durchflusses auch ein induktiver Näherungsschalter möglich (außer DF01LC)
- die Armatur verfügt über einen Proben-Entnahmehahn (außer DF20 und DF01LC)
- die Durchflussgeometrie ist optimal an die Sensoren angepasst
- Betriebstemperatur: 25 ... 75 °C
- C (bis 50 °C, Kaltwasser), Anschluss in PP, Verschraubung in PVC
- H (bis 80 °C, Heißwasser), Anschluss in PVDF, Verschraubung in PVDF
- 80 °C optional für Heißwasser (mit dieser Option ist auch bei 80 °C ein Betriebsdruck von 8 bar möglich, entsprechendes Set für Schlauchanschluss wählen)
- max. Betriebsdruck 6 bar
- Messwasserstrom: > 30 l/h
- Anschlussmöglichkeiten: 1 ¼" mit d = 25 mm, PG13,5 (Anschluss an ETE Temperaturfühler möglich, außer DF01LC-C und DF01LC)

Einsatzgebiete:

- Aufnahme von elektrochemischen Sensoren
- z.B. pH, Redox (ORP) Sauerstoff, Temperatur ...

Lieferumfang:

- Durchflussarmatur **DOSAFlow DF** (Elektroden, Sensoren und Temperaturfühler sind nicht im Lieferumfang enthalten)

Bestellung:

Typ:	Ausstattung:	Anschlüsse:	Artikelnummer:
DOSAFlow DF01LC-C	1 amperometrischer Sensor	1 x 1 ¼" (Innengewinde)	3488070
DOSAFlow DF01LC-H	1 amperometrischer Sensor	1 x 1 ¼" (Innengewinde)	3488080
DOSAFlow DF01H	1 amperometrischer Sensor	1 x 1 ¼"	3488210
DOSAFlow DF20H	2 Elektroden	2 x PG 13,5	3488175
DOSAFlow DF11C	1 Elektrode, 1 amperometrischer Sensor	1 x PG13,5, 1 x 1 ¼"	3488260
DOSAFlow DF11H	1 Elektrode, 1 amperometrischer Sensor	1 x PG13,5, 1 x 1 ¼"	3488275
DOSAFlow DF21	2 Elektroden, 1 amperometrischer Sensor	2 x PG13,5, 1 x 1 ¼"	3488155

Technische Änderungen und Druckfehler vorbehalten, Abbildungen können ggf. abweichen.
14-02-2018

Optionen:

Typ:	Ausstattung:	Artikelnummer:
Anschluss-Set für Kaltwasser bis 50°C	Schlauchanschluss mit 2 Absperrkugelhähnen, 2 Schlauchanschlüssen ½" und je 2 x 2 m Verbindungsschlauch 6 x 8 mm	3488400
Anschluss-Set für Heißwasser bis 80°C		3488405
induktiver Näherungsschalter DFÜ1	Anschluss-Set: Typ PNP (N.O.), 2 m Festkabel	3454000
induktiver Näherungsschalter DFÜ2	Anschluss-Set: Typ NPN (N.O.), 2 m Festkabel	3454010
induktiver Näherungsschalter DFÜ3	Anschluss-Set: Typ PNP (N.C.), 2 m Festkabel	3454050
induktiver Näherungsschalter DFÜ4	Anschluss-Set: Typ NPN (N.C.), 2 m Festkabel	3454060

2.4.2 DOSAFlow Flow Cell DAS

PVC Flow cell for holding electrodes with PG 13.5



Product description:

- Made of high-grade PVC
- Operating temperature range: 1 to 50 °C
- Max. operating pressure: 6 bar
- The **DOSAFlow DAS** flow cells have screw connections and PVC glue sockets, enabling them to be mounted in the full stream
- Connection: glue socket
- Electrode holding thread PG 13.5

Areas of application:

- Holding of electrodes
- e.g. pH, redox (ORP), oxygen, temperature

Scope of supply:

- **DOSAFlow** Flow Cell **DAS**

Ordering data:

Type:	Equipment:	Seals:	Item number:
DOSAFlow DAS 1KC DN 25, D 32	1 electrode holder	EPDM	3488020
DOSAFlow DAS 1KC DN 25, D 32		Viton	3488025
DOSAFlow DAS 1KC DN 32, D 40		EPDM	On request
DOSAFlow DAS 1KC DN 32, D 40		Viton	
DOSAFlow DAS 1KC DN 40, D 50		EPDM	
DOSAFlow DAS 1KC DN 40, D 50		Viton	

2.4.3 **DOSASens Immersion Cell ETA**

PP immersion cell for electrode attachment.



Product description:

- Operating temperature: 0 to 80 °C
- Max. operating pressure: 8 bar
- Material: polypropylene
- Electrode length: 120 mm
- Connection: PG 13.5
- Cable inlet protection: IP 65
- Design:
 - ETA 1: Ø 40 mm, for 1 electrode

Areas of application:

- Installation in open tanks and channels
- e.g. pH, redox (ORP), oxygen, temperature, conductivity (conductive glass electrodes) electrodes

Scope of supply:

- **DOSASens ETA** immersion cell, incl. 2 pipe clamps for wall mounting

Ordering data:

Type:	Length: mm	Connections:	Item number:
DOSASens ETA (1 electrode)	500	PG13.5	34183001
	1000		34183002
	1500		34183003
	2000		34183004

Options:

Type:	Length: mm	Item number:
Optional immersion tube length	Custom length	On request

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
22-01-2018

Accessories: PP (polypropylene) mounting flange



Type:	Item number:
Mounting flange DN32	34183060
Mounting flange DN50	34183065

Accessories: Wetting cup type N1 made of PP



Type:	Item number:
Wetting cup	34183080

Accessories: Electrode spray cleaner type S made of PP



Type:	Item number:
Cleaning nozzle for immersion cell 500 mm	34183090
Cleaning nozzle for immersion cell 1000 mm	34183091
Cleaning nozzle for immersion cell 2000 mm	34183092

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
22-01-2018

2.4.4 DOSASens Retractable Process Assembly PA

Assembly for holding pH and redox electrodes.



Product description:

- Assembly for holding pH and redox electrodes with PG 13.5 connection thread
- For electrodes up to 120 mm in length
- Easy in-process insertion and retraction of the electrodes
- Cleaning and calibration of the electrodes with zero downtime
- Especially stable, durable fitting made of polypropylene (PP) or poly vinylidene fluoride (PVDF)
- Operating temperature range:
 - Up to 70 °C, PP
 - Up to 120 °C, PVDF
- Operating pressure:
 - Up to 5 bar at 50 °C, PP
 - Up to 5 bar at 100 °C, PVDF
- Connection thread size: ¾" thread
- Ø 40 mm
- h1 = 80 mm, h2 = 43 mm

Areas of application:

- Installation in pipes or tanks

Scope of supply:

- DOSASens Retractable Process Assembly PA

Ordering data:

Type:	Item number:
DOSASens PA, made of PP	3464060
DOSASens PA, made of PVDF	3464070

2.4.5 DOSAFlow Flow Cell DFA

Noryl flow cell for attaching electrodes



Product description:

- high quality flow cell made of transparent Noryl plastic
- flow cell cup easily removable for cleaning and maintenance
- flow cell head made of polypropylene (PP)
- optimised flow to the electrodes
- flow control tunable: N.O. or N.C.
- with equipotential bonding pin
- max. operating pressure: 5 bar
- operating temperature range: 50 °C

Areas of application:

- holding of electrodes, e.g. pH, redox (ORP), oxygen, temperature

Scope of supply:

- **DOSAFlow** Flow Cell **DFA**, flow cell with mounting bracket, ball valve for flow control, hose connections ½", 4 m PE hose 6 x 8 mm

Ordering data:

Model:	Equipment: electrodes	Flow monitoring:	Connections: Ø, mm	Item No.:
DOSAFlow DFA-O-PP-1-2	2	-	Clamping connection 12 mm	34118000
DOSAFlow DFA-O-PP-1-3	3	-		34118005
DOSAFlow DFA-O-PP-2-2	2	-	PG13.5	34118010
DOSAFlow DFA-O-PP-2-3	3	-		34118015
DOSAFlow DFA-O-PVDF-2-2	2	-		34118020
DOSAFlow DFA-O-PVDF-2-3	3	-		34118025
DOSAFlow DFA-1-PP-1-2	2	+	Clamping connection 12 mm	34118050
DOSAFlow DFA-1-PP-1-3	3	+		34118055
DOSAFlow DFA-1-PP-2-2	2	+	PG13.5	34118060
DOSAFlow DFA-1-PP-2-3	3	+		34118065
DOSAFlow DFA-1-PVDF-2-2	2	+		34118070
DOSAFlow DFA-1-PVDF-2-3	3	+		34118075

Subject to technical modifications and printing errors. Images may vary slightly from actual product.
19-02-2018



II. Sensors

2.5 Filter technology

2.5.1 **DOSASens Water filter VF/80 5"**

Noryl water filter



Product description:

- Material:
 - Housing head: polypropylene (PP)
 - Housing cup: Noryl, transparent
- Flow cell cup easily removable for cleaning and maintenance
- Operating pressure: max. 6 bar
- Operating temperature range: 45 °C (max.)

Areas of application:

- Pre-filter

Scope of supply:

- **DOSASens Water filter VF/80 5"**
Pre-filter, housing with mounting bracket, flow control, valve, 2 hose connections, ½" x 6/8 mm, and 4 m PE hose

Ordering data:

Model:	Micron rating: μ	Material: cartridge	Cartridge: washable	Connection:	Mounting:	Item number:
DOSASens VF/80 5"	80	PET	+	Hose 6 x 8 mm	Wall device	90118500

Spare parts:

Model:	Micron rating: μ	Material: cartridge	Cartridge: washable	Item No.:
Replacement cartridges 80	80	PET	+	90118506

Subject to technical modifications and printing errors. Images may vary slightly from actual product.

Water Quality Measurement Products

Full Line Catalog



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Contacts

Contacts:	Contact E-Mail:
Jack Brockmeier, Sales Manager	Jack.Brockmeier@wattswater.com
Diana Harrison, Customer Service	Diana.Harrison@wattswater.com
Sandy Scullion, Customer Service	Sandy.Scullion@wattswater.com
Service Department	Joel.Leal@wattswater.com

To Order:

Phone: (239) 337-2116
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Fax: (239) 332-7643
E-mail: hf.info@wattswater.com
Mail: HF scientific
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Returned Goods:

Before returning items for any reason, **please call our Customer Service Department** (888) 203-7248 for a RMA (Return Material Authorization) number. Goods returned without authorization will be refused. Any return or repair sent "Freight Collect" will be refused.

HF scientific

3170 Old Metro Parkway
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Phone: (239) 337-2116
Fax: (239) 332-7643
Toll free; 888-203-7248
E-mail: hf.info@wattswater.com
Web Site: www.hfscientific.com



We Accept

MicroTOL - OnLine Turbidimeter

Cat. No.	Model	Range in NTU	Ultrasonic Cleaning	USEPA Method 180.1	ISO 7027
20053	#2 White Light	0 - 1000		X	
20054	#2 Infrared	0 - 1000			X
20055	#3 White Light	0 - 100	X	X	
20056	#3 Infrared	0 - 100	X		X
20063	#4 White Light	0 - 1000	X	X	
20064	#4 Infrared	0 - 1000	X		X
40060	#5 White Light	0 - 10		X	
40061	#5 Infrared	0 - 10			X
40070	#6 White Light	0 - 10	X	X	
40071	#6 Infrared	0 - 10	X		X



MicroTOL

All MicroTOL Models include:

Backlight display, 4-20ma, RS-485/Modbus, inline pressure regulator, desiccant, universal power supply (100 - 240VAC), and operator's manual. MicroTOL 2 & MicroTOL 5 also includes spare measuring cuvette.

CALIBRATION KITS MUST BE ORDERED SEPARATELY.

MicroTOL - Accessories & Options

Cat. No.	Description
39950	ProCal Primary Calibration Kit - .02, 1 and 10 NTU (for MicroTOL 5 or 6)
39953	ProCal Primary Calibration Kit - .02, 10 and 100 NTU (for MicroTOL 3)
39957	ProCal Primary Calibration Kit, Full Range, .02, 10 and 1000 NTU (for MicroTOL 2, 4)
39825	ProCal Primary Calibration Standard – 10 NTU - 125ml
39824	ProCal Primary Calibration Standard – 100 NTU - 125ml
28335	ProCheck-S Solid Validation Standard Low NTU Value (typically less than 1 NTU) - for MicroTOL, Micro 100/1000
28336	ProCheck-S Solid Validation Standard Mid NTU Value (typically around 7 NTU) - for MicroTOL, Micro 100/1000
19787	Converter RS485 to USB. For Use with HF OnLine Software
24034	Operator's Manual MicroTOL-1, 2, 3, 4 (free download available from our web site)
19777	Modbus Protocol Manual (free download available from our web site)
98877	Demo Stand – MicroTOL
19945A	Flow Alarm MicroTOL (factory installed)
50121	Flow Through Assembly, High Temperature (0 - 90°C)
70914	Formazin Stock Solution – 4000 NTU in a 16oz bottle
50040	Formazin Stock Solution Kit - Primary Calibration - each kit contains: 32 ounces of 4000 NTU Formazin, one gallon 0.02 NTU water, one 0.02 NTU Standard, four cuvettes with indexing light shields, three pipettes, and instruction manual.
24017S	Junction Box Power Supply Assembly
21045A	Inductive Isolator Option for 4-20mA
20111	24 Volt Power Supply for MicroTOL (Factory Installed)
19609	Remote Display
20106	Stilling / Bubble Removing Chamber
20815	22 Gauge RS-485 two wire twisted pair shielded communication cable
20779S	Power Cord 120VAC / 240VAC
21201S	Source/Drain Tubing – 50 foot roll
21201	Source/Drain Tubing – (sold per foot)



Simple Calibration



Ultrasonic autoclean system

*Contact HF scientific customer service for more information toll free: 888-203-7248

MicroTOL - Spare Parts

Cat. No.	Description
50036*	Flow Through Cuvette - MicroTOL 2 (3 pack)
39957*	ProCal Primary Calibration Kit, Full Range, .02, 10 & 1000 NTU (for MicroTOL 1)
21555R*	Desiccant – Refill only
24166S	Ultrasonic Cuvette Assembly – MicroTOL 3 & 4
50125	Flow Through Assembly, Nylon (includes non ultrasonic cuvette.)
24165S	Flow Through Assembly, Nylon (does not include cuvette.)
21396S	Lamp Assembly for IR Models
24082S	Lamp Assembly for White Light Models
21062	Tubing Kit Includes: tubing, fittings, clamp for Micro200 & TOL sensor, backpressure valve, & drain vent.
19778	Inline Flow Regulator (1L/min). Recommended for pressurized system
24306S	Inline Pressure Regulator
02053	Electronic Service Module MicroTOL 2 WL (also will retrofit to MicroTOL 1 WL)
02054	Electronic Service Module MicroTOL 2 IR (also will retrofit to MicroTOL 1 IR)
02055	Electronic Service Module MicroTOL 3 WL
02056	Electronic Service Module MicroTOL 3 IR
02063	Electronic Service Module MicroTOL 4 WL
02064	Electronic Service Module MicroTOL 4 IR
04060	Electronic Service Module MicroTOL 5 WL
04061	Electronic Service Module MicroTOL 5 IR
04070	Electronic Service Module MicroTOL 6 WL
04071	Electronic Service Module MicroTOL 6 IR

*Recommended spare parts

Micro 200** & Micro 200BW Turbidimeter - Accessories & Options & Spare Parts

Cat. No.	Description
70718	Accessory Kit (Includes 1 each 0.02 NTU secondary standard, flow control clamp (stainless steel), spare cuvette and light shield cap).
39830*	ProCal Calibration Set (0.02, 100, 400 & 1000 NTU) Micro 200BW only
39820*	ProCal Calibration Set (0.02, 4, 10, 40 & 100 NTU)
39828*	ProCal Calibration Set (0.02, 4.0 & 10 NTU)
39826	ProCal Primary Calibration Standard – 4.0 NTU - 125ml
39825	ProCal Primary Calibration Standard – 10 NTU - 125ml
39823	ProCal Primary Calibration Standard – 40 NTU - 125ml
39824	ProCal Primary Calibration Standard – 100 NTU - 125ml
50121	Flow Through Assembly, High temperature (0-90°C) Micro 200BW Only
21652	Micro200BW Operator's Manual - 0-10 and 0-100NTU (free download available from our web site)
21640	Micro200BW Operator's Manual - 0-1000NTU (free download available from our web site)
21546	Cable – Interconnect cable between sensor & analyzer (6 feet long)
20853A	Cable – Analyzer to Sensor with connector (for requirements over 6 feet)
50036*	Cuvette, 28 x 70 mm, vial only (screw in type) 3/pk.
21555R	Desiccant – Refill Only
50125	Flow Through Assembly, Nylon (includes non ultrasonic cuvette).
21541*	Lamp module, plug in source lamp.

*Recommended spare parts

** This instrument is no longer in production, but some parts and accessories are still available.

Micro100 - Instruments

Cat. No.	Micro WL	NTU,V, Hz	Description
20001	Micro 100 WL Laboratory Turbidimeter	0 – 1000 NTU, 120V 60 Hz	Includes a complete set of calibration standards (0.02, 10 and 1000 NTU), two measuring cuvettes with light shield cap, operator's manual and 120VAC power adapter
19950	Micro 100 WL Laboratory Turbidimeter	0 – 1000 NTU, Universal Power 100-240V 50-60 Hz	Includes a complete set of calibration standards (0.02, 10 and 1000 NTU), two measuring cuvettes with light shield cap, operator's manual and a Universal Power adapter that operates at any voltage between 100-240VAC
19952	Micro 100 IR Laboratory Turbidimeter,	0 – 1000 NTU, 100-240V Universal Power 50-60 Hz	Includes a complete set of calibration standards (0.02, 10 and 1000 NTU), two measuring cuvettes with light shield cap, operator's manual and a Universal Power adapter that operates at any voltage between 100-240VAC



Micro 100 - Accessories & Options

Cat. No.	Description
19786	Batteries, Lithium - Pkg. of 2
70050	Wall Power Supply/Charger 120 Volts
22580	Universal Power Supply 100-240 Volts
19785	Cable RS-232, Micro 100/1000
39957	ProCal Primary Calibration Kit, Full Range, .02, 10 & 1000 NTU
39825	ProCal Primary Calibration Standard – 10 NTU - 125ml
28335	ProCheck-S Solid Validation Standard Low NTU Value (typically less than 1 NTU) - for MicroTOL, Micro 100/1000
28336	ProCheck-S Solid Validation Standard Mid NTU Value (typically around 7 NTU) - for MicroTOL, Micro 100/1000
50052	Cuvette 28 x 70 mm 10/pk. (replaces 28 x 93 mm) Use for grab sample. Includes ten threaded light shield caps.
50051	Cuvette 28 x 70mm 3/pk. (replaces 28 x 93mm) Use for grab sample. Includes threaded light shield caps.
19981	Cuvette Stand (for storing empty cuvettes as well as calibration standards; holds up to 11 cuvettes)
19889	Flow Through Assembly (complete kit)
50040	Formazin Stock Solution Kit Each kit contains 32 ounces of 4000 NTU Formazin, one gallon 0.02 NTU water, one 0.02 NTU Reference Standard, four cuvettes with indexing light shields, three pipettes, and instruction manual.
22155	Operator's Manual - White Light & IR - (free download available from our web site)
19975	Pour through Assembly (includes the assembly, locking ring, 24" of drain tubing, cuvettes and instructions)
19972	Replacement Lamp Module - (White Light)
22423S	Replacement Lamp Module – (IR)

Micro1000 - Instruments

Cat. No.	Micro WL	NTU,V, Hz	Description
20014	1000 WL Laboratory Turbidimeter	0 - 10,000 NTU, 100-240V Universal Power 50-60 Hz	Includes a complete set of calibration standards (.02, 10, 100, 1750 NTU), two measuring cuvettes with light shield caps, operator's manual, and plug-in power adapter.
20016	Micro 1000 IR Laboratory Turbidimeter	0 - 10,000 NTU, 100-240V Universal Power 50-60 Hz	Includes a complete set of calibration standards (.02, 10, 100, 1750 NTU), two measuring cuvettes with light shield caps, operator's manual, and plug-in power adapter.



Micro1000 - Accessories & Options

Cat. No.	Description
22580	Universal Power Supply 100-240 Volts
19785	Cable RS-232, Micro 100/1000
39927	ProCal Primary Calibration Set, WL (0.02, 10, 100, 1750 NTU)
39928	ProCal Primary Calibration Set, IR (0.02, 10, 100, 1750 NTU)
39938	ProCal Calibration Standard, 10,000 NTU (white light)
39939	ProCal Calibration Standard, 10,000 NTU (IR)
39825	ProCal Primary Calibration Standard – 10 NTU - 125ml
39824	ProCal Primary Calibration Standard – 100 NTU - 125ml
28335	ProCheck-S Solid Validation Standard Low NTU Value (typically less than 1 NTU) - for MicroTOL, Micro 100/1000
28336	ProCheck-S Solid Validation Standard Mid NTU Value (typically around 7 NTU) - for MicroTOL, Micro 100/1000
50052	Cuvette 28 x 70 mm 10/pk. (replaces 28 x 93 mm) Use for grab sample. Includes ten threaded light shield caps.
50051	Cuvette 28 x 70 mm 3/pk. (replaces 28x93 mm) Use for grab sample. Includes threaded light shield caps.
22615	Operator's Manual - White Light & IR - (free download available from our web site)
19889	Flow Through Assembly (complete kit)
19975	Pour through Assembly (includes the assembly, locking ring, 24" of drain tubing, cuvettes and instructions)
19972	Replacement Lamp Module - (White Light)
24547S	Replacement Lamp Module – (IR)

MicroTPW / TPI - Instruments

Cat. No.	Micro Type	NTU	Description
20000	MicroTPW Portable Turbidimeter (White Light)	0 - 1,100 NTU	Includes carrying case, one set of calibration standards, indexing rings, 4AAA alkaline batteries, operator's manual and measuring cuvettes with light shield caps.
20008	MicroTPI Portable Turbidimeter (IR)	0 - 1,100 NTU	Includes carrying case, one set of calibration standards, indexing rings, 4AAA alkaline batteries, operator's manual and measuring cuvettes with light shield caps.

MicroTPW / MicroTPI - Accessories, Options & Spare Parts

Cat. No.	Description
39845	ProCal Primary Calibration Kit, .02, 10, 1000 NTU for MicroTPI & MicroTPW
24571S	Rechargeable Battery Pack w/ 120v charger (TPI & TPW)
34381S	ProCal Primary Calibration Standard – 10 NTU - 60ml
19856	Cuvettes with Light Shield Caps, 3 pack (TPI & TPW)
22664	Batteries, 4 pack (TPI & TPW)
24378	Combined Manual for MicroTPI & MicroTPW (free download available from our web site)
39855	ProCal Primary Calibration Kit, .02, 10, 100, 1000NTU for MicroTPI–Cat# 19997 (before July-2004)
32482S	ProCal Primary Calibration Standard–10 NTU - 60ml for Cat#19997
32483S	ProCal Primary Calibration Standard–100 NTU - 60ml for Cat#19997



DRT-15CE - Instruments

Cat. No.	Micro Type	NTU,V	Description
19057	DRT-15CE Portable Turbidimeter (White Light)	0 - 1000 NTU (120V)	Includes: battery charger, sample cuvette w/light shield cap, 0.02 NTU reference standard, recorder output plug and instruction manual..
19058	DRT-15CE Portable Turbidimeter (White Light)	0 - 1000 NTU (240V)	Includes: battery charger, sample cuvette w/light shield cap, 0.02 NTU reference standard, recorder output plug and instruction manual..



DRT-15CE - Accessories, Options & Spare Parts

Cat. No.	Description
20115	Adapter Kit, 16 mm factory installed
19045	Auto Adapter 12 Volt
39071	ProCal Primary Calibration Set (0.02, 10, 100 & 1000 NTU)
21805	Operator's Manual (free download available from our web site)
19981	Cuvette Stand (for storing cuvettes as well as calibration standards; holds up to 11 cuvettes)
50040	Formazin Stock Solution Kit Each kit contains 32 ounces of 4000 NTU Formazin, one gallon 0.02 NTU water, one 0.02 NTU Reference Standard, four cuvettes with indexing light shields, three pipettes, and instruction manual.
19975	Pour through Assembly (includes the assembly, locking ring, 24" of drain tubing, cuvettes and instructions)
39825	ProCal Primary Calibration Standard–10 NTU - 125ml
39824	ProCal Primary Calibration Standard–100 NTU - 125ml
50048	Cuvette 16mm 3/pk. With cap shields (requires adapter, catalog no. 20115)
50052	Cuvette 28 x 70 mm 10/pk. (replaces 28 x 93 mm) Use for grab sample. Includes ten threaded light shield caps.
50051	Cuvette 28 x 70 mm 3/pk. (replaces 28 x 93 mm) Use for grab sample. Includes threaded light shield caps.
70008	Rechargeable Battery
60013	ProCal Calibration Standard 0.02 NTU (complete with indexing light shield)
21084	Source Lamp Assembly, 2/pk.

ProCal

ProCal primary turbidity standards are pre-diluted, factory certified*, and ready for use with Hach® process, laboratory and field instruments as well as the HF scientific turbidimeter product line and other manufacturer's instrumentation. The ProCal standard formulation utilizes a preservative that enhances stability, yet is safe and biodegrades rapidly. Contact our customer service department for more information.

Hach® 1720 c/d/e Process Turbidimeter

Hach® part #	**GFS part #	HF part#	Kit:	NTU Value(s)	Bottle size
n/a	85558	52000	High range	0.0, 20	1 Liter
n/a	85559	52010	High range	0.0, 20	1 Gallon
n/a	86340	52020	Low range	0.0, 1.0	1 Liter
n/a	86307	52030	Low range	0.0, 1.0	1 Gallon
2659600		52040	High range	0.0, 20	4 x 1 liter
2659753	85005	52050		0.0	1 Liter
n/a	85006	52060		0.0	1 Gallon
2659853	85575	52070		1.0	1 Liter
n/a	86291	52080		1.0	1 Gallon
2660153		52090		20	1 Liter
n/a	85474	52100		20	1 Gallon
2746353		52110		40	1 Liter
2746356		52120		40	1 Gallon

Standards certified* for use with the Hach® Company's 1720 series turbidimeters



ProCal gallon for Hach® 1720



ProCal liter for Hach® 1720

Hach® 2100N Laboratory Turbidimeter

Hach® part #	**GFS part #	HF part #	Kit:	NTU Value(s)	Bottle size
n/a	85525	52140	Kit:	0.0, 20, 200, 1000, 4000	250ml
2662100		52150	Kit:	0.0, 20, 200, 1000, 4000	500ml
n/a	85003	52160		0.0	250ml
2659749	85004	52170		0.0	500ml
n/a	85248	52180		20	250ml
2660149	86191	52190		20	500ml
n/a	85249	52200		200	250ml
2660449	86193	52210		200	500ml
n/a	85250	52220		1000	250ml
2660649		52230		1000	500ml
n/a	85251	52240		4000	250ml
246149	86197	52250		4000	500ml

Standards certified* for use with the Hach® Company's 2100N turbidimeter

Hach® is a registered trademark of the Hach® Company, which is not affiliated with HF scientific.

**GFS stands for GFS Chemicals of Powell, Ohio.

*In addition to being approved by the EPA, ProCal™ has been certified through testing conducted by HF scientific demonstrating that ProCal™ performs as well as Hach® primary turbidity standards in selected Hach® instruments. Test results are available upon request.

Hach® 2100AN Laboratory Turbidimeter

Hach® part #	GFS part #	HF part #	Kit:	NTU Value(s)	Bottle size
n/a		52260	Kit:	0.0, 20, 200, 1000, 4000	250ml
2659500		52270	Kit:	0.0, 20, 200, 1000, 4000	500ml
n/a	85003	52280		0.0	250ml
2659749	85004	52290		0.0	500ml
n/a	85248	52300		20	250ml
2660149	86191	52310		20	500ml
n/a	85249	52320		200	250ml
2660449	86193	52330		200	500ml
n/a	85508	52340		1000	250ml
2660649	85396	52350		1000	500ml
n/a	85251	52360		4000	250ml
246149	86197	52370		4000	500ml
2584202		52380		7500 for 2100AN	30ml sealed

Standards certified* for use with the Hach® Company's 2100AN turbidimeter



Hach® 2100P Portable Field Turbidimeter

Hach® part #	GFS part #	HF part #	Kit:	NTU Value(s)	Bottle size
n/a	85526	52390	Kit:	0.0, 20, 100, 800	250ml
2659400		52400	Kit:	0.0, 20, 100, 800	500ml
n/a	85003	52410		0.0	250ml
2659749	85004	52420		0.0	500ml
n/a	85253	52430		20	250ml
2660149		52440		20	500ml
n/a	85255	52450		100	250ml
2660249		52460		100	500ml
n/a	85256	52470		800	250ml
2660549		52480		800	500ml

Standards certified* for use with the Hach® Company's 2100P turbidimeter



Hach® 2100Q Portable Field Turbidimeter

Hach® part #	GFS part #	HF part #	Kit:	NTU Value(s)	Bottle size
n/a	85712	52490	Kit:	0.0, 20, 100, 800	250ml
2971200		52500	Kit:	0.0, 20, 100, 800	500ml
n/a	85003	52510		0.0	250ml
2659749	85004	52520		0.0	500ml
n/a	85693	52530		20	250ml
2660149		52540		20	500ml
n/a	85695	52550		100	250ml
2660249		52560		100	500ml
n/a	85697	52570		800	250ml
2660549		52580		800	500ml

Standards certified* for use with the Hach® Company's 2100Q turbidimeter

Hach® is a registered trademark of the Hach® Company, which is not affiliated with HF scientific.

**GFS stands for GFS Chemicals of Powell, Ohio.

*In addition to being approved by the EPA, ProCal™ has been certified through testing conducted by HF scientific demonstrating that ProCal™ performs as well as Hach® primary turbidity standards in selected Hach® instruments. Test results are available upon request.

CLX - Instrument

Cat. No.	Name	Description
20040	CLX OnLine Residual Chlorine Analyzer	The CLX comes with 4-20mA and RS-485 Modbus, backlight display, inline pressure regulator, power supply, replacement tubing/cuvette kit (one year supply) and owners manual. REAGENTS PURCHASED SEPARATELY!

If the application combines high humidity with cold sample water, purchase a #09944 Desiccant Cartridge separately

Reagents

Cat. No.	CLX J.A.W. reagents - Dry - Just Add Water
09951	J.A.W. Kit Reagent - Free Chlorine 30 day supply
09952	J.A.W. Kit Reagent - Total Chlorine 30 day supply

Cat. No.	J.A.W. Reagents designed by HF scientific for use in the Hach® CL17
09951H	J.A.W. Kit Reagent - Free Chlorine 30 day supply
09952H	J.A.W. Kit Reagent - Total Chlorine 30 day supply

Cat. No.	Description
09947	Original Liquid Kit Reagent - Free Chlorine 30 day supply
09948	Original Liquid Kit Reagent - Total Chlorine 30 day supply



CLX Instrument



CLX Reagents

Accessories

Cat. No.	Description
09950	Replacement Tubing/Cuvette Kit - one year supply with cuvette (new) CALL!
25096	Flush Kit
24561	T-Strainer Assembly
28625	T-Strainer Screen
24320S	Pressure Regulator
25018S	Flow Through Cuvette CLX
25017S	Check Valve Kit – For CLXs shipped after AUG 2007. Includes Check Valves, Duck Bill Valves, End Caps and Pump Tubes
09944	Desiccant Cartridge - Use in high humidity, cold water sample applications
98878	Demo Stand - CLX
24429S	Replacement PCB Module – Includes LCD and Keypad
20779S	Power Cord – 120VAC / 240VAC
09945	Zero Calibration Kit – 240 Volt 50Hz
09946	Zero Calibration Kit – 120 Volt 60Hz
24420	Operator's Manual (free download available from our web site)
24569	Modbus Manual for CLX (free download available from our web site)
24561	Accessory kit - t-strainer, ferrite, fittings, tubing polypro, screen



CLX Instrument cover removed

Hach® is a registered trademark of the Hach® Company, which is not affiliated with HF scientific.

Dry CLX Reagents - OnLine for international shipments requiring non-hazardous

Cat. No.	Dry Kit Reagents*
09947X	CLX Dry Kit Reagent - Free Chlorine 30 day supply
09948X	CLX Dry Kit Reagent - Total Chlorine 30 day supply
09937X	CLX Dry Kit Reagent - Free Chlorine 12 month supply
09938X	CLX Dry Kit Reagent - Total Chlorine 12 month supply

*Kits shipped dry. User must add Sulfuric Acid and Sodium Hydroxide before use.

Hach® is a registered trademark of the Hach® Company, which is not affiliated with HF scientific.

Chlorine Pocket Photometer - Instrument

Cat. No.	Name	Description
10478	Chlorine Pocket Photometer 0-10.0 ppm (mg/L)	Each unit includes: 4 measuring cuvettes w/caps, 4 AAA batteries, rugged carrying case & instructions (REAGENT DISPENSER SOLD SEPARATELY)
10485	Chlorine Pocket Photometer 0-20.0 ppm (mg/L)	Each unit includes: 4 measuring cuvettes w/caps, 4 AAA batteries, rugged carrying case & instructions (REAGENT DISPENSER SOLD SEPARATELY)

Chlorine Pocket Photometer - Accessories & Options

Cat. No.	Description
10451	Reference Standard solution, 2.0 ppm 118 ml (CP-15)
10451A	Reference Standard solution, 2.0 ppm 118 ml (Chlorine Pocket Photometer)
10431	Cuvettes, Disposable with caps, pkg. 100
10430	Cl ₂ Dilution Kit (0-75 ppm)
21487	Optical Well Cover, Black
21885	Operator's Manual (free download available from our web site)
22664	Set of 4 AAA Alkaline batteries
24571S	Rechargeables Battery - 4 AAA with 120V Charger



Cat. No.	Description
10500	PPD-2 Dispenser for Free Chlorine-100 tests (5ml sample size)
10500C	PPD-2 Dispenser for Free Chlorine-1000 tests (5 x 200) (5ml sample size)
10502	PPD-2 Dispenser for Total Chlorine-100 tests (5ml sample size)
10502C	PPD-2 Dispenser for Total Chlorine-1000 tests (5 x 200) (5ml sample size)
10508	PPD-2 Dispenser for 0-20 ppm, Total Chlorine 200 tests (5 ml sample size)
10509	PPD-2 Dispenser for 0-20 ppm, Free Chlorine 200 tests (5 ml sample size)

Chlorine Dioxide Pocket Photometer - Instrument

Cat. No.	Name	Description
10474	Chlorine Dioxide Pocket Photometer	Each unit includes: 4 measuring cuvettes w/caps, Powder Pop Dispenser w/ 100 doses of DPD, 30 ml of Glycine Reagent, 4 AAA batteries, rugged carrying case and instruction card



Chlorine Dioxide Pocket Photometer - Accessories & Options

Cat. No.	Description
10419	Reagent Kit – PPD-2 Dispenser and 30ml of Glycine (dropper) for 100 tests (5ml sample volume)
10431	Cuvettes, Disposable with caps, pkg. 100
10453	Reference Standard solution, 2.0 ppm 118 ml
24055	Operator's Manual (free download available from our web site)
22664	Set of 4 AAA Alkaline batteries
24571S	Rechargeable Batteries - 4 AAA with 120V Charger

Total Alkalinity Pocket Photometer - Instrument

Cat. No.	Description
10482	Alkalinity Pocket Photometer

Total Alkalinity Pocket Photometer - Reagent

Cat. No.	Description
14195	Indicator, Test Solution, Syringe, Cuvettes, Instruction

Total Alkalinity Pocket Photometer - Accessories

Cat. No.	Description
10431	Disposable Cuvettes, 100/pkg
27035S	Soft Carry Case
22664	Set of 4 AAA Alkaline batteries

PPD-2 DPD Powder Pop® Dispenser

Cat. No.	Test Description	Sample Size	Use with the following Photometers
10500	PPD-2 Dispenser for Free Chlorine-100 tests	≤ 5 ml	HF scientific, Hach®
10445A	PPD-2 Dispenser for Free Chlorine-400 tests (2 x 200)	≤ 5 ml	HF scientific, Hach®
10500C	PPD-2 Dispenser for Free Chlorine-1000 tests (5 x 200)	≤ 5 ml	HF scientific, Hach®
10502	PPD-2 Dispenser for Total Chlorine-100 tests	≤ 5 ml	HF scientific, Hach®
10446A	PPD-2 Dispenser for Total Chlorine-400 tests (2 x 200)	≤ 5 ml	HF scientific, Hach®
10502C	PPD-2 Dispenser for Total Chlorine-1000 tests (5 x 200)	≤ 5 ml	HF scientific, Hach®
10504	PPD-2 Dispenser for Free Chlorine-100 tests	10 ml	Hach®, Hanna
10447A	PPD-2 Dispenser for Free Chlorine-400 tests (2 x 200)	10 ml	Hach®, Hanna
10504C	PPD-2 Dispenser for Free Chlorine-1000 tests (5 x 200)	10 ml	Hach®, Hanna
10506	PPD-2 Dispenser for Total Chlorine-100 tests	10 ml	Hach®, Hanna
10448A	PPD-2 Dispenser for Total Chlorine-400 tests (2 x 200)	10 ml	Hach®, Hanna
10506C	PPD-2 Dispenser for Total Chlorine-1000 tests (5 x 200)	10 ml	Hach®, Hanna
10504T	PPD-2 Dispenser for Free Chlorine 100 Tests (for test kits using tablet technology)	10 ml	Lamotte, Lovibond, YSI, Palintest, Tintometer, Orion
10439A	PPD-2 Dispenser for Free Chlorine 400 Tests (2 x 200) (for test kits using tablet technology)	10 ml	Lamotte, Lovibond, YSI, Palintest, Tintometer, Orion
10505T	PPD-2 Dispenser for Free Chlorine 1000 Tests (5 x 200) (for test kits using tablet technology)	10 ml	Lamotte, Lovibond, YSI, Palintest, Tintometer, Orion
10506T	PPD-2 Dispenser for Total Chlorine 100 Tests (for test kits using tablet technology)	10 ml	Lamotte, Lovibond, YSI, Palintest, Tintometer, Orion
10444A	PPD-2 Dispenser for Total Chlorine 400 Tests (2 x 200) (for test kits using tablet technology)	10 ml	Lamotte, Lovibond, YSI, Palintest, Tintometer, Orion
10507T	PPD-2 Dispenser for Total Chlorine 1000 Tests (5 x 200) (for test kits using tablet technology)	10 ml	Lamotte, Lovibond, YSI, Palintest, Tintometer, Orion
10517	PPD-2 Dispenser for Free Chlorine-100 tests	25 ml	Hach®
10519	PPD-2 Dispenser for Free Chlorine-1000 tests (5 x 200)	25 ml	Hach®
10518	PPD-2 Dispenser for Total Chlorine-100 tests	25 ml	Hach®
10520	PPD-2 Dispenser for Total Chlorine-1000 tests (5 x 200)	25 ml	Hach®



The HF PPD-2 DPD Dispenser is compatible with HF and many non-HF scientific photometers.



PPD-2 DPD Free Chlorine Dispenser



PPD-2 DPD Total Chlorine Dispenser

DPD Powder Pops®

Cat. No.	Description	Sample size
10300	Free Chlorine, 200 pkg	5 ml
10301	Free Chlorine, 1000 pkg	5 ml
10303	Total Chlorine, 200 pkg	5 ml
10304	Total Chlorine, 1000 pkg	5 ml
10306	Free Chlorine, 200 pkg	10 ml
10307	Free Chlorine, 1000 pkg	10 ml
10309	Total Chlorine, 200 pkg	10 ml
10310	Total Chlorine, 1000 pkg	10 ml
10312	Free Chlorine, 200 pkg	25 ml
10313	Free Chlorine, 1000 pkg	25 ml
10315	Total Chlorine, 200 pkg	25 ml
10316	Total Chlorine, 1000 pkg	25 ml



Chlorine Micro Check Test Strips (bottles of 50 strips)

Cat. No.	Micro Check Free, Detection Levels PPM (mg/L)	
09940	0, 0.1, 0.2, 0.4, 0.6, 0.8, 1.2, 1.5, 2.0, 2.6, 4.0, 6.0, 10	
	High Range	Low Range
09941	0.0, 0.1, 0.2, 0.5, 0.8, 4.0, 10.0	0.0, 0.05, 0.1, 0.15, 0.2, 0.5, 1.0



pH Buffers

Cat. No.	Description
10124A	Acetate Buffer (pH4) for residual analyzers (case - 4 x 1 gallon)
10006	Buffer Solution, pH 10.00 (1 gallon)
10003	Buffer Solution, pH 10.00 (500 ml)
10004	Buffer Solution, pH 4.00 (1 gallon)
10001	Buffer Solution, pH 4.00 (500 ml)
10005	Buffer Solution, pH 7.00 (1 gallon)
10002	Buffer Solution, pH 7.00 (500 ml)



Nitrification Inhibitor Dispenser for Carbonaceous BOD Analysis

Cat. No.	Description
10487	Nitrification Inhibitor Dispenser - 200 doses/tests



Bottles not included



Visual Test Kits

Cat. No.	Description
10460	Total Hardness Kit, Visual Drop Count, Titrimetric, 0-500 ppm/0-30 gpg, ≥ 100 test/kit
10489	Total Alkalinity Kit, Visual Comparator Card, Colorimetric, 0-500 ppm, ≥ 100 test/kit
10490	Total Iron (Fe+3) Kit, Visual Comparator Card, Colorimetric, 0-9 ppm, ≥ 100 test/kit
10491	Ferrous Iron (Fe+2) Kit, Visual Comparator Card, Colorimetric, 0-9 ppm, ≥ 100 test/kit
10492	pH Kit, Visual Comparator, Colorimetric, 6-8 ppm, ≥ 100 test/kit
10493	Manganese Kit, Visual Comparator Card, Colorimetric, 0-10 ppm, ≥ 100 test/kit
10494	Chlorine (Free & Total) Kit, Visual Comparator Card, Colorimetric, 0-6 ppm, ≥ 100 test/kit



Total Alkalinity



Total Iron

Accessories

Cat. No.	Description
29224S	Comparator
27035S	Carrying Case

UVT-15 - Instrument/Laboratory

Cat. No.	Micro WL	NTU,V, Hz	Description
19573	UVT-15 UV Photometer	120V	Each unit includes quartz cuvette, plug-in power supply and is Self Contained in a Rugged Carrying Case
19574	UVT-15 UV Photometer	240V	Each unit includes quartz cuvette, plug-in power supply and is Self Contained in a Rugged Carrying Case



UVT-15 - Accessories & Options

Cat. No.	Description
19313	Quartz cuvette (package of 2)
21827	Replacement Power Supply UVT-15 for 120volt UL/CSA approved
19323	100%T Standard – 500ml
21828	Power Supply UVT-15 for 240volt CE approved
21823	Black Zero Reference Plug

For Pressurized Drinking or Gravity Feed Water Applications

AccUView OnLine UV %Transmission Analyzer

Cat. No.	Micro WL	NTU,V, Hz	Description
28041	AccUView LED OnLine UV Analyzer	100-240 VAC	Each unit includes selectable isolated 4-20 mA output or RS-485 with modbus, two alarm contact, inline pressure regulator, desiccant, power supply, Standard 100%T, spare cuvette with Ultrasonic Transducer and operators manual. Selectable Units: %T or Absorbance – Mercury Free.
28042	AccUView LED OnLine UV Analyzer with Flow Alarm	100-240 VAC	Each unit includes selectable isolated 4-20 mA output or RS-485 with modbus, two alarm contact, inline pressure regulator, desiccant, power supply, Standard 100%T, spare cuvette with Ultrasonic Transducer and operators manual. Selectable Units: %T or Absorbance – Mercury Free. Includes a built in flow alarm
19577	AccUView OnLine %Transmission Analyzer,	100 – 240 VAC for Pressurized or Gravity Feed Potable Water Systems	Each unit includes 4-20mA output with isolator, two alarm contacts, inline flow and pressure regulator, desiccant, power supply, Standard 100%T, Spare cuvette with Ultrasonic Transducer and operator's manual



AccUView LED



Ultrasonic Autoclean System

AccUView Standard and LED - Accessories & Options

Cat. No.	Description	Standard	LED
19609	Remote Display (for an additional digital readout up to 500 feet away)	√	√
24232S	Cuvette (Quartz), with Ultrasonic Transducer	√	√
21555R	Desiccant – Refill Only	√	√
21062	Tubing Kit Includes: tubing, fittings, shut off clamp, backpressure valve, and drain vent.	√	√
21201S	Source/Drain Tubing – 50 foot roll	√	√
21201	Source/Drain Tubing – (sold per foot)	√	√
28137	Electronic Service Module AccUView LED		√
24235S	Electronic Service Module AccUView	√	
24238	Operator's Manual (free download available from our web site)	√	
24165S	Flow Through Assembly, Nylon (does not include cuvette.)	√	√
29173	AccUView LED Owners manual (or free download from our web site)		
20106	Stilling / Bubble Removal Chamber	√	√
19323	100% T Standard – 500ml	√	√
70908	100% T Standard – 1 Gallon	√	√
19851A	RS-485 output with Modbus Protocol (Factory installed option)	√	
24570	Modbus Manual for AccUView (free download available from our web site)	√	√



AccUView

For Wastewater Open Channel Applications

AccUView OnLine WASTEWATER UV % Transmission Analyzers

Cat. No.	Name	Description
19571	AccUView WASTEWATER OnLine UV %T Analyzer, 100-240 VAC	Each unit includes Stainless Steel (304) Enclosure with window for viewing of analyzer, spare cuvette, spare flow through assembly, 4-20mA with isolator, backlight display, bellows pump, power supply, desiccant, 500ml of 100%T water and 50 feet of source drain tubing.
19571C	AccUView WASTEWATER OnLine UV %T Analyzer with Heater, 100-240 VAC	Each unit includes Stainless Steel (304) Enclosure with window for viewing of analyzer, spare cuvette, spare flow through assembly, Heater, 4-20mA with isolator, backlight display, bellows pump, power supply, desiccant, 500ml of 100%T water and 50 feet of source drain tubing.



AccUView WASTEWATER OnLine UV % T Analyzer - Accessories & Options

Cat. No.	Description
19323	Calibration Standard, 500mL, 100%T, Certified
70908	Calibration Standard, 1 gal, 100%T, Certified
19609	Remote Display (for an additional digital readout up to 500 feet away)
24232S	Cuvette (Quartz), with Ultrasonic Transducer
21555R	Desiccant – Refill Only
24767S	Electronic Service Module AccUView Wastewater
24745S	Flow Through Assembly AccUView Wastewater (Rotational quick release flow head without cuvette.)
24743	Operator's Manual (free download available from our web site)
19402	Cleaning / Descaling Solution (4X1 Gallon)
24701S	T-Strainer AccUView Wastewater
24653S	Bellows Pump
21201S	Source/Drain Tubing – 50 foot roll
21201	Source/Drain Tubing – (sold per foot)
19851A	RS-485 output with Modbus Protocol (Factory installed option)

*The Micro TUV instrument has been discontinued and replaced by the AccUView Wastewater Online UV %T Analyzer. The AccUView Wastewater has updated microprocessor technology, ultrasonic cleaning and a smaller footprint which adds up to better value in a newer updated model.

MicroTUV OnLine UV %Transmission Analyzer* - Accessories & Options

Cat. No.	Description
70908	100%T Standard, (1 gallon)
19402	Cleaning and Descaling Solution (4 x 1 gallon)
22965	Cleaning Kit (Includes modified Cap, Tubing and Connectors)
21555R	Desiccant – Refill Only
22974	Cuvette, Quartz (Online)
22041	Pump Head Kit
22047	Pump Tubing Kit

Streaming Current Monitor - Accessories & Options

Cat. No.	Description
19886L	Flow/Level Alarm (Factory Installed)
19922	Calibration Kit – Includes polymer, water and measuring vessel
19926	Polymer Calibration Standard Replacement – for #19922 2 each
21648	Operator's Manual (free download available from our web site)
19994	Spare Cell and Probe Set
19402	Cleaning and Descaling Solution (4 x 1 gallon)
19980	Signal Amplifier to Extend Sensor to Analyzer Distance up to 1000' (need cable #20853A)
22480	Cable – Analyzer to Sensor with connector (25 feet long)
20853A	Cable – Analyzer to Sensor with connector (for requirements over 25 feet long)
19779	Extended Range – (\pm 100 SCU)
19774	Strap Down Kit (Factory Installed)
19552	Replacement sensor for MicroTSCM
22485	Replacement analyzer for MicroTSCM
19984	Sample Chamber, SCM

Industrial Process Control & Monitoring

- **Patented Axial Ion Path™ Reference**
- **Specialized pH Glass Formulations and ORP Electrodes**
- **Proprietary Low-Noise, High Temperature Signal Cable**
- **Sensors are Compatible with Most Major Manufacturer's Analyzers**
- **Industrial Mounting Options**
- **Industry Leading Pressure and Temperature Ratings**



Axial Ion Path™ Reference

- Patented design increases sensor life, accuracy and reliability
- High resistance to poison: Reduced calibration offset error
- Large surface area reference junction eliminates plugging issues
- Eliminates error due to fluctuating pressure
- No exotic gel or polymer electrolyte which may be incompatible with the process

Specialized Electrode Glass Formulations & Styles

- High accuracy and lifespan in strong acids and bases
- Coating resistant glass electrode reduces fouling
- Silica resistant option to eliminate bonding to glass
- Ruggedized hemispherical and flat glass options resist breaking

Proprietary Sensor Signal Cable

- Designed to eliminate measurement fluctuation due to noise
- Chemical and UV resistant
- Highest temperature rating (130°C)

Compatibility with Most Major Vendor's Electronics

- Proven with major vendors of pH analyzers (Rosemount, ABB, Foxboro, E&H, Mettler Toledo, GLI/Hach, Knick)
- Get higher accuracy and longer life in your application by upgrading the sensor

Industrial Mounting Options

- Mounting fittings for sample line installations
- Submersible cleaners and scrubbers
- Ball Valve "Hot Tap" retraction solutions
- Variety of materials for corrosive applications

Highest Pressure & Temperature Ratings

- In-line sensor installation to 2,500 PSIG (172 BAR)
- Quick Change "Nut Lock" to 300 PSIG (20 BAR)
- Retractable "Hot Tap" to 300 PSIG (20 BAR)
- Process temperature to 266°F (130°C)

Performance Series pH/ORP Sensors

Performance Series

The Barben Analyzer Technology Performance Series products are 3rd generation combination pH/ORP electrodes targeted at harsh, industrial measurement applications. High pressures, strong chemicals, and elevated temperatures typically shorten the lifespan of conventional double-junction pH probes. In these applications the Performance Series sensor offers extended sensor lifespan, as well as decreased drift, and longer calibration intervals.

Each sensor is manufactured with our patented Axial Ion Path™ reference technology, proprietary Low-Noise & High-Temp Signal Cable along with proprietary ruggedized, high temp and coat resistant glass formulations.

A wide selection of sensor body styles and process fittings in a variety of corrosion resistant materials allow direct replacement of short-lived OEM pH/ORP sensors. BAT Performance Series sensors are compatible with all major manufacturers of pH analyzers and transmitters. Upgrade your analytical measurement without the hassle and expense of replacing costly field instruments.

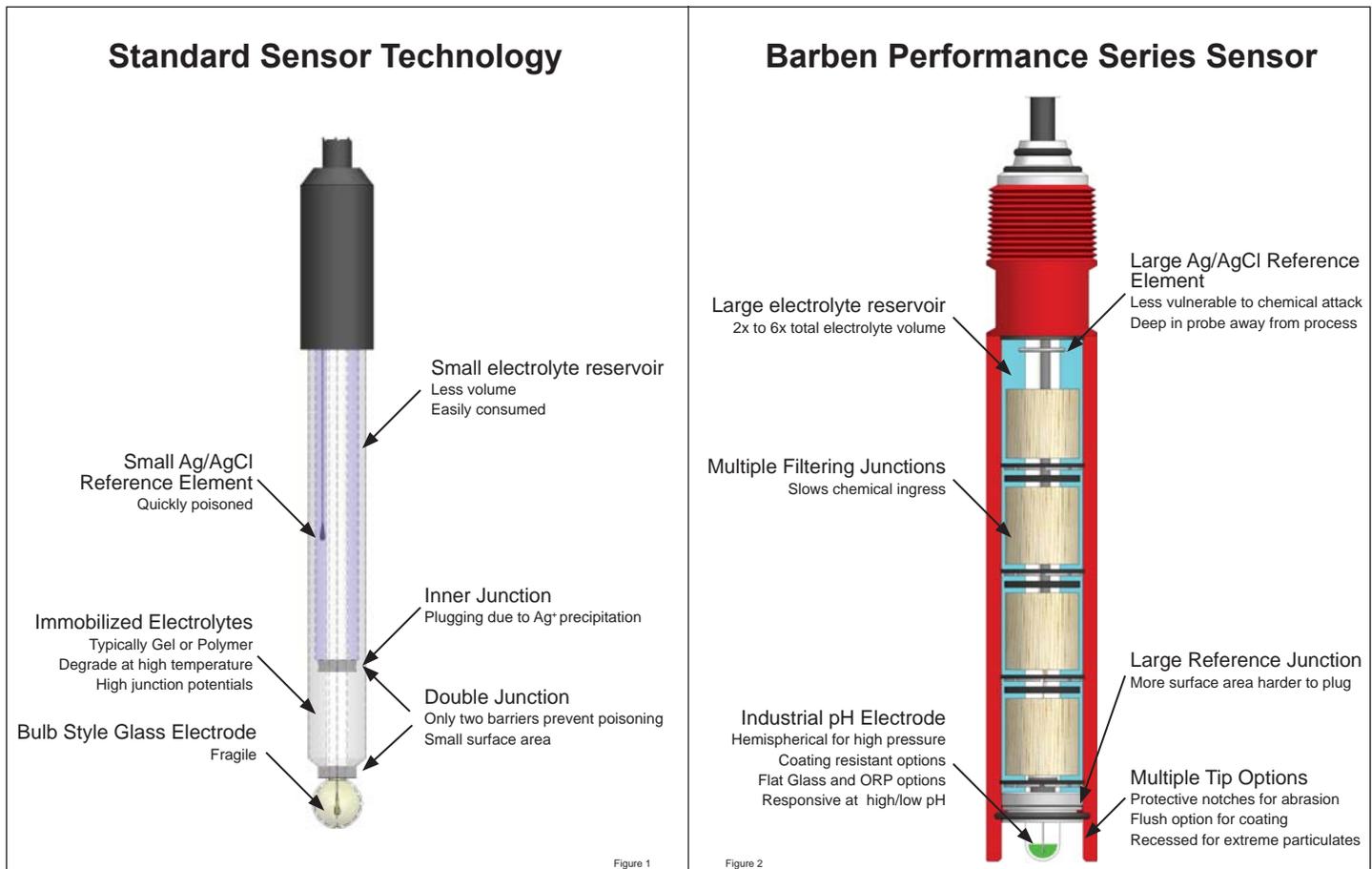
Typical Process Applications

Many industrial processes shorten pH/ORP sensor lifespan. Barben Performance Series sensors excel in applications that may have the following characteristics:

- **H₂S (Sulfides)¹**
- **High Ion-Strength Solutions**
- **Ammonia**
- **Heavy Metals [Ag, Pb, Hg]²**
- **Strong Caustics**
- **Strong Acids**
- **High Cyclic Pressures**
- **High Temperature**
- **Proteins¹**
- **Organics**
- **Mercaptans¹**
- **Cyanides¹**
- **Iodides¹**
- **Bromines**

NOTES

1. Chemicals that react with Ag⁺ (Silver) and restrict traditional reference junction designs
2. Heavy metals which react with Cl⁻ (Chloride) and reduce the voltage potential of the sensor.



Performance Series pH/ORP Sensors

Industry Leading Reference Technology Axial Ion Path™

In 90% of industrial applications the reference cell is the cause of sensor failure. The typical industry standard “double junction” pH sensor (fig. 1) uses reference technology designed to minimize mixing of internal electrolyte and process liquid. This simplistic design is achieved by dividing the reference cell into two chambers, each protected with a porous junction. Once process liquid penetrates each junction poisoning of the sensor may occur or the measurement signal may be impeded by plugging of the porous junction.

The Barben sensor (fig. 2) has a unique, patented reference cell design which combats these common problems.

Performance Series sensor’s reference technology utilizes multiple innovations within the reference cell to greatly extend sensor life.

- Multiple annular wood filtering junctions
- Axial Ion Path™ Communication Disks
- Large volume of electrolyte
- Large surface area Ag/AgCl reference element
- Teflon junction

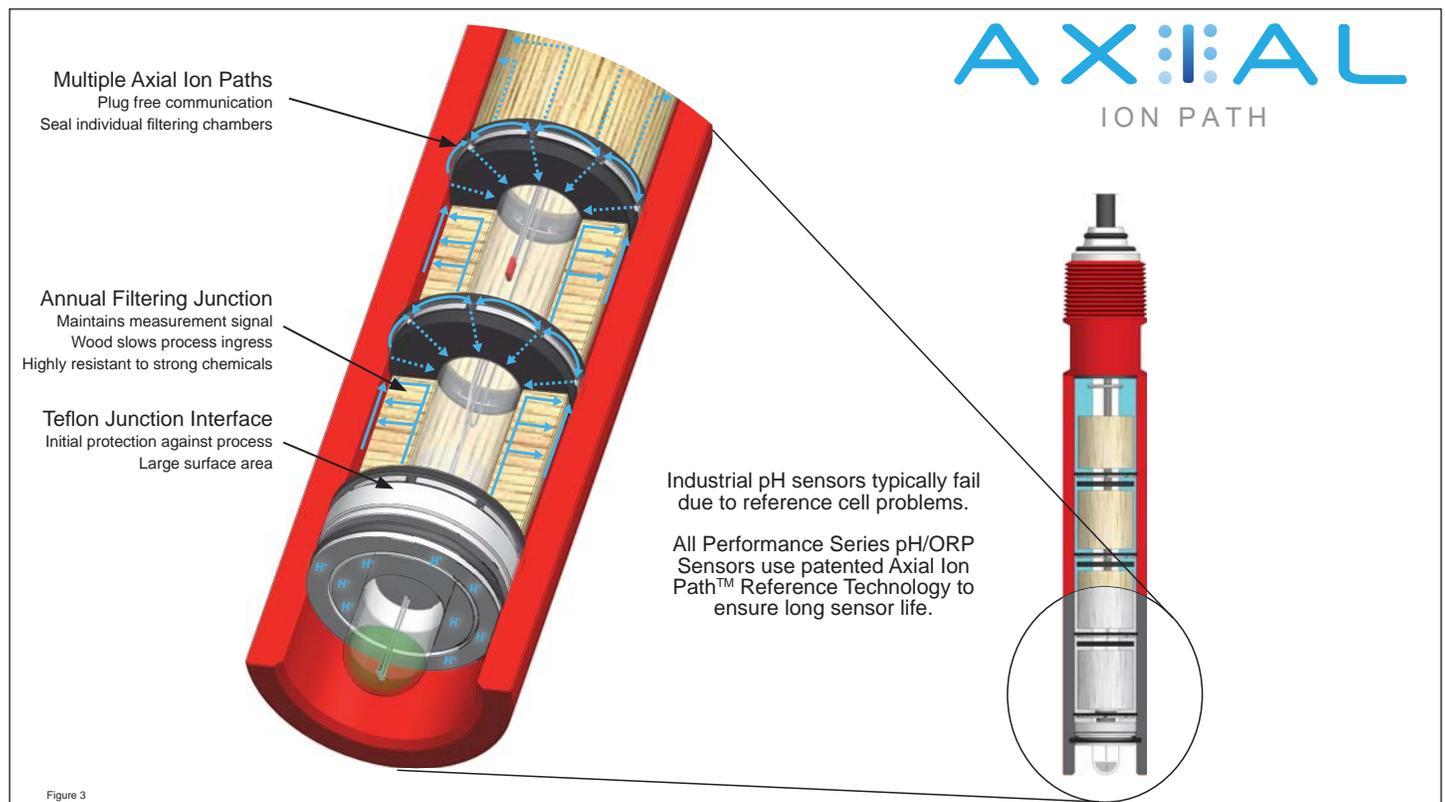
Each sensor uses multiple “solid-state” annular wood

filtering junctions. Wood’s natural cellular makeup greatly slows the ingress of process liquid into the sensor. Each wood filtering junction chamber is separated by patented **Axial Ion Path™** communication disks. The communication disk seals each chamber while providing multiple electrolyte paths thus ensuring a reliable measurement signal.

Barben Performance Series sensors contain a much higher volume of KCl electrolyte than typically found in double junction sensors. More electrolyte provides on-going insurance against the leaching effects of fluctuating process pressure and temperature.

An oversized Ag/AgCl reference element is located near the rear of the sensor. This innovation serves two purposes. Distancing the reference element far from the sensor tip keeps it away from process chemicals. Over time, if chemicals such as sulfides were to penetrate within the sensor, then the large reference element is capable of withstanding long-term poisoning while maintaining a stable measurement.

As a final preventative measure, a porous Teflon insert placed at the tip of the sensor provides a large surface area to prevent plugging. Teflon also serves as a great initial barrier to chemical attack. All of these features combine to make the Performance Series sensors the best choice for industrial measurement applications.



Performance Series pH/ORP Sensors

Low Noise, High Temperature Cable

Since Performance Series sensors are commonly mounted directly into the process, all products are manufactured with proprietary low-noise, high temperature cable. Competitive designs may use low-temperature cable to reduce signal noise (thus de-rating the sensor). Alternately, when high temperature cable is improperly specified, triboelectric noise can cause signal error. Barben Analyzer Technology has developed a proprietary cable that can withstand 130°C (266°F) process temperatures while providing stable pH measurement.

Specialized Glass Formulations and Configurations

Barben glass pH measurement electrodes are designed with unique formulations to prevent coating and scaling. Additional coating resistant options further improve lifespan in strong caustic (NaOH) and silica applications. These specialty glass formulations are manufactured to precision impedance ranges to ensure the best balance between high strength signal, speed of response, structural integrity under high pressure, long life in high temperatures and extreme acid and caustic pH conditions. Unique billet style ORP electrodes completely eliminate glass from the process thus further eliminating potential breakage.

Industrial Grade Mounting Options and Accessories

Barben Analyzer Technology offers the most comprehensive accessories to ensure convenient, safe and economical installation into your applications. In-line, submersible and hot tap (retractable through a isolation ball valve) are all standard options. In-line threaded sensors with quick adapters, rated to 300 psig, allow for easy access for calibration or maintenance in an isolated sample stream. In-line high pressure housings allow for operations up to 2,500 psig. Hot-Tap or Ball-valve retraction systems, rated to 300 psig allow for direct use into process without the need for sample or bypass lines. We offer hardware in 316 Stainless, Titanium and Hastelloy C-276, sensor bodies in Kynar, CPVC and PEEK and seals in Viton, EPDM, and Kalrez to meet the specific demands of your process.

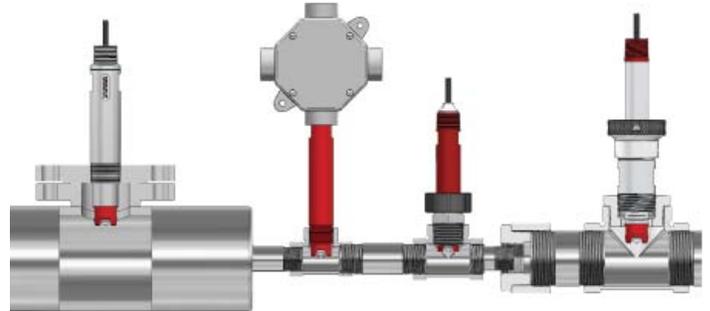
Interconnection with Existing pH and ORP Analyzers

Performance Series Sensors are compatible with all major manufacturers pH analyzers accepting milli-volt input. Temperature compensation options for PT100, PT1000, 3K ohm RTD (Balco), and 8550 ohm (Honeywell) ensure full compatibility with your installations. Now you can upgrade your process without replacing your field instrument. Wiring diagrams for many analyzers can be found at www.bat4pH.com.

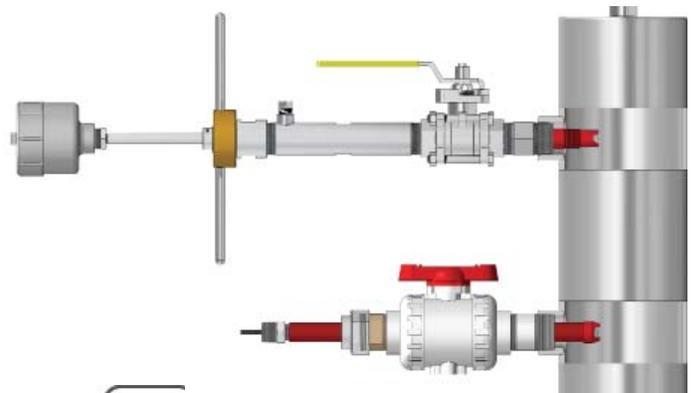
Sensor Selection: Mounting

The first consideration when selecting a pH sensor is how will it be mounted into the process. Examples of various process mounting configurations are provided below.

In-line Sensor Mounting: In-line installations are common on sample streams off the main process. Isolation valves should be upstream / downstream of sensor for removal.



Hot Tap Sensor Mounting: Hot Tap refers to the ability to remove the sensor from the process while under pressure. A ball valve is used to isolate the sensor for removal.



Submersible Sensor Mounting: Submersible mounting installations are required when the measurement is needed directly into a tank, reactor vessel or open channel. Typically the sensor must be mounted on a “dip tube” which is the hardware to submerge the sensor in the application.

Performance Series pH/ORP Sensors

Sensor Installation Mounting orientation

Sensor mounting for optimum performance should be considered prior to installation. The illustration below shows the proper angle for sensor installation into a pipeline.

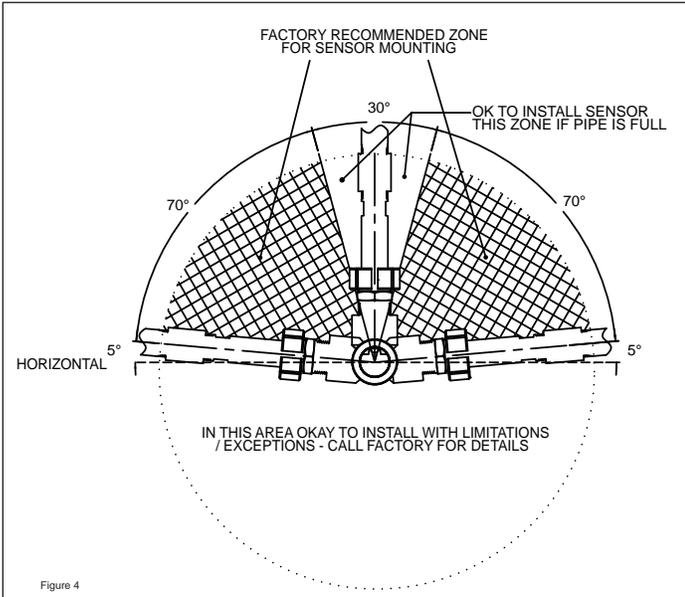


Figure 4

Isolation

pH / ORP sensors require periodic removal for cleaning, calibration, and eventual sensor replacement. Consideration in the piping design should be given as to how to isolate the sensor from the process.

Hot tap retractable sensors are popular since they can be extracted from the flowing process, isolated with a ball valve, and then removed. If a non-retractable sensor is installed then isolation valves need to be installed upstream and downstream.

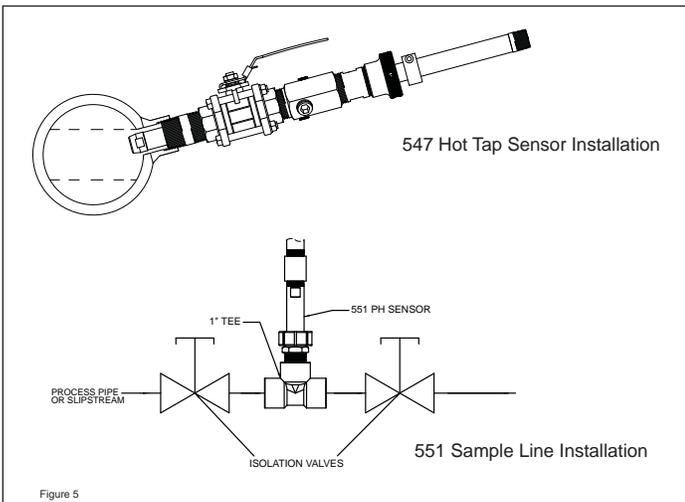


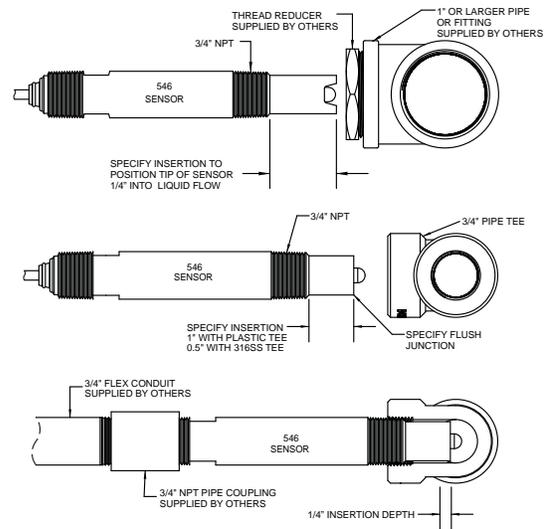
Figure 5

Insertion depth

The depth that pH / ORP sensor protrudes into the pipeline can greatly affect the measurement. Applications where the sensor tip is recessed can lead to coating and slow response. In high particulate applications abrasion of the electrode can be a concern.

A typical installation goal is to get the sensor tip at least 1/4" (6mm) into the stream. At this depth coating issues lessen and response improves due to flow velocity. 546, 551 and 547 sensors offer a variety of tip lengths. Here are some guidelines.

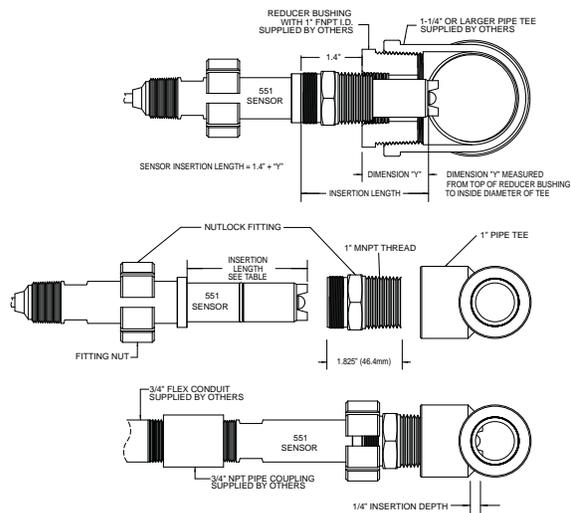
546 In-line Installation Examples



3/4" Pipe Tee Options	
CPVC	P/N: B4951-0057
316 SS	P/N: B4951-0020

Figure 6

551 In-line Installation Examples



Insertion Length Table		
1" NPT TEE	Part Number	551 Insertion Length
CPVC 100#	B4951-0045	3.5"
316 SS 150#	B4951-0036	2.625"
Polypro 150#	B4951-0044	3.5"
Kynar 200#	B4951-0046	3.5"

Figure 7

Performance Series pH/ORP Sensors

547 In-line Sizing Example

Insertion
Depth = (A) - (B) - (C)

The insertion depth should exceed any mounting hardware (flange, standoff or thread-o-let) plus the pipe wall thickness by at least 1/4" (6mm) to get the tip of the sensor into the process.

Figure 8

Valve & Nipple	"B" Dim.	Compression Fitting	"C" Dim.
1-1/4" SS Valve	6.5"	Wrench Tight	3.0"
		Hand Tight	3.5"
1-1/2" SS Valve	7.1"	Wrench Tight	3.0"
		Hand Tight	4.5"
1-1/4" Kynar Valve	8.0"	Wrench Tight	3.0"
		Hand Tight	3.5"
1-1/2" Kynar Valve	8.6"	Wrench Tight	3.0"
		Hand Tight	4.5"

Sensor Selection: Electrode Options

Code	Glass Type	Suggested Applications	Recommended Measurement Range	Recommended Temp Range	Maximum Temp Range
R CR	Industrial High Temp (Hemi) Industrial High Temp Coat Resist (Hemi)	Best choice for hi/low pH & high pressure. Coat resistant excels in NaOH. Hemispherical glass.	0 to 14 pH	15 to 100°C 59 to 212°F	15 to 130°C 59 to 266°F
FG CF	Flat Industrial Glass Flat Industrial Glass Coat Resist	Best choice for in-line slurries. Consult if rapid pressure changes are present.	0 to 14 pH	20 to 85°C 68 to 185°F	20 to 130°C 68 to 266°F
PX	Redox (ORP)	Flat Platinum (Pt) Billet. Non-glass. Easy to clean.	0 to ±1500mV	0 to 130°C 32 to 266°F	0 to 130°C 32 to 266°F
E CE	General Purpose General Purpose Coating Resist	Light to medium duty pH electrode for low temperature applications. Not for high pH.	2 to 11 pH	-10 to 40°C 14 to 104°F	-20 to 50°C -4 to 122°F
FA	Antimony (Sb) Non-glass Electrode	Antimony (metal) pH electrode for abrasives or HF acid or low temperature applications.	3 to 11 pH	-20 to 80°C -4 to 176°F	-20 to 80°C -4 to 176°F
FR	Fluoride / HF Acid (Hemi)	Resistant to etching by HF and other strong acids. Hemispherical pH glass.	1 to 14 pH	15 to 100°C 59 to 212°F	15 to 130°C 59 to 266°F
HR	Silica Resistant High Temp (Hemi)	Best choice for extreme pH where silica may coat traditional electrodes. Hemispherical glass.	1 to 14 pH	15 to 100°C 59 to 212°F	15 to 130°C 59 to 266°F
FH	Silica Resistant Flat Glass	Best choice for slurries and heavy fouling where silica may coat traditional glass electrodes.	1 to 14 pH	15 to 85°C 59 to 185°F	15 to 130°C 59 to 266°F

= Most common electrodes = Special Application (Consult with factory)

Sensor Selection: Additional Options

Temperature Compensation

- PT100 RTD
- PT1000 RTD
- 3.01K Ohm RTD Balco
- 8550 Ohm (Honeywell / Leeds & Northrup)

Sensor Body Material

- Kynar PVDF: *Red, White, or Blue based on model*
- PEEK: *Beige*
- CPVC: *Gray*

Sensor O-Ring Material

- Viton
- EPDM
- Kalrez

Sensor Tip Examples

Notched Tip Flat Glass

Notched Tip Hemispherical Glass

Flush Tip Flat Glass

Flush Tip Hemispherical Glass

When selecting the sensor tip consider the process. Notches protect against breakage from heavy particulates. Flush tips are effective for soft coatings. For extreme abrasion a recessed tip can be offered (*not shown*).

Figure 9

Sensor Wiring Termination Examples

Tinned Leads: This option is commonly specified when the sensor is directly wired to the analyzer

BNC Connector: BNC's offer a low impedance connector to the coaxial wire carrying the pH signal. It is often used when the sensor will connect to an extension cable.

TOP68: The industry standard TOP68 connector provides a quick disconnect option at the sensor.

Figure 10

Performance Series pH/ORP Sensors

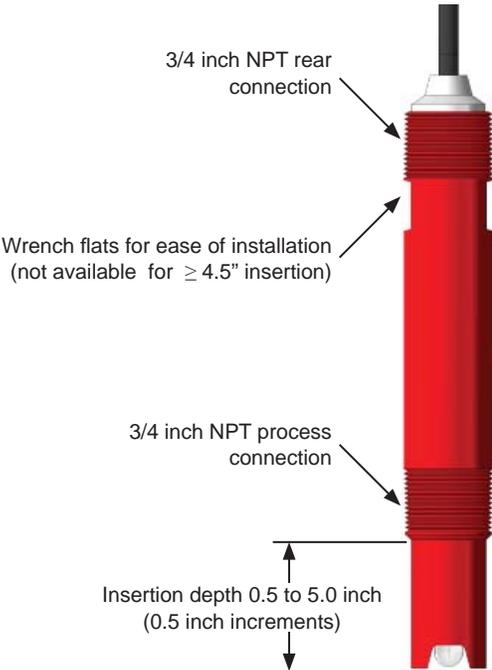
Model 546 Threaded In-line, Submersible, High Pressure Hot Tap

The versatile Model 546 is suitable for in-line sample stream applications using the 3/4 inch NPT process connection. A similar 3/4 inch NPT connection on the rear of the sensor is used to mount the sensor in submersible and high pressure hot tap installations. With tip lengths from 0.5 to 5.0 inches the 546 sensor can fit through extended pipe nipples and flanges to reach into the process and provide optimum pH/ORP measurement.

Pressure / Temperature Ratings

Sensor Material	Installation Type	
	3/4" In-line or Submersible*	High Pressure Hot Tap
Kynar <i>(red / blue**)</i>	150 PSIG @ 158°F (70°C) 40 PSIG @ 266°F (130°C)	300 PSIG @ 176°F (80°C) 40 PSIG @ 266°F (130°C)
CPVC <i>(grey)</i>	100 PSIG @ 167°F (75°C) 35 PSIG @ 212°F (100°C)	Not Recommended
PEEK <i>(tan)</i>	150 PSIG @ 158°F (70°C) 40 PSIG @ 266°F (130°C)	300 PSIG @ 176°F (80°C) 40 PSIG @ 266°F (130°C)

* When using jet cleaner please consult accessories documentation for pressure ratings
** Blue Kynar (used with solution ground) not recommended in high pressure hot tap applications.



546 Examples

546 Submersible with Dip Tube and Analyzer

546 Submersible with Jet Cleaner (1.5 inch tip required)

546 in-line 3/4 inch pipe tee with optional junction box

546 High Pressure Hot Tap (0.5 inch tip recommended)

Performance Series pH/ORP Sensors

546 In-line / Submersible / High Pressure Hot Tap 3/4 inch NPT pH / ORP Sensors

Material	Axial Ion Path	Body	Electrode	Tip	TC	Body Options	Insertion Depth	Cable	Reference Wire	Terminations	
Body Material											
C	CPVC (not available with Solution Ground)										
B	PVDF Kynar										
K	PEEK (not available with Solution Ground)										
O-Ring Seal Material											
V	Viton										
E	EPDM										
K	Kalrez										
Body Style											
546	3/4" MNPT Thread Inline/Submerged, Kynar/PEEK High Pressure for valve insertion available to 300PSIG (Drawings: 2P0001 Cartridge; 2P0007 Installation Examples; 2P0034 Flow Installations)										
Measuring Electrode											
R	Ruggedized, Hemi-glass (0 - 14 pH) 15°C to 130°C										
E	Low Temp Hemi-glass (2 - 11 pH) -20°C to 50°C										
CE	Coating Resistant, Low Temp Hemi-glass (2 - 11 pH) -20°C to 50°C										
CF	Coating Resistant, Ruggedized, Flat-glass (0 - 14 pH) 20°C to 130°C										
CR	Coating Resistant, Ruggedized, Hemi-glass (0 - 14 pH) 15°C to 130°C										
FA	Antimony measuring electrode for Hydrofluoric Acid applications (3 - 8 pH) min -20°C to 80°C										
FG	Ruggedized, Flat-glass (0 - 14 pH) 20°C to 130°C										
FR	Hydrofluoric Acid Resistant, Ruggedized, Hemi-glass (1 - 14 pH) 15°C to 130°C										
FH	Silica resistant coating, Ruggedized, Flat-glass (1 - 14 pH) 20°C to 130°C										
HR	Silica resistant coating, Ruggedized, Hemi-glass (1 - 14 pH) 15°C to 130°C										
PX	Platinum ORP, Flat Solid Billet (0 to ±1500 mV) 0°C to 130°C										
GX	Gold ORP, Flat Solid Billet										
SX	Silver Cyanide Flat Billet										
Tip Configuration with Teflon Liquid Junction											
FT	Flush no tip protection										
GT	Flush no tip protection, with Solution Ground (Not for High Pressure)										
ST	Recessed										
UT	Recessed with Solution Ground (Not for High Pressure)										
DT	Dual Notch										
LT	Dual Notch with Solution Ground (Not for High Pressure)										
Temperature Compensation (TC)											
N	None										
B	Balco 3.01K Ohm										
C	PT100 RTD										
H	Honeywell 8550 ohm										
K	PT1000 RTD										
Body Options											
S	Standard Body 546										
C	High pressure certification, Kynar/PEEK only										
Insertion Depth from small end of front pipe thread to front of body											
0.5	0.5"										
1.0	1.0"										
1.5	1.5"										
2.0	2.0"										
2.5	2.5"										
3.0	3.0"										
3.5	3.5"										
4.0	4.0"										
4.5	4.5" (No Wrench Flats)										
5.0	5.0" (Max Length 546 Tip No Wrench Flats)										
Cable Configuration - High Temperature, Low Noise TPE Jacket											
T	8" Pigtail - for use with junction box										
T3	8" Pigtail for High Pressure Hot Tap										
PH	TOP68 Quick Disconnect Plug Head										
1 to 5	1' to 5' - Standard										
6 to 15	6' to 15'										
16 to 30	16' to 30'										
31 to 100	Longer lengths available. Consult factory for installation, application and leadtime. For lengths >30 feet, please consider Junction Box, Extension Cable and possible pre-amp.										
Reference Wire											
C	Reference wire on Coax Shield (BNC Termination)										
E	Reference on Separate Wire										
Lead Terminations											
BN	BNC for Coax only, NO TC										
BT	BNC & Tinned Leads for TC										
B2	BNC & 2 Pin Conn (use with B39 Ext Cables) for TC										
TT	All Tinned Leads										
PT	TOP68 Quick Disconnect Plug Tail on cable										
PN	Wire Ferrules Coax, NO TC										
PP	All Wire Ferrules										
TN	Tinned Leads for Coax only, NO TC										
Mtl	AIP	Body	Elec	Tip	TC	Opt	Depth	Cable	Ref	Term	
B	V	546	R	DT	C	S	0.5	15	E	TT	Typical Sensor Configuration

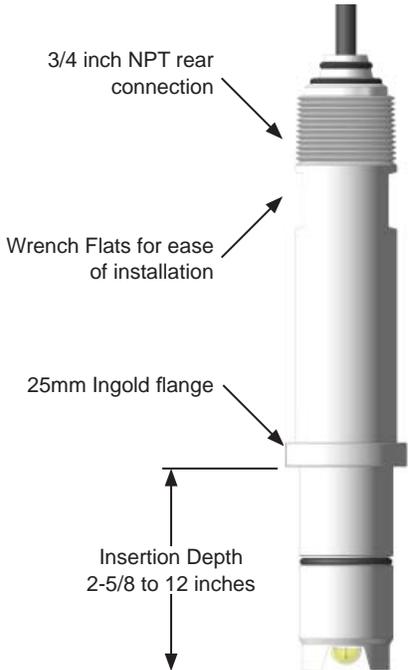
Performance Series pH/ORP Sensors

Model 551 Quick Change In-line

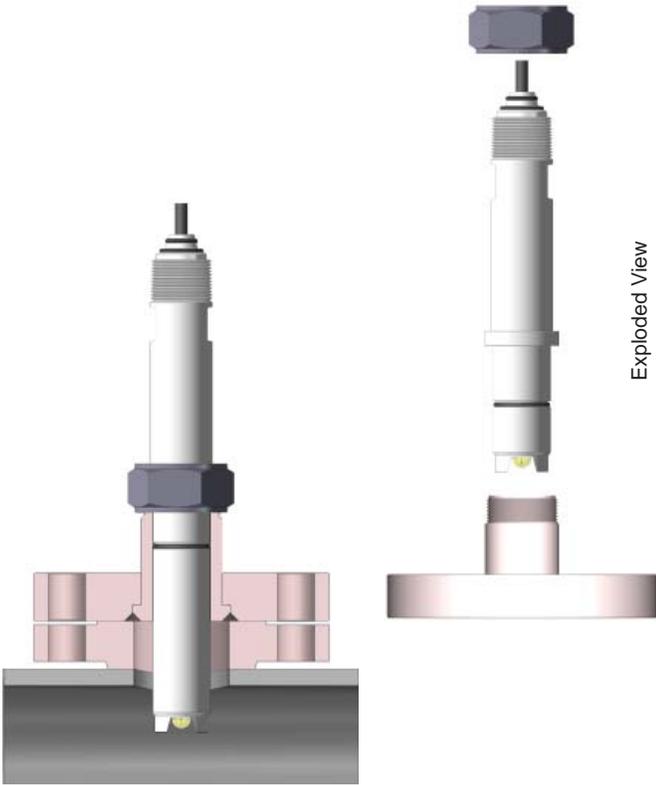
In some in-line applications sensor removal for routine cleaning or calibration becomes difficult due to conduit or cabling. The 551 Quick Change Sensor offers a unique method to extract the sensor through a “Nut Lock” adapter system. The Nut Lock adapter threads directly into 1 inch NPT process connections. Sensor length options up to 12 inches allows the sensor to fit through flanges and stand-off piping. The 551 sensor also includes a 3/4 inch rear connection for use in submersible applications.

Pressure / Temperature Ratings

Sensor Material	Quick Change Nut Lock Type		
	Threaded plastic or metal body with hand nut	Threaded metal body with metal hex nut	Plastic body with metal hex nut (flanged or threaded mounting)
Kynar <i>(White)</i>	150 PSIG @ 158°F (70°C) 40 PSIG @ 266°F (130°C)	300 PSIG @ 176°F (80°C) 40 PSIG @ 266°F (130°C)	150 PSIG @ 73°F (25°C) 25 PSIG @ 266°F (130°C)
CPVC <i>(grey)</i>	100 PSIG @ 167°F (75°C) 40 PSIG @ 212°F (100°C)	100 PSIG @ 167°F (75°C) 40 PSIG @ 212°F (100°C)	150 PSIG @ 73°F (25°C) 50 PSIG @ 212°F (100°C)

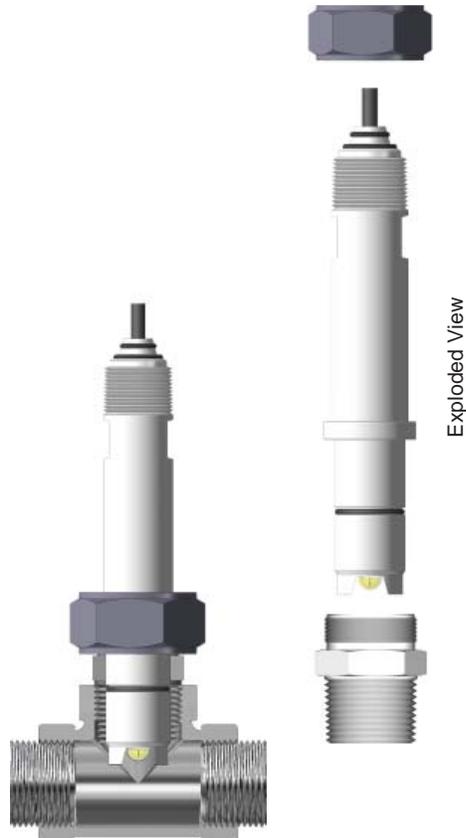


551 Examples



551 with Nut Lock Flange adapter
(extended tip)

Figure 12



551 with Nut Lock adapter in 1 inch
NPT pipe tee (Metal hex nut)

Performance Series pH/ORP Sensors

551 Quick Change In-line / Submersible pH / ORP Sensors

Material	Axial Ion Path	Body	Electrode	Tip	TC	Body Options	Insertion Depth	Cable	Reference Wire	Terminations
Body Material										
C		CPVC (not available with Solution Ground)								
B		PVDF Kynar								
O-Ring Seal Material										
V		Viton								
E		EPDM								
K		Kalrez								
Body Configuration										
551		Quick-Change Inline, Kynar available High Pressure to 300PSIG								
Measuring Electrode										
R		Ruggedized, Hemi-glass (0 - 14 pH) 15°C to 130°C								
E		Low Temp Hemi-glass (2 - 11 pH) -20°C to 50°C								
CE		Coating Resistant, Low Temp Hemi-glass (2 - 11 pH) -20°C to 50°C								
CF		Coating Resistant, Ruggedized, Flat-glass (0 - 14 pH) 20°C to 130°C								
CR		Coating Resistant, Ruggedized, Hemi-glass (0 - 14 pH) 15°C to 130°C								
FA		Antimony measuring electrode for Hydrofluoric Acid applications (3 - 8 pH) -20°C to 80°C								
FG		Ruggedized, Flat-glass (0 - 14 pH) 20°C to 130°C								
FR		Hydrofluoric Acid Resistant, Ruggedized, Hemi-glass (1 - 14 pH) 15°C to 130°C								
FH		Silica resistant coating, Ruggedized, Flat-glass (1 - 14 pH) 20°C to 130°C								
HR		Silica resistant coating, Ruggedized, Hemi-glass (1 - 14 pH) 15°C to 130°C								
PX		Platinum ORP, Flat Solid Billet (0 to ±1500 mV) 0°C to 130°C								
GX		Gold ORP, Flat Solid Billet								
SX		Silver Cyanide Flat Billet								
Tip Configuration with Teflon Liquid Junction										
FT		Flush with no tip protection								
GT		Flush with no tip protection with Solution Ground (Not for High Pressure)								
ST		Recessed								
UT		Recessed with Solution Ground (Not for High Pressure - PVDF Kynar 2.625" insertion depth only)								
DT		Dual Notch								
LT		Dual Notch with Solution Ground (Not for High Pressure)								
Temperature Compensation (TC)										
N		None								
B		Balco 3.01K Ohm								
C		PT100 RTD								
H		Honeywell 8550 ohm								
K		PT1000 RTD								
Body Options										
S		Standard Body 551								
C		High pressure certification, Kynar only								
Insertion Depth from Rib to Front of Body (Not available with solution ground except with "N")										
N		Standard (2.625" from rib) (only one with solution)								
3.0		3.0"								
3.5		3.5"								
4.0		4.0"								
4.5		4.5"								
5.0		5.0"								
5.5		5.5"								
6.0		6.0"								
6.5		6.5"								
7.0		7.0"								
7.5		7.5"								
8.0		8.0"								
8.5		8.5"								
9.0		9.0"								
9.5		9.5"								
10.0		10.0"								
10.5		10.5"								
11.0		11.0"								
11.5		11.5"								
12.0		12.0"								
100		100mm								
150		150mm								
200		200mm								
250		250mm								
300		300mm								
Cable Configuration - High Temperature, Low Noise TPE Jacket										
T		8" Pigtail - for use with junction box								
PH		TOP68 Quick Disconnect Plug Head								
1 to 5		1' to 5' - Standard								
6 to 15		6' to 15'								
16 to 30		16' to 30'								
31 to 100		Longer lengths available. Consult factory for installation, application and leadtime. For lengths >30 feet, please consider Junction Box, Extension Cable and possible pre-amp.								
Reference Wire										
C		Reference wire on Coax Shield (BNC Termination)								
E		Reference on Separate Wire								
Lead Terminations										
BN		BNC for Coax only, NO TC								
BT		BNC & Tinned Leads for TC								
B2		BNC & 2 Pin Conn (use with B39 Ext Cables) for TC								
TT		All Tinned Leads								
PT		TOP68 Quick Disconnect Plug Tail on cable								
PN		Wire Ferrules Coax, NO TC								
PP		All Wire Ferrules								
TN		Tinned Leads for Coax only, NO TC								
Mtl	AIP	Body	Elec	Tip	TC	Opt	Depth	Cable	Ref	Term
B	V	551	R	DT	C	S	N	15	E	TT
Typical Sensor Configuration										

Performance Series pH/ORP Sensors

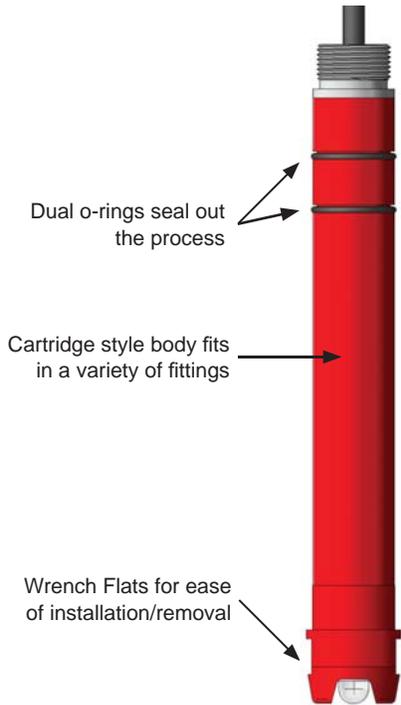
Model 547 In-line, High Pressure In-line, Hot Tap Retractable

The Model 547 is a replaceable, cartridge style sensor. It is designed to fit into a variety of sensor holders for direct insertion into the process. When used with a metallic sheath the 547 sensor can provide variable insertion depth for hot tap ball valve installations as well as the ability to withstand pressures up to 2500 PSIG with Barben's high pressure housing assembly.

Pressure / Temperature Ratings

Sensor Material	Installation Type	
	Threaded In-line High Pressure	Retractable
Kynar <i>(red / blue*)</i>	2500 PSIG @ 122°F (50°C) 50 PSIG @ 266°F (130°C)	150 PSIG @ 158°F (70°C) 40 PSIG @ 266°F (130°C)
CPVC <i>(grey)</i>	Not Recommended	100 PSIG @ 167°F (75°C) 35 PSIG @ 212°F (100°C)
PEEK <i>(tan)</i>	2500 PSIG @ 122°F (50°C) 50 PSIG @ 266°F (130°C)	150 PSIG @ 158°F (70°C) 40 PSIG @ 266°F (130°C)

* Blue Kynar rated to 150PSIG @ 158°F (70°C) in threaded in-line high pressure applications.



547 Examples

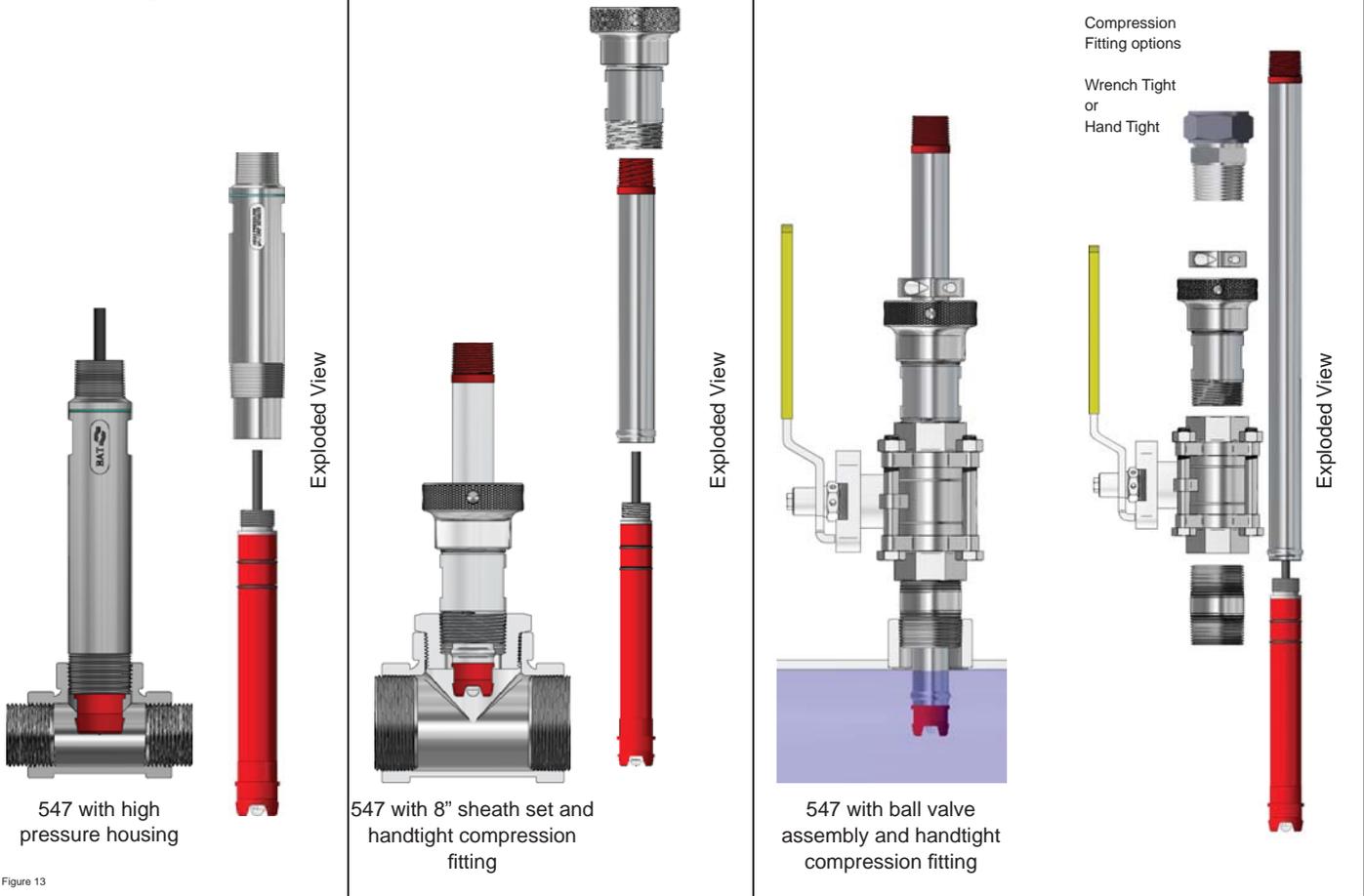


Figure 13

Performance Series pH/ORP Sensors

547 In-line, High Pressure In-line, Hot Tap Retractable pH / ORP Sensors

Material	Axial Ion Path	Body	Electrode	Tip	TC	Body Options	Insertion Depth	Cable	Reference Wire	Terminations	
Body Material											
C	CPVC (not available with Solution Ground)										
B	PVDF Kynar										
K	PEEK (not available with Solution Ground)										
O-Ring Seal Material											
V	Viton										
E	EPDM										
K	Kalrez										
Body Configuration											
547	Replacement Cartridge, Valve Ins, Flow Cell, Kynar or PEEK avail High Pressure to 2500PSIG										
Measuring Electrode											
R	Ruggedized, Hemi-glass (0 - 14 pH) 15°C to 130°C										
E	Low Temp Hemi-glass (2 - 11 pH) -20°C to 50°C										
CE	Coating Resistant, Low Temp Hemi-glass (2 - 11 pH) -20°C to 50°C										
CF	Coating Resistant, Ruggedized, Flat-glass (0 - 14 pH) 20°C to 130°C										
CR	Coating Resistant, Ruggedized, Hemi-glass (0 - 14 pH) 15°C to 130°C										
FA	Antimony measuring electrode for Hydrofluoric Acid applications (3 - 8 pH) -20 °C to 80°C										
FG	Ruggedized, Flat-glass (0 - 14 pH) 20°C to 130°C										
FR	Hydrofluoric Acid Resistant, Ruggedized, Hemi-glass (1 - 14 pH) 15°C to 130°C										
FH	Silica resistant coating, Ruggedized, Flat-glass (1 - 14 pH) 20°C to 130°C										
HR	Silica resistant coating, Ruggedized, Hemi-glass (1 - 14 pH) 15°C to 130°C										
PX	Platinum ORP, Flat Solid Billet (0 to ±1500 mV) 0°C to 130°C										
GX	Gold ORP, Flat Solid Billet										
SX	Silver Cyanide Flat Billet										
Tip Configuration with Teflon Liquid Junction											
FT	Flush no tip protection										
GT	Flush no tip protection, with Solution Ground (Not for High Pressure)										
ST	Recessed										
UT	Recessed with Solution Ground (Not for High Pressure)										
DT	Dual Notch										
LT	Dual Notch with Solution Ground (Not for High Pressure)										
Temperature Compensation (TC)											
N	None										
B	Balco 3.01K Ohm										
C	PT100 RTD										
H	Honeywell 8550 ohm										
K	PT1000 RTD										
Body Options											
S	Standard Body										
C	High pressure certification, Kynar/PEEK only										
Insertion Depth											
N	Standard										
Cable Configuration - High Temperature, Low Noise TPE Jacket											
T1	8" Pigtail for (8" assy or High Pressure or SS Flow Cell)										
T2	8" Pigtail for (16" assy)										
T3	8" Pigtail for (20" assy)										
T4	8" Pigtail for (24" assy)										
T5	8" Pigtail for (30" assy)										
T6	8" Pigtail for (36" assy)										
T7	8" Pigtail for (60" assy)										
1 to 5	1' to 5' - Standard										
6 to 15	6' to 15'										
16 to 30	16' to 30'										
31 to 100	Longer lengths available. Consult factory for information and leadtime. For lengths >30 feet, please consider Junction Box, Extension Cable and possible pre-amp.										
Reference Wire											
C	Reference wire on Coax Shield (BNC Terminations)										
E	Reference on Separate Wire										
Lead Terminations											
BN	BNC for Coax only, NO TC										
BT	BNC & Tinned Leads for TC										
B2	BNC & 2 Pin Conn (use with B39 Ext Cables) for TC										
TT	All Tinned Leads										
PT	TOP68 Quick Disconnect Plug Tail on cable										
PN	Wire Ferrules Coax, NO TC										
PP	All Wire Ferrules										
TN	Tinned Leads for Coax only, NO TC										
Mtl	AIP	Body	Elec	Tip	TC	Opt	Depth	Cable	Ref	Term	
B	V	547	R	DT	C	S	N	15	E	TT	Typical Sensor Configuration

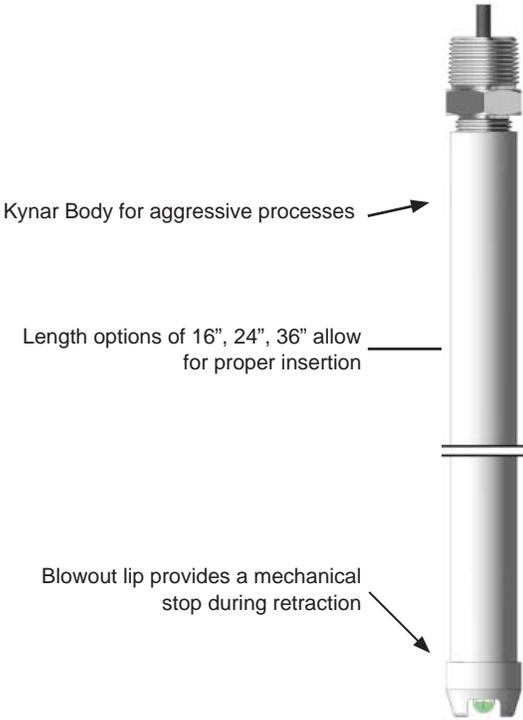
Performance Series pH/ORP Sensors

Model 567 All Plastic Hot Tap Retractable

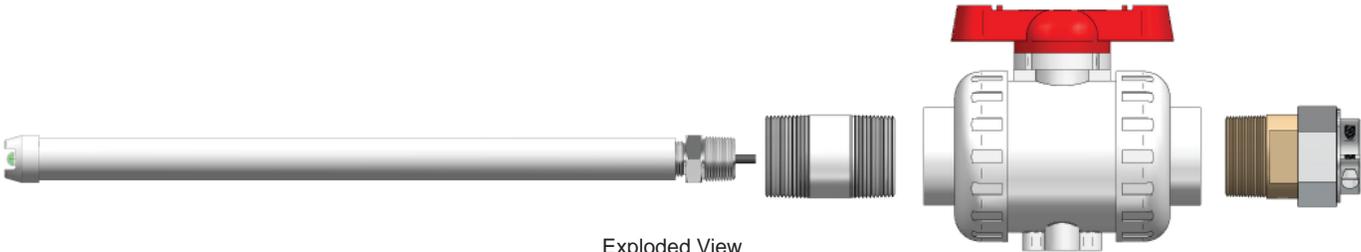
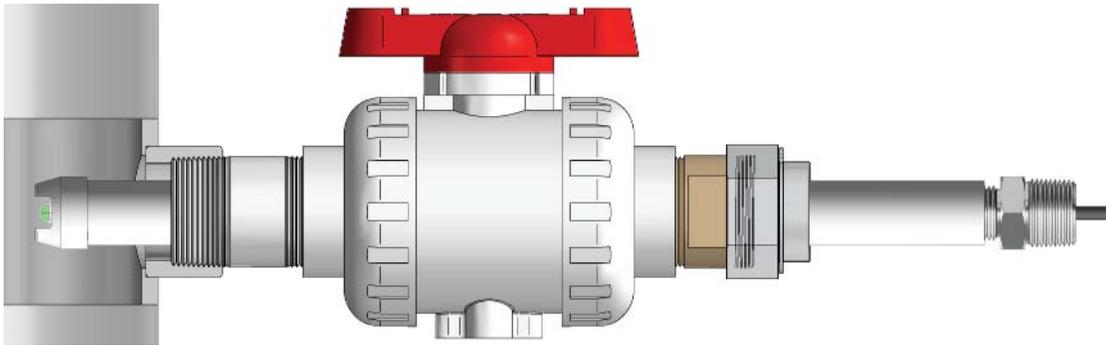
If your piping is corrosion resistant plastic, shouldn't your pH sensor be the same? The Model 567 is specifically designed for use in the most aggressive measurement applications. It is the only "All Plastic" hot tap retractable pH sensor available to the market. The 567 sensor uses a Kynar insertion body thus eliminating the metallic sheath typically used with cartridge style hot tap sensors. Not only can it withstand strong chemicals; the Kynar body provides a great solution in applications that build-up and adhere to metallic parts.

Pressure / Temperature Ratings

Sensor Material	Installation Type	
	Teflon or Kynar Compression Fitting	PEEK Stop Lock Compression Fitting
Kynar (white)	40 PSIG @ 167°F (75°C)	100 PSIG @ 167°F (75°C) 35 PSIG @ 212°F (100°C)



567 Examples



Exploded View
567 All Plastic hot tap sensor with Ball Valve assembly and PEEK Stop Lock Compression Fitting

Figure 14

Performance Series pH/ORP Sensors

567 All Plastic Hot Tap Retractable pH / ORP Sensors

Material	Axial Ion Path	Body	Electrode	Tip	TC	Body Options	Insertion Depth	Cable	Reference Wire	Terminations	
Body Material											
B	PVDF Kynar Body Industrial pH sensor										
O-Ring Seal Material											
V	Viton										
E	EPDM										
K	Kalrez										
Body Configuration											
567	All plastic (Kynar only) valve insertion										
Measuring Electrode											
R	Ruggedized, Hemi-glass (0 - 14 pH) 15°C to 130°C										
E	Low Temp Hemi-glass (2 - 11 pH) -20°C to 50°C										
CE	Coating Resistant, Low Temp Hemi-glass (2 - 11 pH) -20°C to 50°C										
CF	Coating Resistant, Ruggedized, Flat-glass (0 - 14 pH) 20°C to 130°C										
CR	Coating Resistant, Ruggedized, Hemi-glass (0 - 14 pH) 15°C to 130°C										
FA	Antimony measuring electrode for Hydrofluoric Acid applications (3 - 8 pH) -20°C to 80°C										
FG	Ruggedized, Flat-glass (0 - 14 pH) 20°C to 130°C										
FR	Hydrofluoric Acid Resistant, Ruggedized, Hemi-glass (1 - 14 pH) 15°C to 130°C										
FH	Silica resistant coating, Ruggedized, Flat-glass (1 - 14 pH) 20°C to 130°C										
HR	Silica resistant coating, Ruggedized, Hemi-glass (1 - 14 pH) 15°C to 130°C										
PX	Platinum ORP, Flat Solid Billet (0 to ±1500 mV) 0°C to 130°C										
GX	Gold ORP, Flat Solid Billet										
SX	Silver Cyanide Flat Billet										
Tip Configuration with Teflon Liquid Junction											
FT	Flush with no tip protection										
ST	Recessed										
DT	Dual Notch										
Temperature Compensation (TC)											
N	None										
B	Balco 3.01K Ohm										
C	PT100 RTD										
H	Honeywell 8550 ohm										
K	PT1000 RTD										
Body Options											
S	Standard Body										
Insertion Depth											
16	16"										
24	24"										
36	36"										
Cable Configuration - High Temperature, Low Noise TPE Jacket											
1 to 5	1' to 5' Hi-temp - Standard										
6 to 15	6' to 15' Hi-temp										
16 to 30	16' to 30' Hi-temp										
31 to 100	Longer lengths available. Consult factory for information and leadtime. For lengths >30 feet, please consider Junction Box, Extension Cable and possible pre-amp.										
Reference Wire											
C	Reference wire on Coax Shield (BNC Terminations)										
E	Reference on Separate Wire										
Lead Terminations											
BN	BNC for Coax only, NO TC										
BT	BNC & Tinned Leads for TC										
B2	BNC & 2 Pin Conn (use with B39 Ext Cables) for TC										
TT	All Tinned Leads										
PN	Wire Ferrules Coax, NO TC										
PP	All Wire Ferrules										
TN	Tinned Leads for Coax only, NO TC										
Mtl	AIP	Body	Elec	Tip	TC	Opt	Depth	Cable	Ref	Term	
B	V	567	R	DT	C	S	16	15	E	TT	Typical Sensor Configuration

Performance Series pH/ORP Sensors

Sensor Replacement Cross Reference

Because of their improved longevity in harsh processes, Barben Performance Series Sensors allow the user to upgrade their process measurement simply by changing out their existing sensor. Barben Sensors are fully compatible with most major manufacturer's analyzers. The cross reference guide below provides some basic guidelines on changing out sensors. Consult technical support for additional information on replacing competitive sensors.

Vendor	Vendor Model	Temperature Compensation	BAT Model	Barben Application Notes
ABB (Formerly TBI)	TB551 Next Step	3kΩ Balco PT100	551	Use standard "N" insertion depth, may require Nut Lock adapter
	TB556 Next Step		546	
	TB557 Next Step		547	547 will fit directly into ABB retractable sheath
	TB561 Next Step		551	
	TB564 Next Step		554	Consult factory on special Barben 554 Sensor
	TB567 Next Step		547	Request use of Barben high pressure sensor housing
Broadley-James	ST924 DynaProbe	3kΩ Balco PT100 PT1000	551	Use standard "N" insertion depth
	ST856 / ST956 DynaProbe		546	Use either 0.5" or 1.0" insertion depth
	ST873 / ST973 DynaProbe		551	Use 551 with Nut Lock Adapter, 547 with 8" sheath and wrench tight compression fitting can also be used
	ST864 DynaProbe		554	Consult factory on special Barben 554 Sensor
	ST857 / ST977 DynaProbe		547	Barben 547 will fit directly into Broadley-James retractable sheath
	ST851 / ST951 DynaProbe		551	Use standard "N" insertion depth. May require Nut Lock adapter
Endress & Hauser	CPF81 / CPF82	PT100	546	1" insertion with notched tip, 0.5" insertion with flush tip
	<i>NOTE - Many E&H Sensor are based on the 12mm (PG13.5) standard. These sensors use adapters to mount into the process. Consult us on application</i>			
Foxboro (Invensys)	PH10 Dolphin (3/4" inline)	3kΩ Balco PT100 PT1000	546	If PH10 uses 1" bushing then consider Barben 551 or 547 with 8" sheath and wrench tight compression fitting
	871A (1" Inline)	PT100 PT1000	551	Foxboro 871A uses 1" NPT process connection. Barben 551 Sensor with Nut Lock Adapter for inline applications
	871PH	PT1000	551	871PH uses a twist lock in-line connection. Consult Barben on fitting size for 551 sensor
Hach	pH Sensors (DPD, DRD, PD, and RD)	NTC 300 Ω	551	Verify temperature sensor options transmitter can accept
	LCP Sensors (6028)		546	Verify temperature sensor options transmitter can accept, Hach Sensor has 1.5" NPT process connection thus fittings may be needed to mount Barben 546 sensor in process.
	DPC/DRC/PC1/PC2/PC3/RC1/RC2 Combination Probes	PT1000	546	1" insertion depth
Mettler Toledo	InPro 4501	PT100 PT1000	551	Needs 1" NPT Nut Lock Adapter
	InPro 4550	PT100 PT1000	551	Needs 1" NPT Nut Lock Adapter
<i>NOTE - Many Mettler Toledo Sensors are based on the 12mm (PG13.5) standard. These sensors use fittings to mount into the process. Consult BAT on application.</i>				
Rosemount	385 / 385+	3kΩ Balco PT100	547	Barben 547 with 16" sheath (Rosemount sheath is Titanium but other materials can be used)
	389		551	Rosemount 389 uses 1" NPT process connection. Barben 551 Sensor with Nut Lock Adapter for inline applications
	3900		551	Rosemount 3900 has both 3/4" and 1" threads on sensor body. Select Barben 546 if 3/4" threads are used.
	3300 PERpH-X	PT100	546	Select Barben 551 with Nut Lock Adapter if 1" NPT threads are used
	3400 PERpH-X		547	Barben 547 with 8" sheath (Rosemount sheath is Titanium but other materials can be used)
	3500 PERpH-X		551	Rosemount 3500 uses 1" NPT process connection. Barben 551 Sensor with Nut Lock Adapter for inline applications
	372	PT100	546	Use 546 with 2" insertion depth. This sensor for HF Acid applications thus consider "FR" glass or Antimony electrode
Signet	2714/2715/2716/2717	3kΩ Balco	551	Signet offers additional fittings for in-line mounting
	2774/2775/2776/2777	3kΩ Balco PT1000	546	1" insertion with notched tip, 0.5" insertion with flush tip. Signet offers additional fittings for in-line mounting
	2724 / 2726		546	1" insertion with flush tip, 1.5" with notched tip. Signet offers additional fittings for in-line mounting
	2764/2765/2766/2767	3kΩ Balco PT1000 NTC 300 Ω	551	Signet offers additional fittings for in-line mounting
Yokogawa	FU20	PT1000	546	FU20 probes use a variety of adapters. Consult BAT on how sensor is mounted
	FU24		551	FU24 probes use a variety of adapters. Consult BAT on how sensor is mounted
	PH20		551	PH20 probes use a variety of adapters. Consult BAT on how sensor is mounted
	PH97		547	Barben 547 with 8" or 24" sheath (Yokogawa sheath is Titanium but other materials can be used)

Performance Series pH/ORP Sensors

Contact Us

Barben Analyzer Technology is a leading supplier of analytical measurement technology targeting the industrial marketplace. It is a wholly owned subsidiary of Ametek.

Ametek has nearly 14,000 colleagues at over 120 manufacturing locations around the world. Supporting those operations are more than 80 sales and service locations across the United States and in more than 30 other countries around the world.

Barben Analyzer Technology
5200 Convair Drive
Carson City, NV 89706 USA

Toll Free: +1 (800) 993-9309
Phone: +1 (775) 883-2500
Fax: +1 (775) 297-4740
email: sales.uai-bat@ametek.com
Web: www.bat4ph.com

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AMETEK
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USA • BELGIUM • CHINA • SINGAPORE
Toll Free +1(800)993-9309 • Phone +1(775)883-2500 • Fax +1(775)297-4740
sales.uai-bat@ametek.com • www.bat4ph.com



Fittings and Accessories For Industrial Installations

- **Jet Cleaners and Scrubber Accessories**
- **Isolation Ball Valves Assemblies**
- **Compression Fittings and Sheath Sets**
- **High Pressure (2500 PSIG) Sensor Housings**
- **In-line Flow Cells**
- **Nut Lock Union Style Adapters**
- **Sensor Extension Cables**
- **Junction Boxes**



To get the most from your Performance Series Sensors use fittings and accessories direct from the manufacturer.

Barben Analyzer Technology offers a broad range of fittings and sensor cables to make sure your product will function properly in the application. Many process fittings are available in a variety of corrosion resistant metals as well as high performance plastics.

Accessories Guide

pH/ORP/Conductivity Sensors

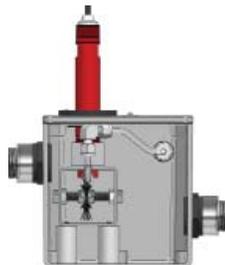
Model 546

3/4 Inch NPT Threaded In-line, Submersible Accessories

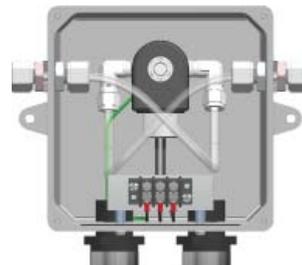
JET CLEANER PRODUCTS - AIR OR LIQUID (546 sensor with 1.5" insertion depth required)	
SUBMERSIBLE JET CLEANER 2" MNPT THREAD MOUNT (DRAWING 2P0183)	
Part #	Description
C37	CPVC / SS316
B37	Kynar / Titanium
	
SUBMERSIBLE JET CLEANER WITH LIQUID TRAP FOR BATCH APPLICATIONS (DRAWING 2P0182)	
C37CT	CPVC / SS316 with liquid trap
B37KT	Kynar / Titanium with liquid trap
	
INLINE JET CLEANER 2" MNPT THREAD MOUNT FOR TEE MOUNTING (DRAWING 2P0184)	
C36	CPVC / SS316
B36	KYNAR / Titanium
	
FLOW CELLS FOR INLINE (C36 / B36) JET CLEANERS ABOVE	
B4951-0050	CPVC 2" FNPT Threaded Pipe Tee for C36
B4951-0051	Polypropylene 2" FNPT Threaded Pipe Tee for C36 or B36
B4951-0052	SS316 2" FNPT Threaded Pipe Tee for C36 or B36
B4951-0053	Kynar 2" FNPT Threaded Pipe Tee for B36
BRUSH SCRUBBER SUBMERSIBLE - SS FRAME WITH PLASTIC BRUSHES - AIR OR LIQUID DRIVEN (546 pH sensors with Hemispherical glass, Flush Junction, and 0.5" Insertion Depth Required) 45 PSIG WATER / 20 PSIG AIR REQ'D WHEN SUBMERSED - 35 PSIG AIR REQ'D NON-SUBMERSED	
SUBMERSIBLE BRUSH SCRUBBERS (DRAWING 2P0042)	
B38-B-V-N	Scrubber with Viton brushes
B38-B-E-N	Scrubber with EPDM brushes
See Below for image	
SUBMERSIBLE BRUSH SCRUBBER MOUNTED IN PVC POT WITH NPT THREADED PORTS (DRAWING 2P0043)	
B38-B-V-P1	Viton brushes, 1" FNPT Threaded ports
B38-B-E-P1	EPDM brushes, 1" FNPT Threaded ports
B38-B-V-P2	Viton brushes, 2" FNPT Threaded ports
B38-B-E-P2	EPDM brushes, 2" FNPT Threaded ports
See Below for image	
DISTRIBUTION VALVE FOR JET CLEANERS AND BRUSH SCRUBBERS ABOVE PVC WEATHERPROOF ENCLOSED SOLENOID VALVE (DRAWING 2P0181)	
B41-P-C	115VAC
B42-P-C	230VAC
B43-P-C	24VDC
See Below for image	
TUBING FOR PLUMBING DISTRIBUTION VALVE TO JET CLEANERS/BRUSH SCRUBBERS	
B9213-0002	Polypropylene 1/4"OD X 1/8"ID



Brush Scrubber - Submersible



Brush Scrubber in Pot with NPT Ports



Distribution Valve

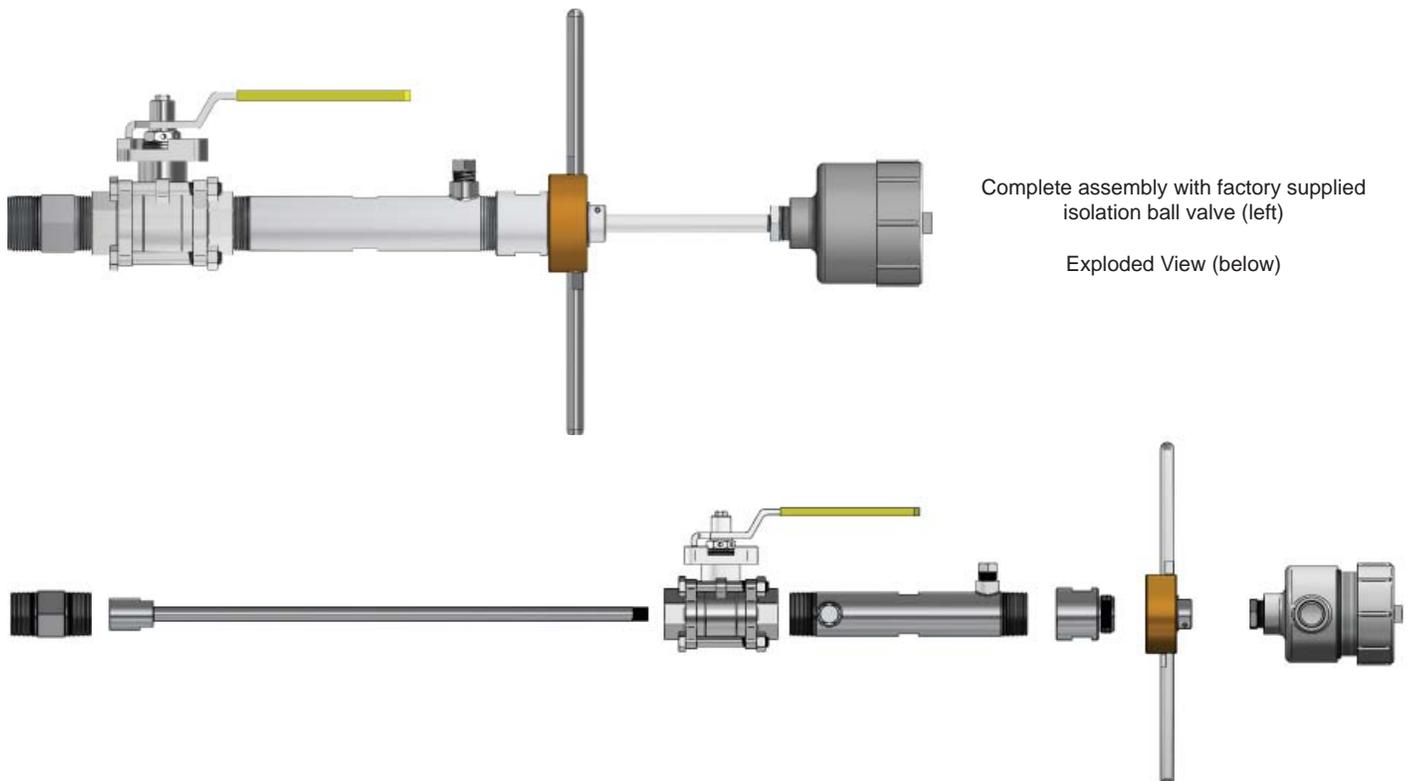
Images for reference only
Not to scale

Accessories Guide

pH/ORP/Conductivity Sensors

Model 546 High Pressure Hot Tap Accessories

HIGH PRESSURE BALL-VALVE INSERTION SYSTEMS	
SS316 1-1/4" ASSEMBLIES WITH FACTORY SUPPLIED VALVE (DRAWING 2P0086)	
Part #	Description
B5104-S125V	With Viton ORings
B5104-S125E	With EPDM ORings
B5104-S125K	With Kalrez ORings
See Below for image	
KIT 1-1/4" (DRAWING 2P0087) (1-1/4" NPT FULL PORT BALL VALVE SUPPLIED BY END USER)	
B5104K-S125V	SS316 with Viton ORings, NO Valve
B5104K-S125E	SS316 with EPDM ORings, NO Valve
B5104K-S125K	SS316 with Kalrez ORings, NO Valve
B5104K-T125V	Titanium Gr. 2 with Viton ORings, NO Valve
B5104K-T125E	Titanium Gr. 2 with EPDM ORings, NO Valve
B5104K-T125K	Titanium Gr. 2 with Kalrez ORings, NO Valve
See Below for image	
KIT 1-1/2" (DRAWING 2P0088) (1-1/2" NPT FULL PORT BALL VALVE SUPPLIED BY END USER)	
B5104K-S150V	SS316 with Viton ORings, NO Valve
B5104K-S150E	SS316 with EPDM ORings, NO Valve
B5104K-S150K	SS316 with Kalrez ORings, NO Valve
B5104K-T150V	Titanium Gr. 2 with Viton ORings, NO Valve
B5104K-T150E	Titanium Gr. 2 with EPDM ORings, NO Valve
B5104K-T150K	Titanium Gr. 2 with Kalrez ORings, NO Valve
See Below for image	
REPLACEMENT O-RINGS FOR HIGH PRESSURE INSERTION SYSTEMS	
B4904K-1009	EPDM ORings
B4904K-1010	Kalrez ORings
B4904K-1011	Viton ORings



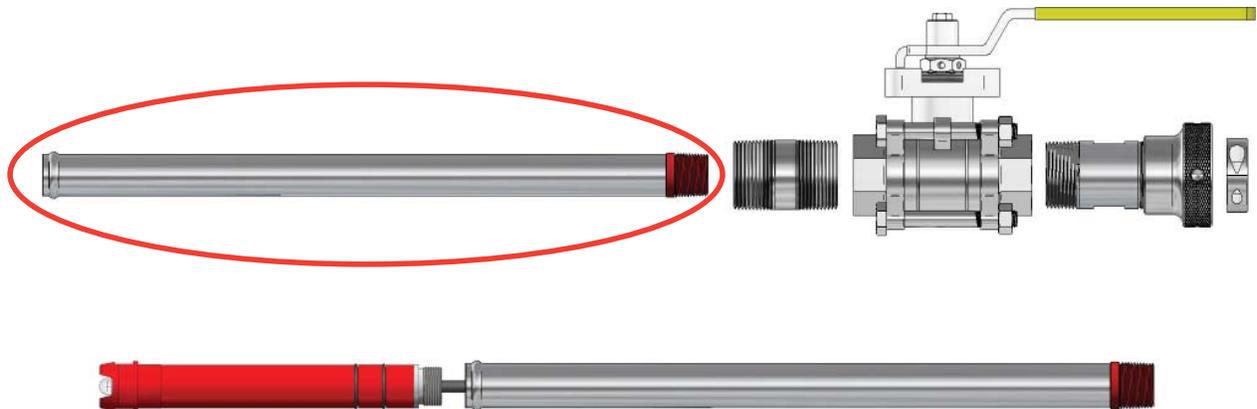
Accessories Guide

pH/ORP/Conductivity Sensors

Model 547

Hot Tap Retractable Accessories (Sheath Kits)

SHEATH SETS - INCLUDES OUTER SHEATH, KYNAR BACKPIECE, ORINGS (DRAWING 2A0160)							
Part #	Length		Part #	Length		Part #	Length
TITANIUM-KYNAR-VITON			SS316-KYNAR-VITON			HASTELLOY C-KYNAR-VITON	
B5104-0058V	8"		B5104-0068V	8"		B5104-0078V	8"
B5104-0116V	16"		B5104-0216V	16"		B5104-0316V	16"
B5104-0120V	20"		B5104-0220V	20"		B5104-0320V	20"
B5104-0124V	24"		B5104-0224V	24"		B5104-0324V	24"
B5104-0130V	30"		B5104-0230V	30"		B5104-0330V	30"
B5104-0136V	36"		B5104-0236V	36"		B5104-0336V	36"
B5104-0160V	60"		B5104-0260V	60"		B5104-0360V	60"
TITANIUM-KYNAR-EPDM			SS316-KYNAR-EPDM			HASTELLOY C-KYNAR-EPDM	
B5104-0058E	8"		B5104-0068E	8"		B5104-0078E	8"
B5104-0116E	16"		B5104-0216E	16"		B5104-0316E	16"
B5104-0120E	20"		B5104-0220E	20"		B5104-0320E	20"
B5104-0124E	24"		B5104-0224E	24"		B5104-0324E	24"
B5104-0130E	30"		B5104-0230E	30"		B5104-0330E	30"
B5104-0136E	36"		B5104-0236E	36"		B5104-0336E	36"
B5104-0160E	60"		B5104-0260E	60"		B5104-0360E	60"
TITANIUM-KYNAR-KALREZ			SS316-KYNAR-KALREZ			HASTELLOY C-KYNAR-KALREZ	
B5104-0058K	8"		B5104-0068K	8"		B5104-0078K	8"
B5104-0116K	16"		B5104-0216K	16"		B5104-0316K	16"
B5104-0120K	20"		B5104-0220K	20"		B5104-0320K	20"
B5104-0124K	24"		B5104-0224K	24"		B5104-0324K	24"
B5104-0130K	30"		B5104-0230K	30"		B5104-0330K	30"
B5104-0136K	36"		B5104-0236K	36"		B5104-0336K	36"
B5104-0160K	60"		B5104-0260K	60"		B5104-0360K	60"



Sheath kit circled above. Additional hot tap hardware on following pages.
 Each kit includes metallic sheath, Kynar backpiece, and o-ring seals (Kalrez, Viton or EPDM)

Accessories Guide

pH/ORP/Conductivity Sensors

Model 547 / 567

Hot Tap Retractable Accessories (Valves Assemblies and Clean / Cal / Purge Fittings)

CLEAN-CALIBRATE-PURGE FITTING		
Includes two 3/8" FNPT Thread Ports for Fill and Drain (DRAWING 2P0071)		
SS316 Wrench Tight		
Part #	Description	
B4954-0014	1" FNPT X 1-1/4" MNPT Thread	See page 7 for image
B4954-0023	1" FNPT X 1-1/2" MNPT Thread	
SS316 Hand Tight		
B4954-0016	1-1/4" FNPT X 1 -1/4" MNPT Thread	See page 7 for image
B4954-0025	1-1/4" FNPT X 1- 1/2" MNPT Thread	
Titanium Gr. 2 Wrench Tight		
B4954-0015	1" FNPT X 1- 1/4" MNPT Thread	See page 7 for image
B4954-0024	1" FNPT X 1 -1/2" MNPT Thread	
Titanium Gr. 2 Hand Tight		
B4954-0017	1-1/4" FNPT X 1-1/4" MNPT Thread	See page 7 for image
B4954-0026	1-1/4" FNPT X 1-1/2" MNPT Thread	
Hastelloy C Wrench Tight		
B4954-0018	1" FNPT X 1-1/2" MNPT Thread	See page 7 for image
Hastelloy C Wrench Tight		
B4954-0019	1-1/4" FNPT X 1-1/2" MNPT Thread	See page 7 for image
COLLAR STOP ADJUSTABLE FOR INSERTION REPEATABILITY		
B5106-0033	SS 1" ID X 1-3/4" OD	See page 7 for image
STAINLESS STEEL BALL VALVE ASSEMBLIES		
SS316 FOR USE WITH HAND TIGHT FITTINGS (DRAWING 2P0016)		
B5205-0003	1-1/4" Valve With Nipple 1-1/4" NPT	See page 7 for image
B5205-0004	1-1/2" Valve With Reducer 1-1/2" X 1-1/4" NPT & Nipple 1-1/2" NPT	
SS316 FOR USE WITH WRENCH TIGHT FITTINGS (DRAWING 2P0016)		
B5205-0001	1-1/4" Valve With Reducer 1-1/4" X 1" NPT & Nipple 1-1/4" NPT	See page 7 for image
B5205-0002	1-1/2" Valve With Reducer 1 1/2" X 1" NPT & Nipple 1-1/2" NPT	
KYNAR BALL VALVE ASSEMBLIES		
KYNAR FOR USE WITH HAND TIGHT FITTINGS (DRAWING 2P0017)		
B5205-0008	1-1/4" Valve With Nipple 1-1/4" NPT	See page 7 for image
B5205-0006	1-1/2" Valve With Reducer 1-1/2" X 1-1/4" NPT & Nipple 1-1/2" NPT	
KYNAR FOR USE WITH WRENCH TIGHT OR PLASTIC HAND TIGHT FITTINGS (DRAWING 2P0017)		
B5205-0007	1-1/4" Valve With Reducer 1-1/4" X 1" NPT & Nipple 1-1/4" NPT	See page 7 for image
B5205-0005	1-1/2" Valve With Reducer 1-1/2" X 1" NPT & Nipple 1-1/2" NPT	
KYNAR FOR USE WITH STOP LOCK FITTINGS (DRAWING 2P0189)		
B5205-1000	1-1/2" Valve With Nipple 1-1/2" NPT	See page 7 for image

Accessories Guide

pH/ORP/Conductivity Sensors

Model 547 / 567

Hot Tap Retractable Accessories (Compression fittings)

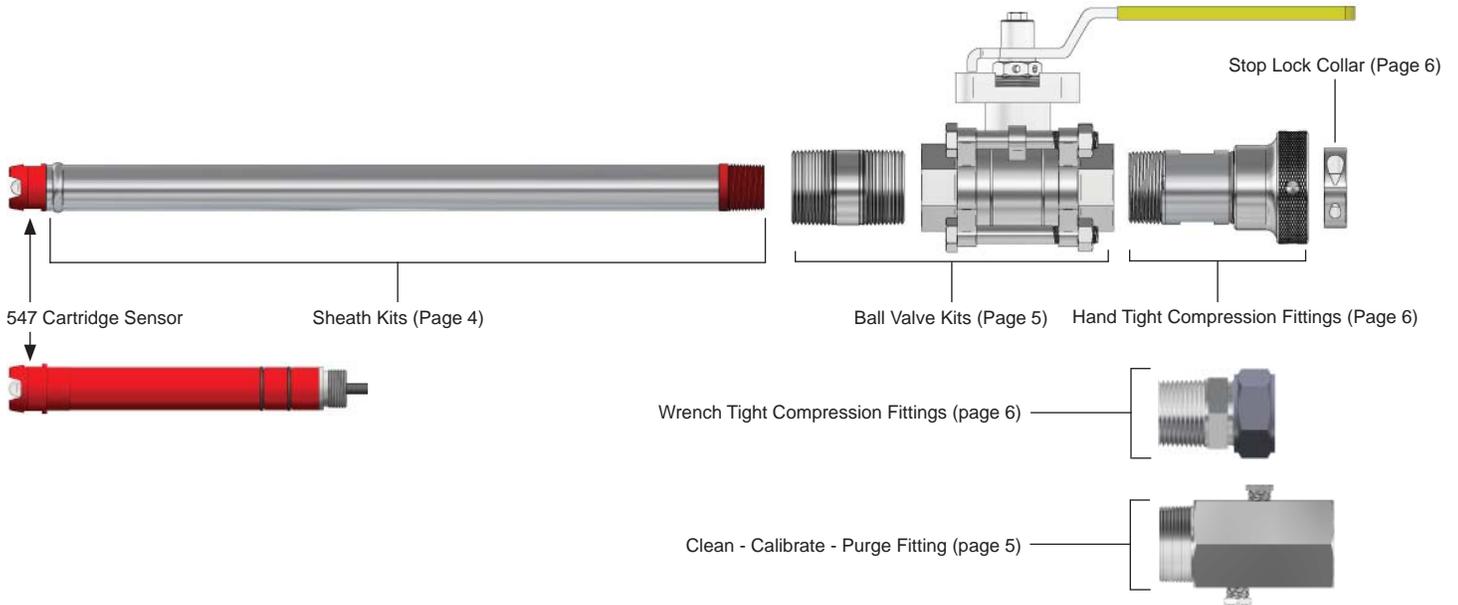
METAL COMPRESSION FITTINGS - HANDTIGHT - ORING SEALS - SS316 HAND NUT 1-1/4" MNPT THREAD (DRAWING 2P0010)			
HAND TIGHT COMPRESSION FITTING OPTIONS	SS316 WETTED COMPONENTS		
	Part #	Description	
	B4954-0003V	VITON seals	
	B4954-0003E	EPDM seals	See page 7 for image
	B4954-0003K	KALREZ seals	
	HASTELLOY C WETTED COMPONENTS		
	B4954-0004V	VITON seals	
	B4954-0004E	EPDM seals	See page 7 for image
	B4954-0004K	KALREZ seals	
	TITANIUM GR. 2 WETTED COMPONENTS		
	B4954-0005V	VITON seals	
	B4954-0005E	EPDM seals	See page 7 for image
	B4954-0005K	KALREZ seals	
	REPLACEMENT O-RING KITS FOR HAND TIGHT COMPRESSION FITTINGS ABOVE (Set)		
	B4904K-1001	VITON	
B4904K-1002	EPDM		
B4904K-1000	KALREZ		
PLASTIC COMPRESSION FITTINGS - HANDTIGHT - ORING SEALS (40 PSIG MAX) 1" MNPT THREAD (DRAWING 2P0164)			
KYNAR WETTED COMPONENT			
B4953-0017V	VITON seal, KYNAR Hand Nut		
B4953-0017E	EPDM seal, KYNAR Hand Nut	See page 7 for image	
B4953-0017K	KALREZ seal, KYNAR Hand Nut		
WRENCH TIGHT COMPRESSION FITTING OPTIONS	METAL COMPRESSION FITTINGS - WRENCH TIGHT - ORING SEALS 1" MNPT THREAD (DRAWING 2P0011)		
	SS316 WETTED COMPONENT		
	B4954-0001V	VITON seal, SS Hex Nut	
	B4954-0001E	EPDM seal, SS Hex Nut	See page 7 for image
	B4954-0001K	KALREZ seal, SS Hex Nut	
	HASTELLOY C WETTED COMPONENT		
	B4954-0002V	VITON seal, SS Hex Nut	
	B4954-0002E	EPDM seal, SS Hex Nut	See page 7 for image
	B4954-0002K	KALREZ seal, SS Hex Nut	
	TITANIUM GR. 2 WETTED COMPONENT		
	B4954-0009V	VITON seal, SS Hex Nut	
	B4954-0009E	EPDM seal, SS Hex Nut	See page 7 for image
	B4954-0009K	KALREZ seal, SS Hex Nut	
	TFE TEFLON WETTED COMPONENT (40PSIG MAX)		
	B4953-0014V	VITON seal, TFE TEFLON Hex Nut	
B4953-0014E	EPDM seal, TFE TEFLON Hex Nut	See page 7 for image	
B4953-0014K	KALREZ seal, TFE TEFLON Hex Nut		
REPLACEMENT ORING FOR WRENCH TIGHT AND PLASTIC HAND TIGHT FITTINGS ABOVE			
B4904K-1003	VITON		
B4904K-1004	EPDM	See page 7 for image	
B4904K-1005	KALREZ		
REPLACEMENT FERRULES FOR METALLIC HAND AND WRENCH TIGHT FITTINGS ABOVE			
B4952-0004	Teflon Front		
B4952-0005	SS Rear Split		
STOP LOCK FITTINGS	STOP LOCK FITTINGS - WRENCH TIGHT - ORING SEALS - 1-1/2"MNPT THREAD (DRAWING 2P0121)		
	PEEK WETTED COMPONENT		
	B4953-0019V	VITON seals, SS Hex Nut	
	B4953-0019E	EPDM seals, SS Hex Nut	See page 7 for image
	B4953-0019K	KALREZ seals, SS Hex Nut	
	REPLACEMENT ORING KIT FOR STOP LOCK FITTINGS ABOVE (SET)		
B4904K-1006	VITON		
B4904K-1007	EPDM	See page 7 for image	
B4904K-1008	KALREZ		

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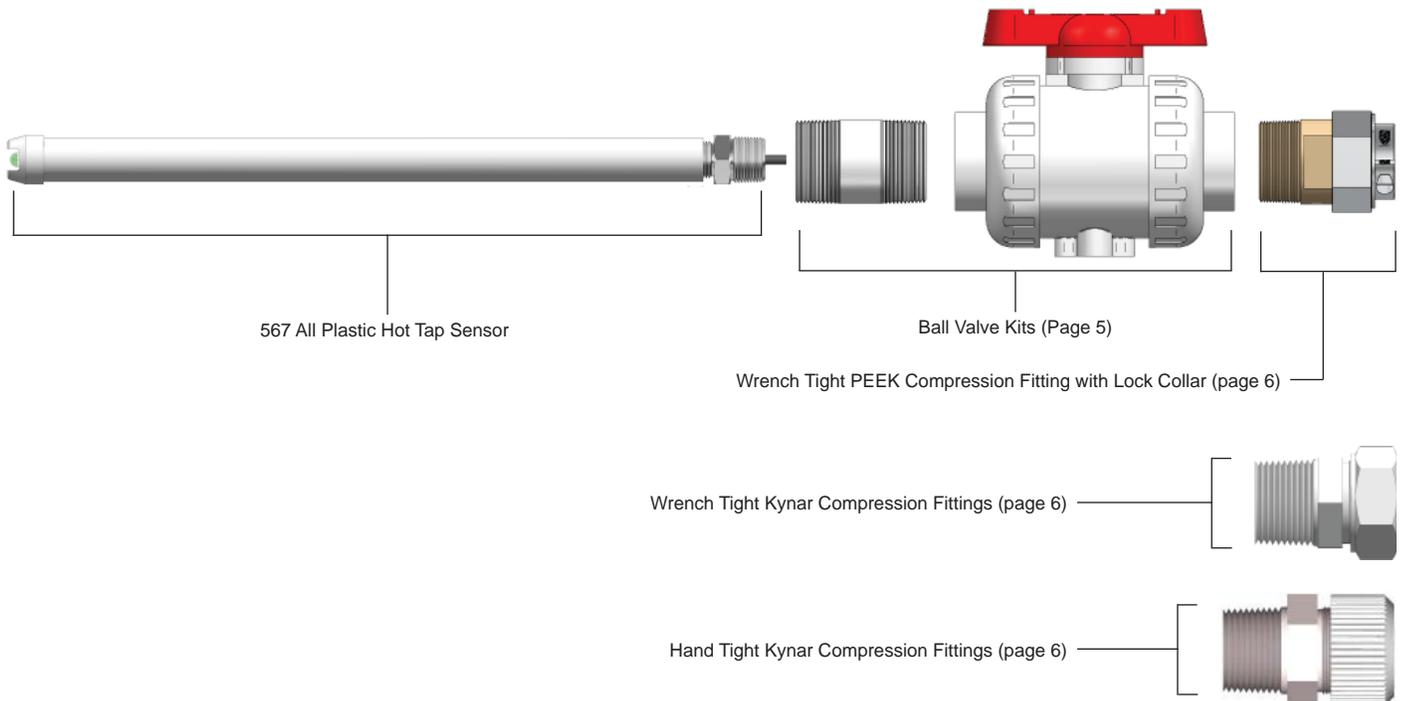
pH/ORP/Conductivity Sensors

Model 547 / 567

Hot Tap Retractable Accessories (Illustrations)



547 Metallic Hot Tap Assembly



567 All Plastic Hot Tap Assembly

Accessories Guide

pH/ORP/Conductivity Sensors

Model 547

In-line High Pressure Accessories

HIGH PRESSURE (2500 PSIG) INLINE HOUSINGS 1" MNPT THREAD MOUNTING (DRAWING 2P0044) (NOSE OF SENSOR CARTRIDGE ACCOUNTS FOR THE FIRST INCH OF INSERTION)

MATERIAL SS316

Part #	Description
B5106-0001	1.0" Insertion Depth
B5106-0002	1.5" Insertion Depth
B5106-0003	2.0" Insertion Depth
B5106-0004	2.5" Insertion Depth
B5106-0005	3.0" Insertion Depth
B5106-0006	3.5" Insertion Depth
B5106-0007	4.0" Insertion Depth
B5106-0008	4.5" Insertion Depth



MATERIAL TITANIUM GR2

B5106-0021	1.0" Insertion Depth
B5106-0022	1.5" Insertion Depth
B5106-0023	2.0" Insertion Depth
B5106-0024	2.5" Insertion Depth
B5106-0025	3.0" Insertion Depth
B5106-0026	3.5" Insertion Depth
B5106-0027	4.0" Insertion Depth
B5106-0028	4.5" Insertion Depth



MATERIAL HASTELLOY C-276

B5106-0040	1.0" Insertion Depth
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INLINE FLOW CELL PIPE TEE 1" FNPT THREADED 3,000PSIG RATED

B4951-0055	SS316
B4951-0095	Titanium Gr2

FLOW CELL ASSEMBLY - SS316 SENSOR HOUSING & MATING CELL WITH 1/4" PORTS (DRAWING 2P0073) (547 PH SENSOR WITH HEMISPHERICAL GLASS AND FLUSH JUNCTION REQUIRED, 547 SPECIFIC, NOT RECOMMENDED FOR 4 ELECTRODE CONDUCTIVITY)

WALL / SURFACE MOUNTED STANDARD

B57-S-V-N	Viton Oring
B57-S-E-N	EPDM Oring
B57-S-K-N	Kalrez Oring



PIPE MOUNTED

B57-S-V-P	Viton Oring
B57-S-E-P	EPDM Oring
B57-S-K-P	Kalrez Oring



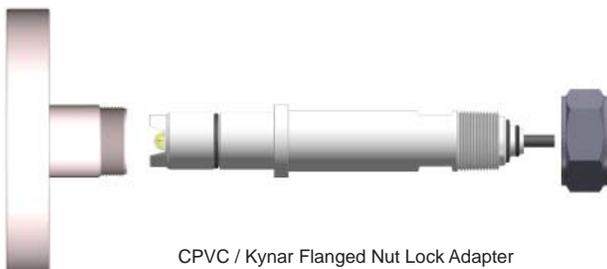
Accessories Guide

pH/ORP/Conductivity Sensors

Model 551

Quick Change In-line Accessories

INLINE NUT-LOCK ADAPTER WITH 1" MNPT THREAD (DRAWING 2P0008)	
PLASTIC BODY 150 PSIG MAX (SENSOR DEPENDENT)	
Part #	Description
B4953-0001	CPVC Body Delrin Hand Nut
B4953-0002	KYNAR Body Delrin Hand Nut
B4953-0015	KYNAR Body SS316 Hex Nut
B4953-1010	CPVC Body KYNAR Hand Nut
B4953-1011	PEEK Body KYNAR Hand Nut
METALLIC BODY 150 PSIG MAX (SENSOR DEPENDENT)	
B4954-0006	SS316 Body Delrin Hand Nut
B4954-0008	Titanium Body Delrin Hand Nut
B4954-0007	Hastelloy C-276 Body Delrin Hand Nut
METALLIC BODY HIGH PRESSURE 300 PSIG MAX (SENSOR DEPENDENT)	
B4954-0022	SS316 Body SS316 Hex Nut
B4954-0036	Titanium Body SS316 Hex Nut
B4954-0040	Hastelloy C276 Body SS316 Hex Nut
INLINE FLOW CELL PIPE TEE 1"FNPT THREADED, FOR NUT-LOCK ADAPTERS (Drawing 2P0092)	
B4951-0036	SS316, 150 PSIG Max
B4951-0045	CPVC Schedule 80, 100 PSIG Max
B4951-0046	Kynar Schedule 80, 200 PSIG Max
B4951-0044	Polypro Schedule 80, 150 PSIG Max
INLINE FLOW CELL ASSEMBLY INCLUDING NUT-LOCK ADAPTER 2X 1/2"FNPT PORTS (Drawing 2P0190)	
B4992-0011	SS316 Wetted Parts Delrin Hand Nut, 150 PSIG Max
INLINE NUTLOCK 150# SCH 80 ANSI B FLANGE ADAPTERS (Drawing 2P0083)	
CPVC FLANGE ADAPTER 150# ANSI WITH 316 SS HEX NUT 150 PSIG MAX (SENSOR DEPENDENT)	
B4951-0066	1"
B4951-0067	1-1/2"
B4951-0068	2"
KYNAR FLANGE ADAPTER 150# ANSI WITH 316 SS HEX NUT 150 PSIG MAX (SENSOR DEPENDENT)	
B4951-0118	1"
B4951-0119	1-1/2"
B4951-0120	2"
SERVICE PLUG - TO SEAL NUT-LOCK ADAPTER WHEN SENSOR IS REMOVED	
BV551PLUG	Kynar/Viton, 300PSIG Max



CPVC / Kynar Flanged Nut Lock Adapter

Images for reference only
Not to scale

Accessories Guide

pH/ORP/Conductivity Sensors

pH / ORP Sensor Extension Cable

BNC COUPLED CABLES FOR pH/ORP SENSORS							
(SENSORS WITH INTEGRAL CABLE AND BN or B2 TERMINATIONS)							
B39	Cable with Female BNC (Interfaces Male BNC Termination on Sensor Cable)						
	Cable Type						
	C	Coax Only 105 C (For pH/ORP sensors w/o TC, Sol Gnd, or Indep Ref)					
	M	Multiconductor 130 C, Low Noise, TPE Jacket (Rqd for TC, Ind Ref & Sol Gnd)					
		Temperature Compensator Wire Requirement					
	A	No TC Wires (Coax Only)					
	2	2 Lead - 3K Balco, PT100, PT1000, & 8550 (Multiconductor Only)					
		Reference Conductor					
	S	Coax Shield					
	I	Independent Lead (Multiconductor Only)					
		Solution Ground					
	N	None					
	G	Independent Lead (Multiconductor Only)					
		C - Coax Cable Length - NO TC, Indep Ref, or Sol Gnd					
	#	Special length cut charge plus next longer selection below					
	5	5' Cable - standard					
	15	15' Cable					
	30	30' Cable					
	50	50' Cable					
	60	60' Cable					
		M - Multiconductor Cable Length - W/ TC, Indep Ref, or Sol Gnd					
	#	Special length cut charge plus next longer selection below					
	5	5' Cable - standard					
	15	15' Cable					
	30	30' Cable					
	50	50' Cable					
	60	60' Cable					
	70	70' Cable					
	80	80' Cable					
	90	90' Cable					
	100	100' Cable					
		Lead Terminations (Transmitter End)					
	BN	BNC (Coax Only) NO TC					
	TN	Tinned Leads (Coax Only) NO TC					
	TT	All Tinned Leads					
	PP	All Wire Ferrules					
	BT	BNC & Tinned Leads for TC					
Series	Type	TC	Ref	SG	Length	Term	Typical Model Number
B39	M	2	S	N	15	TT	

ADAPTIVE MINI CABLES FOR pH or ORP SENSORS WITH BNC AND OR 2 PIN MOLEX TC	
B3907-0016	Female BNC / 2 Pin Molex X Tinned Leads 12" (Drawing 2P0153)
B3907-0001	Female BNC X Tinned Leads 6" (Drawing 2P0093)
B3907-0020	Female BNC X #6 Spade Lugs 6" (Drawing 2P0151)
B3907-0015	Female 2 Pin Molex X Tinned Leads 6" (Drawing 2P0152)

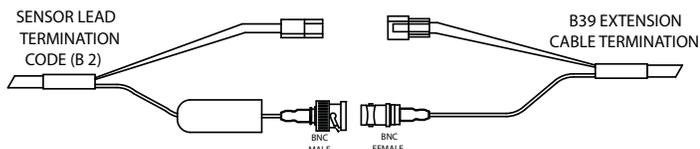
Accessories Guide

pH/ORP/Conductivity Sensors

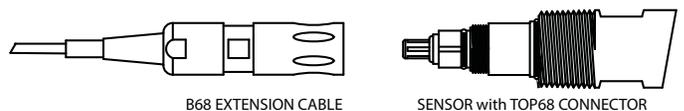
pH / ORP Sensor Extension Cable (Continued)

TOP68 COUPLED 6 POLE QUICK DISCONNECT CABLES FOR pH/ORP SENSORS				
(FOR pH OR ORP SENSORS WITH PLUG HEAD (PH) OR PLUG TAIL (PT) TERMINATIONS)				
B68 High Temperature, Low Noise, Flexible Extension Cable with Connector and Gold Contacts				
Cable Type				
	M	Multiconductor 80°C Max. Temperature		
Cable Length Footage 1 – 60Ft (Whole Numbers Only) Longer POR				
	#	Special length cut charge plus next longer selection below		
	5	5' Cable - standard		
	15	15' Cable		
	30	30' Cable		
	50	50' Cable		
	60	60' Cable		
Lead Terminations (Preamp / Analyzer End)				
	TT	All Tinned		
	PP	All Wire Ferrules		
	BT	BNC & Tinned Leads for TC		
Series	Type	Length	Term	Typical Model Number
B68	M	10	BT	

STANDARD PRE-BUILT CABLES	
TOP68 COUPLED QUICK DISCONNECT FOR pH SENSORS WITH TC OR SOLUTION GND (6 POLE)	
B3907-0022	1.5M, Tinned Leads
B3907-0004	5M, Tinned Leads
B3907-0006	10M, Tinned Leads
TOP68 COUPLED QUICK DISCONNECT FOR pH SENSORS WITHOUT TC OR SOLUTION GROUND OR ORP SENSORS WITHOUT TC OR SOLUTION GROUND (2 POLE)	
B3907-0009	5M, Tinned Leads
B3907-0007	10M, Tinned Leads
B3907-0010	5M, BNC
B3907-0008	10M, BNC



Example of B39 pH Extension cable with BNC connector.
Find extension cable on page 10

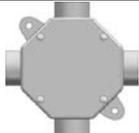


Example of TOP68 Coupled Quick Disconnect termination for a pH Sensor.
Find Extension cable above

Accessories Guide

pH/ORP/Conductivity Sensors

Common Accessories - Junction Boxes and Tags

JUNCTION BOXES FOR PH SENSORS		
Part #	Description	
B5026-0001	Junction Box 4" x 4" CPVC 4 Port Included 2 SS Reinforced CPVC 3/4" FNPT Ports & 2 Slip Plugs (Drawing 2P0020)	
B5026-0005V	Junction Box, powder coated aluminum, weatherproof (Drawing TBA)	
IDENTIFICATION TAGS		
B5003-0001	Tag Polyester	
B5003-0002	Tag Stainless Steel	

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Barben Analyzer Technology
5200 Convair Drive
Carson City, NV 89706 USA

Toll Free: +1 (800) 993-9309
Phone: +1 (775) 883-2500
Fax: +1 (775) 297-4740
email: sales.uai-bat@ametek.com
Web: www.bat4ph.com

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Contacts:	E-Mail:
Quotes, Orders & Product Data	sales@pcspl.com.au
Service	service@pcspl.com.au
Accounts	accounts@pcspl.com.au
Technical	
QLD & NSW: Michael Dickens	michael.dickens@pcspl.com.au
VIC & TAS: Sam Colman	scolman@pcspl.com.au
NZ: John Lane	jlane@pcspl.com.au
National: John Lane	jlane@pcspl.com.au
Head Office & Warehouse: 4 / 198-222 Young St, Waterloo, NSW, 2017	