



PRODUCT CATALOGUE



ABOUT CHEMITEC

WHO WE ARE

Founded in Florence, Italy in 1984, Chemitec is a world-class manufacturer of instruments, controllers and other solutions for modern, professional water-monitoring applications.

Chemitec operates in more than 80 countries and in 2015, we extended our international presence with the opening of our first Asian subsidiary in Shanghai, China.

WHAT WE DO

Drawing upon our vast experience and expertise in water treatment and liquid chemical analysis, Chemitec designs, manufactures and distributes sophisticated level and flow rate detection systems, analysers and sensors to industries worldwide, enabling them to take their processes to a new standard of operational excellence.

With a reputation for exceptional quality and service, we specialise in developing state-of-the-art, customised, user-friendly products for our discerning clients.

OUR VISION

**TO LEAD THE WORLD IN HIGH-TECH
ONLINE WATER & LIQUID ANALYSIS**

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

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 that not only fulfill customer requirements but provide user-friendly, cost-effective, sustainable water-monitoring solutions.





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 design, manufacture and after-sales technical support.

SUSTAINABILITY

At Chemitec, we're serious about sustainability and our responsibility towards environmental protection. We understand that positive actions we take today benefit both us and future generations.

That's why, from recyclable packaging to innovative systems that reduce consumption of chemicals, water and energy, sustainability is at the heart of everything we do.

QUALITY ASSURANCE

As a quality-oriented company, Chemitec monitors and evaluates all aspects of design, planning (MRP), production (Kaizen) and after-sales support in order to guarantee customer satisfaction.

Chemitec develops its products according to the most rigorous international quality standards. We operate in accordance with quality management system UNI EN ISO 9001:2015, while our dedication to maintaining the highest standards in health and safety and environmental management is reflected in ISO 14001 and ISO 45001 certification respectively.

RESEARCH & DEVELOPMENT

With 40 years of R&D experience in the field, uncompromising quality and premium components, our highly skilled engineers develop all of our products in accordance with individual customer specifications, ensuring optimum performance and reliability at the right cost.

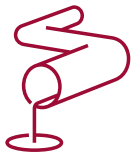


APPLICATIONS

INDUSTRY FIELDS

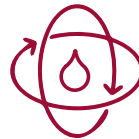
At Chemitec, almost 40 years of experience means we understand that every application is unique, with process requirements dependent on the individual needs and specification of the project.

Our extensive array of instruments, tailor-made solutions and services are based on a vast range of application parameters and measurement principles. This enables optimal adaptation to every challenge and environment and allows us to deliver superior water-monitoring solutions.



WASTEWATER

Dedicated monitoring solutions for improving wastewater treatment processes such as nutrient removal, aeration control, nitrification/denitrification and sludge dewatering.



ALL APPLICATIONS

Chemitec's comprehensive range of instruments includes multi-application solutions that help operators achieve reliable, repeatable results in every field.



DRINKING WATER

Chemitec solutions help operators monitor incoming water, manage changes to the treatment process, and maintain the correct dosages and adjustments to ensure the quality of the final effluent.



INDUSTRIAL WATER

Chemitec's advanced water monitoring tools help operators in a wide range of industries meet the most demanding monitoring and process management needs.



FISH FARMING

Precise monitoring of turbidity, dissolved oxygen, electrical conductivity and other essential water-quality parameters in aquaculture facilities.



IRRIGATION

Chemitec's advanced probes, sensors, controllers and analysis systems for agricultural irrigation applications help operators save money, improve yields and ensure greater product quality.



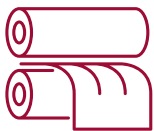
ELECTROPLATING

In electroplating, where water bath temperature and chemical composition are crucial, Chemitec's advanced instruments allow users to have complete confidence that their process is safe and effective.



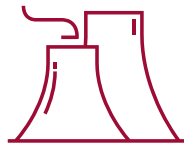
CLEAN IN PLACE (CIP)

Advanced instruments for monitoring water parameters during the automated cleaning of pipes, vessels and equipment where the highest standards of hygiene must be achieved.



PULP & PAPER

Chemitec's state-of-the-art instruments allow operators to reduce fresh water consumption while treating discharge water to comply with environmental regulations and protect local resources.



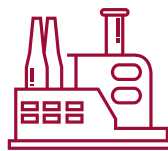
COOLING TOWERS

Solutions for ensuring maximum uptime through preventative protection and superior service throughout the water and steam process.



FOOD & BEVERAGE

Chemitec controllers, sensors and analysers help optimise food and beverage production processes and ensure products comply with safety legislation and shelf-life requirements.



CHEMICAL INDUSTRY

In the production of chemicals, where achieving delicate parameter balance is key to product quality, Chemitec is present with a comprehensive range of sophisticated instruments.

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SENSORS & CONTROLLERS



CONTROLLERS

80 SERIES 12

Multiparametric plug & play control unit

70CT SERIES 14

Multiparametric controller for cooling towers

70DW SERIES 16

Multiparametric controller for drinking water treatment

50 SERIES 18

Multiparametric plug & play control unit

46 SERIES 20

Single or double channel control unit

30 SERIES 22

pH / ORP - Conductivity control unit

SENSORS

PH & ORP ELECTRODES 24

S401 • S406 • S408 range

S401 DIG/N • S406 DIG/N

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CONDUCTIVITY 28

S411 range

S411 DIG

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INDUCTIVE CONDUCTIVITY 30

S411 IND range

S411 IND HT range

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PORTABLE UNITS

COMPACT PRO 46

Plug & play multiparameter portable unit

OUR TEST 47

Measurement of OUR

CONTROLLER/SENSOR CONNECTION TABLE

| Parameters | Sensor models | 30 Series | 46 Series | 50 Series | 80 Series |
|----------------------------|--|-----------|-----------|-----------|-----------|
| pH | S401 DIG/N | | | • | • |
| | S401 DIFF/N | | | • | • |
| | S401 VG | • | • | •+ | • |
| | S401 LC/S401 LC OSM | • | • | •+ | • |
| | S401 VG C | • | • | •+ | • |
| | S401 VG HTAJ | • | • | •+ | • |
| | S408 MEC/POL PLUS | • | • | •+ | • |
| Redox (ORP) | S406 DIG/N | | | • | • |
| | S406 DIFF/N | | | • | • |
| | S406 VG | • | • | •+ | • |
| | S406 POL/OXT | • | • | •+ | • |
| | S406 VG HTAJ | • | • | •+ | • |
| Conductivity | S411 DIG | | | • | • |
| | S411 DIG/N | | | • | • |
| | S411 IND DIG | | | • | • |
| | S411 S | • | • | •+ | • |
| | S411/S411 C | • | • | •+ | • |
| | S411 DI2 | | • | •+ | • |
| | S411 TEF C | • | • | •+ | • |
| | S411 U/PS | | • | •+ | • |
| S411 IND/S411 IND HT | | | •+ | •+ | |
| Disinfectants | S494 Cl ₂ | | • | •+ | • |
| | S494 ClO ₂ | | • | •+ | • |
| | S494 O ₃ | | • | •+ | • |
| | S494 CLT | | • | •+ | • |
| | S494 Br | | • | •+ | • |
| | S494 PAA | | • | •+ | • |
| | S494 H ₂ O ₂ | | • | •+ | • |
| | S494/CL ₂ /HT70 | | • | •+ | • |
| Oxygen Dissolved | S423C/OPT | | • | • | • |
| | S423/C/OPT/T | | • | • | • |
| Turbidity | S461 LT | | • | • | • |
| | S461 N | | | • | • |
| | S461 TN | | • | • | • |
| Suspended Solids | S461 S | | • | • | • |
| | S461 ST | | | • | • |
| Nutrients | S470/N NH ₄ ⁺ | | | • | • |
| | S470/N NO ₃ ⁻ | | | • | • |
| | S470/NO ₃ ⁻ NH ₄ ⁺ | | | • | • |
| Organic Substances/ Colour | S480 NO ₃ | | | • | • |
| | S480 SAC ₂₅₄ | | | • | • |
| | S480 PAH | | | • | • |
| | S480 Colour | | | • | • |
| | S480 CHL | | | • | • |

+ Through Digitiser

CONFIGURATION EXAMPLE

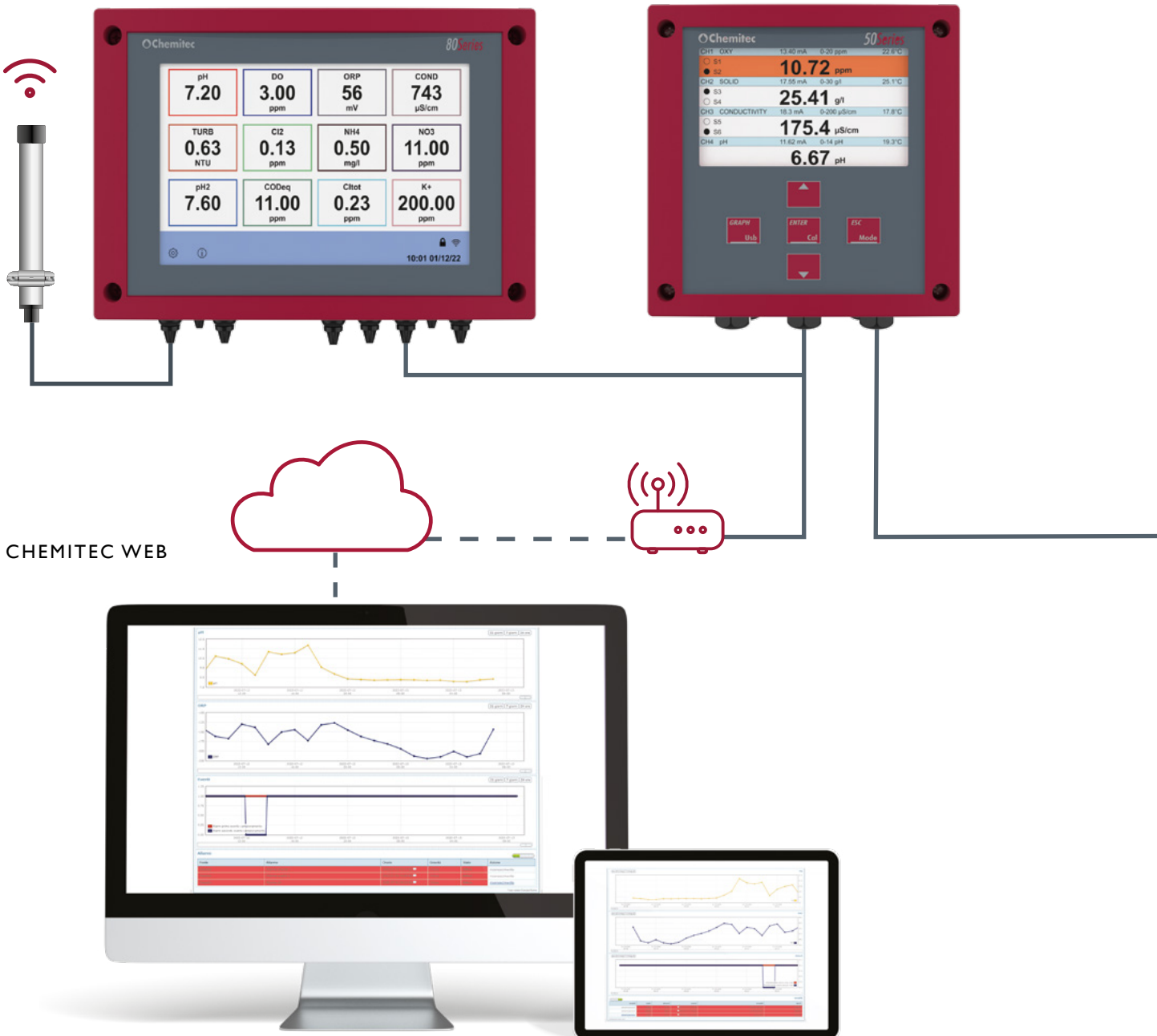
80 OR 50 SERIES UP TO 8 SENSORS

Here we have a graphical representation of an example controller configuration using either the 80 or 50 Series with digital sensors in a typical biological purification plant with two parallel treatment lines. The connection between the sensors in the field and the controllers can be cabled or wireless with radio modem antennas.

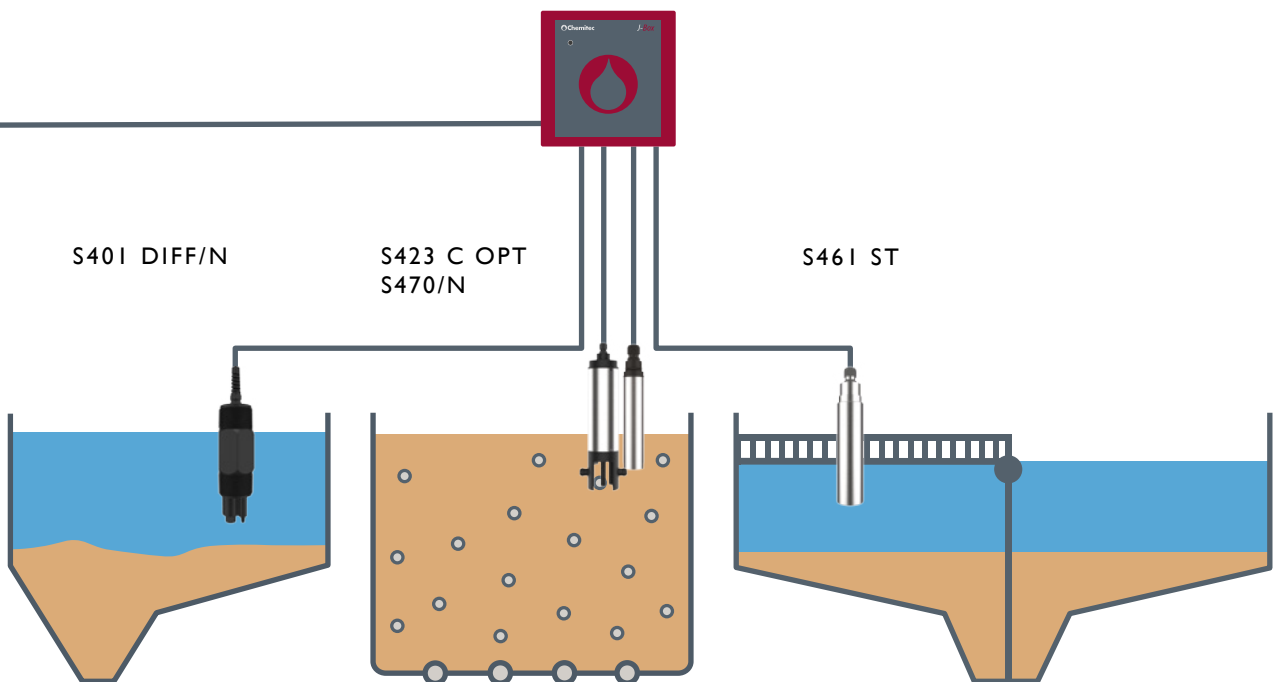
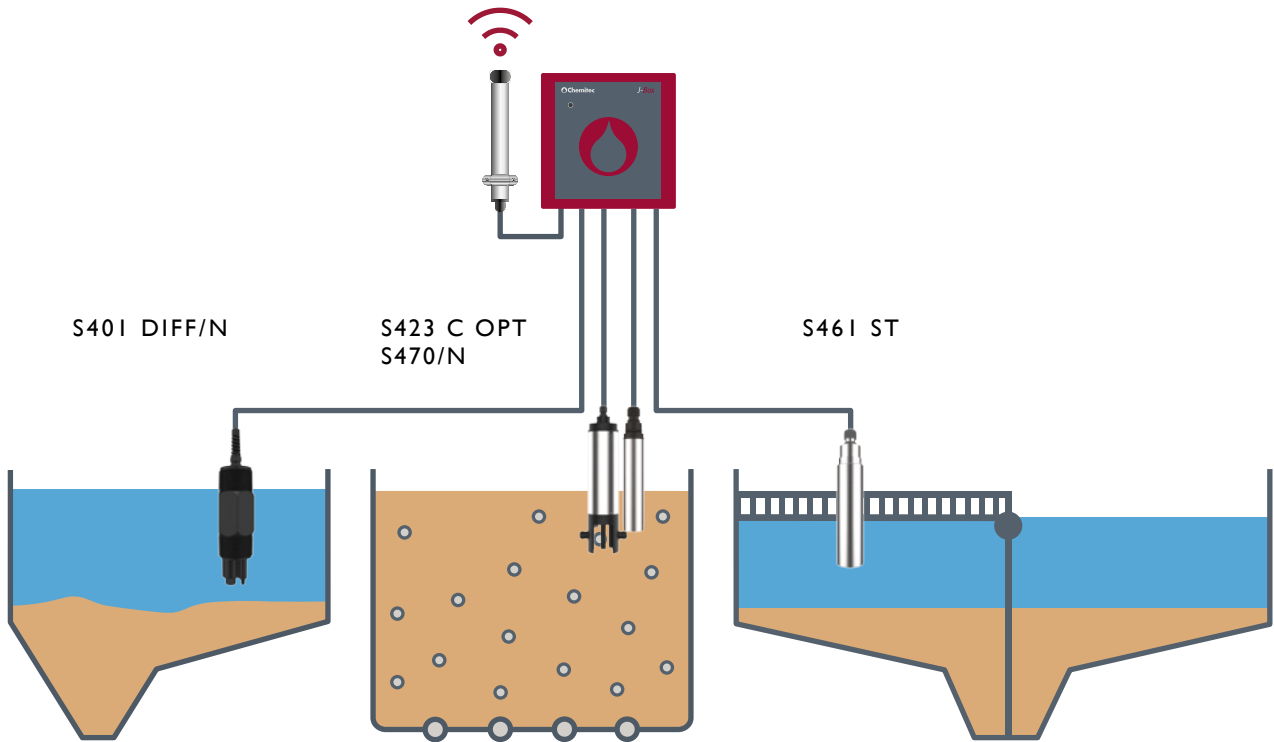
Data collected by the sensors is transmitted to the dedicated Chemitec Web platform that gives the operator remote access to live and stored measurements, alarm event setting and notification as well as configuration parameters modification.

80 SERIES

50 SERIES

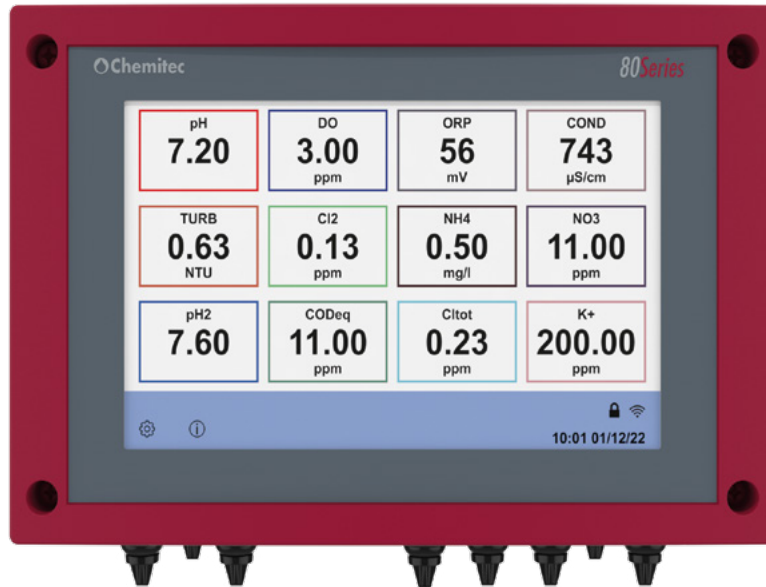


WIRED OR WIRELESS CONNECTION



80 SERIES

MULTIPARAMETRIC PLUG & PLAY CONTROL UNIT



Chemitec's 80 Series delivers state-of-the-art control of industrial process applications, making it ideal for the modern water-treatment professional.

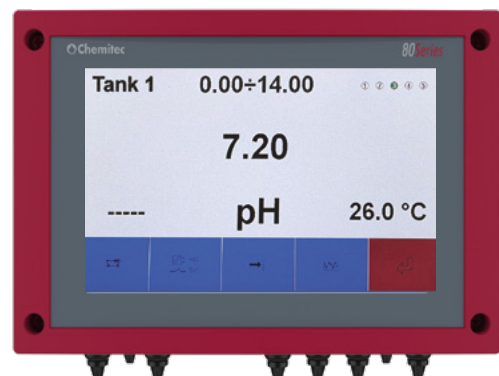
FEATURES

- Up to 12 parameters visible on the large display and saved in the internal data logger
- Stored data can be downloaded via USB or the controller's integrated Wi-Fi module
- Up to 8 mA outputs available with PID control for proportional dosing, 8 relays
- Modbus RS485 serial protocol (Profibus on request)
- The large 7" touch screen RGB 800x480 colour display allows to display all parameters on a single screen
- Programmable analogue outputs for repeating measurements, PID control and temperature
- Digital output relays for set point adjustment
- Analogue input for perturbative functions or engineered display of additional measuring
- Digital input for disabling of dosage

MEASURES

- pH/ORP*
- Dissolved oxygen
- Conductivity*
- Turbidity
- Suspended solids
- Chlorine*
- Chlorine dioxide*
- Ozone*
- Chlorites*
- Hydrogen peroxide*
- Peracetic acid
- Nitrates (UV)
- Ammonia + Nitrate (ISE)
- Organic substances (UV)
- Colour (UV)
- Chlorophyll
- PAH/OIL (UV-Fluorescence)

* connectable to analogue sensors

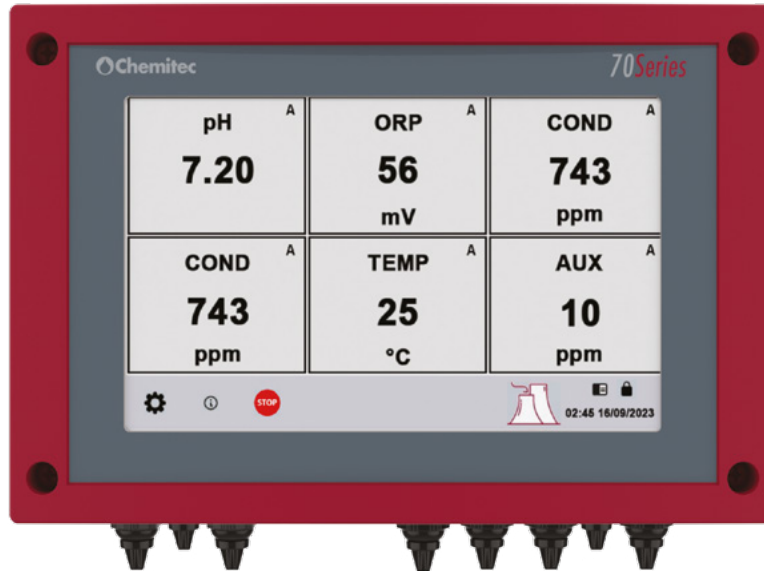


TECHNICAL SPECIFICATION

| | |
|------------------------|--|
| Display | 7" TFT LCD graphic colour display 800x480 RGB with resistive touch 16:9 |
| Languages | Italian, English, French, German, Spanish |
| Data logger | Internal Flash 64Mbit. Download by USB port or Wi-Fi |
| Recording method | Circular (F.I.F.O.) or filling |
| Display of stored data | In tabular and graphical form with indication of maximum, minimum and average values of the period recorded Zoom function |
| PID control | Settable functions: P [Proportional]; PI [Proportional – Integral] and PID [Proportional – Integral – Derivative] |
| Activation | On analogue or digital output |
| Proportional range | 0...500% |
| Time | Integral and/or derivative 0:00...5:00 min |
| Analogue outputs | Eight programmable; 0/4...20 mA; galvanic separation; opto-isolator 1KV; maximum load 500 Ohm; freely programmable output limits within the measuring ranges |
| Digital outputs | Eight freely programmable; 1A 230V ON-OFF or PWM function |
| Alarm output | NAMUR ; 3.6 mA [with range 4...20 mA] |
| Alarm/wash | Two Alarm: instrument fault, minimum/maximum value, delay set point delay (live check); delay time; Set point disablement in case of alarm: Enable/Disable Washing: programming of the interval (minimum 15 minutes) and of the duration from 00:00...24:00 hh:mm; during the washing phase they are frozen |
| Digital inputs | Two for dosage disabling or washing cycle activation Input voltage 24Vdc/ac Absorption 10mA max |
| Serial outputs/ports | Programmable RS485 for setup and remote real-time data or stored data download (through dedicated SW) |
| Baud rate | 1200...38400 |
| Manual commands | Simulation of all analogue and digital outputs via keyboard |
| Power supply | 90 - 240Vac/dc 47 - 63 Hz |
| Transformer isolation | 4 kV |
| Power consumption | ≤ 20W |
| Electrical protection | EMI/RFI CEI-EN55011 - 05/99 |
| Mounting | Wall |
| Container | Red ABS |
| Dimensions | (WxHxD) 250x160x116 mm |
| Mechanical protection | IP66 |
| Weight | 1 kg |
| Operating temperature | 0...50°C |
| Humidity | 10...95% non-condensing |
| Storage and transport | -25...65°C |

70CT SERIES

MULTIPARAMETRIC CONTROLLER FOR COOLING TOWERS



Water-treatment professionals choose Chemitec's 70CT Series controller for the monitoring and management of as many as eight parameters in cooling or evaporative towers where precision and repeatability are essential.

The system's intelligent design and user-friendly interface simplifies measurement calibration and setting of dosing parameters. Meanwhile, in the absence of flow, a dedicated digital input immediately stops dosing and sends a signal via an alarm relay.

FEATURES

- 7" RGB 800x480 colour display
- Displays up to 8 measurements simultaneously
- Readings saved in internal data logger
- Stored data downloadable via integrated Wi-Fi module or USB.
- Up to 8 mA outputs available for proportional dosing
- Modbus RS485 serial protocol
- 8 relays

MEASURES

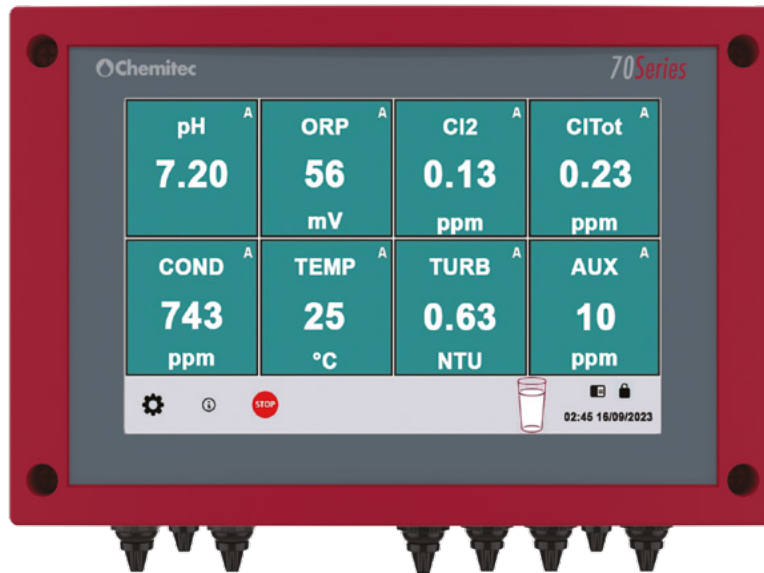
- Conductivity (digital sensor)
- Conductivity
- ORP
- pH
- Temperature
- Analogue input (4-20mA) freely programmable

TECHNICAL SPECIFICATION

| | |
|------------------------|--|
| Display | 7" TFT LCD graphic colour display 800x480 RGB with resistive touch 16:9 |
| Languages | Italian, English, French, German, Spanish |
| Data logger | Internal Flash 64Mbit. Download by USB port or Wi-Fi |
| Recording method | Circular (F.I.F.O.) or filling |
| Display of stored data | In tabular and graphical form with indication of maximum, minimum and average values of the period recorded Zoom function |
| PID control | Settable functions: P [Proportional]; PI [Proportional – Integral] and PID [Proportional – Integral – Derivative] |
| Activation | On analogue or digital output |
| Proportional range | 0...500% |
| Time | Integral and/or derivative 0:00...5:00 min |
| Analogue outputs | Eight programmable; 0/4...20 mA; galvanic separation; opto-isolator 1KV; maximum load 500 Ohm; freely programmable output limits within the measuring ranges |
| Digital outputs | Eight freely programmable; 1A 230V ON-OFF or PWM function |
| Alarm output | NAMUR ; 3.6 mA [with range 4...20 mA] |
| Alarm/wash | Two Alarm: instrument fault, minimum/maximum value, delay set point delay (live check); delay time; Set point disablement in case of alarm: Enable/Disable Washing: programming of the interval (minimum 15 minutes) and of the duration from 00:00...24:00 hh:mm; during the washing phase they are frozen |
| Digital inputs | Two for dosage disabling or washing cycle activation Input voltage 24Vdc/ac Absorption 10mA max |
| Serial outputs/ports | Programmable RS485 for setup and remote real-time data or stored data download (through dedicated SW) |
| Baud rate | 1200...38400 |
| Manual commands | Simulation of all analogue and digital outputs via keyboard |
| Power supply | 90 - 240Vac/dc 47 - 63 Hz |
| Transformer isolation | 4 kV |
| Power consumption | ≤ 20W |
| Electrical protection | EMI/RFI CEI-EN55011 - 05/99 |
| Mounting | Wall |
| Container | Red ABS |
| Dimensions | (WxHxD) 250x160x116 mm |
| Mechanical protection | IP66 |
| Weight | 1 kg |
| Operating temperature | 0...50°C |
| Humidity | 10...95% non-condensing |
| Storage and transport | -25...65°C |

70DW SERIES

MULTIPARAMETRIC CONTROLLER FOR DRINKING WATER TREATMENT



The 70DW Series is a cutting-edge controller offering simultaneous display of as many of eight measurements for the monitoring and management of primary and drinking water plants.

The 70DW Series' intuitive interface simplifies measurement calibration and setting of dosing parameters and, in the absence of flow, a dedicated digital input immediately ceases dosing and sends a signal via an alarm relay.

MEASURES

- Conductivity
- Free chlorine
- Total chlorine
- ORP
- pH
- Temperature
- Turbidity
- Analogue input (4-20mA) freely programmable

FEATURES

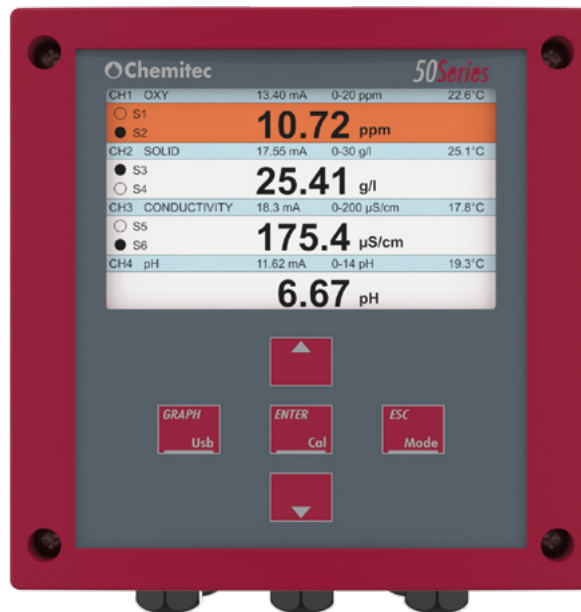
- 7" RGB 800x480 colour display
- Displays up to 8 measurements simultaneously
- Readings saved in internal data logger
- Stored data downloadable via integrated Wi-Fi module or USB.
- Up to 8 mA outputs available for proportional dosing
- Modbus RS485 serial protocol
- 8 relays

TECHNICAL SPECIFICATION

| | |
|------------------------|--|
| Display | 7" TFT LCD graphic colour display 800x480 RGB with resistive touch 16:9 |
| Languages | Italian, English, French, German, Spanish |
| Data logger | Internal Flash 64Mbit. Download by USB port or Wi-Fi |
| Recording method | Circular (F.I.F.O.) or filling |
| Display of stored data | In tabular and graphical form with indication of maximum, minimum and average values of the period recorded Zoom function |
| PID control | Settable functions: P [Proportional]; PI [Proportional – Integral] and PID [Proportional – Integral – Derivative] |
| Activation | On analogue or digital output |
| Proportional range | 0...500% |
| Time | Integral and/or derivative 0:00...5:00 min |
| Analogue outputs | Eight programmable; 0/4...20 mA; galvanic separation; opto-isolator 1KV; maximum load 500 Ohm; freely programmable output limits within the measuring ranges |
| Digital outputs | Eight freely programmable; 1A 230V ON-OFF or PWM function |
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| Alarm/wash | Two Alarm: instrument fault, minimum/maximum value, delay set point delay (live check); delay time; Set point disablement in case of alarm: Enable/Disable Washing: programming of the interval (minimum 15 minutes) and of the duration from 00:00...24:00 hh:mm; during the washing phase they are frozen |
| Digital inputs | Two for dosage disabling or washing cycle activation Input voltage 24Vdc/ac Absorption 10mA max |
| Serial outputs/ports | Programmable RS485 for setup and remote real-time data or stored data download (through dedicated SW) |
| Baud rate | 1200...38400 |
| Manual commands | Simulation of all analogue and digital outputs via keyboard |
| Power supply | 90 - 240Vac/dc 47 - 63 Hz |
| Transformer isolation | 4 kV |
| Power consumption | ≤ 20W |
| Electrical protection | EMI/RFI CEI-EN55011 - 05/99 |
| Mounting | Wall |
| Container | Red ABS |
| Dimensions | (WxHxD) 250x160x116 mm |
| Mechanical protection | IP66 |
| Weight | 1 kg |
| Operating temperature | 0...50°C |
| Humidity | 10...95% non-condensing |
| Storage and transport | -25...65°C |

50 SERIES

MULTIPARAMETRIC PLUG & PLAY CONTROL UNIT



The flexible 50 Series is used worldwide for a broad range of applications in water treatment, with easy-to-use software, automatic recognition of sensors and multiple configurations making it a popular choice among water-treatment operators.

Compatible with Chemitec digital sensors, the 50 Series is expandable to traditional electrodes/sensors through AD Series digitisers.

MEASURES

- pH/ORP
- Dissolved oxygen
- Conductivity
- Turbidity
- Suspended solids
- Chlorine
- Chlorine dioxide
- Ozone
- Chlorites
- Hydrogen peroxide
- Peracetic acid
- Ammonia + Nitrates (ISE)
- Nitrates (UV)
- Organic substances (UV)
- Colour (UV)
- Chlorophyll
- PAH/OIL (UV-Fluorescence)

FEATURES

- Available in three configurations: Up to two, four and eight simultaneous measurements, freely selectable.
- Two RS485 serial ports: Sensor with RS485 digital interface and Modbus RTU protocol. Sensor opto-isolated for connection with local network communication devices.
- Real-time clock allows software to archive data chronologically to flash memory
- Internal data logger with 250,000-record capacity
- Programmable analogue outputs for repeating measurements, PID control and temperature
- Digital output relays for set point adjustment
- Analogue input for perturbative functions or engineered display of additional measuring
- Digital input for disabling of dosage

TECHNICAL SPECIFICATION

| | |
|------------------------|---|
| Display | Graphic TFT colour LCD 480x272 (visible area 95x93) |
| Languages | Italian, English, French, German, Spanish |
| Keypad | 5 bubble keys |
| Data logger | Internal Flash 32Mbit Download by USB port |
| 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 analogue or digital output |
| Analogue outputs | Four programmable; 0/4...20 mA; Galvanic separation |
| Alarm output | NAMUR; 2.4 mA [with range 4...20 mA] |
| Digital outputs | Six; 3A at 230Vac |
| Set point | Four operating range setting (Hysteresis/direction) |
| Alarm/wash | Two 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 minutes) and duration |
| Digital inputs (2) | To disable dosing or activate wash cycle |
| 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, ethernet, device net, Modbus TCP |
| Manual controls | Keyboard can be used to simulate all analogue and digital outputs |
| Power supply | 90...240 Vac/dc 47– 63 Hz [on request 24Vac/dc] |
| Power consumption | < 6W |
| Electrical protection | EMI / RFI CEI-EN55011 – 05/99 |
| Mounting | Wall |
| Housing material | ABS |
| Dimensions | (LxHxP) 144x144x122.5 mm |
| Mechanical protection | IP 66 |
| Weight | 1 kg |
| Operating temperature | 0...50°C |
| Humidity | 10...95% non-condensing |
| Storage and transport | -25...65°C |

46 SERIES

SINGLE OR DOUBLE-CHANNEL CONTROL UNIT



In advanced, high-end water treatment applications, professionals choose 46 Series controllers to benefit from exceptional ease of use and full programming autonomy within their process.

With a graphic display showing digital output status, washing cycle and alarms plus intuitive controls for instrument calibration and configuration, it's never been easier to take control.

MEASURES

- pH / ORP (redox)
- Conductivity
- Chlorine
- Chlorine dioxide
- Ozone
- Hydrogen peroxide
- Peracetic acid
- Chlorites
- Bromine
- Dissolved oxygen
- Turbidity
- Suspended solids
- Flow

FEATURES

- IP65-rated ABS wall-mounted casing
- Two independent 4-20mA output with galvanic isolation
- Four independent relays, two set-points, remote alarm and backwashing sensor setting by software
- On/Off, timed and proportional (PWM) routine function setting
- Solid state relay (SSR) with Wi-Fi embedded module, two-frequency output signal and two set-points

APPLICATIONS

- Wastewater
- Drinking water
- Fish farming
- Electroplating
- Clean in place
- Food and beverage
- Pulp and paper

TECHNICAL SPECIFICATION

POWER SUPPLY (VERSION 100...240 VAC)

| | |
|--------------------------|---|
| Electrical requirements | From 100 to 240 VAC $\pm 10\%$, 8 W (note 1) |
| Frequency | 50 to 60 Hz |
| Power supply fuse | Fuse glass body 5x20 mm T1.25AL250V |
| Short circuit protection | Active |

POWER SUPPLY (VERSION 24...48 VDC)

| | |
|-----------------------------|---|
| Electrical requirements | From 24 to 48 Vdc, or 24Vac $\pm 20\%$, 8 W (note 1) |
| Power supply fuse | Glass body 5x20 mm T1.25AL250V |
| Short circuit protection | Active |
| Reverse polarity protection | Active |

RELAY OUTPUTS

| | |
|------------------------------|---|
| RL1, RL2, RL3 and RL4 | 2-SPST mechanical 250 VAC/5A, 30 VCC/3 A |
| Relay RL1, RL2 configuration | Load activation |
| Relay RL3, RL4 configuration | Load activation, probe wash, alarm repetition |
| Cycle time | 1 sec to 3600 sec |
| Delay time | 1 sec to 3600 sec |
| Test mode | ON, OFF |

SSR OUTPUTS (SOLID STATE RELAYS)

| | |
|------------------------------|--|
| SSR1 and SSR2 | 2-SPST 60 V, max 100 mA, Bidirectional, NPN, PNP |
| Resistance in ON state | 5 ohm max |
| Leakage current in OFF state | 1 μ A max |
| SSR1 and SSR2 configuration | Pulse output |
| Frequency range | 0 to 400 pulse/min |
| Pulse duration | 100 m/sec |
| Test mode | 0 to 400 pulse/min |

OUTPUTS 4-20 MA

| | |
|-------------------------|---|
| Analogue output signals | 2 outputs 4-20 mA, galvanically isolated from one another and from the power supply |
| Measure error | ± 0.01 mA |
| Load | max. 800 Ω |
| Error condition | NAMUR Alarm: OFF, 3.6 mA, 22 mA |
| Test mode | 3 to 23 mA |

DIGITAL INPUTS

| | |
|--------------------|---------------------------------------|
| REED digital input | Input for dry contact 5 Vdc, max 6 mA |
|--------------------|---------------------------------------|

COMMUNICATION PORTS

| | |
|----------------------------------|---|
| RS485 digital communication port | Modbus server ASCII/RTU standard protocol |
|----------------------------------|---|

OUTPUT 24 VDC FOR DIGITAL PROBE

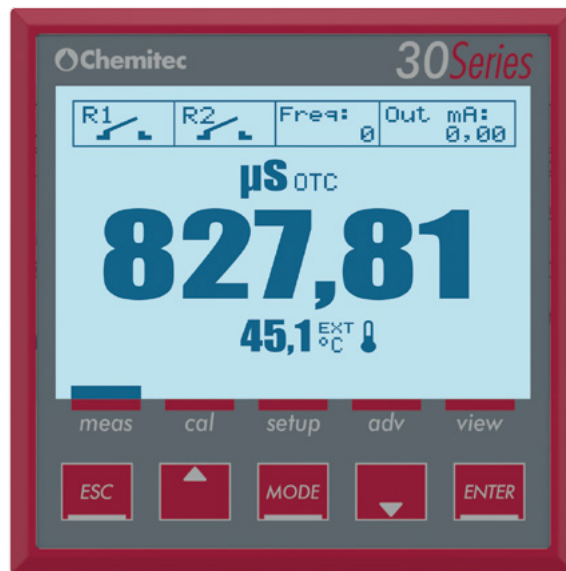
| | |
|--------------------------|---|
| Voltage | 24 Vdc $\pm 5\%$, max. 250 mA (note 2) |
| Short circuit protection | Self-resettable fuse |

(note 1) Only instrument: 8W; instrument + 1 digital probe: 10,5W; instrument + 2 digital probes: 13,5W;

(note 2) DO NOT exceed the maximum allowable current limit, risk of damaging the apparatus

30 SERIES

pH / ORP - CONDUCTIVITY CONTROL UNIT



Chemitec combines state-of-the-art technology with our renowned ease of use to deliver the 30 Series professional water-treatment controller dedicated to pH/ORP and conductivity measurement

MEASURES

- pH/redox
- Conductivity

APPLICATIONS

- Wastewater
- Drinking water
- Electroplating
- Cooling towers
- Irrigation

FEATURES

- IP65-rated front panel for protection against dust and water jets
- Programming keyboard with 5 bubble keys for instrument calibration and configuration
- 128x128-pixel monochrome display shows digital output, wash cycle and alarm menu status
- Automatic temperature compensation
- Two digital outputs for set point, with programmable hysteresis, or for set point delay alarm
- 0/4...20mA analogue output galvanically separated, programmable within the measurement range
- One frequency output with proportional control; two relay outputs for alarms or electrode washing

TECHNICAL SPECIFICATION

| pH/ORP Specifications | pH | ORP |
|-----------------------|------------------|------------------|
| Range pH | 0.00 to 14.00 pH | -2000 to 2000 mV |
| Resolution | 0.01 | 1 mV |
| Accuracy | ± 0.10 pH | ± 5 mV |
| Input impedance | > 1012 | |

CONDUCTIVITY/RESISTANCE SPECIFICATIONS

| | |
|-------------------------------------|--|
| Range with C 0.01 cm-I/K 100 sensor | 0.005 µS/cm to 200 µS/cm (5 KΩx cm to 200 MΩx cm) |
| Range with C 0.10 cm-I/K 10 sensor | 0.05 µS/cm to 2 mS/cm (500 Ωxcm to 20 MΩx cm) 0...100°C |
| Range with C 0.20 cm-I/K 5 sensor | 0.1 µS/cm to 4 mS/cm (250 Ωx cm to 10 MΩx cm) |
| Range with C 1.00 cm-I/K 1 sensor | 0.5 µS/cm to 20 mS/cm (50 Ωxcm to 2 MΩx cm) |
| Range with C 10.0 cm-I/K 0.1 sensor | 5 µS/cm to 200 mS/cm (5 Ωxcm to 200 KΩx cm) |
| Range with C 20.0 cm-I/K 0.5 sensor | 10 µS/cm to 400 mS/cm (2,5 Ωxcm to 100 KΩx cm) |
| Resolution cond/res | 0.0001/0.001/0.01/0.1/l (adjustable from menu) |
| Accuracy cond/res | ± 5% on the measuring point |
| Maximum distance of the sensor | up to 50 m (up to 164 ft) |
| TDS range | 0.3 to 2.0 ppm/µS |
| Pt100/Pt1000 specifications | 0.005 µS/cm to 200 µS/cm (5 KΩx cm to 200 MΩx cm) |

TEMPERATURE INPUT

| | |
|---------------------------|--------------------------|
| Pt100/Pt1000 detection | Automatic |
| Temperature measure range | 0.0...100°C (32...212°F) |
| Temperature resolution | 0.1°C |
| Temperature accuracy ** | ± 1.0°C (± 1.8°F) |

CONTROL

| | |
|-----------------------------------|--|
| Keyboard | 5 tactile feedback keys |
| Display | Graphic LCD 128x128 pixels, Transflective, Backlit |
| Relay Output: RLI and RL2 | 2-SPST mechanical 250 VAC/5A, 30 VCC/3 A |
| SSRI Outputs (solid state relays) | 2-SPST 60 VAC, max 100 mA, Bidirectional, NPN, PNP |
| SSRI frequency range | 0 to 400 imp/min |
| SSRI pulse duration | 100 m/sec |

OUTPUTS 4÷20 MA

| | |
|-------------------------|---|
| Analogue output signals | 1 output 4÷20 mA, galvanically isolated from the power supply |
| Load | Max. 500 Ω |

DIGITAL INPUTS

| | |
|---------------------------------------|-------------------------------------|
| REED digital input | Input for dry contact 5 VCC Max 6mA |
| Power supply: electrical requirements | 24, 115 or 230 VAC, 2.5VA |
| Frequency | 50 or 60 Hz |
| Power supply fuse | 500 mA delay not recoverable |

S401 • S406 • S408

SERIES OF PH & ORP ELECTRODES



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.

pH MODELS & APPLICATIONS

S401 VG

For general use

S401 VG HTAJ

For applications in liquids with a high content of suspended solids

S401 LC

For waters with low electrical conductivity

S401 LC OSM

For osmotised waters with very low electrical conductivity

S408 MEC

For high temperature liquids and/or installations under pressure

ORP MODELS & APPLICATIONS

S406 VG

For general use

S406 POL

For harsh chemical applications

S406 OXT

For high temperature liquids and/or installations under pressure

S406 VG HTAJ

For applications in liquids with a high content of suspended solids

AD SERIES DIGITISER

The AD Series Chemitec digitisers convert the signals of the common pH and ORP electrodes into serial signal with standard Modbus RTU protocol, allowing connection to the 80 and 50 Series plug & play multiparametric instrument.

TECHNICAL SPECIFICATION

| Models | S401 VG | S408 MEC | S401 LC OSM | S401 LC | S401 VG HTAJ | S406 VG | S406 POL | S406 OXT | S406VG HTAJ |
|--------------------------|-----------|-----------|-------------|-----------|--------------|----------|-----------|-----------|-------------|
| Measuring range | 0...14 pH | 0...14 pH | 0...14 pH | 2...14 pH | 0...14 pH | ±2000 mV | ±2000 mV | ±2000 mV | ±2000 mV |
| Operating temperature | 0...80°C | 0...130°C | 0...100°C | 0...60°C | -5...135°C | 0...80°C | 0...130°C | 0...130°C | -5...135°C |
| Maximum pressure | 6 bar | 16 bar | 6 bar | 16 bar | 10 bar | 6 bar | 16 bar | 16 bar | 10 bar |
| Min. liquid conductivity | 5 µS/cm | 50 µS/cm | 0.1 µS/cm | 2 µS/cm | 50 µS/cm | 5 µS/cm | 2 µS/cm | 50 µS/cm | 50 µS/cm |

S401 DIG/N • S406 DIG/N

DIGITAL PH AND ORP SENSORS



FEATURES

- Teflon® porous septum's liquid junction resists encrustations and chemical attack
- Reference electrode's double junction increases service life in applications containing sulphides (H₂S) and metals such as lead, mercury and silver
- New solid-state electrolyte allows a constant reference potential over time even during pressure and temperature variations
- Pt100 capillary temperature sensor is positioned behind sensitive membrane (pH or ORP) for accurate temperature measurement and compensation
- IP68 rated for protection of high-impedance electrodes from condensation

APPLICATIONS

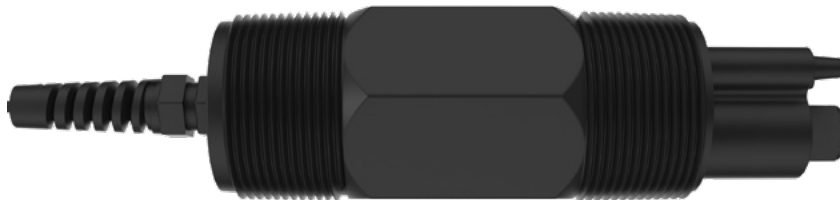
- Drinking water
- Process water
- Wastewater
- Samples containing sulphides and metals such as mercury, lead and silver

TECHNICAL SPECIFICATION

| Models | S401 DIG/N | S406 DIG/N |
|----------------------------|--|---------------------|
| Measurement range | 0...14 pH | -1500 mV...+1500 mV |
| Measurement method | Potentiostatic | |
| Accuracy | 0.05 pH | ± 5 mV |
| Repeatability | ± 0.05 pH | ± 1 mV |
| Response time | T ₉₀ < 60s | |
| Operating temperature | 0...100°C in insertion / by-pass - 0...50°C in immersion | |
| Maximum operating pressure | 11 bar | |
| Body material | Glass and PPS | |
| Measuring electrode | Hemispherical glass membrane | |
| Other materials | Teflon® | |
| Mechanical protection | IP68 sensor + cable | |
| Power supply | 12...24Vdc | |
| Absorption | Max. 1W | |
| Cable | 10 m integral with the sensor (others on request) | |
| Signal interface | Standard Modbus RTU protocol | |

S401 DIFF/N • S406 DIFF/N

DIFFERENTIAL DIGITAL PH AND ORP SENSORS



FEATURES

- Extensive lifespan
- Ryton® body
- Reference electrode with salt bridge and KCL reserve guarantees high stability of reference signal
- Operates in varying environmental conditions
- The measurement and reference electrode are connected to a ground reference for excellent measurement accuracy even in extreme conditions
- Replaceable reference electrode

APPLICATIONS

- Heavy-duty processes
- Entry and exit from biological wastewater treatment
- Aggressive industrial applications

TECHNICAL SPECIFICATION

| Models | S401 DIFF/N | S406 DIFF/N |
|----------------------------|---|------------------|
| Measuring range | 0...14 pH | -1500...+1500 mV |
| Measurement methods | Potentiostatic differential | |
| Accuracy | ± 0.01 pH | ± 5 mV |
| Response time | T ₉₀ < 60s | |
| Operating temperature | Immersion: -5...70°C (21...158°F) Insertion: -5...95°C (21...203°F) | |
| Maximum operating pressure | 6.9 bar (100 psig) | |
| Body material | Ryton® | |
| Measuring electrode | Hemispherical glass membrane | Platinum wire |
| Other materials | PVDF, ceramic junction, Viton® o-rings, titanium (ground ref) | |
| Mechanical protection | IP68 sensor + cable | |
| Power supply | 12...24Vdc | |
| Absorption | Max. 1W | |
| Cable | PUR, integral with the sensor, 10m | |
| Signal interface | Standard Modbus RTU protocol | |

S411

SERIES OF CONDUCTIVE MEASURING CELLS



GENERAL FEATURES

Wide range of conductive cells designed for both water treatment and industrial applications. Courtesy of premium materials and cell constant (k), users can cover a wide range of applications with different measuring ranges.

APPLICATIONS

- Raw water
- Drinking water

MODELS

- S411 U
- S411 PS
- S411 DI2
- S411 / S411 C
- S411 TEF / S411 TEF C

TECHNICAL SPECIFICATION

| Models | S411/S411 C | S411 TEF/ S411 TEF C | S411 DI2 | S411 U | S411 PS |
|----------------------------|--------------------|-------------------------|---------------|--------------------|-------------------------------|
| Constant K | 1 | 1 | 1 | 1 | 10/100 |
| Measurement range | 0...50.000 μ S | 0...10.000 μ S | 0...200.000uS | 0...50.000 μ S | 00...1.000/ 0.04...20.00uS |
| Temp compensation | No/Yes (C) | No/Yes (C) | Yes | Yes | Yes |
| Operating temperature | 0...100°C | 0...100°C | 0...60°C | 0...120°C | 0...130°C |
| Maximum operating pressure | 5 bar | 2 bar | 1 bar | 6 bar at 20° | 16 bar |
| Body material | PP | PTFE | Epoxy | PSU | Stainless-steel |
| Electrode material | Graphite | INOX | Platinum | Graphite | Stainless-steel |
| Process connection | ½" GAS | 1" GAS | PG 13.5 | ½" npt | ½" npt |

S411 DIG

DIGITAL CONDUCTIVITY SENSOR FOR IMMERSION



FEATURES

- Reliable conductivity measurement courtesy of graphite electrodes
- Two-electrode conductive measurement method with temperature compensation
- Sensor body in PVC
- No mechanical moving parts
- Immediate installation and easy maintenance
- Modbus RTU serial communication protocol

APPLICATIONS

- Artesian wells
- Pure and process water
- Raw water
- Drinking water
- Process water
- Water from air conditioning and boiler systems

TECHNICAL SPECIFICATION

| | |
|----------------------------|---|
| Measurement range | 0...20000 μ S |
| Measurement method | Two-electrode conductive |
| Accuracy | \pm 2.5% f.s. |
| Response time | 90% of the value in less than 60 seconds |
| Refresh time | 1 Secs |
| Temp compensation | With internal NTC sensor (external NTC sensor on request) |
| Operating temperature | 0...50°C |
| Maximum operating pressure | 10 bar |
| Body material | PVC |
| Electrode | Graphite |
| Mechanical protection | IP68 sensor & cable. The sensor is completely resin-coated inside |
| Power supply | 12...24Vdc |
| Absorption | Max. 2W |
| Cable | 10 m integral-10 m disconnectable cable |
| Equipotential contact | For solution included |
| Signal interface | RS485 with Modbus RTU protocol |

S411 DIG/N

WIDE RANGE DIGITAL CONDUCTIVITY SENSOR



FEATURES

- Broad measurement range courtesy of 4-electrode graphite sensor
- Measurement communication via Modbus RTU protocol
- Immediate installation and easy maintenance
- Integrated temperature sensor
- Sensor body in PPS and epoxy
- Electrodes in graphite
- No mechanical moving parts
- Maximum operating pressure: 5 bar

APPLICATIONS

- Pure and process water
- Wastewater
- Cooling towers
- Industrial and recirculating water

TECHNICAL SPECIFICATION

| | |
|----------------------------|---|
| Measurement range | 1 μ S/cm - 200 mS/cm (k = 0.55 nominal) |
| Measurement method | Conductive with 4 graphite electrodes |
| Accuracy | \leq 4% on the reading point |
| Repeatability | \leq 0.2% on the reading point |
| Response time | 5s |
| Operating temperature | -5...80°C in non-frozen waters |
| Maximum operating pressure | 5 bar |
| Body material | Epoxy and PPS |
| Measuring electrode | Graphite |
| Other materials | Viton® O-rings |
| Mechanical protection | IP68 |
| Power supply | 12...24 Vdc |
| Absorption | <250 mA |
| Cable | 10 mt |
| Signal interface | RS485 Modbus RTU protocol |

S411 IND

SERIES OF INDUCTIVE CONDUCTIVITY CELLS



FEATURES

- Contactless measuring system
- Virtually maintenance free
- Re-calibration only required occasionally
- High tolerance to sensor "coating" phenomenon

AD SERIES DIGITISER

The AD Series Chemitec digitisers convert the signals of the inductive conductivity cells into serial signal with standard Modbus RTU protocol, allowing the connection to the 80 and 50 Series plug & play multiparametric instrument.

APPLICATIONS

- Polluted surface water
- Process monitoring
- Wastewater
- Highly contaminated or aggressive media

MODELS

- S411 IND
sensor only
- S411 IND T
by immersion
- S411 IND E
for insertion with T-fitting
- S411 IND T INS
for direct insertion on a flat wall

TECHNICAL SPECIFICATION

| | |
|-----------------------|-------------------------------------|
| Operating temperature | - 5...60°C (without freezing) |
| Measurement range | 1000 μ S...1000 mS |
| Temp compensation | 2-wire Pt1000 temperature sensor |
| Cable | Standard 5 metres |
| Operating pressure | Vacuum to 6.5 bar (100 psi) |
| Materials | PVC with Viton® seals |
| Materials in contact | Glass-filled polypropylene |
| Immersion length | 600 or 1200 mm |
| Assembly | Standard bracket or optional flange |
| Connection | 0.5" BSP male |
| Mechanical protection | IP68 |

S411 IND HT

SERIES OF INDUCTIVE CONDUCTIVITY CELLS FOR HIGH TEMPERATURES/PRESSURES



FEATURES

- Manufactured in PEEK™, a food-grade material with excellent aggressive chemical resistance and high temperature performance
- Operates at 100°C continuously, withstanding thermal shocks commonly associated with CIP applications
- The sensors can be sterilised at up to 135°C
- Wide range of process connections

AD SERIES DIGITISER

The AD Series Chemitec digitisers convert the signals of the inductive conductivity cells into serial signal with standard Modbus RTU protocol, allowing connection to the 80 and 50 Series plug & play multiparametric instrument.

APPLICATIONS

- Food and beverage
- Conductivity and concentration measurement

MODELS

S411 IND HT
for insertion

S411 IND HT 60/120
for immersion

S411 IND HT TP
for bypass with PVC T-fitting

S411 IND HT TS
for bypass with SS T-fitting

TECHNICAL SPECIFICATION

| | |
|-----------------------|---|
| 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 | 5 metres (disconnectable) |
| Operating pressure | Vacuum to 10 bar (150 psi) |
| Materials | PEEK/AISI |
| Contact materials | Body in PEEK – Temperature sensor in 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: 50 mm, 80 mm (other on request) |
| Mechanical protection | IP67 |

S411 DIG IND

DIGITAL INDUCTIVE CONDUCTIVITY SENSOR



FEATURES

- Operates in dirty water conditions up to 1 siemens
- Easily interfaced with data acquisition systems courtesy of Modbus RTU RS485 protocol
- Presence of four possible scales with one or two-point calibration
- Robust body in loaded PP
- Immediate installation

APPLICATIONS

- Wastewater
- Primary waters
- Cooling towers

TECHNICAL SPECIFICATION

| | |
|--------------------------|---|
| Measurement range | 0,5...1.000 mS/cm |
| Accuracy | ± 6% on the measuring point |
| Repeatability | ± 3% |
| Response time | T90 <60s |
| Operating temperature | -10...60°C |
| Operating pressure | From vacuum to 6,5 bar |
| Body material | Glass-filled PP, PPS, Viton® O-ring |
| Mechanical protection | IP68 (Sensor & cable) / IP67 Connector |
| Power supply | 12-24 Vdc |
| Cable | 10 mt |
| Signal interface | RS485 Modbus RTU protocol |
| Thread | 1" 1/2 GAS BSP |
| Measurement method | Inductive without contact electrodes |
| Temperature compensation | Automatic with built-in PT1000 |
| Salinity | 0-120g/kg (programmable conversion factor default 0,64) |

S423 C OPT

DIGITAL DISSOLVED OXYGEN SENSOR



FEATURES

- Reliable, accurate measurements with no drift removes need for calibration
- Minimal maintenance
- Does not consume oxygen, making it compatible with a variety of applications
- Suitable for applications in which the measuring liquid is almost stationary
- Available with titanium body for salt-water applications

APPLICATIONS

- Surface waters
- Wastewater
- Fish farming

TECHNICAL SPECIFICATION

| | |
|----------------------------|---|
| Measuring range | 0...20 mg/l |
| Measuring method | Optical measure by luminescence |
| Accuracy | $\pm 0,2$ mg/l when < 5 mg/L $\pm 0,3$ mg/l when > 5 mg/L |
| Response | T90 < 60 s |
| Refresh time | < 1 s |
| Temp. compensation | With internal NTC sensor |
| Operating temperature | 0...50°C |
| Maximum operating pressure | 5 bar |
| Body material | SS316 (PVC or titanium optional) |
| 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 |

S46 I LT

DIGITAL TURBIDITY SENSOR FOR LOW CONCENTRATIONS



FEATURES

- Measurement performed by 90° scattered light method compliant with ISO 7027 / EN 27027
- Immersion, insertion or bypass installation
- Stainless-steel body on request

APPLICATIONS

- Drinking water
- Industrial process water
- Low-turbidity waters

MODELS

- S46 I LT (immersion)
- S46 I LT INS (insertion in combination with S305-INS)

TECHNICAL SPECIFICATION

| | |
|----------------------------|---|
| 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 | ≤ 5% of the measured value without calibration ≤ 1% of the measured value with calibration |
| Repeatability | ±0.05 NTU for 0...10 NTU range ±0.5 NTU for 0...100 NTU range |
| Response time | T90 < 60s |
| Operating temperature | 0...40°C |
| Maximum operating pressure | 4 bar |
| Body material | Black PVC (on request Stainless-steel) |
| O-ring | Viton® and silicone |
| Optics | Special glass with oleophobic treatment |
| Mechanical protection | IP68 sensor and 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 |

S46I TN

DIGITAL TURBIDITY SENSOR FOR HIGH CONCENTRATIONS



FEATURES

- Measurement performed by 90° scattered light method compliant with ISO 7027 / EN 27027
- Immersion, insertion or bypass installation
- Stainless-steel body on request

APPLICATIONS

- Untreated water
- Surface water
- Process water
- Industrial or municipal water

MODELS

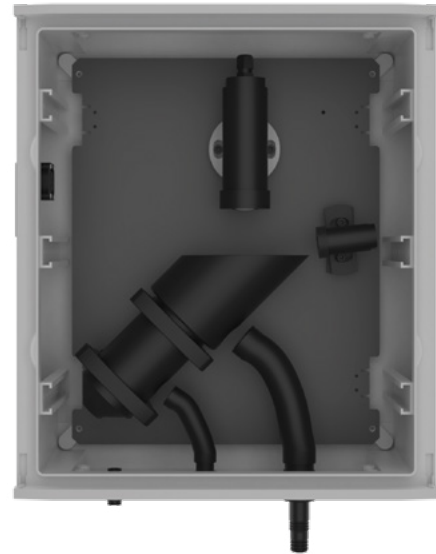
- S46I TN (immersion)
- S46I TN INS (insertion in combination with S305-INS)

TECHNICAL SPECIFICATION

| | |
|-----------------------|---|
| Measuring range | 0...1000 NTU / 0...4000 NTU |
| Measuring method | 90° scattered light |
| Resolution | 1 NTU for 0...1000 NTU range 1 NTU for 0...4000 NTU range |
| Accuracy | ±2% for 0...1000 NTU range ±5% for 0...4000 NTU range |
| Repeatability | ±5 NTU for 0...1000 NTU range ±20 NTU for 0...4000 NTU range |
| Response time | T90 < 60s |
| Operating temperature | 0...40°C |
| Maximum | 4 bar |
| Body material | Black PVC (stainless-steel on request) |
| O-ring | Viton® and silicone |
| Optics | Special glass with oleophobic treatment |
| Mechanical protection | IP68 sensor and cable |
| Power supply | 12...24Vdc |
| Power consumption | Max. 3W |
| Cable | 10 mt integral with the sensor |
| Signal interface | Modbus RTU standard protocol RS485 |

S46 I N

NEPHELOMETRIC TURBIDITY CELL CONTACTLESS, DIGITAL



FEATURES

- Contact-free measurement
- 90° scattering method compliant with ISO 7027/ EN 27027 with visible light beam
- Black rigid PVC sensor body
- Optional air bubble elimination device (de-bubbler)
- No mechanical moving parts
- Measurement pre-processed in the sensor, providing high sensitivity in low-signal transmission

APPLICATIONS

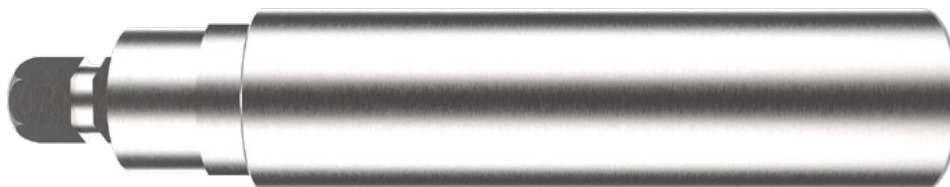
- Primary water upstream of treatment plants
- Industrial or municipal water

TECHNICAL SPECIFICATION

| | |
|----------------------------|--|
| Measuring ranges | 0...100 NTU / 0...1000 NTU (optional 0...4000 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 operating pressure | 0.5 bar |
| Materials | ABS case Black PVC measuring cell, receiver assembly and spotlight assembly |
| O-ring | NBR and Silicone |
| Power supply | 24Vdc |
| Power consumption | Max. 5W |
| Cable | 10 m with connector |
| Signal interface | Modbus RTU standard protocol RS485 |

S46 I ST

DIGITAL TURBIDITY AND SUSPENDED SOLIDS SENSOR



FEATURES

- Utilises dual sensor scattering measurement method
- Infrared optical measurement process delivers reliable concentration measurement
- Sensor body in AISI316
- No mechanical moving parts
- Pre-processed measurement in the sensor provides high sensitivity in low signal transmission
- Immediate installation and simple maintenance

APPLICATIONS

- Industrial and process waters up to 300 g/l (depending on sludge type)
- Biological purification processes
- Extraction processes including quarries, tunnels and aggregate extraction

MODELS

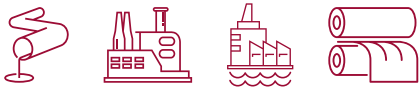
- S46 I ST (immersion)
- S46 I ST INS (insertion in combination with S305-INS)
- S46 I ST/US with ultrasonic cleaning
- S46 I ST/US INS with ultrasonic cleaning (insertion in combination with S305-INS)

TECHNICAL SPECIFICATION

| | |
|----------------------------|--|
| Measurement range | Measuring ranges SS: 0-300 g/l depending on the type of sludge Turbidity measuring ranges: 0...4000 NTU |
| Measurement method | Double-angle scattering light |
| Repeatability | ± 0,5g/l for SS; ± 1NTU for Turbidity |
| Accuracy | ± 5% on measured point |
| Response time | T90 < 60s |
| Operating temperature | 0...50°C |
| Maximum operating pressure | 4 bar |
| Body material | SS316 |
| O-ring | Viton® |
| Optics | Special epoxy |
| Mechanical protection | IP68 sensor & cable |
| Power supply | 12...24Vdc |
| Absorption | Max. 3W |
| Cable | 10 m integral with the sensor |
| Signal interface | RS485 with Modbus RTU protocol |

S461 S

DIGITAL SUSPENDED SOLIDS SENSOR



FEATURES

- Infrared, absorption light measurement
- Modbus RTU RS485 interface

MODELS

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

APPLICATIONS

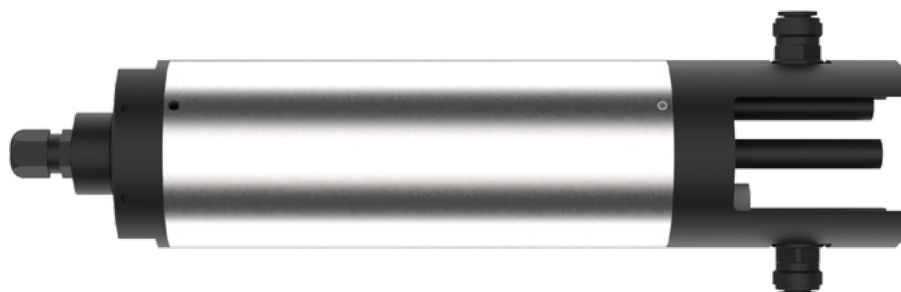
- Biological process slurry
- Chemical industry
- Paper mills

TECHNICAL SPECIFICATION

| | |
|----------------------------|---|
| 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 | T90 < 60s |
| Operating temperature | 0...50°C |
| Maximum operating pressure | 4 bar |
| Body material | SS316 (black PVC on request) |
| O-ring | Viton® |
| Optics | Special epoxy |
| Mechanical protection | IP68 sensor and cable |
| Power supply | 12...24Vdc |
| Power consumption | Max. 3W |
| Cable | 10 mt integral with the sensor |
| Signal interface | Modbus RTU standard protocol RS485 |

S470/N

I.S.E. AMMONIUM AND NITRATE SENSOR, DIGITAL



FEATURES

- Ion-selective electrodes
- Stable and sensitive sensors
- All specific electrodes are individually replaceable
- High capacity for pollutant compensation

APPLICATIONS

- Ammonium ion and nitrate monitoring in a liquid matrix

MODELS

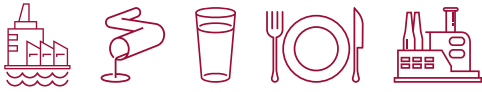
- S470 NH₄⁺ (ammonium ion sensor with potassium ion compensation)
- S470/N NO₃ (nitrate ion sensor with chloride ion compensation)
- S470/N (combined sensor for ammonium and nitrate ions with compensation of potassium and chloride ions)

TECHNICAL SPECIFICATION

| | |
|----------------------------|--|
| Measurement range | NH ₄ ⁺ : 0...100 ppm K ⁺ : 0...1000ppm NO ₃ ⁻ : 0...100 ppm Cl ⁻ : 0...1000 ppm |
| Diameter | 36 mm |
| Body material | Sensor body in AISI 316 |
| O-Rings | NBR |
| Mechanical protection | IP68 sensor & cable |
| Resolution | 0.1 mg/l |
| Accuracy | ± 5 mg/l |
| Repeatability | ± 5% |
| Operating temperature | 5...40°C |
| Maximum operating pressure | 1 bar |
| Power supply | 12...24Vdc |
| Signal interface | Modbus RTU standard protocol |
| Temperature sensor | PT100 included |

S480

DIGITAL UV PHOTOMETRIC SENSORS



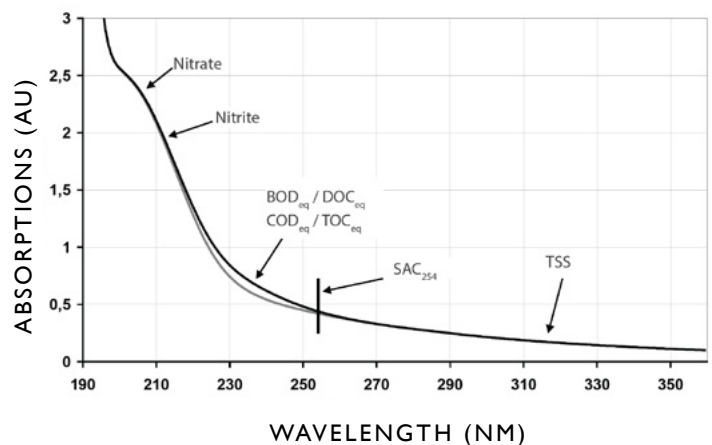
GENERAL FEATURES

- New generation of spectral sensors for the online measurement of nitrogen and carbon compounds
- Exclusive nanocoated optical lenses and compressed air for extended operating time without cleaning
- Optical path length adaptable according to application.

APPLICATIONS

- Industrial water and chemical industry
- Drinking water
- Wastewater

ABSORPTION SPECTRUM



UV NO₃

FEATURES

- Innovative UV photometric technology
- Four detection channels
- Precise optical determination
- Internal temperature correction increases stability of measured values

UV SAC₂₅₄

FEATURES

- Long life, UV-LED technology
- Robust design
- High energy efficiency
- Automatic turbidity compensation via second measuring channel
- SAC₂₅₄ measurement correlated displayed with BOD_{eq}, COD_{eq} or TOC_{eq} values by means of appropriate internal temperature laboratory checks

S480

PHOTOMETRIC UV SENSORS FOR COD/BOD/TOC_{EQ} & NITRATES

TECHNICAL SPECIFICATION

| Template | S480 UV NO ₃ | S480 UV SAC ₂₅₄ |
|------------------------|--|--|
| Light source | Xenon flash lamp | 2 LED technology (254 nm, 530 nm) |
| Detector type | 4 photodiodes & filter | Photodiode |
| Measurement method | Attenuation | Attenuation |
| Optical path | 0,3, 1, 2, 5, 10, 50 mm | 1, 2, 5, 10, 50 mm |
| Measurement parameter | NO ₃ -N, NO ₃ , NO _x -N, NO _x Calibrated with standard solution NO ₃ | SAC ₂₅₄ , COD _{eq} , BOD _{eq} , TOC _{eq} |
| Precision | ± (5 % + 1 mg/L NO ₃ -N) with 1 mm path | 2,5 m-l SAC ₂₅₄ at 1 mm path |
| Turbidity compensation | Yes | Yes |
| Response time | T100 20s | T100 4s |
| Measurement interval | ≥ 10 s | ≥ 2 s |
| Dimensions (L x Ø) mm | 470x48 mm (10 mm path) | 300x48 mm (with 10 mm path) |
| Weight | SS ~ 3 kg (titanium 2 kg) | SS ~ 2,7 kg (titanium 1,9 kg) |
| Absorption | ≤ 7 W | ≤ 1 W |

MEASURING RANGE S480 UV NO₃

| | |
|-------------------|----------------------------------|
| Optical path 1mm | 0.5...60 mg/l NO ₃ -N |
| Optical path 10mm | 0.05...6 mg/l NO ₃ -N |

MEASURING RANGE S480 UV SAC₂₅₄

| Path (mm) | | 1 | 10 |
|-----------------------|-----------------------|-------------------|-------------------|
| | | Measurement range | Measurement range |
| Measurement parameter | SAC ₂₅₄ nm | 5...1500/m | 0.5...150/m |
| | COD _{eq} ** | 5...2200 mg/l | 0.8...220 mg/l |
| | BOD _{eq} ** | 2.5...700 mg/l | 0.25...70 mg/l |
| | TOC _{eq} ** | 3...880 mg/l | 0.3...90 mg/l |

** based on KHP (Note: 100 mg COD-standard-solution corresponds to 85 mg/l KHP)

S480 COLOUR

DIGITAL COLOUR PHOTOMETRIC SENSORS



FEATURES

- Reliable, cost-effective instrument
- Dual LEDs for long-term stable measurements of SAC or colours at different wavelengths
- Robust nano-coated housing for low maintenance
- Optional titanium model for use in aggressive waters

APPLICATIONS

- Environmental monitoring
- Drinking water
- Food and beverage
- Textile industry
- Pulp and paper

TECHNICAL SPECIFICATION

| | | |
|------------------------|--|--------------|
| Measurement technology | Light source | 2 LEDs |
| | Detector | Photo diodes |
| Measurement principle | Attenuation, transmission | |
| Optical path | 50 mm, 100 mm, 150 mm, 250 mm | |
| Parameter | SAC436 | |
| | Colouring (based on DIN EN ISO 7887 (410 nm, 525 nm, 620 nm) | |
| | Pt-Co colour number (APHA/Hazen) (390 nm or 455 nm) | |
| | Cr-Co colour number (390 nm or 413 nm) | |
| Measuring range | See parameter list | |
| Measurement accuracy | 0.5 % | |
| Turbidity compensation | Yes, 740 nm | |
| T100 response time | T100 4 s | |
| Measurement interval | ≥ 2 s | |
| Dimensions | (LxØ) 340x48 mm (with 50 mm path) | |
| Weight | SS ~ 2.4 kg (titanium ~ 1.3 kg) | |
| Power consumption | ≤ 1W | |

S480 UV PAH

DIGITAL SENSOR FOR POLYCYCLIC AROMATIC HYDROCARBONS (PAH) / MINERAL OILS



FEATURES

- UV absorption method
- Real-time sensor
- No reagents
- Optical window with nano coating

APPLICATIONS

- Petrochemical industry
- Drinking water
- Cooling water
- Desalination plants
- Refineries
- Exhaust gas cleaning approved for ship use according to IMO regulation MEPC.184(59)
- Leakage detection in environmental monitoring

TECHNICAL SPECIFICATION

| | | |
|----------------------------------|--------------|---|
| Measurement technology | Light source | Xenon flash lamp & filter (254 nm) |
| | Detector | Photo diode & filter (360 nm) |
| Measurement principle | | Fluorescence |
| Parameter | | PAH, mineral, 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 | | T100 ≤ 10 s |
| Measurement interval | | ≤ 5 s |
| Dimensions (L x Ø) | | 311x68 mm |
| Weight | SS | ~ 2.7 kg |
| | Titanium | ~ 1.9 kg |
| Power consumption | | ≤ 3.5 W |
| Maintenance effort | | Typically ≤ 0.5 h/month |
| Calibration/maintenance interval | | 24 months |

S494

AMPEROMETRIC SENSOR FOR CHLORINE & OTHER OXIDANTS



FEATURES

- Two or three membrane-coated electrodes
- Integrated temperature sensor for signal compensation

APPLICATIONS

- Drinking water
- Wastewater
- Process water

TECHNICAL SPECIFICATION

| | |
|-----------------------|--|
| Measuring parameters | Free Chlorine; Total Chlorine; Organic and Inorganic Free Chlorine; Chlorine Dioxide; Ozone; Peracetic Acid; Hydrogen Peroxide; Chlorides; Bromine |
| Measuring error | ±2 % of the indicated value |
| Repeatability | ±2 % |
| Stability | ±1 % of the analytical determination 4 weeks after calibration |
| Operating conditions | Constant 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 |
| Polarisation time | First polarization from 1 to 3 h Re-polarisation 30 min |
| Response | 60 sec for 90% f.s |
| Body material | PVC, silicone, PTFE |
| Membrane | PTFE (Teflon) semi-permeable |
| Measuring electrode | Gold (Catod) |
| Reference electrode | (Anode) Silver/Silver Chloride |
| Calibration point | Zero not necessary Work according to user requirement, through analytical determination (colourimetric with DPD) |
| Warnings | Maintenance interval: 2 weeks or more Lifetime of the electrolyte solution: approx. 1 year |

S495

PT-PT OPEN AMPEROMETRIC SENSOR FOR FREE CHLORINE MEASUREMENT



FEATURES

- Three electrodes for chlorine measurement
- Immediate installation and easy maintenance
- Absence of moving mechanical parts
- Programmable self-cleaning of the electrodes
- Modbus 485 RTU output
- No spare parts needed

APPLICATIONS

- Drinking water
- Service and process waters

TECHNICAL SPECIFICATION

| | |
|----------------------------|--|
| Materials | Probe body in Ryton®; measuring stem in glass; electrodes in platinum; porous septum in ceramic; o-ring in NBR |
| Measurement system | Three-electrode ammeter |
| Measurement range | 0-10ppm Cl ₂ |
| Measurement error | ±10% of reading but not less than ±0.05ppm |
| Sensor cleaning | Automatic and programmable in-situ cleaning |
| Process connection | PG13,5 |
| Length | 215 mm (glass stem: 123 mm) |
| Glass stem diameter | 12 mm |
| Interfering | ClO ₂ , O ₃ |
| Operating flow | 30-70 l/h constant |
| First stabilisation time | Approx. 30 min |
| Response time | T ₉₀ approx. 30s |
| pH range | 6-8 |
| Operating temperature | 5-75°C |
| Maximum operating pressure | 6 bar |
| Mechanical protection | IP68 |
| Cable | PUR 10m with M12 4-pole male connector |
| Power supply | 9-36 Vdc |
| Maximum absorption | 500 mW |

COMPACT PRO

PLUG & PLAY MULTI-PARAMETER PORTABLE UNIT



Compact Pro is an advanced multi-metric portable system for the easy and safe measurement of water quality. With a convenient connector and special automatic recognition software, operators can connect a wide range of sensors to measure primary, waste or industrial water quality parameters.

FEATURES

- IP67 rated for dust tightness and immersion in water up to 1 metre
- Excellent impact resistance for use in the most challenging environments

MEASUREMENTS

- pH + temp
- ORP + temp
- Conductivity
- Salinity
- Dissolved Oxygen + temp
- Turbidity
- Suspended solids
- Ammonia
- Chlorophyll

TECHNICAL SPECIFICATION

| | |
|---------------|--|
| Display | 2" monochrome TFT LCD |
| Dimensions | 130x80x35 mm |
| Battery | Non-removable lithium (LiPo) 1400mAh wireless charging via dedicated PAD |
| IP grade | IP67 |
| Barometer | Integrated atmospheric pressure sensor |
| Response time | T90 < 60s |
| Weight | 210g without sensor |
| Kit | Wireless power supply - shockproof carrying bag (optional hard case) |

OUR TEST

(OXYGEN UPTAKE RATE)

To control the efficiency of a biologically activated sludge treatment plant, the test for determining oxygen uptake rate is performed on a sample taken directly from the oxidation/nitrification basin.

The traditional method tests the consumption of dissolved oxygen by a sample of activated sludge, with known MLSS concentration and volume, previously brought to a rapid saturation via a forced ventilation system and constantly mixed (see figure 2).

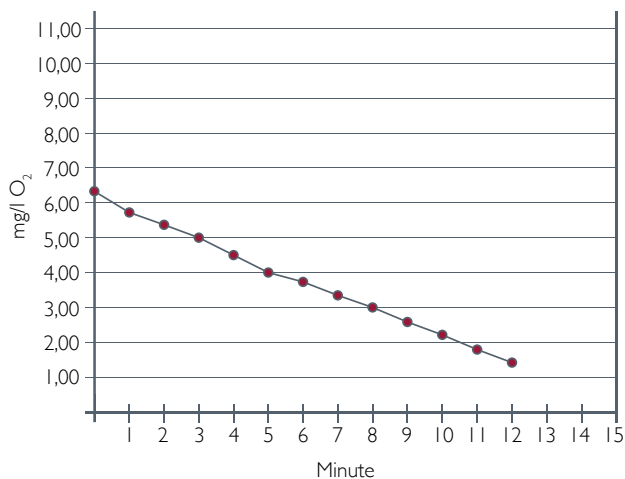


Figure 1
Sample graph of an OUR measurement conducted in the laboratory

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 1).

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

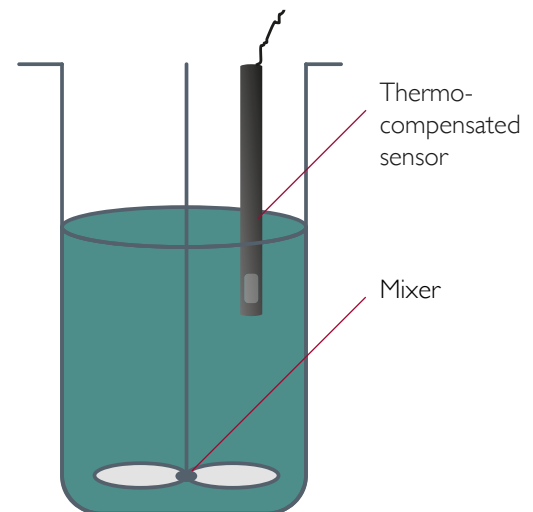


Figure 2
Air insufflation system

ANALYSERS & SAMPLERS



ANALYSERS

ON-LINE ANALYSIS

49

Methods of measuring

4001 SERIES

50

Multiparameter photometric analyser
for chlorine and other disinfectants

COLOR MASTER

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Photometric colour analyser

COLOR TEC

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Photometric analyser for chemical parameters

UV METERS

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Photometric analyser • Nitrates
• Hydrocarbon in water • SAC254

FILTRATION SYSTEM

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SF 100 • UF TEC

SAMPLERS

SAMPLING SYSTEM

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Fixed installation or portable use

FIXED

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SP5 S • SP5 B

FIXED & SELF EMPTYING

64

SP5 A • TP5 W

PORTABLE

65

TP5 C • P6

ON-LINE ANALYSIS

METHODS OF MEASURING

THE PHOTOMETRIC METHOD

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 colourimetric methods characteristic of certain analytes, such as the ability 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 colourimetric technique has the advantage of relying on well-defined linear reactions 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 and permanganate.

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 (including pH, μS , temperature and organic matter) have no influence on the analytical methodology.

PHASES OF THE MEASURING CYCLE

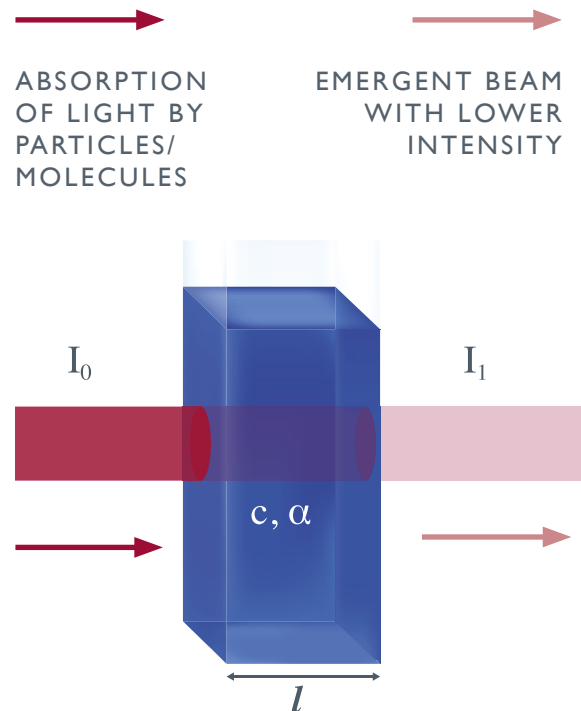
- The sample enters the measuring cell for washing/priming
- First measurement (photometric zero)
- Reagent addition
- Development of the reaction through stirring
- Colour reading (absorbance): the differential measurement between zero and absorbance is processed and converted into a concentration value using correlation tables

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), 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 .

HOW IT WORKS:



400 I SERIES

MULTIPARAMETER PHOTOMETRIC ANALYSER FOR CHLORINE AND OTHER DISINFECTANTS



FEATURES

- Low operating and maintenance costs
- System calibration performed automatically at each measuring cycle
- Intuitive interface provides measurement status
- Create graphs to display measurements
- Internal data logger
- Peristaltic pump for high-precision reagent dosing
- Continuous monitoring of reagents via level sensors

AVAILABLE VERSIONS

- Free chlorine, free + total chlorine
- Peracetic acid
- Chlorine dioxide
- Ozone
- Bromine
- Combiner version with pH, Redox, conductivity and temperature

APPLICATIONS

- Drinking water
- Wastewater
- Food and beverage
- Pharmaceutical

TECHNICAL SPECIFICATION

| | |
|-----------------------|--|
| Operating temperature | 0...50°C |
| Storage and transport | -25...65°C |
| Humidity | 10...95% non-condensing |
| Power supply | 85...275Vac 50-60Hz |
| Power consumption | 66 W |
| Electrical protection | UL6950-I TUV EN60950 EN 55022 Class B EN61000 ENV50204 EN55024 |

TECHNICAL SPECIFICATION

| | |
|--------------------------|--|
| Display | LCD STN with white backlight |
| Resolution | 240x128 pixels |
| Languages | Italian, English, French, German, Spanish |
| Keypad | 4 bubble-keys [6] [5] [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 Combined 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 for primary measure + two for pH measure (only mod. 4001-3) |
| Programming | Hysteresis, operating 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 |
| Operating time | 000...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 |
| Auxiliary relay output | Programmable as: Set point for Temperature measurement or timed activation (programmable frequency and activation time) |
| Digital Input | Clean contact for disabling dosages |
| RS485 serial input | Modbus RTU Protocol (1200...38400 Baud rate) for set-up, real time status or downloading data |
| Dimensions | (LxHxP) 598x601x190 mm |
| Total width | 598 mm |

COLOR MASTER

PHOTOMETRIC COLOUR ANALYSER



Color Master is Chemitec's sophisticated system for automated photometric colour analysis in water-treatment applications.

The all-in-one system delivers precise, repeatable process measurement results while its low maintenance requirement makes it a cost-effective choice.

APPLICATIONS

- Industrial effluent
- Potable water
- Wastewater
- Food and beverage
- Pulp and paper

COLOUR ANALYSIS

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

The colour of water is generally caused by organic substances such as humic and fulvic acids (to which a yellow-brown colouring 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 metres, the colour of water is variable in blue shades, while the presence of coloured foreign substances causes a variation of colour in infinite shades.

The apparent colour, caused by substances dissolved and suspended into the water, must therefore be distinguished from the actual colour.

TECHNICAL SPECIFICATION

| | |
|-------------------------|---|
| Absorbency measuring | 0...500 ABS |
| Resolution | 0.01 ABS |
| Accuracy | 1% f.s. |
| Temperature measuring | 0...50°C |
| Resolution | 0.1°C |
| Accuracy | 1% f.s. |
| Wavelength | 445 nm (others on request) |
| Analogue outputs | Four 0/ 4...20 mA galvanically isolated |
| Programming limits | Lower/ upper |
| Maximum load | 500 ohms |
| Alarm output | NAMUR 2.4 mA (with range 4...20mA) |
| Set point relay outputs | 2 for absorbance; 1 for Temperature; 1 for Alarm |
| ON – OFF | 0...500 ABS |
| 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, projector burned, cell dirty) |
| Delay time | 00:00...59:99 mm:ss with minimum steps of 15 seconds |
| Thresholds disabling | Active |
| Power supply | 85...265Vac 50-60Hz |
| Power consumption | 30 W |
| Electrical protection | CEI EN 61010-1 |
| Mounting | Wall |
| Dimensions | (LxHxP) 276x514x126,5 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 |

COLOR TEC

PHOTOMETRIC ANALYSER FOR CHEMICAL PARAMETERS



Color Tec is Chemitec's leading solution for the analysis of chemical parameters such as Al, NH_4^+ , Cr(VI), PO_4^{3-} , Fe, Mn, SiO_2 , NO_2 and others on request.

The system comprises two sections, hydraulic/analytical and electronics, which are separated from each other so as to ensure efficiency and durability of all parts.

HOW IT WORKS

- Depending on the specific methodology, one or more colourimetric reagents are dosed
- Light intensity value of the coloured liquid is read after proper mixing of the reagents
- Reading cell is emptied and flushed together with the entire hydraulic circuit ready for the next measurement

FEATURES

- Touch-screen user interface
- Intuitive control software
- Measurements may be performed at programmed intervals, a specific time or an external event
- All measurements archived and made available in graphical form
- Designed for connection to an existing LAN

APPLICATIONS

- Industrial effluent
- Potable water
- Wastewater

TECHNICAL SPECIFICATION

| | |
|---|---|
| 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 turbidity we recommend the optional filtration system |
| 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 silicone sensor with 17-bit digital converter |
| Wavelength | 445...800 nm |
| Light source | LED |
| Reading cell | Made of PYREX® Ø 16 mm |
| Mixer | Aluminium thermostat reaction coil |
| Reactive dosage | Peristaltic pump 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 | Via password |
| Archive | Circular, with date and value storage |
| Visualisation 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 | 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 | 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 with arbitrary values |
| Dimensions | (LxHxP) 1000x400x200 mm |
| Weight | 45 kg |
| Power supply | 220 Vac 50 Hz (110 Vac on request) |
| Power consumption | 100 W max |

UV METER

PHOTOMETRIC ANALYSER



FEATURES

- Compact size
- No reagents
- Built-in automatic washing system
- Fast response time
- UV spectrophotometric measurement principle does not require analysis reagents, helping reduce operating costs
- Extremely simple hydraulic system and large-diameter pipes
- Automatic measuring cell cleaning system
- Cleaning solution tank (5% sulfuric acid) refill only necessary monthly
- Built-in peristaltic pump for sampling

TECHNICAL SPECIFICATION

| | | |
|--------------------------|---|-------------------|
| Measuring ranges | Referred to parameter | |
| Principle of measurement | UV spectrophotometry | |
| Frequency of analysis | Settable | |
| Accuracy | Referred to parameter | |
| Drift | On zero 5% | Full range 10% |
| Temperature | Environment > 0...50°C | Sample > 0...80°C |
| Analogue output | 2x4.20 mA | |
| Serial output | RS 485 MODBUS | |
| Alarms | 2 relays | |
| Data logger | Integrated with USB download | |
| Power Supply | 110 ÷ 130 Vac or 220 ÷ 240 Vac/30 VA/50 ÷ 60 Hz | |
| Dimensions | (LxHxD) 604x380x210 mm | |
| Weight | Approx. 20 kg | |

UV METER 254

PHOTOMETRIC ANALYSER OF ORGANIC SUBSTANCES

The UV Meter 254 is a spectrophotometric analyser for the determination of absorption at 254 nm.

This parameter is a measurement related to many organic substances load in aqueous streams and therefore is often used to determine water quality.

In many cases the absorbency determined by the analyser at 254 nm can be related to the organic content sum parameters such as TOC, COD and BOD by applying an appropriate conversion factor.

The analysis process lasts less than one minute and in many cases does not require sample pretreatment due to the automatic turbidity compensation.

FEATURES

- Turbidity, organic substances, suspended solids or dirt are automatically compensated through a differential measurement with a second detector at a different wavelength

APPLICATIONS

- Surface water monitoring
- Potabilisers
- Water-treatment plants

TECHNICAL SPECIFICATION

| | |
|----------------------------|---|
| Measured parameters | COD UV, BOD UV, TOC UV, SAC ₂₅₄ , abs 254 nm |
| Measuring principle | Dual wavelength technique, 254 nm measuring and 590 nm as reference, with turbidity compensation |
| Measuring range | 24 mm cell: 0.01 – 50 m-l equivalent to: COD (KHP) 0.15-100 mg/L, TOCeq 0.06-40mg/L, BODeq 0.05-30 mg/L 16mm cell: 0.01 - 100 m/l equivalent to COD (KHP) 0 - 200 mg/l 11mm cell: 0.02 - 250 m/l equivalent to COD (KHP) 0 - 500 mg/l Up to 10,000 m/l equivalent to COD (KHP) 20,000 with internal dilution |
| Reproducibility | ± 2.5 % on the absorbency value for samples having turbidity below 100 NTU |
| Analysis frequency | Freely programmable, batch near continuous analysis |
| Cycle time | Less than 1 minute, including conditioning before analysis cycle and rinsing after measuring |
| Sample | Pressure: Atmospheric temperature: 5...50°C (41...122°F) Flow rate: 80 to 500 mL/min Connection: 6 mm (¼-in.) |
| Drain | Pressure-free, atmospheric drain Connection: 12 mm (½-in.) |
| N° of streams | Up to 2 with integrated switching valve |
| Dimensions | (LxWxD) 604x380x242 mm |
| Weight | Approx. 20 kg (44 lbs) |
| Power supply | Voltage: 100 - 240 VAC 50/60 Hz standard or 24 VDC (option) Power consumption: max. 80 VA |
| Outputs | 2x4-20 mA outputs for measured data Modbus RTU RS485 |
| Alarms | 2 SPDT programmable potential free relays |
| Digital input | Remote start/stop, start extra cycle, skip idle time, emergency stop |
| Installation | Wall mount (standard), bench top supporter panel mount (options) |
| Protection grade | IP54 |

UV METER NITRATE

PHOTOMETRIC ANALYSER OF NITRATE

The measuring principle is based on the intense UV absorption of the NO chromophore at 210...220 nm in accordance with the Lambert-Beer law:

[C]: sample concentration

k: extinction coefficient

I_{in} : sample input light intensity

I_{out} : sample output light intensity

FEATURES

- Automatic linearisation stored in the analyser allows the user to compensate for the non-linearity of the Lambert-Beer law for high concentrations
- The measurement is the weighted sum of the concentrations of NO₂ and NO₃, in most applications, the concentration of NO₂ is negligible compared to that of NO₃
- Organic substances, suspended solids or dirt in the measuring cell are automatically compensated through a differential measurement with a second detector at a different wavelength

APPLICATIONS

- Surface water monitoring
- Potabilisers
- Water-treatment plants

TECHNICAL SPECIFICATION

| | |
|-----------------------|---|
| Measured parameters | NO ₃ /N-NO ₃ /N-NO ₂ +3 |
| Measuring principle | Dual wavelength technique, 220 nm measuring and 270 nm as reference, with matrix compensation |
| Measuring range | 16 mm cell: 0-30 mg/l NO ₃ (0-6.75 mg/l as N-NO ₃) 11 mm cell: 0-60 mg/l NO ₃ (0-13.50 mg/l as N-NO ₃) Up to 2,000 mg/l with internal dilution (0-450 mg/l as N-NO ₃) |
| Reproducibility | ± 2.5% (30 ppm) ± % (60 ppm) on the absorbency value for samples having turbidity below 100 NTU |
| Cycle time | Less than 1 minute, including conditioning before analysis cycle and rinsing after measuring |
| Sample | Pressure: atmospheric temperature: 5...50°C (41...122°F) flow rate: 80 to 500 mL/min Connection: 6 mm (¼-in.) |
| Drain | Pressure-free, atmospheric drain. Connection: 12 mm (½-in.) |
| No. of streams | 1, 2 with integrated switching valve |
| Dimensions | (HxWxD) 604x380x242 mm |
| Weight | Approx. 20 kg (44 lbs) |
| Power supply | Voltage: 100-240 VAC 50/60 Hz standard or 24 VDC (option) Power consumption: max. 80 VA |
| Outputs | 2x4-20 mA outputs for measured data Modbus RTU RS485 |
| Alarms | 2 SPDT programmable potential free relays |
| Digital input | Remote start/stop, start extra cycle, skip idle time, emergency stop |
| Operating temperature | 5...45°C (41...113°F) |
| Installation | Wall mount (standard), bench top supporter panel mount (optional) |
| Protection grade | IP54 |

UV METER PAH/OIL

PHOTOMETRIC ANALYSER FOR POLYCYCLIC AROMATIC HYDROCARBONS/ MINERAL OILS

The analyser is based on the fluorescence photometric determination of the active species dissolved or suspended in water. The sample is irradiated with a specific wavelength in the UV region. The chemical species in the sample absorb energy from the radiation and release it partially as heat and partially as a new radiation in the visible field.

The intensity of the emitted radiation is proportional to the concentration of the molecules to be measured. The instrument is particularly recommended for the determination of aromatic hydrocarbons in aqueous samples.

APPLICATIONS

- Aromatic hydrocarbons in water (including BTEX, PAH, phenol, oil and fuel)
- Ground water
- Cooling water
- Drinking water
- Process water

TECHNICAL SPECIFICATION

| | |
|-----------------------|---|
| Measured parameters | Oil-in-water, BTEX, aromatic hydrocarbons, PAH/PAC |
| Measuring principle | Fluorescence photometry |
| Measuring range | PAH 0-1/5/10 ppm equivalent NDSA OIW 0-5/10/30 ppm equivalent phenol |
| Reproducibility | ± 3 % of full scale |
| Limit of detection | 0.1 ppm |
| Sampling mode | Batch, with freely settable frequency |
| Analysis duration | 2 minutes, including conditioning before analysis cycle and rinsing after measuring |
| Cell material | Optically pure quartz |
| Sample | Pressure: atmospheric temperature: 5...50°C (41...122°F) Flow: 80-500 mL/m Connection: 6 mm (¼-in.) |
| Drain | Pressure-free, atmospheric drain. Connection: 12 mm (½-in.) |
| No. of streams | Up to 2, with integrated switching valve |
| Dimensions | (HxWxD) 300x380x210 mm (11.8x14.8x8.3 in) |
| Weight | Approx. 10 kg (22 lbs) |
| Power supply | Voltage: 100-240 VAC 50/60 Hz standard or 24 VDC (option) Power consumption: max. 80 VA |
| Outputs | 2 x 4-20 mA outputs for measured data Modbus RTU RS485 |
| Alarms | 2 SPDT programmable potential free relays |
| Digital input | Remote start/stop, start extra cycle, skip idle time, emergency stop |
| Operating temperature | 5-45°C (41-113°F) |
| Installation | Wall mount (standard), bench top support or panel mount (options) |
| Protection grade | IP54 |

SF 100

FILTRATION SYSTEM FOR ANALYSERS



FEATURES

- Stainless-steel filter maintained by compressed air with programmable frequency
- Special profile filter element prevents rapid accumulation of dirt and deposits on the filter
- Powerful filter backwash system
- Automatic washing cycle frequency and duration can be programmed in a wide range of values

APPLICATIONS

- Upstream of on-line analysis systems
- Industrial water and chemical industry
- Wastewater

TECHNICAL SPECIFICATION

| | |
|-----------------------|---|
| Filter body material | PP (polypropylene) |
| Filter element | SS316 – Passage size 100 micron |
| Solenoid valve | Parts in contact with the liquid SS SS316 - Viton® |
| 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 0.1 mc/h Filtered sample 0.1 - 2 l/min depending on the sample line pressure |
| Hydraulic connections | 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 |

UF TEC

IMMERSION FILTRATION SYSTEM

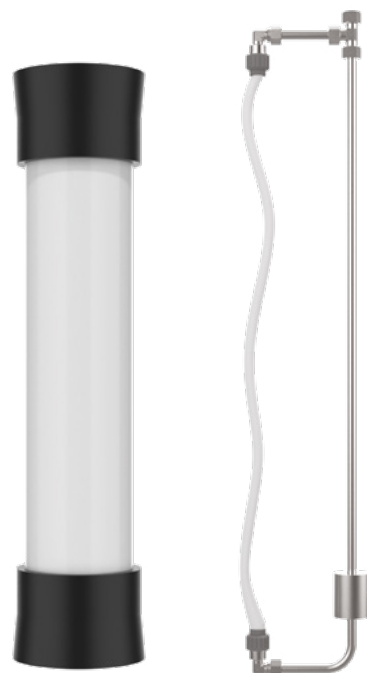


FEATURES

- Specially designed to allow sample feeding of Color Tec or similar analysers
- Operation is independent of the sample condition, allowing installation in any section of a water-treatment plant
- Peristaltic pump-driven sample suction
- Cleaning system allows user to purge the filtering element line and pipes

APPLICATIONS

- Industrial water and chemical industry
- Wastewater
- Food and beverage



TECHNICAL SPECIFICATION

| | |
|--------------------------------|---|
| Components | Wall-mounted control panel; immersion filter candle; suction/delivery tube 10 m |
| Filtration | Porosity 0.02 µm with candle/0.1 µm with hollow fibre 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 | Maximum mounting depth of the immersed filter: 2 m Maximum distance control panel to immersed filter: 10 m Maximum distance from analyser to control panel: 5 m Maximum head from control panel to immersed filter: 5 m Maximum head from analyser - control panel: 5 m |
| Cleaning system | Integrated with compressed air at 4 bar Automatic control from Color Tec analyser or timer (optional) |
| Materials | Control panel in ABS |
| Candle filter | Body housing in 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) 900x600x300 mm – weight 10 kg Candle filter (LxØ) 425x95 mm – weight 4 kg |

SAMPLING SYSTEMS

FIXED INSTALLATION OR PORTABLE USE



Chemitec markets MAXX GmbH sampling systems in Italy, with the company's 25 years' experience culminating in a wide range of equipment and technical solutions for standard and difficult application.

- Wide range of models for fixed installation or portable use
- Universal electronic control unit
- Internal data logger for storing sampling and fault data
- Connect to a remote PC for programming or data download

ELECTRONIC CONTROL UNIT

- Microprocessor control
- Sleep mode (<5 mA)
- 128x64-pixel backlit display
- Mini-USB interface
- Analogue input: 0/4...20 mA
- Digital inputs for remote control, event and pulse launch flow meter
- Digital outputs for reporting status and faults
- Optional communication Modbus

PROGRAMMING

- Twelve sampling programmes with linking function
- Time related with interval between 1 minute and 99 hours 59 minutes with 1-minute increments
- Flow related with 0/ 4...20 mA analogue or digital input
- Each bottle filled in relation to time or number of samples
- Memorisation of sampling and fault events with date and time plus remote data acquisition and programming via serial port, LAN or UMTS/GPRS modem with dedicated software (optional)



SAMPLING SYSTEM

- Dosage system
 - Vacuum : 20...350 ml
 - Vacuum VAR (variable): 5...250 ml
 - Peristaltic pump: 20...10.000 ml
 - Flow-trough system (pressure line)
 - Ceramic slide system (pressure line, harsh applications)
- Accuracy
 - Vacuum pump: < 2,5 % or ± 3 ml
 - Peristaltic pump ± 5 % or ± 5 ml
- Suction speed
 - >0,5 m/s at suction height up to 6 m (at 1013h Pa); pump capacity can be adjusted electronically
- Maximum suction height:
 - 7,5 m (at 1013hPa and stagnant medium)
 - Optional 8,5 m or 15 m (Power booster)

SP5 S

Thermostat-controlled stationary sampler
in stainless-steel cabinet

| | |
|------------------------|--|
| Housing | Two 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) x690x645 mm |
| Weight | Approx. 90 kg (with a single bottle) |
| Operating temp. | Ambient -20...43°C Sample 0...40°C |
| Power supply | 230V...50/60Hz; Consumption 350VA |
| Bottle variants | Plastic: 1x25L, 1x50L, 2x10L, 4x6L, 4x10L, 4x14L, 12x2.9L, 24x1L, 24x2.9L Glass: 12x2L, 24x1L (special version in bigger housing by request) |



SP5 B

Thermostat-controlled stationary sampler
in plastic container

| | |
|------------------------|--|
| Housing | PE material with 50 mm insulation/ Styrosun/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) x760x7450 m |
| Weight | Approx. 75 kg (with a single bottle) |
| Operating temp. | Ambient -20...50°C Sample 0...40°C |
| Power supply | 230V...50/60Hz; Consumption 350VA |
| Bottle variants | Plastic: 1x25L, 4x14L, 4x10L, 12x2.9L, 24x1L Glass: 12x2L, 24x1L |



SP5 A

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

| | |
|------------------------|---|
| Housing | Two 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 | 2x10L, 4x5L, 12x1,6L: 1290 (1930*)x 690x645 mm or 24x2L: 1400 (2175*)x800x850 mm* with opened top |
| Weight | 115 kg version with 2 bottles; greater for versions with more bottles |
| Operating temp. | Ambient -20...40°C; Sample 0...43°C |
| Power supply | 230V...50/60Hz; Consumption 350VA |
| Bottle variants | Plastic: 2x10L Glass: 4x5L; 12x1.6L; 16x2L; 24x2L (other on request) |



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 | 362x442x222 mm |
| Weight | Approx. 10 kg |
| Control unit | Inserted in waterproof box 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 Insulated lower part (sample compartment) Insulation thickness: 40 mm Option: freezer packs (200x10x8 mm) Option: compressor cooling (12V/115V/230V) Control and sample dosing unit Lid with latches |
| Dimensions | 787x510x468 mm/Insulating box passive 1028x550x468 mm/Insulating box active (with compressor cooling) |
| Weight | Approx. 25 kg 24x1 L - Isobox with passive cooling Approx. 40 kg 24x1L - Isobox with compressor cooling (device incl. battery, empty bottles but no suction hose) |
| 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 |
| Bottle variant | Plastic: 1x10L, 1x25L, 2x13L, 4x5L, 16x1L incl. freezer packs, 24x1L (standard version) |



P6

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

| | |
|------------------------|---|
| Housing | ABS / PP, insulated lower part (sample compartment) Insulation thickness 22-33 mm |
| Dimensions | (DxH) P6 L= 500x805 mm (DxH) P6 MiniMaxx = 400x605 mm |
| Weight | P6 L = approx. 13 kg (without battery, without bottles) P6 MiniMaxx = approx. 9 kg (without battery, without bottles) |
| Operating temp. | Ambient 0...50°C; Sample 0...40°C |
| Power supply | 230V...50/60Hz; Consumption 15VA |
| Bottle Variant | Plastic: 24x1L = Standard, Option: 1x10 L, 1x25 L, 4x4L, 8x2L Glass: 24x350ml, 12x950ml, 8x2L, 1x5L P6 Mini Maxx: Composite container 10L PE or 5L Bottle Glass |



PROCESS SOLUTIONS & WEB APP



PROCESS SOLUTIONS

| | |
|--|----|
| DETECTOR Sewer monitoring system | 67 |
| OXYSMART Optimisation system for biological treatment plants | 68 |
| OXYSMART BLUE Simplified biological process automation system | 70 |

WEB APP

| | |
|---|----|
| CHEMITEC WEB Remote management system | 71 |
|---|----|

DETECTOR

SEWER MONITORING SYSTEM



Detector, designed and built by Chemitec, is the ideal solution for the temporary or permanent monitoring of sewer networks directly in road shafts.

By enabling the detection of unwanted pollutants in wastewater, Detector helps operators identify anomalous discharges and prevent the malfunction of water-treatment plants.

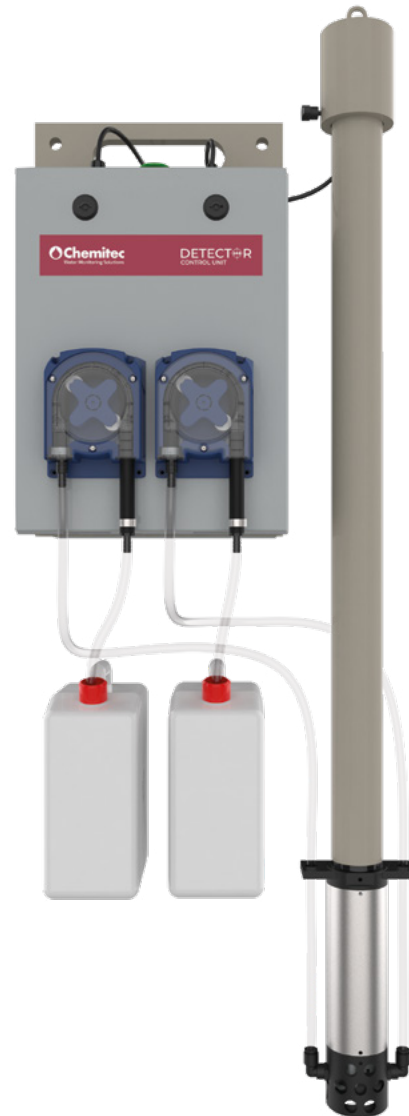
CONTROL UNIT

The control unit acquires measurement data from the multi-parameter sensor, manages events, alarms, sampling and configuration locally or remotely via integrated modem.

The entire system is powered by a high-performance battery that guarantees 16 days of operation in H24 mode. The battery fully recharged in five hours.

S400 MULTIPARAMETER SENSOR

The multi-parameter sensor allows simultaneous measurement of several parameters (pH, ORP, Conductivity, level, flow and temperature, etc) comes with 10 metres of integrated self-supporting cable and is designed for quick installation.

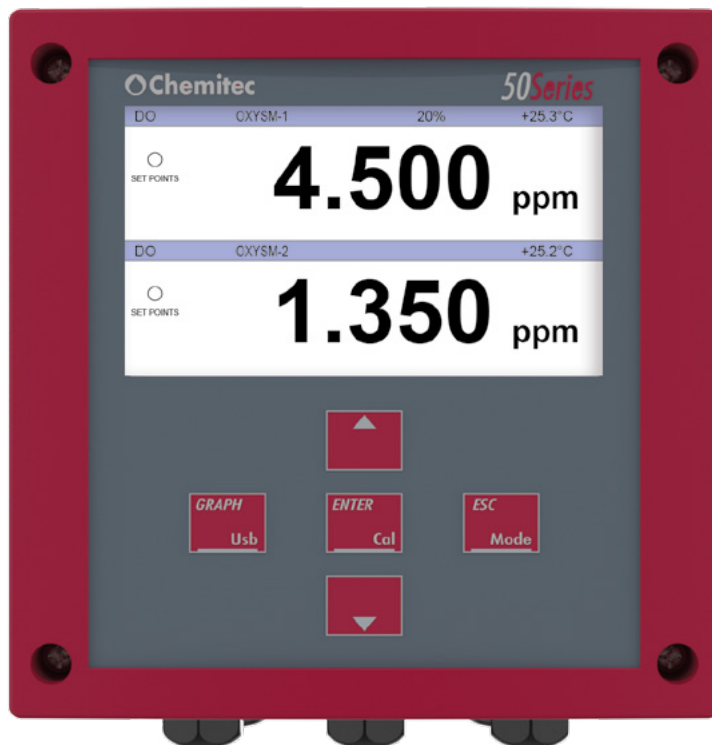


TECHNICAL SPECIFICATION

| | |
|--------------|--|
| pH | 0...14 pH |
| ORP | -1500 mV... +1500 mV |
| Conductivity | 1-200 mS/cm (K = 0.55 nominal) |
| Temperature | 0...50°C |
| Level | 0-2m H ₂ O (with flow rate calculation algorithm) |

OXYSMART

OPTIMISATION SYSTEM FOR BIOLOGICAL TREATMENT PLANTS



Oxysmart is a specialised algorithm that transforms a Chemitec control unit into a system capable of managing compressors, inverters and mixers to optimise the process and adapt it to load variations.

Oxysmart is the ideal solution to help operators properly manage the nitrogen and carbon cycle in order to comply with legislation while preventing resource wastage.

FEATURES

- Safety features protect compressors and inverters
- Alarm functions alert operator to component malfunction or anomaly
- Automatic safety value adjustment
- Reduces intervention costs
- Unlocks optimal energy consumption
- Stabilises effluent parameters

HOW IT WORKS

Oxysmart is adaptable to any plant, regardless of its electromechanical equipment, and is operational as soon as installation is complete.

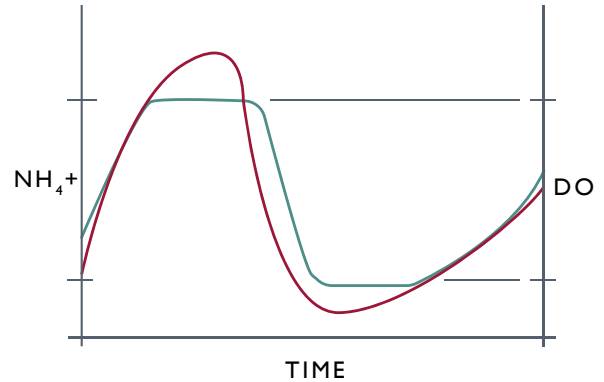
The oxygen setpoint is varied in a continuous manner according to the load detected by Chemitec's ammonia-ion selective sensor S470/N-NH₄, while oxygen is monitored by the S423 C OPT sensor.

Oxysmart offers three logical algorithms, suitable for every kind of plant.

THREE LOGICAL ALGORITHMS AVAILABLE SUITABLE FOR EVERY KIND OF PLANT

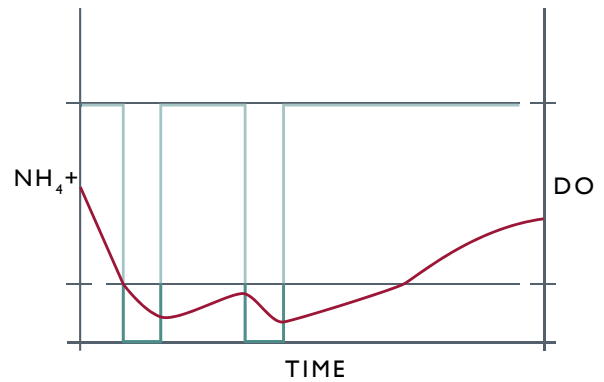
MINIMUM THRESHOLD

In low-load conditions, the DO threshold is maintained at low levels and rises as the load increases.



SMART ON/OFF

In low-load conditions, the system enters pause/work mode, ready to modulate oxygen when load increases.

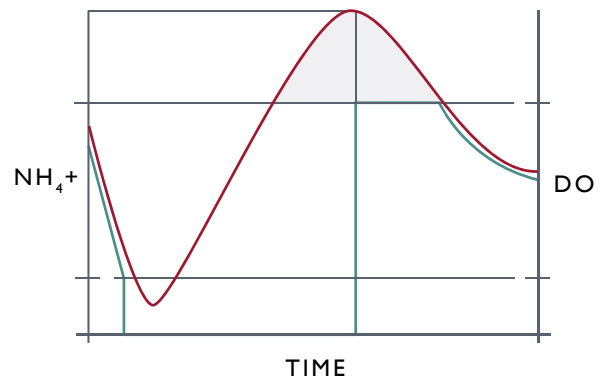


SMART N/DN

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.

When used with the four-parameter 50 series, Oxysmart can connect two additional sensors for the management of two different analytes:

- ISE S470/N sensor for NO_3^- nitrates
- Sensor for freely selectable parameter



OXYSMART BLUE

SIMPLIFIED BIOLOGICAL PROCESS AUTOMATION SYSTEM



Oxysmart Blue is Chemitec's leading solution for optimising purification processes within small and medium-sized treatment plants, whether staffed or unstaffed.

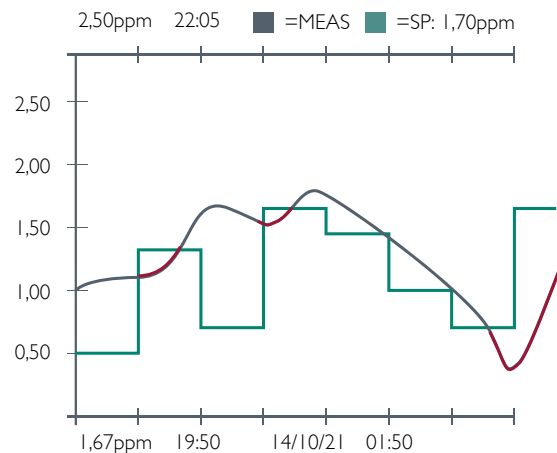
Intelligent blower modulation/optimisation delivers improved energy performance, while calibration and maintenance interventions are drastically reduced due to the minimal use of dissolved oxygen sensors.

With Oxysmart Blue, users can set a model of oxidation progress over 24 hours on a weekly basis according to the presumed load.

FEATURES

- Installer friendly and easy to use
- Compatible with CHEMITEC WEB to enable 24/7 access to remote systems
- Minimal maintenance requirement
- Offers a high degree of safety in process management

EXAMPLE OF A TYPICAL TREND



CHEMITEC WEB

REMOTE MANAGEMENT SYSTEM



Enjoy unprecedented control of your application with Chemitec Web, the revolutionary platform that brings you closer to your Chemitec instruments than ever before.

With unrestricted access to data via smart device or PC, Chemitec Web allows you to monitor your process wherever you are and ensure optimum performance 24/7.

FEATURES

- Monitor up to 50 water-quality parameters for as many as 30 instruments
- Secure cloud storage
- Automatic alerts for exceeding parameter limits
- Parameter trend graphs
- Historical trend reports
- Event log and alarm history



COMMUNICATION GATEWAY

The communication gateway automatically connects to the field devices through different connection methods: either RS-232/485 serial ports, ASCII or Modbus RTU. The gateway sends the data to the cloud-based data centre via Ethernet or a GSM/GPRS cellular network. The SIM card for connection is the client's responsibility.

FEATURES

- Plug-and-play functionality for quick and easy setup
- Support for GPRS quad-band communication or Ethernet communication
- Device connectivity via RS232 and RS485 serial ports
- Extendible through add-in boards dedicated to instrumentation with analogue output (4...20mA) and equipment with digital outputs (e.g. ON-OFF status and alarm)
- Integrated temperature sensor
- Status LED for diagnostics



FLOW, LEVEL & PRESSURE



FLOW

OPEN CHANNEL WITH RESTRICTIONS 74

50 Series F/L Flow & Level Controller
S425 Ultrasonic Level Sensor
Venturi • Weirs
Palmer-Bowlus

ELECTROMAGNETIC 78

S103 C
CH608 Converter
CH406 Converter
Table of measuring tubes
and insertion sensors
CH2300 Measuring tube U0-D0 installation

ULTRASONIC 86

S101 F • 200 H

DOPPLER EFFECT 88

DFM 6.1 • PDFM 5.1

AREA X VELOCITY 90

AVFM 6.1 • STINGRAY

LEVEL

ULTRASONIC 92

50 Series F/L Flow & Level Controller
S425 Ultrasonic Level Sensor
Meter

RADAR 95

RPL 55
RDR 81
RDR 75

SLUDGE INTERFACE 98

Echosmart

IDROSTATIC 100

KPL
KWL

PRESSURE

PIEZORESISTIVE & CAPACITIVE 102

KPT • CPT
SPT • SDT

FLOW METER SELECTION TABLE

| Application/ Model | 50 F/L | SI03C | SI01F/ 200H | DFM6.1/ PDFM5.1 | AVFM6.1/ STINGRAY |
|--|--------|-------|----------------|--------------------|----------------------|
| Open channel with restriction or weir | ● | | | | |
| Open channel without restriction | | | | | ●* |
| Pressurised pipe (raw or clean water) | | ● | ● | | |
| Pressurised pipe (dirty water or sludge) | | ● | | ●* | |
| Partially full pipe | ●** | | | | ●* |

* = Requires suspended solids or air bubbles with minimum cross section of 100 microns, 75ppm concentration

** = By insertion of Palmer-Bowlus channel

50 SERIES F/L

OPEN CHANNEL FLOW METER WITH ULTRASONIC/
PIEZOMETRIC/RADAR LEVEL SENSOR



FEATURES

- Preset calculation or user programming
- Calibration table up to 30 points for non-linear functions
- Double data logger for instant measurement and totalised volumes
- USB port for data download
- Graphic display with visualisation of real-time and historical values
- Modbus RTU communication protocol

TYPES OF PDM

(Primary Measurement Device)

Restrictions:

- Venturi
- Parshall
- Palmer-Bowlus (for partially full pipe)

Weir:

- Rectangular
- V-shaped
- Bazin - rectangular suppressed

Other:

Programming exponent or table with 30 points

TECHNICAL SPECIFICATION

| | |
|---------------------|--|
| Unit of measure | Flow rate: mc/h, lt/sec - cm, mm - Temperature: °C |
| Measurement range | 0...99999 mc/h - Up to 3 decimal points |
| Two totalisers | Absolute 9-digit (saved on Flash PROM non-resettable) - Partial 9-digit resettable |
| Display | Graphic TFT colour LCD 480x272 (Visible Area 95x93) Simultaneous display of: instantaneous flow rate (numeric & bar-graph), totalized volume, temperature, status of digital outputs, alarm events. In scrolling: Status level of the analogue outputs, resettable totalizer |
| Checks | 5 Keys |
| Data logger | Internal 32 Mbit 128000 record |
| Serial output | One RS485 galvanically separated modbus RTU |
| Analogue outputs | Two galvanically programmable separated |
| Relay outputs | Four for thresholds - two for alarm (max load 1A at 230Vac resistive) |
| Power supply | 100...240Vac / dc 50-60Hz (Optional 24Vac / dc) - Isolation 4kV |
| Average absorption | <7W |
| Dimensions / weight | (LxHxD) 144x144x122.5 mm - Weight: 1 kg |

S425

ULTRASONIC SENSOR



FEATURES

- Integrated sensor for temperature compensation
- PVDF body suitable for aggressive environments
- High-resolution 1mm measurement
- Double-threaded connection
- Immediate installation with removable IP67-rated connector
- Modbus RTU protocol

APPLICATIONS

- Raw water
- Drinking water
- Wastewater without persistent foams

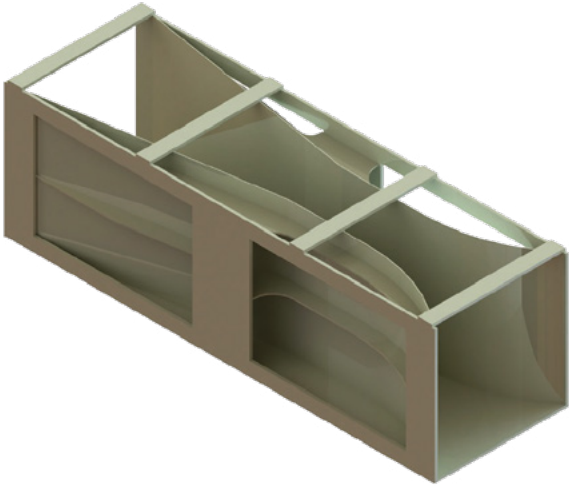


TECHNICAL SPECIFICATION

| Model | S425C | S425K |
|-----------------------|---|-------------------------------|
| Measuring method | Ultrasonic with automatic temperature compensation | |
| Measuring ranges | 30...500 cm | 5...100 cm |
| Operating temperature | -10...75°C | -25...75°C |
| Operating pressure | 0,5...1,5 bar | |
| Accuracy | ± 0.2% of measured distance (but not better than 2mm) | |
| Interface | RS485 Modbus RTU | |
| Body material | PVDF – PCV | PP |
| Protection class | IP67/IP68 with integral cable | IP67/IP68 with integral cable |
| Process connection | 1" g.m and 1,5" g.m | 1" g.m |

VENTURI CHANNELS

HYDRAULIC MODELLER FOR FLOW MEASUREMENT IN RECTANGULAR CHANNEL



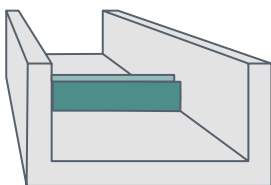
FEATURES

- Dedicated primary measurement device for channels
- For installation in rectangular-section ducts
- Flow rate: > 1...2250 m³/h
- Low-pressure drops
- Suitable for installation in pre-existing rectangular channels
- Design prevents debris build-up

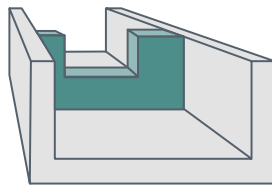
MEASURING RANGES

| Model | Q.min m ³ /h | Q.max m ³ /h |
|---------|-------------------------|-------------------------|
| BS 150 | 1 | 50 |
| BS 200 | 2 | 55 |
| BS 300 | 3 | 150 |
| BS 400 | 10 | 310 |
| BS 500 | 20 | 500 |
| BS 600 | 25 | 850 |
| BS 800 | 50 | 1400 |
| BS 1000 | 60 | 2250 |

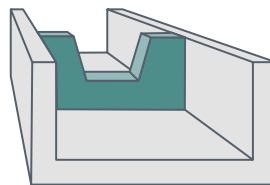
WEIRS



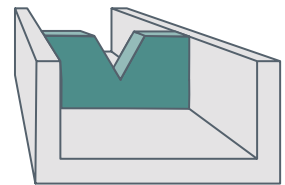
Rectangular weir
without side restraints



Regular weir
with side restraints



Trapezoid weir



Triangular weir

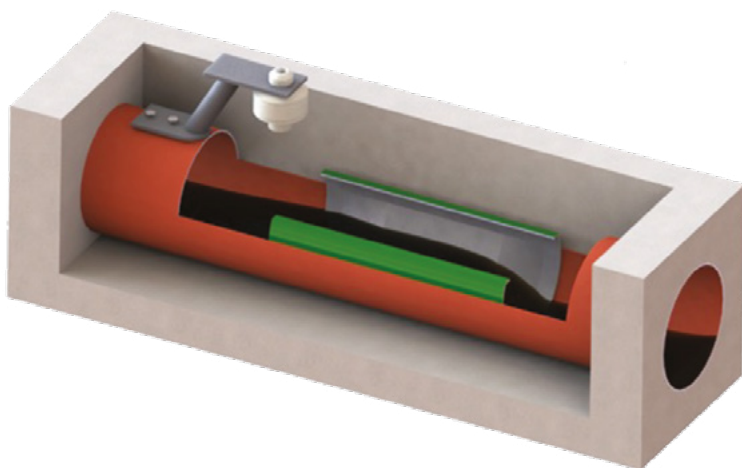
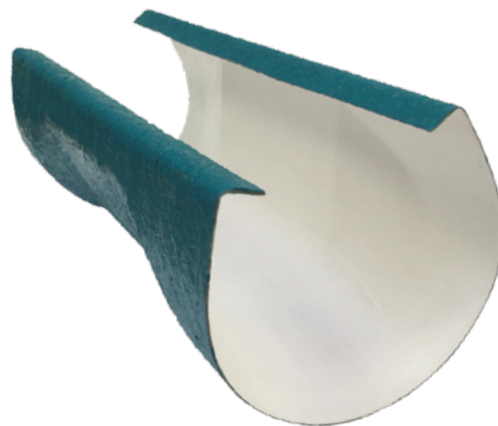
PALMER-BOWLUS

HYDRAULIC MODELLER FOR FLOW MEASUREMENT IN NON-FILLED PIPES



FEATURES

- Direct installation in the pipe or inspection well
- Level sensor calculates the instantaneous flow rate value
- Low cost, easy installation
- Flow rate: 0.45-1800 m³/h



MEASURING RANGES

| Model | DN pipe | Measuring range |
|-------|---------|---|
| 100 | 100 | 0.45 ÷ 6 m ³ /h (max. 8 m ³ /h) |
| 150 | 150 | 0.68 ÷ 15 m ³ /h (max. 19 m ³ /h) |
| 200 | 200 | 1.2 ÷ 48 m ³ /h (max. 56 m ³ /h) |
| 250 | 250 | 1.29 ÷ 68 m ³ /h (max. 76 m ³ /h) |
| 300 | 300 | 2.27 ÷ 136 m ³ /h (max. 150 m ³ /h) |
| 350 | 350 | 5.5 ÷ 161 m ³ /h (max. 192 m ³ /h) |
| 400 | 400 | 2.23 ÷ 213 m ³ /h (max. 240 m ³ /h) |
| 450 | 400 | 3.8 ÷ 330 m ³ /h (max. 365 m ³ /h) |
| 500 | 500 | 5.34 ÷ 468 m ³ /h (max. 532 m ³ /h) |
| 600 | 600 | 10 ÷ 560 m ³ /h (max. 623 m ³ /h) |
| 700 | 700 | 15 ÷ 1019 m ³ /h (max. 1115 m ³ /h) |
| 800 | 800 | 18 ÷ 1672 m ³ /h (max. 1806 m ³ /h) |

SI03C

ELECTROMAGNETIC FLOW METERS

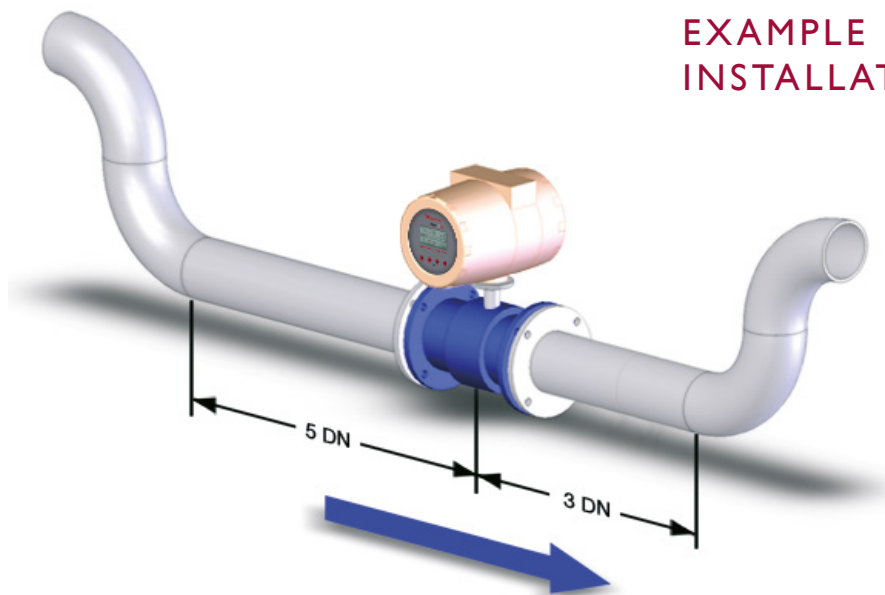


FEATURES

- Advanced instruments for the measurement of flow rate in conductive fluids and wastewater
- Measurements in full-section pipes
- Horizontal or vertical installation

APPLICATIONS

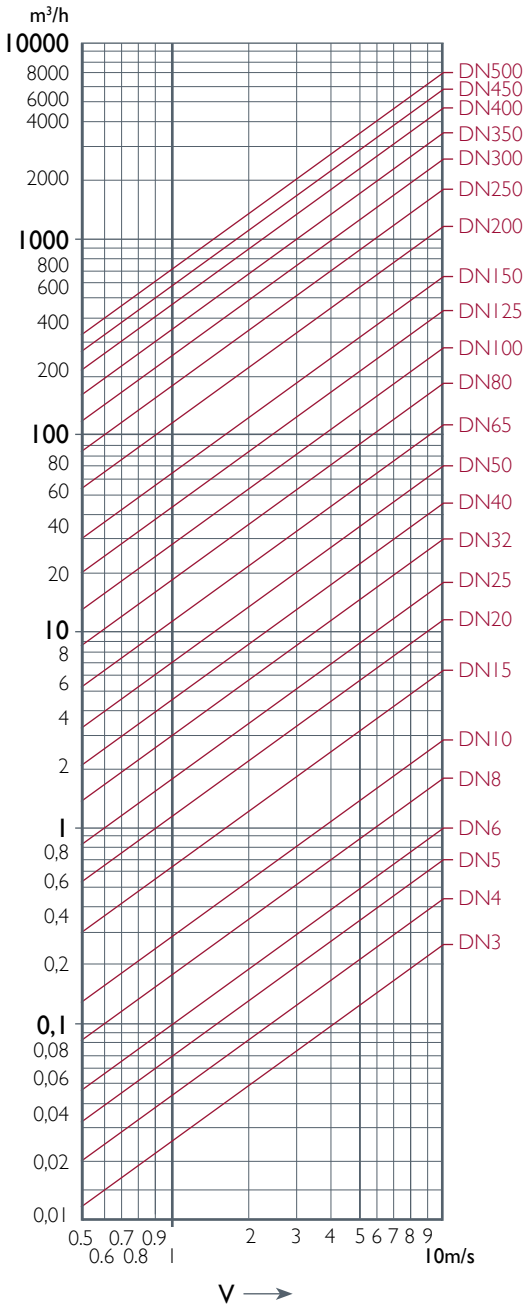
- Conductive fluids
- Wastewater
- Sludge
- Potable water
- Civil and industrial waste
- Chemical industry
- Paper industry
- Tanning industry
- Pharmaceutical
- Food production
- Energy industry (generation and distribution)
- Extractive industry (quarries, mines)
- Environmental protection



EXAMPLE OF CORRECT INSTALLATION

SELECTION TABLE

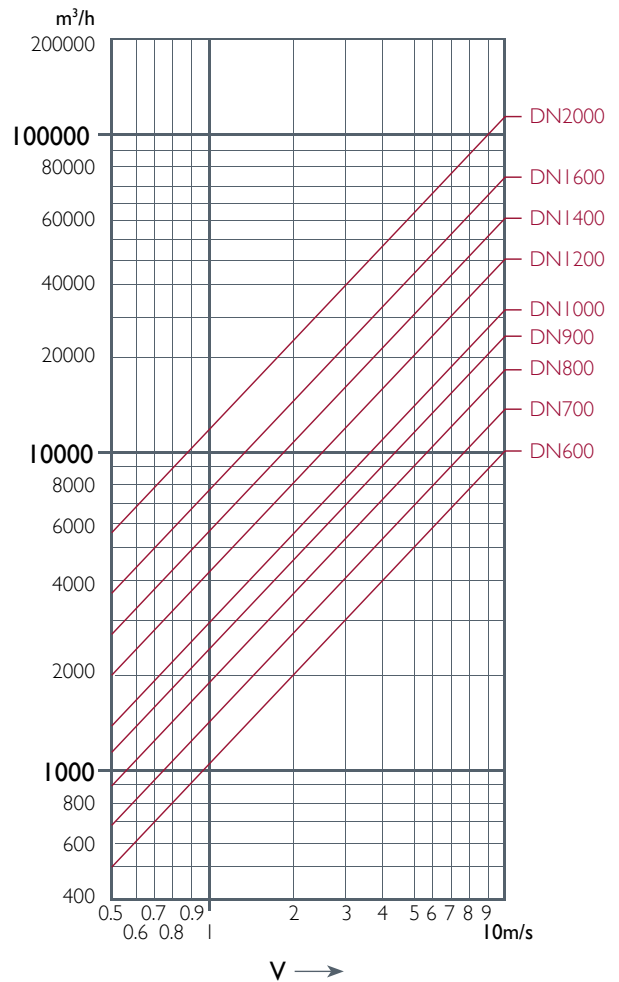
SI03 C



DIAMETER ABACUS

Abacus for optimal diameter selection depending on effective flow rate.

Recommended speed 1...2 m/s



SI03C FLOW METER

CH608 CONVERTER



FEATURES

- The converter for all applications
- Communications via: 4-20 mA analogue output, frequency, pulse, RS485 Modbus
- 5 independent internal totalisers (2 positive, 2 negative, 1 NET)
- IrCOM communication
- 4 MB flash memory, 200,000 lines of data
- Hart protocol available on request
- Availability of field verifier for verification of correct functioning and status of electronics in position

TECHNICAL SPECIFICATION

| | |
|-------------------------------|--|
| Converter installation | Compact on the sensor or remote on support, up to 100m from the sensor |
| Converter case | Epoxy painted aluminium, IP68. With front window in toughened glass |
| Power supply | CH608 90...264 Vac; 12/24 Vac/dc; max. consumption 10 Watt |
| Output signals | Active analogue output 4...20 mA Digital output for pulses Programmable digital output Digital output in active frequency 0...10 kHz |
| Display | Graphic LCD 128x64 pixels, visual area 50x25 mm, backlit Simultaneous indications: Instanteous flow, counter, alarm and status flag 5 totalisers available (2 positive, 2 negative, 1 NET) |
| Programming | With 4 push buttons for non-billing applications Through IrCOM interface and dedicated software Via RS485 Modbus RTU protocol |
| Process data logger | 4 MB flash memory, 200,000 lines of data (one line includes: instant flow, 2 counters, date, time, temperature) |

SI03C FLOW METER

CH406 CONVERTER



FEATURES

- CH406 converter is the new High-efficiency battery-operated converter
- Compact version (horizontal or vertical) or separate (up to 30m cable)
- Coupling with body sensors up to DN1000 and with all sizes of insertion meters
- 5 independent internal totalisers
- Pressure and temperature reading modules (opt.)
- Integrated data logger with capacity for more than 100,000 data lines
- Available also with 12/24Vdc power supply and 4...20 mA output
- RS485 Modbus



TECHNICAL SPECIFICATION

| | |
|--------------------------------|---|
| Transmitter type | Battery powered - 2xD cell 3.6 V * - optional 12/24Vdc power supply |
| Battery life | Lithium battery pack up to 10 years/GSM module battery up to 10 years |
| Display and keyboard | LCD display-index, menu and status icons for dedicated information Four buttons to access all functions |
| Views | Instantaneous flow; positive total counter (T+); negative total counter (T-); positive partial counter (P+); negative partial counter (P-); net counter (NET) Time & date converter temperature Process pressure and temperature (if available) Matching parameters, codes and value |
| Outputs | 2 passive outputs (1 programmable) MOS, galvanically isolated - clean contact Maximum load \pm 35V DC, 100mA protected against short circuits Optional 4...20mA loop powered output. Optional RS485 Modbus output |
| Data logger | 100,000 lines of data with a recording rate between 1 minute and 120 minutes |
| Alarms and status icons | Status icons shown on the display and alarms recorded in the data logger |
| Self-diagnosis | Available alarms: interrupted excitation, power supply voltage, empty tube with fourth electrode, accumulation of pulses, empty tube with measuring electrodes, wet electronic board, high temperature, low battery level |

SI03C FLOW METER

TABLE OF MEASURING TUBES AND INSERTION SENSORS

CH2200



CH2400



CH1000



| | | | |
|--|---|---|---|
| DN (Diameter Nominal) | 15...2000 | 25...100 | 25...300 |
| Connections | EN1092-1 on request ANSI 150; ANSI 300; AWWA C.I.D; ANSI 600 | TRICLAMP on request DIN 11851; MS 1146 female | WAFER |
| Pressure | PN10...PN64 | 16 bar Triclamp/ 25 Bar DIN or SMS | PN40 up to DNI50 PN16 ≥200 |
| Accuracy With liquid speed ≥ 0.2 m/s | 0,2% | 0,2% | 0,2% |
| Material Inner lining | PTFE or EBANITE | PTFE | PTFE or EBANITE |
| Electrodes | HASTELLOY C on request Titanium, Tantalum, Platinum | HASTELLOY C on request Titanium, Tantalum, Platinum | HASTELLOY C on request Titanium, Tantalum |
| No. of electrodes | 2xDN15...20 3xDN25...40 4xDN50...2000 | 2 | 3xDN15...40 4xDN50...300 |
| Body | Carbon steel | SS304 | Carbon steel |
| Flange | Carbon steel | SS304 | – |
| Process temperature Compact version | up to 80°C | up to 80°C | up to 80°C |
| Separate version with liner in PTFE | up to 130°C (180°C on request) | up to 130°C (180°C on request) | up to 130°C (180°C on request) |
| Protection grade Compact version | IP68 | IP68 | IP68 |
| Separate version | IP68 | IP68 | IP68 |
| Certifications ATEX/IECEX: II 2GD Ex mb IIC T6...T4 Gb Ex mb IIIC T85°...T135°C Db Ta -20°...60°C U=30V; I=70mA | on request | on request | on request |

CH500



CH2660



CH2770



CHI222



| | | | |
|--|--------------------|---|--|
| 6...20 | 80...500 | 80...2500 | 50...2600 |
| GAS Clamp (BS4825); DIN 11851 Male | Insertion threaded | Insertion flanged UNI2278 DN40 | Insertion 1" ball valve Hot tap installation |
| PN16 | PN10 | PN25 | PN20 |
| 0,2% | 2% | 2% | 2% |
| PTFE | - | - | - |
| SS316 L | SS316 L | SS316 L | SS316 L |
| 2 | 2 | 2 | 2 |
| SS304 | SS304 | SS304 | SS304 |
| SS316 L | 1" 1/4 GAS thread | UNI 2278 DN40 for connection to the pipe | Ball valve SS316 L |
| up to 80°C | up to 80°C | up to 80°C | up to 80°C |
| up to 130°C (180°C on request) | up to 80°C | up to 80°C | up to 80°C |
| IP68 | IP68 | IP68 | IP68 |
| IP68 | IP68 | IP68 | IP68 |
| - | on request | - | on request |

SI03C FLOW METER

CH2300 MEASURING TUBE U0-D0 INSTALLATION

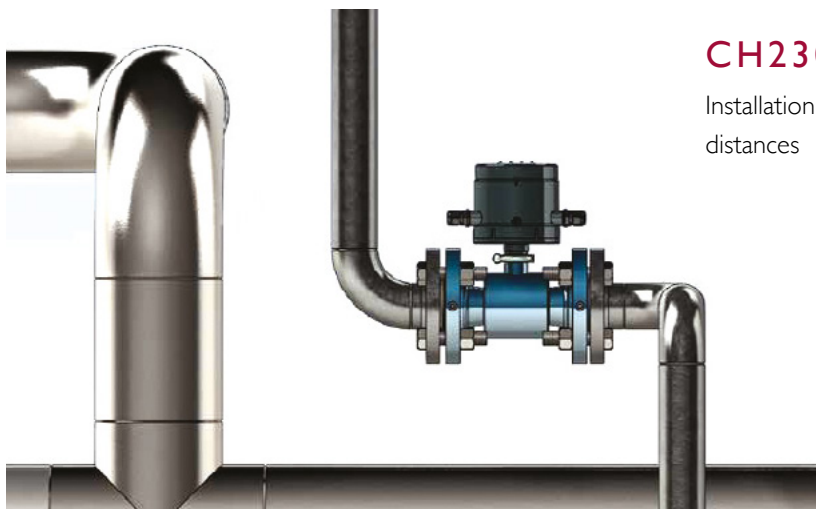


FEATURES

- Measuring tube for mounting in confined spaces
- Wide range of measurement
- Innovative sensor design increases flow rate and measurement precision
- Repeatable measurement even in complex applications
- Optimised and accelerated flow profile
- Flexible installation options
- Accredia and OIML R 49 certified
- Bi-directional measure

APPLICATIONS

- Water cycle
- Industrial water and chemical industry
- Drinking water with food and beverage

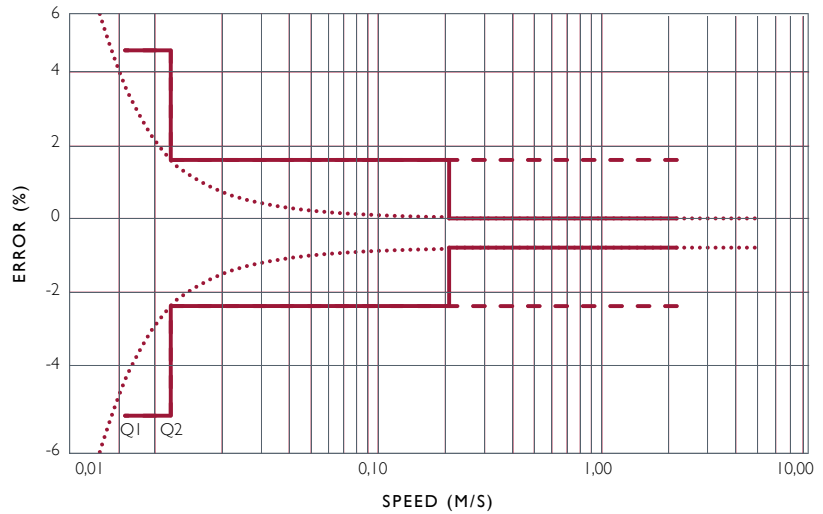


CH2300 INSTALLATION

Installation with no upstream and downstream distances

ACCURACY DIAGRAM

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



CH2300 FLOW RATES TABLE

| 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 |

TECHNICAL SPECIFICATION

| | |
|---------------------------------------|---|
| Flow tube material | AISI 304, SS316 (optional) |
| Flanges material | Carbon steel, AISI 304, SS316 optional |
| Available electrodes | SS 316L, (standard), Hastelloy C, Hastelloy B, Titanium, Tantalum, Platinum |
| Internal lining | Ebanite |
| Liquid temperature | Up to 80°C |
| Standard flanged connections | EN1092-1 PN 16, ANSI 150 on request |
| Installation requirements/ conditions | U0-D0 |
| Protection degree | IP68 permanent submersion at 1.5 m (EN 60529) |

SI01F & 200H

FIXED OR PORTABLE FLOW METER ULTRASONIC
 “TRANSIT TIME” FOR PRESSURE PIPE



SI01F



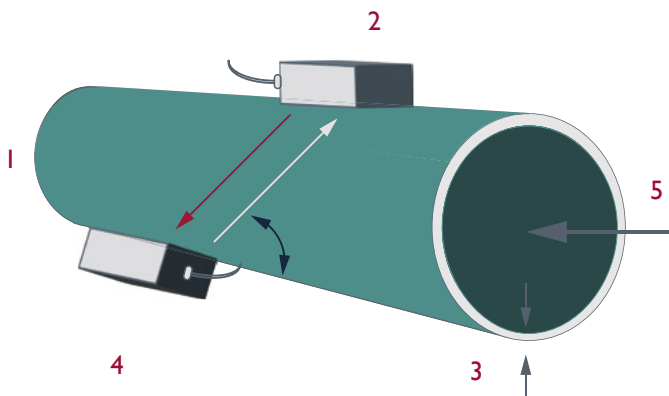
200H

FEATURES

- Instruments comprise digital converter and two ultrasonic clamp-on or insertion transducers
- Digital signal processing (DSP) technology ensures low sensitivity to disturbing factors
- Suitable for pipe dimensions from 20 to 4000 mm
- Transmitter resistant to damage by wear, deposits or pressure
- Password-protected EEPROM

APPLICATIONS

- Ultra-pure water
- Drinking water
- Chemicals
- Cooling water
- River water



DSP TECHNOLOGY - DIAGRAM

1. Pipe diameter
2. Upstream transducer
3. Tube thickness
4. Downstream transducer
5. Flow direction

TECHNICAL SPECIFICATION

| Models | SI01 F | 200 H |
|-------------------------------------|---|--|
| Measurement on pipes | From DN 20 to 4000 mm | From DN 20 to 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; < Ø1 mm) | |
| Speed range | ± 12 m/s | |
| Linearity | 0.5%; repeatability: 0.2%; total accuracy ± 1% | |
| Display | 2x20 alphanumeric characters | 3.5"; 320x240 px |
| Keypad | Four membrane buttons | Eight buttons |
| Internal data logger | Optional | Storage capacity up to 32GB with SD card |
| Displayed data | Instantaneous flow rate; total flow; other | |
| Safety | Password protection for setup and settings | |
| Selectable output | 4...20 mA or 0...20 mA | – |
| Frequency output | Programmable 0...5000 Hz | – |
| Output relay | For pulse or alarm totaliser | – |
| Signal interface | RS485 | |
| Communication protocol | Modbus RTU; ASCII+ (optional) | |
| Power supply | 230Vac/24Vdc (optional) | 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 | (LxHxD) 200x120x77 mm | 100x66x20 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 | |

DFM 6.1 & PDFM 5.1

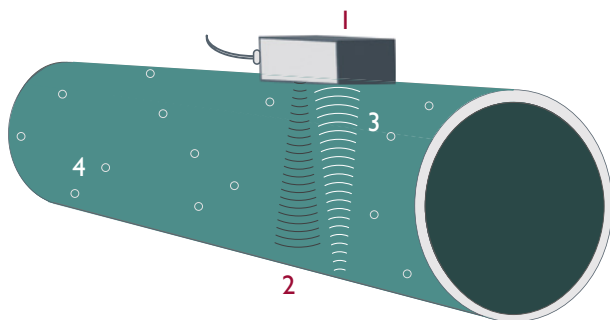
FIXED OR PORTABLE DOPPLER-EFFECT FLOW METERS FOR PRESSURE PIPE



DFM 6.1



PDFM 5.1



DFM 6.1

Dedicated instrument for liquids containing solids or air bubbles. Sensor mounted externally on steel, iron, PVC or ABS pipe.

PDFM 5.1

The ideal instrument for evaluating the performance of in-line flow meters. Fast installation, calibration and commissioning makes it ideal as a temporary in-line transmitter.

FEATURES

- Continuously frequency deviation measurement ensures precise fluid velocity data
- Can be installed without interrupting plant operation
- Intuitive programming menu
- Password protection for totalisation and calibration data
- Sensor unaffected by dirt or deposits

APPLICATIONS

- Wastewater
- Chemicals
- Sludge
- Viscous liquids

OPERATING PRINCIPLE

1. Sensor
2. Soundwave transmitted from sensor
3. Soundwave reflected back to sensor
4. Bubbles or solids reflect sound

TECHNICAL SPECIFICATION - DFM 6.1

| | |
|----------------------------|--|
| Liquid characteristics | Required suspended solids or air bubbles with minimum cross section of 100microns, concentration 75ppm |
| Piping / DN and materials | ½"...180" (12.7...4500 mm) Steel, stainless steel, cast iron, ductile iron, concrete-lined ductile iron, PVC, HDPE or any other sound-conducting pipe material, including pipe lined with a coating bonded to the pipe wall. Avoid pipes with deteriorated coatings that contain air |
| Velocity measurement range | ±0.03 up to 12.2 m/sec |
| Accuracy | ±2% of reading or 0.05 ft/sec (0.015 m/sec). Repeatability ±0.1%, Linearity ±0.5% |
| Display | White, backlit - Display of instantaneous flow rate, totalisation, relay status |
| Programming | 5-digit keypad |
| Analogue output | 4...20mA opto-isolated (1000 ohm max.) |
| Control relay | Two SPDT, 5 A programmable for flow alarm and/or pulse output |
| Power supply | 100...240VAC 50-60Hz (other on request), absorption 5 Watts max. |
| Enclosure | Polyester IP66 NEMA4X. Clear polycarbonate front panel |
| Operating temperature | -23...60°C (-10...140°F) |

SENSOR SPECIFICATIONS

| | |
|-----------------------|---|
| Model SE4-A | Single-head ultrasonic with 7.6 m cable and SS mounting kit for pipes ½" (12.7mm) ID or larger. Certified for Class I Division 2, Groups A, B, C, D hazardous locations |
| Assembly kit | Sensor mounting bracket for pipes with external diameter from 15 to 800 mm Gel of coupling (150g) |
| Operating temperature | -40...150°C (-40...300°F) |

TECHNICAL SPECIFICATION - PDFM 5.1

| | |
|-----------------------------------|---|
| Flow rate range | ± 0.46 up to 12.2 m/sec |
| Pipe size | From ½" up to 180" (12.7...4500 mm) |
| Display | White, backlit matrix - displays flow rate, totaliser |
| Power input | Built-in NiMH battery for up to 18 hours continuous operation External charger with 100...240VAC 50/60Hz input |
| Outputs | 4...20mA (500 ohm) when AC powered USB for Data log transfer by direct PC connection |
| Data logger | Programmable 300000 data point capacity, time and date stamped or formatted flow reports including total, average, minimum, maximum and times of occurrence |
| PC software | For Windows 98 or higher. Retrieves, displays and saves data log files |
| Electronics operating temperature | -23...60°C (-10...140°F) |
| Electronics enclosure | Portable, ABS enclosure |
| Carry case | Rated IP67 with protective molded foam insert |
| Accuracy | ±2% of full scale, requires solids or bubbles minimum size of 100 microns, minimum concentration 75 ppm. Repeatability: ±0.25%, Linearity: ±0.5% |
| Calibration | Built-in 5-key programming with user-friendly calibration menu. Password protected |
| Sensitivity | Adjustable cut-off, damping: adjustable |

SENSOR SPECIFICATIONS

| | |
|-----------------------|---|
| Model PSE4 | Clamp-on, single-head ultrasonic for pipes ID: ½"...180" (12.5 mm...4.5 m) with 3.4 m shielded dual-coaxial cable |
| Sensor mounting kit | SS pipe clamp and 5.3 oz. (150 g). Silicone coupling compound |
| Operating temperature | -40...150°C (-40...300°F) |

AVFM 6.1 & STINGRAY

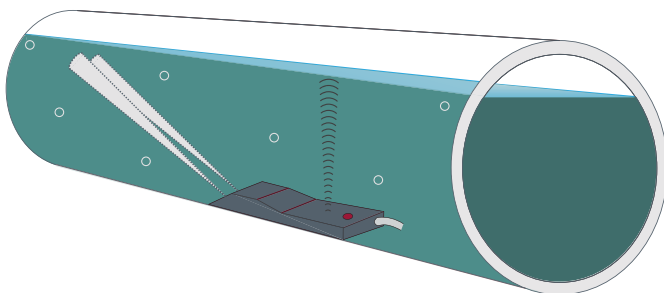
"AREA VELOCITY" FLOW METER, FIXED OR PORTABLE



AVFM 6.1



STINGRAY



AVFM 6.1

State-of-the-art instrument for the simultaneous measurement of fluid level and velocity for flow-rate calculation in open channels or pipes.

FEATURES

- Simple calibration
- Calibration parameters remain stored even in the absence of tension

STINGRAY

Portable instrument for the measurement of water level, velocity and temperature in open channels and partially-filled or pressurised pipes.

FEATURES

- Alkaline battery for extensive operating time
- Data stored to memory and presented as trend graphs and tables
- No calibration required
- Energy-saving display timeout

SUBMERGED SENSOR

- Measuring levels and velocity

TECHNICAL SPECIFICATION - AVFM 6.1

| | |
|------------------------|---|
| Liquid characteristics | Required suspended solids or air bubbles with minimum cross section of 100 microns, 75ppm concentration |
| Type of channels | Unfilled pipe, rectangular, trapezoidal, egg-shaped or custom channels |
| Accuracy | Level: $\pm 0.25\%$ of measurement range. Velocity: $\pm 2\%$ of reading repeatability and linearity: $\pm 0.1\%$. |
| Display | White, backlit display - of instantaneous flow rate, totalisation, relay status |
| Programming | 5-digit keypad |
| Data logger | Recording capacity of 26 million points. Includes USB output and Windows software |
| Analogue outputs | Three 4...20mA opto-isolated (1000 ohms max.) |
| Control relays | Two SPDT, 5 A programmable for flow alarm and/or pulse output |
| Power supply | 100...240VAC 50-60Hz (other on request), absorption 5 Watts max |

QZ02L SENSOR SPECIFICATION

| | |
|----------------------------|---|
| Velocity measurement range | 0.03...6.2 m/sec |
| Level measurement range | Minimum head: 25.4 mm Maximum head: 4.57 m |
| Operating temperature | -15...80°C |
| Exposed materials | SS316, epoxy resin, polyurethane |

TECHNICAL SPECIFICATION - STINGRAY

| | |
|-------------------------|--|
| Liquid characteristics | Required suspended solids or air bubbles with minimum cross section of 100 microns, 75ppm concentration |
| Electronics enclosure | Watertight, airtight, dust proof (IP67) polycarbonate |
| Accuracy | Level: $\pm 0.25\%$ of range. Velocity: $\pm 2\%$ of reading |
| Display | LCD displays: level, velocity, water temperature, battery and memory capacity |
| Operating temperature | -20...60°C (-4...140°F) |
| Instrument set-up | Via software for Windows: logging time interval, site name |
| Data logger capacity | 130,000 data points |
| Power | 4 alkaline 'D' cell batteries |
| Software | For Windows. Supports real-time monitoring, log file download and export, graph and data table presentation, level/velocity to flow conversion |
| Approx. shipping weight | 4.5 kg |

QZ02L SENSOR SPECIFICATION

| | |
|----------------------------|--|
| Velocity measurement range | 0.03...3.8 m/sec |
| Level measurement range | Minimum head: 25.4 mm Maximum head: 4.5 m |
| Operating temperature | -15...80°C (5 to 175°F) |
| Exposed materials | SS316, polyurethane, epoxy |

50 SERIES F/L

LEVEL METER WITH ULTRASONIC OR PIEZOMETRIC OR RADAR SENSOR



FEATURES

- Ultrasonic level measurement; single level, double level, differential level
- Automatic temperature compensation
- Pump operation: single, rotating or timed
- RS485 Modbus RTU serial output
- 2 x programmable analogue outputs
- 5 x relay outputs for intervention pump control thresholds
- 1 x relay output for instrument anomaly alarm, flow totalisation or level 2 alarm

APPLICATIONS

- Wastewater
- Industrial water
- Drinking water
- Cooling towers

TECHNICAL SPECIFICATION

| | |
|--------------------|--|
| Unit of measure | Level mt, cm, mm - temperature °C |
| Measurement fields | Level 0...200 mt (in relation to the connected sensor) Temperature -25°C...75°C |
| Precision | ± 0.2% F.S. |
| Display | Graphic TFT colour LCD resolution 480x272 visible area 95x93 backlit Simultaneous display of: Level (absolute / differential & bar-graph for percentage of full scale), temperature, status of the digital outputs, alarm events Level 2, status of the analogue outputs |
| Controls | 5 keys |
| Data logger | Internal with 4 Mbit flash |
| Serial output | One RS485 galvanically separated Modbus RTU |
| Analogue outputs | Two galvanically programmable separated 1st output: level/temperature - 2nd output: level 2, differential, temperature |
| Relay outputs | Five for thresholds - One for Alarm (max load 1A at 230Vac resistive) |
| Power supply | 100...240Vac/dc 50-60Hz (Optional 24Vac/dc) - Isolation 4 kV |
| Average absorption | <7W |
| Dimensions/weight | (LxHxD) 144x144x122.5 mm - Weight: 1 kg |

S425

ULTRASONIC LEVEL SENSOR



FEATURES

- Integrated sensor for temperature compensation
- PVDF body suitable for aggressive environments
- High-resolution 1mm measurement
- Double-threaded connection
- Immediate installation with removable IP67-rated connector
- Modbus RTU protocol

APPLICATIONS

- Drinking water
- Wastewater without persistent foam chemicals

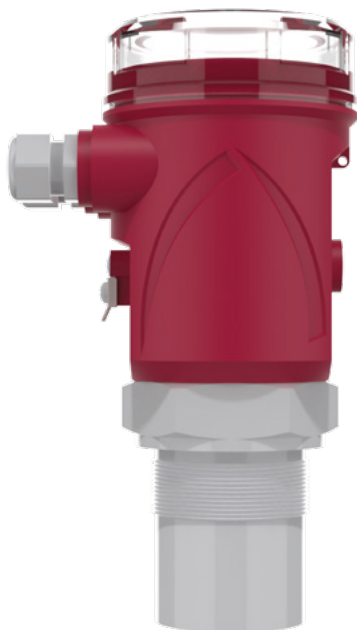


TECHNICAL SPECIFICATIONS

| Models | S425 C | S425 K |
|----------------------------|---|----------------|
| Measurement range | 30...500 cm | 50...1200 cm |
| Measurement method | Ultrasonic with automatic temperature compensation | |
| Emission angle | 14° ± 1° | 10° ± 1° |
| Accuracy | ± 0.2% of measured distance (but not better than 2mm) | |
| Resolution | 1 mm | |
| Operating temperature | -10...75°C | |
| Maximum operating pressure | 0,5 bar...1,5 bar | |
| Body materials | PVDF – PCV | |
| Thread | 1" g.m./1.5" g.m | 1" g.m./2" g.m |
| Degree of protection | IP67 (IP68 optional) | |

METER

COMPACT ULTRASONIC LEVEL TRANSMITTER



FEATURES

- Suitable for liquids and solids
- Range 0,25 ÷ 6 m/0,4 ÷ 10 m
- Power supply 24 Vdc; 12 Vdc
- Output 4 ÷ 20 mA (2 wire version); 4 ÷ 20 mA + 2 relays set (4 wire version); Modbus
- On request ATEX
- Remote control via smart phone (CHEMITEC APP)

TECHNICAL SPECIFICATION

| | |
|-------------------------|--|
| Measuring range | 0.25...6 m or 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 |
| Operating 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 (ATEX certified versions only of PVDF) |
| Mechanical installation | 2" GAS M (PP flange DN80 optional) |
| Protection grade | IP67 |
| 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 |
| Output relays | Nr.2 - 3A 230Vac (n.a.) (only 4 wires version) |
| Digital communication | 2 wires version (optional) HART; 4 wires version Modbus RTU |
| Ex-proof | ATEX II 1/2G Ex ia/db IIC T4 Ga/Gb; II 1D Ex ta IIIC T1 35°C Da Tamb: -20...+60°C |

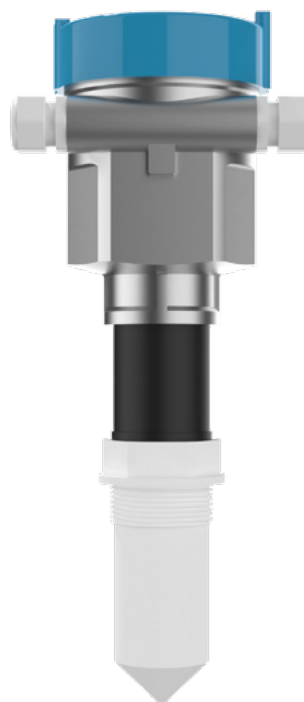
RPL 55

RADAR LEVEL TRANSMITTER



FEATURES

- Suitable for level measurement in tanks with G1½" threaded connections
- Compact antenna allows mounting in pipes or small tanks
- Antenna extensions allow installation in the presence of insulation or other obstacles
- Continuous level measurement for liquids, pastes and sludges
- Measurement range: 10 m
- Maximum operating pressure: 3 bar
- 2/4 wire technology
- Radar pulses at 26 GHz (K band)
- ATEX certification II 1 G/D Ex ia IIC T6...3 Ga/ Ex ia IIIC T76°C...T146°C



TECHNICAL SPECIFICATION

| | |
|----------------------------|--|
| Maximum measuring range | 10 mt |
| Accuracy | ± 10 mm |
| Resolution | 1 mm |
| Frequency range | K band (26GHz) |
| Housing / antenna material | Aluminium; PVDF |
| Mechanical installation | Threaded G1½" |
| Degree of protection | IP67 / IP68 (sensor) |
| Electrical connection | Pressure terminal blocks |
| Operating temperature | PVDF antenna -40...130°C |
| Operating pressure | -1...3 bar |
| Power supply | 24Vdc; 230Vac |
| Certification | ATEX |
| Analogue output | 4...20mA |
| Digital communication | HART/Modbus |
| Calibration | 4 buttons or via HART / Modbus |
| Thermal stabilisation | 5 minutes typical |
| Visualisation | Extractable programming module VL602 (optional) with 4 keys and matrix LCD |

RDR 8 I

RADAR LEVEL TRANSMITTERS



FEATURES

- Non-contact continuous level measurement
- For liquids (max 20 m) and solids (max 10 m)
- 80GHz radar pulses
- Visualisation and configuration on removable display module
- Output: 4...20mA; 2 x configurable relays
- Remote control via smart phone (CHEMITEC APP)
- IP68 Version available

TECHNICAL SPECIFICATION

| | |
|----------------------------|---|
| Housing / sensor material | PP |
| Mechanical installation | 2" GAS M (DN80 PP flanges optional) |
| Degree of protection | IP67 (IP68 optional) |
| Electrical connection | Terminal blocks or waterproof connector IP68 (optional) |
| Operating temperature | -20... +60°C |
| Maximum operating pressure | 3bar |
| Power supply | 24Vdc; 12Vdc |
| Absorbed power | 5W peak; 2.5W average |
| Analogue output | 4...20 mA, max 750 ohm |
| Relay in output | N° 2 3A 230 Vac (n.a.) |
| Digital communication | Modbus RTU |
| Maximum measuring range | 0.05...20 mt |
| Accuracy | Measurement deviation \pm 5 mm |
| Calibration | Vers. IP67 display opt. – 2 buttons – modbus – Bluetooth Vers. IP68 display – modbus – Bluetooth |
| Visualisation | VL620/I module (opt.) with 4 keys and LCD |

RDR 75

RADAR LEVEL TRANSMITTERS



FEATURES

- Non-contact continuous level measurement
- For liquids (max 20 m) and solids (max 10 m)
- 80GHz radar pulses
- Visualisation and configuration on removable display module
- Output: 4...20mA; 2 x configurable relays
- Remote control via smart phone (CHEMITEC APP)



TECHNICAL SPECIFICATION

| | |
|----------------------------|---|
| Housing / sensor material | PC / PP wet part |
| Mechanical installation | 2" GAS M (DN80 PP flanges optional) |
| Degree of protection | IP67 |
| Electrical connection | Pressure terminal blocks |
| Operating temperature | -20...+60°C |
| Maximum operating pressure | 3 bar |
| Power supply | 24Vdc |
| Absorbed power | 5W peak; 2.5W average |
| Analogue output | 4...20 mA, max 750 ohm |
| Relay in output | N° 2 3A 230Vac (n.a.) |
| Digital communication | Modbus RTU |
| Maximum measuring range | 0.05...20mt max for liquids |
| Block distance | 0.05 m |
| Accuracy | Measurement deviation ± 5 mm (If distance < 250 mm ± 10 mm) |
| Calibration | 4 buttons or via Modbus RTU or Bluetooth via dedicated app |
| Visualisation | VL601 programming module (optional) with 4 keys and matrix LCD |

ECHOSMART™

SLUDGE INTERFACE LEVEL METER

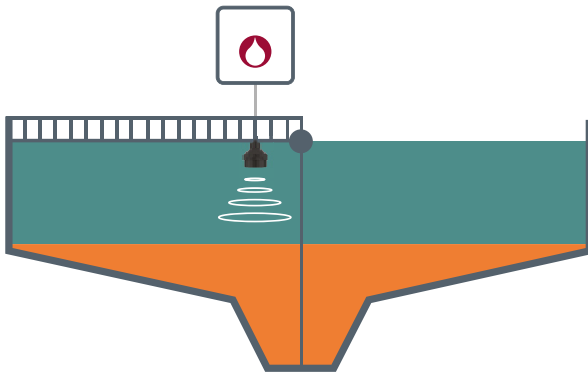


FEATURES

- Superior signal control and performance of control algorithms
- Flexible combinations between sensor, control unit and power supply unit
- Communication via RS-485 or Ethernet
- Large display with intuitive screens for quick parameter entry
- Soft-key operation
- Initialisation and automatic calibration for quick start-up with no process interruption
- Up to 16 EchoSmart™ sensors can be connected in a network with a single EchoSmart™ controller for optimised operation and significantly reduced costs
- Zigbee's "self-healing" mesh technology eliminates unnecessary piping and wiring costs

APPLICATIONS

- Wastewater
- Mining industry



SUBMERGED SENSORS

- Network interconnection of up to 128 EchoSmart™ sensors

TECHNICAL SPECIFICATIONS

| Components | Sensor | Control unit |
|--------------------------|--|--|
| Measuring range | 0.305...10.0 m | – |
| Measuring principle | Ultrasonic immersion | – |
| 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 320x240 pixels; visual area 92x122 mm |
| Material | ABS and epoxy | 320x240 pixels ; visual area 92x122 mm |
| Self-cleaning wiper | Silicone (optional) | – |
| Environmental conditions | – | - 40...60°C |
| Power supply | 15 VDC | Polycarbonate NEMA 4X with IP65 protection |
| Power | 3W with wiper 6W | 65 W (fuse) |
| Relay (optional) | – | Four 10A at 250 VAC; 10A at 30 VDC |
| Mounting | Fixed or flexible | Wall or pipe |
| Dimensions | Standard 62x75 mm With wiper 146x75 mm | 235x229x115 mm |
| Weight | Standard 1.02 kg With wiper 1.25 kg | Approx. 1.36 kg |

KPL

HYDROSTATIC LEVEL TRANSMITTERS



FEATURES

- Superior technological performance in terms of overpressure, small temperature drifts, high stability and accuracy
- No separation liquid between the membrane and the pressure sensor

APPLICATION

- Drinking water
- Industrial water

TECHNICAL SPECIFICATION

| | |
|-----------------------|--|
| Measurement | From 0.1 bar (1mH ₂ O) to 20 bar (200mH ₂ O) |
| Accuracy / stability | ±0.5 % f.s. |
| Operating temperature | - 20...+70°C |
| Output signal | 4...20mA |
| Power supply | 10...36Vdc with two wires |
| Material | Body and membrane AISI316L |
| Protection grade | IP68 |
| Dimensions | Sensor submerged Ø 27 mm; Ø 16 mm on request |

KWL

HYDROSTATIC HEAD LEVEL TRANSMITTER



FEATURES

- Designed specifically for wastewater
- Accuracy: $\pm 0.5\%$
- Range: 1...200 mH₂O
- Immersed sensor protection (wet part): IP68
- Power supply: 12...30Vdc (2-wire)

APPLICATION

- Wastewater
- Chemical industry



TECHNICAL SPECIFICATION

| | |
|-------------------------|---|
| Measurement range | From 0...0.4 mH ₂ O to 0...200 mH ₂ O |
| Operating temperature | -10...+50°C |
| Accuracy | $\pm 0.5\%$ f.s |
| Sensor material | Immersed PVC (\varnothing 46 mm) |
| Capacitive sensor | Golden ceramic membrane |
| Shielded cable material | PU \varnothing 7.5 mm |
| Analogue output | 4...20 mA |
| Power supply | 10...36 Vdc (2 wires) |

KPT

PIEZORESISTIVE PRESSURE TRANSMITTER



FEATURES

- Suitable for continuous level measurement of liquids, gases and vapours
- Small pressure transducer offers maximum reliability and safety
- Accuracy: $\pm 0.25\%$
- Cost-effective solution
- Threaded, sanitary and vacuum connections

CPT

COMPACT PRESSURE TRANSMITTER



FEATURES

- Suitable for aqueduct and water-treatment applications
- Accuracy: $\pm 0.2\%$
- Cost-effective solution
- Threaded process connections
- Capacitive sensor with ceramic membrane
- High mechanical resistance to over-pressure

SPT

PIEZORESISTIVE PRESSURE TRANSMITTERS



FEATURES

- Designed for use in industrial processes
- High rangeability and multiple connection options
- Innovative technology delivers precise measurement and stability over time
- Internal temperature sensor corrects measurement deviations caused by thermal variations
- Accuracy: 0.075%
- Relative and absolute measurement
- Process connection: threaded, male or female and by vacuum
- HART communication
- Parameter setting via display
- Self-diagnosis and fast response time



SDT

DIFFERENTIAL PRESSURE TRANSMITTER



FEATURES

- Especially suited to installations in processes demanding high accuracy and stability
- Capable of measuring very low differential pressures from 1 mbar (10 mm H₂O)
- IP67 rated for protection against dust and water jets
- Fully programmable via backlit matrix display and two external watertight buttons
- Accuracy: 0.075%
- Range: 1 mbar – 20 bar
- HART communication
- Parameter setting via display
- Self-diagnosis and fast response time
- ATEX compliant



ACCESSORIES



IMMERSION SENSOR HOLDER 106

S315 Range

Jointed support and installation

INSERTION SENSOR HOLDER 108

S305 INS • S305/M

BYPASS SENSOR HOLDER 109

PSS8

INSERTION SENSOR HOLDER 110

PSS3 • SPP • SPPFIL

PRE-ASSEMBLED PANELS 111

Paneltec Series

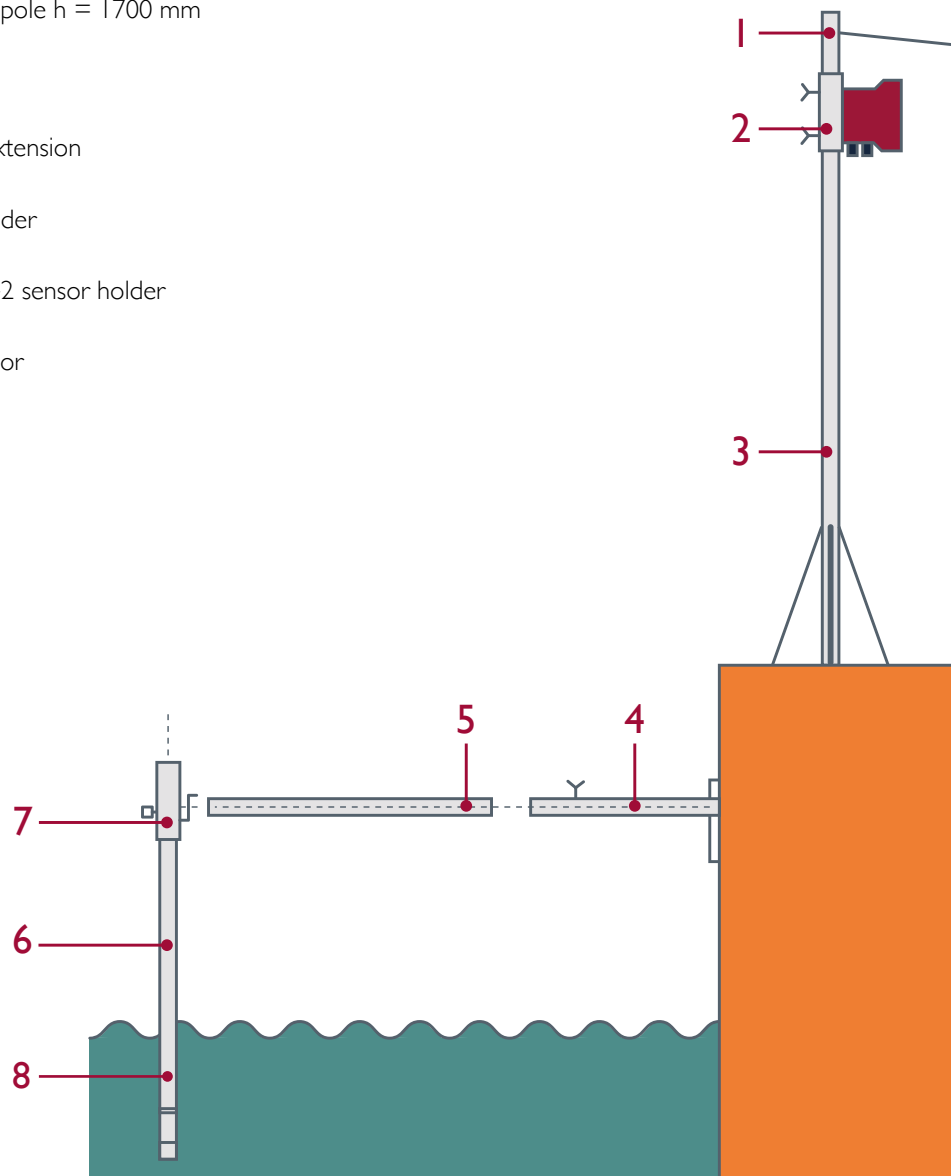


INSTALLATION BRACKETS

DIAGRAM OF ACCESSORIES

With many years of experience, Chemitec has developed a wide range of accessories for the installation of sensors and controllers, which make it easy to install and maintain the measuring system.

- 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 sensor holder
- 7 Support for D42 sensor holder
- 8 Measuring Sensor



S315

IMMERSION SENSOR HOLDERS



TECHNICAL SPECIFICATION

| Model | Material | Operating temperature | Immersion sensor holder |
|--------|---|-----------------------|---|
| S315 | Polypropylene (PP) body Nylon fixing screw NBR O-Rings | max 80°C | S315 for single D42 electrode S315/2 for two D63 electrodes S315/3 for three D63 electrodes |
| S325/T | Plexiglass tube Polypropylene (PP) protection and cap Nylon fixing screw NBR O-Rings | max 80°C | S315/T with KCl tank S315/T/2 for two D12 electrodes with KCl tank |



TECHNICAL SPECIFICATION

| Model | Material | Operating Temperature | Immersion sensor holder |
|--------|--|-----------------------|--|
| S315/F | Polypropylene (PP) tube and cap Nylon fixing screw NBR O-Rings | max 80°C | For turbidity/suspended solids sensors |



TECHNICAL SPECIFICATION

| Model | Material | Operating Temperature | Immersion sensor holder |
|--------|---|-----------------------|--|
| S315/O | Polypropylene (PP) tube and cap Nylon fixing screw PVC 45° fitting NBR O-Rings | max 80°C | For S423-C-OPT oxygen sensor and S401/6 DF/DG pH and redox digital/differential electrodes |

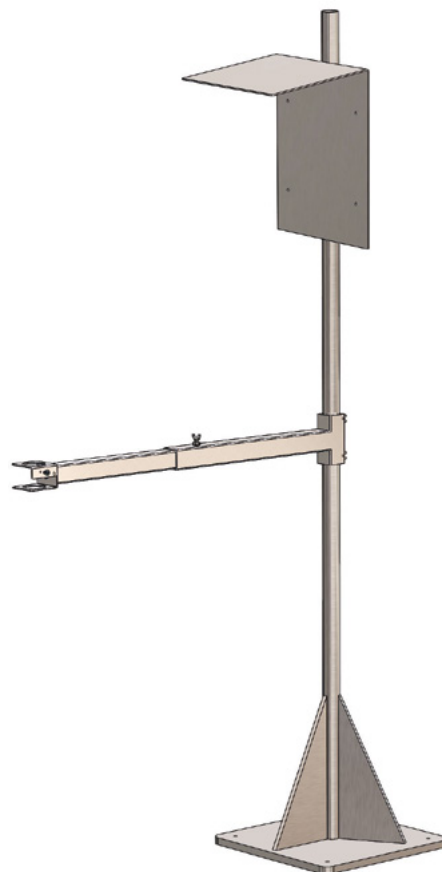
SENSOR HOLDER SUPPORT

JOINTED & FIXED VERSION



BRACKET FOR SENSOR HOLDERS & ULTRASOUND SENSORS

- SS316 material
- Available with fixed or swivelling arm
- 800, 1400 mm or telescopic length
700...1200 mm arm
- U or L bracket for sensor holders/
ultrasound sensors



JOINTED SUPPORT

- Black PVC articulated parts and sensor holder support
- SS316 plates and fixings
- SS316 fixing screws
- Suitable for supporting Chemitec Ø 42mm sensor holders, the articulated support rotates and tilts for multiple configurations

STANDING POLE SUPPORT

- Standing pole for floor mounting or poolside installation
- Designed for use with Ø 42 or 63mm immersion sensor holder
- Allows for secure, strong mounting



S305 INS

BRACKET FOR INSERTION SENSOR FOR TURBIDITY/SS



FEATURES

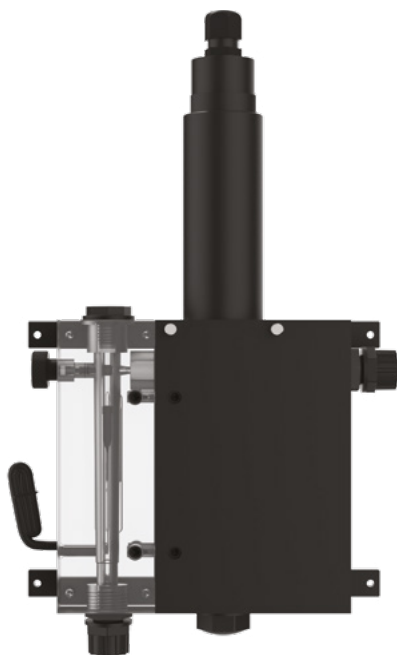
- Used for turbidity / suspended solids sensors
- Mounted onto pipes

TECHNICAL SPECIFICATION

| | |
|---------------|--|
| Body material | SS316 |
| Ball valve | DN 40 for extraction of the sensor without interruption of the process |
| Connection | Welded for mounting on pipe |
| Complete with | Safety sensor fixing brackets |

S305/M

BYPASS SENSOR HOLDER



FEATURES

- Modularity allows alternative sensors holders to be mounted
- No moving mechanical parts
- Easy emptying and cleaning

TECHNICAL SPECIFICATION

| | |
|----------------------------|---|
| Materials | Black PVC and plexiglass body, aluminium plate, NBR seals |
| Operating Temperature | 0...50°C |
| Maximum operating pressure | 6 bar |
| Flow rate | min 60l/h - max 100l/h |

PSS8

BYPASS SENSOR HOLDER

PSS8-A

Bypass sensor holder for three sensors
Ø 12mm

Pressure: up to 2 bar

Temperature: up to 50°C

Transparent vessel

pH range: 4,0...10 pH

Sensor types

pH and ORP (redox) 12 mm

pH and ORP (redox) 13.5 mm

Temperature: 12 or 13,5 mm

Conductivity: 12 or 13.5 mm

Oxygen: 13,5 mm



PSS8-A I

Bypass sensor holder for three sensors
Ø 12mm

Pressure: up to 2 bar

Temperature: up to 50°C

Black vessel

pH range: 2,7...12 pH

Sensor types

pH and ORP (redox) 12 mm

pH and ORP (redox) 13.5 mm

Temperature: 12 or 13,5 mm

Conductivity :12 or 13.5 mm

Oxygen: 13,5 mm



PSS8-B I

Bypass sensor holder for one sensor
Ø 35 or 42mm

Pressure: up to 2 bar

Temperature: up to 50°C

Black vessel

pH range: 2,7...12 pH

Sensor types

Turbidity 42 mm

Oxygen 35 mm



PSS3 • SPP • SPPFIL

PROBE HOLDER FOR DIRECT INSERTION INTO PIPE



PSS3



SPP



SPPFIL

FEATURES

Insertion in-line probe holder with different materials and mechanical arrangements for a wide range of plant applications

TECHNICAL SPECIFICATION

| Model | Connection | Sensor connection | Maximum temperature | Maximum pressure | Materials |
|--------|------------------|--------------------|---------------------|------------------|------------|
| PSS 3 | ½" G.M | PG 13.5 or Ø 12 mm | 60°C | 6 bar | PVC |
| SPP | 1" G.F | PG 13.5 | 60°C | 16 bar | PP and PVC |
| SPPFIL | ¾" or 1" 1/4 G.M | PG 13.5 | 80°C | 16 bar | PP |

PANELTEC SERIES

PRE-ASSEMBLED PANELS

FEATURES

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

Controllers, sensors and measuring cells are pre-assembled on polypropylene panels. The only required operations are the links to the electric and hydraulic networks.

Paneltec is a modular system that can be expanded to measure up to four parameters with a relevant controller.

The standardised 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.



WORLDWIDE DISTRIBUTOR NETWORK

Thanks to flexible and reliable instruments, user-friendly solutions, outstanding technical skills and continuous improvement, we are selected as an ideal partner and continue to increase our international presence.



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