



### INNOVATIVE EXPERIENCE



#### THIRTY YEARS OF LEADERSHIP

EMEC ranks among Italy's top, consolidated industrial actors in the field of electronic control systems for fluids metering and management applications. Our products are designed and manufactured for both industrial and small-scale applications.

We are an all-Italian business entity with a clear strategic outlook, right from the outset, striving to merge design innovation with a long-term industrial footing. Our high-precision, hi-reliability products are entirely designed and assembled at our Rieti facilities.

EMEC's reputation as a market leader is expanding both in Italy and internationally, boosting demand for our quality, Italian designer products.

#### **QUALITY FIRST**

Our products are supported by passion and a solid industrial background. At EMEC, we have always sought to identify and seize investment opportunities, committing our resources to technology and human resources.

That key to our success - and what sets us apart from market competitors - is our complete control of the production cycle, reliant on specialist business setups and resources. Our approach feeds into all aspect ahead of end product delivery: systems design, component production and assembly, software programming and final testing. In line with total quality commitments, we provide installation and maintenance specialists with up-to-date training for both our household and industrial products.

Our retail and commercial units operate with a technical mindset, encompassing a firm grounding in all aspects of design and production; as such, they stimulate product innovation and enhancements based on Customer requirements, feedback and field experience. That approach makes us ideal partners when it comes to delivering targeted solutions to specific requirements. Our claims are anything but overstated: complete control, to us, is the only viable approach to ensuring total product quality and effective service delivery.

#### A CONSTANLY EVOLVING WORLD

Our 30-year industrial footing has bred constant improvements in all our products, expanding range and functions. Our range of products is currently implemented in a broad range of settings:

- Pools
- Saunas
- Industrial water treatment
- Drinking water treatment
- Irrigation
- Chemical industry
- Processing industry
- Cooling towers
- Refineries
- Car wash



#### 100% MADE IN ITALY

All our products are manufactured in our factory in Italy.

#### **SUSTAINABILITY**

Respecting and safeguarding the environment are the core values underpinning our business. In keeping with that commitment we engage in and promote all actions designed to curb the environmental impact of our processes, products and raw materials, on a life-cycle basis. Our company implements an Environmental Management System compliant with UNI ENI ISO 14001 standards, subject to ongoing updates.

Our goal is to curb atmospheric emissions, rationalise water consumption and enact appropriate waste management policies. Environmental impact assessments cover new products, process innovations and public tenders.

We are committed to providing our employees and staff with appropriate information and training concerning our company policy and its implementation with respect to both the workplace and our products.

#### **CERTIFIED SKILLS AND VALUES**

EMEC's values and reliability are the result of a long-standing commitment to quality and detail. We testify to that commitment through ongoing human resources training, rigorous abidance by production benchmarks, and concerted efforts to curb all employee health hazards.

Our pledge is a firm one and is backed by our policy implementation and investment goals. Our global quality approach matches our market standing and is certified by the world's leading certification institutes.









#### **EMEC WORLDWIDE**





#### **WARRANTY**

All our solenoid pump membrane have 5 years warranty.

#### **PRODUCT DESIGN**

Design underpins the production process, driving each and every aspect of our work at EMEC. Our every effort is geared towards delivering a timely, accurate and effective response to our customers' requirements. The resources allocated to our design and development division reflect that: close to 10% of our company's human capital. Our in-house engineers and technicians design and develop software and hardware, as well as test hydraulic and mechanical components.

#### **OUTSTANDING PROFESSIONALS**

Our in-house professionals carry unparalleled qualifications, gained through years of experience and dedication. Our team boasts years of hand-on experience and regularly takes part in ongoing professional training, allowing us to be on top of chemical handling and industry developments. EMEC offers its clients highly trained, skilled professionals, whose proven credentials and wealth of experience are nothing less than leading-edge.

#### **PRODUCTION**

The high standards to which we deliver, on a daily basis, both our services and products, comes from our uncompromising dedication to quality. Total quality is our industrial hallmark, and quality is what sets our products apart from the broader market.

#### WORKSHOP

With on-site manufacturing facilities we are a notch above the competition. At EMEC we take pride in ensuring full internal control over all aspects of production. As much as it implies an onus, product reliability is our foremost pledge, one that cannot be delivered by outsourcing the production of key product components.

Our workshop's capabilities are also crucial to the design stage, ensuring full control over product and systems development and customization, offering customers a complete solution to their requirements.

#### **ASSEMBLY**

Our unparalleled experience and professional know-how also come to bear during the delicate assembly stage, where high quality components come together to form top-of-the-range products. Our components list features as many as 40,000 items: a figure which, on its own, testifies to the scale of our commitment to resources and standards.

#### TEST CENTER

Low quality isn't an option for us. Substandard products defy efforts to secure a market standing, generate the added burden of production recalls and inevitably compromise subsequent product placement.

Our efforts to apply rigorous self-assessment standards are reflected in the quality of our products. Each and every component is subject to rigorous internal testing, with three layers of testing contributing to assembled product reliability. Such stringent standards ensure significantly inferior damage probability, heightened lifetime and optimal operation of our products.

















#### **SALES**

Our solid customer base is proof of our ongoing commitment to delivering reliable products to high price-quality standards. On top of that, our clients can rely on our constant support leading up to and after product purchase. Pre- and post-sales services address all of our customers' product requirements and potential customization needs.

#### CUSTOMI7 ATION

Total control over production allows us to offer clients a broad set of customization options, ranging from individual branding and product component options, to substantial hardware and software departures from standard product specifications.

#### SALES NETWORK

As sales network partners you are part of the broader EMEC project, you're not just sales agents. Our sales managers boast a firm technical grounding and in-depth knowledge of the production cycle, offering client focused, practical insights into our product range. Our every effort is geared towards offering customer-led solutions, establishing full-fledged partnerships with our clients. At EMEC we exceed our role as suppliers, focusing on solving as well as preventing product issues.

#### SALES DESK

Our sales department's back office ensures that every aspect of product supply, from order through to delivery, runs smoothly. Any issues or problems arising during the course of supply are dealt with in timely fashion, cutting any potential delays to a minimum. Our sales desk's efficient handling of client inquiry translates into 40% of orders being adapted during the first contact stage. EMEC has a close to zero customer-loss record.

#### **POST-SALES ASSISTANCE**

Following delivery we provide ongoing support for our products, ensuring onsite maintenance and inspection services, as well as remote support. Our Max5 system, for instance, allows us to provide Sydney-based clients with immediate software updates direct from our Rieti office via remote PC applications. We provide real-time, multi-language customer assistance during out-of-office hours.

#### **TRAINING**

At EMEC we fully understand the complexity of each industry's ever-changing challenges and that the products we develop need to be handled by qualified, trained personnel. That understanding inspired the establishment of the EMEC Training Program: a scheme built around modules, addressing topics spanning technology and chemistry. Our most senior, expert sales account managers are entrusted with providing the training. At EMEC we believe that experienced account managers can exceed their sales role and deliver value-added service to our customers.

#### TRAINING WITH A PURPOSE

Anyone who has taken part in our Program knows that the scope of training goes well beyond providing static learning requirements. EMEC training courses seek to target issues of practical consequence, providing insights into the workings of our products, building solution-oriented approaches.

1. METERING PUMPS

2. LOTUS - CHLORINE DIOXIDE GENERATOR

3. INSTRUMENTS

4. PROBES

5. CUSTOMIZED SOLUTIONS



## PRISMA

Stepper motor-driven

Stepper motor Multifunction control High strength PTFE membrane -5- year warranty Foot mounted LCD display





#### STEPPER MOTOR-DRIVEN

SLOW SUCTION MODE

MULTIFUNCTION

#### **WORKING MODES**

CONSTANT CONSTANT with external input

MLQ PAUSE-WORK WEEKLY

External/Manual BATCH

#### **PUMP HEADS**







**PVDF** 

AISI316L

**PMMA** 





Level Probe with foot filter

1/2" or 3/4" Injection valve





Flow rate up to 80 L/hr, working pressure up to 20 bar

#### **FEATURES**

Thanks to the new stepper motor and to the MultiFunction software, PRISMA dosing pumps offer complete control over dosing speeds and working modes as well as great flexibility and repeatability, meeting even particularly complex application needs. PRISMA is also equipped with Level control, Alarms and Stand-by, while available working modes include Constant, Constant with external input, ppm, %, mlq, Pause-work, Weekly, mA, Pulse, Volt, external Batch and manual Batch.

PRISMA dosing pumps feature the Encoder control knob for quickly browsing through the configuration menus and a large display to easily control and regulate the working parameters. By changing background colors PRISMA backlight display is capable of signaling different working status: pump running (green); stand-by (white); warning condition (yellow); alarm condition (red).

#### TURNDOWN

PRISMA stepper motor-driven pumps give you the most accurate control over the stroke speed, providing an outstanding turndown ratio of up to 4800:1. It means PRISMA, through its digital multifunction control, can split up the dosing process into a maximum of 4800 steps in order to offer the most homogeneous and precise distribution of the product to dose according to the required application.

#### SLOW MODE

Extreme versatility of PRISMA dosing pumps is also due to Slow Mode function. With Slow Mode enabled you can reduce the suction speed to 75, 50 or 25% of the normal speed, making easier, more reliable and extremely accurate the priming and the dosing even when you have to handle particularly viscous liquids.







#### CAPACITY RANGE

PRESSURE	CAPACITY	PVDF pump head	PVDF injection hose	Suction hose
20 bar	5 l/h	L	4 x 6	4 x 6
10 bar	13 l/h	М	6 x 8	6 x 8
5 bar	30 l/h	N	8 x 10	8 x 10
2 bar	80 l/h	N	8 x 10	8 x 10

# **AMS Series**

Flow rate up to 60 L/hr, working pressure up to 25 bar

Manual stroke length adjustment Manual or self venting High strength membrane -5- year warranty Horizontal mounting PVDF pump head



AMS MF digital multi-function

AMS PH built-in pH reading and adjustment built-in ORP reading and adjustment



AMS PLUS constant / constant 1-10

multiplier 1-10

divider 1-10 / 1-100 / 1-1000

mA current signal

AMS CO PLUS constant. Pulses divider 0/10.

AMS CL PLUS constant whith level control. Pulses divider 0/10.

# PUMP HEADS SUPPLIED ACCESSORIES Level Probe with foot filter Injection valve



# **KMS Series**

Flow rate up to 18 L/hr, working pressure up to 20 bar

Manual stroke length adjustment Manual or self venting High strength membrane -5- year warranty Horizontal mounting PVDF pump head





KMS DC digital constant

KMS MF digital multi-function

built-in pH reading and control KMS PH

KMS RH built-in ORP reading and control

KMS EN weekly timer and solenoid valve control

KMS CL built-in chlorine reading and control K PLUS constant / constant 1-10

multiplier 1-10

divider 1-10 / 1-100 / 1-1000

mA current signal

K CO PLUS constant with divider 1/10

K CL PLUS constant with level control and divider 1/10

#### **PUMP HEADS**



**PVDF** 



PP



AISI316L



**PMMA** 



LPV





Level Probe with foot filter



1/2" Injection valve

# TMS Series

Flow rate up to 100 L/hr, working pressure up to 20 bar

Electronic flow adjustment Manual or self venting High strength membrane - 5 - year warranty Wall mounting PVDF pump head



TMS DC digital constant

TMS MF digital multi-function

TMS PH built-in pH reading and control
TMS RH built-in ORP reading and control

TCO constant

TCL constant with level control

#### **PUMP HEADS**









1/2" or 3/4" Injection valve



# **MS** Series

Flow rate up to 16 L/hr, working pressure up to 20 bar

Electronic flow adjustment Manual or self venting High strength membrane - 5 - year warranty Wall mounting PVDF pump head Also available quiet and ultra-quiet models



VMS MF digital multi-function

VMS PO built-in pH or ORP reading and control (set by menu)

weekly timer and optional solenoid valve control VMS EN

VCO

constant VCL constant with level control

#### **PUMP HEADS**



**PVDF** Self venting





**PVDF** Self venting Manual venting Manual venting



Level Probe with foot filter



1/2" Injection valve

# **WDPHxx** Series

Flow rate up to 10 L/hr, working pressure up to 7 bar

Digital programmable controller with double metering pumps

Wall mounting

Easy control by ENCODER wheel with EASY-NAV rotation

Double PVDF pump head

RS485 output for remote control



WDPHRH acid (pH) and disinfectant (ORP)

WDPHCL acid (pH) and chlorine

WDPHCF acid, flocculant (gr/h) and 230 VAC output for chlorine

**WDPHCA** 

acid, anti-algae and 230 VAC output for chlorine

acid (pH) and active oxygen

#### **PUMP HEADS**



**PVDF** Self venting





Self venting Manual venting Manual venting

#### **SUPPLIED ACCESSORIES**



with foot filter





1/2" Injection valve



# **RAC** Series

Car Wash

Compressed Air driven pumps 3 installing modes: horizontal, wall and DIN rail mounting Multiple pumps installation (side by side) Single injection control knob







Pneumatic RAC

RACV Pneumatic with electrovalve Pneumatic with priming button **RACP** 

#### **PUMP HEADS**





Diaphragm

#### **INSTALLING OPTIONS**





Horizontal





Foot filter

1/2" Injection valve



### 771US

Flow rate up to 1000 l/h, working pressure up to 10 bar



#### PRIUS D MF Motor driven diaphragm

- PTFE diaphragm
- 230 VAC single phase power supply
- Wide display with clear information and easy navigation system with the click and turn wheel.
- Gear box can be rotated on the field 90 degrees for optimal installation
- Operating modes: Constant ppm % mlq pause-work pulse weekly mA Volt and Batch
- Level input
- Stand-by
- MODBUS (optional)
- IP65 Motor (optional)

#### **PUMP HEADS**





Flow rate up to 320 l/h, working pressure up to 10 bar



#### PRIUS P MF

Plunger metering pump

- Ceramic or SS plunger
- 230 VAC single phase power supply
- Wide display with clear information and easy navigation system with the click and turn wheel.
- Gear box can be rotated on the field 90 degrees for optimal installation
- Operating modes: Constant ppm % mlq pause-work - pulse - weekly - mA - Volt and Batch
- Level input
- Stand-by
- MODBUS (optional)
- IP65 Motor (optional)

#### **PUMP HEADS**





**PLUNGERS** 



PP

AISI316L

CERAMIC (SIALOX96)

**AISI420** 

### ralus

Flow rate up to 1000 l/h, working pressure up to 10 bar





- Solid Teflon diaphragm pump heads with built in priming valve
- Stroke length adjustment
- Single and three phase motors.
- 0.18, 0.37 and 0.55 kW motors sizes



- 50 and 60 Hz motors
- Foot valve with filter, injection valve and tubing included in the pumps with capacities up to 240 l/h

#### PUMP HEADS





Flow rate up to 508 l/h, working pressure up to 10 bar



#### PRIUS P

Motor driven plunger metering pump

- Ceramic and SS plungers
- SS and PP pump heads
- Stroke length adjustment
- Single and three phase motors

- 0.18, 0.37 and 0.55 kW motors sizes
- 50 and 60 Hz motors

#### PRIUS P - PUMP HEADS



PRIUS P - PLUNGERS



AISI316L PP

CERAMIC (SIALOX96)

AISI420



Flow rate up to 170 l/h, working pressure up to 100 bar





#### PRIUS D HIGH PRESSURE & PRIUS D HIGH PRESSURE ATEX 2D/2G

Motor driven diaphragm metering pump

- SS pump head
- Solid Teflon diaphragm
- Stroke length adjustment
- Single and three phase motors

**( € €** II 2 G c IIB T3, T4

CE ( II 2 D IIIC T125°C, resp T135°C

#### PUMP HEADS



AISI316L

# 771US

Flow rate up to 1000 l/h, working pressure up to 10 bar





PTFE diaphragm / Ceramic or SS plunger

Motor driven diaphragm metering pump

- Stroke length adjustment
- Three phase motors
- Aluminium enclosure
- Stainless steel liquid ends (AISI 316)



**(€ €** II 2 G c IIB T3, T4

**( € €** II 2 D IIIC T125°C, resp T135°C

CEEX

II 3D Ex h IIIC T200°C, resp T135°C Dc

CEEX

II 3G Ex h IIB T3, T4 Gc

#### PUMP HEADS (PRIUS D ATEX)



**PVDF** 



PP





AISI316L







PUMP HEADS & PLUNGERS (PRIUS P ATEX)





PP

AISI316L

**CERAMIC** (SIALOX96)

**AISI420** 

# Pumps Accessories

Reliable products

#### **CHEMICAL TANKS & SAFETY BUNDS**



Chemical tanks made of polyethilene, UV resistant with safety bunds.

For dosing pumps and mixers.



Our chemical tanks can be assembled with:

- 1 Dosing pump (or 2 without mixer)
- 1 mixer
- 1 water loading faucet
- 1 outgassing valve
- 1 or 2 suction lances
- 1 water purging faucet
- 2 level probes with filter (without mixer)

Assembling made with two dosing pumps must use a double-suction lance and KDPV kit for connecting both the pumps.



High speed mixer 1400 RPM. AISI shaft-PVC coated, different lengths available (630-730). Marine impeller, diameter 70mm.



Slow speed mixer 65/200 RPM. AISI shaft-PVC coated, different lengths available (630-730mm).

3-blade impeller, diameter 150mm.



Manual mixer. PVC shaft, different lengths available (450-650 and 770-1100 mm). Impeller diameter 130 mm.



Manual mixer. PVC shaft, different lengths available (450 mm).



# **Pumps Accessories**

Reliable products



Suction lances with level control, for tanks up to 1000 liters.



1/2" injection lance for dosing sodium hypochlorite in hard water. Self cleaning. FKM B o-ring. PVDF or Stainless Steel body.

#### MF MULTIFUNCTION VALVE



Multifunction valve (pressure, safety, antisyphon and bleed) 1/2" connections for different hoses diameters. FKM B or EPDM o-ring. PVDF body.





Flow sensor with PVDF body, N.C. contact and adjustable sensitivity.

Max 45°C - 25 bar



Woltmann water pulse sender water meter, dry dial.

Max 60°C - 16 bar



Cold water pulse sender water meter.

Max 30°C - 16 bar

CATFI - dry dial



Woltmann water pulse sender water meter, dry dial and PTFE internal/ external coating.

Max 60°C - 16 bar





Cold water pulse sender water meter and PTFE internal/external coating.

Max 30°C - 16 bar

## Chlorine dioxide generator





#### **ADVANTAGES**

- · Reaction at controlled pressure
- High degree of stability of the chlorine dioxide solution
- No CIO, loss due to closed reaction chamber
- Diluted chemicals

Also available equipped with a CIO<sub>2</sub> probe (SCL2 or SCL17) or a Redox probe (ERH), a probe holder and a filter.

#### **GAS SENSOR OPTION**

LOTUS MINI with gas sensor detection.

LOTUS MINI is an all-round solution for all your need for water disinfection. It is safe and solid and can also be controlled remotely via the web application ERMES through a 2G/3G modem or a lan adapter, while Modbus is available as option. Its elegant cover preserves the cleanliness of the inner components and their integrity. Chlorine dioxide produced by LOTUS MINI can be proportional to the circulating water flow or based on a measured setpoint. There is no storage of chlorine dioxide therefore there is no chlorine dioxide gas or concentrated solutions outside of the process application.

#### RANGE: 8-20 g/h MAX CAPACITY: 480 g/day

#### **FUNCTIONS**

- Instantaneous CIO, production
- ClO, dosing in proportional mode
- Flow control input (flow alarm)
- Tank level controls (level alarms)
- · Water meter input
- · Stand-by input
- Real time production data
- Pumps and SEFL flow sensors monitoring
- Permanent data storage with system data log (on Logbook menu)
- ERMES communication
- USB data log (option)
- Ethernet module (option)
- GSM internal modem (option)
- MODBUS module (option)
- WIFI module (option)
- Service due date
- mA output

- ClO, concentration: 2 g/l
- Flow control input (flow alarms)
- Tank level control (level alarms)
- HCl (red), NaClO<sub>2</sub> (blue) and dilution water (grey) metering pumps
- 3 SEFL pump dosing check
- MFKT/V multifunction valve as pressure, safety, anti-syphon and bleed valve
- PVC reaction chamber
- ASA (Acrylonitrile Styrene Acrylate) or fiber glass enclosure
- IP65 protection (NEMA4x) of LOTUS control instrument and pumps
- Wheel control for easy programming
- Working temperature: 0-45°C (32-110°F)





**ADVANTAGES** 

- · Reaction at ambient pressure
- Multi-point injection
- No emission
- Diluted chemicals

Also available equipped with a ClO<sub>2</sub> probe (SCL2 or SCL17) or a Redox probe (ERH), a probe holder and a filter.

#### **GAS SENSOR OPTION**

LOTUS MINI with gas sensor detection.

LOTUS AIR is a pressure-less chlorine dioxide generator useful for those applications in which several injection points are required. Chlorine Dioxide is produced from diluted base chemicals: acid-chlorite process by Hydrochloric Acid (HCl 9%) and Sodium Chlorite (NaClO2 7,5%).

Chlorine dioxide produced by LOTUS AIR is stocked into a tank and then dosed proportionally to the request. It can also be controlled remotely via the web application ERMES through a 2G/3G modem or a lan adapter, while Modbus is available as option. Its elegant cover preserves the cleanliness of the inner components and their integrity.

RANGE: 10-60 g/h MAX CAPACITY: 1440 g/day

#### **FUNCTIONS**

- BATCH chlorine dioxide production
- ClO<sub>3</sub> dosing in proportional mode
- · Alarms: products, water, emptying
- Water meter input
- · Stand-by input
- Real time production data
- Pumps and SEFL flow sensors monitoring
- Service due date
- ERMES communication
- USB data log (option)
- Ethernet module (option)
- GSM internal modem (option)
- MODBUS module (option)
- WIFI module (option)
- CIO<sub>2</sub> concentration in water measurement and control
- mA output

- ClO<sub>2</sub> concentration: 2 g/l
- HCl (red), NaClO<sub>2</sub> (blue) and ClO<sub>2</sub> (grey) metering pumps
- MFKT/V multifunction valve as pressure, safety, anti-syphon and bleed
- Double chamber: reaction and storage
- ASA (Acrylonitrile Styrene Acrylate) or fiber glass enclosure
- IP65 protection (NEMA4x) of LOTUS control instrument and pumps
- Wheel control for easy programming
- Working temperature: 0-45°C (32-110°F)

## Chlorine dioxide generator





**ADVANTAGES** 

- · Reaction at controlled pressure
- · Large-scale applications
- High degree of stability of the chlorine dioxide solution
- No CIO<sub>2</sub> loss due to closed reaction chamber
- Diluted chemicals

Also available equipped with a  ${\rm CIO_2}$  probe (SCL2 or SCL17) or a Redox probe (ERH), a probe holder and a filter.

#### **GAS SENSOR OPTION**

LOTUS MAXI with gas sensor detection.

LOTUS MAXI is one of the largest product among EMEC Chlorine Dioxide generators and is used in all those cases in which there is need of a big production, such as large water treatment plants.

Chlorine dioxide produced by LOTUS MAXI is set to be proportional to the circulating water flow or based on a setpoint, it is then dosed into the water flow. It can also be controlled remotely via the web application ERMES through a 2G/3G modem or a lan adapter, while Modbus is available as option.

RANGE: 80-1000 g/h MAX CAPACITY: 24000 g/day

#### **FUNCTIONS**

- Instantaneous ClO<sub>2</sub> production
- ClO, dosing in proportional mode
- Flow control input (flow alarm)
- Tank level controls (level alarms)
- · Water meter input
- · Stand-by input
- Real time production data
- Pumps and SEFL flow sensors monitoring
- Permanent data storage with system data log (on Logbook menu)
- ERMES communication
- USB data log (option)
- Ethernet module (option)
- GSM internal modem (option)
- MODBUS module (option)
- WIFI module (option)
- · Service due date
- mA output

- ClO, concentration: 2 g/l
- Flow control input (flow alarms)
- Tank level control (level alarms)
- HCl (red) and NaClO, (blue) metering pumps
- 3 SEFL flow sensors as security
- MFKT/V multifunction valve as pressure, safety, anti-syphon and bleed
- PVC reaction chamber
- ASA (Acrylonitrile Styrene Acrylate) enclosure
- IP65 protection (NEMA4x) of LOTUS control instrument and pumps
- Wheel control for easy programming
- Working temperature: 0-45°C (32-113°F)





LOTUS EASY is the best solution if you want a simple but professional way to produce chlorine dioxide, thanks to an integrated All-in-One Controller eqipped with two metering pumps.

Chlorine dioxide produced by LOTUS EASY can be proportional to the circulating water flow or based on a measured setpoint, it is then dosed into the water flow. There is no storage of chlorine dioxide therefore there is no chlorine dioxide gas or concentrated solutions outside of the process application.

LOTUS EASY is designed so that the reaction to produce chlorine dioxide takes place in a reaction chamber. Multi function valves on injection points ensure security of the reaction chamber.

#### RANGE: 8-80 g/h MAX CAPACITY: 1920 g/day

#### **FUNCTIONS**

- Instantaneous CIO, production
- CIO, dosing in proportional mode
- Level alarms
- · Water meter input
- Stand-by input
- Real time production data
- Pumps and SEFL flow sensors monitoring
- Service due date
- By-pass flow detection
- mA (0-20mA) input

#### **ADVANTAGES**

#### · Reaction at controlled pressure

- High degree of stability of the chlorine dioxide solution
- No CIO, loss due to closed reaction chamber
- Diluted chemicals

- ClO<sub>2</sub> concentration: 2 g/l
- Level alarms
- 2 flow sensors
- MFKT/V multifunction valve as pressure, safety, anti-syphon and bleed
- Static mixer
- PVC reaction chamber
- Working temperature: 0-45°C (32-113°F)
- 600 x 800 mm panel mounting
- By-pass diametre: DN 40

## Chlorine dioxide generator





#### **ADVANTAGES**

- Reaction at controlled pressure
- Large-scale applications
- High degree of stability of the chlorine dioxide solution
- No ClO<sub>2</sub> loss due to closed reaction chamber
- Diluted chemicals

#### **GAS SENSOR OPTION**

LOTUS ULTRA with gas sensor detection.

LOTUS ULTRA is the largest product among EMEC Chlorine Dioxide generators and is used in all those cases in which there is need of a big production, such as large water treatment plants.

Chlorine Dioxide is produced from concentrated base chemicals: acidchlorite process by Hydrochloric Acid (HCl 33%) and Sodium Chlorite (NaClO2 27%). Chlorine dioxide produced by LOTUS ULTRA is set to be proportional to the circulating water flow or based on a setpoint, it is then dosed into the water

#### RANGE: 2000 gr/h MAX CAPACITY: 48000 gr/day

- Instantaneous CIO, production
- ClO2 dosing in proportional mode
- Flow control input (flow alarm)
- Tank level controls (level alarms)
- Water meter input
- Stand-by input
- Real time production data
- Pumps and SEFL flow sensors monitoring
- Permanent data storage with system data log (on Logbook menu)
- Service due date
- LOTUS control instrument
- HCl (red) and NaClO2 (blue) metering pumps
- 2 pumps for dilution water (grey)
- 4 SEFL flow sensors as security
- MFKT/V multifunction valve as pressure, safety, anti-syphon and bleed valve
- PVDF reaction chamber
- IP65 protection (NEMA4x) of LOTUS control instrument
- · ENCODER wheel control
- Working temperature: 0-45°C (32-110°F)
- mA output
- ClO, probe reading
- Temperature probe reading (probe and accessories not included)



1 Apr 2017

Constant 7 Apr 4.66

94.7 7.47 4.66

SET 1 Apr 2017

Constant 7 Apr 1 Apr 2017

SET 1 Apr 2017

Constant 7 Apr 2017

SET 1 Apr 2017

Constant 7 Apr 2017

SET 1 Ap

Cooling towers

#### **5 SELF INPUT CONFIGURATION CHANNELS**

CONDUCTIVITY - CONTACT OR INDUCTIVE

рН

ORF

CHLORINE

**TRACERS** 

MA INPUT

#### **REMOTE CONTROL**

REALTIME PARAMETERS READING AND REGULATION

**SETTINGS - EXPORT & IMPORT** 

REMOTE SOFTWARE UPDATE

CENTURIO TOWER is the control instrument in cooling tower water treatment, with the ease and safety you need and with the stylish box designed by Giugiaro Design. CENTURIO is equipped with a Linux operating system, a high-performance ARM A5 microprocessor, a large, touchscreen, color display, in order to give you total and simultaneous control, also with real-time graphs, over 5 channels and the most important parameters for cooling tower water treatment, such as conductivity, chlorine, pH or ORP.

CENTURIO TOWER can connect to the internet and then be safely configured and managed with ERMES wherever you are by using any device and any browser. It is also equipped with MODBUS serial communication to be connected to other devices on RS485 networks and TCP/IP MODBUS.

#### **HARDWARE**

- -Large 4.3" LCD Full Color
- Touchscreen Display
- High-performance ARM A5 microprocessor
- Large capacity storage for logging

#### **SOFTWARE**

- ERMES Remote Control
- Multi-language
- Cross platform software
- Communication WIFI 3G ETHERNET MODBUS
- High performance with LINUX operating system

#### **PARAMETERS**

- CENTURIO TOWER with conductivity measurement
- 5 Modular channels to combine
- MODBUS TCP/IP and RTU module included
- ETHERNET module included
- USB module included
- WIFI or 3G module as option
- 0-20 mA input module as option to control different parameters remotely

#### **BOX**

- Box design by GIUGIARO

#### **DESIGN**

- Box design by GIUGIARO DESIGN
- New "EASY-MOUNT" system
- Designed for mounting on pipes
- Opening with side zipper and captive screws



Water treatment Cooling towers Industrial chemical dosing Depuration Swimming pools disinfection



#### Factory parameter configuration.

- pH
- ORP (ORP)
- Chlorine (total, free and combined)
- Chlorine dioxide
- Hydrogen Peroxide
- Ozone
- Peroxyacetic acid
- Turbidity
- Conductivity (contact or inductive)
- Dissolved oxygen
- Temperature
- Bromine

Its versatility allows different programming solutions: each channel can be programmed on user needs. All information is provided through a widescreen LCD display (240x64).

#### Instrument has:

- 6 setpoints output (on/off, PID or PWM) and 6 proportional output
- 1 Temperature setpoint
- 1 probe cleaning output
- 5 level tank input
- 5 daily/weekly timer for multiple options like flocculant, algicide, lights...
- Water meter input for water restore
- Temperature probe input
- Alarm output
- Wheel with "EASY-NAV" control
- ERMES web communication
- Local & Remote Controlled
- Multiple probe readings can be viewed
- Probe readout menu
- Probes check up
- Permanent data storage with system log
- Stand-by input
- Alarms: damaged probes max dosage 2 overflow alarms per channel 5 product level alarms flow alarm
- Totalizer for instant flow rate

#### **OPTIONS**

MODBUS protocol



# LD Multichannel & PLUS Series

2 channels plus 1 for temperature



Cooling towers Industrial-level chemical dosing Depuration Agriculture Swimming pools disinfection

Water treatment

#### Factory parameter configuration.

- Hg •
- ORP
- Chlorine/Bromine
- Conductivity
- Inductive Conductivity
- Chlorine Dioxide
- Hydrogen peroxyde
- Ozone
- Peracetic acid
- Turbidity

Controller for acid (pH) and a second parameter. Wheel with "EASY-NAV" control, Flow control, Local & Remote Controlled, ERMES web communication, Permanent data storage with system log, PT100 temperature probe, Stand-by input. Alarms: damaged probes - max dosage - threshold - levels - flow - reading. Programmable delay at dosing start-up (up to 60 minutes), Priority dosage, Probe readout menu, Probes check up, Multiple probe readings can be viewed. Working modes: on/off, impulsive proportional, proportional PWM and fixed PWM. Automatic or manual dosing activity, Chlorine/Bromine selection with SBR (LDPHCL), Flocculant pump control, mA output (option).

#### Options:

- USB for data log recording
- Current Output (0/4 20 mA)
- Ethernet
- 2G/3G modem
- MODBUS protocol
- WIFI module

#### **PLUS Features:**

- 5 relais (2 setpoint; alarm; probe cleaning; circulation)
- Probe cleaning
- PID
- Feed forward

LDPHRH - LDPHRH PLUS pH (0-14) - ORP (0-1000mV) - °C (0-200)

LDPHCL\* - LDPHCL PLUS\* pH (0-14) - Chlorine (0-10 mg/l Cl<sub>2</sub>) - °C (0-200)

LDPHBR - LDPHBR PLUS pH (0-14) - Bromine (0-10 mg/l Br) - °C (0-200)

LDPHO2 - LDPHO2 PLUS pH (0-14) - O<sub>2</sub> (0-200 mg/l H<sub>2</sub>O<sub>2</sub>) - °C (0-200)

LDPHCD - LDPHCD PLUS pH (0-14) - Conductivity (depending on the probe) - °C (0-200)

LDPHCDIND - LDPHCDIND PLUS pH (0-14) - Inductive conductivity (0-3 mS|0-30mS|0-300mS) - °C (0-99,9)

LDPHTORBH - LDPHTORBH PLUS pH (0-14) - Turbidity (0-9999 NTU) - °C (0-99,9)

LD - Custom configurations on client request.

# Instruments

# LDS & PLUS Encoder Series

1 channel plus 1 for temperature

Water treatment
Cooling towers
Industrial-level chemical dosing
Depuration
Agriculture
Swimming pools disinfection



#### Factory parameter configuration.

- Hq •
- ORP
- Chlorine/Bromine
- Conductivity
- Inductive Conductivity
- Chlorine Dioxide
- Hydrogen peroxyde
- Ozone
- Peracetic acid
- Turbidity
- Dissolved Oxygen

Wheel with "EASY-NAV" control, flow control, local & Remote Control, ERMES web communication, permanent data storage with system log, PT100 temperature probe, Stand-by input, Alarms: damaged probes - max dosage - threshold - levels - flow, Programmable delay at dosing start-up (up to 60 minutes), Priority dosage, Automatic temperature compensation, Probe readout menu (LDSCDIND), Working modes: on/off, impulsive proportional, proportional PWM and fixed PWM, Automatic or manual dosing activity, mA output (option).

#### **Options for LDS and LDS PLUS:**

- USB for data log recording
- Current Output (0/4 20 mA)
- Ethernet
- 2G/3G modem
- MODBUS protocol
- WIFI module

#### **PLUS Features:**

- 5 relais (2 setpoint; alarm; probe cleaning; circulation)
- Probe cleaning
- PID
- Feed forward

LDSPH - LDSPH PLUS pH (0-14) - °C (0-200)

LDSRH - LDSRH PLUS ORP (0-1000mV) - °C (0-200)

LDSCL - LDSCL PLUS Chlorine (0-10 mg/l Cl<sub>2</sub>) - °C (0-200)

LDSCD - LDSCD PLUS Conductivity (depending on the probe) - °C (0-200)

LDSCDIND - LDSCDIND PLUS Inductive conductivity (0-3 mS|0-30mS|0-300mS) - °C (0-99,9)

LDSTORBH Turbidity (0-9999 NTU) - °C (0-99,9)

LDSTRC - LDSTRC PLUS Markers (0-9999 PPM) - °C (0-200)

LDSFL - LDSFL PLUS Fluorine (1E-5-1M) - Concentration (0-300 ppm) - °C (0-60)



Cooling towers

Up to 3 channels



#### **Features**

- Conductivity for blowdown
- 2 Timers for biocides
- Pre-bleed
- Lockout

#### Factory parameter configuration.

- pH
- ORP
- Chlorine
- Conductivity or Inductive conductivity
- Temperature

Easy control by ENCODER wheel with "EASY-NAV" rotation, Current Feed&Bleed display, Local & Remote Controlled, ERMES web communication, Simultaneous multiple view for probes reading, Permanent data storage with system log, Stand-by input, mA output (option). Working modes: on/off, impulsive proportional, proportional PWM and fixed PWM. Pre-bleed: Reduced water system conductivity before biocide dosing. Blow down: Discharge control on conductivity values, Lockout: Discharge valve locked for a settable time (after biocide dosage). Timeout: Maximum discharge valve opening time, Programmable delay at dosing start-up (up to 99 minutes), PT100 temperature compensation. Alarms: conductivity (high/low), Bleed timeout (conductivity not reached after set time), product level, flow, meter activity, not restored water.

#### Options:

- Conductivity inductive probe.
- USB for data log recording
- Current Output (0/4 20 mA)
- Ethernet
- 2G/3G modem
- WIFI module
- MODBUS protocol

#### **3 CHANNELS MODELS**

MTOWER PLUS CD/PH/CL controller for conductivity, pH and chlorine MTOWER PLUS CD/PH/RH controller for conductivity, pH, ORP

#### **2 CHANNELS MODELS**

MTOWER CD/PH controller for conductivity and pH
MTOWER CD/RH controller for conductivity and ORP
MTOWER CD/CL controller for conductivity and Chlorine

#### 1 CHANNEL MODELS

MTOWER CD controller for conductivity

# Instruments Panel instruments 1 channel with temperature

Water treatment
Cooling towers
Industrial-level chemical dosing
Depuration
Agriculture
Swimming pools disinfection

#### JA & JA PRO

96x96 RACK MOUNTING SINGLE READING



JA PH pH
JA RH ORP
JA CL Chlorine (Total - Free) - Chlorine Dioxide - Hydrogen
Peroxyde - Ozone - Bromine - Peracetic Acid
JA CD Conductivity
JA CD IND Inductive conductivity

JA control instruments are a series of rack mounting (96x96) single reading systems with temperature reading, mA module and native modbus (JA PRO). On/Off, impulsive proportional and PID are main working modes.

It can set and monitor: pH, ORP, chlorine (depending on the probe: total chlorine, free chlorine, chlorine dioxide, hydrogen peroxide, ozone, bromine or paracetic acid) and conductivity (uS/S - Ohm - TDS / PPM) with automatic range and probe / product selection ( $H_3PO_4 - H_2SO_4 - HNO_3 - HCI - NaOH - NaCI$ ).

#### **Fearures**

- 2 setpoints (on/off, proportional)
- flow alarm,
- flow sensor
- stand-by input
- 0-20 mA or 4-20 mA output
- proportional to read value and programmable in the reading range
- alarm output.

#### **Options**

- Avalilable low voltage 9-18VDC or 18-36VDC power supply.
- Available IP54 protection cover.

#### **PRO Features:**

- mA module
- MODBUS serial communication



Water treatment
Cooling towers
Industrial-level chemical dosing
Depuration
Agriculture
Swimming pools disinfection

1 channel with temperature

#### **J DIGITAL**

96x48 RACK MOUNTING SINGLE READING



J DIGITAL PH pH
J DIGITAL RH ORP
J DIGITAL CL Chlorine (Total - Free) - Chlorine Dioxide - Hydrogen Peroxyde - Ozone
- Bromine - Peracetic Acid
J DIGITAL CD Conductivity
J DIGITAL 03 Ozone
J DIGITAL CLO2 Chlorine Dioxide
J DIGITAL TEMP Temperature

J DIGITAL control instruments are a series of rack mounting (96x48) single reading systems that meets many applications.

It can set and monitor: pH, ORP, chlorine (depending on the probe: total chlorine, free chlorine, chlorine dioxide, hydrogen peroxide, ozone, bromine or paracetic acid), conductivity, ozone, chlorine dioxide and temperature. Probes are not included.

J DIGITAL models have: 2 setpoints (on/off, proportional), flow alarm, flow sensor stand-by input, 0-20 mA or 4-20 mA output proportional to read value and programmable in the reading range.

Available IP54 protection cover.

#### **DIN DIGITAL**

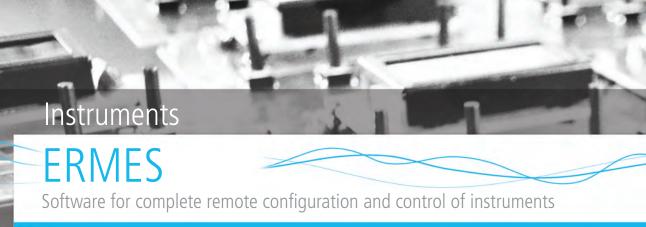
RAIL MOUNTING (6 modules) SINGLE READING



DIN DIGITAL PH pH
DIN DIGITAL RH ORP
DIN DIGITAL CL Chlorine (Total - Free) - Chlorine Dioxide - Hydrogen Peroxyde Ozone - Bromine - Peracetic Acid
DIN DIGITAL CD Conductivity
DIN DIGITAL O3 Ozone
DIN DIGITAL CLO2 Chlorine Dioxide
DIN DIGITAL TEMP Temperature

DIN DIGITAL control instruments are a series of **rail mounting (6 modules)** single reading systems that meets many applications. It can set and monitor: pH, ORP, chlorine (depending on the probe: total chlorine, free chlorine, chlorine dioxide, hydrogen peroxide, ozone, bromine or paracetic acid), conductivity, ozone, chlorine dioxide and temperature. Probes are not included.

DIN DIGITAL models have: 2 setpoints (on/off, proportional), flow alarm, flow sensor stand-by input, 0-20 mA or 4-20 mA output proportional to read value and programmable in the reading range.



#### **ADVANTAGES**

- reduces plant intervention and inspections.
- reports on the current status of the network's devices and connections (probes, outputs, alarms, setpoints)
- instantly gives notification of alarms by sms or email
- generates an up to date report of all plant instruments
- can display the instruments activity log as line graphs and charts and it can download it to your pc in excel or pdf format



#### HOW DOES ERMES WORK?

Enter the website **www.ermes-server.com** and, after registration, set your plants.

EMEC instruments with ETHERNET, 3G or WIFI Configuration will be immediatly connected and available for remote control.

Furthermore, with ERMES you can receive alarm messages via email, with different report option on instrument status. If your instrument has a 3G Configuration you can receive SMS report on your mobile. All EMEC latest controllers are ERMES ready:

- CENTURIO TOWER
- MAX5
- LD MULTICHANNEL
- LD WITH ENCODER (wheel)
- MTOWER
- WD
- JA

Software for complete remote configuration and control of instruments

#### AVAILABLE CONFIGURATIONS FOR CONTROL INSTRUMENTS



#### **BASIC**

RS485 output to link other EMEC instruments



#### **ETHERNET**

- RS485 output to link other EMEC instruments
- LAN connection to web app ERMES
- Alarm messages via email



- RS485 output to link other EMEC instruments
- 3G connection to web app ERMES
- via email Alarm messages

via SMS





- RS485 output to link other EMEC instruments
- WIFI connection to web app ERMES
- · Alarm messages via email



#### **USB**

- RS485 output to link other EMEC instruments
- **USB** connection for downloading of log files to be viewed on web app ERMES



#### **MODBUS**

Connection to other PLC instruments via RS485 or TCP/ IP for reading and modifying parameters

CONFIGURATION	FEATURES	CONNECTION TYPE	REQUIREMENTS	FUNCTIONS
BASIC	1	Local control	1	- RS485 link to EMEC instruments
ETHERNET	LAN	Remote control via ERMES web app (www.ermes-server.com)	LAN (RJ-45)	- RS485 link to EMEC instruments - ERMES Web App (PC, smartphone, tablet) - Email Alarm messages
3G	MOBILE	Remote control via ERMES web app (www.ermes-server.com)	Network Coverage	- RS485 link to EMEC instruments - ERMES Web App (PC, smartphone, tablet) - Email / SMS Alarm messages
WIFI	WIFI	Remote control via ERMES web app (www.ermes-server.com)	Network Coverage	- RS485 link to EMEC instruments - ERMES Web App (PC, smartphone, tablet) - Email Alarm messages
ADVANCED USB	USB	Download data log from controller to USB drive	1	- RS485 link to EMEC instruments - Data Log recording on USB drive
MODBUS	PLC	PLC plant management	1	- PLC connection output for reading and mo- difying parameters via RS485 or TCP/IP

You can CUSTOMIZE configurations adding external modules.

Mixed configurations allows to connect instruments to ERMES software in multiple ways: directly, locally and remotely. Those configurations extend connection capacity.

If you already use EMEC instruments and you want use ERMES web application, contact our customers service.

## Measurement systems

# Probes ==

### SCL - Closed amperometric cells

Free chlorine (organic and inorganic) for fresh water, total chlorine, chlorine dioxide, hydrogen peroxyde, ozone, peracetic acid, bromine.

## ECL - Open amperometric cells \_

Free chlorine (organic and inorganic) for fresh water and salt water.

### EPH - pH probes

Working temperature max 70° C Working pressure max 7 bar

### **ERH - ORP probes**

Working temperature max 70° C Working pressure max 7 bar

### **EOLUM - Dissolved Oxygen probes**

Working temperature max 50° C Working pressure max 10 bar

### **ETORBH** - Turbidity probes

Working temperature max 25° C Working pressure max 6 bar

### ETRC - Inline Fluorometer\_\_\_\_\_

Working temperature max 50° C Working pressure max 7 bar







## Measurement systems

# **Probes**



Working temperature max 70° C Working pressure max 7 bar

### **ECDHL** - Conductivity, Platinum electrodes

Working temperature max 70° C Working pressure max 7 bar

## ECDC - Conductivity, Graphite electrodes

Working temperature max 60° C Working pressure max 7 bar

### ECDI - Conductivity, Stainless Steel electrodes

Working temperature max 60° C Working pressure max 7 bar

### **EICD** - Conductivity Stainless Steel probes

Working temperature max 130° C Working pressure max 15 bar

### **ECDIND PT - Inductive Conductivity probes**

Measuring range up to 300,00 mS

Working temperature max 85° C

Working pressure max 8 bar

L 151.00 mm Ø 44.70 mm

## **ECDSIND PT - Inductive Conductivity probes**

Measuring range up to 10,00 mS Working temperature max 85° C Working pressure max 8 bar L 105.00 mm Ø 32.70 mm









## Measurement systems

# **Probes Accessories**



Off-line probe holders. Working temperature 0°/50° C Maximum pressure 5 bar



Off-line probe holders for closed amperometric cells.



In-line probe holders.



Filters. Maximum temperature 60° C (30° C NFIL/CA) Filtration degree 60  $\mu$  / 150  $\mu$ 



Immersion probe holders.

Optional compressed air or water self cleaning system (automatic or manual control).

#### **MANIFOLD**



With flow sensor as well as housing for the conductivity probe.

Optional motorized valve, two injection points and even additional measurement probes

Maximum pressure 8 bar Maximum temperature 75° C

#### **BUFFER SOLUTIONS**



Buffer solutions for probe calibration.

# Mixing and Dosing Station & SKID

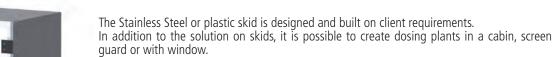
#### MIXING AND DOSING STATION

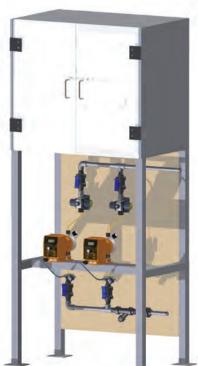


Storage, dosing, all regulation in one single system. Dosing stations are assembled to include:

- Dosing pumps
- Suction lances
- Mixer
- Water makeup valve
- Water bleed valve

Dosing stations are complete solutions ready to go.





Electric control panels designed to control all the assembeld solution. The final product includes electrical and piping hook-ups ready for installation.

## PLANTS ON SKIDS OR IN CUSTOM-MADE CABINS

## POOLBRAVO



POOLBRAVO is a turnkey product available in several configurations to immediately and easily manage the main parameters concerning water treatment in swimming pools, in order to optimize the dosing and consumption of the needed chemicals.

its elegant cover makes POOL BRAVO suitable for any installation context and, besides safeguarding from accidental liquid loss, preserves at the same time the cleanliness of the inner components and their integrity.

The LD multiple reading digital system inside POOLBRAVO gives you the complete control over the measuring parameters and over the dosing of chemicals, besides being easy to use thanks to the LCD display and the ENCODER control knob that makes simple to browse through its configuration menus. Complete control also comes from the wide range of probes that can measures hydrogen peroxide, oxygen, bromine, chlorine, ozone, peracetic acid and chlorine dioxide.

A colored LED light is installed on PEF probe-holder in order to quickly signal, through an opening on the cover, specific operation statuses or possible alarms according to the color of the light.

EMEC exclusive online system ERMES enables you to remotely control and regulate POOLBRAVO from any smartphone or PC, so to keep the status of your swimming pool always under control, wherever you are.



#### **POOL BRAVO**

- + ACID PUMP
- + CHLORINE PUMP



#### **POOL BRAVO**

- + ACID PUMP
- + CHLORINE PUMP
- + ANTI-ALGAE PUMP



#### **POOL BRAVO**

- + ACID PUMP
- + CHLORINE PUMP
- + FLOCCULANT PUMP

ALL MODELS ARE AVAILABLE WITH **ECL6** OPEN AMPEROMETRIC CELL OR WITH **SCL3** CLOSED AMPEROMETRIC CELL





# Anti-Legionella

#### Sanitary hot water lines disinfection

Easy maintenance

Automatic re-priming

| Tailor-made solutions

| Custom panels for specific treatments

Remote Control



# Pools & SPA

#### Complete system for reliable protection

| Multiple parameters measurement and control
| Complete control and dosing systems for pH, ORP, Free chlorine, Chlorine,
| Combined chlorine, Temperature, Bromine, Ozone, Flocculant and Algicide
| Scent and essences dosing, foot-bath disinfection systems,
| dechloration system for filters cleaning waters
| pH and active oxygen measurement and control
| Remote Control



# Potable and waste water

#### Water treatment for a cleaner, safer, better tasting and better smelling water

Chlorination system

| Pre-treatment and final disinfection of potable waters

Disinfection with sodium hypochlorite or calcium hypochlorite

Real time monitoring

Remote Control



# Cooling towers



#### **Cooling towers & Industrial water treatment**

| Efficient measuring system | Complete monthly report | Accurate conductivity control | Pre-assembled skids | Remote Control

Sample panel





