emec®
SIMPLE AS WATER

# COOLING TOWER CATALOGUE

SYSTEMS FOR COOLING TOWERS

emec®
SIMPLE AS WATER

# WATER TREATMENT SYSTEMS

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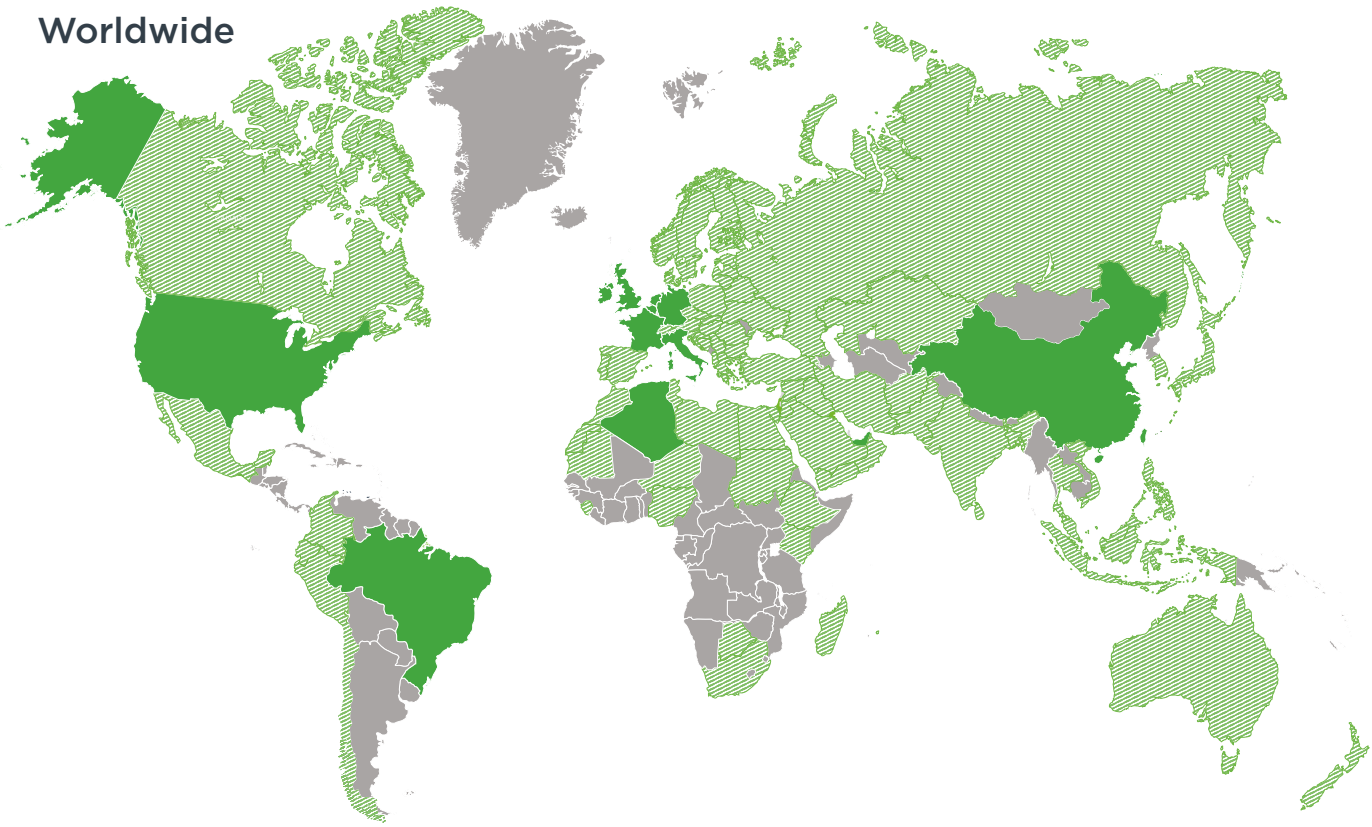
# EMEC

## WATER TREATMENT SYSTEMS

### Worldwide



BRANCHES

DISTRIBUTORS

**EMEC**
SIMPLE AS WATER

**40+** years of excellence
**250+** employees
**88** countries
**10** branches
**10+** sectors
**120.000** dosing pumps/year
**15.000** controllers/year
**26.000** probes & sensors/year
**8.000** dosing station/year
**85.000** accessories

MADE IN ITALY

**100% MADE IN ITALY**
All our products are 100% Made in Italy

5 YEARS WARRANTY

**WARRANTY**
5 years warranty for our dosing pumps and controllrers.
*Terms and conditions apply*

# Flexibility and innovation

Flexibility and innovation are fundamental to us.
Since 1982, we have been designing and producing reliable, cutting-edge systems for water treatment and chemicals dosing.
As a company, we are open to change and, just like water, we have branched out over time, spreading out into wide-ranging areas, from industrial water treatment to potabilization to water purification, from food and beverage industry to swimming pools.

## COMPETENCE AND PROFESSIONALISM

Extremely high performance, top quality and high technology are our greatest assets. But there is more.
Every day, we safeguard something equally important: human capital. Our co-workers are the best professionals on the market; the most expert and competent people.
For this reason our organizational model is designed to manage their safety and health in an organic and systematic way, respecting the international standard ***BS OHSAS 18001***.

## OUR VALUE

Being at the cutting edge means constant study. Our R&D and design departments are where our heart beats.
Extremely high-profile engineers and technicians are committed to developing software and designing hardware, but also to studying and evaluating hydraulic and mechanical components.
The customers and their satisfaction have always been at the heart of what we do, so we pay constant attention to the quality of our production processes, through a constantly updated and cutting-edge range of industrial machines.

## ENVIRONMENTAL SUSTAINABILITY

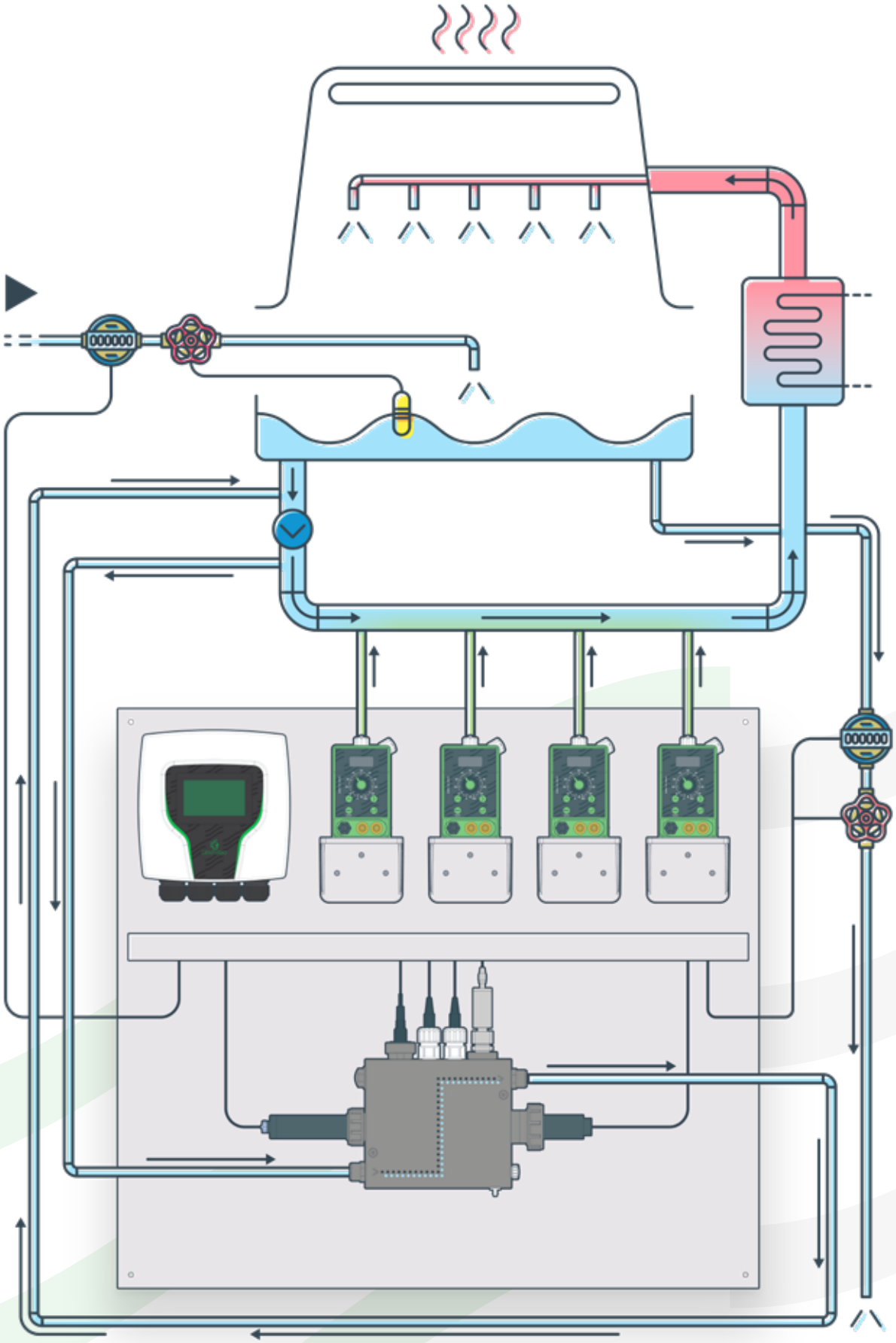
The adoption of an environmental management system compliant with the international standard ***ISO 14001*** arises from the awareness of the imprint that human activities leave on the planet.
Our environmental protection management system allows us to minimize the impact of production processes (with emissions well below the prescribed limits), of products and of raw materials used (with the recycling of most of the waste materials), also thanks to an energy saving system that covers all company spaces and to the use of renewable energy sources.

## QUALITY AND SAFETY, FIRST OF ALL

We are entirely responsible for every stage of the process, from invention to delivery. Our products undergo up to 10 quality checks and are tested four times before reaching the customer.
The quality management system of our production process is ***ISO 9001*** certified and has customer satisfaction as its ultimate goal, as well as continuous improvement of company performance.
Customers satisfaction comes hand-in-hand with ensuring safety for them, their operators and final users.
Our dosing pumps and controllers are ***UL*** certified to guarantee full compliance with general requirements for safety of use, while ***NSF*** certifications guarantee that our pumps do not release hazardous pollutants into the water and therefore are fully safe for use in contact with drinking water, for example in the food production industry, or at recreational facilities like swimming pools and spas.

## OUR CERTIFICATIONS

## OUR SOCIAL CHANNELS

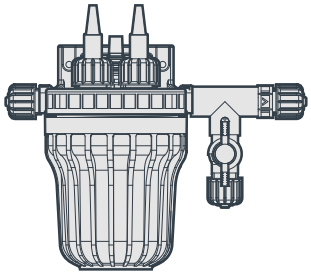


# COOLING TOWERS: HOW THEY WORK

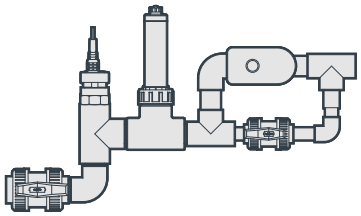
## The most efficient management of cooling tower systems

Cooling towers can lower the temperature of water in a plant, whether civil or industrial, by evaporating a small but sufficient quantity of water to generate cooling of the entire circulating mass, allowing it to be reused (at a lower temperature) and thus limiting consumption.
For an efficient cooling system, however, continuous monitoring and, above all, careful water treatment is essential to prevent both corrosion of system components and the formation of bacterial biofilm or other potentially dangerous biological components.

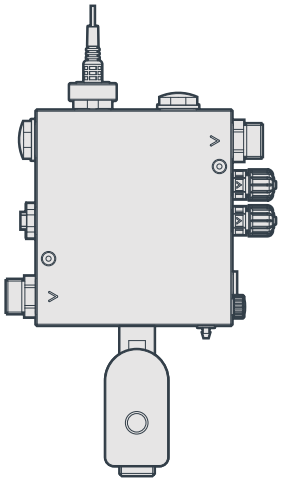
**PROBE HOLDER**



**PIPING MANIFOLD**



**MANIFOLD**



From the very beginning, EMEC has been searching for the most complete solutions to offer the highest possible efficiency in cooling tower operation. With our experience we now features solutions for cooling tower systems both for the civil sector, such as hospitals, large apartment blocks, shopping centres, and for industries such as food, paper, pharmaceuticals, sugar refineries, the chemical industry through to the heavy industry of steel mills. For those who build cooling towers and for those who are involved in water treatment and in particular in the production of chemicals.
Plug-and-play solutions were chosen for their ease of handling, with the aim of having all the equipment compactly in one place rather than split up in various locations.
Given the need to handle often aggressive chemicals, our solutions are also designed to safeguard the safety of operators.

### HYDRAULIC SOLUTIONS

- Simple probe holders
- Piping or manifolds to be able to both measure and inject the chemicals used for conditioning
- Piping or manifolds to handle the purging on the panel but not the injection of the chemical
- Piping or manifolds for measuring, injection but also purging directly on the panel

### COMPACT AND RELIABLE SOLUTIONS

- Conductivity measurement in recirculation water for purging with motorised valve for maintaining salinity
- In case of changes, second conductivity measurement for make-up water, with subsequent purge opening
- Measurement of make-up and/or purge flow rate for control of cycles of concentration, with totaliser.
- pH measurement for controlled pH towers with acid dosing and possible redundancy (i.e. two pH measurements, with the second to control the first)
- Redox potential measurement or hypochlorite or hypobromite for oxidising biocide control/dosing
- Timers for shock dosing of biocides
- Tracer product measurement, ppm measurement of dosed product
- Corrosion measurement with sensors in various materials to see MPY
- Turbidity measurement
- Dosing for various products, depending on flow rate or analytical measurement or timer

# DEVICE, CABIN, SKID AND ASSEMBLED PANELS. ALL THE EMEC CHOICES

## Our solutions

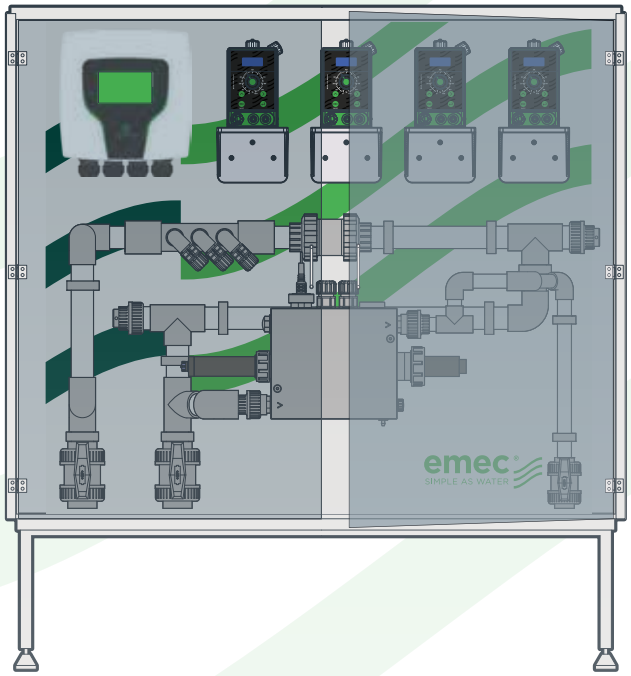
EMEC dosing pumps and measuring and control systems can be assembled with probes and accessories on panels according to specific combinations in order to offer turnkey all-in-one solutions for cooling tower systems.

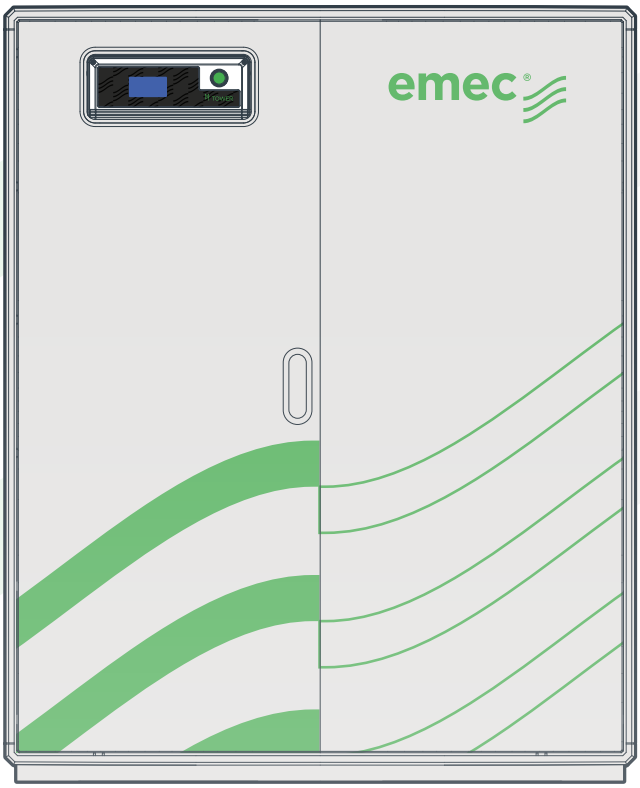
Pre-assembled panels may have:

- **pumps, controllers or elements owned by the customer and assembled by EMEC**
- **customised logos**
- **backgrounds chosen by the customer**
- **customised sizes**
- **custom power panels**

### SYSTEMS ON SKIDS OR IN CUSTOM-MADE CABINS

The Stainless Steel or plastic skid is designed and built on client requirements.
In addition to the solution on skids, it is possible to create dosing plants in a cabin, screen guard or with window.
Electric control panels designed to control all the assembeld solution.
The final product includes electrical and piping hook-ups ready for installation.



# STEPPER MOTOR/PERISTALTIC DOSING PUMPS

## VELON Series

### Peristaltic dosing pumps with stepper motor

VELON

WIFI

NIMBUS
DIGITAL SERVICES

APP **MY EMEC**

ONLINE STATS

CUSTOMIZABLE

**MAX FLOW RATE**

12 **l/h**

**MAX PRESSURE**

2 **bar**

**POWER SUPPLY**

12 | 24 **VDC**

24 **VAC**

100-240 **VAC**

**VELON is a state-of-the-art compact peristaltic dosing pump, equipped with a high-precision, electronically-controlled multifunction stepper motor that guarantees constant and regular chemical product dosing, even in demanding working conditions and with load variations. Designed to offer a complete, easy-to-use solution in all installation contexts that require precise, reliable, quiet and safe operation.**

**ACCESSORIES**

- 1 PVDF injection valve (0.3 bar)
- 1 PVDF foot filter with level probe
- 4 m suction tubing (flexible PVC)
- 1 long-life biocompatible tubing, 4.8 × 1.6 mm (standard supply)
- 1 long-life biocompatible tubing, 1.6 × 1.6 mm (included accessory)

## FEATURES COMMON TO THE ENTIRE SERIES

| Microprocessor | Pressure (bar - psi) | RPM Range (rpm) | Protection | Power Supply | installation Class |
|---|---|---|---|---|---|
| Next-Generation, High-Performance | 2 (29) | da 1 a 100 | IP65 | 24 \| 100–240 VAC, 12VDC, 24VDC | II |

| Flow Rate Range (l/h – gal/h) (Ø1,6x1,6) | Flow Rate Range (l/h – gal/h) (Ø4,8x1,6) | Operating Temperature | Additive Temperature | Manufacturing Materials | Remote Control |
|---|---|---|---|---|---|
| 0,018 – 1,8 l/h<br>0,0047 – 0,47 gal/h | 0,12 – 12 l/h<br>0,0317 – 3,17 gal/h | 10 – 45 °C<br>55 – 113 °F | 0 – 50 °C<br>32 – 122 °F | PC/ABS, PVDF, POM, TPV | Web (NIMBUS) e App (MyEmec) |

# AVAILABLE VERSIONS

DIGITAL

ANALOGIC

## VELON MF

## VELON PO

## VELON PM

## VELON CL

## SPECIFIC MODEL FEATURES

| | Velon MF | Velon PO | Velon CL | Velon PM |
|---|---|---|---|---|
| DESCRIPTION | Multifunction pump with extensive dosing modes and digital management, including remote control | Versatile pump with proportional adjustment and remote control | Essential, practical pump for constant dosing with manual adjustment via potentiometer | Pump with MODBUS RTU integration, ideal for automated systems |
| INTER./CONT. | Backlit RGB LCD display, encoder, remote management via app/web | Backlit LCD display, encoder, remote management via app/web | Front potentiometer, LED, ON/OFF button | MODBUS RTU, LED, tasto ON/OFF |
| WORKING MODE | Constant, CC/Pulse, PPM, %, MLQ, Batch, Volt, mA, Pulse, Weekly Program, Ext Constant | Proportional, Autodosing pH and/or Redox | Constant | External Control |
| MAINTENANCE | Scheduled maintenance via activity meters | Scheduled maintenance via activity meters | Scheduled maintenance via activity meters | Scheduled maintenance via activity meters |
| INPUT | MODBUS RTU, Multi-function, Level | MODBUS RTU, Standby, Level, Serial Probe | Level | MODBUS RTU, Level |
| OUTPUT | Alarm (optional) | Allarm (optional) | Allarm (optional) | Allarm (optional) |
| CONNECTIVITY | Wi-Fi & Bluetooth | Wi-Fi & Bluetooth | - | - |
| FW UPDATE | OTA | OTA | - | - |

# SOLENOID / DIAPHRAGM DOSING PUMPS

## WT PER Series

### Peristaltic dosing pumps with stepper motor

WT

WIFI

NIMBUS
DIGITAL SERVICES

APP **MY EMEC**

ONLINE STATS

CUSTOMIZABLE

**MAX FLOW RATE**

3 **l/h**

**MAX PRESSURE**

2 **bar**

**POWER SUPPLY**

100-240 **VAC**

DOSING
**Green**

STAND-BY
**White**

WARNING
**Yellow**

ALARM
**Red**

## FEATURES

- No. 2 high-precision stepper motors
- High precision through peristaltic dosing
- Low maintenance requirements (long-life, biocompatible peristaltic tubing)
- LCD display with backlighting that adapts to device operation
- Encoder knob for instrument control
- PC+ABS box
- Flow control input
- Conductivity reading
  - 0/3 mS - 0/30 mS (ECDINDPT)
  - 0/10 mS (ECDSINDPT)
  - 0/10 mS (ECDCCPT)
- Alarms: level, no flow
- Configurable digital inputs (N.O. / N.C.)
- Delayed start of dosing
- Permanent data storage with system log viewable on display
- Bluetooth LE / 2.4Ghz WiFi connection for APP and Remote Control
- Upgradable firmware (via OTA)
- Installation class II (IEC/EN 61010-1)
- Pollution level 2 (IEC/EN 61010-1 and IEC 60664-1)
- IP 65 protection (IEC/EN 60529)
- Manual or automatic bleed
- Built-in MODBUS
- Vertical installation
- Remote control via NIMBUS / My EMEC App

## ACCESSORIES

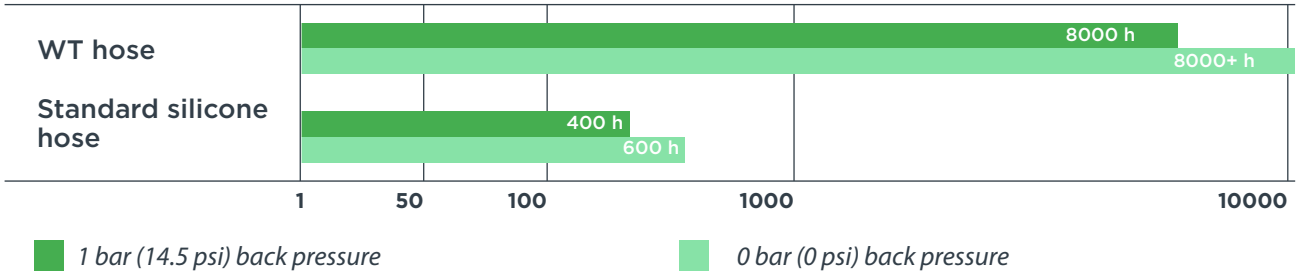
- 2 long-life biocompatible hoses, 4.8 × 1.6 mm (standard supply)
- 2 long-life biocompatible hoses,1,6x1 ,6 (included accessories)

# PERFORMANCE

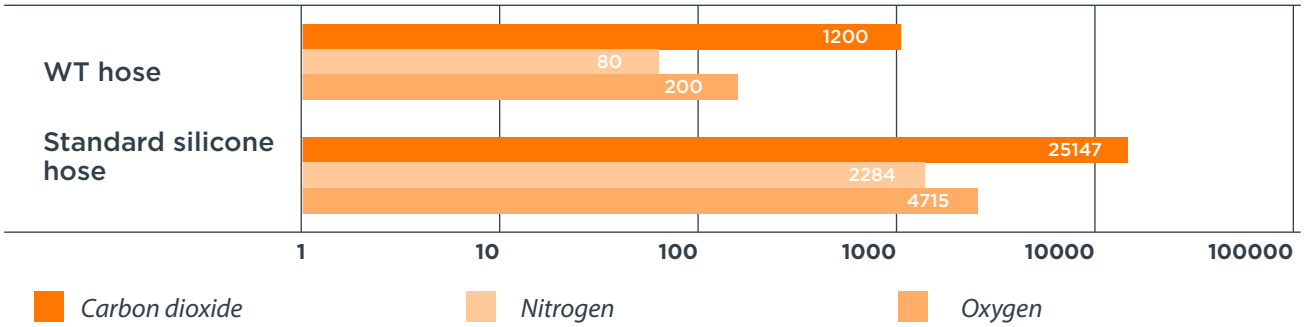
| Hose | Pressure | | Flow Rate | | RPM range |
|---|---|---|---|---|---|
| | *bar* | *psi* | *l/h* | *gal/h* | *rpm* |
| **Ø 1,6x1,6** | **2** | **29,0** | **0,018 - 0,45** | **0,0047 - 0,1175** | **1 - 25** |
| **Ø 4,8x1,6** | **2** | **29,0** | **0,12 - 3** | **0,0317 - 0,7925** | **1 - 25** |

## LONG-LIFE BIOCOMPATIBLE TUBING

### Hose life comparison




### Permeability coefficient comparison (x10$^{-11}$)




# INPUTS

- CONDUCTIVITY PROBE
- INLET WATER METER
- LEVEL 1 AND LEVEL 2
- FLOW SENSOR
- STANDBY MODE

# OUTPUTS

- ALARM (VOLTAGE-FREE RELAY CONTACT)
- MODBUS RTU PORT
- PUMP 1 AND PUMP 2
- BLEED (WATER DISCHARGE)

# WT Series

## Solenoid-driven dosing pumps

WT

WIFI

NIMBUS

DIGITAL SERVICES

APP **MY EMEC**

ONLINE STATS

CUSTOMIZABLE

**MAX FLOW RATE**

3 **l/h**

**MAX PRESSURE**

5 **bar**

**POWER SUPPLY**

115 **VAC**

230 **VAC**

# RGB DISPLAY

DOSING
**Green**

STAND-BY
**White**

WARNING
**Yellow**

ALARM
**Red**

# PERFORMANCE

| Pressure | Flow Rate | | SPM Range |
|---|---|---|---|
| *bar (psi)* | *l/h* | *gal/h* | *spm* |
| up to 5 bar | up to 3 l/h | up to 0,79 gal/h | 45 |

# FEATURES

- Dual Magnet, 45 strokes/min, continuously adjustable (1%–100%)
- Double Ball Check Valves
- Standard PVDF Hydraulic Components
- Wide LCD Display with Adaptive Backlighting
- Rotary Encoder Knob for Instrument Control
- PC + ABS Enclosure
- Flow Control Input
- Conductivity Measurement:
  - 0–3 mS / 0–30 mS (ECDINDPT)
  - 0–10 mS (ECDSINDPT)
  - 0–10 mS (ECDCCPT)
- Alarms: Level, No-Flow
- Digital Inputs Configurable as N.O. or N.C.
- Delayed Dosing Start
- Permanent Data Storage with System Log Viewable on Display
- Bluetooth® LE / 2.4 GHz Wi-Fi Connectivity for App and Remote Control
- Firmware Upgradeable via OTA (Over-the-Air)
- Installation Class II (IEC / EN 61010-1)
- Pollution Degree 2 (IEC / EN 61010-1 and IEC 60664-1)
- IP65 Protection Rating (IEC / EN 60529)
- Manual or Automatic Priming
- Integrated MODBUS
- Vertical Installation

# INPUT

CONDUCTIVITY PROBE · INLET WATER METER · LEVEL 1 AND LEVEL 2 · FLOW SENSOR · STANDBY MODE

# OUTPUT

ALARM (VOLTAGE-FREE RELAY CONTACT) · MODBUS RTU PORT · PUMP 1 AND PUMP 2 · BLEED (WATER DISCHARGE)

# MULTI-CHANNEL DIGITAL CONTROLLERS

## CENTURIO Series | CENTURIO TOWER or CENTURIO PRO

**Complete control system for cooling towers**

## CENTURIO BASIC | USB | ETH | GSM | WIFI | MODBUS

CENTURIO control instruments are multiparameter measurement and regulation systems that combine an absolute control and an extreme ease of use with the elegance of the case created by Giugiaro Design.

CENTURIO TOWER and CENTURIO PRO are digital control instrument designed for cooling tower water treatment and equipped with LINUX operating system, high-performance ARM A5 microprocessor and a large color touchscreen display. It can manage at the same time 5 measurement parameters, read and regulate setpoints of the 5 channels and get real-time graphs. CENTURIO has also an high-capacity storage to archive data logs as well as download option via USB port.

CENTURIO PRO is a complete digital control instrument designed for managing water treatment plants, equipped with LINUX operating system, high-performance ARM A5 microprocessor and a large color touchscreen display. It can manage at the same time the main measurement parameters, read and regulate setpoints of the 6 channels and get real-time graphs. CENTURIO has also an high- capacity storage to archive data logs as well as download option via USB port.

**Centurio Tower available configurations:**
CENTURIO TOWER - CONDUCTIVITY
CENTURIO TOWER - INDUCTIVE CONDUCTIVITY

NIMBUS

DIGITAL SERVICES

Modbus

### FEATURES - CENTURIO TOWER

Biocide programmable in 10 daily interventions.
Pre-bleed (water discharge before biocide dosing).
Blow down (discharge control on conductivity values).
Lockout (discharge valve locked for a settable time, after biocide dosing).

### INPUTS

8 product level inputs
Flow input
2 water meter inputs
1 RS485 bus probe input
6 slots for channels reading

### FEATURES - CENTURIO PRO

For each reading channel:
2 digital setpoints (ON/OFF), 2 proportional setpoints (IS), 1 mA output setpoint, 1 temperature setpoint
6 timers with a maximum of 10 daily schedules each
Laser level output

### OUTPUTS

Alarm output
8 proportional outputs
6 on/off outputs
2 freecontact on/off outputs
6 current outputs

## CHANNEL 1 - CENTURIO TOWER only

### Conductivity

**probe** | ECD/EICD

**range** | 0.1µS-100mS (K=1) - 0.01µS-100mS (K=01)
0.001µS-100mS (K=001) - 1µS-1S (K=10)

**comp.** | Temperature

### Inductive conductivity

**probe** | ECDIND

**range** | 0,1-3mS (K=1) - 0,3-30mS (K=01) - 0,3-300mS (K=001)

**comp.** | Temperature

CHANNEL 1 TO CHOOSE ONLY BETWEEN CONDUCTIVITY AND INDUCTIVE CONDUCTIVITY

## CHANNELS 2 to 6 - CENTURIO TOWER
## CHANNELS 1 to 6 - CENTURIO PRO

### pH

**probe** | EPH

**range** | 0-14 pH

**comp.** | Temperature

**comp.** | pH in Temperature - ECL6

### ORP

**probe** | ERH

**range** | -999/+999 mV

**comp.** | Temperature

### Chlorine (total, free and combined)

**probe** | ECL/SCL

**range** | depending on probe

**comp.** | Chlorine in Temperature

### Tracers

**probe** | ETRC2

**range** | 0/999,9 ppm

**comp.** | Temperature

### Bromine

**probe** | SBR

**range** | depending on probe

**comp.** | Chlorine in Temperature

### Corrosion

**probe** | ECORR

**range** | 0.001/10 MPY

**comp.** | Temperature

### Chlorine Dioxide

**probe** | SCL2

**range** | depending on probe

**comp.** | Chlorine in Temperature

### Turbidity

**probe** | ETORB2

**range** | 0/40,00 NTU
0/400,0 NTU
0/4000 NTU

**comp.** | Temperature

### Hydrogen peroxyde

**probe** | SCL9

**range** | depending on probe

**comp.** | Chlorine in Temperature

### Ozone

**probe** | SCL10

**range** | depending on probe

**comp.** | Chlorine in Temperature

### mA input

**range** | Analogic input module 0-20 mA

### Paracetic Acid

**probe** | SCL11

**range** | depending on probe

**comp.** | Chlorine in Temperature

### Conductivity

**probe** | ECD/EICD

**range** | 0.1µS-100mS (K=1) - 0.01µS-100mS (K=01)
0.001µS-100mS (K=001) - 1µS-1S (K=10)

**comp.** | Temperature

### Inductive conductivity

**probe** | ECDIND

**range** | 0,1-3mS (K=1) - 0,3-30mS (K=01) - 0,3-300mS (K=001)

**comp.** | Temperature

# MTOWER Series | MTOWER PLUS

## Three parameters control system for cooling towers

## MTOWER PLUS BASIC | USB | ETH | GSM | WIFI | MODBUS

MTOWER PLUS controllers are a series of fully feature control systems for cooling towers.
They manage simultaneously three parameters: pH or ORP, chlorine, conductivity or inductive conductivity (to specify on order) and temperature. Probes are not included.

They can be remotely controlled through the exclusive web management system NIMBUS.

**Optional configurations:**
MTOWER PLUS + mA output
MTOWER PLUS + 12VDC or 24VDC power supply

NIMBUS
DIGITAL SERVICES

Modbus

### ALARMS

No water flow alarm
3 product levele alarms
Bleed timeout alarm

### INPUTS

6 product level inputs
2 water meter inputs
Flow input
Temperature probe input
Stand-by input

### OUTPUTS

mA output*

INPUTS/OUTPUTS WITH * ARE TO BE CONSIDERED AS OPTIONAL

## CHANNEL 1 - MTOWER PLUS | CD/PH/CL and CD/PH/RH

### Conductivity

**probe** | ECD/EICD

**range** | 0/300,0 µS
0/3000 µS
0/30,0 mS
0/300,0 mS

**comp.** | Temperature

### Inductive conductivity

**probe** | ECDIND

**range** | 0/3,000 mS
0/30,00 mS
0/300,0 mS

**comp.** | Temperature

## CHANNEL 2 - MTOWER PLUS | CD/PH/CL and CD/PH/RH

### pH

**probe** | EPH

**comp.** | pH in Temperature - ECL6

**range** | 0-14 pH

**comp.** | Temperature

## CHANNEL 3 - MTOWER PLUS | CD/PH/CL only

### Chlorine (total, free and combined)

**probe** | ECL/SCL

**comp.** | Chlorine in Temperature

**range** | depending on probe

### Hydrogen peroxyde

**probe** | SCL9

**comp.** | Chlorine in Temperature

**range** | depending on probe

### Bromine

**probe** | SBR

**comp.** | Chlorine in Temperature

**range** | depending on probe

### Ozone

**probe** | SCL10

**comp.** | Chlorine in Temperature

**range** | depending on probe

### Chlorine Dioxide

**probe** | SCL2

**comp.** | Chlorine in Temperature

**range** | depending on probe

### Paracetic Acid

**probe** | SCL11

**comp.** | Chlorine in Temperature

**range** | depending on probe

## CHANNEL 3 - MTOWER PLUS | CD/PH/RH only

### ORP

**probe** | ERH

**range** | 0/1000 mV

**comp.** | Temperature

# MTOWER Series | MTOWER 1 OR 2 CHANNELS

## Single or double parameters control system for cooling towers

## MTOWER 1CH or 2CH BASIC | USB | ETH | GSM | WIFI | MODBUS

MTOWER 1CH and MTOWER 2CH controllers are a series of fully feature control systems for cooling towers.
MTOWER 1CH manages one parameter: conductivity or inductive conductivity (to specify on order) and temperature. Probes are not included.
MTOWER 2CH manage simultaneously two parameters: pH or ORP or chlorine, conductivity or inductive conductivity (to specify on order) and temperature. Probes are not included.

They can be remotely controlled through the exclusive web management system NIMBUS.

**Optional configurations:**
MTOWER 2CH + mA output
MTOWER 2CH + 12VDC or 24VDC power supply

NIMBUS
DIGITAL SERVICES

Modbus

### ALARMS

No water flow alarm
2 product levele alarms
Bleed timeout alarm

### INPUTS

6 product level inputs
2 water meter inputs
Flow input
Temperature probe input
Stand-by input

### OUTPUTS

mA output*

INPUTS/OUTPUTS WITH * ARE TO BE CONSIDERED AS OPTIONAL

## CHANNEL 1 - MTOWER 1CH | CD
## MTOWER 2CH | CD/PH, CD/RH, CD/CL and CD/TRC

### Conductivity

**probe** | ECD/EICD

**range** | 0/300,0 µS
0/3000 µS
0/30,0 mS
0/300,0 mS

**comp.** | Temperature

### Inductive conductivity

**probe** | ECDIND

**range** | 0/3,000 mS
0/30,00 mS
0/300,0 mS

**comp.** | Temperature

## CHANNEL 2 - MTOWER 2CH | CD/PH only

### pH

**probe** | EPH

**range** | 0-14 pH

**comp.** | Temperature

**comp.** | pH in Temperature - ECL6

## CHANNEL 2 - MTOWER 2CH | CD/RH only

### ORP

**probe** | ERH

**range** | 0/1000 mV

**comp.** | Temperature

## CHANNEL 2 - MTOWER 2CH | CD/CL only

### Chlorine (total, free and combined)

**probe** | ECL/SCL

**range** | depending on probe

**comp.** | Chlorine in Temperature

### Hydrogen peroxyde

**probe** | SCL9

**range** | depending on probe

**comp.** | Chlorine in Temperature

### Bromine

**probe** | SBR

**range** | depending on probe

**comp.** | Chlorine in Temperature

### Ozone

**probe** | SCL10

**range** | depending on probe

**comp.** | Chlorine in Temperature

### Chlorine Dioxide

**probe** | SCL2

**range** | depending on probe

**comp.** | Chlorine in Temperature

### Paracetic Acid

**probe** | SCL11

**range** | depending on probe

**comp.** | Chlorine in Temperature

## CHANNEL 2 - MTOWER 2CH | CD/TRC only

### Tracers

**probe** | ETRC2

**range** | 0/9999,9 ppm

# SINGLE-CHANNEL DIGITAL CONTROLLERS

## Series LDS | LDS OR LDS PLUS

**LDS is a single reading system with setpoints**
**LDS PLUS is a single reading system with PID regulation**

## LDS or LDS PLUS BASIC | USB | ETH | GSM | WIFI | MODBUS

LDS PLUS controllers are a series of single reading digital systems with PID regulation. LDS controllers are a series of single reading controllers that meet a wide range of applications.
Both of two have: easy control by encoder wheel, flow control, local & remote control, NIMBUS web communication, permanent data storage with system log, PT100 temperature probe, stand-by input, water meter input (only LDS PLUS), alarms, programmable delay at dosing start-up (up to 60 minutes), automatic temperature compensation, probe readout menu (LDSCDIND PLUS / LDSCDIND), different working modes [on/off, impulsive proportional, proportional PWM and fixed PWM, PID (only LDS PLUS)], automatic or manual dosing activity, mA output (optional for LDS), mA water meter input (optional for LDS PLUS only), probe cleaning and 5 relais [2 setpoint; alarm; probe cleaning; circulation (only for LDS PLUS)].

**Optional configurations:**
LD MULTICHANNEL PLUS + mA output
LD MULTICHANNEL PLUS + 12VDC or 24VDC power supply
LD MULTICHANNEL PLUS + LED strip

### ALARMS

General alarm
No water flow alarm
Out of range alarm
Level alarm
Max dosing alarm
Damaged probe alarm

NIMBUS
DIGITAL SERVICES
Modbus

### INPUTS

Product level inputs
Flow input
mA water meter input (only for LDS PLUS)*
Temperature probe input
Stand-by input

### OUTPUTS

Alarm output
mA output (optional for LDS)*
Proportional outputs
Set points outputs (only for LDS PLUS)
Relay outputs
Opto coupled output (only for LDS PLUS)

INPUTS/OUTPUTS WITH * ARE TO BE CONSIDERED AS OPTIONAL

## CH 1 - LDS or LDS PLUS | CD only

### Conductivity

**probe** | ECD/EICD

**range** | 0/300,0 µS - 0/3000 µS - 0/30,0 mS - 0/300,0 mS

**comp.** | Conductivity in temperature

## CH 1 - LDS or LDS PLUS | CDIND only

### Inductive conductivity

**probe** | ECDIND

**range** | 0/3,000 mS - 0/30,00 mS - 0/300,0 mS

**comp.** | Conductivity in temperature

## CH 1 - LDS or LDS PLUS | PH only

### pH

**probe** | EPH

**comp.** | pH in Temperature - ECL6

**range** | 0-14 pH

## CH 1 - LDS or LDS PLUS | RH only

### ORP

**probe** | ERH

**range** | 0/1000 mV

## CH 1 - LDS or LDS PLUS | CL only

### Chlorine (total, free and combined)

**probe** | ECL/SCL

**comp.** | Chlorine in Temperature

**range** | depending on probe

### Bromine

**probe** | SBR

**comp.** | Chlorine in Temperature

**range** | depending on probe

### Chlorine Dioxide

**probe** | SCL2

**comp.** | Chlorine in Temperature

**range** | depending on probe

### Hydrogen peroxyde

**probe** | SCL9

**comp.** | Chlorine in Temperature

**range** | depending on probe

### Ozone

**probe** | SCL10

**comp.** | Chlorine in Temperature

**range** | depending on probe

### Paracetic Acid

**probe** | SCL11

**comp.** | Chlorine in Temperature

**range** | depending on probe

## CH 1 - LDS or LDS PLUS | ETORB2 only

### Turbidity

**probe** | ETORB2

**range** | 0/4000 NTU

## CH 1 - LDS or LDS PLUS | DO only

### Dissolved Oxygen

**probe** | EOLUM

**range** | 20 mg/l $O_2$

**comp.** | Temperature and pressure

## CH 1 - LDS or LDS PLUS | TRC only

### Tracers

**probe** | ETRC2

**range** | 0/9999,9 ppm

## CH 1 - LDS or LDS PLUS | FL only

### Fluoride

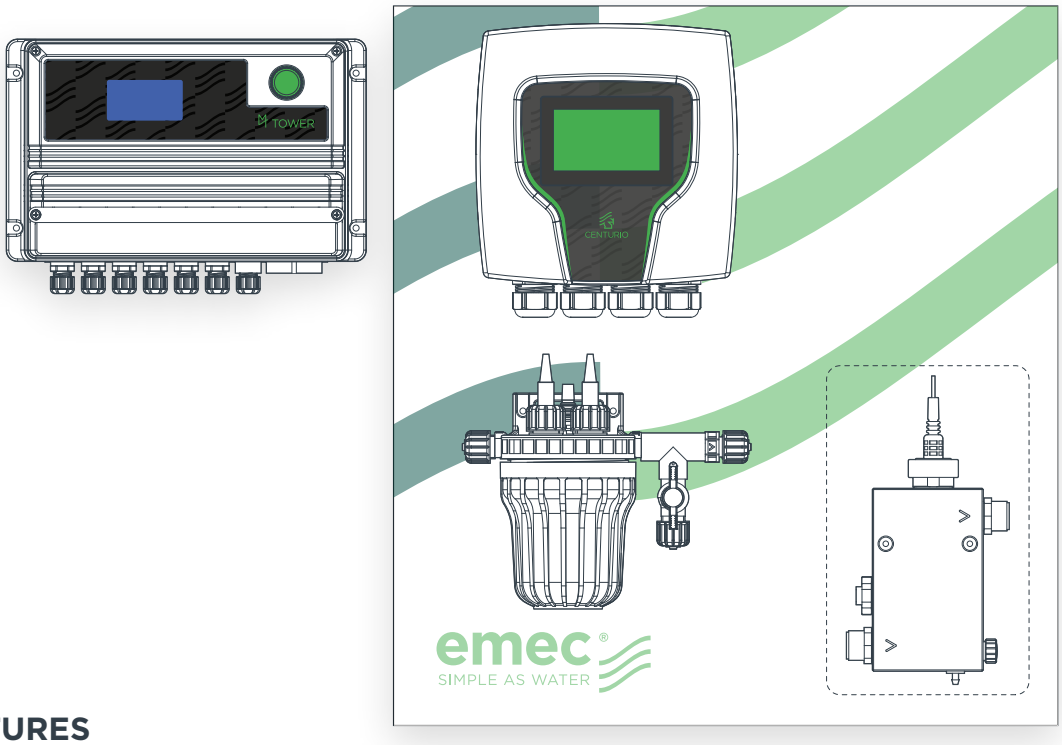
**probe** | EFL

**range** | conc. 0/3,00 ppm (0,01 ppm) - mV 0/1000,00 ppm (0,01 ppm)

# PREASSEMBLED MULTI-CHANNEL PANEL SOLUTIONS

## Basic solutions

### Preassembled panel with Centurio Tower or MTower systems




### FEATURES

Panel with MTOWER controller, for managing the bleed valve and chemical measurement and dosing, and for measuring the make-up and bleed flow rate.

Available in 4 versions: Conductivity (only); Conductivity/PH; Conductivity/RH; Conductivity/PH/RH.

**Optional:** Also available with Centurio Tower controller
Also available with customised colour background

### CONDUCTIVITY

| | | | |
|---|---|---|---|
| **controller** \| MTOWER-CD | **controller** \| MTOWER-CD-PH | **controller** \| MTOWER-CD-RH | **controller** \| MTOWER-CD-PH-RH |
| **p. holder** \| NPED4 | **p. holder** \| NPED4 | **p. holder** \| NPED4 | **p. holder** \| NPED4 |
| **probe** \| ECDCCPT1 | **probe** \| ECDCCPT1-EPHS | **probe** \| ECDCCPT1-ERHS | **probe** \| ECDCCPT1-EPHS-ERHS |

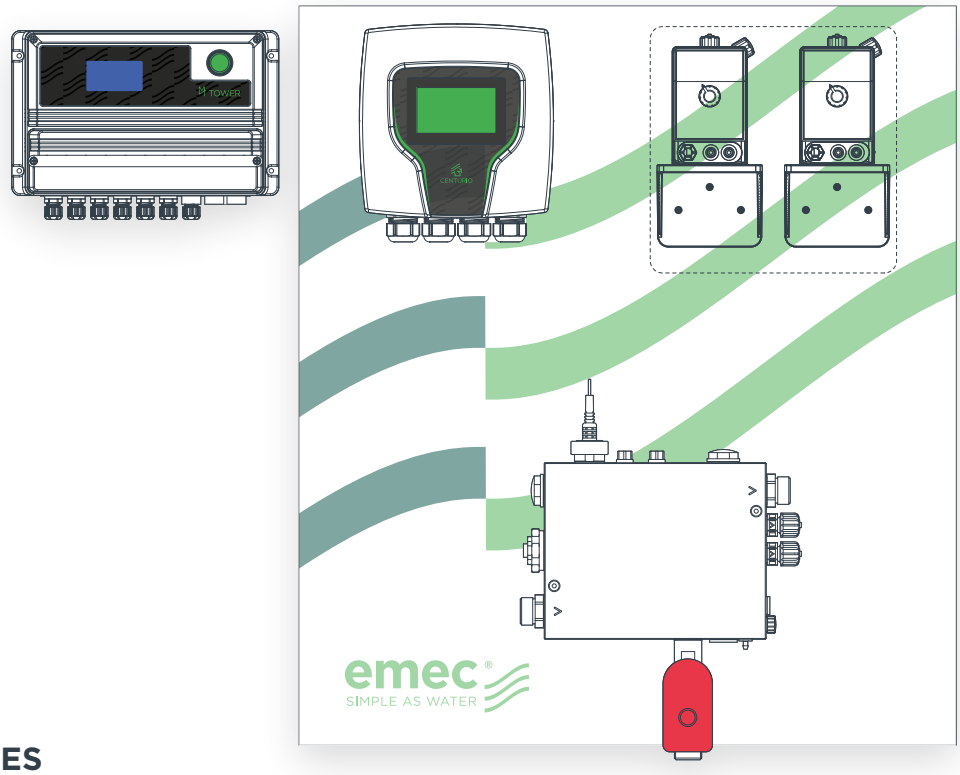
### INDUCTIVE CONDUCTIVITY

| | | | |
|---|---|---|---|
| **controller** \| MTOWER-CDIND | **controller** \| MTOWER-CDIND-RH | **controller** \| MTOWER-CDIND-pH | **controller** \| MTOWER-CDIND-PH-RH |
| **p. holder** \| MANIFOLD-E-3 | **p. holder** \| MANIFOLD-E-3 NPED1 | **p. holder** \| MANIFOLD-E-3 NPED1 | **p. holder** \| MANIFOLD-E-3 NPED1 |
| **probe** \| ECDCCPT1 | **probe** \| ECDCCPT1-EPHS | **probe** \| ECDCCPT1-ERHS | **probe** \| ECDCCPT1-EPHS-ERHS |

*The images on this page are for illustrative purposes only, for more information on possible configurations, please contact the sales department or your sales representative.*

# Basic solutions

## Preassembled panel with Centurio Tower or MTower systems




## FEATURES

Panel with MTOWER controller, for managing the bleed valve and chemical dosing, equipped with 2 dosing pumps and make-up and bleed flow measurement. Equipped with MANIFOLD, 1" controllable bleed valve, 2 dosing pumps, 2 injection points.

Available in 4 versions: Conductivity (only); Conductivity/PH; Conductivity/RH; Conductivity/PH/RH.

**Optional:** Also available with Centurio Tower controller
Also available with customised colour background

## CONDUCTIVITY

| | | | |
|---|---|---|---|
| **controller** \| MTOWER-CD | **controller** \| MTOWER-CD-PH | **controller** \| MTOWER-CD-RH | **controller** \| MTOWER-CD-PH-RH |
| **p. holder** \| MANIFOLD 1EV | **p. holder** \| MANIFOLD PLUS 1EV | **p. holder** \| MANIFOLD PLUS 1EV | **p. holder** \| MANIFOLD PLUS 1EV |
| **probes** \| ECDCCPT1 | **probes** \| ECDCCPT1<br>EPHS | **probes** \| ECDCCPT1<br>ERHS | **probes** \| ECDCCPT1<br>EPHS<br>ERHS |
| **pumps** \| Up to 2x KMF1504 *(with bracket)* | **pumps** \| Up to 2x KMF1504 *(with bracket)* | **pumps** \| Up to 2x KMF1504 *(with bracket)* | **pumps** \| Up to 2x KMF1504 *(with bracket)* |

## INDUCTIVE CONDUCTIVITY

| | | | |
|---|---|---|---|
| **controller** \| MTOWER-CDIND | **controller** \| MTOWER-CDIND-PH | **controller** \| MTOWER-CDIND-RH | **controller** \| MTOWER-CDIND-PH-RH |
| **p. holder** \| MANIFOLD 1EV-IND | **p. holder** \| MANIFOLD PLUS 1EV-IND | **p. holder** \| MANIFOLD PLUS 1EV-IND | **p. holder** \| MANIFOLD PLUS 1EV-IND |
| **probes** \| ECDCCPT1 | **probes** \| ECDIND<br>EPHS | **probes** \| ECDIND<br>ERHS | **probes** \| ECDIND<br>EPHS<br>ERHS |
| **pumps** \| Up to 2x KMF1504 *(with bracket)* | **pumps** \| Up to 2x KMF1504 *(with bracket)* | **pumps** \| Up to 2x KMF1504 *(with bracket)* | **pumps** \| Up to 2x KMF1504 *(with bracket)* |

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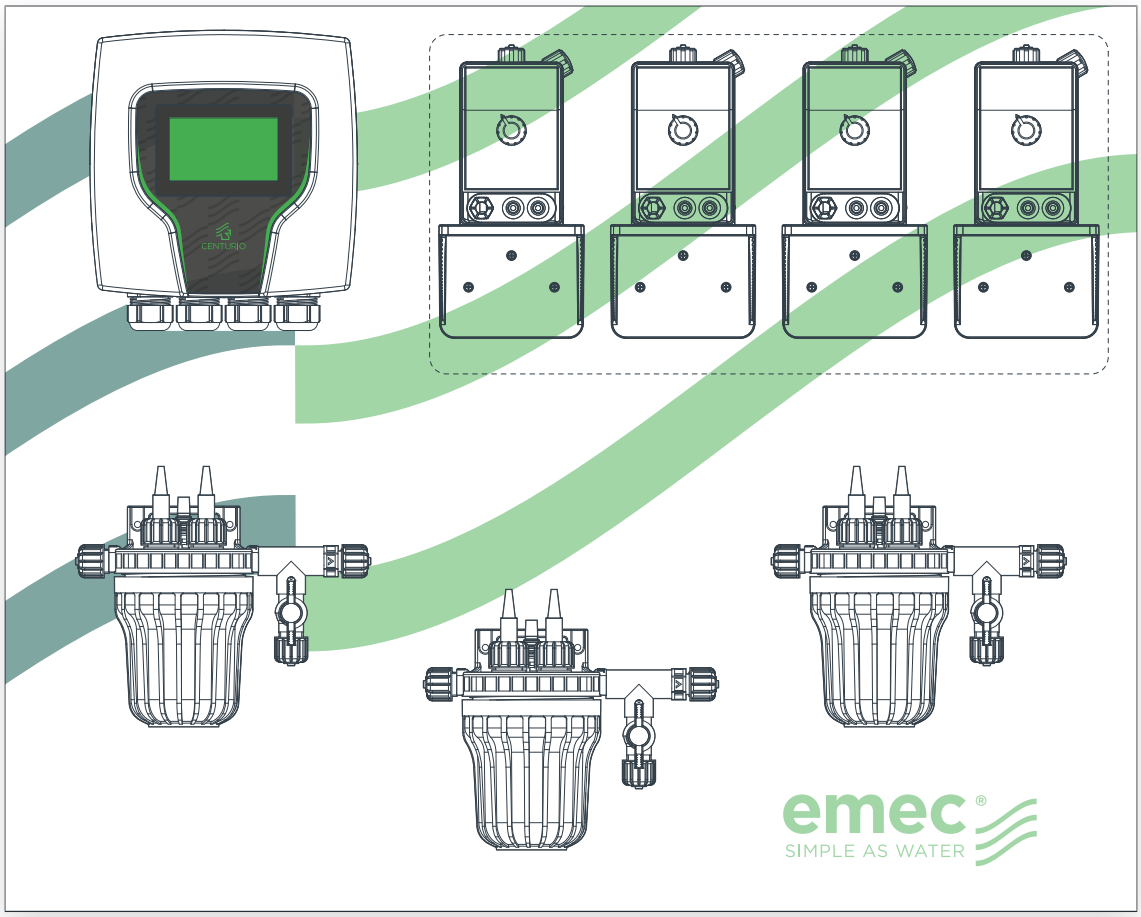
# Intermediate solutions

## Preassembled panel with Centurio Tower system




## FEATURES

Panel with CENTURIO PRO controller, up to 3 conductivities, therefore up to 3 purges, equipped with 4 dosing pumps: one for inhibitor in make-up function and 3 for biocide shock dosing. (Up to 6 purges can be implemented).

Available in 2 versions: Capacitive Conductivity and Inductive Conductivity.

.

**Optional:** Also available with customised colour background

## CONDUCTIVITY

**controller** | CENTURIO PRO-CD-CD-CD

**p. holder** | 3x NPED4

**probes** | 3x ECDCCPT

**pumps** | Up to 4x KMF1504
*(with bracket)*

## INDUCTIVE CONDUCTIVITY

**controller** | CENTURIO PRO-CDIND-CDIND-CDIND

**p. holder** | 3x MANIFOLD-3-E

**probes** | 3x ECDIND

**pumps** | Up to 4x KMF1504
*(with bracket)*

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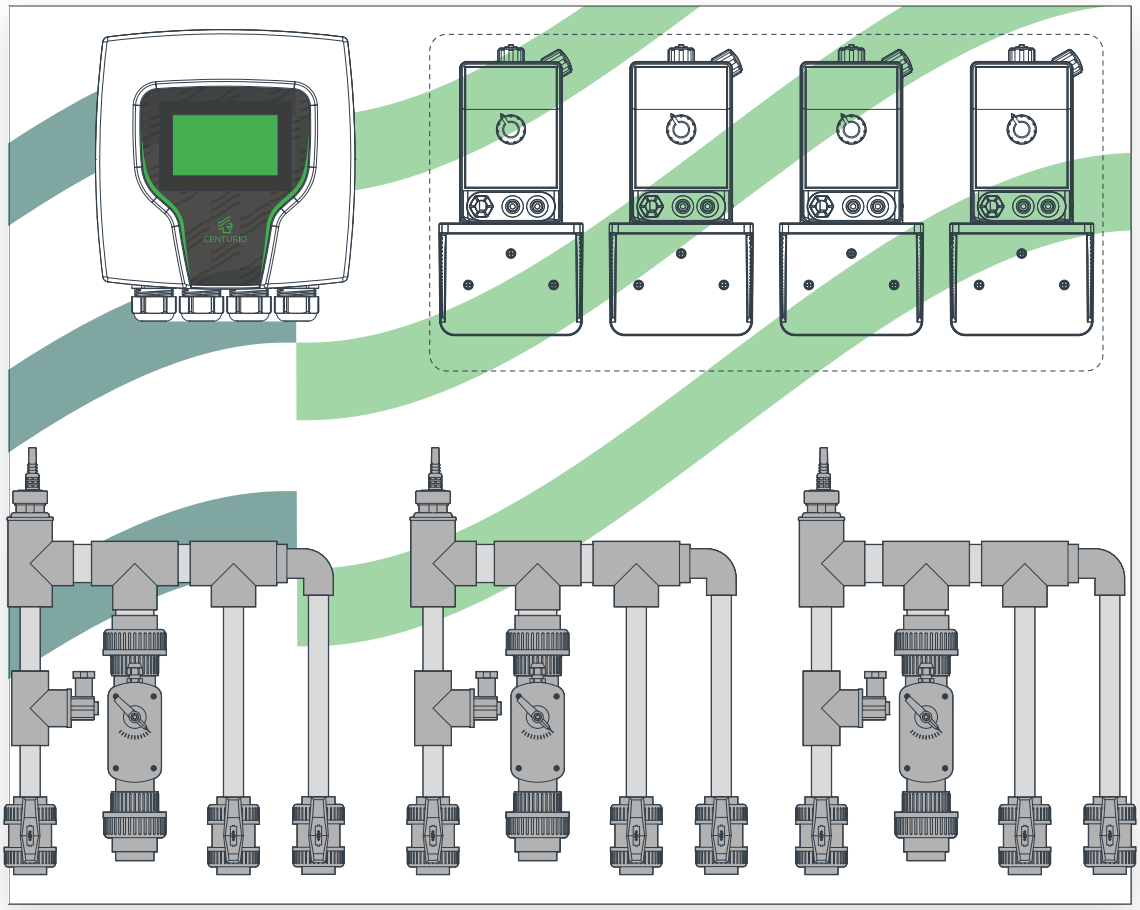
# Intermediate solutions

## Preassembled panel with Centurio Tower system



## FEATURES

Panel with CENTURIO PRO controller, up to 3 conductivities, therefore up to 3 purges, equipped with EV and 4 dosing pumps: one for inhibitor in make-up function and 3 for biocide shock dosing. (Up to 6 purges can be implemented).

Available in 2 versions: Capacitive Conductivity and Inductive Conductivity.

**Optional:** Also available with customised colour background

## CONDUCTIVITY

**controller** | CENTURIO PRO-CD-CD-CD

**p. holder** | 3x PIPING with EV

**probes** | 3x ECDCCPT

**pumps** | Up to 4x KMF1504
*(with bracket)*

## INDUCTIVE CONDUCTIVITY

**controller** | CENTURIO PRO-CDIND-CDIND-CDIND

**p. holder** | 3x PIPING with EV

**probes** | 3x ECDIND

**pumps** | Up to 4x KMF1504
*(with bracket)*

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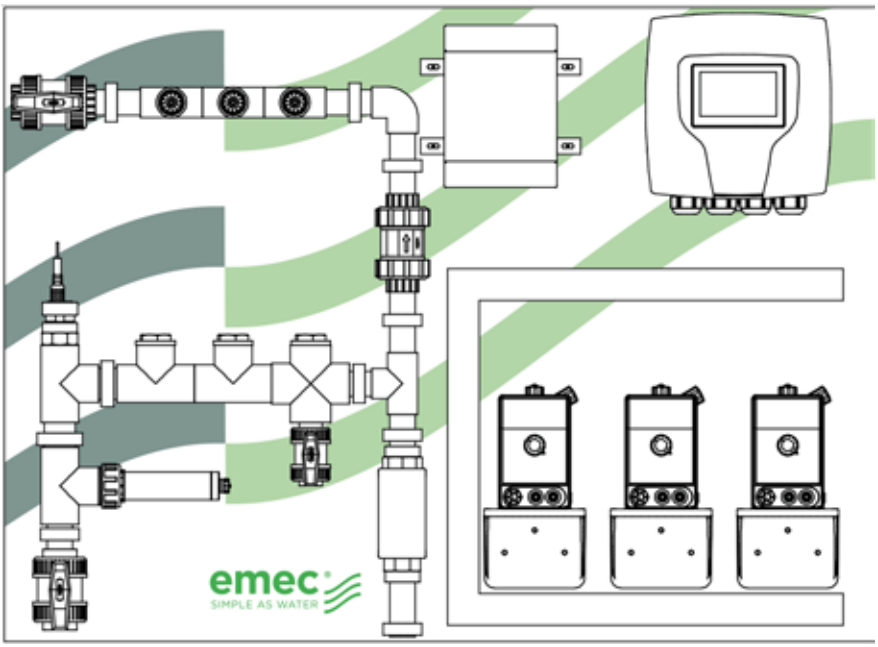
# Intermediate solutions

## Preassembled panel with Centurio Tower or MTower systems




## FEATURES

Panel with CENTURIO/MTOWER controller, with three measurements (CD, pH and Redox), measurement and metering of make-up and purge flow, with PIPING for measurement, 1 1/4" purge and 4 injection points, equipped with 2 dosing pumps (expandable).

Available in 2 versions: Capacitive Conductivity and Inductive Conductivity.

**Optional:** Also available with customised colour background

## CONDUCTIVITY

**controller** | CENTURIO/MTOWER-CD-PH-RH

**p. holder** | PIPING with EV and injection points

**probes** | ECDCCPT
EPHS
ERHS

**pumps** | Up to 2x KMF1504
*(with bracket)*

## INDUCTIVE CONDUCTIVITY

**controller** | CENTURIO/MTOWER-CD-PH-RH

**p. holder** | PIPING with EV and injection points

**probes** | ECDIND
EPHS
ERHS

**pumps** | Up to 2x KMF1504
*(with bracket)*

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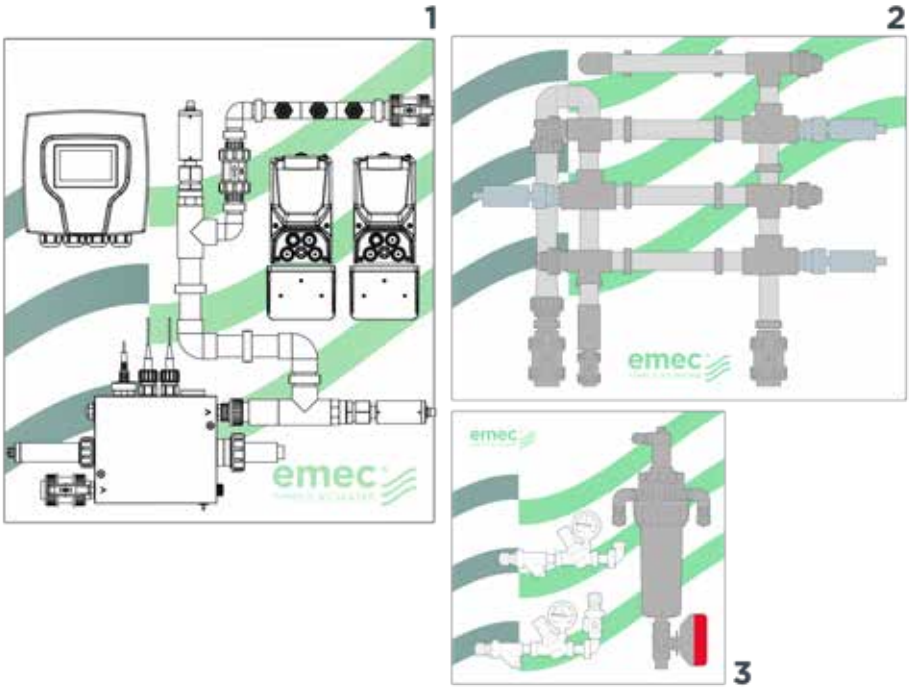
# Top of the range solutions

## Modular preassembled panels with Centurio Tower system




## FEATURES

Top of the range panel with CENTURIO-TOWER controller, with up to 6 measurements (CD, pH and Redox, Tracer, Corrosion and Turbidity), measurement and metering of make-up and purge flow rate, with litre counter and valve on the panel, with PIPING for measurement, 1 1/4" purge and 4 injection points, equipped with 4 dosing pumps.
With separate panels for turbidity probe and double/triple corrosion measurement.

The panel is modular so you can remove or put in probes, valves, dosing pumps.

Available in 2 versions: Capacitive Conductivity and Inductive Conductivity.

**Optional:** Also available with customised colour background

## 1 - CONDUCTIVITY

**controller** | CENTURIO

**p. holder** | PIPING with injection points for purge flow rate measurement

**probes** | 1 ECDCCPT
1 ETRC2
2 ECORR
1 EPHS
1ERHS

**pumps** | Up to 2 x Prisma
*(with bracket)*

## 1 - INDUCTIVE CONDUCTIVITY

**controller** | CENTURIO

**p. holder** | PIPING with injection points for purge flow rate measurement

**probes** | 1 ECDCCPT
1 ETRC2
2 ECORR
1 EPHS
1ERHS

**pumps** | Up to 2 x Prisma
*(with bracket)*

## 2 - CORROSION

**probes** | Up to 3x ECORR

**other** | Corrosion specimen holder kit

## 3- TURBIDITY

**p. holder** | NPED TORB

**probes** | ETORB2

**other** | Cleaning Kit

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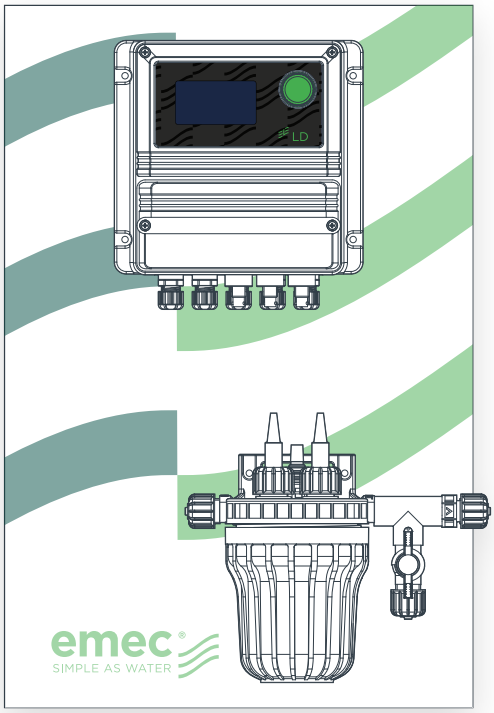
# PREASSEMBLED SINGLE-CHANNEL PANEL SOLUTIONS

## Basic solutions

### Preassembled panel with LDS system




#### FEATURES

Panel with LDSCD controller for purge valve management, with socket probe-holder.

Available in 2 versions: Capacitive Conductivity and Inductive Conductivity.

**Optional:** Also available with customised colour background

#### CONDUCTIVITY

**controller** | LDS-CD

**p. holder** | NPED4

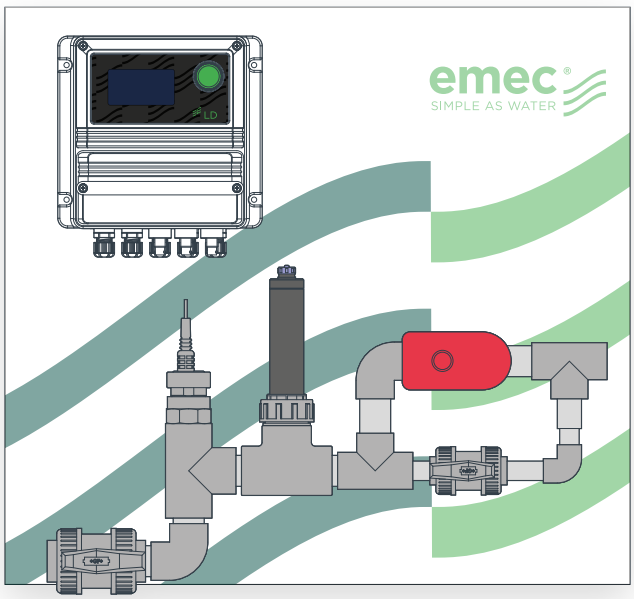
**probe** | ECDCCPT

#### INDUCTIVE CONDUCTIVITY

**controller** | LDS-CDIND

**p. holder** | MANIFOLD-E-3

**probe** | ECDIND




#### FEATURES

Panel with LDSCD controller for managing the 1" partitionable bleed valve, included in the panel.

Available in 2 versions: Capacitive Conductivity and Inductive Conductivity.

**Optional:** Also available with customised colour background

#### CONDUCTIVITY

**controller** | LDS-CD

**p. holder** | PIPING with 1" EV

**probe** | ECDCCPT

#### INDUCTIVE CONDUCTIVITY

**controller** | LDS-CDIND

**p. holder** | PIPING with 1" EV

**probe** | ECDIND

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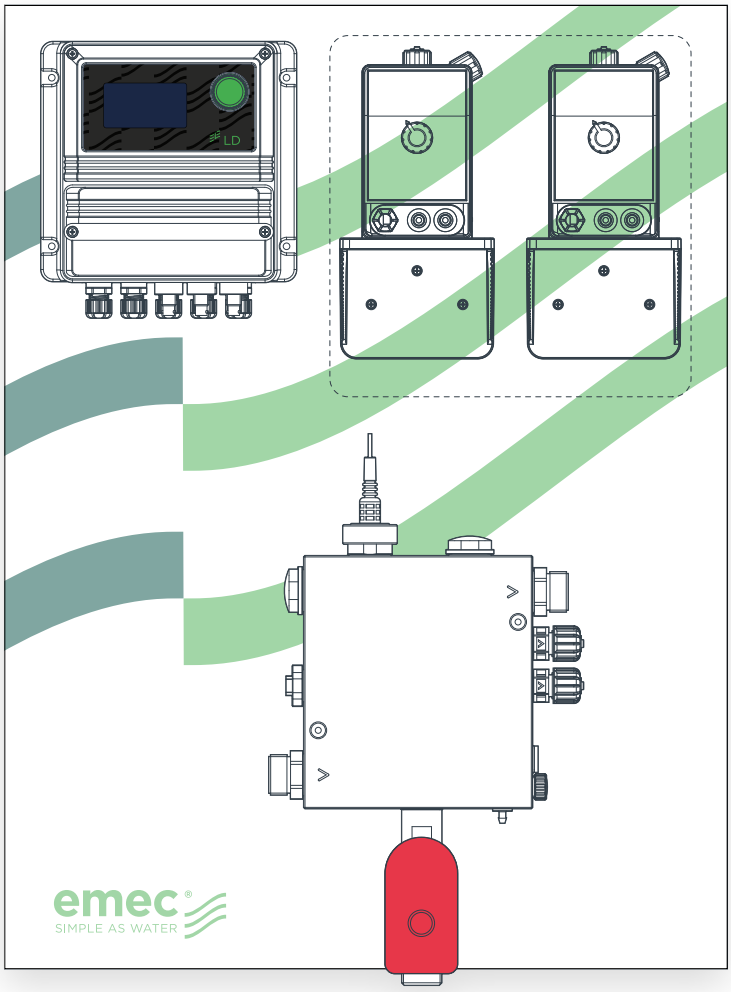
# Intermediate solutions

## Preassembled panel with LDS system




## FEATURES

Panel with LDSCD controller for managing the 1" partitionable bleed valve, included in the panel, equipped with a shock timer pump and an inhibitor pump, with injection points.

Available in 2 versions: Capacitive Conductivity and Inductive Conductivity.

**Optional:** Also available with customised colour background

## CONDUCTIVITY

**controller** | LDS-CD

**p. holder** | MANIFOLD with 1" EV

**probes** | ECDCCPT

**pumps** | KMF1504 *(with bracket)*
KEN1504 *(with bracket)*

## INDUCTIVE CONDUCTIVITY

**controller** | LDS-CDIND

**p. holder** | MANIFOLD with 1" EV with 2 injection points

**probes** | 3x ECDIND

**pumps** | KMF1504 *(with bracket)*
KEN1504 *(with bracket)*

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# ADVANCED REMOTE MONITORING AND CONTROL SYSTEM

# NIMBUS

**Online platform for remote control**

**NIMBUS is an online platform that enables remote monitoring and control of all parameters of compatible EMEC products, allowing interactive management of probes, instrument inputs, product levels, temperature and setpoints.**

## HOW DOES NIMBUS WORK?

All EMEC instruments equipped with an encoder or touchscreen and an Ethernet or 3G/4G connection are immediately connected and ready for use.

In addition to remote interaction, NIMBUS allows you to receive email notifications regarding alarms and the status of your instruments, based on various configuration options.

## ADVANTAGES

- Reduced on-site inspections and maintenance interventions
- Real-time status of network devices (probes, outputs, alarms and setpoints)
- Customisable reports including data from all plant instruments
- Charts, tables and activity logs downloadable to a PC (CSV format)
- Activity scheduling with automatic reminder notifications

## COMPATIBLE SYSTEMS

- PRISMA
- CENTURIO PRO / POOL / TOWER
- MTOWER
- WD
- LD / LDS
- WN
- WT
- VELON
- LD OSIN PLUS
- LOTUS

## KEY FEATURES

Nimbus has been developed to deliver a complete, intuitive and secure user experience: from interactive plant status visualisation to geolocation, from remote configuration to maintenance planning.

Thanks to advanced reporting tools, role-based access management, and the highest standards of security and data protection, Nimbus supports companies and teams in efficiently monitoring their infrastructure, streamlining daily operations and enhancing overall operational control.

**INTUITIVE AND CUSTOMIZABLE DASHBOARD**

**INTERACTIVE MAP WITH REAL-TIME MONITORING OF SYSTEMS AND DEVICES**

**BUILT-IN GEOLOCATION FOR ALL YOUR INSTALLATIONS AND DEVICES**

**GUIDED DEVICE REGISTRATION**

**REMOTE SETUP AND CONTROL, ANYTIME, ANYWHERE**

**SMART TEAM MANAGEMENT WITH PROFILED ACCESS LEVELS**

**INTEGRATED CALENDAR TO PLAN TASKS AND MAINTENANCE**

**DETAILES, CUSTOMIZABLE REPORTS AT YOUR FINGERTIPS**

**MULTILINGUAL PLATFORM**

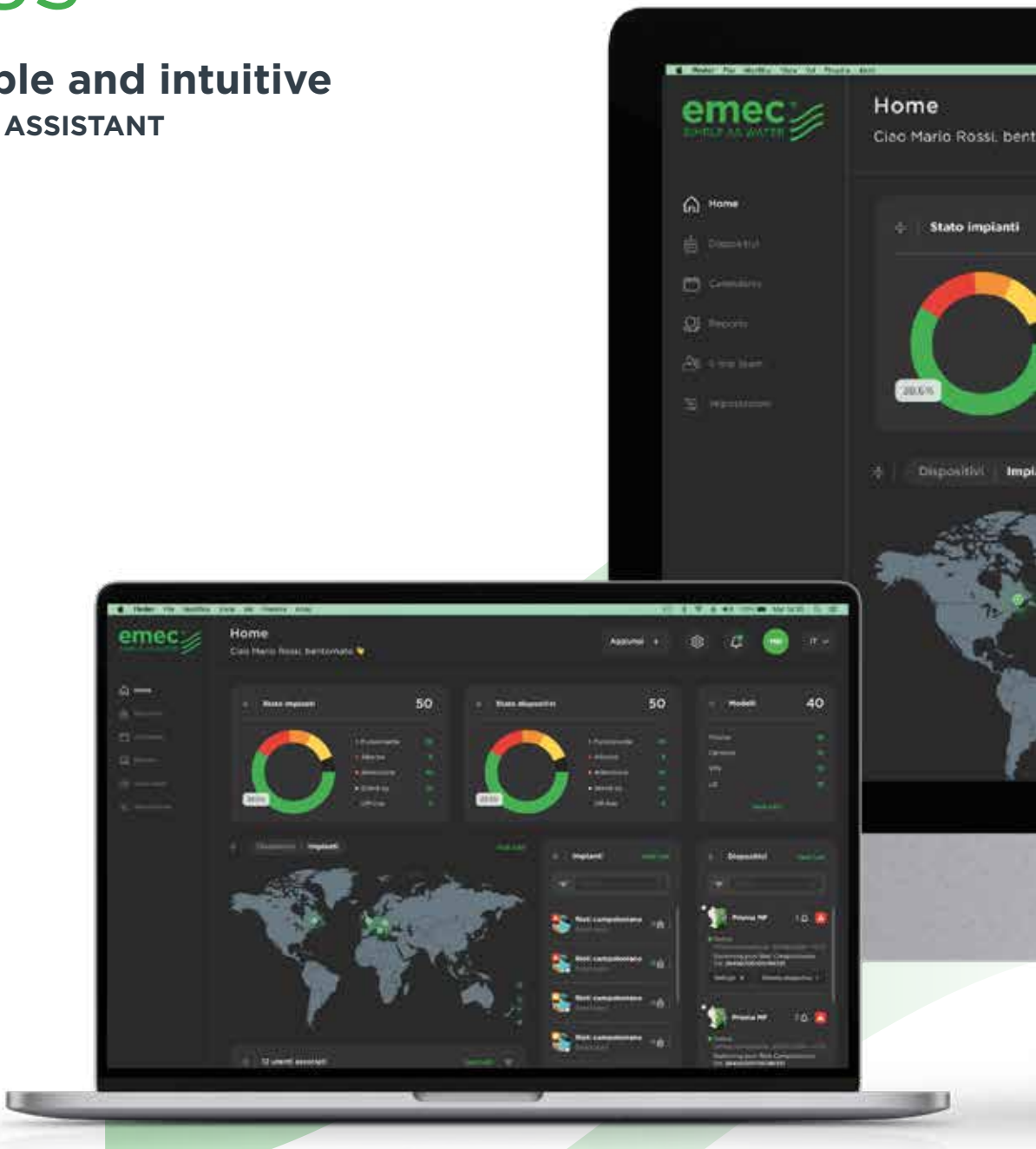
**SECURE CONNECTION WITH STATE-OF-THE-ART ENCRYPTION**

**DATA MANAGEMENT IN COMPLIANCE WITH THE HIGHEST SECURITY AND PRIVACY STANDARDS**

NIMBUS

# Fast, simple and intuitive

## YOUR SMART ASSISTANT




### A MULTILINGUAL WEB PLATFORM

The user interface is available in 34 languages

### MULTIPLE ACCESS LEVELS

Multiple users can be added to the system, with different access levels assigned to each installation

### STATUS NOTIFICATIONS PUSH

Set up push notifications on the status of your installations

## EVERYTHING UNDER CONTROL

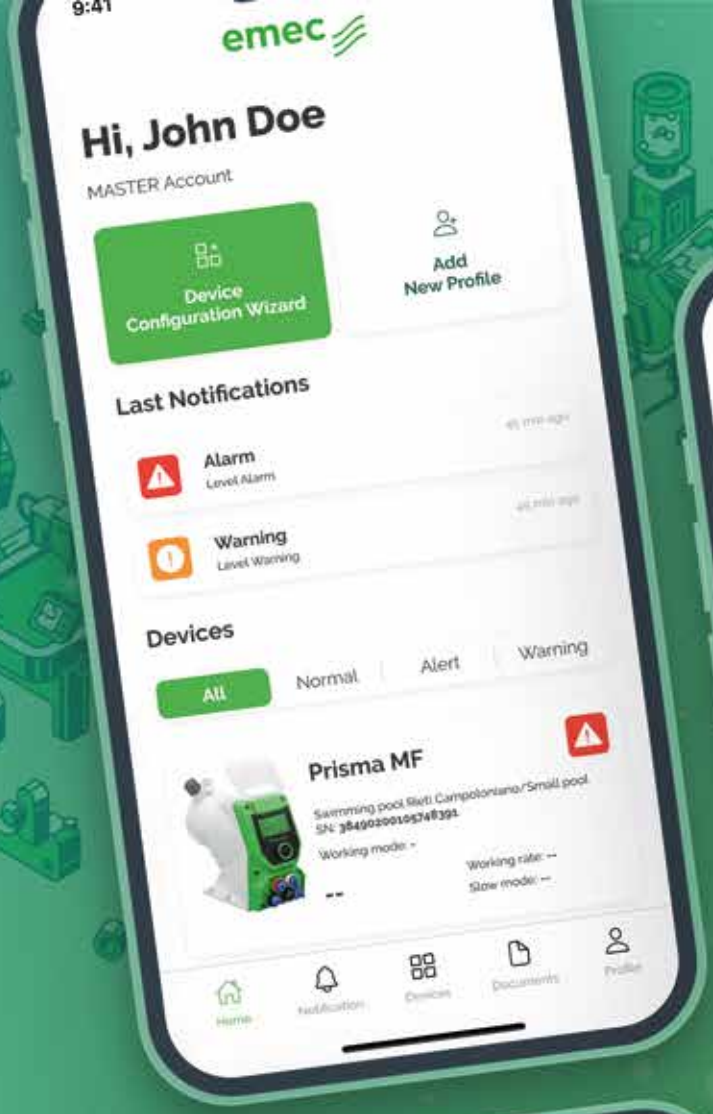
Real-time display of all your plant parameters and monitoring of the status of all probes

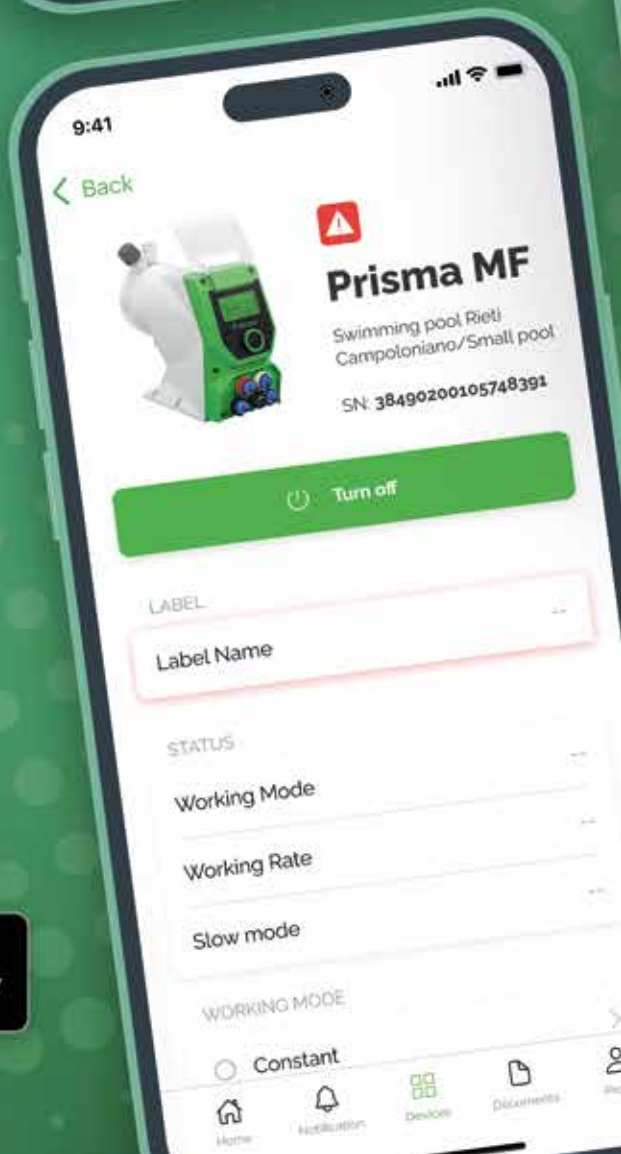
## REAL-TIME MANAGEMENT

Real-time management and configuration of all your plant parameters

## REAL-TIME CHARTSE

Charts of all your plant parameters, based on both real-time data and stored data



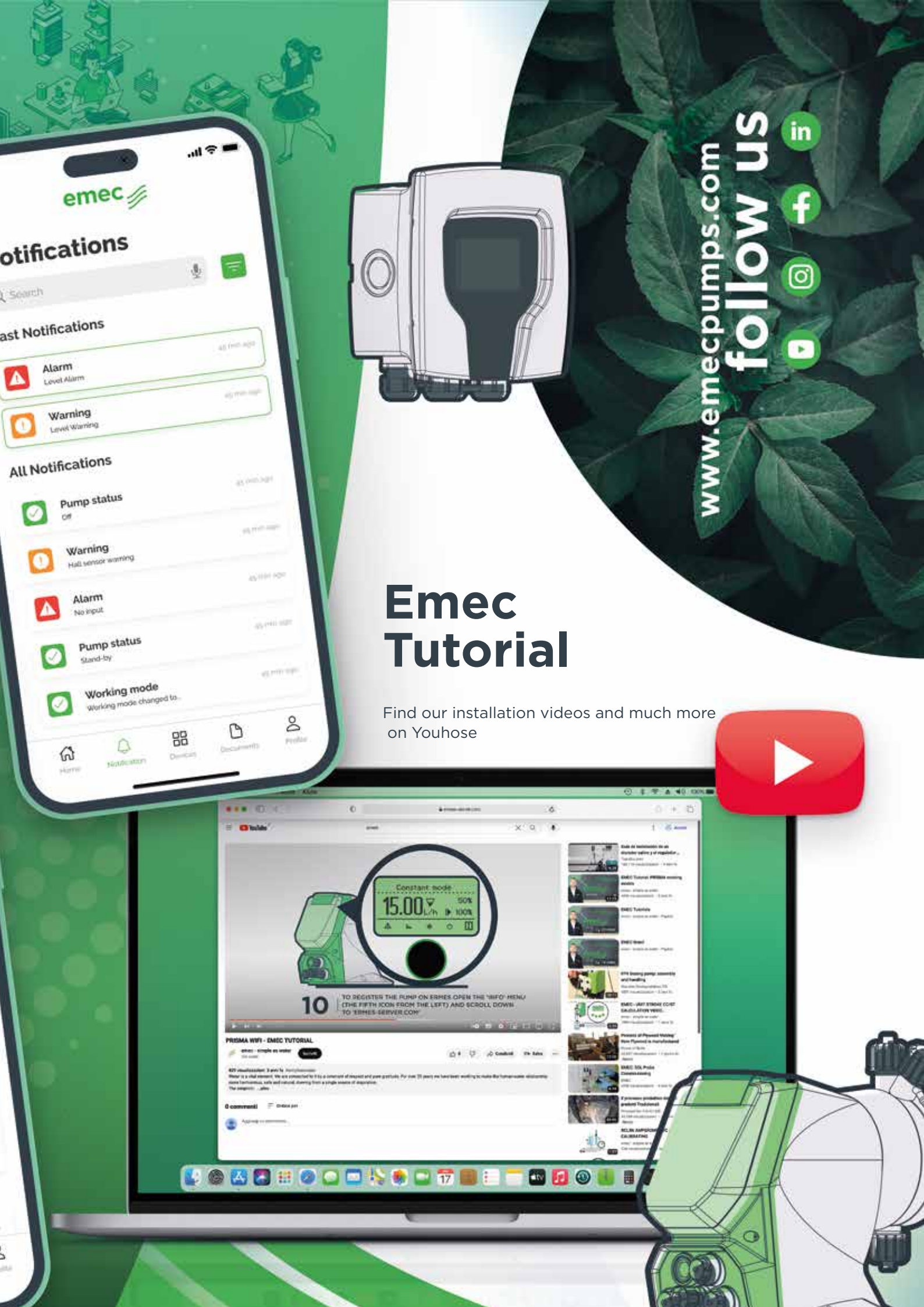

# My Emec

**The app by EMEC**

All your systems in your hand

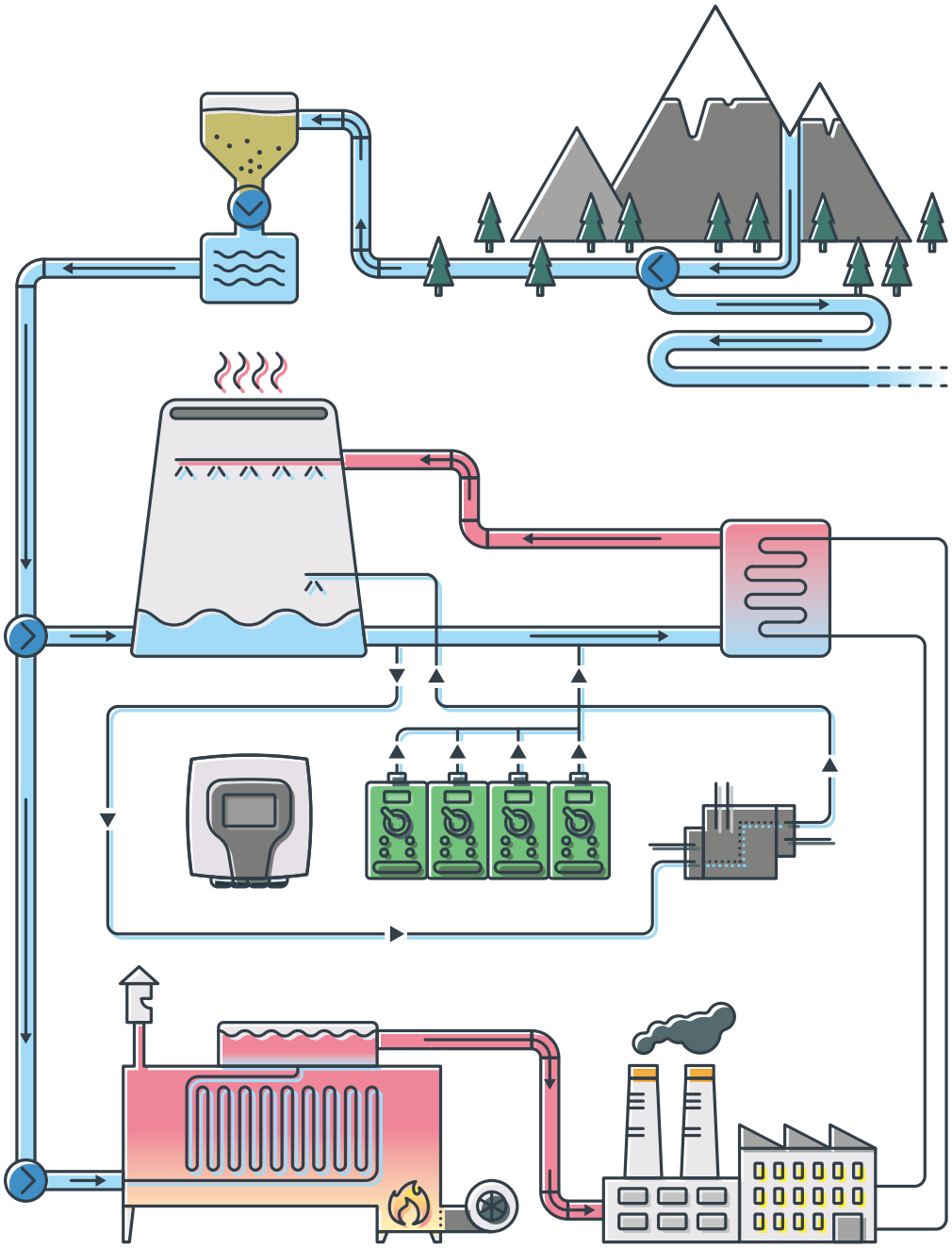
Download on the App Store

GET IT ON Google Play




# Emec Tutorial

Find our installation videos and much more on Youhose



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