



## WATER TREATMENT APPLICATIONS

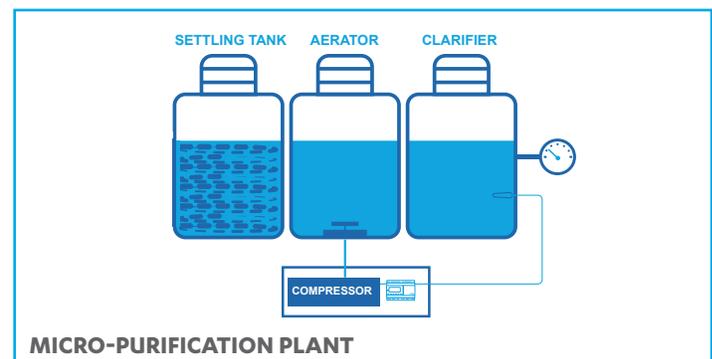
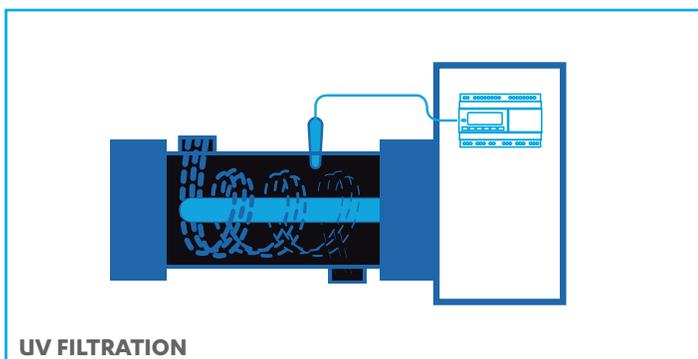
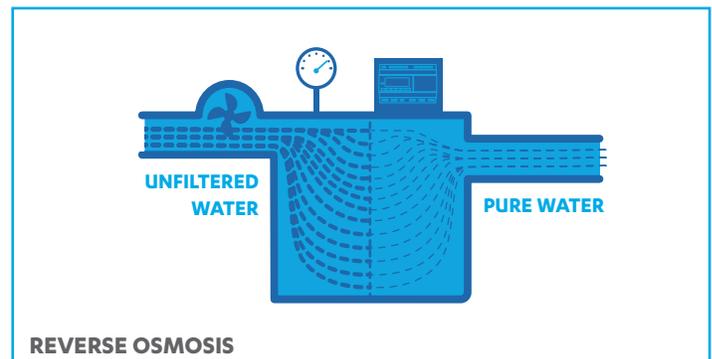
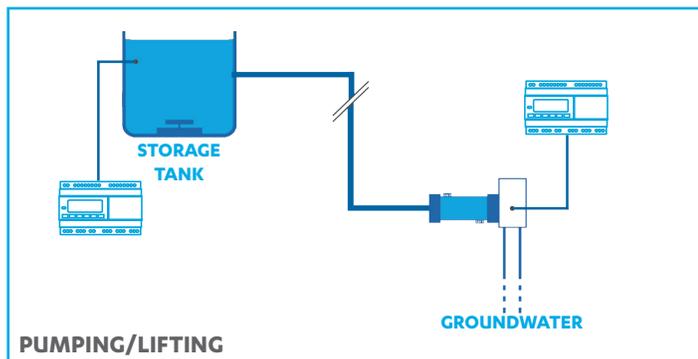
With **em4**, Crouzet Automation offers automated systems ideally suited to the water treatment market, due to a unique combination of features: exceptional performance, precision analog I/O and simplified embedded connectivity.

### TARGETS

- › Manufacturers of micro-purification plants
- › Manufacturers of filtration machines (UV filtration, reverse osmosis)
- › Installers of small pumping and lift stations
- › Installers in the agricultural sector (sprinkler, drilling, irrigation systems)

### APPLICATIONS

Of the various water treatment applications, Crouzet Automation has identified four major applications for which **em4** is particularly suitable.



### FUNCTIONS

#### 1 CONTROL

- › Operating control of pumps and fans
- › Pressure, level and flow regulation
- › No-load operating control

#### 2 MEASUREMENT

- › Measuring pressure and low level
- › Measuring pH/redox
- › Measuring current consumption

#### 3 MONITORING

- › Production monitoring
- › Alarm management (overflow, current draw)
- › Remote fault diagnostics
- › Predictive diagnostics

#### 4 DATALOG

- › Data archiving (pressure, temperature)
- › Historical logging of running and stopping times

# em4 FOR WATER TREATMENT

The em4 range offers solutions tailored to different types of needs such as complete management of a remote fleet, monitoring of one or more installations or local management.



## em4 remote

The first all-in-one solution to bring your application into the Internet of Things

- › First PLC capable of fleet management including map localization
- › Highly secured solution, using e-banking practices and infrastructure
- › Only one device to program via a unique software, em4 soft



### Remote management of fleets of pump houses without adding external modules

- › Inter-site communication links the reservoir and the pumping station that supplies it
- › Devices communicate with one another
- › The reservoir sends pumping commands to the station according to the water level

### Connectivity technology



### em4 toolbox

em4 soft em4 web em4 app



## em4 alert

Nano-PLC that can alert you via SMS or email

- › Only one device to program via a unique software, em4 soft
- › Needs only GSM network to operate (SMS)
- › From a unique and trusted supplier
- › Secured solution, only users identified in the PLC can interact



### Monitoring via SMS or email of a reverse osmosis installation

- › Pump houses send alerts if an event occurs
- › Receipt of datalogs
- › Messages can be exchanged between different machines

### Connectivity technology



### em4 toolbox

em4 soft



## em4 local

The em4 for stand alone use or local area network

- › The most compact and powerful of its category
- › Includes highly accurate 4-20mA analog inputs for industrial sensors
- › Attractive design for an easier integration

### Local management of a micro-purification plant

- › Simple intuitive programming with em4 soft, with the option of importing M3 Soft programs
- › Installation upgraded throughout its life cycle thanks to a high-performance nano-PLC

### Connectivity technology



### em4 toolbox

em4 soft



Stand alone PLC



Usable where 2G (GPRS) cellular network is available



Usable where 3G or 2G cellular network is available



Ethernet for local connection, Internet access needed for em4 remote

em4 soft  
The most intuitive PLC programming software

em4 web  
Web platform to get full access to your equipment

em4 app  
Mobile app, to access your equipment on the go

# TECHNICAL SPECIFICATIONS

- › 24 VDC power supply
- › 26 I/O
- › 16 AON and analog inputs, including 4 x 4-20 mA analog inputs at 1.1%
- › 4 high-speed inputs for encoder (20 kHz or 40 kHz), or counter (60 kHz)
- › Can be extended to 46 I/O, including 16 x 4-20 mA analog inputs at 1.1%
- › 32-bit processor
- › Independently controlled
- › Intuitive programming using the free em4 soft program with numerous application specific function blocks
- › Memory capacity: up to 1,000 function blocks

# BENEFITS OF THE REMOTE AND ALERT OFFERS

- › Faster to set up and learn to use
- › Increasingly efficient maintenance
- › Reduction in transport costs
- › Optimized operating costs
- › Reduced downtime
- › Easier data archiving
- › Offer of new services to users
- › No training fees to budget for

# FOCUS ON...

## Remote management with em4 remote

When you purchase em4 remote you receive the following management tools:

### em4 web

Web platform for full access to devices

- › User management
- › Device management



- Device administration
- Status
- Alarm
- My em4 info

- › Application management

### em4 app

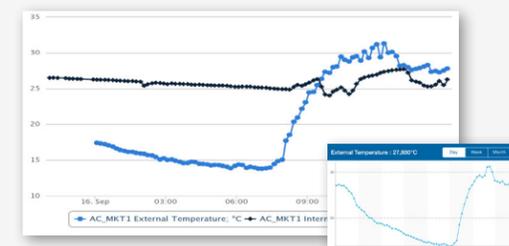
Mobile application for access to devices from a smartphone

Free application included with the em4 remote PLC.



### › Data management

- Event**  
Get notified of all the events on your application (in push mode for em4 app)
- Datalog**  
Display collected data, trend tables or graphs and download them easily



### Monitoring & Control

Check the equipment main parameters and modify application settings remotely



# PART NUMBERS

	Description	Style			Contents of starter kit	
		Glossy black	Glossy white	Robust		
Starter kits	em4 remote 2G* starter kit	88 981 156	88 981 157	Coming soon	- em4 remote - Standard 3 m antenna	- USB interface - USB programming cable
	em4 remote 3G* starter kit	Coming soon				
	em4 remote Ethernet* starter kit	Coming soon			- em4 remote nano-PLC	- Ethernet cable
	em4 alert 2G starter kit	88 981 116	88 981 117	Coming soon	- em4 alert - Standard 3 m antenna	- USB interface - USB programming cable
	em4 alert 3G starter kit	Coming soon				
	em4 local starter kit	88 981 106	88 981 107	88 981 105	- em4 local nano-PLC	- Ethernet cable
	em4 local Ethernet starter kit	Coming soon				

\* em4 remote 2G, 3G and Ethernet include the first year of subscription to em4 remote access (em4 web & em4 app), with a SIM card for the 2G and 3G versions.

Product description	Inputs	Outputs	Glossy black	Glossy white	Robust
<b>Expansions</b>					
em4 digital expansion E10R	6 digital inputs (configurable as analog 0-10V or potentiometer)	4 digital outputs (2 relays 6A and 2 relays 8A)	88 982 113	88 982 114	88 982 112
em4 analog expansion E10A	6 digital inputs (configurable as analog 0-10V / 4-20mA)	4 outputs (2 static 0.5A PWM and 2 analog 0-10V)	88 982 213	88 982 214	88 982 212

	Description	Part number	Description	Features	Part number
Interfaces	Black em4 USB interface	88 980 110	<b>Programmable touch panels</b>		
	White em4 USB interface	88 980 111	MTP6/50 user kit for em4	- 4.3" color touch panel - RS232/RS485 Modbus serial port - USB port - MTP to em4 RS485 Modbus interface cable	Coming soon
	Black em4 RS485 slave Modbus interface	88 980 120			
	White em4 RS485 slave Modbus interface	88 980 121			
Accessories	I/O simulator kit for em4 bases	88 980 150	MTP8/50 user kit for em4	- 4.3" color touch panel - RS232/RS485 Modbus serial port - Ethernet TCP/IP port - MTP to em4 RS485 Modbus interface cable	Coming soon
	Standard 3 m antenna	88 980 160			
	Flat 3 m int/ext antenna	88 980 161			
	10 m ext antenna	88 980 162	MTP8/70 user kit for em4	- 7" color touch panel - 2 RS232/RS485 Modbus serial ports - USB port, Ethernet TCP/IP port - MTP to em4 RS485 Modbus interface cable	Coming soon
	Type B USB 3 m cable	88 980 170			
em4 soft (USB stick)	88 980 140				
Power supplies	24 VDC 7.5 W modular power supply	88 950 303	MTP6/50 - MTP8/70 programming kit (USB)	- USB - Mini USB cable - EB software (CD)	88 970 501
	24 VDC 15 W modular power supply	88 950 304			
	24 VDC 30 W modular power supply	88 950 307	MTP8/50 - MTP8/70 programming kit (Ethernet)	- RJ45 Ethernet crossover cable - EB software (CD)	88 970 502
	24 VDC 60 W modular power supply	88 950 302			

# ABOUT CROUZET AUTOMATION

Supported by an experienced technical team, Crouzet Automation is a pioneer in the simplification of programming. The brand offers the easiest-to-use and most adaptable alternative automation solution for specialized and demanding needs.

Crouzet Automation is a brand of Custom Sensors & Technologies (CST).  
www.crouzet.com

**North America contact:**  
Tel.: +1 619-210-1617  
Fax: +1 800-677-3865  
E-mail: AutomationSales@crouzet.com

Contact us!



Follow us

Custom Sensors & Technologies (CST) is a specialist in designing and manufacturing sensing, control and motion products.

Through its brands, BEI Kimco, BEI Sensors, BEI PSSC, Crouzet, Crydom, Kavlico, Newall and Systron Donner Inertial, CST offers customizable, reliable and efficient components for mission-critical systems in Aerospace & Defense, Transportation, Energy & Infrastructure, Medical, Food and Beverage and Building Equipment markets.

Focused on premium value offers and committed to excellence, CST, with 4.400 employees worldwide and sales of \$590M US in 2014, is the dependable and adaptable partner for the most demanding customers.

www.cstsensors.com