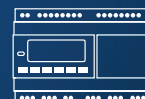


# em4

► REMOTE PLC

## SELECTION GUIDE



The smartest and easiest way to remotely manage equipment and generate new business

- › Select your em4 depending on your remote management needs
- › Discover our remote management capabilities with em4 web and em4 app
- › Check out our new em4 soft including remote function blocks
- › Choose the right solution for you with expansions and accessories

# WHICH em4 DO YOU NEED?

## Select the em4 that fits your needs

	<b>Machine / Equipment fleet management</b>	Manage, classify your equipment, use filters to select it, manage the application programs		<b>Advanced event management</b>	Receive and manage notifications when an event occurs in your application with an app/web platform
	<b>Secured platform and connections</b>	Use highly secure protocols and infrastructure to manage data and machines / equipment		<b>Advanced data history</b>	Graphically display the history of data values in your process, download it in .csv
	<b>Device maintenance &amp; management</b>	Remotely download the new version of application program and/or firmware to a set of em4		<b>Advanced monitoring and control functions</b>	Remotely display or control data values with an app/web platform
	<b>Map localization</b>	Localize your fleet on a map		<b>Advanced remote services for your customers</b>	Create specific web interfaces well adapted to your application
	<b>Automatic clock synchronization</b>	The em4, or the fleet of em4 is always at the right time to better control equipment		<b>Customizable web interface</b>	Personalize your customers web interface with your specification (additional services)

	<b>Basic event management via SMS or email</b>	Receive an SMS or an email when an event occurs in your application		<b>Basic monitoring and control functions via SMS</b>	Remotely display or control data values with SMS
	<b>Basic data report via SMS or email</b>	Receive periodically simple reports by SMS or email		<b>PLC to PLC SMS communication</b>	Exchange data by SMS from one PLC to another

	<b>PLC with local functions only</b>	Stand alone PLC or locally connected with the Ethernet
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Configure your product online

**Connection technology**

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
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**em4 toolbox**

<b>em4 soft</b> The most intuitive PLC programming software	<b>em4 web</b> Web platform, to get full access to your equipment	<b>em4 app</b> Mobile app, to access your equipment on the go
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## 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



SIM card (2G & 3G versions) & remote management subscription included for one year (em4 web, em4 app - see page 4 & 5)

### Connection technology



### em4 toolbox

em4 soft

em4 web

em4 app

Note: the em4 remote offer can be implemented in Europe, USA or in Canada. For other countries please contact us.



## 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



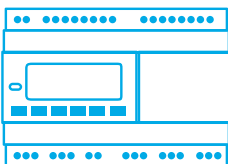
No need to perform complicated integration between the PLC and a modem/gateway

### Connection 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



Easily swap from one version to another version (remote and alert), enabling the upgrade of the equipment

### Connection technology



### em4 toolbox

em4 soft



With **em4 remote**, your equipment gets the simplest access to the Internet of Things

- Simply manage a fleet of machines, check the status of all devices at a glance
- Monitor and control your application from your smartphone or your PC
- Update the application program of multiple devices
- Archive your data and access it remotely
- Offer advanced services to your customers



Check out the **em4 web overview**

# em4 web

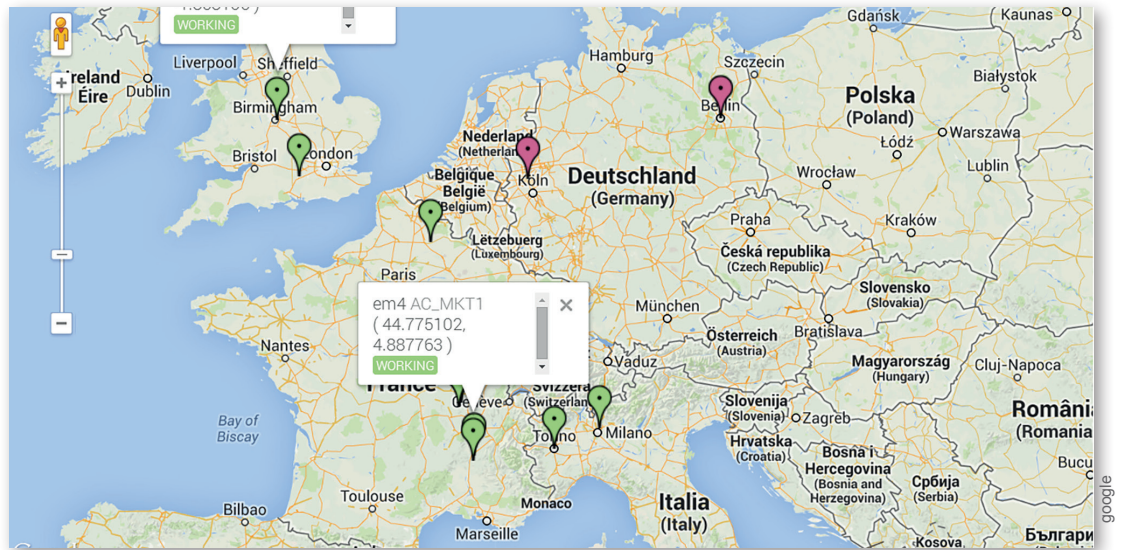
## GET FULL ACCESS TO YOUR EQUIPMENT!

The **em4 web** provides you with a powerful device management web-based platform, allowing you to manage the access, the devices, the data and your application remotely.

### User management

Manage your account and your customers' accounts

### Device management



#### Manage your device

Add, edit, remove, classify equipment and manage software (application program and firmware)



#### Alarm

Get notified of your devices internal alarms and support your customers remotely



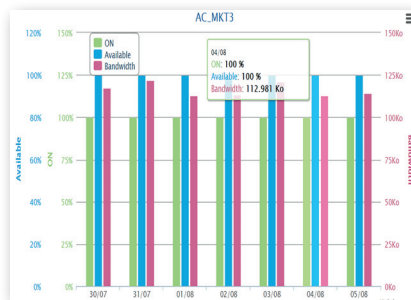
#### Status

Check your **em4** availability, monitor your daily data consumption



#### My em4 info

Get a summary of all relevant information at a glance (versions, status, application name,...)



Category	Picture	Label	Classes	Actions
em4		AC_MKT1	Boiler control, South East area	
em4		AC_MKT2	Energy & Temperature, North East area, Boiler control	
em4		AC_MKT3		

### Application management

- Provide your end customers with simple dashboards
- Choose the data remotely accessible to your end customer

## Data management

Display the data that has been defined with em4 soft in the application program

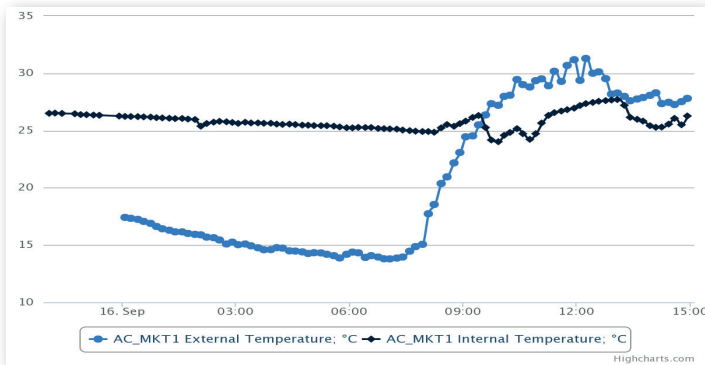
### Event

Get notified of all the events on your application (in push mode for em4 app)

Device	Date	Number	Label	Data 1	Data 2	Acknowledged
AC_MKT1	06/08/2014 09:41:22	0	Pump Failure	: 0.00	: 0.00	Acquitter
AC_MKT1	25/07/2014 08:28:19	0	Pump Failure	: 0.00	: 0.00	
AC_MKT2	07/08/2014 11:28:52	2	Alarm Boiler	Boiler Temperature: 90.01 °C	: 0.00	Acquitter
AC_MKT2	06/08/2014 11:13:20	2	Alarm Boiler	Boiler Temperature: 90.04 °C	: 0.00	Acquitter
AC_MKT2	26/07/2014 10:26:36	2	Alarm Boiler	Boiler Temperature: 90.01 °C	: 0.00	
AC_MKT3	06/08/2014 11:55:43	2	Alarm Boiler	Boiler Temperature: 90.03 °C	: 0.00	Acquitter
AC_MKT3	24/07/2014 09:05:23	2	Alarm Boiler	Boiler Temperature: 67.42 °C	: 0.00	

### Datalog

Display collected data, trend tables or graphs and download them easily



### Monitoring & Control

Check the equipment main parameters and modify application settings remotely

XBOUT Read Bits		XBIN Read/Write Bits	
N°	Labels	N°	Labels
1	Boiler T° Control	1	Switch on the loads 10Mn
2	Boiler T° Alarm		

XWOUT Read Words		XWIN Read/Write Words	
N°	Labels	N°	Labels
1	Internal Temperature	1	Setup Boiler T°
2	External Temperature	2	Setup Alarm Boiler
3	Boiler Temperature	8	Time for Log
4	Light		

# em4 app

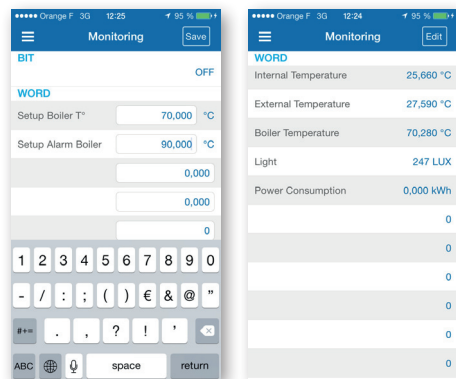
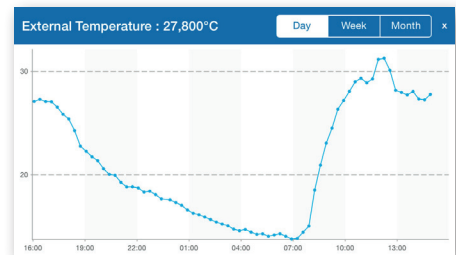
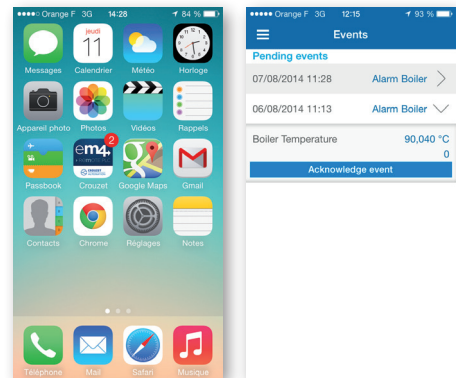
## ACCESS YOUR EQUIPMENT ON THE GO!



em4 app is the ultimate way to control and monitor your em4 from your smartphone! This is a free application included in your em4 remote PLC.

### Select my em4

- Login with your em4 web account to easily access all your available equipment
- Use the application name or simply flash the QRcode

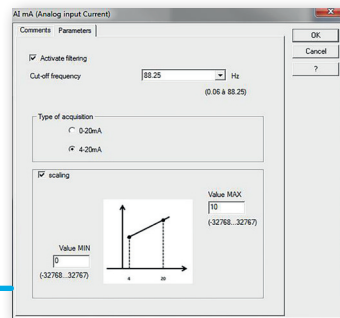


# em4 soft TRY OUR FREE SOFTWARE



Most intuitive programming software on the market, em4 soft now integrates all the remote management features in a single tool

- Improved easiness and intuitive features of M3 Soft
- FBD and SFC language with more than 100 powerful function blocks
- Import M3 Soft FBD programs
- Connect to em4 with USB or Ethernet
- New look in line with the mechanical design of em4 range



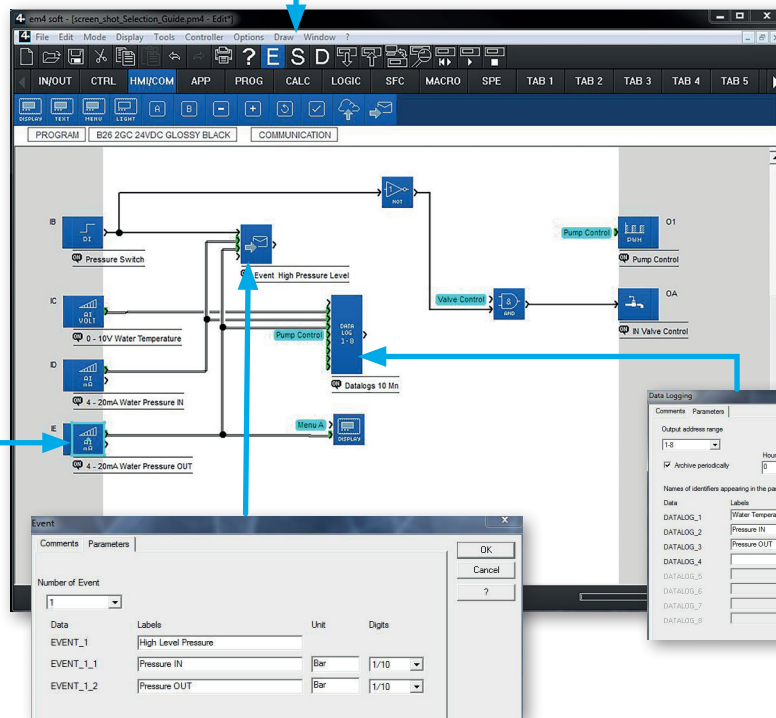
## Smart analog inputs

- Analog I/Os FB implement an easy scaling and filtering function



## Easy integration

- Edition, Simulation and Debug modes allow you to easily setup an application program



## Datalog management

- Up to 3 datalog function blocks to record a history of 8 values, each at different periods of time that are fully controlled by the application program

## Event management

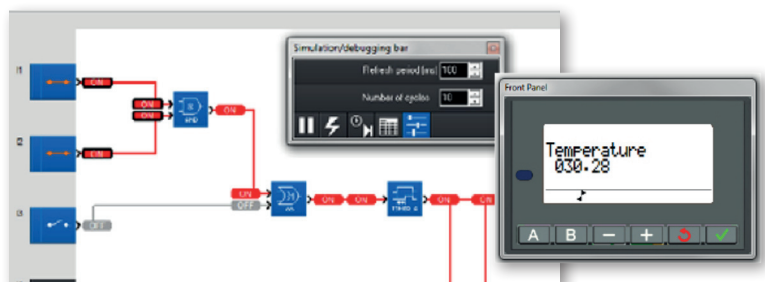
- Up to 24 event function blocks to push an alert message embedding up to two data from the application program

## Monitoring & control management

- XBIN, XWIN function blocks to remotely change set points, XBOU, XWOUT to remotely read data values

## Simulation and Debug mode

- Optimized simulation mode
- Colors clearly indicate the active signals
- The display window is always visible on the top



# em4 MAKE UP YOUR OWN SOLUTION

Product description	Connection type				Design			Details
<b>Bases</b>								<b>Common characteristics:</b> - <b>Supply:</b> 24VDC - <b>Inputs:</b> 16 digital inputs (including 4 high speed, 8 analog 0-10 V / potentiometers and 4 analog 0-10V / 4-20mA) - <b>Outputs:</b> 10 digital outputs (including 2 static 0.5A PWM, 2 relays 6A and 6 relays 8A)
em4 remote 2G*	✓			88 981 153	88 981 154	88 981 152		
em4 remote 3G*		✓		88 981 163	88 981 164	88 981 162		
em4 remote Ethernet*			✓	88 981 173	88 981 174	88 981 172		
em4 alert 2G	✓			88 981 113	88 981 114	88 981 112		
em4 alert 3G		✓		88 981 123	88 981 124	88 981 122		
em4 local	✓			88 981 103	88 981 104	88 981 102		
em4 local Ethernet			✓	88 981 133	88 981 134	88 981 132		
<b>Starter kits</b>								<b>An em4 starter kit includes:</b> - The em4 remote nano-PLC - The standard 3 m antenna - The USB interface - The USB programming cable - The em4 remote nano-PLC - The Ethernet cable - The em4 alert nano-PLC - The standard 3 m antenna - The USB interface - The USB programming cable - The em4 local nano-PLC - The Ethernet cable - The em4 soft (USB key)
Starter kit em4 remote 2G*	✓			88 981 156	88 981 157	88 981 155		
Starter kit em4 remote 3G*		✓		88 981 166	88 981 167	88 981 165		
Starter kit em4 remote Ethernet*			✓	88 981 176	88 981 177	88 981 175		
Starter kit em4 alert 2G	✓			88 981 116	88 981 117	88 981 115		
Starter kit em4 alert 3G		✓		88 981 126	88 981 127	88 981 125		
Starter kit em4 local	✓			88 981 106	88 981 107	88 981 105		
Starter kit em4 local Ethernet			✓	88 981 136	88 981 137	88 981 135		
<b>Evaluation cases</b>								<b>The ready-to-use evaluation case includes:</b> - The starter kit (description above) - The power supply 110-230VAC with Europe and US adaptor - The simulator PCB for the 16 Inputs with switches, potentiometers and terminals to connect your sensor for evaluation - The simulator PCB for the 10 Outputs with 11 LEDs and terminals to connect the 2 static outputs to a device for evaluation
Evaluation case em4 remote 2G*	✓			88 980 185	-	-		
Evaluation case em4 remote 3G*		✓		88 980 186	-	-		
Evaluation case em4 remote Ethernet*			✓	-	88 980 187	-		
Evaluation case em4 alert 2G	✓			88 980 181	-	-		
Evaluation case em4 alert 3G		✓		88 980 182	-	-		
Evaluation case em4 local	✓			88 980 180	-	-		
Evaluation case em4 local Ethernet			✓	-	88 980 183	-		

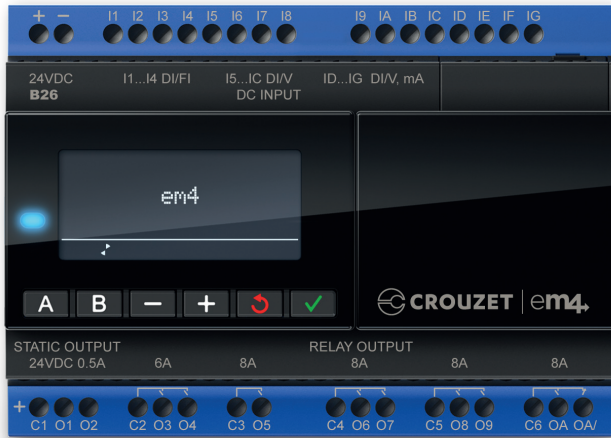
\* em4 remote 2G, 3G and Ethernet include the first year of subscription to em4 remote access (em4 web & em4 app), with a SIM card for the 2G and 3G versions. The 3G and Ethernet versions will be available during the course of 2015.

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

	Product description	Part number	Description	Key features	Part number
Interfaces	em4 USB interface black	88 980 110	Programmable touch panels	MTP6/50 user kit for em4 - 4.3" color touch panel - Modbus RS232/RS485 serial port - USB port - MTP to em4 RS485 Modbus interface cable	88 970 692
	em4 USB interface white	88 980 111			
	em4 interface RS485 Modbus slave black	88 980 120			
	em4 interface RS485 Modbus slave white	88 980 121			
Accessories	em4 Set of I/O simulator for bases	88 980 150	MTP8/50 user kit for em4 - 4.3" color touch panel - Modbus RS232/RS485 serial port - Ethernet TCP/IP port - MTP to em4 RS485 Modbus interface cable	88 970 694	
	Antenna 3 m standard	88 980 160			
	Antenna 3 m int/ext flat	88 980 161			
	Antenna 10 m ext	88 980 162	MTP8/70 user kit for em4 - 7" color touch panel - 2x Modbus RS232/RS485 serial port - USB port, Ethernet TCP/IP port - MTP to em4 RS485 Modbus interface cable	88 970 696	
	USB cable 3 m B type	88 980 170			
	em4 soft (USB key)	88 980 140			
Power supplies	Modular power supply 24VDC 7.5 W	88 950 303	MTP6/50 - MTP8/70 programming kit (USB)	- USB - Mini USB cable - EB Software (CD)	88 970 501
	Modular power supply 24VDC 15 W	88 950 304			
	Modular power supply 24VDC 30 W	88 950 307	MTP8/50 - MTP8/70 programming kit (Ethernet)	- Ethernet crossover cable - EB Software (CD)	88 970 502
	Modular power supply 24VDC 60 W	88 950 302			

# em4 TECHNICAL OVERVIEW

## em4 nano-PLC



## em4 base general data

Item	Main characteristics
Power Supply	24VDC (-15% / +20%) 4W-6.5W
Temperature	Operation: -20°C to 60°C
HMI	4 rows x 18 characters (black & white) 6 keys
Programming	FBD (including SFC) Large application program area ~1000 functions blocks
RTC	Backup with internal recyclable battery (10 years)
Connection	Cellular or Ethernet network
Option Interfaces	USB, Modbus RS485 slave
Protection	IP20 on I/Os terminals IP40 on front panel for Glossy IP50 on front panel for Robust
Certification	CE, cULus listed

## em4 base inputs

#	Main characteristics
4	24VDC digital inputs Fast digital encoder (20kHz or 40kHz), high speed counters (60kHz), tachometer, chronometer, period meter
8	24VDC digital inputs 12 bit analog inputs (Potent. or 0-28.8V +/-2%) for NTC, LDR 11 bit analog inputs (0-10V +/-1.2%)
4	24VDC digital inputs 12 bit analog inputs (0-10V +/-0.8%) 11 bit analog inputs (0-20mA / 4-20mA +/-1.1%)

Accuracy of analog inputs @25°C

## em4 base outputs

#	Main characteristics
2	Static 24VDC 0.5A digital outputs 10 bit PWM 24VDC analog outputs (0-10V or 4-20mA with an external converter)
2	Relay 250VAC / 6A digital outputs
6	Relay 250VAC / 8A digital outputs Including one with NO/NC contact

## em4 expansions

### E10A analog expansion 0-10V

#	Main characteristics
6	24VDC digital inputs 12 bit analog inputs (0-10V +/-0.8%) 11 bit analog inputs (0-20 / 4-20mA +/-1.2%)
2	Static 24VDC 0.5A digital outputs 10 bit PWM 24VDC analog outputs (0-10V or 4-20mA with an external converter)
2	10 bit 0-10V analog output (+/-1%)

Accuracy of analog inputs and outputs @25°C



### E10R digital expansion

#	Main characteristics
6	24VDC digital inputs 12 bit analog inputs (Potent. or 0-28.8V +/-2%) for NTC, LDR 11 bit analog inputs (0-10V +/-1.2%)
2	Relay 250VAC / 6A digital outputs
2	Relay 250VAC / 8A digital outputs

Accuracy of analog inputs and outputs @25°C



# 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

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