em4

em4 Ethernet,
THE MOST INTUITIVE AND EASY TO USE NANO-PLC ON YOUR ETHERNET NETWORK

CROUZET AUTOMATION

A BRAND OF
INNOVISTA SENSORS
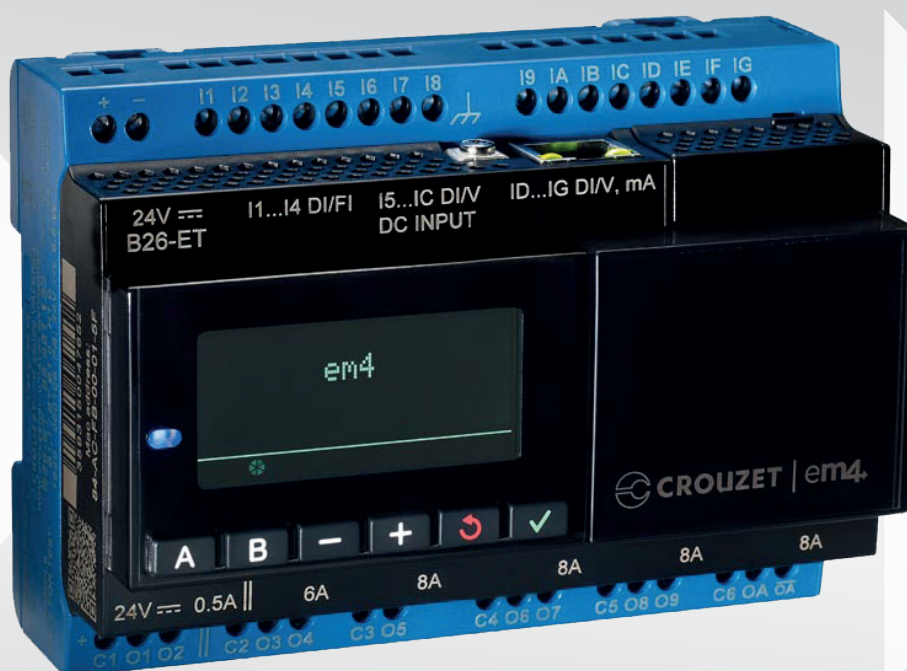
em4, Ethernet,
AN EXTENDED IP CONNECTIVITY...

The programmable logic controller with Modbus TCP/IP communication, manages datalogs in .csv format (Excel) and alerts by email.

Complete access to your equipment:

Easy to set up
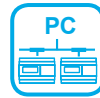Program and set up your em4 Ethernet from your PC using standard network connections

Control, monitor and supervise
Manage automated installations using TCP/IP Ethernet Modbus

Essential information
Save data (datalog) from your installation and periodically receive a .csv file* by email or FTP server**

Simplified addressing
With auto discovery of em4 labels easily address up to 8 em4

Whether you are an **installer, electrician, integrator, manufacturer of small machines** or you work in **a design office**, em4 Ethernet is perfectly suited to your needs.


* Text file which can be manipulated in an Excel spreadsheet.
** The FTP (File Transfer Protocol) server transfers files via the Internet or a local computer network (intranet). Any person with the appropriate permission can upload and send files to a remote computer running such a server.

The most intelligent and easiest network solution for managing your systems

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› Simple to learn and use

› Optimised maintenance costs

› Reduced operating costs

› Improve energy management

› Easy data archiving

› Accurate measurements from your industrial sensors

› No training costs to consider

THE em4 Ethernet RANGE
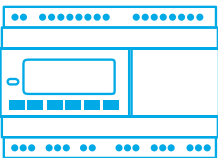
em4 Ethernet

Programmable Logic Controller communicating on local area network

› Manage timed or trigger based data exchange between devices via simple function blocks (Modbus TCP/IP),

› Program and debug your em4 Ethernet from anywhere on the Ethernet local network,

› Receive scheduled simple datalogs via email or FTP,

› Send email alerts fully controlled by the application program.

› **Communicate with up to 16 em4 Ethernet or other devices with the Ethernet Modbus TCP/IP standard protocol Client and Server**
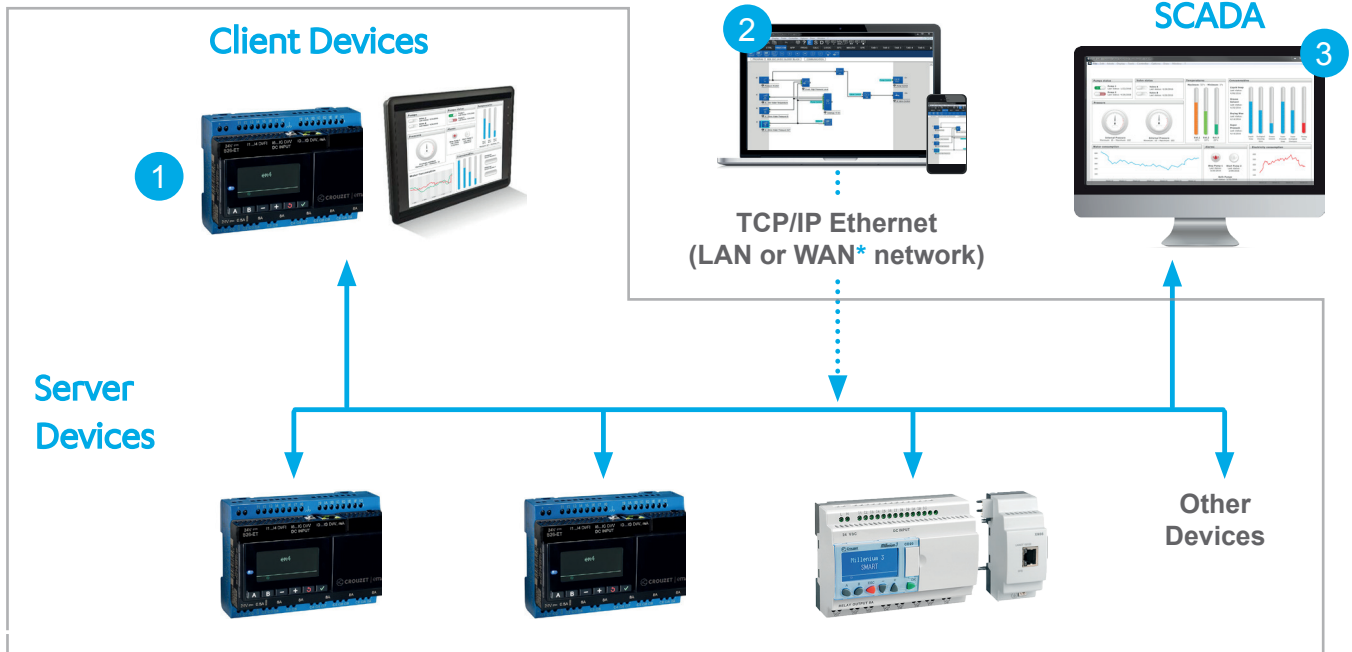› **Connect the touch panel directly to your em4 Ethernet**

em4 tool box

em4 soft

Native Ethernet	No need for USB or Modbus accessories
Discovery	Automatically detect up to 8, and debug all em4 in the network
Modbus TCP/IP Client and server	Communicate with up to 16 devices on the network
Datalog via email or FTP	Receive scheduled .csv files via email or FTP
Event management by email	Receive an email as soon as an event occurs in your application
Go online	Connect to your em4 via the internet

CREATE YOUR em4 NETWORK

Due to extensive connectivity options, remotely access the system in real time, manage and centralise data and take control of your installation.
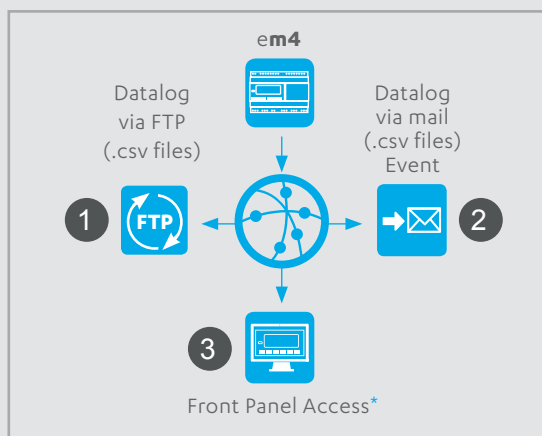
TCP/IP Modbus Network

Client Devices

1

2

SCADA

3

**TCP/IP Ethernet
(LAN or WAN* network)**

Server Devices

Other Devices

* External router to set up

1 Create your Modbus TCP/IP network by identifying client devices and server equipment

2 Manage your devices from your computer in a local network: Editing programs, Simulation and Debug program

3 Possibility of adding a SCADA for remote management of your installation in real time

Discover the network functionalities:

em4

Datalog via FTP (.csv files)

Datalog via mail (.csv files) Event

1 FTP

2

3

Front Panel Access*

1 On an FTP server, periodically receive .csv files of saved variables

2 By mail, receive alerts or periodically .csv files of saved variables

3 Remotely check the em4 front panel without having access to the program

* Router requires configuration

em4 soft,
THE MOST INTUITIVE ON THE MARKET

The most intuitive, programming software on the market, e**m4** soft, includes all remote management functions in a single tool and it is a **free software**!

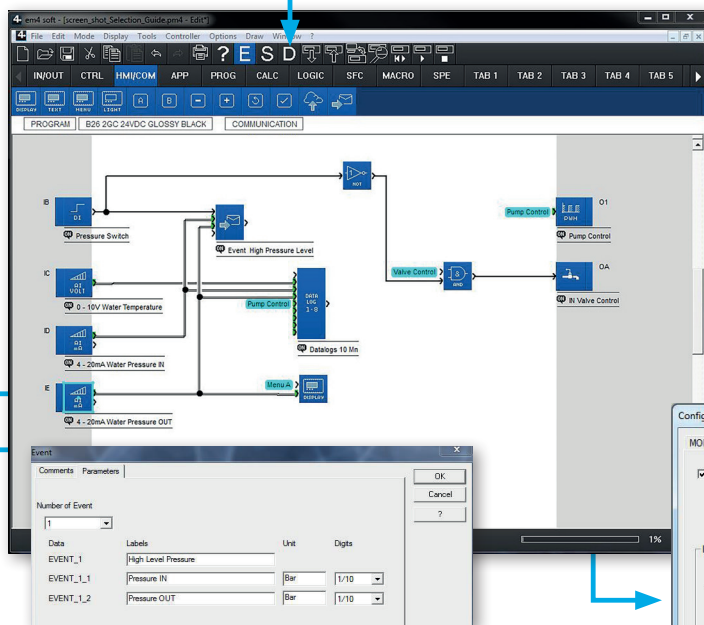› **Saves time when designing your application** and remote functions by using a graphical programming language.
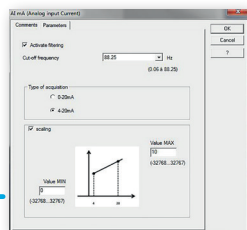
Analogue inputs
› Analogue input blocks integrating a scale factor and filtering function.
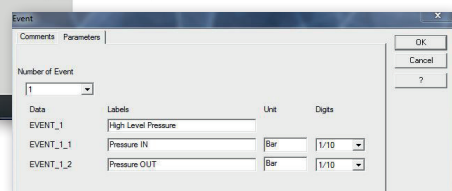
Easy integration
› **E**diting, **S**imulation and **D**ebug modes allow you to set up and configure your application program.
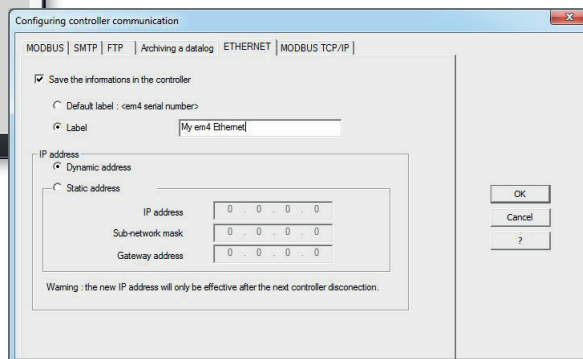
Datalog
› Up to three functional blocks allow the history of 24 values to be saved by sending a .csv file by email or FTP.
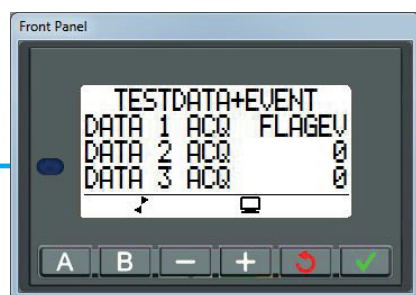
Simulation and Debugging Mode
› Optimised mode simulation,
› Colours make active signals clearly visible.

Label
› Easily identify your e**m4** on the network.

Event management
› Up to 24 customisable 'Event' blocks for sending alert messages directly to recipients or to your remote management system.

Access to the front panel
› Control the e**m4** front panel directly from your computer.

e**m4**, Ethernet TECHNICAL DATA

e**m4** Ethernet nano-PLC

e**m4** base - General data

	Main features
Power supply	24 V DC (-15% / +20%) 4W-6.5W
Operating temperature	-20°C to 60°C
MMI	4 lines of 18 characters (black and white) 6-button keypad
Programming	FBD (including SFC) Large capacity memory ~1000 functional blocks
Clock	Backed up by a recyclable internal battery with a 10-year lifespan
Connections	Ethernet, Modbus TCP/IP Client & Server, email, FTP
Optional interfaces	USB, RS485 slave Modbus
Protection	IP20 on I/O terminals IP40 on the Glossy front panel
Certification	CE, cULus listed

e**m4** base - Inputs

No.	Main features
4	24 V DC on/off inputs Quick encoder inputs (20kHz or 40kHz), counter (60kHz), tachometer, timer, time interval meter
8	24 V DC on/off inputs 12-bit analogue inputs (Potentiometer or 0-28.8V ±2%) for NTC, LDR 10-bit analogue inputs (0-10V ±1.1%)
4	24 V DC on/off inputs 12-bit analogue inputs (0-10V ±0.8%) 11-bit analogue inputs (0-20mA / 4-20mA ±1.2%)

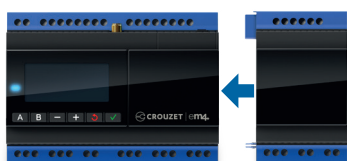*Accuracy of analogue inputs at 25°C*

e**m4** base - Outputs

No.	Main features
2	Static 24 V DC 0.5A digital outputs 10 bit PWM 24 V DC analog outputs (0-10V or 4-20mA with an external converter)
2	250 V AC / 6A relay outputs
6	250 V AC / 8A relay outputs One with NO/NC contact

e**m4** expansions

E10A analogue expansions

No.	Principal features
6	24 V DC on/off inputs 12-bit analogue inputs (0-10V ±0.8%) 11-bit analogue inputs (0-20 / 4-20mA ±1.2%)
2	24 V DC 0.5A static outputs 24 V DC PWM outputs (0-10V or 4-20mA outputs with external converter)
2	10-bit 0-10V analogue outputs (±1%)

Accuracy of analogue inputs and outputs at 25°C

E10R digital expansions

No.	Main features
6	24 V DC on/off inputs 12-bit analogue inputs (Potentiometer or 0-28.8V ±2%) for digital time converter, LDR 10-bit analogue inputs (0-10V ±1.1%)
2	250 V AC relay outputs / 6A digital outputs
2	250 V AC relay outputs / 8A digital outputs

Accuracy of analogue inputs at 25°C

max. 2 expansions

e**m4** Ethernet product pages

e**m4** Part numbers

	Description	Reference
Glossy Black	e**m4** Ethernet	**88 981 133**
	Starter kit e**m4** Ethernet	**88 981 136**
	e**m4** digital expansion E10R	**88 982 113**
	e**m4** analog expansion E10A	**88 982 213**
	Evaluation case e**m4** Ethernet	**88 980 183**