easyHMI.
Operation, Visualisation
and Control with CoDeSys.
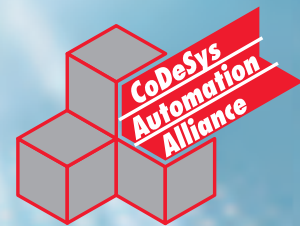
Tool line 3

single production
clearance   20 mm
good parts   220 pieces
bad parts   9 pieces

Start   Stop   Machine in operation

alarmlist

CoDeSys Automation Alliance

Product Information
Multi-Function Display MFD4

MOELLER

We keep power under control.

Multi-Function Display.
For Universal Use.

easySoft-CoDeSys

easyHMI

easyControl

XC100/200

The MFD4-5-XRC-30 multi-function display is a new component in Moeller's automation range. The device from the easyHMI device series features a full graphics 5.7 inch colour STN display with 256 colours, resistive touch technology as well as a host of communication options.

Thanks to the integrated PLC functionality, the MFD4 can be used both as an HMI and as an HMI control device. Only one software, easySoft-CoDeSys, is needed for the visualisation and the PLC application. The Windows CE-based panel comes with a 64 MB SRAM memory. 6 MB Flash memory is provided for visualisation tasks and 2 MB Flash memory for the PLC program.

Universal communication

The MFD4 comes with an Ethernet, combined CANopen/easyNet and RS232 interface. The Ethernet interface (10/100 MB) ensures fast program downloads and can also be used for communication to other controllers. An OPC connection, visualisation via WEB browser or file transfer via FTP access complete the range of communication options available. The RS232 is designed as an alternative programming access and can be also used for communication with peripheral devices such as modems or barcode scanners. The combined CANopen/easyNet interface fully integrates the MFD4 in the Moeller automation world. This means that easy800, easy-Control EC4 or XC100/XC200 can be interconnected without any problem. xStart motor starters can be connected directly to the MFD4 via SmartWire by means of a gateway.
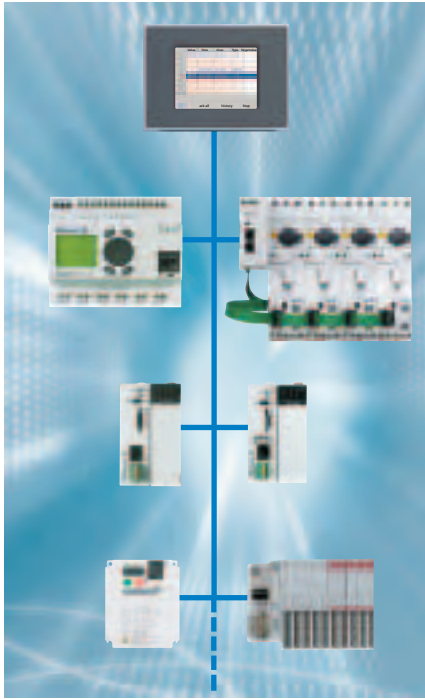
Licenses – all inclusive

The license required for Windows CE and also the PLC license are already included in the price of the device.

MMC enables universal use

The complete project, recipe data, trend and alarm data, as well as the operating system can be stored on a Multi-Media memory card if required. This important feature enables the simple and reliable exchange of data worldwide without any programming device required.

2

CANopen
The MFD4 can be run as network master or also as slave on the CANopen bus. The SmartWire gateway enables motor starters, for example, to be accessed directly from a PLC.
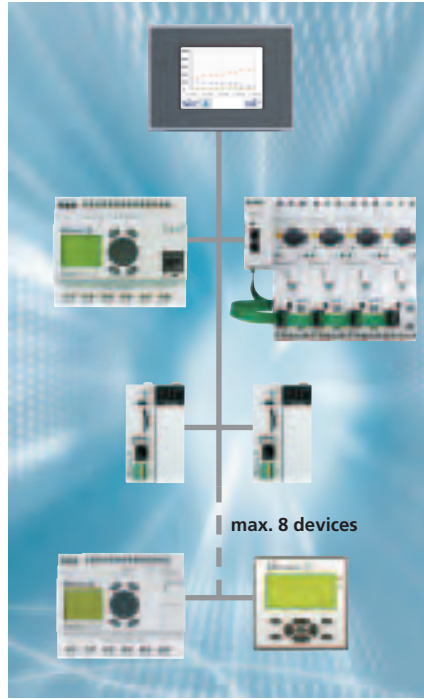
easyNET
The easyNET connects the easy world with the easyHMI, easyControl and XC200 controllers. Up to 8 stations can be connected together simply. Motor starters can also be connected here directly via the SmartWire gateway.
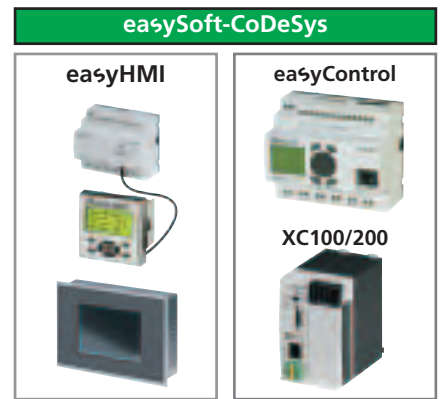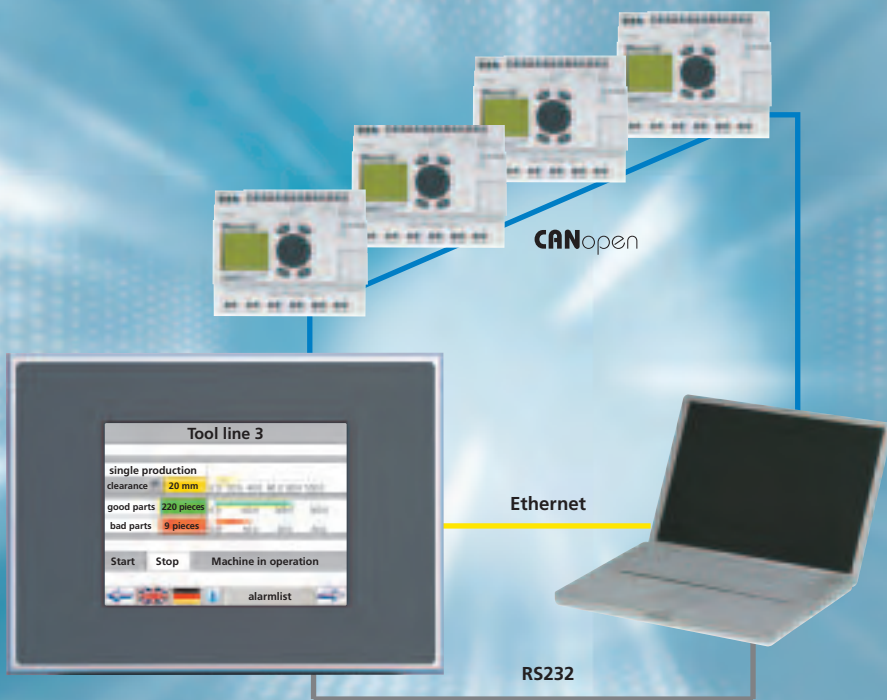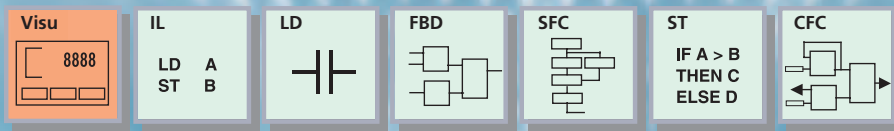
Ethernet
The 10/100 Mbit Ethernet interface of MFD4 guarantees the perfect connection to IT communication. Whether for fast programming access, data exchange between the PLCs, web server or OPC server. It couldn't be simpler and quicker.

1 Power supply
24 V DC; protected against reverse polarity and overvoltage.

2 Ethernet
Programming, communication with other devices, OPC Server, web Server.

3 RS232
Programming, data transfer in Transparent mode. Transfer of the operating system

4 CANopen/easyNet
Combined CANopen/easyNet interface. Complete integration in the Moeller automation world and remote connection of I/O devices.

5 MMC card
Storage of recipe data, general data and the user program; operating system update.
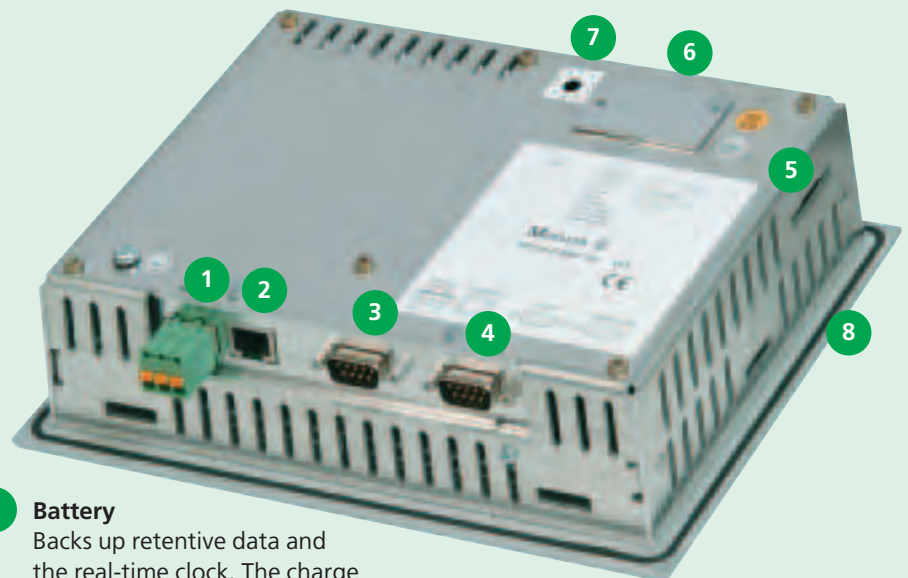
6 Battery
Backs up retentive data and the real-time clock. The charge state is monitored.

7 Operating mode selector switch
Starting and stopping the program. The device can be restored to the factory setting via the covered Set button.

8 Integrated rubber seal
Rubber seal integrated in the front frame guarantees problem-free mounting.
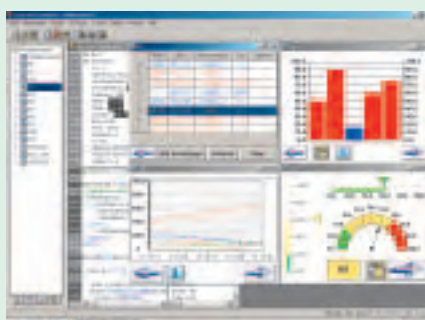
easySoft-CoDeSys.
One Software for Everything.

Visu	IL	LD	FBD	SFC	ST	CFC
8888	LD A ST B				IF A > B THEN C ELSE D	

easySoft-CoDeSys

easyHMI   **easyControl**

XC100/200

Tool line 3

single production clearance — 20 mm

good parts 220 pieces

bad parts 9 pieces

Start   Stop   Machine in operation

alarmlist

Ethernet

RS232

CANopen

Moeller follows its philosophy consistently here:
one software package both for programming and
for creating the visualisation screens. No additional
visualisation package is required. PLC program and
visualisation are created on one user interface.
The designer only has to "play around" with one
software package.

**easySoft-CoDeSys
Programming to IEC 61131-3**

easySoft-CoDeSys is an IEC 61131-2
compliant programming system based
on CoDeSys from 3S for industrial PLCs.
Matured technical features, simple
handling and the widespread use of this
software in the automation components
of different manufacturers make it a
guarantee for success. This success is
impressively demonstrated with Moeller's
new 5.7" multi-function display.
The MFD4-5-XRC-30 enables existing
visualisation functions to be used on
a separate target hardware (target
visualisation). Naturally the MFD4 is also
equipped with a web server. The special
feature: Target visualisation and web
visualisation can be run simultaneously.
The benefits of only one software
package for programming and
visualisation are obvious: The direct
access to the variables of the PLC (one
common database) provides for greater
clarity and reduces the project design
work required. No separate visualisation
software is required. The otherwise
unavoidable and often error-prone
import and export of symbolic variable
lists is unnecessary. One software for
everything is the principle – and that is
easy to use!

The visualisation editor
The visualisation editor integrates a number of functions such as password
management, alarm management, recipe management, language selection
and online project simulation on the PC. The following elements enable the
design of sophisticated visualisation screens: rectangle, ellipse, polygon, polyline,
curve, pie, bitmap, button, table, meter, bar display, trend.
Complete visualisations can be stored in libraries and then called up in different
projects as library POUs.

4
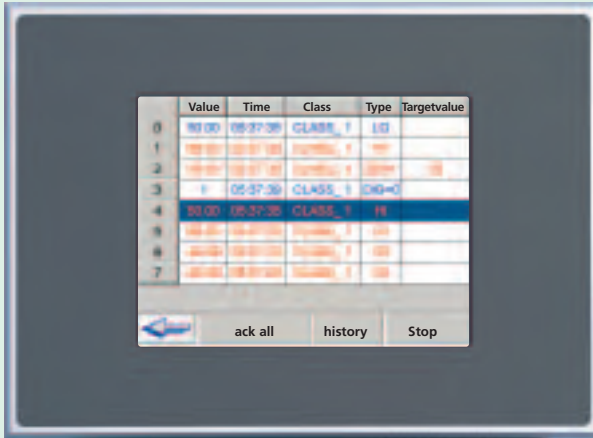
Alarm management

Alarm tables can be tailored in eaѕySoft-CoDeSys to the specific requirements of each application. You can build your table using a host of alarm parameters. For example, you can define the acknowledge procedure in alarm classes. For each alarm group you define a file in which the alarms are stored. Online you can switch simply between the alarm and the history list.
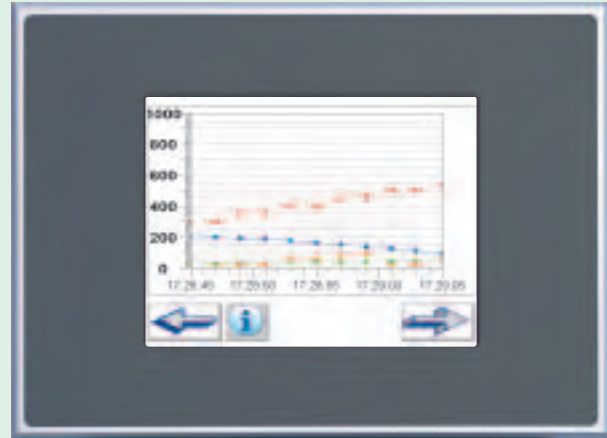
Trend display

The trend function enables you to record variable values over time. The plots are represented by lines. Up to 8 variable values can be displayed in one trend graph. The recorded data can then naturally be stored in a file.
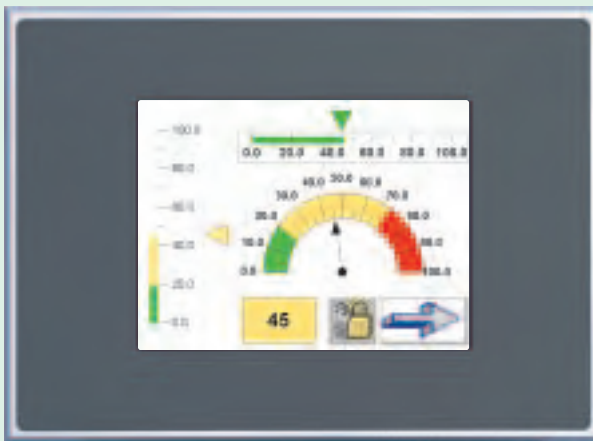
Bar display/meter

Variable values can be shown in a meter and bar display. This allows, for example, the scale graduation, scale formats, alarm colours, the running direction on the bargraph and the size of the arc on the meter to be configured for the specific application.
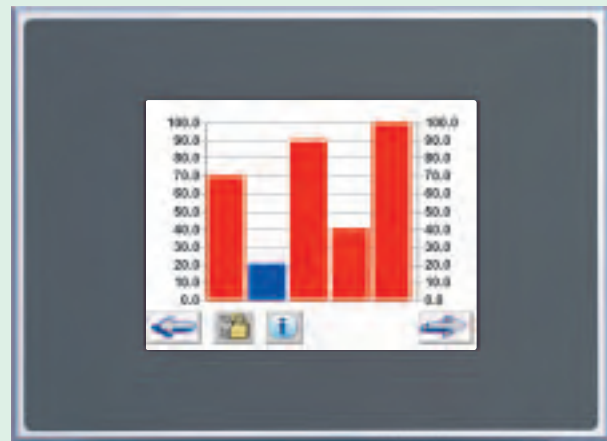
Histogram

A histogram can be used for the simple visualisation of an array. The individual array elements can be displayed as vertical bars or lines.

Changing visualisation elements during the run time

A special feature of the software allows visualisation properties to be changed during the run time. As well as fixed settings for the appearance of the visualisation elements, eaѕySoft-CoDe-Sys offers so-called structure variables for changing the appearance of the visualisation elements. For example, you can set line and fill colours, line thicknesses, texts, the change between visible and invisible, size changes and the rotation of elements. You can even cause complex visualisation objects to move in the X and Y axis according to the function of a variable value. In this way, the right process phases can be displayed for dynamic processes.

Placeholder concept – a really clever solution

Instead of a variable or a text, it is also possible to enter a placeholder in the visualisation editor. This is useful if the visualisation object is not used immediately in the program but is to be added as a reference in other visualisations. For example, this can be for a complex visualisation. Only when this reference is configured are the placeholders then replaced by the variable names or texts.

**Support by application notes**

Application notes are available for communication via Ethernet, CANopen and eaѕyNet, providing clearly structured descriptions of all the implementation steps required for the complete communication. Easy to use is also the key principle here. Example programs are naturally provided also.

5

For Moeller Electric Sales and Support call KMparts.com (866) 595-9616

Simply Select and Order

Order designations		
Part no.	**Order No.**	**Description**
MFD4-5-XRC-30	109428	Multi-function display based on easySoft-CoDeSys
ECP-SOFT	106407	Software for programming and visualisation
XT-CAT5-X-2	256487	2 m programming cable, direct connection to PC
XT-CAT5-X-5	256488	5 m programming cable, direct connection to PC
XT-MEM-MM32M	262731	Memory card (optional)
XT-CPU-BAT1	256209	Battery

Dimensions
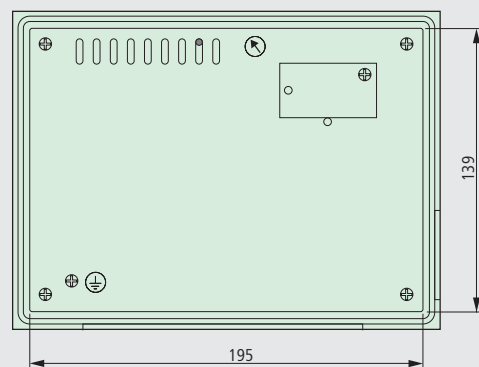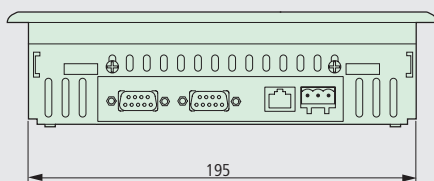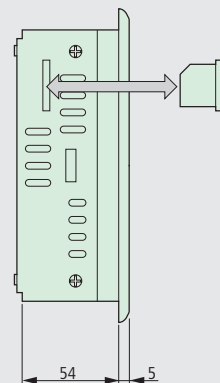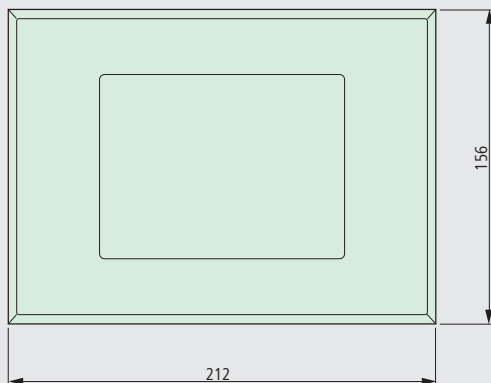
Technical Data		
Display		
Diagonal	Inch	5.7
Type		Colour STN
Touch technology		Analog resistive
Resolution	Pixels	320 x 240
Display area	mm	115 x 86
Number of colours		256
Backlight		CCFL, can be dimmed via software
Memory		
For visualisation	MB	6
For program code	MB	2
Program data	Kbyte	512
Markers	Kbyte	16
Retain data	Kbyte	32
Persistent data	Kbyte	32
Battery		Yes
Real-time clock		Yes
Memory card		Yes (optional)
Interfaces		
Ethernet 10/100 MBit	RJ45	Programming, communication
RS 232	9-poleSub D	Programming, communication, operating system update
CANopen/easyNet	9-pole Sub D	Communication
Project design		
Programming and visualisation		easySoft-CoDeSys
Web server		Yes
General		
Standards and regulations		IEC/EN 61131-2, EN 50178
Explosion protection		ATEX-Directive 94/9/EC device group II, zone 22, category 3D
Ambient temperature	° C	0 to 50
Storage temperature	° C	- 20 to +70
Degree of protection, front		IP 65
Power supply		
Rated input voltage	V DC	24
Current consumption	A	0.3
Overvoltage protection		Yes
Reverse polarity protection		Yes

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Xtra Combinations

Xtra Combinations from Moeller offers a range of products
and services, enabling the best possible combination options
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and automation.

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solutions for your tasks while optimising the economic
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■ great system availability
■ the highest level of safety

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they ensure a high level of operational continuity, allowing
you to achieve optimum safety for your personnel, machinery,
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on Moeller and our products every time. Challenge us!
We are looking forward to it!

MOELLER

We keep power under control.