

The Clever easy Family Safe and Simple Control, Visualization and Networking



Safety Technology
Control the unexpected



xControl

Innovative automation products for control, operation and monitoring of machines and electrical systems

Timing relays ETR

Measuring relays EMR

Safety relays ESR

Control relay

Compact PLC

Modular PLC

Human Machine Interface

Software

Product Information
easyRelay 500, 700, 800
easyMFD-Titan
Multi-Function Display
easyControl EC4P
easySafety

MOELLER

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easy.

The Versatile Controller Series for Industry and Trade.



easy: easy automation system

The easy series offers a cohesive system of control relays, operating and display devices right through to the compact controller. easyRelay, MFD-Titan and easyControl are based on the same concept, and the different device versions provide solutions for a wide range of applications from elementary to powerful controller tasks.

Basic units with easyNet, CANopen and Ethernet are available for communication.

A host of standard additional modules are available for the entire easy series.

easyRelay – simple operation and handling

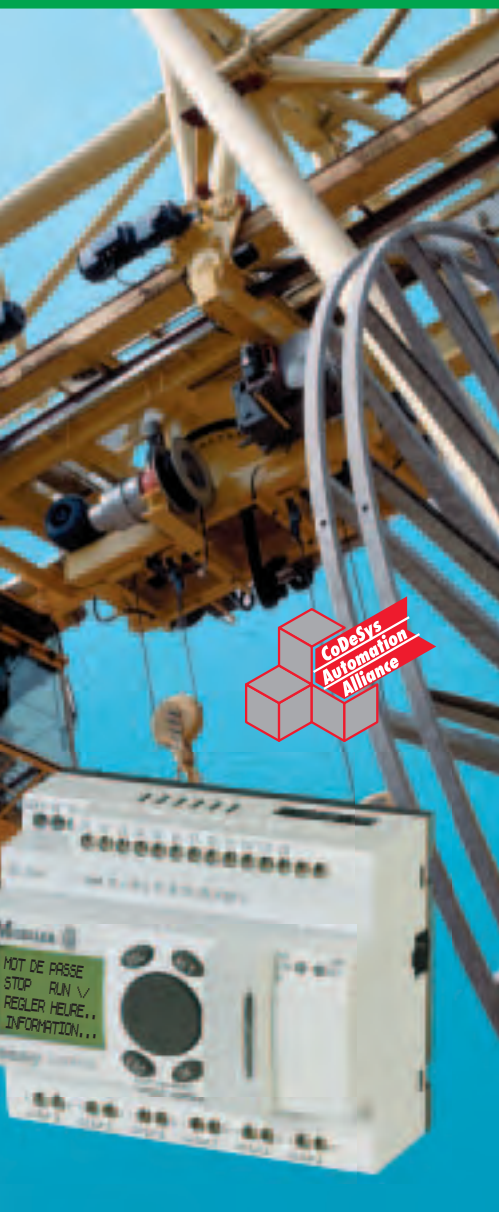
Anyone who can read circuit diagrams immediately feels at home with the **easyRelay**.

The programming is the same as creating a circuit diagram.

The easy500/700 and easy800 control relays provide a wide range of options for solving control tasks in trade and industrial applications.

easyRelay is

- The most comprehensive control relay range on the market
- Can be matched to the task at hand thanks to different performance levels
- Cost optimised for your application
- Easy programming and parameterisation on the device



MFD-Titan – simple visualization and control

In addition to the functions of the easyRelay the **MFD-Titan** offers some powerful visualization options. The screen editor is used for setting parameters for the display.

MFD-Titan is

- Visualization and control in one device
- Powerful and inexpensive
- Expandable and networkable
- Suitable for harsh environments thanks to IP65 protection

easyControl – powerful compact controller

easyControl is the logical continuation of the easy series. The IEC61131-3-based easySoft-CoDeSys software perfectly equips the easyControl for applications that were previously impossible for the easy world.

easyControl is

- Perfectly designed for both machine and system building
- A compact controller with integrated or detachable display
- Expandable as required
- Networkable

easySafety – Combining safety and standard technology efficiently

NEW

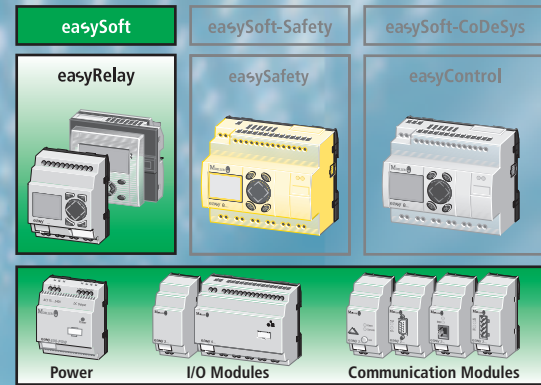
The new **easySafety** control relay monitors all the safety equipment on the machine. It enables applications to be implemented for the most demanding safety requirements in accordance with international safety standards.

easySafety is

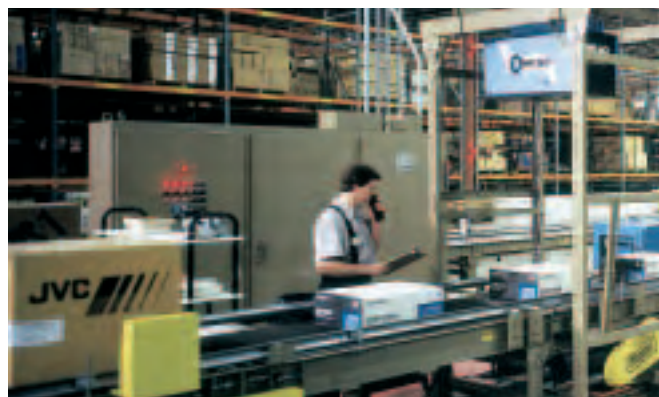
- All in one: safety and standard control functions in one compact device
- Manipulation and know-how protection thanks to multi-level safety and security concept
- Configuration by simple assignment of tested safety function blocks

Refreshingly Easy. The Clever easyRelays.

xControl



The easy500/700 and easy800 control relays come with a full range of technical resources to implement applications for industrial and building automation, machine building or plant construction. A host of different device versions with various functions, voltage types, expansion and networking options are available for implementing the right solution. As well as offering the main functions of the easy500/700 such as multi-functional relays, impulse relays, counters, analog value comparators, time switches, automatic DST function and retentive actual values, the easy800 offers a host of function blocks such as PID controllers, maths function blocks, value scaling, and many more. Its ability to network up to 8 devices makes the easy800 the most powerful control relay on the market.



Lighting control systems in buildings:

- The lighting can be switched On and Off centrally or remotely using an impulse relay function.
- The timer-controlled Off pulse enables the lighting to be switched off centrally for energy saving.
- A base unit controls up to 12 independent lighting groups. Purpose-dedicated lighting control, such as central lighting for cleaning, automatic half-strength staircase lighting, or an early warning pulse for the lights-out phase can be configured.
- Installation in low-voltage distribution boards facilitated by the standard 45mm front dimension, as well as component sizing at 4 times, 6 times, 8 times and 12 times the width of an MCB.

Machine control:

- A plug-in memory module enables the easy circuit diagram to be duplicated without the PC. Later modifications to the circuit can be carried out externally, and the memory module can then be shipped in order to transfer the modification to the easy.
- The ability to preset the startup behaviour to RUN or STOP modes facilitates commissioning.
- Short-circuit recognition and selective disconnection of the transistor outputs in the event of short-circuit and overload.



easy500 control relay

For controlling small applications with up to 12 I/O signals



- Up to 12 I/O



- 128 rungs of 3 contacts and 1 coil each



- 16 operating and message texts



- 2 analog inputs (10-bit) optional (not 230 V AC)



- 2 high-speed inputs 1 kHz (only DC devices)



- 1 Ethernet gateway

easy700 control relay

For controlling medium-sized applications with up to 40 I/O signals



- Up to 40 I/O



- 128 rungs of 3 contacts and 1 coil each



- 16 operating and message texts



- 4 analog inputs (10-bit) optional (not 230 V AC)



- 2 high-speed counter inputs 1 kHz (only DC devices)



- 1 Ethernet gateway



- 1 easy expansion device or 1 fieldbus module

easy800 control relay

For controlling large applications with over 300 I/O signals



- Over 300 I/O



- 256 rungs of 4 contacts and 1 coil each



- 32 operating and message texts



- 4 analog inputs (10-bit) optional (not 230 V AC)



- 4 high-speed counter inputs 5 kHz (only DC devices)



- 1 Ethernet gateway



- 1 digital expansion or network gateway



- Networkable via easyNet with up to 8 stations

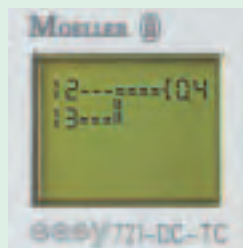


- 1 analog output (10-bit)

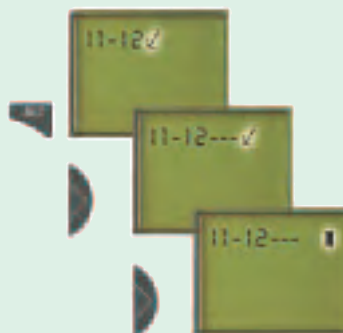
easy500/easy700 and easy800 Control Relays.

easy to operate

Anyone who can read circuit diagrams immediately feels at home with the easy. Every circuit diagram can be entered on a 1:1 basis on the display. The smart device operates as expected with make/break contacts and coils. All basic and special functions can be wired together – simply at the touch of a button.



Power flow display
== Power flow



EASY512...



EASY512...



EASY719...



EASY719...

Basic units	500 series basic units							700 series basic units				
Application	Compact							Expandable (EASY2..., EASY4..., EASY6...)				
Part no.	EASY512-AB-RC ⁽¹⁾	EASY512-AC-R	EASY512-AC-RC ⁽¹⁾	EASY512-DA-RC ⁽¹⁾	EASY512-DC-R	EASY512-DC-RC ⁽¹⁾	EASY512-DC-TC ⁽¹⁾	EASY719-AB-RC ⁽¹⁾	EASY719-AC-RC ⁽¹⁾	EASY719-DA-RC ⁽¹⁾	EASY719-DC-RC ⁽¹⁾	EASY719-DC-TC ⁽¹⁾
Supply voltage	24 V AC	100 - 240 V AC		12 V DC	24 V DC			24 V AC	100 - 240 V AC	12 V DC	24 V DC	
Heat dissipation	5 VA	5 VA		2 W	2 W			7 VA	10 VA	3.5 W	3.5 W	
Inputs, digital	8	8	8	8	8	8	8	12	12	12	12	12
of which optional: Inputs, analog 0 - 10 V	2	-	-	2	2	2	2	4	-	4	4	4
of which optional: Counter inputs	-	-	-	4	4	4	4	-	-	4	4	4
Outputs (R=Relay, T=Trans.)	4R	4R	4R	4R	4R	4R	4T	6R	6R	6R	6R	8T
Expandable/networkable	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / Yes	- / Yes	- / Yes	- / Yes	- / Yes
7-day/year time switch	Yes / Yes	- / -	Yes / Yes	Yes / Yes	- / -	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
Continuous current outputs [1]	8 A	8 A	8 A	8 A	8 A	8 A	0.5 A	8 A	8 A	8 A	8 A	0.5 A
Connection cables	0.2 - 4.0 mm ² (AWG 22-12), rigid 0.2 - 2.5 mm ² (AWG 22-12), flexible							0.2 - 4.0 mm ² (AWG 22-12), rigid 0.2 - 2.5 mm ² (AWG 22-12), flexible				
RFI suppression	EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4							EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4				
Ambient operating temperature	- 25 °C ... + 55 °C							- 25 °C ... + 55 °C				
Certification, standards	EN 50178, IEC/EN 60947, UL, CSA							EN 50178, IEC/EN 60947, UL, CSA				
Dimensions (W x H x D) mm	71.5 x 90 x 58 mm							107.5 x 90 x 58 mm				

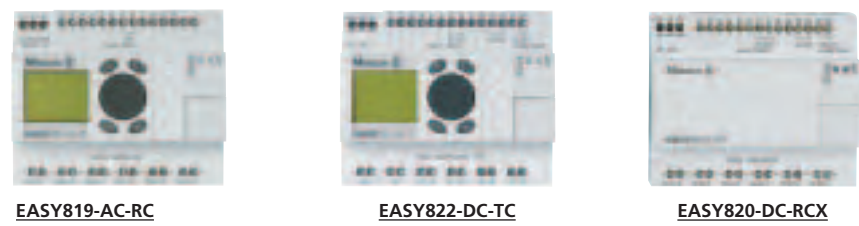
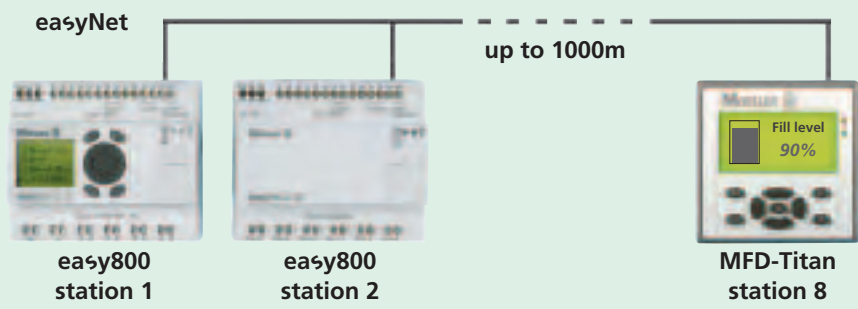
[1] Relay = 8 A (10 A to UL) with resistive load, 3 A with inductive load/transistor outputs = 0.5 A / 24 V DC, max 4 outputs switchable in parallel

[2] With backlight in continuous operation - 10 °C ... 0 °C

*) Add X for types without integrated display or keypad

easy800 and MFD-Titan make over 300 I/O points available

easy800 and MFD-Titan combine virtually all the features of a PLC with the convenient handling of the well-known easy product line. Thanks to their integrated networking capability for up to eight devices, applications with over 300 I/O points can be implemented. The control system can be designed either using a single local program or using several programs distributed on the different devices.



Software, see the easySoft section

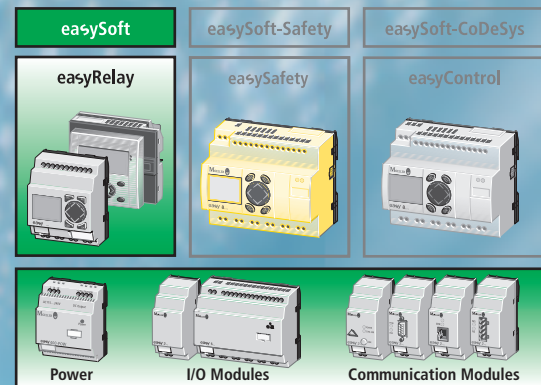
Basic units	800 series basic units				
Application	Expandable (EASY2... , EASY4... , EASY6...), networkable (easyNet)				
Part no.	EASY819-AC-RC ¹⁾	EASY819-DC-RC ¹⁾	EASY820-DC-RC ¹⁾	EASY821-DC-TC ¹⁾	EASY822-DC-TC ¹⁾
Supply voltage	100 - 240 V AC	24 V DC			
Heat dissipation	10 VA	3.4 W			
Inputs, digital	12	12	12	12	12
of which optional: Inputs, analog 0 - 10 V	-	4	4	4	4
of which optional: Counter inputs	-	4	4	4	4
Outputs (R=Relay,T=Trans.), also (A=analog)	6R	6R	6R 1A	8T	8T 1A
Expandable/networkable	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
7-day/year time switch	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
Continuous current outputs [1]	8 A	8 A	8 A	0.5 A	0.5 A
Connection cables	0.2 - 4.0 mm ² (AWG 22-12), rigid 0.2 - 2.5 mm ² (AWG 22-12), flexible				
RFI suppression	EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4				
Ambient operating temperature	- 25 °C ... + 55 °C				
Certification, standards	EN 50178, IEC/EN 60947, UL, CSA				
Dimensions (W x H x D) mm	107.5 x 90 x 72 mm				

“easy gives us the flexibility we need. The expansion devices can be adapted optimally to the tasks required. In this way, you only pay for what you need”.



[1] Relay = 8 A (10 A to UL) with resistive load, 3 A with inductive load/transistor outputs = 0.5 A / 24 V DC, max 4 outputs switchable in parallel
[2] With backlight in continuous operation - 10 °C ... 0 °C
*) Add X for types without integrated display or keypad

Visualization, Control, Regulation and Communication. Easy with the MFD-Titan®.



With the MFD-Titan multi-function display you can create solutions with control and visualization functions for large-scale and complex automation tasks. If you wish to display texts, message texts or fault messages, graphics, pictures, operating instructions, the current date and time; or even acknowledge fault messages, input values or start operations, the MFD-Titan is ideal for implementing all these tasks. EASY-SOFT-PRO is the software tool you use both for programming all the required functions and editing all the visualization screens. Protection to IP65 means that the display can also be used in harsh environments. Like easy800, MFD-Titan can be expanded and networked to standard bus systems and can also be networked via "easyNet". The MFD-80... display can also be provided with customised inscriptions such as your company name. Further information on this is provided in the section on the Labeleditor.



New operator and control concept for textile machines

The newly enhanced machine series from Meyer presents the market with innovative fixing and setting machines. It was MFD-Titan that made all these improvements possible. The new safety concept not only increases reliability but also simplifies the operator's job. All the functions can be set up as it were intuitively, and can be readjusted if necessary on an ergonomically designed and generously sized operator interface. MFD-Titan is a product that belongs to the next generation in automation, combining as it does control and visualization functions in one unit. It requires just one software package for the control function, the visualization and networking. This fact significantly reduced the time that had to be spent on engineering and programming by the machine builders at Meyer.



Control engineering for a crane installation

The MFD-Titan in the control cabin functions as operator interface: In addition to allowing centralised visualization of fault messages from individual network stations, the display also indicates their operational status. A menu also enables the operator to call up graphics showing speeds, limit switch positions, operational hours run and schedules for maintenance. The MFD-Titan networked with the easy control relay can together deal with the following tasks and functions: Single and double lifting gear mode, highly precise synchronisation control, lifting operation interruption, selective load measuring, linear field-weakening, dynamically adapted control procedures, soft start and soft stop, load independent travel, configurable setpoint channels.



MFD-Titan multi-function display

For controlling large-scale applications with powerful visualization features



- Over 300 I/O



- 256 rungs of 4 contacts and 1 coil each



- 32 operating and message texts



- 4 analog inputs (10-bit) optional (not 230 V AC)



- 4 high-speed counter inputs 5 kHz (only DC devices)



- 1 digital expansion or network gateway



- Networkable via easyNet with up to 8 stations



- 1 analog output (10-bit)



- 1 Ethernet gateway



- LCD display, 132 x 64 pixels, 4x16 or 2x9 lines x characters



- Bitmaps



- Value display/entry

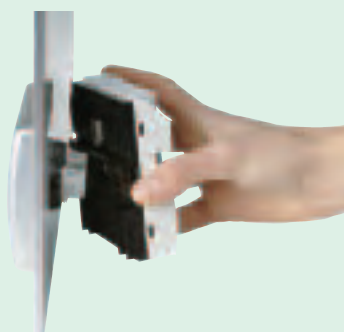


- Bargraph



- Clock

MFD-Titan. Multi-Function Display.



MFD-Titan

When fitted with a power supply/CPU module and optional input/output modules, the display can also be expanded into a compact HMI control device.

This then combines the complete functionality of an easy800 with powerful visualization functions. The two modules are simply plugged together. Plug & Work.

Software, see the
easySoft section



MFD-80-B

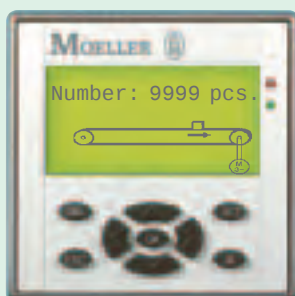


MFD-CP8-NT

Basic units	MFD-Titan					
Application	Display		Power supply/CPU			
Part no.	MFD-80	MFD-80-B	MFD-CP8-ME	MFD-CP8-NT	MFD-AC-CP8-ME	MFD-AC-CP8-NT
Supply voltage	Supply via MFD-CP4...		24 V DC		100 - 240 V AC	
Heat dissipation	3 W		3 W		8 W	
Inputs, digital	-	-	-	-	-	-
of which the following can be used as: Inputs, analog 0 - 10 V	-	-	-	-	-	-
of which the following can be used as: Counter inputs	-	-	-	-	-	-
Inputs, temperature (12-bit, PT=PT100, NI=NI1000)	-	-	-	-	-	-
Outputs (R=Relay, T=Trans.)	-	-	-	-	-	-
also (A=analog)	-	-	-	-	-	-
LCD display / keypad	Yes / -	Yes / Yes	- / -	- / -	- / -	- / -
7-day/year time switch	- / -	- / -	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
Continuous current outputs ¹⁾	-	-	-	-	-	-
Connection cables	-	-	0.2 - 4.0 mm ² (AWG 24-12), rigid 0.2 - 2.5 mm ² (AWG 24-12), flexible			
RFI suppression	EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4					
Ambient operating temperature	Safely legible at - 5 °C ...+ 50 °C ²⁾		- 25 °C ... + 55 °C			
Certification, standards	EN 50178, IEC/EN 60947, UL, CSA					
Dimensions (W x H x D) mm	86.5 x 86.5 x 20 mm		107.5 x 90 x 29.5 mm			

¹⁾ Relay = 8 A (10 A to UL) with resistive load, 3 A with inductive load/transistor outputs = 0.5 A / 24 V DC, max 4 outputs switchable in parallel

²⁾ With backlight in continuous operation - 10 °C ... 0 °C



Screen editor

The screen editor provides a host of different screen elements for creating visualizations with the MFD-Titan multi-function display.



Temperature controller

Direct temperature measurement with a precise 12-bit resolution in a compact visualization unit.



MFD-R16



MFD-TA17



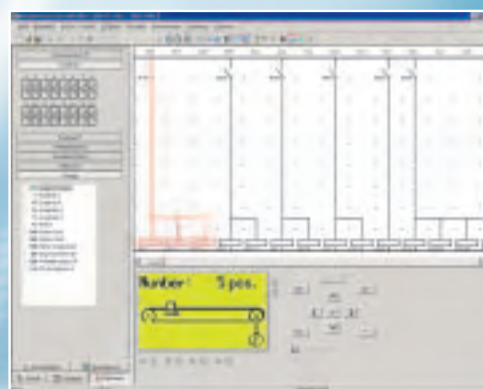
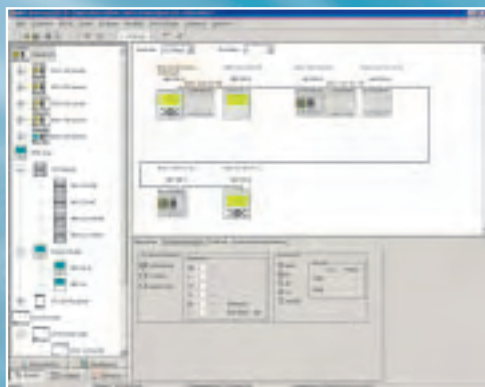
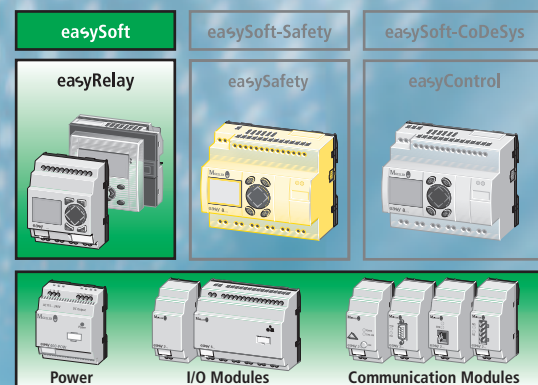
MFD-TP12-PT-A

Expansions										
Inputs / outputs					Temperature controller					
MFD-AC-R16	MFD-R16	MFD-RA17	MFD-T16	MFD-TA17	MFD-TP12-NI-A	MFD-TP12-PT-A	MFD-TP12-PT-B	MFD-TAP13-NI-A	MFD-TAP13-PT-A	MFD-TAP13-PT-B
Supply via MFD-CP8-..										
0.5 W					1 W					
12	12	12	12	12	6	6	6	6	6	6
-	4	4	4	4	2	2	2	2	2	2
-	4	4	4	4	4	4	4	4	4	4
-	-	-	-	-	2NI	2PT	2PT	2NI	2PT	2PT
4R	4R	4R	4T	4T	4T	4T	4T	4T	4T	4T
-	-	1A	-	1A	-	-	-	1A (12-bit)	1A (12-bit)	1A (12-bit)
-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
8 A	8 A	8 A	0,5 A	0,5 A	0,5 A	0,5 A	0,5 A	0,5 A	0,5 A	0,5 A
0.2 - 4.0 mm ² (AWG 24-12), rigid 0.2 - 2.5 mm ² (AWG 24-12), flexible										
EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4										
- 25 °C ... + 55 °C										
EN 50178, IEC/EN 60947, UL, CSA										
88.1 x 90 x 25 mm										

In stand-alone operation the MFD-...CP8-... CPU slices can also be mounted on a 35 mm top-hat rail to DIN 50022 or screw mounted with ZB4-101-GF1 fixing brackets

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easySoft. User-Friendly Circuit Diagram Entry Parameterization and Visualization.



easySoft makes things particularly easy for users. The graphical editor shows the circuit diagram immediately in the display format required. Selection menus and drag & drop functions simplify circuit diagram creation. Simply select contacts and coils and connect with the mouse – that's it!

The screen editor provides a host of different screen elements for creating visualizations with the MFD-Titan multi-function display.

easySoft:

- user-friendly circuit diagram input tool
- clear parameter definition of function blocks
- simple setpoint entry
- wide range of display features for messages and variables
- simple, fast and affordable visualization
- time-saving offline program simulation

Software packages

In addition to the editing features directly provided on the easy... control relay and MFD-Titan multi-function display themselves, the following scaled software packages are available for user-friendly circuit diagram entry:

- **EASY-SOFT-BASIC** for programming the easy400/500, easy600/700
- **EASY-SOFT-PRO** for programming easy400/500, easy600/700, easy800/MFD-Titan and for creating visualization applications with MFD-Titan

The menus and dialogs of easySoft are available in 13 languages:

- German
- English
- French
- Italian
- Dutch
- Polish
- Portuguese
- Rumanian
- Russian
- Spanish
- Czech
- Turkish
- Hungarian

The following fonts can be displayed:

- Western European
- Central European
- Cyrillic

easySoft also provides the following display formats for viewing, editing and printing out your program:

- IEC display format with contact and coil symbols, international standard

- easy circuit diagram format, 1:1 representation as shown on the easy display
- ANSI format, in compliance with the American Standard

easySoft supports you when configuring, programming and defining parameters for easy400/500/600/700/800 control relays and the MFD-Titan multi-function display. The devices that can be selected in easySoft have different functions.

The Screen Editor provides the following screen elements for creating visualization systems with the MFD-Titan multi-function display simply, quickly and inexpensively:

Graphic elements

- Bit display
- Bitmap
- Message bitmap
- Bar graph

Button elements

- Latching button
- Button field

Text elements

- Static text
- Message text
- Screen menu
- Running text
- Rolling text

Value display elements

- Date and time display
- Numerical value

- Timing relay value display

Value entry elements

- Value entry
- Timing relay value entry
- Date and time display
- 7-day time switch entry
- Year time switch entry

easySoft also enables you to manage easy800Relays or MFD-Titan MFD...CP8... units connected via easyNet. The program for the possible maximum of 8 stations on the easyNet is created in easySoft.

easySoft also enables simple and time-saving commissioning of the easy800 control relays or MFD-Titan MFD...CP8... units connected to easyNet.

easySoft's integrated offline simulation tool enables users to check the correct functioning of the "circuit diagram" with the application software before commissioning. The simulation is run without easy or MFD-Titan devices having to be connected. Comments and names for contacts, coils and function blocks allow you to create a clear and easy to understand program structure.

A cover sheet with a customised company logo and freely definable title fields, as well as the cross-reference list with comments provide a clear and complete documentation of your application from the program printout.



USB programming cable

The easyRelay, easyControl or easySafety device series can now also be programmed easily via the USB interface of a PC. The product is supplied with a CD containing drivers and documentation.

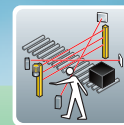
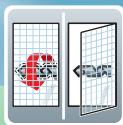


Modem cable

The pre-assembled cable allows the problem-free connection of a serial printer to the easy device series, for tasks such as the documenting of alarm or fault messages. It also enables serial data exchange with a modem or is used as a programming access with 57.6 Kbaud. The two meter cable can be used with a 9-pole SUB-D terminal (either male or female) depending on the function required.

Designation	Description	easy500 / easy700	easy800 / easyMFD	easyControl	easySafety
EASY-USB-CAB	USB programming cable 2m	Yes	—	—	—
EASY800-USB-CAB	USB programming cable 2m	—	Yes	Yes	Yes
EASY800-MO-CAB	Modem cable up to 57.6 Kbaud (freely configurable modem, printer, programming cable)	—	Yes	Yes	Yes

easySafety – All in One Solution for Functional Safety and Control Task



The safety of persons and machinery must be ensured throughout the entire life cycle of a machine/plant. In practice, safety-related components such as position switches, light curtains, two-hand controls, emergency-stop buttons etc. are used for this personnel protection.

This safety-related information is monitored and evaluated with the new easySafety control relay, in compliance with the most stringent safety standards. Applications using easySafety can thus meet the requirements of international standards, category 4 to EN954-1, PL e to EN ISO 13849-1, SILCL 3 to EN IEC 62061 and SIL 3 to EN IEC 61508.



Safety and standard technology efficiently combined!

easySafety adds a “yellow” control relay to the easy product family, and is primarily used for solving the safety-related tasks of a machine in addition to standard control tasks. Whether for simple or complex machines, the required protection of persons and processes is ensured by the compact easySafety device. The simplicity of the easy circuit diagram philosophy has been furthered so that today’s easy users can quickly learn how to operate it.



Controlling the unforeseeable safely and economically!

Whether for simple or complex machines, the required protection of persons and processes is ensured by the compact easySafety device. This large number of safety function blocks, which are implemented in a single device, reduces stock-keeping costs and at the same time increases the flexibility needed to meet the requirements of different applications safely and quickly.

A beginners’ course in the Online Help simplifies the entry level for easySafety as well as the use of the easySoft-Safety PC software.

The right easySafety – for simple to demanding safety tasks!



The price conscious

ES4P-120-DTXX1

- 14 safety inputs
- 4 safety transistor outputs
- 4 test signals
-
-
-
- Safety circuit diagram
- Without display

Additional remote display connectable via integrated RS232 interface



The rugged

ES4P-221-DRXX1
ES4P-221-DRXD1

- 14 safety inputs
- 4 safety relay outputs
- 4 test signals
- 16 operating and message texts
- easyNet on board
- easyLink on board
- Safety and standard circuit diagram
- With and without display



The versatile

ES4P-221-DMXX1
ES4P-221-DMXD1

- 14 safety inputs
- 4 safety transistor outputs + 1 redundant safety relay output
- 4 test signals
- 16 operating and message texts
- easyNet on board
- easyLink on board
- Safety and standard circuit diagram
- With and without display

easySafety – All in One Safety and Control Relays for Many Safety Functions



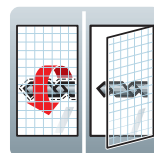
Armed with a host of safety function blocks, easySafety integrates both safety and standard functions in a single all-in-one device. The safety control relay thus offers a standard circuit diagram in addition to the safety circuit diagram contained in the safety configuration. This circuit diagram can be used for standard tasks such as the processing of diagnostics messages or the general control tasks on a machine.

Users are thus provided with a wide range of application options in a single device thanks to the large number of safety function blocks available. In this way users stay flexible and are able to respond immediately to current and future changes in application requirements. This saves financial resources and offers future security, whilst also reducing stock-keeping costs for special safety relays.



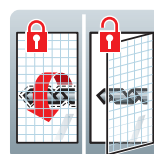
Circuits for stopping in an emergency

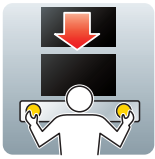
Enables the safe stopping of a hazardous movement; immediate stopping for Stop category 0 and controlled stopping for Stop category 1 in accordance with EN 60 204-1; used in single or dual-channel safety monitoring of emergency-stop circuits.



Guard door monitoring with and without interlocking/guard locking

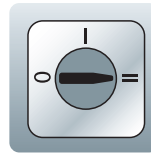
Used with moving guards such as doors, barriers or flaps. Positions are reliably detected, monitored and enabled to safety-related requirements – optional interlock device with guard locking when increased personal and process protection are required. This securely keeps the guard closed until the next machine standstill.





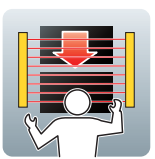
Safe operation with two-hand control

Type III to EN 574. Used for hazardous machine movement such as presses, punching, shearing – the safe enabling of hazardous movement only if both hands of the operator are outside of the hazardous area and the two-hand control switches are actuated synchronously within 0.5 seconds.



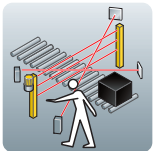
Mode switch

Used for the safe selection and acceptance of a preselected operating mode on an external control device.



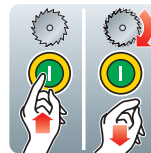
Electro-sensitive protective equipment (ESPE)

Protection of the hazardous location or area in the vicinity of machines by means of contactless guards such as light grids/light barriers/light curtains.



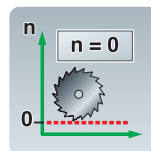
Optional with muting function

that temporarily bypasses the protective function of a guard such as a light grid. Typical application for the material feed of a machine without interrupting the working process.



Start element

Used for the safe starting of an application by an external start actuator or a start condition from the safety circuit diagram.



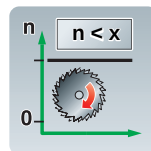
Zero monitoring

Used when the entry or access to the hazardous area is not permitted until the hazardous driving force has come to a standstill.



Open hazardous areas with safety mats

Used for the safety-related monitoring of cross-circuits formed by safety mats.



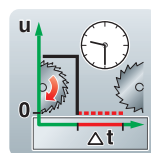
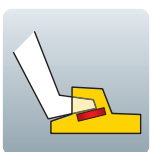
Overspeed monitoring

Used for safety-related overspeed monitoring of a motor or shaft. The drive is disabled if the maximum speed is exceeded.



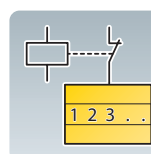
Enabling switch

The manual or foot operated enabling device allows the temporary enabling of a guard, such as a safety door, by continuous actuation. This may be necessary for setting or servicing a machine.



Safety-related timing relay

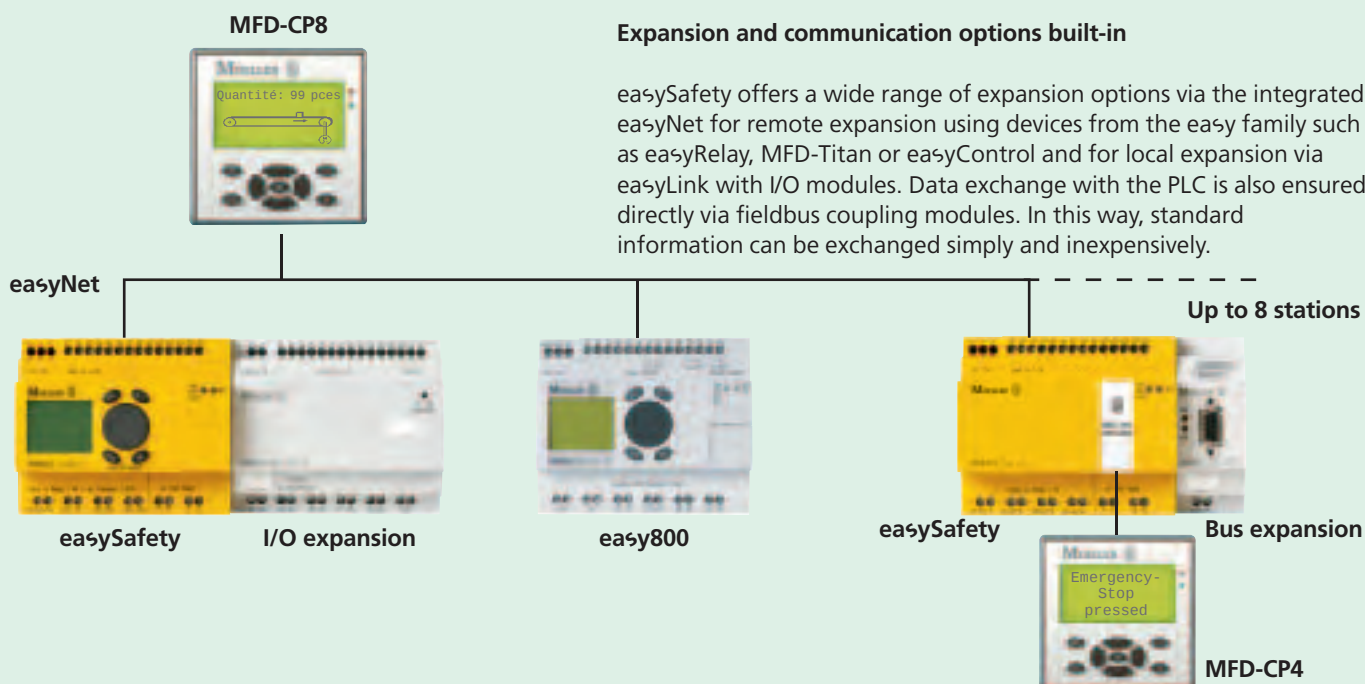
Used for changing the switch duration and the on or off switch points of an enable contact in the safety circuit. Safety-related timing relay with on and/or off delayed or single pulse function.



Feedback loop monitoring (EDM)

Used for the safety-related monitoring of externally connected actuators, e.g. contactors, relays or valves.

easySafety – Versatile Solutions with the Complete easy Range



Basic units	Inputs/outputs					Display	Expansion/communication			Circuit diagram	
	Safety inputs	Safety relay outputs	Safety tran. outputs	Rednt. safety relay outputs	Test signals		easyNet	easyLink	Open fieldbuses	Safety	Standard
ES4P-221-DMXX1	14	–	4	1	4	–	up to 8 Net stations	digital I/O Standard expansions	Profibus DP CanOpen DeviceNet AS-i	yes	yes
ES4P-221-DMXD1	14	–	4	1	4	yes				yes	yes
ES4P-221-DRXX1	14	4	–	–	4	–				yes	yes
ES4P-221-DRXD1	14	4	–	–	4	yes				yes	yes
ES4P-120-DTXX1	14	–	4	–	4	–	–	–	–	yes	–

Accessories	
ES4A-MEM-CARD1	Memory module
ESP-Soft	easySoft-Safety + easySoft Pro
EASY800-PC-CAB	Standard easy USB programming cable
EASY800-USB-CAB	Standard easy serial programming cable

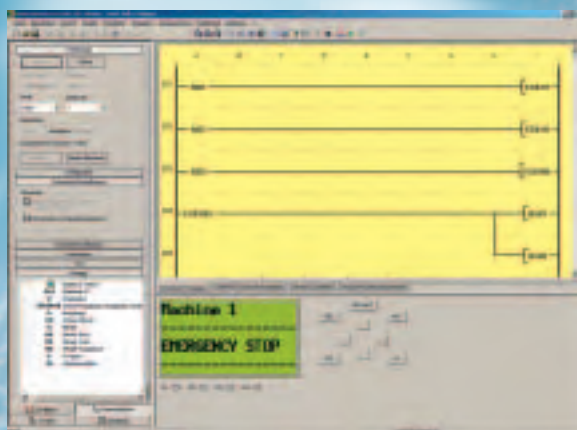


Memory module for reliable data storage and program transfer

All in One – User-Friendly Software for Safety and Standard Circuits



Project view



Safety circuit diagram

easySoft-Safety is a user-friendly configuration environment for creating safety applications and also general control tasks in the conventional easy circuit diagram language.

- Manipulation protection for the machine builder: protects the safety application from manipulation and/or unauthorised access
- Know-how protection for the designer: prevents the undesired transfer or application know-how
- Flexibility for the operator: enables the safe parameterisation of the standard application and a wide range of diagnostic options at any time

Circuit diagram view

Separate circuit diagrams ensure a strict separation between safety tasks and standard tasks. This firstly prevents unauthorised access or manipulation of safety processes through the use of separate passwords. Secondly, operators still have the freedom to adapt non-critical standard functions as well as machine diagnostics to the application at hand.

Safety circuit diagram

All typical safety functions are selected from a list containing a large number of safety function blocks, and the process defined by assigning them to the safety inputs and outputs.

Simulation view

The ability to simulate the project on the PC ensures a considerable time saving during the design phase.

Project view

Project view allows the graphical configuration of the project by drag and drop using easySafety variants in the machine. Either as a stand-alone solution or integrated in the easyNet network.

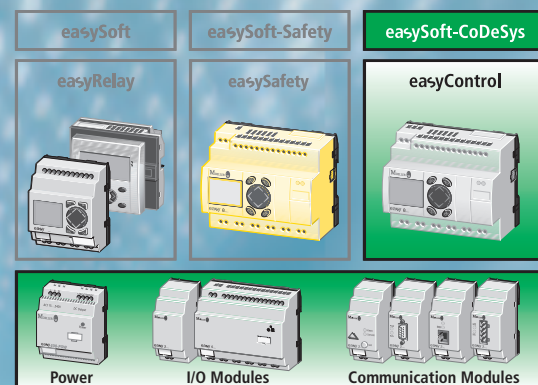
Password protection

The multi-level password protection concept ensures optimum protection against unauthorised changes in the safety configuration, manipulation protection and know-how protection.

Communication view

Communication view enables direct diagnostics of the connected device via the status display.

easyControl. Full Functionality in the Compact Class, Ethernet and High Performance.



easyControl is the logical continuation of the easy success story. The easyControl EC4P can provide user-friendly solutions for small to medium-sized automation tasks. It can be used both with the standard easy system as well as in combination with virtually all automation devices via the integrated CANopen interface. The Ethernet onboard interface enables the inclusion of additional features such as an OPC server and network programming. Other highlights include easySoft-CoDeSys for programming to IEC 61131-3, the 256 kB program memory and a powerful CPU.



Versatile use:

The versatility of the new easyControl compact PLC enables it to be used in a wide range of areas. It has the ideal design for both machine and system building. More and more technologies today are combined in automation solutions.



Easy to network:

In addition to the basic control functions, this includes fieldbus gateways, HMI functions and also the connection to planning and quality management systems. The Ethernet connection plays an ever increasing importance here, and is not a problem for the powerful easyControl device.



easyControl

Controller for small and medium-sized automation tasks

	• 12 digital inputs
	• 6 digital relay outputs or alternatively
	• 8 transistor outputs
	• 4 analog inputs (10-bit) optional (not 230 V AC)
	• 2 high-speed inputs 50 kHz (only DC devices)

	• 1 expansion module
	• Networkable via easyNet or CANopen
	• 1 analog output (10-bit)
	• 1 Ethernet gateway
	• 256 kB program memory
	• IL / FBD / LD / ST / CFC / SFC easySoft-CoDeSys (IEC 6-1131)

easyControl. Compact Controller.



① Flexible interfaces

Whether CANopen or easyNet: The combined CAN interface enables you to choose your own network structure.

② Updates simply easy

The slot for a memory module makes program or firmware updates child's play. The memory module is also fully suitable for archiving data.

③ Ethernet on board

The Ethernet interface enables easyControl to be integrated easily. This simplifies programming and connections, such as visualization systems via OPC.

④ User-friendly operation

As the only compact PLC with both an integrated and remote display, the easyControl allows simple operation and visualization.



EC4P-221-MTXX1



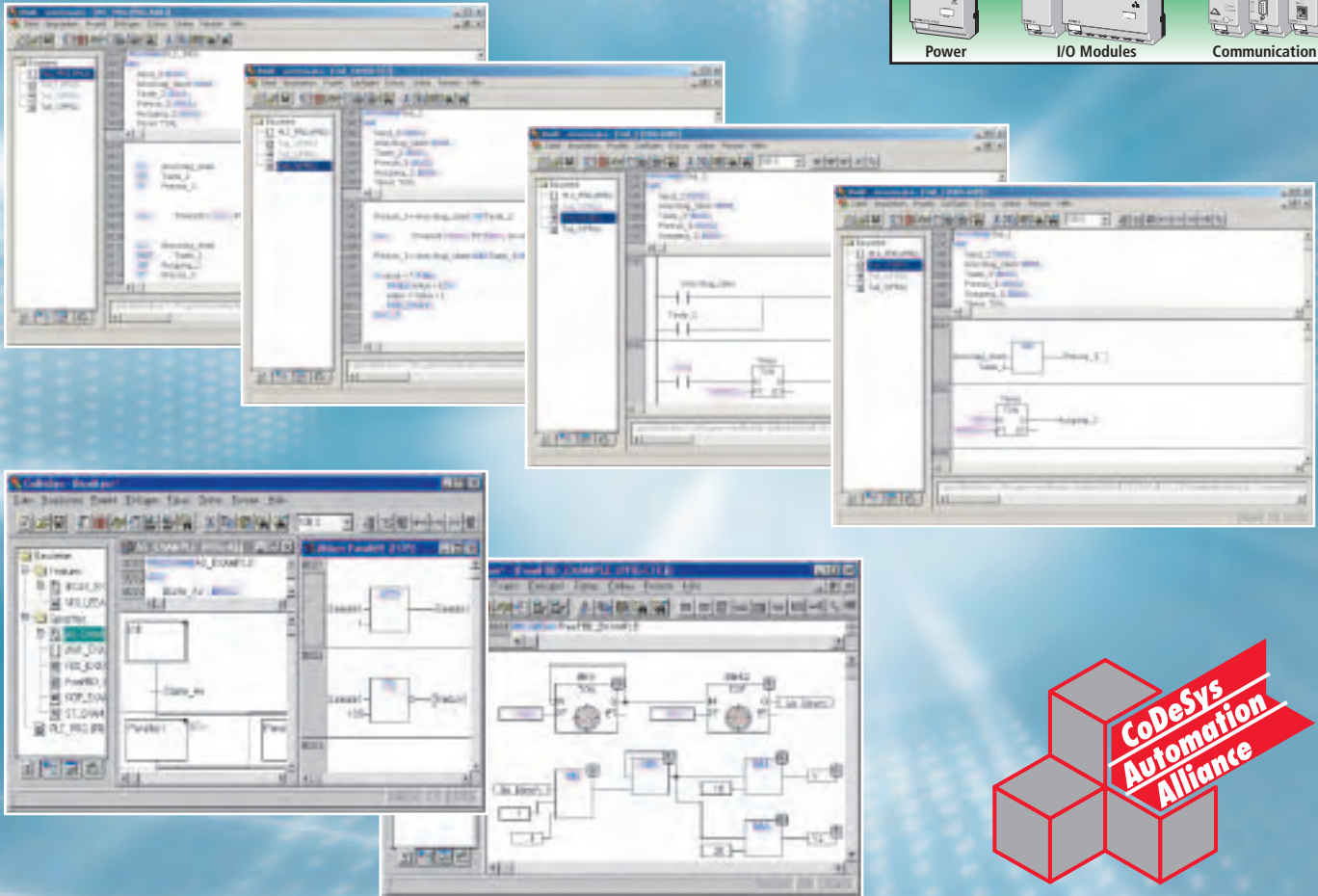
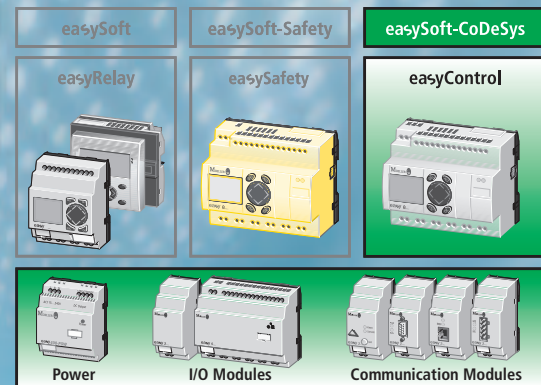
EC4P-222-MTXX1

Basic units	easyControl							
Application	Compact PLC for different applications							
Part no.	EC4P-221-MTXX1 ^(*) EC4P-221-MTXX1 ^(*)	EC4P-221-MRXX1 ^(*) EC4P-221-MRXX1 ^(*)	EC4P-221-MTAD1 ^(*) EC4P-221-MTAX1 ^(*)	EC4P-221-MRAD1 ^(*) EC4P-221-MRAX1 ^(*)	EC4P-222-MTXX1 ^(*) EC4P-222-MTXX1 ^(*)	EC4P-222-MRXX1 ^(*) EC4P-222-MRXX1 ^(*)	EC4P-222-MTAD1 ^(*) EC4P-222-MTAX1 ^(*)	EC4P-222-MRAD1 ^(*) EC4P-222-MRAX1 ^(*)
Supply voltage	24 V DC							
Heat dissipation	7 W							
Inputs, digital	12	12	12	12	12	12	12	12
of which the following can be used as: Inputs, analog 0 - 10 V	4	4	4	4	4	4	4	4
Outputs (R=Relay,T=Trans.), also (A=analog)	8T	6R	8T 1 A	6R 1 A	8T	6R	8T 1 A	6R 1 A
Continuous current outputs [1]	0.5 A	8 A	0.5 A	8 A	0.5 A	8 A	0.5 A	8 A
Expandable/networkable	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
easyNet/CANopen	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
Ethernet	-	-	-	-	Yes	Yes	Yes	Yes

[1] Relay = 8 A (10 A to UL) with resistive load, 3 A with inductive load/transistor outputs = 0.5 A / 24 V DC, max 4 outputs switchable in parallel

*) D with display, X without display

easySoft-CoDeSys. IEC 61131-3 Compliant Programming.



easySoft-CoDeSys is an IEC 61131-3 compliant programming system based on CoDeSys 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. Regardless of whether you require a graphical programming language such as function block diagram, ladder diagram, sequential function chart; or textual programming such as instruction list or structured text – easySoft-CoDeSys is the right programming tool. You can also test your application program without having to connect a PLC. For this easySoft-CoDeSys offers several program simulation functions. Neither do you have to use a different operator interface, since handling is exactly the same as online operation with the PLC connected.

easy Expansions and Communication Modules.

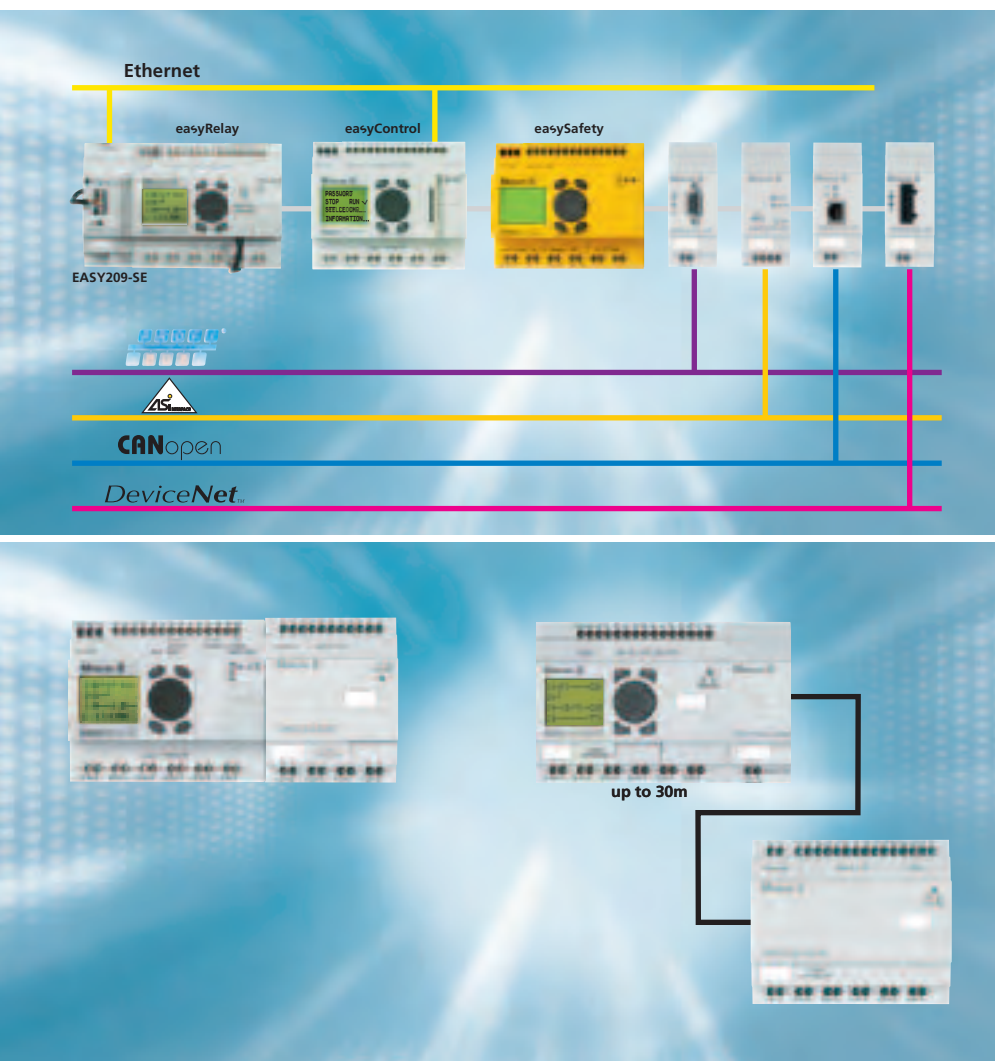
Communication via fieldbus systems is often an integral part of the automation concept.

The communication modules of the easyRelays, MFD-Titan and easyControl make it possible to exchange data with higher-level automation systems. Communication modules are available for the following bus systems:

- AS-Interface
- Profibus DP
- CANopen
- DeviceNet

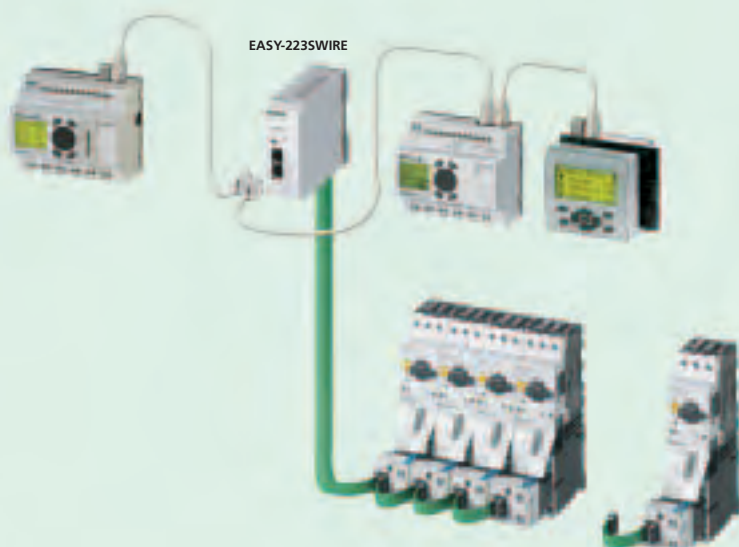
The expandable basic units enable the implementation of both local and remote I/O expansions.

In conjunction with the EASY4... and EASY6... expansion modules, a unit can be provided with up to 24 inputs and 16 outputs. These expansion modules are fitted directly on the basic unit and are connected via the easyLink interface. Alternatively, a simple connection can be set up using the EASY200-EASY coupling module and up to 30 metres of two-wire cable, thus making it possible to create extensive or expanded configurations. If that isn't enough, the EASY202-RE expansion module provides two additional relay outputs.

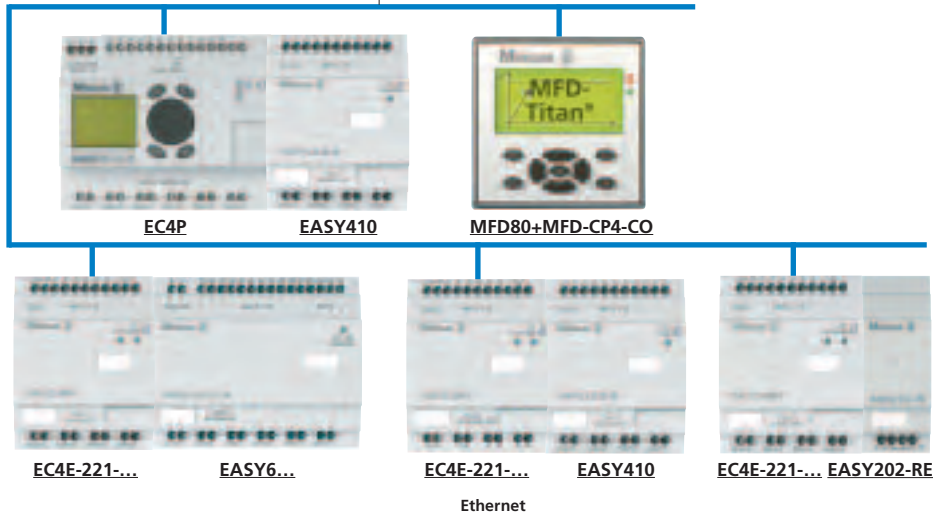


SmartWire: Plug & Work for motor starters

Moeller motor starters of the SmartWire gateway series with SmartWire without complex control wiring and PLC I/O assemblies can be directly connected to the easyNet, CANopen or Profibus. In order to make the starter SmartWire compatible, the user simply plugs the SmartWire module onto the contactor. All motor starters are interconnected with the prefabricated SmartWire connection cable. Communication with the control is implemented via the SmartWire gateway.



CANopen



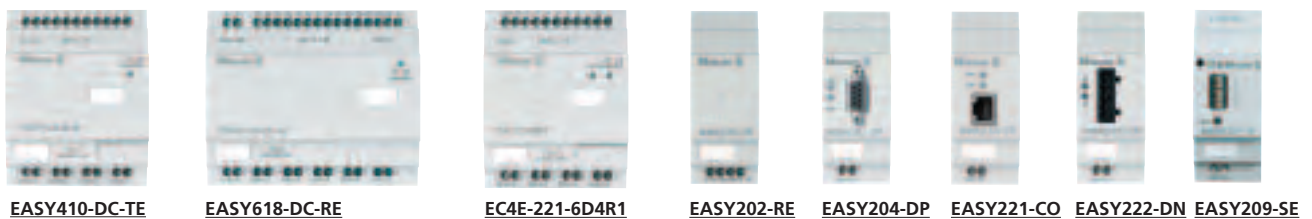
CANopen expansion

The new decentralized CANopen expansions guarantee a high level of flexibility. The integrated easyLink interface enables a wide range of combinations with standard local easy expansions (I/O and communication modules).

Ethernet gateway

The EASY209-SE network module now provides a convenient Ethernet connection for the easyRelays and MFD-Titan, thus enabling corporate network connections, remote programming and the implementation of an OPC server.

The network module is an RS232 Ethernet gateway that can be connected to the programming interface of all devices of the easy system.



Accessories	Expansion modules, digital inputs / outputs								Expansion modules						
Application	CANopen		easyLink						Communication						
Part no.	EC4E-221-6D4R1	EC4E-221-6D4T1	EASY202-RE	EASY410-DC-RE	EASY410-DC-TE	EASY618-AC-RE	EASY618-DC-RE	EASY620-DC-TE	EASY200-EASY	EASY204-DP	EASY205-ASI	EASY221-CO	EASY222-DN	EASY209-SE	EASY223-SWIRE
Supply voltage	24 V DC	24 V DC	-	24 V DC	24 V DC	100 - 240 V AC	24 V DC	24 V DC	-	24 V DC	-	24 V DC	24 V DC	24 V DC	24 V DC
Inputs, digital	6	6	-	6	6	12	12	12	-	-	-	-	-	-	-
Outputs (R=Relay, T=Trans.)	4R	4T	2R	4R	4T	6R	6R	8T	-	-	-	-	-	-	-
Continuous current outputs ¹⁾	8 A	0,5 A	8 A	8 A	0,5A	8 A	8 A	0.5 A	-	-	-	-	-	-	-
Connection cables	0.2 - 4.0 mm ² (AWG 22-12), rigid 0.2 - 2.5 mm ² (AWG 22-12), flexible								0.2 - 4.0 mm ² (AWG 22-12), rigid 0.2 - 2.5 mm ² (AWG 22-12), flexible						
Degree of protection	IP 20								IP 20						
RFI suppression	EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4								EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4						
Ambient operating temperature	- 25 °C ... + 55 °C								- 25 °C ... + 55 °C						
Certification, standards	EN 50178, IEC/EN 60947, UL, CSA								EN 50178, IEC/EN 60947, UL, CSA						
Dimensions (W x H x D) mm	71,5 x 90 x 58	35,5 x 90 x 58		71,5 x 90 x 58		107.5 x 90 x 58			35.5 x 90 x 58						35.5 x 90 x 101

¹⁾ Relay = 8 A (10 A to UL) with resistive load, 3 A with inductive load/transistor outputs = 0.5 A / 24 V DC, max 4 outputs switchable in parallel

"Remote" Display: easy Text Display With Optimum Protection.



MFD-80-B



MFD-CP4

Plug & Work

With Moeller's MFD-CP4-500 / MFD-CP4-800 supply and communication module, all easyRelay and easyControl applications can include a remote display that is protected to IP65. The Plug & Work technology allows users to connect the MFD-Titan display (MFD-80 or MFD-80-B) to the easyControl relay via the MFD-CP4 power supply and communication module.

For this purpose the MFD-CP4 module is factory shipped with five metres of serial connection cable that can be cut to any required length. The benefits are multiple. Users do not require any software or drivers for the connection, since MFD-CP4 offers genuine Plug & Work functionality. The I/O wiring can be kept in the control cabinet. The display can also be fastened simply with 2 x 22.5 mm fixing holes. The display is protected to IP65, comes with a backlight and offers optimum legibility.

Basic units	MFD-Titan						
Application	Display		Power supply unit/ communication module				
Part no.	MFD-80	MFD-80-B	MFD-CP4-500	MFD-CP4-800	MFD-CP4-CO	MFD-AC-CP4-500	MFD-AC-CP4-800
Supply voltage	Supply viaCP...		24 V DC			100/240 V AC	
Heat dissipation	3 W		1.5 W			10 VA	
LCD display / keypad	Yes / -	Yes / Yes	- / -	- / -	- / -	- / -	- / -
Connection cables	-	-	0.2 - 4.0 mm² (AWG 24-12), rigid 0.2 - 2.5 mm² (AWG 24-12), flexible				
RFI suppression	EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4						
Ambient operating temperature	Safely legible at - 5 °C ...+ 50 °C [1]		- 25 °C ... + 55 °C				
Certification, standards	EN 50178, IEC/EN 60947, UL, CSA						
Dimensions (W x H x D) mm	86.5 x 86.5 x 20 mm		78 x 58 x 36.2 mm				

[1] With backlight in continuous operation - 10° C ... 0° C

New easyPower Switched-Mode Power Supply Units



easyPower power supply units are primary switched mode power supplies that are optimally adapted to the easyRelay, easyControl and easySafety product series in terms of functions and design.

The new high-performance power supply units support safe operation in plants and machines. They are simple and flexible in handling.

A permanently lit LED indicates that the output voltage is in order. The LED starts flashing as soon as the protective function of the easyPower supply unit is active.

The AC 85 V to 264 V wide range input and radio interference class B enable the easyPower switched-mode power supply units to be used flexibly in a wide range of applications.



EASY200-POW



EASY400-POW



EASY500-POW



EASY600-POW

	EASY200-POW 24 V 350 mA 12 V / 20 mA	EASY400-POW 24 V / 1.25 A	EASY500-POW 24 V / 2.5 A	EASY600-POW 24 V / 4.2 A
Input	Single phase AC			
Nominal voltage	AC 100–240 V (wide range input)			
Voltage range	85–264 V AC			
Frequency	47–63 Hz			
Output				
Rated output current	0.35 A (24 V) 20 mA (12 V)	1.25 A (24 V)	2.5 A (24 V)	4.2 A (24 V)
Can be connected in parallel for increased power	–	Yes		
Protection				
Use of current limit	$> 1.2 \times I_{\text{rated}}$			
Overload-proof	Yes, with current limit			
Reduction of output voltage after current limit	$< 18 \text{ V}$			
Resistant to continuous short-circuit	Yes, hiccup mode, approx. 10 Hz			
Dimensions in mm (W x H x D)	35.5 x 90 x 58	71.5 x 90 x 58		107.5 x 90 x 58
Status display	– –	LED = green for output voltage OK LED = flashing for overload indication		
Standards, certification	EN 55011, EN 55022, IEC/EN 61000-4, IEC 60068-2-27, SELV output voltage U _{out} to EN 60950 and EN 50178 CE, UL, CSA			



<http://www.trainingscenter.moeller.net>

Online Training Center

Moeller has also developed a new web-based information and training platform for the easyRelay control relays, MFD-Titan multi-function display and for the easyControl. The Online Training Center is divided into the four areas "Products", "Functions", "Applications" and "Software": The website primarily provides fully programmed and documented applications for different branches. It also provides a wide range of information on all aspect of easy and MFD-Titan, with additional links to more detailed information. The FAQ area of the website presents useful tips and tricks for these devices. A full text search facility provides support for finding information on particular topics.

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Xtra Combinations

Xtra Combinations from Moeller offers a range of products and services, enabling the best possible combination options for switching, protection and control in power distribution and automation.

Using Xtra Combinations enables you to find more efficient solutions for your tasks while optimising the economic viability of your machines and systems.

It provides:

- flexibility and simplicity
- great system availability
- the highest level of safety

All the products can be easily combined with one another mechanically, electrically and digitally, enabling you to arrive at flexible and stylish solutions tailored to your application – quickly, efficiently and cost-effectively.

The products are proven and of such excellent quality that they ensure a high level of operational continuity, allowing you to achieve optimum safety for your personnel, machinery, installations and buildings.

Thanks to our state-of-the-art logistics operation, our comprehensive dealer network and our highly motivated service personnel in 80 countries around the world, you can count on Moeller and our products every time. Challenge us! We are looking forward to it!



We keep power under control.