

easyE4

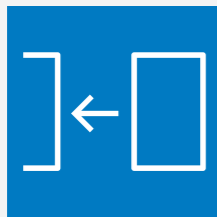
The fastest path to success



easyE4 control relay

More time for the really important things

Whether it's about temperature control in the food industry, simple control tasks in the machine building sector or lighting control in buildings—the easyE4 from the Moeller™ series, Eaton's next generation of control relays, makes implementing control tasks even easier, more convenient and faster. Experience the many advantages of this new technology, which allows you to free up valuable time for what's really important.



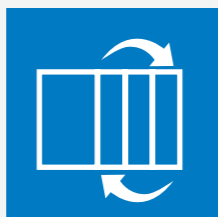
Offering maximum flexibility, with **up to 11 local expansion modules per base unit**.



The **188 available inputs/outputs in one easyE4 system** provide coverage for a broad range of applications.



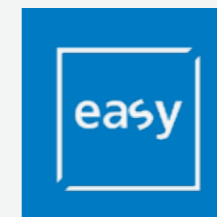
Mixed connection of AC/DC/UC modules allows flexibility in the application.



The virtually **unlimited combination options** of base units and expansion modules make the handling of the easyE4 devices extremely easy.



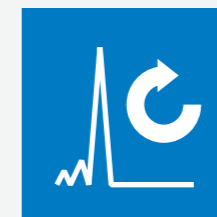
The **Ethernet connection** enables a wide range of enhanced communication options.



Four programming languages are available: easySoft speaks your language!



Various visualization options are available, via the integrated displays, web server as well as the Ethernet options.



Interrupt features enable fast event recognition and rapid response times.



DCF77 synchronization as well as Ethernet services enable highly precise date and time indication.



The devices are **suitable for global use** and come with all the necessary approvals.

From planning to maintenance

Consistently simple

The **easyE4** supports you every step of the way—starting with the planning phase, thanks to the optimized size of the assortment. Enjoy greater flexibility, more transparency and time savings that will allow you to devote yourself to other tasks.



Multifunctionality ensures simplified planning

The easy relay takes on various command and control tasks in a single device:

- Logic functions
- Timing relay and counter functions
- Time switch functions
- Arithmetic functions
- PID controller
- Operating and display functions

This simplifies the planning process:

- Up to 11 expansions can be connected
- The AC, DC and UC expansions can be used together in any combination (12/24 V DC, 24 V AC, 100-240 V AC)

Programming options that are suited to your needs

The easyE4 offers flexible programming options, either directly on the device, or via the easySoft software:

- Circuit diagrams can be created directly on the base unit, using the input keypad and text display
- Programming the devices is highly user-friendly, thanks to the four available programming languages
- The display texts, background colors and start graphics can be individually designed, for example, by adding your company's own graphics



Everything at a glance during maintenance

The various available display options allow you to gain a quick and comprehensive overview of your projects:

- A base-unit display that's easy to use
- Remote visualization and access are also possible, for example via a smartphone or tablet
- Easy data logging of operating states and evaluation of events



"The easyE4 simplifies every step of the process!"



Installation and commissioning made easy

The number of inputs/outputs can be easily extended with the addition of expansion modules:

- The expansion modules are connected via a unique plug connector
- It is easy to install programming on brand-new devices via the SD card. This considerably simplifies, for example, the commissioning of series production

Quick and easy implementation during operation

The full advantages of this powerful control relay reveal themselves during operation:

- Rapid response times of less than 2 milliseconds
- DCF77 synchronization for high accuracy in time-dependent applications
- Rapid detection of the operating states of both the base units and the expansion modules thanks to the integrated display
- The application-specific parameters can be manually adjusted directly on the device



easySoft 7

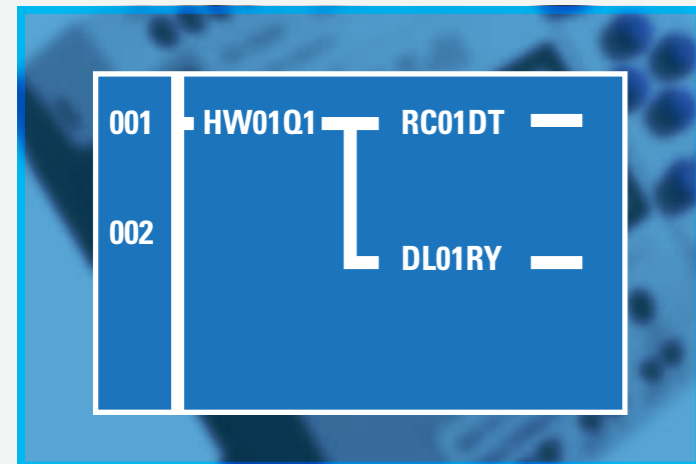
Simple, intuitive and convenient



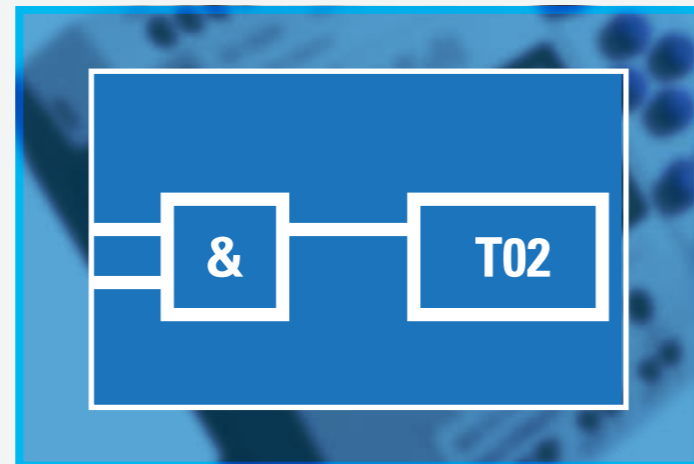
With the user-friendly easySoft software, programming the devices is quick and easy. Circuit diagrams can be easily created and adapted via a PC or directly on the device. The easy-to-navigate selection menus, as well as the simulation, online communications and documentation options, make easySoft the ideal companion for the easyE4 devices. Four different programming languages are available (ST, FBD, LD, EDP)—in other words, the right programming environment for all of your needs.

- **Ladder diagram (LD)** for transferring existing easySoft programs
- **easy programming (EDP)** enables the creation and adaptation of programs on the devices
- **Function block diagram (FBD)** provides a quick overview of the various features
- **Structured text (ST) for professionals**, to facilitate efficient programming

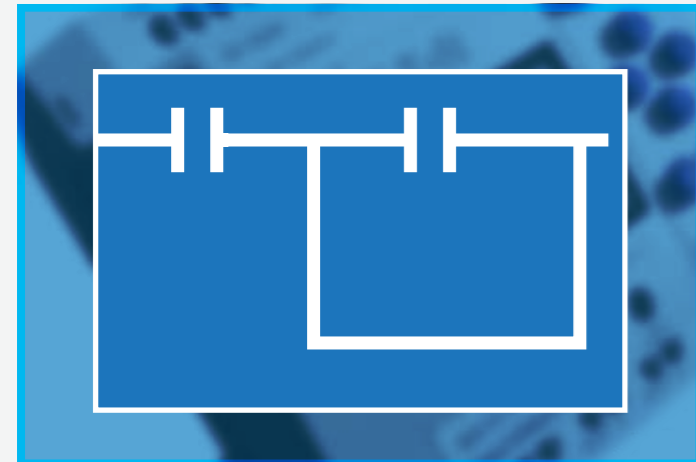
EDP



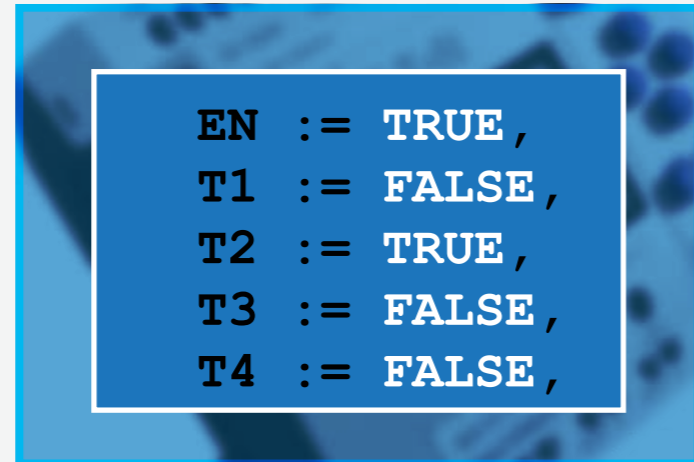
FBD



LD



ST

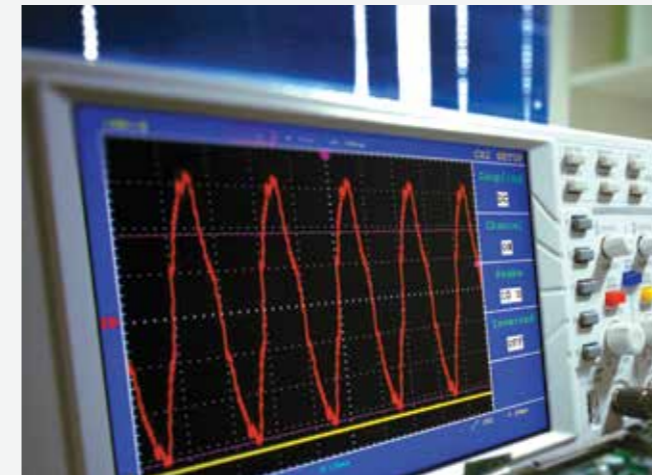


"Secure programming can be so simple."

- The **multi-level password protection** protects your application and process know-how against unauthorized access.
- **Unique IDs for each easyE4 and program** ensure that the correct programs are uploaded to the intended hardware (pairing).

Download easySoft

Video Tutorials



- The **integrated oscilloscope feature** can be used both in simulation mode and during operation
- **Direct analysis of switching operations**, based on the curve characteristics
- Pre-set analytics allow **quick commissioning**

The system is backward compatible

- With easySoft 7, existing programs that were created for the easy series 500/700/800 can simply be transferred
- Automatic conversion of visualizations from the previous easy series to the new easyE4



Visualization for every need

Simply versatile

The easyE4 also offers a variety of visualization options to optimally adapt the solution to your individual needs and requirements. Texts and data can be easily displayed or changed using the easyE4 base unit display. Thanks to the integrated web server, the data can also be accessed via all Internet-enabled devices, such as smartphones or tablets. In addition, visualization through HMIs is also possible. The access to the data can be individually defined.

easyE4 display

Use the display of the basic unit for convenient visualization on site.



Visualization via Ethernet

Any HMI, like an XV100, can be connected to the easyE4, for example via Modbus TCP.



LAN (Ethernet)



Wireless visualization

Any standard browser can access the easyE4 web server via a WLAN router, a repeater or dLan.



LAN (Ethernet)



Router

- An **individual user list** ensures secure remote access to the web browser
- **Efficient service and maintenance**, thanks to the reliable online services in easySoft
- The **web server** is **password protected**
- **Automatic email notifications** will promptly inform you of any deviations to ensure maximum availability of your application

Application check - Visualization

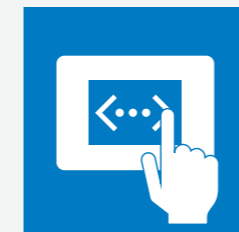
In combination with the XV-102..E4 touch panel, easyE4 users benefit from a powerful and cost-effective visualization solution inside or outside the control cabinet.



"With the easyE4, I never lose sight of the big picture."



✓ Intuitive operation



- Convenient operation of the device
- Simple implementation of the visualization based on the Galileo software

✓ Convenient illustration



- Clear visualization of the application
- Attractive surface due to picture language

✓ Resistive touch



- Smooth operation even when wearing gloves
- Fully laminated protective foil

✓ Robust design



- Protection class IP65 for use in harsh environments
- Flat front surface for easy cleaning

easyE4 solutions

Ready for the future



The optimal design of your system architecture

LEVEL 1: Eaton 'easy' stand-alone solution

The easyE4 allows for a wide range of clever applications of varying complexity. The control of simple tasks is performed by the base unit via the integrated inputs/outputs. The system can be tailored to the task at hand by means of the existing expansions. To this end, various expansion modules are available, which can be connected via a simple plug connector.

LEVEL 2 Eaton 'easy' system solution

For more complex tasks, additional devices can be connected to the base unit and the expansions via the

network. Via the Ethernet and NET interfaces, up to eight easyE4 devices can communicate with each other within the same network cluster.

For larger networks, the easyE4 series offers the possibility of operating up to ten clusters—each with eight individual easyE4 devices—in parallel.

With the Modbus TCP protocol, it is even possible to use Eaton's XC300 as the central master-level control system for the easyE4 devices. And by connecting an Eaton HMI (e.g. the XV300), even the most demanding visualizations can be realized.

Successful entry to IIOT

LEVEL 3 Eaton 'easy' system solution with connection to the cloud

Industry 4.0 is already a reality in many companies. In addition to enhancements in data availability, it also facilitates process optimization along the entire value chain. Implementation requires intelligent, networked system components—also known as the Industrial Internet of Things (IIoT).

easyE4 enables integration into IIoT architectures via the built-in Ethernet interface. You can therefore transfer your data to the cloud via a router and then access it whenever you need it, from anywhere in the world.

Smart control relay as an alternative to PLC control

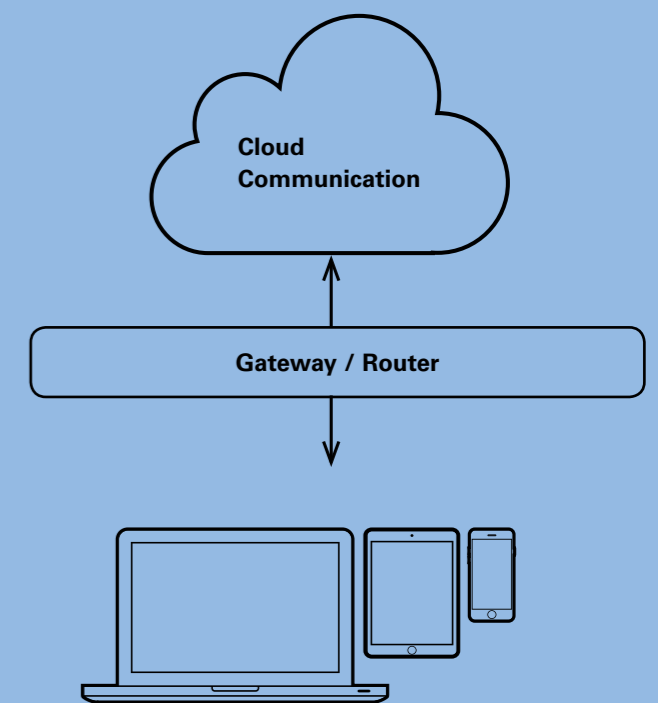
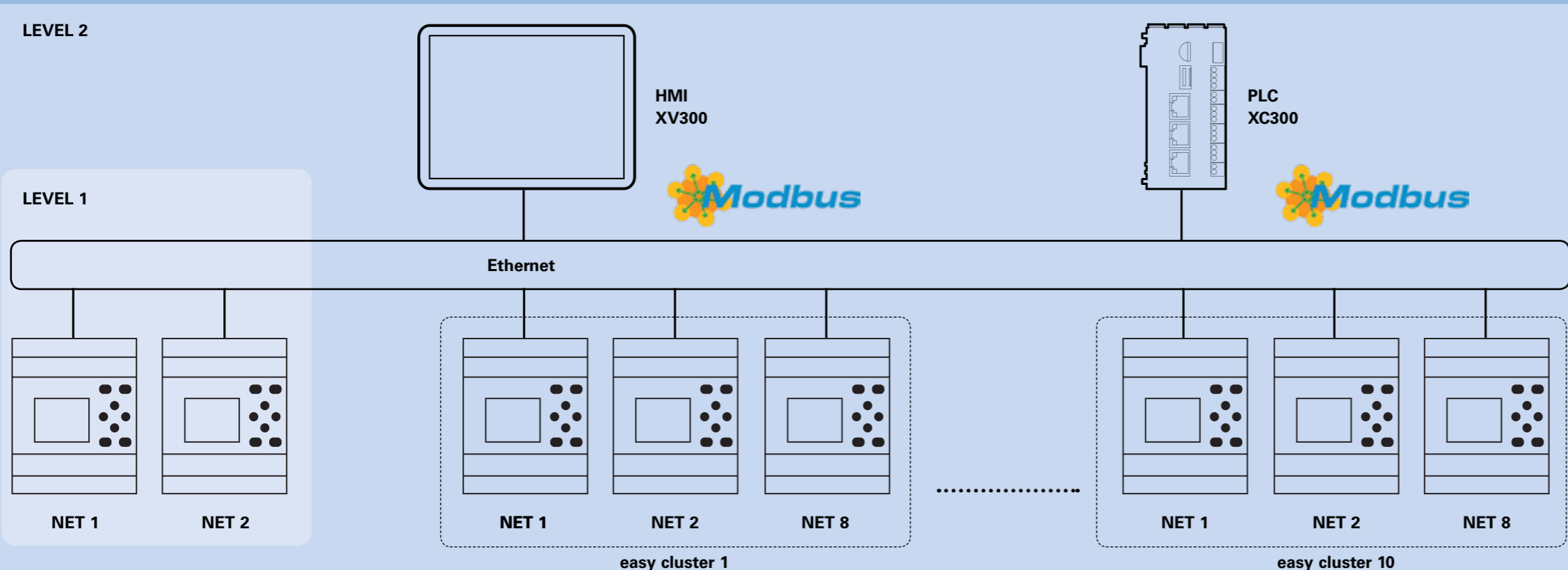
In our whitepaper you will find more information about the question whether the latest generation of smart control relays can be a future-proof and cost-effective alternative to PLC controls for machines of low to medium complexity.



LEVEL 3

LEVEL 2

LEVEL 1



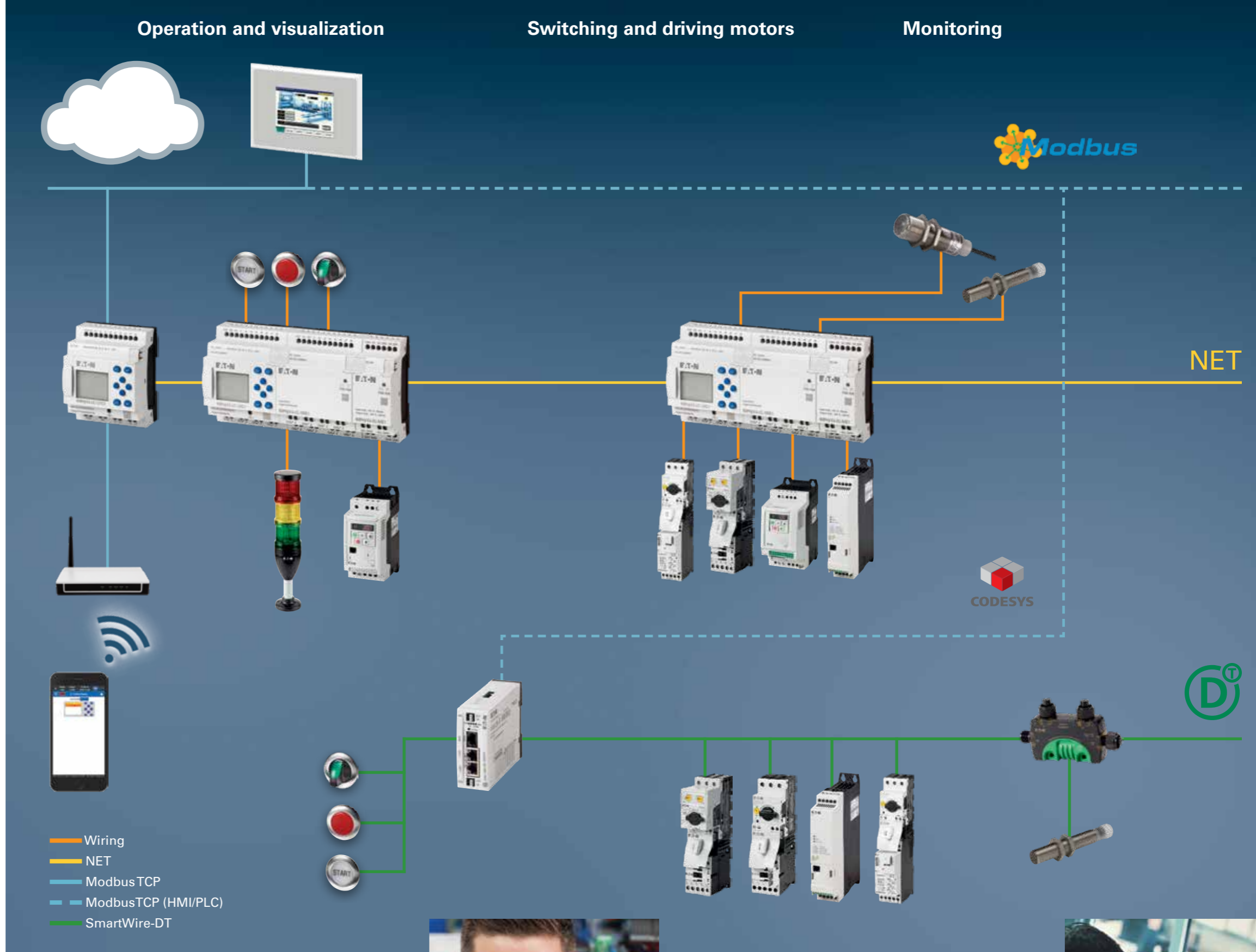
Implementing system architectures with Eaton's easyE4

The easyE4 control relays can be used within many different projects meeting your requirements for a flexible, modular system. If used in conjunction with the other components from the Eaton portfolio, such as our pilot devices or motor starters, the devices allow you to implement integrated system architectures that can be easily expanded.

Our example shows three different areas of application: Operation and visualization, motor start and controls, and sensor technology. The easyE4 control relay serves as an important interface between the individual components of the system architecture.

Since the in-/outputs in the easyE4 system can be easily extended, it is possible to integrate a wide variety of devices, such as those from our RMQ-Titan range. In addition, you can also connect motor starters, variable speed starters or sensors to the easyE4. The devices within each easyE4 network (cluster) communicate via NET. The XV100, which can be easily connected via Modbus TCP, is used for visualization.

A Modbus gateway is used to integrate additional modules, such as those from our SmartWire-DT range. Modbus TCP is also used to transmit the system-level data, which can then be visualized on a master-level control system using Codesys. With the easyE4, the operating status of the entire application can also be conveniently displayed on any mobile device.



Flexible visualization options

In addition to HMI visualization via Modbus TCP, the easyE4's integrated web server also makes it possible to display the application content on tablets and smartphones. The web server is accessed by means of a wireless router. A number of built-in functions ensure secure access to the server.



Tailor-made programming options

From easy device programming (EDP) to the ladder diagram (LD), the function block diagram (FBD), and structured text (ST) for more advanced users — easySoft gives users the option to select their preferred programming language. This not only provides flexibility but also saves time.

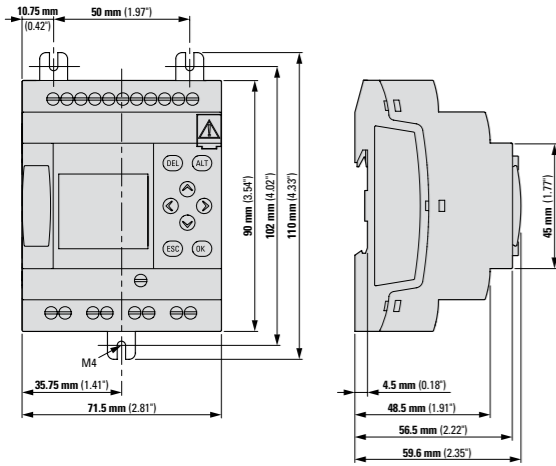


Technical data

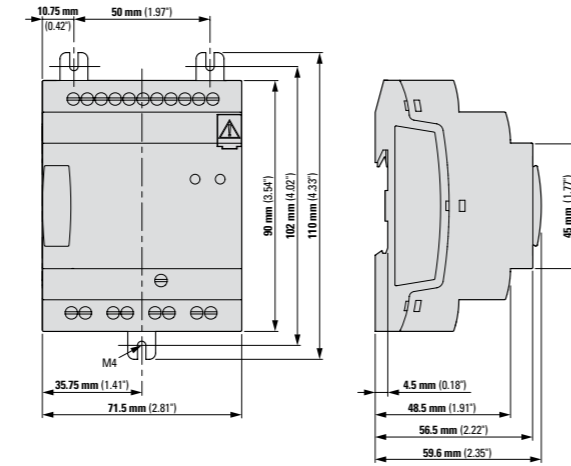
Typ	EASYE4-UC-12RC1	EASYE4-UC-12RCX1	EASYE4-UC-8RE1	EASYE4-UC-16RE1	EASYE4-DC-6AE1	EASYE4-DC-12TC1	EASYE4-DC-12TCX1	EASYE4-DC-8TE1	EASYE4-DC-16TE1
Article no.	197211	197212	197217	197218	197223	197213	197214	197219	197220
Type of device	Base unit	Base unit	Expansion unit	Expansion unit	Expansion unit	Base unit	Base unit	Expansion unit	Expansion unit
Inputs									
digital	8	8	4	8	-	8	8	4	8
can be used as analog inputs	4	4	-	-	6	4	4	-	-
Outputs									
Transistor	-	-	-	-	-	4	4	4	8
Relay	4	4	4	8	-	-	-	-	-
can be used as analog outputs	-	-	-	-	2	-	-	-	-
Display	with Display	without Display	without Display	without Display	without Display	with Display	without Display	without Display	without Display
Rated operational voltage	12/24 V DC, 24 V AC					24 V DC			
Operating ambient temperature (°C)	-25 - +55					-25 - +55			
Dimensions (L x H x D)	71.5 x 90 x 58	35.5 x 90 x 58	71.5 x 90 x 58	35.5 x 90 x 58	71.5 x 90 x 58	35.5 x 90 x 58	71.5 x 90 x 58	35.5 x 90 x 58	71.5 x 90 x 58
Weight (kg)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Degree of protection	IP20								
Standards	EN 61000-6-2, EN 61000-6-3, IEC 60068-2-6, IEC 60068-2-27, IEC 60068-2-30, IEC 61131-2, EN 61010, EN 50178, cULus acc. to UL 61010, CSA C22.2 No.61010								

Dimensions

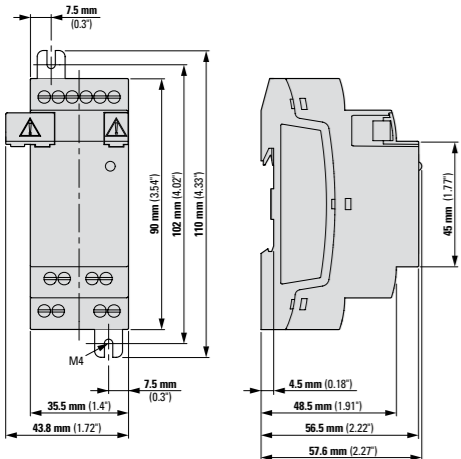
Basic device with display



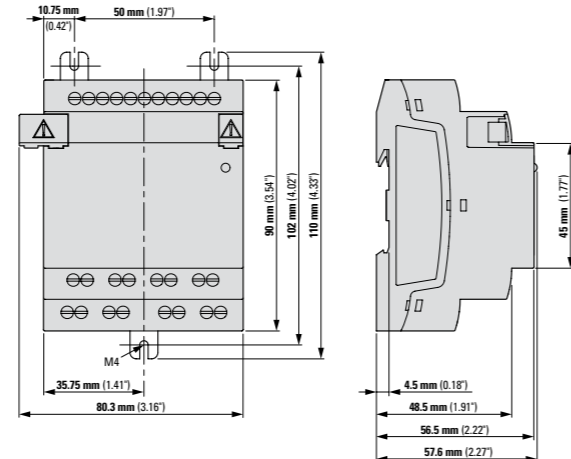
Basic device without display



Slim expansion module



Large expansion module



Ordering data

easyE4 Basic devices

Inscription	Input		Output		Features			Power supply	Typ Article no.	
	digital	digital analog	Transistor	Relay (8 A)	Display + Keypad	Realtime clock	Ethernet		Screw terminal	Push-in clamp
Basis device 12/24 V DC, 24 V AC, Display, Keypad	4	4	-	4	•	•	•	12/ 24 V DC 24 V AC	EASYE4-UC-12RC1 197211	EASYE4-UC-12RC1P 197504
Basis device 12/24 V DC, 24 V AC	4	4	-	4	-	•	•	12/ 24 V DC 24 V AC	EASYE4-UC-12RCX1 197212	EASYE4-UC-12RCX1P 197505
Basis device 24 V DC, Display, Keypad,	4	4	4	-	•	•	•	24 V DC	EASYE4-DC-12TC1 197213	EASYE4-DC-12TC1P 197506
Basic device 24 V DC	4	4	4	-	-	•	•	24 V DC	EASYE4-DC-12TCX1 197214	EASYE4-DC-12TCX1P 197507
Basis device 100 - 240 V AC/DC Display, Keypad	8	-	-	4	•	•	•	100- 240 V AC/DC	EASYE4-AC-12RC1 197215	EASYE4-AC-12RC1P 197508
Basis device 100-240 V AC/DC	8	-	-	4	-	•	•	100- 240 V AC/DC	EASYE4-AC-12RCX1 197216	EASYE4-AC-12RCX1P 197509

Expansion devices

Inscription	Input		Output			Power supply	Typ Article no.	
	digital	analog	Relay (5 A)	Transistor	analog		Screw terminal	Push-in clamp
Digital Input/ Output 12/24 V DC, 24 V AC	4	-	4	-	-	12/ 24 V DC 24 V AC	EASYE4-UC-8RE1 197217	EASYE4-UC-8RE1P 197510
Digital Input/ Output 12/24 V DC, 24 V AC	8	-	8	-	-	12/ 24 V DC 24 V AC	EASYE4-UC-16RE1 197218	EASYE4-UC-16RE1P 197511
Transistor Input/ Output, 0.5 A	4	-	-	4	-	24 V DC	EASYE4-DC-8TE1 197219	EASYE4-DC-8TE1P 197512
Transistor Input/ Output, 0.5 A	8	-	-	8	-	24 V DC	EASYE4-DC-16TE1 197220	EASYE4-DC-16TE1P 197513
Digital Input/ Output 100/110/230/ 240 V AC	4	-	4	-	-	100-240 V AC/DC	EASYE4-AC-8RE1 197221	EASYE4-AC-8RE1P 197514
Digital Input/ Output 100/110/230/ 240 V AC	8	-	8	-	-	100-240 V AC/DC	EASYE4-AC-16RE1 197222	EASYE4-AC-16RE1P 197515
Analog Input/ Output; 0 - 10 V / 0/4 - 20mA, 12 bit, each channel configurable	-	4	-	-	2	24 V DC	EASYE4-DC-6AE1 197223	EASYE4-DC-6AE1P 197516
Temperature Input, 2 and 3 Wire, Pt100/1000/Ni1000, 12 bit, * [°C] or [°F], scalling, 12 bit, in 0,1 °, in 1°, 0 - 4095, 0 - 65535	-	4	-	-	-	24 V DC	EASYE4-DC-4PE1 197224	EASYE4-DC-4PE1P 197517

* Measurement range selectable PT100, PT1000 -100°C...+200°C / -148°F...392°F, -100°C...+400°C / -148°F...752°F, -100°C...+800°C / -148°F...1472°F; Ni1000 -50°C...+100°C / -58°F...212°F, -50°C...+250°C / -58°F...482°F

Visualization

Inscription	Typ Article no.
Touch panel for easyE4 control relay 3.5", resistive touch, Modbus-TCP interface	XV-102-A0-35TORB-1E4 198513

Software

Inscription	Typ Article no.
Programming software easySoft easyE range	EASYSOFT-SWLIC 197226

Accessories (optional)

Inscription	Typ Article no.
Micro SD memory card, 2GB, with adapter	MEMORY-SDU-A1 191087
Switching power supply, 100-240VAC/24VDC/12VDC, 0.35A/0.02A, single-phase, regulated	EASY200-POW 229424
Switching power supply, 100-240VAC/24VDC, 1.25A, 1-phase, regulated	EASY400-POW 212319
Spare parts package easyConnect 3 x connector, 3 x caps	EASYE4-CONNECT1 197225

Order your starter set now!

easyE4 Starter sets

EASY-BOX-E4-UC1

- Basic device EASY-E4-UC-12RC1, 24 V AC, 12/24 V DC, 8 digital inputs, 4 outputs (Relay 8 A)
- License code for easySoft V7
- Patch cable RJ45
- Flyer easyE4

Order no.: 197227

EASY-BOX-E4-DC1

- Basic device EASY-E4-DC-12TC1, 24 V DC, 8 digital inputs, 4 outputs (Transistor 0,5 A)
- License code for easySoft V7
- Patch cable RJ45
- Flyer easyE4

Order no.: 197228

EASY-BOX-E4-AC1

- Basic device EASY-E4-AC-12RC1, 100-240 V AC/DC, 8 digital inputs, 4 outputs (Relay 8 A)
- License code for easySoft V7
- Patch cable RJ45
- Flyer easyE4

Order no.: 197229



“Application solutions simply planned and visualized.”

easyE4 starter sets with visualization device

XV100-BOX-E4-UC1

- easyE4 basic device EASY-E4-UC-12RC1, 24 V AC, 12/24 V DC, 8 digital inputs, 4 outputs (Relay 8 A)
- XV-102-A0-35TQRB-1E4 touch panel, 3.5”
- License code for easySoft V7
- Ethernet-switch
- Patch cable RJ45
- Flyer easyE4

Order no.: 198515

XV100-BOX-E4-DC1

- easyE4 basic device EASY-E4-DC-12TC1, 24 V DC, 8 digital inputs, 4 outputs (Transistor 0.5 A)
- XV-102-A0-35TQRB-1E4 touch panel, 3.5”
- License code for easySoft V7
- Ethernet-switch
- Patch cable RJ45
- Flyer easyE4

Order no.: 198514

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