

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Programmable Controller

with type designation(s)
EASY-E4 family

Issued to

Eaton Industries GmbH
Bonn, Germany

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Temperature	D
Humidity	B
Vibration	A
EMC	A
Enclosure	A

Issued at **Hamburg** on **2020-02-11**

This Certificate is valid until **2025-02-10**.

DNV GL local station: **Essen**

for **DNV GL**

Approval Engineer: **Jens Dietrich**

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Joannis Papanuskas
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Product description

EASY-E4 modules:

Base Units:

EASY-E4-UC-12RC1:

Control Relay with LCD display, power supply 12/24VDC, 24VAC; Ethernet interface;
8 binary inputs (4 configurable as analogue input); 4 binary outputs (4 relays);
Extendable with binary I/Os of easyE4 family using connector easy-E4-CONNECT1;
Screw terminals.

EASY-E4-UC-12RC1P

Control Relay with LCD display, power supply 12/24VDC, 24VAC; Ethernet interface;
8 binary inputs (4 configurable as analogue input); 4 binary outputs (4 relays);
Extendable with binary I/Os of easyE4 family using connector easy-E4-CONNECT1;
Push-In terminals.

EASY-E4-UC-12RCX1

Control Relay, power supply 12/24VDC, 24VAC; Ethernet interface;
8 binary inputs (4 configurable as analogue input); 4 binary outputs (4 relays);
Extendable with binary I/Os of easyE4 family using connector easy-E4-CONNECT1;
Screw terminals.

EASY-E4-UC-12RCX1P

Control Relay, power supply 12/24VDC, 24VAC; Ethernet interface;
8 binary inputs (4 configurable as analogue input); 4 binary outputs (4 relays);
Extendable with binary I/Os of easyE4 family using connector easy-E4-CONNECT1;
Push-In terminals.

EASY-E4-DC-12TC1

Control Relay with LCD display, power supply, 24VDC; Ethernet interface;
8 binary inputs (4 configurable as analogue inputs); 4 binary transistor outputs;
Extendable with binary I/Os of easyE4 family using connector easy-E4-CONNECT1;
Screw terminals.

EASY-E4-DC-12TC1P

Control Relay with LCD display, power supply, 24VDC; Ethernet interface;
8 binary inputs (4 configurable as analogue inputs); 4 binary transistor outputs;
Extendable with binary I/Os of easyE4 family using connector easy-E4-CONNECT1;
Push-In terminals.

EASY-E4-DC-12TCX1

Control Relay, power supply, 24VDC; Ethernet interface;
8 binary inputs (4 configurable as analogue inputs); 4 binary transistor outputs;
Extendable with binary I/Os of easyE4 family using connector easy-E4-CONNECT1;
Screw terminals.

EASY-E4-DC-12TCX1P

Control Relay, power supply, 24VDC; Ethernet interface;
8 binary inputs (4 configurable as analogue inputs); 4 binary transistor outputs;
Extendable with binary I/Os of easyE4 family using connector easy-E4-CONNECT1;
Push-In terminals.

I/O Extensions:

EASY-E4-UC-16RE1

I/O extension unit, power supply 12/24VDC, 24VAC;
8 binary inputs; 8 binary outputs (relays);
Extendable with binary I/Os of easyE4 family using connector easy-E4-CONNECT1;
Screw terminals.

EASY-E4-UC-16RE1P

I/O extension unit, power supply 12/24VDC, 24VAC;
8 binary inputs; 8 binary outputs (relays);
Extendable with binary I/Os of easyE4 family using connector easy-E4-CONNECT1;
Push-In terminals.

EASY-E4-UC-8RE1

I/O extension unit, power supply 12/24VDC, 24VAC;
4 binary inputs; 4 binary outputs (relays);
Extendable with binary I/Os of easyE4 family using connector easy-E4-CONNECT1;
Screw terminals.

EASY-E4-UC-8RE1P

I/O extension unit, power supply 12/24VDC, 24VAC;
4 binary inputs; 4 binary outputs (relays);
Extendable with binary I/Os of easyE4 family using connector easy-E4-CONNECT1;
Push-In terminals.

EASY-E4-DC-6AE1

I/O extension unit, power supply 24VDC;
4 analogue inputs; 2 analogue outputs;
Extendable with binary I/Os of easyE4 family using connector easy-E4-CONNECT1;
Screw terminals.

EASY-E4-DC-6AE1P

I/O extension unit, power supply 24VDC;
4 analogue inputs; 2 analogue outputs;
Extendable with binary I/Os of easyE4 family using connector easy-E4-CONNECT1;
Push-In terminals.

EASY-E4-DC-8TE1

I/O extension unit, power supply 24VDC;
4 binary inputs; 4 binary transistor outputs;
Extendable with binary I/Os of easyE4 family using connector easy-E4-CONNECT1;
Screw terminals.

EASY-E4-DC-8TE1P

I/O extension unit, power supply 24VDC;
4 binary inputs; 4 binary transistor outputs;
Extendable with binary I/Os of easyE4 family using connector easy-E4-CONNECT1;
Push-In terminals.

EASY-E4-DC-16TE1

I/O extension unit, power supply 24VDC;
8 binary inputs; 8 binary transistor outputs;
Extendable with binary I/Os of easyE4 family using connector easy-E4-CONNECT1;
Screw terminals.

EASY-E4-DC-16TE1P

I/O extension unit, power supply 24VDC;
8 binary inputs; 8 binary transistor outputs;

Extendable with binary I/Os of easyE4 family using connector easy-E4-CONNECT1;
Push-In terminals.

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Product certificate

If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After certification the clause for software control will be put into force.

Software control

All changes in software are to be recorded as long as the system is in use on board. Documentation of major changes is to be forwarded to DNV GL for evaluation and approval before implemented on board. Certification of modified functionality may be required for the particular vessel.

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE