

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Miniature Circuit Breaker**

with type designation(s)

EC-E1, EC-E, EC-E4, EC 1 12DC/xA S-C, EC 1 12DC/xA S-R

Issued to

**Phoenix Contact GmbH & Co. KG
Blomberg, 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.**Issued at **Hamburg** on **2018-08-13**This Certificate is valid until **2023-08-12**.DNV GL local station: **Essen**for **DNV GL**Approval Engineer: **Thomas Hartmann**

**Arne Schaarmann
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

Electronic circuit breaker without galvanic isolation for DIN rail mounting

Common Characteristic

Short circuit current I_{sc} [A]:	300
Current limitation:	1.8/ 1.5/ 1.4/1.3 x I_n (see data sheet)
Overcurrent Characteristic:	Definite-time 1.1 x I_n (1.05...1.35 x I_n)
IP Rating:	20
Pollution degree:	2
Aux. Contact	N.O /N.C Max 30VDC/ 0.5 A resistive load

EC	E1	E	E4
Nominal current I_N [A]:	0.5-12	0.5-12	0.5-12
Rated Voltage U_n [VDC]:	24	24	24
Max. operat. Voltage U_s [VDC]:	32	32	32
Options:		RESET input Status output SF	Aux. Contact N.C.

EC	1 12DC/xA S-C	1 12DC/xA S-R
Nominal current I_N [A]:	1-10	1-10
Rated Voltage U_n [VDC]:	12	12
Max. operat. Voltage U_s [VDC]:	18	18
Options:	Control Input In+ Status output SF	RESET Input Status output SF

All units with internal back-up fuse element (fail-safe)

Application/Limitation

Location Classes:

Temperature:	B
Humidity:	A
Vibration:	B
EMC:	A

Max. insulation testvoltage: 18/32 VDC (main circ.)/ 500 VDC (main to aux. circ.; see data sheet)

Operating instruction of the manufacturer to be observed. To be used in SELV or PELV circuits only. The use of remote RESET and other control functions/ features is subject to individual plan approval process.

Type Approval documentation

Tests carried out

Relevant tests according to CG-0339, Cold, Dry-heat, Damp-heat, Vibration, Flammability and EMC

Marking of product

Phoenix Contact - Type designation - Main data

Name and place of manufacturer

DNV GL id: 10372631



Job Id: **262.1-026246-1**
Certificate No: **TAE00002HC**

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and 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