

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Multifunction Relay**with type designation(s)
SYMAP FI, SYMAP MI, SYMAP 87M, SYMAP TI

Issued to

**Stucke Elektronik GmbH
Hamburg, 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 **2018-11-14**This Certificate is valid until **2023-11-13**.DNV GL local station: **Hamburg**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

SYMAP® R is a digital protection relay for use in low, medium and high-voltage power systems intended as retrofit solution for HIMAP FI, MI, 87M and TI. SYMAP R is designed to fit in the existing module housing of HIMAP FI, M, T and 87M slide-in modules.

SYMAP FI	Feeder protection
SYMAP MI	Motor protection
SYMAP 87M	Motor differential protection
SYMAP TI	Transformer (2 winding transformers) / Motor Differential protection

Protection function ANSI/IEEE 37.2 code):

Common features	50, 50G/N, 51, 51G/N, 67GS/GD, 94 (CCS)
SYMAP FI	27, 47, 59, 64/59N, 67
SYMAP MI	37, 46, 49, 50H, 51LR, 66
SYMAP 87M	37, 46, 49, 50H, 51LR, 66, 87G/M
SYMAP TI	87T, 95i

Energizing inputs:

Current	1A, 5A
Sensitive ground current input	0..20mA
Voltage	100V/200V/400V/800V

Aux. power supplies:

95-230V AC/DC, 50Hz/60Hz

Degree of Protection:

Front panel	IP54
Terminals	IP20 (slide-in module, inside existing module housing)

Overvoltage Category:

III; EN 60664-1: 2007

Pollution degree:

2; EN 60664-1: 2007

Additional Features:

Digital I/O, Event recorder, Communication interface RS232, RS485

Software Version CU/MU

1.1/ 1.1

Application/Limitation

Location Classes:

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

Job Id: **262.1-027387-1**
Certificate No: **TAE00002YY**

Installation requirements of the manufacturer to be observed.
Pollution degree 2, installation requirements to be observed (e.g. anti-condensation heating)

Type Approval documentation

Tests carried out

Power supply variation, vibration, inclination, EMC (immunity and emission), damp heat (humidity) and dry heat test.

Marking of product

Marking requirements as per IEC 60255-27;
Stucke elektronik GmbH- Model name/ Type reference- electrical data

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