DNV·GL

Certificate No:
TAA000018V

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electromechanical Relays

with type designation(s)
RIFLINE Relay Modular System

Issued to
Phoenix Contact GmbH & Co. KG
Blomberg, Germany

is found to comply with
DNV GL rules for classification – Ships
DNV GL offshore standards
DNV GL rules for classification – 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	**B**
Enclosure	**Required protection according to the Rules shall be provided upon installation on board.**

*** see Application/Limitation**

Issued at **Hamburg** on **2017-07-19**
This Certificate is valid until **2019-11-25**.
DNV GL local station: **Magdeburg**

for **DNV GL**

Approval Engineer: **Heinz Scheffler**

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.

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Product description

RIFLINE is a modular relay system consisting of:
Relay base
Relay holder
Relay
Function plug module

Nomenclature RIF – A – BC-D – E – F - GHIJ

A = Type
0 Miniature relay module with 1 NO or 1 PDT contact
1 Miniature relay module with 1 or 2 PDT contact(s)
2 Industry relay module with 2 or 4 PDT contacts
3 Octal relay module with 2 or 3 PDT contacts
4 Power relay module with up to 3 PDT contacts

B = Assembly
B Base element
R Base element assembled with Relay
O Base element assembled with Solid State Relay

C = Connection Technology
PT Push-In Technology
SC Screw Connection

D = Relay holder
MH Metall Holder
PHS Plastic Strong
Blank Standard plastic holder(base element R or O) / no holder (base element B)

E = Function input / Function Plug module
L LED-Status indicator
V Varistor
LV LED-Status indicator and Varistor positiv
LVM LED-Status indicator and Varistor negativ
RC RC-Module
T3 Timer-Module
LDP LED-Status Indicator and free-wheeling diode positiv
LDM LED-Status Indicator and free-wheeling diode negativ
BR Bridge Rectifier
M Minus Switching
Blank No input function

F = Input Voltage
6 – 230 followed by UC, AC or DC
Blank (Base element B)

G = Contact configuration Relay (1= NO; 21 =PDT)
1 1x1 2x1 3x1
21 1x21 2x21 3x21 4x21
blank (Base element O)

H = Output function Solid-State-Relay
24DC/2 (3A Output)
48DC/100 (100mA Output)
230AC/1 (750mA Output)
blank (Base element R or B)

I = Contact Material
AU Aureate
Blank (Base element O or B)

J = Extended Contact configuration
FG Force Guided
IC Inrush current
MS Manual Switch
Blank Power contact (Base element R) / none (base element B or O)

Accessories
Relay holder plastic:
- RIF-RH-1
- RIF-RH-1-H
- RIF-RH-2
- RIF-RHS-2
- RIF-RH-3
- RIF-RH-4

Relay holder metal:
- RIF-RHM-1
- RIF-RHM-1-H
- RIF-RHM-2
- EL3-M52 (only for RIF-3)
- RIF-RHM-4

Function plug modules:
- RIF-LDP-12-24 DC
- RIF-LDP-48-60 DC
- RIF-LDP-110 DC
- RIF-LDM-12-24 DC
- RIF-LVM-100-200 AC/110 DC
- RIF-BR-12-230 AC
- RIF-LV-12-24 UC
- RIF-LV-48-60 UC
- RIF-LV-120-230 AC/110 DC
- RIF-V-12-24 UC
- RIF-V-48-60 UC
- RIF-V-120-230 UC
- RIF-RC-12-24 UC
- RIF-RC-48-60 UC
- RIF-RC-120-230 UC
- RIF-T3-24UC

Application/Limitation

Derating-Kurve of output function Solid-State-Relay is to observed.

* Vibration 2,3g: RIF-0 and RIF-1

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 Ships Pt.4 Ch.9 Control and Monitoring Systems.

Type Approval documentation

Test Reports: U143633E1; S143633E1 2nd version; 170861; Rifline_SC09122016.doc (09.12.2016); PB 21260 Rev. 00 (12-12-2016); PB 20201 Rev. 00 (15-04-2016); 16-111274 (01.07.2016).

Documents: 2017-07-17_170861_Index; Installation notes 83133827-03, 83133830-02, 83133833-02, 83180747-00.

Tests carried out

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

Marking of product

The products to be marked with:

- Model name
- Manufacturer name
- Serial number

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