DNV·GL

# TYPE APPROVAL CERTIFICATE

Certificate No:
**TAA000018V**
Revision No:
**1**

## This is to certify:

**That the Electromechanical Relays**

with type designation(s)
**RIFLINE Relay Modular System**

Issued to
**Phoenix Contact GmbH & Co. KG**
**Blomberg, Nordrhein-Westfalen, 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.**

**Location classes:**

| | |
|---|---|
| **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 **2019-12-02**

This Certificate is valid until **2024-12-01**.
DNV GL local station: **Magdeburg**

Approval Engineer: **Heinz Scheffler**

for **DNV GL**
Digitally Signed By:
Papanuskas, Joannis

**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

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
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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

**Location classes Temperature:** Derating-Kurve of output function Solid-State-Relay is to observed.

**Location classes 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