

EUROPEAN UNION RECOGNISED ORGANISATION (EU RO) MUTUAL RECOGNITION TYPE APPROVAL CERTIFICATE

Certificate No:
MRE0000019

In accordance with Article 10.1 of EU Regulation 391/2009

This Certificate is issued to

SACI, S.A. - de Construcciones Industriales
Alcobendas, Madrid, Spain

for

Electrical/Electronic Relays

with type designation(s)

Naval Supervision Relay - RSN

The product is found to comply with

EU RO Mutual Recognition Technical Requirements for Electrical/Electronic Relays

Intended service

3 poles electronical type multifunctional relays for installation in enclosures onboard ship and offshore units

This is to certify:

that the Product referred to herein has been inspected for the Manufacturer, pursuant to the relevant requirements of the European Union Recognised Organisation Mutual Recognition procedure, required by Article 10.1 of EU Regulation 391/2009, and has been found in accordance with those requirements.

This Certificate is valid until **2027-09-19**.

Issued at **Høvik** on **2022-09-20**

for **DNV**

DNV local station: **Vigo FIS**

Approval Engineer: **Nicolay Horn**

Marta Alonso Pontes

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: MRTA 201

Revision: 2021-03

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Product description

The RSN naval supervision relay is an equipment intended for the protection of the generating sets usually used on board. It can be used both in naval and industrial installations.

- Main functions of product are :
 - Current Overload relay, three and single phase (ANSI code 50,51)
 - Differential current relay, (ANSI code 87))
 - Earth fault relay, (ANSI code 50N,51N)
 - Undercurrent relay (ANSI code 37)
 - Voltage relay, three and single phase overvoltage, (ANSI code 59)
 - Voltage relay, three and single phase low voltage, (ANSI code 27)
 - Active Power Relay, Overload relay, (ANSI code 59)
 - Active Power Relay, reverse power, (ANSI code 27)
 - Reactive Power Relay, Over excitation (ANSI code 32)
 - Reactive Power Relay, Loss of excitation (ANSI code 32)
 - Frequency relay: Over frequency (ANSI code 81)
 - Frequency relay: Under frequency (ANSI code 81)

Input		Output	
Rated Voltage (Un)	3x400/690 V C.A.	Number of relays	2
Overload continuous	1,2 Un	Isolation	5000 V C.A
Overload instantaneous	2 Un/10s	Range	250 V AC/24 V DC, 8 A
Impedance	3 kΩ/V	Max. Contact time	400 V AC/150 V DC, 10 A
Current rated	X/5 o X/1 programmable	Hysteresis	Programmable
Overload continuous	4 In	Response time	<690 ms
Overload instantaneous	20 In/10s (max 75 A)		
	80 In/1s (max 300 A)		

General Figures	
Rated impulse withstand voltage U_{imp}	8 kV
Rated insulation voltage U_i	1000 V AC
Rated frequency	45-65 Hz
Dimensions	106 x 70 x 113 mm
Weight	0.450 kg
Protection	IP 20
Operating temperature	-25 - 70 °C
Storage temperature	25 - 70 °C
Relative humidity	5 - 96 % SC

Manufactured by

SACI, S.A. - de Construcciones Industriales
 Alcobendas, Madrid,
 Spain

Application/Limitation

For installation inside switchboards/ enclosures onboard ships and offshore units.

Type Approval documentation

Name	Number	Date
NEW NAVAL SUPERVISION RELAY – RSN (Catalogue)	AN-62-AN64	
L.C.O.E. Test report, IACS E10 Rev. 8	202110052981	2022-02-21
L.C.O.E. Test report,EMC	2021100530C1-M2	2022-03-07 / M2 2022-07-05
RSN - Multifunction NAVAL RELAY (witnessed tests)		2022-07-20

Marking of product

SACI – Type designation – Manufacturing place

Other Conditions

Electrical tests after EU RO MR Technical Requirements – Electrical/Electronic Relays. Environmental tests in accordance with DNV-CG-0339, August 2021 (Power supply variation, Power supply failure, Vibration, Dry heat, Damp heat, Cold Inclination)

Environmental test parameters:

Temperature:	-25 °C and 70 °C
Humidity:	Relative humidity up to 100% at all relevant temperatures
Vibration:	± 1mm / 0.7g
EMC:	General power zone
Enclosure:	IP20

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval is 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 Routines tests (RT) checked (if not available tests RT to be carried out).
- Review of type approval documentation.
- Review of possible change in design, materials and performance.
- Ensure traceability between manufacturer's product marking and the DNVGL EU MR Type Approval Certificate.

Assessment to be performed annually.

Generic Statement for EU RO MR Type Approval Certificate

When a product is presented with this EU RO MR Type Approval Certificate for given application, its acceptability with regards to the limitations stated in the certificate conditions defined in 1b, 1c and 1d of the applied Technical Requirement will be evaluated by the EU RO in charge of classing the ship or being in charge of the unit/system certification.

In accordance with Article 10 of Regulation (EC) No 391/2009 of the European Parliament and of the Council of 23 April 2009 "on common rules and standards for ship inspection and survey organizations", the following organizations, recognized by the EU on this date, have agreed on the technical and procedural conditions under which they will mutually recognize this certificate:

- American Bureau of Shipping (ABS);
- Bureau Veritas (BV);
- China Classification Society (CCS);
- Croatian Register of Shipping (CRS);
- DNV;
- Indian Register of Shipping (IRS);
- Korean Register (KR);
- Lloyd's Register Group Ltd. (LR);
- Nippon Kaiji Kyokai General Incorporated Foundation (ClassNK);
- Polish Register of Shipping (PRS);
- RINA Services S.p.A. (RINA);
- Russian Maritime Register of Shipping (RS).

The scheme for the mutual recognition of class certificates for materials, equipment and components laid down by Article 10(1) of Regulation (EC) No 391/2009 is only enforceable within the Union in respect of ships flying the flag of a Member State. As far as foreign vessels are concerned, the acceptance of relevant certificates remains at the discretion of relevant non-EU flag States in the exercise of their exclusive jurisdiction, notably under the United Nations Convention on the Law of the Sea (UNCLOS). (In accordance with COMMISSION IMPLEMENTING REGULATION (EU) No 1355/2014 amending Regulation (EC) No 391/2009 - recital (25)).

END OF CERTIFICATE