



# TYPE APPROVAL CERTIFICATE

Certificate no.:  
**TAE00003BB**  
Revision No:  
**1**

## This is to certify:

that the Instrument for Switchboard

with type designation(s)

**EC3V "Serie Naval", EC4V "Serie Naval", EC3VII "Serie Naval" (Moving Iron Measuring Instrument)**

issued to

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

is found to comply with

**DNV rules for classification – Ships, offshore units, and high speed and light craft**

## Application:

Location classes:

Temperature: **B**

Humidity: **B**

Vibration: **A**

**Products approved by this certificate are accepted for installation on all vessels classed by DNV.**

Issued at **Høvik** on **2024-05-06**

for **DNV**

This Certificate is valid until **2028-12-31**.

DNV local unit: **Madrid**

Approval Engineer: **Nicolay Horn**

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.



## Product description

Moving Iron Measuring Instrument

Type designation	Front dimensions (mm)	Protection degree	Ammeter (A)	Voltmeter (V)
EC3V "Serie Naval"	96 x 96	IP 54	0.1 - 100	6 - 600
EC4V "Serie Naval"	72 x 72	IP 54	0.1 - 100	6 - 600
EC3VII "Serie Naval"	96 x 96	IP 54	-	6 - 600

## Type Approval documentation

L.C.O.E. No. 89116162, L.C.O.E. No. 89116163 & L.C.O.E. No. 89116164 dated 18.04.1990  
Cetema EMC test report: 51507IEM.004 dated 28.11.1995

## Test carried out

Type tests in accordance with IEC 60051, EMC tests & Environmental tests (DNV class guidelines CG-0339) Environmental test specification for electrical, electronic and programmable equipment and systems).

## Marking of product

Product marking: SACI, type designation

## 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