



TYPE APPROVAL CERTIFICATE

Certificate No:
TAE00001RV
Revision No:
1

This is to certify:

That the Fuse

with type designation(s)
CMS10-US10, CMS14-US14 and CMS22-US22

Issued to
MERSEN France SB S.A.S.
St Bonnet de Mure, Rhone, France

is found to comply with
DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

For use onboard ships and offshore units.
Products approved by this certificate are accepted for installation on all vessels classed by DNV.

Rated voltage (V) 230 V to 600 /690 V

Issued at **Høvik** on **2022-10-05**

for **DNV**

This Certificate is valid until **2026-12-31**.

DNV local station: **France CMC**

Approval Engineer: **Ivar Bull**

Frederik Tore Elter
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.



Name and place of manufacturer

Mersen France SB SAS
 69720 Saint Bonnet de Mure
 France

Nolam Tunisia rue de nabeul lot n°4 zone Industrielle de
 M'Ghira Tunisie

Product description

Modular fuse holders with or without indicator with the following type designation: Modulstar CMS.

Technical data:

Type:	CMS10-US10	CMS14-US14	CMS22-US22
Rated insulation voltage U_i (V):	600 / 690*	690	690
Rated impulse voltage U_{imp} (kV):	6	8	8
Rated uninterrupted current I_e lth (A)	32	50	125
Utilization category:	AC20B / DC20B	AC20B / DC20B	AC20B / DC20B
Ingress protection:	IP20	IP20	IP20
Voltage limit for blown fuse indicator (V):	690 AC/DC	690 AC/DC	690 AC/DC
Number of poles:	1, 1+N, 2, 3, 3+N, 4	1, 1+N, 2, 3, 3+N, 4	1, 1+N, 2, 3, 3+N

*See Application / limitation

Application / limitation

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

With $U_{imp} = 6$ kV the max. rated voltage is 600 V when used in a IT (ship) net. It can be used in applications with directly earthed systems with rated voltage of 400/690 V.

Type Approval documentation

Technical info:

"IEC Low Voltage General Purpose Protection Modular fuse holders" datasheet from Mersen.

Test reports:

Mersen Test Report no. 138601-679437 dated 2015-01-12. Mersen Test Certificate no. FR 679436 dated 2016.01-21.
 Mersen Test Report no. 2012088 / A / B / C dated 2012-06-19 & 25, Mersen CD-R "Test report and Marine Approvals dated 2012-08.

Tests carried out

Type tests according to IEC 60269-1 and 60947-3, Environmental tests in accordance with DNV Standard for Certification No. 2.4: Vibration test, Dry heat test and Damp heat,.

Marking of product

Packing with company name Mersen.

Product with the trademark Mersen or Ferraz-Shawmut and type designation - current - power rating.
 Factory origin with the made in (France or Tunisia).

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) and selected type tests (ref. to applicable class programs) checked (if not available these tests shall 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