

# TYPE APPROVAL CERTIFICATE

## This is to certify:

### That the Fuse Holders

with type designation(s)  
**CMC10 and CUS10**

Issued to  
**MERSEN France**  
**Saint-Bonnet-de-Mure, Rhone, France**

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

## Application :

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

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

Issued at **Høvik** on **2019-03-27**

for **DNV GL**

This Certificate is valid until **2024-03-26**.

DNV GL local station: **Marseille**

Approval Engineer: **Nicolay Horn**

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**Trond Sjøvåg**  
**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.



Job Id: **262.1-029793-1**  
Certificate No: **TAE00003F2**

## Product description

Modular Fuse Holders with or without indicator with the following type designation: Modulstar CMC10 & CUS10.

Technical data:

Type:	CMC10	CMC10I	CUS101	CUS101I
Rated insulation voltage $U_i$ (V):	600 / 690*	600 / 690*	600 / 690*	600 / 690*
Rated impulse voltage $U_{imp}$ (kV):	6	6	6	6
Rated uninterrupted current $I_e$ $I_{th}$	32	32	32	32
Utilization category:	AC20B/DC20B	AC20B/DC20B	AC20B/ DC20B	
SCCR:	200 kA	200 kA	200 kA	200 kA
Ingress protection:	IP20	IP20	IP20	IP20
Voltage limit for blown fuse indicator:	-	220-700V AC/DC	-	220-700V 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, 4	1, 1+N, 2, 3, 3+N, 4

\*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:

"Modulostar® CMC10 Fuse Holder, Fuse Bases and Support" and "Modulostar® CUS10 Fuse Holder, Fuse Bases and Support", datasheets from Mersen.

Test reports:

In accordance with Approval Letter 262.1-029793-J-12 dated 2019-01-16 and VDE Test report doc. No. 249846-TL3-1 dated 2018-08-28.

## Tests carried out

Type tests according to IEC 60269-1 and 60947-3, Environmental tests in accordance with DNVGL-CG-00339: Vibration test, Dry heat test and Damp heat.

## Marking of product

Mersen - type designation - current - power rating.

## 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 (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.
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Assessment to be performed at 2 and 3,5 year and at renewal.

END OF CERTIFICATE