

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Motor

with type designation(s)

FM2, FM2VP, FM3, FM3VP Cast Iron Motor

Issued to

FELM S.r.l.

Inveruno MI, Italy

is found to comply with

DNV 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.

Degree of protection	IP 55
Insulation class	Class F
Temp. class (°C)	155
Voltage (V)	690V (440V / 230V)
Power (kW)	0.9 – 426
Frequency (Hz)	50/60 Hz
Speed (RPM)	up to 3600

Issued at **Hamburg** on **2021-11-23**

This Certificate is valid until **2026-11-22**.

DNV local station: **Italy/Malta CMC**

Approval Engineer: **Andreas Andrecht**



for DNV

Digitally Signed By: **Schaarmann, Arne**
Location: **DNV GL SE Hamburg, Germany**
Signing Date: **2021-11-23**

Arne Schaarmann
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.





Job Id: 262.1-034875-1
Certificate No: TAE00004DF

Product description

Marine electric motors 3ph efficiency IE2 and IE3

- FM2, FM2VP, Cast Iron Motor, Rated power (KW) 0.9 – 426, 690V, 50/60Hz, Poles 2-4-6, IE2
- FM3, FM3VP, Cast Iron Motor, Rated power (KW) 0.9 – 426, 690V, 50/60Hz, Poles 2-4-6, IE3

Voltage	690V (440V / 230V)
Frequency	50/60Hz
Efficiency	IE2 / IE3
Type FM2	DOL starting motors
Type FM2VP	Inverter duty motors with reinforced windings
Type FM3	DOL starting motors
Type FM3VP	Inverter duty motors with reinforced windings
Amb temp	-25°C+50°C
Enclosure	cast iron frame standard IP55 (IP56 or IP66)
Cooling method	IC411 TEFV Totally Enclosed Fan Ventilated
Temperature rise	Class F.
Insulation class	Class F.
Duty cycle	S1 continuous rated.