



Marine Motors





Marine motors

Frames 63 to 400L

FELM

Felm and Its Partners are one of the leading trading and manufacturer of electric motors for the global industrial market, with motor solutions which benefit a wide range of customers.

Our products are used in almost every industrial activity including water treatment, building services, chemical/petrochemicals, general processing and manufacturing where they drive fans, pumps, compressors and conveyors, amongst other things.

We have extensive stocks of motors in our facilities From 0,12 Kw to 500 kw.

Thanks to our world wide net work We are ensuring excellent local support wherever needed.

Quality assurance

Stringent quality procedures are observed from first design to finished product in accordance with the ISO9001 documented quality systems.

All of our factories have been assessed to meet these requirements, a further assurance that only the highest possible standards of quality are accepted.

Marine motors

Felm and Its Partners are one of the leading trading and manufacturer of electric motors for the global industrial market Felm and Its Partners one of the world wide leading manufacturer of low voltage ac motors for the marine and other industries. Features developed over many years for the arduous conditions of the Sea have now been incorporated into standard motors.

These include, for example, high performance paint treatments, stainless steel nameplates, higher standards of balancing and built-in electrical protection - all particularly important to the marine industry.

The standard totally enclosed motors, which meet the latest requirements for high efficiency and low noise levels, are hose proof and can be readily produced in deck watertight enclosures.

Where weight is an important consideration, open drip-proof motors are available. Certified hazardous area motors are a specialty of the company which is also experienced in obtaining approval from most of the world's marine certifying authorities.



Marine duty motors

The motors described in this catalogue are designed and rated for use on board merchant ships built anywhere in the world and in accordance with the requirements of the major marine classification authorities.

These requirements generally concern limits to winding temperature rises with given ambient temperatures, which determine the motor frame size for a given output. For certain larger motors, some authorities specify normalized shaft steel to give greater consistency.

The requirements for witnessed tests, type tests, certification etc., differ between authorities and can all be accommodated.

However, these exceptional demands must be made clear at the time of ordering.

The table opposite gives a list of the major classifying authorities and a summary of their specific requirements. Other classifications available on request, please contact Felm for details.

Marine motor features			
	W cast iron	W aluminium	Drip proof cast iron
Frequency	50/60Hz	50/60Hz	50/60Hz
Enclosure	IP55	IP55	IP23
Cooling method	IEC411 TEFV*	IEC411 TEFV*	-
T-box position	80-180 right 200-355 top	Top	Top (IP55)
Lubrication	200-355 through greasing	Available on request	Through greasing -relief at DE
Balance	80-180 Grade N 200-355 Grade R	Grade N	Grade R
Bearings	Ball/ball C3 clearance	Ball/ball C3 clearance	Ball/ball C3 clearance
Drain holes	160-315	80-180	-
Temperature rise	Class B (80°C)	Class B (80°C)	Class B (80°C)
Insulation class	Class F (155°C)	Class F (155°C)	Class F (155°C)
Duty cycle	S1 continuous rated	S1 continuous rated	S1 continuous rated
Earth facility	Internal and external	Internal and external	Internal and external
Thermal protection	200-355 fitted as standard	Available on request	-

Standards for TEFV and open drip proof				
Classifying authority	Service	Ambient temp °C	Permissible temp rise K Class Class B F	Key special requirements Normalised Witnessed tests shaft steel for essential service
Lloyds Register of Shipping (LRS)	Restricted Unrestricted	40 45	75 70 90 90	>75kW >100kW
Det Norske Veritas (DNV)	Restricted Unrestricted	35* 45	80 70 100 90	>65mm shaft dia >100kW
Germanischer Lloyd (GL)	Restricted Unrestricted	40 45	80 75 100 95	>75kW >100kW
American Bureau of Shipping (ABS)	Non-essential Essential	40 50	80 70 105 95	->100kW
Korean Register of Shipping (KRS)	Essential and non-essential	50	70 90	All motors All motors (1)
Chinese Classification Societies (CCS)	Essential and non-essential	50	70 90	** **
Bureau Veritas (BV)	Auxiliaries Essential	45 40 50	75 95 80 70 100 90	>100kW >100kW Essential
Registro Italiano Navale (RINA)	Non-essential Essential	40 50	80 70 100 90	All motors >100kW
Nippon Kaiji Kyokai (NKK)	Essential and non-essential	45	75† 95†	-All motors for essential service

* Refrigerated holds only: †5°C allowed on non-ventilated, totally enclosed motors

** Refer to Brook Crompton (1) Discretion of local surveyor

Marine motors Specification

Insulation and thermal rating

FELM motors are manufactured using Class F insulating materials, giving a maximum operating temperature, including ambient of 145°C. Class H insulation, 165°C maximum temperature is available as option.

Motor ratings depend upon:

- ambient temperature
- type of service
- maximum operating temperate, ie Class B (120°C), Class F (145°C)
- certifying authorities' special arrangements
- supply variations, ie tolerance on voltage and frequency

To simplify selection, it is assumed that standard supply conditions of voltage are +/-10%.

Tropical protection

Standard motors will operate satisfactorily in the tropical environments experienced by many ships. Where environmental conditions are conducive to the formation of fungal growth, algae or condensation, totally enclosed motors with extra tropic proof treatments are recommended as additional protection. The use of drain holes to assist in the release of any condensation is also recommended.

Where the motor is to be left standing for long periods of time in damp conditions, or subject to condensation forming atmospheres, it is recommended that anticondensation heaters are fitted and energised to prevent condensation forming in the motor enclosure.

For more arduous applications, Felm & Partners have additional solutions, with special and anticorrosive treatment, which enables the motor to operate satisfactorily in extreme tropical and high Humidity conditions.

Anticorrosive treatment

The Anticorrosive treatment specification has been applied to most of Felm marine motor range. This specification has been designed to enable the motor to operate and survive in the most arduous maritime conditions, and includes the following features as standard:

- IP55 weatherproof protection
- Anti-corrosive paint systems to suit each constructional material
- Stainless steel nameplate
- C3 clearance bearings
- internal and external earth terminals
- Tapped hole in shaft end



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