

## New modular air-to-water cooled motor series

Our new B5V 500 frame size motor is part of the latest Marelli Motori modular induction range rated 700 - 5000 kW.

This series is optimized for shipboard applications such as main propulsion systems (including PTO/PTI hybrid systems), thrusters, dredge pumps, fi-fi systems and for heavy industry applications such as compressors, pumps, rollers and other rotating equipment.



- ✓ **Top-level power density and reduced overall dimensions**  
The new B5V series has been developed using the most advanced design techniques and top quality manufacturing standards to ensure the best power / dimension ratio. As a result these motors are the perfect choice for installations where space is very limited.
- ✓ **Design flexibility**  
The new Marelli Motori B5V motor series is available in different configurations thanks to the new modular design: drip proof, filters and air-to-water heat exchanger, they are all available to suit any specific application and system requirements.  
Our R&D focus is driven by a deep understanding of our customers' needs, therefore we have made a wide range of accessories and optionals available for our B5V motors, with an easy-to-use design even in emergency mode. Customers can select the most suitable solutions to perfectly fit their systems, for example:
  - Emergency doors on the heat exchanger to operate in case of loss of coolant situation (LOCA).
  - Larger main terminal box with easy-to-connect terminals and more space available for the operator.
  - Additional terminal boxes for auxiliary connection.

- ✓ **Optimal performance and efficiency**  
The new modular configuration of our induction motor series ensures that the temperature is evenly distributed inside the machine, optimizing the motor functioning and its efficiency.  
The motor robust mechanical construction is designed and manufactured to withstand the most difficult operating conditions such as dynamic stresses transmitted by the system to the motor in industrial applications, or vessel inclination common in the marine industry.
- ✓ **Minimized cost of ownership**  
Our motors have been specifically designed for ease-of-maintenance, offering quick access to key components to facilitate MRO (Maintenance, Repair and Overhaul) activities and reducing system downtime and costs of ownership.
- ✓ **Outstanding support**  
Marelli Motori pre-engineered solutions, together with our extensive expertise and prompt technical support ensure a quick and accurate response which guarantee the success of our customers' projects, even when challenging delivery times are involved.
- ✓ **International marine certifications**  
Marelli Motori motors are in compliance with the standards requested by all major International Association of Classification Societies', such as: ABS, KR, BV, DNV, CCS, GL, LR, NKK, RINA, RS.

## Standard configuration

Frame size	500 mm
Output power	1100 to 3100 kW
Voltages	up to 6600 V
Poles	2 to 8 (lower speed on request)
Frequency	50 Hz - 60 Hz
Cooling system	IC 81W (IC 86W, IC 611, IC 616, IC 666 on request)
Degree of protection	IP 55 (IP 23, IP 44 with filters, IP 24W NEMA, IP 56 on request)
Insulation class	F (H on request)
Temperature rise class	B (by main)
Ambient temperature	-20°C to +40°C (+55°C on request)
Altitude	1000 m asl
Water in temperature	up to 38°C as standard (higher on request)
Cooling method	Air-To-Water (TEWAC)
Mounting	horizontal (other mounting on request)
Enclosure material	welded steel
Bearing type	antifriction (insulated at NDE for inverter application ) and sleeve (on request)
Standards	IEC 60034
Supply	DOL, VSD on request

	Type	690 V <sup>(1)</sup>		3300 V <sup>(2)</sup>		6600 kV <sup>(2)</sup>	
		kW (50 Hz)	kW (60 Hz)	kW (50 Hz)	kW (60 Hz)	kW (50 Hz)	kW (60 Hz)
<b>4 POLES</b>	500 LA	2000	2400	1800	2160	1500	1800
	500 LB	2300	2800	2070	2520	1730	2100
	500 LC	2500	3100	2250	2790	1870	2320
<b>6 POLES</b>	500 LA	1500	1800	1350	1620	1130	1350
	500 LB	1650	2000	1490	1800	1240	1500
	500 LC	1900	2300	1710	2070	1430	1730
	500 LD	2000	2500	1800	2250	1500	1870
<b>8 POLES</b>	500 LA	1100	1400	990	1260	830	1050
	500 LB	1300	1600	1170	1440	980	1200
	500 LC	1500	1800	1350	1620	1130	1350
	500 LD	1650	2000	1490	1800	1230	1500

All outputs are referred to main supply. Data presented in rating lists are typical values. Guaranteed values on request. Accurate motor data will be given on request at quotation phase.

(1) Above outputs apply to low voltage motor driven by VSD with temperature rise within class F.  
Voltage lower than 690V is available on request, depending on the output and speed range.  
Low voltage superior insulation system is suitable for motor driven by VSD with the following characteristics:

- Upk ≤ 2.15 kV Rise Time ≥ 0.5 micro sec
- Upk ≤ 1.9 kV Rise Time ≥ 0.2 micro sec

Standard switching frequency with no derating = 2.5 kHz  
For lower switching frequency, relevant derating shall be applied.  
Switching frequency must be limited to 5 kHz.

(2) Medium voltage insulation system is suitable for motor driven by VSD with the following characteristics:

- Un = 3300 V Upk ≤ 4670 V
- Un = 4160 V Upk ≤ 5890 V
- Un = 6600 V Upk ≤ 9340 V

dV/dt line to line = max. 10 V/micro sec

dV/dt line to ground = max. 500 V/micro sec

For medium voltage motor driven by VSD with different performances, contact Marelli Motori for motor selection and relevant data.

## Dimensions

A	B	B'	C	D	E	F	GA	H	AE	HD	L	K
950	1600	1400	224	140	250	36	148	500	1746	2025	2460	42
AA	AB	AC	BA	BA'	BB	HA	HB	D-end bearing		N-end bearing		
150	1080	1075	665	465	1806	35	110	6328-C3		6328-C3		

