

# Compact Azipod® Propulsion

The propulsion solution up to 5 MW



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# The Compact Azipod® System

Compact Azipod is a podded propulsion system, providing unlimited (nx360°) azimuthing angles. It incorporates a permanent magnet synchronous motor and a fixed-pitch propeller, which is directly mounted on the motor shaft. A low voltage frequency converter controls the electric motor. The system provides full power in all directions resulting in superb maneuverability.

## Compact Azipod Range from 0,5 MW to 4,0 MW

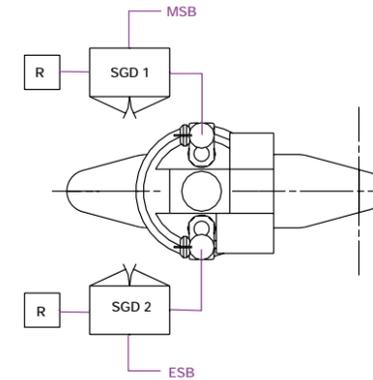
The Compact Azipod family is comprised of six unit sizes. Propulsion power demand can be accurately achieved by optimizing propeller rpm and size according to the varying hydrodynamics of each project. Utilizing the permanent magnet technology in the electric motor makes the exciter obsolete, resulting in a shorter motor. Direct seawater cooling makes it possible to reduce the motor diameter, a compact motor and pod dimensions lead to a slimmer body and better hydrodynamics. Furthermore, the absence of the exciter and direct cooling reduce losses and results in better electrical efficiency.

## Modular Construction

Compact Azipod is constructed with highly standardized "plug and play" modules for fast installation. Vessel building schedule and yard costs can be optimized with the modular construction of the propulsion system. The system consists of two main modules: the steering module and the propulsor. Standardized modular construction enables lower production costs resulting in an attractive propulsion option for a wide range of merchant and offshore vessels.

## ACS 600 Drive

The electric motor is driven by a well-proven state of the art ACS 600 DTC (Direct Torque Control) variable speed drive. The drive is a low voltage (690V) system that is simple to operate and has proven reliable in thousands of marine and land based applications all over the world. The drive gives full nominal torque, in both directions over the entire speed range. A new water cooled version of the ACS 600 provides remarkable space savings in the machinery rooms.



## Electric Steering Gear

Steering of the Compact Azipod propulsor is achieved by two electrical steering motors, controlled by variable speed drives. Electrical steering eliminates the need for hydraulic motors and piping.

### Steering Gear Drives (SGD1 & SGD2):

Length 1010 mm, Depth 610 mm,  
Height 1510 mm, max. Mass 370 kg  
(one converter)

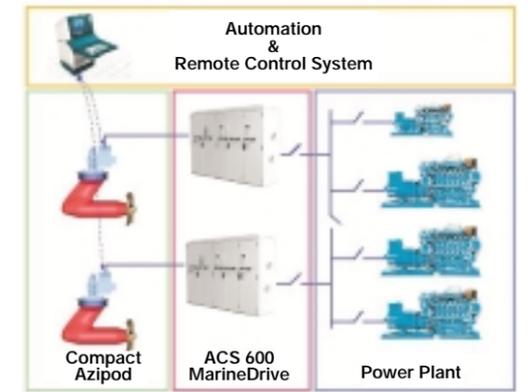
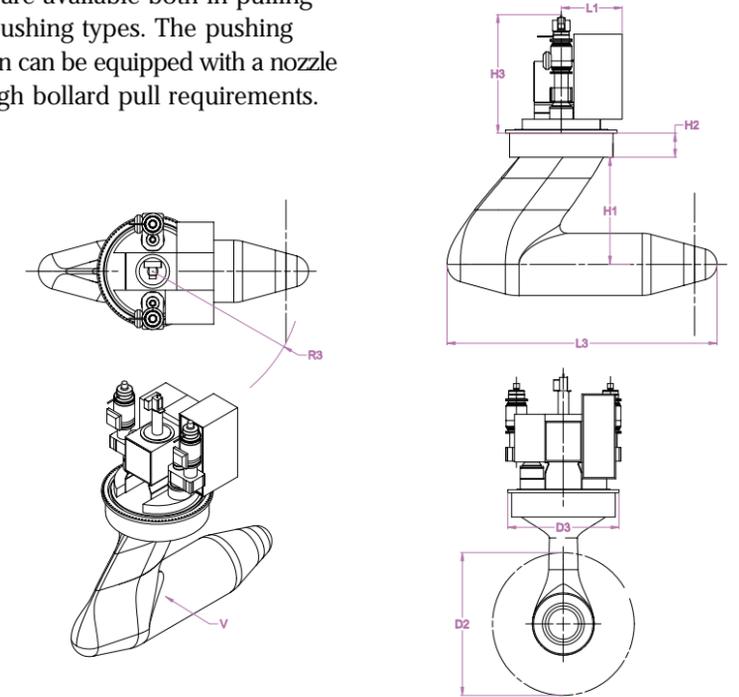
Feed voltage 400/440/480/690 V ~3

### Steering Gear Drive Braking Resistors (R):

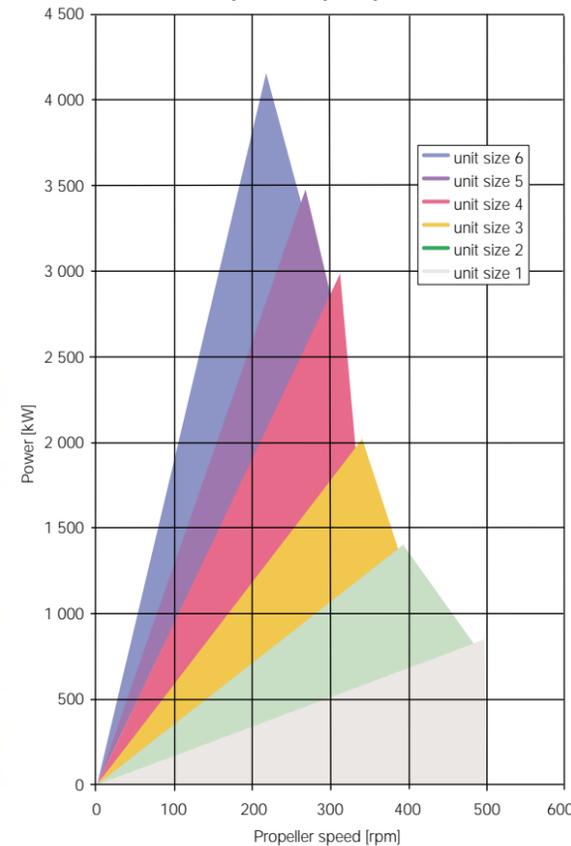
Length 490 mm, Depth 440 mm,  
Height 595 mm, max Mass 35 kg  
(one unit)

## Dimensions

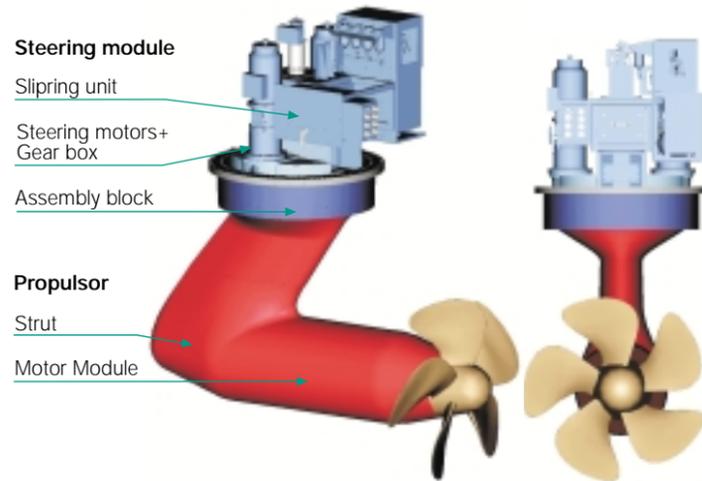
Units are available both in pulling and pushing types. The pushing version can be equipped with a nozzle for high bollard pull requirements.



Compact Azipod performances



## Propulsion unit



	Compact Azipod unit sizes						Nomination
	1	2	3	4	5	6	
D1 [mm]	729	910	1040	1165	1310	1470	Motor outer diameter
D2 [mm]	1350-1700	1700-2200	1900-2600	2200-3100	2400-3500	2700-4000	Propeller diameter min-max
D3 [mm]	2302	1700	2285	2285	2990	2990	Assembly block outer diameter
L1 [mm]	1235	1235	1060	1060	900	900	Slipring boundary distance
L3 [mm]	3949*	4181	4546	5090	5690	6186	Length of Azipod unit
H1 [mm]	1300	1645	1950	2325	2625	3005	Assembly block height to the connection flange lower surface
H2 [mm]	495*	355	495	495	650	650	Height from motor module to the assembly block shoulder
H3 [mm]	1635*	1517	1740	1740	1863	1863	Height from connection flange lower surface to the top of the steering module
R [mm]	2526	2526	2796	2982	3191	3443	Minimum distance to next propulsor or vessel side (absolute dimension+300mm)
M [ton]	15,5*	16	27	35	50	60	total mass of complete Azipod unit
V [m <sub>3</sub> ]	1,3	2,45	3,55	5	7,25	10,5	Displacement of propulsor (buoyance of propulsor)

\* ice strengthened unit