



## 4000 SERIES THRUSTERS

The **SEA MAX THL-404-8 Thruster** is the result of more than 20 years of deep ocean engineering experience in the design and manufacture of ROVs. It provides up to two shaft horsepower and is extremely reliable, even in the demanding underwater environment and during long, continuous use. It is a true brushless servo motor thruster that permits very exact output power regulation and is therefore ideal for use with precision feedback systems such as autodepth and autoheading.



The thruster is powered and controlled by a vector drive type electronic drive module (EDM), one EDM for each thruster. The EDM provides up to 2.5 kW of power in a closed loop, factory calibrated system and controls the motor speed by estimating the orientation of the permanent magnet flux vector to determine the thruster motor shaft rotational position. It connects directly to the thruster and is powered from an AC or DC source over a range of voltages. The drive does not require that a resolver be installed in the thruster for motor commutation, yet it is fully backward compatible with earlier **THL-404-8 Thrusters** which include resolvers and use resolver type EDMs. The drive also includes an RS-485 serial interface which is used to configure the drive and to monitor its performance using a PC or other host computer.

This thruster has been in production for over 12 years and is truly "the world's most reliable".

### Tech Specs: SEA MAX THL-404-8 Thruster

<b>Thruster motor</b>	Long life brushless
<b>Thruster MTBF</b>	18,000 hours proven
<b>Forward thrust</b>	95 lb, $\pm 5$ lb (43 kg, $\pm 2.3$ kg)
<b>Reverse thrust</b>	95 lb, $\pm 5$ lb (43 kg, $\pm 2.3$ kg)
<b>Operating depth</b>	3000 meters standard, 6000 meters optional
<b>Shaft horse power</b>	2.0 hp at 120 VAC into EDM
<b>Shaft speed</b>	1480 rpm at 120 VAC into EDM
<b>Shaft seal type</b>	Tungsten carbide and ceramic
<b>Housing type</b>	Pressure balanced oil filled (PBOF) with tattle tail for visual oil level verification, and quick disconnect fitting for oil filling
<b>Oil type</b>	Shell Tellus #22
<b>Housing material</b>	Hard-coat anodized aluminum
<b>Nose and Nozzle</b>	Nylon
<b>Propeller material</b>	Hard-coat anodized aluminum
<b>Connecting cable</b>	4-foot oil filled with 12-pin Wet-Mate type connector standard, factory installed; other lengths optional
<b>Size</b>	Nozzle diameter = 10.30" (26.2 cm) Overall length = 18.35" (46.6 cm) Motor diameter = 4.50" (11.4 cm)
<b>Weight in air</b>	26 lb (11.8 kg)
<b>Weight in water</b>	16 lb (7.3 kg)