

IntegratedThruster™ For Submersible Applications

HT Servo Ltd has many years experience to meet your needs for motion control systems designed specifically for underwater and submersible applications.

Our products have been utilised on many ROV's, underwater research vehicles, submarines both military & tourist as well as submarine rescue systems.

Features of the IntegratedThrusters™

- High Efficiency
- Symmetric Thrust
- Easy to Install
- Reliable:
 - no seals
 - no gearbox
 - no oil
 - no sensors



IntegratedThrusters™ are rim driven thrusters using PM Brushless DC motors integrated into the propeller and duct structure. Torque is produced at the tip of the blade diameter thus allowing an efficient gearless motor matched to the propeller characteristics. Forward and Reverse thrust characteristics are identical because of the unique propeller design combined with an obstruction-free flow path.

Construction uses no seals or fluids—there is only one moving part and no particular depth restriction. The assembly also demonstrates that both overall length and mass are both reduced significantly when compared to conventional thrusters with 'bolt on' motors.

The companion drives are sensorless controllers i.e. the PM BLDC motors do not need additional leads for a feedback device usually required for commutation purposes.

Integrated Thrusters



Size 50 Thruster

Part Number: **PA-THR-0000A**

Diameter 79 mm

Length 58 mm

Thrust 25 N / 2.5 Kg

Weight (Air) 0.45 Kg

Weight (Water) 0.25 Kg



Size 70 Thruster

Part Number: **PA-THR-0010A**

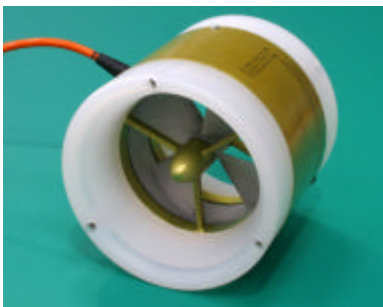
Diameter 108 mm

Length 95 mm

Thrust 32 N / 3.2 Kg

Weight (Air) 1.2 Kg

Weight (Water) 0.7 Kg



Size 100 Thruster

Part Number: **PA-THR-0020A**

Diameter 140 mm

Length 140 mm

Thrust 50 N / 5.0 Kg

Weight (Air) 2/0 Kg

Weight (Water) 1.1 Kg



Sensorless Controllers (not submersible)

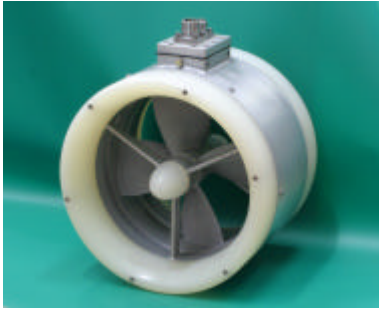
Part Number: **PA-THR-0500A** 8-channel x 100 W

Part Number: **PA-THR-0501A** 8-channel x 250 W

Part Number: **PA-THR-0510A** 1-channel x 100 W

Enquire about voltage, connector and controller options. Devices may be operated to higher thrust.

Other Submersible Motion Solutions



Size 300 Thruster for Workclass ROV

Part Number: **PA-THR-0100A**

Diameter 384 mm

Length 291 mm

Thrust 2500 N / 250 Kgf

Weight (Air) 29 Kg

Weight (Water) 18 Kg



Submersible Motors

5 frame sizes

Cont. Torque 1.5Nm—90Nm

Peak Torque 2.4Nm—131Nm

Speed up to 5500rpm

Operational Depth 6000m



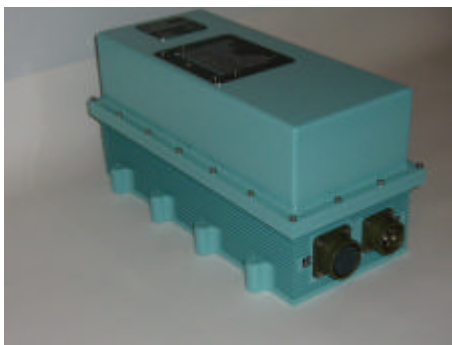
Standard Matrix Frameless PM BLDC Kit Motor

10 frame sizes from 20mm—240mm

Cont. Torque 0.01Nm—38Nm

Peak Torque 0.03Nm—200Nm

Speeds up to 35000rpm



Custom Controls for Submersible Applications

The control system shown to the left is a 3 axis configurable thruster and pump system operating 3 phase PM BLDC motors. This drive system provides a 120vdc NOM, 140A rms drive with CANBus reporting.



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