

# MODEL 1040 DC BRUSHLESS THRUSTERS



Proven in the world's harshest subsea environments, Tecnadyne's thrusters have been at the forefront of propulsion technology for over 20 years. The Model 1040 tunnel thruster fits within a 21cm diameter duct and since it generates the same thrust in both forward and reverse directions, it is ideally suited as a lateral or vertical thruster on larger AUV's and on hydrodynamic ROV's.

The precision stainless steel propeller of the Model 1040 is magnetically coupled using a design perfected by Tecnadyne. With this design, a magnet array in the hub of the propeller is driven by a matching magnet array attached to the drive motor. By eliminating the rotating drive shaft and shaft seals that always seem to leak over time, the Model 1040 acheives extremely high reliability. Additionally, the magnetic coupling will ratchet if overloaded, preventing damage caused by objects jammed in the propeller. And since the water lubricated propeller bearings are external to the pressure housing, they can be easily replaced in several minutes.

Employing a high RPM, low inertia DC brushless motor, coupled to a 6/1 ratio planetary gearset, the Model 1040 delivers maximum reliability, high efficiency and high power in an extremely compact , lightweight and easy to maintain package. .

For depths to 1,500 meters, the power and control electronics are housed within the hard anodized aluminum motor casing, greatly simplifying the installation and electrical interface. For full ocean depth rating, the electronics are installed in a remote, one atmosphere housing (either the customers housing or one supplied by Tecnadyne) and the thruster is oil filled for pressure tolerance.

The Model 1040 is available for operation at voltages from 48vdc to 330vdc (150vdc standard) supplied by a well filtered battery bank, rectified and filtered AC or a DC power supply. In addition to the main power, the thruster requires an isolated +/-5v analog speed and direction control signal. Alternately, a full servo RS232 or RS485 input controller is available which, due to its size, must be installed in a remote, one atmosphere housing. Please refer to the Tecnadyne website for detailed installation and interface instructions.

The standard depth rating of the Model 1040 is 850 meters. 1,500 meters and full ocean depth with remote one atmosphere electronics are optional. Remote electronics options include the extremely compact Tecnadyne controller module or larger, full servo brushless or sensorless units. For applications requiring extremely low noise, Tecnadyne offers an optional remote linear drive. Customer specified subsea connectors and cables, stainless steel or titanium housings and custom mountings are also available.

## MODEL 1040 SPECIFICATIONS

### **Bollard Output**

55lbf (25kg) forward  
55lbf (25kg) reverse

### **Input**

150vdc, 8.2A power  
(1,250 watts at alternate  
voltages)  
+/-5v analog speed  
command

### **Weight**

5.2lb (2.4kg) in air  
4.1lb (1.9kg) in water

### **Depth Rating**

2,800ft (850m) standard,  
5,000ft (1,500m) &  
full ocean depth (oil  
filled) optional

(1,000m & greater depth subject to  
US Govt. export approval)

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Part Number: 1040 -

- (48-55vdc) 048
- (55-65vdc) 060
- (90-100vdc) 095
- (115-125vdc) 120
- (145-160vdc) 150
- (170-180vdc) 175
- (190-210vdc) 200
- (250-270vdc) 260
- (300-330vdc) 330

- 850 (850m depth)
- 1500 (1500m depth)
- OFRE (oil filled remote electronics)
- Ln (SeaCon LMG-6FS w/ cable length of n meters)
- Mn (SeaCon LMG-6MP w/ cable length of n meters)
- X (Customer specified connector)

Note: Due to motor tolerances, voltage required to achieve rated Bollard thrust can vary +/-5%

Specifications subject to change without notice

