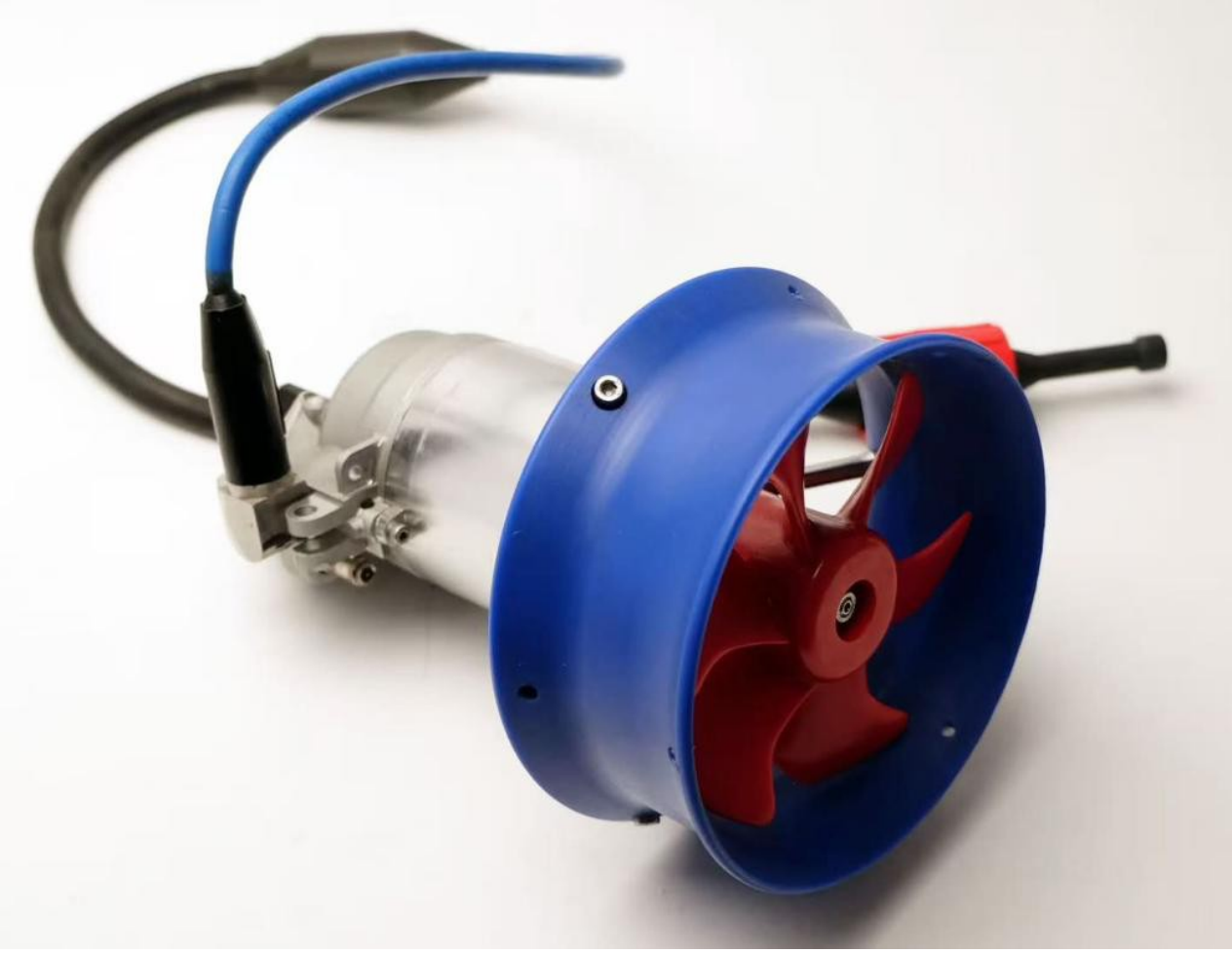
MMT BRUSHLESS DC THRUSTER

TECHNICAL MANUAL

144 mm Propeller | 1.25 kW | 300 / 600 VDC



Document type	Product Technical Manual / Integration Data
Revision	1.0
Issue date	19 August 2026
Source basis	Manufacturer-supplied technical information

This manual consolidates the verified technical information supplied for the MMT brushless DC thruster. Parameters not present in the supplied source are intentionally not inferred.

1. Product Overview

MMT offers a range of brushless DC underwater thrusters developed for observation-class and light work-class ROV applications. The thrusters have been integrated into third-party ROV platforms, with the product concept focused on reliability, long service life and integration flexibility.

The thruster described in this manual uses a direct-drive architecture and is offered with 300 VDC and 600 VDC motor supply options at a nominal power level of 1.25 kW. Standard control is via RS485 serial communication.

2. Key Product Features

- Observation-class and light work-class thruster technology
- High-reliability, rugged and lightweight design
- Continued operation in the event of shaft seal failure
- Forward / reverse thrust performance within a 5-10% band
- Standardised PCB architecture
- Enhanced over-current and over-temperature protection
- Ultra-low noise emissions
- Improved thruster response
- Direct-drive reliability with no gearbox
- RS485 serial control as standard
- Various connector options available
- Speed, current, temperature and direction feedback via serial communications
- 300 VDC and 600 VDC supply options

3. Technical Specifications

Parameter	Metric	Imperial / Notes
Propeller diameter	144 mm	5.7 in
Maximum bollard thrust	26 kgf	57 lbf
Nominal motor supply	300 VDC or 600 VDC	@ 1.25 kW
Weight in air	4.3 kg	9.5 lb
Weight in water	3.0 kg	6.6 lb
Control interface	RS485 serial	Standard
Operational feedback	Speed, current, temperature, direction	Via serial communications
Drive architecture	Direct drive	No gearbox

SPECIFICATION NOTE

The supplied source does not state depth rating, housing material, overall dimensions, mounting dimensions, operating temperature range, efficiency, RPM, connector part numbers or detailed thrust curves. These values are therefore not included in this edition.

4. Electrical and Control Interface

4.1 Motor Supply

The thruster is available for nominal 300 VDC and 600 VDC motor supply systems at 1.25 kW. Selection of the appropriate voltage variant should be matched to the host ROV power architecture.

4.2 Serial Control

RS485 serial control is standard across the MMT thruster range. The serial interface also provides feedback for speed, current, temperature and direction.

4.3 Connector Options

Various connector options are available. Specific connector series, pin assignments and mating details are not identified in the supplied source and must be confirmed for the selected configuration.

5. Mechanical and Performance Characteristics

The thruster uses a 144 mm (5.7 in) propeller and is rated for a maximum bollard thrust of 26 kgf (57 lbf). The direct-drive arrangement eliminates the gearbox and is intended to improve reliability and thruster response while maintaining low acoustic emissions.

The stated product weight is 4.3 kg (9.5 lb) in air and 3.0 kg (6.6 lb) in water. Forward and reverse thrust are stated to remain within a 5-10% performance band.

6. Protection and Reliability Features

- Enhanced over-current protection
- Enhanced over-temperature protection
- Continued operation following shaft seal failure
- Rugged, lightweight mechanical design
- Standardised PCB architecture
- Direct-drive layout with no gearbox

7. ROV Integration

The MMT thruster range is intended for integration into observation and light work-class ROVs and has been used in third-party vehicle builds. For a production installation, the vehicle integrator should use the final configuration-specific engineering data released for the selected thruster variant.

Integration Item	Status in Supplied Source
Input power	300 VDC / 600 VDC @ 1.25 kW - provided
Control method	RS485 serial - provided
Feedback channels	Speed / current / temperature / direction - provided
Connector options	Available, but types and pinouts not specified
Mounting interface	Not specified
Mechanical envelope / CAD	Not specified
RS485 protocol / command set	Not specified
Depth / pressure rating	Not specified
Environmental operating limits	Not specified

8. Application Scope

The supplied product information identifies research, exploration and industrial underwater operations as the intended application areas. The thruster family is positioned for observation-class and light work-class ROV platforms.

9. Document Limitations

This edition is a formalised technical manual based strictly on the engineering information contained in the supplied two-page product document. It does not replace configuration-specific drawings, wiring diagrams, serial protocol documentation, installation procedures, safety instructions or maintenance procedures where those documents are required for vehicle certification or field service.

RECOMMENDED NEXT RELEASE

For a fully production-ready website manual, add the exact model number, pressure/depth rating, housing and propeller materials, dimensional drawing, mounting pattern, connector part number and pinout, RS485 protocol details, operating temperature, performance curves, installation torque values, inspection intervals and maintenance instructions.

10. Document Control

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