

Liberty MDrive 85mm Rotary Stepper Motor

CANopen NEMA 34 integrated 1.8° 2-phase stepper motor & control electronics

   REACH IP20/IP65



PRODUCT OVERVIEW

Robust Liberty MDrive (LMD) CANopen products integrate 1.8° 2-phase stepper motors with I/O, motion controller, drive electronics, and encoder delivering hMT closed loop performance.

hMT closed loop performance is available in products with either a multi-turn absolute encoder or incremental magnetic encoder. Closed loop performance maintains functional motor control to prevent loss of synchronization, offers variable current control, torque control, and use more of the motor's full torque range.

Multi-turn absolute encoders may benefit users by retaining position information when powered down. This can eliminate homing routines and reduce setup time at system startup.

CANopen products support CiA 301 and 402 Device Profile for Drives and Motion Control. Direct configuration via either an included GUI or Layer Setting Services (LSS) simplifies interface to CANopen networks.

Especially well suited for industrial applications, products include an IP65 rated version with circular M12 connectors.

Liberty MDrive products can reduce machine complexity, size and cost in many stepper and servo motor applications. Their high degree of integration can increase system reliability by reducing the number of individual components, eliminating multiple potential failure points.

FEATURES AND BENEFITS

- Compact NEMA 34 1.8° 2-phase stepper motor integrated with control electronics, including programmable motion controller
- Available in 1, 2, or 3 stack lengths
- Two (2) connection options available: Pluggable terminal and M12 circular. Pluggable model is IP20 rated, M12 circular connector model is IP20 or IP65 rated with proper motor shaft sealing
- CANopen CAN Bus 2.0b Active
- CiA 301 CANopen application layer and communication profile
- CiA 402 CANopen device profile for drives and motion control
- User interface available for download, providing quick & easy commissioning
- Multi-turn absolute or incremental magnetic encoder options
- Operating temperature of -20 to 50 °C (-4 ... 122 °F)
- Nominal operating voltage: 24/48 VDC
Maximum Current: 4.0A
- User selectable Temperature Warning (Range: 0° - 84° C (32° - 183.2° F))
- 4 year conditional warranty



Additional setup, quick reference information, and supporting documents are available for download from the Novanta IMS download website <https://novantaims.com/downloads/>

Three-dimensional depictions of this product are available for download from <https://novantaims.com/downloads/3dconfigurator/>



To select from the available features and build the LMD integrated stepper motor to fit your needs, use the Novanta IMS part number builder, available online at <https://novantaims.com/resources/part-number-builders/>

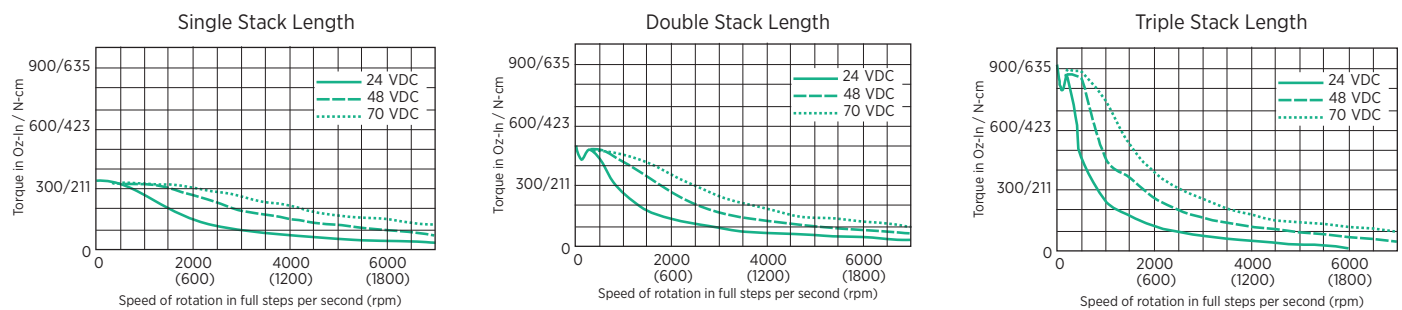
LMDA•85 CANopen

Motor Performance















Motor	Stack length	Single	Double	Triple
Holding torque	oz-in	336	480	920
	N-cm	237	339	650
Detent torque	oz-in	10.9	14.16	19.83
	N-cm	7.7	10.0	14.0
Rotor inertia	oz-in-sec ²	0.0127	0.0191	0.0382
	kg-cm ²	0.90	1.35	2.70
Radial load limit, center of shaft	lbs	65	65	65
	kg	29.4	29.4	29.4
Axial load limit @ 1500rpm (5000 full steps/sec)	lbs	20	20	20
	kg	9	9	9
Weight (motor+driver)	lbs	4.45	5.65	9.0
	kg	2.02	2.56	4.08

LM•85 NEMA 34 Speed Torque

Test conditions: 100% current with damper simulating load



Accessories

Description	Length feet (m)	Part Number	Description	Length feet (m)	Part Number
Communication Converter USB-pluggable CANopen converter to set/program communication parameters in 32- or 64-bit Windows*. Includes: CAN dongle, terminating resistor, and pre-wired mating cables			Straight Configuration Cordsets (IP65) Shielded cables pre-wired with straight M12 mating connectors		
 Mates to DB9 connector	6.0 (1.8)	MD-CC501-000	 I/O cordset w/ leads, mates to 12-pin male connector	10.0 (3.0)	MD-CS610-000
 Mates to M12 5-pin female connector	6.0 (1.8)	MD-CC502-000	 Power cordset w/ leads, mates to 4-pin male connector	10.0 (3.0)	MD-CS620-000
Back-up Battery Pack for Absolute Encoder Models Extend stored position data up to 5-years for 1 to 6 LMDs with absolute encoder			 Communication cordset w/ leads, mates to 5-pin male connector	10.0 (3.0)	MD-CS650-000
 Battery pack, DIN-rail mount. Uses 3 AA batteries, not provided	—	ICP0531	Right Angle Configuration Cordsets (IP65) Shielded cables pre-wired with right angled M12 mating connectors		
 LMD mating cable(s) with crimp connector to flying lead end	3.3 (1.0)	PDO2-0531-FL1	 I/O cordset w/ leads, mates to 12-pin male connector	10.0 (3.0)	MD-CS611-000
 PLC mating cable with crimp connector to flying lead end	3.3 (1.0)	PDO4-0531-FL1	 Power cordset w/ leads, mates to 4-pin male connector	10.0 (3.0)	MD-CS621-000
Daisy Chaining Products (IP65) Connect multiple CAN units together in sequence with Y cable. The termination plug, which is sold separately, is required at end of run			Replacement Mating Connector Kit (IP20) Kits for pluggable products		
 Y cable mates to M12 communication connector	0.3 (1.0)	MD-CS660-000	 Includes one 2-pin power mate, and two 7-pin multifunction mates	—	CK-15
 M12 bus termination (resistor) plug	—	PLG-M12TP	Cable Accessory Kit (IP65) Kits for M12 products		
			 Includes two M12 screw plugs and one sealing cap	—	CK-16