MDrive® Plus MDI•14

NEMA 14 (35mm) CANopen integrated 1.8° 2-phase stepper motor & control electronics

CE RoHS REACH **IP20**

PRODUCT OVERVIEW

MDrive Plus CANopen products integrate 1.8° 2-phase stepper motor, motion controller, drive electronics and optional encoder. Products support CiA DS301 and DSP402 Device Profile for Drives and Motion Control.

Firmware is provided for setup and testing MDrive Plus CANopen products. CANopen Tester software and communication dongle (MD-CC500-000) are also available.

MDrive Plus products deliver reliable performance for new and existing motion control applications. Satisfying the requirements for a wide range of machine builders.

Simplify your machine design and reduce cabinet size by replacing multiple components with a single compact integrated motor. Fewer individual system components eliminates multiple potential failure points, and lowers risk of electrical noise by eliminating cabling between motor and drive.

These compact, powerful and cost effective motion control solutions deliver exceptional smoothness and performance that can reduce system cost, design and assembly time for a large range of 2-phase stepper motor applications.

FEATURES AND BENEFITS

- Compact integrated microstepping drive, motion controller and NEMA 14 1.8° 2-phase stepper motor
- Advanced current control with automatic current reduction for exceptional performance and smoothness
- Single supply: +12 to +48 VDC
- 20 microstep resolutions up to 51,200 steps per rev including: Degrees, Metric, Arc Minutes
- IP20 protection rating
- Auxiliary logic power supply input
- 0 to 5 MHz step clock rate selectable in 0.59 Hz increments
- Up to eight I/O lines and one 10-bit selectable analog input
- Programmable motor run/hold current
- Available options include:
  - Encoder
  - Multiple motor stack lengths
  - Long life linear actuators
  - Rear control knob for manual positioning
- Single & triple motor stack lengths available
- Graphical user interface provided for quick and easy configuration and programming via optional MD-CC500-000 comm converter

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

Three-dimensional depictions of this product are available for download from https://novantaims.com/dloads/3d-product-models/

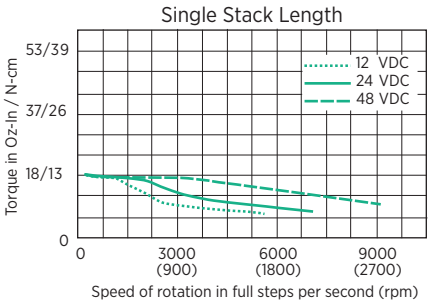
To select from the available features and build the LMD integrated stepper motor to fit your needs, use the Novanta IMS part number builder, available online at https://novantaims.com/resources/part-number-builders/

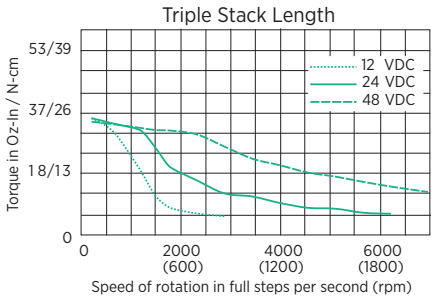
MDrive Plus MDI•14 CANopen

Motor Performance

		MDrive 14	
Motor	Stack length	Single	Triple
Holding torque	oz-in	18	36
	N-cm	13	25
Detent torque	oz-in	2.0	4.4
	N-cm	1.4	3.1
Rotor inertia	oz-in-sec^2	0.000198	0.000801
	kg-cm^2	0.014	0.0566
Weight (motor+driver)	oz	5.29	12.8
	g	150	380

Motor Speed Torque





Test conditions: 100% current with damper simulating load.

Accessories

Description	Length feet (m)	Part Number
Communication Converter Electrically isolated, in-line converter pre-wired with mating connector to conveniently set/program communication parameters for a single MDrive Plus via a PC's USB port.		
Interface cable for all CANopen products. Requires mating connector adapter for DB9 connector. Requires power supply, not supplied.	12.0 (3.6)	MD-CC500-000
Prototype Development Cables Speed test/development with pre-wired mating connector with other cable end open.		
Mates to 16-pin locking wire crimp connector for I/O and power	10.0 (3.0)	PD16-1417-FL3
Mating Connector Kit Connectors for the assembly of cables. (Cable material not included). Sold in lots of 5. Manufacturer's crimp tool recommended for crimp connectors		
16-pin locking wire crimp connector for I/O and power	—	CK-10
Drive Protection Module Limits surge current and voltage to a safe level when DC input power to the MDrive Plus is switched on and off		
For all MDrive 14 CANopen products	—	DPM75