

# MDrive<sup>®</sup> Plus MDM•34AC

CE  REACH IP54

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



## PRODUCT OVERVIEW

The MDrive Plus with step & direction input is a 1.8° 2-phase stepper motor with on-board control electronics, power supply, and optional encoder. Step/direction signals of a master controller, e.g. a motion controller, or A/B signals of an encoder are converted directly into motion.

Settings for MDrive Plus step & direction input products may be changed on-the-fly or downloaded and stored in nonvolatile memory using the SPI Motor Interface software provided. This eliminates the need for external switches or resistors. Parameters are changed via an SPI port.

The MDrive Plus with step & direction input is ideal for machine builders who want an optimized motor with on-board electronics. The integrated electronics of these products reduces the potential for problems due to electrical noise by eliminating the cable between motor and drive.

Fewer individual system components also eliminates multiple potential failure points.

Compact, powerful and cost effective, these 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

- Integrated microstepping drive, NEMA34 1.8° 2-phase stepper motor, and AC power supply
- Advanced current control with automatic current reduction for exceptional performance and smoothness
- Single supply: 120 or 240 VAC
- 20 microstep resolutions up to 51,200 steps per rev, including: Degrees, Metric, & Arc Minutes
- Optically isolated Universal inputs accept +5 to +24 VDC signals, sourcing or sinking
- IP54 protection rating
- Thermal temp & over voltage/current warning
- Configurable options include:
  - Motor run/hold current
  - Motor direction via direction input
  - Microstep resolution
  - Clock type (step & direction, quadrature, step up/down)
  - Programmable digital filtering for clock and direction inputs
- Available options include:
  - Encoder
  - Multiple motor stack lengths
  - Rear control knob for manual positioning
- Single, double, & triple motor stack lengths available
- Setup parameters may be switched on-the-fly
- Graphical user interface provided for quick and easy parameter setup



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/>



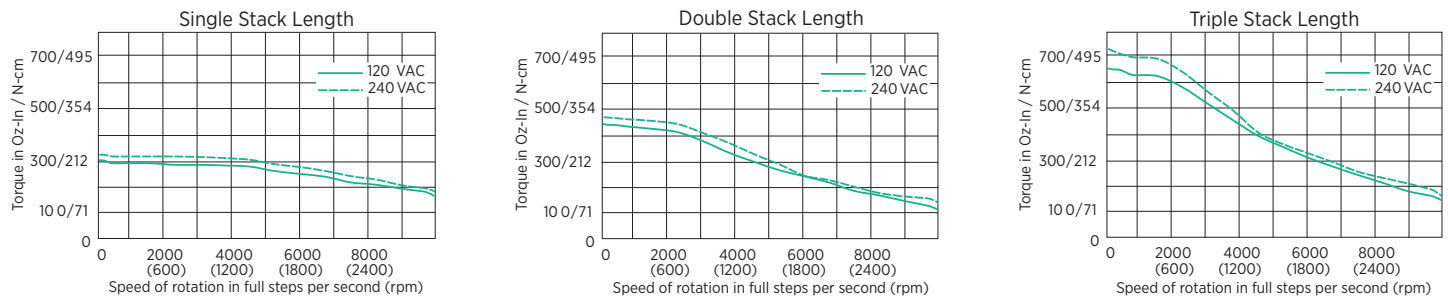
To select from the available features and build the LMD integrated stepper motor to fit your needs, use the Novanta IMS part number builder, available online at <https://novantaims.com/resources/part-number-builders/>

# MDrive Plus MDM•34AC Step & Direction

## Motor Performance

		MDrive 34AC		
Motor	Stack length	Single	Double	Triple
Holding torque	oz-in	330	500	750
	N-cm	233	353	529
Detent torque	oz-in	10.9	14.16	19.83
	N-cm	7.7	10.0	14.0
Rotor inertia	oz-in-sec <sup>2</sup>	0.01416	0.02266	0.04815
	kg-cm <sup>2</sup>	1.0	1.6	3.4
Weight (motor+driver)	oz	6.4	7.7	11.0
	g	2.9	3.5	5.0

## Motor Speed Torque



Test conditions: 100% current with damper simulating load.

## Accessories

Description	Length feet (m)	Part Number
<b>Communication Converters</b>		
Electrically isolated, in-line converter pre-wired with mating connector to conveniently set/program communication parameters for a single MDrivePlus via a PC's USB port.		
Mates to 19-pin male M23 industrial connector, with interface for option internal differential optical encoder	12.0 (3.6)	MD-CC301-001
<b>Prototype Development Cables</b>		
Speed test/development with pre-wired mating connector with other cable end open.		
Mates to 19-pin male M23 industrial connector with straight termination for I/O, communication and optional encoder	13.0 (4.0)	MD-CS100-000
Mates to 19-pin male M23 industrial connector with right angle termination for I/O, communication and optional encoder	13.0 (4.0)	MD-CS101-000
Mates to 3-pin male Euro AC industrial connector with straight termination for power	13.0 (4.0)	MD-CS200-000
Mates to 3-pin male Euro AC industrial connector with right angle termination for power	13.0 (4.0)	MD-CS201-000
<b>Quick Start Kit</b>		
For rapid design verification, all-inclusive QuickStart Kits includes prototype development cables and communication converter for MDrivePlus initial functional setup and system testing.		
For all MDrive 34 step & direction input products, add a "K" to the beginning of the part number when ordering		