



**Applied  
Motion  
Products**

Applied Motion Products, Inc.  
404 Westridge Dr.  
Watsonville, CA 95076, USA

1-888-237-2171  
Tel (831) 761-6555  
Fax (831) 761-6544

**Product Datasheet**

[www.Applied-Motion.com](http://www.Applied-Motion.com)

## **SWM24Q-3EE**

*IP65 Rated NEMA 24 Integrated Drive+Motor*

1pc. - 794.00  
50pc. - 595.50



### ***Product Features***

- *Rated IP65 for wet and dusty environments*
- *M12 connectors*
- *Sophisticated current control*
- *Anti-resonance*
- *Torque ripple smoothing*
- *Microstep emulation*
- *NEMA 23 frame size*
- *Q programming control mode for stand-alone operation*
- *Capable of all "S" control modes*
- *Fast 10/100 Ethernet for programming and communications*
- *UDP & TCP support*
- *Built-in incremental encoder*



## Description

The SWM24Q-3EE integrated stepper is a drive+motor unit, fusing a NEMA 23 step motor and a sophisticated 6.0 A/phase (peak-of-sine) stepper drive into a single IP65 rated device. Power to the drive, located at the rear of the motor, must be supplied by an external DC supply. See Related and Recommended Products below for compatible 24 and 48 volt DC power supplies.

The SWM24Q-3EE integrated stepper can operate in all of the same control modes as the S option, plus the ability to run a Q program stored in non-volatile memory. Q programs are created using Applied Motion's Q Programmer™ software, which provides powerful commands for motion, I/O, conditional processing, multi-tasking, math functions, and more. The STM23Q is setup and configured using Applied Motion's ST Configurator™ software.

An integral 1000-line (4000 count/rev) incremental encoder is housed inside the same enclosure as the drive electronics, providing protection from dust and debris. The integration of the encoder means the SWM24Q can perform special functions not available otherwise. Stall Detection notifies the system as soon as the required torque is too great for the motor, which results in a loss of synchronization between the rotor and stator, also known as stalling. Stall Prevention actually prevents stalling of the step motor by dynamically adjusting motor speed to maintain synchronization of the rotor to the stator under all conditions. This unique feature allows step motors to operate in a much broader range of applications than previously available to step motors, such as torque-control applications. The Stall Prevention feature also performs static position maintenance, which maintains the position of the motor shaft when at rest.

Each SWM24Q integrated stepper comes with 3 digital inputs, 1 digital output, and 1 analog input. The digital inputs accept signals of 5-24 VDC and can be used for connecting pulse & direction signals, end-of-travel limit switches, jog switches, quadrature encoder signals, PLC outputs, sensors, or many other signal types. The digital output can be connected to PLC inputs, counters, lights, relays, or other devices. The analog input accepts 0-5 VDC signals and can be used for velocity and position control.

The SWM24Q-3EE comes with an Ethernet port for configuration, programming and communications. The Ethernet port is fast 10/100 Mbit, and the drive supports both TCP and UDP communication protocols.

All SWM24Q models are CE approved and RoHS compliant.







Please note that a VL series gearhead purchased for this motor will require a special mounting adaptor and 2 weeks lead time. Please contact customer service for the price of this adaptor.

## Specifications

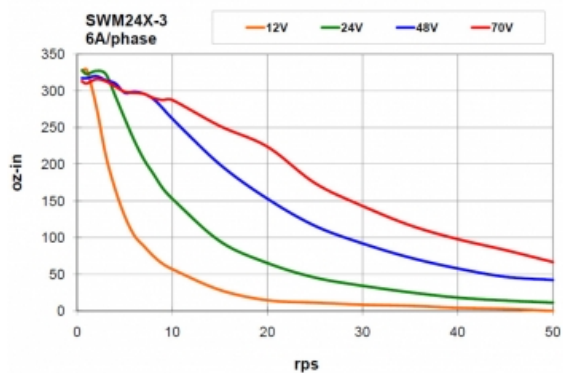
<b>Part Number:</b>	SWM24Q-3EE
<b>Supply Voltage:</b>	12-70 VDC
<b>Supply Voltage Type:</b>	DC
<b>Control Modes:</b>	Streaming Commands Analog Positioning Encoder Following Q Programming
<b>Communication Ports:</b>	Ethernet
<b>Encoder Feedback:</b>	Yes
<b>Step Resolution:</b>	Full Half Microstepping Microstep Emulation
<b>Idle Current Reduction:</b>	0-90%
<b>Setup Method:</b>	Software setup
<b>Digital Inputs:</b>	3
<b>Digital Outputs:</b>	1
<b>Analog Inputs:</b>	1 single ended
<b>Circuit Protection:</b>	Short circuit Over-voltage Under-voltage Over-temp
<b>Status LEDs:</b>	1 red, 1 green
<b>Frame Size:</b>	NEMA 24
<b>Holding Torque:</b>	340 oz-in
<b>Step Angle:</b>	1.8 deg
<b>Rotor Inertia:</b>	1.27E-02 oz-in-sec <sup>2</sup>
<b>Length:</b>	5.03 inches
<b>Weight:</b>	56 oz
<b>Operating Temperature Range:</b>	-20 to 50 °C
<b>Ambient Temperature Range:</b>	0 to 40 °C
<b>Ambient Humidity:</b>	90%
<b>Insulation Class:</b>	Class B (130 °C)
<b>Maximum Radial Load:</b>	NA lbs
<b>Maximum Thrust Load:</b>	NA lbs

<b>Shaft Run Out:</b>	0.0012 inch T.I.R. max
<b>Radial Play:</b>	0.0008 inch max w/ 1.1lb load
<b>End Play:</b>	0.003 inch max w/ 1.1lb load
<b>Perpendicularity:</b>	0.004 inches inch
<b>Concentricity:</b>	0.002 inches inch

## Downloads

<b>Speed-Torque Curves:</b>	 <a href="#">SWM24-3 torque curve.pdf</a>
<b>Manuals:</b>	 <a href="#">SWM24 Hardware Manual_920-0068B.pdf</a>  <a href="#">SWM24_Ethernet_QuickSetup_920-0070B.pdf</a>
<b>Datasheet:</b>	<a href="http://s3.amazonaws.com/applied-motion-pdf/SWM24Q-3EE.pdf">http://s3.amazonaws.com/applied-motion-pdf/SWM24Q-3EE.pdf</a>
<b>2D Drawing:</b>	 <a href="#">SWM24_Simple_3Dpdf.pdf</a>  <a href="#">SWM24x-3Ex_RevC.pdf</a>
<b>3D Drawing:</b>	 <a href="#">SWM24_Simple_10-31-13.igs</a>

## Torque Curves



## Software

<b>Software:</b>	<a href="#">DSP Firmware Downloader</a> <a href="#">Q Programmer™</a> <a href="#">SCL Utility</a> <a href="#">ST Configurator™</a>
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SWM24Q-3EE Part No. SWM24Q-3EE	
1pc.	\$794.00
25pc.	\$682.84
50pc.	\$595.50
100pc.	<a href="#">Contact us</a> for 100+ piece pricing.

Products in the Series *SWM24 Integrated Steppers*

Part Number	Frame Size	Supply Voltage	Control Modes	Holding Torque	Communication Ports	Encoder Feedback	1pc./50pc.
<a href="#">SWM24IP-3EE</a>	NEMA 24	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP	340	Ethernet	Yes	\$857.00 / \$642.75
<a href="#">SWM24Q-3EE</a>	NEMA 24	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming	340	Ethernet	Yes	\$794.00 / \$595.50
<a href="#">SWM24QF-3AE</a>	NEMA 24	12-70 VDC	Step & Direction, Analog Torque / Velocity, Velocity (Oscillator), Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus	340	RS-232	Yes	\$772.00 / \$579.00
<a href="#">SWM24S-3EE</a>	NEMA 24	12-70 VDC	Step & Direction, Analog Torque / Velocity, Velocity (Oscillator), Streaming Commands	340	Ethernet	Yes	\$659.00 / \$494.25
<a href="#">SWM24SF-3AE</a>	NEMA 24	12-70 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	340	RS-232	Yes	\$637.00 / \$477.75