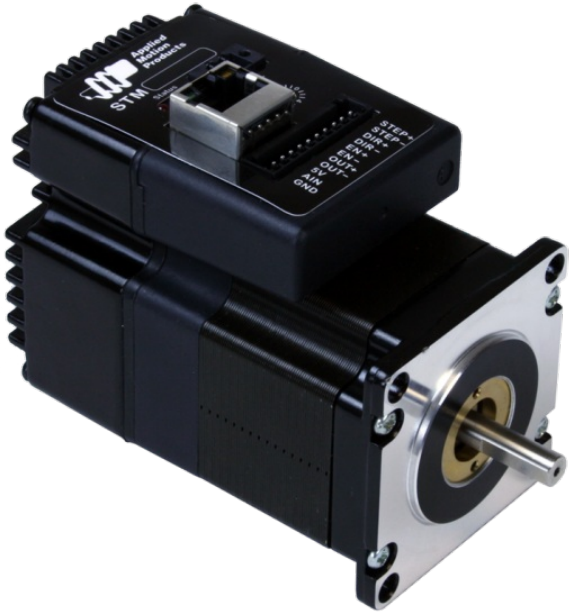
Applied Motion Products, Inc.
404 Westridge Dr.
Watsonville, CA 95076, USA

1-800-525-1609
Tel (831) 761-6555

STM23S-2EN

NEMA 23 Integrated Drive+Motor w/ Ethernet



Product Features

- *Sophisticated current control*
- *Anti-resonance*
- *Torque ripple smoothing*
- *Microstep emulation*
- *NEMA 23 frame size*
- *Step & direction, CW/CCW pulse, and A/B quadrature pulse control modes*
- *Velocity (oscillator) control mode*
- *Streaming serial commands (SCL) control mode*
- *Fast 10/100 Ethernet for programming and communications*
- *UDP & TCP support*

Description

The STM23S-2EN integrated stepper is a drive+motor unit, fusing a NEMA 23 step motor and a sophisticated 5.0 A/phase (peak-of-sine) stepper drive into a single 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 STM23S-2EN integrated stepper can operate in the following control modes: step (pulse) & direction, velocity (oscillator), and streaming serial commands (SCL). The STM23S is setup and configured using Applied Motion's *ST Configurator™* software.

Each STM23S 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 STM23S-2EN comes with an Ethernet port for configuration and communications. The Ethernet port is fast 10/100 Mbit, and the drive supports both TCP and UDP communication protocols.

All STM23S models are CE approved and RoHS compliant.

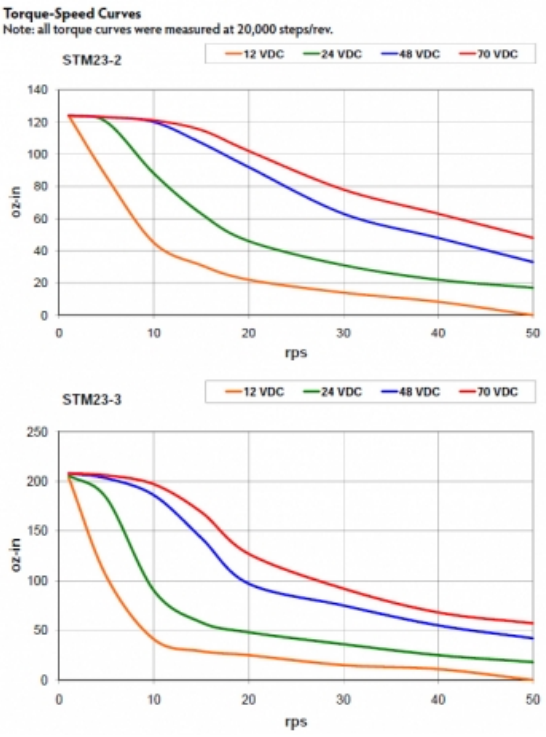
Specifications

Part Number:	STM23S-2EN
Supply Voltage:	12-70 VDC
Supply Voltage Type:	DC
Control Modes:	Step & Direction Velocity (Oscillator) Streaming Commands
Communication Ports:	Ethernet
Encoder Feedback:	No
Step Resolution:	Full Half Microstepping Microstep Emulation
Idle Current Reduction:	0-90%
Setup Method:	Software setup
Digital Inputs:	3
Digital Outputs:	1
Analog Inputs:	1 single-ended
Circuit Protection:	Short circuit Over-voltage Under-voltage Over-temp
Status LEDs:	1 red, 1 green
Frame Size:	NEMA 23
Holding Torque:	125 oz-in
Step Angle:	1.8 deg
Rotor Inertia:	3.68E-03 oz-in-sec^2
Length:	3.64 inches
Weight:	30 oz
Operating Temperature Range:	0 to 85 °C
Ambient Temperature Range:	0 to 40 °C
Ambient Humidity:	90% max, non-condensing
Insulation Class:	Class B (130 ºC)

Downloads

Speed-Torque Curves:	STM23-speed-torque.pdf
Manuals:	STM23 Hardware Manual_920-0021F-opt-.pdf STM23_Ethernet_QuickSetup_920-0058.pdf Host-Command-Reference_920-0002R.pdf
Product PDF - S3 Link:	http://s3.amazonaws.com/applied-motion-pdf/STM23S-2EN.pdf
Datasheet:	STM-Datasheet-925-0009.pdf
2D Drawing:	STM23S-2XX RevC.pdf STM23S-2_3D.pdf
3D Drawing:	STM23S-2_5-14.igs
Application Notes:	APPN0026B-LabVIEW-communication-using-streaming-commands.zip

Torque Curves



Software

Software:	SCL Utility ST Configurator™
Sample Code:	C_sharp_UDP_example.zip VB6_UDP_example.zip VB6_TCP_example.zip

Products in the Series *STM23 Integrated Steppers*

Part Number	Frame Size	Supply Voltage	Control Modes	Holding Torque	Communication Ports	Encoder Feedback	1pc.
STM23C-3CE	NEMA 23	12-70 VDC	CANopen	210	RS-232, CANopen	Yes	$642.00
STM23C-3CN	NEMA 23	12-70 VDC	CANopen	210	RS-232, CANopen	No	$552.00
STM23IP-2EE	NEMA 23	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP, Modbus TCP	125	Ethernet, EtherNet/IP	Yes	$630.00
STM23IP-2EN	NEMA 23	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP, Modbus TCP	125	Ethernet, EtherNet/IP	No	$540.00
STM23IP-3EE	NEMA 23	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP, Modbus TCP	210	Ethernet, EtherNet/IP	Yes	$642.00
STM23IP-3EN	NEMA 23	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP, Modbus TCP	210	Ethernet, EtherNet/IP	No	$552.00
STM23Q-2AE	NEMA 23	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, SiNet Hub Compatible, Modbus RTU	125	RS-232	Yes	$528.00
STM23Q-2AN	NEMA 23	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, SiNet Hub Compatible, Modbus RTU	125	RS-232	No	$438.00
STM23Q-2EE	NEMA 23	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus TCP	125	Ethernet	Yes	$542.00
STM23Q-2EN	NEMA 23	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus TCP	125	Ethernet	No	$452.00
STM23Q-2RE	NEMA 23	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus RTU	125	RS-485	Yes	$536.00
STM23Q-2RN	NEMA 23	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus RTU	125	RS-485	No	$446.00
STM23Q-3AE	NEMA 23	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, SiNet Hub Compatible, Modbus RTU	210	RS-232	Yes	$547.00
STM23Q-3AN	NEMA 23	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, SiNet Hub Compatible, Modbus RTU	210	RS-232	No	$457.00
STM23Q-3EE	NEMA 23	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus TCP	210	Ethernet	Yes	$562.00
STM23Q-3EN	NEMA 23	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus TCP	210	Ethernet	No	$472.00
STM23Q-3RE	NEMA 23	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus RTU	210	RS-485	Yes	$556.00
STM23Q-3RN	NEMA 23	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus RTU	210	RS-485	No	$466.00
STM23R-2ND	NEMA 23	12-70 VDC	Step & Direction	125	NA	No	$179.00
STM23R-2NE	NEMA 23	12-70 VDC	Step & Direction	125	NA	Yes	$268.00
STM23R-2NN	NEMA 23	12-70 VDC	Step & Direction	125	NA	No	$179.00
STM23R-3ND	NEMA 23	12-70 VDC	Step & Direction	210	NA	No	$190.00

STM23R-3NE	NEMA 23	12-70 VDC	Step & Direction	210	NA	Yes	$272.00
STM23R-3NN	NEMA 23	12-70 VDC	Step & Direction	210	NA	No	$190.00
STM23S-2AE	NEMA 23	12-70 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands, SiNet Hub Compatible	125	RS-232	Yes	$420.00
STM23S-2AN	NEMA 23	12-70 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands, SiNet Hub Compatible	125	RS-232	No	$330.00
STM23S-2EE	NEMA 23	12-70 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	125	Ethernet	Yes	$434.00
STM23S-2EN	NEMA 23	12-70 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	125	Ethernet	No	$344.00
STM23S-2RE	NEMA 23	12-70 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	125	RS-485	Yes	$428.00
STM23S-2RN	NEMA 23	12-70 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	125	RS-485	No	$338.00
STM23S-3AE	NEMA 23	12-70 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands, SiNet Hub Compatible	210	RS-232	Yes	$439.00
STM23S-3AN	NEMA 23	12-70 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands, SiNet Hub Compatible	210	RS-232	No	$349.00
STM23S-3EE	NEMA 23	12-70 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	210	Ethernet	Yes	$454.00
STM23S-3EN	NEMA 23	12-70 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	210	Ethernet	No	$364.00
STM23S-3RE	NEMA 23	12-70 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	210	RS-485	Yes	$448.00
STM23S-3RN	NEMA 23	12-70 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	210	RS-485	No	$358.00
STM24IP-3EE	NEMA 24	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP, Modbus TCP	340	Ethernet, EtherNet/IP	Yes	$751.00
STM24IP-3EN	NEMA 24	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP, Modbus TCP	340	Ethernet, EtherNet/IP	No	$661.00
STM24Q-3EE	NEMA 24	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus TCP	340	Ethernet	Yes	$691.00
STM24Q-3EN	NEMA 24	12-70 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus TCP	340	Ethernet	No	$601.00
STM24S-3EE	NEMA 24	12-70 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	340	Ethernet	Yes	$583.00
STM24S-3EN	NEMA 24	12-70 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	340	Ethernet	No	$493.00