MOONS'
moving in better ways

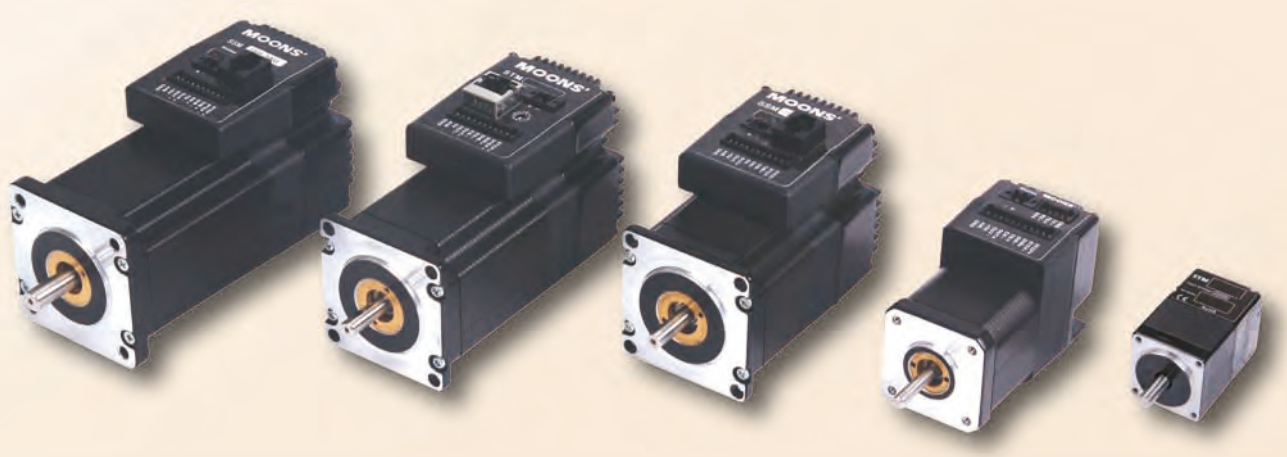
STM

Integrated Step Motors

Motor + Encoder + Driver + Controller

The STM is an integrated all-in-one solution, fusing step motor and drive technologies into a single device, offering savings on space, wiring and cost over conventional motor and drive solutions.

- Anti-Resonance
- Microstep Emulation
- Dynamic Current Control
- Torque Ripple Smoothing
- Stall Detection and Stall Prevention
- Command Signal Smoothing



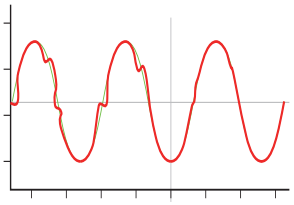
www.motiontech.com.au

CE RoHS Compliant

www.moonsindustries.com

Anti-Resonance

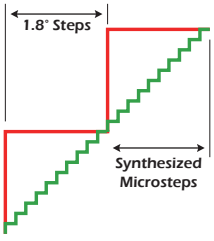
Step motor systems have a natural tendency to resonate at certain speeds. The STM drive+motor automatically calculates the system's natural frequency and applies damping to the control algorithm. This greatly improves midrange stability, allows for higher speeds, greater torque utilization and also improves settling times.



Delivers better motor performance and higher speeds

Microstep Emulation

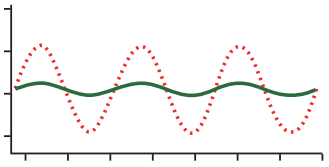
With Microstep Emulation, low resolution systems can still provide smooth motion. The drive can take low-resolution step pulses and create fine resolution micro-step motion.



Delivers smoother motion in any application

Torque Ripple Smoothing

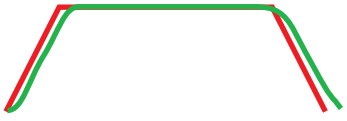
All step motors have an inherent low speed torque ripple that can affect the motion of the motor. By analyzing this torque ripple the system can apply a negative harmonic to negate this effect, which gives the motor much smoother motion at low speed.



Delivers smoother motion at lower speeds

Command Signal Smoothing

Command Signal smoothing can soften the effect of immediate changes in velocity and direction, making the motion of the motor less jerky. An added advantage is that it can reduce the wear on mechanical components.

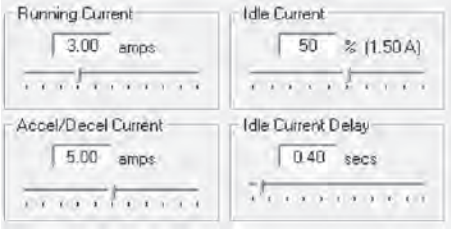


Delivers smoother system performance

Dynamic Current Control

Allows for three current settings to help the motor run cooler and reduce power consumption.

- Running Current - the current the drive will deliver for continuous motion.
- Accel Current - the current the drive will deliver when accelerating or decelerating.
- Idle Current - reduces current draw when motor is stationary.



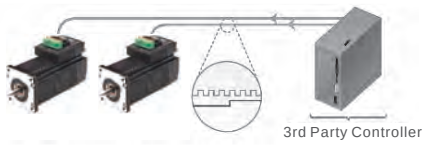
System runs cooler

Self Test & Auto Setup

At start-up the drive measures motor parameters, including the resistance and inductance, then uses this information to optimize the system performance.

Control Options

Step & Direction



S

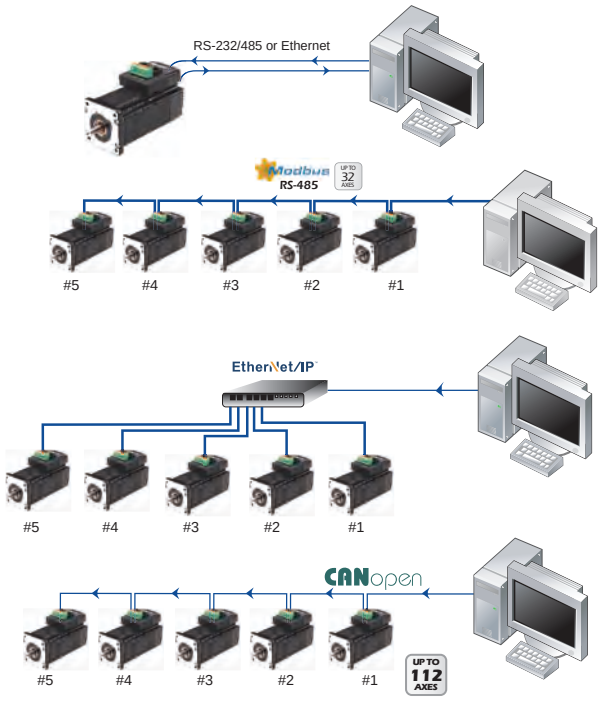
- Step & direction
- CW & CCW pulse
- A/B quadrature(master encoder)

Oscillator / Run-stop

S

- Software configuration
- Two speeds
- Vary speed with analog input
- Joystick compatible

Host Control



S & **Q**

RS-232

- Accept serial commands from host PC or PLC

RS-485 or Modbus/RTU network

- Accept serial commands from host PC or PLC
- Multi-axis capable, up to 32 axes

Q & **IP**

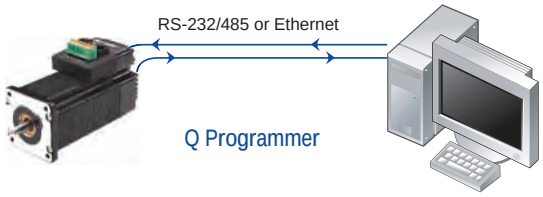
- Accepts streaming commands from host PC or PLC
- 1000's of axes with Ethernet and EtherNet/IP

C

CANopen Model

- Connect to CANopen network
- CiA301 and CiA402 protocols
- Multi axle bus, up to 112 axis

Stand-Alone Programmable



Q & **IP**

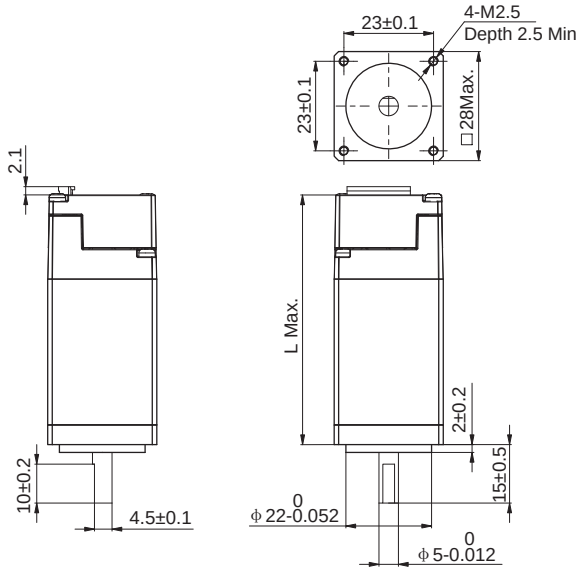
- Comprehensive text based languaged
- Download, store & execute programs
- High level features: multi-tasking, conditional programming and math functions
- Host interface while executing stored programs

STM11

Integrated Stepper

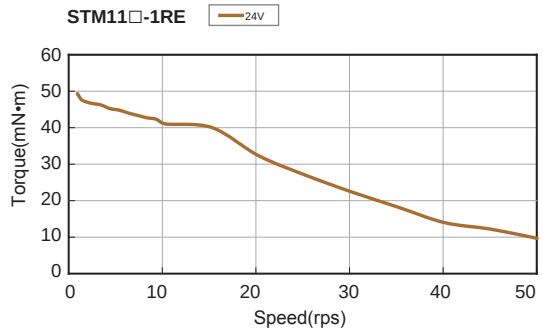
- **NEMA 11 frame size**
- **Torque: up to 100 mN•m**
- **Input voltage: 24 VDC**

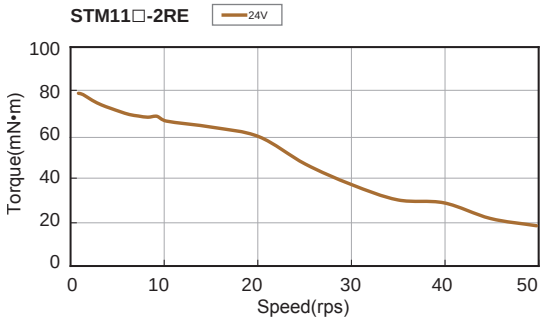
STM11 Dimensions (Unit : mm)

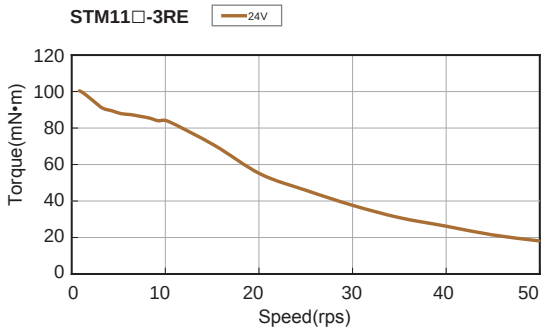


Model	"L"
STM11□-1RE	43.8
STM11□-2RE	52.9
STM11□-3RE	64.1

STM11 Torque Curves







Connections Pin-out

	RS485 Modbus
Power supply, communication & I/O port	

STM11 Technical Specifications

Power Amplifier	
AMPLIFIER TYPE	Dual H-Bridge, 4 Quadrant
CURRENT CONTROL	4 state PWM at 16 KHz
OUTPUT TORQUE	STM11□-1RE up to 50 mN.m STM11□-2RE up to 60 mN.m STM11□-3RE up to 100 mN.m
POWER SUPPLY	External 24 VDC power supply required
INPUT VOLTAGE RANGE	15 - 30 VDC min/max (nominal 24 VDC)
PROTECTION	Over-voltage, under-voltage, over-temp, internal motor shorts (phase-to-phase, phase-to-ground)
IDLE CURRENT REDUCTION	Reduction range of 0 - 90% of running current after a delay selectable in milliseconds
AMBIENT TEMPERATURE	0 - 40°C (32 - 104°F) when mounted to a suitable heatsink
HUMIDITY	90% non-condensing

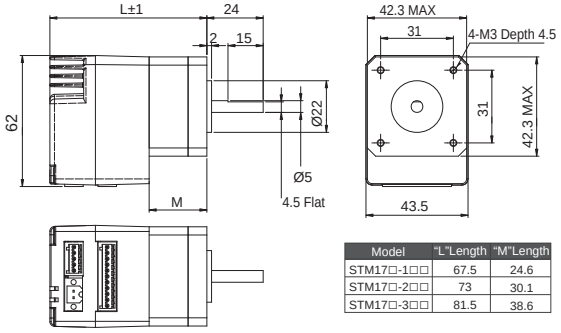
Controller	
CURRENT CONTROL	Advanced digital current control provides excellent high speed torque
MICROSTEP RESOLUTION	Software selectable from 200 to 51200 steps/rev in increments of 2 steps/rev
SPEED RANGE	Speeds up to 50 rps
DISTANCE RANGE	Over 10,000,000 revolutions (at 200 steps/rev)
NOISE FILTERING	Programmable hardware digital noise filter. Software noise filter
SERIAL COMMANDING	Supports Serial Command Language (SCL)
ENCODER FEEDBACK	4000 counts/rev encoder feedback
NON-VOLATILE STORAGE	Configurations are saved in FLASH memory on-board the DSP
X1/STEP	Input: 5 - 24 VDC, single-ended signals, max. pulse frequency 1 MHz Functions: Step, CW Step, A Quadrature, CW Limit, CW Jog, Run/Stop, general purpose input; adjustable bandwidth digital noise rejection filter Connect with NPN type output ONLY
X2/DIRECTION	Input: 5 - 24 VDC, single-ended signals, max. pulse frequency 1 MHz Functions: Dir, CCW Step, B Quadrature, CCW Limit , CCW Jog, general purpose input; adjustable bandwidth digital noise rejection filter Connect with NPN type output ONLY
X3/ENABLE	Input: 5 - 24 VDC, single-ended signals, max. pulse frequency 1 MHz Functions: Enable, Change speed, general purpose input Connect with NPN type output ONLY
X4/ALARM RESET	Input: 5 - 24 VDC, single-ended signals, max. pulse frequency 1 MHz Functions: Alarm reset; general purpose input Connect with NPN type output ONLY
Y1	Open drain output, maximum current 100mA with maximum voltage of 30VDC Functions: Fault detection, general purpose
Y2	Open drain output, maximum current 100mA with maximum voltage of 30VDC Functions: Brake, Moving, Tach Output, general purpose
COMMUNICATION INTERFACE	RS-422/485
WEIGHT	STM11□-1RE: 118 g STM11□-2RE: 168 g STM11□-3RE: 218 g
ROTOR INERTIA	STM11□-1RE: 9 g•cm^2 STM11□-2RE: 12 g•cm^2 STM11□-3RE: 18 g•cm^2

STM17

Integrated Stepper

- **NEMA 17 frame size**
- **Torque: up to 0.48 N•m**
- **Input voltage: 12-48 VDC**

STM17 Dimensions (Unit : mm)

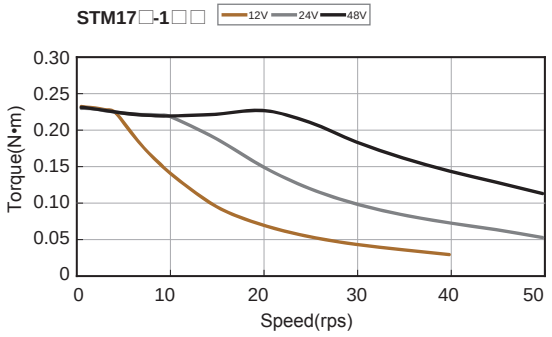


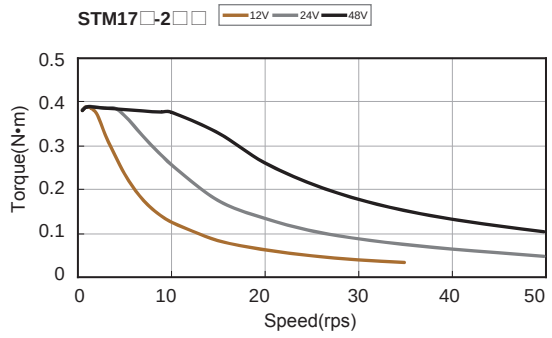
Model	"L"Length	"M"Length
STM17□-1□□	67.5	24.6
STM17□-2□□	73	30.1
STM17□-3□□	81.5	38.6

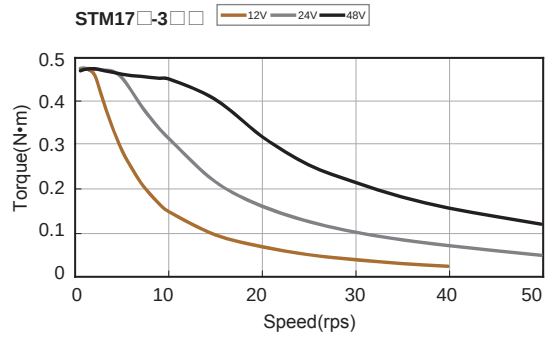
Connections Pin-out

	RS232	RS485 Modbus	CANopen
Communication Port	RXD +5V TXD GND GND	GND TX- TX+ RX- RX+	TXD RXD CAN_H CAN_L GND
I/O Port	STEP+ STEP - DIR+ DIR - EN+ EN - OUT+ OUT - +5V AIN GND	STEP+ STEP - DIR+ DIR - EN+ EN - OUT+ OUT - +5V AIN GND	IN1+ IN1 - IN2+ IN2 - IN3+ IN3 - OUT+ OUT - +5V AIN GND

STM17 Torque Curves







STM17 Technical Specifications

Power Amplifier	
AMPLIFIER TYPE	Dual H-bridge, 4 quadrant
CURRENT CONTROL	4 state PWM at 20 kHz
OUTPUT TORQUE	STM17□-1□□: Up to 0.23 N•m STM17□-2□□: Up to 0.38 N•m STM17□-3□□: Up to 0.48 N•m
POWER SUPPLY	External 12 - 48 volt power supply required
PROTECTION	Over-voltage, under-voltage, over-temp, internal shorts (phase-to-phase, phase-to-ground)

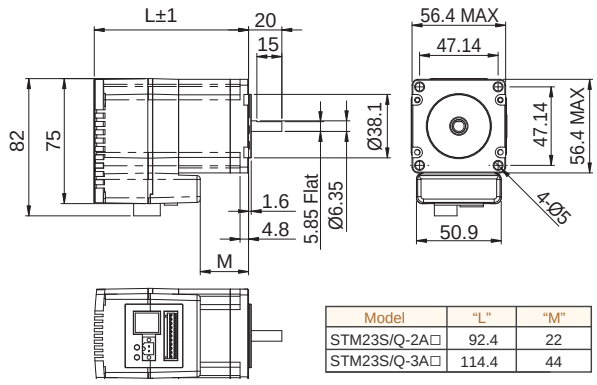
Controller	
MICROSTEP RESOLUTION	Software selectable from 200 to 51200 steps/rev in increments of 2 steps/rev.
ENCODER FEEDBACK	Optional 4000 counts/rev encoder feedback
SPEED RANGE	Speeds up to 3000 rpm
NON-VOLATILE STORAGE	Configurations are saved in FLASH memory on-board the DSP
MODES OF OPERATION	STM17S: Step & direction, CW/CCW pulse, A/B quadrature pulse, velocity (oscillator, joystick), streaming commands(SCL) STM17Q: All STM17S modes of operation plus stored Q program execution, support Modbus/RTU STM17C: CANopen slave node plus stored Q program execution
DIGITAL INPUTS	**S/Q type:** Adjustable bandwidth digital noise rejection filter on all inputs **STEP+/- :** Optically isolated, 5-24 volt. Minimum pulse with 250 ns. Maximum pulse frequency = 2MHz Function: Step, CW step, A quadrature (encoder following), CW limit, CW jog, start/stop (oscillator mode), or general purpose input. **DIR+/- :** Optically isolated, 5-24 volt. Minimum pulse width = 250 ns. Maximum pulse frequency = 2 MHz. Function: Direction, CCW step, B quadrature (encoder following), CCW limit, CCW jog, direction (oscillator mode), or general purpose input. **EN+/- :** Optically isolated, 5-24 volt. Minimum pulse width = 100 µs. Maximum pulse frequency = 10 KHz. Function: Enable, alarm/fault reset, speed 1/speed 2 (oscillator mode), or general purpose input **C type:** Adjustable bandwidth digital noise rejection filter on all inputs **IN1+/-:** Optically isolated, 5-24 volt. Minimum pulse width = 250 ns. Maximum pulse frequency = 2 MHz. Function: CW limit, CW jog, or general purpose input. **IN2+/-:** Optically isolated, 5-24 volt. Minimum pulse width = 250 ns. Maximum pulse frequency = 2 MHz. Function: CCW limit, CCW jog, or general purpose input. **IN3+/-:** Optically isolated, 5-24 volt. Minimum pulse width = 100 µs. Maximum pulse frequency = 10 KHz. Function: general purpose input
DIGITAL OUTPUT	**OUT+/-:** Optically isolated, 30V/100mA max. Function: Fault, brake motion, tach, or general purpose programmable
ANALOG INPUT	AIN referenced to GND. Range = 0 to 5 VDC. Resolution = 12 bits.
COMMUNICATION	S/Q type: RS-232, RS-485 C type: CANopen & RS-232

Physical	
AMBIENT TEMPERATURE	0 to 40°C (32 to 104°F) When mounted to a suitable heat sink
HUMIDITY	90% non-condensing
MASS	STM17□-1□□: 280g STM17□-2□□: 360g STM17□-3□□: 440g
ROTOR INERTIA	STM17□-1□□: 38 g•cm^2 STM17□-2□□: 57 g•cm^2 STM17□-3□□: 82 g•cm^2

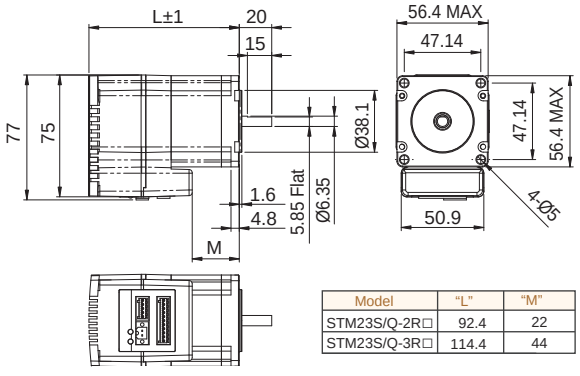
STM23
Integrated Stepper

- **NEMA 23 frame size**
- **Torque: up to 1.5 N•m**
- **Input voltage: 12-70 VDC**

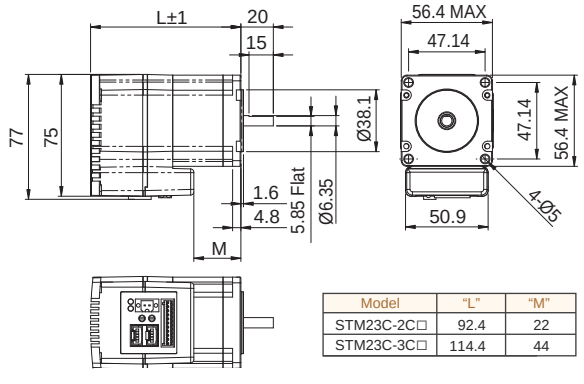
STM23 Dimensions (Unit : mm)



Model	"L"	"M"
STM23S/Q-2A□	92.4	22
STM23S/Q-3A□	114.4	44

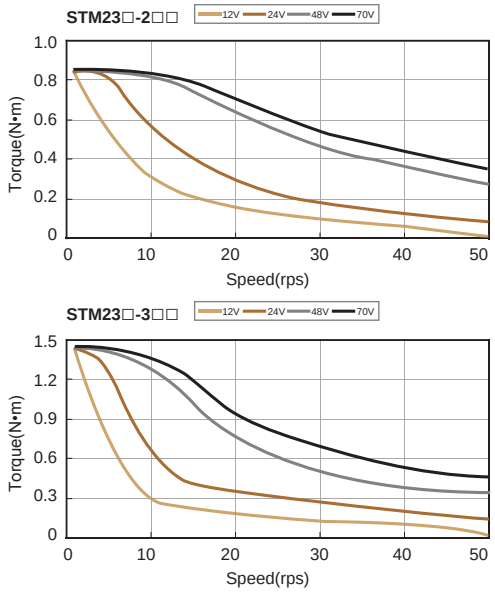


Model	"L"	"M"
STM23S/Q-2R□	92.4	22
STM23S/Q-3R□	114.4	44

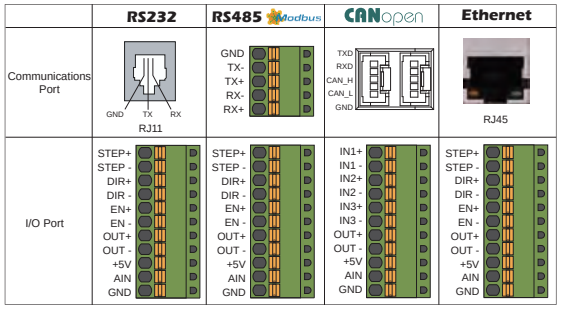


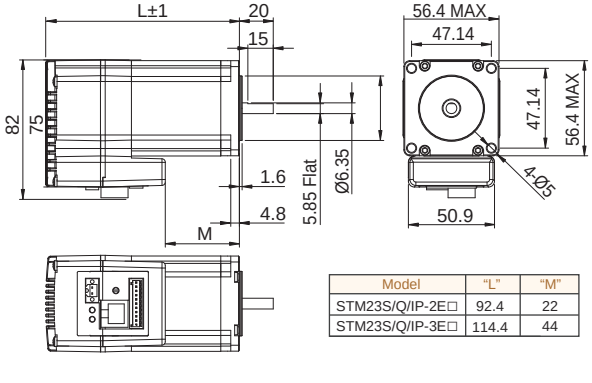
Model	"L"	"M"
STM23C-2C□	92.4	22
STM23C-3C□	114.4	44

STM23 Torque Curves



Connections Pin-out





Model	"L"	"M"
STM23S/Q/IP-2E□	92.4	22
STM23S/Q/IP-3E□	114.4	44

STM23 Technical Specifications

Power Amplifier	
AMPLIFIER TYPE	Dual H-bridge, 4 quadrant
CURRENT CONTROL	4 state PWM at 20 kHz
OUTPUT TORQUE	STM23□-2□□: Up to 1.0 N•m STM23□-3□□: Up to 1.5 N•m
POWER SUPPLY	External 12 - 70 volt power supply required
PROTECTION	Over-voltage, under-voltage, over-temp, motor/wiring shorts (phase-to-phase, phase-to-ground)

Controller	
MICROSTEP RESOLUTION	Software selectable from 200 to 51200 steps/rev in increments of 2 steps/rev.
ENCODER FEEDBACK	Optional 4000 counts/rev encoder feedback
SPEED RANGE	Speeds up to 3000 rpm
NON-VOLATILE STORAGE	Configurations are saved in FLASH memory on-board the DSP
MODES OF OPERATION	STM23S: Step & direction, CW/CCW pulse, A/B quadrature pulse, velocity (oscillator, joystick), streaming commands (SCL) STM23Q: All STM23S modes of operation plus stored Q program execution, support Modbus/RTU STM23C: CANopen slave node plus stored Q program execution STM23IP: All STM23Q modes of operation plus EtherNet/IP industrial network communications
DIGITAL INPUTS	**S/Q/IP type:** Adjustable bandwidth digital noise rejection filter on all inputs **STEP+/- :** Optically isolated, 5-24 volt. Minimum pulse width 250 ns. Maximum pulse frequency = 2MHz Function: Step, CW step, A quadrature (encoder following), CW limit, CW jog, start/stop (oscillator mode), or general purpose input. **DIR+/- :** Optically isolated, 5-24 volt. Minimum pulse width = 250 ns. Maximum pulse frequency = 2 MHz. Function: Direction, CCW step, B quadrature (encoder following), CCW limit, CCW jog, direction (oscillator mode), or general purpose input. **EN+/- :** Optically isolated, 5-24 volt. Minimum pulse width = 100 µs. Maximum pulse frequency = 10 KHz. Function: Enable, alarm/fault reset, speed 1/speed 2 (oscillator mode), or general purpose input **C type:** Adjustable bandwidth digital noise rejection filter on all inputs **IN1+/-:** Optically isolated, 5-24 volt. Minimum pulse width = 250 ns. Maximum pulse frequency = 2 MHz. Function: CW limit, CW jog, or general purpose input. **IN2+/-:** Optically isolated, 5-24 volt. Minimum pulse width = 250 ns. Maximum pulse frequency = 2 MHz. Function: CCW limit, CCW jog, or general purpose input **IN3+/-:** Optically isolated, 5-24 volt. Minimum pulse width = 100 µs. Maximum pulse frequency = 10 KHz. Function: general purpose input
DIGITAL OUTPUT	**OUT+/-:** Optically isolated, 30V/100mA max. Function: Fault, brake motion, tach, or general purpose programmable
ANALOG INPUT	AIN referenced to GND. Range = 0 to 5 VDC. Resolution = 12 bits.(Not present on STM23C)
COMMUNICATION	S/Q type: RS-232, RS-485, Modbus/RTU, Ethernet TCP or UDP C type: CANopen & RS-232 IP type: EtherNet/IP

Physical	
AMBIENT TEMPERATURE	0 to 40°C (32 to 104°F) When mounted to a suitable heat sink
HUMIDITY	90% non-condensing
MASS	STM23□-2□□: 850g STM23□-3□□: 1200g
ROTOR INERTIA	STM23□-2□□: 260 g•cm^2 STM23□-3□□: 460 g•cm^2

STM24

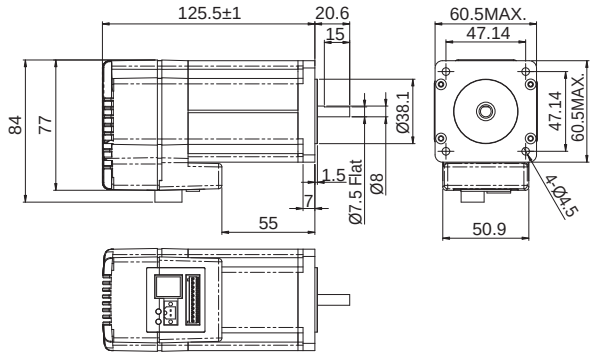
Integrated Stepper

- **NEMA 24 frame size**
- **Torque: up to 2.4 N•m**
- **Input voltage: 12-70 VDC**

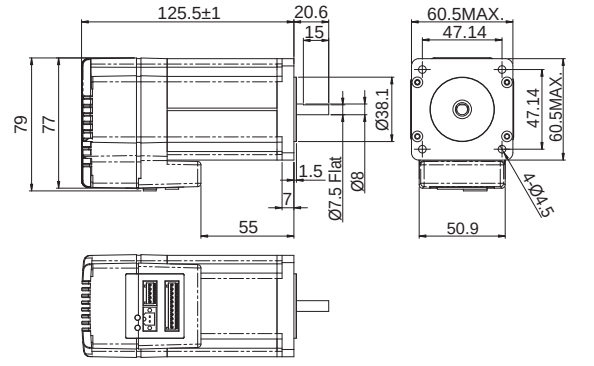
CE RoHS Compliant

STM24 Dimensions (Unit : mm)

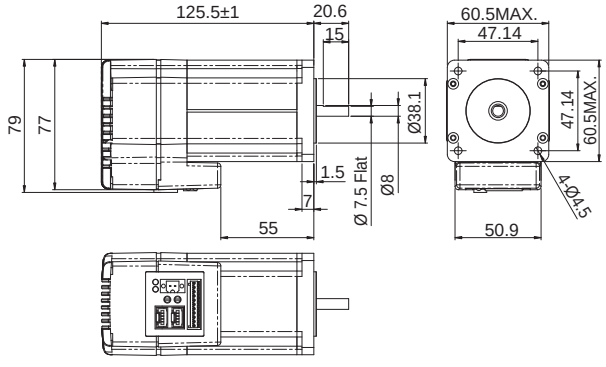
STM24SF-3A□ & STM24QF-3A□



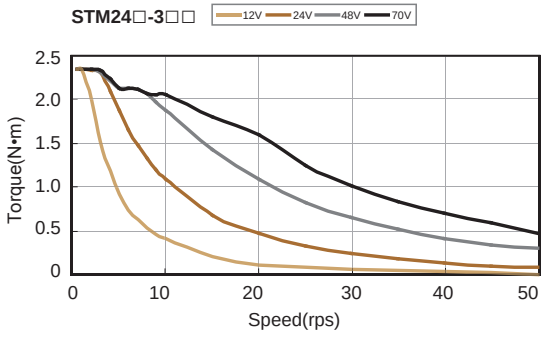
STM24SF-3R□ & STM24QF-3R□



STM24C-3C□



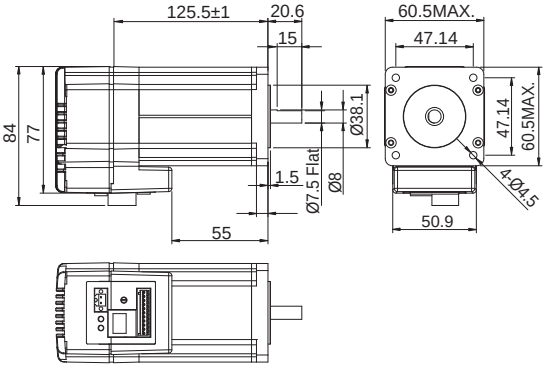
STM24 Torque Curves



Connections Pin-out

	RS232	RS485 Modbus	CANopen	Ethernet
Communication Port	GND TX RX RJ11	GND TX- TX+ RX- RX+	TXD RXD CAN_H CAN_L GND	RJ45
I/O Port	I/O1+ I/O1 - I/O2+ I/O2 - I/O3+ I/O3 - I/O4+ I/O4 - +5V AIN GND	I/O1+ I/O1 - I/O2+ I/O2 - I/O3+ I/O3 - I/O4+ I/O4 - +5V AIN GND	IN1+ IN1 - IN2+ IN2 - IN3+ IN3 - OUT+ OUT - +5V AIN GND	STEP+ STEP - DIR+ DIR - EN+ EN - OUT+ OUT - +5V AIN GND

STM24S-3E□ & STM24Q-3E□ & STM24IP-3E□



STM24 Technical Specifications

Power Amplifier	
AMPLIFIER TYPE	Dual H-bridge, 4 quadrant
CURRENT CONTROL	4 state PWM at 20 kHz
OUTPUT TORQUE	STM24□-3□□: Up to 2.4 N•m
POWER SUPPLY	External 12 - 70 volt power supply required
PROTECTION	Over-voltage, under-voltage, over-temp, internal motor shorts (phase-to-phase, phase-to-ground)

Controller	
MICROSTEP RESOLUTION	Software selectable from 200 to 51200 steps/rev in increments of 2 steps/rev.
ENCODER FEEDBACK	Optional 4000 counts/rev encoder feedback
SPEED RANGE	Speeds up to 3000 rpm
NON-VOLATILE STORAGE	Configurations are saved in FLASH memory on-board the DSP
MODES OF OPERATION	STM24SF/S: Step & direction, CW/CCW pulse, A/B quadrature pulse, velocity (oscillator, joystick), streaming commands (SCL) STM24QF/Q: All STM24S modes of operation plus stored Q program execution, support Modbus/RTU STM24C: CANopen slave node plus stored Q program execution STM24IP: All STM24Q modes of operation plus EtherNet/IP industrial network communications
FLEX I/O RS-232 AND RS-485 MODELS	Adjustable bandwidth digital noise rejection filter on all flex I/O points configured as inputs **I/O1+/-:** When configured as input, optically isolated, 5-24 volt. Minimum pulse width = 250 ns. Maximum pulse frequency = 2 MHz. Function: Step, CW step, A quadrature (encoder following), CW jog, start/stop (oscillator mode), Enable or general purpose input. When configured as output, optically isolated, 30V/100 mA max. Function: Fault, brake motion, tach, or general purpose programmable. **I/O2+/-:** When configured as input, optically isolated, 5-24 volt. Minimum pulse width = 250 ns. Maximum pulse frequency = 2 MHz. Function: Direction, CCW step, B quadrature (encoder following), CW jog, direction (oscillator mode), alarm/ fault reset or general purpose input. When configured as output, optically isolated, 30V/100 mA max. Function: Fault, brake motion, tach, or general purpose programmable. **I/O3+/-:** When configured as input, optically isolated, 5-24 volt. Minimum pulse width = 100 µs. Maximum pulse frequency = 10 KHz. Function: CW limit, Enable, Speed 1/Speed 2 (oscillator mode) or general purpose input. When configured as output, optically isolated, 30V/100 mA max. Function: Fault, brake motion, tach, or general purpose programmable. **I/O4+/-:** When configured as input, optically isolated, 5-24 volt. Minimum pulse width = 100 µs. Maximum pulse frequency = 10 KHz. Function: CCW limit, alarm/fault reset or general purpose input. When configured as output, optically isolated, 30V/100 mA max. Function: Fault, brake motion, tach, or general purpose programmable.
DIGITAL INPUT ETHERNET MODELS	Adjustable bandwidth digital noise rejection filter on all inputs **STEP+/- :** Optically isolated, 5-24 volt. Minimum pulse width 250 ns. Maximum pulse frequency = 2MHz Function: Step, CW step, A quadrature (encoder following), CW limit, CW jog, start/stop (oscillator mode), or general purpose input. **DIR+/- :** Optically isolated, 5-24 volt. Minimum pulse width = 250 ns. Maximum pulse frequency = 2 MHz. Function: Direction, CCW step, B quadrature (encoder following), CW limit, CW jog, direction (oscillator mode), or general purpose input. **EN+/- :** Optically isolated, 5-24 volt. Minimum pulse width = 100 µs. Maximum pulse frequency = 10 KHz. Function: Enable, alarm/fault reset, speed 1/speed 2 (oscillator mode), or general purpose input
DIGITAL INPUT CANOPEN MODELS	Adjustable bandwidth digital noise rejection filter on all inputs **IN1+/-:** Optically isolated, 5-24 volt. Minimum pulse width = 250 ns. Maximum pulse frequency = 2 MHz. Function: CW limit, CW jog, or general purpose input **IN2+/-:** Optically isolated, 5-24 volt. Minimum pulse width = 250 ns. Maximum pulse frequency = 2 MHz. Function: CCW limit, CCW jog, or general purpose input **IN3+/-:** Optically isolated, 5-24 volt. Minimum pulse width = 100 µs. Maximum pulse frequency = 10 KHz. Function: general purpose input
DIGITAL OUTPUT	**OUT+/-:** Optically isolated, 30V/100 mA max. Function: Fault, brake motion, tach, or general purpose programmable
ANALOG INPUT	AIN referenced to GND. Range = 0 to 5 VDC. Resolution = 12 bits.(Not present on STM24C)
COMMUNICATION	SF/QF type: RS-232, RS-485 or Modbus/RTU S/Q type: Ethernet TCP or UDP C type: CANopen & RS-232 IP type: EtherNet/IP

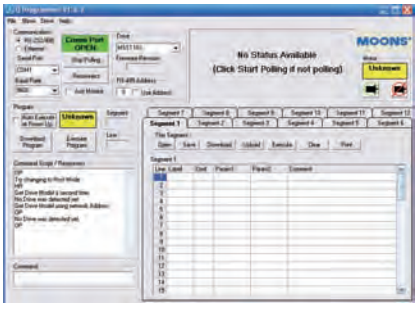
Physical	
AMBIENT TEMPERATURE	0 to 40°C (32 to 104°F) When mounted to a suitable heat sink
HUMIDITY	90% non-condensing
MASS	STM24□-3□□ : 1580g
ROTOR INERTIA	STM24□-3□□ : 900 g•cm^2

ST Configurator

Software Features

- Intuitive interface
- Drive status and alarm monitoring
- Self-test function to test drive/motor operation
- Built-in SCL Terminal
- Online help integrated

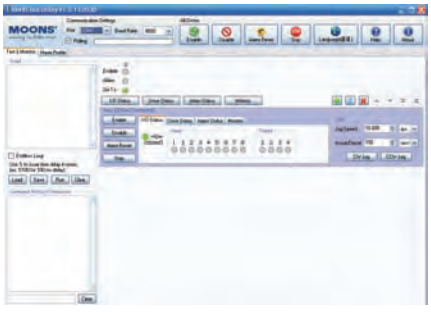
Q Programmer



Software Features

- Single-axis motion control
- Stored program execution
- Multi-tasking
- Conditional processing
- Math functions
- Data registers
- Motion Profile simulation
- Online help integrated

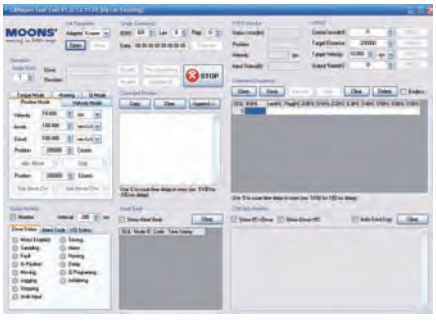
RS485 Bus Utility



Software Features

- Stream SCL commands from the command line
- Simple interface with powerful capability
- Easy setup with RS-485 for 32 axis network motion control
- Monitoring Status of I/O, drive, alarm and the other nine most useful motion parameters
- Write and save SCL command scripts
- Online help integrated
- Supports all RS-485 drives

CANopen Test Tool



Software Features

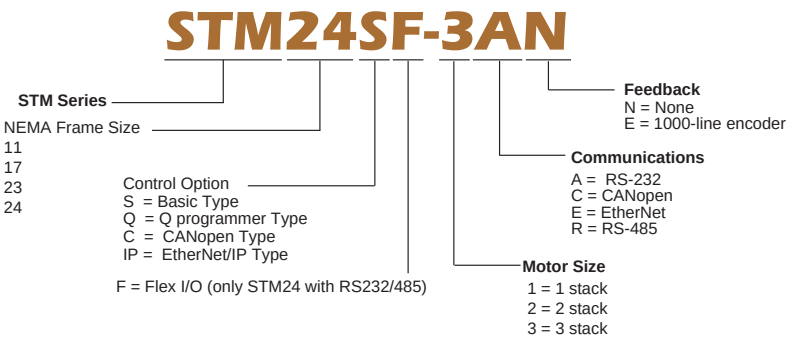
- Friendly User Interface
- Multiple operation Mode Support
- Multi-Thread, High Performance
- CAN bus monitor and log function
- Kvaser/PEAK adapter support

FREE DOWNLOAD
Our software and user manual can be downloaded from our website:

www.moonsindustries.com

All software applications run on Windows 7, Windows 8, 32-bit or 64-bit, Windows XP.

STM Drive Model Numbers



Model	Control	Output Torque	Encoder	RS-232	RS-485	CANopen	Ethernet	Modbus/RTU	EtherNet/IP
STM11S-1RE	S	0.05N•m	√		√				
STM11S-2RE		0.08N•m	√		√				
STM11S-3RE		0.1N•m	√		√				
STM11Q-1RE	Q	0.05N•m	√		√			√	
STM11Q-2RE		0.06N•m	√		√			√	
STM11Q-3RE		0.1N•m	√		√			√	
STM17S-1AN	S	0.23N•m		√					
STM17S-1RN					√				
STM17S-1AE			√	√					
STM17S-1RE			√		√				
STM17S-2AN		0.38N•m		√					
STM17S-2RN					√				
STM17S-2AE			√	√					
STM17S-2RE			√		√				
STM17S-3AN		0.48N•m		√					
STM17S-3RN					√				
STM17S-3AE			√	√					
STM17S-3RE			√		√				
STM17Q-1AN	Q	0.23N•m		√					
STM17Q-1RN					√			√	
STM17Q-1AE			√	√					
STM17Q-1RE			√		√			√	
STM17Q-2AN		0.38N•m		√					
STM17Q-2RN					√			√	
STM17Q-2AE			√	√					
STM17Q-2RE			√		√			√	
STM17Q-3AN		0.48N•m		√					
STM17Q-3RN					√			√	
STM17Q-3AE			√	√					
STM17Q-3RE			√		√			√	
STM17C-1CN	C	0.23N•m		√		√			
STM17C-1CE			√	√		√			
STM17C-2CN		0.38N•m		√		√			
STM17C-2CE			√	√		√			
STM17C-3CN		0.48N•m		√		√			
STM17C-3CE			√	√		√			
STM23S-2AN	S	0.9N•m		√					
STM23S-2RN					√				
STM23S-2EN							√		
STM23S-2AE			√	√					
STM23S-2RE			√		√				
STM23S-2EE			√				√		
STM23S-3AN	S	1.5N•m		√					
STM23S-3RN					√				
STM23S-3EN							√		
STM23S-3AE	S	1.5N•m	√	√					
STM23S-3RE			√		√				
STM23S-3EE			√				√		
STM23Q-2AN	Q	0.9N•m		√					
STM23Q-2RN					√			√	
STM23Q-2EN							√		
STM23Q-2AE			√	√					
STM23Q-2RE			√		√			√	
STM23Q-2EE			√				√		
STM23Q-3AN	Q	1.5N•m		√					
STM23Q-3RN					√			√	
STM23Q-3EN							√		
STM23Q-3AE			√	√					
STM23Q-3RE			√		√			√	
STM23Q-3EE			√				√		
STM23C-2CN	C	0.9N•m		√		√			
STM23C-2CE			√	√		√			
STM23C-3CN		1.5N•m		√		√			
STM23C-3CE			√	√		√			
STM23IP-2EN	IP	0.9N•m					√		√
STM23IP-2EE			√				√		√
STM23IP-3EN		1.5N•m					√		√
STM23IP-3EE			√				√		√
STM24SF-3AN	S	2.4N•m		√					
STM24SF-3RN					√				
STM24SF-3AE			√	√					
STM24SF-3RE			√		√				
STM24S-3EN							√		
STM24S-3EE			√				√		
STM24QF-3AN	Q	2.4N•m		√					
STM24QF-3RN					√			√	
STM24QF-3AE			√	√					
STM24QF-3RE			√		√			√	
STM24Q-3EN							√		
STM24Q-3EE			√				√		
STM24C-3CN	C	2.4N•m		√		√			
STM24C-3CE			√	√		√			
STM24IP-3EN	IP	2.4N•m					√		√
STM24IP-3EE			√				√		√

STM-S/Q/C/IP

The STM integrated steppers are offered with an optional 1000-line incremental encoder. On STM-S/Q/C/IP models this encoder is integrated into the housing of the motor, without increasing the overal size of the unit. The addition of this encoder provides the following enhanced functionality:

Stall Detection notifies the system as soon as the required torque is too great for the motor, resulting in a loss of synchronization between the rotor and stator, also known as stalling. As soon as the motor stalls the drive triggers its fault output. See Figure 1.

Stall Prevention automatically adjusts the excitation of the motor windings to maintain synchronization of the rotor and stator under all conditions. This means that motor position is maintained and corrected even when the required torque is too great for the motor. The stall prevention feature also performs position maintenance, which maintains the position of the motor shaft when at rest. See Figure 2.

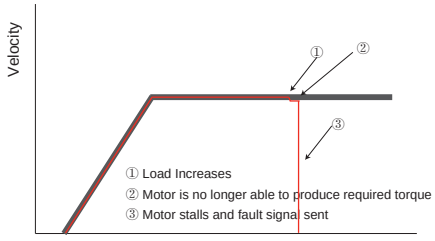


Figure 1: Diagram showing the Stall Detection process

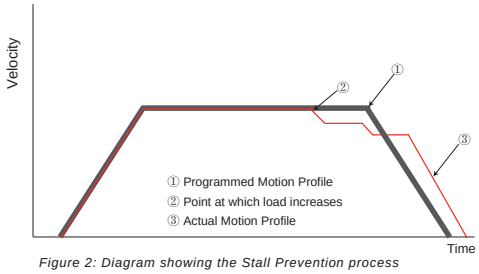


Figure 2: Diagram showing the Stall Prevention process

RC-880 Regeneration Clamp

Many motor and drives systems require a clamp circuit to limit increase in power supply voltage when the motor is decelerating under load. This is commonly referred to as "regeneration", and occurs when DC motors are driven by their load (backdriving). During regeneration the DC motor can produce enough voltage to actually exceed the input power supply voltage. MOONS' drives can deal with regeneration by channeling the increased motor voltage back to the source power supply. However, if the voltage is not clamp to a safe level the power supply and/or drive can be damaged or destroyed.

Max. Supply Voltage: 80V
Max. Output Current: 8A(rms)
Continuous Power: 50W

Distributors for Australia & New Zealand

MOTION TECHNOLOGIES PTY LIMITED

24/22-30 Northumberland Road
Caringbah NSW 2229 Australia
Phone: (02) 9524 4782

sales@motiontech.com.au
www.motiontech.com.au

CHINA / 1ST PRINT / 31ST / JULY / 2018
NO.32533010001O7 A1

http://www.moonsindustries.com
E-mail: ama-info@moons.com.cn

MOONS'
moving in better ways

- All the specifications, technical parameters of the products provided in this catalog are for reference only, subject to change without notice. For the latest details, please contact our sales department.