

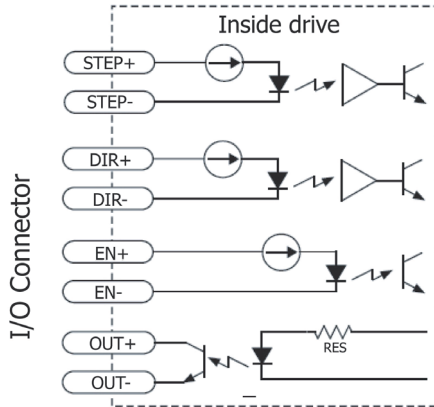
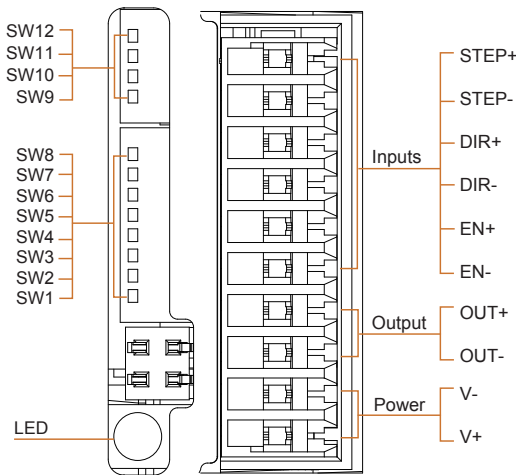
STM23R

Integrated Motor

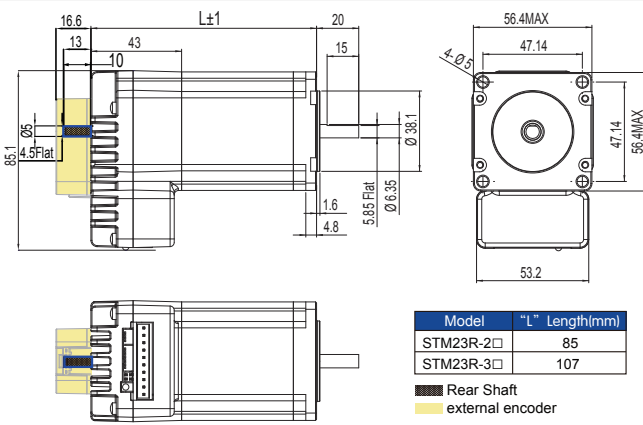
Description

The STM23R Integrated Motor is a cost effective, high performance, motor with the drive and controller built in. It is based on advanced digital current control technology, and features high torque, low noise, and low vibration. Operational parameters are switch selectable so software configuration is not required.

Connections - Inputs & Outputs

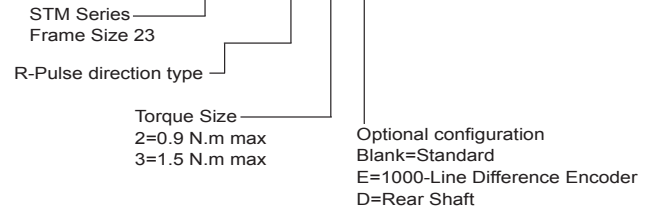


Mechanical Drawings(unit:mm)



Ordering Options

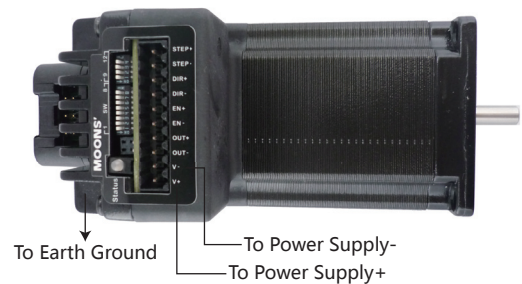
STM23R-2E



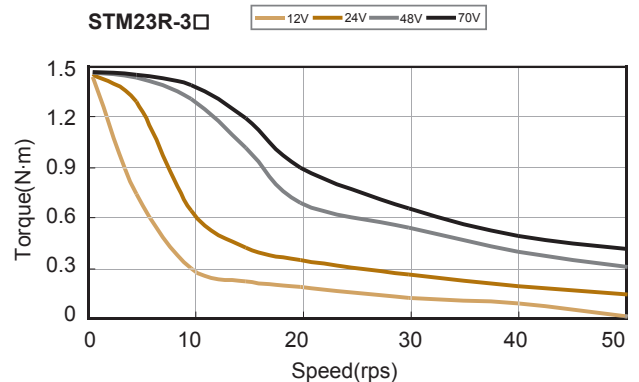
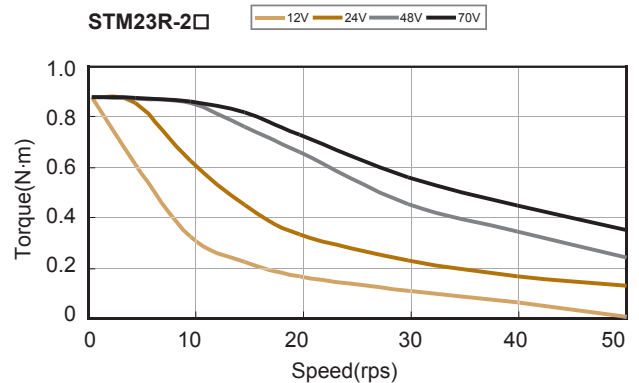
Optional Encoder

The optional external encoder adds extra functions:

- Stall Detection – detects motor stalling and triggers a fault
- Stall Prevention – prevents motor stalling and provides position maintenance when the motor is stopped



Torque Curves



Technical Specifications

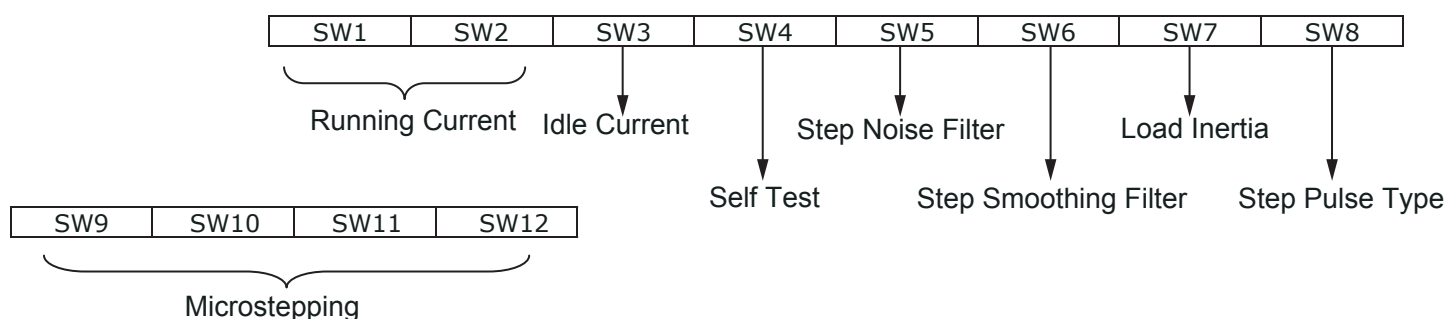
Power Amplifier

Amplifier Type	Dual H-Bridge, 4 Quadrant
Current Control	4 state PWM at 16 KHz
Power Supply	External 12 - 70 volt power supply required
Input Voltage Range	10 - 75 volts min/max (nominal 12 - 70 volts)
Protection	Over-voltage, over-current, under-voltage, over-temp, internal motor shorts (phase-to-phase, phase-to-ground)
Idle Current Reduction	Switch selectable for reduction to 50% or 90% of running current
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
Speed Range	Speeds up to 3000 rpm
Auto Setup	Measures motor parameters to configure current control and anti-resonance gain settings
Encoder Feedback	Optional 1000 line external encoder
Step Input STEP+/-	Inputs: optically isolated, 5 - 24 volts, min. pulse width 250 ns., max. pulse frequency 2 MHz; motor executes one step on the falling edge of the STEP input signal
Direction Input DIR+/-	Inputs: optically isolated, 5 - 24 volts, min. pulse width 50 μ s, max. pulse frequency 2 MHz; direction of rotation is controlled by the DIR input state
Enable Input EN+/-	Inputs: optically isolated, 5 - 24 volts, min. pulse width 100 μ s, max. pulse frequency 10 KHz; enables or disables the drive amplifier
Output OUT+/-	Open Collector, 30 volts, 100 mA max, max. pulse frequency 10 KHz; closes when the drive encounters an error, open when the drive is operating normally

Switch Selections



Running current - output current is set by **SW1** & **SW2** with a total of 4 settings: 50%, 70%, 90% and 100% of the running current.

Idle Current - can be set by **SW3** for 50% of running value to reduce motor and drive heating, or for 90% when a high holding torque is required.

Self test - set by **SW4** to check the physical operation of the motor.

Input Noise Filter - set by **SW5** this filters out unwanted electrical noise. The frequency of the filter can be set to 150KHz or 2MHz.

Step Smoothing Filter - also called microstep emulation, smooth motion can be obtained from coarse command signals by setting **SW6** to ON.

Anti-Resonance/Electronic Damping - setting **SW7** for the proper inertia load, low (OFF) or high (ON), can greatly improve the motor's performance.

Step Pulse Type - **SW8** allows the motor to be used with either CW/CCW pulse type command signals (ON), or STEP/DIR pulse type signals (OFF).

Microstep resolution - **SW9**, **SW10**, **SW11**, and **SW12** set the microstep resolution at one of 16 settings: 200, 400, 800, 1600, 3200, 6400, 12800, 25600, 1000, 2000, 4000, 5000, 8000, 10000, 20000, or 25000 steps/rev.