

X-NMS-E Series Datasheet



- NEMA 17 and 23 stepper motors with built-in controllers and encoders
- Up to 3000 rpm speed and 1.8 N-m torque
- Daisy-chains data and power with X-series products
- Home sensor and magnet included, optional away sensor
- Optional integrated power-off brake
- Custom versions available

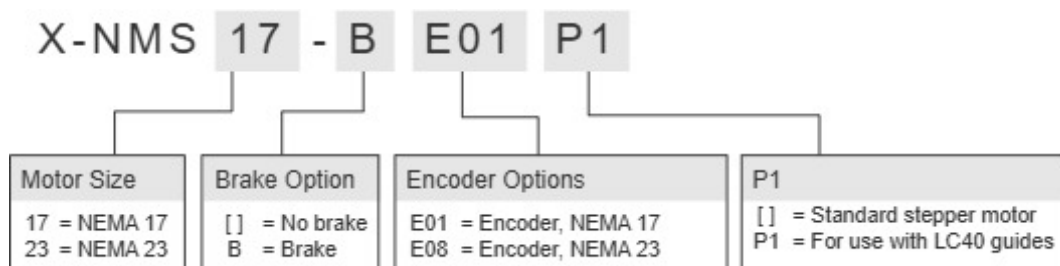
X-NMS-E Series Overview

These NEMA size 17 and 23 stepper motors have built-in controllers and encoders for stall detection and recovery. A detachable home sensor HS02 and magnet are included. An additional HS02L150 Hall effect sensor can be purchased to function as an away sensor. These motors are standalone units requiring only a standard 24 V or 48 V power supply.

An indexed knob provides convenient manual control for versatile operation even without a computer. The motors connect to the USB 2.0 or RS-232 port of any computer and can be daisy-chained with any other Zaber products. Convenient locking, 4-pin, M8 connectors on the unit allow for secure connection between units. An optional power-off brake is available on NEMA 23 sized steppers to secure the payload across power cycles. The chain also shares power, so multiple X-Series products can use a single power supply.

For more information visit: <https://www.zaber.com/products/stepper-motors/X-NMS-E>

X-NMS-E Series Part Numbering & Options



X-NMS-E Series Drawings

- [X-NMS17-E.png \(Drawing for the X-NMS17-E\)](#)
- [X-NMS23-E.png \(Drawing for the X-NMS23-E\)](#)
- [X-NMS23-BE.png \(Drawing for the X-NMS23-BE\)](#)

X-NMS-E Series Specifications

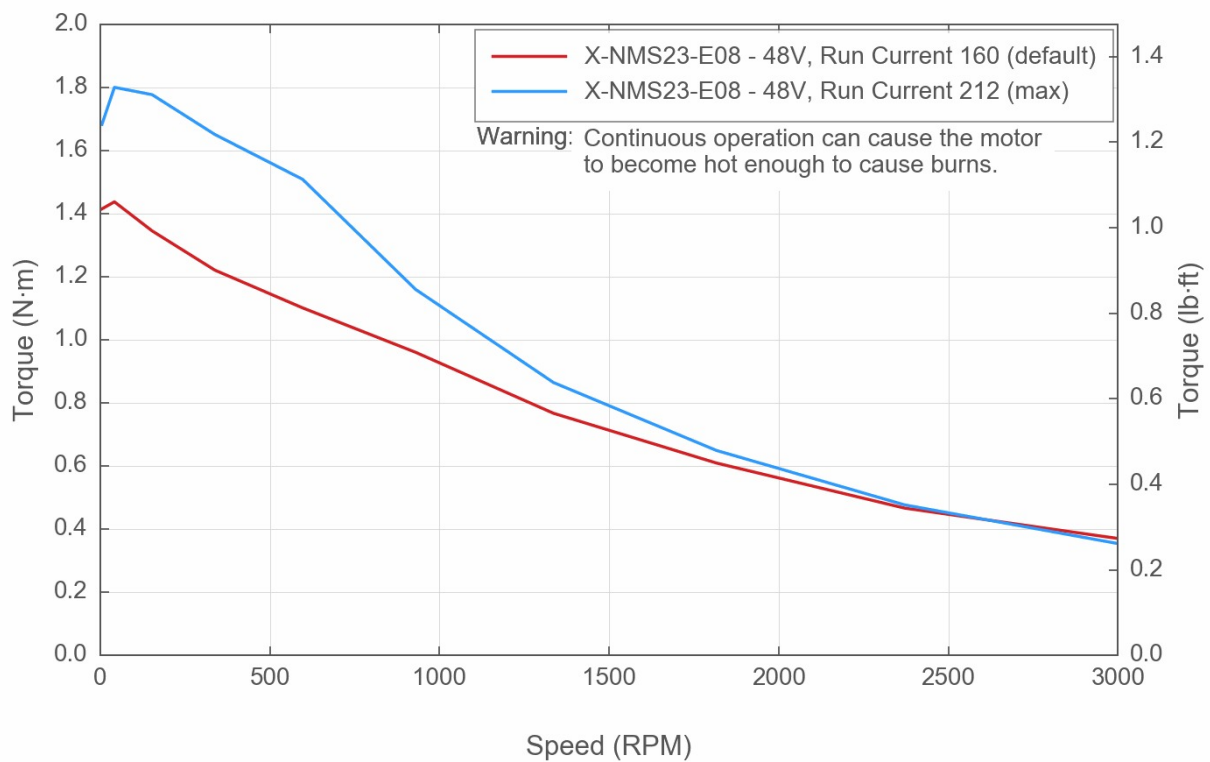
Microstep Size (Default Resolution)	0.028125° (490.866 μrad)
Built-in Controller	Yes
Accuracy (unidirectional)	0.25° (4.362500 mrad)
Repeatability	< 0.1° (< 1.745 mrad)
Maximum Speed	18000°/s (3000 rpm)
Minimum Speed	0.017172°/s (299.703 μrad/s)
Speed Resolution	0.017172°/s (299.703 μrad/s)
Encoder Type	Rotary quadrature encoder
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default), Zaber Binary
Data Cable Connection	Locking 4-pin M8
Power Supply	24-48 VDC
Power Plug	2-pin Screw Terminal
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Default Resolution	1/64 of a step
LED Indicators	Yes
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	No

Part Number	Encoder Resolution	Maximum Torque	Maximum Brake Torque	Maximum Current Draw
X-NMS17-E01	500 CPR (2000 states/rev)	58 N-cm (82.1 oz-in)		1900 mA
X-NMS23-E08	400 CPR (1600 states/rev)	180 N-cm (254.9 oz-in)		3500 mA
X-NMS23-E08P1	400 CPR (1600 states/rev)	180 N-cm (254.9 oz-in)		3500 mA
X-NMS23-BE08	400 CPR (1600 states/rev)	180 N-cm (254.9 oz-in)	150 N-cm (212.4 oz-in)	3500 mA
X-NMS23-BE08P1	400 CPR (1600 states/rev)	180 N-cm (254.9 oz-in)	150 N-cm (212.4 oz-in)	3500 mA

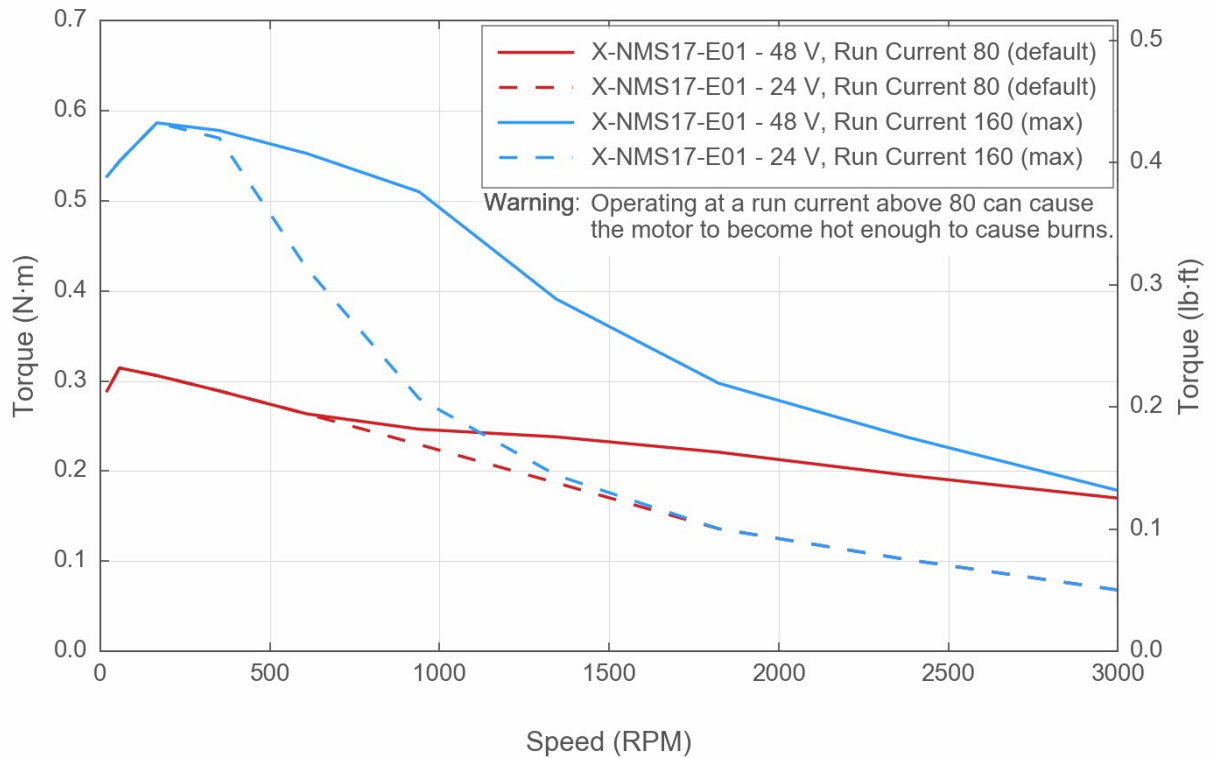
Part Number	Motor Rated Current	Motor Frame Size	Mounting Interface	Weight
X-NMS17-E01	2300 mA/phase	NEMA 17	M3 threaded holes	0.58 kg (1.279 lb)
X-NMS23-E08	3000 mA/phase	NEMA 23	4.5 mm thru holes	1.3 kg (2.866 lb)
X-NMS23-E08P1	3000 mA/phase	NEMA 23	4.5 mm thru holes	1.3 kg (2.866 lb)
X-NMS23-BE08	3000 mA/phase	NEMA 23	4.5 mm thru holes	1.926 kg (4.246 lb)
X-NMS23-BE08P1	3000 mA/phase	NEMA 23	4.5 mm thru holes	1.926 kg (4.246 lb)

X-NMS-E Series Charts

Torque Speed Performance



Torque Speed Performance



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