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#2 - 605 West Kent Ave.
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1-604-569-3780 *Direct*
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X-NA-E Series Datasheet



- 25 and 50 mm travel
- Up to 25 mm/s speed and up to 25 N thrust
- Hardened ball-tip (removable so you can use the built-in threaded tip or a flat tip)
- Designed to replace standard micrometer heads on manual translation stages
- Built-in, 250 CPR, motor encoder provides slip/stall detection and recovery
- Built-in controller; daisy-chains with other Zaber products

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X-NA-E Series Overview

Zaber's X-NA-E Series devices are computer-controlled, motorized linear actuators with high thrust and speed capabilities and a compact size. They are stand-alone units requiring only a standard 24 V or 48 V power supply. The built-in motor encoder allows closed-loop operation and slip/stall recovery features. An optional indexed knob provides convenient manual control for versatile operation even without a computer.

These actuators connect to the RS-232 port or USB port of any computer, and they can be daisy-chained with any other Zaber products. The daisy-chain also shares power, making it possible for multiple X-Series products to share a single power supply. Convenient locking, 4-pin, M8 connectors on the unit allow for secure connection between units. At only 20 mm high, these miniature actuators are excellent for applications where a small profile is required. Like all of Zaber's products, the X-NA-E Series is designed to be 'plug and play' and very easy to set up and operate.

Please see our TSB linear slides for more information on compatible slides.

[For more information visit: https://www.zaber.com/products/linear-actuators/X-NA-E](https://www.zaber.com/products/linear-actuators/X-NA-E)

X-NA-E Series Part Numbering & Options

X-NA 08 A 25 - _ E09

Motor Size	Lead Screw Options	Travel	Options	Encoder Options
08 — NEMA 08	**A** — Fine pitch	**25** — 25 mm **50** — 50 mm	**None** — Manual control **S** — No manual knob	**E09** — Motor Encoder, 250 CPR

X-NA-E Series Drawings

- [X-NA-E.png (Drawing for the X-NA-E)]
- [View all drawings and documents at zaber.com]

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X-NA-E Series Specifications

Overview

Specification	Value
Built-in Controller	Yes
Axes of Motion	1
LED Indicators	Yes

Positioning Performance

Specification	Value
Repeatability	<1 µm (<0.000039 ")
Backlash	<15 µm (<0.000591 ")
Microstep Size (Default Resolution)	0.047625 µm
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Peak Thrust	25 N (5.6 lb)

Speed

Specification	Value
Maximum Speed	25 mm/s (0.984 "/s)
Minimum Speed	0.000029 mm/s (0.000001 "/s)
Speed Resolution	0.000029 mm/s (0.000001 "/s)

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Encoder & Sensing

Specification	Value
Encoder Type	Rotary quadrature encoder (incremental)
Encoder Resolution	250 CPR (1 states/rev)
Limit or Home Sensing	Magnetic hall sensor

Motor

Specification	Value
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	240 mA/phase
Motor Winding Inductance	1.5 mH/phase

Power and Communication

Specification	Value
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
Maximum Current Draw	180 mA

Mechanical

Specification	Value
Mechanical Drive System	Precision lead screw
Mounting Interface	3/8-32 nut, 3/8" shank, or M3 screws

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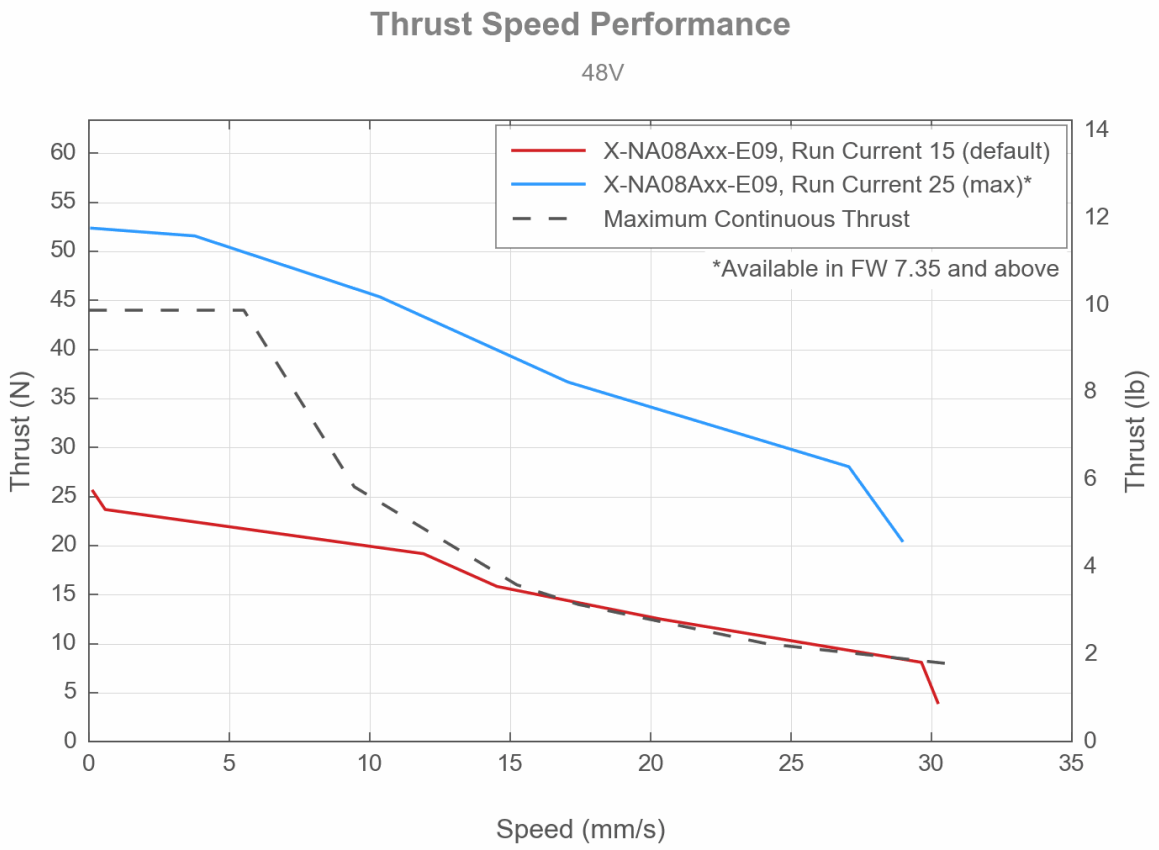
Environmental & Compliance

Specification	Value
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	No

Part Number	Travel Range	Manual Control	Weight	Accuracy (unidirectional)
X-NA08A25-E09	25.4 mm (1 ")	Yes	0.18 kg (0.397 lb)	40 µm (0.001575 ")
X-NA08A25-SE09	25.4 mm (1 ")	No	0.18 kg (0.397 lb)	40 µm (0.001575 ")
X-NA08A50-E09	50.8 mm (2 ")	Yes	0.2 kg (0.441 lb)	55 µm (0.002165 ")
X-NA08A50-SE09	50.8 mm (2 ")	No	0.2 kg (0.441 lb)	55 µm (0.002165 ")

X-NA-E Series Charts

X NA08Axx E09, Thrust Speed Performance



Contact

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X-NA Series Datasheet



- 25 and 50 mm travel
- Up to 25 mm/s speed and up to 25 N thrust
- Hardened ball-tip (removable so you can use the built-in threaded tip or a flat tip)
- Designed to replace standard micrometer heads on manual translation stages
- Built-in controller; daisy-chains with other Zaber products

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X-NA Series Overview

Zaber's X-NA Series devices are computer-controlled, motorized linear actuators with high thrust and speed capabilities and a compact size. They are stand-alone units requiring only a standard 24 V or 48 V power supply. An optional indexed knob provides convenient manual control for versatile operation even without a computer.

These actuators connect to the RS-232 port or USB port of any computer, and they can be daisy-chained with any other Zaber products. The daisy-chain also shares power, making it possible for multiple X-Series products to share a single power supply. Convenient locking, 4-pin, M8 connectors on the unit allow for secure connection between units. At only 20 mm high, these miniature actuators are excellent for applications where a small profile is required. Like all of Zaber's products, the X-NA Series is designed to be 'plug and play' and very easy to set up and operate.

Please see our TSB linear slides for more information on compatible slides.

For more information visit: https://www.zaber.com/products/linear-actuators/X-NA

X-NA Series Part Numbering & Options

X-NA 08 A 25 _

Motor Size	Lead Screw Options	Travel	Options
08 — NEMA 08	**A** — Fine pitch	**25** — 25 mm **50** — 50 mm	**None** — Manual control **-S** — No manual knob

X-NA Series Drawings

- X-NA.png (Drawing for the X-NA)
- View all drawings and documents at zaber.com

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X-NA Series Specifications

Overview

Specification	Value
Built-in Controller	Yes
Axes of Motion	1
LED Indicators	Yes

Positioning Performance

Specification	Value
Repeatability	<1 µm (<0.000039 ")
Backlash	<15 µm (<0.000591 ")
Microstep Size (Default Resolution)	0.047625 µm
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Peak Thrust	25 N (5.6 lb)

Speed

Specification	Value
Maximum Speed	25 mm/s (0.984 "/s)
Minimum Speed	0.000029 mm/s (0.000001 "/s)
Speed Resolution	0.000029 mm/s (0.000001 "/s)

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Encoder & Sensing

Specification	Value
Encoder Type	None
Limit or Home Sensing	Magnetic hall sensor

Motor

Specification	Value
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	240 mA/phase
Motor Winding Inductance	1.5 mH/phase

Power and Communication

Specification	Value
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
Maximum Current Draw	180 mA

Mechanical

Specification	Value
Mechanical Drive System	Precision lead screw
Mounting Interface	3/8-32 nut, 3/8" shank, or M3 screws

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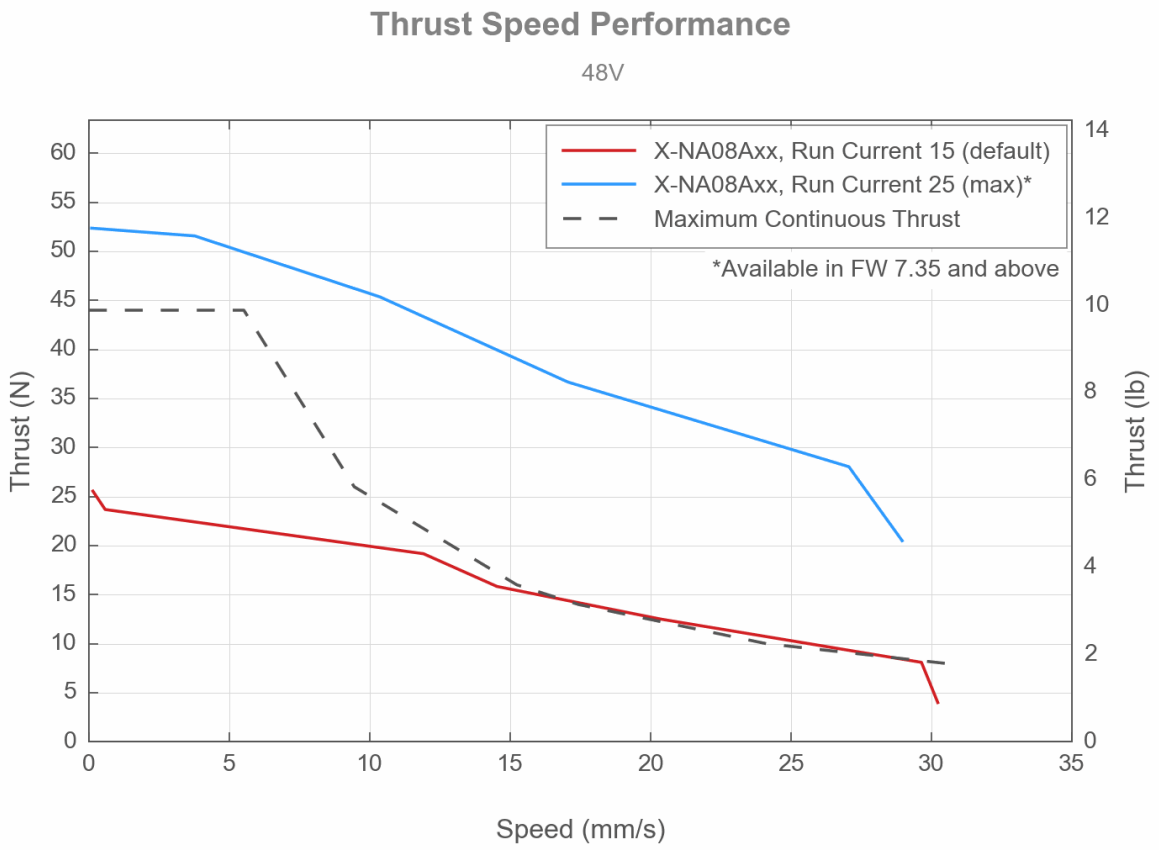
Environmental & Compliance

Specification	Value
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	No

Part Number	Travel Range	Manual Control	Weight	Accuracy (unidirectional)
X-NA08A25	25.4 mm (1 ")	Yes	0.14 kg (0.309 lb)	40 µm (0.001575 ")
X-NA08A25-S	25.4 mm (1 ")	No	0.14 kg (0.309 lb)	40 µm (0.001575 ")
X-NA08A50	50.8 mm (2 ")	Yes	0.16 kg (0.353 lb)	55 µm (0.002165 ")
X-NA08A50-S	50.8 mm (2 ")	No	0.16 kg (0.353 lb)	55 µm (0.002165 ")

X-NA Series Charts

X NA08Axx, Thrust Speed Performance



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NA Series Datasheet



- 16, 30, and 60 mm travel
- Threaded tip for multiple mounting options
- Available in several sizes for a variety of thrusts and speeds
- Designed for use with MCC Family controllers or any 2-phase stepper motor controller
- With AutoDetect, Zaber controllers automatically configure settings for the connected peripheral
- Custom versions available

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NA Series Overview

These electric linear actuators, based on standard NEMA stepper motors, come in a variety of sizes to fit many applications. Each electric linear actuator includes 30 cm of cable wired to a male DB15 connector for use with our MCC Family controllers. Set up is easy with AutoDetect. Once connected, the controller will automatically detect and configure the NA. These linear actuators have a built-in magnetic home sensor.

Please note: An AMB140 bracket must be purchased separately to mount the NA11 actuators to our TSB translation stages.

For more information visit: https://www.zaber.com/products/linear-actuators/NA

NA Series Part Numbering & Options

NA 08 A 16 - T4A

Motor Size	Lead Screw Options	Travel	Connector
08 — NEMA 08	**A** — Fine pitch	**16** — 16 mm	**T4A** — D-sub 15 inline connector with Auto Detect
11 — NEMA 11	**B** — Medium Pitch	**30** — 30 mm	
14 — NEMA 14	**C** — Coarse Pitch	**60** — 60 mm	
23 — NEMA 23			
34 — NEMA 34			

NA Series Drawings

- NA (Drawing for the NA)
- View all drawings and documents at zaber.com

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NA Series Specifications

Overview

Specification	Value
Built-in Controller	No
Recommended Controller	MCC (48 V) Recommended
AutoDetect	Yes
Axes of Motion	1

Positioning Performance

Specification	Value
Default Resolution	1/64 of a step

Encoder & Sensing

Specification	Value
Encoder Type	None
Limit or Home Sensing	Magnetic hall sensor

Motor

Specification	Value
Motor Temperature Rise	75 °C
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Connection	D-sub 15

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Mechanical

Specification	Value
Mechanical Drive System	Precision lead screw

Environmental & Compliance

Specification	Value
CE Compliant	Yes
Vacuum Compatible	No

Part Number	Travel Range	Weight	Accuracy (unidirectional)	Repeatability
NA08A16-T4A	16 mm (0.63 ")	0.07 kg (0.154 lb)	20 µm (0.000787 ")	<5 µm (<0.000197 ")
NA11B30-T4A	30 mm (1.181 ")	0.16 kg (0.353 lb)	25 µm (0.000984 ")	<5 µm (<0.000197 ")
NA14B60-T4A	60 mm (2.362 ")	0.23 kg (0.507 lb)	36 µm (0.001417 ")	<5 µm (<0.000197 ")
NA23C60-T4A	60 mm (2.362 ")	0.75 kg (1.653 lb)	36 µm (0.001417 ")	<5 µm (<0.000197 ")
NA34C60-T4A	60 mm (2.362 ")	2.64 kg (5.82 lb)	45 µm (0.001772 ")	<10 µm (<0.000394 ")

Part Number	Backlash	Microstep Size (Default Resolution)	Peak Thrust	Maximum Continuous Thrust
NA08A16-T4A	<15 µm (<0.000591 ")	0.047625 µm	44 N (9.9 lb)	19 N (4.3 lb)
NA11B30-T4A	<18 µm (<0.000709 ")	0.09921875 µm	85 N (19.1 lb)	58 N (13 lb)
NA14B60-T4A	<20 µm (<0.000787 ")	0.09525 µm	225 N (50.5 lb)	225 N (50.5 lb)
NA23C60-T4A	<30 µm (<0.001181 ")	0.1984375 µm	700 N (157 lb)	700 N (157 lb)

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NA34C60-T4A	<65 µm (<0.002559 ")	0.1984375 µm	1300 N (291.5 lb)	1300 N (291.5 lb)

Part Number	Maximum Speed	Minimum Speed	Speed Resolution	Linear Motion Per Motor Rev
NA08A16-T4A	30 mm/s (1.181 "/s)	0.000029 mm/s (0.000001 "/s)	0.000029 mm/s (0.000001 "/s)	0.6096 mm (0.024 ")
NA11B30-T4A	63 mm/s (2.48 "/s)	0.000061 mm/s (0.000002 "/s)	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
NA14B60-T4A	60 mm/s (2.362 "/s)	0.000058 mm/s (0.000002 "/s)	0.000058 mm/s (0.000002 "/s)	1.2192 mm (0.048 ")
NA23C60-T4A	80 mm/s (3.15 "/s)	0.000121 mm/s (0.000005 "/s)	0.000121 mm/s (0.000005 "/s)	2.54 mm (0.1 ")
NA34C60-T4A	55 mm/s (2.165 "/s)	0.000121 mm/s (0.000005 "/s)	0.000121 mm/s (0.000005 "/s)	2.54 mm (0.1 ")

Part Number	Motor Rated Current	Motor Winding Resistance	Motor Winding Inductance	Motor Rated Power
NA08A16-T4A	490 mA/phase	5.1 ohms/phase	1.5 mH/phase	2.45 watts
NA11B30-T4A	1000 mA/phase	2.1 ohms/phase	1.5 mH/phase	4.2 watts
NA14B60-T4A	570 mA/phase	8.8 ohms/phase	13 mH/phase	5.7 watts
NA23C60-T4A	1300 mA/phase	3.85 ohms/phase	10.5 mH/phase	13 watts
NA34C60-T4A	3120 mA/phase	1.6 ohms/phase	8.8 mH/phase	31.2 watts

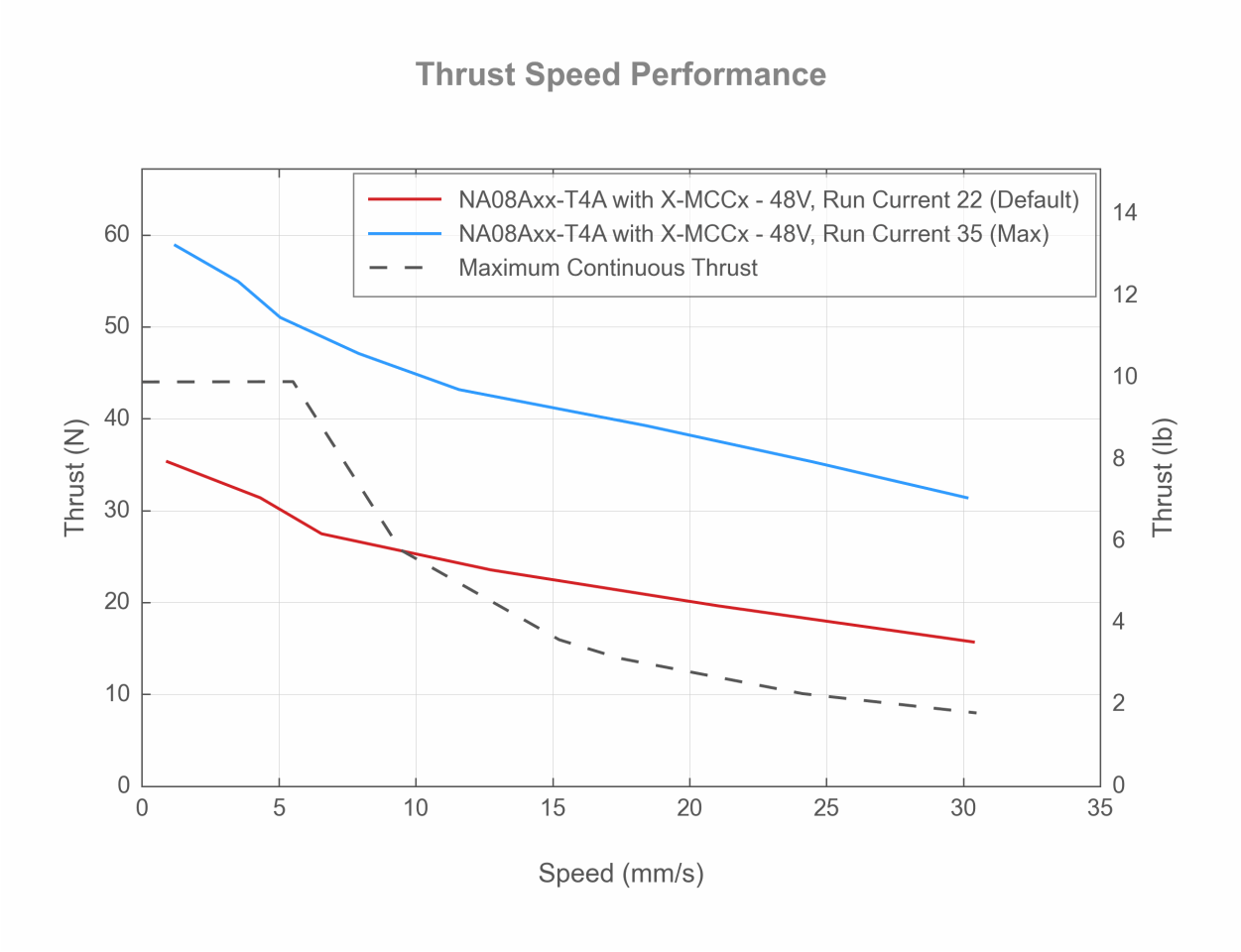
Part Number	Motor Frame Size	Mounting Interface
NA08A16-T4A	08	4 M2 tapped holes 15.4 mm apart or 9 mm dia smooth shank
NA11B30-T4A	11	4 M2.5 tapped holes 23 mm apart or 14 mm smooth shank
NA14B60-T4A	14	4 M3 tapped holes 26 mm apart or 15 mm smooth shank
NA23C60-T4A	23	5.2 mm holes
NA34C60-T4A	34	6.5 mm hole

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NA Series Charts

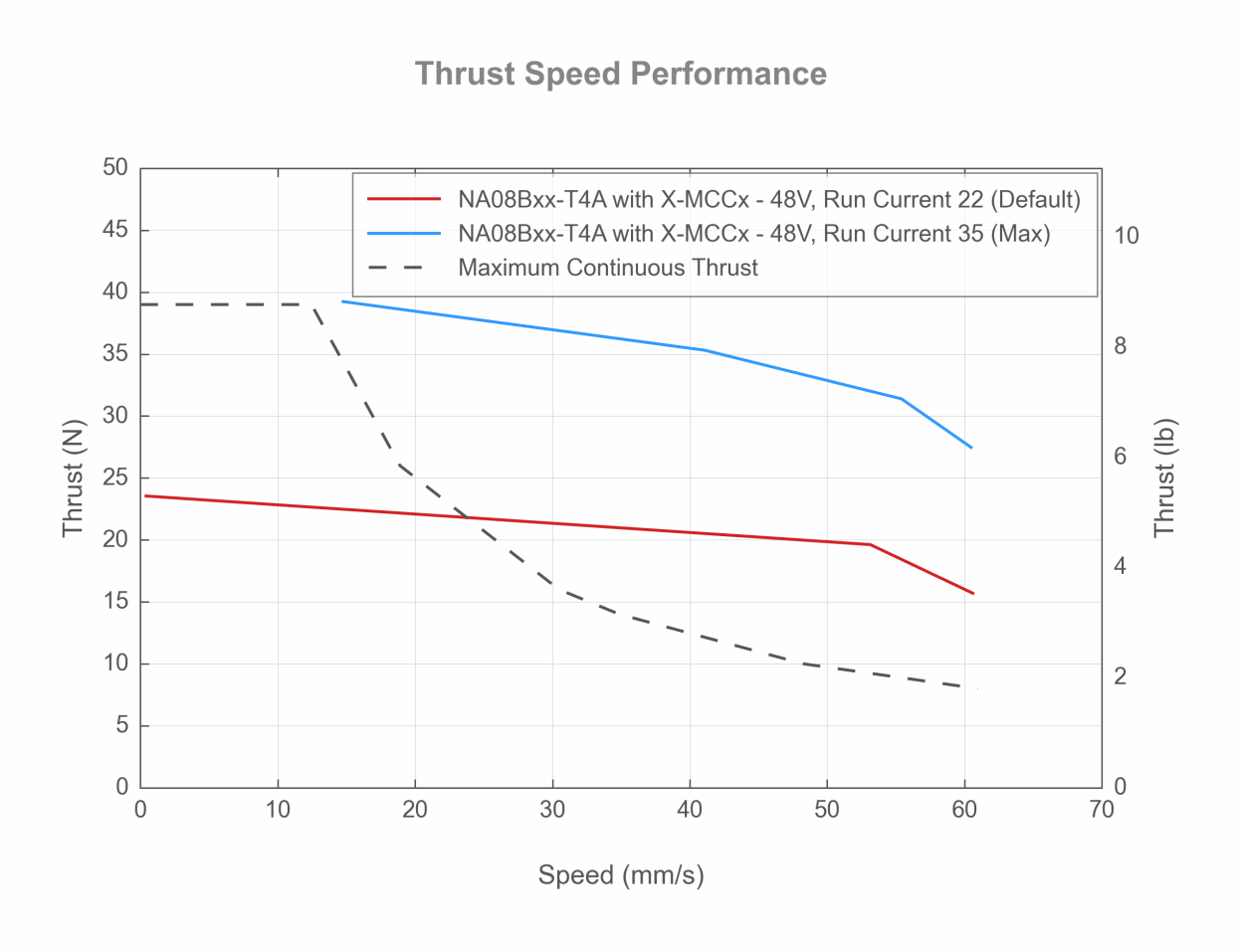
NA08Axx T4A Thrust Speed Performance



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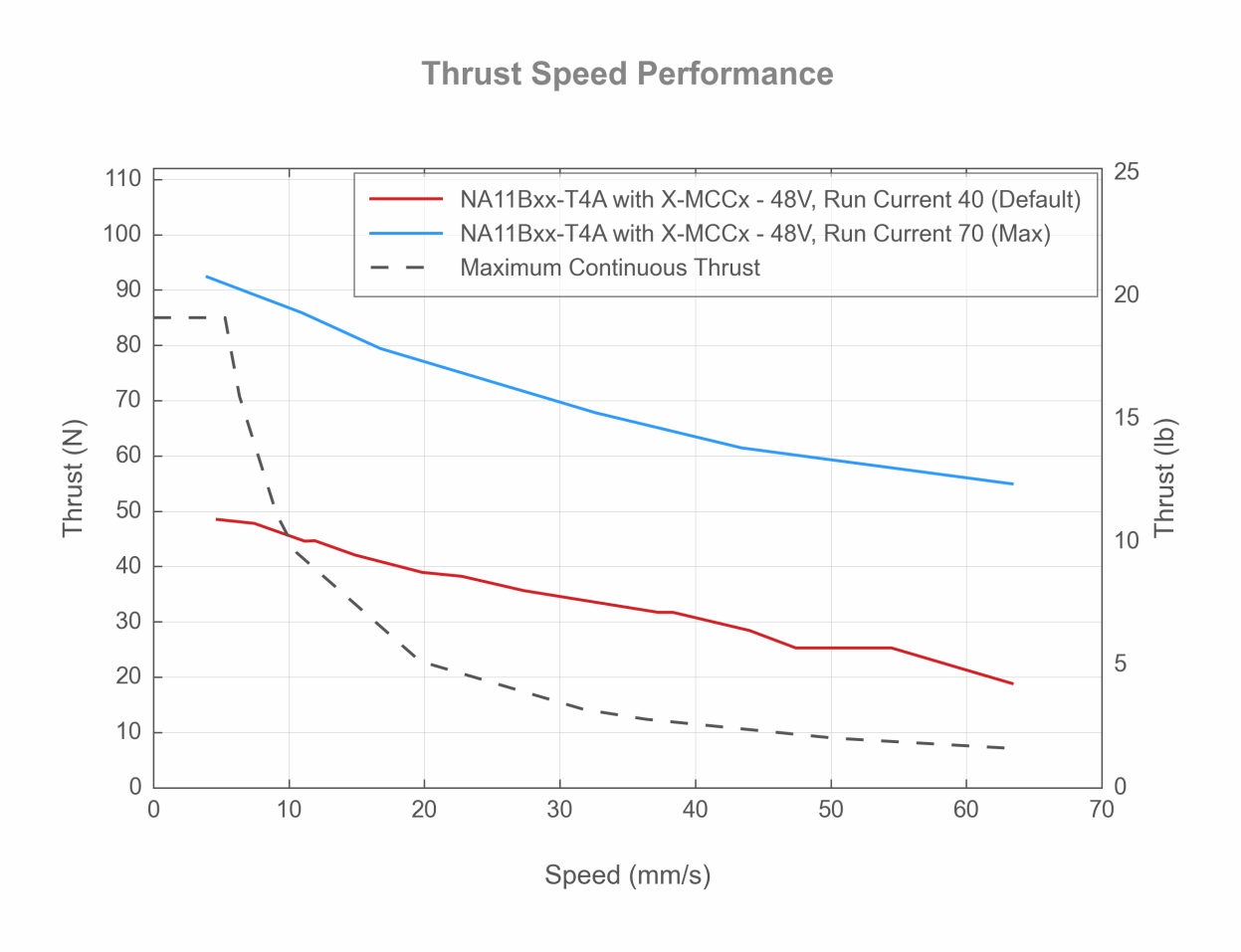
NA08Bxx T4A Thrust Speed Performance



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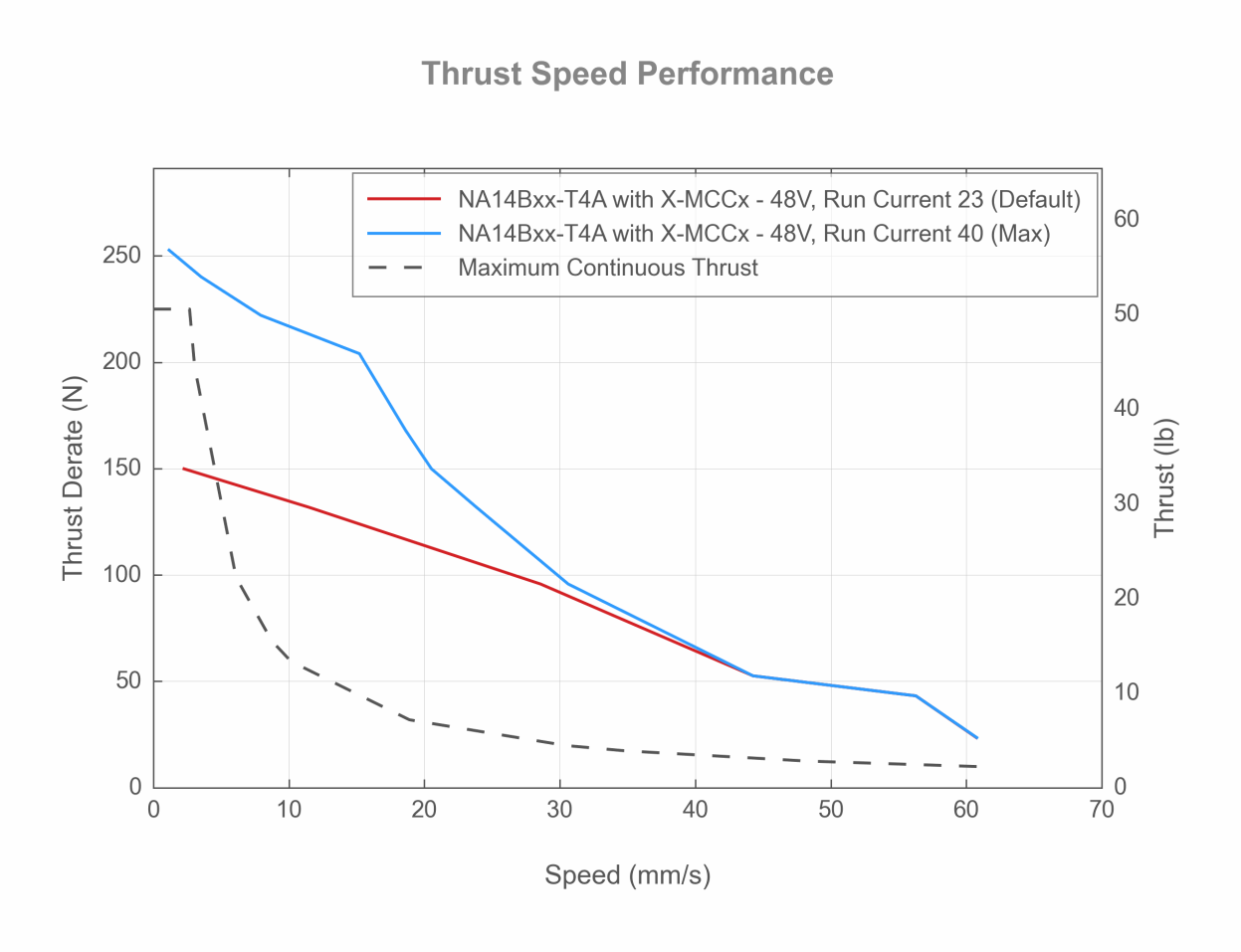
NA11Bxx T4A Thrust Speed Performance



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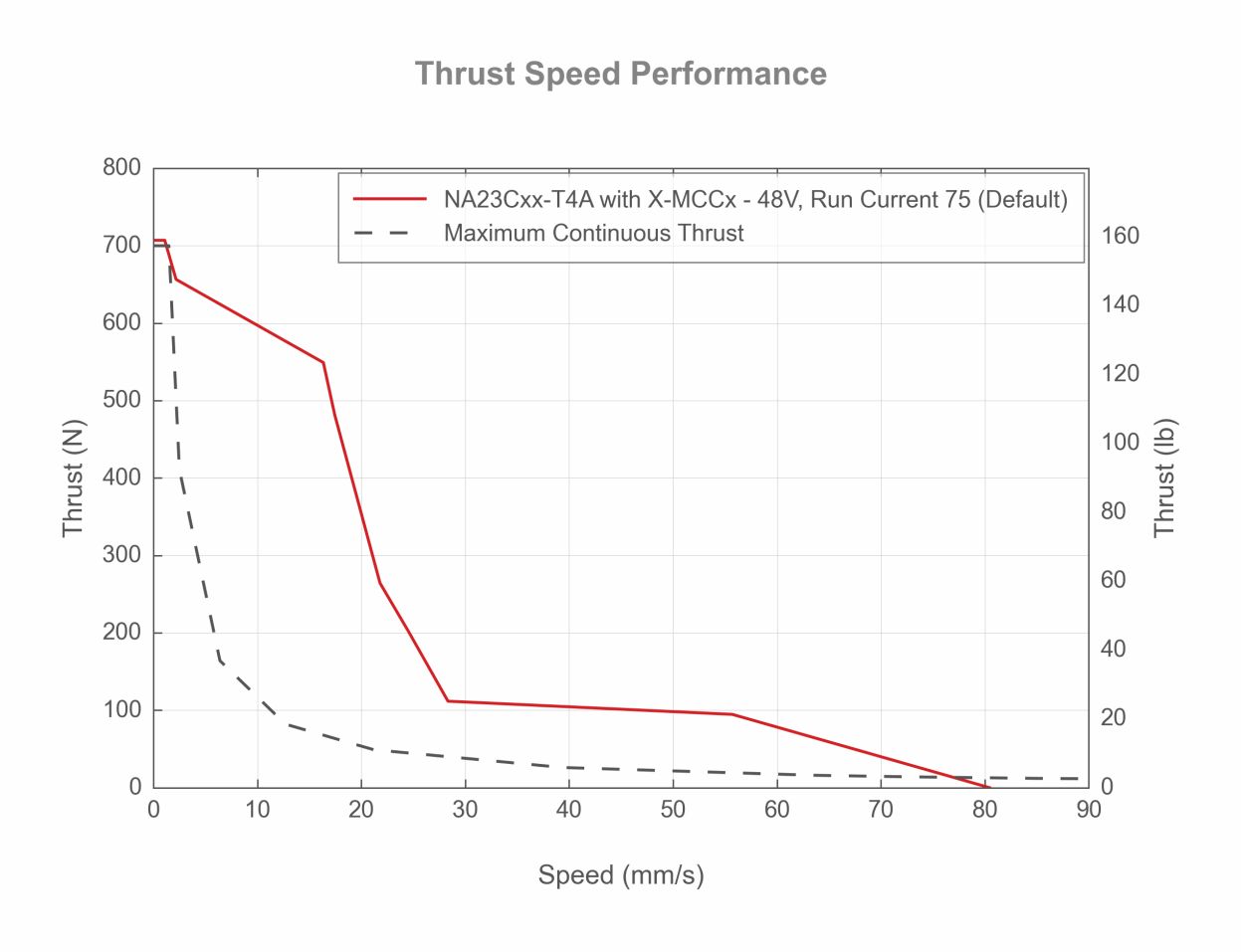
NA14Bxx T4A Thrust Speed Performance



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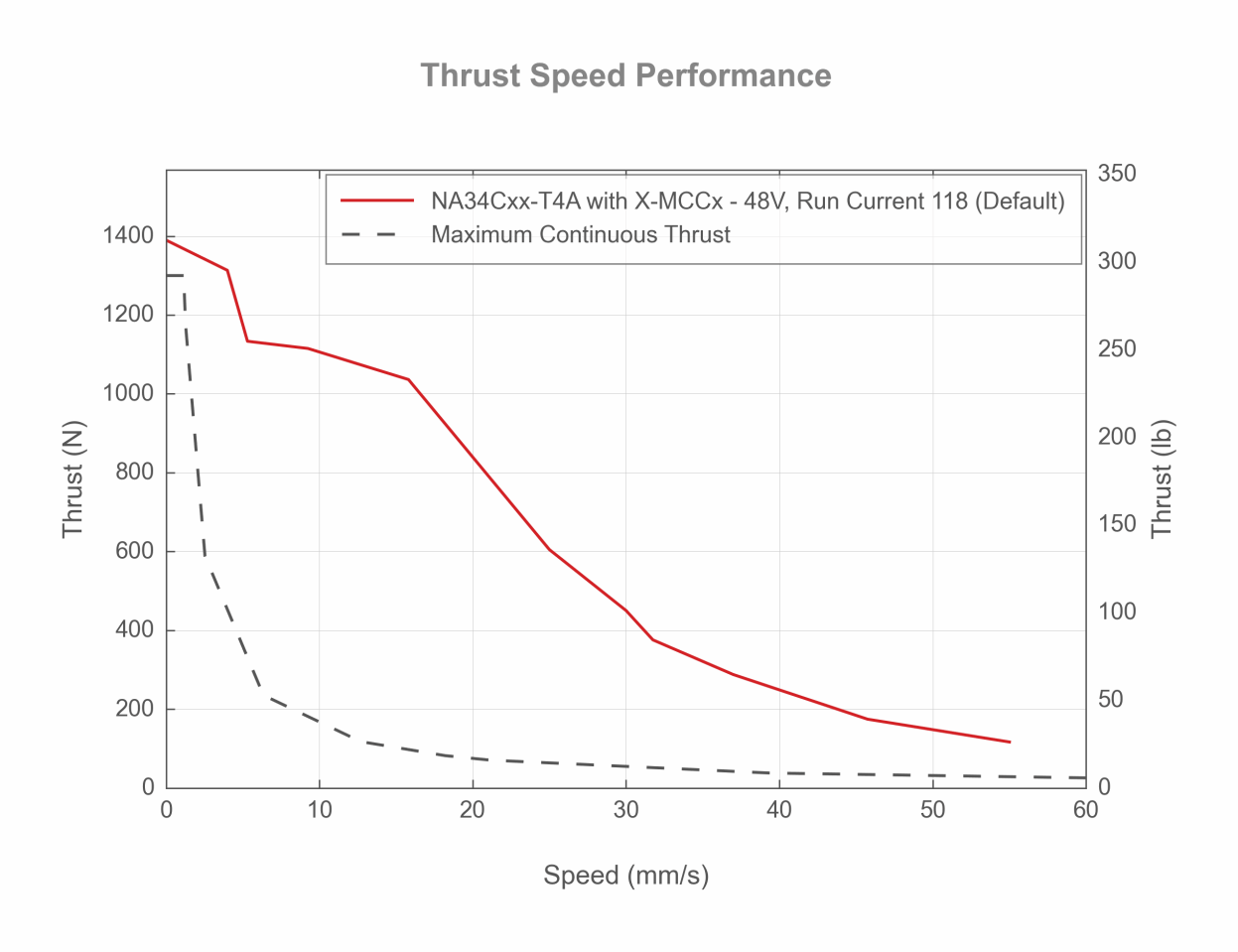
NA23Cxx T4A Thrust Speed Performance



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NA34Cxx T4A Thrust Speed Performance



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X-NA-SV2 Series Datasheet



- Vacuum compatible to 10-6 Torr
- 25 and 50 mm travel
- Up to 25 mm/s speed and up to 25 N thrust
- Our most compact, precise and robust actuator
- Hardened ball-tip (removable so you can use the built-in threaded tip or a flat tip)
- Built-in controller; daisy chains with other X-series devices inside vacuum chamber
- Designed to replace standard micrometer heads on manual translation stages

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X-NA-SV2 Series Overview

Zaber's X-NA-SV2 Series devices are high-vacuum compatible, computer-controlled, motorized miniature linear actuators with high thrust and speed capabilities, and a compact size. They are stand-alone units requiring only a standard 24 V or 48 V power supply.

These actuators connect to the RS-232 port or USB port of any computer, and they can be daisy-chained with any other Zaber products. The daisy-chain also shares power, making it possible for multiple X-Series products to share a single power supply.

At only 20 mm wide, these miniature actuators are excellent for applications where a small profile is required. The X-NA-SV2 is designed with vacuum compatible materials to minimize outgassing and allow for faster pump down times. Like all of Zaber's products, the X-NA-SV2 Series is designed to be 'plug and play' and very easy to set up and operate.

For more information about the basics of a vacuum system and considerations to keep in mind when gathering requirements for your application, read our technical article, "Motion Device Design Considerations for Vacuum Applications".

See our Vacuum Compatible TSB-V Linear Slides for more information on compatible slides.

For more information visit: https://www.zaber.com/products/vacuum-compatible-stages/X-NA-SV2

X-NA-SV2 Series Part Numbering & Options

X-NA 08 A 25 -SV2

Motor Size	Lead Screw Options	Travel	Options
08 — NEMA 08	**A** — Fine pitch	**25** — 25 mm **50** — 50 mm	**-SV2** — High-vacuum compatible: 10-6 Torr

X-NA-SV2 Series Drawings

- X-NA-SV.png (Drawing for the X-NA-SV)
- View all drawings and documents at zaber.com

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X-NA-SV2 Series Specifications

Overview

Specification	Value
Built-in Controller	Yes
Axes of Motion	1

Positioning Performance

Specification	Value
Repeatability	<1 µm (<0.000039 ")
Backlash	<15 µm (<0.000591 ")
Microstep Size (Default Resolution)	0.047625 µm
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Peak Thrust	25 N (5.6 lb)
Maximum Continuous Thrust	25 N (5.6 lb)

Speed

Specification	Value
Maximum Speed	25 mm/s (0.984 "/s)
Minimum Speed	0.000029 mm/s (0.000001 "/s)
Speed Resolution	0.000029 mm/s (0.000001 "/s)

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Encoder & Sensing

Specification	Value
Encoder Type	None
Limit or Home Sensing	Magnetic hall sensor

Motor

Specification	Value
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Winding Inductance	1.5 mH/phase

Power and Communication

Specification	Value
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default), Zaber Binary
Data Cable Connection	Teflon flying leads with 4-pin M8 M/F
Power Supply	24-48 VDC
Power Plug	None, use X-PIB
Maximum Current Draw	180 mA

Mechanical

Specification	Value
Mechanical Drive System	Precision lead screw
Mounting Interface	3/8-32 nut, 3/8" shank, or M3 screws

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Environmental & Compliance

Specification	Value
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	High vacuum (10-6 Torr)

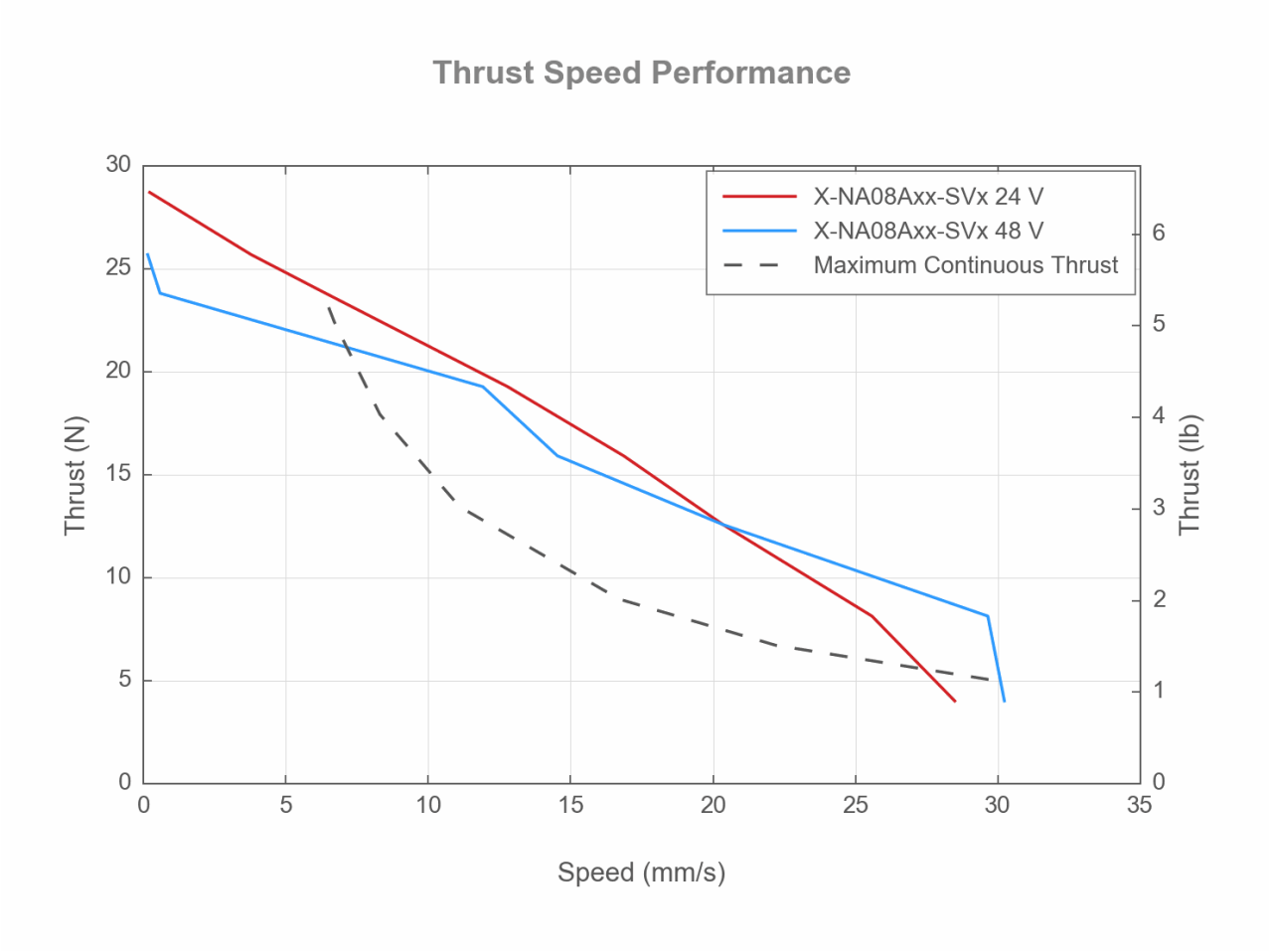
Part Number	Travel Range	Weight	Accuracy (unidirectional)
X-NA08A25-SV2	25.4 mm (1 ")	0.156 kg (0.344 lb)	40 µm (0.001575 ")
X-NA08A50-SV2	50.8 mm (2 ")	0.176 kg (0.388 lb)	55 µm (0.002165 ")

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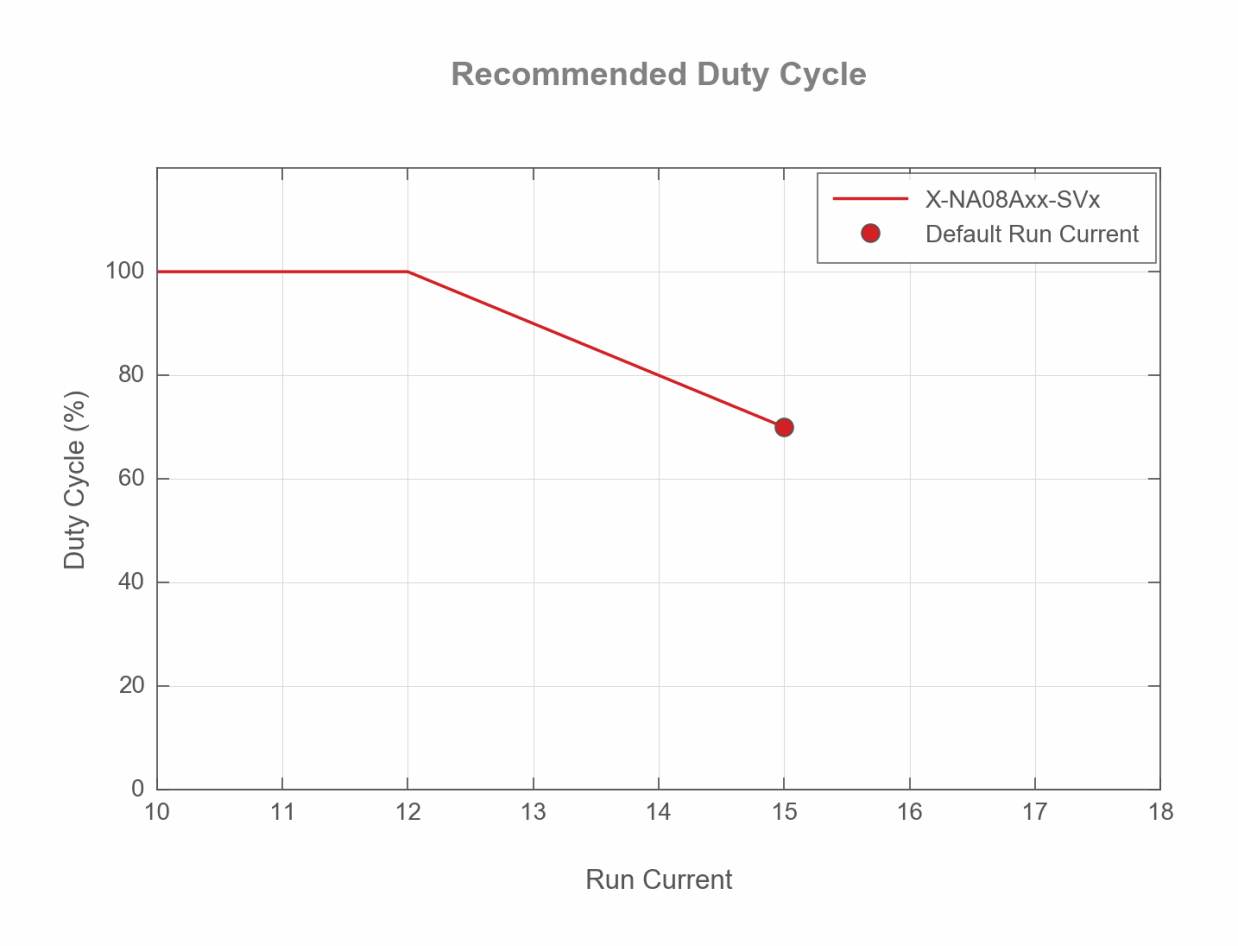
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X-NA-SV2 Series Charts

Thrust Speed Performance



X NA08xx SVx Duty Cycle Vs Run Current



Contact

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X-NA-SV1 Series Datasheet



- Vacuum compatible to 10-3 Torr
- 25 and 50 mm travel
- Up to 25 mm/s speed and up to 25 N thrust
- Hardened ball-tip (removable so you can use the built-in threaded tip or a flat tip)
- Our most compact, precise and robust actuator
- Designed to replace standard micrometer heads on manual translation stages
- Built-in controller; daisy chains with other X-series devices inside vacuum chamber

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X-NA-SV1 Series Overview

Zaber's X-NA-SV1 Series devices are low-vacuum compatible, computer-controlled, motorized miniature linear actuators with high thrust and speed capabilities, and a compact size. They are stand-alone units requiring only a standard 24 V or 48 V power supply.

These actuators connect to the RS-232 port or USB port of any computer, and they can be daisy-chained with any other Zaber products. The daisy-chain also shares power, making it possible for multiple X-Series products to share a single power supply.

At only 20 mm wide, these miniature actuators are excellent for applications where a small profile is required. The X-NA-SV1 is designed with vacuum compatible materials to minimize outgassing and allow for faster pump down times. Like all of Zaber's products, the X-NA-SV1 Series is designed to be 'plug and play' and very easy to set up and operate.

For more information about the basics of a vacuum system and considerations to keep in mind when gathering requirements for your application, read our technical article, "Motion Device Design Considerations for Vacuum Applications".

See our Vacuum Compatible TSB-V Linear Slides for more information on compatible slides.

For more information visit: https://www.zaber.com/products/vacuum-compatible-stages/X-NA-SV1

X-NA-SV1 Series Part Numbering & Options

X-NA 08 A 25 -SV1

Motor Size	Lead Screw Options	Travel	Options
08 — NEMA 08	**A** — Fine pitch	**25** — 25 mm **50** — 50 mm	**-SV1** — Low-vacuum compatible: 10-3 Torr

X-NA-SV1 Series Drawings

- X-NA-SV.png (Drawing for the X-NA-SV)
- View all drawings and documents at zaber.com

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X-NA-SV1 Series Specifications

Overview

Specification	Value
Built-in Controller	Yes
Axes of Motion	1

Positioning Performance

Specification	Value
Repeatability	<1 µm (<0.000039 ")
Backlash	<15 µm (<0.000591 ")
Microstep Size (Default Resolution)	0.047625 µm
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Peak Thrust	25 N (5.6 lb)
Maximum Continuous Thrust	25 N (5.6 lb)

Speed

Specification	Value
Maximum Speed	25 mm/s (0.984 "/s)
Minimum Speed	0.000029 mm/s (0.000001 "/s)
Speed Resolution	0.000029 mm/s (0.000001 "/s)

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Encoder & Sensing

Specification	Value
Encoder Type	None
Limit or Home Sensing	Magnetic hall sensor

Motor

Specification	Value
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Winding Inductance	1.5 mH/phase

Power and Communication

Specification	Value
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default), Zaber Binary
Data Cable Connection	Teflon flying leads with 4-pin M8 M/F
Power Supply	24-48 VDC
Power Plug	None, use X-PIB
Maximum Current Draw	180 mA

Mechanical

Specification	Value
Mechanical Drive System	Precision lead screw
Mounting Interface	3/8-32 nut, 3/8" shank, or M3 screws

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Environmental & Compliance

Specification	Value
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	Low vacuum (10-3 Torr)

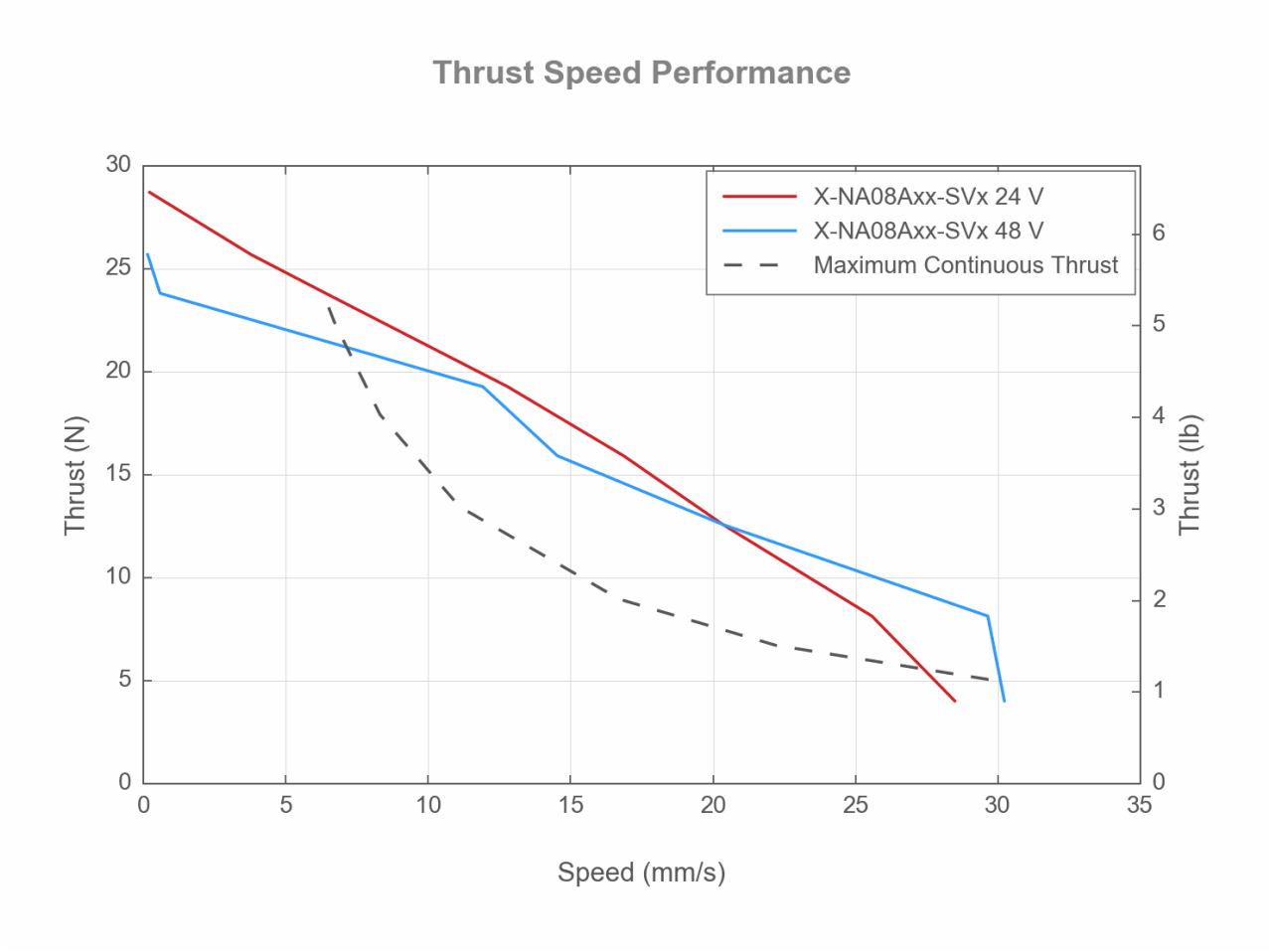
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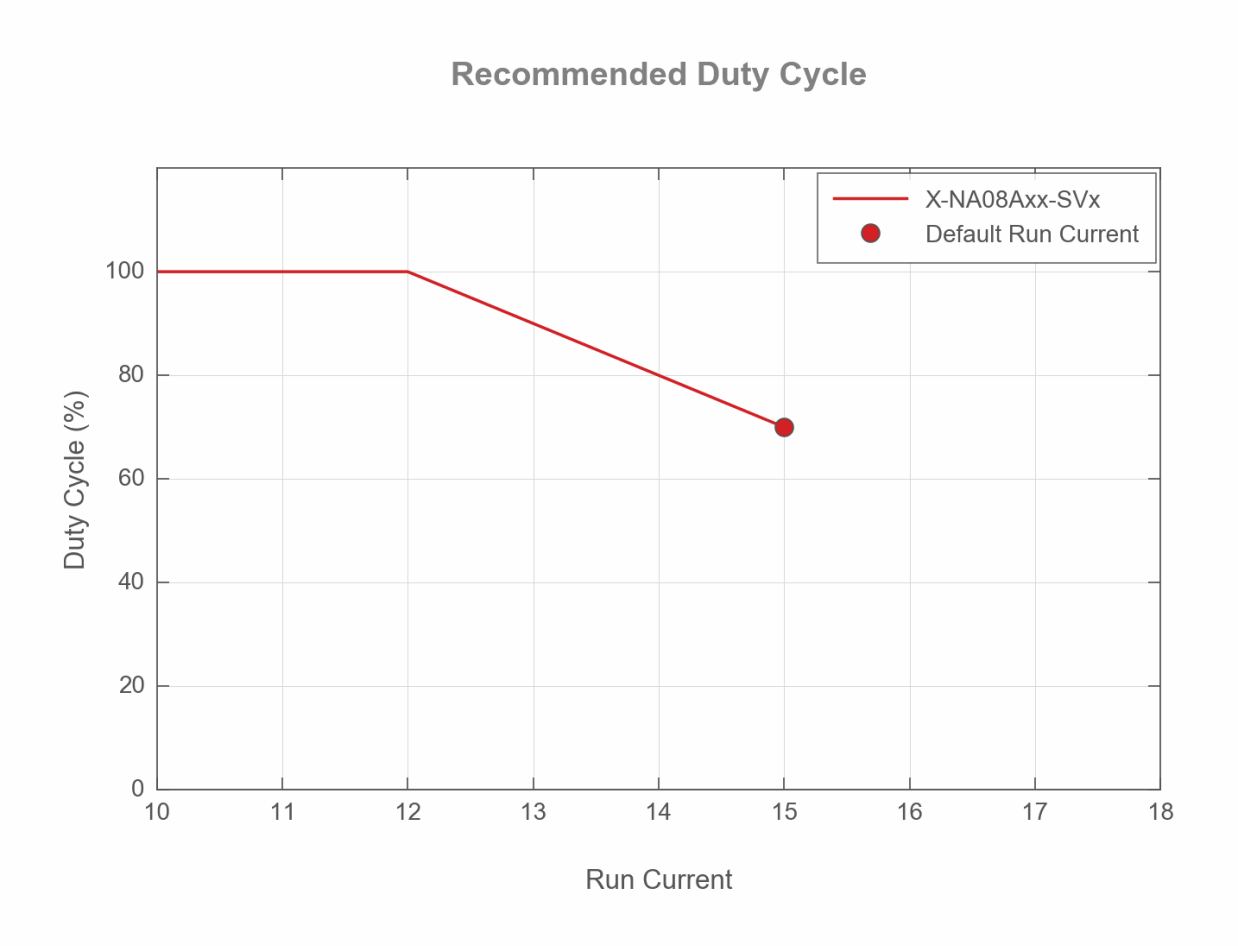
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X-NA-SV1 Series Charts

Thrust Speed Performance



X NA08xx SVx Duty Cycle Vs Run Current



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