X-DMA10A-AE55ZJ2T17Q Datasheet

- 10 nm step size and sub-15 ms move and settle time maximizes your imaging throughput and is comparable to Piezo stages at !S t
- Passive, user adjustable magnetic counterbalance for payloads up to 1 kg
- High repeatability (50 nm), with 10 nm minimum incremental move
- Direct position measurement from 1 nm resolution linear encoder
- Non-contact direct-drive motor for high precision, high dynamic performance & reliability
- Built-in controller; daisy-chains with other Zaber products
- Digital IO, analog input, and optional encoder output for interfacing with external systems

X-DMA-AEZ Series Overview

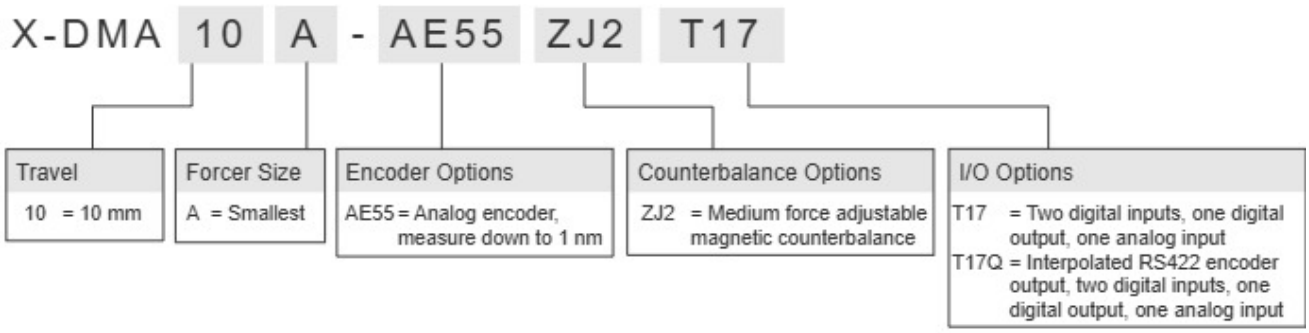
Zaber's X-DMA-AEZ Series devices are computer-controlled, direct-drive linear stages delivering high speed, precision, and reliability of the X-DMA-AE stages with an integrated magnetic counterbalance specifically designed for vertical applications. A high resolution linear encoder results in repeatability less than 50 nm and consistent movement steps down to 10 nm. Low-friction high-rigidity crossed roller bearings allow for fast step and settle times and anti-creep bearing cages eliminate cage creep during vertical or high acceleration operation. Both the drive and encoder are non-contact, and have no moving cables, resulting in an extremely robust system.

A passive frictionless magnetic counterbalance integrated directly into the stage compensates for payloads up to 1 kg, preventing unwanted motion during power loss. The counterbalance’s force can be finely adjusted in seconds with a single screw.

X-DMA-AEZ are stand-alone units requiring only a standard 24 V or 48 V power supply. They connect to the RS-232 port or USB port of any computer, and 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. Like all of Zaber's products, the X-DMA-AEZ Series is designed to be 'plug and play' and very easy to set up and operate. X-DMA-AEZ devices also include two digital inputs, a digital output, and an analog input for interfacing with external systems. An event-driven trigger system allows devices to be programmed for stand-alone operation based on I/O, time, or movement stimuli.

For more information visit: https://www.zaber.com/products/vertical-stages/X-DMA-AEZ

X-DMA-AEZ Series Part Numbering & Options



X-DMA10A-AE55ZJ2T17Q Drawings

• X-DMA-AEZ.pdf (Drawing for the X-DMA-AEZ)

X-DMA10A-AE55ZJ2T17Q Specifications

Built-in Controller	
Travel Range	10 mm (0.394")
Accuracy (unidirectional)	8 µm (0.000315")
Repeatability	< 0.05 µm (< 0.000002")
Minimum Incremental Move	10 nm
Minimum Speed	0.61 nm/s
Speed Resolution	0.61 nm/s
Encoder Type	Linear analog encoder
Encoder Count Size	1 nm
Peak Thrust	15 N (3.4 lb)
Maximum Continuous Thrust	5 N (1.1 lb)
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default)
Data Cable Connection	Locking 4-pin M8
Counterbalance Type	Adjustable Magnetic
Counterbalance Payload Range	2.5-10 N (0.6-2.2 lb)
Power Supply	48 VDC
Power Plug	2-pin screw terminal
Motor Type	Moving Magnet Voice Coil
Force Constant	2.23 N/A (0.5 lbs/A)
Guide Type	Anti-Creep Crossed-Roller Bearing
Limit or Home Sensing	Optical Index Mark
Manual Control	No
Axes of Motion	1
LED Indicators	Yes
Mounting Interface	M3 and M6 threaded holes
Moving Mass	0.18 kg (0.396 lbs)
Digital Input	2

Built-in Controller	
Digital Output	1
Analog Input	1
Encoder Output Type	Interpolated relative quadrature signal with differential RS422 levels
Operating Temperature Range	0-50 °C
Vacuum Compatible	No
Typical Move and Settle Time (100 nm move, < 15 nm, 250 g load)	< 15 ms
Typical Move and Settle Time (250 nm move, < 15 nm, 250 g load)	< 15 ms
Weight	0.53 kg (1.168 lb)

Contact

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