

Precision Linear Positioner

500 mm Travel Range with High Guiding Accuracy



M-417

- High number of cycles and velocity to 100 mm/s
- Low crosstalk with $\pm 100 \mu\text{rad}$ over the entire travel range
- Efficient ActiveDrive DC servomotor
- Direction-sensing reference switch

Precision-class linear drive

High travel accuracy and load capacity thanks to recirculating ball bearing guides. Precision ball screw with 2 mm pitch. Stress-relieved aluminum base for high stability

Drive types and position measurement

ActiveDrive DC motor for high velocity: Control via pulse-width-modulated (PWM) signals, the operating voltage is achieved via an amplifier integrated in the motor housing. Noncontact limit switches. Noncontact reference switch with direction sensing in the middle of the travel range. Integrated rotary encoder on the motor shaft

Application fields

Precision positioning in industry and research. High duty cycles.

Motion	Unit	Tolerance	M-417.2PD
Active axes			X
Travel range in X	mm		500
Maximum velocity in X, unloaded	mm/s		100
Pitch (Rotational crosstalk in θ_Y with motion in X)	μrad	Typ.	± 100
Yaw (Rotational crosstalk in θ_Z with motion in X)	μrad	Typ.	± 100

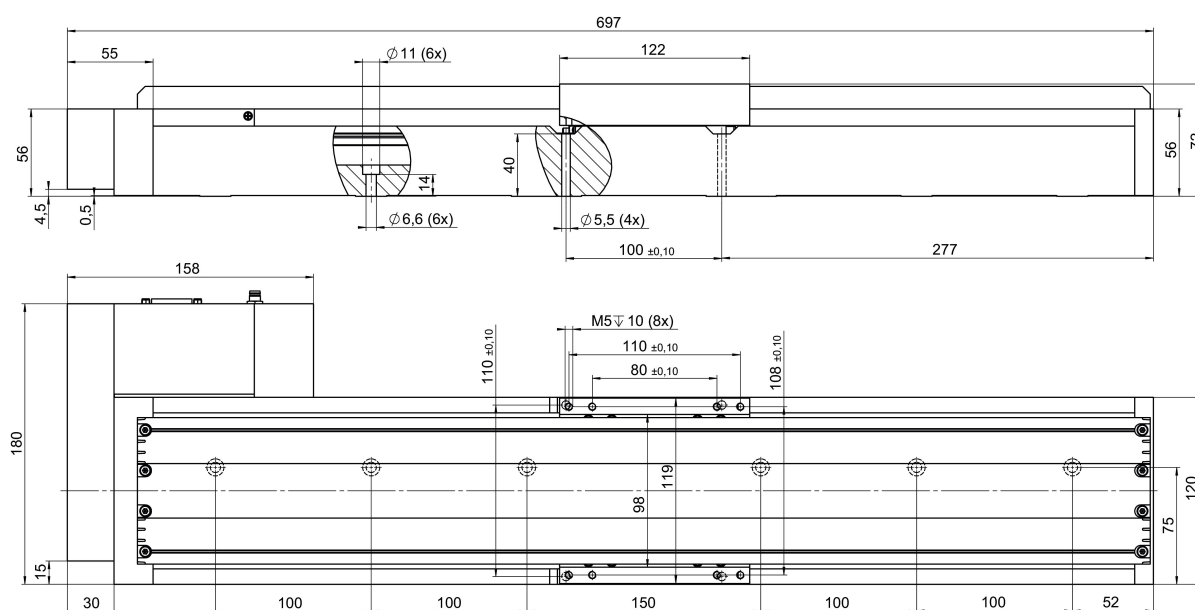
Positioning	Unit	Tolerance	M-417.2PD
Minimum incremental motion in X	μm	Typ.	0.5
Unidirectional repeatability in X	μm	Typ.	± 0.25
Backlash in X	μm	Typ.	2
Reference switch			Hall effect
Limit switches			Hall effect
Integrated sensor			Incremental rotary encoder
Sensor resolution	Cts./rev.		4000

Drive Properties	Unit	Tolerance	M-417.2PD
Drive type			DC motor with ActiveDrive
Operating voltage	V		24
Drive force in positive direction of motion in X	N	Typ.	200
Drive force in negative direction of motion in X	N	Typ.	200

Mechanical Properties	Unit	Tolerance	M-417.2PD
Permissible push force in Y	N	Max.	200
Permissible push force in Z	N	Max.	500
Drive screw type			Ball screw
Drive screw pitch	mm		2
Guide			Recirculating ball bearing guide
Overall mass	g		10500
Material			Aluminum, steel

Miscellaneous	Unit		M-417.2PD
Operating temperature range	°C		-20 to 65
Connector			D-sub 15-pin (m)
Recommended controllers / drivers			C-863, C-884

Drawings / Images



M-417.2PD, dimensions in mm. Note that a comma is used in the drawing instead of a decimal point.

Order Information

M-417.2PD

Precision linear positioner; DC motor with ActiveDrive; 500 mm travel range; 500 N load capacity; 100 mm/s maximum velocity; ball screw; incremental rotary encoder, 4000 counts/rev. sensor resolution