

High-Precision Linear Stage

Compact Positioner with Direct Positioning Measuring



M-605

- 25 mm and 50 mm travel ranges
- Integrated linear encoder for highest accuracy up to 0.2 μm
- Max. Velocity 30 mm/s
- High load capacity up to 30 kg
- Noncontact limit and reference switches
- MTBF >20,000 h

Linear stage with direct position measuring

The M-605 high-precision linear stage is driven by an ActiveDrive DC motor in conjunction with a zero-play ball screw. A stress-relieved aluminum base ensures high stability and flexible bellows protect the mechanics against dirt and dust. The connection grid allows XY and XYZ combinations.

Motion	Unit	Tolerance	M-605.1DD	M-605.2DD
Active axes			X	X
Travel range in X	mm		25	50
Maximum velocity in X, unloaded	mm/s		30	30
Pitch (Rotational crosstalk in θ_Y with motion in X)	μrad	Typ.	± 30	± 40
Yaw (Rotational crosstalk in θ_Z with motion in X)	μrad	Typ.	± 30	± 40

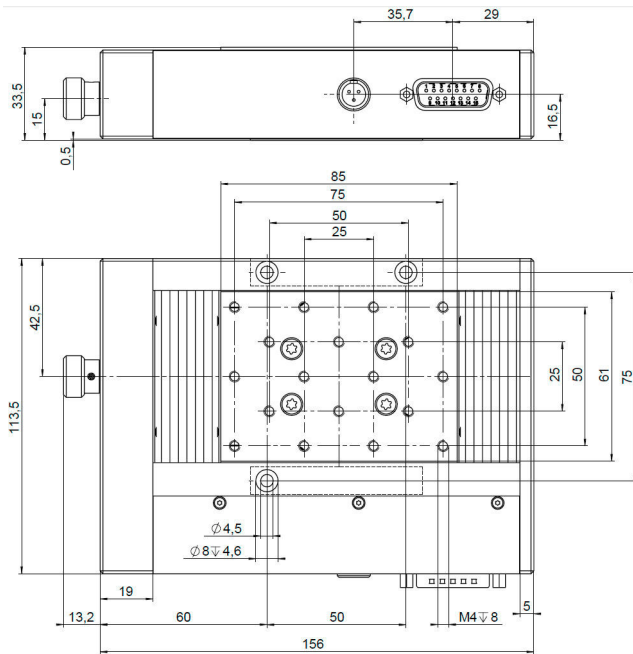
Positioning	Unit	Tolerance	M-605.1DD	M-605.2DD
Integrated sensor			Incremental linear encoder	Incremental linear encoder
Unidirectional repeatability in X	μm	Typ.	0.2	0.2
Bidirectional repeatability in X	μm	Typ.	± 1.5	± 1.5
Positioning accuracy in X, uncalibrated	μm	Typ.	± 1	± 1
Minimum incremental motion in X	μm	Typ.	0.3	0.3
Sensor signal			A/B quadrature, RS-422	A/B quadrature, RS-422
Sensor resolution	nm		100	100
Reference switch			Hall effect	Hall effect
Reference switch repeatability	μm		1	1
Limit switches			Hall effect	Hall effect

Drive Properties	Unit	Tolerance	M-605.1DD	M-605.2DD
Drive type			DC motor with ActiveDrive	DC motor with ActiveDrive
Nominal voltage	V		24	24
Drive force in negative direction of motion in X	N	Typ.	20	20
Drive force in positive direction of motion in X	N	Typ.	20	20

Mechanical Properties	Unit	Tolerance	M-605.1DD	M-605.2DD
Guide			Recirculating ball bearing guide	Recirculating ball bearing guide
Drive screw type			Ball screw	Ball screw
Drive screw pitch	mm		1	1
Moved mass in X, unloaded	g			
Permissible push force in Y	N	Max.	100	100
Permissible push force in Z	N	Max.	300	300
Overall mass	g		1500	1800
Material			Anodized aluminum	Anodized aluminum

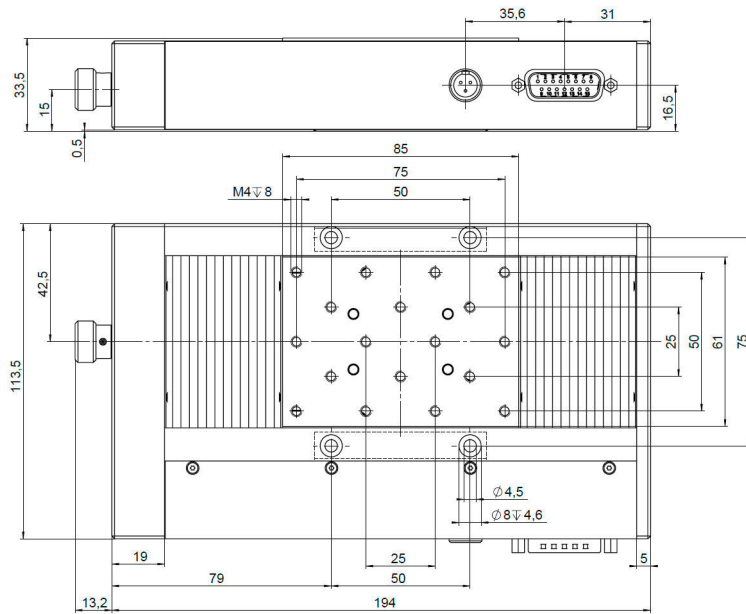
Miscellaneous	Unit		M-605.1DD	M-605.2DD
Connector			D-sub 15-pin (m)	D-sub 15-pin (m)
Recommended controllers / drivers			C-863 (single axis) C-884 (up to 6 axes)	C-863 (single axis) C-884 (up to 6 axes)
Operating temperature range	°C		-20 to 65	-20 to 65

Drawings / Images



M-605.1DD, dimensions in mm

Drawings / Images



M-605.2DD, dimensions in mm

Order Information

M-605.1DD

High-precision linear stage; DC motor with ActiveDrive; 25 mm travel range; 300 N load capacity; 30 mm/s maximum velocity; ball screw; incremental linear encoder, 100 nm sensor resolution, A/B quadrature, RS-422

M-605.2DD

High-precision linear stage; DC motor with ActiveDrive; 50 mm travel range; 300 N load capacity; 30 mm/s maximum velocity; ball screw; incremental linear encoder, 100 nm sensor resolution, A/B quadrature, RS-422