

M-605

Ultra-Compact, High-Accuracy Translation Stages

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M-605.2DD translation stage

- Integrated Linear-Scale Encoders for Highest Accuracy
- Travel Ranges 25 mm (1") and 50 mm (2")
- Velocity up to 50 mm/sec.
- ActiveDrive™ Motors
- Compatible with Leading Industrial Motion Controllers
- Stress-Relieved Aluminum Stage Base for Highest Stability
- Zero-Backlash Recirculating Ballscrews
- Non-Contact, Direction-Sensing Origin Switch
- Non-Contact Limit Switches
- Load Capacity 20 kg
- >20,000 Hours MTBF

M-605 series translation stages are designed to meet the most demanding positioning requirements in applications where space is limited. They feature a space-saving design with the ballscrew side-by-side to the motor and an extremely flat, precision-machined base of high-density, stress-relieved aluminum providing exceptional stability and minimum

weight. Precision-ground, recirculating ballscrews (more accurate than rolled ballscrews) with preloaded nuts provide low friction, maintenance-free and backlash-free positioning.

ActiveDrive™

For superior dynamic performance, we integrated our innovative ActiveDrive™ system. This unique design features a high-efficiency PWM servo-amplifier mounted right beside the motor and offers several decisive advantages:

- Increased efficiency, by eliminating power losses between the amplifier and motor
- Overall cost reduction and improved reliability, because no external amplifier is required

- Elimination of PWM amplifier noise radiation, because the amplifier and motor are mounted together in the same electrically shielded case

Linear Scale Encoder

For highest accuracy and repeatability, M-605 stages are equipped with integrated linear-scale encoders (**direct output metrology**) providing 0.1 μm minimum incremental motion and 1 μm full-travel accuracy. High-precision linear guiding rails with recirculating ball bearings guarantee 1 μm / 100 mm straightness and flatness. They are also immune to the cage migration problems of crossed roller bearings (can be an issue where small ranges are scanned repeatedly) and are maintenance free.

Non-Contact Limit and Origin Switches

Integrated, non-contact, Hall-effect origin and limit switches with direction sensing on the origin switches protect your equipment and increase versatility in automation applica-

Ordering Information

M-605.1DD
Ultra-Compact, High-Accuracy Translation Stage, 25 mm, 0.1 μm Linear Scale, ActiveDrive™ DC Motor

M-605.2DD
Ultra-Compact, High-Accuracy Translation Stage, 50 mm, 0.1 μm Linear Scale, ActiveDrive™ DC Motor

Options

M-605.AV0
Angle Bracket for Vertical Mount of M-605 on M-605

M-110.01
Adapter Plate for Horizontal Mount of M-605 on Honeycomb Tables, M-400- and M-500 Series Translation Stages and Several Rotation Stages

Ask about custom designs!

tions. A flexible bellows protects the mechanics from dust and spray.

M-605 versions with AC motors are available on request.

Precision Assembly

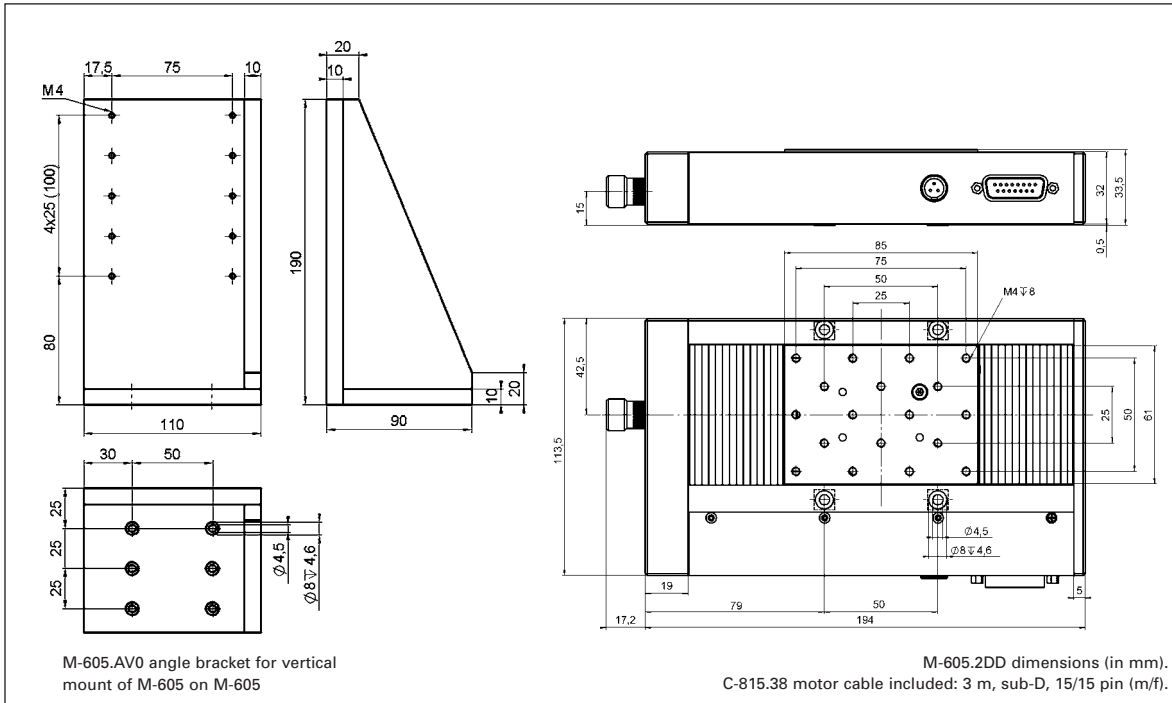
Each M-605 stage is precision assembled and optimized using laser interferometers for performance testing.



M-605.2DD XYZ combination

Application Examples

- Photonics packaging
- Quality control
- Semiconductor test equipment
- Metrology
- Disk drive test assemblies
- R&D



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Capacitive Position Sensors

Piezo Drivers & Nanopositioning Controllers

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Photonics Alignment Solutions

Motion Controllers

Ceramic Linear Motors & Stages

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Technical Data

Models	M-605.1DD	M-605.2DD	Units	Notes see page 7-106
Travel range	25	50	mm	
Design resolution	0.1	0.1	μm	A3
Min. incremental motion	0.1	0.1	μm	A4
Unidirectional repeatability	0.1	0.1	μm	
Bidirectional repeatability	0.2	0.2	μm	
Pitch (θ_y)	50	50	μrad	
Yaw (θ_z)	50	50	μrad	
Max. velocity	50	50	mm/s	
Max. normal load capacity	30	30	kg	B1
Max. push/pull force	20 / 20	20 / 20	N	B2
Max. lateral force	100	100	N	
Linear encoder resolution	0.1	0.1	μm	
Ballscrew pitch	1	1	mm/rev.	
Nominal motor power	17*	17*	W	
Motor voltage	24	24	V	
Weight	1.5	1.8	kg	
Body material	Al	Al		L
Recommended motor controller	C-843, C-862, C-848	C-843, C-862, C-848		D2

* ActiveDrive™ (integrated PWM servo-amplifier), 24 V power supply included