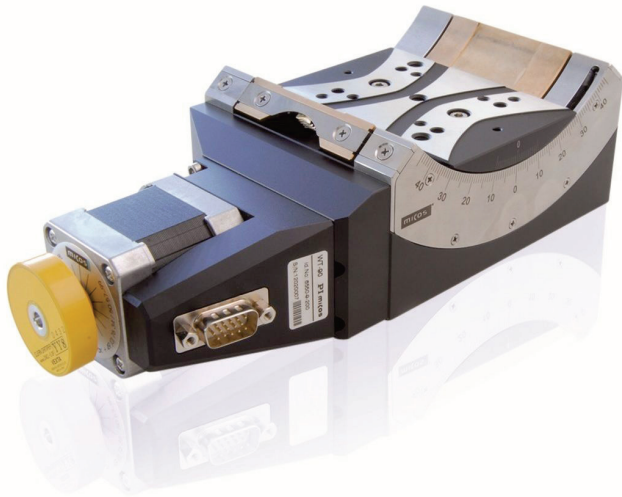


Motorized Precision Goniometer

Long Travel Range



WT-90

- Rotation range 90°
- Repeatability to 2.7 μ rad
- Load capacity to 8 kg
- Option: Direct position measurement with angle measuring system
- Combination with WT-120 with shared pivot point

Precision-class goniometer stage

Polished and hardened worm drive with high gear ratio for precision positioning. Two adjustable limit switches. Can be combined with WT-120 for 2-axis motion with shared pivot point.

Versions

- DC servo motor with rotary encoder on the motor shaft
- Stepper motor
- Option: High-resolution optical angle measuring system for direct position measurement
- Vacuum versions available on request

Application fields

Precision microassembly. Metrology. Photonics. Optical alignment.

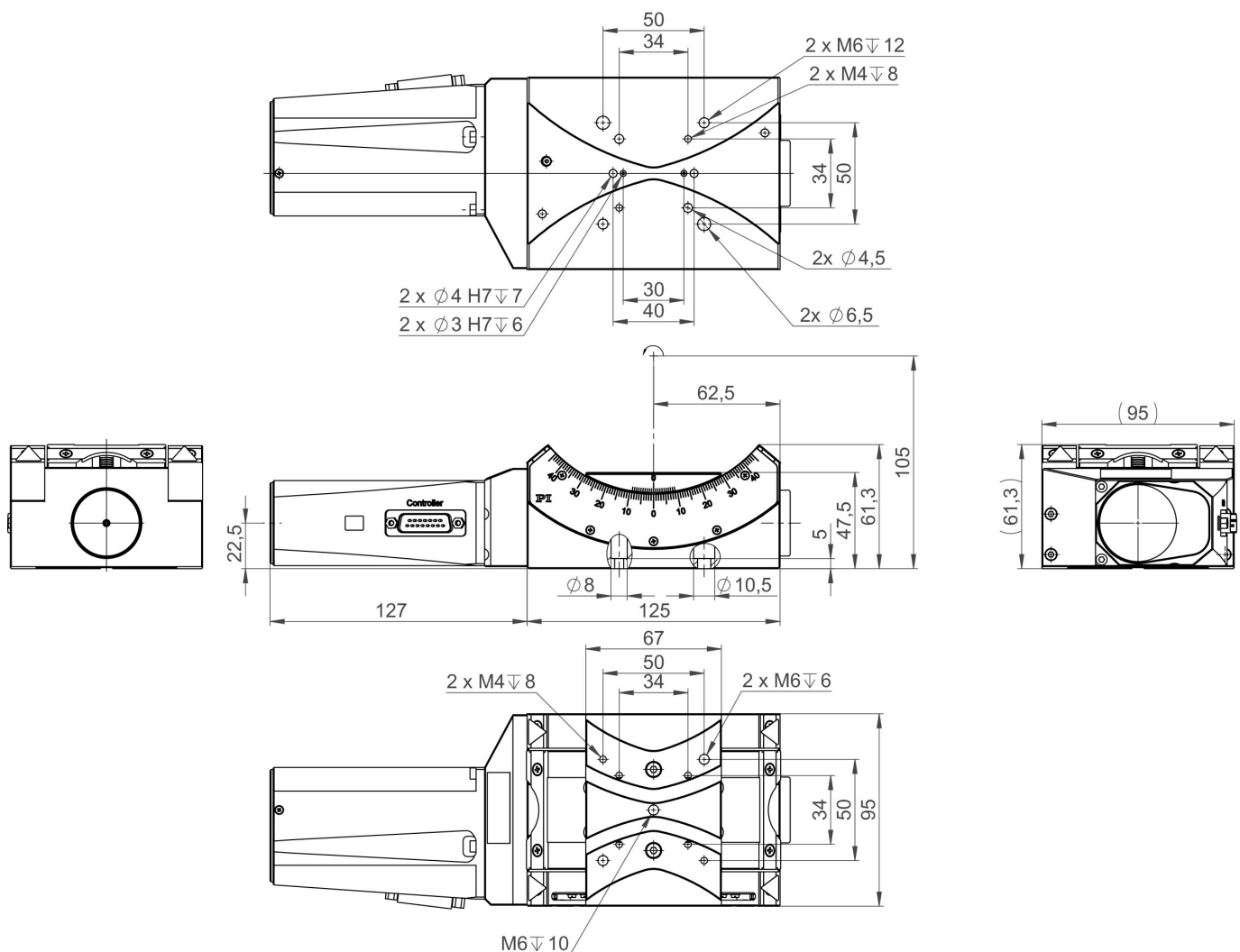
Specifications

	65509100	65509200	65509201	Unit	Tolerance
	DC motor	Stepper motor	Stepper motor and angle measuring system		
Active axes	θ_x	θ_x	θ_x		
Motion and positioning					
Rotation range	90	90	90	°	
Integrated sensor	Rotary encoder	–	Incremental angle measuring system		
Sensor signal rotary encoder	AB quadrature, RS-422	–	–		
Sensor signal angle measuring system		–	A/B quadrature, RS-422		
Sensor resolution rotary encoder	20000	–	–		
Sensor signal period angle measuring system	–	–	269.3	μrad	
Design resolution	1.047	105	2.69	μrad	
Minimum incremental motion	52.4	4.8	2.7	μrad	typ.
Unidirectional repeatability	87	9.6	17.5	μrad	typ.
Bidirectional repeatability	±350	±175	±17.5	μrad	typ.
Wobble	±125	±125	±125	μrad	typ.
Angular velocity	15	10	10	°/s	max.
Gap from rotational axis to surface of the motion platform	57.5	57.5	57.5	mm	
Limit switches	2 × mechanical	2 × mechanical	2 × mechanical		
Mechanical properties					
Guide type	Ball bearings	Ball bearings	Ball bearings		
Drive screw type	Worm Gears	Worm Gears	Worm Gears		
Drive screw pitch				mm	
Worm gear ratio	300:1	300:1	300:1		
Torque, power on	2.5	2.5	2.5	N·m	max.
Holding torque, power off	2.5	2.5	2.5	N·m	max.
Load capacity	80	80	80	N	max.
Permissible lateral force	50	50	50	N	max.
Permissible torque in θ_y , θ_z	12	12	12	N·m	max.
Drive properties					
Motor type	DC motor	2-phase stepper motor	2-phase stepper motor		
Step resolution	–	200	200	Full steps/rev	

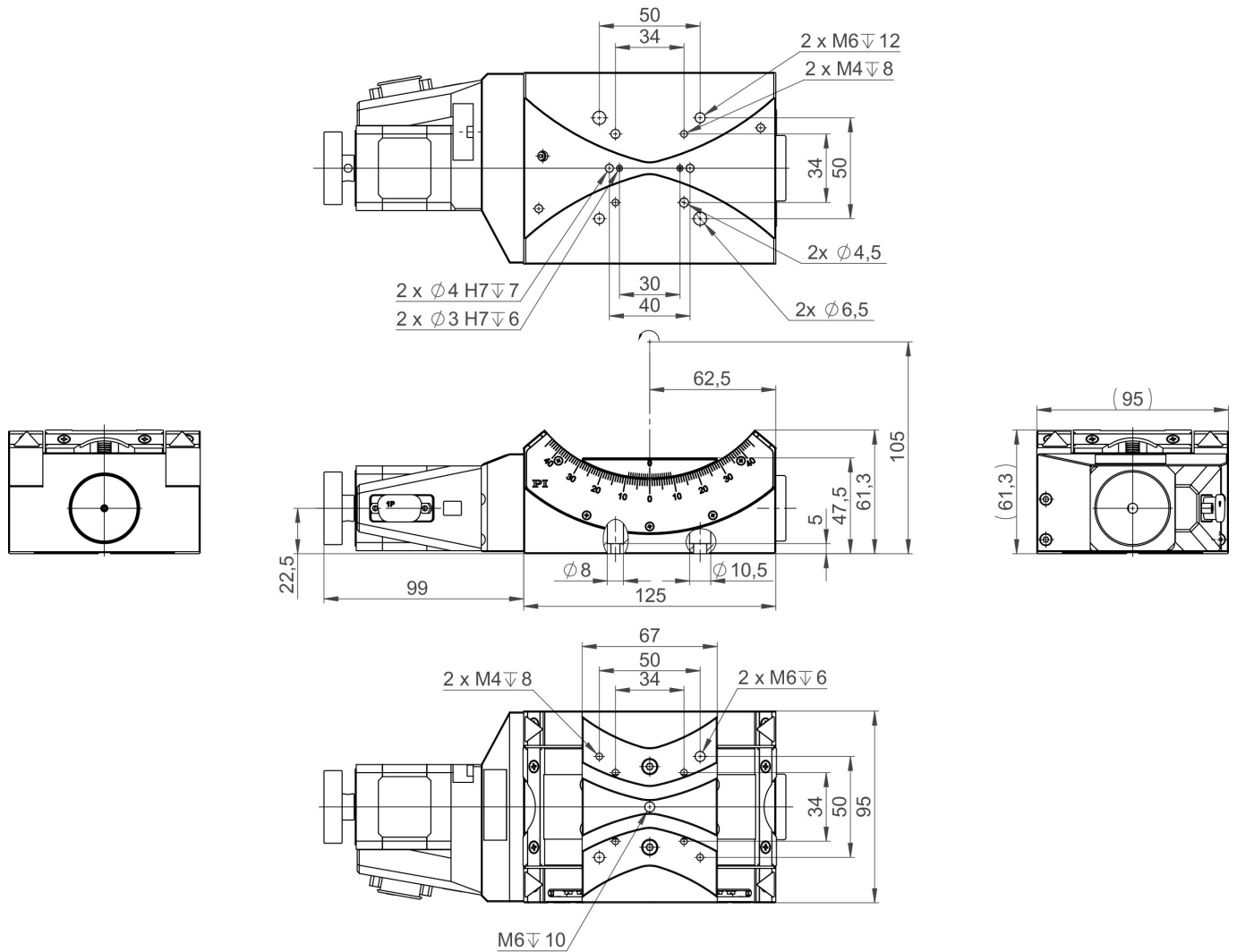
	65509100	65509200	65509201	Unit	Tolerance
Miscellaneous					
Operating temperature range	5 to 40	5 to 40	5 to 40	°C	
Material	Aluminum, black anodized, stainless steel, red bronze	Aluminum, black anodized, stainless steel, red bronze	Aluminum, black anodized, stainless steel, red bronze		
Mass	2.8	2.8	2.9	kg	±5%
Connector	D-sub 15 (m)	HD D-sub 15 (m)	HD D-sub 15 (m) (motor) D-sub 9 (m) (sensor)		
Recommended controllers/drivers	C-863 (single axis) C-884 (up to 6 axes) C-885 with C-863.20C885 (to 40 axes) ACS modular controller	C-663.12 (single axis) SMC Hydra (double axis) C-885 with C-663.12C885 (up to 20 axes) ACS modular controller	C-663.12 (single axis) SMC Hydra (double axis) C-885 with C-663.12C885 (up to 20 axes) ACS modular controller		

Connecting cables for motor and sensor are not in the scope of delivery and must be ordered separately.
Ask about customized versions.

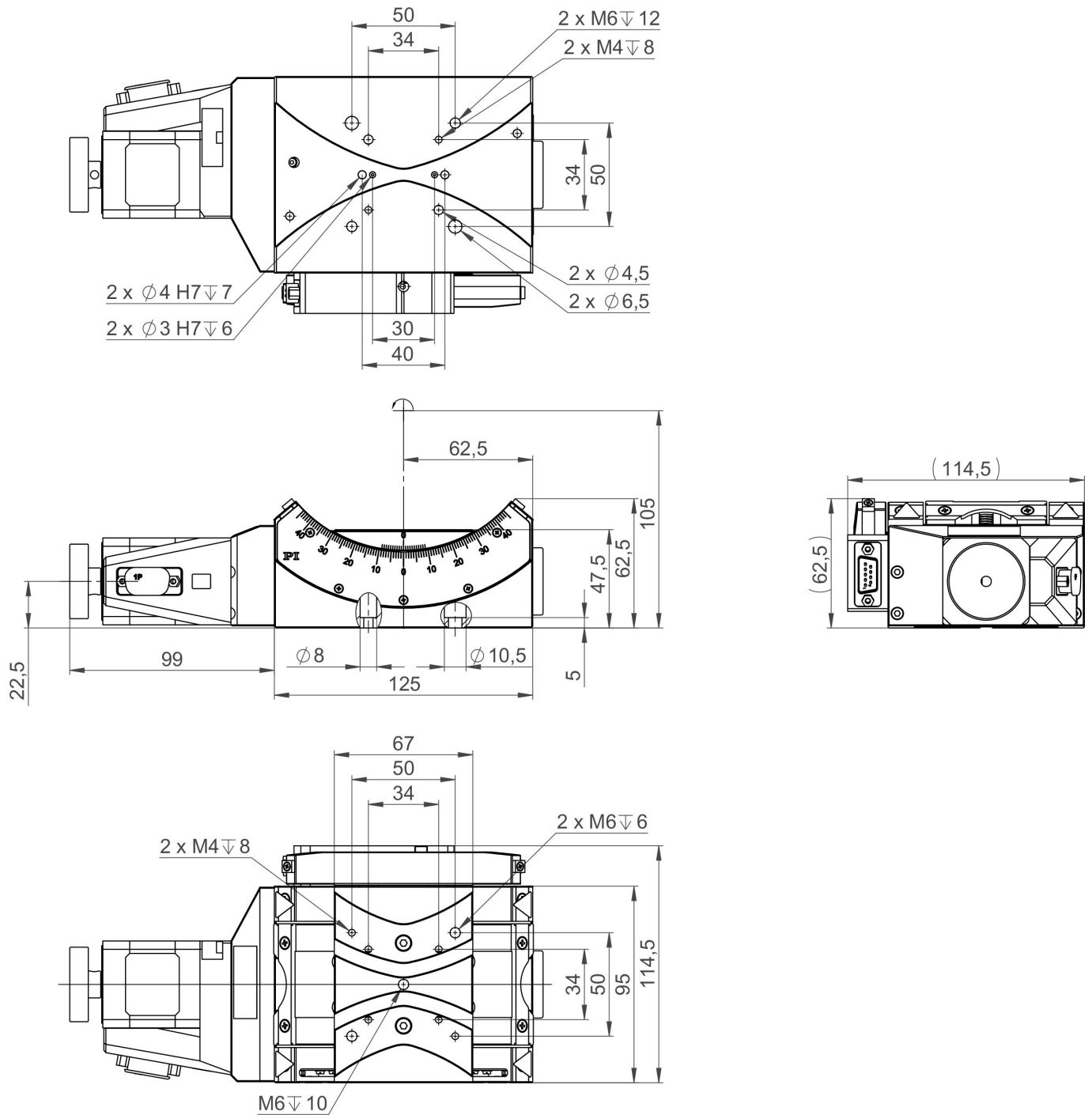
Drawings / Images



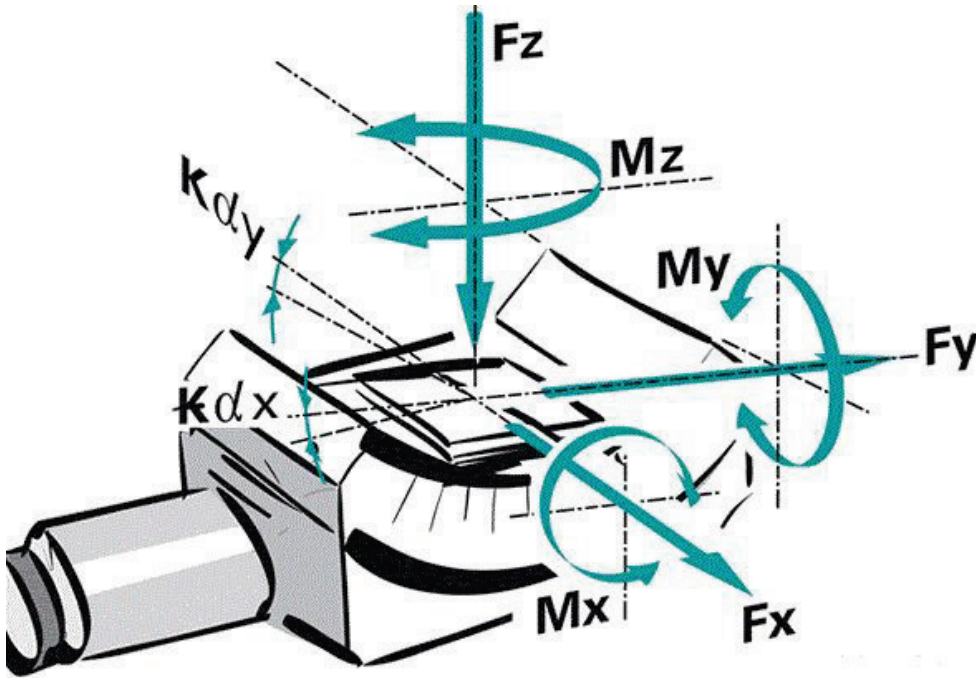
65509100, WT-90 goniometer with DC motor. Dimensions in mm. Note that the decimal points are separated by a comma in the drawings.



65509200, WT-90 goniometer with stepper motor. Dimensions in mm. Note that the decimal points are separated by a comma in the drawings.



65509201, WT-90 goniometer with stepper motor and incremental angle measuring system. Dimensions in mm. Note that the decimal points are separated by a comma in the drawings.



Direction of the axes and torques for goniometer stages

Ordering Information

65509100

WT-90 goniometer stage, 95 mm width, DC motor, $\pm 45^\circ$ rotation range, mechanical limit switches

65509200

WT-90 goniometer stage, 95 mm width, stepper motor, $\pm 45^\circ$ rotation range, mechanical limit switches

65509201

WT-90 goniometer stage, 95 mm width, stepper motor, $\pm 45^\circ$ rotation range, angle measuring system with A/B signal quadrature signal transmission, mechanical limit switches