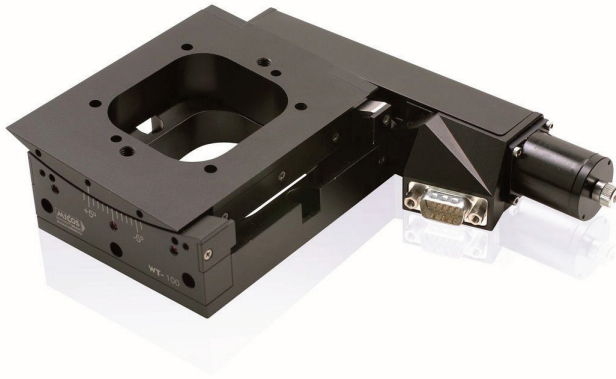


Motorized Precision Goniometer

Compact, with Large Aperture



WT-100

- Rotation range 10°
- Repeatability to 8.7 μ rad
- Load capacity to 2 kg
- Option: Direct position measurement with angle measuring system
- Combination with WT-85 with shared pivot point

Precision-class goniometer stage

Drive with high gear ratio for precision positioning. Two limit switches. Large clear aperture with 60 mm $\times$ 25 mm. Can be combined with WT-85 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

	65419100	65419101	65419200-0000	65419201-0001	Unit	Tolerance
	DC motor with rotary encoder	DC motor with angle measuring system and rotary encoder	With stepper motor	Stepper motor and angle measuring system		
Active axes	θ_x	θ_x	θ_x	θ_x		

Motion and positioning	65419100	65419101	65419200-0000	65419201-0001	Unit	Tolerance
Rotation range	10	10	10	10	°	
Integrated sensor	Rotary encoder	Incremental angle measuring system Rotary encoder	–	Incremental angle measuring system		
Sensor signal rotary encoder	AB quadrature, RS-422	AB quadrature, RS-422	–	–		
Sensor signal angle measuring system	–	AB quadrature, RS-422	–	Sin/cos, 1 V peak-peak		
Sensor signal period angle measuring system	–	157	–	157	μrad	
Sensor resolution rotary encoder	2000	2000	–		Cts./rev.	
Design resolution	3.49	1.57	34.9	1.57	μrad	
Minimum incremental motion	17.5	8.7	17.5	8.7	μrad	Typ.
Unidirectional repeatability	70	8.7	70	8.7	μrad	Typ.
Bidirectional repeatability	±70	±8.7	±70	±8.7	μrad	Typ.
Wobble	±125	±125	±125	±125	μrad	Typ.
Angular velocity	15	15	7	7	°/s	Max.
Limit switch	2 × mechanical, N/C contact, to 30V, NPN	2 × mechanical, N/C contact, to 30V, NPN	2 × mechanical, N/C contact, to 30V, NPN	2 × mechanical, N/C contact, to 30V, NPN		
Gap from rotational axis to surface of the motion platform	124	124	124	124	mm	

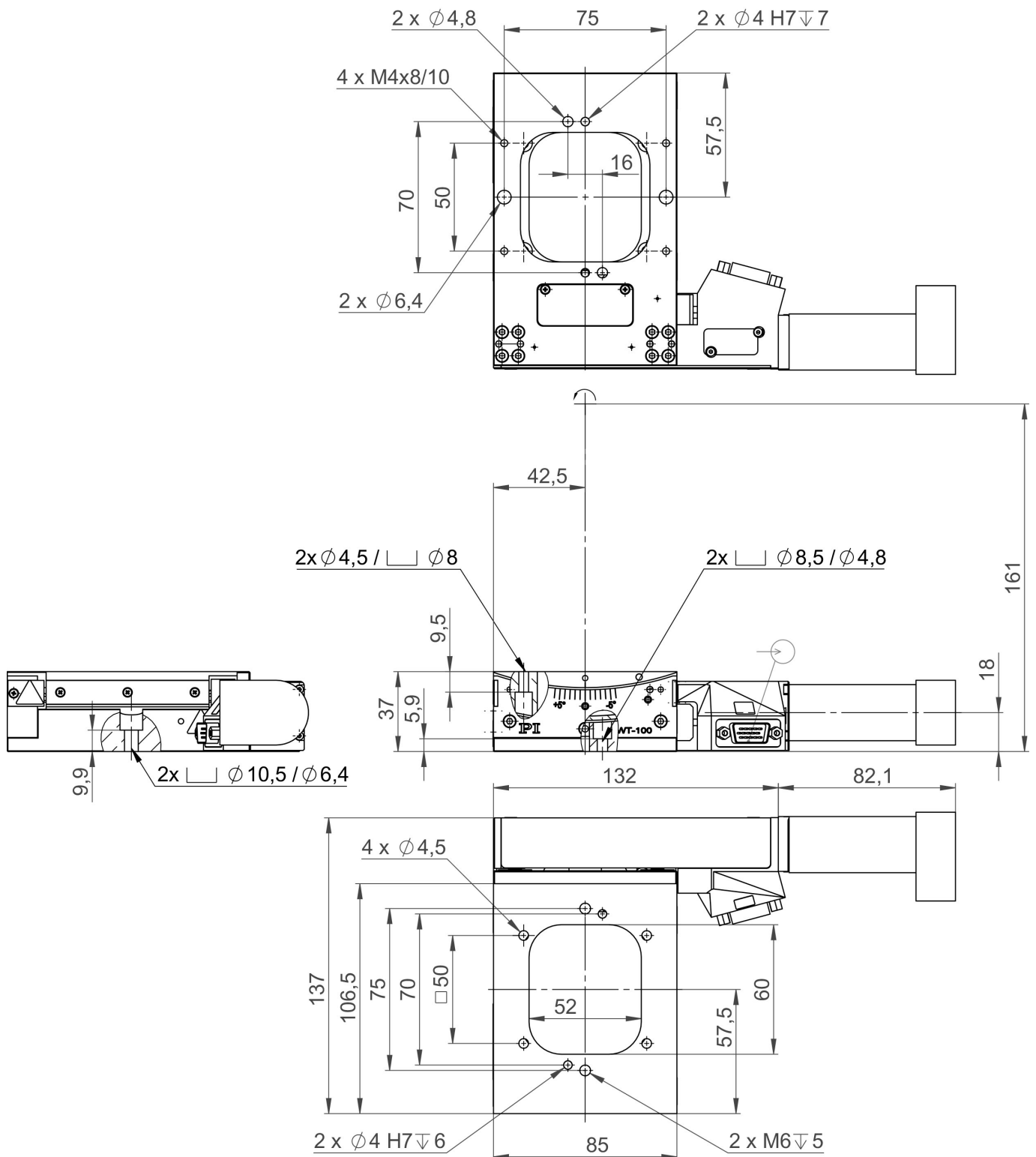
Mechanical properties	65419100	65419101	65419200-0000	65419201-0001	Unit	Tolerance
Drive screw type	Ball screw	Ball screw	Ball screw	Ball screw		
Drive screw pitch	1	1	1	1	mm	
Guide type	Ball bearings	Ball bearings	Ball bearings	Ball bearings		
Gear ratio	900:1	900:1	900:1	900:1		
Load capacity	20	20	20	20	N	Max.
Permissible lateral force	15	15	15	15	N	Max.
Permissible torque in θ_y , θ_z	4	4	4	4	N·m	Max.

Drive properties	65419100	65419101	65419200-0000	65419201-0001	Unit	Tolerance
Motor type	DC motor	DC motor	2-phase stepper motor	2-phase stepper motor		
Operating voltage, nominal	24	24	24	24	V	Nom.
Operating voltage, max.	48	48	48	48	V	Max.
Step resolution	–	–	200	200	Full steps/rev	

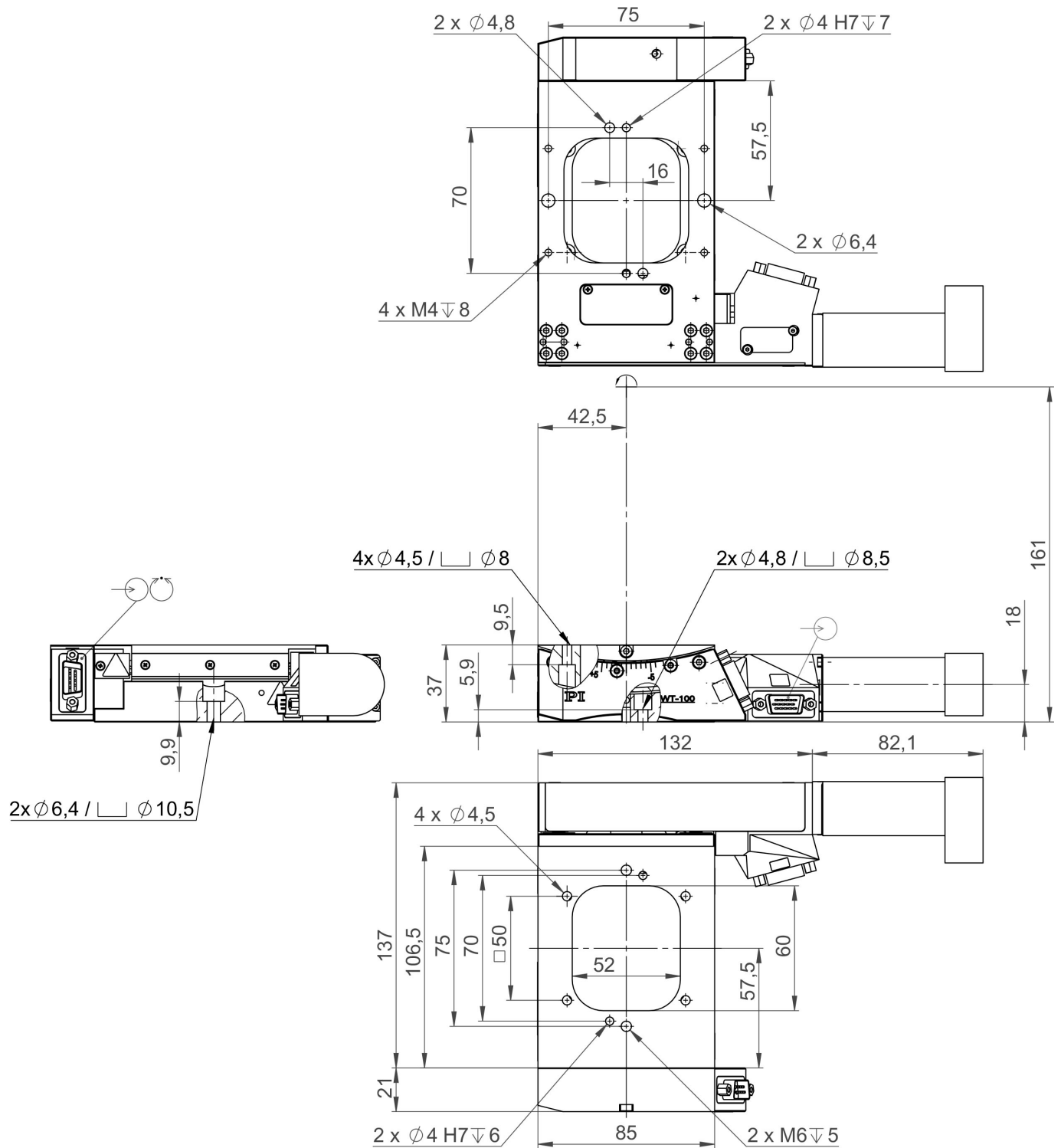
Miscellaneous	65419100	65419101	65419200-0000	65419201-0001	Unit	Tolerance
Operating temperature range	5 to 40	5 to 40	5 to 40	5 to 40	°C	
Material	Anodized aluminum, steel	Anodized aluminum, steel	Anodized aluminum, steel	Anodized aluminum, steel		
Mass	0.9	0.9	0.9	0.9	kg	±5%
Connector	HD D-sub 15 (m)	HD D-sub 15 (m) (motor) D-sub 9 (m) (sensor)	HD D-sub 15 (m) (motor)	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-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.

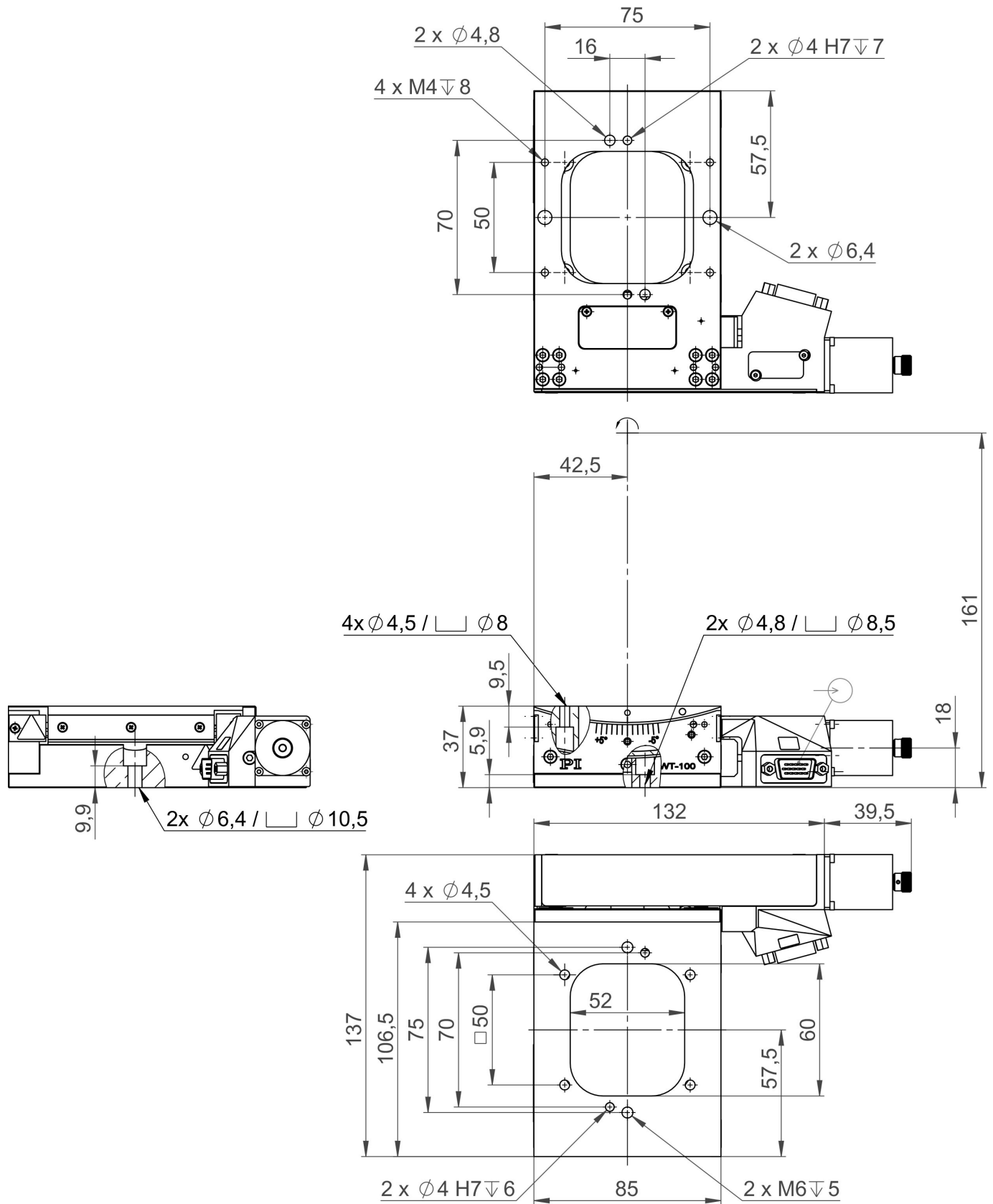
Drawings / Images



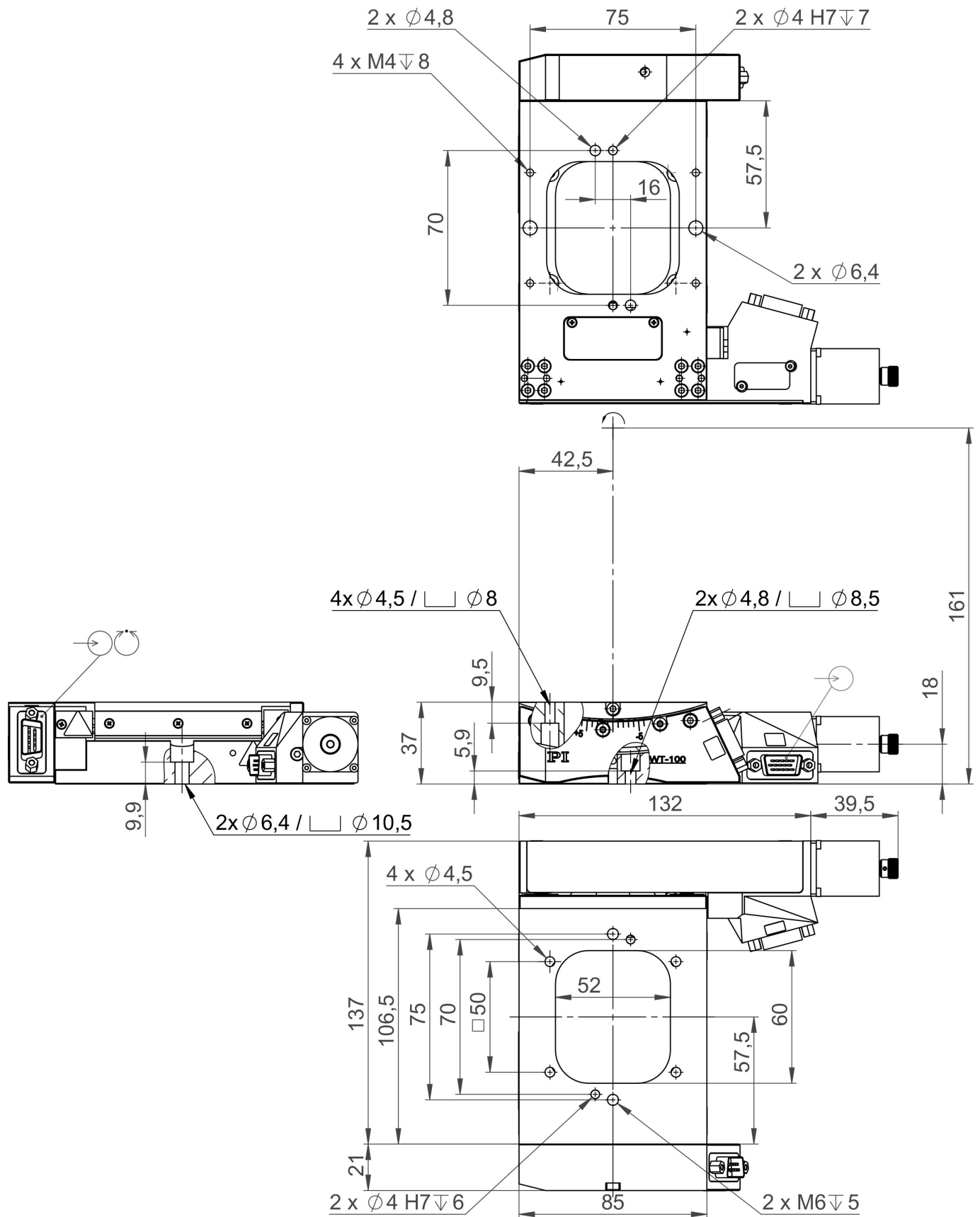
65419100, WT-100 goniometer with DC motor, dimensions in mm. Note that a comma is used in the drawings instead of a decimal point.



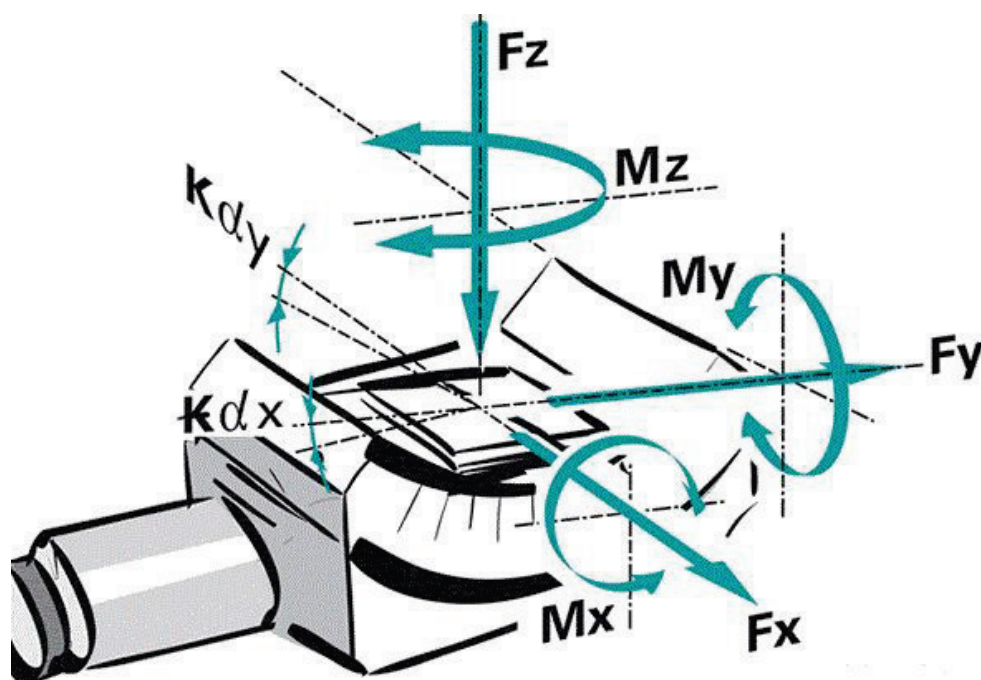
65419101, WT-100 goniometer with DC motor and incremental angle measuring system, dimensions in mm. Note that a comma is used in the drawings instead of a decimal point.



65419200-0001, WT-100 goniometer with stepper motor, dimensions in mm. Note that a comma is used in the drawings instead of a decimal point.



65419201-0001, WT-100 goniometer with stepper motor and incremental angle measuring system, dimensions in mm



Direction of the axes and torques for goniometer stages

Ordering Information

65419100

WT-100 goniometer stage, 100 mm width, DC motor, $\pm 5^\circ$ rotation range, clear aperture 60 mm $\times$ 52 mm, mechanical limit switches

65419101

WT-100 goniometer stage, 100 mm width, DC motor, $\pm 5^\circ$ rotation range, angle measuring system with A/B quadrature signal transmission, clear aperture 60 mm $\times$ 52 mm, mechanical limit switches

65419200-0000

WT-100 goniometer stage, 100 mm width, stepper motor, $\pm 5^\circ$ rotation range, clear aperture 60 mm $\times$ 52 mm, mechanical limit switches

65419201-0001

WT-100 goniometer stage, 100 mm width, stepper motor, $\pm 5^\circ$ rotation range, angle measuring system with sin/cos signal transmission, clear aperture 60 mm $\times$ 52 mm, mechanical limit switches