



Rotary indexing tables / rotary axes

The multi-dimensional processing of a wide variety of workpieces and materials often requires rotary indexing tables and rotary axes as the fourth or fifth axis in addition to the three-axis CNC machine.

Whether for small components or higher loads - the maintenance-free isel rotary axes are popular with designers for a wide range of applications and machine sizes. Useful, easy-to-mount accessories such as chucks, T-slot plates and tailstock units reliably fix the workpiece. Rotary indexing tables and rotary axes are available in different configurations and can be easily retrofitted into existing systems as well.

RDH series

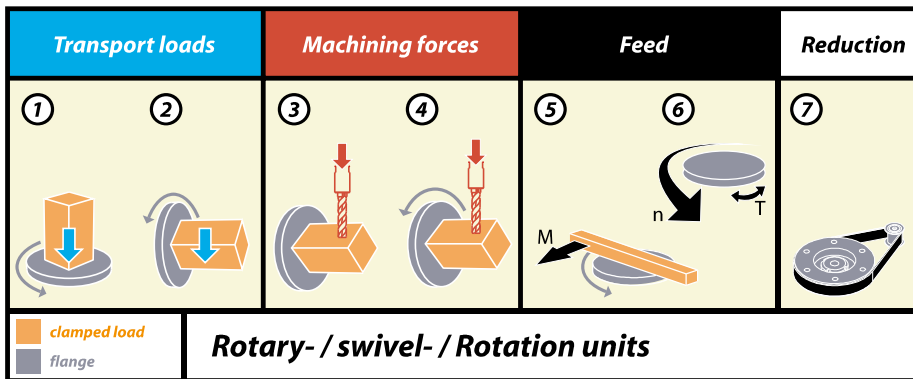


DSH series





Transport loads, machining forces, feed



Rotating and/or swiveling units	1*	2*	3	4	5	6	7
RDH-M (step)	100 kg	45 kg	55 Nm	24 Nm	24 Nm	4 rpm	1:51
RDH-M (step)	160 kg	70 kg	108 Nm	45 Nm	45 Nm	2 rpm	1:101
RDH-M (brushless EC servo)	110 kg	50 kg	26 Nm	9 Nm	9 Nm	22 rpm	1:51
RDH-M (brushless EC servo)	180 kg	80 kg	51 Nm	17 Nm	17 Nm	11 rpm	1:101
RDH-S (step)	30 kg	15 kg	7 Nm	7 Nm	7 Nm	4 rpm	1:51
RDH-S (step)	48 kg	24 kg	11 Nm	11 Nm	11 Nm	2 rpm	1:101
RDH-M (brushless EC servo)	30 kg	15 kg	7 Nm	4.6 Nm	4.6 Nm	22 rpm	1:51
RDH-M (brushless EC servo)	48 kg	24 kg	11 Nm	4.6 Nm	9.2 Nm	11 rpm	1:101
RDH-S (DC servo)	25 kg	13 kg	7 Nm	4.6 Nm	4.6 Nm	22 rpm	1:51
RDH-S (DC servo)	40 kg	20 kg	11 Nm	8.7 Nm	8.7 Nm	11 rpm	1:101
RDH-XS (step)	30 kg	10 kg	5 Nm	5 Nm	5 Nm	24 rpm	1:50
RDH-XS (step)	30 kg	10 kg	7 Nm	7 Nm	7 Nm	12 rpm	1:100
RDH-M (brushless EC servo)	30 kg	10 kg	5 Nm	5 Nm	5 Nm	59 rpm	1:50
RDH-M (brushless EC servo)	30 kg	10 kg	7 Nm	7 Nm	7 Nm	30 rpm	1:100
RDH-XS (DC servo)	30 kg	10 kg	5 Nm	5 Nm	5 Nm	70 rpm	1:50
RDH-XS (DC servo)	30 kg	10 kg	7 Nm	7 Nm	7 Nm	35 rpm	1:100
MD 1 (step)	5 kg	2.5 kg	14 Nm	8 Nm	8 Nm	60 rpm	1:20
MD 1 (DC servo)	6 kg	3 kg	3.9 Nm	3 Nm	3 Nm	175 rpm	1:20
MD 1 (brushless EC servo)	6 kg	3 kg	4 Nm	3.2 Nm	3.2 Nm	150 rpm	1:20
ZR 20 (step)	10 kg	5 kg	10 Nm	8 Nm	8 Nm	60 rpm	1:20
ZD 30 (step)	14 kg	8 kg	15 Nm	12 Nm	12 Nm	40 rpm	1:30

*Guide values varying according to the application



Rotary indexing table/rotary axis RDH-XS

- Equipped with precision gear
 - heavy duty and stiff output bearing
- Clearance-free and high torsional rigidity
- Reduction ratio of 1:50 or 1:100
- Stepping or servo motor
- Cable outlet on the right or left side
- Degree of protection IP 65
- Stainless construction
- Accuracy of transmission < 2.0 arcmin
- Repeatability ± 1.0 arcmin
- Maintenance-free

RDH-XS as rotary indexing table



RDH-XS as axis of rotation



Order key

26600X 0X00

Gear reduction ratio

0 = 1 : 100

1 = 1 : 50

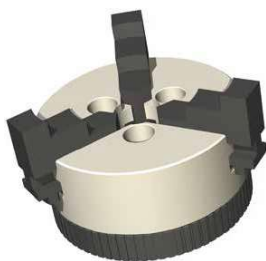
Engines

0 = Stepping motor MS 045 HT equipped with an encoder (400 pulses, 3 channels, RS422)

5 = stepping motor without encoder

6 = brushless EC servo motor EC 40

Accessories



Clamping chuck

3-jaw chuck Ø 65

Itemno.: 269060 4065*

*including flange



Tailstock unit

RE-XSfor RDH-XS

Itemno.: 269100 0020 (200 mm)

Itemno.: 269100 0030 (300 mm)

Itemno.: 269100 0040 (400 mm)

Itemno.: 269100 0050 (500 mm)

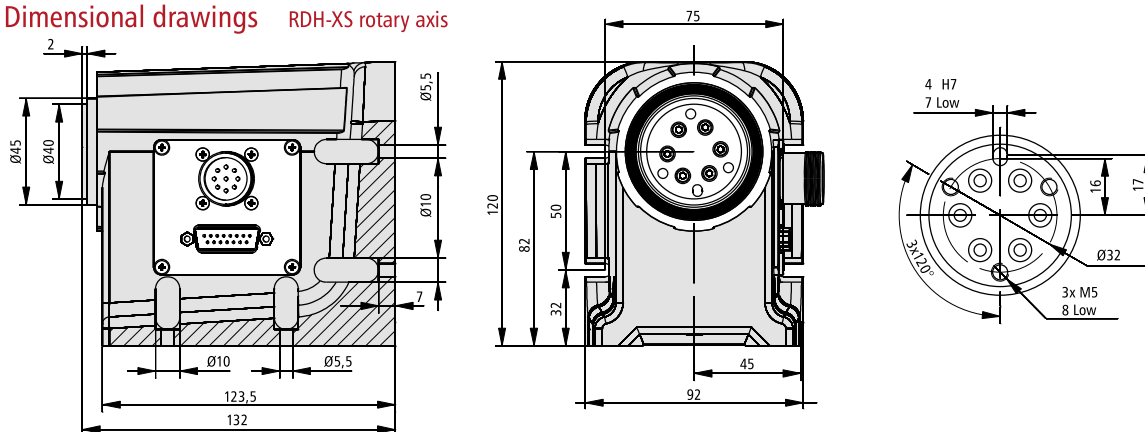


Technical data

	Stepping motor MS 045 HT*		EC servo motor EC 40	
Reduction ratio of gear	1:50	1:100	1:50	1:100
Nominal output speed [1/min]	5	2	60	30
	at 1,500 Hz (225 1/min)		at 3,000 rpm	
Max. Output speed [1/min]	24	12	100	50
	at 8,000 Hz (1200 rpm)		at 5,000 rpm	
Rated torque [Nm]	5	7	5	7
	at 1500 Hz (225 1/min)		–	
Max. torque (for a short term) [Nm]	–	–	9	14
Nominal holding torque (static load) [Nm]	5	7	5	7
Max. load capacity of the gearbox [Nm]	9	14	9	14
	Limit for repeatable peak torque			
Dynamic load rating C [N]	392			
Static load rating c_0 [N]	392			
Weight [kg]	2.3			

*Values for the half-step mode

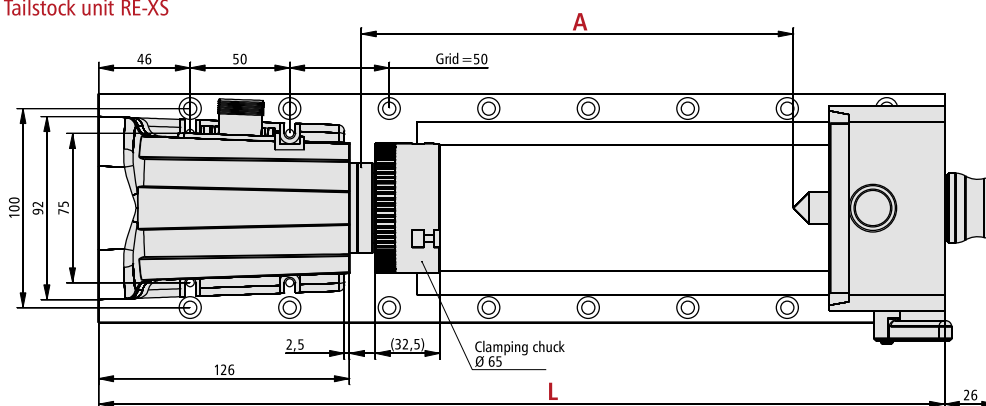
Dimensional drawings RDH-XS rotary axis



Variants

Variants	Item number	L	A
Tailstock unit RE-XS 200 mm	269100 0020	325	117
Tailstock unit RE-XS 300 mm	269100 0030	425	217
Tailstock unit RE-XS 400 mm	269100 0040	525	317
Tailstock unit RE-XS 500 mm	269100 0050	625	417

Tailstock unit RE-XS





Rotary indexing tables/rotary axis RDH-S

- Equipped with precision gear
 - heavy duty and stiff output bearing
 - Clearance-free and high torsional rigidity
- Reduction ratio of 1:51 oder 1:101
- Stepping or servo motor
- Cable outlet on the right or left side
- Degree of protection IP 65
- Stainless construction
- Transmission accuracy <1.5 arcmin
- Repeatability <±6 arcsec
- Optionally as a solid shaft or with a hollow shaft design
- Maintenance-free



RDH-S as rotary indexing table
(hollow shaft version)

RDH-S as rotary axis
(hollow shaft version)

Order key

2661XX 0X00

Flanged shaft

- 0 = full shaft
1 = hollow shaft

Gear reduction ratio

- 0 = 1 : 101
1 = 1 : 51

Engines

- 0 = Stepping motor MS 045 HT
equipped with an encoder (400 pulses,
3 channels, RS422)
5 = stepping motor without encoder
6 = brushless EC servo motor EC 40

Accessories



Clamping chuck

3-jaw chuck Ø 65
Itemno.: 269060 3065*

3-jaw chuck Ø 80
Itemno.: 269063 2080*

3-jaw chuck Ø 100
Itemno.: 269063 2100*

*including flange



Round plates

Ø 150 mm
Itemno.: 269050 0150



Tailstock unit RE-S

for RDH-S
Itemno.: 269100 1020 (200 mm)
Itemno.: 269100 1030 (300 mm)
Itemno.: 269100 1040 (400 mm)
Itemno.: 269100 1050 (500 mm)

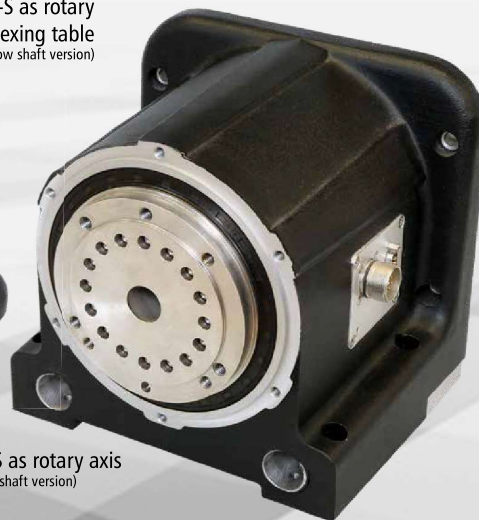


Rotary indexing tables/rotary axis RDH-M

- Equipped with precision gear
 - heavy duty and stiff output bearing
 - Clearance-free and high torsional rigidity
- Reduction ratio of 1:51 oder 1:101
- Stepping or servo motor
- Cable outlet on the right or left side
- Degree of protection IP 65
- Stainless construction
- Transmission accuracy <1 arcmin
- Repeatability <±6 arcsec
- Optionally as a solid shaft or with a hollow shaft design
- Maintenance-free



RDH-S as rotary
indexing table
(hollow shaft version)



RDH-S as rotary axis
(hollow shaft version)

Order key

2662XX 0X00

Flanged shaft

0 = full shaft
1 = hollow shaft

Gear reduction ratio

0 = 1 : 101
1 = 1 : 51

Engines

0 = Stepping motor MS 200 HT
equipped with an encoder (400 pulses,
3 channels, RS422)
5 = stepping motor without encoder
6 = brushless EC servo motor EC 60TM 48V

Accessories



Clamping chuck

3-jaw chuck Ø 125
Itemno.: 269063 2125*

*including flange



Aluminum T-slot plate

Ø 240 mm / PT 25
Itemno.: 269050 0240

Ø 365 mm / PT 25
Itemno.: 269050 0365



Tailstock unit RE-M

for RDH-M
Itemno.: 269100 2100 (1000 mm)
Itemno.: 269100 2150 (1500 mm)
Itemno.: 269100 2200 (2000 mm)

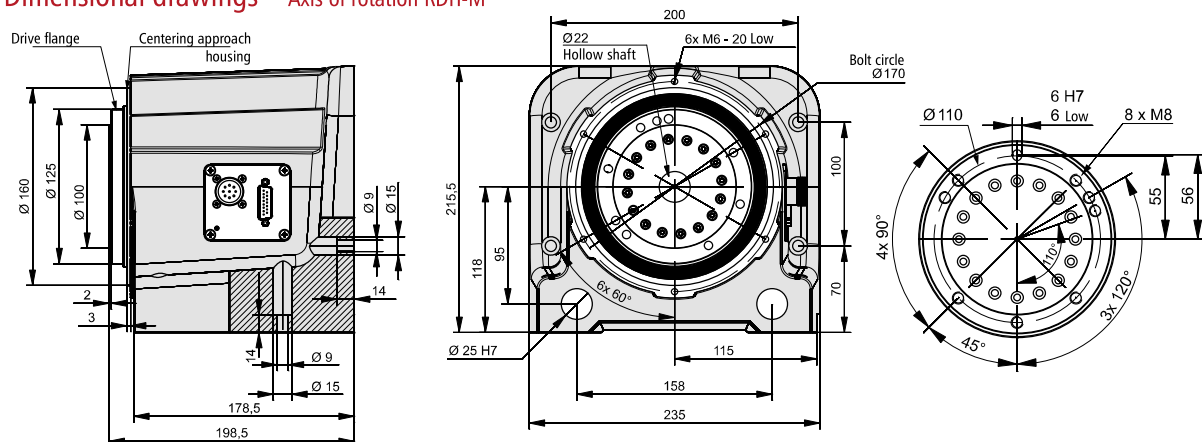


Technical data

	Stepping motor MS 200HT*		EC servo motor EC 60TM (brushless)	
Reduction ratio of gear	1:51	1:101	1:51	1:101
Nominal output speed [1/min]	4	2	20	10
	at 1,500 Hz (225 1/min)		at 1,000 1/min	
Max. Output speed [1/min]	24	12	78	40
	at 8,000 Hz		at 4,000 1/min	
Rated torque [Nm]	24	46	20	38
	at 1,500 Hz		–	
Max. torque (for a short term) [Nm]	–	–	42	80
Nominal holding torque (static load) [Nm]	55	108	26	51
Max. load capacity of the gearbox [Nm]	98	157	98	157
	Limit for repeatable peak torque			
Dynamic load rating C [N]	21800			
Static load rating c ₀ [N]	35800			
Weight [kg]	13.7			

*Values for the half-step mode

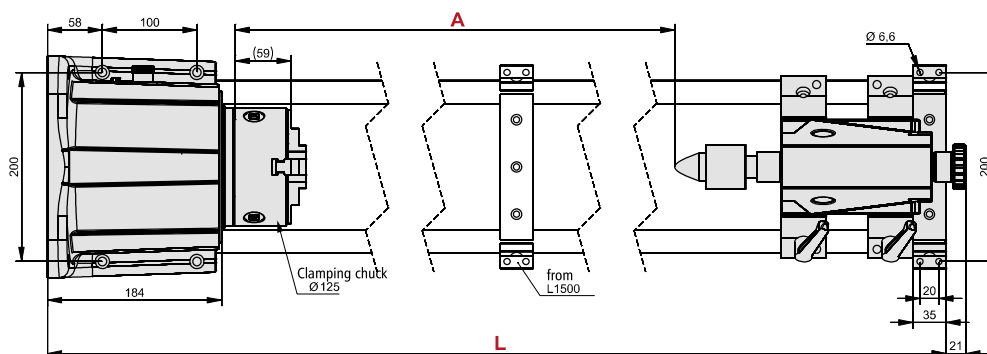
Dimensional drawings Axis of rotation RDH-M



Variants

Item number	L	A
Tailstock unit RE-M 1000 mm	269100 2100	1110 624.5
Tailstock unit RE-M 1500 mm	269100 2150	1610 1124.5
Tailstock unit RE-M 2000 mm	269100 2200	2110 1624.5

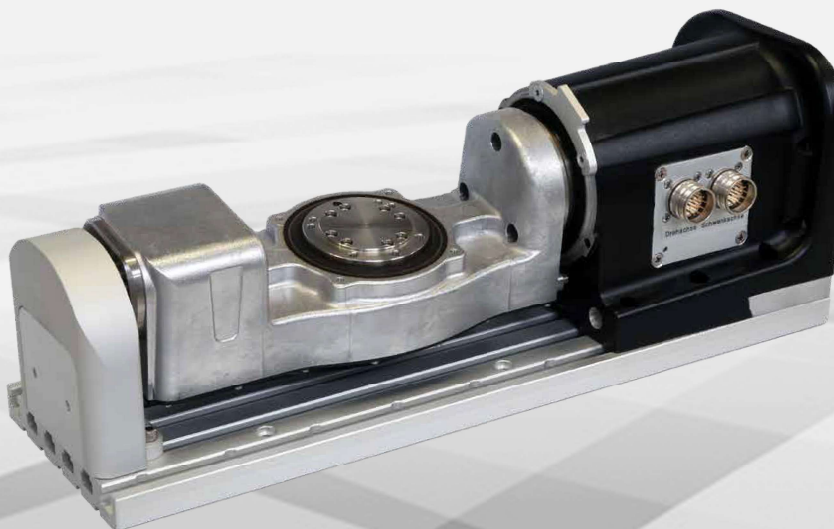
Tailstock unit RE-M





Rotary swivel unit type DSH-S

- Equipped with precision gear
 - heavy duty and stiff output bearing
 - Clearance-free and high torsional rigidity
- equipped with rotary axis type RDH-S
- Reduction ratio of 1:51 oder 1:101
- Stepping or servo motor
- Degree of protection IP 65
- Stainless construction
- Transmission accuracy <1.5 arcmin
- Repeatability <±6 arcsec
- Maintenance-free
- Infinitely adjustable swivel range



Order key

26541X X000

Engines

- 0 = Stepping motor MS 045 HT
equipped with an encoder (400 pulses,
3 channels, RS422)
- 5 = stepping motor without encoder
- 6 = brushless EC servo motor EC 40

Gear reduction ratio

- 0 = 1 : 101
- 1 = 1 : 51

Accessories



Clamping chuck

3-jaw chuck Ø 65
Itemno.: 269060 3065*

3-jaw chuck Ø 80
Itemno.: 269063 2080*

3-jaw chuck Ø 100
Itemno.: 269063 2100*

*including flange



Round plates

Ø 150 mm
Itemno.: 269050 0150



Technical data

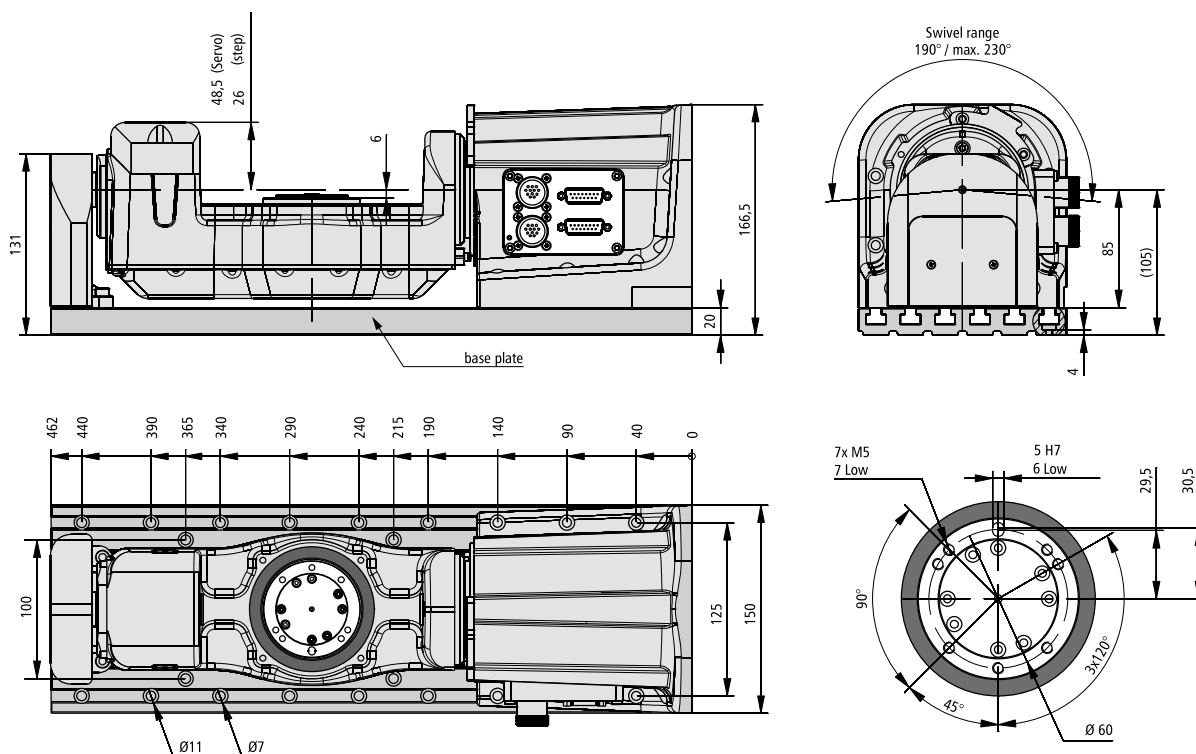
Stepping motor MS 045 HT*

EC servo motor EC 40

Reduction ratio of gear	1:51	1:101	1:51	1:101
Nominal output speed [1/min]	4	2	22	11
	at 1,500 Hz (225 1/min)		at 1,100 1/min	
Max. Output speed [1/min]	24	12	98	50
	at 8,000 Hz		at 5,000 rpm	
Rated torque [Nm]	7	11	4.8	9.2
	at 1,500 Hz		—	
Max. torque (for a short term) [Nm]	—	—	7	11
Nominal holding torque (static load) [Nm]	7	11	7	11
Max. load capacity of the gearbox [Nm]	18	28	18	28
	Limit for repeatable peak torque			
Dynamic load rating C [N]	5,800			
Static load rating c ₀ [N]	8,600			
Weight [kg]	12			

*Values for the half-step mode

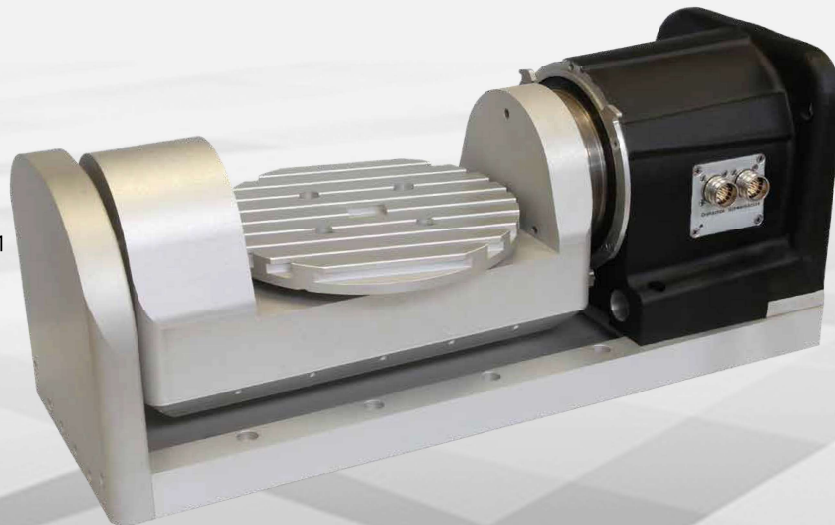
Dimensional drawings





Rotary swivel unit type DSH-M

- Equipped with precision gear
 - heavy duty and stiff output bearing
 - Clearance-free and high torsional rigidity
- equipped with rotary axis type RDH-M
- Reduction ratio of 1:51 oder 1:101
- Stepping or servo motor
- Degree of protection IP 65
- Stainless construction
- Transmission accuracy < 1 arcmin
- Repeatability < ± 6 arcsec
- Maintenance-free
- Infinitely adjustable swivel range



Order key

26542X X000

Engines

- 5 = stepping motor type MS 200 HT
6 = brushless EC servo motor EC 60TM

Gear reduction ratio

- 0 = 1 : 101
1 = 1 : 51

Accessories



Clamping chuck

3-jaw chuck Ø 125
Itemno.: 269063 2125*

*including flange



Aluminum T-slot plate

Ø 240 mm / PT 25
Itemno.: 269050 0240

Ø 365 mm / PT 25
Itemno.: 269050 0365



Technical data

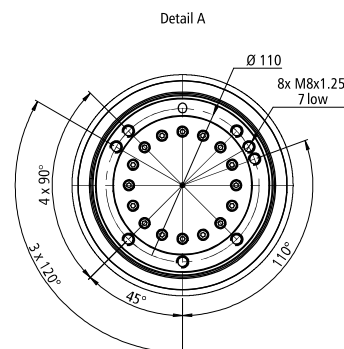
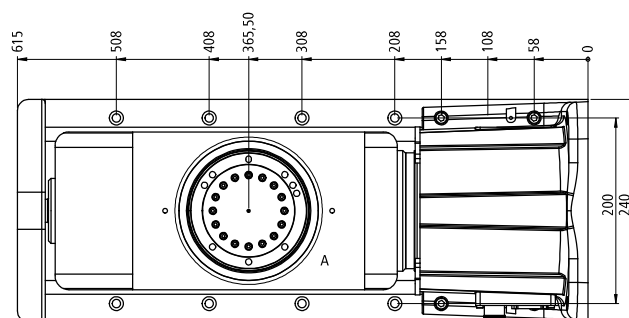
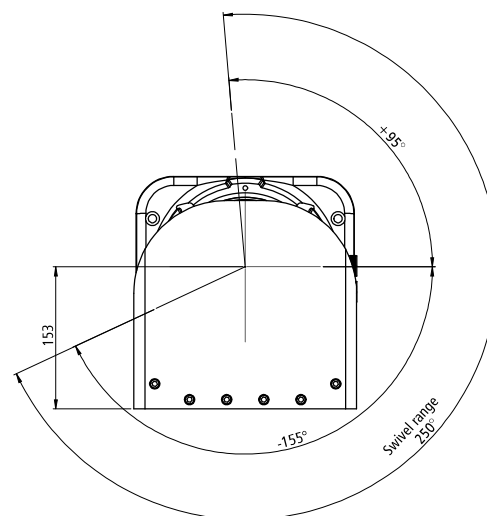
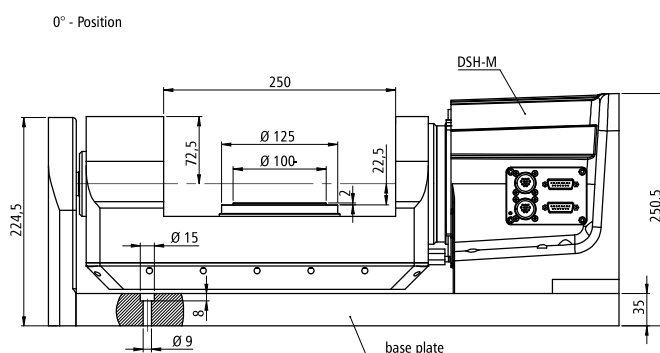
Stepping motor MS 200HT*

EC servo motor EC 60TM

Reduction ratio of gear	1:51	1:101	1:51	1:101
Nominal output speed [1/min]	4	2	20	10
	at 1,500 Hz (225 1/min)		at 1,000 1/min	
Max. Output speed [1/min]	24	12	78	40
	at 8,000 Hz		at 4,000 1/min	
Rated torque [Nm]	24	46	20	38
	at 1,500 Hz		—	
Max. torque (for a short term) [Nm]	—	—	42	80
Nominal holding torque (static load) [Nm]	55	108	26	51
Max. load capacity of the gearbox [Nm]	98	157	98	157
	Limit for repeatable peak torque			
Dynamic load rating C [N]	21800			
Static load rating c_0 [N]	35800			
Weight [kg]				

*Values for the half-step mode

Dimensional drawings





Rotary axis type ZD30

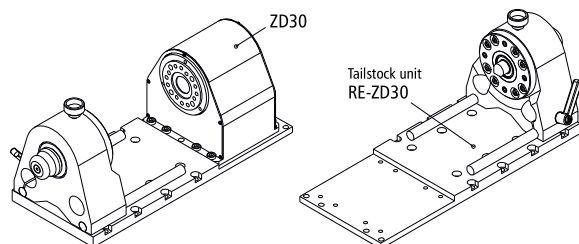
- Low toothed belt drive without clearance and equipped with a stepper motor
- Reduction 1 : 30
- Shaft with through hole, Ø 15 mm
- Mounting flange with inner cone SK 20
- Weight: 2.9 kg

Options

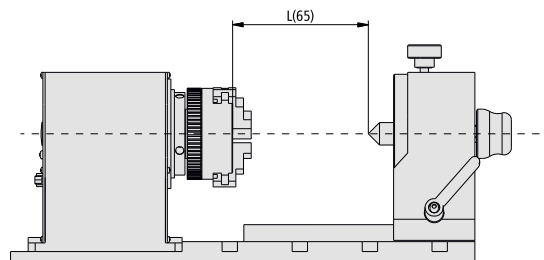
- CNC control through Sub-D

Order data

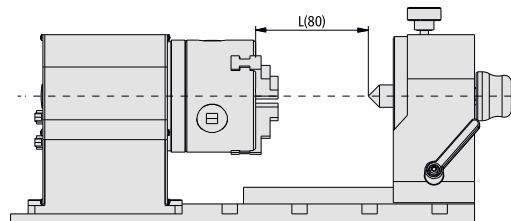
Itemno.: 261100 0000



Tailstock unit RE-ZD30 equipped with three-jaw chuck Ø 65



Tailstock unit RE-ZD30 equipped with three-jaw chuck Ø 65



Accessories



Clamping chuck
3-jaw chuck Ø 65
Itemno.: 269060 2065*

*including flange



Clamping chuck
3-jaw chuck Ø 80
Itemno.: 269063 3080*

3-jaw chuck Ø 125
Itemno.: 269063 1125*

*including flange



Collet holder
Collet holder SK 20 for
tools Ø 3 - 13 mm,
equipped with mounting ring

Itemno.: 239122 9001



Tailstock unit type RE-ZD30
200 mm length 331 mm
Itemno.: 269 100 1060
300 mm length 431 mm
Itemno.: 269 100 1070
400 mm length 531 mm
Itemno.: 269 100 1080
500 mm length 631 mm
Itemno.: 269 100 1090



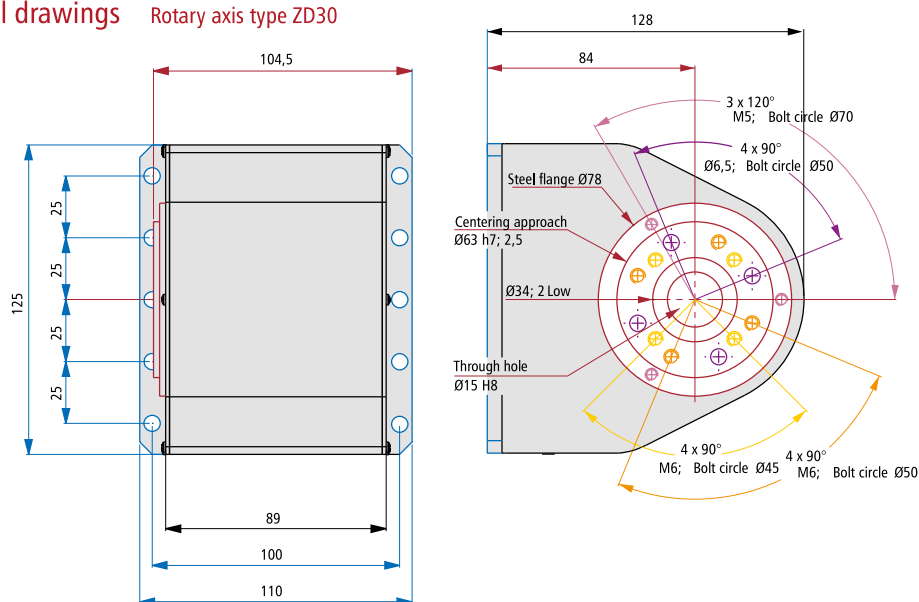
Technical data

Stepping motor type MS 045 HT*

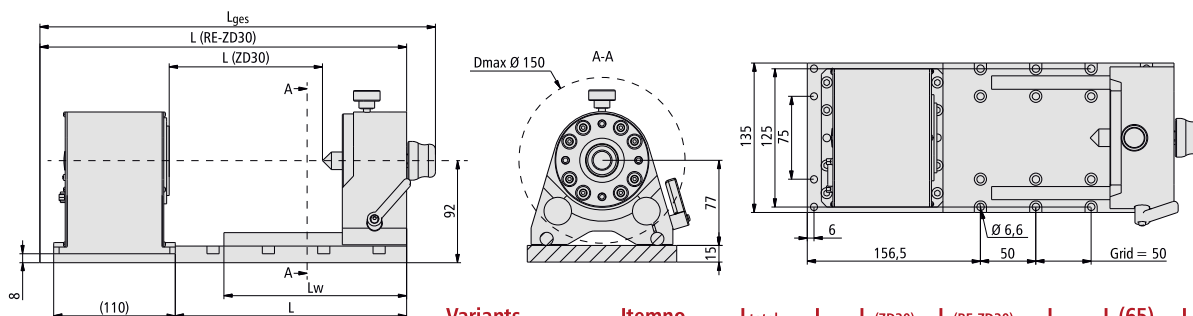
Reduction ratio of gear	1:30
Output speed [1/min]	0 – 40
Operating torque (0 - 1600 Hz) [Nm]	12
Nominal holding torque (static load) [Nm]	20
Min. Increment [arcmin]	2.5
Repetitive accuracy	0.015°
Max. reverse play	0.1°
Transmission accuracy	0.15°
Axial runout at the drive flange [mm]	0.05
Concentricity at the output flange [mm]	0.05
Weight [kg]	2.9

*Values for the half-step mode

Dimensional drawings Rotary axis type ZD30



Tailstock unit type RE-ZD30



Variants	Itemno.	Ltotal	L	L (ZD30)	L (RE-ZD30)	Lw	L (65)	L (80)
RE-ZD30 200 mm	269100 1060	358	209	138.5	331.5	165	97	80.5
RE-ZD30 300 mm	269100 1070	458	309	238.5	431.5	265	197	180.5
RE-ZD30 400 mm	269100 1080	558	409	338.5	531.5	365	297	280.5
RE-ZD30 500 mm	269100 1090	658	509	438.5	631.5	465	397	380.5



Mini rotary axis type MD 1

- Clearance-poor toothed belt drive equipped with stepping or servo motor
- Reduction 1 : 20
- Shaft with through hole, Ø 9 mm
- Mounting flange with inner cone SK 20
- Weight: according to the version, starting from 1.35 kg

Options

- Additional mounting plate (vertical mounting possible) CNC control

Mini rotary axis type MD 1
equipped with servomotor EC
42 and optional accessories
3-jaw chuck Ø65 mm



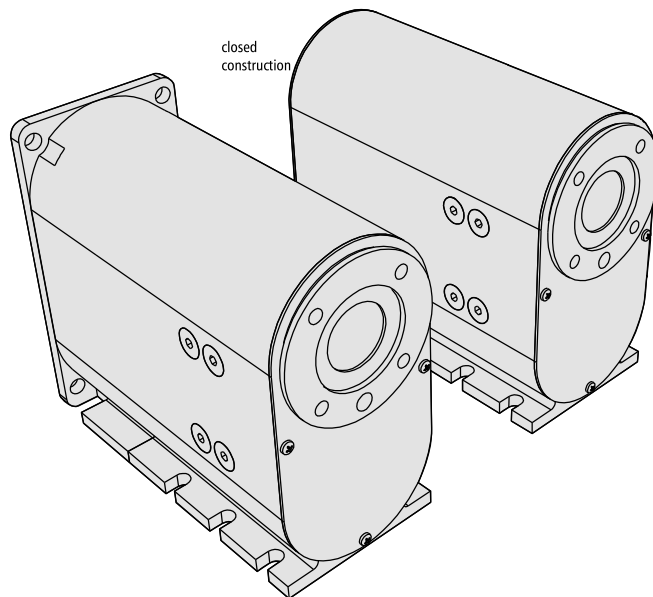
Order key

261010 0X10

Engines

- 0 = stepping motor MS048 HT
- 2 = brushed DC servomotor RE 40
- 3 = brushless EC servo motor EC 42

Mounting plate
(vertical assembly of the
closed construction)
Itemno.: 277026



Accessories



Clamping chuck
3-jaw chuck Ø 65
Itemno.: 269060 2065*

*including flange



Collet holder
Collet holder SK 20for
tools Ø 3 - 13 mm,
equipped with mounting ring

Itemno.: 239122 9001



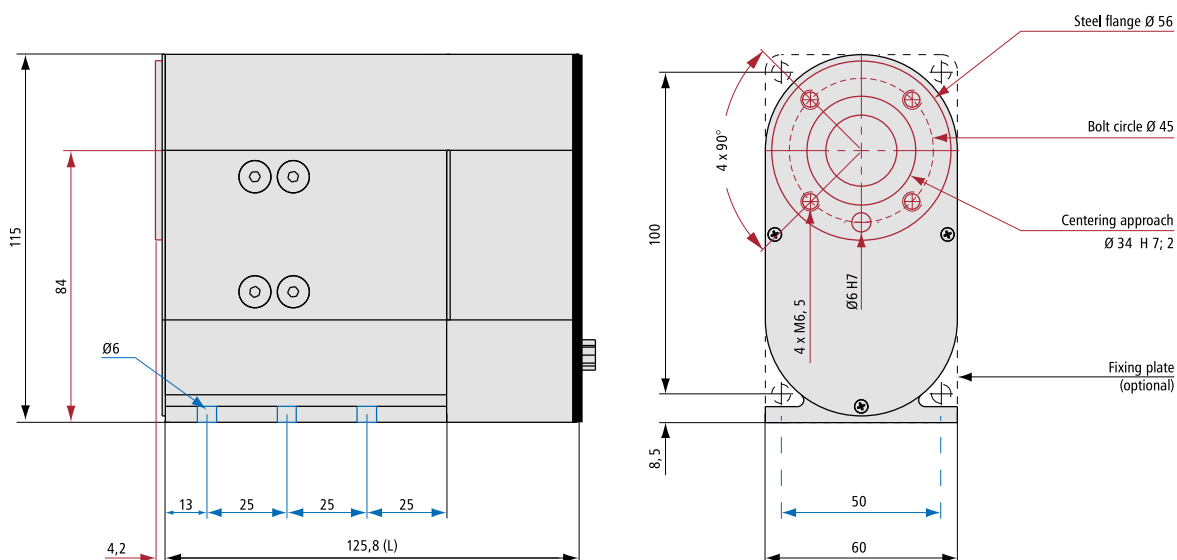


Technical data	Stepping motor type MS 048 HT*	DC servo motor RE 40	EC servo motor EC 42
Reduction ratio of gear	1:20	1:20	1:20
Output speed [1/min]	0 - 60	0 - 175	0 - 150
Operating torque (0 - 1600 Hz) [Nm]	8	—	—
Rated torque [Nm]	—	3	3.2
Nominal holding torque (static load) [Nm]	14	3.9	4
Min. Increment [arcmin]	3.5	2	2
Weight [kg]		1.35	

*Values for the half-step mode

Dimensional drawings

length [L] at	Stepping motor	Servomotor
closed construction	129 mm	180 mm
equipped with fixing plate	130 mm	184 mm



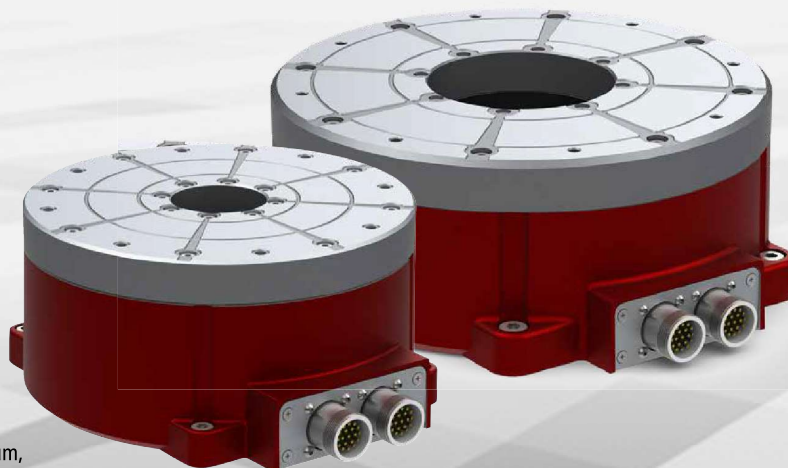


Torque motors iTM 180 and iTM 240

- Energy-efficient due to low losses
- Completely ready for use in a ready-to-assemble housing
- Hollow shaft for the media feed-through
- Convection cooling
- integrated measuring system
- Tested according to the EC regulation 73/23/ECC, and to the standards EN50178 and EN60204

Options

- Absolute measuring system equipped with BISS-C protocol
- Clamping plate made of die-cast aluminium, Ø 250 mm and Ø 500 mm



Advantages offered by the torque motor

- High torques from speed 0
- Reduced assembly space, since there is no gearbox required
- Clearance-free, robust, maintenance-free and smooth-running

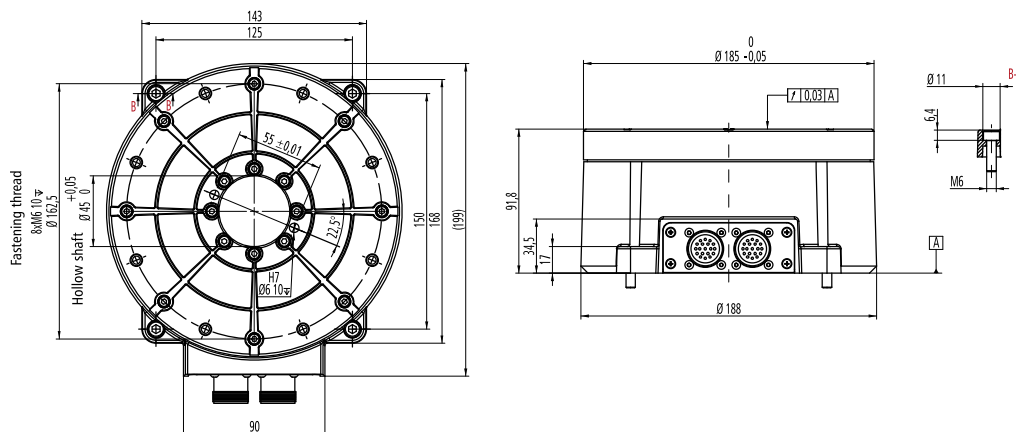
Areas of application

- Swivel axes
- Rotary table
- Measuring technology
- Positioning

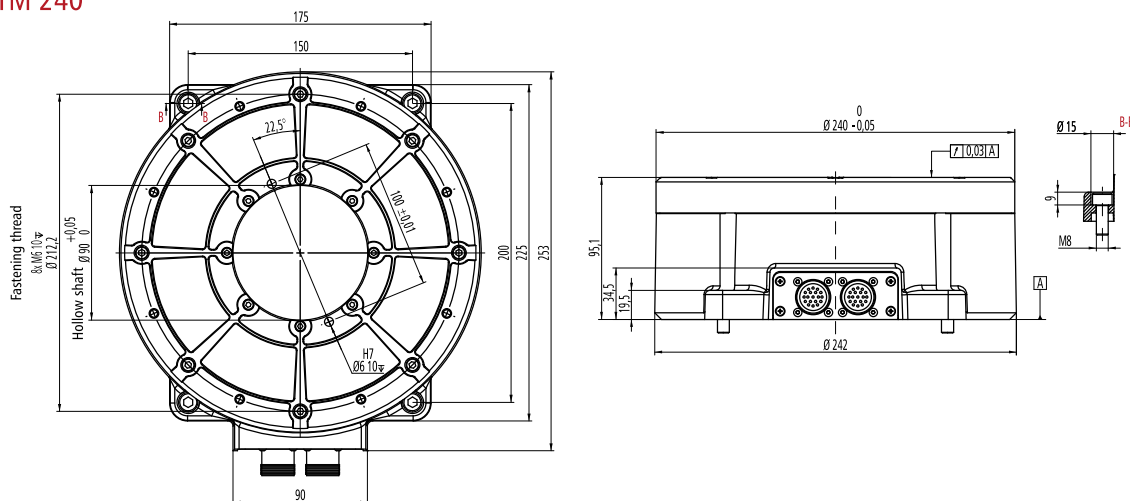
Technical details	iTM180-48V	iTM180-320V	iTM240-48V	iTM240-320V
Nominal voltage	48 DC	320 VDC	48 DC	320 VDC
Rated current	7.4 A	1.3 A	8.8 A	1.8 A
Nominal power	350 W	350 W	425 W	475 W
rated torque	15 Nm	13 Nm	25 Nm	27 Nm
Peak current	18.5 A	3.2 A	26.5 A	5.4 A
Maximum peak torque	38 Nm	32 Nm	75 Nm	75 Nm
Nominal turn speed	220 rpm	220 rpm	130 rpm	160 rpm
max. rotational speed	260 rpm	250 rpm	155 rpm	200 rpm
Winding resistance (phase-phase)	1.1 ohms	21 ohms	0.8 ohms	14.8 ohms
Motor inductance (phase-phase)	1.4 mH	66 mH	2 mH	60.6 mH
Voltage constant	0.128 V/min ⁻¹	0.77 V/min ⁻¹	0.123 V/min ⁻¹	1.15 V/min ⁻¹
Torque constant	2.11 Nm/A	10 Nm/A	2.83 Nm/A	15 Nm/A
Number of poles	40	40	46	40
Thermoguard	Optional			
Moment of inertia (of the rotating components)	0.0085 kg/m ²	0.0085 kg/m ²	0.0114 kg/m ²	0.0114 kg/m ²
Weight	8 kg		13 kg	
max. axle load/max. radial load	3100 N		4,000 N	
Protection class	IP40			
hollow shaft diameter	45 mm		90 mm	
run-out accuracy	0.05 mm			
Dimensions (LxWxH)	199 / 188 / 92 mm		242 / 253 / 95 mm	



Dimensional drawing iTM 180



iTM 240



integrated: incremental measuring system / RS422

Item	RS422
Signals	A, /A, B, /B optional: Z, /Z
supply voltage	5 VDC
Power consumption	< 100 mA
Distance between the sensor and the magnetic tape	0.4 - 0.7 mm
max. resolution (after quadrature) increments/r	iTM 180: standard 276,000 optional up to 2,260,000 iTM 240: standard 420,000 optional up to 3,440,000
Repetitive accuracy	± 1 increment(s)
Positioning accuracy	270 arcs/sec
Working temperature range	-5 to +80 °C
Storage temperature range	-20 to +100 °C

optional: absolute measuring system

Interface	SSI, BiSS, SPI
supply voltage	5 VDC
max. resolution	max. 38 bits (1,048,576)

Order data (itemno.)

	iTM180-48V	iTM180-320V	iTM240-48V	iTM240-320V
torque motor	267402 0048i	267401 0320i	267400 0048i	267400 0320i
Controller (MC1-20 / EC Servo)	381518 0020	-	381518 0020	-
Controller (MC1-40 / EC Servo)	-	381518 0040	-	381518 0040
Motor cable (M23 6 wire pin / wire end ferrule)	392303 0x00	-	392303 0x00	-
Motor cable (M23 8 wire pin / M23 8 wire socket)	-	392307 0x00	-	392307 0x00
Encoder cable (M23-17wire pin / SubD15)	392325 0x00			