

Hybrid Two-Phase Stepping Motor MS 026



MS 026



MS 026 Z

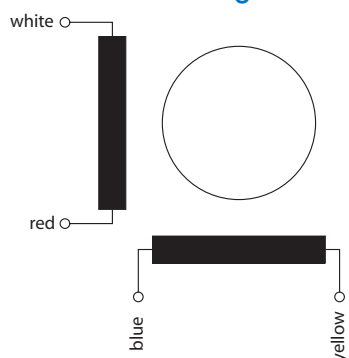
Features

- hybrid stepping motor with high energy density
- unipolar and bipolar mode of operation due to 8-wire connection
- revolution control via step-sequence frequency in open loop
- minor step angle error, not cumulative
- rotation angle of the motor shaft is directly proportional to the number of the input impulses
- second shaft end for the optional mounting of brake and encoder (type HEDS 55..., make: HP)
- Option: Gear stepping motor upon request

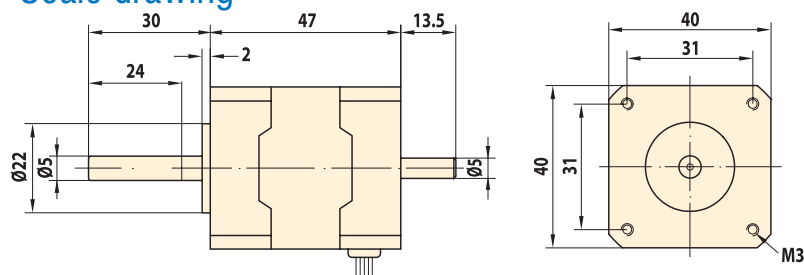
Technical data

Description	Item no.	Holding torque unipolar / bipolar Nm.	Winding torque per phase (unipolar) A	Coil voltage per phase V	Winding inductance per phase mH	Step angle °	Connecting lines	Weight kg	Flange dimension mm	Overall length (without shaft) mm	Ø / length shaft A-sided mm	Ø / length shaft B-sided mm
MS 026	473011	- / 0.26	1.7	2.9	27	1.8	4	0.3	40	47	5 / 30	5 / 13.6
MS 026 Z	473012	- / 0.26	1.7	2.9	27	1.8	4	0.3	40	47	5 / 30	5 / 13.6

Connection diagram



Scale drawing

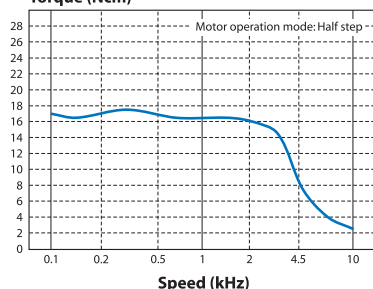


Type MS 026 Z: Shaft gearing Type M
Pitch 2.032 mm = 0.08 inch
Number of teeth = 10
Shaft length = 30 mm

Torque curve

MS 026 / MS 026 Z

Torque (Ncm)



Hybrid Two-Phase Stepping Motor MS 110 / 160



MS 160 Z

MS 160

MS 110

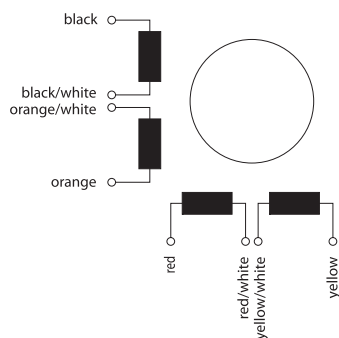
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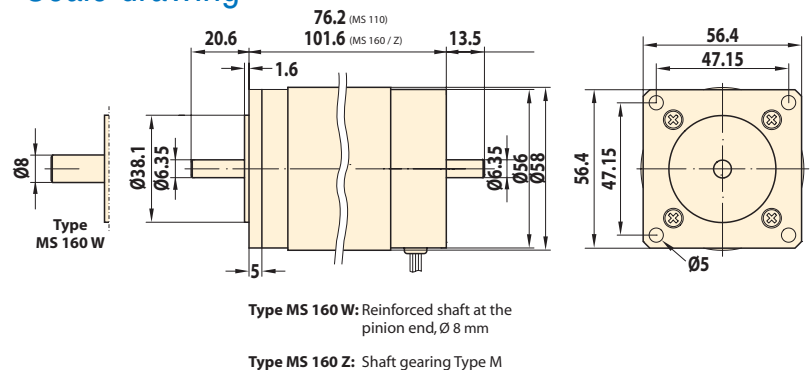
Technical data

Description	Item no.	Holding torque unipolar/bipolar Nm.	Winding torque per phase (unipolar) A	Coil voltage per phase V	Winding inductance per phase mH	Step angle °	Connecting lines	Weight kg	Flange dimension mm	Overall length (without shaft) mm	Ø / length shaft A-sided mm	Ø / length shaft B-sided mm
MS 110	473031	0.88 / 1.1	2.8	2.8	1.9	1.8	8	1.0	56.4	76.2	6.35/20.6	6.35/18.6
MS 160	473041	1.3 / 1.6	2.85	1.7	2.2	1.8	8	1.4				
MS 160Z	473042	1.3 / 1.6	2.85	1.7	2.2	1.8	8	1.4		101.6		
MS 160W	473043	1.3 / 1.6	4.1	1.1	1.0	1.8	8	1.4			8 / 20.6	6.35 / 18.6

Connection diagram



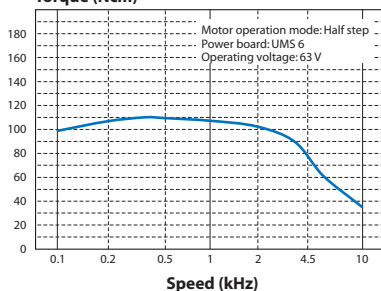
Scale drawing



Torque curves

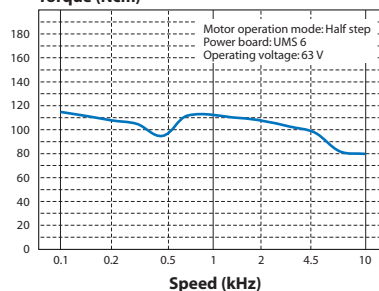
MS 110

Torque (Ncm)



MS 160 / MS 160 Z

Torque (Ncm)



Hybrid Two-Phase Stepping Motor MS 300



MS 300

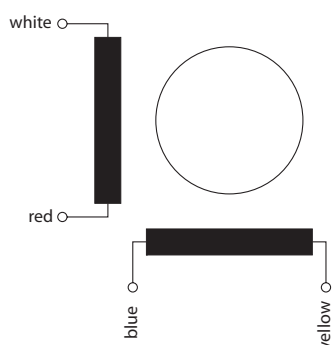
Features

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- unipolar and bipolar mode of operation due to 8-wire connection
- revolution control via step-sequence frequency in open loop
- minor step angle error, not cumulative
- rotation angle of the motor shaft is directly proportional to the number of the input impulses
- second shaft end for the optional mounting of brake and encoder (type HEDS 55..., make: HP)
- Option: gear stepping motor upon request

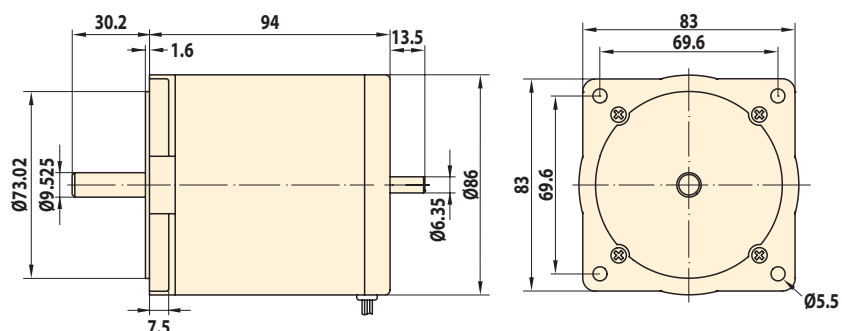
Technical data

Description	Item no.	Holding torque unipolar/bipolar Nm.	Winding torque per phase (unipolar) A	Coil voltage per phase V	Winding inductance per phase mH	Step angle °	Connecting lines	Weight kg	Flange dimension mm	Overall length (without shaft) mm	Ø / length shaft A-sided mm	Ø / length shaft B-sided mm
MS 300	473061	2.7 / 3.5	8.5	1.2	1.5	1.8	1.8	2.6	83	94	9.525 / 30.2	9.525 / 13.6

Connection diagram



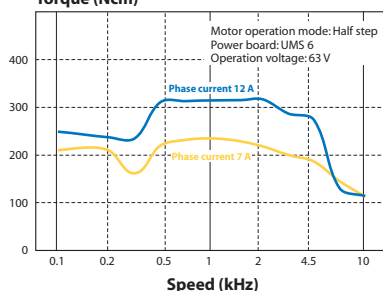
Scale drawing



Torque curve

MS 300

Torque (Ncm)



Gear Motor

MSG 020 / 050 S



MS 300

The worm gear transmission reduces the revolution of the flanged stepping motor by the factor "i" and, at the same time, increases the torque available at the motor shaft.

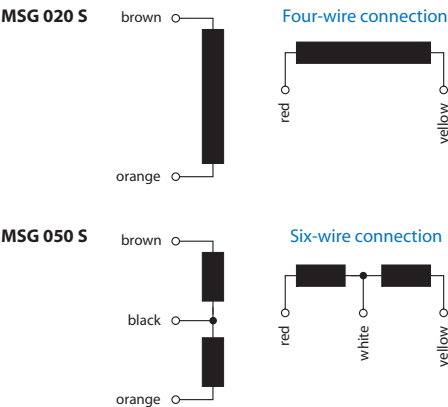
The gear itself consists of a zinc die-cast housing with cap. A high-quality toothed wheel, which is embedded in grease, and a drive shaft, which is embedded in sintered metal on both sides, complete the simple yet robust construction.

- Fields of application:
- controlled tape drives
 - indexing tables
 - machine drives

Technical data

Description	Item no.	Item no. with second shaft end	Mounted stepping motor type	Reduction i	Nominal/peak torque Nm	Self-locking Nm	Axial load, push N	Axial load, pull N	Radial load N
MSG 020 S	470010 0480	470010 1480	MS 045 HT	62:1	2 / 9	7	10	15	40
MSG 050 S	470010 0520	470010 1520	MS 058 HT	69:1	5 / 25	15	10	15	40

Connection diagram



Linear Motor

MS 015/028/130 L



MS 130 L

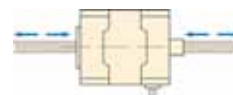
MS 028 L

MS 015 L

In order to achieve a linear movement, the twisting of the spindle has to be prevented.

Please keep in mind that lateral forces must not affect the spindle.

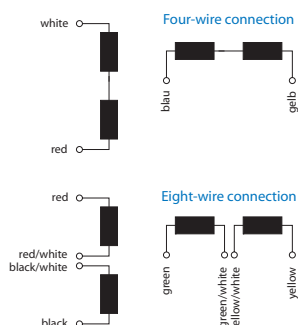
- Stroke depends on threaded spindle's length
- Self-locking (no brake at standstill)
- Micro-step control up to 0.001mm/step possible
- axial play (ISO DIN 13 - tolerance 6 G)



Technical data

Description	Item no.	Thrust N	Resolution mm/step	Feed mm/s	Winding current A	Winding resistance Ohm	Flange dimension mm	Overall length mm	Internal thread	Weight kg
MS 015 L	473341	50	0.005	30	1.2	2.8	40	33	M6 x 1	0.2
MS 028 L	473351	80	0.005	30	1.4	2.6	56.4	38.5	M6 x 1	0.38
MS 130 L	473381	200	0.00625	35	4.5	0.34	86	62	M8 x 1.25	1.45

Connection diagram

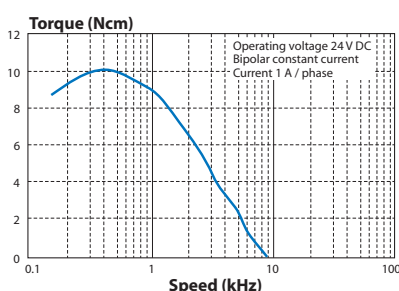


Spindles for linear motors

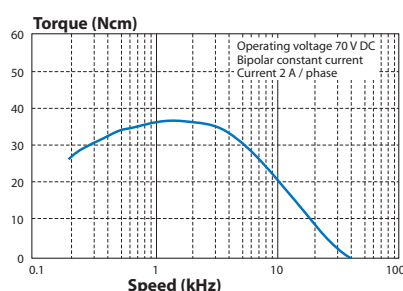
Item no.	Pitch	Length mm	suited to motor
473 390 9603	M6 x 1	300	MS 015/028 L
473 390 9803	M8 x 1	300	MS 130 L

Torque curves

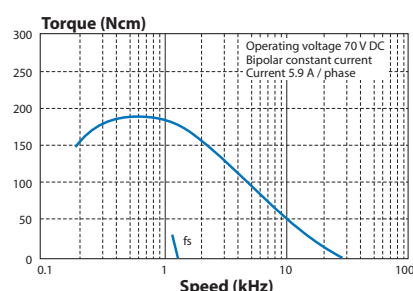
MS 015 L



MS 028 L



MS 130 L



High-Torque Stepping Motor

MS 019/032/045 HT



MS 045 HT

MS 032 HT

MS 019 HT

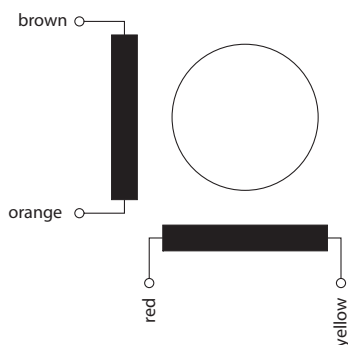
Features

- step angle 1.8°, less resolution due to micro-step operation
- very high torque due to rare-earth magnets
- optimised for application in positioning control units
- optimal torque/overall size ratio
- 6/8-wire connection for unipolar and bipolar operation
- minor step angle error, not cumulative
- second shaft end for the optional mounting of HP encoder

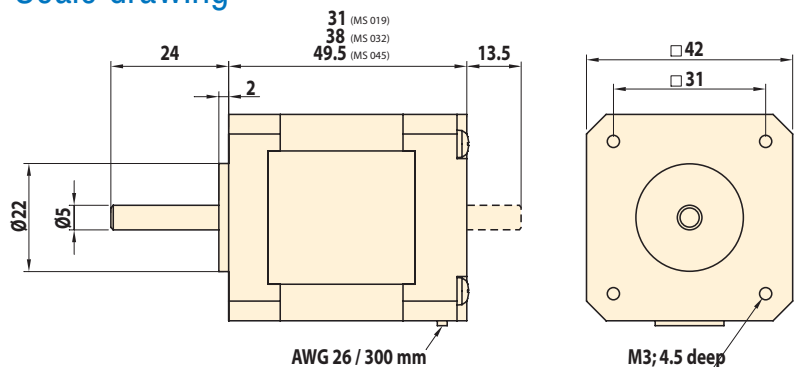
Technical data

Description	Item no.	Holding torque unipolar/bipolar Nm.	Winding torque per phase (unipolar) A	Coil voltage per phase V	Winding inductance per phase mH	Step angle °	Connecting lines	Weight kg	Flange dimension mm	Overall length (without shaft) mm	Ø / length shaft A-sided mm	Ø / length shaft B-sided mm
MS 019 HT	470420	- / 0.19	1.4	2.5	3.6	1.8	4	0.2	42	31	5 / 24	5 / 13.5
MS 032 HT	470450	- / 0.32	1.8	2.0	1.85	1.8	4	0.27		38		
MS 045 HT	470480	- / 0.45	1.8	3.2	5.4	1.8	4	0.37		49.5		

Connection diagram

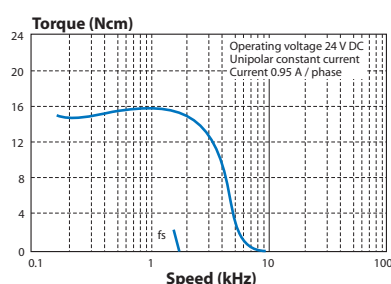


Scale drawing

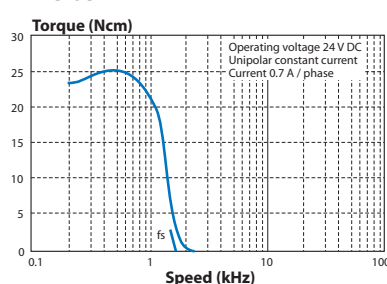


Torque curves

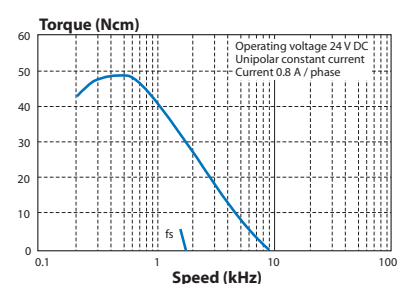
MS 019 HT



MS 032 HT



MS 045 HT



High-Torque Stepping Motor

MS 058/135/200 HT



MS 200 HT

MS 135 HT

MS 058 HT

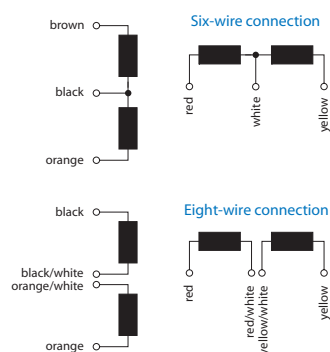
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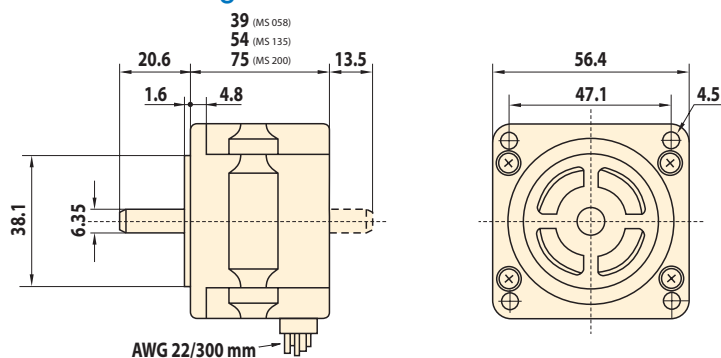
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MS 058 HT	470520	0.42 / 0.58	2.6	1.8	1.6	1.8	8	0.4	56.4	39	6.35 / 20.6	6.35 / 13.5
MS 135 HT	470550	0.97 / 1.35	3.6	1.5	1.8	1.8	8	0.6		54		
MS 200 HT	470580	1.43 / 2	2.85	1.7	3.1	1.8	8	0.97		75		

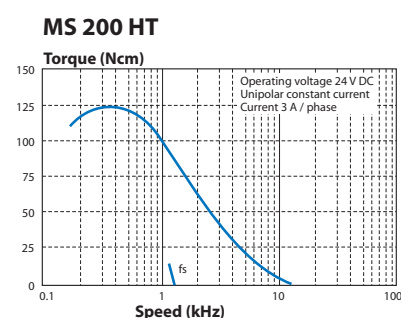
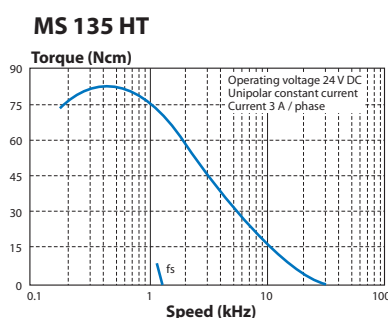
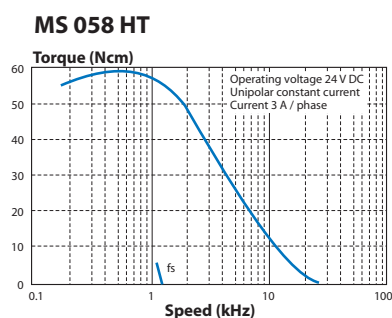
Connection diagram



Scale drawing



Torque curves



High-Torque Stepping Motor

MS 300/600/900 HT



MS 900 HT

MS 600 HT

MS 300 HT

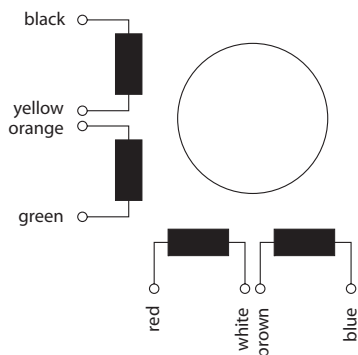
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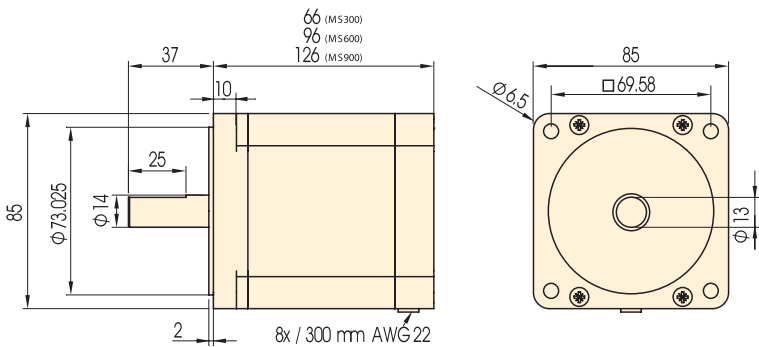
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MS 300 HT	470820	2.15 / 3.01	4.5	2	1.5	1.8	8	1.7	85	66	14 / 37	-
MS 600 HT	470850	4.31 / 6	4.5	2.8	2.5	1.8	8	2.8		96		
MS 900 HT	470880	6.47 / 9	4	3.8	4.2	1.8	8	3.8		126		

Connection diagram

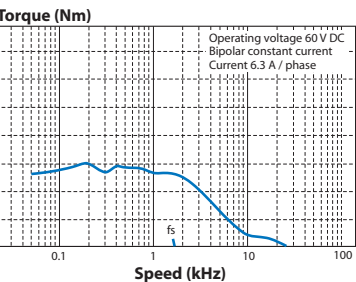


Scale drawing

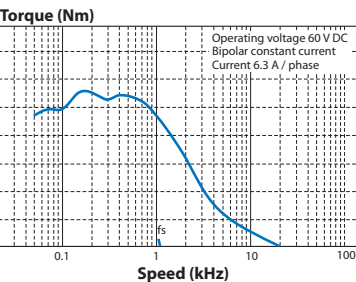


Torque curves

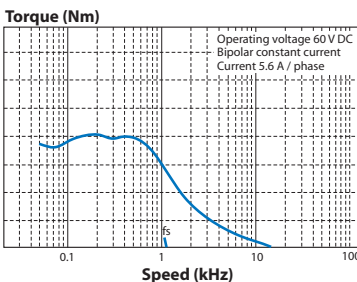
MS 300 HT



MS 600 HT



MS 900 HT



ServoStepper

MS-J

Two-phase stepping motor with integrated measuring system



Features

- two-phase stepping motor step angle 1.8°
- improved torque/overall installed size ratio due to optimised motor design
- torque range from 0.8 Nm to 20 Nm
- bipolar mode of operation (4-wire)
- construction type according to NEMA standard
- integrated incremental encoder 2000
- increments/revolution
- optionally with holding brake

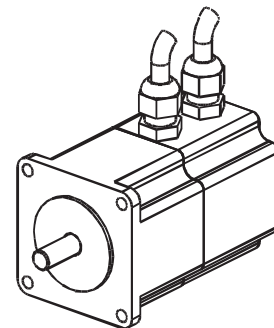
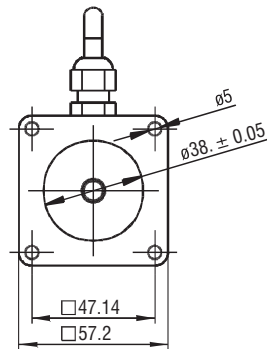
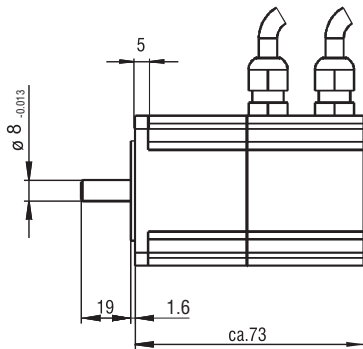
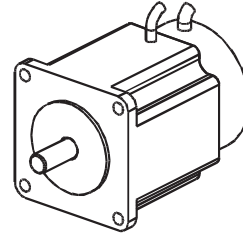
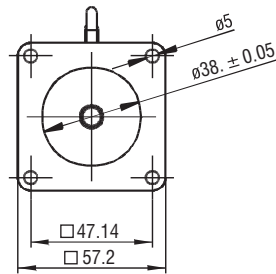
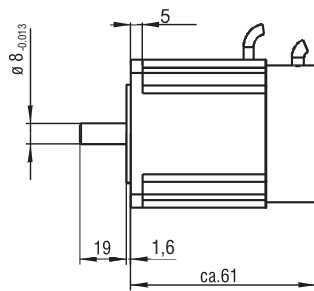
Technical data

Motor type	MS 045-J	MS 100-J	MS 180-J	MS 220-J	MS 400-J	MS 600-J	MS 1100-J
Phase current (A)	5.6	5.6	6.5		6.0		
Winding resistance (Ohm)	0.28	0.41	0.29		0.75		
Winding inductance (mH)	0.30	0.54	0.8		3.5		
Holding torque (Nm)	0.45	1.0	1.8	2.37	4.0	6.27	13.0
Max. Indirect voltage (V)	60	60	60	120	120	120	150
Rotor inertia kg (cm ²)	0.0077	0.002	0.034		0.12	0.18	0.56
Detent torque (Nm)	0.02	0.04	0.07		0.13		
Encoder							
Voltage supply	+5V (10%), 100mA						
Increments/revolution	2,000						
Output signal	RS 422 (A, /A, B, /B, N, /N)						
Dimensions							
Flange dimension (mm)	57.2	57.2	57.2	86	86	86	110
Overall length (mm)	61	88	111	105	105	161	135
Shaft diameter (mm)	8.0	8.0	8.0	12	12	12	19
Axial load (Nm)	80	80	80	130	130	130	560
Radial load (Nm)	100	100	100	180	180		
Weight (kg)	0.5	0.8	1.4	2.4	2.8	3.6	5.0
Item no.	4705200290	4705500290	4705800290	4708200290	4708300290	478500290	4709200290

ServoStepper

MS-J

Scale drawings



EC Servo Motor

MD 030/050/100



Features

- servo motors without brushes (6-pole)
- very good performance/volume ratio
- low motor inertia
- encoder with 2,500 impulses/revolution, RS 422

Technical data

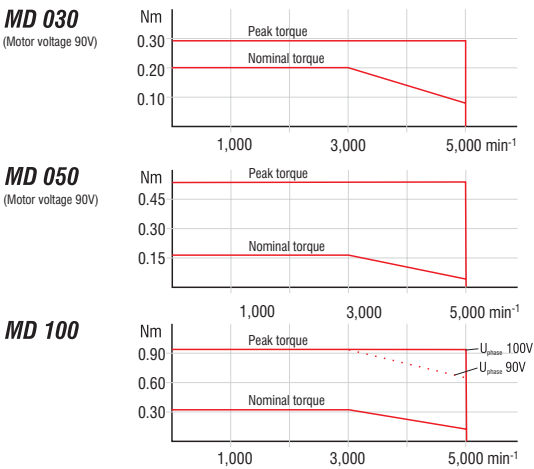
		MD 030	MD 050	MD 100
Item no.		474410 0200	474420 0200	474430 0200
Item no.	with brake	474410 0201	474420 0201	474430 0201
Nominal power	W	30	50	100
Nominal voltage	V	100	100	100
Nominal/peak current	A	1.0 / 4.3	1.0 / 4.3	1.6 / 6.9
Nominal/peak torque	Nm	0.095 / 0.28	0.16 / 0.48	0.32 / 0.95
Nominal speed	min ⁻¹	3,000	3,000	3,000
Voltage constant	10V / min ⁻¹	3.63	5.66	7.35
Torque constant	Nm / A	0.103	0.16	0.21
Winding resistance	Ohm	3.50	3.70	2.90
Winding inductance	mH	2.40	2.80	2.30
Power rate	kW / s	5.8 (4.6)	9.9 (8.3)	23.4 (21.4)
Max. revolution	min ⁻¹	5,000	5,000	5,000
Rotor inertia	10 kg / m ²	0.016 (0.020)	0.025 (0.030)	0.044 (0.048)
Electrical time constant	ms	0.69	0.76	0.79
Mechanical time constant	ms	1.5	1.1	0.86
Radial load (at 10 mm)	N	49.0	68.6	68.6
Shaft load, axial	N	29.4	58.8	58.8
Weight	kg	0.3 (0.5)	0.4 (0.6)	0.5 (0.7)
Protection class		IP 55		
Ambient temperature	°C	0 °C... + 40 °C		

Values in brackets refer to motor with flanged brake

EC Servo Motor

MD 030/050/100

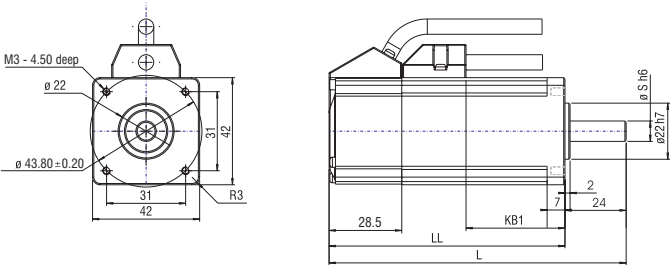
Torque curves



Connector pin assignment

Motor	red	phase U	1	AMP module (2 x 2) (housing 172330-1)
	white	phase V	2	
	black	phase W	3	
	yellow/green	motor housing	--	
Encoder	white	+ 5V	13	AMP Mini-Universal (3 x 5) (housing 172334-1)
	black	ground	14	
	red	phase A	1	
	pink	phase /A	2	
	green	phase B	3	
	blue	phase /B	4	
	yellow	phase Z	5	
	orange	phase /Z	6	
	light blue	Rx +	11	
	violet	Rx -	12	
	Cable screen		15	

Scale drawing



	L	LL	KB 1	S
MD 030	91.5 (123.0)	67.5 (99.0)	13.8	7.0
MD 050	99.5 (131.0)	75.5 (107.0)	21.8	8.0
MD 100	116.5 (148.0)	92.5 (124.0)	38.8	8.0

Values in brackets refer to motor with flanged brake

EC Servo Motor

MD 200 / 400



Features

- servo motors without brushes (6-pole)
- very good performance/volume ratio
- low motor inertia
- encoder with 2,500 impulses/revolution, RS 422

Technical data

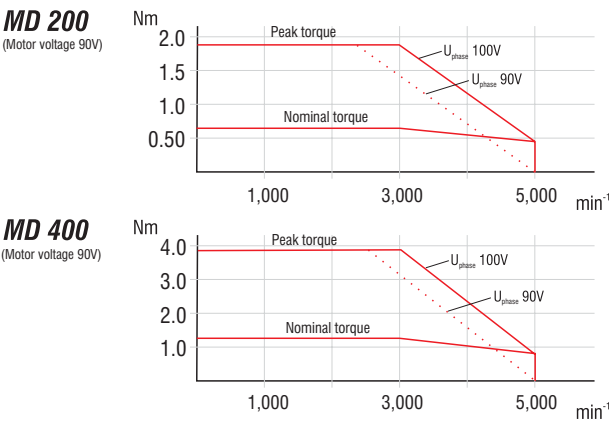
		MD 200	MD 400
Item no.		474510 0200	474520 0200
Item no.	with brake	474510 0201	474520 0201
Nominal power	W	200	400
Nominal voltage	V	100	100
Nominal/peak current	A	2.5 / 10.5	4.4 / 18.6
Nominal/peak torque	Nm	0.64 / 1.91	1.3 / 3.8
Nominal speed	min ⁻¹	3,000	3,000
Voltage constant	10V / min ⁻¹	9.40	10.6
Torque constant	Nm / A	0.27	0.30
Winding resistance	Ohm	1.20	0.58
Winding inductance	mH	3.80	2.04
Power rate	kW / s	41.4 (31.9)	97.4 (82.8)
Max. revolution	min ⁻¹	5,000	4,500
Rotor inertia	10 kg / m ²	0.1 (0.13)	0.17 (0.20)
Electrical time constant	ms	3.5	6.2
Mechanical time constant	ms	0.31	0.37
Radial load (at 10 mm)	N	245.0	245.0
Shaft load, axial	N	98.0	98.8
Weight	kg	0.96 (1.36)	1.5 (1.9)
Protection class		IP 55	
Ambient temperature	°C	0 °C... + 40 °C	

Values in brackets refer to motor with flanged brake

EC Servo Motor

MD 200 / 400

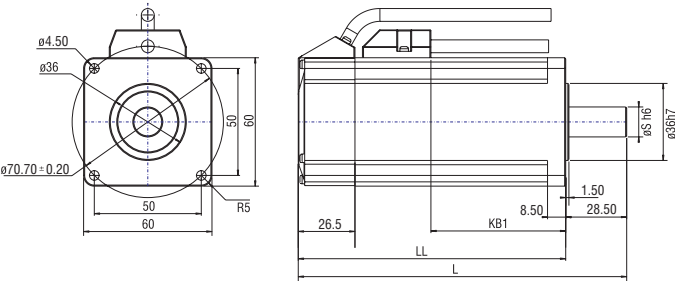
Torque curves



Connector pin assignment

Motor	red	phase U	1	AMP module (2 x 2) (housing 172330-1)
	white	phase V	2	
	black	phase W	3	
	yellow/green	motor housing	--	
Encoder	white	+5V	13	AMP Mini-Universal (3 x 5) (housing 172334-1)
	black	ground	14	
	red	phase A	1	
	pink	phase /A	2	
	green	phase B	3	
	blue	phase /B	4	
	yellow	phase Z	5	
	orange	phase /Z	6	
	light blue	Rx+	11	
	violet	Rx-	12	
	Cable screen		15	

Scale drawing



	L	LL	KB 1	S
MD 200	126.0 (159.0)	97.5 (130.5)	35.5	11.0
MD 400	153.5 (186.5)	125.5 (158.0)	63.0	14.0

Values in brackets refer to motor with flanged brake

EC Servo Motor

MD 750



Features

- servo motors without brushes (6-pole)
- very good performance/volume ratio
- low motor inertia
- encoder with 2,500 impulses/revolution, RS 422

Technical data

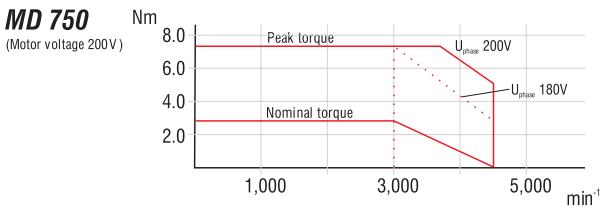
MD 750		
Item no.		474810 0200
Item no.	with brake	474810 0201
Nominal power	W	750
Nominal voltage	V	200
Nominal/peak current	A	4.3 / 18.3
Nominal/peak torque	Nm	2.4 / 7.1
Nominal speed	min ⁻¹	3,000
Voltage constant	10V / min ⁻¹	--
Torque constant	Nm / A	0.61
Winding resistance	Ohm	0.71
Winding inductanc	mH	4.40
Power rate	kW / s	86.4 (77.2)
Max. revolution	min ⁻¹	4,500
Rotor inertia	10 kg / m ²	0.67 (0.75)
Electrical time constant	ms	6.2
Mechanical time constant	ms	0.37
Radial load (at 10 mm)	N	392
Shaft load, axial	N	147.0
Weight	kg	3.1 (3.8)
Protection class		IP 55
Ambient temperature	°C	0 °C... + 40 °C

Values in brackets refer to motor with flanged brake

EC Servo Motor

MD 750

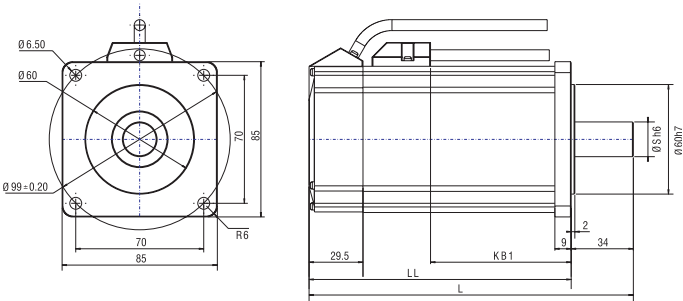
Torque curve



Connector pin assignment

Motor	red	phase U	1	AMP module (2 x 2) (housing 172330-1)
	white	phase V	2	
	black	phase W	3	
	yellow/green	motor housing	--	
Encoder	white	+5V	13	AMP Mini-Universal (3 x 5) (housing 172334-1)
	black	ground	14	
	red	phase A	1	
	pink	phase /A	2	
	green	phase B	3	
	blue	phase /B	4	
	yellow	phase Z	5	
	orange	phase /Z	6	
	light blue	Rx+	11	
	violet	Rx-	12	
	Cable screen		15	

Scale drawing



	L	LL	KB 1	S
MD 750	177.5 (211.5)	143.5 (177.5)	77.0	19.0

Values in brackets refer to motor with flanged brake

DC Servo Motor

MV 030 / 030Z



Features

- DC servo motors with brushes
- low-impedance coil
- 4-finger brush, lifetime approx. 3,000 hrs
- encoder with 1,000 impulses/revolution, RS 422

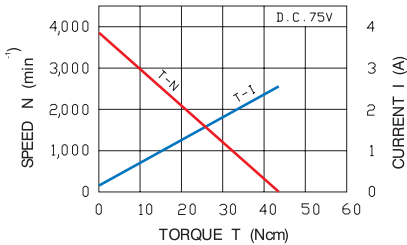
Technical data

		MV 030	MV 030Z
Item no.		471000	471001
Nominal power	W	30	
Nominal/peak speed	min ⁻¹	3,000 / 4,000	
Nominal/peak torque	Ncm	10 / 53	
Nominal resistance	Ohm	1.0	
Nominal/peak current	A	0.8 / 3.4	
Torque constant	Nm / A	16.0	
E.m.f. constant	V / 1000 min ⁻¹	16.1	
Armature inductance	mH	6.3	
Rotor inertia	10 kg / cm ²	0.05	
Mechanical time constant	ms	4.6	
Electrical time constant	ms	0.29	
Max. axial load	N	19.6	
Max. radial load	N	58.8	
Weight	kg	0.45	
ISO category/protection class		B (130°) / IP 40	
Ambient temperature		0° C... +40° C	
Leakage resistance		10 MOhm / 500 VDC	
Voltage supply encoder		5 VDC (+/-5%) / 200 mA	
Resolution		1,000 increments/revolution	
Signal output		rectangle (max. 70 kHz), RS 422	
Output voltage		V _{low} 0V, V _{high} + 2.5 V	

DC Servo Motor

MV 030 / 030Z

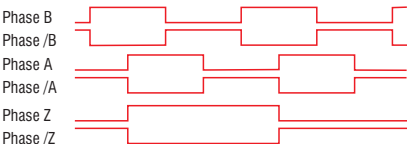
Characteristic curve



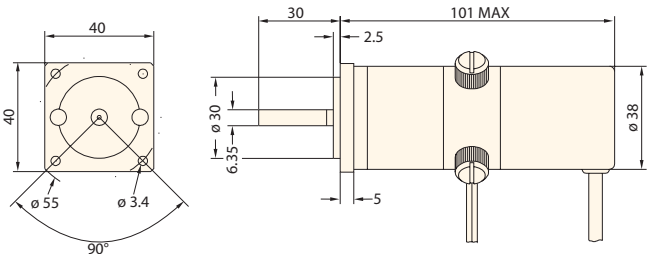
Anschlussbelegung

Motor	black	-
	red	+
Encoder	red/black	ground
	red	+ 5 VDC
	blue	phase A
	blue/black	phase /A
	yellow	phase B
	yellow/black	phase /B
	green	phase Z
	green/black	phase /Z

Encoder output



Scale drawing



Gearing (type MV-030Z)
Type M
Pitch 2.032 mm = 0.080 inch
Number of teeth z = 10

DC Servo Motor

MV 120 / 120Z



Features

- DC servo motors with brushes
- low-impedance coil
- 4-finger brush, lifetime approx. 3,000 hrs
- encoder with 1,000 impulses/revolution, RS 422

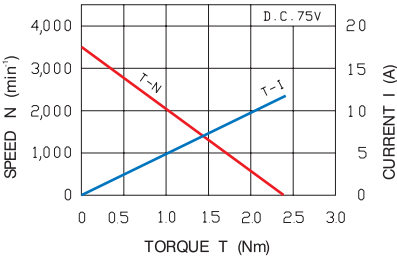
Technical data

		MV 120	MV 120Z
Item no.		471002	471003
Nominal power	W	120	
Nominal/peak speed	min ⁻¹	3,000 / 4,000	
Nominal/peak torque	Ncm	38 / 220	
Nominal resistance	Ohm	3.0 - 4.5	
Nominal/peak current	A	2.8 / 13	
Torque constant	Nm / A	17.3	
E.m.f. constant	V / 1000 min ⁻¹	17.8	
Armature inductance	mH	2.2	
Rotor inertia	10 kg / cm ²	0.35	
Mechanical time constant	ms	4.5	
Electrical time constant	ms	0.59	
Max. axial load	N	39.2	
Max. radial load	N	88.3	
Weight	kg	1.4	
ISO category/protection class		B (130°) / IP 40	
Ambient temperature		0° C... +40° C	
Leakage resistance		10 MOhm / 500 VDC	
Voltage supply encoder		5 VDC (+/-5%) / 200 mA	
Resolution		1,000 increments/revolution	
Signal output		Rectangle (max. 70 kHz), RS 422	
Output voltage		V _{low} 0V, V _{high} + 2.5 V	

DC Servo Motor

MV 120 / 120Z

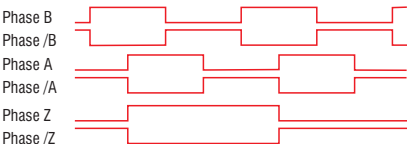
Characteristic curve



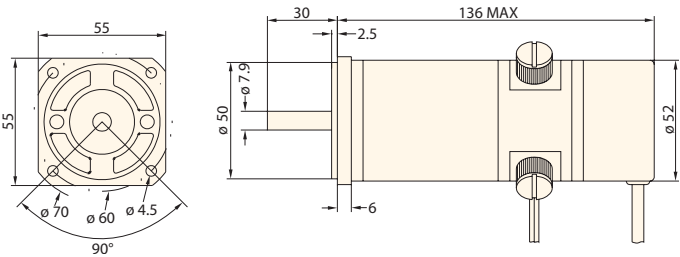
Connector pin assignment

Motor	black	-
	red	+
Encoder	red/black	ground
	red	+ 5 VDC
	blue	phase A
	blue/black	phase /A
	yellow	phase B
	yellow/black	phase /B
	green	phase Z
	green/black	phase /Z

Encoder output



Scale drawing



Gearing (type MV-120Z)
Type M
Pitch 2.032 mm = 0.080 inch
Number of teeth $z = 13$

DC Servo Motor

MV 330



Features

- DC servo motors with brushes
- low-impedance coil
- 4-finger brush, lifetime approx. 3,000 hrs
- encoder with 1,000 impulses/revolution, RS 422

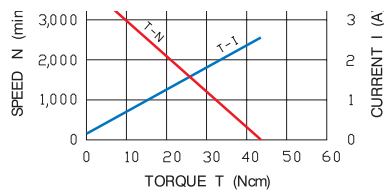
Technical data

		MV 330
Item no.		471004
Nominal power	W	330
Nominal/peak speed	min ⁻¹	3,300 / 4,000
Nominal/peak torque	Ncm	100 / 539
Nominal resistance	Ohm	0.9
Nominal/peak current	A	6.5 / 30
Torque constant	Nm / A	18.1
E.m.f. constant	V / 1000 min ⁻¹	18.6
Armature inductance	mH	0.8
Rotor inertia	10 kg / cm ²	2.51
Mechanical time constant	ms	7.4
Electrical time constant	ms	0.84
Max. axial load	N	40
Max. radial load	N	150
Weight	kg	3.1
ISO category/protection class		B (130°) / IP 40
Ambient temperature		0° C... +40° C
Leakage resistance		10 MOhm / 500 VDC
Voltage supply encoder		5 VDC (+/-5%) / 200 mA
Resolution		1,000 increments/ revolution
Signal output		Rectangle (max. 70 kHz), RS 422
Output voltage		V _{low} 0V, V _{high} + 2.5 V

DC Servo Motor

MV 330

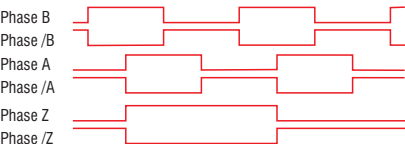
Characteristic curve



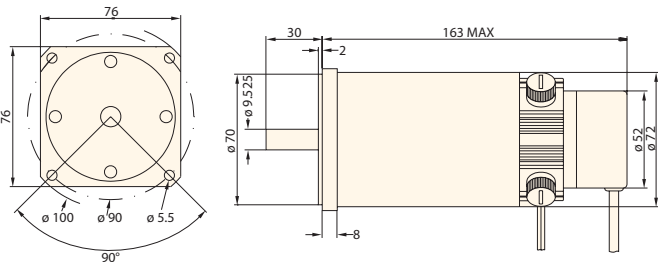
Connector pin assignment

Motor	black	-
	red	+
Encoder	red/black	ground
	red	+ 5 VDC
	blue	phase A
	blue/black	phase /A
	yellow	phase B
	yellow/black	phase /B
	green	phase Z
	green/black	phase /Z

Encoder output



Scale drawing



DC Servo Motor

MV 500



Features

- DC servo motors with brushes
- high overload capability, low moment of inertia
- 4-finger brush, lifetime approx. 3,000 hrs
- encoder with 1,000 impulses/revolution, RS 422

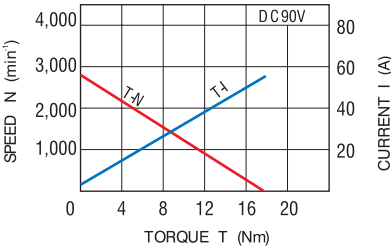
Technical data

		MV 500
Item no.		471005
Nominal power	W	500
Nominal/peak speed	min ⁻¹	2,500 / 3,000
Nominal/peak torque	Nm	2.0 / 6.0
Nominal resistance	Ohm	0.71
Nominal/peak current	A	6.6 / 19.8
Torque constant	Nm / A	0.335
E.m.f. constant	V / 1000 min ⁻¹	34.4
Armature inductance	mH	1.54
Rotor inertia	10 kg / cm ²	54.05
Mechanical time constant	ms	3.55
Electrical time constant	ms	2.17
Max. axial load	N	--
Max. radial load	N	--
Weight	kg	4.55
ISO category/protection class		F / IP 50
Ambient temperature		0° C... +40° C
Leakage resistance		10 MOhm / 500 VDC
Voltage supply encoder		5 VDC (+/-5%) / 200 mA
Resolution		1,000 increments/ revolution
Signal output		Rectangle (max. 70 kHz), RS 422
Output voltage		V _{low} 0V, V _{high} + 2.5 V

DC Servo Motor

MV 500

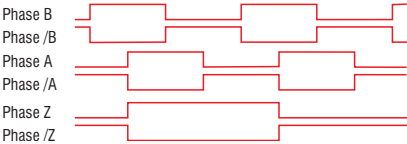
Characteristic curve



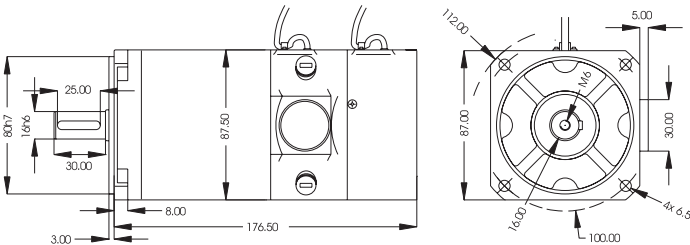
Connector pin assignment

Motor	black	-
	red	+
Encoder	red/black	ground
	red	+ 5 VDC
	blue	phase A
	blue/black	phase /A
	yellow	phase B
	yellow/black	phase /B
	green	phase Z
	green/black	phase /Z

Encoder output



Scale drawing



AC Synchronous Motor

MY 051/052/053/054


MY 054

MY 053

MY 052

MY 051

Features

- highly dynamic positioning motors without brushes
- compact design due to rare-earth magnets
- low moment of inertia due to optimised construction of the rotors
- good synchronisation characteristics due to 6-pole design
- high load capability (impulse torque up to 5-fold nominal torque)
- integrated temperature protection due to PTC thermal resistor
- protection type IP 65 (shaft lead-through IP 64)
- high-resolution sine/cosine encoder as measuring system
- connection via two circular plug-in connectors
- Options: integrated holding brake resolver

Technical data

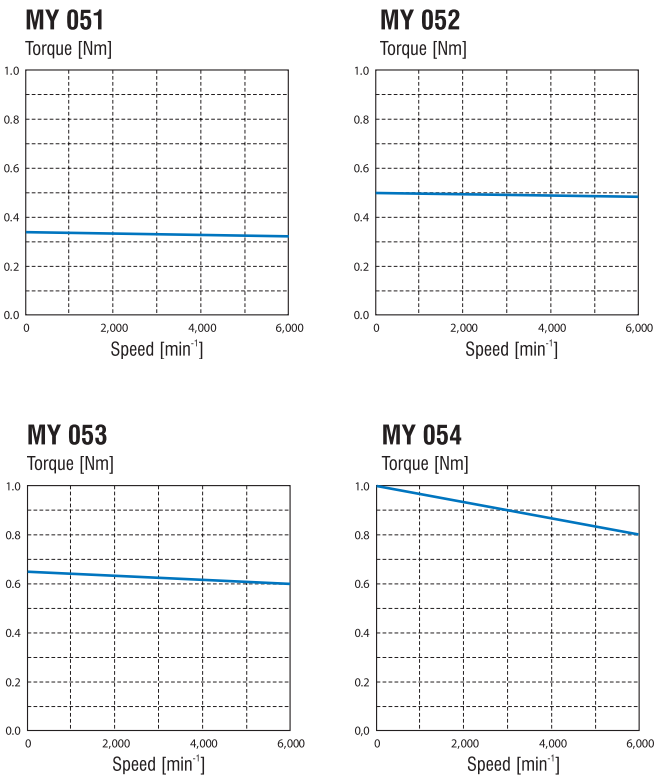
		MY 051	MY 052	MY 053	MY 054
Item no. *		475510 1300	475520 1300	475530 1300	475540 1300
Holding torque Nm		0.34	0.50	0.65	1.0
Holding continuous current A		1.2	1.5	2.0	3.2
Rated values	Torque Nm	0.32	0.48	0.6	0.8
	Nominal voltage V	270 ... 350			
	Current A	1.3	1.7	2.3	3.4
	Nominal speed min ⁻¹	6,000			
	Power W	200	300	375	500
	Voltage constant V / 1000	20			
	Winding resistance Ohm	21	8.7	6.1	3.3
	Winding inductance mH	9.9	5.4	3.9	2.7
Peak values	Torque Nm	1.7	2.5	3.2	5.0
	Current A	10	12.8	15.3	24.0
	Revolution min ⁻¹	9,000			
Mechanics	Rotors' moment of inertia kgcm ²	0.17	0.24	0.31	0.45
	Mass kg	1.0	1.2	1.4	1.8

* If a brake is mounted, the item number's last figure changes to "1".

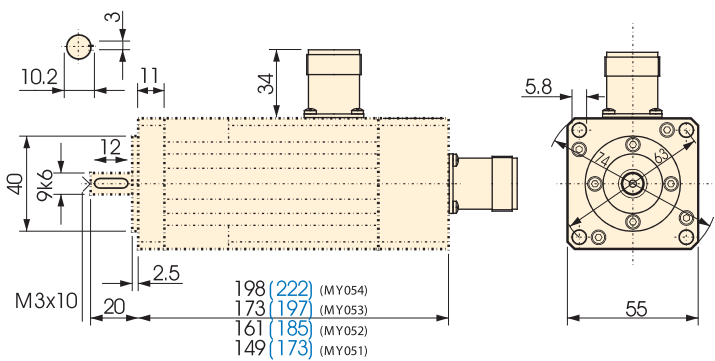
AC Synchronous Motor

MY 051/052/053/054

Torque curves

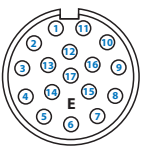


Scale drawing



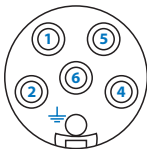
Connector pin assignment

Connection of measuring system



Pin	Signal	Pin	Signal
1	A +	10	+ 5 V
2	A -	11	B +
3	R +	12	B -
4	D -	13	R -
5	C +	14	D +
6	C +	15	not assigned
7	0 V	16	not assigned
8	temperature +	17	not assigned
9	temperature -		

Power connection



Pin	Signal	Pin	Signal
1	U 1	4	brake + *
2	V 1	5	brake - *
PE	PE	6	W 1

* optional

AC Synchronous Motor

MY 071/072/073



MY 073

MY 072

MY 071

Features

- highly dynamic positioning motors without brushes
- compact design due to rare-earth magnets
- low moment of inertia due to optimised construction of the rotors
- good synchronisation characteristics due to 6-pole design
- high load capability (impulse torque up to 5-fold nominal torque)
- integrated temperature protection due to PTC thermal resistor
- protection type IP 65 (shaft lead-through IP 64)
- high-resolution sine/cosine encoder as measuring system
- connection via two circular plug-in connectors
- Options: integrated holding brake resolver

Technical data

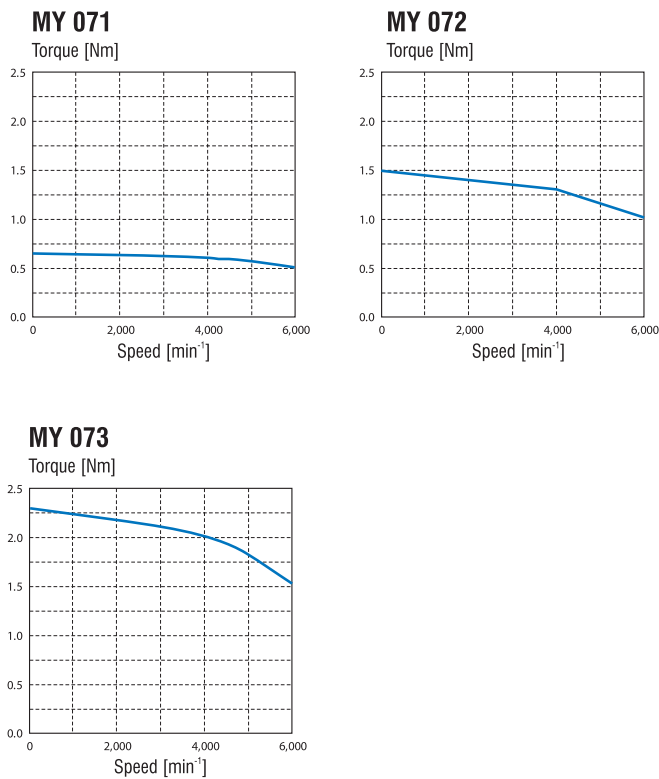
		MY 071	MY 072	MY 073
Item no. *		475710 1300	475720 1300	475730 1300
Holding torque Nm		0.65	1.50	2.30
Holding continuous current A		1.9	3.2	5.5
Rated values	Torque Nm	0.6	1.3	2.0
	Nominal voltage V	270 ... 350		
	Current A	2.0	2.9	4.7
	Nominal speed min ⁻¹	4,000		
	Power W	250	540	830
	Voltage constant V / 1000	20.8	27.7	26.3
	Winding resistance Ohm	6.8	4.0	1.7
	Winding inductance mH	11.5	11.5	5.6
Peak values	Torque Nm	3.1	7.2	11.0
	Current A	16.1	27.2	46.7
	Speed min ⁻¹	9,000		
Mechanics	Rotors' moment of inertia kgcm ²	0.22	0.36	0.57
	Mass kg	1.5	2.1	2.9

* If a brake is mounted, the item number's last figure changes to "1"

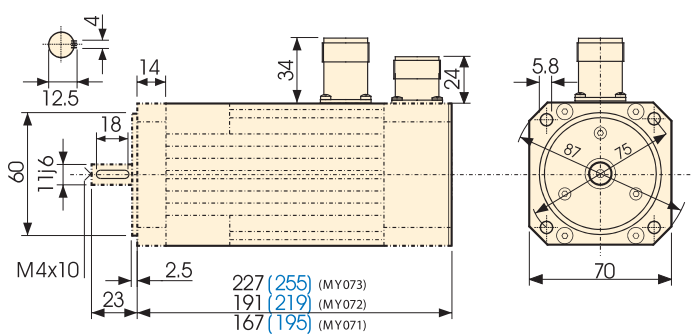
AC Synchronous Motor

MY 071/072/073

Torque curves



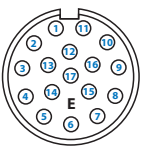
Scale drawing



Values in brackets refer to motors with brake

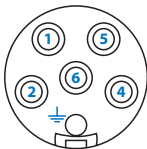
Connector pin assignment

Connection of measuring system



Pin	Signal	Pin	Signal
1	A +	10	+ 5 V
2	A -	11	B +
3	R +	12	B -
4	D -	13	R -
5	C +	14	D +
6	C +	15	not assigned
7	0 V	16	not assigned
8	temperature +	17	not assigned
9	temperature -		

Power connection



Pin	Signal	Pin	Signal
1	U 1	4	brake + *
2	V 1	5	brake - *
PE	PE	6	W 1

* optional

AC Synchronous Motor

MY 091/092/093



MY 093

MY 092

MY 091

Features

- highly dynamic positioning motors without brushes
- compact design due to rare-earth magnets
- low moment of inertia due to optimised construction of the rotors
- good synchronisation characteristics due to 6-pole design
- high load capability (impulse torque up to 5-fold nominal torque)
- integrated temperature protection due to PTC thermal resistor
- protection type IP 65 (shaft lead-through IP 64)
- high-resolution sine/cosine encoder as measuring system
- connection via two circular plug-in connectors
- Options: integrated holding brake resolver

Technical data

		MY 091	MY 092	MY 093
Item no. *		475910 3300	475920 3300	475930 3300
Holding torque Nm		0.95	2.70	4.50
Holding continuous current A		1.1	2.5	6.7
Rated values	Torque Nm	0.75	2.2	3.50
	Nominal voltage V	510 ... 620		
	Current A	0.9	2.1	3.1
	Nominal speed min ⁻¹	4,000		
	Power W	310	920	1,470
	Voltage constant V / 1000	50.2	59	64.2
	Winding resistance Ohm	39.4	6.9	3.7
	Winding inductance mH	57.6	19.3	12.2
Peak values	Torque Nm	4.3	12.2	20.3
	Current A	7.7	17.6	26.8
	Speed min ⁻¹	6,000		
Mechanics	Rotors' moment of inertia kgcm ²	1.2	2.7	4.2
	Mass kg	2.7	3.9	5.2

* If a brake is mounted, the item number's last figure changes to "1"

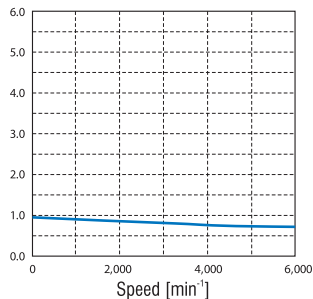
AC Synchronous Motor

MY 091/092/093

Torque curves

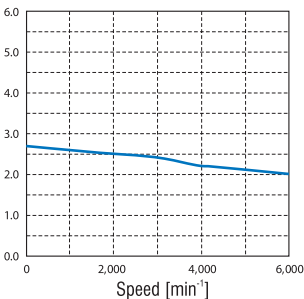
MY 091

Torque [Nm]



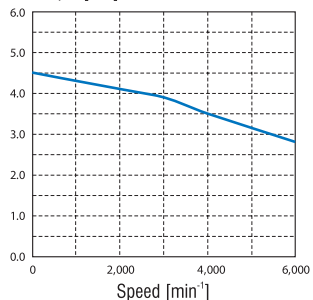
MY 092

Torque [Nm]



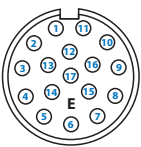
MY 093

Torque [Nm]



Connector pin assignment

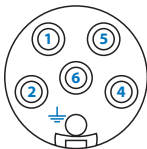
Connection of measuring system



Pin	Signal
1	A +
2	A -
3	R +
4	D -
5	C +
6	C +
7	0 V
8	temperature +
9	temperature -

Pin	Signal
10	+ 5 V
11	B +
12	B -
13	R -
14	D +
15	not assigned
16	not assigned
17	not assigned

not assigned

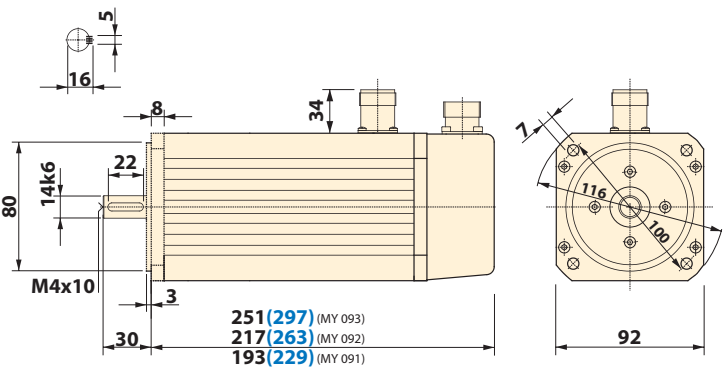


Pin	Signal
1	U 1
2	V 1
PE	PE

Pin	Signal
4	brake + *
5	brake - *
6	W 1

* optional

Scale drawing



Values in brackets refer to motors with brake