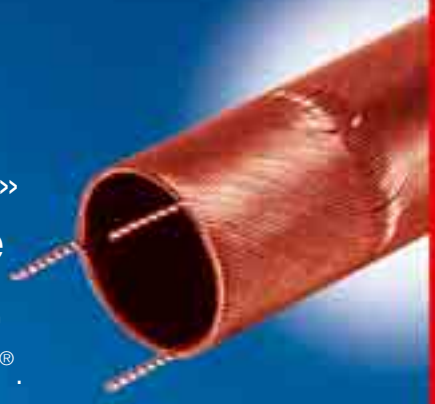
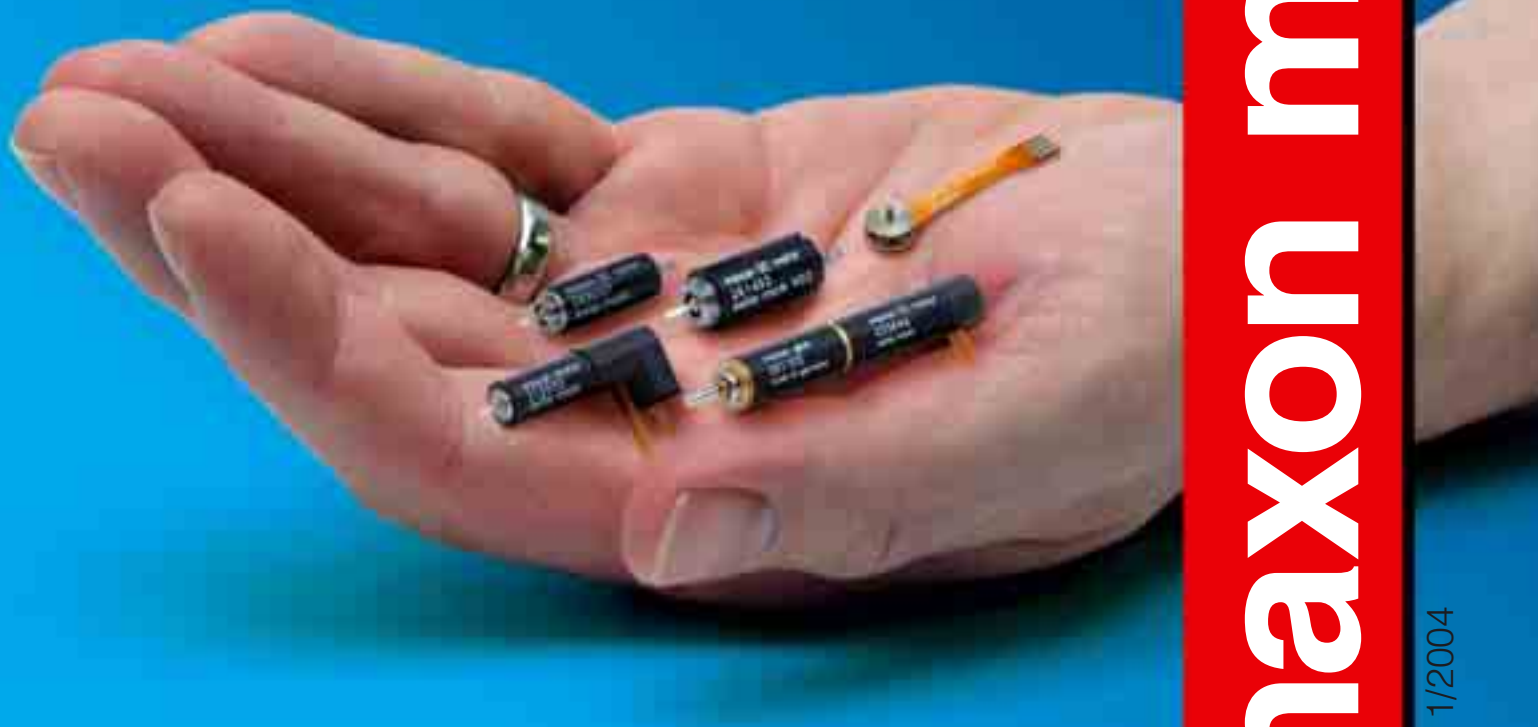
High-tech Drives

The «heart»
of our motors is the
ironless winding,
System maxon®.





maxon micro drive

EDITION 11/2004

maxon
maxon motor ag

maxon motor ag
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Tél.: +41 (0)41 666 15 00 Fax: +41 (0)41 666 16 50
www.maxonmotor.com

maxon DC motor

Powerful DC motors the size of a pencil tip

The extremely high power density of the Rare Earth, Neodymium magnets imparts this motor with maximum values. Motors with precious metal brushes and ironless maxon rotor for smooth rotational movement and high efficiency. The shaft, made of high-tech ceramic, is in some ways stronger than a steel shaft.

maxon EC motor

Brushless, electronic commutated DC motors feature high power output, detent free running and of course an unexcelled service life.

maxon flat motor

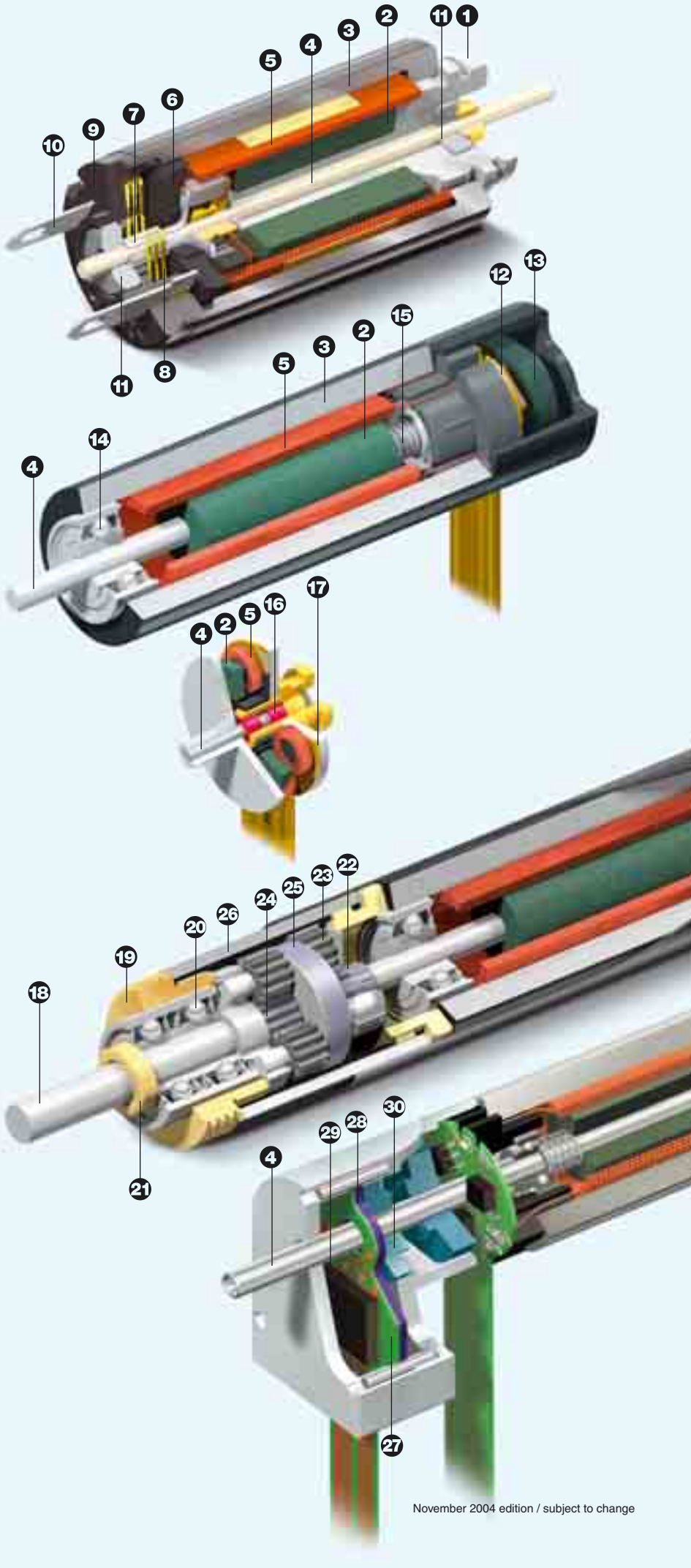
The brushless miniature disc type motors run detent free and are, thanks to their flat design, exactly the right drive for many applications.

maxon gear

If basically the power of a motor is high enough, but its speed is too high and its torque too low, a maxon precision gear is recommended.

maxon tacho

In an MR-encoder, the magnetic disc (pole wheel) mounted on the motor shaft produces a sine-wave voltage flow which creates the typical square wave signals.



November 2004 edition / subject to change

1 Flange
2 Permanent magnet
3 Housing (magnetic return)
4 Shaft
5 Winding
6 Commutator plate
7 Commutator
8 Precious metal brushes
9 Cover
10 Electrical connection
11 Sintered sleeve bearing
12 Flexprint with Hall sensors
13 Control magnet
14 Ball bearing
15 Spring (bearing preloaded)
16 Ruby bearing
17 Flexprint
18 Output shaft
19 Mounting flange
20 Bearing of the output shaft
21 Axial security
22 Motor pinion
23 Planetary gearwheel
24 Sun gearwheel
25 Planet carrier
26 Internal gear
27 Print
28 MR sensor
29 ASIC
30 Pole wheel

Electronics

maxon control electronics are optimized for maxon motors. Various 1- and 4-quadrant servoamplifiers as well as positioning control meet your needs regarding performance, speed and positioning accuracy.

The maxon winding

The **«heart»** of a maxon motor is the ironless winding, System maxon®, patented worldwide. This principle has very special advantages. There is no magnetic detent at all and minimal electromagnetic interference. With up to 90% the efficiency surpasses other motor systems by far.
Every motor type has a wide range of winding variations. They differ in the amount of windings and wire gauge. This offers differing terminal resistances for the motor and thereby, those motor parameter vary which characterise the conversion of electrical and mechanical energy (torque and speed constants). This gives you the possibility to choose the appropriate motor for your specific application.

Miniature positioning drive unit

- Precise, play-free and quick positioning
- Assigned power rating 1.2 Watt
- Micro Harmonic Drive® gearhead with reduction ratio 160 : 1 and 10 mNm output torque
- 100 pulse encoder
- Hollow shaft, drill hole diameter 0.65 mm

Characteristics which bring convincing advantages:

maxon DC motor

- no magnetic cogging
- high acceleration thanks to a low mass inertia
- low electromagnetic interference
- low inductance
- high efficiency
- linearity between voltage and speed
- linearity between load and speed
- linearity between load and current
- small torque ripple thanks to multi-segment commutator
- able to bear high overloads for short periods
- compact design – small dimensions
- multiple combination possibilities with gears as well as DC tachos and encoders

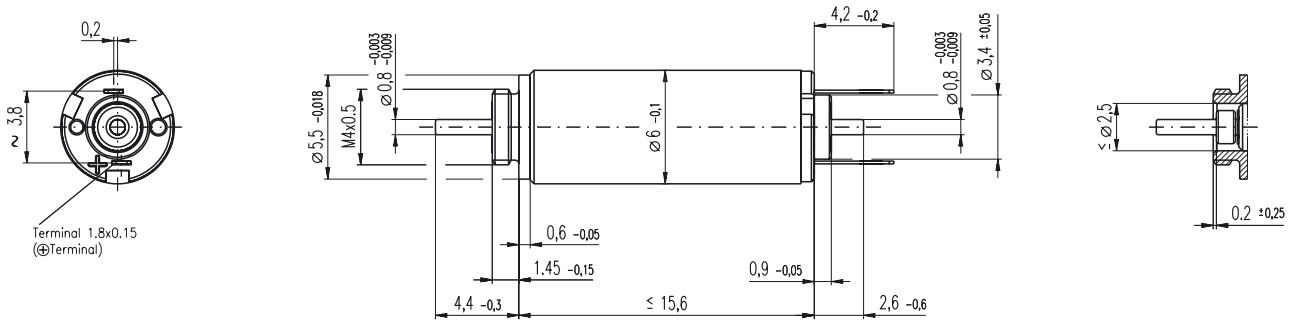
maxon EC motor

- no mechanical commutation
- long service life – only limited by the bearings
- without cogging
- high speeds even at low voltages
- The maxon winding technology allows the winding to be optimized for specific applications.
- good heat dissipation, high overload ability
- mainly linear motor characteristics, excellent control properties
- high efficiency
- very small electrical time constants and low inductance
- multiple combination possibilities with gears as well as encoders

maxon flat motor

- flat construction also suitable for limited amount of space
- no mechanical commutation
- long service life – only limited by the bearings
- without cogging
- high speeds even at low voltages
- mainly linear motor characteristics, excellent control properties
- high efficiency
- very small electrical time constants and low inductance
- multiple combination possibilities with gears

RE 6 ∅6 mm, Precious Metal Brushes, 0.3 Watt



M 2.5:1

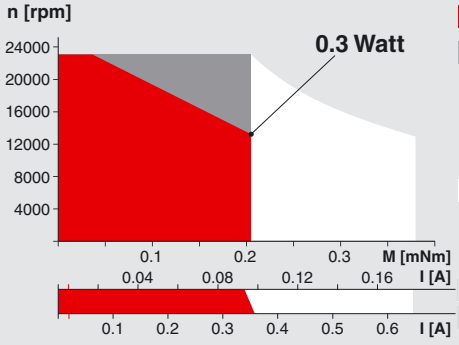
Stock program
Standard program
Special program (on request!)

			Order Number			
			302018	302019	302020	302021
Motor Data (provisional)						
1	Assigned power rating	W	0.3	0.3	0.3	0.3
2	Nominal voltage	Volt	1.5	3.0	4.5	6.0
3	No load speed	rpm	21600	21800	21800	21700
4	Stall torque	mNm	0.358	0.414	0.400	0.397
5	Speed / torque gradient	rpm / mNm	64500	55700	57600	58100
6	No load current	mA	36	18	12	9
7	Starting current	mA	576	333	215	160
8	Terminal resistance	Ohm	2.61	9.00	21.0	37.5
9	Max. permissible speed	rpm	23500	23500	23500	23500
10	Max. continuous current	mA	355	191	125	93.5
11	Max. continuous torque	mNm	0.198	0.214	0.210	0.210
12	Max. power output at nominal voltage	mW	196	230	222	220
13	Max. efficiency	%	57	60	59	59
14	Torque constant	mNm / A	0.621	1.24	1.86	2.48
15	Speed constant	rpm / V	15400	7690	5120	3840
16	Mechanical time constant	ms	143	124	128	129
17	Rotor inertia	gcm²	0.211	0.213	0.212	0.212
18	Terminal inductance	mH	0.018	0.072	0.163	0.289
19	Thermal resistance housing-ambient	K / W	130	130	130	130
20	Thermal resistance rotor-housing	K / W	16	16	16	16
21	Thermal time constant winding	s	1	1	1	1

Specifications

- Axial play 0.05 - 0.15 mm
- Max. **sleeve bearing** loads
  axial (dynamic) 0.15 N
  radial (4 mm from flange) 0.6 N
  Force for press fits (static) 10 N
- Radial play **sleeve bearing** 0.012 mm
- Ambient temperature range -20 ... +65°C
- Max. rotor temperature +85°C
- Number of commutator segments 5
- Weight of motor 2.3 g
- 2-pole permanent magnet
- Ceramic shaft
- Values listed in the table are nominal.

Operating Range



Comments

Recommended operating range

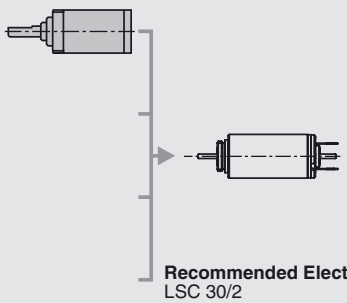
Continuous operation
In observation of above listed thermal resistances (lines 19 and 20) the maximum permissible rotor temperature will be reached during continuous operation at 25°C ambient.
= Thermal limit.

Short term operation
The motor may be briefly overloaded (recurring).

302021 Motor with high resistance winding
302018 Motor with low resistance winding

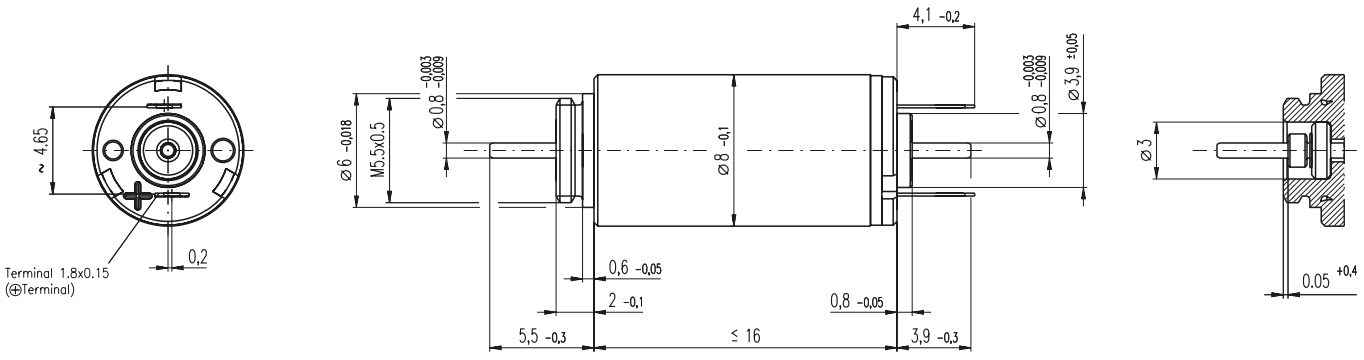
maxon Modular System

Planetary Gearhead
∅6 mm
0.002 - 0.03 Nm
Details page 9



Recommended Electronics:
LSC 30/2

RE 8 ∅8 mm, Precious Metal Brushes, 0.5 Watt



M 2.5:1

Stock program
Standard program
Special program (on request!)

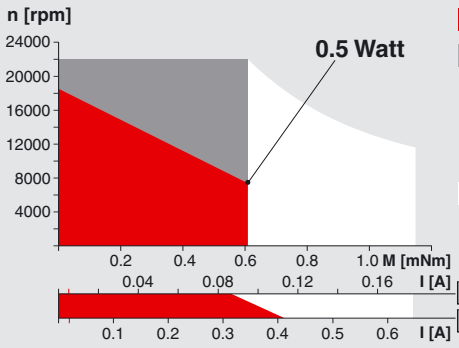
Order Number

			261492	261508	261509	261513	261510	261512
Motor Data (provisional)								
1	Assigned power rating	W	0.5	0.5	0.5	0.5	0.5	0.5
2	Nominal voltage	Volt	2.4	4.2	6.0	7.2	9.0	12.0
3	No load speed	rpm	14500	14700	13900	14900	15000	16200
4	Stall torque	mNm	0.889	0.896	0.824	0.832	0.920	0.889
5	Speed / torque gradient	rpm / mNm	16800	17000	17500	18600	16800	18900
6	No load current	mA	20	11	7	7	5	5
7	Starting current	mA	581	340	207	187	166	130
8	Terminal resistance	Ohm	4.13	12.3	29.0	38.5	54.3	92.2
9	Max. permissible speed	rpm	22000	22000	22000	22000	22000	22000
10	Max. continuous current	mA	411	237	155	134	113	86.8
11	Max. continuous torque	mNm	0.628	0.625	0.616	0.598	0.628	0.593
12	Max. power output at nominal voltage	mW	331	339	293	319	355	370
13	Max. efficiency	%	68	68	67	67	68	67
14	Torque constant	mNm / A	1.53	2.63	3.98	4.45	5.55	6.83
15	Speed constant	rpm / V	6240	3630	2400	2150	1720	1400
16	Mechanical time constant	ms	6	6	6	6	6	6
17	Rotor inertia	gcm²	0.037	0.036	0.035	0.033	0.036	0.033
18	Terminal inductance	mH	0.04	0.13	0.29	0.36	0.56	0.85
19	Thermal resistance housing-ambient	K / W	48	48	48	48	48	48
20	Thermal resistance rotor-housing	K / W	22	22	22	22	22	22
21	Thermal time constant winding	s	3	3	3	3	3	2

Specifications

- Axial play 0.05 - 0.15 mm
- Max. **sleeve bearing** loads
  axial (dynamic) 0.15 N
  radial (4 mm from flange) 0.6 N
  Force for press fits (static) 10 N
- Radial play **sleeve bearing** 0.012 mm
- Ambient temperature range -20 ... +65°C
- Max. rotor temperature +85°C
- Number of commutator segments 5
- Weight of motor 4.1 g
- 2-pole permanent magnet
- Ceramic shaft
- Values listed in the table are nominal.

Operating Range



261512 Motor with high resistance winding
261492 Motor with low resistance winding

Comments

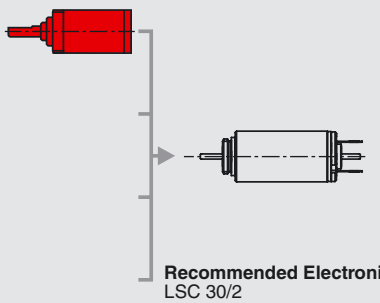
Recommended operating range

Continuous operation
In observation of above listed thermal resistances (lines 19 and 20) the maximum permissible rotor temperature will be reached during continuous operation at 25°C ambient.
= Thermal limit.

Short term operation
The motor may be briefly overloaded (recurring).

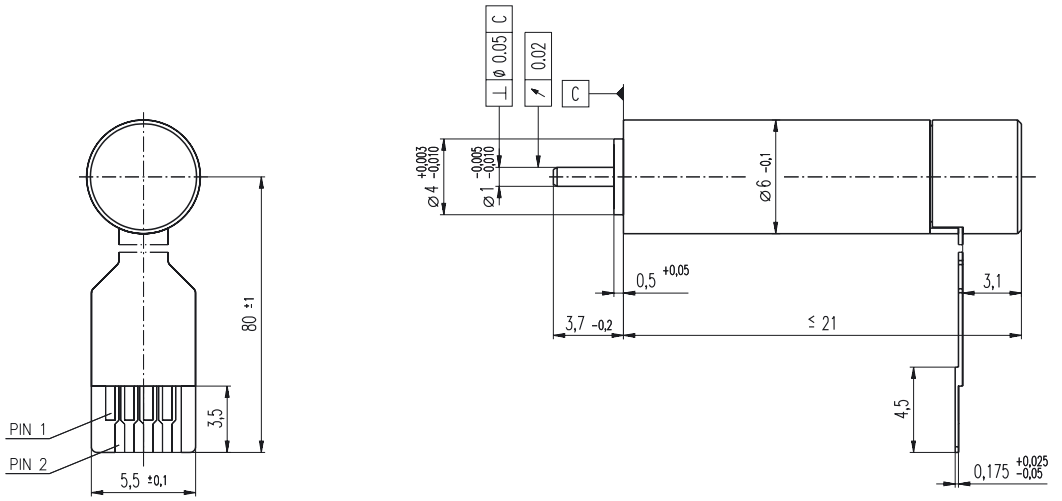
maxon Modular System

Planetary Gearhead
∅8 mm
0.002 - 0.03 Nm
Details page 9



Recommended Electronics:
LSC 30/2

EC 6 ∅6 mm, brushless, 1.2 Watt



M 2.5:1

Stock program
Standard program
Special program (on request!)

Order Number

			Y-circuit	215550	215551
Motor Data (provisional)					
1	Assigned power rating	W		1.2	1.2
2	Nominal voltage	Volt		6.0	12.0
3	No load speed	rpm		47130	35940
4	Stall torque	mNm		0.50	0.44
5	Speed / torque gradient	rpm / mNm		105770	95360
6	No load current	mA		60	22
7	Terminal resistance phase to phase	Ohm		12.50	75.40
8	Max. permissible speed	rpm		100000	100000
9	Max. continuous current at 40 000 rpm	A		0.25	0.10
10	Max. continuous torque at 40 000 rpm	mNm		0.23	0.26
11	Max. efficiency	%		50	41
12	Torque constant	mNm / A		1.05	2.75
13	Speed constant	rpm / V		8980	3474
14	Mechanical time constant	ms		6	5
15	Rotor inertia	gcm²		0.005	0.005
16	Terminal inductance phase to phase	mH		0.091	0.590
17	Thermal resistance housing-ambient	K / W		75	75
18	Thermal resistance winding-housing	K / W		5	5
19	Thermal time constant winding	s		0.5	0.5
20	Thermal time constant stator	s		80	80

Specifications

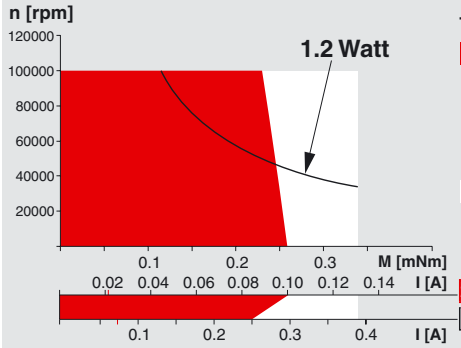
- Axial play at axial load < 0.15 N: 0 mm; > 0.15 N: max. 0.06 mm
- Preloaded **ball bearing**
  Preload strength min. 0.15 N
- Max. **ball bearing** loads
  axial (dynamic) 0.1 N
  radial (2 mm from flange) 8 N
  Force for press fits (static) 10 N
- Radial play **ball bearing** 0.01 mm
- Ambient temperature range -20 ... +100°C
- Max. permissible winding temperature +125°C
- Weight of motor 2.8 g
- 2-pole permanent magnet
- Values listed in the table are nominal.
- **Connections**

Pin 1	Motor winding 3
Pin 2	Motor winding 2
Pin 3	Hall sensor 3
Pin 4	V_{Hall} 4.5 ... 12 VDC
Pin 5	GND
Pin 6	Hall sensor 1
Pin 7	Hall sensor 2
Pin 8	Motor winding 1

Connector for Flexprint
Berg 87768-108
FPC, 8-pole, pitch 0.5 mm,
top contact style

- For wiring diagram for Hall sensors see the catalogue
- Sterilisable version upon request

Operating Range



Comments

Curve of constant assigned power rating

Continuous operation
In observation of above listed thermal resistance (lines 17 and 18) the maximum permissible winding temperature will be reached during continuous operation at 25°C ambient.
= Thermal limit.

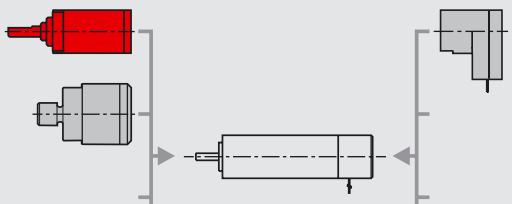
Short term operation
The motor may be briefly overloaded (recurring).

215551 Motor with high resistance winding
215550 Motor with low resistance winding

maxon Modular System

Planetary Gearhead
∅6 mm
0.002 - 0.03 Nm
Details page 9

Micro Harmonic Drive®
∅8 mm
0.01 Nm
Details page 10

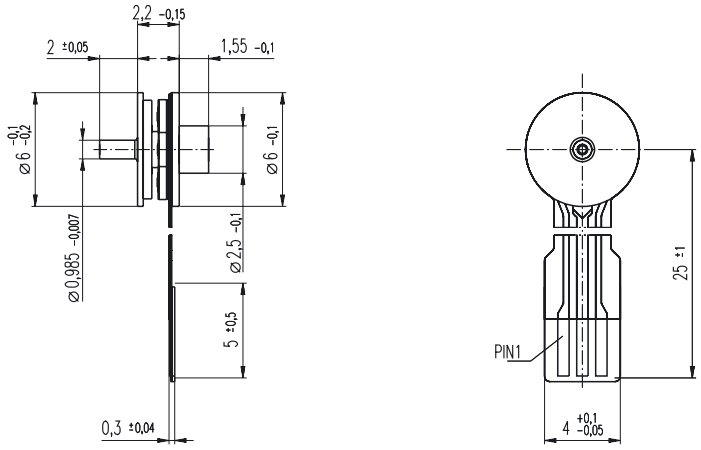


Digital MR Encoder
100 CPT,
2 channels
Details page 10

Recommended Electronics:

DEC 24/1	page 11
EPOS 24/1	11

EC 6 flat motor ∅6 mm, brushless, 0.03 Watt



M 2.5:1

Stock program
Standard program
Special program (on request!)

			Order Number
		sensorless	263800
Motor Data (provisional)			
1	Assigned power rating	W	0.03
2	Nominal voltage	Volt	1.0
3	No load speed	rpm	15900
4	Stall torque	mNm	0.0049
5	Speed / torque gradient	rpm / mNm	7740000
6	No load current	mA	7.4
7	Terminal resistance phase to phase	Ohm	68
8	Max. permissible speed	rpm	50000
9	Max. continuous current at 6 000 rpm	A	0.075
10	Max. continuous torque at 6 000 rpm	mNm	0.023
11	Max. efficiency	%	n.c.
12	Torque constant	mNm / A	0.33
13	Speed constant	rpm / V	33000
14	Mechanical time constant	ms	393
15	Rotor inertia	gcm²	0.0063
16	Terminal inductance phase to phase	mH	0.121
17	Thermal resistance housing-ambient	K / W	80
18	Thermal resistance winding-housing	K / W	75
19	Thermal time constant winding	s	n.c.
20	Thermal time constant stator	s	n.c.

Specifications

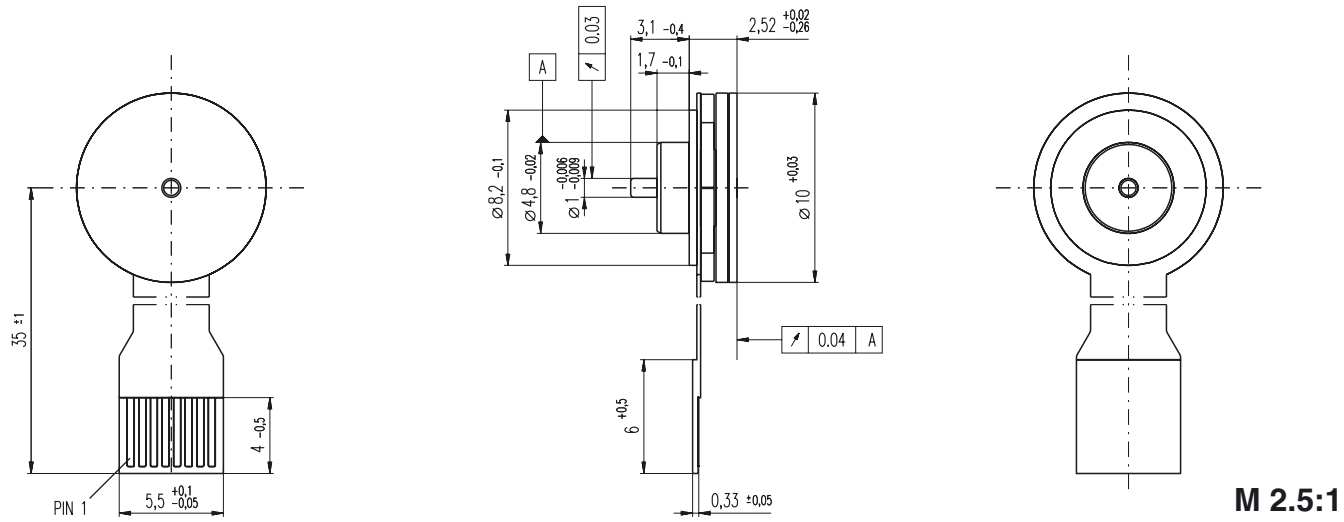
- Axial preload > 0.03 N
  defined through magnetic force between rotor and stator
- **Ruby bearing** with axial pivot bearing
- Ambient temperature range -40 ... +80°C
- Max. permissible winding temperature +100°C
- Weight of motor 0.35 g
- 8-pole permanent magnet
- 3-phased coil stator
- Values listed in the table are nominal.
- **Connections sensorless**

Pin 1	Motor winding 3
Pin 2	Motor winding 2
Pin 3	Motor winding 1

- **Connector** **Article number**
  MOLEX 52207-0390

Recommended Electronics:
DECS 5 / 0.05 page 11

EC 10 flat motor ∅10 mm, brushless, 0.3 Watt



Stock program
Standard program
Special program (on request!)

			Order Number
		with Hall sensors	302000
Motor Data (provisional)			
1	Assigned power rating	W	0.3
2	Nominal voltage	Volt	7.5
3	No load speed	rpm	29400
4	Stall torque	mNm	0.308
5	Speed / torque gradient	rpm / mNm	126000
6	No load current	mA	39.9
7	Terminal resistance phase to phase	Ohm	45
8	Max. permissible speed	rpm	30000
9	Max. continuous current at 10 000 rpm	A	0.104
10	Max. continuous torque at 10 000 rpm	mNm	0.176
11	Max. efficiency	%	26.4
12	Torque constant	mNm / A	1.85
13	Speed constant	rpm / V	5160
14	Mechanical time constant	ms	105
15	Rotor inertia	gcm²	0.08
16	Terminal inductance phase to phase	mH	n.v.
17	Thermal resistance housing-ambient	K / W	50
18	Thermal resistance winding-housing	K / W	50
19	Thermal time constant winding	s	2.38
20	Thermal time constant stator	s	n.v.

Specifications

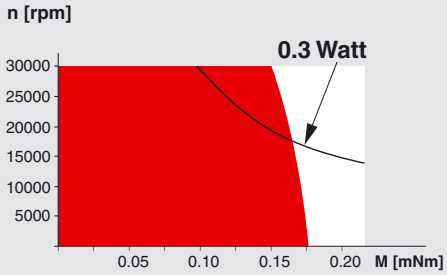
- Axial preload > 0.7 N
- Max. **ball bearing** loads
  axial (dynamic) 1 N
  radial (1 mm from flange) 1 N
  Force for press fits (static) n.v.
  (static, shaft supported) 20 N
- Ambient temperature range -20 ... +85°C
- Max. permissible winding temperature +85°C
- Weight of motor 0.81 g
- 8-pole permanent magnet
- 3-phased coil stator
- Values listed in the table are nominal.
- **Connections with Hall sensors**

Pin 1	Motor winding 3
Pin 2	Motor winding 2
Pin 3	Hall sensor 3
Pin 4	4.5 ... 12 VDC
Pin 5	GND
Pin 6	Hall sensor 1
Pin 7	Hall sensor 2
Pin 8	Motor winding 1

- **Connector** **Article number**
  MOLEX 52745-0890

  FPC, 8-pole, pitch 0.5 mm,
  top contact style

Operating Range



Comments

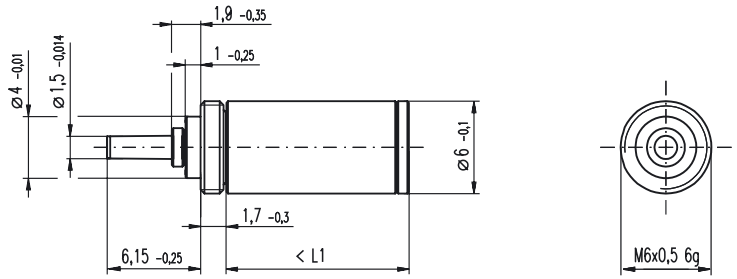
Curve of constant assigned power rating

Continuous operation
In observation of above listed thermal resistance (lines 17 and 18) the maximum permissible winding temperature will be reached during continuous operation at 25°C ambient.
= Thermal limit.

Short term operation
The motor may be briefly overloaded (recurring).

Recommended Electronics:
DEC 24/1 page 11

Planetary Gearhead GP 6 ∅6 mm, 0.002 - 0.03 Nm



M 2:1

Technical data

Planetary Gearhead	straight teeth
Output shaft	stainless steel
Bearing at output	ball bearings*
Radial play, 5 mm from flange	max. 0.12 mm
Axial play	0.02 - 0.10 mm
Max. radial load, 5 mm from flange	5 N
Max. permissible axial load	5 N
Max. permissible force for press fits	10 N
Sense of rotation, drive to output	=
Recommended input speed	< 40 000 rpm
Recommended temperature range	-15 … +100°C

*Option: sleeve bearing

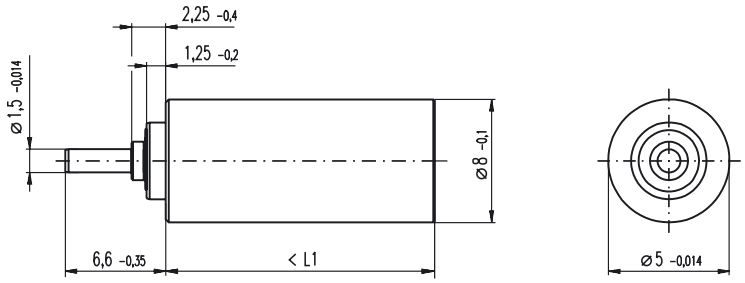
Stock program
Standard program
Special program (on request!)

Order Number					
	199687	**199688**	**199689**	**199690**	**199691**
Gearhead Data (provisional)					
1 Reduction value	3.9 : 1	15 : 1	57 : 1	221 : 1	854 : 1
2 Reduction value absolute	$^{27}/_{7}$	$^{729}/_{49}$	$^{19683}/_{343}$	$^{531441}/_{2401}$	$^{14348907}/_{16807}$
3 Max. motor shaft diameter mm	1	1	1	1	1
4 No. of stages	1	2	3	4	5
5 Max. continuous torque Nm	0.002	0.005	0.010	0.030	0.030
6 Intermittently permissible torque at gear output Nm	0.005	0.010	0.020	0.060	0.060
7 Max. efficiency %	88	77	68	60	52
8 Weight g	1.8	2.2	2.6	3.0	3.4
9 Average backlash no load °	1.8	2.0	2.2	2.5	2.8
10 Mass inertia gcm²	0.0008	0.001	0.001	0.001	0.001
11 Gearhead length L1 mm	7.0	9.5	12.1	14.7	17.3

Combination

+ Motor	Page	+ Tacho / Encoder / Brake	Page	**Longueur totale [mm]** = Motor length + gearhead length + (tacho / encoder / brakes) + assembly parts				
RE 6, 0.3 W	4			21.8	24.6	26.9	29.5	32.1
EC 6, 1.2 W	6			28.1	30.6	33.2	35.8	38.4

Planetary Gearhead GP 8 B ∅8 mm, 0.002 - 0.03 Nm



Technical data

Planetary Gearhead	straight teeth
Output shaft	stainless steel
Bearing at output	ball bearings*
Radial play, 5 mm from flange	max. 0.12 mm
Axial play	0.02 - 0.10 mm
Max. radial load, 5 mm from flange	5 N
Max. permissible axial load	5 N
Max. permissible force for press fits	10 N
Sense of rotation, drive to output	=
Recommended input speed	< 40 000 rpm
Recommended temperature range	-15 … +100°C

*Option: sleeve bearing

M 2:1

Stock program
Standard program
Special program (on request!)

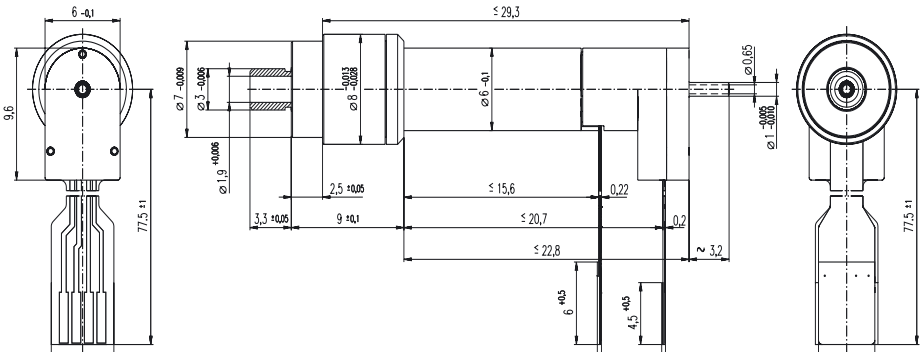
Order Number					
	264054	**264055**	**264056**	**264057**	**264058**
Gearhead Data (provisional)					
1 Reduction value	3.9 : 1	15 : 1	57 : 1	221 : 1	854 : 1
2 Reduction value absolute	$^{27}/_{7}$	$^{729}/_{49}$	$^{19683}/_{343}$	$^{531441}/_{2401}$	$^{14348907}/_{16807}$
3 Max. motor shaft diameter mm	1	1	1	1	1
4 No. of stages	1	2	3	4	5
5 Max. continuous torque Nm	0.002	0.005	0.010	0.030	0.030
6 Intermittently permissible torque at gear output Nm	0.005	0.010	0.020	0.060	0.060
7 Max. efficiency %	88	77	68	60	52
8 Weight g	1.8	2.2	2.6	3.0	3.4
9 Average backlash no load °	1.8	2.0	2.2	2.5	2.8
10 Mass inertia gcm²	0.0008	0.001	0.001	0.001	0.001
11 Gearhead length L1* mm	9.5	12.0	14.6	17.2	19.8

* L1 - 1.5 mm for calculating the overall length

Combination

+ Motor	Page	+ Tacho / Encoder / Brake	Page	**Longueur totale [mm]** = Motor length + gearhead length + (tacho / encoder / brakes) + assembly parts				
RE 8, 0.5 W	5			25.1	27.6	30.2	32.8	35.4

Positioning Drive Unit

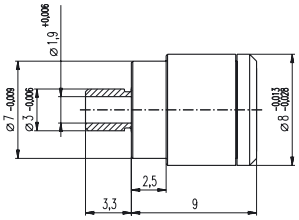


Miniature positioning drive unit

- Brushless maxon EC motor EC 6 with assigned power rating 1.2 Watt
- Micro Harmonic Drive® gearhead with a 10 mNm output torque, in 3 different reduction ratio versions
- 2-channel 100 pulse MR encoder – **M**agneto **R**esistance Encoder
- Precise: 100 encoder pulses produce a play-free operating angle of 0.0225 degrees at a 160:1 gearhead reduction ratio
- Hollow shaft (only with 160:1 gearhead reduction ratio) with drill hole diameter 0.65 mm for extended applications, for example: air, vacuum, light

Micro Harmonic Drive® Ø8 mm 0.01 Nm

Play-free micro gearhead



❶ Sun gearwheel fixed firmly to the motor shaft
❷ Planetary wheel, elastically moldable

❸ Flexspline, elastically moldable ring (ellipse) with internal and external toothing
❹ Circular spline, internal gear, two more cogs than the Flexspline

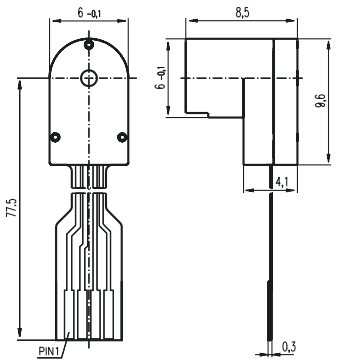
Stock program
Standard program
Special program (on request!)

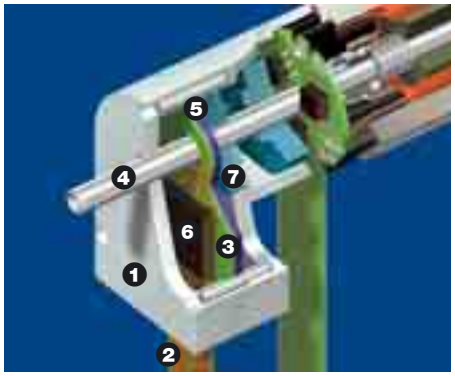
Gearhead Data (provisional)			Order Number	Order Number
			on request	on request
1 Reduction value			160	500
2 Max. continuous torque	mNm		5	13
3 Peak torque	mNm		10	26
4 Sense of rotation, drive to output			≠	≠
5 Torque loss	µNm		50	45
6 Weight	g		1.8	1.8

Technical data	
Material	Ni-Fe
Module	34 µm
Repeating accuracy	± 48 · 10^{-6} rad
Lost motion	48 · 10^{-6} rad
Torsion rigidity	2.6 Nm/rad

Digital MR Encoder

High resolution micro-encoder



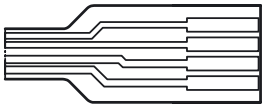


❶ Housing
❷ Electrical connection
❸ Print
❹ Motor shaft
❺ MR sensor
❻ ASIC
❼ Magnetic multi-pole wheel

Stock program
Standard program
Special program (on request!)

Encoder Data (provisional)			Order Number
			on request
1 Supply voltage	V		5 ± 5 %
2 Output signal			TTL compatible
3 Operating temperature range	°C		-25 / +85
4 Moment of inertia of code wheel	gcm²		0.0025
5 Counts per turn			100

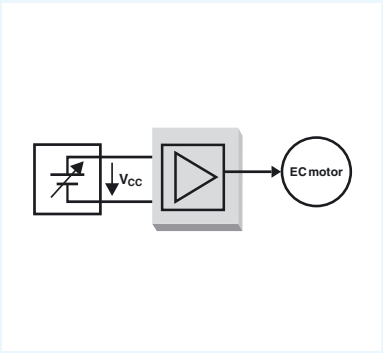
Pin Allocation

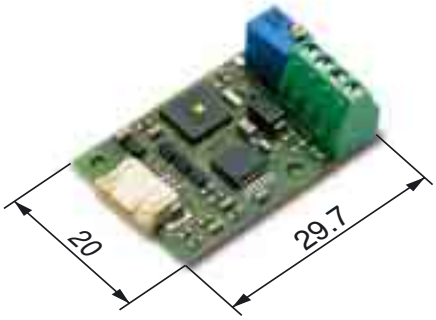


PIN 4	channel B
PIN 3	channel A
PIN 2	GND
PIN 1	V_{CC}

sensorless

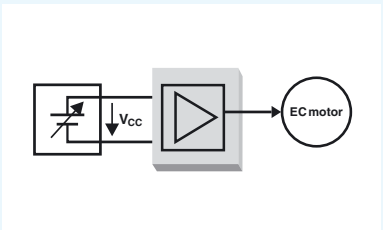
open loop

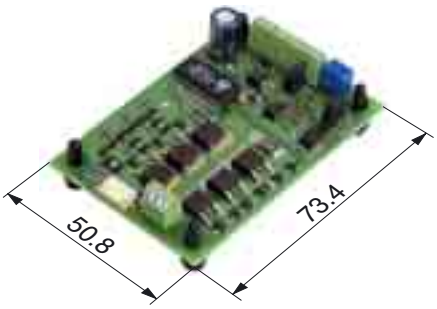




1-Q-EC amplifier sensorless DECS 5 / 0.05

- Motor speed is given by the operating voltage or regulated with the built-in potentiometer or an externally predeter-mined set value
- Brake, direction and disable input
- Ready to connect electronic circuit board
- Continuous output current 50 mA
- Max. output current 100 mA
- Supply voltage 4.5 - 5.5 VDC
- Max. speed range 1000 - 15 000 rpm
- **Order number** DECS 5 / 0.05 **274645**



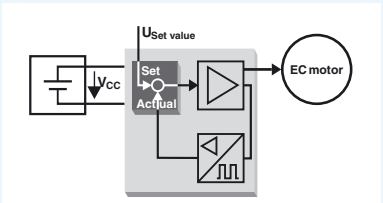


1-Q-EC amplifier sensorless AECS 35/3

- Motor speed is given by the operating voltage or regulated with the built-in potentiometer or an externally predeter-mined set value
- Brake, direction and disable input
- Ready to connect electronic circuit board
- Motor current 3 A / 5 A
- Supplied voltage 8 to 35 VDC

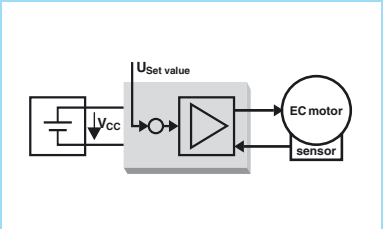
Details see the catalogue
Order number AECS 35/3 **215738**

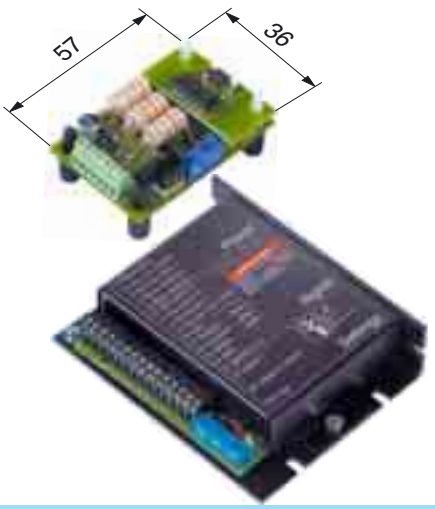
closed loop



Hall sensors

unclosed loop





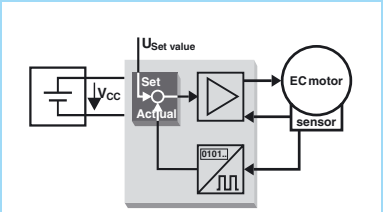
1-Q-EC amplifier DEC

- Motor speed is regulated and if required, can be adjusted by the built-in potentiometer or an externally predetermined set value
- Speed control with Hall sensors
- Brake, direction and disable input
- Connection ready module

Details see the catalogue
Order number
DEC 24/1 with FPC RM 0.5 mm **249629**
DEC 24/1 with FPC RM 1.0 mm **249630**
DEC 24/1 with pin connector **249631**
DEC 24/1 with screw terminals **249632**

Order number
DEC 50/5 **230572**

closed loop



Online commanding

EPOS

- Point to point control unit
- 1-Axis controller
- Multiple axis systems by networking via CAN Bus
- CANopen
- For DC and EC motors
- Digital inputs / outputs
- Analog inputs
- Modular design
- 'stand-alone' version in preparation

Operation with online commanding by PC through RS232 or by CAN Bus Master (PC, SPS, Soft SPS)

Typical applications
automation tasks
production machinery
work equipment manufacturing

Order number
EPOS 24/1, 24 V, 1 A **280938**
for EC 6 with Hall sensor
and digital MR Encoder

maxon motor

The maxon group is perfoming well despite the worldwide economic turbulence.

With a global workforce of around 1000, this company is a leading supplier of high-precision drive technology up to 500 W output power.

Back on Mars! Yes, and again with maxon motors. After the successful mission with "Sojourner" in 1997, in 2004 both the rovers "Spirit" and "Opportunity" are driven by 39 maxon motors.

maxon motor – at a glance!

maxon DC motors are high quality DC micromotors. The patented moving coil rotor represents the heart of the motor.

The innovative DC motor program with even greater performance and quality data at impressive conditions.

The high-power range DC motor, with top performance and convincing quality. Same design as the innovative and award winning A-max range.

Electronically commutated DC servomotors with no detent for maximum service life.

The new EC motor program picks up the ideology of the successful A-max and RE-max motors. Modular system with gearheads, sensors and brakes.

EC flat motors are brushless motors with a flat design for when space is limited.

Precision spur and planetary gearheads matched to maxon motors.

Micro drives less than 10 mm in diameter

High-tech ceramic components – MIM/CIM technology

An extensive range of electronic control systems meets your every need in terms of performance and speed accuracy.

High resolution analog and digital tachos through to absolute transmitters guarantee highly dynamic control systems with our precision motors.

Order the new maxon catalogue 04/05 with CD-ROM and maxon selection program. 288 pages of comprehensive information on motors, gearheads, tachos and controls.

maxon motor