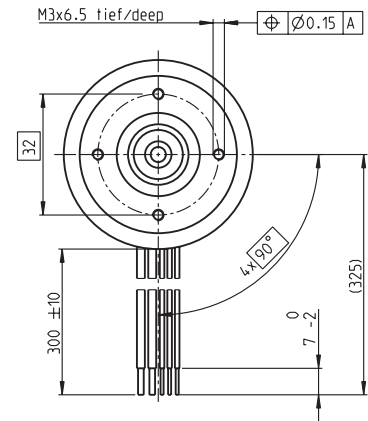
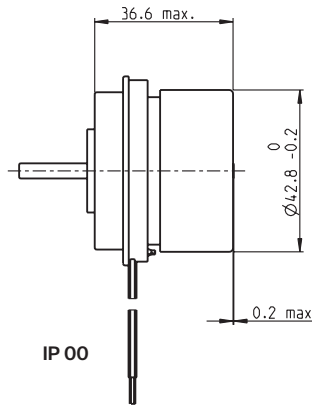
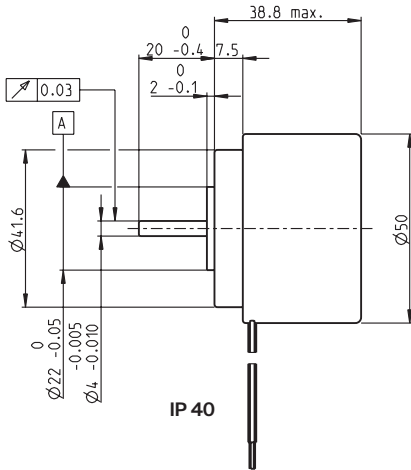


EC 45 flat brushless, 50 watt, with integrated electronics

4-Q-Speed Controller

EC flat



M 1:2

- Stock program
- Standard program
- Special program (on request)

Part Numbers			
5 wire version			
Enable		Direction	
IP 40 (with cover)	688723	688724	688728
IP 00 (without cover)	688727	688724	688728

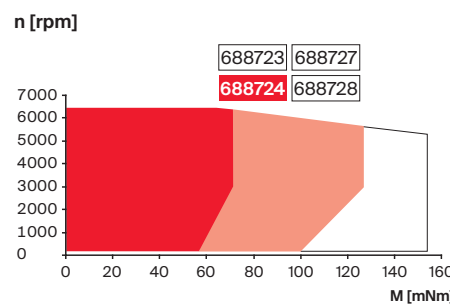
Motor Data (provisional)

Values at nominal voltage					
1 Nominal voltage	V	24	24	24	24
2 No load speed	rpm	4500	4500	4500	4500
3 No load current	mA	192	192	192	192
4 Nominal speed	rpm	4500	4500	4500	4500
5 Nominal torque (max. continuous torque)	mNm	82.8	131	82.8	131
6 Nominal current (max. continuous current)	A	2.15	3.45	2.15	3.45
33 Max. torque	mNm	149	149	149	149
34 Max. current	A	3.86	3.86	3.86	3.86
9 Max. efficiency	%	76	76	76	76
Characteristics					
35 Type of control		Speed	Speed	Speed	Speed
36 Supply voltage +V _{cc}	V	10...28	10...28	10...28	10...28
37 Speed set value input	V	0.33...10.8	0.33...10.8	0.33...10.8	0.33...10.8
38 Scale speed set value input	rpm/V	600	600	600	600
39 Speed range	rpm	200...6480	200...6480	200...6480	200...6480
40 Max. acceleration	rpm/s	6000	6000	6000	6000

Specifications

Thermal data	
17 Thermal resistance housing-ambient	5.1 (2.5) K/W
18 Thermal resistance winding-housing	6.7 (3.3) K/W
19 Thermal time constant winding	45.1 (22.1) s
20 Thermal time constant motor	256 (124) s
21 Ambient temperature	-40...+85°C
22 Max. winding temperature	+125°C
41 Max. temperature of electronics	+105°C
Mechanical data (preloaded ball bearings)	
16 Rotor inertia	181 gcm ²
24 Axial play at axial load < 7.0 N	0 mm
	> 7.0 N
	0.14 mm
25 Radial play	preloaded
26 Max. axial load (dynamic)	6.8 N
27 Max. force for press fits (static)	95 N
(static, shaft supported)	1000 N
28 Max. radial load, 5 mm from flange	63 N

Operating Range



Comments

- Continuous operation**
The drive can be operated with a speed controller and, taking account of the given thermal resistance (fig. 17 and 18) at an ambient temperature of 25°C, does not exceed the maximum permissible operating temperatures.
- Overload range**
The drive reaches these operating points. Speed may vary from the set value. The overload protection shuts down the drive in the event of sustained overload.

Other specifications

31 Weight of motor	260 g
32 Direction of rotation	Clockwise (CW)

Values listed in the table are nominal.

Protective functions

Overload protection, blockage protection, inverse-polarity protection, thermal overload protection, low/high voltage cut-off

Connection 5 wire version (Cable AWG 18/24)

red	+V _{cc} 10...28 VDC
black	GND
white	Speed set value input
green	Monitor n (6 pulses per revolution)
grey	Disable (Type Enable) or sense of direction (Type Direction)

maxon Modular System

Details on catalog page 46

Planetary Gearhead

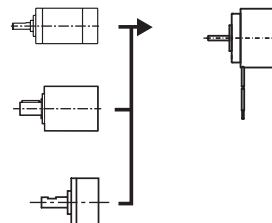
Ø32 mm
0.75 - 6.0 Nm
Page 394/398

Planetary Gearhead

Ø42 mm
3.0 - 15.0 Nm
Page 407

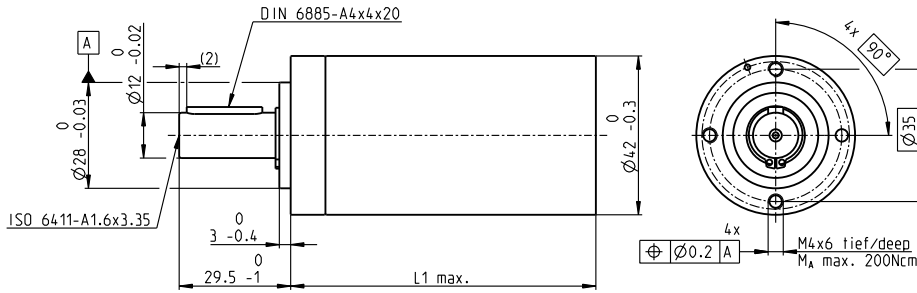
Spur Gearhead

Ø45 mm
0.5 - 2.0 Nm
Page 409



Planetary Gearhead GP 42 C $\varnothing 42$ mm, 3.0–15.0 Nm

Ceramic Version

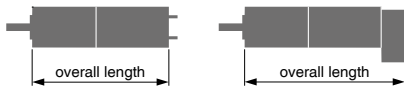


Technical Data	
Planetary Gearhead	straight teeth
Output shaft	stainless steel
Bearing at output	preloaded ball bearings
Radial play, 12 mm from flange	max. 0.06 mm
Axial play at axial load	< 5 N 0 mm > 5 N max. 0.3 mm
Max. axial load (dynamic)	150 N
Max. force for press fits	300 N
Direction of rotation, drive to output	=
Max. continuous input speed	8000 rpm
Recommended temperature range	-40...+100°C
Number of stages	1 2 3 4
Max. radial load, 12 mm from flange	120 N 240 N 360 N 360 N

gear

	Part Numbers									
	203113	203115	203119	203120	203124	203129	203128	203133	203137	203141
Legend:	<div style="display: flex; justify-content: space-between;"> <div style="width: 20%;"> <p> Stock program</p> <p> Standard program</p> <p> Special program (on request)</p> </div> </div>									
Gearhead Data										
1 Reduction	3.5:1	12:1	26:1	43:1	81:1	156:1	150:1	285:1	441:1	756:1
2 Absolute reduction	$\frac{7}{2}$	$\frac{49}{4}$	26	$\frac{343}{8}$	$\frac{2197}{27}$	156	$\frac{2401}{16}$	$\frac{15379}{54}$	441	756
10 Mass inertia	gcm ² 14	15	9.1	15	9.4	9.1	15	15	14	14
3 Max. motor shaft diameter	mm 10	10	8	10	8	8	10	10	10	10
Part Numbers	203114	203116	260552*	203121	203125	260553*	203130	203134	203138	203142
1 Reduction	4.3:1	15:1	36:1	53:1	91:1	216:1	186:1	319:1	488:1	936:1
2 Absolute reduction	$\frac{13}{3}$	$\frac{91}{6}$	$\frac{36}{1}$	$\frac{637}{12}$	91	$\frac{216}{1}$	$\frac{4459}{24}$	$\frac{637}{2}$	$\frac{4394}{9}$	936
10 Mass inertia	gcm ² 9.1	15	5.0	15	15	5.0	15	15	9.4	9.1
3 Max. motor shaft diameter	mm 8	10	4	10	10	4	10	10	8	8
Part Numbers	260551*	203117		203122	203126		203131	203135	203139	260554*
1 Reduction	6:1	19:1		66:1	113:1		230:1	353:1	546:1	1296:1
2 Absolute reduction	$\frac{6}{1}$	$\frac{169}{9}$		$\frac{1183}{18}$	$\frac{338}{3}$		$\frac{8281}{36}$	$\frac{28561}{81}$	546	$\frac{1296}{1}$
10 Mass inertia	gcm ² 4.9	9.4		15	9.4		15	9.4	14	5.0
3 Max. motor shaft diameter	mm 4	8		10	8		10	8	10	4
Part Numbers		203118		203123	203127		203132	203136	203140	
1 Reduction		21:1		74:1	126:1		257:1	394:1	676:1	
2 Absolute reduction		21		$\frac{147}{2}$	126		$\frac{1029}{4}$	$\frac{1183}{3}$	676	
10 Mass inertia	gcm ²	14		15	14		15	15	9.1	
3 Max. motor shaft diameter	mm	10		10	10		10	10	8	
4 Number of stages		1	2	3	3	3	4	4	4	4
5 Max. continuous torque	Nm	3.0	7.5	7.5	15.0	15.0	15.0	15.0	15.0	15.0
6 Max. intermittent torque at gear output	Nm	4.5	11.3	11.3	22.5	22.5	22.5	22.5	22.5	22.5
7 Max. efficiency	%	90	81	81	72	72	72	64	64	64
8 Weight	g	260	360	360	460	460	460	560	560	560
9 Average backlash no load	°	0.6	0.8	0.8	1.0	1.0	1.0	1.0	1.0	1.0
11 Gearhead length L1**	mm	41.0	55.5	55.5	70.0	70.0	70.0	84.5	84.5	84.5

*no combination with EC 45 (150/250 W) and EC-140
**for EC 45 flat L1 is -3.6 mm

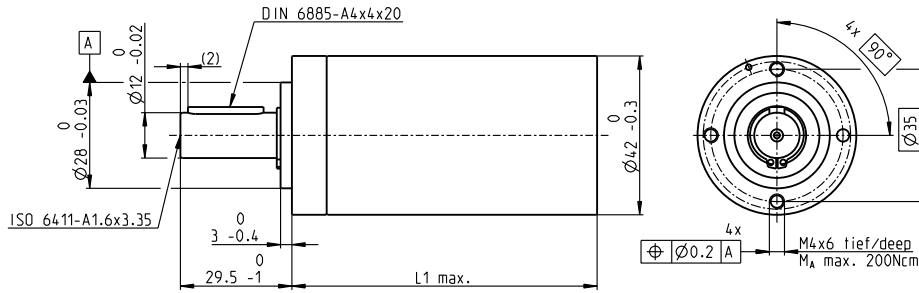


maxon Modular System														
+ Motor	Page	+ Sensor	Page	Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts								
RE 35, 90 W	149					112.1	126.6	126.6	141.1	141.1	141.1	155.6	155.6	155.6
RE 35, 90 W	149	MR	479			123.5	138.0	138.0	152.5	152.5	152.5	167.0	167.0	167.0
RE 35, 90 W	149	HED_5540	486/488			132.8	147.3	147.3	161.8	161.8	161.8	176.3	176.3	176.3
RE 35, 90 W	149	DCT 22	495			130.2	144.7	144.7	159.2	159.2	159.2	173.7	173.7	173.7
RE 35, 90 W	149			AB 28	535	148.2	162.7	162.7	177.2	177.2	177.2	191.7	191.7	191.7
RE 35, 90 W	149	HED_5540	486/488	AB 28	535	165.4	179.9	179.9	194.4	194.4	194.4	208.9	208.9	208.9
RE 40, 150 W	151					112.1	126.6	126.6	141.1	141.1	141.1	155.6	155.6	155.6
RE 40, 150 W	151	MR	479			123.5	138.0	138.0	152.5	152.5	152.5	167.0	167.0	167.0
RE 40, 150 W	151	HED_5540	486/489			132.8	147.3	147.3	161.8	161.8	161.8	176.3	176.3	176.3
RE 40, 150 W	151	HEDL 9140	493			166.2	180.7	180.7	195.2	195.2	195.2	209.7	209.7	209.7
RE 40, 150 W	151			AB 28	535	148.2	162.7	162.7	177.2	177.2	177.2	191.7	191.7	191.7
RE 40, 150 W	151			AB 28	536	156.2	170.7	170.7	185.2	185.2	185.2	199.7	199.7	199.7
RE 40, 150 W	151	HED_5540	486/489	AB 28	535	165.4	179.9	179.9	194.4	194.4	194.4	208.9	208.9	208.9
RE 40, 150 W	151	HEDL 9140	493	AB 28	536	176.7	191.2	191.2	205.7	205.7	205.7	220.2	220.2	220.2
EC 40, 170 W	239					121.1	135.6	135.6	150.1	150.1	150.1	164.6	164.6	164.6
EC 40, 170 W	239	HED_5540	487/489			144.5	159.0	159.0	173.5	173.5	173.5	188.0	188.0	188.0
EC 40, 170 W	239	Res 26	496			148.3	162.8	162.8	177.3	177.3	177.3	191.8	191.8	191.8
EC 40, 170 W	239			AB 32	537	163.8	178.3	178.3	192.8	192.8	192.8	207.3	207.3	207.3
EC 40, 170 W	239	HED_5540	487/489	AB 32	537	182.2	196.7	196.7	211.2	211.2	211.2	225.7	225.7	225.7
EC 45, 150 W	240					152.3	166.8	166.8	181.3	181.3	181.3	195.8	195.8	195.8
EC 45, 150 W	240	HEDL 9140	493			167.9	182.4	182.4	196.9	196.9	196.9	211.4	211.4	211.4
EC 45, 150 W	240	Res 26	496			152.3	166.8	166.8	181.3	181.3	181.3	195.8	195.8	195.8
EC 45, 150 W	240			AB 28	536	159.7	174.2	174.2	188.7	188.7	188.7	203.2	203.2	203.2
EC 45, 150 W	240	HEDL 9140	493	AB 28	536	176.7	191.2	191.2	205.7	205.7	205.7	220.2	220.2	220.2
EC 45, 250 W	241					185.1	199.6	199.6	214.1	214.1	214.1	228.6	228.6	228.6
EC 45, 250 W	241	HEDL 9140	493			200.7	215.2	215.2	229.7	229.7	229.7	244.2	244.2	244.2
EC 45, 250 W	241	Res 26	496			185.1	199.6	199.6	214.1	214.1	214.1	228.6	228.6	228.6
EC 45, 250 W	241			AB 28	536	192.5	207.0	207.0	221.5	221.5	221.5	236.0	236.0	236.0
EC 45, 250 W	241	HEDL 9140	493	AB 28	536	209.5	224.0	224.0	238.5	238.5	238.5	253.0	253.0	253.0

Planetary Gearhead GP 42 C $\varnothing 42$ mm, 3.0–15.0 Nm

Ceramic Version

gear



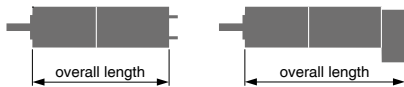
M 1:2

Technical Data

Planetary Gearhead	straight teeth
Output shaft	stainless steel
Bearing at output	preloaded ball bearings
Radial play, 12 mm from flange	max. 0.06 mm
Axial play at axial load	< 5 N 0 mm > 5 N max. 0.3 mm
Max. axial load (dynamic)	150 N
Max. force for press fits	300 N
Direction of rotation, drive to output	=
Max. continuous input speed	8000 rpm
Recommended temperature range	-40...+100°C
Number of stages	1 2 3 4
Max. radial load, 12 mm from flange	120 N 240 N 360 N 360 N

Gearhead Data	Part Numbers									
	203113	203115	203119	203120	203124	203129	203128	203133	203137	203141
1 Reduction	3.5:1	12:1	26:1	43:1	81:1	156:1	150:1	285:1	441:1	756:1
2 Absolute reduction	$7\frac{1}{2}$	$49\frac{1}{4}$	26	$34\frac{3}{8}$	$219\frac{7}{27}$	156	$240\frac{1}{16}$	$15379\frac{5}{64}$	441	756
10 Mass inertia	14	15	9.1	15	9.4	9.1	15	15	14	14
3 Max. motor shaft diameter	10	10	8	10	8	8	10	10	10	10
Part Numbers	203114	203116	260552*	203121	203125	260553*	203130	203134	203138	203142
1 Reduction	4.3:1	15:1	36:1	53:1	91:1	216:1	186:1	319:1	488:1	936:1
2 Absolute reduction	$13\frac{1}{3}$	$91\frac{1}{6}$	$36\frac{1}{1}$	$637\frac{1}{12}$	91	$216\frac{1}{1}$	$4459\frac{1}{24}$	$637\frac{1}{2}$	$4394\frac{1}{9}$	936
10 Mass inertia	9.1	15	5.0	15	15	5.0	15	15	9.4	9.1
3 Max. motor shaft diameter	8	10	4	10	10	4	10	10	8	8
Part Numbers	260551*	203117		203122	203126		203131	203135	203139	260554*
1 Reduction	6:1	19:1		66:1	113:1		230:1	353:1	546:1	1296:1
2 Absolute reduction	$6\frac{1}{1}$	$169\frac{1}{9}$		$1183\frac{1}{18}$	$338\frac{1}{3}$		$8281\frac{1}{36}$	$28561\frac{1}{81}$	546	$1296\frac{1}{1}$
10 Mass inertia	4.9	9.4		15	9.4		15	9.4	14	5.0
3 Max. motor shaft diameter	4	8		10	8		10	8	10	4
Part Numbers		203118		203123	203127		203132	203136	203140	
1 Reduction		21:1		74:1	126:1		257:1	394:1	676:1	
2 Absolute reduction		21		$147\frac{1}{2}$	126		$1029\frac{1}{4}$	$1183\frac{1}{3}$	676	
10 Mass inertia		14		15	14		15	15	9.1	
3 Max. motor shaft diameter		10		10	10		10	10	8	
4 Number of stages		1		2	3		3	4	4	
5 Max. continuous torque		3.0		7.5	15.0		15.0	15.0	15.0	
6 Max. intermittent torque at gear output		4.5		11.3	22.5		22.5	22.5	22.5	
7 Max. efficiency		90		81	81		72	72	64	
8 Weight		260		360	460		460	560	560	
9 Average backlash no load		0.6		0.8	1.0		1.0	1.0	1.0	
11 Gearhead length L1**		41.0		55.5	70.0		70.0	84.5	84.5	

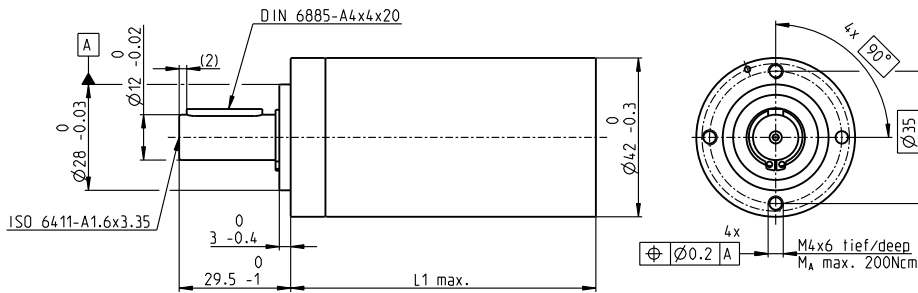
*no combination with EC 45 (150/250 W) and EC-I 40
**for EC 45 flat L1 is -3.6 mm



maxon Modular System														
+ Motor	Page	+ Sensor	Page	Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts								
EC-max 30, 60 W	251					105.1	119.6	119.6	134.1	134.1	134.1	148.6	148.6	148.6
EC-max 30, 60 W	251	MR	478			117.3	131.8	131.8	146.3	146.3	146.3	160.8	160.8	160.8
EC-max 30, 60 W	251	HEDL 5540	490			125.7	140.2	140.2	154.7	154.7	154.7	169.2	169.2	169.2
EC-max 30, 60 W	251			AB 20	532	140.7	155.2	155.2	169.7	169.7	169.7	184.2	184.2	184.2
EC-max 30, 60 W	251	HEDL 5540	490	AB 20	532	161.3	175.8	175.8	190.3	190.3	190.3	204.8	204.8	204.8
EC-max 40, 70 W	252					99.1	113.6	113.6	128.1	128.1	128.1	142.6	142.6	142.6
EC-max 40, 70 W	252	MR	479			114.8	129.3	129.3	143.8	143.8	143.8	158.3	158.3	158.3
EC-max 40, 70 W	252	HEDL 5540	490			122.5	137.0	137.0	151.5	151.5	151.5	166.0	166.0	166.0
EC-max 40, 70 W	252			AB 28	534	133.5	148.0	148.0	162.5	162.5	162.5	177.0	177.0	177.0
EC-max 40, 70 W	252	HEDL 5540	490	AB 28	534	151.8	166.3	166.3	180.8	180.8	180.8	195.3	195.3	195.3
EC-max 40, 120 W	253					129.1	143.6	143.6	158.1	158.1	158.1	172.6	172.6	172.6
EC-max 40, 120 W	253	MR	479			144.8	159.3	159.3	173.8	173.8	173.8	188.3	188.3	188.3
EC-max 40, 120 W	253	HEDL 5540	490			152.5	167.0	167.0	181.5	181.5	181.5	196.0	196.0	196.0
EC-max 40, 120 W	253			AB 28		163.5	178.0	178.0	192.5	192.5	192.5	207.0	207.0	207.0
EC-max 40, 120 W	253	HEDL 5540	490	AB 28		181.8	196.3	196.3	210.8	210.8	210.8	225.3	225.3	225.3
EC-4pole 30, 100 W	259					88.1	102.6	102.6	117.1	117.1	117.1	131.6	131.6	131.6
EC-4pole 30, 100 W	259	22 EMT	457			116.0	130.5	130.5	145.0	145.0	145.0	159.5	159.5	159.5
EC-4pole 30, 100 W	259	16 EASY/XT/Abs.	464-468			102.0	116.5	116.5	131.0	131.0	131.0	145.5	145.5	145.5
EC-4pole 30, 100 W	259	16 EASY Abs. XT	470			102.5	117.0	117.0	131.5	131.5	131.5	146.0	146.0	146.0
EC-4pole 30, 100 W	259	16 RIO	481			100.5	115.0	115.0	129.5	129.5	129.5	144.0	144.0	144.0
EC-4pole 30, 100 W	259	AEDL/HEDL	484/490			108.7	123.2	123.2	137.7	137.7	137.7	152.2	152.2	152.2
EC-4pole 30, 100 W	259			AB 20	532	124.3	138.8	138.8	153.3	153.3	153.3	167.8	167.8	167.8
EC-4pole 30, 100 W	259	22 EMT	457	AB 20	532	155.5	170.0	170.0	184.5	184.5	184.5	199.0	199.0	199.0
EC-4pole 30, 100 W	259	16 EASY/XT/Abs.	464-468	AB 20	532	138.4	152.9	152.9	167.4	167.4	167.4	181.9	181.9	181.9
EC-4pole 30, 100 W	259	16 EASY Abs. XT	470	AB 20	532	138.9	153.4	153.4	167.9	167.9	167.9	182.4	182.4	182.4
EC-4pole 30, 100 W	259	16 RIO	481	AB 20	532	136.9	151.4	151.4	165.9	165.9	165.9	180.4	180.4	180.4
EC-4pole 30, 100 W	259	AEDL/HEDL	484/490	AB 20	532	145.1	159.6	159.6	174.1	174.1	174.1	188.6	188.6	188.6
EC-4pole 30, 200 W	261					105.1	119.6	119.6	134.1	134.1	134.1	148.6	148.6	148.6
EC-4pole 30, 200 W	261	22 EMT	457			133.0	147.5	147.5	162.0	162.0	162.0	176.5	176.5	176.5

Planetary Gearhead GP 42 C $\varnothing 42$ mm, 3.0–15.0 Nm

Ceramic Version



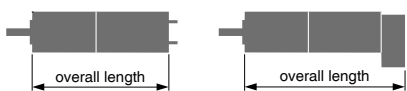
M 1:2

Technical Data

Planetary Gearhead	straight teeth
Output shaft	stainless steel
Bearing at output	preloaded ball bearings
Radial play, 12 mm from flange	max. 0.06 mm
Axial play at axial load	< 5 N 0 mm > 5 N max. 0.3 mm
Max. axial load (dynamic)	150 N
Max. force for press fits	300 N
Direction of rotation, drive to output	=
Max. continuous input speed	8000 rpm
Recommended temperature range	-40...+100°C
Number of stages	1 2 3 4
Max. radial load, 12 mm from flange	120 N 240 N 360 N 360 N

gear

- Stock program
- Standard program
- Special program (on request)



Part Numbers									
203113	203115	203119	203120	203124	203129	203128	203133	203137	203141
203114	203116	260552*	203121	203125	260553*	203130	203134	203138	203142
260551*	203117		203122	203126		203131	203135	203139	260554*
	203118		203123	203127		203132	203136	203140	

*no combination with EC 45 (150/250 W) and EC-i 40
**for EC 45 flat L1 is -3.6 mm

maxon Modular System

+ Motor	Page	+ Sensor	Page	Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts									
EC-4pole 30, 200 W	261	16 EASY/XT/Abs. 464/468				119.0	133.5	133.5	148.0	148.0	162.5	162.5	162.5	162.5	
EC-4pole 30, 200 W	261	16 EASY Abs. XT 470				119.5	134.0	134.0	148.5	148.5	163.0	163.0	163.0	163.0	
EC-4pole 30, 200 W	261	16 RIO 481				117.5	132.0	132.0	146.5	146.5	161.0	161.0	161.0	161.0	
EC-4pole 30, 200 W	261	AEDL/HEDL 484/490				125.7	140.2	140.2	154.7	154.7	169.2	169.2	169.2	169.2	
EC-4pole 30, 200 W	261		AB 20	532		141.3	155.8	155.8	170.3	170.3	170.3	184.8	184.8	184.8	
EC-4pole 30, 200 W	261	22 EMT 457		AB 20	532	172.5	187.0	187.0	201.5	201.5	216.0	216.0	216.0	216.0	
EC-4pole 30, 200 W	261	16 EASY/XT/Abs. 464/468		AB 20	532	155.4	169.9	169.9	184.4	184.4	198.9	198.9	198.9	198.9	
EC-4pole 30, 200 W	261	16 EASY Abs. XT 470		AB 20	532	155.9	170.4	170.4	184.9	184.9	199.4	199.4	199.4	199.4	
EC-4pole 30, 200 W	261	16 RIO 481		AB 20	532	153.9	168.4	168.4	182.9	182.9	197.4	197.4	197.4	197.4	
EC-4pole 30, 200 W	261	AEDL/HEDL 484/490		AB 20	532	162.1	176.6	176.6	191.1	191.1	205.6	205.6	205.6	205.6	
EC-i 40, 50 W	272/273					67.1	81.6	81.6	96.1	96.1	110.6	110.6	110.6	110.6	
EC-i 40, 50 W	272/273	16 EASY/Abs. 464/468				78.8	93.3	93.3	107.8	107.8	122.3	122.3	122.3	122.3	
EC-i 40, 50 W	272/273	16 RIO 481				81.6	96.1	96.1	110.6	110.6	125.1	125.1	125.1	125.1	
EC-i 40, 50 W	272/273	AEDL/HEDL 484/490				90.1	104.6	104.6	119.1	119.1	133.6	133.6	133.6	133.6	
EC-i 40, 70 W	274/275					77.1	91.6	91.6	106.1	106.1	120.6	120.6	120.6	120.6	
EC-i 40, 70 W	274/275	16 EASY/Abs. 464/468				88.8	103.3	103.3	117.8	117.8	132.3	132.3	132.3	132.3	
EC-i 40, 70 W	274/275	16 RIO 481				91.6	106.1	106.1	120.6	120.6	135.1	135.1	135.1	135.1	
EC-i 40, 70 W	274/275	AEDL/HEDL 484/490				100.1	114.6	114.6	129.1	129.1	143.6	143.6	143.6	143.6	
EC-i 40, 100 W	276					97.1	111.6	111.6	126.1	126.1	140.6	140.6	140.6	140.6	
EC-i 40, 100 W	276	16 EASY/XT/Abs. 464/468				108.8	123.3	123.3	137.8	137.8	152.3	152.3	152.3	152.3	
EC-i 40, 100 W	276	16 EASY Abs. XT 471				109.3	123.8	123.8	138.3	138.3	152.8	152.8	152.8	152.8	
EC-i 40, 100 W	276	16 RIO 481				111.6	126.1	126.1	140.6	140.6	155.1	155.1	155.1	155.1	
EC-i 40, 100 W	276	AEDL/HEDL 484/490				120.1	134.6	134.6	149.1	149.1	163.6	163.6	163.6	163.6	
EC-i 40, 130 W	277					131.9	146.4	146.4	160.9	160.9	175.4	175.4	175.4	175.4	
EC-i 40, 130 W	277	16 EASY/XT/Abs. 464/468				143.6	158.1	158.1	172.6	172.6	187.1	187.1	187.1	187.1	
EC-i 40, 130 W	277	16 EASY Abs. XT 471				144.1	158.6	158.6	173.1	173.1	187.6	187.6	187.6	187.6	
EC-i 40, 130 W	277	RIO 481				146.4	160.9	160.9	175.4	175.4	189.9	189.9	189.9	189.9	
EC-i 40, 130 W	277	AEDL/HEDL 484/490				154.9	169.4	169.4	183.9	183.9	198.4	198.4	198.4	198.4	
EC 45 flat, 30 W	295					53.9	68.4	68.4	82.9	82.9	97.4	97.4	97.4	97.4	
EC 45 flat, 30 W, cable	295					55.2	69.7	69.7	84.2	84.2	98.7	98.7	98.7	98.7	
EC 45 flat, 30 W	295	MILE 460				56.1	70.6	70.6	85.3	85.3	99.6	99.6	99.6	99.6	
EC 45 flat, 50 W	296					59.5	74.0	74.0	88.5	88.5	103.0	103.0	103.0	103.0	
EC 45 flat, 50 W	296	MILE 460				60.3	74.8	74.8	89.3	89.3	103.8	103.8	103.8	103.8	
EC 45 flat, 60 W	297					59.5	74.0	74.0	88.5	88.5	103.0	103.0	103.0	103.0	
EC 45 flat, 60 W	297	MILE 460				60.3	74.8	74.8	89.3	89.3	103.8	103.8	103.8	103.8	
EC 45 flat, 90 W	298					65.5	80.0	80.0	94.5	94.5	109.0	109.0	109.0	109.0	
EC 45 flat, 90 W	298	MILE 460				66.3	80.8	80.8	95.3	95.3	109.8	109.8	109.8	109.8	
EC 45 flat, 70 W	299					64.5	79.0	79.0	93.5	93.5	108.0	108.0	108.0	108.0	
EC 45 flat, 70 W	299	MILE 460				65.3	79.8	79.8	94.3	94.3	108.8	108.8	108.8	108.8	
EC 45 flat, 80 W	300					64.5	79.0	79.0	93.5	93.5	108.0	108.0	108.0	108.0	
EC 45 flat, 80 W	300	MILE 460				65.3	79.8	79.8	94.3	94.3	108.8	108.8	108.8	108.8	
EC 45 flat, 120 W	301					70.5	85.0	85.0	99.5	99.5	114.0	114.0	114.0	114.0	
EC 45 flat, 120 W	301	MILE 460				71.3	85.8	85.8	100.3	100.3	114.8	114.8	114.8	114.8	
EC 45 flat, IE, IP 00	302					72.7	87.2	87.2	101.7	101.7	116.2	116.2	116.2	116.2	
EC 45 flat, IE, IP 40	302					74.9	89.4	89.4	103.9	103.9	118.4	118.4	118.4	118.4	
EC 45 flat, IE, IP 00	303					77.7	92.2	92.2	106.7	106.7	121.2	121.2	121.2	121.2	
EC 45 flat, IE, IP 40	303					79.9	94.4	94.4	108.9	108.9	123.4	123.4	123.4	123.4	