

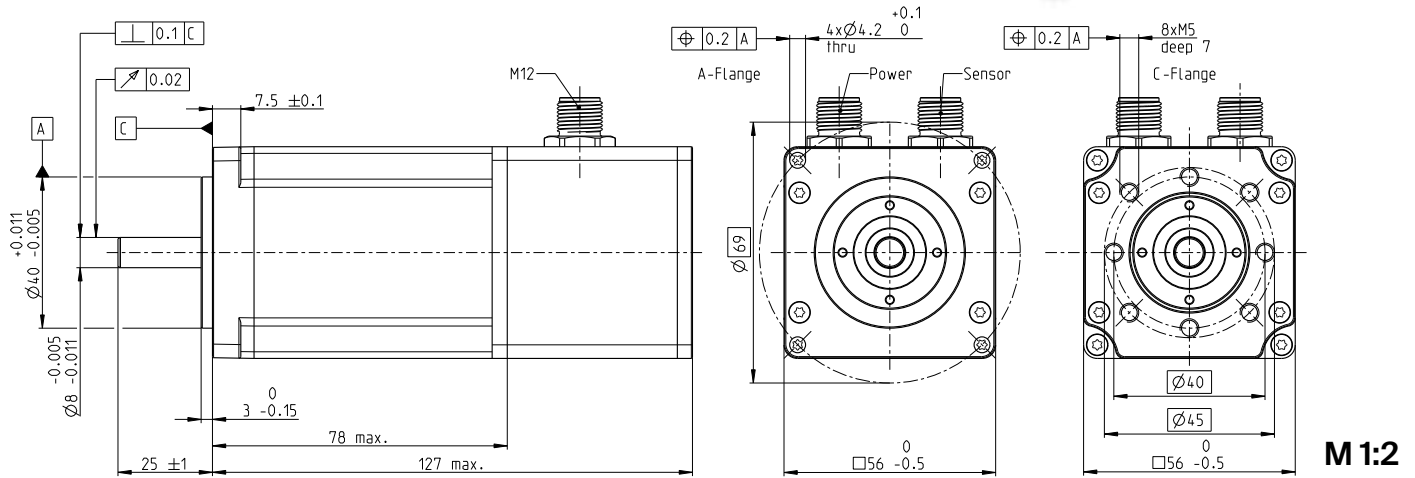
# IDX 56 M brushless BLDC motor $\square 56$ mm

**NEW**



IDX

**Key Data: 350/420 W, 693 mNm, 8000 rpm**



**M 1:2**

**Motor Data**

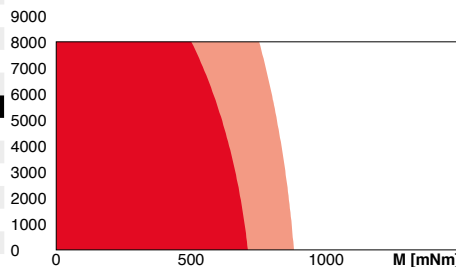
1_	Nominal voltage	V	24	48
2_	No load speed	rpm	5740	7270
3_	No load current	mA	911	653
4_	Nominal speed	rpm	4820	6260
5_	Nominal torque (max. continuous torque)	mNm	693	622
6_	Nominal current (max. continuous current)	A	16.1	9.35
7_	Stall torque	mNm	15800	20500
8_	Stall current	A	399	328
9_	Max. efficiency	%	90.8	91.3
10_	Terminal resistance	$\Omega$	0.0601	0.146
11_	Terminal inductance	mH	0.0941	0.234
12_	Torque constant	mNm/A	39.5	62.4
13_	Speed constant	rpm/V	242	153
14_	Speed/torque gradient	rpm/mNm	0.367	0.359
15_	Mechanical time constant	ms	0.654	0.639
16_	Rotor inertia	gcm <sup>2</sup>	170	170

**Thermal data**

17_	Thermal resistance housing-ambient	K/W	2.36
18_	Thermal resistance winding-housing	K/W	1.05
19_	Thermal time constant winding	s	171
20_	Thermal time constant motor	s	962
21_	Ambient temperature	$^{\circ}$ C	-40...+100
22_	Max. winding temperature	$^{\circ}$ C	155

**Operating Range**

**n [rpm] winding 48 V**



■ Continuous operation  
■ Continuous operation with reduced thermal resistance  $R_{th2}$  50%  
□ Short term operation

**Mechanical data ball bearings**

23_	Max. speed	rpm	8000
24_	Axial play	mm	0..0.14
	Preload	N	15
	Direction of force		pull
25_	Radial play	preloaded	1000
26_	Max. axial load (dynamic)	N	12
27_	Max. force for press fits (static) (static, shaft supported)	N	150
28_	Max. radial load [mm from flange]	N	110 [12.5]

**Other specifications**

29_	Number of pole pairs	8
30_	Number of phases	3
31_	Weight of motor	g 815
32_	Typical noise level [rpm]	dBA 54 [4000]

**Power Connection (M12, male, 5 poles, L-coded)**

Pin 1	Motor winding 1
Pin 2	Motor winding 2
Pin 3	Motor winding 3
Pin 4	$U_{brake} +24$ VDC (optional)
Pin 5	$U_{brake}$ GND (optional)

**Sensor Connection (M12, male, 17 poles, A-coded)**

Pin 1	GND	Pin 10	B
Pin 2	NTC	Pin 11	DATA/
Pin 3	$V_{cc}$ 4.75...26 V	Pin 12	DATA
Pin 4	A	Pin 13	CLK
Pin 5	I/	Pin 14	CLK/
Pin 6	A/	Pin 15	Hall Sensor 3
Pin 7	B/	Pin 16	Hall Sensor 1
Pin 8	I	Pin 17	Hall Sensor 2
Pin 9	NTC		

NTC resistor 25 $^{\circ}$ C: 10 kOhm  $\pm$ 1%, beta (25-100 $^{\circ}$ C): 3460 K

Wiring diagram for Hall sensors see p. 49

**maxon Modular System**

maxon gear	Stages [opt.]	maxon sensor
354-355_GPX 52 A/UP/LN	1-3	integrated
		maxon brake
		522_AB 34

**Details on catalog page 32**

maxon motor control
488_ESCON Module 50/8
488_ESCON Module 50/8 HE
489_ESCON 70/10
497_EPOS4 Mod./Comp. 50/15
501_EPOS4 70/15

**Configuration**

Flange front: A-Flange/C-Flange  
Encoder Interface: SSI/BiSS-C

**Notes about the encoder**

Output level incremental, RS422, with internal supply voltage 5 V  
Input/output level absolute, RS422, with internal supply voltage 5 V  
Resolution (not configurable) 1024 cpt / 4096 steps (12 bit)  
More production information can be found online, under ENX 22 EASY INT

[xdrives.maxongroup.com](http://xdrives.maxongroup.com)

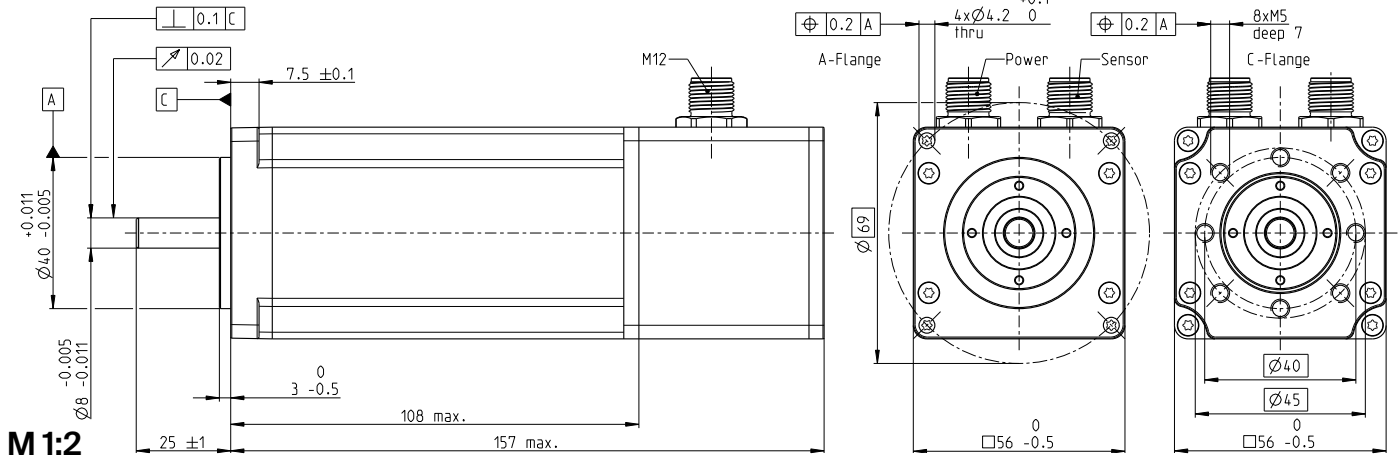
# IDX 56 L brushless BLDC motor $\square 56$ mm

**NEW**



**IDX**

**Key Data: 400/500 W, 1110 mNm, 6000 rpm**



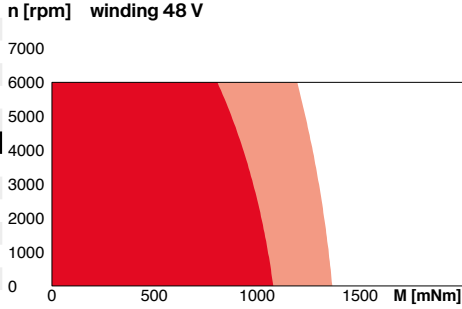
**Motor Data**

1_	Nominal voltage	V	24	48
2_	No load speed	rpm	3440	5440
3_	No load current	mA	693	673
4_	Nominal speed	rpm	2860	4740
5_	Nominal torque (max. continuous torque)	mNm	1110	979
6_	Nominal current (max. continuous current)	A	15.6	11.1
7_	Stall torque	mNm	16700	27100
8_	Stall current	A	252	324
9_	Max. efficiency	%	89.9	91.2
10_	Terminal resistance	$\Omega$	0.0952	0.148
11_	Terminal inductance	mH	0.138	0.221
12_	Torque constant	mNm/A	66.2	83.6
13_	Speed constant	rpm/V	144	114
14_	Speed/torque gradient	rpm/mNm	0.208	0.202
15_	Mechanical time constant	ms	0.576	0.561
16_	Rotor inertia	gcm <sup>2</sup>	265	265

**Thermal data**

17_	Thermal resistance housing-ambient	K/W	1.94
18_	Thermal resistance winding-housing	K/W	0.67
19_	Thermal time constant winding	s	177
20_	Thermal time constant motor	s	1160
21_	Ambient temperature	$^{\circ}$ C	-40...+100
22_	Max. winding temperature	$^{\circ}$ C	155

**Operating Range**



■ Continuous operation  
■ Continuous operation with reduced thermal resistance  $R_{th2}$  50%  
 Short term operation

**Mechanical data ball bearings**

23_	Max. speed	rpm	6000
24_	Axial play	mm	0...0.14
	Preload	N	15
	Direction of force		pull
25_	Radial play	preloaded	
26_	Max. axial load (dynamic)	N	12
27_	Max. force for press fits (static) (static, shaft supported)	N	150
28_	Max. radial load [mm from flange]	N	110 [12.5]

**Other specifications**

29_	Number of pole pairs	8
30_	Number of phases	3
31_	Weight of motor	g 1196
32_	Typical noise level [rpm]	dBA 58 [4000]

**maxon Modular System**

<b>maxon gear</b>	Stages [opt.]	<b>maxon sensor</b>	<b>maxon motor control</b>
354-355_GPX 52 A/UP/LN	1-3	integrated	488_ESCON Module 50/8
			488_ESCON Module 50/8 HE
		<b>maxon brake</b>	489_ESCON 70/10
		522_AB 34	497_EPOS4 Mod./Comp. 50/15
			501_EPOS4 70/15

**Power Connection (M12, male, 5 poles, L-coded)**

Pin 1	Motor winding 1
Pin 2	Motor winding 2
Pin 3	Motor winding 3
Pin 4	$U_{brake}$ +24 VDC (optional)
Pin 5	$U_{brake}$ GND (optional)

**Sensor Connection (M12, male, 17 poles, A-coded)**

Pin 1	GND	Pin 10	B
Pin 2	NTC	Pin 11	DATA/
Pin 3	$V_{cc}$ 4.75...26 V	Pin 12	DATA
Pin 4	A	Pin 13	CLK
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Pin 8	I	Pin 17	Hall Sensor 2
Pin 9	NTC		

NTC resistor 25 $^{\circ}$ C: 10 kOhm  $\pm$ 1%, beta (25-100 $^{\circ}$ C): 3460 K

Wiring diagram for Hall sensors see p. 49

**Configuration**

Flange front: A-Flange/C-Flange  
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**Notes about the encoder**

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[xdrives.maxongroup.com](http://xdrives.maxongroup.com)

# GPX 52

## Planetary Gearhead $\varnothing 52$ mm

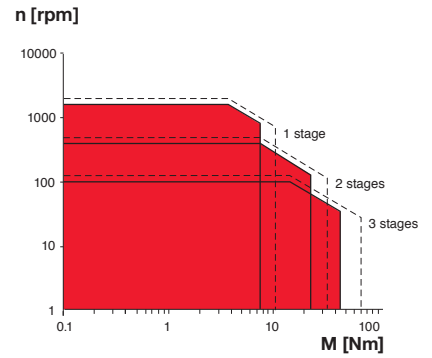
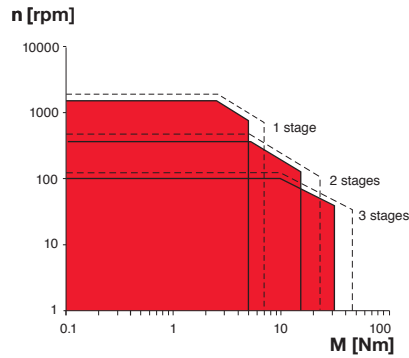
**NEW**



Key Data		A Standard Version	UP Ultra Performance
Max. transmittable power	W	400	600
Max. continuous torque	Nm	30.0	45.0
Max. continuous input speed	rpm	6000	6000
Ambient temperature	°C	-40...+100	-40...+100
Bearing at output		Ball bearing	

Operating Range (output shaft)	A Standard Version	UP Ultra Performance
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■ Continuous operation  
 - - - Intermittent operation

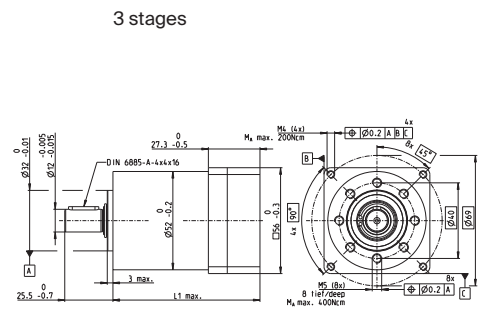
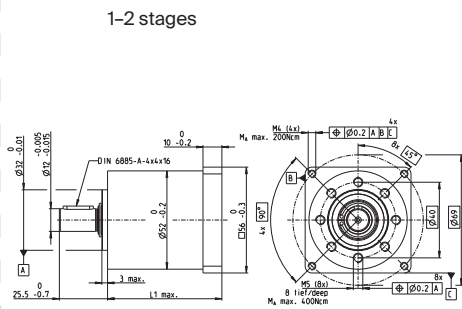


Specifications	A Standard Version			UP Ultra Performance			
	1	2	3	1	2	3	
Number of stages	1	2	3	1	2	3	
Max. transmittable power (continuous)	W	400	200	100	600	300	150
Max. transmittable power (intermittent)	W	500	250	125	750	375	188
Max. continuous torque	Nm	5.0	15.0	30.0	7.5	22.5	45.0
Max. intermittent torque	Nm	7.0	23.0	45.0	10.5	34.5	67.5
Max. continuous input speed	rpm	6000	6000	6000	6000	6000	6000
Max. intermittent input speed	rpm	7500	7500	7500	7500	7500	7500
Max. efficiency	%	95.0	92.0	89.0	95	92	89
Average backlash no load	°	0.5	0.6	0.8	0.30	0.40	0.50
Max. axial load (dynamic)	N	200	200	200	200	200	200
Max. permissible radial load, 10 mm from flange	N	420	630	900	420	630	900
Gearhead length L1 <sup>1</sup>	mm	44	61	78	44	61	78
Weight	g	687	855	1080	694	861	1086

Configuration	A Standard Version			UP Ultra Performance		
	1	2	3	1	2	3
Number of stages	1	2	3	1	2	3
Reduction	3.9, 5.3, 6.6	16, 21, 26, 28, 35, 44	62, 83, 103, 111, 138, 150, 172, 186, 231, 287	3.9, 5.3, 6.6	16, 21, 26, 28, 35, 44	62, 83, 103, 111, 138, 150, 172, 186, 231, 287
Version	Standard/noise reduced/ultra performance					
Flange	Standard flange					
Shaft						

maxon Modular System	Page	Dimensions	M 1:4
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maxon DC motor	Nº of stages [opt.]	
maxon EC motor	Nº of stages [opt.]	
IDX 56 M		221
IDX 56 L		222
maxon IDX drive	Nº of stages [opt.]	
IDX 56 M	1-3	315
IDX 56 L	1-3	316

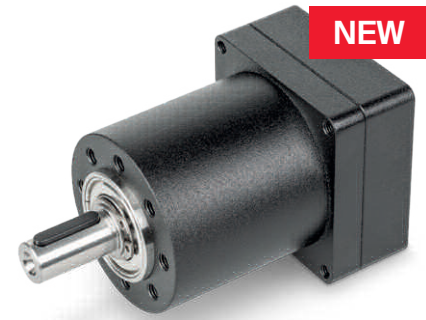


<sup>1</sup>This length may vary depending on the configuration and choice of motor. The effective length is calculated at the end of the configuration process.

[gpx.maxongroup.com](http://gpx.maxongroup.com)

# GPX 52

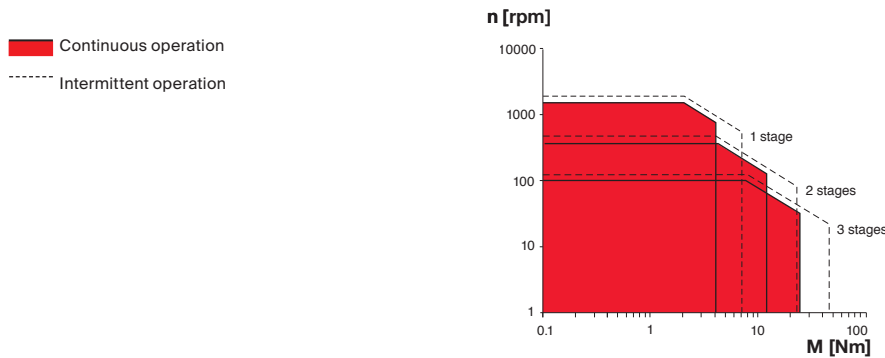
## Planetary Gearhead $\varnothing 52$ mm



GPX

Key Data		LN Noise Reduced	
Max. transmittable power	W	320	
Max. continuous torque	Nm	24.0	
Max. continuous input speed	rpm	6000	
Ambient temperature	°C	-40...+100	
Bearing at output		Ball bearing	
Typical noise level	dBA	-5 dBA compared to standard configuration	

Operating Range (output shaft)		LN Noise Reduced	
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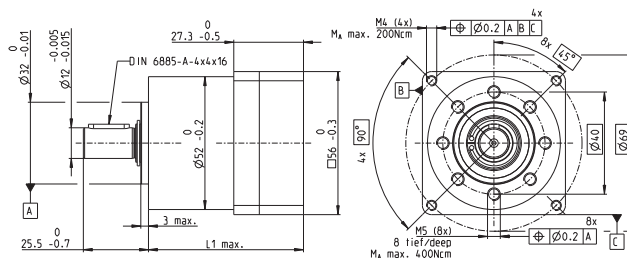


Specifications		LN Noise Reduced		
		1	2	3
Number of stages		1	2	3
Max. transmittable power (continuous)	W	320	160	80
Max. transmittable power (intermittent)	W	400	200	100
Max. continuous torque	Nm	4.0	12.0	24.0
Max. intermittent torque	Nm	7.0	23.0	45.0
Max. continuous input speed	rpm	6000	6000	6000
Max. intermittent input speed	rpm	7500	7500	7500
Max. efficiency	%	90	83	78
Average backlash no load	°	0.50	0.60	0.80
Max. axial load (dynamic)	N	200	200	200
Max. permissible radial load, 10 mm from flange	N	420	630	900
Gearhead length L <sup>1</sup>	mm	44	61	78
Weight	g	687	861	1143

Configuration		LN Noise Reduced		
		1	2	3
Number of stages		1	2	3
Reduction		3.9, 5.3, 6.6, 9	16, 21, 26, 28, 35, 36, 44, 48, 59	62, 83, 103, 111, 138, 150, 172, 186, 231, 254, 287, 315, 392
Version		Standard/noise reduced/ultra performance		
Flange		Standard flange		
Shaft				

maxon Modular System		Page	Dimensions	M 1:3
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maxon DC motor	Nº of stages [opt.]		
maxon EC motor	Nº of stages [opt.]		
IDX 56 M		221	
IDX 56 L		222	
maxon IDX drive	Nº of stages [opt.]		
IDX 56 M	1-3	315	
IDX 56 L	1-3	316	



<sup>1</sup>This length may vary depending on the configuration and choice of motor. The effective length is calculated at the end of the configuration process.

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