

## Configured drive

Motor - DC-max16S GB SL 12V  
Planetary gearhead - GPX16 A 35:1

**Part number: B7A2287AAC99** Revision number 1

Orders are processed and shipped from Switzerland within 11 working days.

General Terms and Conditions: [https://www.maxonmotor.ch/maxon/view/content/terms\\_and\\_conditions\\_page](https://www.maxonmotor.ch/maxon/view/content/terms_and_conditions_page)




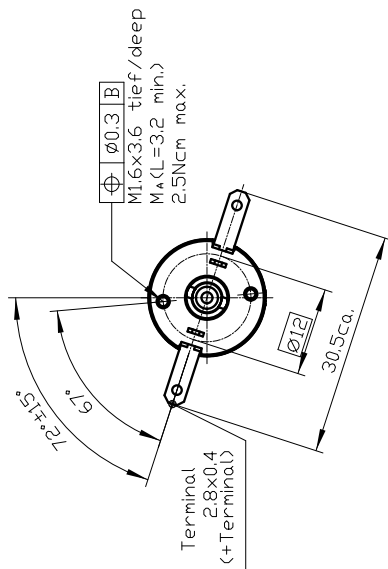
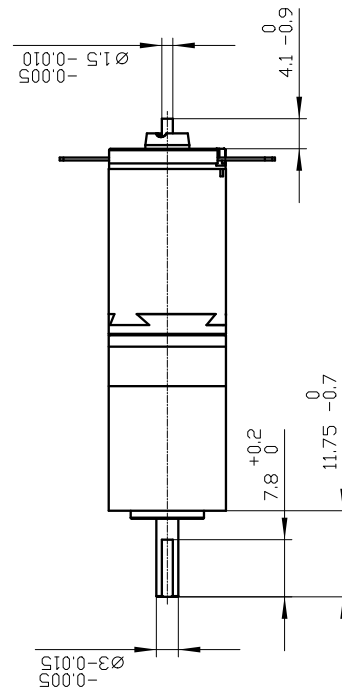
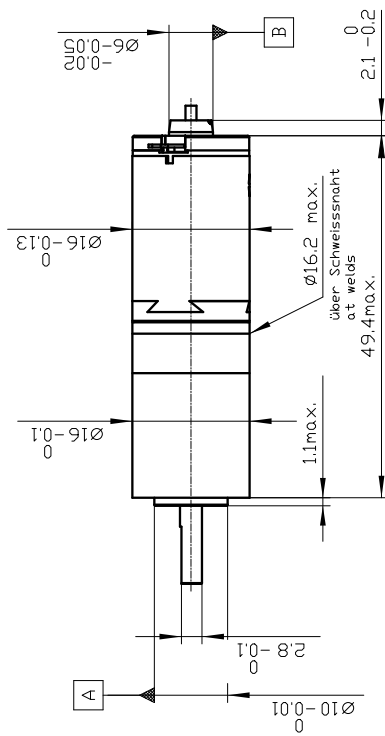
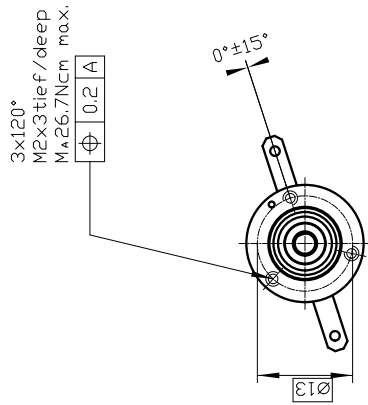
To open the integrated CAD file, please save this document and open it in Acrobat Reader. The STEP file is available after a double-click on the pin icon.

B7A2287AAC99.stp (STP AP 214)

Open configuration: <https://www.maxongroup.com/maxon/view/configurator/?ConfigID=B7A2287AAC99>

**Motor - DC-max16S GB SL 12V**  
**Planetary gearhead - GPX16 A 35:1**  
 Drawing not to scale!

ISO 5456-1   
 Axial play motor: 0.05...0.15mm  
 Axial play gearhead: 0...0.1mm



## Summary of your selected configuration

Total weight of the drive: 45 g

### DC-max16S GB SL 12V

#### Product detail

Commutation	Graphite brushes
Nominal voltage	12 V
Motor bearings	Sintered sleeve bearings

### GPX16 A 35:1

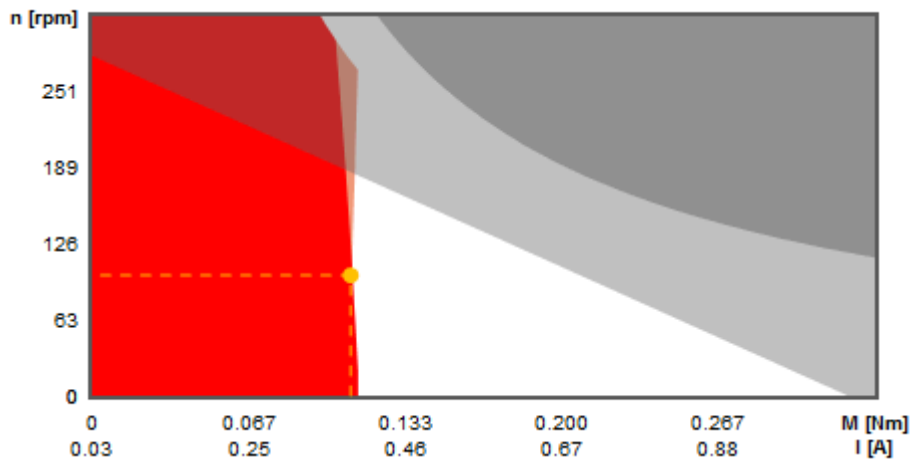
#### Product detail

Gearhead type	Standard version
Reduction	35:1
Number of stages	2

**Legend for part designation**

EB	Precious metal brushes	GB	Graphite brushes	CLL	Spark suppression	BL	Brushless
A	Hall sensors	B	Sensorless	KL	Ball bearings	SL	Sintered bearings
GPX	Planetary gearhead	ENX	Encoder	ENC	Encoder	IMP	Pulses
ST	Number of stages	HP	High Power	S/M/L	Short/medium/long	HS	High Speed
STE	Sterilizable	INT	Integrated	STD	Standard	SP	Speed
ABS	Absolute	LN	Reduced noise level	A	Standard	LZ	Reduced backlash
C	Ceramic bearing			STEC	Sterilizable, Ceramic bearing		

## Drive disposition



- Continuous operation range
- Out of voltage range
- Short-term operating range
- Not recommended range
- Selected operating point
- Continuous operation range at reduced thermal resistance  $R_{th2}$  50%

### Combination details

#### Your entries

Available voltage	12 V
Speed	100 min <sup>-1</sup>
Torque	0.11 Nm

#### Values of the drive at available voltage

Available voltage	12 V
Max. speed at given load	186 min <sup>-1</sup>
Max. continuous torque	0.12 Nm
Max. continuous current	0.41 A

#### Required electrical data for your operating point

Speed	100 min <sup>-1</sup>
Torque	0.11 Nm
Required voltage	8.43 V
Required current	0.38 A

## DC-max16S GB SL 12V



## Product specification

## Values at nominal voltage

Nominal voltage	12 V
No load speed	9860 min <sup>-1</sup>
No load current	33.6mA
Nominal speed	6200 min <sup>-1</sup>
Nominal torque (max. continuous torque)	4.31 mNm
Nominal current (max. continuous current)	0.413 A
Stall torque	11.9 mNm
Stall current	1.05 A
Max. efficiency	68.2 %

## Characteristics

Max. output power continuous	4.22 W
Terminal resistance	11.4 Ω
Terminal inductance	0.343 mH
Torque constant	11.2 mNm A <sup>-1</sup>
Speed constant	849 min <sup>-1</sup> V <sup>-1</sup>
Speed/torque gradient	858 min <sup>-1</sup> mNm <sup>-1</sup>
Mechanical time constant	8.92ms
Rotor inertia	0.993 gcm <sup>2</sup>

## Thermal data

Thermal resistance housing-ambient	29.8 KW <sup>-1</sup>
Thermal resistance winding-housing	5.5 KW <sup>-1</sup>

Thermal time constant of the winding	4.8 s
Thermal time constant of the motor	288 s
Ambient temperature	-30...85 °C
Max. winding temperature	125 °C

**Mechanical data**

Max. permissible speed	11000 min <sup>-1</sup>
Axial play	0.05...0.15 mm
Preload	N
Radial backlash	0.012 mm
Max. axial load (dynamic)	0.8 N
Max. force for press fits (static)	35 N
Static, supported shaft	200 N
Max. radial load 5 mm from flange	1.4 N
Measurement from the flange	5 mm

**Further specifications**

Number of pole pairs	1
Number of commutator segments	7
Motor weight	19.6 g
Motor length	25.4 mm
Typical noise level	55 dBA (6000 min <sup>-1</sup> )

Information about motor data: [http://www.maxonmotor.com/medias/CMS\\_Downloads/DIVERSES/12\\_049\\_EN.pdf](http://www.maxonmotor.com/medias/CMS_Downloads/DIVERSES/12_049_EN.pdf)

## GPX16 A 35:1



## Product specification

## Gearhead data

Reduction	35:1
Absolute reduction	4554/130
Number of stages	2
Max. continuous torque	0.25 Nm
Max. intermittent torque	0.35 Nm
Direction of rotation, drive to output	=
Max. efficiency	80 %
Average backlash no-load	1.2 °
Mass inertia	0.11 gmc <sup>2</sup>
Max. transmittable power (continuous)	3.2 W
Max. short-time transferable output	4 W

## Technical data

Output shaft bearing	KL
Max. radial play, 5 mm from flange	max. 0.1 mm
Axial play	0...0.1 mm
Max. permissible radial load, 5 mm from flange	45 N
Max. permissible axial load	20N
Max. permissible force for press fits	60 N
Max. continuous input speed	14000 min <sup>-1</sup>
Max. intermittent input speed	17500 min <sup>-1</sup>
Recommended temperature range	-40..100 °C



Information about gearhead data: [http://www.maxonmotor.com/medias/CMS\\_Downloads/DIVERSES/12\\_203\\_EN.pdf](http://www.maxonmotor.com/medias/CMS_Downloads/DIVERSES/12_203_EN.pdf)