

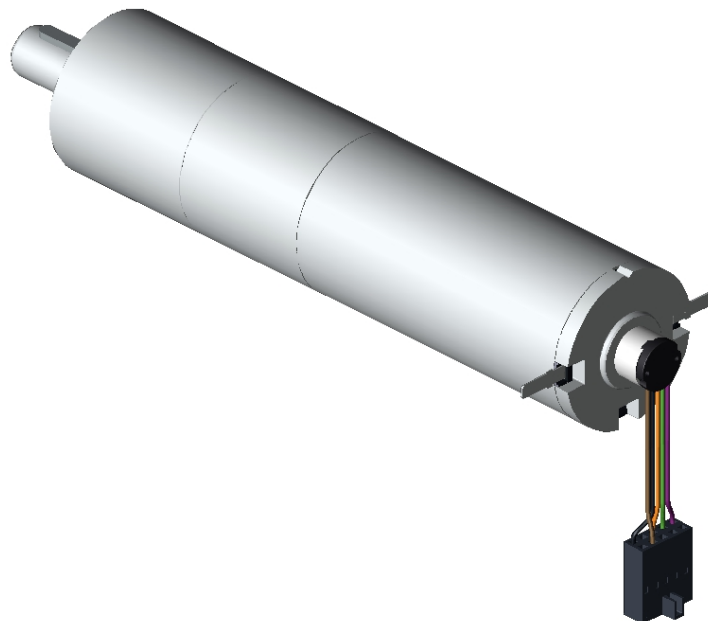
## Configured drive

Motor - DCX32L GB KL 12V  
Gearhead - GPX32UP 111:1  
Sensor - ENX 10 EASY XT 1024IMP

**Part number: B7BAA6D15634** Revision number 1

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

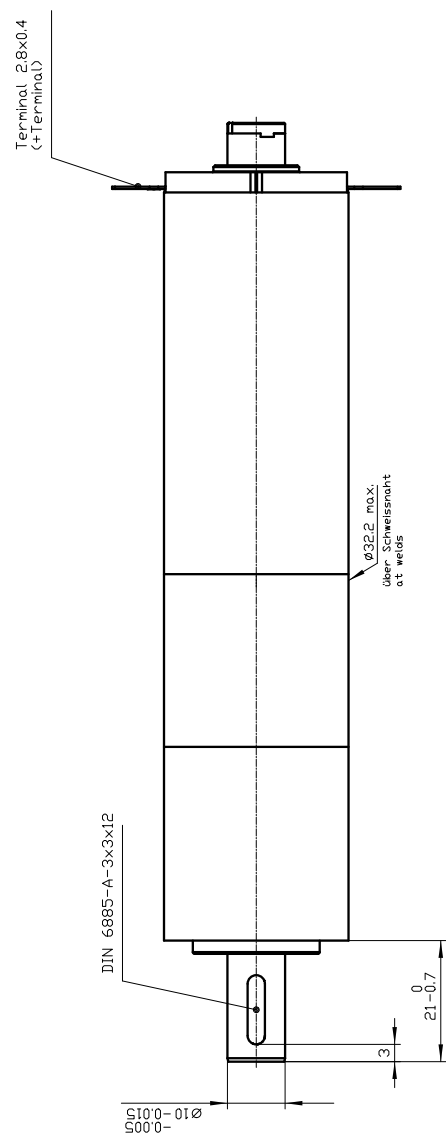
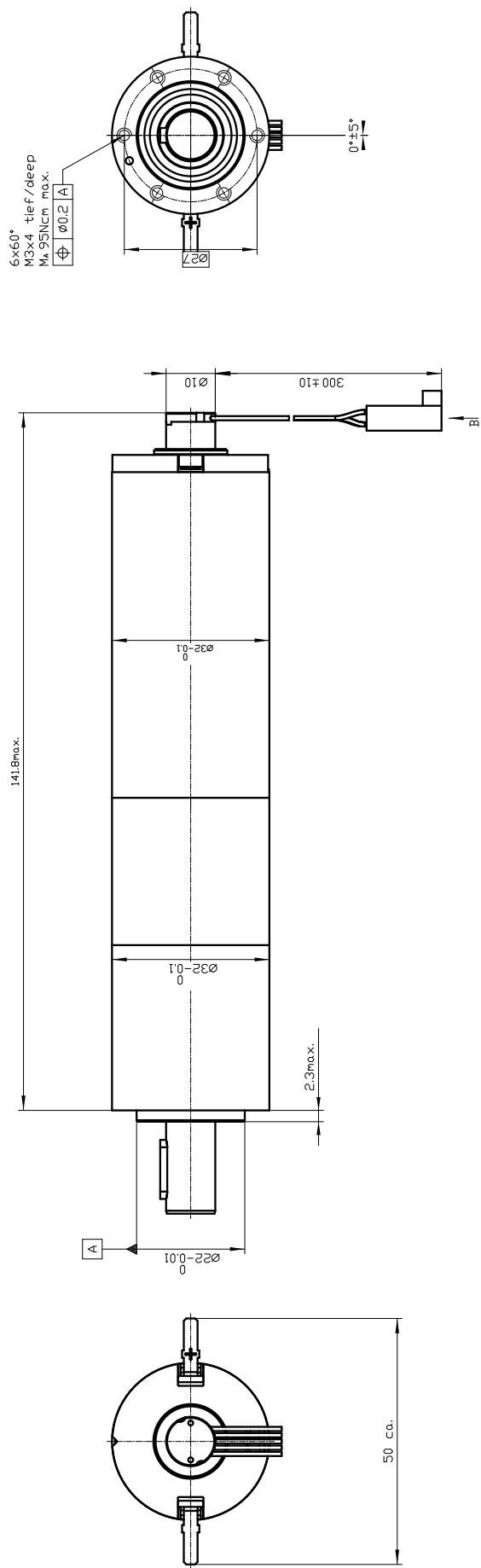
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To open the integrated CAD file, please save this document and open it in Acrobat Reader. The STEP file is available after a double-click on the pin icon.

B7BAA6D15634.stp (STP AP 214)

Open configuration: <https://www.maxongroup.com/maxon/view/configurator/?ConfigID=B7BAA6D15634>



Anschluss nicht dargestellt/ terminal not shown

Unit of measure: mm



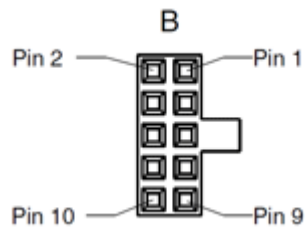
ISO 5456-1

ISO 1101

ISO 965-1

ISO 2768-m

ISO 8015




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**Connector type, encoder**


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Molex 22-55-2102

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Pin 1	NC
Pin 2	VCC
Pin 3	GND
Pin 4	NC
Pin 5	NC
Pin 6	Channel A
Pin 7	NC
Pin 8	Channel B
Pin 9	NC
Pin 10	Channel I

## Summary of your selected configuration

Total weight of the drive: 618 g

### DCX32L GB KL 12V

#### Product detail

Commutation	Graphite brushes
Nominal voltage	12 V
Motor bearings	Preloaded ball bearing

### GPX32UP 111:1

#### Product detail

Gearhead type	Ultra Performance
Reduction	111
Number of stages	3

### ENX 10 EASY XT 1024IMP

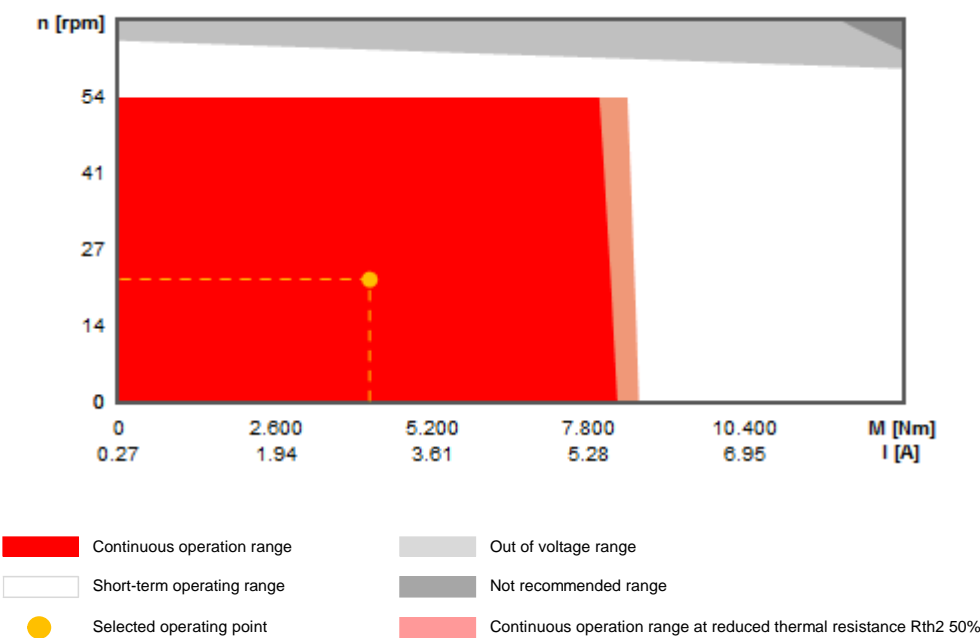
#### Product detail

Counts per turn	1024
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## 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	integ.	STD	Standard	SP	Speed
ABS	Absolute	LN	Reduced noise level	A	Standard	LZ	Reduced backlash
C	Ceramic bearing			STEC	Sterilizable, Ceramic bearing		

Drive disposition



Combination details

Your entries

Available voltage	12 V
Speed	21.62 min <sup>-1</sup>
Torque	4.16 Nm

Values of the drive at available voltage

Available voltage	12 V
Max. speed at given load	54 min <sup>-1</sup>
Max. continuous torque	8.93 Nm
Max. continuous current	6.00 A

Required electrical data for your operating point

Speed	21.62 min <sup>-1</sup>
Torque	4.16 Nm
Required voltage	4.39 V
Required current	2.94 A

## DCX32L GB KL 12V



### Product specification

#### Values at nominal voltage

Nominal voltage	12 V
No load speed	7120 min <sup>-1</sup>
No load current	274mA
Nominal speed	6560 min <sup>-1</sup>
Nominal torque (max. continuous torque)	89.4 mNm
Nominal current (max. continuous current)	6 A
Stall torque	1730 mNm
Stall current	111 A
Max. efficiency	85.5 %

#### Characteristics

Max. output power continuous	90.2 W
Terminal resistance	0.108 Ω
Terminal inductance	0.0336 mH
Torque constant	15.6 mNm A <sup>-1</sup>
Speed constant	612 min <sup>-1</sup> V <sup>-1</sup>
Speed/torque gradient	4.24 min <sup>-1</sup> mNm <sup>-1</sup>
Mechanical time constant	3.44ms
Rotor inertia	77.6 gcm <sup>2</sup>

#### Thermal data

Thermal resistance housing-ambient	7.28 KW <sup>-1</sup>
Thermal resistance winding-housing	2.3 KW <sup>-1</sup>
Thermal time constant of the winding	45 s
Thermal time constant of the motor	837 s
Ambient temperature	-40...100 °C
Max. winding temperature	155 °C

#### Mechanical data

Max. permissible speed	11300 min <sup>-1</sup>
Axial play	0...0.1 mm
Preload	7 N
Radial backlash	0.02 mm
Max. axial load (dynamic)	7 N
Max. force for press fits (static)	22.6 N

Static, supported shaft	2510 N
Max. radial load 5 mm from flange	65.3 N
Measurement from the flange	5 mm

## Further specifications

Number of pole pairs	1
Number of commutator segments	11
Motor weight	323.1 g
Motor length	71.9 mm
Typical noise level	47 dBA ( min <sup>-1</sup> )

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



## GPX32UP 111:1



### Product specification

#### Gearhead data

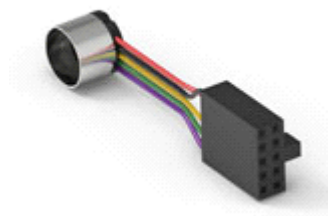
Reduction	111:1
Absolute reduction	357075/3211
Number of stages	3
Max. continuous torque	10.40 Nm
Max. intermittent torque	13 Nm
Direction of rotation, drive to output	=
Max. efficiency	90 %
Average backlash no-load	0.9 °
Mass inertia	10.82 gcm <sup>2</sup>
Max. transmittable power (continuous)	70 W
Max. short-time transferable output	85 W

#### Technical data

Output shaft bearing	Ball bearings
Max. radial play, 5 mm from flange	max. 0.1 mm
Axial play	0...0.2 mm
Max. permissible radial load, 10 mm from flange	250 N
Max. permissible axial load	110 N
Max. permissible force for press fits	200 N
Max. continuous input speed	6000 min <sup>-1</sup>
Max. intermittent input speed	7500 min <sup>-1</sup>
Recommended temperature range	-40..100 °C

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

## ENX 10 EASY XT 1024IMP



### Product specification

#### Sensor data

Counts per turn	1024
Number of channels	3
Line Driver	No
Max. electrical speed	90000 min <sup>-1</sup>
Max. mechanical speed	30000 min <sup>-1</sup>

#### Technical data

Supply voltage Vcc	5 V ±10 %
Output signal	INC
Output signal driver	Single Ended / EIA RS 422
Output current per channel	-20...20 mA
State length	20...160 °el
Signal rise time/Signal fall time	20/20 ns
Min. state duration	125 ns
Direction of rotation	A before B CW
Index position	A low & B low
Index synchronously to AB	Yes
Index pulse width	90 °el
Typical current draw at standstill	22 mA
Max. moment of inertia of code wheel	0.09 gcm <sup>2</sup>
Operating temperature range	-55...125 C°
Number of autoclave cycles	0

Datasheet: [https://www.maxongroup.com/medias/CMS\\_Downloads/DIVERSES/ENXEASY\\_EN.pdf](https://www.maxongroup.com/medias/CMS_Downloads/DIVERSES/ENXEASY_EN.pdf)

## EPOS4 Module 50/5



### Product specification

#### Motor

DC motors up to	250 W
EC motors up to	250 W

#### Sensor

Without sensor (DC motors)	Yes
Sensorless (EC motors)	
Digital incremental encoder (2-channel, single-ended)	Yes
Digital incremental encoder (2-channel, differential)	Yes
Digital incremental encoder (3-channel, differential)	Yes
Digital Hall sensors (EC motors)	Yes
SSI absolute encoder	Yes
Analog incremental encoder (2-channel, differential)	Yes

#### Operating modes

Current controller	Yes (Torque)
Speed controller (open loop)	
Speed controller (closed loop)	Yes
Positioning controller	Yes

#### Electrical data

Operating voltage VCC	10..50 VDC
Logic supply voltage VC optional	10.. 50 VDC
Max. output voltage (factor * VCC)	0.9 *
Max. output current I <sub>max</sub>	15 A
Max. duration of peak output current I <sub>max</sub>	3 s
Continuous output current I <sub>cont</sub>	5 A
Switching frequency of the power stage	50 kHz
Sampling rate, PI current controller	25 kHz
Sampling rate, PI speed controller (closed loop)	2.5 kHz
Sampling rate, PID positioning controller	2.5 kHz
Max. efficiency	97 %
Max. speed (DC motors)	100000 min <sup>-1</sup>
Max. speed (1 pole pair), block commutation	100000 min <sup>-1</sup>
Max. speed (1 pole pair), sinusoidal commutation	50000 min <sup>-1</sup>
Built-in motor choke per phase	μH

#### Inputs

Hall sensor signals	H1, H2, H3
Encoder signals	A, A <sub>l</sub> , B, B <sub>l</sub> , I, I <sub>l</sub>
Max. encoder input frequency	6.2 MHz
Digitale Eingänge	8

Functionality of digital inputs	limit switch, reference switch, general purpose, touch probe
Analog inputs	2
Resolution, range, circuit	12-bit, -10...+10V, differential
Functionality of inputs	General Purpose, Set Value Current, Set Value Velocity
Potentiometers	
Functionality of the potentiometers	
DIP switch	
Functionality of the DIP switch	

## Outputs

Digital outputs	3
Functionality of digital outputs	holding brake, general purpose
Analog outputs	2
Resolution, range	12-bit, -4...+4V
Functionality of analog outputs	General Purpose

## Voltage outputs

Hall sensor supply voltage	see "Sensor supply voltage"
Encoder supply voltage	see "Sensor supply voltage"
Auxiliary output voltage	+5 VDC, max. 150 mA
Output voltage (reference)	

## Ambient conditions

Temperature – operation	-30.. 45 °C
Temperature – storage	-40 .. 85 °C
Temperature – extended range	+45...+75 °C, Derating: -0.167 A/°C
Humidity (non-condensing)	5 .. %

## Mechanical data

Weight	17 g
Dimensions (L x W x H)	53.8 x 38.8 x 11.1 mm
Mounting	mountable on socket terminal strips pitch 1.27 mm, mounting holes for M2.5 screws