

Configured drive

Motor - DCX22L EB KL 12V
Gearhead - GPX22HP 231:1
Sensor - ENX 16 RIO 4096IMP

Part number: B7A35027F97A Revision number 1

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

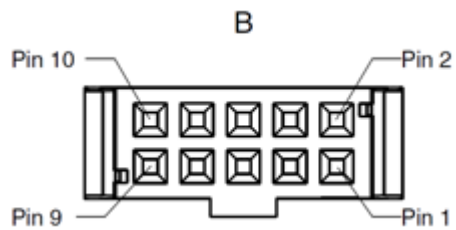
General Terms and Conditions: https://www.maxongroup.ch/maxon/view/content/terms_and_conditions_page



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.

B7A35027F97A.stp (STP AP 214)

Open configuration: <https://www.maxongroup.us/maxon/view/configurator/?ConfigID=B7A35027F97A>



Connector type, encoder

2.54mm 10-pol

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

Summary of your selected configuration

Total weight of the drive: 196 g

DCX22L EB KL 12V		
Product detail		
Commutation		Precious metal brushes
Nominal voltage		12 V
Motor bearings		Preloaded ball bearing
Spark suppression (CLL)		without CLL

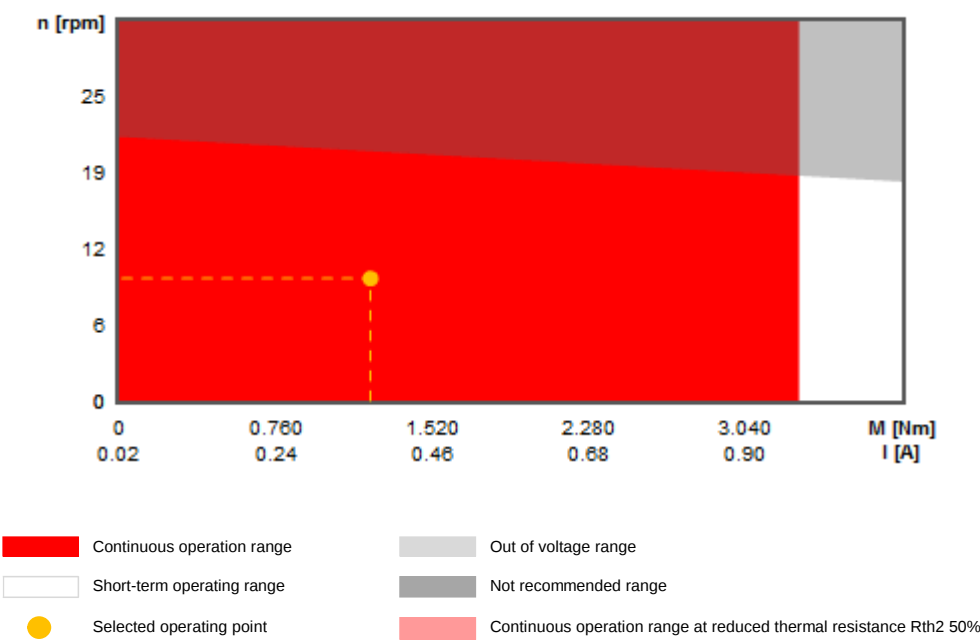
GPX22HP 231:1		
Product detail		
Gearhead type		High Power
Reduction		231:1
Number of stages		3

ENX 16 RIO 4096IMP		
Product detail		
Counts per turn		4096

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	10 min ⁻¹
Torque	1.22 Nm

Values of the drive at available voltage

Available voltage	12 V
Max. speed at given load	20 min ⁻¹
Max. continuous torque	3.30 Nm
Max. continuous current	0.97 A

Required electrical data for your operating point

Speed	10 min ⁻¹
Torque	1.22 Nm
Required voltage	6.24 V
Required current	0.37 A

DCX22L EB KL 12V



Product specification

Values at nominal voltage

Nominal voltage	12 V
No load speed	4980 min ⁻¹
No load current	20mA
Nominal speed	4000 min ⁻¹
Nominal torque (max. continuous torque)	29.5 mNm
Nominal current (max. continuous current)	1.3 A
Stall torque	150 mNm
Stall current	6.54 A
Max. efficiency	89.4 %

Characteristics

Max. output power continuous	20 W
Terminal resistance	1.84 Ω
Terminal inductance	0.192 mH
Torque constant	22.9 mNm A ⁻¹
Speed constant	416 min ⁻¹ V ⁻¹
Speed/torque gradient	33.3 min ⁻¹ mNm ⁻¹
Mechanical time constant	3.14ms
Rotor inertia	9 gcm ²

Thermal data

Thermal resistance housing-ambient	13.6 KW ⁻¹
Thermal resistance winding-housing	4.57 KW ⁻¹
Thermal time constant of the winding	21.4 s
Thermal time constant of the motor	646 s
Ambient temperature	-40...85 °C
Max. winding temperature	100 °C

Mechanical data

Max. permissible speed	7160 min ⁻¹
Axial play	0...0.1 mm
Preload	2.5 N
Radial backlash	0.02 mm
Max. axial load (dynamic)	2.5 N
Max. force for press fits (static)	30 N

Static, supported shaft	440 N
Max. radial load 5 mm from flange	16 N
Measurement from the flange	5 mm

Further specifications

Number of pole pairs	1
Number of commutator segments	9
Motor weight	94.7 g
Motor length	46.7 mm
Typical noise level	52 dBA (min ⁻¹)

Information about motor data: https://www.maxongroup.com/medias/CMS_Downloads/DIVERSES/12_049_EN.pdf

GPX22HP 231:1



Product specification

Gearhead data

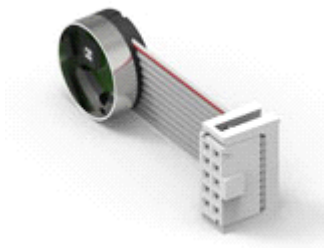
Reduction	231:1
Absolute reduction	300564/1300
Number of stages	3
Max. continuous torque	3.30 Nm
Max. intermittent torque	3.8 Nm
Direction of rotation, drive to output	=
Max. efficiency	65 %
Average backlash no-load	1.2 °
Mass inertia	1.191 gmc ²
Max. transmittable power (continuous)	15 W
Max. short-time transferable output	20 W

Technical data

Output shaft bearing	Wälzlager
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	150 N
Max. permissible axial load	80 N
Max. permissible force for press fits	120 N
Max. continuous input speed	10000 min ⁻¹
Max. intermittent input speed	12500 min ⁻¹
Recommended temperature range	-40..100 °C

Information about gearhead data: https://www.maxongroup.com/medias/CMS_Downloads/DIVERSES/12_203_EN.pdf

ENX 16 RIO 4096IMP



Product specification

Sensor data

Counts per turn	4096
Number of channels	3
Line Driver	RS422
Max. electrical speed	40000 min ⁻¹
Max. mechanical speed	40000 min ⁻¹

Technical data

Supply voltage Vcc	5 V ±10 %
Output signal	INC
Output signal driver	Differential / EIA RS 422
Output current per channel	-20...20 mA
State length	80...100 °el
Signal rise time/Signal fall time	5/5 ns
Min. state duration	40 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	125 mA
Max. moment of inertia of code wheel	1.2 gcm ²
Operating temperature range	-40...100 C°
Number of autoclave cycles	0

Datasheet: https://www.maxongroup.com/medias/CMS_Downloads/DIVERSES/ENXRIO_en.pdf