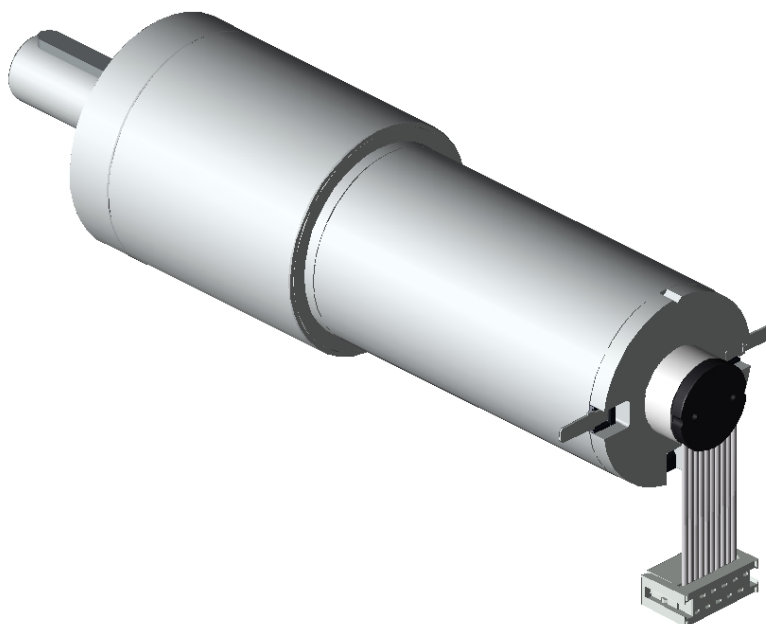


## Configured drive

Motor - DCX35L GB KL 24V  
Gearhead - GPX42 C 15:1  
Sensor - ENX16 EASY 512IMP

**Part number: B7FFFEF9FAF8** Revision number 1

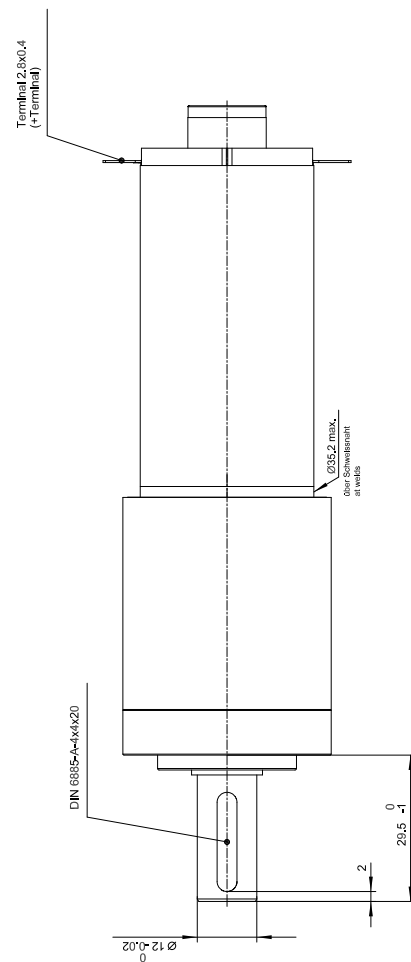
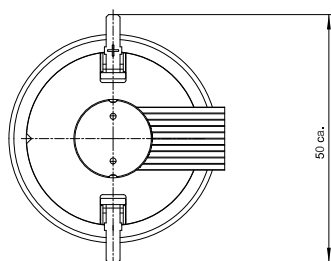
General Terms and Conditions [https://www.maxongroup.ch/maxon/view/content/terms\\_and\\_conditions\\_page](https://www.maxongroup.ch/maxon/view/content/terms_and_conditions_page)



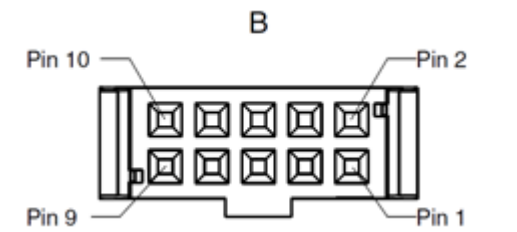
To open the integrated CAD file, please save this document and open it in Acrobat Reader. The STEP file is available after a double-click on the pin icon.

B7FFFEF9FAF8.stp (STP AP 214)

Open configuration: <https://www.maxongroup.com/maxon/view/configurator/?ConfigID=B7FFFEF9FAF8>



ISO 8015



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: 752 g

DCX35L GB KL 24V

Product detail	
Commutation	Graphite brushes
Nominal voltage	24
Motor bearings	Preloaded ball bearing
Elec. connection, motor	
Electrical connection, motor	Terminal

GPX42 C 15:1

Product detail	
Gearhead type	CA
Reduction	15
Number of stages	2
Connector type, encoder	2.54mm 10-pol

## Legend for part designation

### EC-Motor:

A	Hall sensor version
B	Sensorless version
BL	Brushless
C	Integrated electronics
ECX	EC-motor (brushless)
FL	FLAT (type series name)
HP	High Power
HTQ	High Torque
HTQF	High Torque, fan-ventilated
KL	Ball bearings
M/L/X	Medium / Long / Extra long
PR	PRIME (type series name)
SP	SPEED (type series name)
SQ	SQUARE (type series name)
STD	Standard
STE	Sterilizable
STEC	Sterilizable, ceramic bearing
TQ	TORQUE (type series name)

### DC-Motor:

CLL	Capacitor long life (spark suppression)
DC-max	DC motors (brushed)
DCX	DC motors (brushed)
EB	Precious metal brushes
GB	Graphite brushes
KL	Ball bearings
S/M/L	Short / Medium / Long
SL	Sintered sleeve bearings

### IDX Drive/Motor:

AB	Integrated brake
CO	CANopen interface
ENC	Encoder
ET	EtherCAT interface
IDX	Drive System
IO	I/O interface
P	Positioning-control
S	Speed-control
S/M/L	Short / Medium / Long

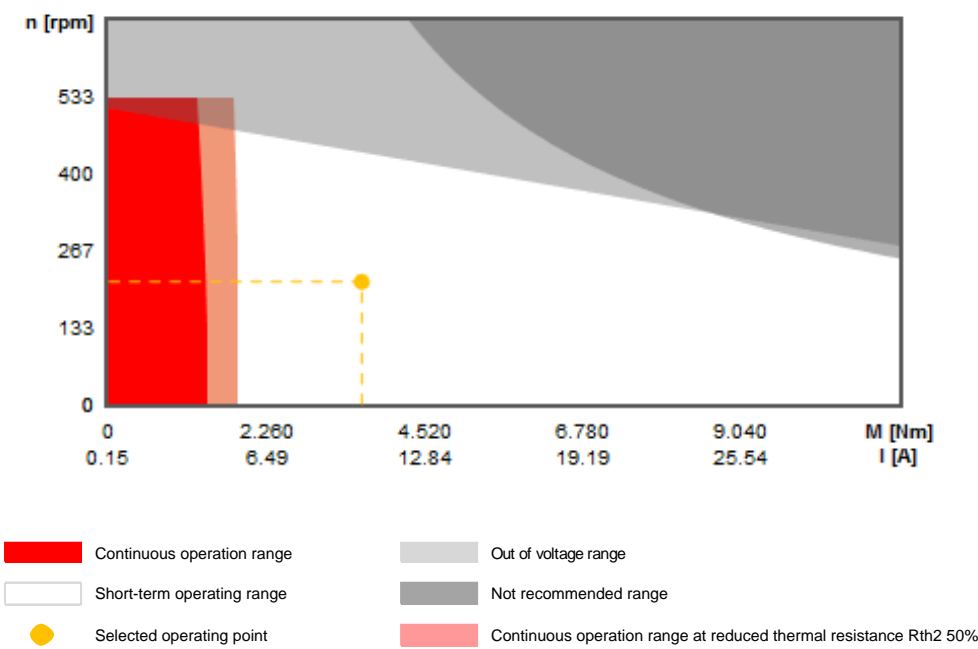
### Gearhead

A	Standard version
C	Ceramic version
GPX	Planetary gearhead
HP	High Power
LN	Reduced noise level
LZ	Reduced backlash
SP	SPEED (type series name)
ST	Number of stages
STE	Sterilizable
STES	Sterilizable, with sealing
UP	Ultra Performance

### Encoder/Sensor:

ABS	Absolute
BISSC	Bidirectional serial synchronous (protocol)
COMM	Commutation signals
EASY	(type series name)
EMT	(type series name)
ENX	Encoder
FFC	Flexible flat cable
GAMA	(type series name)
IMP	Pulses
INT	integrated
MAG	(type series name)
QUAD	(type series name)
RIO	(type series name)
SSI	Synchronous serial Interface (protocol)
XT	Extended version

Drive disposition



Combination details

Your entries

Available voltage	24 V
Speed	213 min <sup>-1</sup>
Torque	3.62 Nm

Values of the drive at available voltage

Available voltage	24 V
Max. speed at given load	423 min <sup>-1</sup>
Max. continuous torque	1.47 Nm
Max. continuous current	4.26 A

Required electrical data for your operating point

Speed	213 min <sup>-1</sup>
Torque	3.62 Nm
Required voltage	14.09 V
Required current	10.28 A

## DCX35L GB KL 24V

### Product specification

#### Values at nominal voltage

Nominal voltage	24 V
No load speed	7720 min <sup>-1</sup>
No load current	146mA
Nominal speed	7160 min <sup>-1</sup>
Nominal torque (max. continuous torque)	121 mNm
Nominal current (max. continuous current)	4.26 A
Stall torque	2030 mNm
Stall current	69.3 A
Max. efficiency	88.9 %

#### Characteristics

Max. output power continuous	117 W
Terminal resistance	0.346 Ω
Terminal inductance	0.121 mH
Torque constant	29.3 mNm A <sup>-1</sup>
Speed constant	326 min <sup>-1</sup> V <sup>-1</sup>
Speed/torque gradient	3.86 min <sup>-1</sup> mNm <sup>-1</sup>
Mechanical time constant	3.91ms
Rotor inertia	96.6 gcm <sup>2</sup>

#### Thermal data

Thermal resistance housing-ambient	6.98 KW <sup>-1</sup>
Thermal resistance winding-housing	2.1 KW <sup>-1</sup>
Thermal time constant of the winding	43 s
Thermal time constant of the motor	1030 s
Ambient temperature	-40...100 °C
Max. winding temperature	155 °C

#### Mechanical data

Max. permissible speed	12300 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	385.5 g
Motor length	70.4 mm
Typical noise level	48 dBA (6000 min <sup>1</sup> )

More information on the motor: <https://www.maxongroup.com/maxon/view/product/DCX35L01GBKL511?download=show>



## GPX42 C 15:1

### Product specification

#### Gearhead data

Reduction	15:1
Absolute reduction	91/6
Number of stages	2
Max. continuous torque	7.50 Nm
Max. intermittent torque	11.3 Nm
Direction of rotation, drive to output	=
Max. efficiency	81 %
Average backlash no-load	0.8 °
Mass inertia	5 gcm <sup>2</sup>
Max. transmittable power (continuous)	240 W
Max. short-time transferable output	300 W

#### Technical data

Output shaft bearing	Ball bearings
Max. radial play, 12 mm from flange	max. 0.06 mm
Axial play	0...0.3 mm
Max. permissible radial load, 12 mm from flange	240 N
Max. permissible axial load	150 N
Max. permissible force for press fits	300 N
Max. continuous input speed	8000 min <sup>-1</sup>
Max. intermittent input speed	8000 min <sup>-1</sup>
Recommended temperature range	-40..100 °C

More information on the gearhead: <https://www.maxongroup.com/maxon/view/product/GPX42CAKLSL15D0CPLW?download=show>

## ENX16 EASY 512IMP

Product specification		
Sensor data		
	Counts per turn	512
	Number of channels	3
	Line Driver	RS422
	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	Differential / EIA RS 422
	Output current per channel	-20...20 mA
	State length	45...135 °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	0.05 gcm <sup>2</sup>
	Operating temperature range	-40...100 C°
	Number of autoclave cycles	0

More information on the encoder: <https://www.maxongroup.com/maxon/view/product/ENX16EASY06?download=show>