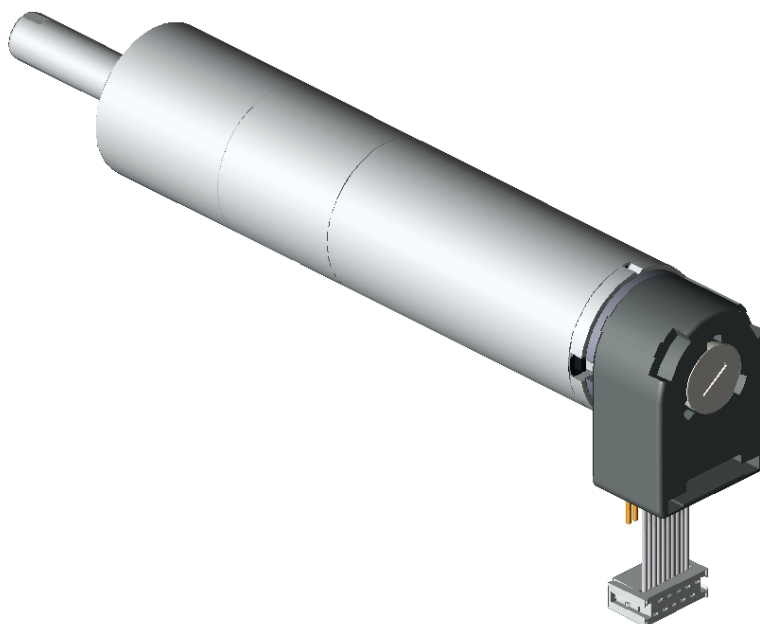


## Configured drive

Motor - DCX32L GB KL 12V  
Gearhead - GPX32UP 83:1  
Sensor - ENC 30 AEDL 5810 1024IMP

**Part number: B7E71794209F** Revision number 1

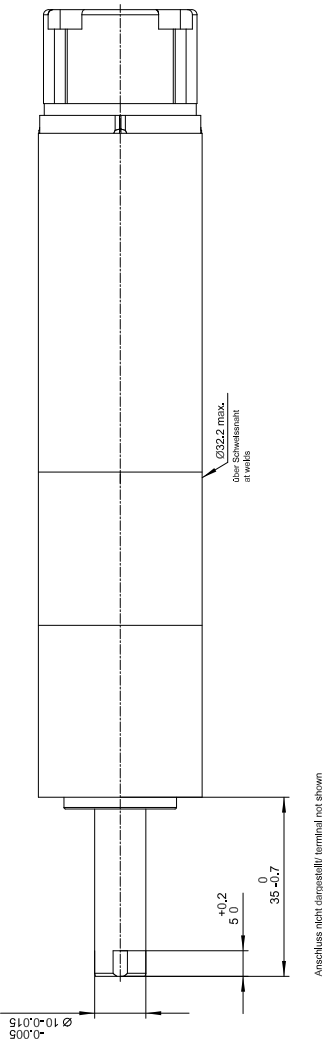
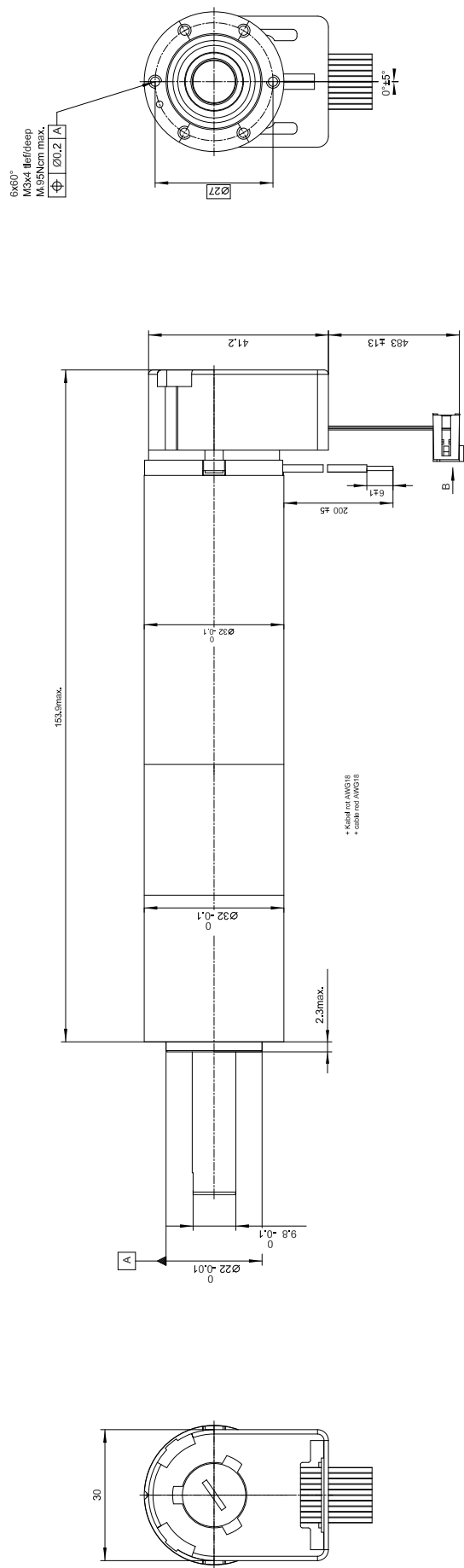
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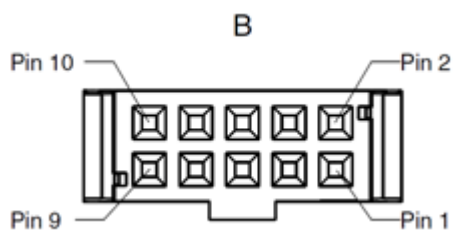


To open the integrated CAD file, please save this document and open it in Acrobat Reader. The STEP file is available after a double-click on the pin icon.

B7E71794209F.stp (STP AP 214)

Open configuration: <https://www.maxongroup.com/maxon/view/configurator/?ConfigID=B7E71794209F>





## Connector type, encoder

2.54mm 10-pol

Pin 1	No connection
Pin 2	VCC
Pin 3	GND
Pin 4	No connection
Pin 5	Channel A \
Pin 6	Channel A
Pin 7	Channel B \
Pin 8	Channel B
Pin 9	Channel I \ (Index)
Pin 10	Channel I (Index)

## Summary of your selected configuration

Total weight of the drive: 657 g

### DCX32L GB KL 12V

Product detail		
	Commutation	Graphite brushes
	Nominal voltage	12 V
	Motor bearings	Preloaded ball bearing
Elec. connection, motor		
	Elec. connection, motor	Cable
	Cable length	200 mm

### GPX32UP 83:1

Product detail		
	Gearhead type	Ultra Performance
	Reduction	83
	Number of stages	3
Gear shaft		
	Gear shaft	Configurable shaft
	Shaft shape	with flat
	Shaft length	35 mm
	Length of flat	5 mm
	Height of flat	9.8 mm

### ENC 30 AEDL 5810 1024IMP

Product detail		
	Counts per turn	1024
	Cable type	Flachband TPE

## Legend for part designation

### EC-Motor:

A	Hall sensor version
B	Sensorless version
BL	Brushless
ECX	EC-motor (brushless)
FL	FLAT (type series name)
HP	High Power
HTQ	High Torque
HTQF	High Torque, fan-ventilated
KL	Ball bearings
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)
M/L/XL	Medium / Long / Extra long

### 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

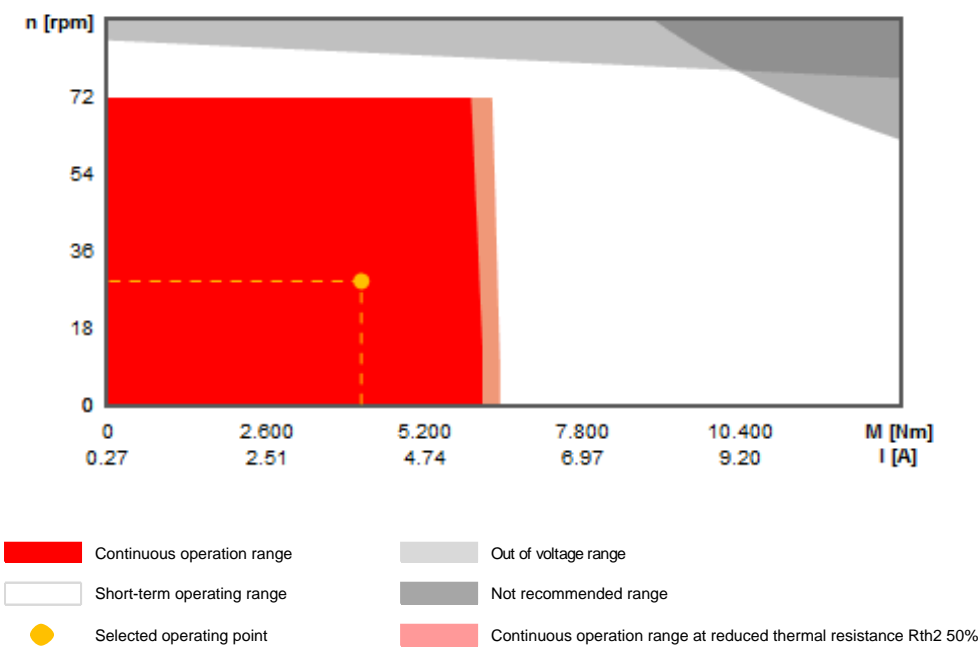
### Gearhead

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	12 V
Speed	29 min <sup>1</sup>
Torque	4.16 Nm

Values of the drive at available voltage

Available voltage	12 V
Max. speed at given load	72 min <sup>1</sup>
Max. continuous torque	6.68 Nm
Max. continuous current	6.00 A

Required electrical data for your operating point

Speed	29 min <sup>1</sup>
Torque	4.16 Nm
Required voltage	4.55 V
Required current	3.84 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	326.9 g
Motor length	71.9 mm
Typical noise level	47 dBA ( min <sup>1</sup> )

More information on the motor: <https://www.maxongroup.com/maxon/view/product/DCX32L01GBKL448?download=show>



## GPX32UP 83:1

### Product specification

#### Gearhead data

Reduction	83:1
Absolute reduction	388125/4693
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	0.8 °
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	Wälzlager
Max. radial play, 5 mm from flange	max. 0.1 mm
Axial play	0...0.2 mm
Max. permissible radial load, 5 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	6000 min <sup>-1</sup>
Recommended temperature range	-40..100 °C

More information on the gearhead: <https://www.maxongroup.com/maxon/view/product/GPX32UPKLSL83D0CPLW?download=show>

## ENC 30 AEDL 5810 1024IMP

### Product specification

#### Sensor data

Counts per turn	1024
Number of channels	3
Line Driver	AM26C31QD
Max. electrical speed	14000 min <sup>1</sup>
Max. mechanical speed	30000 min <sup>1</sup>

#### Technical data

Supply voltage V <sub>cc</sub>	5 V ±10 %
Output signal	INC
Output signal driver	Differential / EIA RS 422
Output current per channel	-20...20 mA
State length	65...115 °el
Signal rise time/Signal fall time	10/10 ns
Min. state duration	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	60 mA
Max. moment of inertia of code wheel	0.6 gcm <sup>2</sup>
Operating temperature range	-40...85 C°
Number of autoclave cycles	0

More information on the encoder: <https://www.maxongroup.com/maxon/view/product/ENC30AEDL581001?download=show>