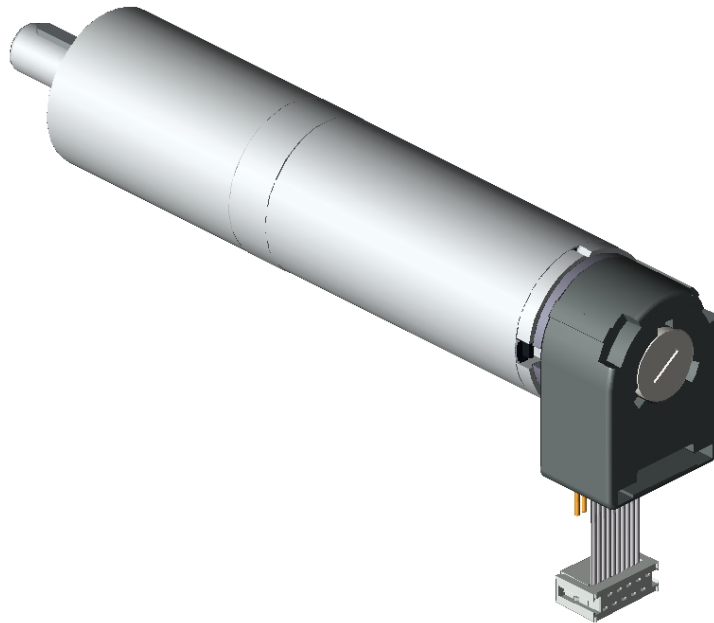


Configured drive

Motor - DCX32L GB KL 18V
Gearhead - GPX32HP 172:1
Sensor - ENC 30 AEDL 5810 1024IMP

Part number: B7E70FC8388A Revision number 1

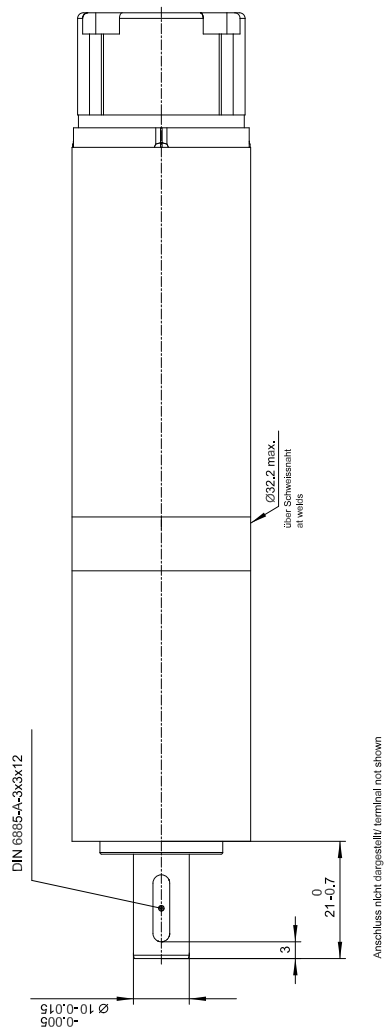
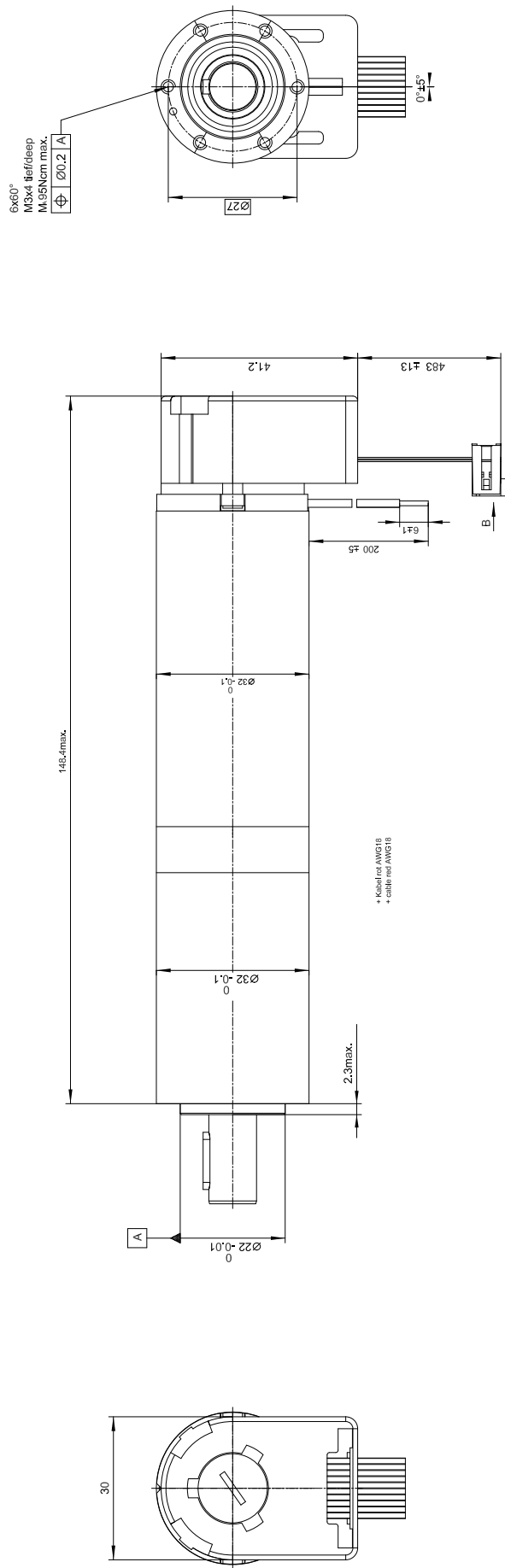
General Terms and Conditions https://www.maxongroup.ch/maxon/view/content/terms_and_conditions_page

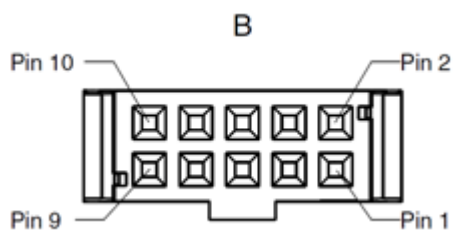


To open the integrated CAD file, please save this document and open it in Acrobat Reader. The STEP file is available after a double-click on the pin icon.

B7E70FC8388A.stp (STP AP 214)

Open configuration: <https://www.maxongroup.com/maxon/view/configurator/?ConfigID=B7E70FC8388A>





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: 642 g

DCX32L GB KL 18V

Product detail		
	Commutation	Graphite brushes
	Nominal voltage	18 V
	Motor bearings	Preloaded ball bearing
Elec. connection, motor		
	Elec. connection, motor	Cable
	Cable length	200 mm

GPX32HP 172:1

Product detail		
	Gearhead type	High Power
	Reduction	172:1
	Number of stages	3

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

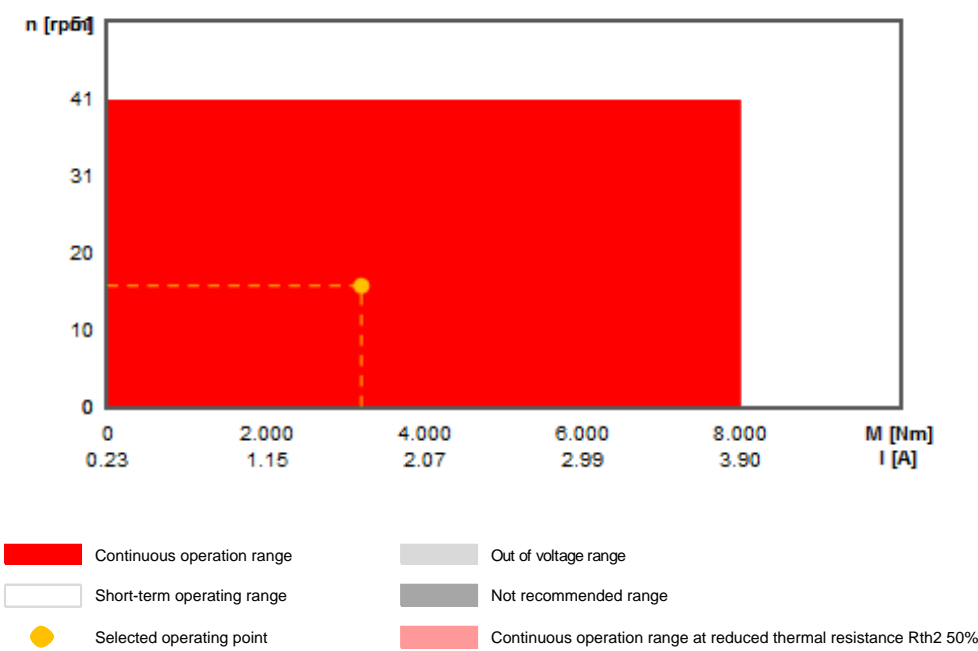
Gearhead

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	23 V
Speed	16 min ¹
Torque	3.2 Nm
Values of the drive at available voltage	
Available voltage	23 V
Max. speed at given load	41 min ¹
Max. continuous torque	8.00 Nm
Max. continuous current	3.91 A
Required electrical data for your operating point	
Speed	16 min ¹
Torque	3.2 Nm
Required voltage	5.99 V
Required current	1.70 A

DCX32L GB KL 18V

Product specification

Values at nominal voltage

Nominal voltage	18 V
No load speed	8630 min ⁻¹
No load current	234mA
Nominal speed	8070 min ⁻¹
Nominal torque (max. continuous torque)	101 mNm
Nominal current (max. continuous current)	5.42 A
Stall torque	2120 mNm
Stall current	109 A
Max. efficiency	87.8 %

Characteristics

Max. output power continuous	96.1 W
Terminal resistance	0.165 Ω
Terminal inductance	0.0525 mH
Torque constant	19.5 mNm A ⁻¹
Speed constant	490 min ⁻¹ V ⁻¹
Speed/torque gradient	4.15 min ⁻¹ mNm ⁻¹
Mechanical time constant	3.3ms
Rotor inertia	75.9 gcm ²

Thermal data

Thermal resistance housing-ambient	7.28 KW ⁻¹
Thermal resistance winding-housing	2.3 KW ⁻¹
Thermal time constant of the winding	44 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 ⁻¹
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 ¹)

More information on the motor: <https://www.maxongroup.com/maxon/view/product/DCX32L01GBKL470?download=show>

GPX32HP 172:1

Product specification

Gearhead data

Reduction	172:1
Absolute reduction	326700/1900
Number of stages	3
Max. continuous torque	8.00 Nm
Max. intermittent torque	10 Nm
Direction of rotation, drive to output	=
Max. efficiency	65 %
Average backlash no-load	0.9 °
Mass inertia	9.961 gcm ²
Max. transmittable power (continuous)	55 W
Max. short-time transferable output	70 W

Technical data

Output shaft bearing	Wälzlager
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	250 N
Max. permissible axial load	110 N
Max. permissible force for press fits	200 N
Max. continuous input speed	7000 min ⁻¹
Max. intermittent input speed	7000 min ⁻¹
Recommended temperature range	-40..100 °C

More information on the gearhead: <https://www.maxongroup.com/maxon/view/product/GPX32HPKLSL0172CPLW?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 ¹
Max. mechanical speed	30000 min ¹

Technical data

Supply voltage V _{cc}	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 ²
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>