

Configured drive

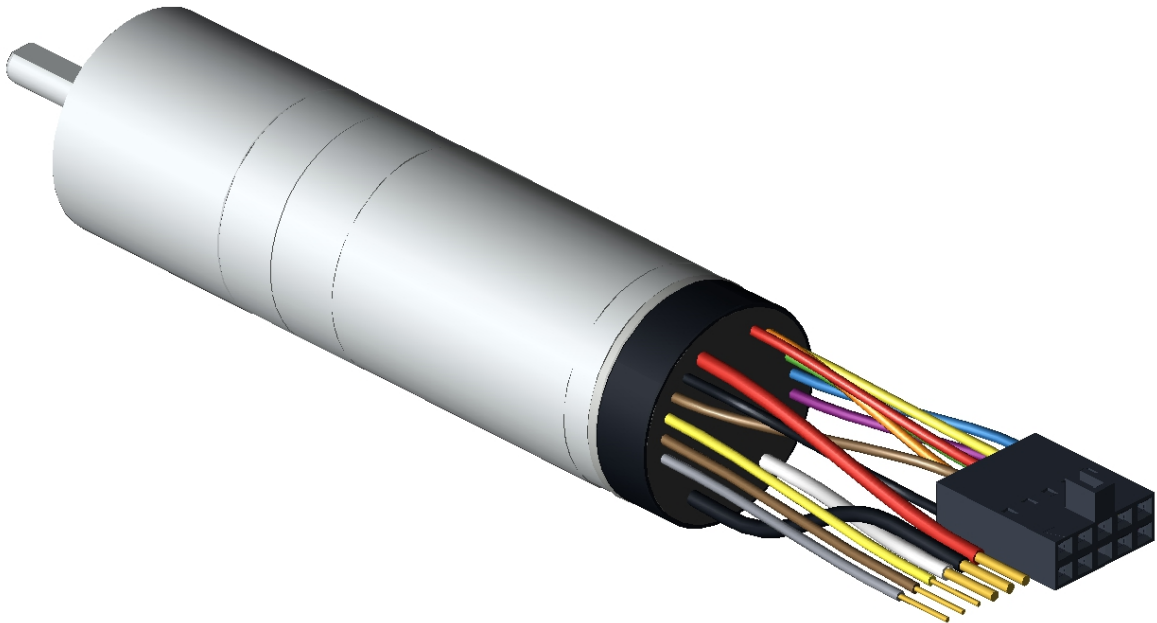
Motor - ECXTQ22M BL KL A STD 24V

Gearhead - GPX22 C 35:1

Sensor - ENX 22 EASY INT COMM 512IMP

Part number: B7E788DD1CAD Revision number 1

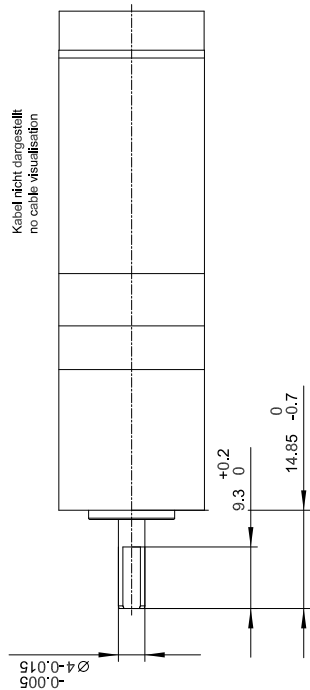
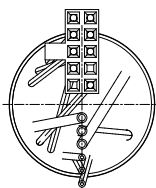
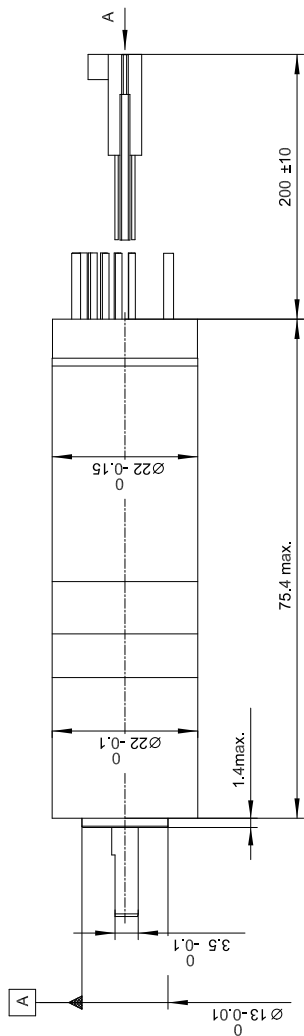
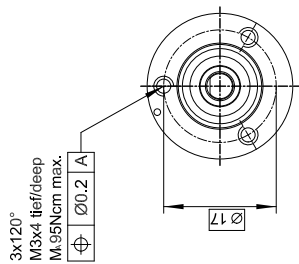
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To open the integrated CAD file, please save this document and open it in Acrobat Reader. The STEP file is available after a double-click on the pin icon.

B7E788DD1CAD.stp (STP AP 214)

Open configuration: <https://www.maxongroup.com/maxon/view/configurator/?ConfigID=B7E788DD1CAD>



Unit of measure: mm



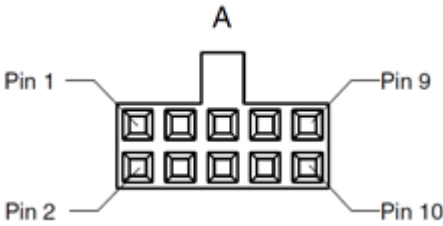
ISO 5456-1

ISO 1101

ISO 965-1

ISO 2768-m

ISO 8015



Motor (Cable type: AWG18)

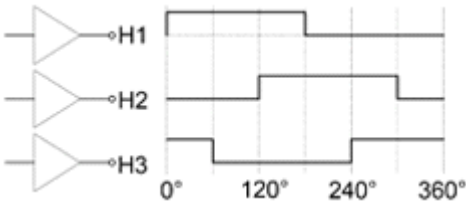
Red	Motor 1
Black	Motor 2
White	Motor 3

Hall-Sensor (Cable type: AWG26)

Yellow	Hall-Sensor 1
Brown	Hall-Sensor 2
Gray	Hall-Sensor 3

Connector type, encoder		
Molex 22-55-2102		
Pin 1	NC	
Pin 2	VCC	Black
Pin 3	GND	Brown
Pin 4	NC	
Pin 5	A \	Red
Pin 6	A	Orange
Pin 7	B \	Yellow
Pin 8	B	Green
Pin 9	Channel II (Index)	Blue
Pin 10	Channel I (Index)	Purple

Cable type: AWG26



Output signals: CMOS compatible
push-pull stage
No pull-up resistor required
Hall signals are generated
by EASY INT sensor

Summary of your selected configuration

Total weight of the drive: 155.8 g

ECXTQ22M BL KL A STD 24V

Product detail

Commutation	With Hall sensors
Nominal voltage	24 V
Motor bearings	Preloaded ball bearing
Version	Standard

GPX22 C 35:1

Product detail

Gearhead type	Ceramic version
Reduction	35:1
Number of stages	2

ENX 22 EASY INT COMM 512IMP

Product detail

Counts per turn	512
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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

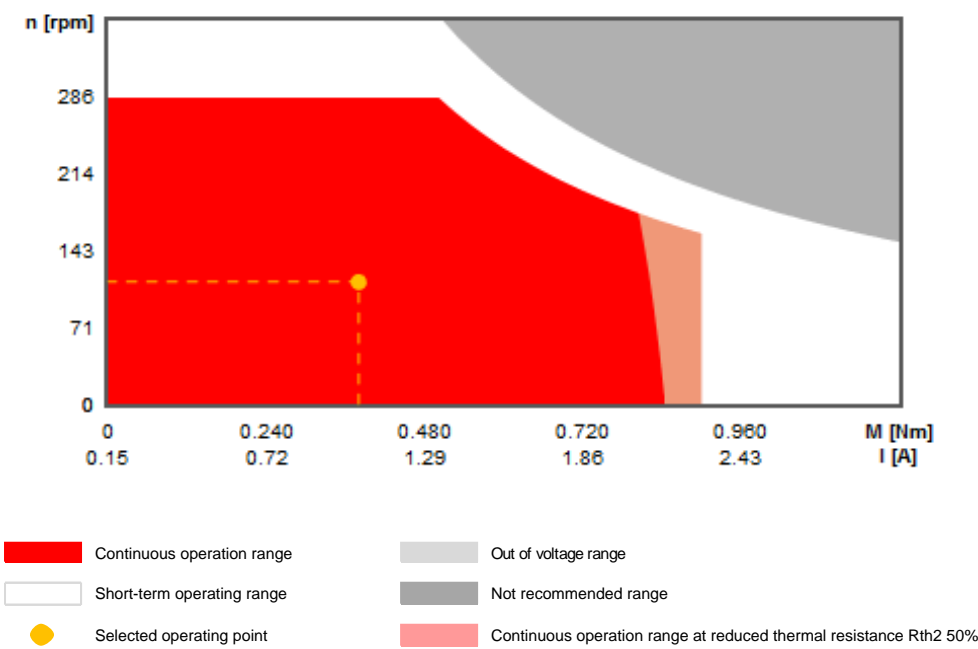
Gearhead

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	24 V
Speed	114 min ⁻¹
Torque	0.38 Nm

Values of the drive at available voltage

Available voltage	24 V
Max. speed at given load	286 min ⁻¹
Max. continuous torque	0.50 Nm
Max. continuous current	1.23 A

Required electrical data for your operating point

Speed	114 min ⁻¹
Torque	0.38 Nm
Required voltage	8.07 V
Required current	0.96 A

ECXTQ22M BL KL A STD 24V

Product specification

Values at nominal voltage

Nominal voltage	24 V
No load speed	15300 min ⁻¹
No load current	145 mA
Nominal speed	13100 min ⁻¹
Nominal torque (max. continuous torque)	28.6 mNm
Nominal current (max. continuous current)	1.88 A
Stall torque	466 mNm
Stall current	31.5 A
Max. efficiency	86.8 %

Characteristics

Max. output power continuous	40.4 W
Terminal resistance phase-to-phase	0.763 Ω
Terminal inductance phase-to-phase	0.428 mH
Torque constant	14.8 mNm A ⁻¹
Speed constant	645 min ⁻¹ V ⁻¹
Speed/torque gradient	33.2 min ⁻¹ mNm ⁻¹
Mechanical time constant	0.599 ms
Rotor inertia	1.72 gcm ²

Thermal data

Thermal resistance housing-ambient	15.7 KW ⁻¹
Thermal resistance winding-housing	4.48 KW ⁻¹
Thermal time constant of the winding	16.5 s
Thermal time constant of the motor	644 s
Ambient temperature	-40...100 °C
Max. winding temperature	155 °C

Mechanical data

Max. permissible speed	16000 min ⁻¹
Axial play	0...0.24 mm
Preload	4 N
Direction of force	Pull
Radial backlash	0.025 mm
Max. axial load (dynamic)	4 N
Max. force for press fits (static)	110 N
Static, supported shaft	1890 N
Max. radial load 5 mm from flange	22 N
Measurement from the flange	5 mm

Further specifications

Number of pole pairs	4
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Number of phases	3
Typical noise level	54 dBA (12000 min ¹)
Typical noise level at reference speed	12000 min ¹
Number of autoclave cycles	0

More information on the drive: <https://www.maxongroup.com/maxon/view/product/ECXI22M4ZF46C4IL1Y501A?download=show>

GPX22 C 35:1

Product specification

Gearhead data

Reduction	35:1
Absolute reduction	4554/130
Number of stages	2
Max. continuous torque	0.90 Nm
Max. intermittent torque	1.2 Nm
Direction of rotation, drive to output	=
Max. efficiency	81 %
Average backlash no-load	1.1 °
Mass inertia	0.501 gcm ²
Max. transmittable power (continuous)	15 W
Max. short-time transferable output	19 W

Technical data

Output shaft bearing	Ball bearings
Max. radial play, 5 mm from flange	max. 0.2 mm
Axial play	0...0.2 mm
Max. permissible radial load, 5 mm from flange	100 N
Max. permissible axial load	40 N
Max. permissible force for press fits	100 N
Max. continuous input speed	10000 min ⁻¹
Max. intermittent input speed	10000 min ⁻¹
Recommended temperature range	-40..100 °C

More information on the gearhead: <https://www.maxongroup.com/maxon/view/product/GPX22CAKLSL35D0CPLW?download=show>

ENX 22 EASY INT COMM 512IMP

Product specification

Sensor data

Counts per turn	512
Number of channels	3
Line Driver	RS422
Max. electrical speed	200000 min ¹
Max. mechanical speed	200000 min ¹

Technical data

Supply voltage V _{cc}	5 V ±10 %
Output signal	INC + COMM
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	60/60 ns
Min. state duration	62.5 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	0.005 gcm ²
Operating temperature range	-40...125 C°
Number of autoclave cycles	1000

More information on the encoder: <https://www.maxongroup.com/maxon/view/product/ENX22EASYINT01?download=show>