

Configured drive

Motor - DCX22S GB KL 12V
Gearhead - GPX22HP 103:1

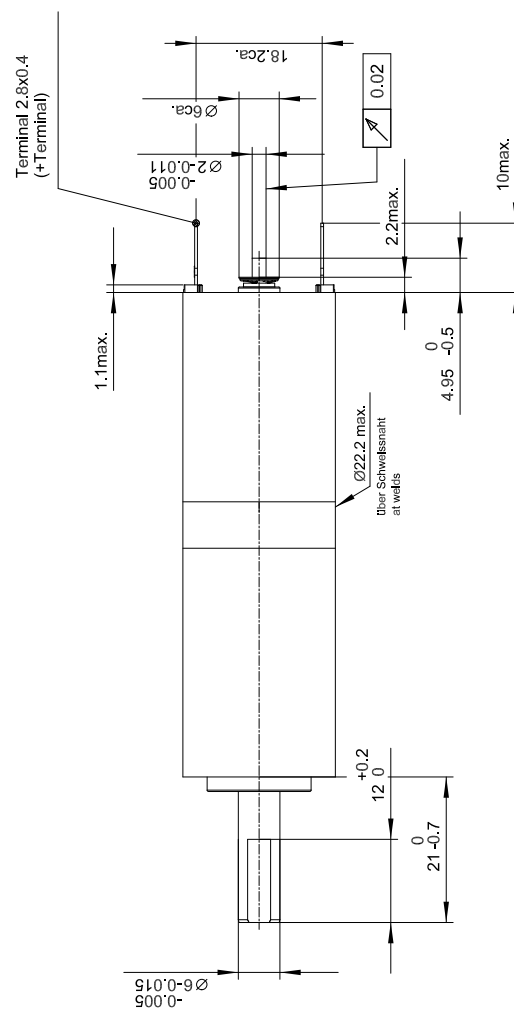
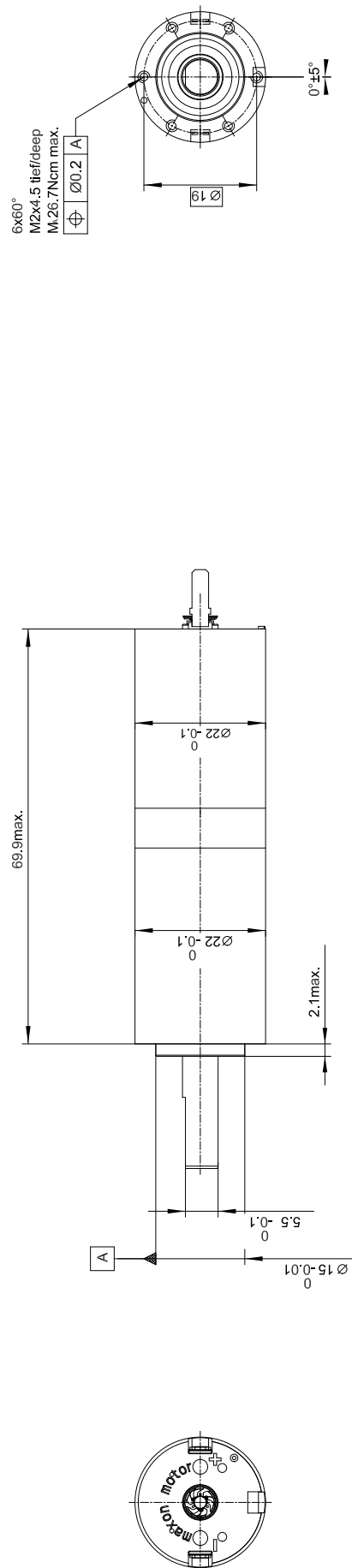
Part number: B75D3A7ED6B0 Revision number 3

General Terms and Conditions:

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.

B75D3A7ED6B0.stp (STP AP 214)

Open configuration:
[&ConfigID=B75D3A7ED6B0](#)



Summary of your selected configuration

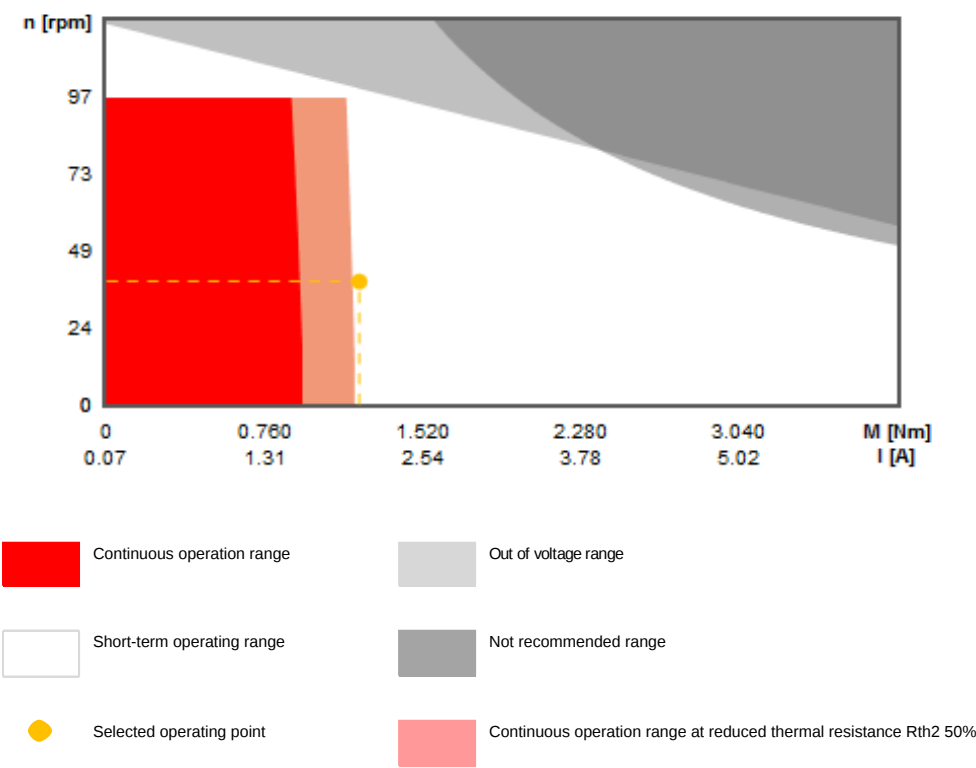
Total weight of the drive: 145 g

DCX22S GB KL 12V	
Product detail	
Commutation	Graphite brushes
Nominal voltage	12
Motor bearings	Preloaded ball bearing
Elec. connection, motor	
Electrical connection, motor	Terminal
Labeling	
Labeling	Your own text
Your text	12 v 103 - 1
GPX22HP 103:1	
Product detail	
Gearhead type	HP
Reduction	103
Number of stages	3

Legend for part designation

EC-Motor:		DC-Motor:		IDX Drive/Motor:	
A	Hall sensor version	CLL	Capacitor long life (spark suppression)	AB	Integrated brake
B	Sensorless version	DC-max	DC motors (brushed)	CO	CANopen interface
BL	Brushless	DCX	DC motors (brushed)	ENC	Encoder
C	Integrated electronics	EB	Precious metal brushes	ET	EtherCAT interface
ECX	EC-motor (brushless)	GB	Graphite brushes	IDX	Drive System
FL	FLAT (type series name)	KL	Ball bearings	IO	I/O interface
HP	High Power	S/M/L	Short / Medium / Long	P	Positioning-control
HTQ	High Torque	SL	Sintered sleeve bearings	S	Speed-control
HTQF	High Torque, fan-ventilated			S/M/L	Short / Medium / Long
KL	Ball bearings				
M/L/X	Medium / Long / Extra long				
PR	PRIME (type series name)				
SP	SPEED (type series name)				
STD	Standard				
STE	Sterilizable				
STEC	Sterilizable, ceramic bearing				
TQ	TORQUE (type series name)				
Gearhead		Encoder/Sensor:			
A	Standard version	ABS	Absolute		
C	Ceramic version	BiSSC	Bidirectional serial synchronous (protocol)		
GPX	Planetary gearhead	COMM	Commutation signals		
HP	High Power	EASY	(type series name)		
LN	Reduced noise level	EMT	(type series name)		
LZ	Reduced backlash	ENX	Encoder		
SP	SPEED (type series name)	FFC	Flexible flat cable		
ST	Number of stages	GAMA	(type series name)		
STE	Sterilizable	IMP	Pulses		
STES	Sterilizable, with sealing	INT	integrated		
UP	Ultra Performance	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	38.834951 min ¹
Torque	1.216 Nm

Values of the drive at available voltage

Available voltage	12 V
Max. speed at given load	97 min ¹
Max. continuous torque	0.98 Nm
Max. continuous current	1.65 A

Required electrical data for your operating point

Speed	38.834951 min ¹
Torque	1.216 Nm
Required voltage	5.95 V
Required current	2.04 A

DCX22S GB KL 12V

Product specification

Values at nominal voltage

Nominal voltage	12 V
No load speed	12400 min ⁻¹
No load current	71.7mA
Nominal speed	10700 min ⁻¹
Nominal torque (max. continuous torque)	14.6 mNm
Nominal current (max. continuous current)	1.65 A
Stall torque	108 mNm
Stall current	11.8 A
Max. efficiency	85.2 %

Characteristics

Max. output power continuous	22.7 W
Terminal resistance	1.02 Ω
Terminal inductance	0.0576 mH
Torque constant	9.18 mNm A ⁻¹
Speed constant	1040 min ⁻¹ V ⁻¹
Speed/torque gradient	116 min ⁻¹ mNm ⁻¹
Mechanical time constant	6.12ms
Rotor inertia	5.05 gcm ²

Thermal data

Thermal resistance housing-ambient	16 KW ⁻¹
Thermal resistance winding-housing	7 KW ⁻¹
Thermal time constant of the winding	18.1 s
Thermal time constant of the motor	528 s
Ambient temperature	-40...100 °C
Max. winding temperature	125 °C

Mechanical data

Max. permissible speed	18000 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	58.7 g
Motor length	31.7 mm
Typical noise level	41 dBA (6000 min ¹)

More information on the motor: <https://www.maxongroup.com/maxon/view/product/DCX22S01GBKL529?download=show>

GPX22HP 103:1

Product specification

Gearhead data

Reduction	103:1
Absolute reduction	371250/3610
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 gcm ²
Max. transmittable power (continuous)	15 W
Max. short-time transferable output	20 W

Technical data

Output shaft bearing	Ball bearings
Max. radial play, 5 mm from flange	max. 0.1 mm
Axial play	0...0.2 mm
Max. permissible radial load, 10 mm 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

More information on the gearhead: <https://www.maxongroup.com/maxon/view/product/GPX22HPKLSL0103CPLW?download=show>