12mm DC Gearmotor - 24mm Type
Shown on 6mm Isometric Grid

PRECISION MICRODRIVES™

Product Data Sheet
Micro Spur™
12mm DC Gearmotor - 24mm Type

Model: 212-103

Ordering Information

The model number 212-103 fully defines the model, variant and additional features of the product. Please quote this number when ordering.
For stocked types, testing and evaluation samples can be ordered directly through our online store.

Datasheet Versions

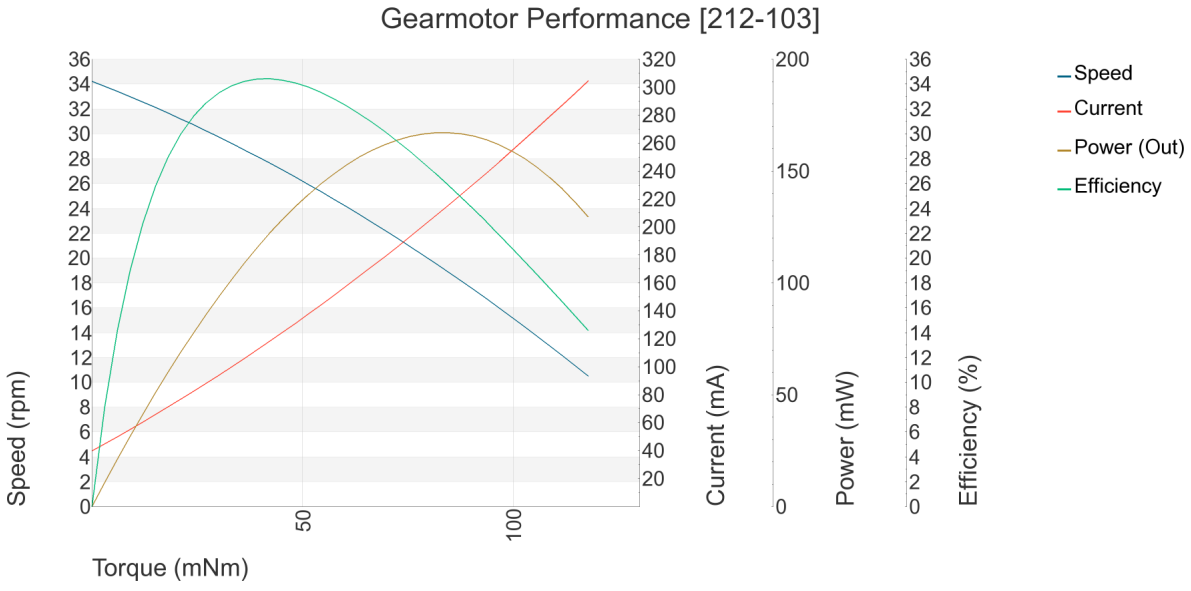
It is our intention to provide our customers with the best information available to ensure the successful integration between our products and your application. Therefore, our publications will be updated and enhanced as improvements to the data and product updates are introduced.
To obtain the most up-to-date version of this datasheet, please visit our website at:
www.precisionmicrodrives.com
The version number of this datasheet can be found on the bottom left hand corner of any page of the datasheet and is referenced with an ascending R-number (e.g. R002 is newer than R001). Please contact us if you require a copy of the engineering change notice between revisions.

If you have any questions, suggestions or comments regarding this publication or need technical assistance, please contact us via email at:
enquiries@precisionmicrodrives.com or call us on +44 (0) 1932 252 482

Key Features

Body Diameter:	12 mm [+/- 0.2]
Body Length:	24 mm [+/- 0.2]
Shaft Orientation:	Inline
Gear Ratio:	297.9 :1
Gearhead Type:	Spur
Rated Operating Voltage:	3 V
Rated Torque:	40 mNm
Rated Speed:	22 rpm
Typical Max. Output Power:	167 mW

Typical DC Gearmotor Performance Characteristics



Physical Specification

PARAMETER	CONDITIONS	SPECIFICATION
Body Diameter	Max body diameter or max face dimension where non-circular	12 mm [+/- 0.2]
Body Length	Excl. shafts, leads and terminals	24 mm [+/- 0.2]
Unit Weight		9.5 g
No. of Output Shafts		1
Shaft Diameter		3 mm [+/- 0.02]
Shaft Orientation		Inline
Shaft Length	Measured from motor body face	8 mm [+/- 0.2]

Construction Specification

PARAMETER	CONDITIONS	SPECIFICATION
Gear Ratio		297.9 :1
Gearhead Type		Spur
Motor Construction		Iron Core
Commutation		Precious Metal Brush
Rotation Direction	As viewed from the primary shaft end / or motor top	CW
No. of Poles		3
Bearing Type		Sintered Bronze

Operational Specification

PARAMETER	CONDITIONS	SPECIFICATION
Rated Operating Voltage		3 V
Rated Torque		40 mNm
Rated Speed	At rated voltage under fixed torque at rated load	22 rpm
N/L Speed	Measured at rated voltage	34 rpm [+/- 6]
Max. N/L Current	Measured at rated voltage	48 mA
Max. Start Voltage	Measured at no load	2 V
Max. Operating Voltage		4 V
Max. Start Current	At rated voltage	450 mA
Max. Rated Current	At rated voltage under fixed torque at rated load	137 mA
Min. Insulation Resistance	At 50V DC between motor terminal and case	1 MOhm

Important: The characteristics of the motor is the typical operating parameters of the product. The data herein offers design guidance information only and supplied batches are validated for conformity against the specifications on the previous page.

Typical Performance Characteristics

PARAMETER	CONDITIONS	SPECIFICATION
Typical Rated Power Consumption	At rated voltage and load	340 mW
Typical N/L Current	At rated voltage	40 mA
Typical Start Current	At rated voltage	375 mA
Typical Peak Efficiency		34 %
Typical Peak Eff. Torque		42 mNm
Typical Peak Eff. Speed		28 rpm
Typical Peak Eff. Current		118 mA
Typical Peak Eff. Power		122 mW
Typical Max. Output Power		167 mW
Typical Terminal Resistance		6 Ohm
Typical Terminal Inductance		1,000 uH

Typical Durability Characteristics

PARAMETER	CONDITIONS	SPECIFICATION
Max. Axial Compression		45 N
Max. Radial Load		4,000 mN
Typical Max. Mech. Noise		50 dB(A)

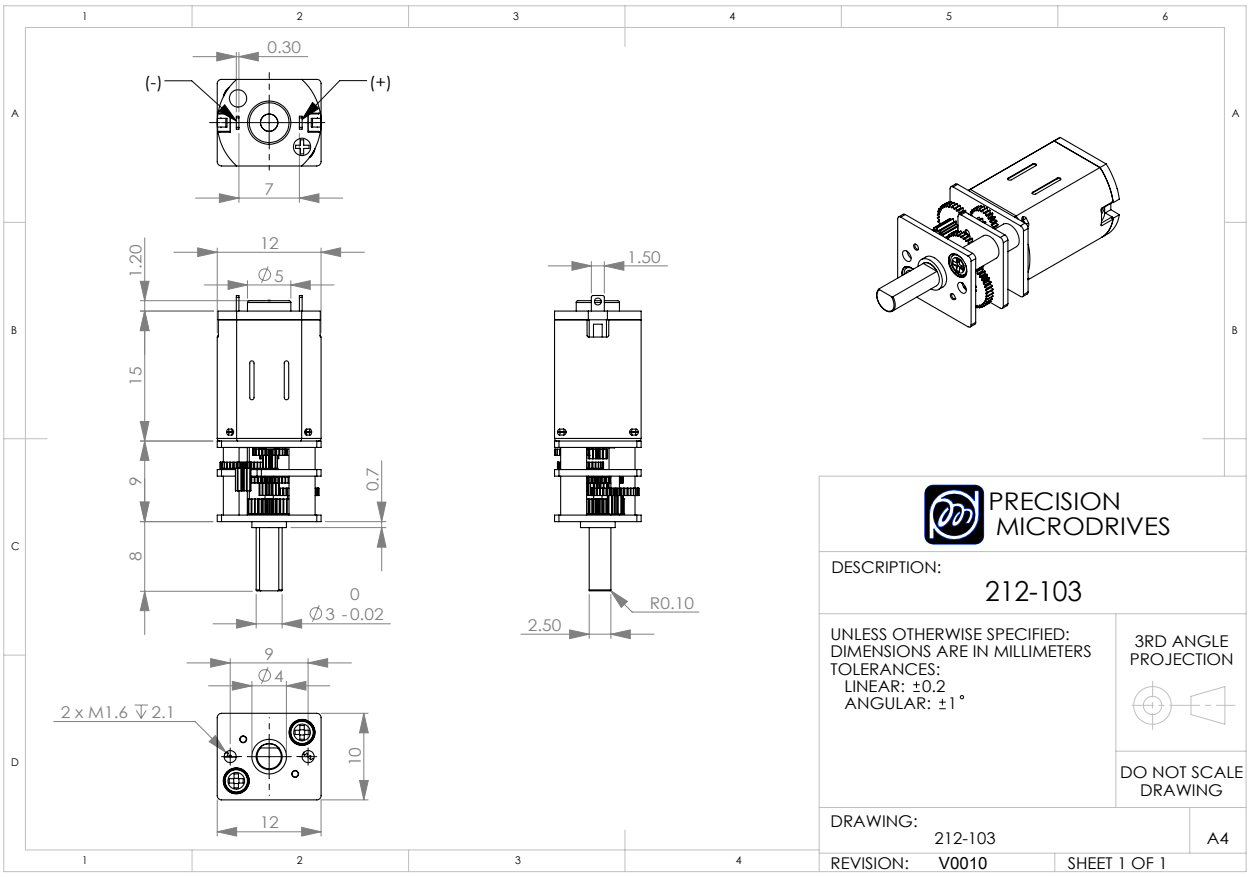
Environmental Characteristics

PARAMETER	CONDITIONS	SPECIFICATION
Min. Operating Temp.		-10 Deg.C
Max. Operating Temp.		50 Deg.C
Min. Storage Temp.		-40 Deg.C
Max. Storage Temp.		80 Deg.C

Typical Packing Conditions

PARAMETER	CONDITIONS	SPECIFICATION
Carton Type		Boxed Trays

Product Dimensional Specification



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