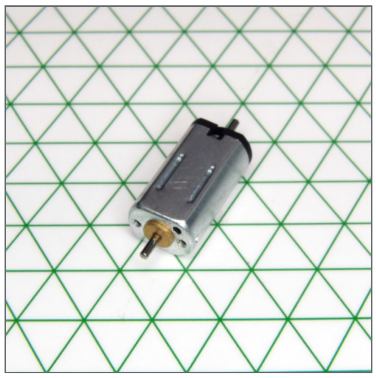
PRECISION MICRODRIVES™

Model No. 108-105

Product Data Sheet

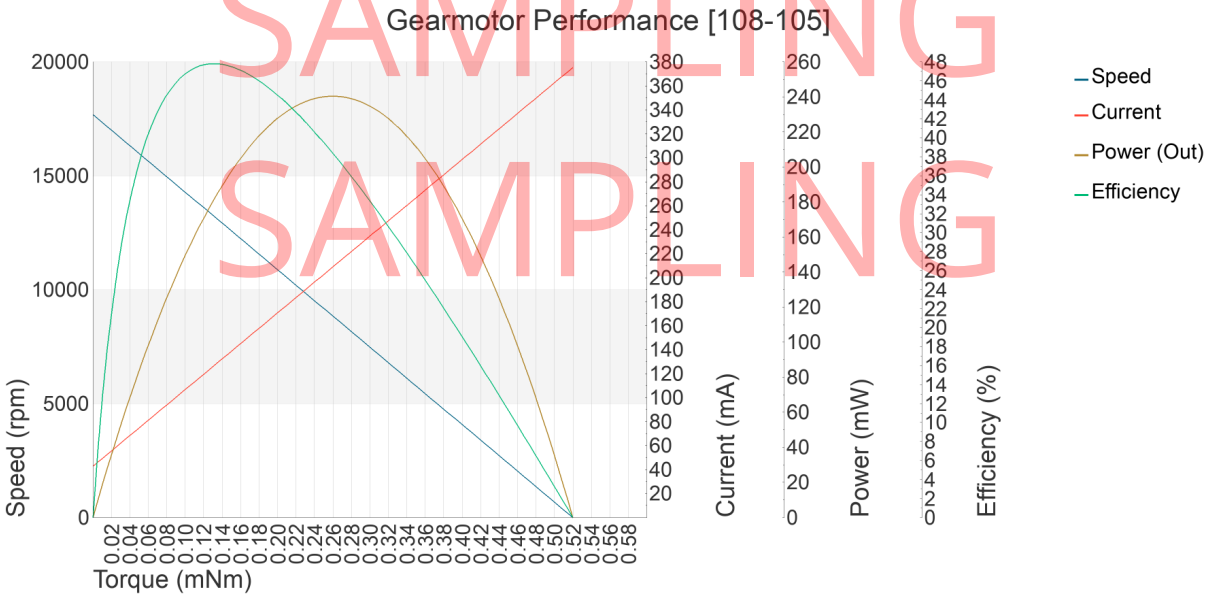
Range: Nano Core
Title: 8mm DC Motor
Type: Undefined
Model: 108-105



8mm DC Motor
15mm Type
Shown on 6mm Isometric Grid

KEY FEATURES	
Body Diameter	8 mm [+/- 0.2]
Body Length	14.5 mm [+/- 0.2]
Shaft Orientation	Inline
Rear Shaft Length	3 mm [+/- 0.3]
Rated Operating Voltage	3 V
Rated Load	0.15 mNm
Rated Load Speed	12,700 rpm [+/- 2,550]
Typical Max. Output Power	245 mW

TYPICAL DC MOTOR PERFORMANCE CHARACTERISTICS



ORDERING INFORMATION

The model number 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.

FIND OUT HOW THIS PART COULD MEET YOUR SPECIFICATIONS | **Email:** enquiries@precisionmicrodrives.com **Call:** +44 (0) 1932 252482

PRECISION MICRODRIVES™

Model No. 108-105

Looking for the perfect design?

We can help.

Precision Microdrives is an ISO 9001:2015 trusted designer and manufacturer of miniature, cost-effective, and well engineered motors and mechanisms. We are specialists in,

- Trusted precision motor design
- Flexible motor & mechanism manufacturing
- Dependable quality control & after-sales support
- Industry leading motor testing and validation

Our UK based motor design engineers, will support you through the complex process of specifying, developing, validating, and mass manufacturing, a custom motor or mechanism. The result? A part perfect for your application.

Delivered, On-Time & To Spec.

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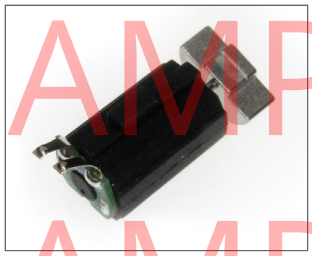
DESIGN FOR APPLICATION CASE STUDIES

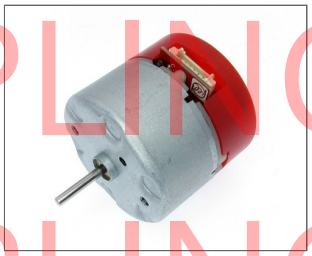
ENCAPSULATED VIBRATION MOTOR FOR A CPR TRAINING DUMMY

- Low volume, high value manufacturing
- Custom CNC machined enclosure
- Optimised haptic performance
- Custom PCB including EMI filters
- Part no. 334-401.001



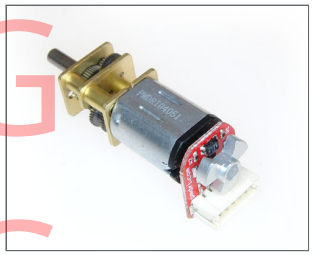
VIBRATION MOTOR HIGHLY OPTIMISED FOR RUGGEDISED FIRE AND POLICE EMERGENCY RADIOS

- High volume production
- Optimised for emergency services application
- Ruggedised design with custom rubber 'suspension' cover
- Custom PCB with spring legs for simplified production assembly times
- Part no. 308-104.001



PRECISION SPEED AND TORQUE CONTROLLED SERVO WITH INTEGRATED TUNABLE PID LOOP FOR SINGLE-USE SCIENTIFIC INSTRUMENT.

- Medium volume, high value assembly
- Proprietary PID controller converts cost-effective motor design into a precision servo
- Adapted control software including digital IO (to customer's specification)
- Part no. 132-100.001



CUSTOMISED PRECISION GEAR MOTOR WITH ROBUST OPTICAL ENCODER

- High volume production
- Application specific output shaft
- Tailored motor performance curves
- Rear motor shaft with noise resistant optical encoder
- Part no. 212-116.001

PHYSICAL SPECIFICATION

PARAMETER	CONDITIONS	SPECIFICATION
Body Diameter	Max body diameter or max face dimension where non-circular	8 mm [+/- 0.2]
Body Length	Excl. shafts, leads and terminals	14.5 mm [+/- 0.2]
Unit Weight		2.5 g
No. of Output Shafts		2
Shaft Diameter		1 mm
Shaft Orientation		Inline
Shaft Length	Measured from motor body face	3.6 mm [+/- 0.3]
Rear Shaft Diameter		1 mm
Rear Shaft Length		3 mm [+/- 0.3]

CONSTRUCTION SPECIFICATION

PARAMETER	CONDITIONS	SPECIFICATION
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 Load	Maximum continuous torque	0.15 mNm
Rated Load Speed	At rated voltage under fixed torque at rated load	12,700 rpm [+/- 2,550]
N/L Speed	Measured at rated voltage	17,700 rpm [+/- 3,000]
Max. Start Voltage	Measured at no load	1 V
Max. N/L Current	Measured at rated voltage	79 mA
Max. Operating Voltage		3.6 V
Max. Start Current	At rated voltage	500 mA
Min. Insulation Resistance	At 50V DC between motor terminal and case	1 MOhm
Max. Rated Load Current	At rated voltage under fixed torque at rated load	190 mA

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 Load Power Consumption	At rated voltage and load	411 mW
Typical N/L Current	At rated voltage	44 mA
Typical Peak Efficiency		48.6 %
Typical Start Current	At rated voltage	374 mA
Typical Peak Eff. Torque		0.13 mN·m
Typical Peak Eff. Speed		13,200 rpm
Typical Peak Eff. Current		127 mA
Typical Peak Eff. Power Out	Power out at rated voltage at the peak efficiency torque point	185 mW
Typical Max. Output Power		245 mW
Typical Terminal Resistance		7.46 Ohm
Typical Terminal Inductance		691 uH

TYPICAL DURABILITY CHARACTERISTICS

PARAMETER	CONDITIONS	SPECIFICATION
Max. Axial Compression	Max. allowable momentary axial press-fit force. Rear shaft or end cap must be supported	19.6 N
Typical Max. Mech. Noise		55 dB(A)

ENVIRONMENTAL CHARACTERISTICS

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

TYPICAL PACKING CONDITIONS

PARAMETER	CONDITIONS	SPECIFICATION
Carton Type		Boxed Trays

PRECISION MICRODRIVES ™

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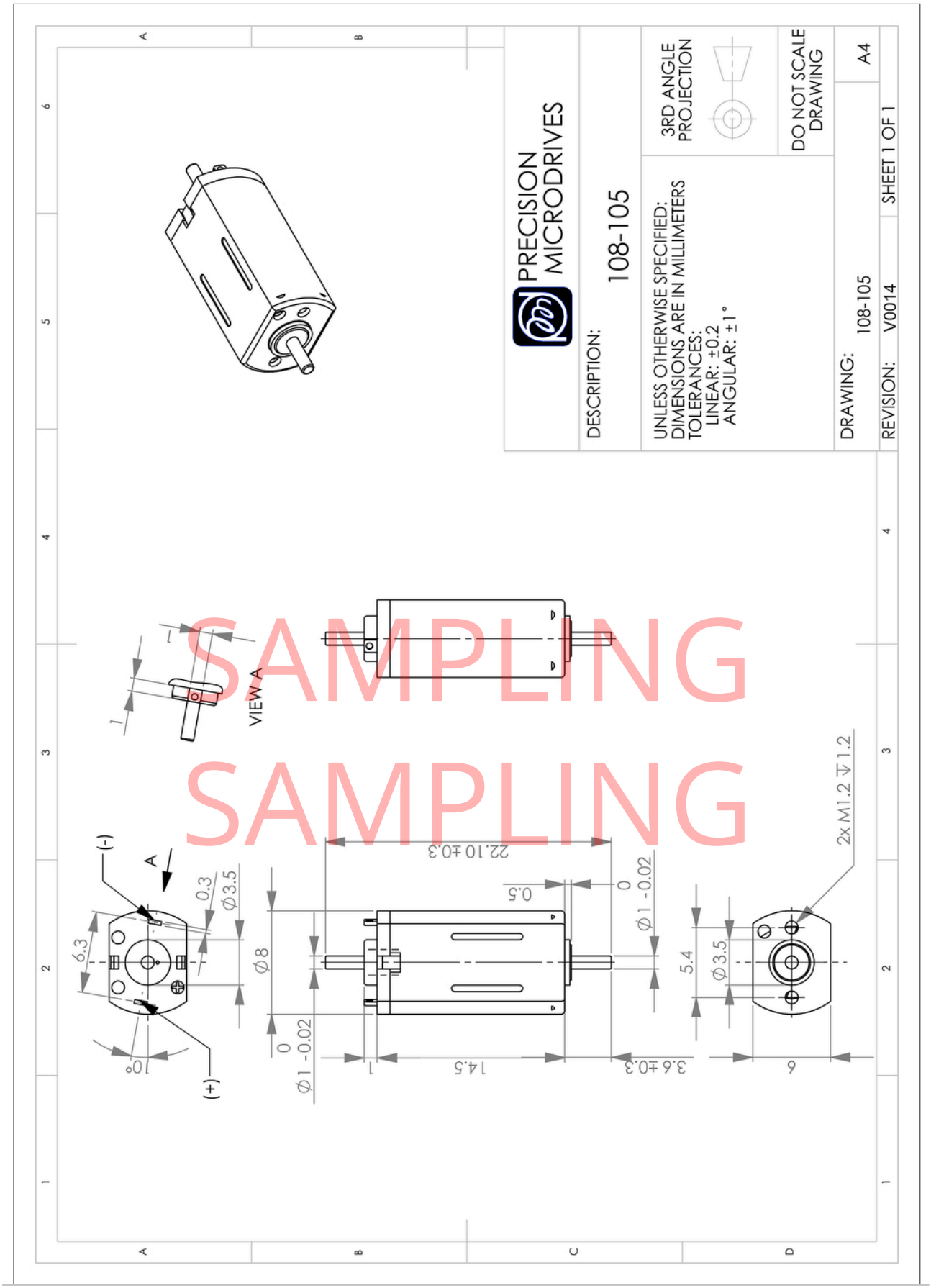
PRODUCT DIMENSIONAL SPECIFICATION



FIND OUT HOW THIS PART COULD MEET YOUR SPECIFICATIONS

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Call: +44 (0) 1932 252482

HOW TO ORDER

Call or email us with your order requirements at:
Email: **enquiries@precisionmicrodrives.com**
Phone: **+44 (0) 1932 252482**

Please quote the full part number when ordering or making an enquiry. Some products can be ordered in smaller volumes directly from our website: **www.precisionmicrodrives.com**

DATASHEET REVISION AND VERSION NUMBERING

We aim to provide ou customer with the most detailed product information available. Sometimes changes are necessary, and these will be controlled by our engineering change request and notification process. To track datasheet versions we use both a 'production revision number' and a 'document version number'. These can be found at the bottom of every page. Inc some cases, such as documentation errors, the document version number can increase without triggering a product revision.

LIFE SUPPORT AND MISSION CRITICAL APPLICATION POLICY

PRECISION MICRODRIVES PRODUCTS ARE NOT AUTHORISED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR OTHER CRITICAL APPLICATION SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF PRECISION MICRODRIVES LIMITED.

As used herein:

1. Life support devices or systems are devices or systems which,
    1.1. are intended for surgical implant into the body, or
    1.2. support or sustain life, and whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user or a third party.
2. A critical component is any component of a life support device or any other system or machine whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

BATCH NUMBERING, MANUFACTURING, TRACEABILITY AND LABELLING

Every part of manufactured by Precision Microdrives is at minimum identified and traced via a batch number. Where physically practical, we try to make each part with a batch number. In addition, some parts carry a lot code or barcode serial numbers. If traceability is a core requirement for your purchase, let us know and we'll outline the production options for you.

STANDARD QUALITY CONTROLS AND ISO 9001

Precision quality control is one of our 3 key competitive advantages. All motors that we produce undergo 100% line inspection followed by strict and detailed batch sample testing in accordance with ISO 2859. All of the processes operated at Precision Microdrives are managed within our ISO 9001 quality system.

Precision Microdrives Limited
Unit 1.07, Canterbury Court
1-3 Brixton Road
London
SW9 6DE
United Kingdom

Tel: +44 (0) 1932 252482
Fax: +44 (0) 1932 325353
Email: enquiries@precisionmicrodrives.com
Web: www.precisionmicrodrives.com
Registered in England and Wales No. 5114621
VAT Registration. GB 900 1238 84.