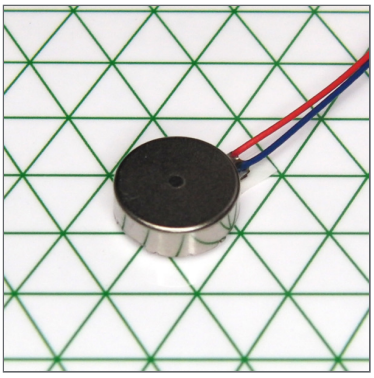
PRECISION MICRODRIVES™

Model No. 310-122

Product Data Sheet

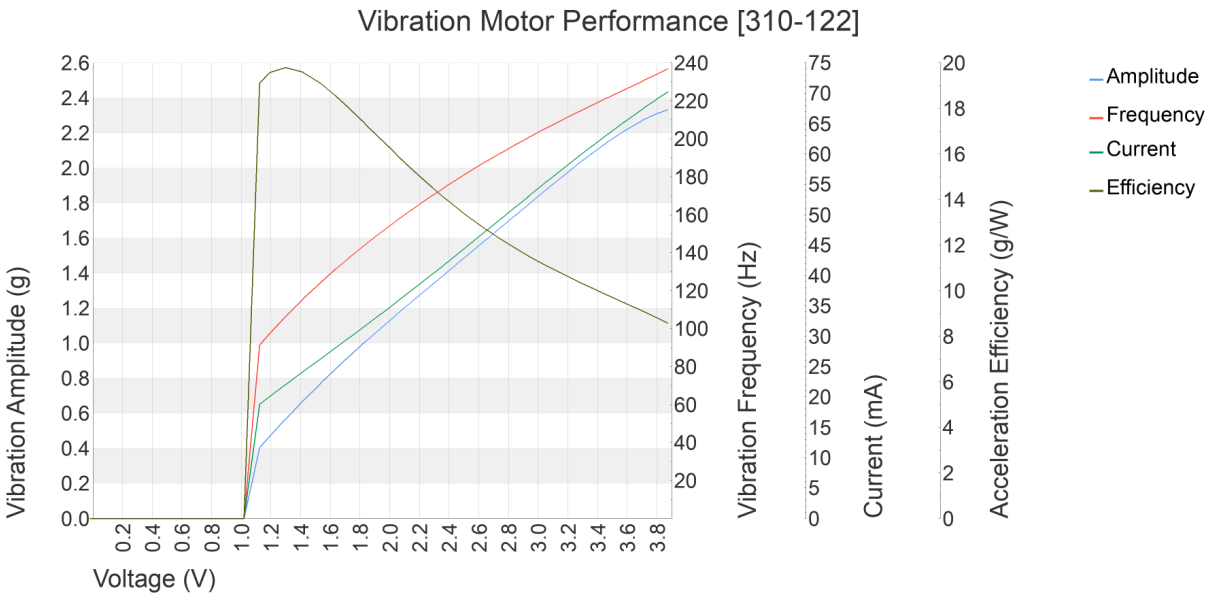
Range:
Title: 10mm Vibration Motor
Type: Undefined
Model: 310-122



10mm Vibration Motor
3mm Type
Shown on 6mm Isometric Grid

KEY FEATURES	
Body Diameter	10 mm [+/- 0.1]
Body Length	3.4 mm [+/- 0.1]
Rated Operating Voltage	3 V
Rated Vibration Speed	11,500 rpm [+/- 3,500]
Typical Rated Operating Current	55 mA
Typical Norm. Amplitude	1.9 G

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

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Looking for the perfect design?

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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,

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- Flexible motor & mechanism manufacturing
- Dependable quality control & after-sales support
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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.

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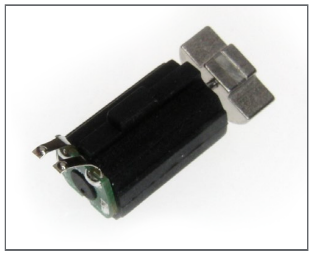
Email: enquiries@precisionmicrodrives.com
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DESIGN FOR APPLICATION CASE STUDIES



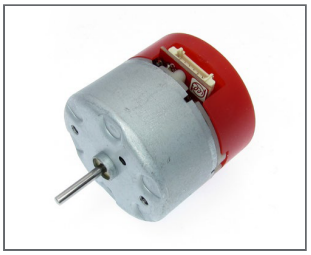
ENCAPSULATED VIBRATION MOTOR FOR A CPR TRAINING DUMMY

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



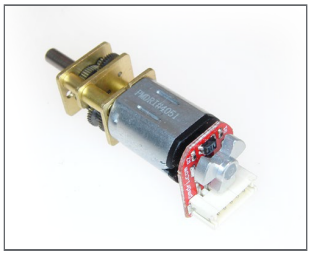
VIBRATION MOTOR HIGHLY OPTIMISED FOR RUGGEDISED FIRE AND POLICE EMERGENCY RADIOS

- 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

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PHYSICAL SPECIFICATION

PARAMETER	CONDITIONS	SPECIFICATION
Body Diameter	Max body diameter or max face dimension where non-circular	10 mm [+/- 0.1]
Body Length	Excl. shafts, leads and terminals	3.4 mm [+/- 0.1]
Unit Weight		1.2 g
Mounting	See drawing for details	Self Adhesive Sheet

CONSTRUCTION SPECIFICATION

PARAMETER	CONDITIONS	SPECIFICATION
Motor Construction		Flat Coreless
Commutation		Precious Metal Brush
No. of Poles		6
Bearing Type		Sintered Bronze

LEADS & CONNECTORS SPECIFICATION

PARAMETER	CONDITIONS	SPECIFICATION
Lead Length	Lead lengths defined as total length or between motor and connector	100 mm [+/- 2]
Lead Wire Gauge		32 AWG
Lead Configuration		Straight
Lead Strip Length		1.5 mm [+/- 0.5]

OPERATIONAL SPECIFICATION

PARAMETER	CONDITIONS	SPECIFICATION
Rated Operating Voltage		3 V
Max. Start Voltage	Certified starting voltage. Measured at no load, where applicable	2.3 V
Rated Vibration Speed	At rated voltage using the inertial test load	11,500 rpm [+/- 3,500]
Max. Rated Operating Current	At rated voltage using the inertial test load	80 mA
Max. Operating Voltage		3.3 V
Rated Inertial Test Load	Mass of rated load standard test sled	100 g
Min. Insulation Resistance	At 50V DC between motor terminal and case	10 MOhm
Min. Vibration Amplitude	Peak-to-peak value at rated voltage using the inertial test load	1.2 G
Max. Start Current	At rated voltage	120 mA

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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 Operating Current	At rated voltage using the inertial test load	55 mA
Typical Vibration Amplitude	Peak-to-peak value at rated voltage using the inertial test load	1.9 G
Typical Start Current	At rated voltage	105 mA
Typical Start Voltage	Measured at no load, where applicable	0.9 V
Typical Vibration Efficiency	At rated voltage using the inertial test load	11.5 G/W
Typical Norm. Amplitude	Peak-to-peak vibration amplitude normalised by the inertial test load at rated voltage	1.9 G
Typical Terminal Resistance		63 Ohm
Typical Terminal Inductance		530 uH

TYPICAL HAPTIC CHARACTERISTICS

PARAMETER	CONDITIONS	SPECIFICATION
Typical Lag Time	At rated voltage using the inertial test load	38 ms
Typical Rise Time	At rated voltage using the inertial test load	97 ms
Typical Stop Time	At rated voltage using the inertial test load	140 ms
Typical Active Brake Time	Time taken from steady-state to 0.04 G under inverse polarity at max. voltage	57 ms

ENVIRONMENTAL CHARACTERISTICS

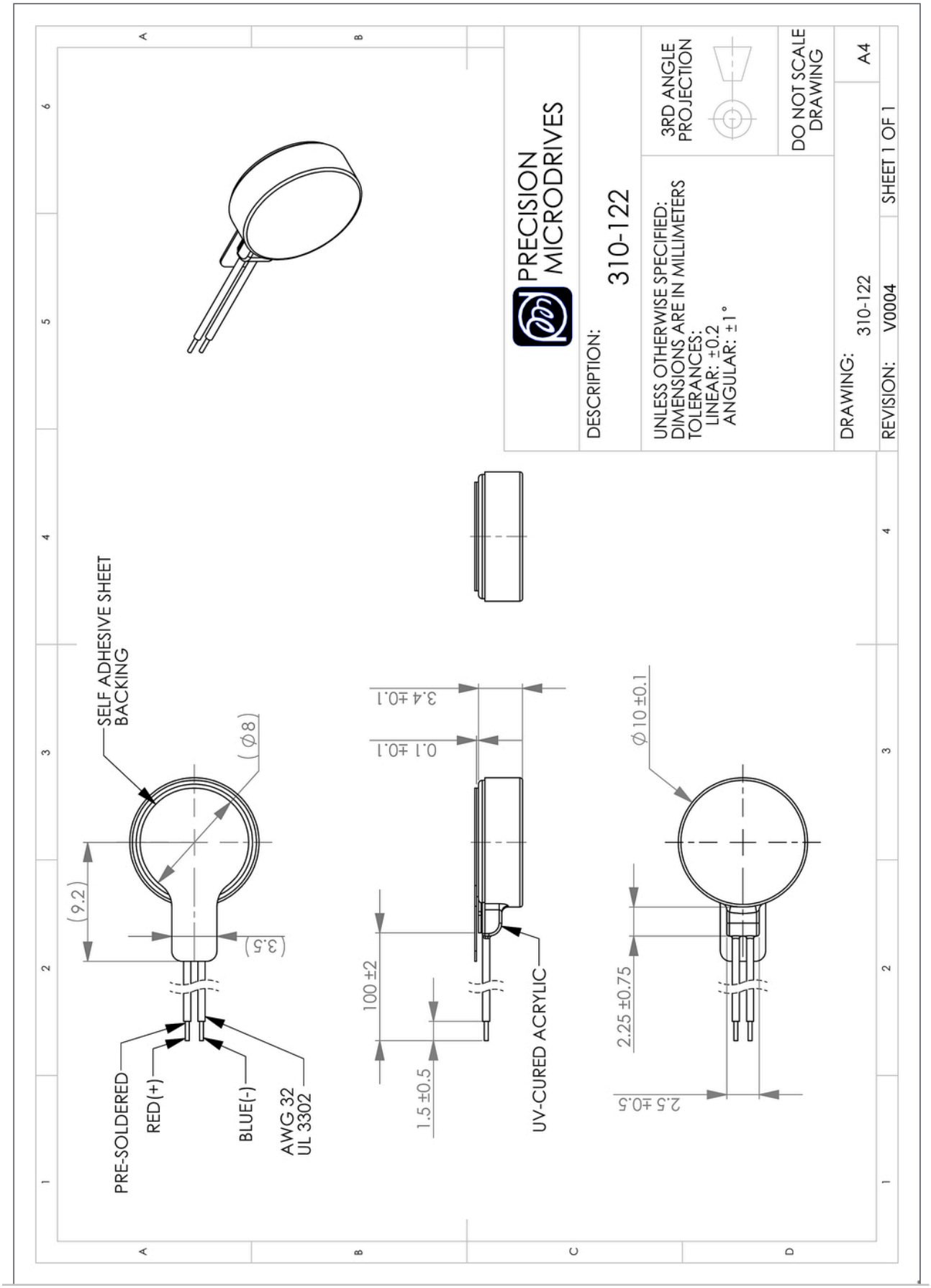
PARAMETER	CONDITIONS	SPECIFICATION
Max. Operating Temp.		70 Deg.C
Min. Operating Temp.		-20 Deg.C
Max. Storage & Transportation Temp.		80 Deg.C
Min. Storage & Transportation Temp.		-30 Deg.C

TYPICAL PACKING CONDITIONS

PARAMETER	CONDITIONS	SPECIFICATION
Carton Type		Boxed Trays

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PRODUCT DIMENSIONAL SPECIFICATION



FIND OUT HOW THIS PART COULD MEET YOUR SPECIFICATIONS

Email: enquiries@precisionmicrodrives.com
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.

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