D-25TB-J

PRODUCT TECHNICAL SPECIFICATION

Three-Button Mechanical Trackball

Product Features

- Precise pointer control
- Supports external left, middle and right button control
- Low noise, high rotational speed and comfortable operation
- USB interface
- 1-year warranty

Applications

- Measuring instruments, industrial control equipment and medical equipment

Document Control

Item	Information
Product Name	Three-Button Mechanical Trackball
Product Model	D-25TB-J
Manufacturer	Shenzhen Davo Electronic Co., Ltd
Website	www.davolin.com
Telephone	+86 18898618179
Address	4th Floor, Building A, No. 1 Yujie Road, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China 518103

1. Product Introduction

This product is an embedded mechanical trackball with a resolution of 600 DPI. It provides stable and reliable performance, flexible operation, and convenient handling. The product also has good resistance to electromagnetic interference. It is widely used in measuring instruments, industrial control equipment, medical equipment and related products.

2. Product Name

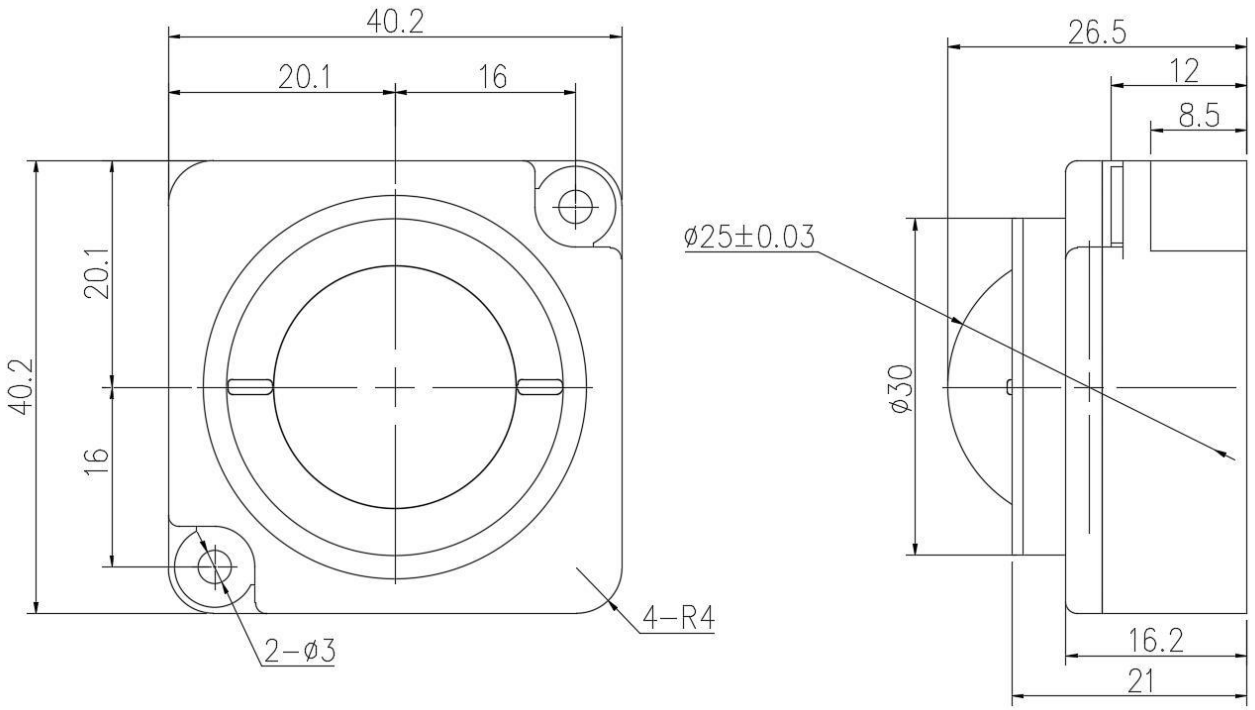
Three-Button Mechanical Trackball

3. Product Model

D-25TB-J

4. Product Dimensions

Overall dimensions and mounting dimensions are shown in the drawing below.



Unless otherwise specified, dimensional tolerances shall refer to the following standard:

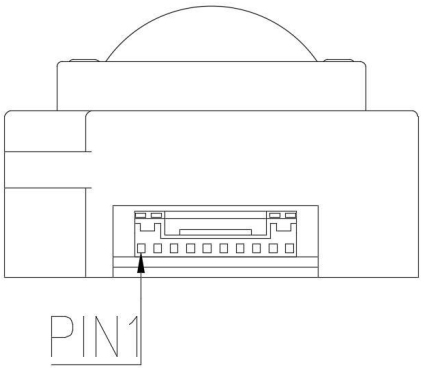
Dimension Range	Tolerance (±)
0–30 mm	0.2 mm
30–120 mm	0.4 mm

4.1 Physical Specifications

Item	Actual Value / Requirement
Overall Dimensions (mm)	40.2 × 40.2 × 26.5 mm (L × W × H)
Drive Ball Diameter	Ø25 ± 0.03 mm
Drive Ball Color / Type	Black weighted ball
Drive Ball Weight	47 g ± 1 g
Drive Ball Seat	Gray
Upper Ring	Black small upper ring

5. Interface Definition

The D-25TB-J mechanical trackball uses an SM10B-GHS-TB-JST, 1.25 mm, horizontal SMT socket. The socket is oriented toward the left.



Pin No.	USB Interface Definition
1	GND
2	NC
3	VCC
4	D+
5	D-
6	NC
7	L
8	M
9	R
10	GND

6. Electrical Characteristics

Item	Specification
Operating Voltage	DC 5.0 V ± 0.2 V
Operating Current	65 mA (MAX)
Communication Protocol	USB
Socket Orientation	Left-facing
Supported Operating Systems	Windows, Linux, macOS, XP and other common operating systems

7. Operating and Inspection Method

7.1 When the left button of the specified keyboard is clicked for the first time, one cursor symbol will appear on the screen. When the trackball is moved, the cursor symbol moves in the same direction.

7.2 When the right button is clicked, two cursor symbols will appear. The first cursor symbol displayed automatically becomes a stationary reference point. When the trackball is moved, the other cursor symbol moves in the same direction relative to the reference point, represented by a dashed line.

7.3 Click the right button again to switch the two cursor symbols as the stationary reference point. The switching repeats cyclically.

7.4 Click the left button to exit the mode described in Section 7.3. The screen will then display only one cursor symbol.

7.5 When the middle button is clicked, a cursor symbol with a solid line will appear. The movement path of the solid-line cursor corresponds to the direction in which the trackball is moved.

7.6 Click the middle button again to switch the solid-line cursor to a cursor without a solid line. Subsequent clicks switch between the two states cyclically.

8. Environmental Requirements

Item	Requirement
Storage Temperature	-20 °C to 55 °C
Storage Relative Humidity	15% to 95% RH, non-condensing
Operating Temperature	-20 °C to 55 °C
Operating Relative Humidity	15% to 95% RH
Operating Altitude	Up to 5000 m
Environmental Compliance	RoHS 2.0

9. Storage and Usage Instructions

9.1 Storage

1. Before use, keep the product in its original packaging. Storage temperature shall be -20 °C to 55 °C and relative humidity shall be 15% to 95%. The warehouse shall be free from harmful gases, flammable or explosive products, and corrosive chemicals containing salt or alkali. Strong mechanical vibration, impact and strong magnetic fields shall be avoided. Packaging cartons shall be at least 10 cm above the floor and at least 50 cm away from walls, heat/cold sources, windows or air inlets.

2. Under the specified conditions, the general storage period is six months. If the storage period exceeds six months, the product shall be re-inspected and may be used only after passing inspection.

9.2 Testing

1. The inspection party may perform tests according to the actual equipment used or according to a test method agreed with our company. The test methods used by the supplier and purchaser shall be substantially consistent.

2. Before inspection, clean the workbench and surrounding area and maintain a clean, dust-free inspection environment.

3. When touching the ball, ensure that hands are dry and free of adhering foreign matter.

4. After testing, return the product to its original packaging and place it back in the product carton.

9.3 Usage

1. Maintain a controlled assembly environment and prevent foreign matter from entering the product as the ball rotates during assembly.

2. The upper ring has been designed with the appropriate tightness and, in principle, does not require adhesive or other fixation. If adhesive is required, ensure that no adhesive or foreign matter falls into the product.

3. If the upper ring must be removed during final equipment assembly, prevent foreign matter from entering the product and pay attention to the orientation of the locking points.

4. Do not store or use the product in highly corrosive environments containing salt or alkali, or in excessively dusty environments.

5. This product is a mechanical trackball. The ball must remain in close contact with the three internal support points to ensure smooth cursor movement. Therefore, the product should not be used at an angle exceeding 15°. Excessive inclination may cause the ball's center of gravity to shift away from the center and result in reduced operating flexibility.

6. Product service life: ≥ 2 million operations (based on comprehensive product testing and evaluation).

10. Basic Troubleshooting and Corrective Actions

No.	Failure Symptom	Corrective Action
1	No response	1) Check whether the connector at the product cable is making good contact. 2) Check whether the supply voltage meets the product requirements (see this specification).
2	Cursor draws straight lines / operation is not smooth	Rotate the drive ball clockwise and check whether the ball rotates naturally. If foreign matter is found blocking one direction or the overall mechanism, rotate the upper ring clockwise to the locked position, then rotate it counterclockwise to remove the upper ring and take out the ball. Clean the internal shafts, single-bearing surface, base and entire ball with a dust-free cloth. Reinstall the ball and upper ring, paying attention to the locking-point orientation.

If the problem remains unresolved, contact the DAVO Electron product after-sales service department.

11. Product Warranty

The warranty period for this product is 1 years. During the warranty period, natural damage occurring under normal use conditions will be repaired by our company free of charge.

The following conditions are excluded from the warranty:

- Unauthorized repair or damage caused by repair without permission from our company.
- Unauthorized additions, modifications or alterations.
- Incorrect operation or use.
- Damage caused by abnormal environmental conditions exceeding the specified requirements.
- Intentional human-caused damage.
- Damage caused by force majeure or natural disasters.

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