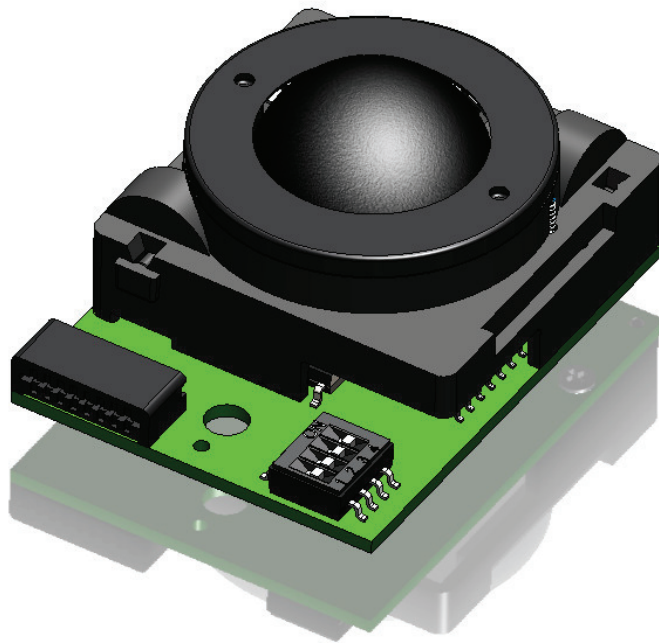


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**P16 Series – Ø16mm Panel Mount Trackball, Protocol Output**

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**1. DESCRIPTION**

The P16 Series mechanical trackballs are reliable, ultra-compact, pointing devices ideal for use in laptops, palmtops, remote control systems, compact keyboards, mobile phones and all compact panel installations where a small ball solution is required.

The top ring and ball are both removable allowing for quick and easy servicing/cleaning.

Where precision and reliable control is needed, the jewel suspension P16 Series trackballs provide the optimum visual control solution for industrial applications.

**2. FEATURES**

- Ultra-compact design
- Outputs: USB & PS/2 (auto select) or SUN Systems
- Jewel bearing suspension system
- Ø16mm (0.6") steel core ball for precise control
- Custom connections available
- Custom OEM solutions available

**3. APPLICATIONS**

- Control systems
- Navigation systems
- Compact keyboards
- Industrial consoles
- Laptops & palmtops
- OEM custom solutions available

## 5. CONNECTION DETAILS

Connection is made to the P16 Series trackball by means of a single JST film connector (or equivalent). Tables 1 & 2 highlight the connection details for the two available protocol options. Custom connections are available (please contact your local sales office for further details).

### 5.1 Output Connector: J1

Description: 8 way, 1mm lead pitch, right-angled film connector

Manufacturer: JST (or equivalent)

Part No: 08FM-1.0SP-1.9-TF

Mating part: 1.0mm lead pitch, Flexible Flat Cable (FFC)

### 5.2 Pin Connection Details:

#### USB & PS/2 (auto-select)

Pin Number	USB/PS/2
1	5V D.C
2	D-, PS/2 Data
3	D+, PS/2 Clock
4	Switch right
5	Switch left
6	0V
7	Switch middle
8	N.C

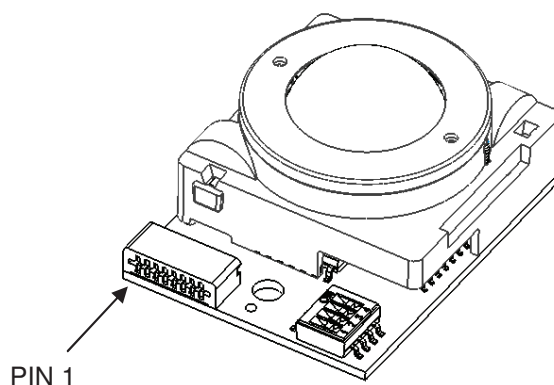
**Table 1:** USB, PS/2 Output Connections

#### SUN Systems

Pin Number	SUN
1	5V D.C
2	Data (1200 BAUD)*
3	Do not connect
4	Switch right
5	Switch left
6	0V
7	Switch middle
8	Do not connect

**Table 2:** SUN Systems Output Connections

\* Optional BAUD rates available on request.



## 6. TRACKBALL CONFIGURATION

The P16 Series trackballs provide features/options that may be selected using the DIP switch located on the printed circuit board. Table 3 details the assigned function of each switch.

### 6.1 DIP Switch Functions

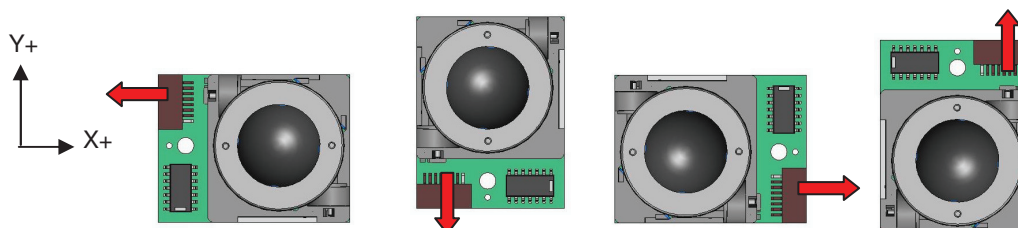
DIP Switch	Function	OFF	ON
1	Orientation 1 Setting	See Figure.1	See Figure.1
2	Orientation 2 Setting	See Figure.1	See Figure.1
3	VX3 - Virtual 3 Axis Function	Feature disabled	Feature enabled
4	Tracking Mode	Ballistic tracking	Linear tracking

Table 3 – DIP Switch Functions

**Factory default setting:** All DIP switches OFF

### 6.2 Orientation

The orientation function allows the user to mount the P16 Series trackballs in one of four positions (see figure. 1 below). The orientation of the device is determined by the direction in which the output connector is facing (when viewed from the top of Trackerball device). The direction of the output connector is indicated by the red arrow. The Trackerball orientation can be selected to accommodate customer requirements for connector location and wiring.



Switch 1 (Orientation 1)	OFF	ON	OFF	ON
Switch 2 (Orientation 2)	OFF	OFF	ON	ON

Figure 1 – Mounting Orientations

### 6.3 VX3™

VX3 is patent protected facility that provides the same 2 modes of functionality as a scroll wheel on a 3-axis mouse.

Operation:

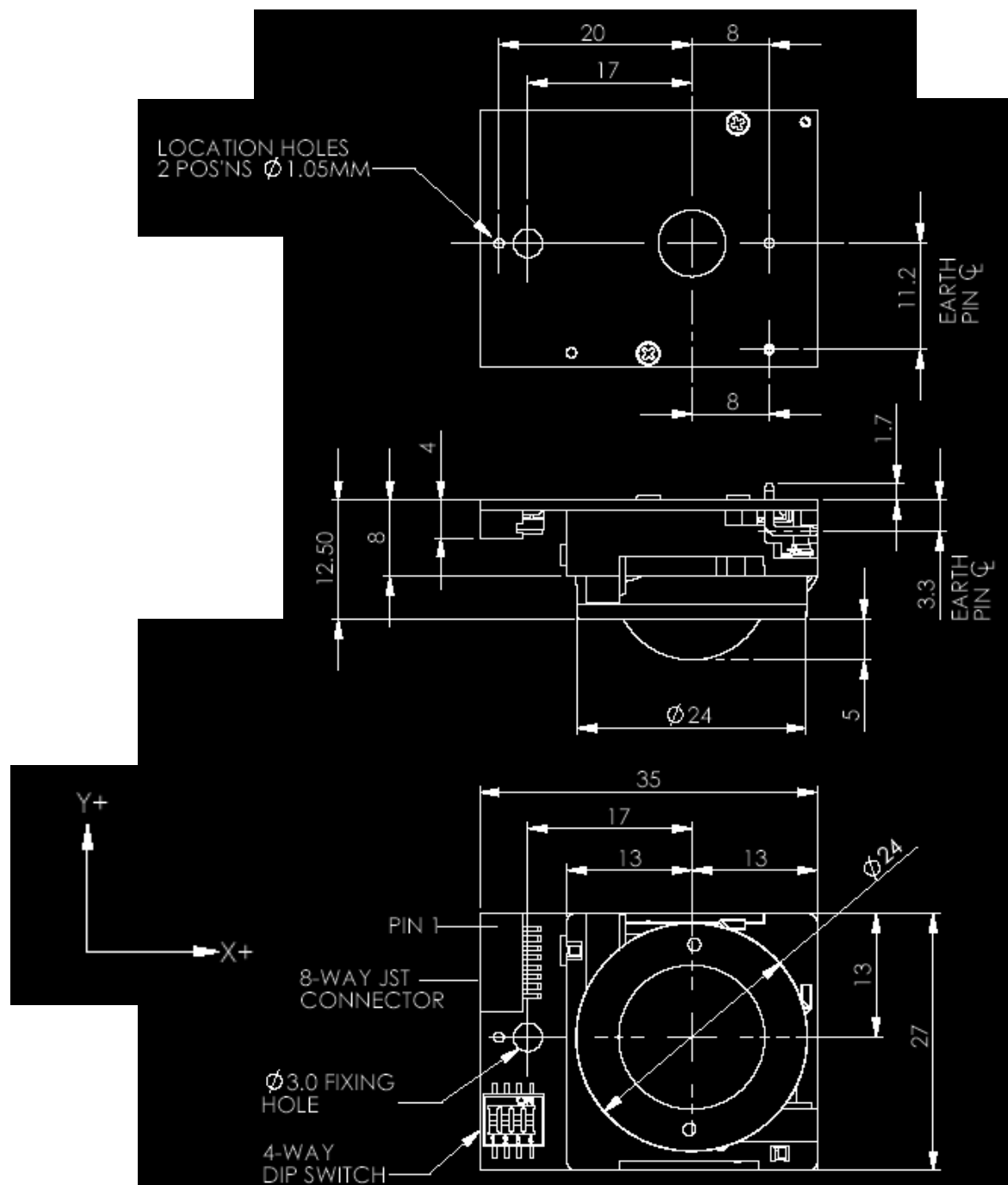
- Press middle button once to latch scroll mode one (e.g. dynamic pan feature);
- Press middle button again to latch scroll mode two (e.g. 3<sup>rd</sup> axis zoom feature);
- Further middle button presses toggles between scroll mode one and scroll mode two;
- Press either left or right buttons to cancel feature and resume normal X-Y cursor operation

### 6.4 Tracking Mode

**Ballistic Tracking:** Intuitive tracking algorithm to provide increased cursor resolution when tracking fast whilst retaining the original resolution for tracking accurately at slow speeds.

**Linear Tracking:** No tracking algorithm. 214 counts per ball revolution maintained at all tracking speeds.

## 7. OUTLINE DRAWING



Dimensional drawing specifies factory default orientation.

All dimensions are in mm unless otherwise stated.

Tolerances  $\pm 0.2\text{mm}$  unless otherwise stated

Please note that 3D models are available upon request. Please contact your local sales office for more information.

**10. DOCUMENT HISTORY**

Issue	Date	Author	Remarks
A	08.02.10	N.S	Document released

*Whilst the information provided herein is to the best of our knowledge true and accurate, it should be used for guidance only and may be subject to change. You are therefore advised to ensure all information provided herein is current and up to date and suitable for your application. Use of Cursor Controls Ltd products in life support systems is only permitted with prior written consent of the Company.*