
P75 Series – Mechanical Trackball, Panel Mount, Quadrature Output

**1. DESCRIPTION**

The P75 Series mechanical trackballs are rugged pointing devices ideal for use in the most demanding of applications. The device incorporates the same proven technology found in the already well-established Cursor Controls Ltd trackball range, providing the user with the same high specification trackball.

The high ball exposure provides the user with excellent control, while the high-grade stainless steel shafts and bearings ensure a solid and precise pointer control. The unit has been designed to be back of panel mounted as part of OEM keyboards and consoles.

2. FEATURES

- Sealing options up to IP51 (BS EN 60529)
- Output: 5V TTL Quadrature
- High mass ball for precise control
- Smooth operation in rugged environments
- High grade stainless steel shaft and bearings
- Various top plate configurations providing sealing and tracking force options
- Custom connector options
- Custom ball colours

3. APPLICATIONS

- Control systems
- Navigation systems
- Sound and lighting desks
- Industrial consoles
- OEM custom solutions available

4. SPECIFICATIONS

4.1 Mechanical

Weight	~600grams
Ball size	76.15 mm (3")
Ball material	Phenolic
Tracking force	30 grams – no seal (IP40) - see section 7 for ordering code details 50-100 grams – felt seal (IP51) - see section 7 for ordering code details
Ball load	200N (20Kg) maximum downward pressure for 2 minutes @ 20°C
Mounting position	Horizontal to 30°
Tracking engine	Dual channel photo-interrupters
Housing material	Glass filled ABS

4.2 Electrical

Output	5V TTL Quadrature
Supply voltage	4.75V to 5.25V D.C.
Supply current	10mA typical, 15mA maximum
Resolution	265 pulses per ball revolution (1060 counts per ball revolution)
Output connector	10 Way JST, right-angled header, part no. S10B-PH-SM3-TB
Mating output connector	10 Way JST connector, part no. PH, CR or KR types

4.3 Environmental

Operating temperature	0°C to +55°C (IEC 60068-2-1, IEC60068-2-2)
Storage temperature	-40°C to + 85 °C (IEC 60068-2-1, IEC60068-2-2)
Operating humidity	93% RH @ 40°C, non-condensing (IEC 60068-2-78)
Storage humidity	10%-95% RH, non-condensing (IEC 60068-2-78)
Vibration	5g, 10-500Hz, 1 octave/min, 10 sweep cycles (IEC 60068-2-6)
Operating Shock	15g/11ms, ½ sine, 3 shocks in +ve and –ve direction, all 3 axes (IEC 60068-2-27)
Mechanical lifetime	1 million ball revolutions
Impact	10 Joules
MTBF	in excess of 80,000 hours (MIL-STD-217F)
ESD	15kV air-discharge and 8kV contact discharge (IEC 61000-4-2)
EMC	Radiated immunity - limits according to level 3 of IEC 61000-4-3 Radiated emissions to EN55022 class B
Sealing capability	Up to IP51 (BS EN 60529)

5. CONNECTION DETAILS

Connection is made to the P75 Series trackball by means of a single JST style connector (or equivalent). Table 1 highlights the connection details. Custom connections are available (please contact your local sales office for further details).

5.1 Output connector:

Description: 10 way, 2mm pitch, right-angled connector

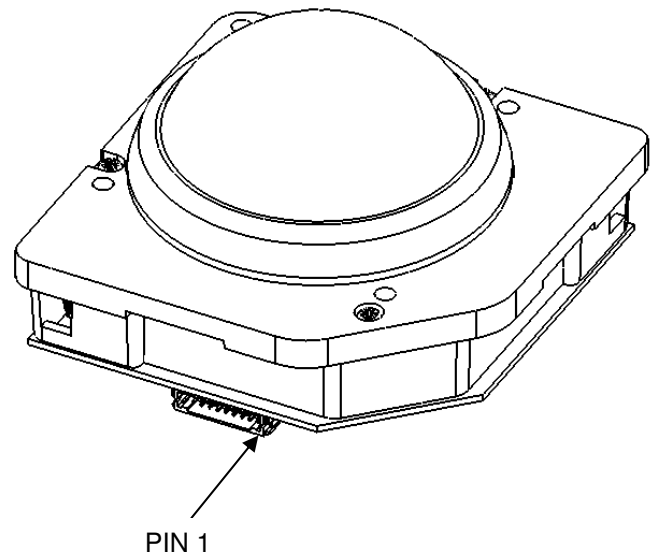
Manufacturer: JST (or equivalent)

Part No: S10B-PH-SM3-TB

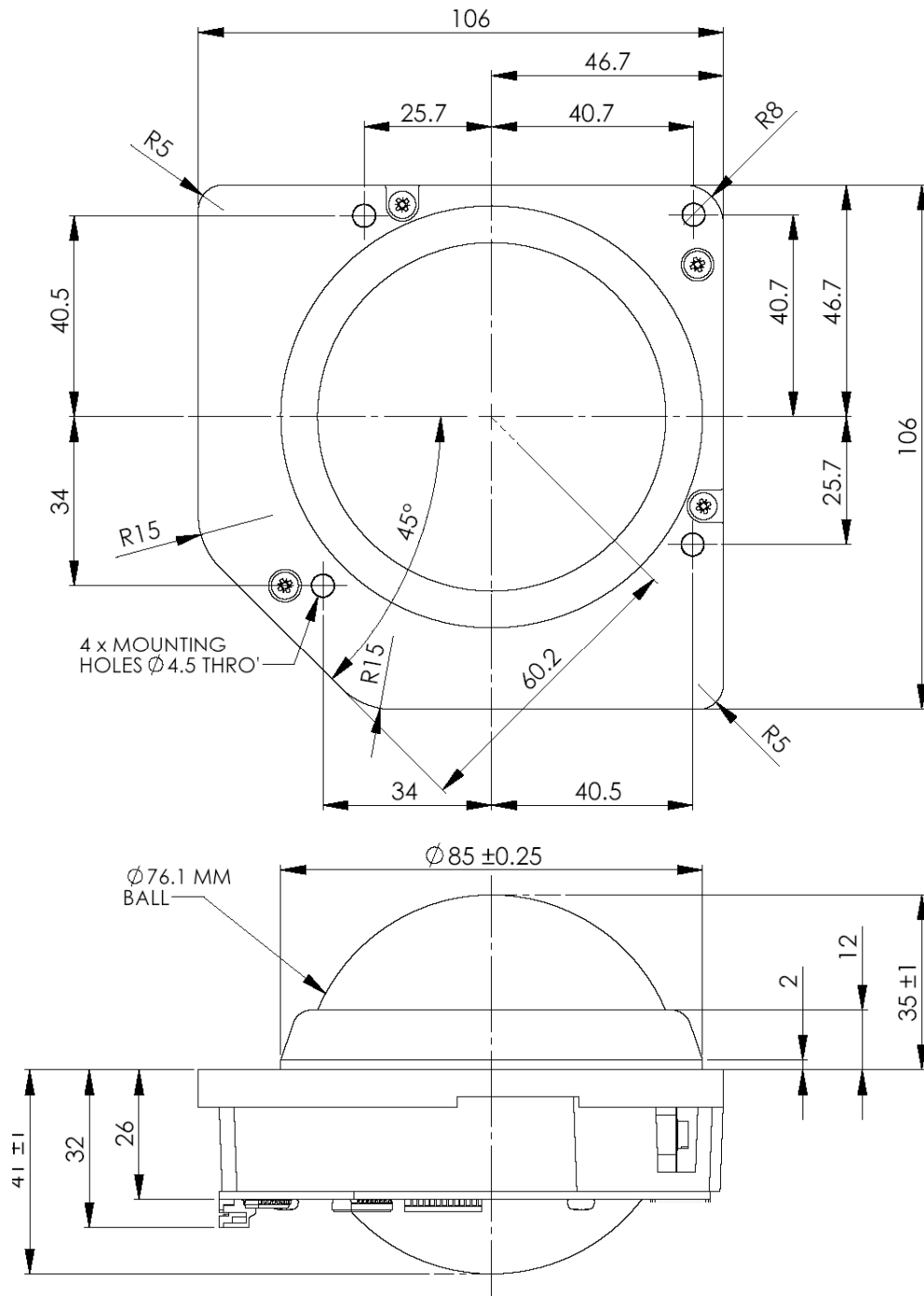
Mating connector: PH, CR or KR types

Pin Number	5V TTL Quadrature
1	X1
2	X2
3	Y1
4	Y2
5	Earth
6	0V
7	5V
8	-
9	-
10	0V

Table 1 Output connections



6. OUTLINE DRAWING



Dimensional drawing specifies factory default orientation.

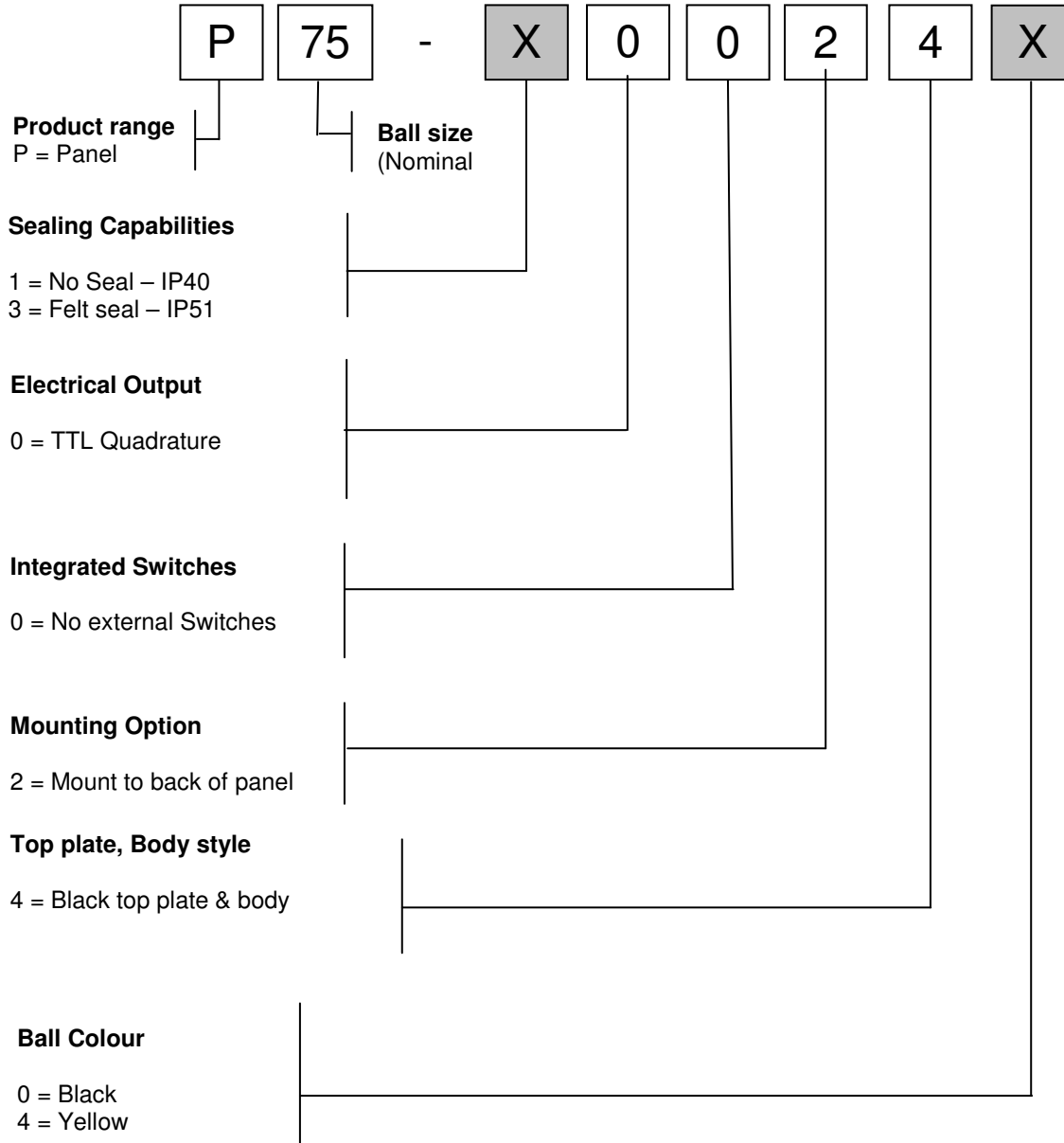
All dimensions are in mm unless otherwise stated.

Tolerances ± 0.2 mm unless otherwise stated

Please note that an IGES model is available on request. Please contact your local sales office for more information.

7. PRODUCT ORDERING CODE SYSTEM

Please construct your standard P75 Series product ordering code by selecting the numbers and letters to suit your specification:



7.1 Ordering Example

P75-100240: Panel 75mm, No seal (IP40), Quadrature output, no external switches, mount to back of panel, black top plate and body, black ball.

8. DOCUMENT HISTORY

Issue	Date	Author	Remarks
A	10.09.11	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.