

## P38 Series PANEL TRACKERBALL

### Specifications

#### **Mechanical**

|                     |                                                                                                                                                                                                                                   |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight              | 90gms (Polyester ball) approx<br>98gms (Phenolic ball) approx<br>286gms (Stainless Steel ball) approx<br>102gms (Anti Vandal Kit) approx                                                                                          |
| Ball                | Thermoset Phenolic, Polyester or Stainless Steel 38mm, 1_"                                                                                                                                                                        |
| Tracking Force      | 8gms Nominal continuous – no seal (IP40), Polyester<br>25gms Nominal continuous - Felt seal (IP51), Polyester<br>50gms Nominal continuous - PTFE seal (IP65)<br>65gms Nominal continuous - PTFE seal (IP65), Stainless Steel ball |
| Ball Load           | 200N Maximum downward pressure (20Kg) @ 20°C                                                                                                                                                                                      |
| Ball Rotation       | Continuous and reversible – any direction                                                                                                                                                                                         |
| Ball Speed          | 200 RPM maximum                                                                                                                                                                                                                   |
| Housing Material    | ABS in black                                                                                                                                                                                                                      |
| Transducers         | Photo-optical encoders with LED's                                                                                                                                                                                                 |
| Mounting Position   | Horizontal to 30° (non-sealed versions)<br>Horizontal to 60° rear elevation (sealed)                                                                                                                                              |
| Optional Sealing    | PTFE composite IP65/54, Felt IP51                                                                                                                                                                                                 |
| Sealing Qualified @ | 25°C static                                                                                                                                                                                                                       |

#### **Electrical**

|                           |                                                                        |
|---------------------------|------------------------------------------------------------------------|
| Standard Output Connector | JST 2mm PH 10 way right-angled header                                  |
| Mating Connector          | JST 10 way CR, KR or KRD type connector                                |
| Resolution (Quadrature)   | 241 pulses per ball revolution                                         |
| Resolution (Protocol)     | 482/241 ppr - switch selectable (other options available upon request) |
| External Switch Inputs    | 3 switch support - Left, Middle, Right                                 |
| Supply Voltage            | 5 V DC +/- 5%                                                          |
| Supply Current            | Quadrature format 10ma typical<br>Protocol format 20ma typical         |
| Optional Backlight        | +5 V DC, 100ma                                                         |

#### **Environmental**

|                       |                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------|
| Operating Temperature | 0°C to +70°C                                                                         |
| Storage Temperature   | -25°C to + 85 °C                                                                     |
| Humidity              | 30% min, 95% max, non-condensing                                                     |
| Vibration             | 5 G, 2-5Khz any plane                                                                |
| Shock                 | 100Gs - duration 11ms                                                                |
| Lifetime              | >10 million ball revolutions - non-sealed<br>>2 million ball revolutions - seal life |

#### **Electrical Connections**

Please refer to the option 'B' in the Product Ordering Code table.

|            | 0                 | 4           | 5          |
|------------|-------------------|-------------|------------|
| Pin Number | Quadrature Output | PS/2 Output | USB Output |
| 1          | X1                | -           | -          |
| 2          | X2                | -           | -          |
| 3          | Y1                | -           | -          |
| 4          | Y2                | -           | -          |
| 5          | -                 | -           | -          |
| 6          | -                 | -           | -          |

## P38 Series PANEL TRACKERBALL

|    |               |               |               |
|----|---------------|---------------|---------------|
| 7  | VCC (+5 V DC) | VCC (+5 V DC) | VCC (+5 V DC) |
| 8  | -             | Data          | D-            |
| 9  | -             | Clock         | D+            |
| 10 | GND           | GND           | GND           |

### Configuration Options

Orientation drawings viewed from the top.

| ORIENTATION SETTINGS |               |  |  |  |  |
|----------------------|---------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Applies to USB only  | Orientation 1 | On                                                                                | On                                                                                | Off                                                                               | Off                                                                                 |
|                      | Orientation 2 | On                                                                                | Off                                                                               | On                                                                                | Off                                                                                 |

| ORIENTATION SETTINGS |               |  |  |
|----------------------|---------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Applies to PS/2 only | Orientation 1 | On                                                                                | Off                                                                               |

| USB SWITCH SETTINGS |                               |                 |                  |
|---------------------|-------------------------------|-----------------|------------------|
| Switch              | Function                      | Off             | On               |
| 1                   | Orientation 1 setting         | See diagram     | See diagram      |
| 2                   | Orientation 2 setting         | See diagram     | See diagram      |
| 3                   | VX3 – Virtual 3 axis function | Feature enabled | Feature disabled |
| 4                   | Smart Button - button lock    | Feature enabled | Feature disabled |

| PS/2 DIP SWITCH SETTINGS |                               |                  |                 |
|--------------------------|-------------------------------|------------------|-----------------|
| Switch                   | Function                      | Off              | On              |
| 1                        | Orientation 1 setting         | See diagram      | See diagram     |
| 2                        | N/A                           | N/A              | N/A             |
| 3                        | VX3 – Virtual 3 axis function | Feature disabled | Feature enabled |
| 4                        | Double tracking rate          | Feature disabled | Feature enabled |

| EXTERNAL SWITCHES CONNECTION |               |
|------------------------------|---------------|
| Pin No.                      | Function      |
| 1                            | Left Switch   |
| 2                            | Middle Switch |
| 3                            | Right Switch  |
| 4                            | GND           |

| OPTIONAL BACKLIGHT POWER |          |
|--------------------------|----------|
| Pin No.                  | Function |
| 1                        | +5 V DC  |
| 2                        | GND      |

Please note: Switch settings only apply to protocol output versions.