



 Cursor  
Controls

- 38 mm optical ball
- IP68 sealing
- Integrated scroll wheel

## 38 MM ERGONOMICAL DESKTOP TRACKBALL

The E38 Series desktop trackball is an extremely high specification device that incorporates the latest IP68 technology. The trackball combines the patented optical trackball technology with the new hall-effect scroll wheel to provide a fully waterproof desktop trackball solution.

To compliment these two technologies the trackball also includes left, middle, and right switch functionality as found in all conventional desktop trackballs/mice making the E38 trackball a complete human interface solution for control of a cursor. In its standard configuration the E38 Series is supplied with a black, fine-textured housing, aluminium base plate, USB and PS/2 output, and a grey scroll wheel. The solid state design allows the device to be subjected to extreme conditions and provides the user with the ability to wash down, decontaminate, and sterilise the module, making it the ideal trackball for a wide range of demanding applications and environments. The freestanding desktop device optimises desk space when compared to a mouse.

### MECHANICAL SPECIFICATIONS

#### UNIT

|                       |                               |
|-----------------------|-------------------------------|
| Weight                | ~500 grams                    |
| Housing material      | PC/ABS                        |
| Housing colour/finish | Black/fine-textured finish    |
| Base plate material   | Aluminium                     |
| Base plate finish     | Bead blasted & clear anodised |
| Mounting position     | All angles                    |

#### TRACKBALL ASSEMBLY

|                       |                                                                |
|-----------------------|----------------------------------------------------------------|
| Ball size/material    | Ø38.1mm (1.5")/Epoxy resin                                     |
| Tracking force        | 20 grams nominal – damper ring seal<br>20-40 grams – PTFE seal |
| Ball load             | 100N (10Kg) maximum downward pressure for 2 minutes @ 20°C     |
| Resolvable ball speed | 30 IPS (inches per second)                                     |
| Tracking engine       | Infra-red optical navigation technology                        |
| Removable ring        | PC/ABS, black                                                  |

#### SCROLL WHEEL

|                        |                       |
|------------------------|-----------------------|
| Wheel diameter         | Ø25mm                 |
| Wheel material         | PC/ABS                |
| Wheel colour           | Grey                  |
| Encoding technology    | Hall effect           |
| Magnet strength        | N42                   |
| Detent-scrolling force | 30 grams nominal      |
| Switch actuation force | 275 ± 125 grams force |

#### LEFT/RIGHT SWITCH

|                        |                       |
|------------------------|-----------------------|
| Switch actuation force | 250 ± 100 grams force |
|------------------------|-----------------------|

### FEATURES

- Sealing to IP68 (fully waterproof)
- Infra-red optical navigation technology
- Integrated IP68 hall-effect scroll wheel
- Integrated left, middle and right switch functionality
- 38mm ball for precise cursor movement
- Removable ball for easy cleaning
- Outputs: USB & PS/2 (auto select)
- Wired USB cable providing high reliability and avoiding the need for batteries
- Smooth operation in rugged environments
- No special driver required

### ORDER INFO

desktop

E38-76A31D

Output : PS/2 &amp; USB Combo

for panel mount version, see type TBE38

## ELECTRICAL SPECIFICATIONS

|                         |                                                                                                                                            |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Protocol                | USB & PS/2 (auto-select)                                                                                                                   |
| Supply voltage          | 4.4V to 5.25V DC                                                                                                                           |
| Supply current          | 100mA Max.                                                                                                                                 |
| Trackball resolution    | 1200 counts per ball revolution @ 1 IPS (inches per second) +/- 10%<br>2400 counts per ball revolution @ 5 IPS (inches per second) +/- 10% |
| Scroll wheel resolution | 24 counts per wheel revolution                                                                                                             |
| Output connector        | USB "A" type connector with 2 metre cable                                                                                                  |
| Mating output connector | Standard USB "A" type socket                                                                                                               |

## ENVIRONMENTAL SPECIFICATIONS

|                       |                                                                                                           |
|-----------------------|-----------------------------------------------------------------------------------------------------------|
| 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% non-condensing (IEC 60068-2-78)                                                                   |
| Vibration             | 2g, 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                                                                                |
| 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<br>Radiated emissions to EN55022 class B |
| Sealing capability    | IP68                                                                                                      |

The E38 trackball provides conventional X and Y axis cursor movement with an additional Z-axis scroll wheel. The Z-axis scroll wheel provides scroll/zoom and middle button capabilities for more effective navigation in complex user interfaces and operating systems (please note the function of the scroll wheel is software dependent). The trackball also features a removable retaining ring enabling the user to remove the ball for servicing and maintenance purposes.



## MANUFACTURED

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E-mail: [sales@cursorcontrols.com](mailto:sales@cursorcontrols.com)

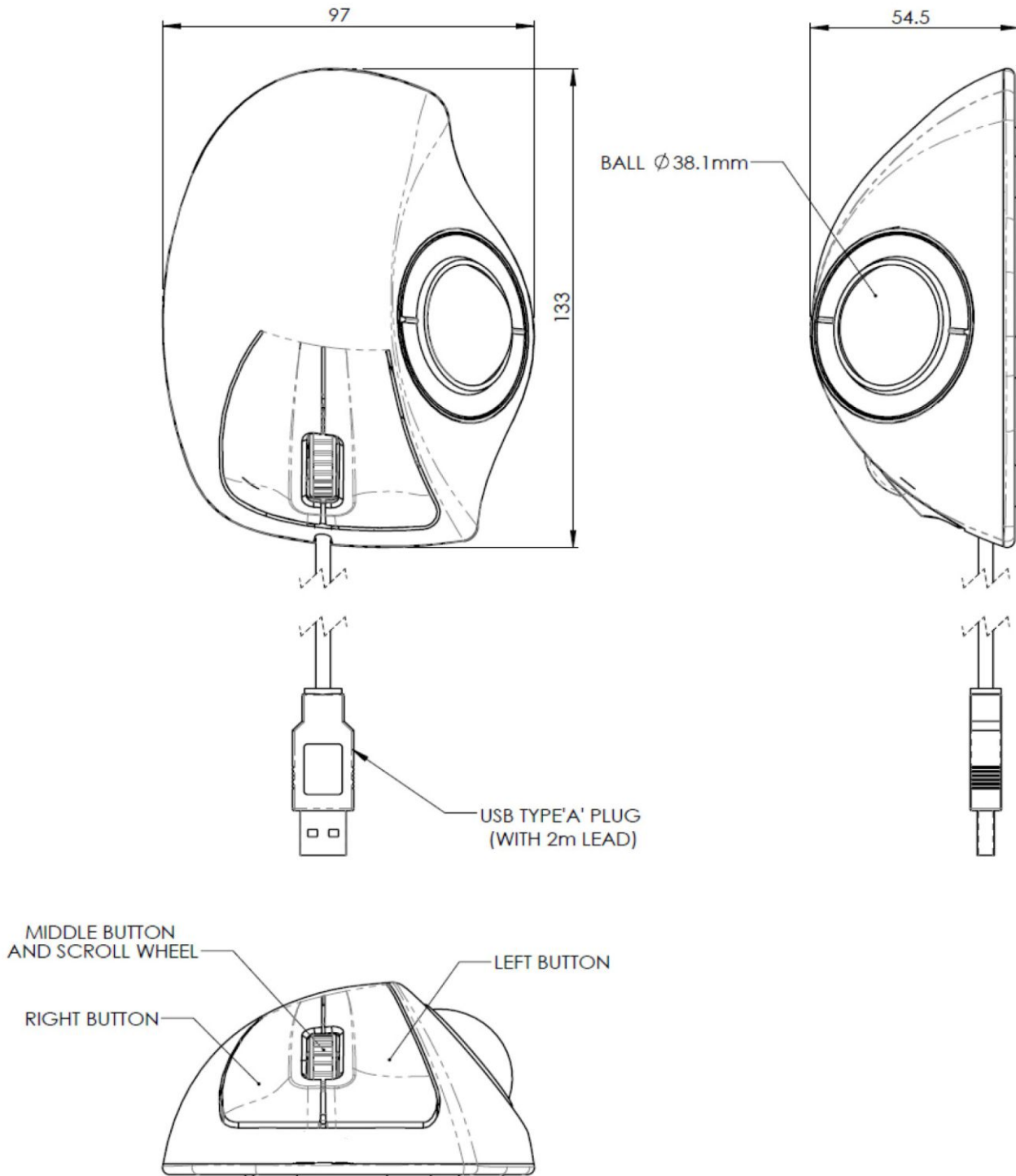


## SALES &amp; SERVICE CENTRE

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E-mail : [info@nsi-be.com](mailto:info@nsi-be.com)



## DIMENSIONAL DRAWING



Dimensional drawing specifies factory default orientation.  
 All dimensions are in mm unless otherwise stated.  
 Tolerances  $\pm 0.25\text{mm}$  unless otherwise stated  
 IGES/STEP model available on request.

The company reserves the right to alter without prior knowledge the specification or design of any standard product or service.



- 38 mm optical ball
- IP68 sealing
- Integrated scroll wheel

## ERGONOMICAL 38 MM PANEL MOUNT TRACKBALLS

The TBE38 trackball is an extremely high specification device that incorporates the latest IP68 technology. The trackball combines the patented optical trackball technology with the new hall-effect scroll wheel to provide a fully waterproof desktop trackball solution.

To compliment these two technologies the trackball also includes left, middle, and right switch functionality as found in all conventional trackballs/mice making the TBE38 trackball a complete human interface solution for control of a cursor. The solid state design allows the device to be subjected to extreme conditions and provides the user with the ability to wash down, decontaminate, and sterilise the module, making it the ideal trackball for a wide range of demanding applications and environments.

### MECHANICAL SPECIFICATIONS

#### UNIT

|                       |                               |
|-----------------------|-------------------------------|
| Weight                | ~700 grams                    |
| Housing material      | PC/ABS                        |
| Housing colour/finish | Black/fine-textured finish    |
| Base plate material   | Aluminium                     |
| Base plate finish     | Bead blasted & clear anodised |
| Mounting position     | All angles                    |

#### TRACKBALL ASSEMBLY

|                       |                                                                |
|-----------------------|----------------------------------------------------------------|
| Ball size/material    | Ø38.1mm (1.5")/Epoxy resin                                     |
| Tracking force        | 20 grams nominal – damper ring seal<br>20-40 grams – PTFE seal |
| Ball load             | 100N (10Kg) maximum downward pressure for 2 minutes @ 20°C     |
| Resolvable ball speed | 30 IPS (inches per second)                                     |
| Tracking engine       | Infra-red optical navigation technology                        |
| Removable ring        | PC/ABS, black                                                  |

#### SCROLL WHEEL

|                        |                       |
|------------------------|-----------------------|
| Wheel diameter         | Ø25mm                 |
| Wheel material         | PC/ABS                |
| Wheel colour           | Grey                  |
| Encoding technology    | Hall effect           |
| Magnet strength        | N42                   |
| Detent-scrolling force | 30 grams nominal      |
| Switch actuation force | 275 ± 125 grams force |

#### LEFT/RIGHT SWITCH

|                        |                       |
|------------------------|-----------------------|
| Switch actuation force | 250 ± 100 grams force |
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### FEATURES

- Sealing to IP68 (fully waterproof)
- Infra-red optical navigation technology
- Integrated IP68 hall-effect scroll wheel
- Integrated left, middle and right switch functionality
- 38mm ball for precise cursor movement
- Removable ball for easy cleaning
- Outputs: USB & PS/2 (auto select)
- Wired USB cable providing high reliability and avoiding the need for batteries
- Smooth operation in rugged environments
- No special driver required

### ORDER INFO

|                   |                |
|-------------------|----------------|
| panel mount/studs | <b>TBE38FO</b> |
| panel mount/holes | <b>TBE38NO</b> |

## ENVIRONMENTAL SPECIFICATIONS

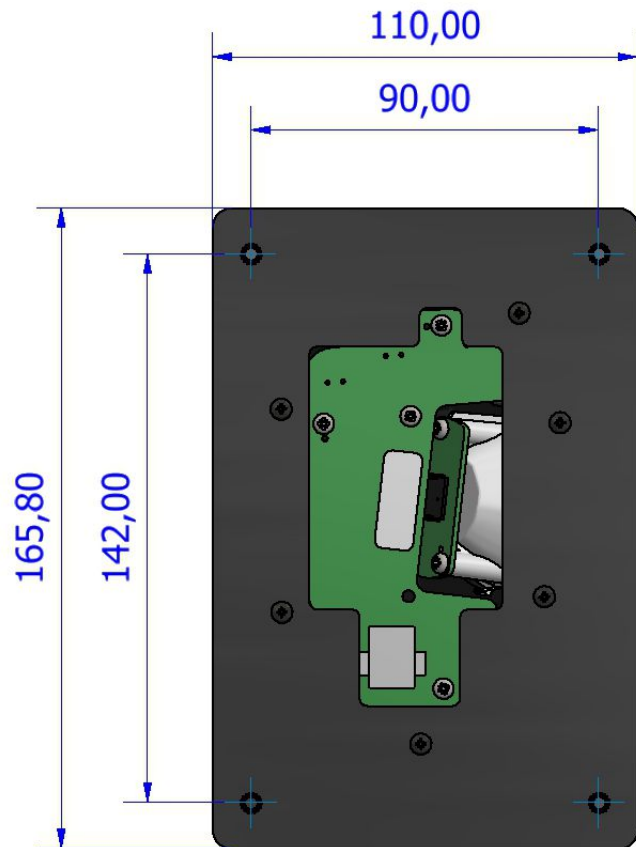
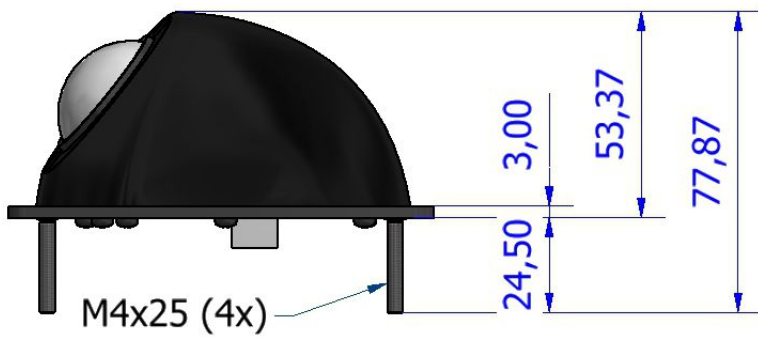
|                       |                                                                                  |
|-----------------------|----------------------------------------------------------------------------------|
| Operating temperature | 0°C to +55°C (IEC 60068-2-1, IEC60068-2-2)                                       |
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| Operating humidity    | 93% RH @ 40°C, non-condensing (IEC 60068-2-78)                                   |
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| Vibration             | 2g, 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                                                       |
| 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    | IP68                                                                             |

## ELECTRICAL SPECIFICATIONS

|                         |                                                                                                                                            |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Protocol                | USB & PS/2 (auto-select)                                                                                                                   |
| Supply voltage          | 4.4V to 5.25V DC                                                                                                                           |
| Supply current          | 100mA Max.                                                                                                                                 |
| Trackball resolution    | 1200 counts per ball revolution @ 1 IPS (inches per second) +/- 10%<br>2400 counts per ball revolution @ 5 IPS (inches per second) +/- 10% |
| Scroll wheel resolution | 24 counts per wheel revolution                                                                                                             |
| Output connector        | USB "A" type connector with 2 metre cable                                                                                                  |
| Mating output connector | Standard USB "A" type socket                                                                                                               |

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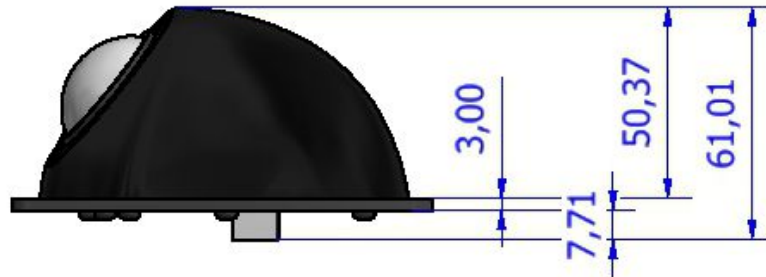
DIMENSIONAL DRAWING  
panel mount with studs



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Tolerances +/- 0.25mm unless otherwise stated  
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DIMENSIONAL DRAWING  
panel mount with holes



Dimensional drawing specifies factory default orientation.  
All dimensions are in mm unless otherwise stated.  
Tolerances +/- 0.25mm unless otherwise stated  
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