



## IEC60945 ERGONOMICAL TRACKBALL UNIT IP68 waterproof trackball & scroll wheel



The E50 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 complement these two technologies the trackball also includes left, middle, and right switch functionality as found in all conventional desktop trackballs/mice making the E50 trackball a complete human interface solution for control of a cursor.

In the standard configuration the E50 Series is supplied with a black soft touch case, USB and PS/2 output, and a grey scroll wheel.

The ergonomical trackball is available as desktop or as panel mount unit. The freestanding desktop device optimises desk space when compared to a mouse. The panel mount unit has been designed as part of OEM keyboards and consoles.

### FEATURES

- Certificate of conformity fully compliant with IEC60945
- Sealing to IP68 (fully waterproof)
- Infra-red optical navigation technology
- Integrated IP68 hall-effect scroll wheel
- Integrated left, middle and right switch functionality
- Large 50mm ball for precise cursor movement
- Removable ball for easy cleaning
- Outputs: USB & PS/2 (auto select)
- Smooth operation in rugged environments
- No special driver required

### MECHANICAL SPECIFICATIONS

#### UNIT

Weight	-500 grams
Case material	PC/ABS
Case colour/finish	Black/soft touch

#### TRACKBALL MODULE

Ball size/material	Ø50.8mm (2")/Epoxy resin, metallic grey (other colours on request)
Tracking force	30-80 grams – PTFE seal
Ball load	200N (20Kg) 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 style/colour	Bayonet style locking ring/black

#### SCROLL WHEEL

Wheel diameter	Ø25mm
Wheel material	PC/ABS
Wheel colour	Grey – various colours available
Encoding technology	Hall effect
Magnet strength	N42
Detent-scrolling force	30 grams nominal
Switch actuation force	150 ± 50 grams force

#### LEFT/RIGHT SWITCH

Switch actuation force	150 ± 50 grams force
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VER. 1.1



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### 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% 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 Radiated emissions to EN55022 class B
Sealing capability	IP68

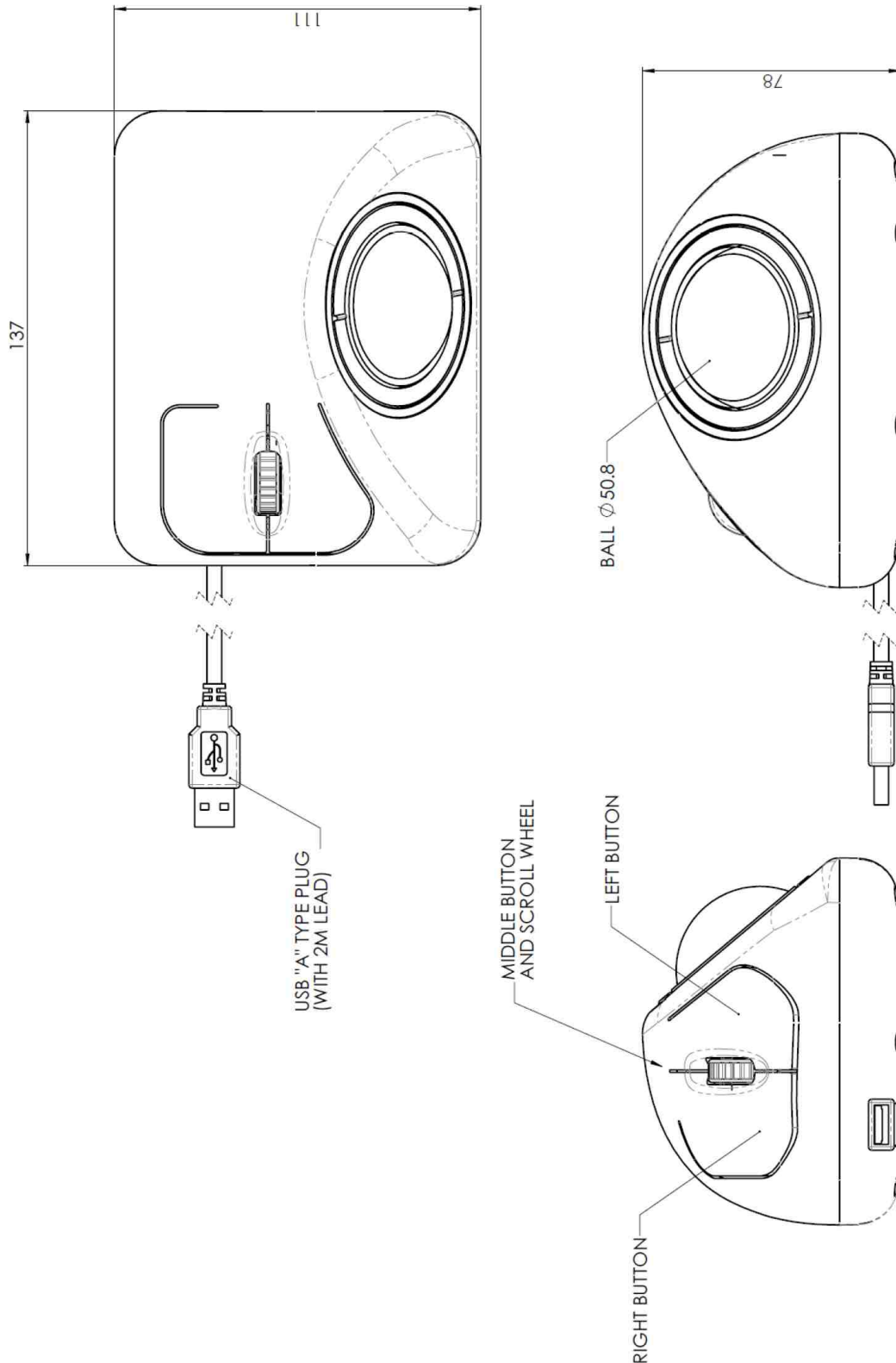
The E50 trackball provides conventional X and Y axis cursor movement with an additional Z-axis scroll wheel. The Z-axis scroll wheel provides scroll/zoom and middle button capabilities for more effective navigation in complex user interfaces and operating systems (please note the function of the scroll wheel is software dependent). The trackball also features a removable retention ring enabling the user to remove the ball for servicing and maintenance purposes.



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DIMENSIONAL DRAWING - DESKTOP UNIT

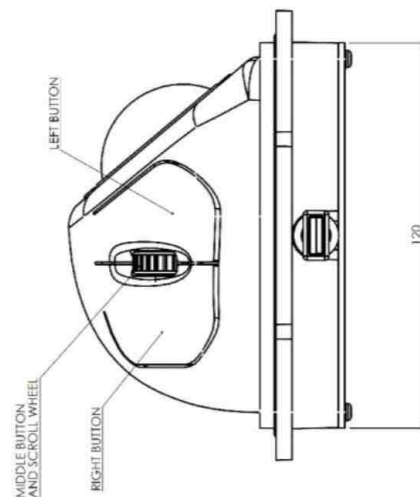
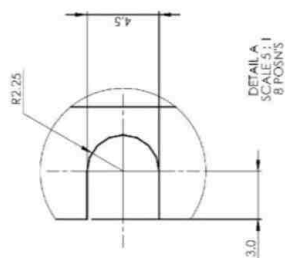
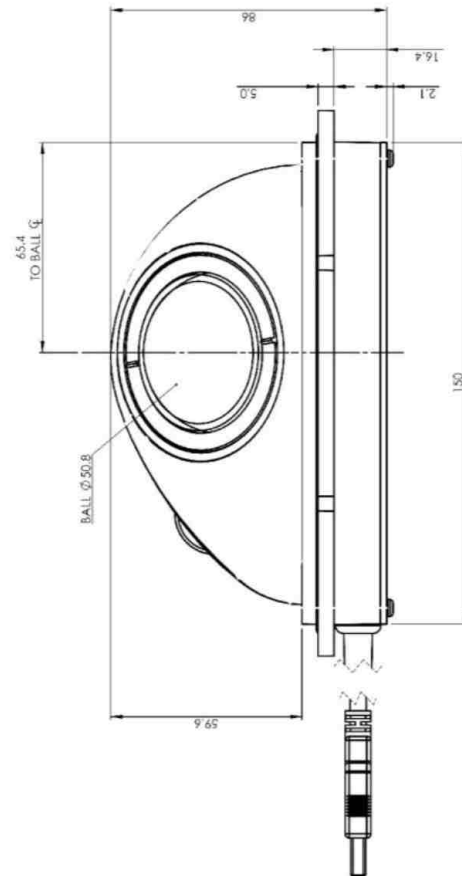
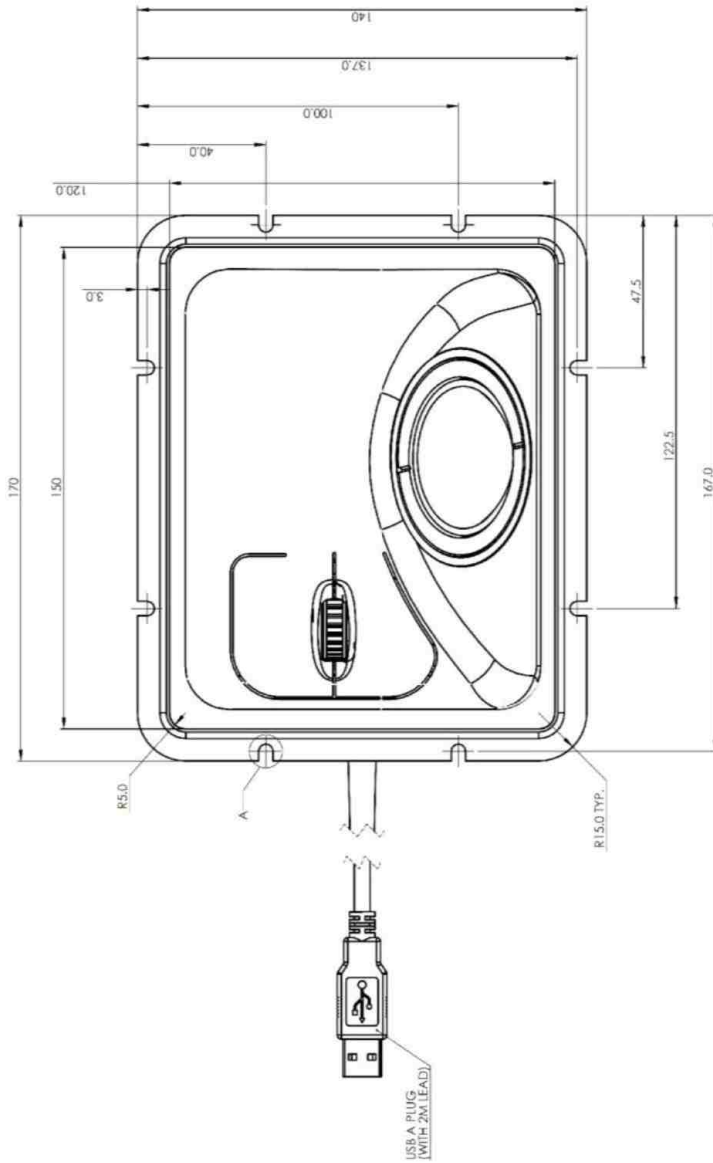


Dimensional drawing specifies factory default orientation.  
All dimensions are in mm unless otherwise stated.  
Tolerances +/- 0.2mm unless otherwise stated

VER. 1.1



DIMENSIONAL DRAWING - PANEL MOUNT UNIT



Dimensional drawing specifies factory default orientation.  
All dimensions are in mm unless otherwise stated.  
Tolerances +/- 0.2mm unless otherwise stated



### INSTALLATION PANEL MOUNT UNIT

The E50 series module has been designed to be installed to the rear of a panel by utilising the standard CCL mounting bracket with integrated sealing gasket.

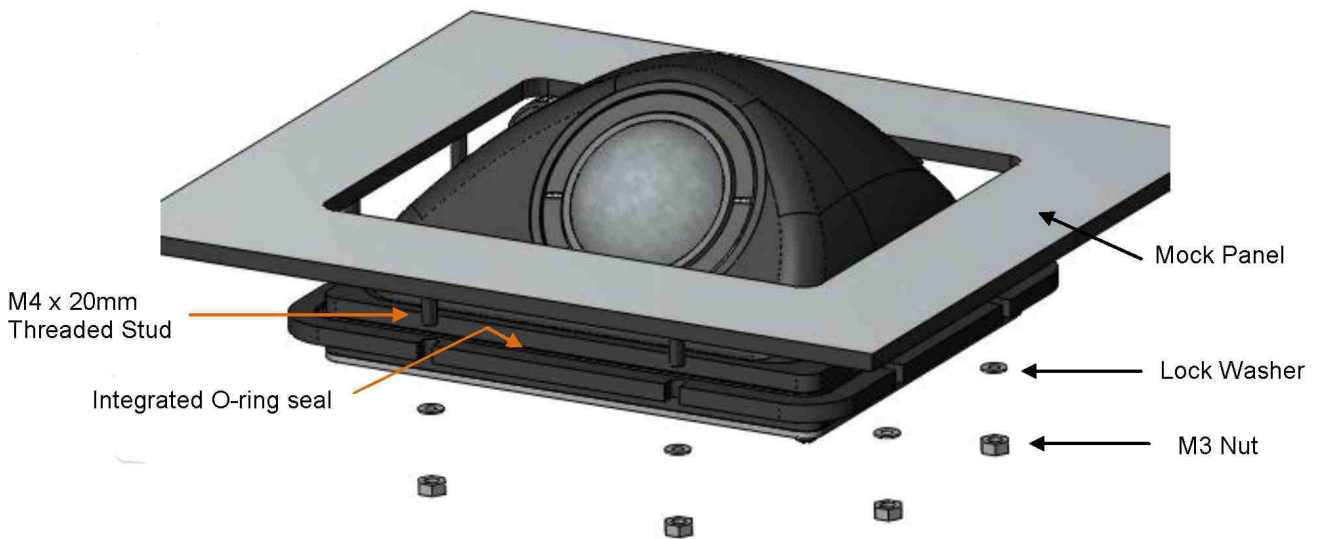
A typical installation arrangement should include;

- 1 x 5mm thick metal panel (recommended).
- 8 x M4 threaded studs (M4 x 20mm) spot welded to the underside of the metal panel
- 8 x M4 nuts and lock washers (not supplied).

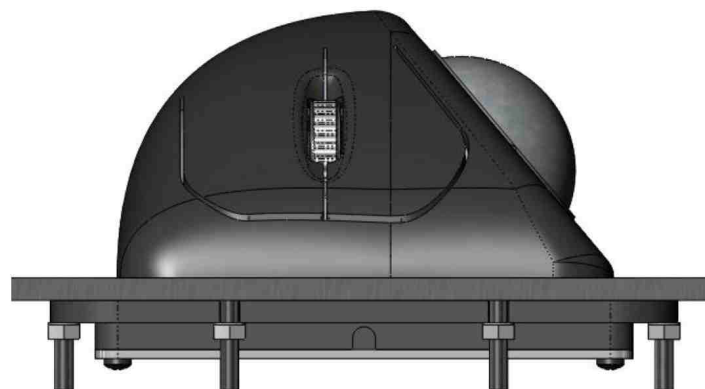
Please note that fixings and fasteners are not included with the E50 series module.

Please refer to section 8 for recommended panel cut-out dimensions and M4 threaded stud locations.

Custom mounting brackets are available on request - please contact your local sales office for more information.



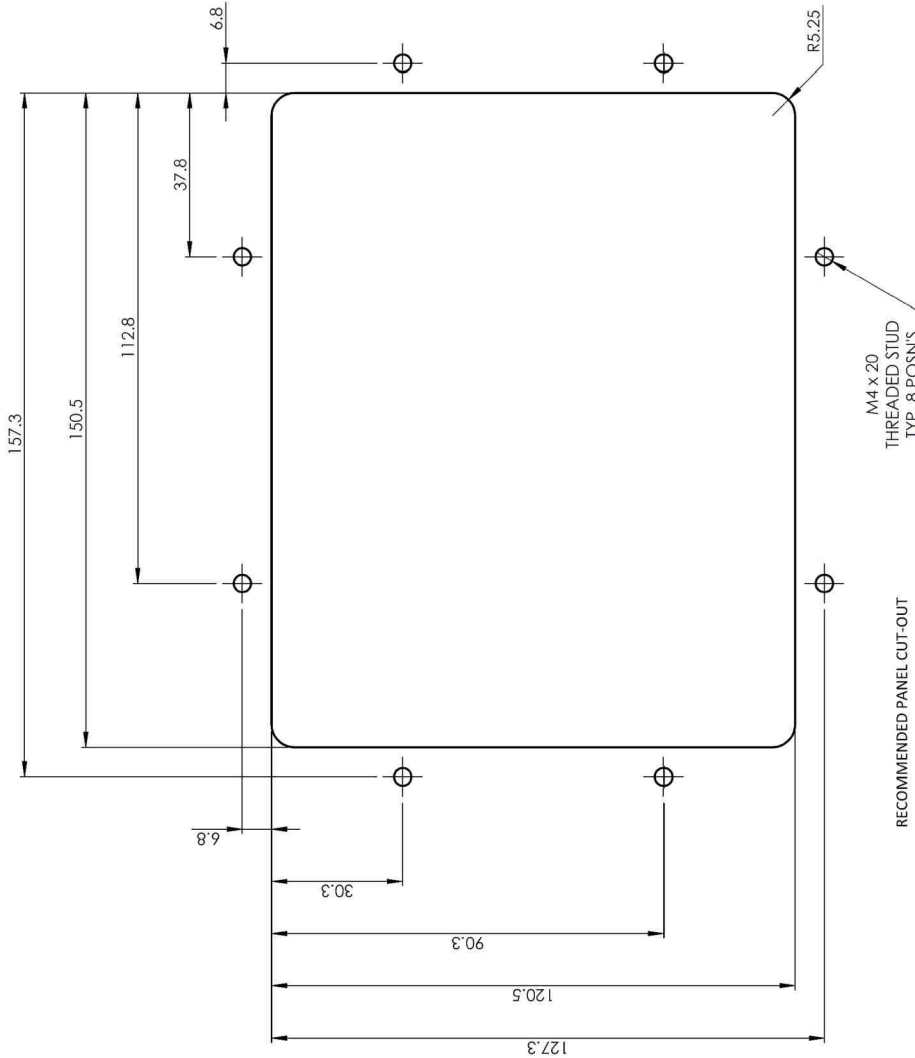
Exploded view of typical rear panel installation



Front view of E50 module installed into the rear of a panel



RECOMMENDED PANEL CUT-OUT - PANEL MOUNT UNIT



ORDER INFO

E50-76A31D-M000	desktop ergonomical trackball
E50-76A2AD-M004	panel mount ergonomical trackball

combo PS/2 & USB output

Options available on request :  
Backlit  
Anti-Vibration  
Backlit - Anti-Vibration

**BASIC JAPAN**

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example options