

K38

Specification

Mechanical

Weight	90 grams (Polyester) approx. 98 grams (Phenolic) approx. 286 grams (Stainless Steel) approx.
Ball	Thermoset Phenolic , Polyester or Stainless Steel , 38.1 mm, 1 ½”
Tracking Force	8 grams Nominal Continuous – No seal (IP40) 25 grams Nominal Continuous – Felt seal (IP51)
Ball load	200N Maximum downward pressure (20 Kg) at 20°C
Ball rotation	Continuous and reversible – any direction
Ball speed	200 RPM max
Housing material	ABS in cream
Transducer	Photo – optical encoders with LED
Mounting Position	Horizontal to 30° (non – sealed units) Horizontal to 90° (sealed)

Electrical

Standard output connector	JST 2mm PH 10 way right
Mating connector	JST 10 way CR, KR or KRD type connector Pt No PHR 10
Resolution	241 pulses per ball revolution (Other options available upon request)
External switch inputs	3 switches Left, Middle, and Right. Connection through JST 2 mm PH 4 way right angled header. Pt no PHR 4
Supply Voltage	5 V DC +/- 5%
Supply current (Quadrature) (Protocol)	10 mA typical 20 mA typical
Optional backlighting	+ 5 V DC, 100 mA

Environmental

Operating temperature	0°C to +70°C
Storage temperature	-25°C to + 85 °C
Humidity	30% min, 95% max, non condensing
Vibration	5G, 2-5 KHz any plane
Shock	100G's – duration 11mS
Lifetime	> 10 million ball revolutions – non sealed > 2 million ball revolution – seal life

Standard Product Options

A Top Plate Sealing 1 No seal in top plate (IP40 .) 3 Felt seal (IP51)	B Electrical Output 0 Quadrature 4 PS/2 Only 5 USB Only	C Integrated Switches 0 No switches
D Mounting 1 Mount to front of panel	E Top Plate / Body Style 3 Moulded top and chassis. (No seal / felt seal) Top cream, chassis black 4 Moulded Top and Chassis, sealing ring .Top cream, chassis black 8 Stainless Steel over flange mounted to top plate sealing ring black	F Ball Colour 0 Black 7 Ivory 8 Grey/ Stainless Steel 9 Backlit Blue

Product Ordering Code K38 – ABCDEF. Please fill in letters A – F using numbers from the table above

External connections

Output connector			
	0	4	5
Pin Number	Quadrature output	PS/2 Only output	USB Only output
1	X1		
2	X2		
3	Y1		
4	Y2		
5			
6			
7	Vcc (+5 V DC)	Vcc (+5 V DC)	Vcc (+5 V DC)
8		Data	D -
9		Clock	D +
10	GND	GND	GND

Switch input connector		
	4	5
Pin Number	PS/2 Only output	USB Only output
1	Left (Sw1)	Left (Sw1)
2	Middle (Sw2)	Middle (Sw2)
3	Right (Sw3)	Right (Sw3)
4	GND	GND

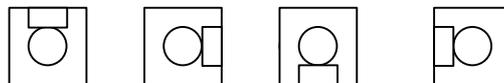
Optional backlight power	
Pin Number	Function
1	+5V DC
2	GND

Configuration

USB Only output			
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

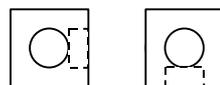
PS/2 Only output			
Switch	Function	Off	On
1	Orientation 1 setting	See diagram	See diagram
2	N/A		
3	VX3 – Virtual 3 axis function	Feature Disabled	Feature Enabled
4	Double tracking rate	Feature Disabled	Feature Enabled

Orientation settings



USB Only				
Orientation 1	On	On	Off	Off
Orientation 2	On	Off	On	Off

Viewed from the top of the unit



PS/2 Only		
Orientation 1	On	Off

Viewed from top of unit.

Other orientations available on request.

Optional lead assemblies

If required lead assemblies are available please quote the required lead as below

Output cable	Switch input cable
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PS/2	T9902147 (2.2 meters long)	T9902125 (500mm long to bare wires)
USB	T9902128 (2.2 meters long)	T9902125 (500mm long to bare wires)