

## **P38**

### **Specification**

#### **Mechanical**

Weight	90 grams (Polyester) approx. 98 grams (Phenolic) approx. 286 grams (Stainless Steel) approx. 102 grams (Anti Vandal Kit) approx.
Ball	Thermoset Phenolic , Polyester or Stainless Steel , 38.1 mm, 1 ½"
Tracking Force	8 grams Nominal Continuous – No seal (IP40) Polyester 25 grams Nominal Continuous – Felt seal (IP51) Polyester 50 grams Nominal Continuous – PTFE seal (IP65) 65 grams Nominal Continuous – PTFE seal (IP65) S/Steel ball
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 Black
Transducer	Photo – optical encoders with LED
Mounting Position	Horizontal to 30° (non – sealed units) Horizontal to 60° (sealed)

#### **Electrical**

Standard output connector	JST 2mm PH 10 way right angled header
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

<b>A Top Plate Sealing</b> 1 No seal in top plate (IP40 ) 3 Felt seal (IP51) 5 PTFE seal (IP65)	<b>B Electrical Output</b> 0 Quadrature 4 PS/2 Only 5 USB Only	<b>C Integrated Switches</b> 0 No switches
<b>D Mounting</b> 4 Universal adapter style	<b>E Top Plate / Body Style</b> 1 Moulded top and chassis,(no seal/felt seal) black 2 Moulded top and chassis sealing ring,black 3 Moulded top and chassis,(no seal/felt seal) cream 4 Moulded top and chassis sealing ring,cream 8 Stainless steel overflange, Moulded top and chassis sealing ring,black	<b>F Ball Colour</b> 0 Black 7 Ivory 8 Grey / Stainless Steel 9 Backlit Blue

Product Ordering Code P38 – ABCDEF. Please fill in letters A – F using numbers from the table above

### External connections

<b>Output connector</b>			
	<b>0</b>	<b>4</b>	<b>5</b>
<b>Pin Number</b>	<b>Quadrature output</b>	<b>PS/2 Only output</b>	<b>USB Only output</b>
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

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

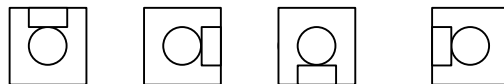
<b>Optional backlight power</b>	
<b>Pin Number</b>	<b>Function</b>
1	+5V DC
2	GND

**Configuration**

<b>USB Only output</b>			
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

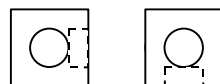
<b>PS/2 Only output</b>			
Switch	Function	Off	On
1	Orientation 1 setting	See diagram	See diagram
2	N/A		
3	VX3 – Virtual 3 axis function	Feature Disabled	Feature Enabled
4	Double tracking rate	Feature Disabled	Feature Enabled

**Orientation settings**



<b>USB Only</b>				
Orientation 1	On	On	Off	Off
Orientation 2	On	Off	On	Off

Viewed from the top of the unit



<b>PS/2 Only</b>		
Orientation 1	On	Off

Viewed from top of unit.

Other orientations available on request.

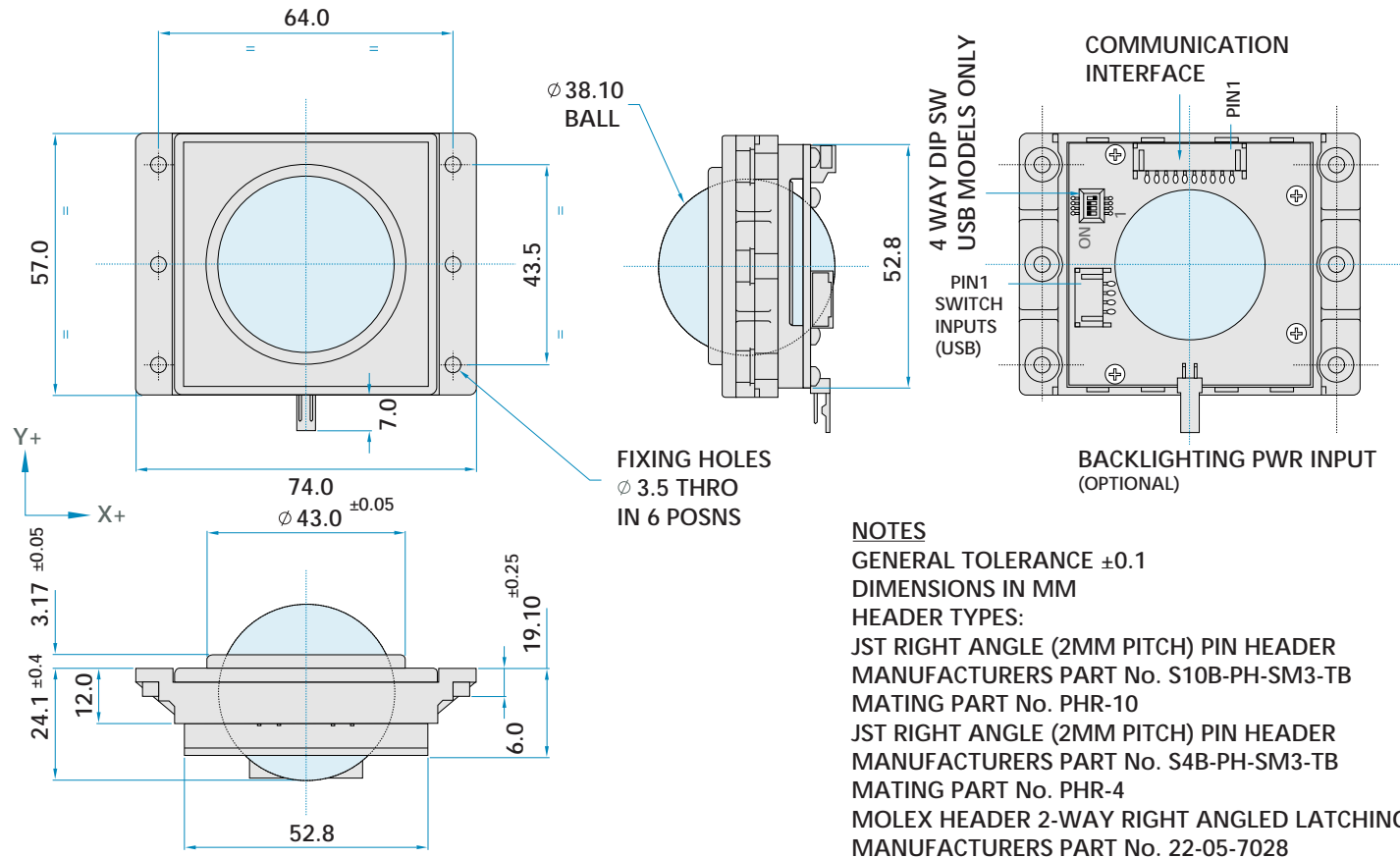
**Optional lead assemblies**

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

	Output cable	Switch input cable
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)

# P38

## TRACKER BALL



### NOTES

GENERAL TOLERANCE ±0.1

DIMENSIONS IN MM

HEADER TYPES:

JST RIGHT ANGLE (2MM PITCH) PIN HEADER

MANUFACTURERS PART No. S10B-PH-SM3-TB

MATING PART No. PHR-10

JST RIGHT ANGLE (2MM PITCH) PIN HEADER

MANUFACTURERS PART No. S4B-PH-SM3-TB

MATING PART No. PHR-4

MOLEX HEADER 2-WAY RIGHT ANGLED LATCHING

MANUFACTURERS PART No. 22-05-7028