

P60 Series PANEL TRACKERBALL

Specifications

Mechanical

Weight	400gms
Ball	Thermoset Phenolic or Polyester, 63mm, 2_ "
Tracking Force	15gms Nominal continuous – no seal (IP40) 25gms Nominal continuous - Felt seal (IP51)
Ball Load	200N Maximum downward pressure (20Kg) @ 20°C
Ball Rotation	Continuous and reversible – any direction
Ball Speed	200 RPM maximum
Housing Material	Top ABS, base ABS + 30% GF
Transducers	Photo-optical encoders with LED's
Mounting Position	Horizontal to 30° (non-sealed versions) Horizontal to 90° (sealed)
Optional Sealing	Felt
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)	220 pulses per ball revolution
Resolution (Protocol)	440/220 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 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 >2 million ball revolutions - seal life

Electrical Connections

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

	0	6	A	8
Pin Number	Quadrature Output	Universal Interface	RS232 Output	Sun Systems
1	X1	X1	TX	TX
2	X2	X2	RX	-
3	Y1	Y1	DTR / Clock	
4	Y2	Y2	RTS / +5 V	+5 V
5	-	Drain	GND	GND
6	-	-	Data	-
7	VCC (+5 V DC)	VCC (+5 V DC)	-	-
8	-	Data / D-	-	-
9	-	Clock / D+	-	-
10	GND	GND	-	-

* connecting core colour if supplied with optional cable (not SUN).

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Note: Please check your unit is configured to provide format required. Units are supplied pre-configured to the electrical protocol requested/ordered.

Configuration Options

Orientation drawings viewed from the top.

Note: some units require Link 1 to be made for SUN.

ORIENTATION SETTINGS					
Applies to non Quadrature versions	Orientation 1	On	On	Off	Off
	Orientation 2	On	Off	On	Off

MULTI PROTOCOL INTERFACE & SUN DIP SWITCH SETTINGS			
Switch	Function	Off	On
1	Protocol Mode	Microsoft RS232/PS2	Mouse Systems/SUN
2	Orientation 1 setting	See diagram	See diagram
3	Orientation 2 setting	See diagram	See diagram
4	Double Tracking Rate	2:1	1:1
5	VX3 - Virtual 3 Axis Function	Feature enabled	Featured disabled
	(Sun mode: Baud rate selection)	1200	9600
6	Smart Button - button lock	Feature available	Feature disabled
7	N/A	-	-
8	TTL output levels	Standard output (RS232)	TTL level / Sun

USB & PS/2 DIP 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	Double Tracking Rate	Feature available	Feature disabled
5, 6, 7	N/A	Default	-
8	Backlight Flash Feature	Enabled	Disabled

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.