

P50 Series PANEL TRACKERBALL

Specifications

Mechanical

Weight	270gms
Ball	Thermoset Phenolic or Polyester, 50mm, 2"
Tracking Force	10gms Nominal continuous – no seal (IP40) 20gms Nominal continuous - Felt seal (IP51) 50gms Nominal continuous - PTFE seal (IP65)
Ball Load	200N Maximum downward pressure (20Kg) @ 20°C
Ball Rotation	Continuous and reversible – any direction
Ball Speed	200 RPM maximum
Housing Material	Base - PBT + 20% GF, Top ABS/PC blend
Transducers	Photo-optical encoders with LED's
Mounting Position	Horizontal to 30° (non-sealed versions) Horizontal to 90° rear elevation (sealed)
Optional Sealing	PTFE composite IP65/54, Felt IP51
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)	155 pulses per ball revolution
Resolution (Protocol)	310/155 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	4	5
Pin Number	Quadrature Output	Universal Output	Sun Systems
1	X1	X1	TX
2	X2	X2	-
3	Y1	Y1	-
4	Y2	Y2	+5 V
5	-	Drain	GND
6	-	-	-
7	VCC (+5 V DC)	VCC (+5 V DC)	-
8	-	Data / D-	-
9	-	Clock / D+	-
10	GND	GND	-

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Configuration Options

Orientation drawings viewed from the top.

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

MULTI PROTOCOL 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 (Sun mode: Baud rate selection)	Feature enabled 1200	Featured disabled 9600
6	Smart Button - button lock	Feature available	Feature not available
7	N/A	-	-
8	TTL Output Levels	Standard output (RS232)	Enabled / Sun mode

UNIVERSAL 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	Smart Button - button lock	Feature available	Feature not available
5, 6, 7		Default	
8		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	0 V

Please note: Switch settings only apply to protocol output versions.