Penny+Giles

INNOVATION IN MOTION

JC 120
Single-axis Fingertip Joystick

Creative solutions
for position measurement and control

Conductive Plastic Technology

JOYSTICK CONTROLLERS

Developed for applications where ergonomics and system integrity are paramount, the JC120 is a minimum width, low profile joystick that provides smooth, precise fingertip control in one axis. The low profile lever makes the JC120 less susceptible to unintentional operation and the minimal under panel space makes it ideal for mounting in panels and operator arm rests. The JC120 is sealed to IP66 to enable it to operate in extreme environments.

- **Slim profile**
- **Simple to install**
- **Long operating life**
- **Superior reliability**
- **Rapid despatch**

Innovative design

Designed for use with electronic controllers the joystick generates analogue and switched reference signals proportional to the distance and direction over which the handle is moved. The output is configured to provide signals for fault detection circuits and a centre tap provides an accurate voltage reference for the lever in its released position, or a zero point for a bipolar supply voltage. An electrically independent switch operates with separate contacts each side of the lever centre position.

Typical applications include remote control chest packs and the control of off-highway or material handling equipment.

Features	Benefits
• Width only 26.5mm	• Increased control density
• Ergonomic design	• Reduced operator fatigue
• Choice of low profile lever heights	• Unintentional operation reduced
• Long life	• Maintenance free operation
• Sealed to IP66	• Operation in hostile environments
• Choice of output voltage ranges	• Maximum interface flexibility

Total reliability

the JC120 joystick incorporates conductive plastic track technology which provides absolute position control and facilitates a maintenance free operating life in excess of five million cycles.

NO MAINTENANCE

JOYSTICK CONTROLLERS

SINGLE-AXIS

Selection Guide

Penny+Giles offers the widest choice of options to suit your application.

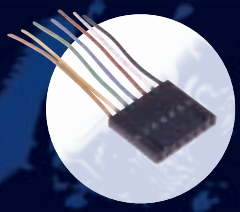
Rapid Despatch

JC 120 - Short lever

The JC 120 supplied with the short lever presents the lowest profile, ensuring less susceptibility to unintentional operation.

JC 120 - Long lever

The JC 120 supplied with the long lever provides increased fingertip control, but still ensures a lower lever profile than the JC 100 model.



JC 120 - Connector

The JC 120 is supplied with a 7 pin latching connector for easy installation. The mating connector assembly is ordered separately.

CE

EMC Directive 89/336/EEC

The products detailed in this document are supplied as **components** for installation into an electrical apparatus or system. They are outside the scope of the EEC directive and will not be CE marked.

PERFORMANCE

MECHANICAL

	Short handle	Long handle
Breakout force (at handle tip)	3.1N	2.3N
Operating force (at tip, full deflection)	5.1N	3.4N
Maximum allowable force	50N	35N
Lever operating angle	±30°	±30°
Lever action	self centring	self centring
Expected life (operations)	>5 million	>5 million
Weight	45g	45g

ENVIRONMENTAL

Operating temperature	-25º to +70ºC
Storage temperature	-40º to +85ºC
Environmental sealing above the flange	IP66 - BS EN 60529†

ELECTRICAL

Analogue track	
Electrical angle of movement	±28°
Total track resistance	4kΩ or 5kΩ (±20%)
Supply voltage - maximum (Vs)	35Vd.c.
Wiper current - maximum	5mA (non derangement)
Power dissipation - maximum	0.25W at 20°C
Wiper circuit impedance	200kΩ minimum
Output voltage	0% to 100%Vs 10% to 90%Vs 25% to 75%Vs
Resolution	Virtually infinite
Centre tap voltage (no load)	50%Vs ±2%
Centre tap angle	±2.5° either side of centre (±1° tolerance)
Insulation resistance	>50MΩ at 500Vd.c.
Switch	
Switch operating angle	5° either side of centre (±1° tolerance)
Supply voltage - maximum	35Vdc
Load resistance - minimum	10kΩ
Load current - maximum (resistive)	2mA
Typical contact resistance	150Ω
Connection	7 pin Molex series latching male
Mating Connector	7 pin Molex series latching female, with 0.5m leads (order separately as SA301649)

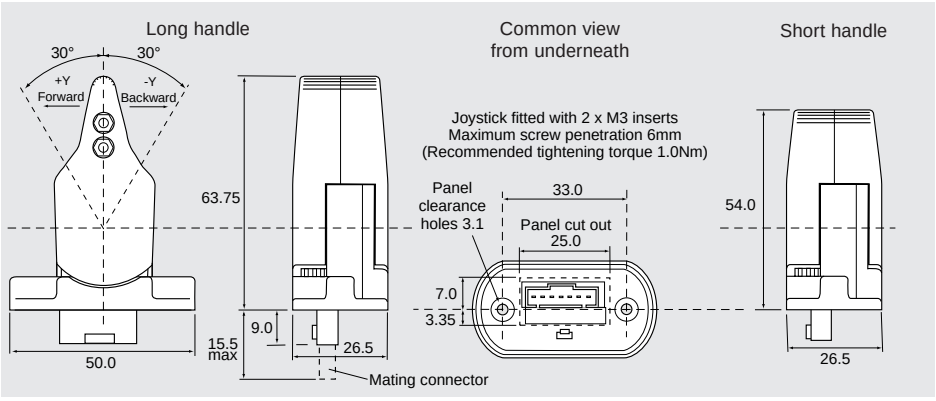
CUSTOM BUILD OPTIONS

Lever return to one end.

ORDERING CODES

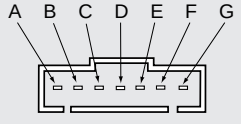
Short handle	0% to 100% output voltage range	JC120-0001 (4k)
	10% to 90% output voltage range	JC120-0002 (5k)
	25% to 75% output voltage range	JC120-0003 (5k)
Long handle	0% to 100% output voltage range	JC120-0004 (4k)
	10% to 90% output voltage range	JC120-0005 (5k)
	25% to 75% output voltage range	JC120-0006 (5k)
Connector	7 way mating connector with 0.5m flyleads	SA301649 (order separately)

DIMENSIONS AND MOUNTING OPTIONS



†Seal integrity can only be achieved when using sealing gasket supplied and screws are tightened to 1Nm (9lbf/in)

ELECTRICAL CONNECTIONS



Description	Pin Number	Mating Connector/Flylead colour
Centre tap	A	Orange
Positive voltage supply	B	Yellow
Output voltage signal	C	Green
Negative or zero voltage supply	D	Blue
N/O switch, handle backward (-Y)	E	Red
N/O switch, handle forward (+Y)	F	White
Common terminal for switch	G	Black

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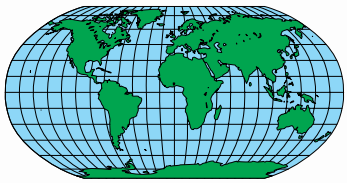

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