

NEW
PRODUCT

Penny+Giles
YOUR PARTNERS
In Control

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.

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.

Features	Benefits
<ul style="list-style-type: none"> ● Width only 26.5mm ● Ergonomic design 	<ul style="list-style-type: none"> ● Increased control density ● Reduced operator fatigue
<ul style="list-style-type: none"> ● Choice of low profile lever heights <ul style="list-style-type: none"> ● Long life ● Sealed to IP66 	<ul style="list-style-type: none"> ● Unintentional operation reduced ● Maintenance free operation ● Operation in hostile environments
<ul style="list-style-type: none"> ● Choice of output voltage ranges 	<ul style="list-style-type: none"> ● Maximum interface flexibility



JOYSTICK CONTROLLERS SINGLE-AXIS

Selection Guide

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



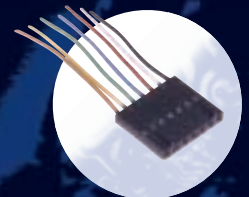
JC 120 - Short lever

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.



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

Breakout force (at handle tip)
 Operating force (at tip, full deflection)
 Maximum allowable force
 Lever operating angle
 Lever action
 Expected life (operations)
 Weight

Short handle

3.1N
 5.1N
 50N
 $\pm 30^\circ$
 self centring
 > 5 million
 45g

Long handle

2.3N
 3.4N
 35N
 $\pm 30^\circ$
 self centring
 > 5 million
 45g

ENVIRONMENTAL

Operating temperature
 Storage temperature
 Environmental sealing
 above the flange

-25° to $+70^\circ\text{C}$
 -40° to $+85^\circ\text{C}$
 IP66 - BS EN 60529

ELECTRICAL

Analogue track

Electrical angle of movement
 Total track resistance
 Supply voltage - maximum (Vs)
 Wiper current - maximum
 Power dissipation - maximum
 Wiper circuit impedance
 Output voltage
 Resolution
 Centre tap voltage (no load)
 Centre tap angle
 Insulation resistance

$\pm 28^\circ$
 $4\text{k}\Omega$ or $5\text{k}\Omega$ ($\pm 20\%$)
 35Vd.c.
 5mA (non derangement)
 0.25W at 20°C
 $200\text{k}\Omega$ minimum
 0% to $100\%\text{Vs}$ 10% to $90\%\text{Vs}$ 25% to $75\%\text{Vs}$
 Virtually infinite
 $50\%\text{Vs}$ $\pm 2\%$
 $\pm 2.5^\circ$ either side of centre ($\pm 1^\circ$ tolerance)
 $> 50\text{M}\Omega$ at 500Vd.c.

Switch

Switch operating angle
 Supply voltage - maximum
 Load resistance - minimum
 Load current - maximum (resistive)
 Typical contact resistance
 Connection
 Mating Connector

5° either side of centre ($\pm 1^\circ$ tolerance)
 35Vdc
 $10\text{k}\Omega$
 2mA
 150Ω
 7 pin Molex series latching male
 7 pin Molex series latching female, with 0.5m leads (order separately as SA301649)

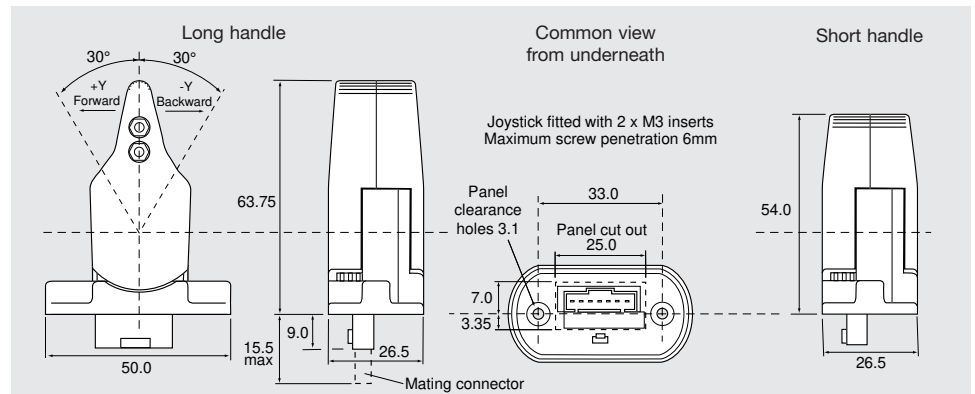
CUSTOM BUILD OPTIONS

Lever return to one end.

ORDERING CODES

<i>Short handle</i>	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)
<i>Long handle</i>	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)
<i>Connector</i>	7 way mating connector with 0.5m flyleads	SA301649 (order separately)

DIMENSIONS AND MOUNTING OPTIONS



ELECTRICAL CONNECTIONS

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

Available from Penny+Giles

A wide range of instrumentation for measurement and control solutions in industrial and aerospace applications. Please ask for more details.

Penny+Giles quality systems meet the requirements of ISO9001, the Civil Aviation Authority and numerous customer's certification standards.

Quality is at the heart of all our systems ensuring the reliability of our products from initial design to final despatch.

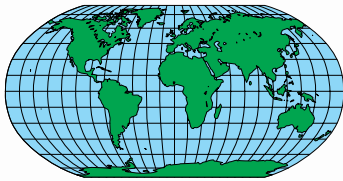


Certificate No. LRQA 0965179



- VRVTs ■ LVDTs - industrial/aerospace ■ Hybrid Linear Potentiometers
- Solenoids ■ Rotary Potentiometers ■ Joystick Controllers ■ In-Cylinder Transducers

Contact Worldwide



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Penny+Giles products are in service with these industries throughout the world.

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Marine
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Mining

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Off-highway
Petrochemical
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Power generation
Process control
Transportation
Timber and Forestry

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JC120

SINGLE AXIS JOYSTICK FEATURES

Penny + Giles has expanded its family of JC120 joysticks with the addition of new features.

These features are:

A **Friction** mechanism that enables a user to set the joystick handle to a specific angle/output so as to drive a system at a constant speed without the need for the operator to continue to hold the handle.

A **Centre detent feel** that is used with the **Friction** mechanism to provide the user with an indication of the joystick middle position.

A **7-position detent feel** that provides an indication to the user of the progressive movement through the Joystick operating angle. Detents are separated by an angle of 10° with one at the middle position.

These detent options are available for both the spring return to centre, spring return to one end and also the new Friction options.

The key features of these new options are:

- The Friction and Detent features are contained within the existing joystick body
- The life of the mechanical features is in excess of 1 million cycles
- A cost effective solution to providing mechanical indication of speed of the system

The new part numbers are as follows:

Part number	Handle Type	Friction/Spring	Number of Detents
JC120-0025	Long	Spring to End	7
JC120-0028	Long	Spring to Centre	7
JC120-0029	Long	Friction	Centre only
JC120-0030	Long	Friction	None
JC120-0032	Long	Friction	7
JC120-0036	Short	Spring to End	7
JC120-0037	Short	Spring to Centre	7
JC120-0038	Short	Friction	Centre only

If you have a requirement for a combination of features that is not shown above then please do not hesitate to contact the sales department at Penny & Giles



SHORT HANDLE OPTION



LONG HANDLE OPTION

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