

## Heavy Duty Multi-Axis Joystick

### Penny & Giles – JC8000

- **Extremely robust design for arduous applications**
- **Center detent for enhanced return-to-center performance**
- **Under panel depth has been minimized to 78mm**
- **Pivot-point position minimizes grip cable flex**
- **Rated for 5 million cycles**
- **Hall-effect sensor technology**
- **Dual outputs with sense options**
- **Electronics sealed to IP69k**
- **Can be supplied as 'base-only'**
- **More functions, e.g. CAN interface, to follow**
- **Multiple grip options ...**



HE



AMF



MG



The JC8000 offers high mechanical strength for very heavy-duty applications and features a center detent that provides guaranteed return-to-center, as well as a positive feel to the operator, throughout 5 million cycles. While maintaining an overall minimum under-panel depth of the joystick body, the shaft pivot-point position has been designed to be as low as possible so as to ensure a high strength capability in the small body space envelope. This reduction in angular deflection reduces wear on base-to-grip wiring, so enhancing overall reliability.

Hall-effect sensing eliminates contact wear and provides safety functionality via dual outputs, which can be set to positive or negative ramps, or a combination of both. Electronic robustness is assured with sealing of the internal PCB to a rating of IP69k.

A choice of multi-function grips are available, plus the option of 'base-only' enabling custom grips to be fitted. Beyond this initial release, further models will be introduced to provide increased grip functionality, CAN bus interfaces and mechanical variation.

## SPECIFICATIONS

### SUPPLY

SUPPLY VOLTAGE	5Vdc $\pm$ 0.5Vdc
OUTPUT VOLTAGE (FACTORY SET)	0.5–4.5V 1.0–4.0V 1.25–3.75V
CENTER REFERENCE	44.5–55.5% of supply voltage
OUTPUT SENSE	The dual outputs can be configured to have positive ramps, negative ramps or a combination of both.
CURRENT CONSUMPTION	<64mA
CONNECTION	22-way Molex Mini Fit

### MECHANICAL

BREAKOUT TORQUE	1.2Nm
OPERATING TORQUE	1.2Nm
MAXIMUM LEVER LOAD	240Nm
MECHANICAL ANGLE	$\pm 16^\circ$ on X- and Y-axes
GATE	Square
EXPECTED LIFE	5 million cycles
WEIGHT	1.1kg without grip

### ENVIRONMENTAL

OPERATING TEMPERATURE	-40°C to 80°C
STORAGE TEMPERATURE	-50°C to 85°C
ENVIRONMENTAL PROTECTION	IP66 above panel IP69k electronics
EMC IMMUNITY LEVEL	100V/m
EMC EMISSIONS LEVEL	Complies with EN 55011
ESD IMMUNITY LEVEL	EN 61000-4-2 $\pm 15$ kV air discharge
VIBRATION	EN 60068-2-64 random, 3.6gn, 10-200Hz, 2h per axis
SHOCK	EN 60068-2-27 25gn, 10ms, 500 in 6 directions

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