Penny & Giles

Proportional, Hall-Effect Rocker

JC040

- **Robust design for arduous in-cab applications**
- **Return-to-center**
- **Optional mechanical over-press feature at either ends of travel**
- **Low under-panel depth of 21mm**
- **Hall-effect sensor technology**
- **Rated for 1 million cycles of life**
- **Dual-redundant electronic architecture**
- **Outputs with sense and voltage span options**
- **Dual supply to ensure a high level of signal integrity**
- **Designed to allow contamination (liquid or dust) to pass through the mechanism without causing any damage**
- **Electronics sealed to IP67**

The JC040 is a proportional rocker for use in joystick grips and other in–cab human-machine interfaces. Two robust, return-to-center operating options are available: a ±25° movement from center; or a ±20° movement with an over-press feature, which can be included in both directions of movement or just one, used to indicate a different mode of machine operation. In all versions, a compact mechanical design means the required under-panel space is just 21mm.

The rocker utilizes non-contacting, Hall-effect sensing technology that eliminates contact wear and provides for long-life integrity of the output signal, giving rise to a minimum operating life of 1 million cycles.

Safety is enhanced via a fully dual-redundant electronic architecture made up of two power supplies and two sensing circuits, the outputs of which can be set to positive or negative ramps or a combination of both. Electronic robustness is assured with the enclosure sealing rated to IP67.

SPECIFICATIONS

ELECTRICAL		
SUPPLY VOLTAGE	5Vdc ± 0.5Vdc	
OUTPUT VOLTAGE	10% to 90% of Supply Voltage	
CENTER REFERENCE	48% to 52% of Supply Voltage	
OUTPUT SENSE	The dual outputs can be configured to have positive ramps or a combination of positive and negative ramps	
CURRENT CONSUMPTION	< 19mA	
CONNECTION	6-way flying lead	
MECHANICAL		
BREAKOUT FORCE	3Nm	
OPERATING FORCE AT END OF TRAVEL – WITHOUT OVER-PRESS	6.5 ±1.5Nm	
OPERATING FORCE AT START OF OVER-PRESS	6Nm	
OPERATING FORCE TO ENGAGE OVER-PRESS	17Nm	
MECHANICAL ANGLE	±25°	
START OF OVER-PRESS	±20°	
MECHANICAL LIFE	1 million cycles	
	200,000 cycles with over-press feature	
WEIGHT	20g maximum	
ENVIRONMENTAL & LEGISLATIVE		
OPERATING TEMPERATURE	-25°C to 80°C	
STORAGE TEMPERATURE	-40°C to 80°C	
ENVIRONMENTAL PROTECTION	The rocker has a design where contamination (liquid or dust) can pass through the mechanism without causing any damage and an IP67 protection of the electronics	
EMC IMMUNITY LEVEL	EN 61000-4-3: 2002	100V/m, 80MHz-1GHz and 1.4-2.7GHz
EMC EMISSIONS LEVEL	EN 61000-6-4: 2011	30MHz-1GHz
ESD IMMUNITY LEVEL	EN 61000-4-2, Level 2: 1995	4kV contact and air discharge
VIBRATION (RANDOM)	EN 60068-2-64: 2008	3.6gn, 10-200Hz, 2h per axis
BUMP	EN 60068-2-27: 2008	25gn, 10ms, 500 bumps in each of 6 directions
FREE-FALL DROP	EN 60068-2-32: 1993	1.0m at level C, 1.2m at level E
SHOCK	EN 60068-2-27: 2008	50g, 6ms, half sine, 3 shocks in each of 6 directions
MTTFd	>700 years	

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