Contactless – Hall-effect technology

Single axis control with spring to center or friction hold lever action

Choice of grips including Center and End Locking

5Vdc or 9-30Vdc supply

Dual channel output with optional ramp directions

Analogue (Vdc) or Digital (PWM) outputs

Extremely low signal noise – less than 1mV rms

Operating temperature -40 to +85°C

Environmental protection up to IP69K above the panel – dependent on grip selected

Electronics sealed to IP69K

53mm under-panel depth

The JC1500 joystick utilizes contactless rotary position sensor technology combined with a rugged, low profile design.

The joystick provides reliable and accurate output signals - and includes a second output to enable error checking of the system integrity. The JC1500 is intended for use in the off-highway specialist vehicles market - particularly where reliability and strength are paramount e.g. Aerial Work Platforms.

The JC1500 joystick complements the existing range of JC150 potentiometer track joysticks and has the same panel mounting details – allowing replacement or upgrade with no panel modifications. If a JC1500 is used to replace a JC150 joystick then due consideration needs to be taken of the supply voltage.

This JC1500 joystick is designed to share the same range of handles and grips as used in the JC150 and JC6000 models.
# SPECIFICATIONS

## SUPPLY
- **SUPPLY VOLTAGE**: 5Vdc ± 0.5Vdc or 9-30Vdc
- **SUPPLY CURRENT**: < 25mA (12.5mA per channel)
- **OVER VOLTAGE**: up to 40Vdc (-40°C to +60°C)
- **REVERSE POLARITY PROTECTED**: Yes
- **POWER-ON TIME**: < 1s
- **CONNECTIONS**: 220 mm long 4 core (24 AWG) Flying lead

## ANALOGUE OUTPUT
- **OUTPUT VOLTAGE (5V)**: 10–90% ±1% of Vsupply
- **OUTPUT VOLTAGE (9-30V)**: 0.5–4.5V ±3%
- **OUTPUT NOISE**: <1mV rms
- **INPUT/OUTPUT DELAY**: 2.5ms

## DIGITAL (PWM) OUTPUT
- **PWM FREQUENCY**: 244Hz ± 20% over temperature range
- **PWM LEVEL (5V)**: 0-Vsupply ±1%
- **PWM LEVEL (9-30V)**: 0-5V nominal ±3%
- **PWM DUTY CYCLE**: 10-90% over measurement range
- **PWM RISE/FALL TIME**: <20µs typical

## GENERAL OUTPUT DATA
- **RESOLUTION**: 12 Bit (0.025% of measurement range)
- **NON-LINEARITY**: < ±0.4%
- **LOAD RESISTANCE**: 10kΩ min. to GND
- **SHORT CIRCUIT PROTECTION**: Output to GND and output to supply in 5V mode

## MECHANICAL
- **ANGLE**: ±30° forward/reverse
- **WEIGHT**: 530g without handle fitted
- **LEVER OPERATING FORCE (spring return to center)**: Breakout 0.75Nm or 1.50Nm
  Operating 1.25Nm or 1.85Nm (full deflection)
  Maximum allowable 110Nm on axis of movement
  (Spring return and friction) 70Nm across axis of movement
  1,000N vertical load
- **LEVER OPERATING FORCE (Friction)**: Breakout and Operating 1.50 Nm

## ENVIRONMENTAL
- **OPERATING TEMPERATURE**: -40°C to 85°C
- **STORAGE TEMPERATURE**: -50°C to 85°C
- **VIBRATION**: Level ±3g, 10Hz to 200Hz (random) @ 3.6g(rms)
- **LIFE**: 10 million operations (1 million for Friction and center and end locks versions)
- **SHOCK**: 20g, 6mS, half sine profile
- **EMC IMMUNITY LEVEL**: 100V/m, 30MHz to 1GHz, 1KHz 80% sine wave modulation, EN50082-2
- **EMC EMISSIONS LEVEL**: Complies with EN50081-2 (1993), 150kHz to 30MHz, level B
- **PROTECTION**: DIN 40050-9 IP69K (fitted with HKN handle)
  DIN 40050-9 IP69K (electronics)
  Mechanics not sealed below the panel

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