Penny & Giles

In-Cylinder Linear Displacement Sensor

ICS100

- **Competitively priced — cost of servo systems reduced.**
- **Integrated with actuator design — eliminates damage to externally fitted sensors.**
- **Removable slider assembly — simple to install**
- **Cable integrally moulded — maximum sealing and strain relief**
- **CE approved — confidence in EMC performance**

ICS100 is a range of In-Cylinder linear position sensors designed for integration into hydraulic and pneumatic actuators where the sensor is fitted inside the pressurised environment. Using the proven benefits of Hybrid Track Technology and including a number of unique design features, the ICS100 range is ideally suited to high volume OEM actuator manufacturers, where design engineers can specify an affordable alternative for applications where non-contacting technologies may prove too expensive.

The hybrid track comprises a high resistivity conductive plastic film bonded to a precision wire-wound element. The conductive plastic film is wiped by a precious metal contact. The technology provides infinite resolution and a very long life (since the majority of the current still flows in the wire, the carbon content of the conductive plastic film is low, and the film is therefore very hard). Track linearity is very good, temperature coefficient of resistance is low and predictable and resistance stability with change in humidity is excellent.

The ICS100 can be supplied with a choice of mounting styles. The Internal flange style (I) is more suited to clevis style actuators, where the pressure flange is hidden within the cylinder bulkhead. The External flange style (EM/EI) is suited to tie-rod style actuators and is fitted through the cylinder rear via a threaded hole

SPECIFICATIONS

PERFORMANCE	
ELECTRICAL LENGTH	25 to 200mm in 5mm increments 210 to 1100 in 10mm increments (up to 1600mm can be specified)
RESISTANCE +10%	1kΩ per 25mm length
INDEPENDENT LINEARITY	±0.25% for 25 to 70mm lengths ±0.15% for 75 to 1600mm lengths
POWER DISSIPATION AT 20°C	0.5W per 25mm length
APPLIED VOLTAGE – MAXIMUM	22Vdc per 25mm length (maximum 74Vdc)
RESOLUTION	Virtually Infinite
HYSTERESIS (REPEATABILITY)	Less than 0.01mm
OPERATIONAL TEMPERATURE	-30 to +100°C
OUTPUT SMOOTHNESS	To MIL-R-39023 grade C 0.1%
INSULATION RESISTANCE	Greater than 50MΩ at 250Vdc
OPERATING MODE	Voltage divider only
WIPER CIRCUIT IMPEDANCE	Minimum of 100 x track resistance or 0.5MΩ, (whichever is greater)
SLIDER OPERATING FORCE – MAX	60gf
LIFE	Typically greater than 100 million operations (50 x 10^6 cycles) at 25mm stroke length
DITHER LIFE	200 million operations (100 x 10^6 cycles) at ±0.5mm 60Hz
SLIDER VELOCITY - MAXIMUM	(ISO VG 32 mineral oil)
VIBRATION	RTCA/DO-160D 10Hz to 2000Hz, 4.12*g* (rms) - all axes
SHOCK	40*g*, 6.0ms, half sine profile - all axes
PRESSURE	
Working	500 Bar Maximum
Burst	>700 Bar Maximum
Pulsed	0 to 500 Bar in 1 second (tested to 25,000 cycles)
WORKING FLUID	Tested for mineral oils only. Not recommended for water based fluids or systems containing zinc additives.

© 2023 Curtiss-Wright. All rights reserved. Specifications are subject to change without notice.
All trademarks are property of their respective owners.

CURTISS-WRIGHT

USA LA
California
T: +1.714.982.1860
cwig.us@curtisswright.com
www.cw-industrial.com

Europe Christchurch
United Kingdom
T: +44.1202.034000
cwig.uk@curtisswright.com
www.cw-industrial.com

Asia Taipei
Taiwan
T: +886.2.2778.1900
cwig.tw@curtisswright.com
www.cw-industrial.com