Williams Controls

Rotary Position Sensor

WM-H10

- **Non-contacting Hall-effect technology**
- **Measurement angle 15-360°**
- **Dual output – electrically isolated Hall-sensing elements**
- **Independent 5V supply**
- **6mm D-profile shaft**
- **Fail-safe outputs**
- **Environmentally robust**
- **Packard Electric ‘Metri-Pack’ 150 series connector**

The WM-H10 shaft-operated Rotary Position Sensor is a solid-state, Hall-effect sensor offering two independent and electrically isolated outputs in a compact housing with integrated connector.

The full range electrical output can be set to correspond to maximum rotations from 15° to 360°, providing a dual linear output voltage proportional to the absolute position of the 6mm, D-profiled shaft, in either direction from a reference angle. The integral magnet arrangement ensures a consistent sensor-magnet separation, avoiding errors associated with air-gap fluctuations.

The two independent measuring circuits, each with its own +5Vdc power supply connection, enable the use of algorithms that compare the signals for error checking. By utilising the first output signal as the source of rotational motion detection and the second signal for diagnostic purposes, comparing the positional data from both outputs, signal veracity can be determined, meaning high-performing, safety-critical applications can easily be addressed. Further integrity is provided as the outputs enter pre-defined states in the event of connection errors to the sensor

The robust mechanical design offers exceptional levels of performance with respect to water and dust, shock, vibration and temperature, meaning the sensor is ideal for use in hostile, on- and off-highway vehicle environments.

Connection to the WM-H10 is via the industry-standard, Packard Electric ‘Metri-Pack’ 150 series of connectors, which offer high-reliability performance across all operating conditions.

SPECIFICATIONS

SUPPLY	
SUPPLY VOLTAGE	5Vdc ± 0.5Vdc
SUPPLY CURRENT	10mA per channel
SHORT-CIRCUIT PROTECTION	
OUTPUT TO GND	Indefinite
OUTPUT TO SUPPLY	Indefinite
SUPPLY REVERSE POLARITY PROTECTION	Up to -12Vdc
OVER-VOLTAGE PROTECTION	Up to 24Vdc
OUTPUT	
MEASUREMENT RANGE	15-360° in 1° increments
OUTPUT VOLTAGE	10-90% ±2% of Vsupply over measurement range
MONOTONIC RANGE	5%/0.25V to 95%/4.75V nominal
LINEARITY	±2%
OUTPUT CORRELATION	±2%
LOAD RESISTANCE	10kΩ min. to GND
MECHANICAL	
ANGLE	360° continuous
WEIGHT	<70g
ENVIRONMENTAL	
OPERATING TEMPERATURE RANGE	-40°C to +85°C (SAE J1455)
STORAGE TEMPERATURE RANGE	-40°C to +105°C
FLAMMABILITY	Per FMVSS-302 regulations
HUMIDITY	120 hours at 95% humidity (+27°C to +75°C)
SALT FOG	ASTM B-117 96 hour exposure
SEALING	IP68 and IP69K (Electronics with GT Series connector) IP6x (Rotor)
VIBRATION	Random broadband 5-500Hz, 4.0*g*
SHOCK	1m drop onto concrete (SAE J1455)
LIFE	10 million cycles at 1Hz
MTTF	>1000 years
ELECTROMAGNETIC INTERFERENCE	SAE J1113

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