MS111

Angular Measurement Sensor

MICRONOR

automation components

Product

The MS111 is a novel angular sensor that functions based on the Hall Effect in a proprietary non-contact design. It provides an absolute angular readout over one full turn. The output can be a 12 bit digital signal or an analog signal voltage. The voltage vs. angle slope is custom programmable. The output slope programming is accomplished through a 4096 step (12bit) look-up table.

Available output configurations are serial 12 bit digital, 0.5V to 4.5V, 4-20mA and PWM digital. Optionally available are 2 limit switch positions that can be factory programmed or custom programmed using a separate setup instrument.

Features

- Absolute 360° Angular Position
- Non-Contact Sensor for Longer Life
- Programmable Zero Point and Readout Direction
- Programmable Output slope with 12 bit Accuracy
- Analog and/or Digital Outputs
- Accuracy better than ±0.35°
- Resolution of 0.1° (12bit)
- Hysteresis of ¡ 0.1°

Options include:

- •Digital Output (12 bit)
- •Voltage Output
- •Current Output 4-20 mA
- •PWM Output
- •Two limit Switch Logic Outputs
- •5VDC ±10% or 12V to 30VDC
- •IP65 Sealed

Applications

The MS111 series of angular sensors are ideal for sensing the position of components that demand a high degree of reliability such as valves, levers, gates, cranes, and automated doors.

Because the units can be programmed to output a custom slope, they can directly replace almost any analog position indicator – including resolvers, angular sensors, and potentiometers.

These sensors have an advantage in any application because they are exceedingly rugged, have a small form factor, have long-wearing twin ball bearings, are shock proof to 20 g, and can handle vibration to 3 g from 20 to

Specifications

Supply Voltage: 5V U_B at 25°C (Ub=5V RL=5k? if not otherwise specified)

Supply Voltage	5 (±10%) VDC
Current consumption (Typical without Load)	6 mA
Resistive Output Load at 10% to 90% Voltage Output	=5 k?
Resistive Output Load at PWM Output	=10 k?
Capacitive Output Load at Voltage/PWM Output	=5.0 nF
Output Voltage (Percentage of Supply Voltage)	10%...90% U_B
PWM Output	0%..100% TTL (levels) (5-95% or 10% to 90% on request)
Output Load Current for Digital Outputs	1 mA

Supply Voltage: 12-30V (at 25°C Ub=24V RL=10k? if not otherwise specified)

Supply Voltage U_B (Supply Voltage U_B for 4-20mA interface)	12-30 VDC (18-30 VDC)
Maximum Allowable Supply Voltage	35V (10s) VDC
Current Consumption (Typical without Load)	10 mA
Resistive Output Load at 0.5V-4.5V voltage output Resistive Output Load at 0-10V/PWM output Resistive Output Load at 4-20mA output	=5 k? =10 k? =500 ?
Output Short Circuit Duration on 0-10V Output (Max.) Output Short Circuit Duration on 4-20mA Output	6 min 8 min
Capacitive Output Load at 0.5V-4.5V Voltage Output Capacitive Output Load at 0-10V Output Capacitive Output Load at 4-20mA Output Capacitive Output Load at PWM Output	=5.0 nF =1.0 µF =0.1 µF =5.0 nF
Output Signal Configuration Options	0.5 .. 4.5 V or 0.1..10 V
Current Output	4..20 mA
PWM output	0%..100% TTL (levels) 5-99% or 10-90% on request
Output Load Current for Digital Outputs	1 mA

Micronor

MICRONOR provides custom feedback units, brushless resolvers, encoders, and other automation control components with a fast turn-around to accommodate our customers' specific requirements. We specialize in repair or replacement of other manufacturers' feedback units and motion control devices because re-engineering an obsolete unit is more cost effective than engineering an entire system.

MICRONOR has served the automation industry with components since 1968 and continues to support and manufacture these products. Thousands of customer-specific solutions have been engineered and are controlling equipment from CNC machines to ship diesel engines.

Ordering Information

To order, please reference the MS111. Our sales engineers will be able to help you determine the customization necessary for the specific requirements of your application. We would be pleased to work with you to achieve a solution for your unique situation.

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