MICROCOM ENVIRONMENTAL

MagShaft

Absolute Magnetic Shaft Encoder

Description:

The *MagShaft* uses advanced magnetic sensing technology to accurately measure the absolute rotational position of its input shaft. A unique combination of absolute angle sensing elements with a multiple rotation sensing system allows the *MagShaft* to provide extreme precision over a wide dynamic range.

The use of magnetic sensors eliminates the need for gears or other mechanical connections to the input shaft. This enables the *MagShaft* to have extremely low torque and rotating inertia, which leads to increased measuring accuracy. The rotating assembly uses high quality ball bearings to minimize torque and maximize the life of the moving components.

The *MagShaft* utilizes the latest version (1.3) SDI-12 for primary power and communications. The *MagShaft* is designed to have significantly improved features over existing shaft encoders, most of which use designs that are decades old. New technology has permitted greater simplicity and precision.

Extremely Low Input Torque:

There are no gears or other components which would cause drag on the input shaft, allowing the *MagShaft* to more accurately measure water level.

Robust Mechanical Design:

All mechanical sensor alignment is integral with the shaft sub-assembly. An aluminum mounting base is included to make installation quick and simple. The batteries can be easily replaced in the field with only a screw driver.

Display and Keypad:

The optional Sensor Display Unit is capable of displaying the current measurement and has an integral keypad that can be used to configure the *MagShaft*.

Easy Setup:

Simple setup and data acquisition using any SDI-12 master or optional Sensor Display Unit. Offset and slope are software adjustable so that various shaft inputs can be measured.

Low Power Consumption:

Average Power consumption taking a reading every 5 minutes is 21µA.

Backup Battery:

Backup power is provided by a pair of low temperature lithium batteries. The batteries ensure absolute position is maintained and updated during primary power outages.

Specifications:

Power Consumption:	14µA quiescent
	20mA active (0.1 seconds)
Accuracy:	±0.36 degree nominal
	±0.5 maximum
	±0.0014 feet (1 ft. float wheel)
	±0.5 mm (375 mm float wheel)
Resolution:	±0.1 degree nominal
Starting Torque:	0.02 oz./in (0.00014 N-M)
	(does not include any float wheel imbalance)
Shaft Diameter:	0.248 ±0.001 inch
Range:	±9,999.999 rotations
Battery Life:	5 years
Battery type:	3.6V lithium (2 batteries)
Temperature Range:	-40 … 60 °C (Operation)
	-60 … 85 °C (Storage)
Humidity:	0 … 100% RH non-condensing

Options:

- Metric 375 mm circumference wheel
- English 1 foot circumference wheel
- Custom programmable wheel sizes
- Sensor Display Unit

July 2018

Microcom Design, Inc.
10948 Beaver Dam Road
Hunt Valley, MD, USA 21030
Tel: (410) 771-1070
Fax: (410) 771-0018
Email: sales@microcomdesign.com

Microcom Florida
Air-Sea Monitoring Systems
656-E Capital Circle, NE
Tallahassee, FL, USA 32301
Tel: (850) 325-1865
Email: sales@microcomdesign.com

Microcom Canada
Omnimetrix
3465 Rue Ashby
Saint Laurent, QC H4R 2K3
Tel: (514) 684-1004
Fax: (514) 697-0400
Email: roger@omnimetrix.com

Microcom Brazil
SIMTECH Representações Ltda
Praça Pio X, 55 – SI 903, Candelária
Rio de Janeiro, RJ 20040-020, Brasil
Tel: 21 2506 5900
Fax: 21 2240 1242
E-mail: simtech@simtech.com.br