

# G1400 High Performance Transmissive Rotary Encoder System

Transmissive Rotary Encoder



## Resolution

With MC 2000 Electronics:  
4.68 nanoradians

## Output

Analog Sine/Cosine

The G1400 is a high performance encoder capable of 4.68 nanoradian resolution when used with the MC2000 motion control board.

For ultra-high resolution and accuracy in rotary applications, the G1400 transmissive encoder provides resolutions up to 4.68 nrad with the MC200 control board- all in a small package. It is the heart of MicroE's positioners for servo track writing, enabling the world-leading resolution and accuracy that these positioners provide to data storage OEMs. The G1400 encoder has analog sine/cosine outputs to use with your interpolation electronics, or use the MicroE MC2000 motion control PC board (see separate data sheet). For applications requiring an encoder with an index mark or full EMI shielding, use MicroE's S2100/2150 rotary encoders or the Mercury series of encoders.

### Standard Features

- *Line Counts: 82K*
- *Resolution from 76.6  $\mu$ rad to 4.68 nanoradians (with MC2000)*
- *Safe Transmissive Design*
- *Broad Alignment Tolerances*

### Applications

- *In-house designed servo track writers*
- *In-house designed media writers*
- *OEM uses in data storage test and measurement equipment*

### Optional features

- *MC2000 motion control board*

# System Specifications

## System

Grating Period	5 $\mu\text{m}$
Signal Period	2.5 $\mu\text{m}$

## Rotary Resolution

Model	Scale O.D. inches [mm]	Scale I.D. inches [mm]	Fundamental Resolution	Interpolated Resolution
G10	2.750 [69.9]	1.000 [25.40]	82K CPR 15.8 arc-sec.	4.68 nrad 0.001 arc-sec.

## Sensor Size

W:	1.113"	28.27 mm
L:	0.800"	20.32 mm
H:	1.023"	25.98 mm

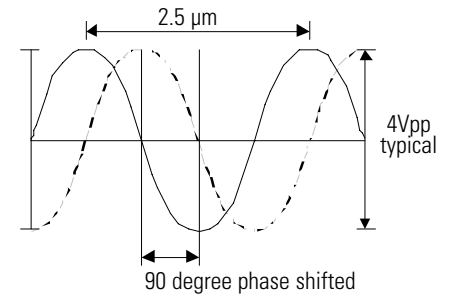
## Operating and Electrical Specifications

Power Supply	+5 VDC $\pm$ 5% @ 100 mA, +12VDC $\pm$ 5% @ 1mA
Shock	10G or better
Humidity	10 to 90% RH non-condensing
Operating Temp.	0 to 55 $^{\circ}\text{C}$

## Output Signals

### Analog:

Two channels V1 and V2 differential sinusoids [90 degree phase shifted] on 2.5V reference.



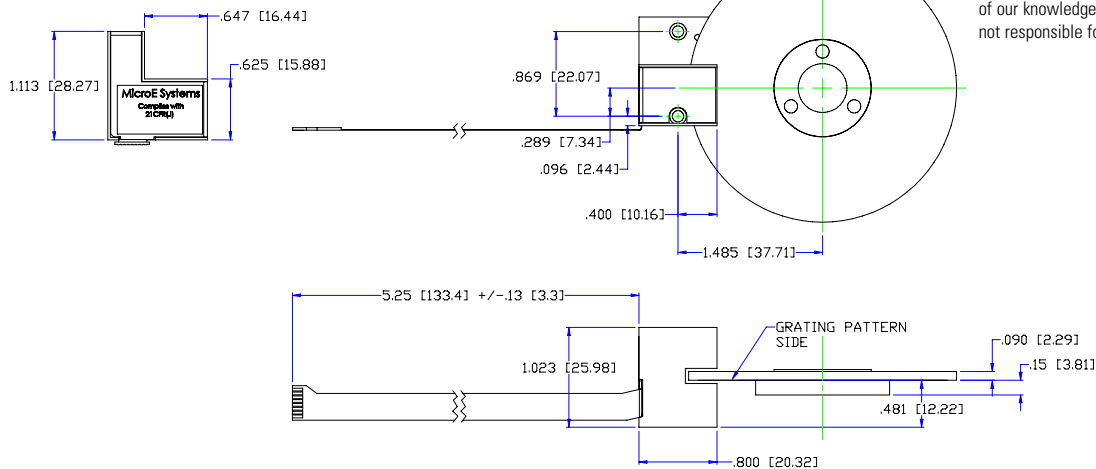
Sine \_\_\_\_\_  
Cosine - - - - -

### Output Connector:

#### 8-PIN ZIF CONNECTOR

PIN	FUNCTION
1	Sine +
2	Sine -
3	Cosine -
4	Cosine +
5	+12V
6	+5V
7	Ground
8	Laser Enable

## Mechanical Information



All Specifications are subject to change. All data is accurate to the best of our knowledge. MicroE Systems is not responsible for errors.

## How to Order G1400 Transmissive Rotary Encoder Systems

To specify your G1400 transmissive encoder with the desired scale, consult the chart below to create the correct part number for your order. Call MicroE Systems' Rapid Customer Response team for more information [781] 266-5700.

G1400 - G10 - Scale Mounting  
Hubs for Rotary Scales  
NH = Without Hub  
H4 = With Hub