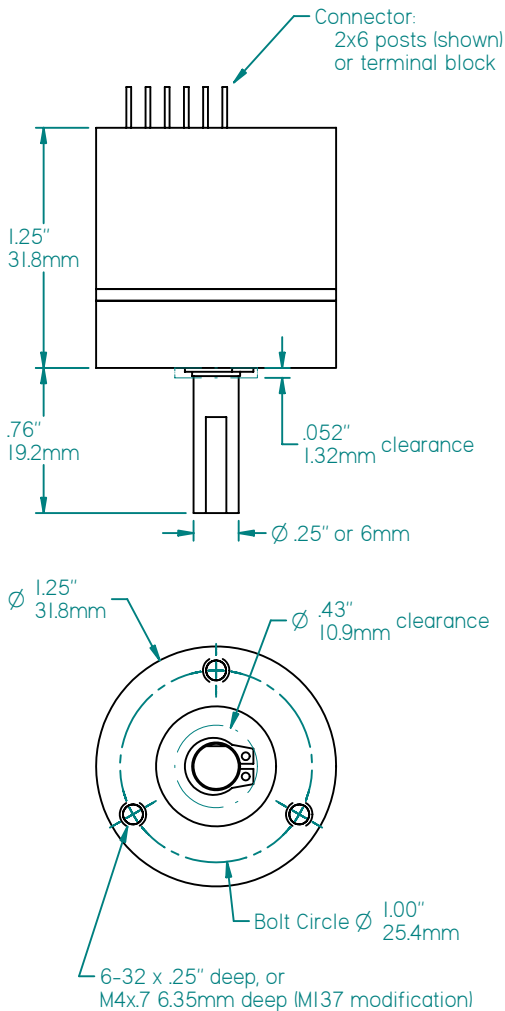


## FEATURES

- 7, 8, or 9 bit resolution
- Up to 512 positions/revolution, single turn
- Parallel, Serial, or Analog Outputs
- Digital Output: Natural Binary or Gray Code
- Analog Output: 0-10 vdc
- Supply: 5 vdc (12-30 vdc for analog)
- 1/4" or 6mm Shaft Diameters
- ESD Protected
- Custom Models Available

## DIMENSIONS



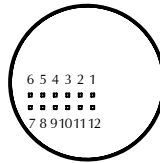
## SPECIFICATIONS

### Mechanical

- Maximum speed:** 5,000 rpm
- Bearings:** ball bearings, shielded
- Shaft Loading:** 10 lb. (4.5 kg) axial  
10 lb. (4.5 kg) radial
- Bearing Life:** 52 x 1,000,000/rpm = hours
- Weight:** 1.75 oz. (50 gm)
- Materials:**
- Case: Aluminum, anodized
  - Shaft: 303 Stainless steel
  - Epoxy potting

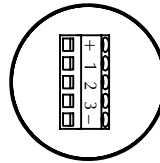
### Output Configurations

- Digital Parallel:** 2x6 posts on .1" centers  
— 5vdc with totem-pole outputs



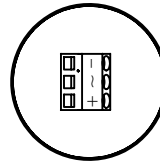
Pin Function	Pin Function
1 Supply	7 2 <sup>8</sup>
2 2 <sup>3</sup>	8 2 <sup>7</sup>
3 2 <sup>2</sup>	9 2 <sup>6</sup>
4 2 <sup>1</sup>	10 2 <sup>5</sup>
5 2 <sup>0</sup>	11 2 <sup>4</sup>
6 DataReady	12 Common

- Digital Serial (SPI):** 5 position terminal block  
— 5vdc with totem-pole outputs



Terminal	Function
+	5vdc supply
1	Slave Select
2	Clock Input
3	Data Output
-	Common

- Analog:** 3 position terminal block  
— 12-30vdc with 0-10vdc output



Terminal	Function
-	Common
~	0-10vdc output
+	12-30vdc supply

### Electrical

- Supply Voltages:** (specify when ordering)
- 5 vdc ± 5%
  - 12-30 vdc (only for analog output)
- Current:** 25 ma max (no load)
- Operating Temperature:** -40° to 70° C
- Output Codes:** (specify when ordering)
- Gray Code
  - Natural Binary
  - 0-10 vdc analog

### Interrogation Rate:

1KHz (typical)  
Note: This is the rate at which the code disk is sampled. Regardless of the rotational speed, this determines the maximum rate the outputs change.  
*Consult factory for details.*

### Resolution:

- (specify when ordering)
- 128, 256, or 512 positions/revolution

### Accuracy:

- ± 1/2 bit digital, ± 1 bit analog

### Rotation:

(specify when ordering)  
Counts can increase with clockwise (CW) rotation as viewed from shaft end, or they can decrease clockwise.

### Digital Output Logic Levels:

- Logic "0": low voltage (0.6 volts max.)
- Logic "1": high voltage (Supply - 0.7 volts min.)

**DataReady Output:** Normally high, goes low momentarily (7 µsec) while the outputs are changing. Stays low to indicate an error condition.

### Analog Output Levels:

- Zero code error: 20mv
- Full-scale error: 125mv
- Relative accuracy: ± 20mv

### Output Circuits:

- Totem-pole: 5 ma. max source and 6 ma. max sink current
- 0-10vdc analog: uses OPA251 op amp, and DAC6571 D-to-A converter

## MODEL NUMBER

<b>SR12</b>						
<b>Model Number</b>						
<b>Shaft Diameter:</b> blank for 1/4", M6=6mm						
<b>Resolution:</b> 128, 256, or 512						
<b>Output Code:</b> A=0-10vdc analog, G=Gray Code, N=Natural Binary						
<b>Rotation:</b> leave blank to increase CW, D=counts decrease for CW rotation.						
<b>Supply Voltage:</b> Analog output: 12-30vdc, Digital output: 5vdc						
<b>Special Features:</b> SPI=Serial Peripheral Interface M__=Modification Number Call or see our website for more information.						
<b>Accessories:</b> leave blank for no accessories. Call or see our website for more information.						

Example: SR12-512N/5 - 1/4" shaft, 512 resolution, natural binary code, counts increase for CW rotation, 5vdc supply



602 E. North Street Elburn, IL 60119, USA  
**630-365-7148**  
 Fax: 630-365-7149  
[www.photocraftencoders.com](http://www.photocraftencoders.com)