

# SERIES SL1250

**NorthStar™ brand**

## Bearingless Encoder

### Key Features

- **Bearingless Design Mounts to 250-C Face Motors and Requires only 1.4" of Motor Shaft**
- **Magneto-Resistive Technology Resists Dust, Dirt, Oil, Water and Other Common Contaminants**
- **Single or Dual Isolated Outputs Available**



## SPECIFICATIONS

### STANDARD OPERATING CHARACTERISTICS

**Code:** Incremental  
**Pulses per Revolution:** 64-1024  
**Phasing Sense:** A leads B for Counter-Clockwise rotation (CCW) viewing encoder-mounted end  
**Quadrature Phasing:** 90° ± 22°  
**Symmetry:** 180° ± 54°  
**Index:** 270°, ungated (optional gated to falling B edge)

### ELECTRICAL

**Input Voltage Requirement:** 5-15 or 5-26 Volts DC  
**Current Requirement:**  
 With Electrical Option L or H: 45 mA typical per sensor module plus line driver load  
 With Electrical Option V or 5: 65 mA typical per sensor module plus line driver load  
**Output Signals:**  
 With Elec Option L or H: 5-15 V Line Driver, 150mA  
 With Elec Option V: 5-26 V Line Driver, 100mA  
 With Elec Option 5: 5V Line Driver, 150mA  
**Frequency Response:** 0 - 120kHz Data & Index  
**Electrical Immunity:** 2kV ESD, Reverse Polarity, Short Circuit  
**Connector:** 10 pin industrial duty latching, sealed NEMA 4 & 12, IP65; MS connector or pig-tail

### MECHANICAL

**Shaft Speed:** 5,000 RPM  
**Mounting Configuration:** 12.5" C face mount for NEMA MG1-4 standards (excluding C-Face runout)  
**Housing Material:** Cast Aluminum  
**Acceleration Rate:** 12,000 rpm/sec max  
**Shaft Length Required:** 1.1" min  
**Allowable Shaft End-Play:** ± 0.045"  
**Allowable Shaft Runout:** 0.003" TIR  
**Weight:** 11 lbs.

### ELECTRICAL CONNECTIONS

Signal	Connector Pin	Pigtail Cable	MS 3102E18-IT#
Common	1	Black	F
B	2	Green	B
A	3	Blue	A
Z *	4	Violet	C
No Connection	5	—	E
Vcc (5-15 VDC)	6	Red	D
B	7	Yellow	I
A̅	8	Gray	H
Z *	9	Orange	J
Shield	10	Braid	G

\* Index (Z) optional. See Ordering Information

### ENVIRONMENTAL

**Operating Temperature Range:**  
 Standard: -40°C to +90°C  
 Extended: -40°C to +100°C  
**Storage Temperature Range:** -40°C to +120°C  
**Humidity:** to 98% RH (non-condensing)  
**Shock (Sensor Module):** 1 meter drop test, 30 G's Min  
**Vibration:** 18 G's @ 5-2000 Hz spectrum

**Ordering Information**

To order, complete the model number with code numbers from the table below:

Code 1: Model	Code 2: PPR	Code 3: Index	Code 4: Wheel Bore	Code 5: Termination	Code 6: Electrical	Code 7: Cover/Adapter
<input type="checkbox"/> 1	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>S1 Motor</b>						
Mount Ring, for 12 1/2" NEMA C-Face Motors Single Output	<b>0064</b> <b>0128</b> <b>0256</b> <b>0512</b> <b>1024</b>	<b>L</b> No Index  Available when Code 2 is 0512 or 1024  <b>G</b> Gated Index (Z, Z̄)  <b>Z</b> Differential Index (Z, Z̄)	<b>J04</b> 5/8" bore <b>J05</b> 7/8" bore <b>J06</b> 1.00" bore <b>J07</b> 1-1/8" bore <b>K09</b> 1-3/8" bore <b>K10</b> 1-1/2" bore <b>K11</b> 1-5/8" bore <b>K12</b> 1-3/4" bore <b>K13</b> 1-7/8" bore <b>K14</b> 2.00" bore <b>K15</b> 2-1/8" bore <b>K16</b> 2-1/4" bore <b>K17</b> 2-3/8" bore <b>K18</b> 2-1/2" bore <b>K19</b> 2-7/8" bore Additional Shaft Sizes Available Up to 3.75" Maximum	<b>C</b> Latching Industrial Connector with 1/2" NPT  <b>D</b> 1" extended height Latching industrial connector with 1/2" NPT  <b>M</b> 10 pin MS Connector  <b>P</b> 18" pigtail cable  <b>Q</b> Latching Industrial Connector on 18" pigtail cable	<b>L</b> 5-15V in, 5-15V Line Driver (4428) out  <b>H</b> Same as L with extended temp. to 100°C  <b>V</b> 5-26V in, 5-26V Line Driver (IC-WE) out  <b>5</b> 5-15V in, 5V Line Driver (4428) out  Differential, bidirectional signals (A, Ā, B, B̄)	<b>C</b> No Cover  <b>F</b> Flat Thru-hole cover
<b>D1 Motor</b>						
Mount Ring, for 12 1/2" NEMA C-Face Motors Dual Output						

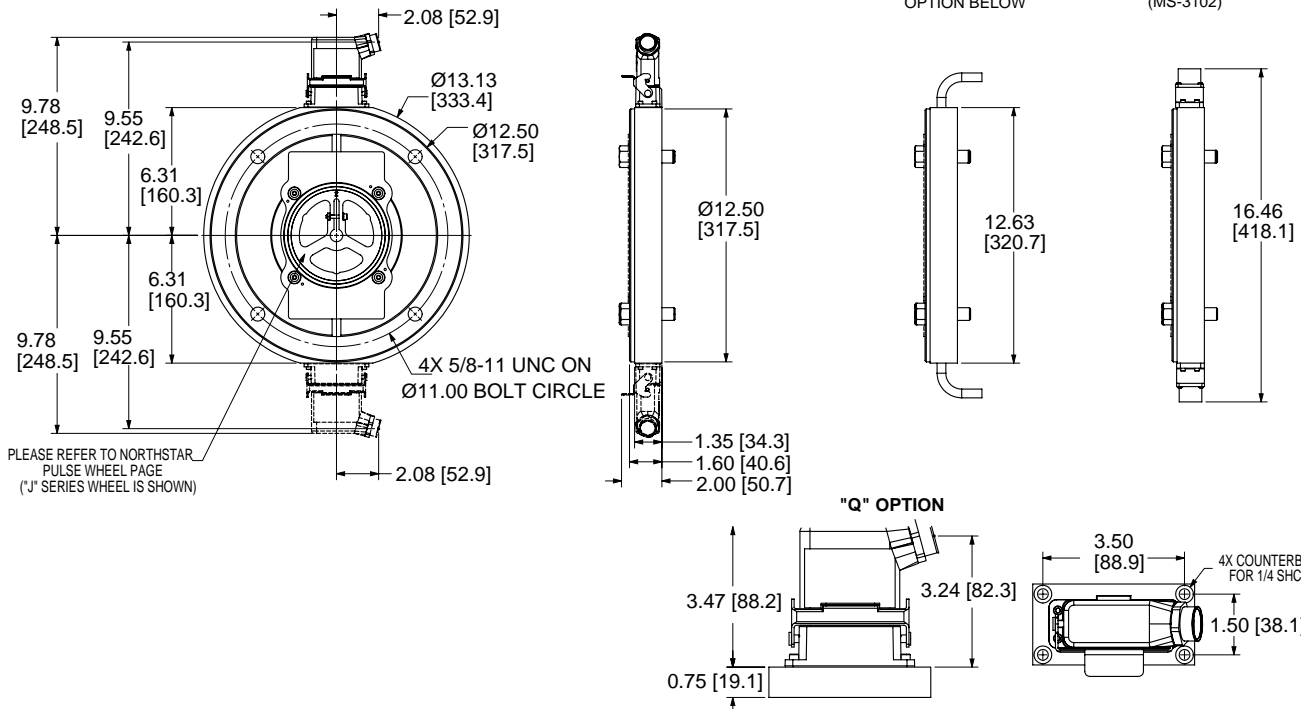
**Note:** See ACCESSORIES Section For Connectors, Spare Parts and Pulse Wheels

**DIMENSIONS** inch [mm]

**C-DECODE:**  
INDUSTRIAL LATCHING CONNECTOR

**P-DECODE:**  
18" PIGTAIL SEE "Q" OPTION BELOW

**M-DECODE:**  
10 PIN MS CONNECTOR (MS-3102)



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