

# SERIES RL67

**NorthStar™ brand**

## Bearingless Encoder

### Key Features

- **Designed for Reliance Motors (6.75" fit and 56 and 140 C-Face)**
- **Magneto-Resistive Technology Resists Dust, Dirt, Oil, Water and Other Contaminants**
- **Anodized Aluminum Housing With Field-Serviceable Connector**
- **New Model Available with Larger Air Gap and Diagnostic LED. See ST67**



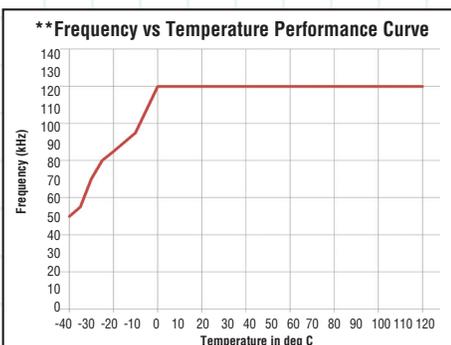
## SPECIFICATIONS

### STANDARD OPERATING CHARACTERISTICS

**Code:** Incremental, Magnetic  
**Pulses per Revolution:** 64-1024 PPR  
**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)  
**Number of Output Modules:** Single

### 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:**  
 4428 Differential Line Driver: 150mA, sink or source  
 IC-WE Differential Line Driver: 150mA, sink or source



### ELECTRICAL (CONT.)

**Frequency Response:** 0 - 120kHz Data & Index. Please refer to our performance curve diagram for frequency and temperature details\*\*  
**Noise Immunity:** Tested to EN61326-1  
**Electrical Immunity:** Reverse polarity and short circuit protected  
**Connector:** 10 pin industrial duty latching, sealed NEMA 4 & 12, IP65

### MECHANICAL

**Bore Size:** 5/8" to 3.75"  
**Mounting Configuration:** 4.5" diameter, 56 C-Face, 140 C-Face Mount or accessory flange to meet NEMA MG1-4 standards or mounts directly in the 6.75" machined accessory recess of the 4.5" accessory flange found on Reliance RPM™ motors  
**Shaft Speed:** 5,000 RPM  
**Shaft Length Required:** 0.7" min  
**Allowable Shaft End-Play:** ± 0.045"  
**Allowable Shaft Runout:** 0.003" TIR  
**Acceleration Rate:** 12,000 rpm/sec max  
**Housing Material:** Cast Aluminum  
**Weight:** 4 lbs

### ENVIRONMENTAL

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

### 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 (+ VDC)	6	Red	D
B̄	7	Yellow	I
Ā	8	Gray	H
Z *	9	Orange	J
Shield	10	Braid	G

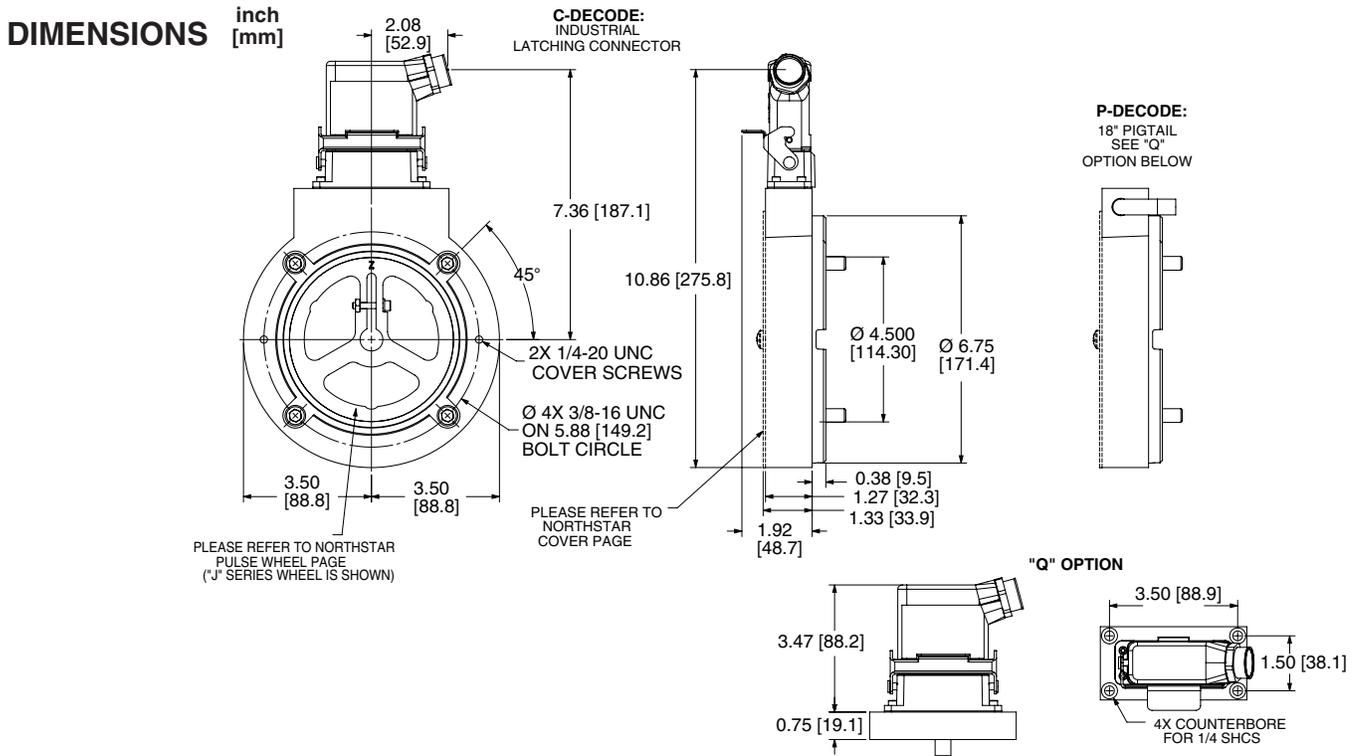
\* Index (Z) optional. See Ordering Information

**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
<b>S6</b>	□□□□	□	□□□	□	□	□
Ordering Information						
<b>S6</b> Motor Mount Ring, for 4 1/2" NEMA 56 C-Face Motors or Reliance Electric Style 6.75" Recess	<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" <b>J05</b> 7/8" <b>J06</b> 1.00" <b>J07</b> 1-1/8" <b>K09</b> 1-3/8" <b>K10</b> 1-1/2" <b>K11</b> 1-5/8" <b>K12</b> 1-3/4" <b>K13</b> 1-7/8" <b>K14</b> 2.00" <b>K15</b> 2-1/8" <b>K16</b> 2-1/4" <b>K17</b> 2-3/8" <b>K18</b> 2-1/2" <b>K19</b> 2-7/8" For additional bore sizes up to 3.75" maximum, please consult factory.	<b>C</b> Latching Industrial Connector with 1/2" NPT <b>F</b> Latching Industrial Connector without Mating Connector <b>M</b> 10 Pin MS Connector <b>P</b> 18" Pigtail Cable <b>Q</b> Latching Industrial Connector on 18" Pigtail Cable <b>R</b> Latching Industrial Connector on 18" Pigtail Cable without Mating Connector	<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> Standard cover <b>F</b> Flat Thru-hole cover

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



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