

# 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:**  $90^\circ \pm 22^\circ$

**Symmetry:**  $180^\circ \pm 54^\circ$

**Index:**  $270^\circ$ , 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:**  $\pm 0.045"$

**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:**  $-40^\circ\text{C}$  to  $+90^\circ\text{C}$

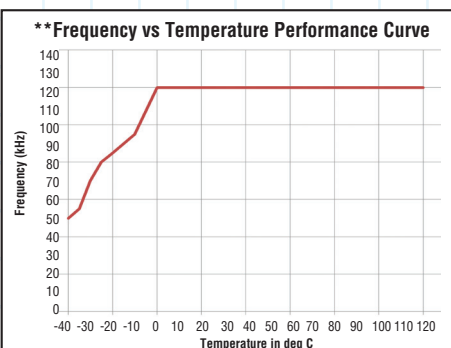
**Extended:**  $-40^\circ\text{C}$  to  $+100^\circ\text{C}$

**Storage Temperature Range:**  $-40^\circ\text{C}$  to  $+120^\circ\text{C}$

**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
B	7	Yellow	I
A	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>	□□□□	□	□□□	□	□	□
<b>Ordering Information</b>						
<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>L</b> No Index	<b>J04</b> 5/8"	<b>C</b> Latching Industrial Connector with 1/2" NPT	<b>L</b> 5-15V in, 5-15V Line Driver (4428) out	<b>C</b> Standard cover
	<b>0128</b>	Available when Code 2 is 0512 or 1024	<b>J05</b> 7/8"	<b>F</b> Latching Industrial Connector without Mating Connector	<b>H</b> Same as L with extended temp. to 100°C	<b>F</b> Flat Thru-hole cover
	<b>0256</b>		<b>J06</b> 1.00"			
	<b>0512</b>	<b>G</b> Gated Index (Z, $\bar{Z}$ ) <b>Z</b> Differential Index (Z, $\bar{Z}$ )	<b>J07</b> 1-1/8"	<b>M</b> 10 Pin MS Connector	<b>V</b> 5-26V in, 5-26V Line Driver (IC-WE) out	
	<b>1024</b>		<b>K09</b> 1-3/8"			
			<b>K10</b> 1-1/2"	<b>P</b> 18" Pigtail Cable	<b>5</b> 5-15V in, 5V Line Driver (4428) out	
			<b>K11</b> 1-5/8"			
			<b>K12</b> 1-3/4"	<b>Q</b> Latching Industrial Connector on 18" Pigtail Cable	Differential, bidirectional signals (A, A, B, B)	
			<b>K13</b> 1-7/8"			
			<b>K14</b> 2.00"	<b>R</b> Latching Industrial Connector on 18" Pigtail Cable without Mating Connector		
			<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.			

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