

# SLIM Tach<sup>®</sup> RL67

Reliance / ©NorthStar modular encoder for RPM<sup>™</sup> DC & AC motors

## Features

- Unique mechanical design for Reliance RPM<sup>™</sup> motors
- Rugged, zero-speed, magnetoresistive sensing technology is unaffected by grease, salt water, dust, and other common contaminants
- Modular, bearingless, low profile “pancake” design adds only 1.5” to motor length
- 5-15 VDC operation with bi-directional quadrature and signals, with high power differential line driver outputs
- 64, 128, 256, 512, 1024, & 2048 pulses per revolution (PPR) with optional Index pulse
- Up to 90°C operational temperature



The **SLIM Tach<sup>®</sup> RL67** heavy duty encoder is a breakthrough innovation in feedback technology. Incorporating dual mounting features, the RL67 was designed especially for Reliance Electric, Inc. RPM<sup>®</sup> AC or DC motors.

## Rugged, Bearingless Construction

The hard anodized aluminum alloy frame provides strength, ruggedness, and corrosion resistance. The hardened encapsulated electronics offer outstanding reliability under heavy machine vibration and accidental impacts. The electronics range from +5 to +15 volts DC and include the latest in short circuit proof design on all output pins. High power, complementary, line driver outputs assure clean, crisp signals over long cable lengths. These outputs are compatible with most drives or other input devices. The advanced magnetoresistive sensing technology operates with an unparalleled immunity to grease, oil, salt water, dirt, fibers, and other contaminants. This eliminates the need to seal the encoder.

## Slim, Simple, Sturdy Design

The compact RL67 adds only 1.5” to the motor length. Designed to maximize the ease of field installation, the RL67 retrofits onto older existing motors as well as new motors. In some cases, it may be necessary to change the accessory stub shaft in the motor. This stub shaft is available from NorthStar.

## Quick and Easy Installation

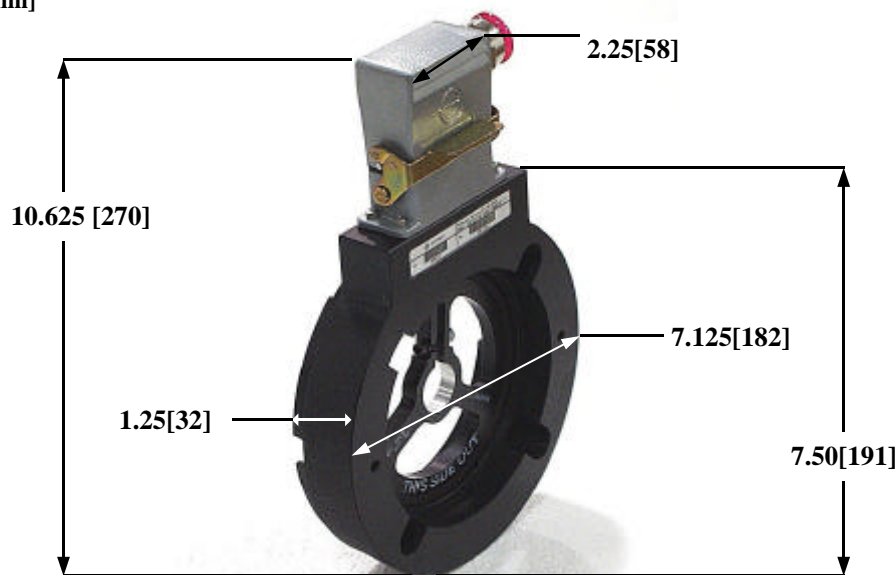
The RL67 will mount directly in the 6.75” machined accessory recess of the 4.5” accessory flange found on the motor. This unique modular design mounts quickly and easily with no adapter plates, bearings, or flexible couplings. Installation can be completed in minutes, without gap adjustments or special tools. The encoder can be removed then reinstalled just as easily.

Electrical Specifications	
Resolution	64, 128, 256, 512, 512Z, 1024, 1024Z, 2048, 2048Z PPR
Frequency Response	Minimum 120 kHz
Pulse Code	A, B, Z (Index ), and complements (A, B, Z)
Output Phases	A phase, B phase: 90° phase gap; Z phase: Once per revolution
Pulse Duty Cycle	50 ± 15% (within defined mechanical specs)
Quadratic Accuracy	90° ± 22°
Output Type	High Speed, Differential Driver
Rise and Fall	Less than 500 ns @ 10,000 pf (typical)
Current Consumption	40 mA typical plus line driver load
ESD Protection	2 kV
Output Current Capability	145 mA typical [350 mA maximum (worst case)]
Cable	22 AWG, 8 conductor, 18" length individually shielded, twisted pair
Input Voltage	+5.0 to +15.0 VDC
Mechanical Specifications	
Maximum Operational Speed	6,000 RPM (120 kHz)
Nominal Air Gap	0.019 inch ± 0.008 inch
Shaft Axial End Play	Up to ± 0.045 inch maximum
Enclosure Configuration	4.5" diameter, 56 C motor face or accessory flange to meet NEMA MG1-4 standards or 6.75" machined recess
Acceleration Rate	12,000 RPM per second
Unit Weight / Dimensions	3lbs. (1.5 kg) / 9.00" (230mm) x 9.00" (230mm) x 4.00" (102mm)
Box Weight / Dimensions	1 lb. (0.46 kg) / 14.25" (6.5mm) x 9.00" (230mm) x 4.25" (2mm)
Environmental Specifications	
Operational Temperature	-40° to + 90° C
Operational Humidity Range	Maximum of 98%
Chemical Resistance	Salt spray, most solvents, mild acids and bases
Vibration	Minimum 18 g's RMS, 5-2000 Hz
Shock (Encoder Housing)	1 meter drop tested, min 30 g's shock spectrum

\*Specifications subject to change without notice.

## Dimensions

inches[mm]



## Ordering Information

### Encoder Type

RL67 RL67

### Pulse Count

512, 512Z, 1024, 1024Z, 2048, 2048Z

### Shaft Size

0.625" thru-shaft clamp style J4  
 0.875" thru-shaft clamp style J5  
 1.000" thru-shaft clamp style J6  
 1.125" thru-shaft clamp style J7  
 1.250" thru-shaft clamp style J8  
 Custom thru-shaft JX

### Connections

18" pigtail cable P  
 Latching industrial connector C  
 Industrial connector on 18" cable Q

### Temperature

90° C standard L

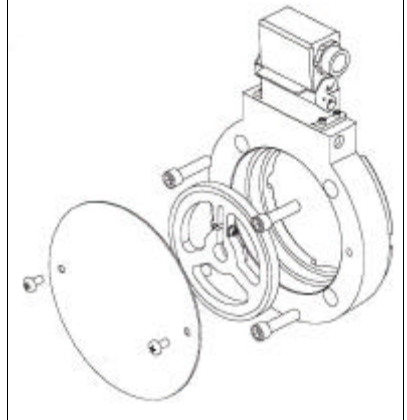
### Mechanical Options

Standard cover —  
 Flat thru-hole cover F  
 Grounding brush assembly G  
 Special instructions X

### Example:

**RL6710224J4CL—**

## Assembly



## Also from ©NorthStar



**RIM Tach® F2V**-a frequency to voltage instrument that converts digital encoder signals to analog DC tachometer format. Old analog tachometers can now be replaced by the digital encoders of today. Accepts inputs from any

line driver encoder or digital tachometer. Outputs of ±10VDC, 0/4-20mA, or ±300VDC, & 10 selectable PPR values & output voltage scales. Auto calibrates to correct drift.