SERIES RIMFV

NorthStar™ brand

Brushless Digital Feedback

Key Features

- Improves Speed Regulation
- Eliminates Drift and Non-Linearities
- Eliminates Temperature Effects
- Easy to Install
- Economical

This product is obsolete and information is available for reference only.

SPECIFICATIONS

All specifications are determined using a 240 PPR Encoder.

INPUT:

1. **Power:** 115 VAC ±15%, approx. 0.25 A
2. **Transformer isolated reluctance input TB1 (6) and (7)**
   a. Impedance: 600 ohms ±20% from 100 to 10,000Hz; 40 ohms DC resistance.
   b. Input Speed: 0 to 3000 RPM at 50 V/1000 RPM
      0 to 3000 RPM at 100 V/1000 RPM
      0 to 1500 RPM at 200 V/1000 RPM
   c. Input Waveform: 0.5 to 5.0 V Sine Wave
3. **Zero Speed Input:**
   a. Impedance: 10 K ohms
   b. Input Speed: Same as above
   c. Input Waveform: 5.0 to 15.0 volts square wave.
   d. Encoder Power: 13.5 VDC @ 100 mA

SIGNAL OUTPUT:

1. **Full Scale Voltage:**
   a. (Bidirectional) 300 ±3 VDC
   b. (Unidirectional) 300 ±3 VDC
   c. 0 VDC at 0 Hz.
2. **Programmable Output Gains:** 50, 100, and 200 volts per 1000 RPM of encoder with 240 pulses per revolution (PPR).
3. **Signal Output Polarity:**
   a. (Bidirectional): Determined by phase order from encoder; i.e., ØA leads ØB for (+) output.
   b. (Unidirectional): Determined by jumper on TB1; i.e., jumper on terminals (12) and (13) of TB1 is (+) output. Remove jumper for (-) output.

OUTPUT LINEARITY: Maximum 0.002% of full scale.

1. **Temperature Drift:** Maximum ±0.05% of full scale from 32 to 140°F
2. **Stability:** Maximum ±0.02% of full scale over 30 days

OUTPUT RIPPLE: Volts peak-to-peak depends upon the input speed. Open loop ripple at 100 V/1000 RPM is .9 VRMS at 25 RPM, 0.15 VRMS at 250 RPM, and 0.1 VRMS at 2500 RPM. This is significantly lower than conventional brush type generators above 25 RPM. Below 25 RPM the ripple amplitude is comparable to DC generators but has less effect on speed because the ripple frequently is higher.

RISE TIME: 0.01 seconds for a step change in frequency. (Time to reach 90% of final value.)

LOAD IMPEDANCE: 100 K ohms (minimum) for full scale 300 VDC output.

LOAD CURRENT: 3mA output current maximum.

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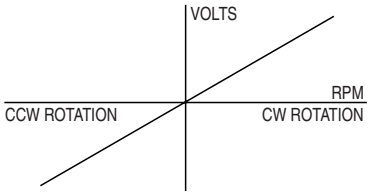
RIMFV Output with NorthStar RIM Tach Digital Encoders
Two styles of encoders are recommended for use with the RIMFV. Recommended NorthStar encoders (RIM6200 & RIM8500) permit direct replacement of analog tachs. RIM6200 may be foot mounted. Encoder selection depends on the output required from the RIMFV and types of service required.

For example:

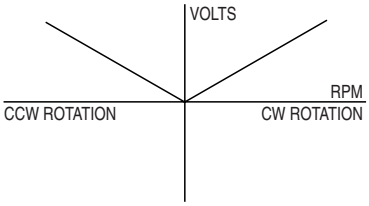
STYLE 1: Two Phase Zero Speed (Example Encoder: RIM6200, RIM8500).

For bidirectional, zero speed applications. The RIMFV output voltage reverses when drive runs backwards. Use with nearly any drive.

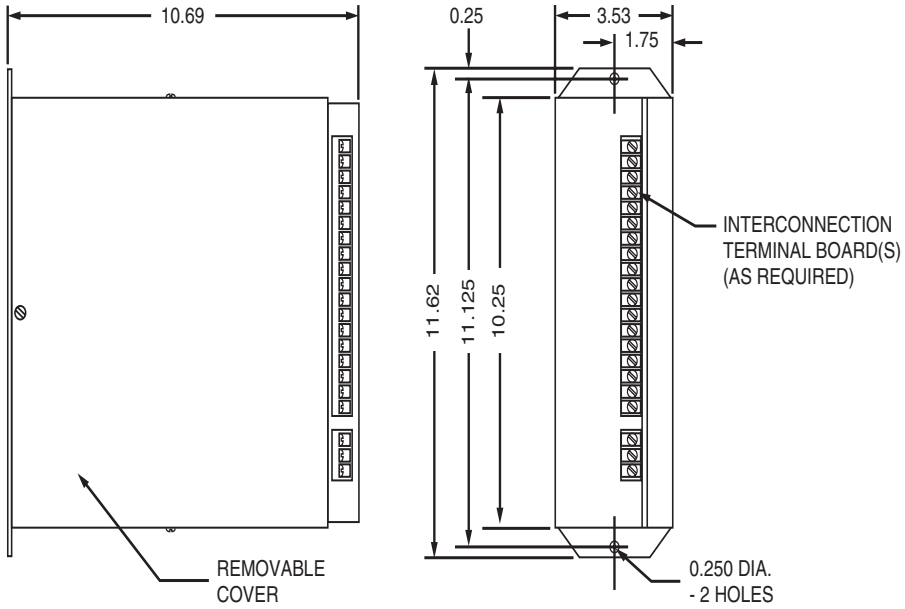


STYLE 2: Single Phase Zero Speed (Example: RIM6200, RIM8500)

For unidirectional, zero speed applications. The RIMFV output voltage does not reverse when drive runs backwards. 3 wire interconnection to RIMFV. Use with non-regenerative drives or drives where tach voltage does not determine rotation direction.



DIMENSIONS



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