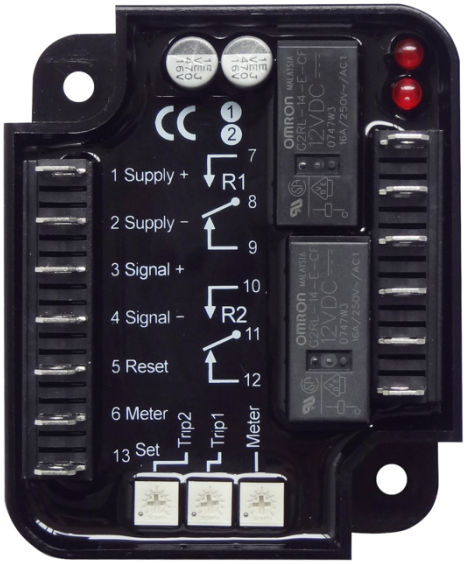
RF103 MKII

SPEED SWITCH CONTROLLER



SPECIFICATIONS

DC SUPPLY
CONTINUOUS VOLTAGE RATING
8 V to 35 V Continuous

CRANKING DROPOUTS
Able to survive 0 V for 50 mS, providing supply was at least 10 V before dropout and supply recovers to 5 V. This is achieved without the need for internal batteries.

MAXIMUM OPERATING CURRENT
95 mA at 12 V, 100 mA at 24 V

MINIMUM OPERATING CURRENT
21 mA at 12 V, 22 mA at 24 V

OUTPUTS
TRIP 1 & 2
16 A at 35 V DC/AC

TACHOMETER
1 mA full scale

ALTERNATOR
VOLTAGE Range
15 V - 333 V AC (L-N) RMS

FREQUENCY RANGE
3.5 Hz to 75 Hz

MAGNETIC PICK UP
VOLTAGE RANGE
+/- 0.7 V to 70 V RMS

FREQUENCY RANGE
10,000 Hz (max)

DIMENSIONS
OVERALL
88 mm x 72 mm x 26 mm
3.4” x 2.8” x 1.0”

1. INPUTS

Number	Pins 5, 13
Arrangement	Contact between terminal and ground
Low level threshold	2.1V minimum
High level threshold	6.6V maximum
Maximum input voltage	+50V DC with respect to plant supply negative
Minimum input voltage	-24V DC with respect to plant supply negative
Contact wetting current	2.5mA typical
Open circuit voltage	12V typical

1.1 FREQUENCY SENSING INPUT HZ , RPM

Measurement type	Frequency
Input Impedance	900K Ω ph-N
Phase to Neutral	15V to 333V AC (max)
Minimum frequency	3.5Hz
Maximum frequency	75.0Hz
Frequency resolution	0.1Hz
Frequency accuracy	±0.2Hz

1.2 MAGNETIC PICKUP

Type	Differential input
Minimum voltage	0.6V RMS
Max common mode voltage	±2V
Maximum frequency	10,000Hz
Resolution	6.25 RPM
Accuracy	±25 RPM

Magnetic Pickup devices can often be ‘shared’ between two or more devices. For example, one device can often supply the signal to both the RF103 MKII speed switch and the engine governor. The possibility of this depends upon the amount of current that the magnetic pickup can supply.

2 SETTINGS AND ADJUSTMENT

2.1 SETTING OF NOMINAL SPEED

- With the RF103 connected, run the engine at nominal speed.
- Connetct terminal 13 to the battery negative for 5 seconds until 2 LEDs illuminate. RF103 will set the Nominal Speed automatically.
- Turn off the power of RF103, and disconnect terminal 13 to battery negative.

2.2 ADJUSTMENT OF TRIP POINTS

- Turn the pre-set potentiometers to set the trip point. The factory setting for Trip 1 is 10% to 50% of nominal engine speed and the default setting for Trip 2 is 90% to 140% of nominal engine speed . The range is adjusted from 0% to 400% of nominal engine speed via the RF Configuration Suite Lite PC Software.
- Turn the pre-set potentionmeters clockwise to increase the appropriate trip point, turn it anti-clockwise to decrease the appropriate trip point.
- The LED illuminate when the trip has been achieved.

2.3 METER CALIBRATION

- Turn the pre-set potentiometer “METER” to set the meter calibration. PWM output is scaled to match the optional tachometer (0 mA to 1 mA range).
- Turn the potentiometer clockwise to increase the meter reading.
- Turn the potentiometer anti-clockwise to decrease the meter reading.

2.4 PC CONFIGURATION

- PC configuration is achieved using the P813 interface and
- RR Configuration Suite Lite PC Software.
- For further information on PC Configuration, please refer to RR publication: ***057-136 103 MKII Speed Switch Software Manual***

3 TYPICAL WIRING DIAGRAM