

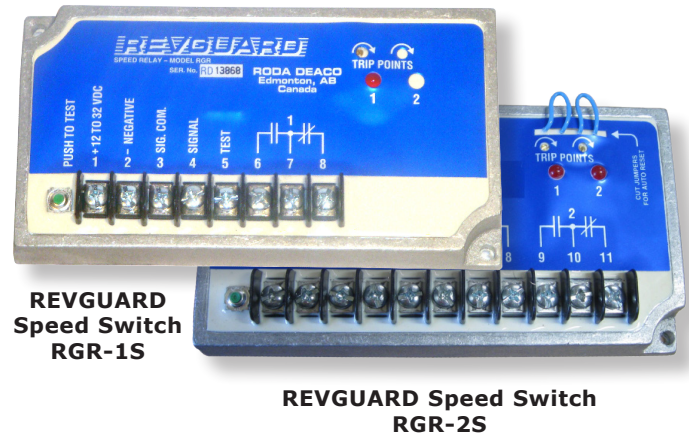
# REVGUARD Speed Switch

## Models RGR-1S and RGR-2S

### Overview

The Chalwyn/Roda Deaco REVGUARD Speed Switch continuously monitors engine RPM.

In the event of an RPM overspeed condition, REVGUARD transmits a signal to quickly close the air intake shutoff valve to shut down the engine and prevent dangerous consequences.



### Key Features and Benefits

- Operates with either alternator pulse or flywheel sensing and at either standard vehicle voltage
- Factory set trip point, easily adjusted in the field
- Built-in test switch simulates overspeed at two thirds RPM setting without over revving engine
- Accurate repeatability of trip point is unaffected by engine load condition
- Provision for remote test switch (see Chalwyn System Selection Guide)
- Auto reset
- LED visual trip indicator
- Normally open and normally closed output contacts rated at 5A
- Operates from 12 VDC to 32 VDC
- Wide operating temperature range -30°C to 75°C (-22°F to 167°F)
- Screw terminals for easy installation
- Aluminium frame for ruggedness
- Polyurethane encapsulated for protection from fuel, moisture, and dirt

### Typical Applications

- Refinery and maintenance vehicles
- Vacuum trucks
- Bulk haulers and road tankers
- LNG refinery support equipment
- Drilling rigs (onshore & offshore)
- Drilling support equipment
- Well servicing equipment
- Underground mining equipment
- Construction equipment
- Generator sets and welders
- Emergency response vehicles
- Aircraft support equipment
- Barges and work boats

**CHALWYN**  
by AMOT

# REVGUARD Speed Switch - RGR

## Operation

The Chalwyn/Roda Deaco Model RGR monitors engine RPM via a magnetic pick-up mounted on the engine's flywheel housing or a tachometer pulse signal from the alternator.

When engine RPMs exceed the RGR's set point, the RGR trips, sending an electrical signal to the intake air shutoff valve.

Two versions of the RGR Speed Switch are available: Single RPM set point; and dual RPM set point.

The RGR includes a test button to temporarily reduce the trip point to two thirds of the desired RPM set point limit. This permits testing the overspeed emergency shutdown system without overspeeding the engine.

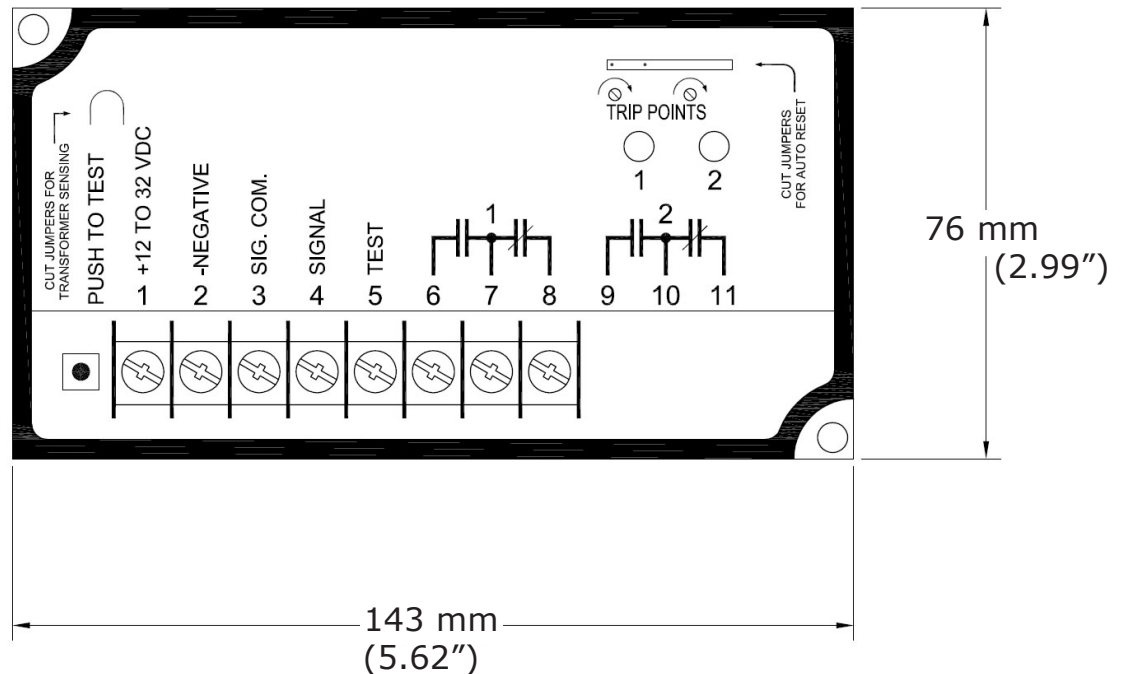
## Specifications

<b>Input Power:</b>	Supply voltage	12V - 32 VDC with reverse polarity protection	
	Max operating current	At 12 VDC	0.07A
		At 24 VDC	0.08A
		At 32 VDC	0.09A
<b>Input Signal:</b>	Frequency range	10 Hz - 8,000 Hz	
	Input signal type	Sine Wave or Square Wave	
	Set points	RGR-1S: 1 set point	RGR-2S: 2 set points
	Set point repeatability	Less than 1% deviation	
<b>Output Signal:</b>	Contact relay	5A at 12 VDC	
	Local trip indication	Red LED	
	RGR-1S: 1 indicator	RGR-2S: 2 set points	
	Automatic reset	at 10% below RPM setpoint	
<b>Testing:</b>	Test function	Reduces set point(s) by $\frac{1}{3}$ while activated	
	Activation	Push button on RGR	
	Provision for remote testing activation		
<b>Physical Properties:</b>	Body material	Aluminium	
	Wire terminals	Plated screw terminals	
	Recommend wire gauge	1.5mm <sup>2</sup>	(14 AWG)
	Operating temperature range	-30°C to 75°C	(-22°F to 167°F)

# REVGUARD Speed Switch - RGR

## Dimensions and Weight

### RGR 1S shown



**Height:** 27 mm (1.06")

**Weight:** 0.23 kg (0.5 lb)

## Installation

For schematic wiring diagrams to connect the RGR-1S to Chalwyn valves, please see Chalwyn System Guide at [www.dieselsafety.com/technical](http://www.dieselsafety.com/technical) downloads.

## How to order

When ordering the Model RGR Speed Switch please provide the following information:

- Specify Chalwyn Model No.: RGR-1S or
- Model No.: RGR-2S if two trip set points are needed

## Available options

- Filter pack RGR-FP for 2010 onwards Ford F Series and vehicles with Bosch 24 V alternator
- AMOT 11408X magnetic flywheel pickup sensor

# REVGUARD Speed Switch - RGR

## Setting Instructions

1. Install components as shown in Chalwyn Systems Selection Guide (see pdf in Technical Downloads in website).

2. (a) For engines using electric 12 or 24 VDC system (i.e. vans, pick-ups, industrial equipment, etc.).

To check manual system: With engine at idle RPM, operate manual toggle switch and the 12/24VDC relay plus solenoid should energize to close the Chalwyn SVX valve. For valves with micro-switch feature, the remote bulb should be lit to indicate that the valve has closed. Ensure that the valve is manually reset before restarting engine.

(b) For engines using compressed air for actuation (i.e. larger trucks with air brakes and 24 VDC system).

To check manual system: With engine at idle RPM, operate manual toggle switch and SVA-200 air solenoid should energize to pass air pressure to PVX or MPX Intake Shutoff Valve and stop engine. Reset Chalwyn MPX Valve before attempting to start engine. With automatic reset PVX versions wait until valve has rotated to open position as visible from the yellow position indicator on top of the valve before restarting engine.

3. To check functional operation of the Automatic Overspeed Detection System:

a. Disconnect wire from Speed Switch terminal #6 to allow speed setting without the Chalwyn valve being operated.

b. With engine at idle RPM, observe indicator light on RGR-1S speed switch. If indicator light is on, turn RPM setting screw clockwise until indicator light goes out. Raise engine RPM slightly and the indicator light should come on.

c. With engine at idle RPM, turn RPM adjusting screw clockwise one turn and increase engine RPM. The indicator light should now come on at a higher RPM than in paragraph b.

This indicates that the speed switch is following the engine RPM and the automatic system can now be set. If the indicator light will not come on with an increase in RPM, the system is not working properly, several checks should be made:

i. Check the lead wires from the magnetic pickup to the speed switch. The ground (common) wire should be on terminal #3, the signal wire should be on terminal #4. If using an AC Lead from the alternator, the wire should be on terminal #4.

ii. Check for 12/24 VDC power supply on terminals #1 and #7.

iii. Check for proper ground on terminal #2.

c. Proceed with Check Automatic System as per paragraph #3.

4. To set automatic system, leave #6 wire disconnected from speed switch, and:

a. Turn adjusting screw clockwise out of range, about 3 - 4 turns.

b. Increase engine RPM to full governed RPM, indicator light should not be on, and if it is, turn clockwise several more turns until it goes out.

c. Hold engine at full RPM and turn adjusting screw counter-clockwise (anti-clockwise) until the indicator light just comes on. At this point, turn adjusting screw  $\frac{1}{2}$  to  $\frac{3}{4}$  turn clockwise. This puts the overspeed set RPM slightly above the governed RPM. Return engine to idle.

d. To check the actual overspeed RPM at this setting, depress and hold the green test button on the speed switch. Increase engine RPM slowly until the indicator light comes on and observe RPM.

This RPM is  $\frac{2}{3}$  of the actual overspeed RPM. (i.e. if, with the test button depressed, the indicator light goes on at 1500 RPM, the overspeed RPM will be 2250 RPM. If the Indicator light goes on at 1600 RPM, the overspeed RPM will be 2400 RPM, etc.)

e. If the overspeed RPM is too low or too high, repeat step 4.c.

5. Reconnect #6 power output wire to speed switch terminal #6.

6. Caution should be taken when actuating Chalwyn Valve at full engine RPM as frequent high RPM shutdowns may affect engine.

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