



# Delta Speed Sensor

**MODEL: DE097**

The DE-097 Speed Sensor is a small DIN Rail Mounted unit intended for standby alternators, generators, and Pumps. It is housed in DIN Rail Mount case with aluminium cover plate. Terminal connections are made via a pluggable 16-way terminal block. The DE-097 provides monitoring of four different engine speeds. Typically these are: Zero Rpm, Starter Cut Out (SCO), Under Speed (US), and Over Speed (OS).

The DE-097 has an LCD Display for indicating the Current Engine RPM, SCO, US, and OS settings. The following settings can be adjusted using the Keypad:

- Zero Rpm
- SCO Rpm
- US Rpm
- OS Rpm
- Number Of Teeth on the Flywheel
- Over Speed Latch (ON or OFF)

NOTE: These settings will not be lost in the event of Power Loss.

Relays are ENERGISED when the Engine RPM is above the respective set speed, and DE-ENERGISED otherwise. When Over Speed Latch is set to "ON", power must be removed from the unit in order to reset the Over Speed relay. The Zero Rpm setting is used to detect when the engine has stopped – this setting is adjustable and not set to 0 due to irregularity of the Input Signal at Low Engine RPM.

<i>Supply voltage:</i>	12 / 24V DC (Specify when ordering)
<i>Signal Source:</i>	Magnetic pickup sensing ring gear rotation. May be paralleled with governor.
<i>Relay contacts:</i>	One changeover on Zero RPM
	One change over on Starter Cut Out
	One change over on Under Speed
	One change over on Over Speed
<i>Contact rating:</i>	Change Over contact: 8A resistive loading, 4A inductive.
<i>Indicators:</i>	LEDs for each Relay (LED on when Relay is Energised)
	Character LCD Display
<i>Programming:</i>	Zero RPM
	Starter Cut Out
	Under Speed
	Over Speed
	Number of Teeth on Ring gear
	Over Speed Latch ON / OFF
<i>Controls:</i>	Keypad – INCREASE, OK, DECREASE

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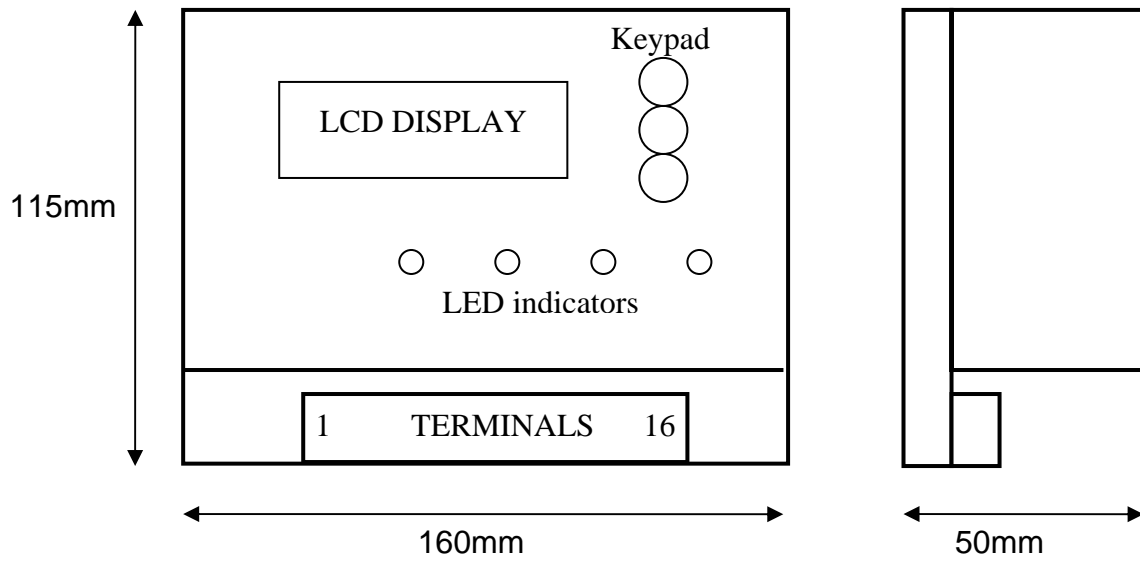
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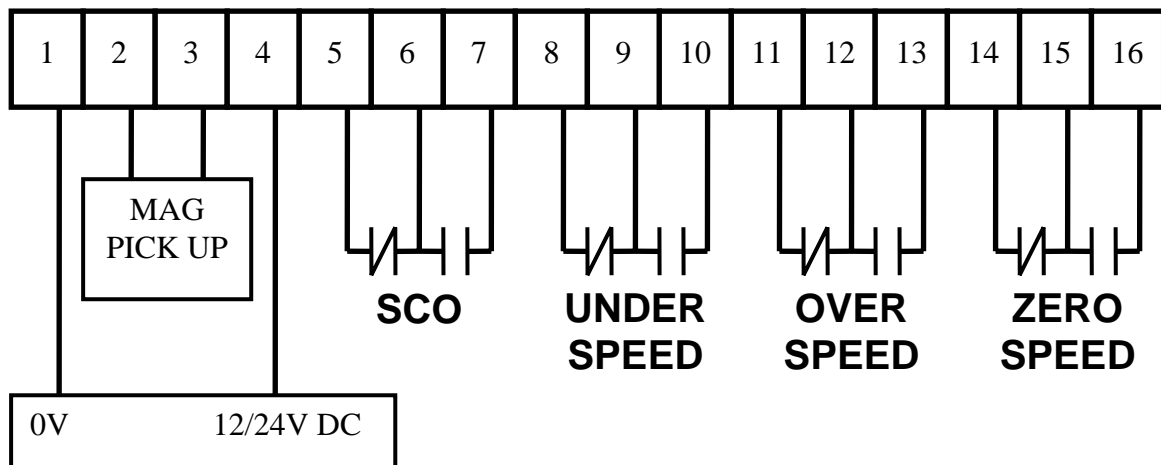
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## DIMENSIONS



## TERMINATIONS



# Calibration

NOTE:		PRESET VALUE
Ring Gear Teeth	- Number of Teeth on the Flywheel Ring Gear	150 teeth
OS LATCH	- Over Speed Latch	OFF
ZERO	- Zero Rpm Speed	10 RPM
SCO	- Starter Cut Out speed	350 RPM
US	- Under Speed	1350 RPM
OS	- Over Speed	1850 RPM

When power is connected to the DE-097 Speed Sensor the following is displayed on the LCD:

SPEED SWITCH  
TYPE DE-097

Then...

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VERSION 5.0

After the above message is displayed, the unit will then display the current settings and engine RPM.

RPM: 0 US:1350  
SCO: 500 OS:1850

## SETUP:

1. Remove power to the DE-097 unit.
2. Hold the “INC” and “DEC” buttons down and restore power to the unit. The same as above will be displayed, then the following will be displayed:

CALIBRATION MODE

3. Release the buttons and following will be displayed:

GEAR TEETH: 150  
OS LATCH: OFF

To adjust the setting as indicated by the flashing cursor, press the INC or DEC button.

NOTE: The Zero setting adjusts by units of 10.  
SCO, OS, and US adjust by units of 50.  
Ring Gear Teeth adjusts by 1.  
OS Latch indicated by “ON” or “OFF”

4. After the OS Latch is set, the following is displayed:

ZRO: 10 US:1350  
SCO: 500 OS:1850

5. Press the “OK” button to save the current adjustable setting and move on to the next. Adjustments flow according to: Ring Gear Teeth – OS Latch – ZERO – SCO – US – OS — Returns to RPM screen.