

# OS77 Series Single Set Point Switch Installation and Operation Instructions

OS-98001N  
Effective 04-98  
Section 20  
00-02-0303



Please read the following information before installing. A visual inspection of this product for damage during shipping is recommended before mounting. It is your responsibility to have a qualified person install this unit and make sure it conforms to NEC and local codes.

## GENERAL INFORMATION

### WARNING

#### BEFORE BEGINNING INSTALLATION OF THIS MURPHY PRODUCT

- ✓ Disconnect all electrical power to the machine.
- ✓ Make sure the machine cannot operate during installation.
- ✓ Follow all safety warnings of the machine manufacturer.
- ✓ Read and follow all installation instructions.

### Description

The OS77 Series single set point speed switch is a compact, all-electronic, speed sensing module. It is field adjustable and can be panel mounted via its trip set point potentiometer.

Standard OS77 models provide a transistor output when tripped. Models with a relay output are available.

The OS77 is used for protecting the engine from excessive or insufficient operating speeds. As the engine speed reaches the adjustable set point setting, the OS77 will cause the engine to shutdown.

Models are available with Normally Open or Normally Closed circuit and available recrank feature which inhibits starter re-engagement until the engine speed is near zero RPM.

### Specifications

**Power Supply:** Voltage: 7-28 VDC.

Maximum Current: 100 mA.

#### Frequency Signal:

Voltage, Magnetic Pickup Signal Models

- Minimum: 1.2 Vrms
- Maximum: 30 Vrms

Voltage, Distributor Ignition Models

- Minimum: 6 Vrms
- Maximum: 30 Vrms

Maximum Current, Magnetic Pickup Signal Models: 0.12 mA

Maximum Current, Distributor Ignition Models: 0.12 mA

Adjustment Range, Magnetic Pickup Signal Models: 1000-10,000 Hz

Adjustment Range, Distributor Ignition Models: 40-400 Hz

Reset Differential, Magnetic Pickup Signal Models

- Non-recrank model: 10 Hz Differential
- Recrank model: dropout 54 Hz

Reset Differential, Distributor Ignition Models

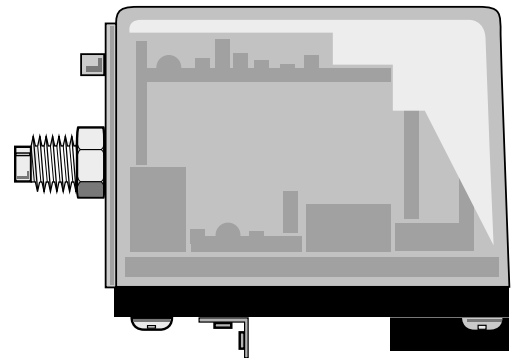
- Non-recrank model: 10 Hz Differential
- Recrank model: dropout 2.4 Hz

#### Output:

- Transistor Sink to Ground Resistive Load: 2 A, 28 VDC
- Relay Output Models: 5 A, 250 VAC

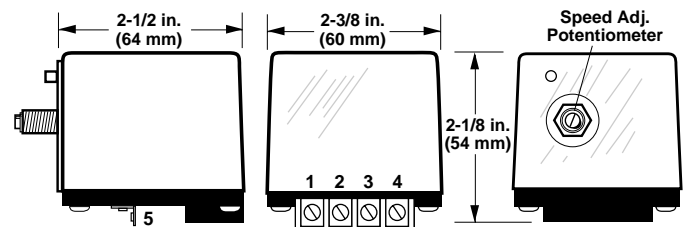
**Adjustment:** 270°-turn potentiometer

**Temperature Range:** -13° to 185°F (-25° to 85°C)

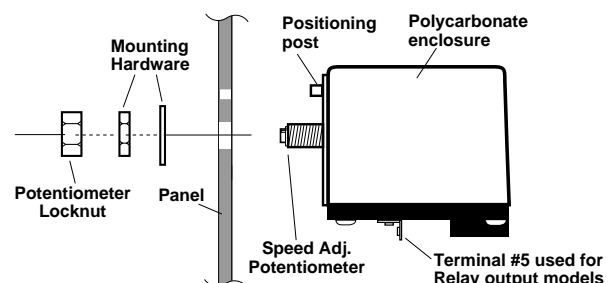


OS77 Series

### OS77 Module Dimensions



### Mounting Schematic



### Mounting Instructions

The OS77 module is designed to be mounted in a flat panel.

1. Drill the mounting holes as shown on the template included with the packing.
2. Insert the module from the back side of the panel (refer to schematic above).
3. Secure the OS77 module using the mounting hardware included.

### Installation Accessories

Hardware tools and optional equipment needed to install the OS77:

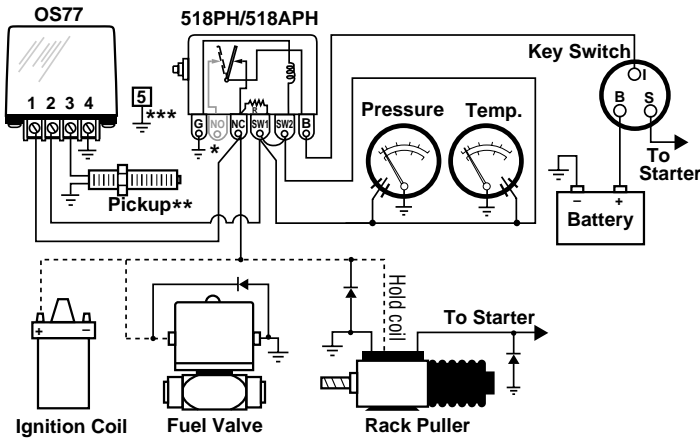
- Tools as needed for system mounting such as drill and screw driver
- 18 AWG wire for extension and hook up
- Wire termination tools and ring or spade wire termination.
- Voltmeter or test lamp for set up and adjustments.

# HOOK UP AND ADJUSTMENTS

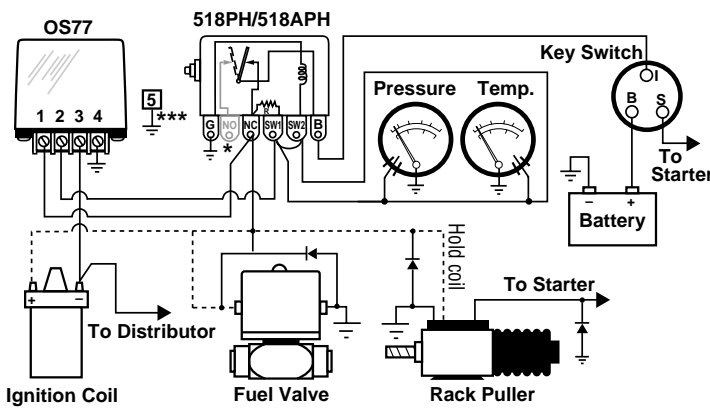
## Wiring the OS77 Series

**WARNING: BEFORE WIRING THE OS77 MAKE SURE THE POWER SOURCE IS OFF AND EQUIPMENT IS STOPPED.**

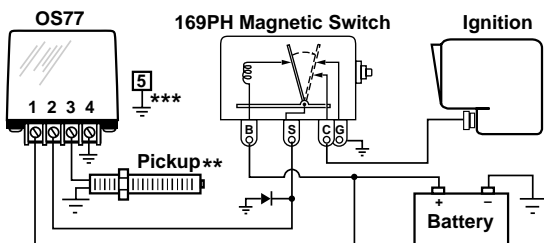
### OS77D Model Typical Wiring Diagram (Negative Ground Only)



### OS77I Typical Wiring Diagram (Distributor Ignition Applications)



### OS77I Typical Wiring Diagram (For Shutting Down Magneto Ignitions)



\* Applies to 518APH model.

\*\* Always use shielded cable.

\*\*\* Applies to Relay output models only. B+ can be switched on Relay output models if desired.

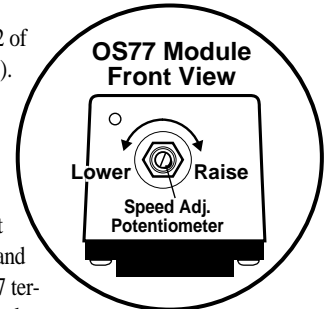
## Setting the OS77 Series

The OS77 Series module must be fully installed and properly wired before attempting any of adjustment steps. These adjustment steps must be performed before the fine tuning can be accomplished and should be performed for first time setup of the OS77.

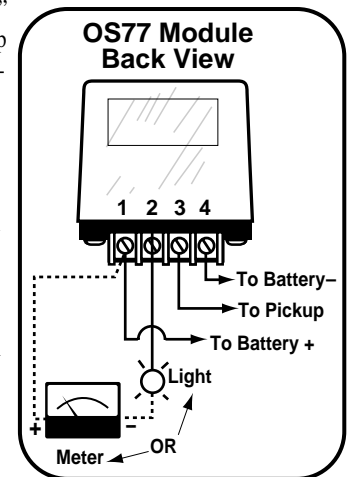
*Note for relay output models only (OS77R): The following instructions assume terminal 5 is grounded. Relay contacts are between terminals 2 & 5.*

1. Turn the "SPEED ADJ." potentiometer fully clockwise (**Detail 1**).
2. Remove the wire from terminal #2 of the OS77 terminal block (**Detail 2**).
3. Start engine and run at the highest RPM desired. This is the RPM at which the engine should be shut-down if exceeded.
4. Connect a Voltmeter or a test light between terminals #1 (positive+) and terminal #2 (negative) of the OS77 terminal block. You should read no voltage or the test lamp will be OFF.
5. Slowly turn the "SPEED ADJ." pot counter-clockwise and stop the INSTANT the battery voltage is indicated on the meter or the test light comes ON.
6. Slowly turn "SPEED ADJ." pot clockwise about 1/8 of an inch. Now, tighten the locknut (bigger nut) on the SPEED ADJ. pot without disturbing the setting.
7. Re-connect the wire to terminal #2 on the OS77 terminal block. This reconnects the SPEED shutdown circuitry.

#### Detail 1



#### Detail 2



*NOTE: If further adjustment (fine tuning) is needed: Turning the SPEED ADJ. pot clockwise, **RAISES** the shutdown point. This allows the engine to run at a **HIGHER RPM**. Turning the SPEED ADJ. counter-clockwise **LOWERS** the shutdown point. This will shutdown the engine at a **LOWER RPM**.*

## Warranty

A two year limited warranty on materials and workmanship is provided with this Murphy product. Details are available on request and are packed with each unit.

In order to consistently bring you the highest quality, full featured products, we reserve the right to change our specifications and designs at any time.

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