



TITLE
INSTRUCTION SHEET
ADJUSTABLE LOW FUEL INDICATOR MODULE

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Features of the Adjustable Fuel Warning Module

- Operates above the SAE temperature and voltage range guidelines.
- Over voltage, over current, and reverse polarity circuit protection.
- Works with or without an existing fuel gauge.
- Variable fuel tank sender unit resistance value selection provided to select the correct range value for the gauge set being used.
- Unit designed to provide a continuous 1-amp output. Typically, a light bulb is driven to indicate low fuel status. However, a relay may also be activated when the device being activated is rated above 1 amp.
- Automatic self-test each time the unit is activated. In the case of using the unit as a low fuel indicator, this would result in a "bulb check".
- Automatic anti-slosh feature. The unit dampens the signal to avoid sudden fuel tank movement from fuel sender float due to harsh road conditions.
- All wiring is high heat and abrasion resistant cross-link polyethylene wire made to withstand -60 F to +275 F temp. ranges without degradation.
- Unit is environmentally sealed for vibration and splash resistance.

Installing the Adjustable Fuel Warning Module

1. Set the desired amount of fuel in your fuel tank.

To set the fuel warning level in your tank, start with an empty tank and add the number of gallons you want in the tank at the time that you want the light (device) to come on. An alternate method is to run the fuel level down to a point on your gauge that you want the light (device) to come on. Typically, low fuel warning is set to 2 to 3 gallons or between "EMPTY" and "1/4 Tank". The best way to ensure the proper notification of a low fuel level is to start with a known amount of fuel as opposed to trusting the reliability of your current fuel level gauge.

2. Connect the Adjustable Fuel Warning Module wires according to the diagram shown above.

- The BLACK wire is connected to a good chassis ground.
- The PINK wire is connected to a 12-volt ignition power source. (One that provides power when the ignition switch is on).
- The TAN wire is connected to the fuel tank sender wire by one of the following methods:
 - Splicing into the existing fuel tank sender lead wire or
 - Connecting to the sender lead wire terminal on the existing fuel tank sender unit or
 - Connecting to the fuel gauge sender terminal on the back of the fuel gauge.
- The YELLOW wire is connected to whatever device is to be activated when the desired low fuel level has been reached. This YELLOW wire is a GROUND lead wire, meaning that when the desired low fuel level is reached, the Adjustable Fuel Warning Module internal circuitry completes the YELLOW wire circuit to GROUND. Therefore, the YELLOW wire can be used as follows:
 - In most cases it will be connected to the ground side of a 12 to 14 volt indicator light. This will cause the light to come on when the adjusted fuel level has been reached. The positive (+) side of the light should connect to IGN on source.
 - It may also be used to activate a relay by connecting it to the relay coil ground terminal (typically terminal #85 or #86 for a standard ISO mini relay). In this case, the adjusted fuel level activation is used to set a relay to power a device requiring a higher than 1 amp current draw than the Adjustable Fuel Warning Module is designed to handle.

Setting the Adjustable Fuel Warning Module Switches

1. **The DIP switches 1 to 8 are pushed up toward the "ON" label to set the "ON" position. A "BLACK" dot on the chart indicates the "ON" position.**

2. **Set the module DIP switches 1 and 2 on the module as follows:**

DIP switches 1 and 2 are used to set the range and sensitivity of the unit by the resistance value of the tank sender unit being used. If you don't know the resistance value of the tank sender unit, some experimentation will be necessary. There are four (4) possible settings for these DIP switches as shown in Figure 1 below. If you know the resistance value of the tank sender unit, set the DIP switches according to the chart. If you do not know the tank sender unit resistance value, either test your sender with an ohm meter, or start with DIP switch 1 and 2 in the OFF positions. Final adjustments will be made when you proceed to the module Tuning section below. For example, the module in the diagram is set for a tank sender having an ohm resistance rating of 0-30 or 0-90 ohms. This is a common GM sender specification.

3. **Set the module DIP switches 3, 4, 5 and 6 on the module as follows:**

DIP switches 3 through 6 are used to set the polarity of the tank sender unit being used. The DIP switches must be set according to the chart shown on the module and in Figure 1 below. DIP switches 3 and 5 set positive polarity. DIP switches 4 and 6 set negative polarity. Generally speaking, the polarity can be determined by the way the tank resistance value is specified (low to high is considered positive polarity and high to low is considered negative polarity. As a general rule, All General Motors senders utilize positive polarity, Ford and Chrysler can be either.

Figure 1 - DIP switch 1 - 6 settings							
DIP1	DIP2	DIP3	DIP4	DIP5	DIP6	POLARITY	VALUE
OFF	OFF	ON	OFF	ON	OFF	POS	10 - 180 ohms (upper range)
ON	ON	ON	OFF	ON	OFF	POS	10 - 180 ohms (lower range)
OFF	ON	ON	OFF	ON	OFF	POS	0 - 30 ohms or 0 - 90 ohms
ON	OFF	OFF	ON	OFF	ON	NEG	240 - 33 ohms

4. **Set the module DIP switch 7 on the module as follows:**

DIP switch 7 must initially be set to the "ON" (up) position as the initial setting. This sets the anti-slosh feature to the "FAST" setting for initial adjustment. Once calibration is done, you may turn switch off to enable anti-slosh feature and avoid nuisance triggering as desired.

5. **Set the module DIP switch 8 on the module as follows:**

DIP switch 8 is normally set to "OFF" when a fuel gauge is being used. This is the most common setting. In the rare instance when no fuel gauge is used, DIP switch 8 is set to the "ON" position.

Tuning the Adjustable Fuel Warning Module

1. **Turn the ignition switch on to provide power to the Adjustable Fuel Warning module.**

2. **Turn the Adjustment Dial slowly until the low fuel warning light or device being activated comes on.**

It is possible that the Adjustment Dial will not be able to be set at a point that activates the warning circuit using the initial resistance settings of DIP switch 1 and 2. In this case, it is probable that the point selected is not in the range of circuit resistance selected by DIP switches 1 and 2. As the ranges of resistance values overlap as shown in the fuel tank sender versus Adjustable Fuel Warning Module analysis chart shown below, it may be necessary to select a different resistance value range with DIP switches 1 and 2 and repeat the procedure of adjusting the Adjustment Dial. Because of the range overlap it is also possible to set the activation point in more than one resistance value range. This is perfectly acceptable as the resistance value of the activation point is technically the same. This can happen due to the range overlap of the desired activation value, manufacturing tolerances of the fuel tank sending units, and variations in tank unit resistance values due to age or wear. The point is that it may be necessary to switch resistance ranges from the initial setting by trial and error in order to accurately set the activation point.

Figure 2 - Fuel tank sender working ranges versus Module adjustment value ranges							
		SENDER OUTPUT VOLTAGE					
		.2 .4 .6 .8 .0 .2 .4 .6 .8 .0 .2 .4 .6 .8 .0 .2 .4 .6 .8 .0					
	0 - 30 ohms	----- E ----- ! ----- F -----					
	0 - 90 ohms	E ----- ! ----- F					
	10 - 180 ohms	E ----- ! ----- F					
	240 - 33 ohms	----- F ----- ! ----- E					
DIP1	DIP2	DIP3	DIP4	DIP5	DIP6	POLARITY	VALUE
OFF	OFF	ON	OFF	ON	OFF	POS	10 - 180 ohms (upper range)
ON	ON	ON	OFF	ON	OFF	POS	10 - 180 ohms (lower range)
OFF	ON	ON	OFF	ON	OFF	POS	0 - 30 ohms or 0 - 90 ohms
ON	OFF	OFF	ON	OFF	ON	NEG	240 - 33 ohms

3. **Set the desired option for the "Anti-slosh" feature.**

To use the anti-slosh feature which dampens the signal on the Yellow wire to prevent flickering due to fuel slosh in the fuel tank, set DIP switch 7 to the "OFF" (down) position.