

# INSTALLATION INSTRUCTIONS

## ELITE SERIES

### FULL SWEEP ELECTRIC FUEL LEVEL GAUGE

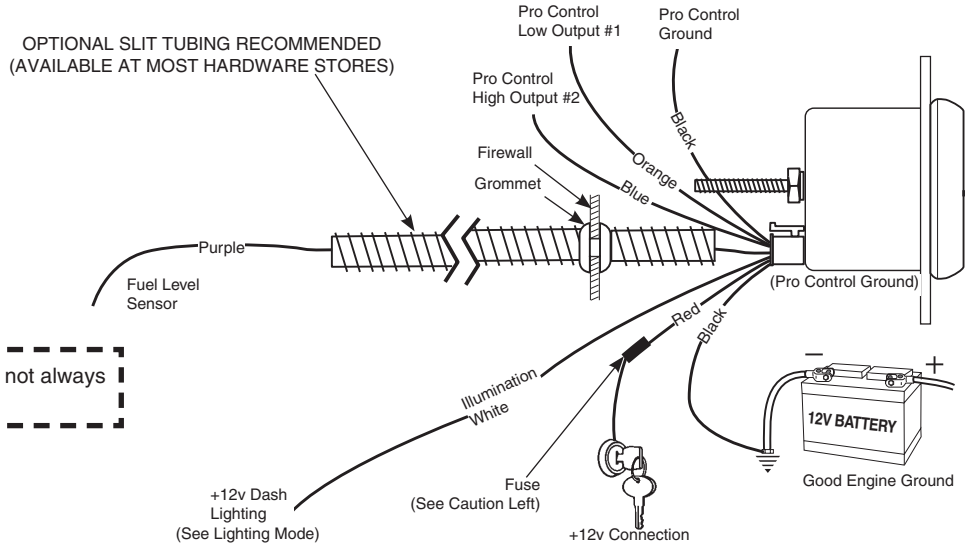
2650-1443-00



#### CAUTION!

As a safety precaution, the +12V terminal of this product should be fused before connecting to the 12V ignition switch. We recommend using a 1 Amp, 3AG fast-acting type cartridge fuse (Littlefuse® # 312 001 or an equivalent).

**NOTE:** When the ignition is off the pointer may not always rest at zero.



## Installation - Fuel Level

1. Check that you have all parts required for installation, and the engine is cool.
2. Disconnect the negative (-) battery cable.
3. Gauge mounts in a 2<sup>5</sup>/<sub>8</sub>" hole for 2<sup>5</sup>/<sub>8</sub>" gauges, and a 2<sup>1</sup>/<sub>16</sub>" hole for 2<sup>1</sup>/<sub>16</sub>" gauges. Use supplied brackets and nuts to secure gauge to dash.
4. Drill 1" diameter hole where wires pass through sheet metal (such as firewall) and install rubber grommet provided. (Grommet will require slit.)
5. Connect the white wire to dash lighting or switchable 12v light source, the red wire to switched +12V source and the black wire to ground. (see diagram for details)
6. Connect purple wire to fuel level sender, making sure that the sender is grounded.
7. Reconnect negative (-) battery cable.

## Setting the Sender Type

1. The gauge ships pre-programmed to read GM 0-90 ohm senders.
2. If any other sender type is required press and hold the "A" button and apply power to the gauge. Keep holding the "A" button until the dial illuminates blue (about 15 seconds).
3. Release the "A" button, the dial will move to the 1/8 tank mark indicating the current selected sender.
4. Press the "A" button to move the pointer down to the next 1/8 tank mark or press the "B" button to move up to the next 1/8 tank mark stopping at the desired sender type (see chart below). Holding the "A" or "B" button will allow the pointer to sweep in the selected direction stopping briefly at each 1/8 tank mark.
5. When the desired selection is indicated remove power from the gauge to store the new sender type by turning off ignition switch.
6. Re-apply power to the gauge, and confirm that it reads the proper fuel level. If the proper fuel level is not read, return to step 3 and recalibrate. If the proper fuel level is still not indicated, perform Custom Sender Calibration. If there is still no proper function, the sender circuit may need diagnosis. Please call our technical support for assistance.

## Custom Sender Calibration

The fuel level gauge can be custom calibrated to accurately display the output from any fuel level sender with an output between 0 and 270 ohms.

1. Make sure the fuel level sender is connected to the gauge and that the fuel tank is empty, or nearly empty, before proceeding.
2. Press and hold the "A" button and apply power to the gauge. Keep holding the "A" button until the dial illuminates blue (about 15 seconds).
3. Release the "A" button, the dial will move to the 1/8 tank mark indicating the current selected sender (see chart below).
4. Press and hold the "B" button until the pointer sweeps to the 7/8 tank mark. This will select the custom sender.
5. Remove power from the gauge to enter custom calibration mode.
6. Re-apply power to the gauge, the pointer will move to a position just below the empty mark, indicating that the empty calibration point can be entered.
7. With an empty or nearly empty tank, capture the empty calibration point by momentarily (less than one second) pushing the "A" button. After approximately 1 second, the pointer will move to just above the full mark.
8. Fill the tank and momentarily (less than one second) press "B" button to capture the full calibration point. After approximately one second, the gauge will reset, and begin reading fuel level per the custom calibration.
9. Confirm that the gauge reads the proper fuel level.
10. If proper fuel level is not read, return to step 2 and recalibrate.

## Sender Error

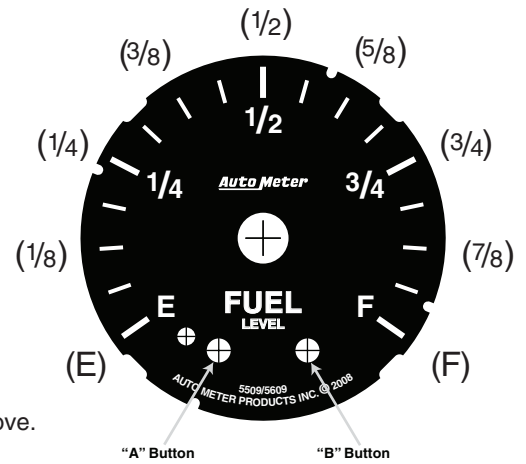
If no sender is connected, the pointer will move to the empty position indicating an error. Approximately 4 seconds after the sender is connected, the pointer will move to the indicated fuel level and will resume normal operation.

## Sender Select Chart

| Sender Type                        |                | Pointer Position |
|------------------------------------|----------------|------------------|
| Ford Pre-'89, Chrysler             | 73 - 10 ohms   | E                |
| Ford '89 - Present                 | 16 - 158 ohms  | 1/8              |
| GM Pre-'65                         | 0 - 30 ohms    | 1/4              |
| GM '65 - Present*                  | 0 - 90 ohms    | 3/8              |
| Auto Meter Sender                  | 240 - 33 ohms  | 1/2              |
| Eclipse '90 - '02, Civic '88 - '00 | 107.5 - 7 ohms | 5/8              |
| Civic '01 - Present                | 131 - 12 ohms  | 3/4              |
| Custom Calibration                 |                | 7/8              |

\* Starting in '98, some GM models began using a different sender type.

If this calibration is not accurate, perform Custom Sender Calibration as described above.



## Power-Up

The pointer will move counter clockwise to the stop pin and then moves to the current gauge reading. This procedure is an auto-calibration function and is performed on every power-up. While this test is being performed, the gauge may make a clicking sound. This is normal.

## Peak Recall

Press and hold the **B** button to recall the highest fuel level reading since the memory was last cleared. To clear the memory, press and hold the **B** button, and while still holding the **B** button, press the **A** button. The pointer will move to the stop pin to indicate that the memory has been cleared. Release the **B** and **A** buttons to resume normal operation. The peak recall point is retained when power is removed from the gauge.

## Full Dial Warning

This gauge features full dial warning. When a warning point is reached, the entire dial illuminates in the programmed warning color. This feature is available for both a high and low warning set point. In addition, the warning color will flash when an over warn point is reached.

## Pro Control High Warning Set Point

To adjust the high warning set point, press and release the **A** button. The warning light will begin to flash and the pointer will move to the previous high warning set point signifying that warning set mode has been selected. Once in set mode, press the **A** button to move the pointer down, or press the **B** button to move the pointer up. Three seconds after the last button press, the warning light will stop blinking and the pointer will return to the current reading. The warning set points are retained when power is removed from the gauge.

## Pro Control High Over Warn Set Point

To adjust the high over warn set point, press and hold the **A** button. After three seconds the warning light will begin to flash and the pointer will move to the previous high over warning set point signifying that over warn set mode has been selected. Release the warn button. Once in set mode, press the **A** button to move the pointer down, or press the **B** button to move the pointer up. Three seconds after the last button press, the warning light will stop blinking and the pointer will return to the current reading. The over warn set points are retained when power is removed from the gauge.

## Pro Control Low Warning Set Point

To adjust the low warning set point, press and hold the **A** button, and while still holding the **A** button, press and release the **B** button. The warning light will begin to flash and the pointer will move to the previous low warning set point signifying that warning set mode has been selected. Once in set mode, press the **A** button to move the pointer down, or press the **B** button to move the pointer up. Three seconds after the last button press, the warning light will stop blinking and the pointer will return to the current reading. The warning set points are retained when power is removed from the gauge.

## Pro Control Low Over Warn Set Point

To adjust the low over warn set point, press and hold the **A** button, and while still holding the **A** button, immediately press and hold the **B** button. After three seconds the warning light will begin to flash and the pointer will move to the previous low over warning set point signifying that over warn set mode has been selected. Release both buttons. Once in set mode, press the **A** button to move the pointer down, or press the **B** button to move the pointer up. Three seconds after the last button press, the warning light will stop blinking and the pointer will return to the current reading. The over warn set points are retained when power is removed from the gauge.

## Change Backlight Color

### To change the backlight color:

With power off, press and hold the **A** button. Apply power to the gauge. Release the **A** button. Press and release the **B** button. The pointer will move to half scale and the dial will illuminate with the current Backlight Color. Press and hold the **B** button to cycle through the available colors. Once you have selected the desired color, release **B** and don't press any buttons for about three seconds. The dial will flicker white several times to indicate the desired setting has been saved and the gauge will return to normal operation with your new color selection. Color selections are saved when power is off.

# Change Low Warn Color

(Region A color)

## Warn Color Set Mode:

With power off, press and hold the **A** button. Apply power to the gauge. Release the **A** button. The pointer will be at the stop pin and the dial illumination will be off. Press and release the **A** button to cycle between **HIGH** warn color set and **LOW** warn color set modes. In High Warn color set mode, the pointer will move to full scale and the dial will illuminate with the current High Warn color. In Low Warn color

set mode, the pointer moves to the minimum position and the dial will illuminate with the current Low Warn color.

## To change Low Warn Color:

When the Low Warn color set mode has been selected (see above), press and **HOLD** the **A** button to cycle through the available colors. Once you have selected the desired color, release the **A** button. Don't press any buttons for about three seconds. The dial will flicker white several times to indicate the desired setting has been saved and the gauge will return to normal operation with your new Low Warn color selection. Color selections are saved when power is off.

# Change High Warn Color

(Region C color)

## Warn Color Set Mode:

With power off, press and hold the **A** button. Apply power to the gauge. Release the **A** button. The pointer will be at the stop pin and the dial illumination will be off. Press and release the **A** button to cycle between **HIGH** warn color set and **LOW** warn color set modes. In High warn color set mode, the pointer will move to full scale and the dial will illuminate with the current High Warn color. In Low Warn color set mode, the pointer moves to the minimum position and the dial will illuminate with the current Low Warn color.

## To change High Warn Color:

When the High Warn color set mode has been selected (see above), press and hold the **A** button to cycle through the available colors. Once you have selected the desired color, release the **A** button. Don't press any buttons for about three seconds. The dial will flicker white several times to indicate the desired setting has been saved and the gauge will return to normal operation with your new High Warn color selection. Color selections are saved when power is off.

# Lighting Mode

(Region B Color)

This gauge allows the dial lighting to operate in two modes, Full On or Dimmable. Factory default is Full On.

**Full On:** In this mode, the white lighting wire is ignored. The gauge dial lighting is always on at full brightness. (unless you select NO color when setting the Backlight Color). If using Full On mode, white wire hook-up is not needed.

**Dimmable:** In this mode, the white wire is used to set the intensity of the dial lighting from full brightness down to off.

## To change the Lighting Mode:

With power off, press and hold the **B** button. Apply power to the gauge. Release the **B** button and the dial face will illuminate with either white lighting or blue lighting. Press and release the **B** button to toggle between Full On (dial is illuminated white) and Dimmable (dial is illuminated blue). Once you have selected the desired mode, don't press any buttons for about three seconds. The dial will flicker white several times to indicate the desired setting has been saved and the gauge will return to normal operation with your new mode selection. Mode selections are saved when power is off.

# Gauge Reset

It may be desired to reset the gauge. This clears programmable settings to a system default.

With power off, hold in both buttons. Apply power to the gauge, wait two seconds, and release both buttons. The dial face will flicker white several times and return to normal operation. At this point, the gauge has been reset.

## Reset Settings:

High Warning Set Point: Max Value  
Low Warning Set Point: Lowest Value  
Peak: Lowest Value  
High Warning Color: Green  
Low Warning Color: Red  
Backlighting Color: White  
Lighting Mode: Full On  
High Warning Pro Control State: Active High  
Low Warning Pro Control State: Active Low  
High Over Warn Set Point: Max Value  
Low Over Warn Set Point: Lowest Value

# Pro Control Active States

The active region for Pro Control outputs are user configurable. For example, consider a pressure gauge with a low warning set point at 20 PSI. The gauge can be configured so the associated Pro Control output is active when the pointer falls below the set point [less than 20 PSI] (active low) OR when the pointer is beyond the set point [greater than 20 PSI] (active high). Likewise, consider a pressure gauge with high warning set point at 95 PSI. Again, the gauge can be configured so the associated Pro Control is active when the pointer falls below the set point [less than 95 PSI] (active low) OR when the pointer progresses beyond the set point [greater than 95 PSI] (active high).

## To change the active state:

With power off, press and hold the **B** button. Apply power to the gauge. Release the **B** button. Press and release the **A** button. The gauge is now in Active State Set Mode. The pointer will point straight up at the value in the

top center of the dial. Press and release the **A** button to toggle back and forth between the low and high warning point active state modes. Doing so will cause the dial to change back and forth between green and red. When setting the low warning active state the dial face will be green. When setting the high warning active state the dial face will be red.

Once the designated warning mode is selected (green or red) press and hold the **A** button to toggle between active high and active low. As you hold the button the pointer will continuously sweep from the left of center and to the right of center pausing at each side. Left of center is active low and right of center is active high. Release the **A** button when the pointer is in the position of the desired active state. Once you have selected the desired state, don't press any buttons for about three seconds. The dial will flicker white several times to indicate the desired setting has been saved and the gauge will return to normal operation with your new state selection. State selections are saved when power is off.

**NOTE:** The Pro Control Active State does not affect the color of each dial region.

# Pro Control

The Pro Control feature activates a switched ground output at a user defined set point. Pro Control can be used to switch on a relay to activate ignition kill, cooling fans, lamps, alarms, etc. The set points define three regions on the gauge dial, the region below the low set point, between the set points, and above the high set point.

| Low Set Point - ACTIVE STATE LOW (ORANGE WIRE) |                       |                       |                         |                 |
|------------------------------------------------|-----------------------|-----------------------|-------------------------|-----------------|
| Pointer Region                                 | Pro Control Output #1 | Normally Open Contact | Normally Closed Contact | Dial Color      |
| A                                              | Active (ON)           | CLOSED (ON)           | OPEN (OFF)              | Low Warn Color  |
| B                                              | OFF                   | OPEN (OFF)            | CLOSED (ON)             | Backlight Color |
| C                                              | OFF                   | OPEN (OFF)            | CLOSED (ON)             | High Warn Color |

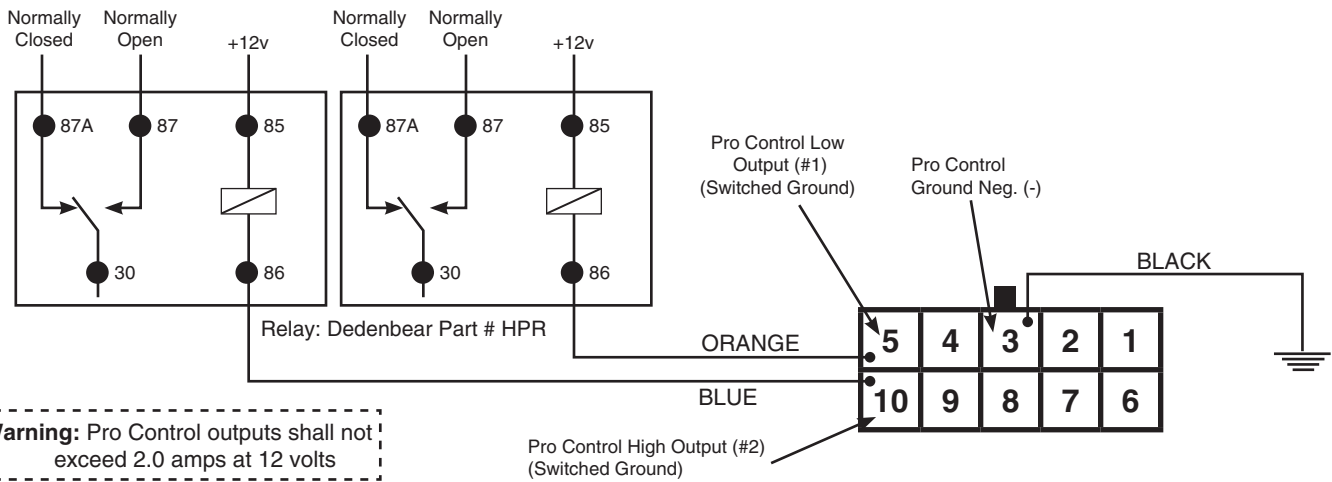
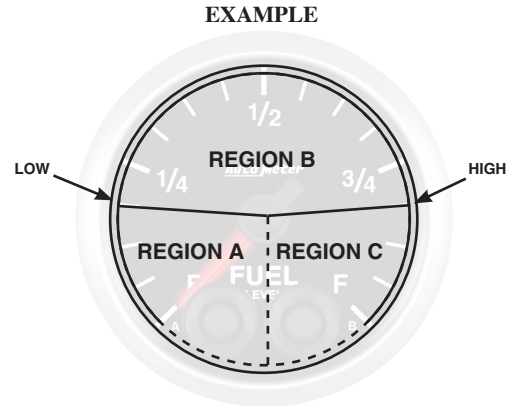
| Low Set Point - ACTIVE STATE HIGH (ORANGE WIRE) |                       |                       |                         |                 |
|-------------------------------------------------|-----------------------|-----------------------|-------------------------|-----------------|
| Pointer Region                                  | Pro Control Output #1 | Normally Open Contact | Normally Closed Contact | Dial Color      |
| A                                               | OFF                   | OPEN (OFF)            | CLOSED (ON)             | Low Warn Color  |
| B                                               | Active (ON)           | CLOSED (ON)           | OPEN (OFF)              | Backlight Color |
| C                                               | Active (ON)           | CLOSED (ON)           | OPEN (OFF)              | High Warn Color |

| High Set Point - ACTIVE STATE HIGH (BLUE WIRE) |                       |                       |                         |                 |
|------------------------------------------------|-----------------------|-----------------------|-------------------------|-----------------|
| Pointer Region                                 | Pro Control Output #2 | Normally Open Contact | Normally Closed Contact | Dial Color      |
| A                                              | OFF                   | OPEN (OFF)            | CLOSED (ON)             | Low Warn Color  |
| B                                              | OFF                   | OPEN (OFF)            | CLOSED (ON)             | Backlight Color |
| C                                              | Active (ON)           | CLOSED (ON)           | OPEN (OFF)              | High Warn Color |

| High Set Point - ACTIVE STATE LOW (BLUE WIRE) |                       |                       |                         |                 |
|-----------------------------------------------|-----------------------|-----------------------|-------------------------|-----------------|
| Pointer Region                                | Pro Control Output #2 | Normally Open Contact | Normally Closed Contact | Dial Color      |
| A                                             | Active (ON)           | CLOSED (ON)           | OPEN (OFF)              | Low Warn Color  |
| B                                             | Active (ON)           | CLOSED (ON)           | OPEN (OFF)              | Backlight Color |
| C                                             | OFF                   | OPEN (OFF)            | CLOSED (ON)             | High Warn Color |



## SERVICE

For service send your product to Auto Meter in a well packed shipping carton. Please include a note explaining what the problem is along with your phone number. Please specify when you need the product back. If you need it back immediately mark the outside of the box "RUSH REPAIR," and Auto Meter will service product within two days after receiving it. (\$10.00 charge will be added to the cost of "RUSH REPAIR.") If you are sending product back for Warranty adjustment, you must include a copy (or original) of your sales receipt from the place of purchase.

## 12 MONTH LIMITED WARRANTY

Auto Meter Products, Inc. warrants to the consumer that all Auto Meter High Performance products will be free from defects in material and workmanship for a period of twelve (12) months from date of the original purchase. Products that fail within this 12 month warranty period will be repaired or replaced at Auto Meter's option to the consumer, when it is determined by Auto Meter Products, Inc. that the product failed due to defects in material or workmanship. This warranty is limited to the repair or replacement of parts in the Auto Meter instruments. In no event shall this warranty exceed the original purchase price of the Auto Meter instruments nor shall Auto Meter Products, Inc. be responsible for special, incidental or consequential damages or costs incurred due to the failure of this product. Warranty claims to Auto Meter must be transportation prepaid and accompanied with dated proof of purchase. This warranty applies only to the original purchaser of product and is non-transferable. All implied warranties shall be limited in duration to the said 12 month warranty period. Breaking the instrument seal, improper use or installation, accident, water damage, abuse, unauthorized repairs or alterations voids this warranty. Auto Meter Products, Inc. disclaims any liability for consequential damages due to breach of any written or implied warranty on all products manufactured by Auto Meter.

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