



**Part Number 30-5131**  
**Analog EGT Gauge**

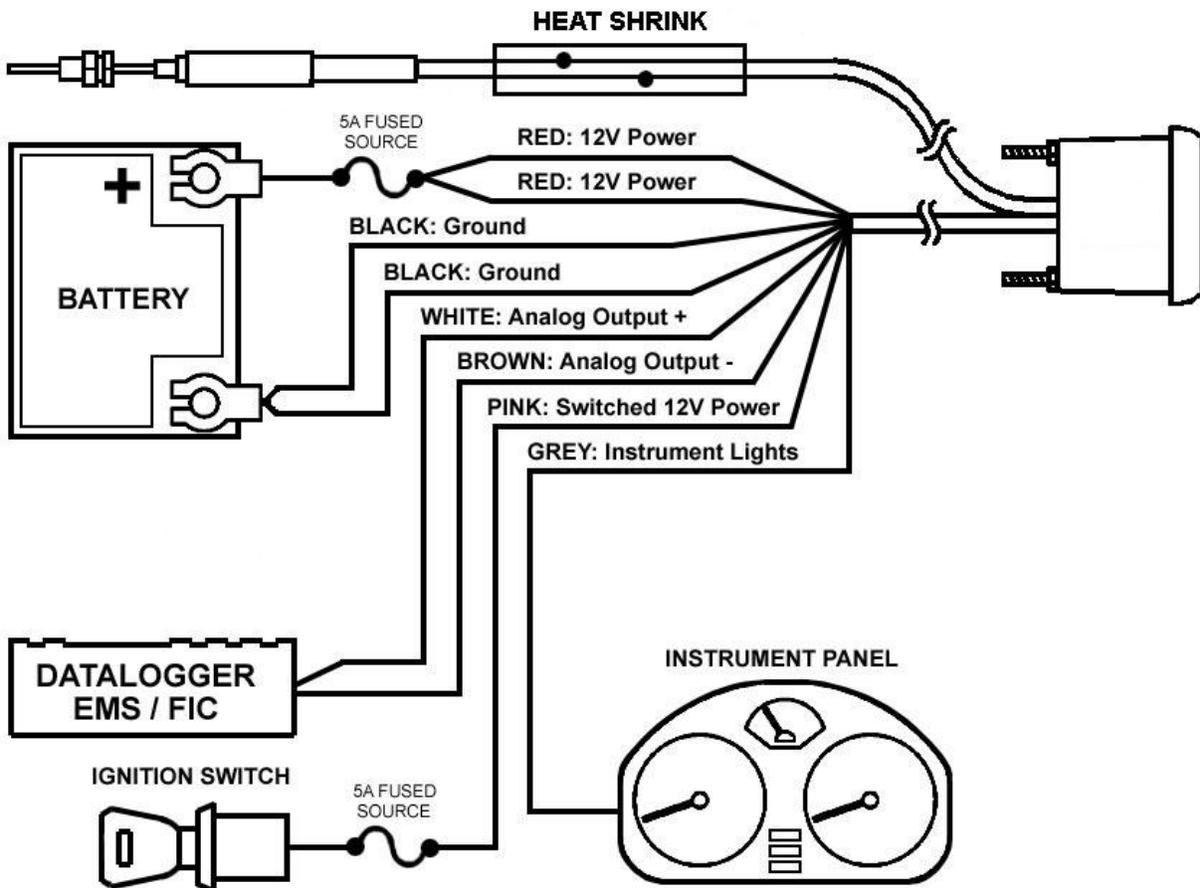


Figure 1. Wiring Schematic

**AEM EGT Gauge Parts**

- 1 x 35-5131(B/W) EGT Gauge Assembly
- 1 x 30-2065 EGT Sensor Thermocouple w/Mount
- 1 x 35-4302 Install Kit (6 Butt Connectors)
- 1 x 10-5131 Installation Instructions
- 1 x 35-3411 8-Pin Power Harness
- 1 x 35-3414 2-Pin Sensor Harness
- 1 x 35-8529S Silver Bezel
- 1 x 6" Heat Shrink
- 2 x 4-40 Hex Nut
- 2 x 4-40 Screw

**AEM Performance Electronics**  
 2205 126<sup>th</sup> Street Unit A, Hawthorne, CA. 90250  
 Phone: (310) 484-2322 Fax: (310) 484-0152  
<http://www.aempower.com>  
 Instruction Part Number: 10-5131 Rev 04  
 © 2009 AEM Performance Electronics

## INSTALLATION

1. Disconnect the negative battery cable.
2. Secure the gauge in a 2 1/16<sup>th</sup> (52MM) mounting hole with the supplied bracket.
3. Plug the 8-wire power harness into the mating connector on the back of the gauge and connect the wires as shown in Figure 1. Note: the locating tabs on the side of the connector should be nearest the center of the gauge.
4. Connect the sensor cable to the gauge. The locating tabs should be closest to the center of the gauge.
5. Mount the thermocouple as shown in figure 2.
6. Slide the heat shrink tube over the sensor cable and connect the thermocouple to the cable as shown below in figure 3.

RED - Connect **BOTH** RED wires to a constant 12 volt power source utilizing a 5A fuse.

BLACK – Connect **BOTH** BLACK wires to a clean ground.

PINK - Connect to a switched 12 volt power source utilizing a 5A fuse.

GREY - Connect to instrument lighting circuit supply voltage.

\*WHITE - Connect to Analog + Input.

\*BROWN - Connect to Analog – input. (Must be connected if Analog + is used)

*\*optional – only needed if using the available differential analog output*

### Wiring notes:

RED - When wired as shown above, the gauge will park the needle upon powering down. Alternatively, both RED wires can be connected to a switched, fused 12 volt power source. With both RED wires and the PINK wire connected to switched power, the needle will remain at its current position upon powering down. For both power connection methods, the needle will rotate to the parked position before rotating to the value of the current operating condition upon powering up.

GREY – The GREY wire is used to control the lighting intensity of the gauge. Maximum lighting intensity is achieved when the GREY wire is connected to 12 volts. Minimum lighting intensity is achieved when the GREY wire is not connected. The instrumentation illumination on many vehicles is controlled by varying the supply voltage to the instrument panel lights. When the GREY wire is connected to the instrument panel supply voltage, the intensity of the gauge is controlled by the dimmer switch on the dash.

WHITE – The WHITE wire should be connected to the Analog + input on the EMS or the analog + input on a similar device.

BROWN – The BROWN wire should be connected to the Analog – input. If the EMS or similar device does not have a – input, the BROWN wire should be connected to a sensor ground. If no sensor ground is available, the BROWN wire should be connected to a power ground. **Note: The BROWN wire must be connected in order to get correct readings from the analog output.**

## Thermocouple Mounting

The thermocouple included in the kit comes with a stainless steel compression style mounting adapter. The mounting adapter consists of three pieces: compression nut, ferrule sleeve, threaded body. The threaded body has 1/8" NPT male threads. To install the sensor, the threaded body can either be threaded into a hole with mating 1/8" NPT threads, or welded to the pipe/manifold. Remove the compression nut, ferrule sleeve, and thermocouple from the threaded body. For a welded installation, drill a 13/32" hole and weld the threaded body, being careful not to cause any distortion. For a threaded installation, either thread the body into an existing hole with 1/8" NPT threads or drill a hole using an "R" size drill bit and cut the threads using a 1/8" NPT tap. With the compression nut and ferrule sleeve on the thermocouple, insert the thermocouple into the threaded body so the tip of the thermocouple is near the center of the pipe/manifold and tighten the compression nut to the threaded body.

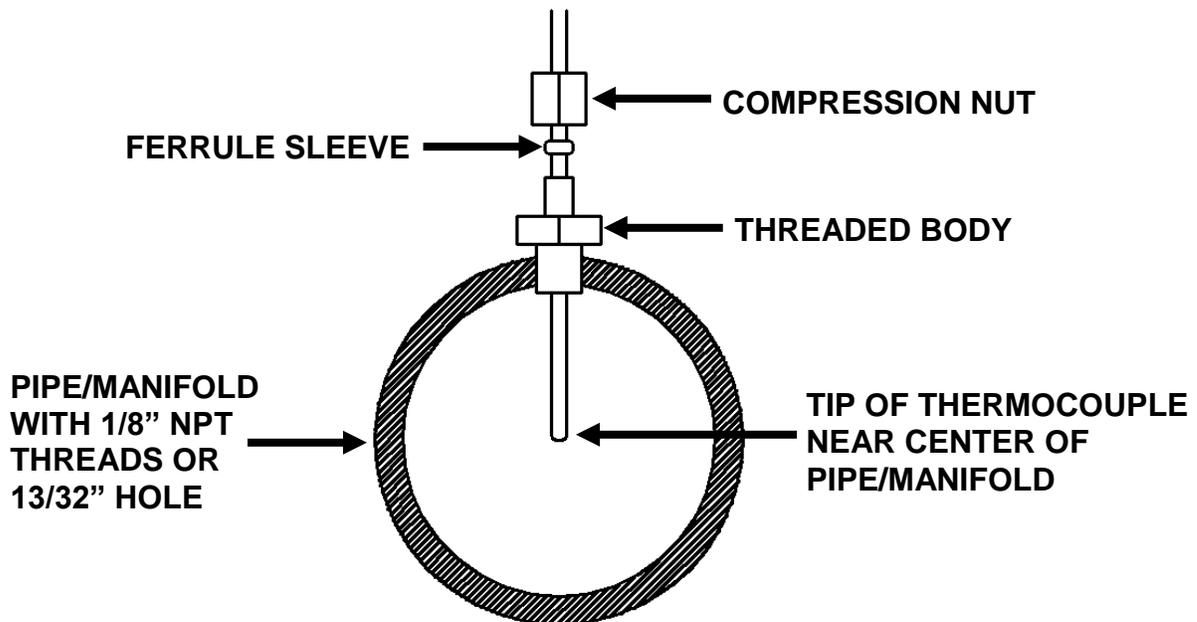


Figure 2. Thermocouple Mounting

## Connecting the Thermocouple

Slide the supplied heat shrink onto the sensor cable. Connect the RED wire from the thermocouple to the RED wire on the harness and the YELLOW wire from the thermocouple to the YELLOW wire on the harness using the supplied 4-40 screws and hex nuts. Make sure the connections are not touching. Center the heat shrink over the connections and apply mild heat to the heat shrink until it shrinks over the connections.

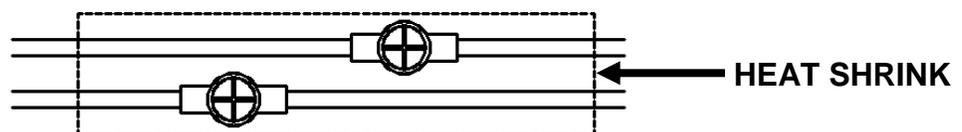


Figure 3. Thermocouple to Cable Connection

## Changing the Bezel

The AEM Analog EGT Gauge comes with the black bezel installed. However, a silver bezel is also included in the gauge kit. To change the bezel, orient the gauge so you are looking at the faceplate. Rotate the bezel counter-clockwise to unscrew it from the gauge cup. The bezel, lens, and rubber spacer are all removable. Reassemble the gauge as shown below in Figure 4. **Do not over tighten the bezel when reassembling the gauge.**

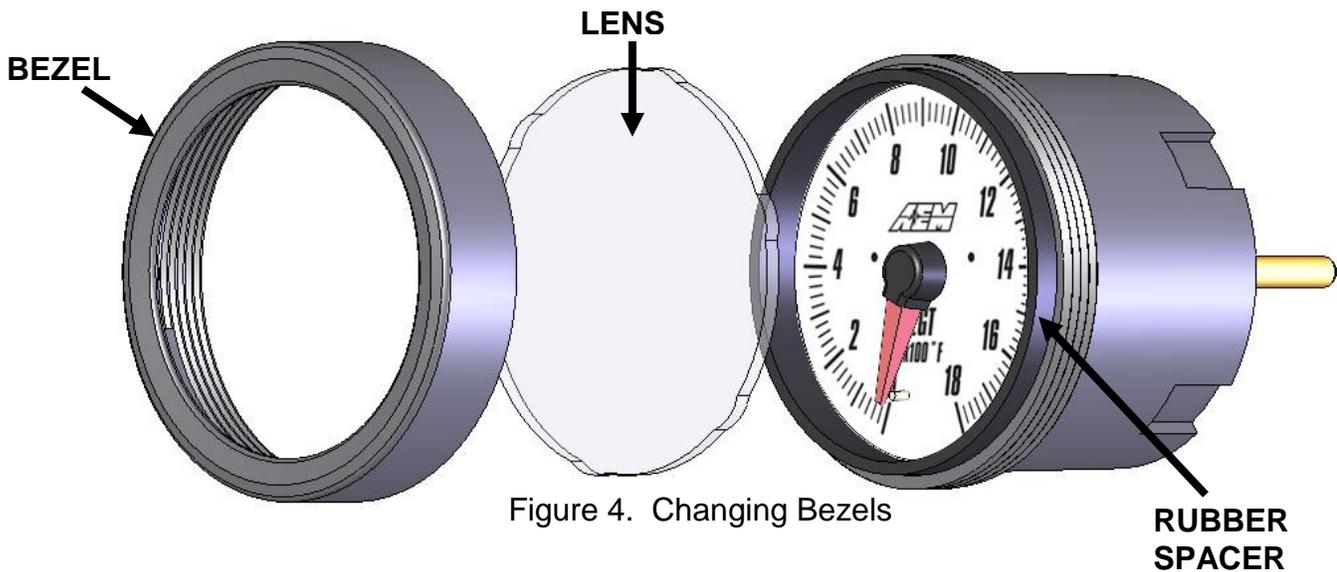


Figure 4. Changing Bezels

## Backlighting

The AEM Analog EGT Gauge has 7 different backlight colors available to the end user, which closely match some of the more common factory dash panels: white, blue, green, red, orange, light blue, and aqua. To change the backlight color, rotate the backlighting switch using a small precision style screwdriver. The backlight switch is accessed through the small hole in the back of the gauge. See Figure 5.

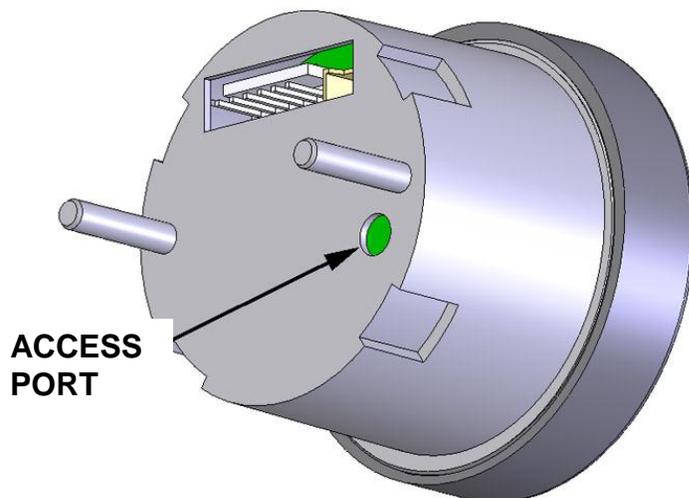


Figure 5. Backlighting Adjustment

## Status Lights

The AEM Analog EGT Gauge has one status light, see Figure 6. The status light will flash whenever the sensor is disconnected.



Figure 6. Illuminated Status Light

## Analog Output

The analog output from the AEM Analog EGT gauge is a linear dc voltage signal that varies from **0.5 Vdc at 0 Degrees Fahrenheit (-18 Degrees Celsius) to 4.5Vdc at 1800 Degrees Fahrenheit (982 Degrees Celsius)** over the operating range of the gauge. The signal is used for sending information to a data logger or an engine management system like the AEM EMS or F/IC. The transfer functions for the analog output are listed below in Degrees Fahrenheit and Degrees Celsius.

Temperature (Degrees Fahrenheit) =  $450 * \text{Voltage} - 225$

For example, if the output is 2.5 Vdc, the temperature is 900 Degrees Fahrenheit.

$450 * 2.5 - 225 = 900$  Degrees Fahrenheit

Temperature (Degrees Celsius) =  $250 * \text{Voltage} - 143$

For example, if the output is 2.5 Vdc, the temperature is 482 Degrees Celsius.

$250 * 2.5 - 143 = 482$  Degrees Celsius

A list of output voltages and corresponding temperatures is shown below in Table 1.

VOLTAGE	°F	°C
0.50	0	-18
0.75	113	45
1.00	225	107
1.25	338	170
1.50	450	232
1.75	563	295
2.00	675	357
2.25	788	420
2.50	900	482
2.75	1013	545
3.00	1125	607
3.25	1238	670
3.50	1350	732
3.75	1463	795
4.00	1575	857
4.25	1688	920
4.50	1800	982

Table 1. Analog Calibrations

### Connector Pinouts

The pinouts for the 3-pin sensor harness and 8 pin power harness are provided below in Figure 6.

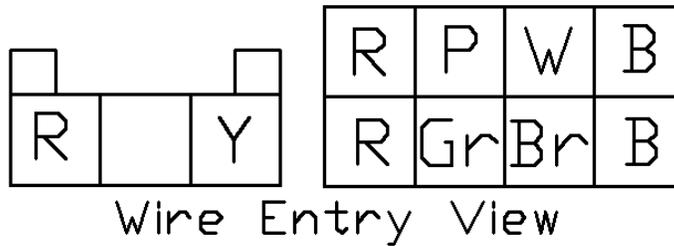


Figure 6. Harness Pinouts

### Specifications

#### Gauge

Supply Current	<0.100 A
Differential Analog Outputs	1
Measuring Range	0 – 1800 Degrees Fahrenheit, -18-982 Degrees Celsius
Sensor Accuracy	0.75% FS
Operating Voltage (nominal)	8.5-15 volts dc
Harness & Connector Temp Limit:	105C

**NOTES:**

If further tuning help is needed be sure to visit the video gallery or performance electronics forum at [www.aempower.com](http://www.aempower.com) for comprehensive instructional videos and information.

**Replacement EGT Gauge Components**

30-2065      K-Type Thermocouple with Bung  
35-3411      8-Pin Power Harness  
35-3414      3-Pin Sensor Harness

**12 MONTH LIMITED WARRANTY**

Advanced Engine Management Inc. warrants to the consumer that all AEM 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 AEM's option, when determined by AEM that the product failed due to defects in material or workmanship. This warranty is limited to the repair or replacement of the AEM part. In no event shall this warranty exceed the original purchase price of the AEM part nor shall AEM be responsible for special, incidental or consequential damages or cost incurred due to the failure of this product. Warranty claims to AEM 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. Improper use or installation, accident, abuse, unauthorized repairs or alterations voids this warranty. AEM disclaims any liability for consequential damages due to breach of any written or implied warranty on all products manufactured by AEM. Warranty returns will only be accepted by AEM when accompanied by a valid Return Goods Authorization (RGA) number. Product must be received by AEM within 30 days of the date the RGA is issued.

Please note that before AEM can issue an RGA for any product, it is first necessary for the installer or end user to contact the AEM Performance Electronics tech line at 1-800-423-0046 to discuss the problem. Most issues can be resolved over the phone. Under no circumstances should a system be returned or a RGA requested before the above process transpires.

Need additional help? Contact the AEM Performance Electronics tech department at 1-800-423-0046 or [tech@aempower.com](mailto:tech@aempower.com), or visit the AEM Performance Electronics forum at <http://forum.aempower.com/forum/>