



## Part Number 30-5140

### Analog Style 100°F - 300°F Oil/Coolant/Trans Temperature Gauge

**NOTE: Faceplate Configuration Instructions Included on Separate Sheet**

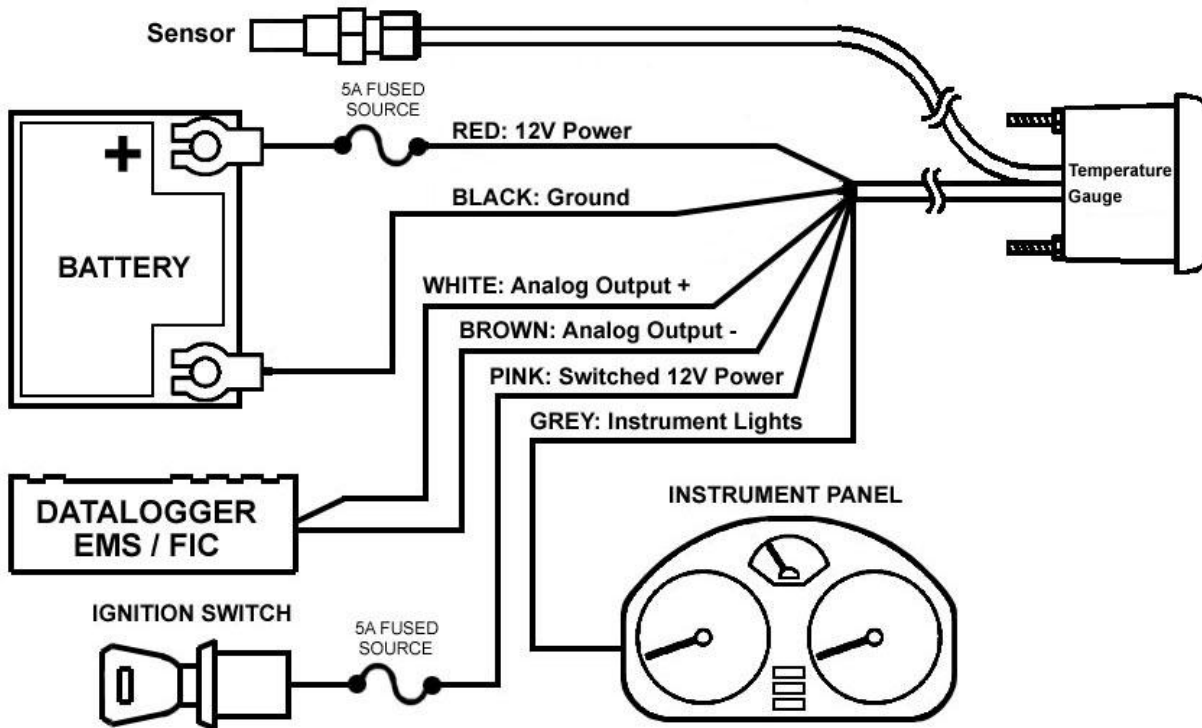


Figure 1. Wiring Schematic

### AEM Oil/Coolant/Trans Temperature Gauge Parts

- 1 x 35-5140 Temperature Gauge Assembly
- 1 x 35-2012 Temperature Sensor
- 1 x 35-4302 Install Kit (6 Butt Connectors)
- 1 x 10-5140 Installation Instructions
- 1 x 35-3411 8-Pin Power Harness
- 1 x 35-3413 3-Pin Sensor Harness
- 1 x 35-8529S Silver Bezel
- 1 x 35-8539W Trans Temp Faceplate, White
- 1 x 35-8539B Trans Temp Faceplate, Black
- 1 x 35-8541W Oil Temp Faceplate, White
- 1 x 35-8542W Coolant Temp Faceplate, White
- 1 x 35-8542B Coolant Temp Faceplate, Black
- 1 x Faceplate Configuration Instructions
- 1 x Paper Clip Needle Removal Tool

## 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. Thread the sensor into a suitable temperature port that has 1/8" NPT female threads. Note: a small amount of thread sealant may be used.
5. Connect the sensor to the gauge using the 2-wire sensor cable. The single-row, 3-position connector connects to the back of the gauge. The locating tabs on the connector should be nearest the center of the gauge.
6. Reconnect the negative battery cable.

RED (Power) - Connect to a constant 12 volt power source utilizing a 5A fuse.

BLACK (Ground) – Connect to a clean power ground.

PINK (Switched Power) – Connect to a switched 12 volt power source utilizing a 5A fuse.

GREY (Light Intensity) - Connect to instrument lighting circuit supply voltage.

\*WHITE (Analog Output) - Connect to Analog + Input.

\*BROWN (Analog Ground) - 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 against the needle stop upon powering down. Alternatively, the RED wire can be connected to the same location as the PINK wire. With the RED wire and the PINK wire connected to the same 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 AEM 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.**

## Changing the Bezel and Faceplate

The gauge kit comes with the black bezel and black faceplate installed. However, the kit also comes with a silver bezel and multiple faceplates. Instructions on how to change the faceplate are included in the kit on a separate sheet of paper. 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 3. Note: When reassembling the gauge, it may be necessary to apply a light amount of pressure on the lens and spacer to keep the faceplate from rotating when reinstalling the bezel. **Do not over tighten the bezel when reassembling the gauge.**

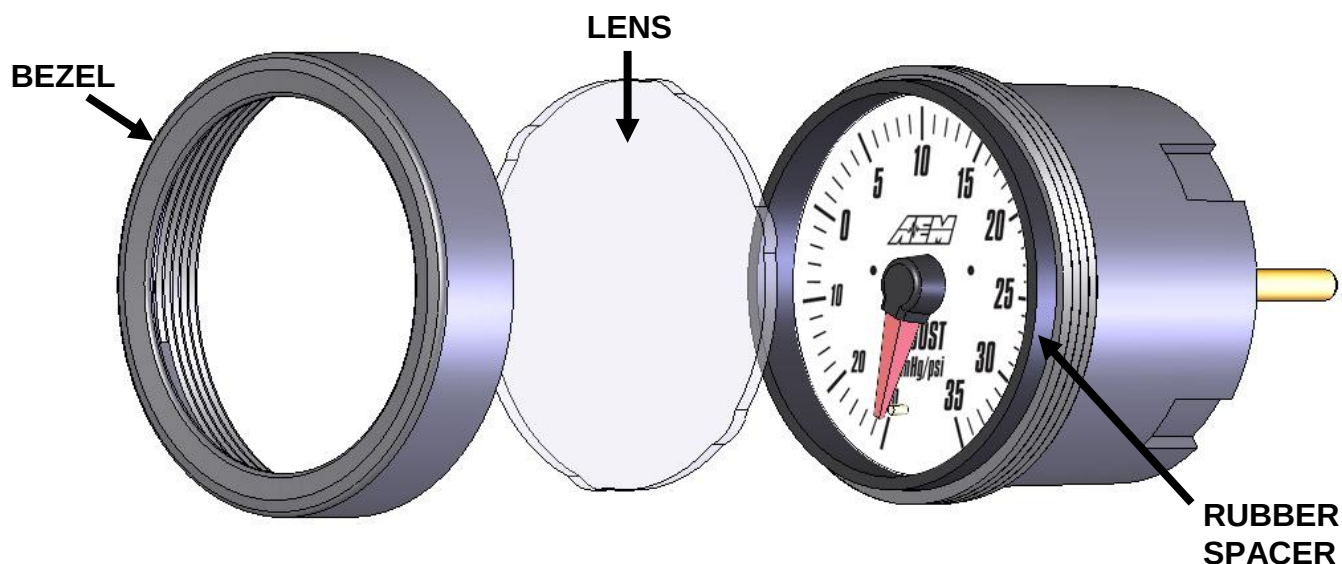


Figure 3. Changing Bezels

## Backlighting

The AEM Boost 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.

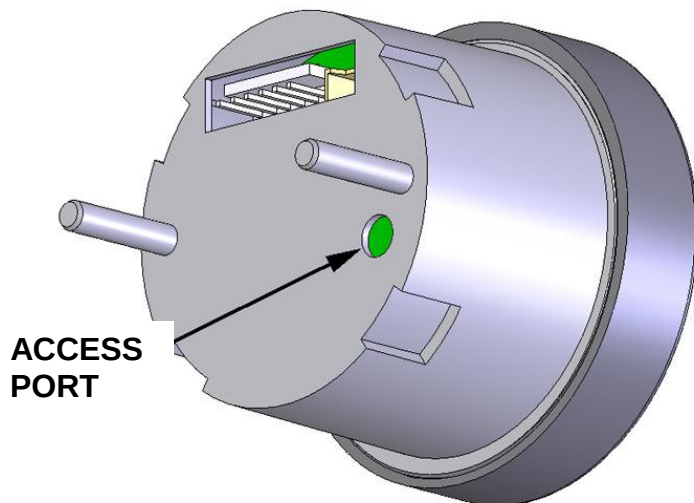


Figure 4. Backlighting Adjustment

### Status Lights

The AEM Temperature gauge has two status lights, see Figure 4. The status light on the left will turn on solid if the temperature is less than 100°F (40°C). The status light on the right will flash if the temperature exceeds 300°F (148°C). Both status lights will flash if the sensor is disconnected. The needle will point straight downward if the temperature exceeds 300°F (148°C) or the sensor is disconnected. See Table 1 for a description of the conditions.

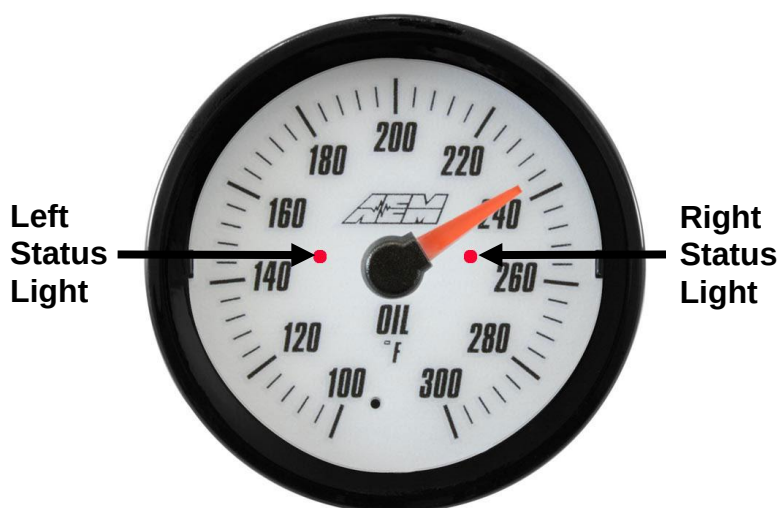


Figure 4. Illuminated Status Lights

| Status Light   | Condition                         | Corrective Action |
|----------------|-----------------------------------|-------------------|
| Left on Solid  | Temperature below 100°F (40°C)    | --                |
| Right Flashing | Temperature above 300°F (148°C)   | --                |
| Both Flashing  | Sensor Disconnected/Wires Shorted | Check wiring      |

Table 1. Status Light Conditions

## Analog Output

The analog output from the AEM Temperature gauge is a linear dc voltage signal that varies from **0.5 Vdc at 100°F (40°C) to 4.5 Vdc at 300°F (148°C)** 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 function for temperature in degrees Fahrenheit is listed below.

$$\text{Temperature (Fahrenheit)} = 50 \times \text{Voltage} + 75$$

The transfer function for temperature in degrees Celsius is listed below.

$$\text{Temperature (Celsius)} = 27 \times \text{Voltage} + 26.5$$

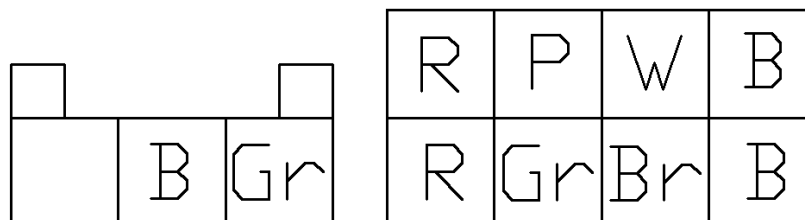
A list of output voltages and corresponding temperatures is shown below in Table 1.

| Voltage | Temperature |      |     |      |
|---------|-------------|------|-----|------|
| 0.50    | 100         | degF | 40  | degC |
| 0.75    | 113         | degF | 47  | degC |
| 1.00    | 125         | degF | 54  | degC |
| 1.25    | 138         | degF | 60  | degC |
| 1.50    | 150         | degF | 67  | degC |
| 1.75    | 163         | degF | 74  | degC |
| 2.00    | 175         | degF | 81  | degC |
| 2.25    | 188         | degF | 87  | degC |
| 2.50    | 200         | degF | 94  | degC |
| 2.75    | 213         | degF | 101 | degC |
| 3.00    | 225         | degF | 108 | degC |
| 3.25    | 238         | degF | 114 | degC |
| 3.50    | 250         | degF | 121 | degC |
| 3.75    | 263         | degF | 128 | degC |
| 4.00    | 275         | degF | 135 | degC |
| 4.25    | 288         | degF | 141 | degC |
| 4.50    | 300         | degF | 148 | degC |

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.



Wire Entry View

Figure 6. Harness Pinouts

## Specifications

### Gauge

|                                 |                               |
|---------------------------------|-------------------------------|
| Supply Current                  | 0.1 A                         |
| Differential Analog Outputs     | 1                             |
| Measuring Range                 | 100°F - 300°F<br>40°C - 148°C |
| Operating Voltage (nominal)     | 8.5-15 volts dc               |
| Harness & Connector Temp Limit: | 105C                          |

### Notes

The sensor is a precision pressure measuring device and should not be subject to mechanical or thermal shock or it may be damaged.

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

### Replacement Components

35-3411      8-Pin Power Harness  
35-3413      3-Pin Sensor Harness  
35-2012      Temperature Sensor

### 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/>