

## PARTS LIST

DI 9.1 volt zener diode 1N5239 or equivalent  
R1 12 ohm 2 watt resistor  
R2 1000 ohm 1 watt trim pot  
R3 100 ohm 1 watt trim pot  
Q1 NPN 500 ma transistor 2N4400 or equivalent (2N4402 for positive ground cars)

Temperature sensor late model MGB sensor Moss p/n 760-180

Cold resistance = 900 ohms (approx)

Hot (212°) resistance = 47 ohms (approx)

Resistance at 170° - 180° = 100 ohms (approx) Temperature gauge

Magnette gauge

Resistance = 21 ohms (approx)

Current for cold reading = 195 ma (approx)

Current for hot reading = 43 ma (approx)

>> = External connections to temperature sensor converter box

Diagram is drawn for negative ground system. If using on a positive ground system, reverse the direction of DI and use PNP transistor (2N4402 or equivalent)

To calibrate:

1. Turn ignition on
2. Adjust R3 for reading of C on gauge.
3. Place sensor in boiling water and allow its temperature to stabilize.
4. Adjust R2 for reading just below H.
5. Remove sensor from boiling water and for reading of C.
6. Repeat the above steps as many times to read C when the sensor is at ambient temperature sensor and just below H when the sensor is in boiling water.

Note 1: There are some adjustments on the temperature gauge that affect the range from C to H, but they have to be made very judiciously.

Note 2: I set the reading of the temperature gauge to just below H when the sensor is immersed in boiling water, as it is not uncommon for engine temperature to go up to 230° and not be considered overheating. You may consider a lower temperature to be overheating for your car, so set the gauge to read H at whatever temperature you feel comfortable with.

Just keep in mind that boiling water will always be 212° at sea level (if you are doing this in Denver, you will have to compensate).

Note 3: It is an extremely involved procedure to build this converter and calibrate the system.

I will not accept any responsibility if the conversion does not work in your car or causes any damage from being done incorrectly.

