

Document Number		RG_SPEC-0013	
Title		Air Pressure and Temp Sensor (MAP/MAT)	
Revision	Date	Prepared By	Change History
1.0	11/2/2011	Chris Brown	initial release. Calibration for 70° C updated.

A small compact sensor designed for automotive use of measuring air pressure and temperature for the intake / manifold of an engine.



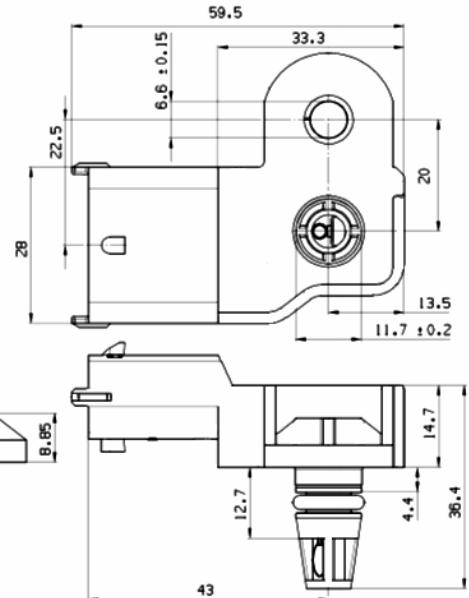
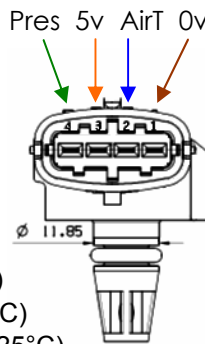
Part #	Description	Range
M 16-4360	1 BAR MAP/MAT SENSOR	10 to 115 KPa
M 16-8191	3.5 BAR MAP/MAT SENSOR	10 to 350 KPa

Mounting Guidelines:

The vacuum port shall be oriented downward relative to earth, and higher than the vacuum source. When a tube/hose is used for connection, an accumulation loop shall exist below the vacuum source in order to hold any water or other contaminants from entering the sensor.

Specifications:

- Output: 0.4 to 4.65 v ratiometric, 1 bar
0.5 to 4.5 v ratiometric, 3.5 bar
clamped to 0.25v to 4.75v
- Over Pressure: 655 KPa
- Voltage Supply: 5.0 +/- 0.1 Vdc
- Over Voltage: 16.0 Vdc
- Reverse Voltage: -5.0 Vdc
- Current Draw: < 10mA
- Humidity: 0 to 100%
- Cavity Volume: 75cc
- Weight: 27 grams
- Temperature Range: -40°C to 125°C
- Total Error: +/- 2.4 KPa, 1 bar (10°C to 85°C)
+/- 3.6 KPa, 1 bar (-40°C to 125°C)
+/- 8.29 KPa, 3.5 bar (-40°C to 125°C)



Pressure Calibration:

1 bar: 0.4v = 10 KPa 4.65v = 115 KPa
3.5 bar: 0.5v = 10 KPa 4.50v = 350 KPa

Temperature Calibration:

-20°C = 15614 ohms	30°C = 1715 ohms	80°C = 330 ohms
-10°C = 9428 ohms	40°C = 1200 ohms	90°C = 246 ohms
0°C = 5887 ohms	50°C = 851 ohms	100°C = 186 ohms
10°C = 3791 ohms	60°C = 612 ohms	110°C = 142 ohms
20°C = 2510 ohms	70°C = 446 ohms	120°C = 110 ohms

Connection:

Mating Connector: 4 pin Bosch Part # M 12-5525K
 Pin 1 - 0v
 Pin 2 - Air Temp Signal
 Pin 3 - 5v
 Pin 4 - Pressure Signal

