

Temperature Manifold Absolute Pressure Sensor M661 (TMAP)

FEATURES

- Pressure Range 44.8 kPa to 350 kPa
- High Static Accuracy
- MEMS technology
- Programmable ASIC to meet customer specifications
- Low part count enhances reliability
- Amplified and temperature compensated
- EMI protection
- Combination of pressure and temperature sensor(MAP/MAT)
 - MAP sensor precision with reliable thermistor output
 - Two-in-one sensor yields cost reduction and space savings w/one fewer component, wire and connector



DESCRIPTIONS

Model 661 incorporates MEMS technology and custom Application Specific Integrated Circuit (ASIC) technology in the design. It is specifically designed for tough automotive application.

The Temperature Manifold Air Pressure sensors in Model 661 provide two separate outputs critical to air/fuel ratio optimization:

- One voltage output proportional to engine intake manifold pressure
- One resistance output proportional to manifold air temperature

Model 661 is designed to perform in the underhood harsh environment such as temperature extremes, vibration, thermal and mechanical shock, and corrosive chemical. Please contact us for special design to meet your requirements.

SPECIFICATIONS

Pressure specification

Electrical

Supply Voltage	5.0 ± 0.5VDC
Input Current(I _s)	10 mA max
Max Supply Voltage	16.0 V
Output Type	ratiometric
Output Voltage	0 to 5.0 V/0.5 to 4.5V at 5VDC excitation

Operating Characteristics

Range	44.8kPa to 350kPa
Proof Pressure	700 KPa

Static Accuracy ¹

10-85°C	1.2%FS
Full Temperature Range	3.0%FS
Applied temperature error multiplier	
T=-40 °C	2.0
T= 10 °C	1.0
T= 85 °C	1.0
T= 125°C	2.0
Response time (t _R)	≤2ms

Environmental Effects:

Operating Temperature Range	-40°C to +130°C
Storage Temperature Range	-50°C to +150°C

Mechanical:

Media Compatibility	Media Compatible with Silicon
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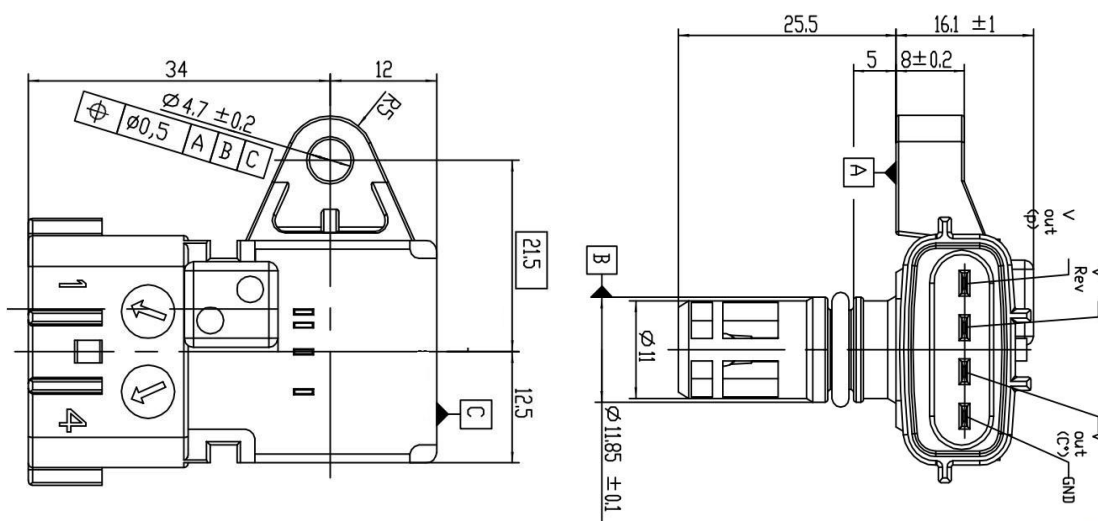
Temperature specification

R25°C	2014 Ω
Temperature Accuracy	±1°C at 25°C

Notes:

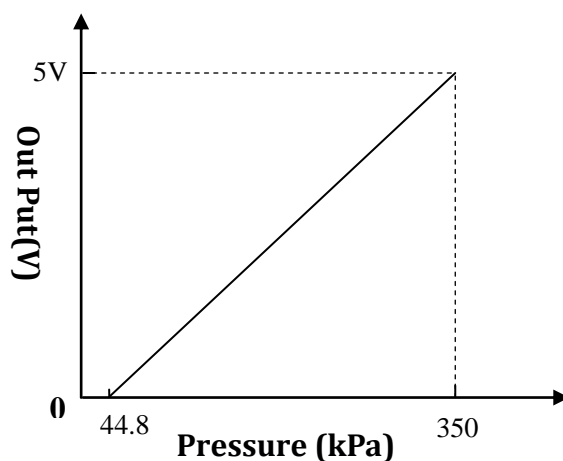
1. Static accuracy is the RSS of non-linearity, hysteresis, and non-repeatability.

OUTLINE:



PERFORMANCE

Pressure output Curve



Design characteristics for temperature output

Response time: $T_r \leq 12s$

T [°C]	Rnom [Ω]	Tolerance Rmin [Ω]	Tolerance Rmax [Ω]
-40	44373	41255	47492
-30	25572	23935	27209
-20	15141	14260	16022
-10	9202	8716	9689
0	5774	5497	6050
10	3714	3553	3875
20	2448	2353	2544
25	2014	1940	2089
30	1671	1613	1730
40	1150	1114	1186
50	816.7	794.0	839.3
60	583.1	568.9	597.4
70	426.7	417.6	435.8
80	315.8	310.0	321.6
90	238.1	234.4	241.8
100	182.8	180.4	185.1
110	141.2	139.8	142.6
120	110.3	108.9	111.8
130	87.4	86.0	88.8