

5 Bar Sensor

Introduction

The Ecumaster 5 Bar Sensor is a high-precision pressure sensor designed to accurately measure oil, fuel, or air pressure in automotive applications. It functions by converting absolute pressure into an electrical voltage signal.



This versatile sensor can accurately measure a range of pressures, from vacuum conditions to "boost" pressures up to 5 bar (500 kPa) gauge, making it an ideal choice for various automotive applications.



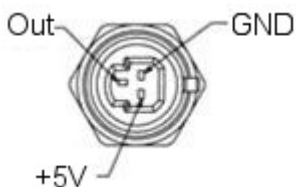
Note:

Please note that for the proper installation and best performance of the Ecumaster 5 Bar Sensor, it is recommended to follow all guidelines provided in the Installation.

Installation

The Ecumaster 5 Bar Sensor features three terminals: +5V (1), Analog out (2), and Ground (3). For proper connection, the Ground terminal (3) should be linked to the ECU sensor ground. The pinout is shown below. The sensor also includes a 1/8" NPT threaded fitting for mounting.

When used as a MAP sensor, the sensor should be installed above the intake manifold level, with the nipple facing downwards. This positioning helps protect it against the accumulation of fluids like fuel and oil that can collect in the manifold.



Transfer function

The transfer function, or the relationship between the output voltage (V_{out}) and the pressure (P) in kPa, is as follows:

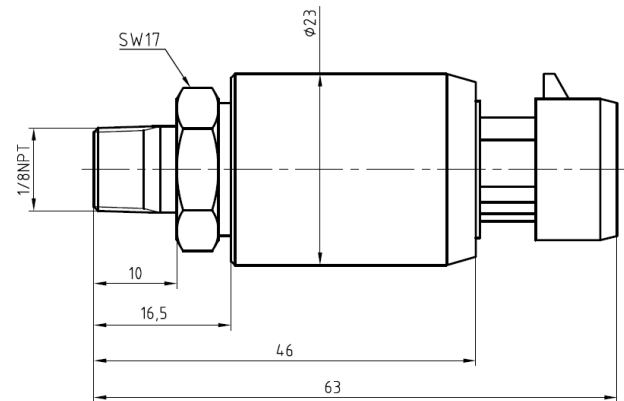
$$V_{out} = 0.006695 * P + 0.496233$$

Here, V_{out} represents the sensor's output voltage, and P refers to the measured pressure in kPa. With this transfer function, you can calculate the sensor output for any

given pressure value, aiding in the accurate interpretation of sensor readings.

Pressure (kPa)	0.0	182.4	414.7	600.0
Voltage (V)	0.5	1.7	3.3	4.5

Dimensions



Connector and terminals

The Ecumaster 5 Bar Sensor is available in two connector configurations:

1. Pull-to-Seat (Metri-Pack)

Connector part number: 12065287

Terminal part number: 12089290, AWG 20-22

Feed the wire through the connector body, strip and crimp the terminal, then pull the wire back until the terminal locks in place.

2. Standard (Push-to-Seat)

Connector part number: 13846842

Terminal part number: 12191818, AWG 20-22

Remove the gray locking element. Insert the pre-crimped terminal into the connector until it clicks, then reinstall the locking element.

Characteristics

General	
Supply voltage	5.0 V
Supply current	< 5 mA
Pressure range	0 to 600 kPa
Full scale span	4 V
Sensitivity	6.67 mV/ kPa
Operating temperature	-25 °C to 125 °C
Accuracy	0.5% full-scale
Enclosure	SAE 304 stainless steel
Threaded mounting	1/8" NPT
Absolute maximum ratings	
Maximum pressure	660 kPa
Maximum supply voltage	6 V
Maximum load current	+/- 0.5 mA