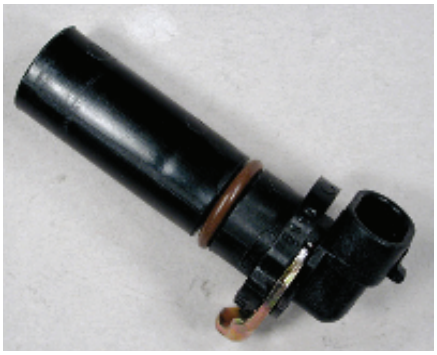
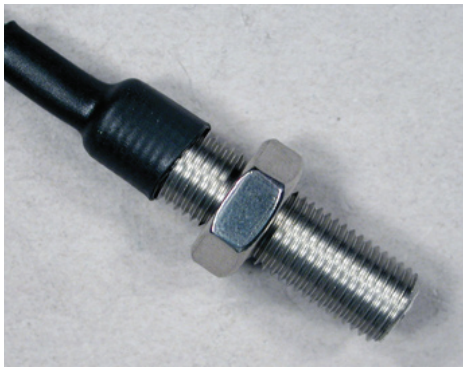
Sensors

Crank/Cam Trigger

Crank, 3/8² smooth mag sensor
M 3025 SS13



Crank angle, GM mag sensor
M 6-BAC-AD8



Crank, 3/8² threaded mag sensor
M 4-APX-001

Crank/cam, 5/8² threaded mag sensor
M 6-APX-003

Crank/Cam, magnet operated
M MHALL 437

Samarium/cobalt magnet, 1/4 thd carrier
M MHALL MAG ASB

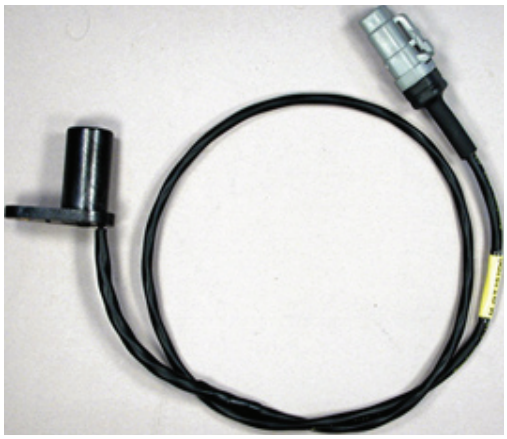
Samarium/cobalt .115" diameter (white side is south pole)
M MHALL MAG

Mag Sensor Polarity

When using a magnetic sensor, the waveform produced by the sensor can be changed by reversing the polarity of the wires from the sensor. For your convenience, MoTeC sensors come pre-wired with a falling edge waveform.

Wheel Speed

Wheel speed, 7/16² threaded hall sensor,
ferrous-tooth operated with DTM termination.
M DHALL 437



GT101 Hall effect wheelspeeed
ferrous-tooth operated
M GT101DC

Calibrating Wheel Speeds

In order to properly calibrate the wheelspeed sensor in the ECU you must know the circumference of the tire. According to Geometry the circumference is equal to the diameter of the tire multiplied by Pi (3.14159). Unfortunately, your tire diameter will change when it is supporting the weight of the car. So the best way to get the tire circumference is to mark the tire and the ground, and then push the car until the mark on the tire is again back on the ground. Then measure the linear distance between the two marks. You can then divide this measurement into the distance you are calibrating for (1 mile = 5280 ft). The result is the number of tire revs per mile or KM. Then we have to multiply this number by the number of teeth on the trigger wheel. Finally, the total is divided by 10 to arrive at the calibration value. Circumference = 8.3 feet 5280/8.3 = 636 Number of teeth = 4 so 636(4) = 2544/10 = 254.4 Calibration value is 254.4

Manifold Pressure Sensors

Pressure transducer, 500 kPa (60 PSI boost)
M EPT 75A

Pressure sensor, 100 kPa
M 16-7039

Barometric Pressure sensor, 108 kPa
M 16-6835

Pressure sensor, 200 kPa (15 PSI boost)
M 16-9886

Pressure sensor, 300 kPa (30 PSI boost)
M 16-0749

Billet mount, blue w/filter
Accepts any M16 sensor
M 16-SENMNT-BL

Billet mount, black,
Accepts any M16 sensor
M 16-SENMNT-BK

How to Calibrate a Pressure Transducer

The Pressure Transducer which MoTeC offers for measuring pressure all output signal voltages beginning at .5 volts and ending at 4.5 volts. The range of the sensor is relateable to the AtoD counts in an ECU in the following way. At the bottom of the range, the sensor outputs .5 volts which is equivalent to 102 counts. At the top of the sensor's range, it outputs 4.5 volts or about 922 counts. If you interpolate the calibration table between these two points, you will have the correct calibration for the sensor - no matter what the range is.

MoTeC Sensors

Pressure Sensors

Pressure transducer, 100 PSIG
M EPT 100G

Pressure transducer, 150 PSIG
M EPT 150G

Pressure transducer, 300 PSIG
M EPT 300G

Pressure transducer, 1000 PSIG
M EPT 1000G

Pressure transducer, 2000 PSIG
M EPT 2000S

Pressure transducer, 3000 PSI
M EPT 3000S

8-bar(0-120 PSIG) GM
M P155 2230

Pressure-Sensor Unions

3ANto-3AN bulkhead union
M 3-983203/5924

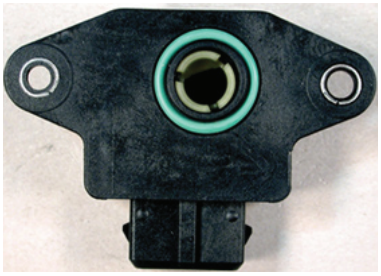
3AN-to-3AN coupler
M 3-981503

3AN-male-to-1/8”MTP-male coupler
Requires O-ring to mate with Kavlico sensor
M 3-981603

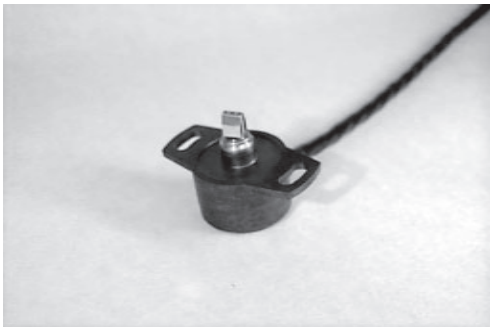
Dash-3AN to dash-4AN coupler
M 3-991902

Sensors

Throttle Angle



Bosch, D Drive ClockWise
M 0280 001



Rotary-blade drive, 100° rotation
M 518-2846-100K

D drive CounterClockWise
M 518-1

Rotary-blade drive, 350 degrees. Used to create gear voltage on sequential gear boxes
M 518-RP5130-35

D drive ClockWise
M 518-3

Noncontact hall ClockWise
M 580-06751

Lambda Sensors

All three of these sensors feature 18mm X 1.5mm Threads

Bosch LSM-11 4 Wire Wide Band
For use with M4/M48 ECU's and MoTeC ADL. Can also be used for Narrow Band
M 0258 002

Bosch LSU-4 5 Wire Wide Band
For Use with M800/880 and PLM's Low cost High Accuracy
M 0258 666

NTK UEGO PRO 5 Wire Wide Band
For Use with M800/880 and PLM's - Laboratory Grade Sensor
M UEGO SENSOR

Bosch LSU-4.9 Sensor
For Use with M800/880 and PLM's - Laboratory Grade Sensor
M 0258 032

What is Lambda anyway?

Lambda describes an equivalence value in percentage of the chemically correct air-to-fuel ratio for any type of fuel. If the air fuel ratio measured in the exhaust pipe of an engine is at the chemically correct (stoichiometric) ratio of air-to-fuel, lambda is equal to 1.0. In the case of gasoline, lambda 1.0 is equivalent to 14.7:1 air-to-fuel. Lambdas less than 1.0 indicate the engine is running richer than stoichiometric, while lambdas greater than 1.0 indicate a lean mixture. If we measure a lambda value of 1.06 and we want a lambda value of .95, we simply increase the fuel delivered to the engine (pulsewidth) by 11 percent. This will place us exactly at .95 lambda. By using the Lambda Was or the Quick Lambda functions a tuner can quickly shape the fuel table to match the engine's exact requirements.

How long will the Lambda Sensor Last?

A Lambda sensor is designed as a consumable item which means like a spark plug, it wears out with use. Typically you may notice the sensor begin to slow down in its response to changes in lambda when it becomes worn out. This normally occurs in about 500 hours on unleaded type fuels but is reduced to 50 hours for lead. Like Spark Plugs, the sensor can be fouled in a matter of minutes with improper air fuel ratios and the sensor can crack if it is over torqued or dropped. For this reason, there is no warranty on Lambda Sensors.