Professional Lambda Meter

The ***MoTeC*** Professional Lambda Meter (PLM) accurately determines exhaust gas mixture strength over a wide range of engine operating conditions with a fast response time. This device has been designed to be quick and easy to use, whilst allowing a calibration engineer all of the power and configurability required for OE emissions development and certification work.

Weighing only 135 gms and with a robust aluminium enclosure it can be conveniently mounted singularly, or in multiples, in almost any application. The operating range of the device is between 0.7 and 32.0 Lambda. For Gasoline/ Petrol this equates to an Air/Fuel Ratio range of 10.3:1 to 470:1.

The display may be set to show Lambda, Air Fuel Ratio or Equivalence Ratio for any sensor compatible fuel (Gasoline/Petrol, Alcohol, Gas, Diesel or 'blend' fuel as defined by the user). The resolution of the display (decimal points), display update rate, display filtering, backlight intensity may all be defined by the user with the Windows setup software provided.

The ***MoTeC*** PLM provides an differential Analog Voltage Output that may be connected to an Analog Meter or other measurement instrument such as a Data Logger or Chart Recorder. The output may be defined by the user to be linear or non-linear in relation to the measured units. The PLM also supports 1mbit CAN and RS232 data links to devices such as the ***MoTeC*** Dash/Logger for transmission of sensor and diagnostic data. Comprehensive diagnostic and status channels are provided for.

MoTeC in control

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The ***MoTeC*** PLM configuration determines exactly how it operates. The initial configuration will allow the ***MoTeC*** PLM to be connected to a power supply and sensor, displaying Lambda values without any modification to the configuration. Changes can be made to the configuration to alter various aspects of the ***MoTeC*** PLM. This includes the display parameter (eg: to A/F ratio), display formats, analogue output scaling, sensor type, sensor calibration, backlight intensity, etc. Standard configuration templates for most common preferences are included. The user can manually select the sensor used as Bosch LSU or NTK UEGO. Selecting 'Auto' allows the ***MoTeC*** PLM to determine the type of sensor being used. The sensor can be user calibrated to compensate for sensor aging and contamination.

The two prime applications for this device are for the development and tuning of emission controlled vehicles and for use in motorsport. The highly competitive motorsport environment requires that all aspects of the vehicle are optimally calibrated and perhaps no area is more critical than the engine.

The engine will normally give best performance at only one mixture strength and the ***MoTeC*** PLM lets you accurately determine the direction and magnitude of adjustments that need to be made to acheive this. The ***MoTeC*** PLM can be used equally effectively on fuel injected and carburetted vehicles. The versatility and practicality of the ***MoTeC*** PLM makes it perfect for a wide range of applications, from garages to motorsport and OEM calibration professionals.

PLM Specifications

POWER SUPPLY

Input Voltage Range	7 to 16Volts
Input current	- 60mA Typical with backlight off - 110mA Typical with backlight on - Plus sensor heater current
Protection	Reverse polarity protected
Load Dump Clamp	Max 40V at 100 Amp 100msec

SENSORS

Sensors	1
Compatible Types	Bosch LSU / NTK UEGO
Calibration Methods	- Automatic using sensor's built in calibration resistor - Manual Table Entry - Known Oxygen Environment - Calibration Constant
Type Detection	Manual or Automatic (using sensor's built in calibration resistor)

MEASUREMENTS

Lambda	0.7 to 32.0
02	0 to 22%
A/F Ratio	Fuel dependant (see lambda range)
Accuracy	+/-1.5% (sensor specific)

SENSOR HEATER

Outputs	1
Current	Max 8 Amp
Control	- Bosch - Digital PID - NTK - Constant Voltage (Requires 11V supply for optimal operation)

OUTPUTS

Analogue	1 x 0 to 5V DC, User Programmable
Output Type	Differential
Differential Range	- 4.8 to 5.0 Volts

INPUTS

Digital	2 x User Programmable as RPM or PLM Enable (Operate)

COMMUNICATIONS

Serial	- CAN @ up to 1Mbit - RS232

DISPLAY

Type	LCD 3.5 Digit
Digit Height	12.7mm
Lighting	Green LED Back Light

PROCESSOR

CPU	Motorola 68HC908AZ60
Speed	8MHz
Code Memory	60K Flash
Configuration Memory	1K EEPROM - Field updateable

GENERAL

Connectors	2 x 9 Pin Dsub
Temperature Range	-10 to 70 Deg C
Dimensions(WxHxD)	105x41x25 mm (Excluding Connector)
Weight	135grams

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