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 a 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 or *MoTeC* ECU for transmission of sensor and diagnostic data. Comprehensive diagnostic and status channels are provided for.



Professional Lambda Meter

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

	AIFD	PPLY
P())	N - R	יייי אי

Input Voltage Range Input current

Protection Load Dump Clamp

SENSORS

Sensors **Compatible Types Calibration Methods**

Type Detection

MEASUREMENTS

Lambda A/F Ratio

Accuracy

SENSOR HEATER

Outputs Current Control

7 to 16Volts

- 60mA Typical with backlight off - 110mA Typical with backlight on

- Plus sensor heater current Reverse polarity protected Max 40V at 100 Amp 100msec

Bosch LSU / NTK UEGO

 Automatic using sensor's built in calibration resistor

- Manual Table Entry

- Known Oxygen Environment - Calibration Constant

Manual or Automatic (using sensor's built in calibration resistor)

0.7 to 32.0 0 to 22%

Fuel dependant (see lambda range)

+/-1.5% (sensor specific)

Max 8 Amp

- 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

2 x User Programmable as RPM or Digital

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

GENERAL

Connectors 2 x 9 Pin Dsub **Temperature Range** -10 to 70 Deg C

Dimensions(WxHxD) 105x41x25 mm (Excluding Connector)

135grams Weight

MoTeC Research Centre

121 Merrindale Drive Croydon South, 3136 Victoria. Australia Tel: 61 3 9761 5050

Fax: 61 3 9761 5051

MoTeC Europe Ltd

Unit 14, Twyford Mill Industrial Estate Oxford Road Adderbury Nr Banbury, Oxon, UK OX17 3HJ Tel: 44 8700 119 100

Fax: 44 8700 111 922

MoTeC Systems USA

5355 Industrial Drive Huntington Beach California, 92649 U.S.A

Tel: 1 714 895 7001 Fax: 1 714 897 8782

MoTeC Systems East 169-2 Gasoline Alley Mooresville NC 28117, USA Tel: 1 704 799 3800

Fax: 1 704 7993874

www.motec.com.au

AUSTRALIA

EUROPE

USA

ASIA

Over 50 countries