



**INDIAN INSTITUTE OF TECHNOLOGY KANPUR**  
**DEPARTMENT OF MECHANICAL ENGINEERING**  
**KANPUR-208016, INDIA**

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Enquiry no.: ME/ERL/2013-14/May/02

Enquiry date: May 8<sup>th</sup>, 2013

Last Date: June 14<sup>th</sup>, 2013 (Extended)

**Enquiry for Air-Fuel Ratio (Lambda Module)**

**Measurement in the Engine Exhaust Gas, Compatible for**  
**Gasoline/ Diesel/ CNG/ Hydrogen**

Lambda Module (including sensor and display) is required for gasoline/ diesel/ CNG/ hydrogen fuelled engine. Specification of lambda module is given below

**Lambda Module (1-CH) including LSU4.9 (1 No.)**

- Lambda range = 0.65 to 5.0 ( for lean and rich mixture application)
- Exhaust gas pressure < 4 bar
- Exhaust gas temperature range (max.) < 1,030 °C
- Ethernet PC Connection and Power Supply Cable
- Lambda Module with one input channel for Bosch LSU Lambda Sensors LSU4.2, LSU4.7, LSU4.9 or LSU ADV.
- Preconfigured for operation of LSU4.9.
- Characteristics: Heater control for Lambda sensor;
- Provision of raw sensor signal Ip and Ri;
- Conversion of sensor signals into lambda, 1/lambda, A/F, F/A, O2 and sensor temperature;
- Adjustable sampling rate of 0.5 Hz up to 2 kHz;
- Analog signal on electrically isolated output with 2 kHz update rate;
- Built-in VFD display to visualize all signals;

- Configuration via PC-interface or built in touch panel;
- Temperature rated from -40 °C to +70 °C; IP42 rated.
- Including one splitter cable to connect sensor and one sensor (LSU4.9).

## **Ethernet PC Connection and Power Supply Cable Lemo 1B**

### **FGL – RJ45 –Banana (8fc-8mc+2mc), 3 m (1 No.)**

- Combined Ethernet PC connection and power supply cable.
- IP67 rated Lemo connector towards the chain.
- Temperature rated for -40°C to +125°C.
- Includes reverse-polarity, load dump protection and standard fuse.

#### **Terms & Conditions:**

- (i) Provide “Authorization certificate” from the manufacturer, in case the quotation is submitted by an Indian Agent.
- (ii) Prices should be FOB/ CIF upto Delhi.
- (iii) Validity of quotation should be at least for 90 days.
- (iv) Warranty: Three Years from the date of Installation and Commissioning.

*Kindly send your best offer (Technical and Commercial offers separately) so as to reach us on or before June 14<sup>th</sup>, 2013 (Revised and extended date) to the following address:*

Prof. Avinash Kumar Agarwal  
Department of Mechanical Engineering  
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In case of any queries/ clarifications related to this tender, you may contact Mr. Dhananjay Srivastava (+91 9935355990).