

## Lambda controller for LSU4.0/LSU4.2 Bosch sensors



### Specifications:

- **Operating Voltage:** 9V – 18V
- **Power Consumption:** 25 Watt Max
- **Analog Output AFR:** Linear 0-5V corresponding to Lambda Range from 9 AFR to 19 AFR
- **AFR Accuracy:** error < 0.1 AFR (Gasoline)
- Sensor soft start circuitry, prolongs o2 sensor life.

### Sensor:

- Type Bosch UEGO LSU4.0/LSU4.2
- Accuracy +/- 0.7%
- Exhaust Temp Limit 1030 C
- Cable & Protector Sleeve Temp Limit 250 C
- Mounting M18 X 1.5 thread
- Nominal Service Life 80,000 km for Unleaded Fuel

### Quick operation instructions:

- Install the lambda sensor on exhaust pipe (don't use the sensor without power, it will accumulate carbon particles)
- Connect the controller box to a 12 Volt DC source
- Connect lambda sensor to the lambda connector
- Wait the sensor reaches its operating temperature (see led table)
- Read output voltage

### Led table:

- Fast blink: lambda sensor is unconnected or there is a short circuit in the sensor.
- Slow blink: lambda sensor is heating (output not valid)
- Quick blink and long pause: operative temperature reached, now output voltage is valid to read lambda value.

### Output table:

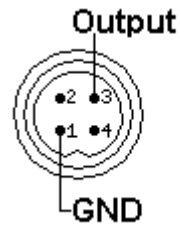
Volt	AFR	
0	9	Too Rich
1	11	Too Rich
1.5	12	Rich / power AFR
1.75	12.5	Rich / power AFR
2	13	Rich / power AFR
2.25	13.5	Rich / power AFR
2.5	14	Lean AFR
2.75	14.5	Lean AFR
3	15	Too lean
4	17	Too lean
5	19	Too lean

$$\text{AFR} = V * 2 + 9$$

## Connectors:

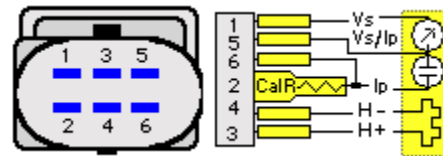
### 4-PIN Connector

Pin	Description
1	GND
2	n.c.
3	Output (0 to 5 V)
4	n.c.



### Lambda Connector

Pin	Description
1	Vs
2	Cal Resistor
3	Heater +
4	Heater -
5	Vs/lp
6	Ip / Cal R



### Power Connector

Pin	Description
Red	12 Vdc
Black	Ground