

Lambda Sensor Mini-LSU 4.9

This sensor is designed to measure the oxygen content and Lambda value of exhaust gases in automotive engines (gasoline or Diesel).

The wide band lambda sensor Mini-LSU 4.9 is a planar ZrO_2 dual cell limiting current sensor with integrated heater. Its monotonic output signal in the range of $\lambda = 0.65$ to air makes the LSU capable of being used as an universal sensor for $\lambda = 1$ measurement as well as for other Lambda ranges. The connector housing contains a trimming resistor, which defines the characteristic of the sensor. The LSU operates only in combination with a special LSU-IC, used in most Bosch Motorsport ECUs and lambda control units like LT4.

The main benefit of the Mini-LSU 4.9 is its very compact design in combination with the high quality Bosch production quality standard.



Application	
Application	0.65 ... ∞ lambda
Fuel compatibility	gasoline/Diesel/E85
Exhaust Gas Pressure	< 4 bar
Exhaust Gas Temperature Range (operating)	< 930 °C
Exhaust Gas Temperature Range (max.)	< 1,030 °C
Hexagon Temperature	< 1,050 °C
Cable and Protective Sleeve Temperature	< 250 °C
Connector Temperature	< 150 °C
Storage Temperature Range	-40 ... 100 °C
Max. Vibration (stochastic peak level)	< 1,000 m/s ²

Connectors and Cables	
Connector	1 928 404 682
Connector Loom	09 4421 01
Pin 1	IP
Pin 2	VM
Pin 3	UH-
Pin 4	UH+
Pin 5	RT
Pin 6	UN
Sleeve	Fiber Glas / Silicone coated
Cable Size	AWG22
Cable Length L	30 ... 100 cm
Various motorsports and automotive connectors on request.	
Please specify the requested cable length with your order.	

Application Hint	
The Mini-LSU 4.9 can be connected to most Bosch Motorsport ECUs and Lambda Control Units like LT4.	
The lambda sensor should be installed at point which permits the measurement of a representative exhaust-gas mixture and which does not exceed the maximum permissible temperature.	
Install at a point where the gas is as hot as possible.	
Observe the maximum permissible temperature.	
Sensors should be installed as close to vertical as possible (wire upwards).	
The sensor is not to be fitted near to the exhaust pipe outlet, so that the influence of the outside air	

Mechanical Data	
Weight w/o Cable	28 g
Length	60 mm
Thread	M16x1.5
Wrench Size	17 mm
Tightening Torque	60 Nm

Electrical Data	
Power Supply H+ Nominal	7.5 V
System Supply Voltage H+ (min)	10.8 V
Heater Power steady State	7.5 W
Heater Control Frequency	≥ 100 Hz
Nominal Resistance of Nernst Cell	300 Ohm
Max. Current Load for Nernst Cell	250 µA

Characteristic		
Signal Output	Ip meas / Ua (AWS)	
Accuracy @ λ = 1	1.016 ±0.007	
Accuracy @ λ = 0.8	0.80 ±0.01	
Accuracy @ λ = 1.7	1.70 ±0.05	
IP	U _A [V]	Lambda
-1.243	0.192	0.750
-0.927	0.525	0.800
-0.800	0.658	0.822
-0.652	0.814	0.850
-0.405	1.074	0.900
-0.183	1.307	0.950
-0.106	1.388	0.970
-0.040	1.458	0.990
0.000	1.500	1.003
0.015	1.515	1.010
0.097	1.602	1.050
0.193	1.703	1.100
0.250	1.763	1.132
0.329	1.846	1.179
0.671	2.206	1.429
0.938	2.487	1.701
1.150	2.710	1.990
1.385	2.958	2.434
1.700	3.289	3.413
2.000	3.605	5.391
2.150	3.762	7.506
2.250	3.868	10.119

Part Number

can be ruled out.

The exhaust system upstand and surrounding the sensor must be sealed in order to avoid the effects of leakage air.

Protect the sensor against condensation water. The sensor is not to be painted, nor is wax to be applied or any other forms of treatment. Use only the recommended grease for lubricating the thread.

Please find further application hints in the offer drawing (<http://www.bosch-motorsport.com>).

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