

Lambda Sensor 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 LSU 4.9 is a planar ZrO₂ 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 a universal sensor for $\lambda = 1$ measurement as well as for other λ ranges. The connector module 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 LSU is the robust design combined with the high Bosch production quality standard.



Application	
Application	0.65 λ ... ∞
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	< 600 °C
Cable and protective sleeve temperature	< 250 °C
Connector temperature	< 140 °C
Storage temperature range	-40 ... 100 °C
Max. vibration (stochastic peak level)	< 1,000 m/s ²

Mechanical Data	
Weight w/o wire	120 g
Length	84 mm
Thread	M18x1.5
Wrench size	22 mm
Tightening torque	40 ... 60 Nm

Electrical Data	
Power supply H+ nominal	7.5 V
System supply voltage	10.8 V ... 16.5 V
Heater power steady state	7.5 W
Heater control frequency	\geq 100 Hz
Nominal resistance of Nernst cell	300 Ω
Max current load for Nernst cell	250 μ A

Connectors and Wires	
LSU 4.9 with automotive connector	
Connector	1 928 404 687
Mating connector	D 261 205 356-01
Pin 1	IP / APE
Pin 2	VM / IPN
Pin 3	Uh- / H-
Pin 4	Uh+ / H
Pin 5	IA / RT
Pin 6	UN / RE
LSU 4.9 with motorsports connector	
Connector	AS 6-07-35PN
Mating connector	AS 0-07-35SN
Pin 1	Uh+ / H
Pin 2	Uh- / H-
Pin 3	IP / APE
Pin 4	VM / IPN
Pin 5	UN / RE
Pin 6	IA / RT
Sleeve	fiber glas / silicone coated
Wire size	AWG 24
Wire length L	32.5 cm
Various motorsport and automotive connectors are available on request.	
Please specify the required wire length with your order.	

Characteristic		
Signal output	Ip meas / Ua (AWS)	
Accuracy @ $\lambda = 1.016$	1.016 \pm 0.007	
Accuracy @ $\lambda = 0.8$	0.80 \pm 0.01	
Accuracy @ $\lambda = 1.7$	1.70 \pm 0.05	
IP	Ua [V]	Lambda [λ]
-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	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

