

# Lambdatronic LT4



- ▶ Supply of up to 4 Bosch lambda sensors, type LSU 4.2, LSU 4.9 or Mini-LSU 4.9
- ▶ Integrated voltage compensation for sensor heater

The Lambdatronic LT4 provides controlled pumping current to supply up to 4 Bosch lambda sensors, type LSU 4.2, LSU 4.9 or Mini-LSU 4.9. The lambda value, the sensor temperature and diagnostics are available via CAN and analog signal.

The LSU contains a Nernst and a pump cell. The lambda in the Nernst cell is controlled to  $\lambda = 1.013$  independent of the oxygen contents on the emission side, through a current through the pump cell. The current proportional output voltage of the IC is a measure of the lambda value.

The main feature and benefit of this unit is the combination of the Bosch well known lambda IC and a very compact box size with motorsport specification. Furthermore the analog signal output can be configured freely.

## Application

Application	Lambda 0.75 to 10.12
Compatible Bosch sensor type	LSU 4.2, LSU 4.9, Mini-LSU 4.9
Channels	4
Heater	Internal

## Technical Specifications

### Mechanical Data

Weight with wire	98 g
Sealing	100 % humidity
Mounting	Velcro
Size w/o wire (w*h)	54 x 59 x 13 mm
Operating temp. range (housing)	-20 to 85°C

Storage temp. range	-20 to 85°C
Max. vibration	Vibration Profile 1 (see Appendix or <a href="http://www.bosch-motorsport.com">www.bosch-motorsport.com</a> )

### Electrical Data

Power supply $U_s$	(6.5) 10 to 14 V
Max power supply (1 min) $U_s$	Max. 26 V
Thermal dissipation loss	3 W at 14 V
Current $I_s$	5 A
Current $I_s$ (Heating up)	26 A

### Software Tool (free download)

System Configuration tool RaceCon 2.7.0.9 or later
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### Characteristic

Signal output 1	CAN
Signal output 2	4 x 0 to 5 V "analog"
CAN- baud rate	500 kbaud or 1 Mbaud
Signal resolution	2,5 * 10 <sup>-4</sup> lambda
Signal sampling rate	100 Hz
CAN refresh rate	100 Hz

### Connectors and Wires

Connector	AS614-35PN
Connector loom	F02U.000.365-01
AS114-35SN	
Sleeve	Viton
Wire size	26
Wire length L	20 cm

**Pin Assignment**

Pin	Function
1	+ 12 V (Battery +)
2	+ 12 V (Battery +)
3	Ground (Battery -)
4	Ground (Battery -)
5	K-Line diagnostic connection
6	CAN1 + (high)
7	CAN1 - (low)
8	Analog out 1
9	Analog out 2
10	Analog out 3
11	Analog out 4
12	Reference GND for analog out
13	Shield
14	Pump current LSU 1 IP1
15	Virtual GND LSU 1 VM1
16	Heater PWM LSU 1 Uh-1
17	Heater (Batt +) LSU 1 Uh+1
18	Setup current LSU 1 IA1
19	Nernst voltage LSU 1 UN1
20	Pump current LSU 2 IP2
21	Virtual GND LSU 2 VM2
22	Heater PWM LSU 2 Uh-2
23	Heater (Batt. +) LSU 2 Uh+2
24	Setup current LSU 2 IA2
25	Nernst voltage LSU 2 UN2
26	Pump current LSU 3 IP3
27	Virtual GND LSU 3 VM3
28	Heater PWM LSU 3 Uh-3
29	Heater (Batt +) LSU 3 Uh+3
30	Setup current LSU 3 IA3
31	Nernst voltage LSU 3 UN3
32	Pump current LSU 4 IP4
33	Virtual GND LSU 4 VM4

34	Heater PWM LSU 4 Uh-4
35	Heater (Batt. +) LSU 4 Uh+4
36	Setup current LSU 4 IA4
37	Nernst voltage LSU 4 UN4

**Communication**

Communication link	K-Line / CAN
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**Installation Notes**

Typical lifetime: max. 220 h / 2 years

For application with severe conditions and/or high volume, please contact your Bosch Motorsport counterpart in order to define the most appropriate validation program

The LT4 is designed to supply 4 Bosch lambda sensors, type LSU 4.2, LSU 4.9 or Mini-LSU 4.9

The LT4 is featured with voltage compensation for the heating profile

The unit can be connected to any CAN system (500 kbaud or 1 Mbaud) and analog measuring device.

To avoid signal errors, a cable length of maximum 1.5 m between sensor and box is recommended.

The unit is secure from miss-pinning.

The reference ground (GND\_REF) has to be connected either to the measuring device or to the system ground.

A ground offset of 2 V (max.) between GND and GND\_REF has not to be exceeded.

See the LT4 function sheet for software documentation (e.g. CAN protocol).

Please find further application hints in the offer drawing at our homepage.

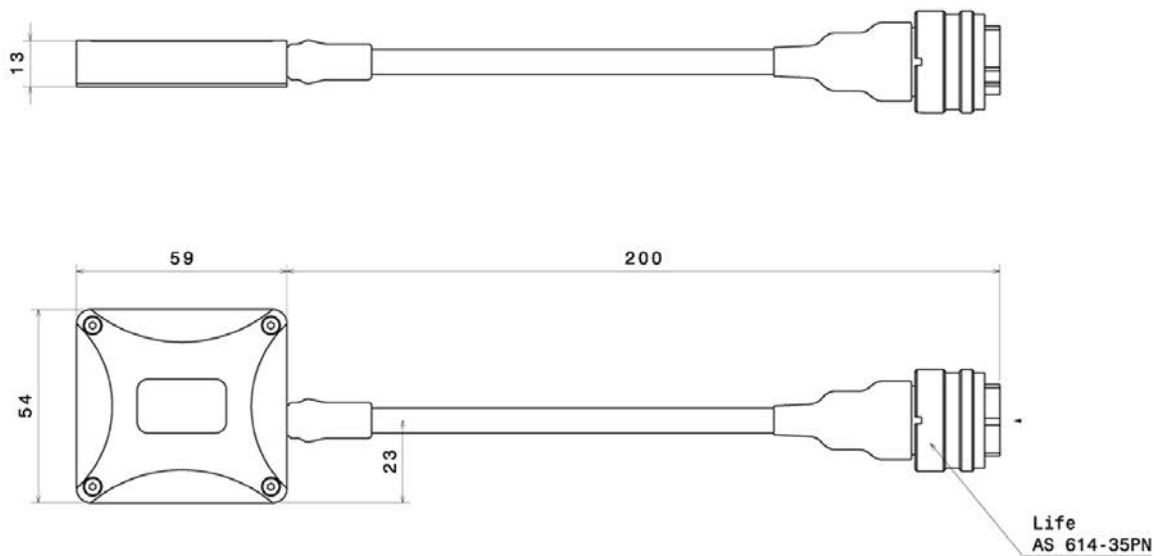
**Legal Restrictions**

The sale of this product in Mexico is prohibited.

**Ordering Information****Lambdatronic LT4**

Order number **F01T.A20.070-09**

**Dimensions**



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