

# Lambdatronic LT4 ADV

www.bosch-motorsport.com



**BOSCH**  
Invented for life



- ▶ Supply of up to 4 Bosch lambda sensors, type LSU ADV
- ▶ Integrated voltage compensation for sensor heater

The Lambdatronic LT4 ADV is a control module which function is to supply and control up to four Bosch LSU ADV. The new lambda sensor LSU ADV offers extended features as an improved robustness, a shorter heating time and less influence from the ambient pressure.

The LSU ADV contains a Nernst cell and a pump cell. The lambda value between the Nernst cell and an internal oxygen reference chamber is controlled to lambda 1.013, independent of the oxygen concentration on the emission side. This happens thanks to the pump current through the pump cell, responsible for the transmission of oxygen atoms in the sensor ceramic. The current proportional output voltage of the IC gets translated in a lambda value. The LT4 ADV provides the sensors temperature and other diagnostics parameters over CAN. The 4 lambda signals can be read by using the CAN or analog output.

The main feature and benefit of this unit is its compact design, its light weight construction, as well as the possibility to control up to 4 Lambda Sensors LSU ADV with multiple user-configurable parameters.

## Functions

Application	Lambda 0.75 to 5
Compatible Bosch sensor type	LSU ADV

Channels	4
Heater	Internal

## Technical Specifications

### Mechanical Data

Weight with wire	98 g
Sealing	100 % humidity
Mounting	Velcro
Size w/o wire (w*l*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 Is	5 A
Current Is (Heating up)	26 A
<b>Software</b>	
Configuration with Modas Sport	Included
<b>Characteristic</b>	
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
<b>Connectors and Wires</b>	
Connector	AS 6-14-35PN
Connector loom AS 1-14-35SN	F 02U 000 365-01
Sleeve	Viton
Wire size	26
Wire length L	20 cm
<b>Pin Assignment</b>	
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	Not connected
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	Not connected
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	Not connected
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	Not connected
37	Nernst voltage LSU 4 UN4

## Installation Notes

The LT4 ADV is designed to supply 4 Bosch lambda sensors, type LSU ADV

The LT4 ADV 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.

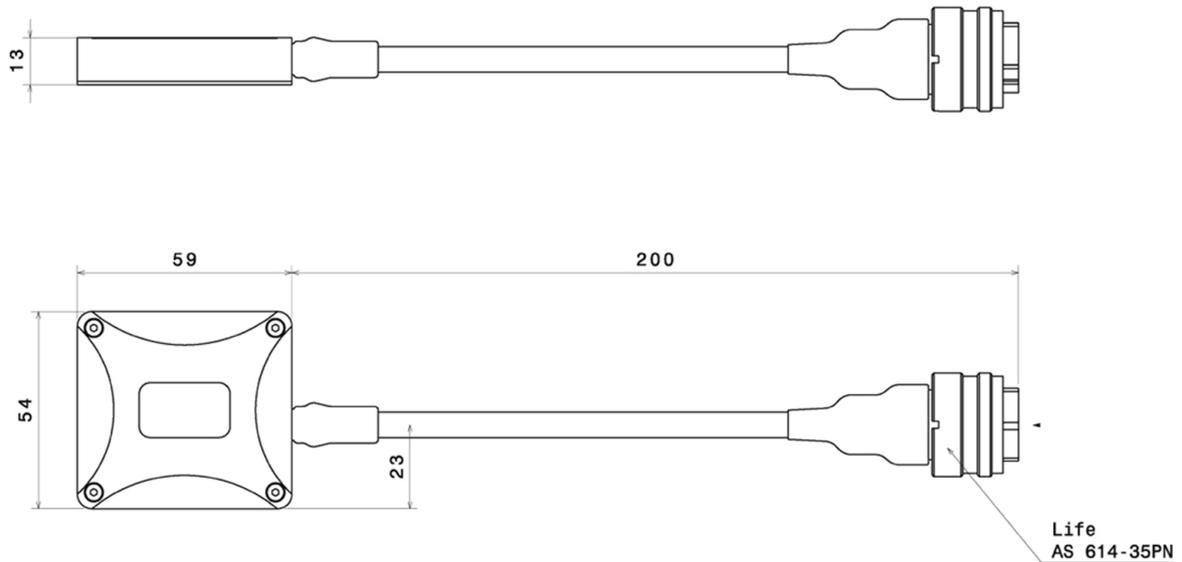
See the LT4 ADV function sheet for software documentation (e.g. CAN protocol).

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

## Ordering Information

**Lambdatronic LT4 ADV**  
Order number **F 02U V01 111-04**

## Dimensions



### Represented by:

**Europe:**  
Bosch Engineering GmbH  
Motorsport  
Robert-Bosch-Allee 1  
74232 Abstatt  
Germany  
Tel.: +49 7062 911 9101  
Fax: +49 7062 911 79104  
motorsport@bosch.com  
www.bosch-motorsport.de

**North America:**  
Bosch Engineering North America  
Motorsport  
38000 Hills Tech Drive  
Farmington Hills, MI 48331-3417  
United States of America  
Tel.: +1 248 876 2977  
Fax: +1 248 876 7373  
motorsport@bosch.com  
www.bosch-motorsport.com

**Latin America:**  
Robert Bosch Ltda  
Motorsport  
Av Juscelino Kubitschek de  
Oliveira 11800  
Zip code 81460-900  
Curitiba - Parana  
Brasil  
Tel.: +55 41 3341 2057  
Fax: +55 41 3341 2779

**Asia-Pacific:**  
Bosch Engineering Japan K.K.  
Motorsport  
18F Queen's Tower C, 2-3-5 Minato Mirai  
Nishi-ku, Yokohama-shi  
Kanagawa 220-6218  
Japan  
Tel.: +81 45 650 5610  
Fax: +81 45 650 5611  
www.bosch-motorsport.jp

**Australia, New Zealand and South Africa:**  
Robert Bosch Pty. Ltd  
Motorsport  
1555 Centre Road  
Clayton, Victoria, 3168  
Australia  
Tel.: +61 (3) 9541 3901  
motor.sport@au.bosch.com