M163 UEGO Lambda Controller Bosch double

USER MANUAL

Warning!!! To display the correct value of A/F, before attaching a probe to the connector it is essential to set in M163 module "the identification code for calibration" five figures reported on the probe itself. This parameters is a unique code associated with each sensor that allows M163 to perform compensation and must therefore be set again each time you used different probes or the probe are connected to different channels. So for each module using always make sure the probes are connected to the correct channel. For details on how to settings the code refer to the "mode setting parameters".

Display modes

The M163 module can have two pages to display data acquired in each of which are expressed respectively in ratio A/F or Lambda (A/F ratio measured in relation to the value of A/F stoichiometric).
After a short message at startup, the system displays on the last page before the shutdown.
It's possible switch from one display mode to another by a simply press to the right button "<>".

How to set parameters

The M163 module allows you to set for each channel the following parameters:

- ID of CAN channel which data is transmitted to the probe connected to the channel.
- ID for the calibration of the probe connected to the channel.

To change parameters press left button "◊" until you see parameter to change. Pressing the right button "<>" you can entry in the mode of "edit".
In this mode you can change the single digit of the parameter to be amended by selecting the right key "<>". The figure selected, which is marked with the symbol "^", can be increased later by pressing left button "◊". Reached value "F", with an additional pressure of the left button. "◊", you get the reset of the figure itself.
The parameter is changed and saved when you selected the last digit, making a further press left "<>".

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Electrical characteristics

Supply voltage	:	10,5 – 18 V
Supply current	:	5 A peak

Pin Out Connector Sumitomo HM 6V M

N°PIN	Signal	Color	DESCRIPTION	RANGE
1	Vbatt	Red	Battery voltage	10,5-18
2	GND	Black	Power ground	-
3	Vout2	Violet	Analog output signal on the probe 2	0-5V
4	CAN H	White	Positive transmission can	-
5	CAN L	Green	Negative transmission can	-
6	Vout1	Pink	Analog output signal on the probe 1	0-5V

The signal Vout1 and Vout2 show linearly the A/F ratio in analog form.

Voltage value	A/F
1,000 V	10,02
4,000 V	14,70

CAN transmission characteristics

CAN transmission speed	:	1 Mbit/sec
No. Channels	:	2
Single channel transmission frequency	:	200 Hz
Addresses channels	:	User defined
Termination	:	Not ended

Data transmitted are coded as follows:

OFFSET	DESCRIPTION	TYPE	NOTE
0	A/F ratio	UWORD	2 DECIMAL
2	Lambda	UWORD	3 DECIMAL
4	Battery voltage	UBYTE	1 DECIMAL
5	Allarms	UBYTE	See table below
6	Impedance	UWORD	Expressed in cell count

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The alarms are coded as follows:

Bit	DESCRIPTION	Comment
0	Heating	The bit is high during the heating
1	Heater current limitation	The bit is high when the heater is in limit current for the absorption of excessive current. This warning is normally activated when the probe is cold.
2	Open circuit heater	This alarm is activated when the probe isn't connected or when the heater of the probe itself is interrupted.
3	Short circuit heater	This alarm is activated when the heater of the probe is short-circuit.
4	Reserved	
5	Reserved	
6	Reserved	
7	Low battery	This alarm is activated when the battery voltage is insufficient for the proper functioning of the circuit.

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