Walbro ECU for Bimota







INTRODUCTION

AIM has developed special applications for many of the most popular ECUs: by special applications we mean user-friendly systems which allow to easily connect your ECU to our high tech data loggers: user needs only to install harness between the **logger** and the ECU.

Once connected, the logger displays (and/or records, depending on the logger and on the ECU data stream and configuration) values like RPM, engine load, throttle position (TPS), air and water temperatures, battery voltage, speed, gear, lambda value (air/fuel ratio) analog channels...

All AIM loggers include – free of charge – **Race Studio 2** software, a powerful tool to configure the system and analyze recorded data on your PC.

Warning: once the ECU is connected to the logger, it is necessary to set it in the logger configuration in Race Studio 2 software. Select Manufacturer "Walbro" Model "Bimota_DB7" for DB7 models and "Bimota" for all the others Bimota bikes. Refer to Race Studio Configuration user manual for further information concerning the loggers configuration.

Warning: for any further information concerning ECU firmware/software settings and/or upgrading it is always recommended to address to the ECU dealer.



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Chapter 1 – Technical communication notes

Walbro ECU is installed as stock on Bimota bikes. The image below shows its position on the bike: right side below the radiator.



Like other Bimota ECU this model is equipped with a 4 pins superseal female connector shown here below that the same Bimota installs on the bikes.



The connector pinout is:

- Pin 1 not to be connected, used by Bimota staff;
- Pin 2 RS232Rx
- Pin 3 RS232TX
- Pin 4 Ground



Chapter 2 – Walbro serial communication Setup

Walbro ECU is equipped with a serial communication setup used to communicate with external loggers whose standard setup is shown here below.



Chapter 3 – Connection with AIM loggers

To connect the ECU with AIM loggers:

- connect AIM cable labelled RS232TX with pin 2 of superseal 4 pins female connector;
- connect AIM cable labelled RS232RX with pin 3 of superseal 4 pins female connector;



Chapter 4 – Walbro Bimota communication protocol

Channels received by AIM loggers connected to Walbro ECU are different according to Bimota bike models.

4.1 – General Bimota communication protocol

Channels received by AIM loggers connected to Bimota ECU (DB7 model excluded) are:

ID	CHANNEL NAME	FUNCTION
ECU_1	RPM	RPM
ECU_2	BAP	Barometric Air pressure
ECU_3	MAP	Manifold pressure
ECU_4	KLAMBDA	Fuel correction from lamba value
ECU_5	INJ1	Injection time 1
ECU_6	INJ2	Injection time 2
ECU_7	SPARK1	Spark advance 1
ECU_8	SPARK2	Spark advance 2
ECU_9	PHASE	
ECU_10	TPS	Throttle position sensor
ECU_11	DELTATPS	Throttle position delta
ECU_12	TAIR	Intake air temperature
ECU_13	TENGINE	Enigne temperature
ECU_14	VBATT	Battery supply
ECU_15	LAMBDA	Lambda value
ECU_16	LAMBDAREF	Lambda reference
ECU_17	IDLEPOS	Idle position
ECU_18	GEAR_AD_VAL	Gear advanced value
ECU_19	START_SWITCH	Start switch
ECU_20	SIDE_STAND	
ECU_21	NEUTRAL	Neutral sensor



4.2 – Bimota DB7 communication protocol:

ID	CHANNEL NAME	FUNCTION
ECU_1	WALBRO_RPM	RPM
ECU_2	WALBRO_SPEED	Speed
ECU_3	WALBRO_TPS	Throttle position sensor
ECU_4	WALBRO_DTPS_POS	Throttle position positive delta
ECU_5	WALBRO_DTPS_NEG	Throttle position negative delta
ECU_6	WALBRO_MAP	Manifold pressure
ECU_7	WALBRO_BAP	Barometric air pressure
ECU_8	WALBRO_AIRT	Intake air temperature
ECU_9	WALBRO_ENGT	Engine temperature
ECU_10	WALBRO_LBDA1	Lambda value 1
ECU_11	WALBRO_LBDA2	Lambda value 2
ECU_12	WALBRO_LBDA_T	Lambda target value
ECU_13	WALBRO_KLBDA1	Fuel correction from Lambda 1 value
ECU_14	WALBRO_KLBDA2	Fuel correction from Lambda 2 value
ECU_15	WALBRO_INJT1	Injection time 1
ECU_16	WALBRO_INJT2	Injection time 2
ECU_17	WALBRO_SPARK1	Spark advance 1
ECU_18	WALBRO_SPARK2	Spark advance 2
ECU_19	WALBRO_PHASE1	Injection phase 1
ECU_20	WALBRO_PHASE2	Injection phase 2
ECU_21	WALBRO_IDLE_VALVE	Idle valve position
ECU_22	WALBRO_ACTIVEBLOCK	Immobilizer
ECU_23	WALBRO_NEUTRAL	Neutral sensor
ECU_24	WALBRO_BATT_V	Battery supply
ECU_25	WALBRO_ERCOUNTER	Error counter