MecTronik

MK_E4 ECU

Racing Data Power

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 "MecTronik" Model "MK_E4".
Refer to Race Studio Configuration user manual for further information concerning the loggers configuration.

Warning: it is always suggested to verify if the ECU needs any software/firmware setting or upgrade to export data to an external logger.

INDEX

Chapter 1 – Technical communication notes

MecTronic company produces two versions of MK_E4 ECU: standard and drive by wire. They can be distinguished by their serial number.

MK_E4 **standard** version serial numbers are:

- xx HA xxx
- xx HB xxx
- xx HC xxx

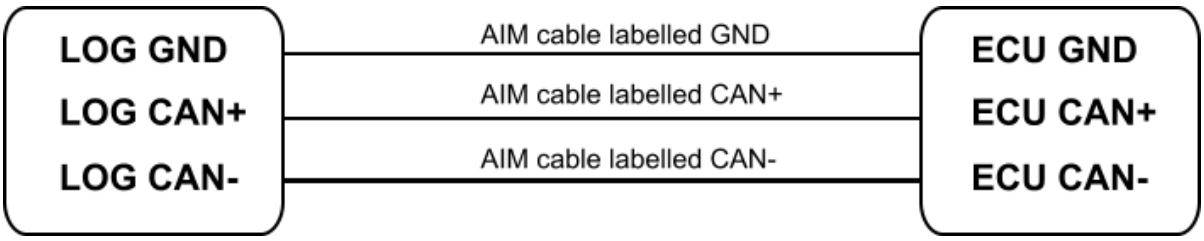
MK_E4 **drive by wire** version serial numbers are:

- xx HD xxx

“HA” “HB” “HC” “HD” are the codes that identify ECU version.

Chapter 2 – CAN communication Setup

Both MK_E4 ECU are equipped with a CAN communication protocol and its setup is shown here below.



Chapter 3 – Connection with AIM loggers

Both ECU versions are equipped with a 41 pins connector. For MK_E4 ECU to correctly communicate with AIM logger follows carefully these instructions.

MK_E4 standard version:

- connect AIM cable labelled CAN+ with pin “J” of 41 pins ECU connector
- connect AIM cable labelled CAN- with pin “Y” of 41 pins ECU connector
- connect AIM cable labelled GND with pin “H” of 41 pins ECU connector

MK_E4 drive by wire version:

- connect AIM cable labelled CAN+ with pin “J” of 41 pins ECU connector
- connect AIM cable labelled CAN- with pin “c” of 41 pins ECU connector
- connect AIM cable labelled GND with pin “H” of 41 pins ECU connector

Chapter 4 – MecTronik MK_E4 communication protocol

Channels received by AIM loggers connected to MecTronik MK_E4 (both versions) are:

ID	CHANNEL NAME	FUNCTION
ECU_1	MKE4_RPM	RPM
ECU_2	MKE4_TORQUE	Torque value
ECU_3	MKE4_LAMBDA	Lambda value
ECU_4	MKE4_KNOCK	Detonation counter
ECU_5	MKE4_THROTPOS	Throttle position sensor
ECU_6	MKE4_ACCPOS	Accelerator
ECU_7	MKE4_CAMAPOS	Cam shaft "A" position 1
ECU_8	MKE4_CAMBPOS	Cam shaft "B" position 1
ECU_9	MKE4_TURBOPRESS	Boost pressure
ECU_10	MKE4_COLLPRESS	Manifold pressure
ECU_11	MKE4_BAROPRESS	Barometric pressure
ECU_12	MKE4_OILPRESS	Oil pressure
ECU_13	MKE4_ENGTEMP	Engine temperature
ECU_14	MKE4_AIRTEMP	Intake air temperature
ECU_15	MKE4_OILTEMP	Oil temperature
ECU_16	MKE4_AUXTEMP	Auxiliary temperature
ECU_17	MKE4_BATTVOLT	Battery voltage
ECU_18	MKE4_SENSVOLT	Sensor voltage
ECU_19	MKE4_AUXAVOLT	Auxiliary voltage 1
ECU_20	MKE4_AUXBVOLT	Auxiliary voltage 2
ECU_21	MKE4_GEAR	Engaged gear
ECU_22	MKE4_SPEED	Vehicle speed
ECU_23	MKE4_ENG_CYC	Engine cycles
ECU_24	MKE4_POWERCUT	Power cut
ECU_25	MKE4_RPM2	RPM 2
ECU_26	MKE4_TORQUE2	Torque value 2
ECU_27	MKE4_LAMBDA2	Lambda value 2
ECU_28	MKE4_KNOCK2	Detonation counter 2
ECU_29	MKE4_THROTPOS2	Throttle position sensor 2
ECU_30	MKE4_ACCPOS2	Accelerator 2
ECU_31	MKE4_CAMAPOS2	Cam shaft "A" position 2

ECU_32	MKE4_CAMBPOS2	Cam shaft "B" position 2
ECU_33	MKE4_LSUAFR	Air/Fuel ratio
ECU_34	MKE4_SNDTEMP	Lambda probe temperature
ECU_35	MKE4_LSUAUXAVOLT	Lambda auxiliary "A" voltage
ECU_36	MKE4_LSUAUXBVOLT	Lambda auxiliary "b" voltage
ECU_37	MKE4_SPEED_FSX	Front left wheel speed
ECU_38	MKE4_SPEED_FDX	Front right wheel speed
ECU_39	MKE4_SPEED_RSX	Rear left wheel speed
ECU_40	MKE4_SPEED_RDX	Rear right wheel speed
ECU_41	MKE4_ACC_LONG	Longitudinal acceleration
ECU_42	MKE4_ACC_LAT	Lateral acceleration
ECU_43	MKE4_ROT_XY	
ECU_44	MKE4_STEER	Steering angle speed
ECU_45	MKE4_SLIP_FR	Front right slip
ECU_46	MKE4_SLIP_LR	Left rear slip
ECU_47	MKE4_SLIP_WHEEL	Wheel slip
ECU_48	MKE4_DIFF_ACC	Differential accelerometer
ECU_49	MKE4_REG	
ECU_50	MKE4_IN_STATE	Input State
ECU_51	MKE4_OUT_CURR	Output current
ECU_52	MKE4_PWM	Pulse width modulation
ECU_53	MKE4_ERR_SEN	
ECU_54	MKE4_ERR_ACT	
ECU_55	MKE4_ERR_TRG	
ECU_56	MKE4_ERR_SENL1	
ECU_57	MKE4_ERR_ACTL1	
ECU_58	MKE4_ERR_SENDC	
ECU_59	MKE4_ERR_ACTDC	