Link G4 ECU

Racing Data Power

INTRODUCTION

AIM has developed special applications for many of the most common ECUs: by special applications we mean user-friendly systems which allow to easily connect your ECU to our hi-tech data loggers: user need 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) 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.

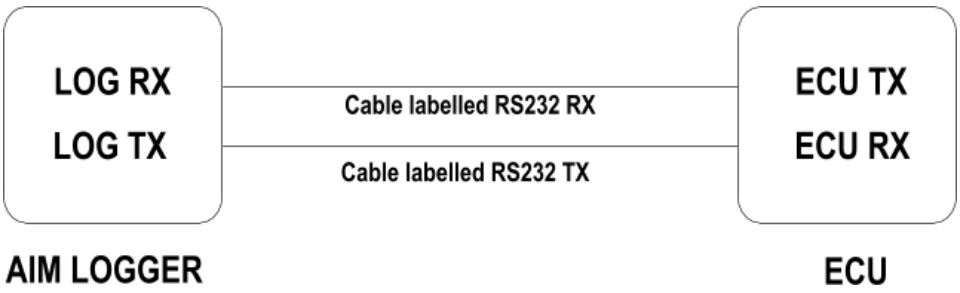
Warning: once the ECU is connected to the logger, it is necessary to set it in the logger configuration in Race Studio 2 software.
Select Manufacturer "LINK" and Model "G4".
Refer to Race Studio Configuration user manual for further information concerning the loggers configuration.

Warning: it is strongly recommended to always verify whether the ECU needs specific software settings to export data.

IMPORTANT: using the latest "PC Link" software NO ADAPTER IS NEEDED to connect Link G4 to an AIM logger

1 –Serial communication Setup

Link G4 ECU has a serial communication protocol (RS232) and is equipped with 4 connectors used to communicate parameters to external loggers or to configure the ECU itself.



1.1 - ECU connectors Description

The image below shows the ECU connections:

“A” connector is necessary to power the ECU

“B” connector is used to connect different kinds of sensors to the ECU

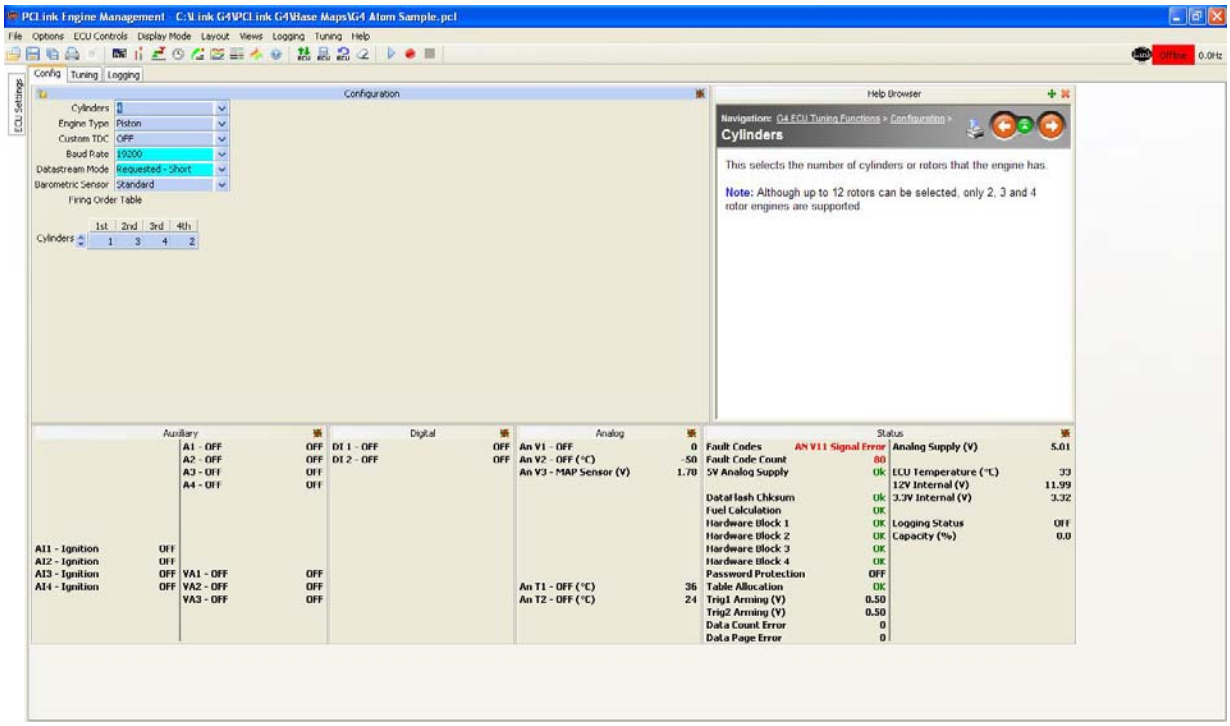
Connector labelled “USB” is used to connect the ECU to the PC

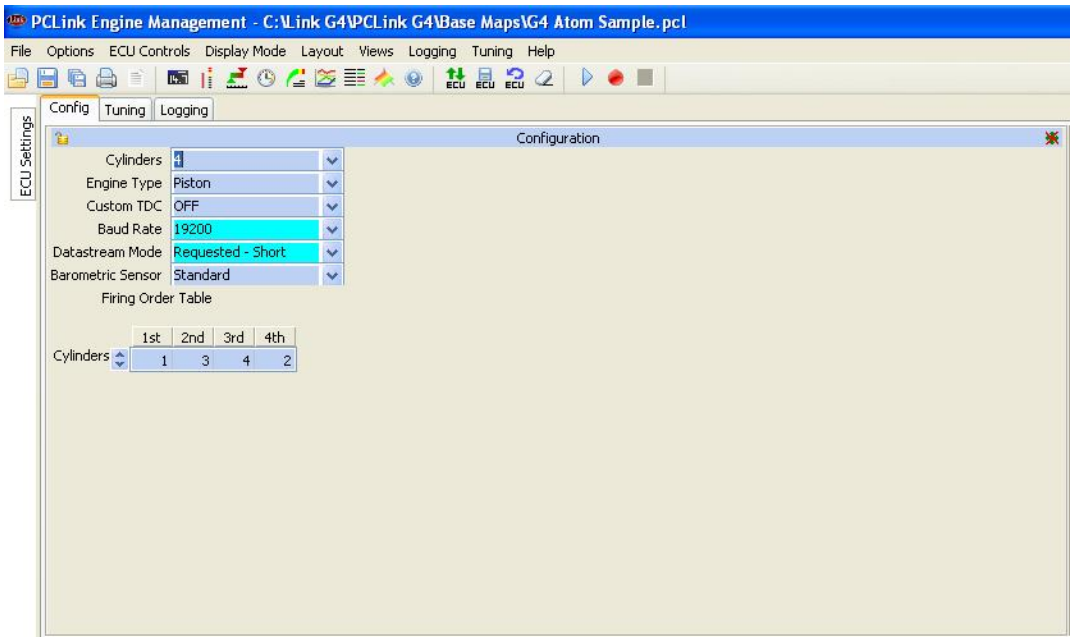
Connector labelled “CAN” allows serial communication (see Chapter 2)

1.2 – Link G4 ECU Setup

The ECU must be re-configured using PC Link software:

- "BAUDRATE" has to be set at "**19200**"
- "DATASTREAM MODE" has to be "**REQUESTED SHORT**"





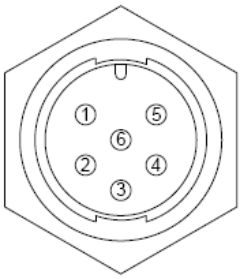
Warning: in case of lack of communication between logger and ECU, disconnect the ECU from PC

2 – Connection to AIM loggers

Connection between ECU and AIM loggers is to be made as follows:

- **Connect AIM cable labelled "RS232RX" (white) to cable labelled "RX232TX" (blue) of the adapter.**
- **Connect RX232RX cable (yellow) of the adapter to AIM cable labelled "RS232TX" (blue) of the AIM logger.**
- **Connect 12V cable (red) and "GND" ones (green and black) to the battery**.

ECU "CAN" connector is shown here below in the left while its pinout is shown on the right.



Looking into ECU connector

Pin	Color	Function
1	Brown	Ground
2	Blue	N/A
3	White	CAN H
4	Green	CAN L
5	Yellow	ECU RS232 TX
6	Gray	ECU RS232 RX

3 – Link G4 ECU communication protocol

Channels received by AIM loggers connected to Link G4 ECU are:

ID	CHANNEL NAME	FUNCTION
ECU_1	G4_RPM	RPM
ECU_2	G4_MAP	Manifold Air Pressure
ECU_3	G4_MGP	NOT AVAILABLE
ECU_4	G4_BAROMETRIC	Barometric value
ECU_5	G4_TPS	Throttle position sensor
ECU_6	G4_DUTY_CYCLE	NOT AVAILABLE
ECU_7	G4_DUTY_CYC (S)	NOT AVAILABLE
ECU_8	G4_INJ_PW	Injection power
ECU_9	G4_ECT	Engine cooling temperature
ECU_10	G4_IAT	Intake air temperature
ECU_11	G4_BATT_VOLT	Battery voltage
ECU_12	G4_MAF	Mass Air Flow
ECU_13	G4_MAF_CYl	Cylinder Mass air flow
ECU_14	G4_GEAR	Gear Number
ECU_15	G4_ECU_TEMP	ECU temperature
ECU_16	G4_INJ_ANGLE	Injection angle
ECU_17	G4_IGN_ANGLE	Ignition angle
ECU_18	G4_CAM_INL_LH	Camshaft Inlet Position
ECU_19	G4_CAM_INL_RH	Camshaft Inlet Position
ECU_20	G4_CAM_EXH_LH	Camshaft Exhaust Position
ECU_21	G4_CAM_EXH_RH	Camshaft Exhaust Position
ECU_22	G4_GPTemp_AN1	Generic Temperature Channels
ECU_23	G4_GPTemp_AN2	Generic Temperature Channels
ECU_24	G4_GPTemp_AN3	Generic Temperature Channels
ECU_25	G4_GPTemp_AN4	Generic Temperature Channels
ECU_26	G4_GPPress_AN1	Generic Sensor Channels
ECU_27	G4_GPPress_AN2	Generic Sensor Channels
ECU_28	G4_GPPress_AN3	Generic Sensor Channels
ECU_29	G4_GPPress_AN4	Generic Sensor Channels
ECU_30	G4_GPPress_AN5	Generic Sensor Channels
ECU_31	G4_GPPress_AN6	Generic Sensor Channels
ECU_32	G4_GPPress_AN7	Generic Sensor Channels
ECU_33	G4_GPPress_AN8	Generic Sensor Channels
ECU_34	G4_GPPress_AN9	Generic Sensor Channels
ECU_35	G4_GPPress_AN10	Generic Sensor Channels
ECU_36	G4_GPPress_AN11	Generic Sensor Channels

ECU_37	G4_DI_SPEED1	Generic Speed Channels
ECU_38	G4_DI_SPEED2	Generic Speed Channels
ECU_39	G4_DI_SPEED3	Generic Speed Channels
ECU_40	G4_DI_SPEED4	Generic Speed Channels
ECU_41	G4_DI_SPEED5	Generic Speed Channels
ECU_42	G4_DI_SPEED6	Generic Speed Channels
ECU_43	G4_DI_FREQ1	Generic Frequency Channels
ECU_44	G4_DI_FREQ2	Generic Frequency Channels
ECU_45	G4_DI_FREQ3	Generic Frequency Channels
ECU_46	G4_DI_FREQ4	Generic Frequency Channels
ECU_47	G4_DI_FREQ5	Generic Frequency Channels
ECU_48	G4_DI_FREQ6	Generic Frequency Channels
ECU_49	G4_KNOCK_LEVEL	Knock level
ECU_50	G4_KNOCK_COUNT	Knock count
ECU_51	G4_KNOCK_TARGET	Knock Target
ECU_52	G4_DWELL_TIME	Coil Dwell Time
ECU_53	G4_OV_VOLT_LIM	Overvoltage Limiter (1=Act – 0=Not Act)
ECU_54	G4_OV_FUEL_LIM	Overrun Fuel Cut (1=Act – 0=Not Act)
ECU_55	G4_VOLTAGE_LIM	Voltage limit (1=Act – 0=Not Act)
ECU_57	G4_MAX_IGN_LIM	Max ignition limiter (1=Act – 0=Not Act)
ECU_58	G4_SPEED_LIM	Speed limiter (1=Act – 0=Not Act)
ECU_59	G4_MAP_LIM	Manifold air pressure limit (1=Act – 0=Not Act)
ECU_60	G4_RPM_LIM	RPM Limit(1=Act – 0=Not Act)
ECU_65	G4_AN_LIM	Limit (1=Act – 0=Not Act)
ECU_66	G4_WAKEUP_STATUS	Wake Up Status (1=Act – 0=Not Act)
ECU_67	G4_LCH_RPM_LIM	Launch RPM Limit (1=Act – 0=Not Act)
ECU_68	G4_UN_VOLT_LIM	Under Voltage Limit (1=Act – 0=Not Act)
ECU_69	G4_TG1_ERR_CNT	Trig1 Error Counter
ECU_70	G4_TG2_ERR_CNT	Trig2 Error Counter
ECU_76	G4_ECCS_WIDESLOT_ERR	ECCS Widest Slot Error (1=Y – 2=NO)
ECU_77	G4_TRIG2_ERR	Trig2 Error Signal (1=Y – 2=NO)
ECU_78	G4_TRIG1_ERR	Trig1 Error Signal (1=Y – 2=NO)