

AiM InfoTech

A-RACER
RC Super2 ECU

Release 1.01



ECU



1 Models and years

This document explains how to connect AiM devices to the vehicle Engine Control Unit (ECU) data stream.

Supported models and years are:

- RC-Super2

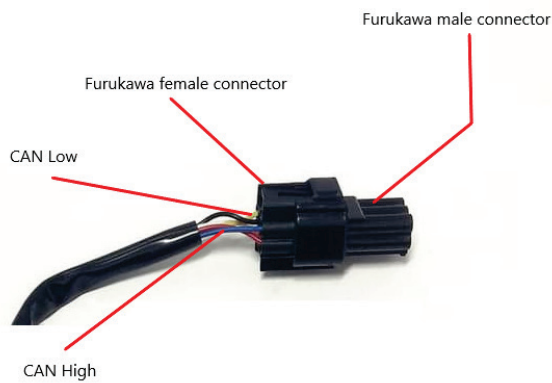
2 Wiring connection

These models have a specific-manufacturer CAN protocol, accessible through the 6-pin Furukawa FW 090 male connector positioned on their standard wiring shown below. For this installation, refer the following pinout of the Furukawa connector and related connection table.

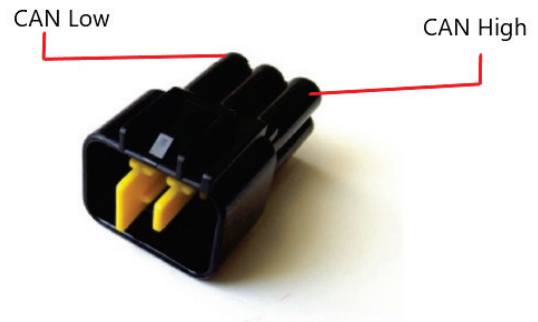
RC super 2 Standard wiring



RC super 2 Standard



Furukawa male connector



Furukawa pin color

Blue
Yellow

Function

CAN High
CAN Low

AiM cable

CAN +
CAN -

AiM color cable

White
Blue

3

Race Studio configuration

Before connecting the AiM device to the ECU, set all functions using AiM software Race Studio. The parameters to set in the device configuration are:

- ECU manufacturer: **A-RACER**
- ECU Model: **RC Super2 ECU (only RS3)**

4

“A-RACER – RC Super2 ECU” protocol

Channels received by AiM devices configured with " A-RACER – RC Super2 ECU" protocol are:

CHANNEL NAME	FUNCTION
Bit_Group 1	Bit group 1 1=BL En 2=CL En
Bit_Group 2	Bit group 2 1=Stall 3=Idle 7=Run
Bit_Group 3	Contains the following messages: 1=MAP sensor defect 2=MAP sensor break 3=MAP sensor short to battery 4=Intake temp. Sensor short to GND 5=Intake temp. Sensor Break 6=Engine temp. Short to GND 7=Engine temp. Short to GND 8=Battery voltage too high
Bit_Group 4	Contains the following messages: 1=TPS break 2=TPS short to battery 3=O2 sensor circuit low voltage 4=O2 sensor circuit high voltage 5=O2 sensor circuit no activity detected 6=Fuel pump break 7=Fuel pump short to break 8=Internal control module memory check sum error



AFR	Air fuel ratio
BL	Narrowband Air fuel ratio learning (01=ON / 00=OFF)
CL	Narrowband air fuel ratio correction %
TAir	Air temperature
SA	Spark advance
RPM	Engine RPM
Bat	Voltage battery
TEng	Water temperature
TPS	Throttle position sensor
PW	Fuel pulse width (ms)
Bit_Group 5	Contains the following messages: 1=Injector Break 2=Injector Short to battery 3=Coil Short to GND 4=Coil Short to battery
Bit_Group 6	Contains the following messages: 1=Idle air control system circuit low 2=Idle air control system circuit high 3=Crankshaft position sensor A circuit malfunction 4=Engine oil over temperature condition
BitGroup 7	Contains the following messages: 1=Malfunction (01:ON / 00:OFF)
At	ATM (kPa)
AP	Manifold air pressure (kPa)
IdleA	Idle air control
O2V	Narrowband O2 sensor voltage (mV)
BitGroup 8	Contains the following messages: 3=O2 sensor fault 4=O2 sensor fault 7=Roll over switch ON 8=Crank sensor open
VM	



BitGroup 9	Contains the following messages: 1=O2 sensor heater circuit malfunction 2=Air fuel ratio sensor heater circuit malfunction 3=Idle control system malfunction 4=Idle air control valve system high RPM 5=Injection usage to high
TF	Total fuel consumption (L)
AvF	Average fuel consumption
VS	Vehicle speed
IF	Real time fuel consumption (L)
AF	Average fuel consumption
Bit_Group 10	Contains the following messages: 1=WBO2 2=WBCL
Bit_Group 11	Contains the following messages: 1=Ready 3=Valet
WAF	Wideband AFR
Inj	Injection usage (%)
FA	
LRPM	
MiniProductID	Mini product identification
ISC	Idle speed control
MisC	Crank error count
AEMULT	Acceleration enrichment
TPS_idx	Throttle position sensor index
Bit_Group 1Log	Contains the following messages: 1=DFCOEn
TCVSSFRRate	Traction control system front rear rate
Cyl1Expect_MAP	Expected manifold air pressure – 1 st cylinder
Gear	Gear position
Bit_Group 2Log	Contains the following messages:



1=QuickShift Act

2=AT RUN

3=Neutral SW

5=PitLimit ON

MapNum

Map number

EngineBrake

Engine brake

Technical note: not all data channels outlined in the ECU template are validated for each manufacture's model or variant; some of the outlined channels are model and year specific, and therefore may not be applicable.