AiM InfoTech

A-RACER
RC Super2 ECU

Release 1.00

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:

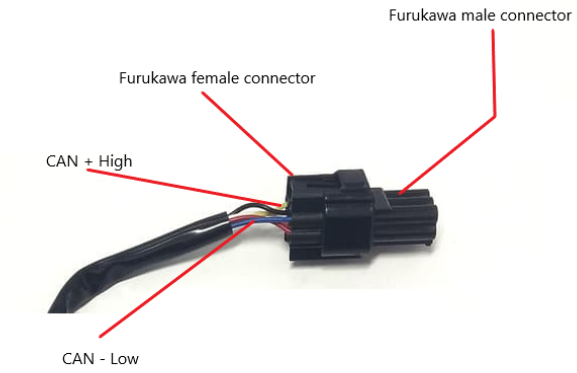
- RC-Super2

2 Wiring connection

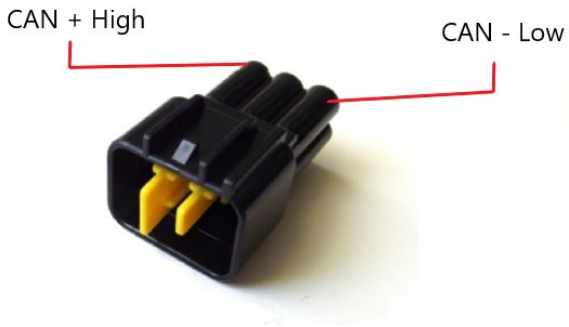
These models have a specific-manufacturer CAN protocol, accessible through the 6-pin Furukawa FW 090 male connector positioned on their standard wiring shown below. For this installation, refer the following pinout of the Furukawa connector and related connection table.

RC super 2 Standard wiring

RC super 2 Standard



Furukawa male connector



Furukawa pin color	**Function**	**AiM cable**	**AiM color cable**
Yellow	CAN High	CAN +	White
blue	CAN Low	CAN -	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 – 1st 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.