

AiM InfoTech

YAMAHA
MT-09 / FZ-09

Release 1.00



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:

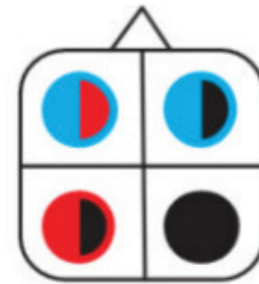
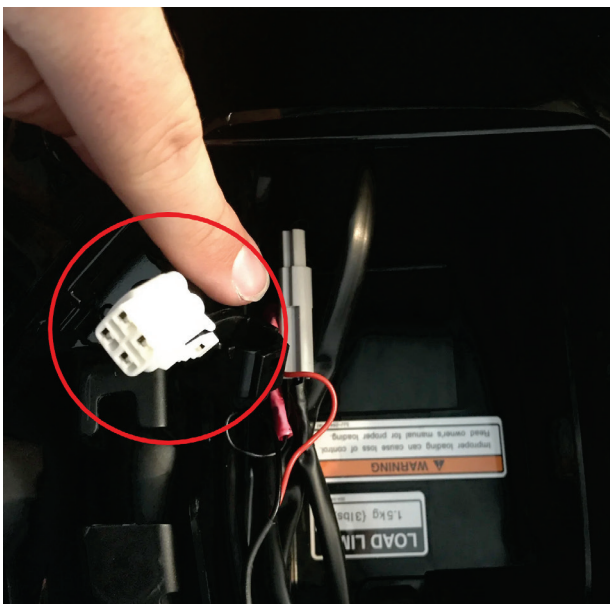
- Yamaha – FZ09 MT09 2014 - 2020
- Yamaha – FZ09 MT09 from 2021 (Euro5)

Warning: for these models/years AiM recommends not to remove the stock dash, doing so will disable some of the bike's functions or safety controls. AiM Tech srl will not be held responsible for any consequences that may result from the replacement of the original instrumentation cluster.

2

Wiring connection (2014 – 2020)

Yamaha MT-09 ECU features a bus communication protocol based on CAN that can be reached through the diagnostic connector (4pins Sumitomo connector), placed under the bike tail. Below each diagnostic connector lead color and function is expressed.



Diagnostic connector	Function	AiM Cable	AiM color Cable
Blu/Red	CAN High	CAN +	White
Blu/Black	CAN Low	CAN -	Blu
Red/Black	+VB (unswitched)	V Batt	Red
Black	Ground	GND	Black

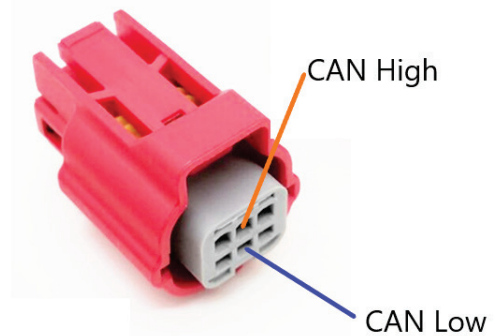
AiM supplies a dedicated cable with part number:

SOLO 2 DL	Cable length 1600mm	V02569340
EVO4S	Cable length 500mm	V02585150

2.1

Wiring connection (2021 onwards – Euro5)

Yamaha MT-09 Euro5 models are equipped with a bus communication protocol based on CAN that can be accessed through the standard OBDII Euro5 red connector placed under the bike seat.



Diagnostic connector

- 2
- 3
- 4
- 5

Function

- CAN High
- Ground
- Voltage Battery
- CAN Low

AiM Cable

- CAN+
- GND
- V Battery
- CAN-

AiM color Cable

- White
- Black
- Red
- Blue

AiM supplies a dedicated cable with part number:

Solo 2 DL
EVO4S

Cable length 1600 mm
Cable length 400 mm

"V02589130"
"V02585200"

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: **YAMAHA**
- ECU Model: **FZ09 MT09** (RS3 Only)

3.1

OBDII - 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: **OBD_II**
- ECU model: **CAN** (Only EURO5 models)

4

Protocols

Channels received by AiM devices change according to the selected protocol.

4.1

"YAMAHA – FZ09 MT09" protocol

Channels received by AiM devices configured with "YAMAHA – FZ07" protocol are:

CHANNEL NAME	FUNCTION
RPM	Engine RPM
Speed	Vehicle speed
Speed	Vehicle speed 2
Water Temp	Water temperature
Air Temp	Air temperature
PPS	Handle throttle position
TPS	Throttle position sensor
Gear	Engaged gear
Mode	Mode
FlagError	Flag error
	3= MIL malfunction indicator lamp
Error	Error

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

4.2 "OBDII - CAN" protocol

Channels received by AiM devices configured with "OBDII - CAN" protocol are:

CHANNEL NAME	FUNCTION
OBDII RPM	Engine RPM
OBDII SPEED	Vehicle speed
OBDII ECT	Engine coolant temperature
OBDII TPS	Throttle position sensor
OBDII IAT	Intake air temperature
OBDII MAP	Manifold air pressure
OBDII MAF	Manifold air flow
OBDII FUEL LEVEL	Fuel level
OBDII PPS	Pedal position sensor

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