AiM Infotech

Aprilia RSV4/Tuono RF/RR
MY2015 - MY2017 - MY2019

Release 1.01

AiM

1
Models and years

This manual explains how to connect Aprilia RSV4 and Tuono V4 ECUs to AiM devices. Supported models and years are:

- Aprilia RSV4 RR / RF MY 2015   2015 - 2016
- Aprilia RSV4 RR / RF MY 2017   2017 - 2018
- Aprilia RSV4 1100 MY 2019   2019 - 2020

- Aprilia Tuono V4 RR / Factory MY 2015   2015 - 2016
- Aprilia Tuono V4 RR / Factory MY 2017   2017 - 2018
- Aprilia Tuono V4 RR / Factory MY 2019   2019 - 2020

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.
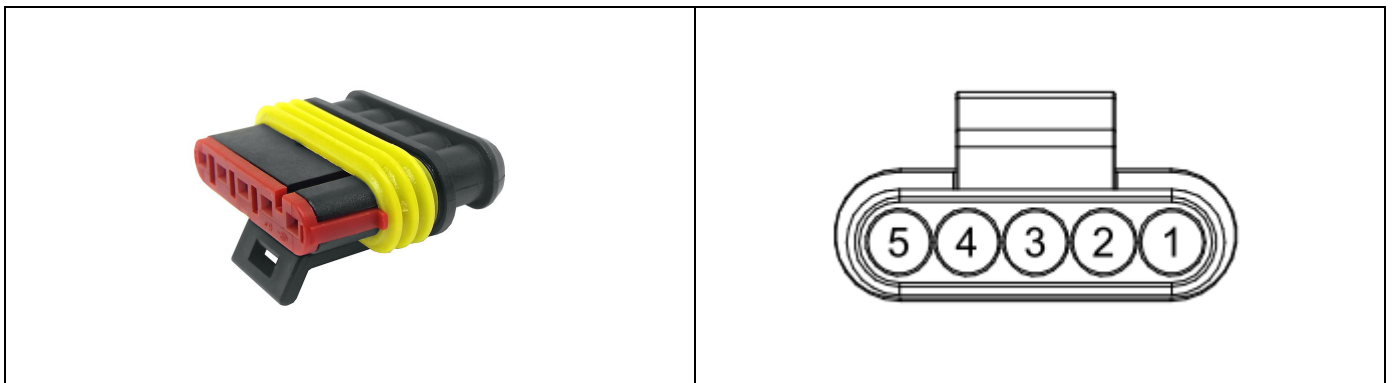
2
Connection

Aprilia RSV4/Tuono bikes feature a bus communication protocol based on CAN that can be reached through the V4-MP (Multimedia Platform – Bluedash) connector you find on the left side of the bike. Different connectors have been used by the manufacturer depending on model year.

2.1
RSV4 MY 2015 connection

Aprilia RSV4/Tuono MY2015 are equipped with a 5 ways AMP Superseal connector dedicated to the V4-MP connection.

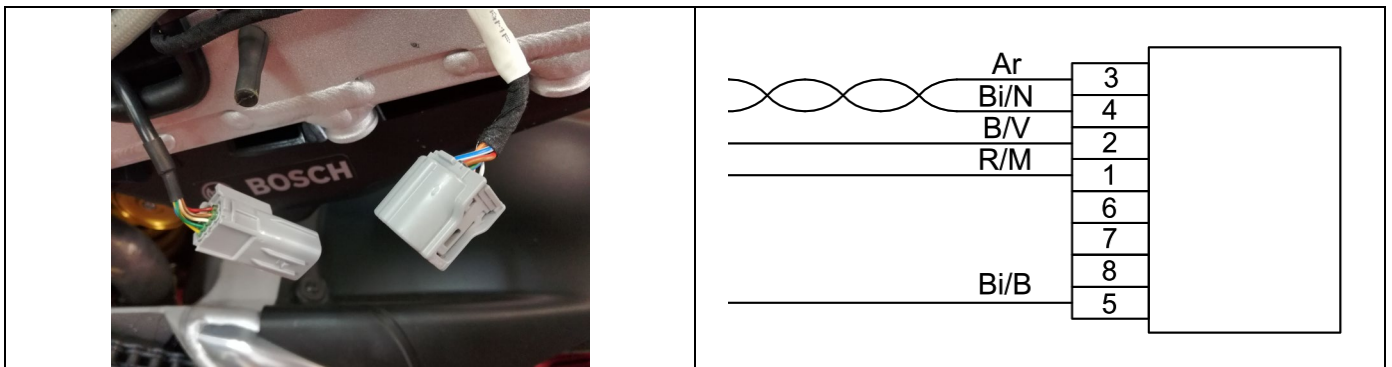Below is indicated its pinout (rear view) and connection table.

5 ways connector pin	Pin function	Aprilia cable colour	AiM cable label
1	CAN High	Orange	CAN+
2	CAN Low	White/Black	CAN-
3	GND	Green/Blue	GND
4	15 (12V switched)	Red/Brown	9-15V power
5	30 (12V unswitched)	Not Used	NC

2.2
RSV4 MY2017 and MY2019 connection

Aprilia RSV4/Tuono MY2017 MY2019 are equipped with an 8 ways Sumitomo connector dedicated to the V4-MP connection.

Below is indicated its pinout and connection table.

8 ways connector pin	Pin function	Aprilia cable colour	AiM cable label
1	15 (12V switched)	Red/Brown	9-15V power
2	GND	Blue/Green	GND
3	CAN High	Orange	CAN+
4	CAN Low	White/Black	CAN-
5	Diagnostic K-line	White/Blue	Not Used
6	NC		NC
7	NC		NC
8	NC		NC

3

Race Studio 3 configuration

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

- ECU manufacturer: **Aprilia**
- ECU Model: **RSV4_APRC_V4MP**

After this first selection, enable/disable the 120 Ohm resistor and the "Silent" mode on CAN Bus as follows:

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"Aprilia - RSV4_APRC_V4MP" protocol

Channels received by AiM devices configured with "Aprilia - RSV4_APRC_V4MP" protocol are:

CHANNEL NAME	FUNCTION
RSV4_RPM	RPM
RSV4_GEAR	Engaged gear
RSV4_BK_SPEED	Bike speed
RSV4_WH_SPD_F	Front wheel speed
RSV4_WH_SPD_R	Rear wheel speed
RSV4_ACC_LONG	Longitudinal accelerometer
RSV4_ACC_LAT	Lateral accelerometer
RSV4_ROLL_RATE	Roll rate

RSV4_YAW_RATE	Yaw rate
RSV4_ENG_TEMP	Engine coolant temperature
RSV4_Brake_press	Brake pressure
RSV4 Baro	Barometric pressure
RSV4 MAP2 Target	Manifold air pressure target bank 2
RSV4 MAP1 Target	Manifold air pressure target bank 1
RSV4 MAP2	Manifold air pressure bank 2
RSV4 MAP1	Manifold air pressure bank 1
RSV4_Advance	Ignition Advance
V4MP_Lean_angle	Lean angle
RSV4_Pitch_angle	Pitch angle
RSV4_Roll_angle	Roll angle
RSV4 PFANGCOR 1	-
RSV4 PFANGCOR 2	-
V4MP_Throttle	Throttle position
RSV4_THRT_HAND	Throttle handle
RSV4_TPS1	Throttle position bank 1
RSV4_TPS2	Throttle position bank 2
V4MP_Torque_red	Torque reduction
V4MP_Inj_time	Injection time
RSV4_Odometer	Odometer
RSV4_V_BATT	V battery
RSV4_Pit_speed	Pit limiter speed
RSV4_ATC	ATC – Aprilia Traction Control level
RSV4_AWC	AWC – Aprilia Wheel control
RSV4_ALC	ALC – Aprilia Launch control
RSV4_AQS_on	Quick shift on
RSV4_Pit_on	Pit limiter on
RSV4_Pit_active	Pit limiter activated
V4MP_ATC_level	ATC – Aprilia Traction Control level
V4MP_Speed	Speed
V4MP_ABS_int	ABS intervention

V4MP_Slip	Tyre slip
RSV4_Sistfas	-
RSV4_Cntlostsync	Lost sync counter
Cruise selector	Cruise control selection key
RSV4 ALC INT	ALC – Aprilia Launch Control intervention
RSV4_SEL_MAP	Selected Map
RSV4_WARNING	Warning led
RSV4_Urg_serv	Urgent Service Lamp
RSV4_MIL	Malfunction Indicator Lamp
RSV4_TC_INT	Traction control intervention
RSV4_FUEL_LOW	Low fuel level
Set confirm	Selection key
RSV4_Tipover	Tip over sensor
TC menu set butt	Selection key
RSV4_SIDESTAND	Side stand led
RSV4_ABS	ABS

Technical note: not all data channels outlined in the ECU template are validated for each manufacturer model or variant; some of the outlined channels are model and year specific, and therefore may not be applicable. Some models may need the V4-MP module to be plugged in, in order to stream the additional data.