AiM Infotech

BMW S1000RR 2009-2014
S1000RR HP4 from 2012
S1000RR 2015

Release 1.05

ECU

1 Supported models and years

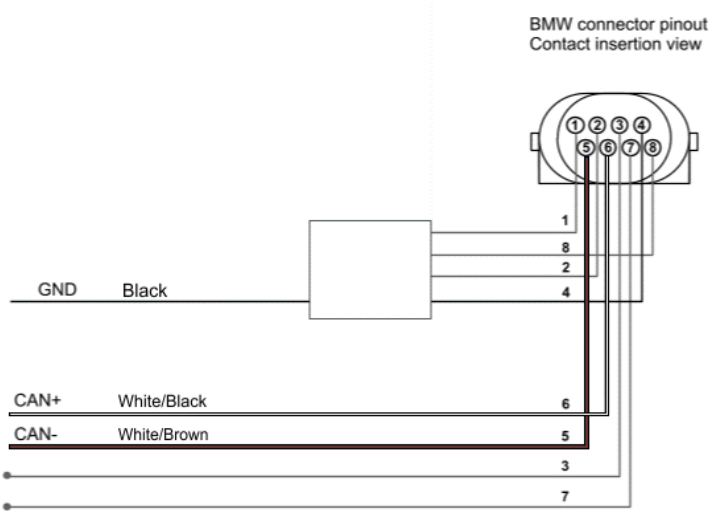
This document explains how to connect AiM devices to the vehicle Engine Control Unit (ECU) data stream.
Supported years and models are:

- BMW S1000RR 2009-2014
- BMW S1000RR from 2015
- BMW S1000RR HP4 from 2012

Warning: for these models/years AiM recommends not to remove the stock dash. Doing so will disable some of the bike 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

These models feature a bus communication protocol based on CAN, accessible through the DWA (alarm) connector placed under the bike tail. For this installation refer to the following pinout and connection table of the DWA connector (rear view).



DWA connector pin	Pin function	BMW cable colour	AiM cable label
5	CAN-	White/Brown	CAN-
6	CAN+	White/Black	CAN+

3
Configuration with Race Studio

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

- ECU Manufacturer: **BMW**
- ECU Model:
    - **BIKE_S1000RR** for BMW S1000RR 2008-2014 and BMW S1000RR HP4 2013-2014
    - **BIKE_S1000RR_2015** for BMW S1000RR 2015

4
Available channels

Channels received by AiM Devices connected to BMW bikes change according to the selected protocol.

4.1
"BMW – BIKE_S1000RR" protocol

Channels received by AiM devices configured with "BMW – BIKE_S1000RR" protocol are:

CHANNEL NAME	FUNCTION
RPM	RPM
THROTTLE	Throttle
GEAR	Gear Sensor
NEUTRAL	Neutral sensor
WATER TEMP	Engine cooling temperature
SEL MAP	Selected map
CHK ENGINE	Engine check
SPEED F	Front wheel speed sensor
HAND THRT	Manual Throttle
SPEED R	Rear wheel speed sensor
INTK AIR T	Intake air temperature
YAW RATE	Yawing rate
ROLL RATE	Rolling rate
ACC LATER	Horizontal Accelerometer
ACC VERTIC	Vertical Accelerometer
TC INTERV	Traction Control Intervention
TC OFF	Traction Control in OFF State (alarm)
CLUTCH SW	Clutch Switch

SIDE STAND	Side stand
BRK FR SW	Front Brake
BRK RR SW	Rear Brake
ACC LONGIT	Longitudinal Accelerometer
OIL PRESS SW	Oil pressure switch
EWS CTRL	Immobilizer Control
BRK FAIL	Brake malfunction (Error)
ABS OFF	ABS in off State (alarm)
MAP MENU	Map selection menu
HP4 TC SEL	Traction control selection
HP4 LAUNCH	HP4 Launch control switch
HP4 POT R	HP4 Rear potentiometer
HP4 POT F	HP4 Front potentiometer
HP4 BANKING	HP4 Banking angle
HP4 R SPEED	HP4 Rear wheel Speed
HP4 BIKE SPD	HP4 Bike speed
HP4 F SPEED	HP4 Front wheel speed
HP4 ACC LON	HP4 Longitudinal acceleration

Technical note: note 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. Channels labelled HP4, for example are only available on BMW S1000RR HP4 2013-2014 bikes.

4.2
"BMW – BIKE_S1000RR_2015" protocol

Channels received by AiM devices configured with "BMW – BIKE_S1000RR_2015" protocol are:

CHANNEL NAME	FUNCTION
RPM	RPM
Gear	Active gear
SpeedF	Front wheel Speed
SpeedR	Rear wheel speed
LongAcc	Longitudinal accelerometer
LatAcc	Lateral accelerometer
VertAcc	Vertical accelerometer
RollRate	Roll rate
YawRate	Yaw rate
WaterTemp	Water temperature
IntakeAirTemp	Intake air temperature
BrakePressF	Front brake pressure
BrakePressR	Rear brake pressure
Banking	Banking angle
TPS	Throttle position
HandTPS	Throttle position (grip)
MomTotRedu	Wheel torque reduction
ASCTrqReduct	Torque reduction for anti spin control intervention
AscTyreGrip	Tyre grip % for anti spin control intervention
WheelMomAct	Wheel torque actual
WheelMomRedu	Wheel torque reduction
LaunchCtrl	Launch control
TC Sel	Traction control selection
ABSActive	ABS active status
LiftOff	Lift control off status
DamperFmm	Front dampers travel (mm)
DamperRmm	Rear dampers travel (mm)
InjFuelmL	Fuel injection (ml)
ASCOn	Anti-spin control on
MIL	Malfunctioning indicator lamp

RReboundSet	Rear rebound set
FReboundSet	Rear bump set
RBumpSet	Front rebound set
FBumpSet	Front bump set

Technical note: note 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.