AiM Infotech

Bosch MS4 and Bosch MS4 Sport ECU

Release 1.00

ECU

This tutorial explains how to connect Bosch MS4 ECU to AiM devices.

1 Supported models

Supported ECU models are:

- Bosch MS4
- Bosch MS4 Sport

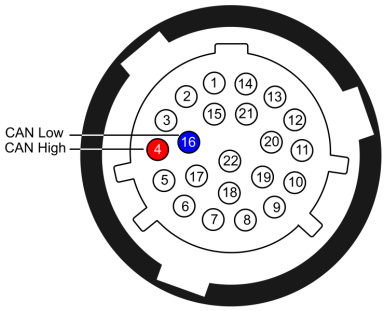
2 Connection to AiM devices

Bosch MS4 and Bosch MS4 Sport ECU feature a bus communication protocol based on CAN that can be reached in two ways:

- on the ECU front left connector
- on the 22 pins Deutsch female diagnosis connector.

2.1
Connection through 22 pins Deutsch connector

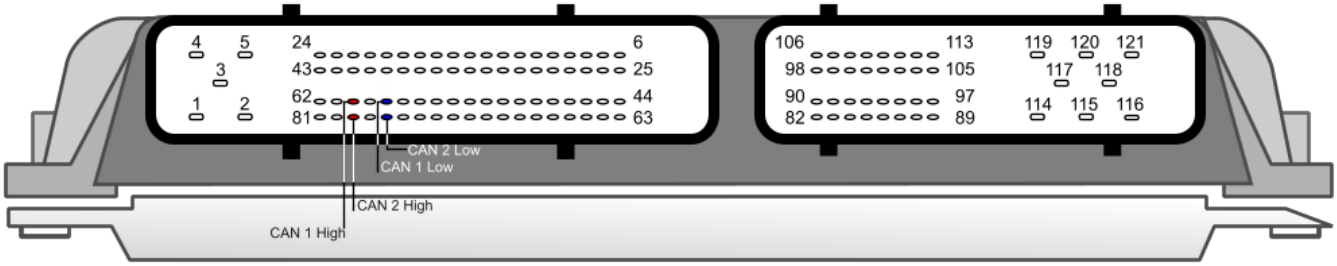
AiM would recommend this connection. The 22 pins diagnosis Deutsch female connector is on the ECU harness and here below you see its pinout and connection table.



22 pins Deutsch connector pin	Pin function	AiM cable
4	CAN 1 High	CAN+
16	CAN 1 Low	CAN-

2.2
Direct ECU connection

Here below is ECU pinout and bottom of it connection table.



ECU connector pin	Pin function	AiM cable
60	CAN 1 High	CAN+
58	CAN 1 Low	CAN-
79	CAN 2 High	CAN+
77	CAN 2 Low	CAN-

Warning: **never connect** pins belonging to different couples like pin 60 (CAN 1 High) with pin 77 (CAN 2 Low).

3
AiM Logger configuration

Before connecting the device to the ECU set it up as follows:

- Run Race Studio 2 software and follow this path:
- Device Configuration –> Select the device you are using;
- select the configuration or press “New” to create a new one;
- select ECU manufacturer “Bosch” and ECU Model
    - "MS4" or
    - "MS4_SPORT"
- transmit the configuration to the device pressing “Transmit”.

4
Available channels

Channels received by AiM devices connected to "Bosch" ECU changes according to the selected protocol.

4.1
"Bosch" "MS4" protocol

Channels received by AiM devices connected to "Bosch" "MS4" protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	BOSCH_RPM	RPM
ECU_2	BOSCH_VEHICLE_SPEED	Vehicle speed
ECU_3	BOSCH_TPS	Throttle position sensor
ECU_4	BOSCH_IGNIT_ANG	Ignition angle
ECU_5	BOSCH_ENGINE_TEMP	Engine temperature
ECU_6	BOSCH_OIL_TEMP	Oil temperature
ECU_7	BOSCH_FUEL_TEMP	Fuel temperature
ECU_8	BOSCH_AIR_TEMP	Intake air temperature
ECU_9	BOSCH_GEAR	Engaged gear
ECU_10	BOSCH_GEAR_OIL_P	Gearbox oil pressure
ECU_11	BOSCH_FUEL_PRESS	Fuel pressure
ECU_12	BOSCH_WATER_PRESS	Water pressure
ECU_13	BOSCH_ATM_PRESS	Atmospheric pressure
ECU_14	BOSCH_OIL_PRESS	Oil pressure
ECU_15	BOSCH_LAMBDA1	Lambda value 1
ECU_16	BOSCH_LAMBDA2	Lambda value 2
ECU_17	BOSCH_AFR1	Air/Fuel ratio 1
ECU_18	BOSCH_AFR2	Air/Fuel ratio 2

ECU_19	BOSCH_INJ_TM1	Injection time 1
ECU_20	BOSCH_INJ_TM2	Injection time 2
ECU_21	BOSCH_FUEL_USED	Injected fuel
ECU_22	BOSCH_ACC_X	Horizontal acceleration
ECU_23	BOSCH_ACC_Y	Vertical acceleration
ECU_24	BOSCH_ACC_Z	Lateral acceleration
ECU_25	BOSCH_BRAKE_PR	Rear brake pressure
ECU_26	BOSCH_BRAKE_PF	Front brake pressure
ECU_27	BOSCH_EXAUST_GAS	Exhaust gas temperature
ECU_28	BOSCH_SPEED_FL	Front Left wheel speed
ECU_29	BOSCH_SPEED_FR	Front right wheel speed
ECU_30	BOSCH_SPEED_RL	Rear left wheel speed
ECU_31	BOSCH_SPEED_RR	Rear right wheel speed

4.2 "Bosch" "MS4_SPORT" protocol

Channels received by AiM devices connected to "Bosch" "MS4_SPORT" protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	MS4_RPM	RPM
ECU_2	MS4_SPEED	Speed
ECU_3	MS4_TPS	Throttle position sensor
ECU_4	MS4_GEAR	Engaged gear
ECU_5	MS4_WH_SPD_FL	Front left wheel speed
ECU_6	MS4_WH_SPD_FR	Front right wheel speed
ECU_7	MS4_WH_SPD_RL	Rear left wheel speed
ECU_8	MS4_WH_SPD_RR	Rear right wheel speed
ECU_9	MS4_LAM1	Lambda 1 value
ECU_10	MS4_LAM2	Lambda 2 value
ECU_11	MS4_OIL_P	Oil pressure

ECU_12	MS4_ATM_P	Atmospheric pressure
ECU_13	MS4_FUEL_P	Fuel pressure
ECU_14	MS4_CRANK_P	Crank pressure
ECU_15	MS4_P1	Pressure 1
ECU_16	MS4_OIL_T	Oil temperature
ECU_17	MS4_ATM_T	Intake air temperature
ECU_18	MS4_FUEL_T	Fuel temperature
ECU_19	MS4_ECT	Engine coolant temperature
ECU_20	MS4_EX_T1	Exhaust gas temperature 1
ECU_21	MS4_EX_T2	Exhaust gas temperature 2
ECU_22	MS4_LAMBDA_T1	Lambda 1 temperature
ECU_23	MS4_LAMBDA_T2	Lambda 2 temperature
ECU_24	MS4_BATTVOLT	Battery supply
ECU_25	MS4_MIL	Malfunctioning indication lamp
ECU_26	MS4_OIL_SW	Oil switch