

AiM Infotech

Bosch MS4 Sport Turbo 40CSTX20 and 40CSTX30 ECUs

Release 1.00



ECU



This tutorial explains how to connect Bosch MS4 Sport Turbo ECUs to AiM devices.

1

Supported models

Supported ECU models are:

- Bosch MS4 Sport Turbo 40CSTX20
- Bosch MS4 Sport Turbo 40CSTX30

2

Connection to AiM devices

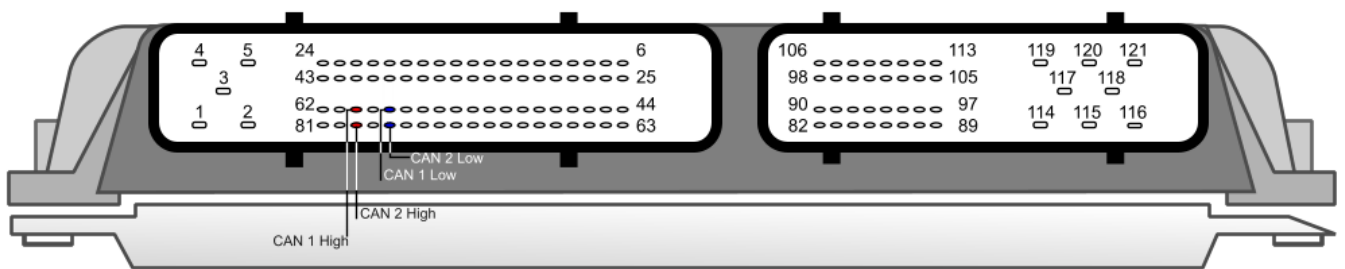
Bosch MS4 Sport Turbo 40CSTX20 and 40CSTX30 ECUs feature a bus communication protocol based on CAN that can be reached in two ways:

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

2.1

Direct ECU connection

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



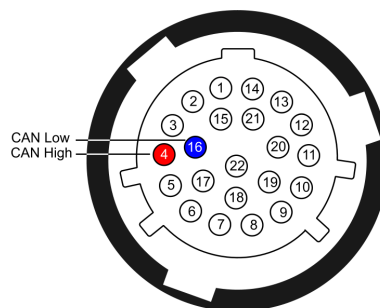
ECU connector pin	Pin function	AiM cable
60	CAN 1 High	CAN+
58	CAN 1 Low	CAN-
79	CAN 2 High	CAN+
77	CAN 2 Low	CAN-

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

2.2

Connection through 22 pins Deutsch connector

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-

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_SP_T_CSTX20" or
 - "MS4_SP_T_CSTX30"
- transmit the configuration to the device pressing "Transmit".

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Available channels

Channels received by AiM devices connected to Bosch MS4 Sport Turbo ECU changes according to the selected protocol.

4.1

"Bosch" "MS4_SP_T_CSX20" protocol

Channels received by AiM devices connected to "Bosch" "MS4_SP_T_CSX20" protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	MS4_RPM	RPM
ECU_2	MS4_SPEED	Vehicle speed
ECU_3	MS4_WH_ABS_FL	Front left wheel ABS
ECU_4	MS4_WH_ABS_FR	Front right wheel ABS
ECU_5	MS4_WH_ABS_RL	Rear left wheel ABS
ECU_6	MS4_WH_ABS_RR	Rear right wheel ABS
ECU_7	MS4_ATH	Throttle plate angle detection
ECU_8	MS4_ETB	Electronic throttle
ECU_9	MS4_APS	APS
ECU_10	MS4_GEAR	Engaged gear
ECU_11	MS4_GEAR_RATIO	Gear ratio
ECU_12	MS4_GEAR_CUT	Gear cut
ECU_13	MS4_ACCX	Horizontal acceleration
ECU_14	MS4_ACCY	Vertical acceleration
ECU_15	MS4_ACCZ	Lateral acceleration
ECU_16	MS4_P1	Pressure sensor 1
ECU_17	MS4_PCRANK	Crank case pressure
ECU_18	MS4_POIL	Oil pressure



ECU_19	MS4_PWAT	Water pressure
ECU_20	MS4_PAMB	Ambient pressure
ECU_21	MS4_PFUEL	Fuel pressure
ECU_22	MS4_MAPPOS	Selected map
ECU_23	MS4_FUEL_LIT	Fuel level
ECU_24	MS4_TAIR	Intake air temperature
ECU_25	MS4_TFUEL	Fuel temperature
ECU_26	MS4_TOIL	Oil temperature
ECU_27	MS4_TLA1	Lambda 1 temperature
ECU_28	MS4_TLA2	Lambda 2 temperature
ECU_29	MS4_TMOT	Engine coolant temperature
ECU_30	MS4_TEX1	Exhaust gas temperature 1
ECU_31	MS4_TEX2	Exhaust gas temperature 2
ECU_32	MS4_ABS_SW_ST	ABS switch state
ECU_33	MS4_BRK_PR	Brake pressure
ECU_34	MS4_BRAKE_SW	Brake switch
ECU_35	MS4_P22_M	Average pressure after throttle plate
ECU_36	MS4_P22_2M	Average pressure after throttle plate 2
ECU_37	MS4_P22_SP	Boost pressure-controller reference value out of maps
ECU_38	MS4_WGDC	Boost pressure waste gate
ECU_39	MS4_WGD2	Boost pressure waste gate 2
ECU_40	MS4_TC_ACT	Traction control active
ECU_41	MS4_OIL_LAMP	Oil lamp
ECU_42	MS4_MIL	Malfunctioning indication lamp
ECU_44	MS4_LAMBDA1	Lambda 1
ECU_45	MS4_LAMBDA2	Lambda 2
ECU_46	MS4_TC_SW_POS	Traction control switch position
ECU_47	MS4_CAMSHPOS	Camshaft position
ECU_48	MS4_BATT	Battery supply
ECU_49	MS4_DATH	Throttle angle gradient
ECU_50	MS4_IGN_BASE	Ignition base
ECU_51	MS4_IGN_MAP	Ignition manifold air pressure

ECU_52	MS4_TDWELL	Ignition circuit dwell time
ECU_53	MS4_TIBASE	Injection duration from map and after corrections
ECU_54	MS4_TIMAP	Injection duration from map
ECU_55	MS4_IGN_ANG	Ignition angle

4.2

"Bosch" "MS4_SP_T_CSTX30" protocol

Channels received by AiM devices connected to "Bosch" "MS4_SP_T_CSTX30" protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	MS4_RPM	RPM
ECU_2	MS4_SPEED	Speed
ECU_3	MS4_WH_ABS_FL	Front left wheel speed
ECU_4	MS4_WH_ABS_FR	Front right wheel speed
ECU_5	MS4_WH_ABS_RL	Rear left wheel speed
ECU_6	MS4_WH_ABS_RR	Rear right wheel speed
ECU_7	MS4_ATH	Throttle plate angle detection
ECU_8	MS4_ETB	Electronic throttle
ECU_9	MS4_APS	APS
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ECU_30	MS4_TEX1	Exhaust gas temperature 1
ECU_31	MS4_TEX2	Exhaust gas temperature 2
ECU_32	MS4_ABS_SW_ST	ABS switch state
ECU_33	MS4_BRK_PR	Brake pressure
ECU_34	MS4_BRAKE_SW	Brake switch
ECU_35	MS4_P22_M	Average pressure after throttle plate
ECU_36	MS4_P22_2M_PWG	Average pressure after throttle plate 2
ECU_37	MS4_P22_SP	Boost pressure-controller reference value out of maps
ECU_38	MS4_PWG_SP	Waste gate pressure
ECU_39	MS4_WGDC_EVENT	Waste gate event
ECU_40	MS4_WGD2_HOLD	Waste gate hold
ECU_41	MS4_TC_ACT	Traction control active
ECU_42	MS4_OIL_LAMP	Oil lamp
ECU_43	MS4_MIL	Malfunctioning indication lamp
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ECU_51	MS4_IGN_BASE	Ignition base
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ECU_53	MS4_TDWELL	Ignition circuit dwell time



ECU_54	MS4_TIBASE	Injection duration from map and after corrections
ECU_55	MS4_TIMAP	Injection duration from map
ECU_56	MS4_IGN_ANG	Ignition angle