AIM Infotech

Autronic SM4 V1.08-V1.09 ECUs

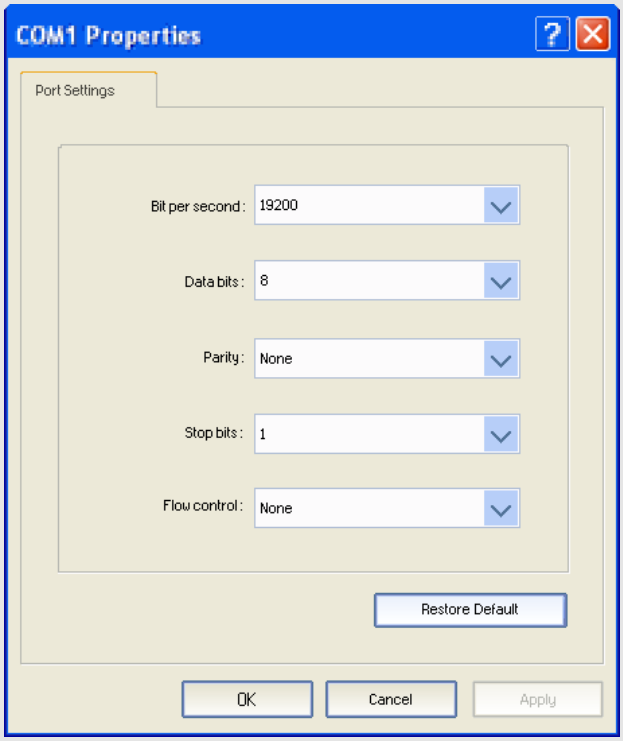
Release 1.00

This tutorial explains how to connect Autronic SM4 V1.08 and V1.09 ECU to AIM devices.

1 COM Port setting

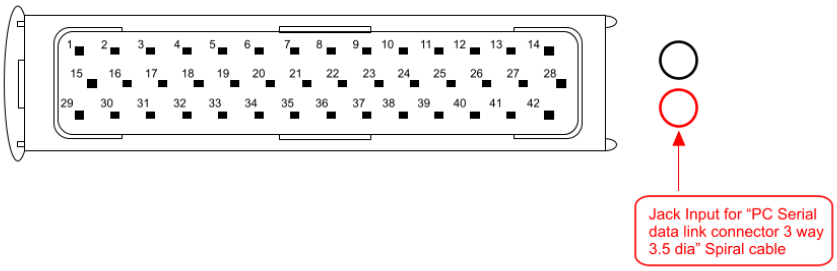
Autronic SM4 V1.08 and V1.09 communicate using the serial protocol. For a good communication between the ECU and the PC the PC COM Port needs to be set with specific parameters. Here below COM Port panel on Windows® XP operative system is shown.

Please note: this panel is usually placed in Control Panel –> System –> Device Manager.



2
Wiring connection

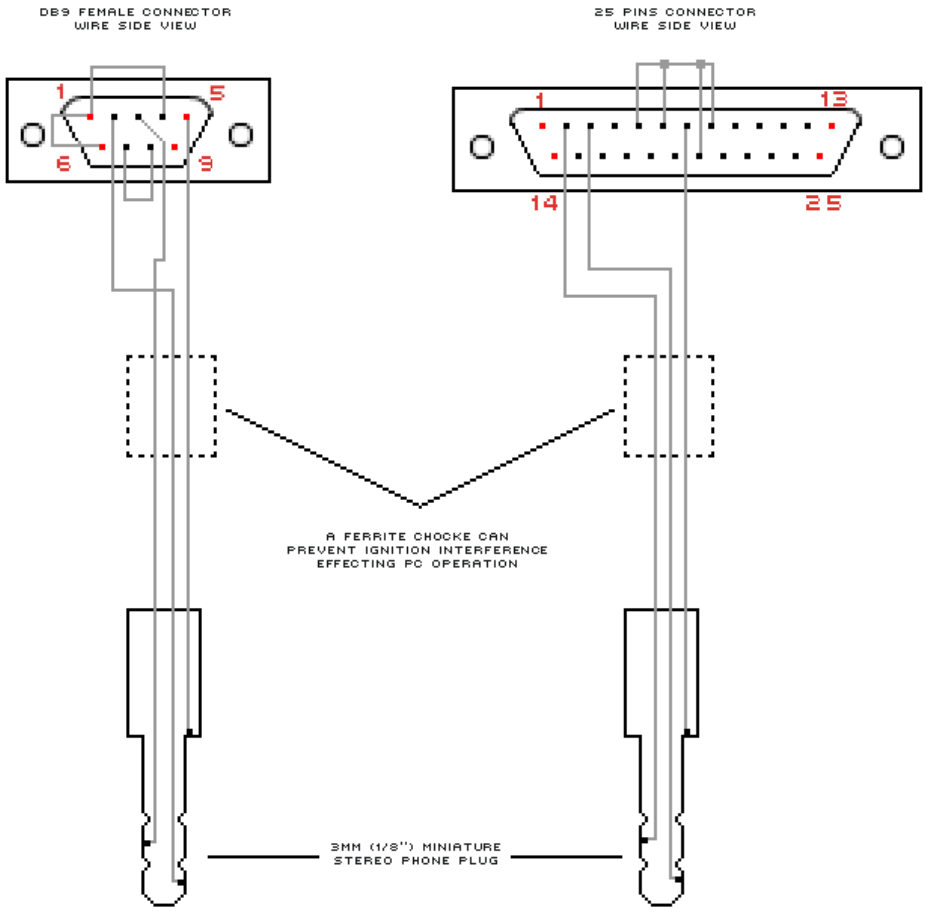
Autronic SM4 V1.08 and SM4 V1.09 ECU are equipped with a serial communication protocol. The ECU features a 42 pins connector and two Jack connectors on its front as shown here below.



The ECU comes with a spiral cable ending with a Jack on one side and alternatively a DB9 female or a DB25 female on the other side. The Jack input of the ECU to be used is shown here above. The spiral cable is used to program the ECU as well as to communicate with external devices, like AIM ones.

Here below the spiral cable ending with a DB9 female connector is shown.

Here follow technical drawing of the two possible cables as well as connection tables.



DB9 connector pin	**Pin function**	**AIM cable**
5	GND	GND
2	RS232TX	RS232RX
DB25 connector pin	**Pin function**	**AIM cable**
7	GND	GND
3	RS232TX	RS232RX

Please note: ECU RS232RX is not to be connected.

3
AIM Logger configuration

Once the ECU connected to the logger, this last one is to be configured as connected to that ECU.

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 “Autronic” and ECU Model “SM4_V108” or “SM4_V109” according to the ECU you are connecting your AIM device to;
- transmit the configuration to the device pressing “Transmit”.

4
Available channels

Channels received by AIM loggers connected to Autronic ECUs depend on the ECU model and are listed in the following paragraphs.

4.1
Autronic SM4 V1.08 ECU channels

Channels received by Autronic SM4 V1.08 ECU are:

ID	CHANNEL NAME	FUNCTION
ECU_1	SM4_RPM	RPM
ECU_2	SM4_SPEED	Vehicle speed
ECU_3	SM4_TURBO_SPD	Turbo speed
ECU_4	SM4_TPS	Throttle position sensor
ECU_5	SM4_IAT	Intake air temperature
ECU_6	SM4_ECT	Engine cooling temperature
ECU_7	SM4_OIL_TEMP	Oil temperature
ECU_8	SM4_CHARGE_TEMP	Air/Fuel mix temperature
ECU_9	SM4_FUEL_TEMP	Fuel temperature
ECU_10	SM4_MAP	Manifold air pressure
ECU_11	SM4_OIL_PRESS	Oil pressure
ECU_12	SM4_FUEL_PRESS	Fuel pressure
ECU_13	SM4_EXHAUST_PRESS	Exhaust pressure
ECU_14	SM4_AF_RATIO	Air/Fuel ratio
ECU_15	SM4_CAM_1	CAM 1
ECU_16	SM4_CAM_2	CAM 2
ECU_17	SM4_INJECT_PW	Injection power
ECU_18	SM4_IGN_ANG	Ignition angle

ECU_19	SM4_KNOC_RET	Knock retard
ECU_20	SM4_BATT_VOLT	Battery supply
ECU_21	SM4_ERR_C1	Error Channel 1
ECU_22	SM4_ERR_C2	Error Channel 2
ECU_23	SM4_ERR_C3	Error Channel 3
ECU_24	SM4_ERR_C4	Error Channel 4
ECU_25	SM4_ERR_C5	Error Channel 5
ECU_26	SM4_ERR_C6	Error Channel 6
ECU_27	SM4_ERR_C7	Error Channel 7
ECU_28	SM4_ERR_C8	Error Channel 8

4.2
Autronic SM4 V1.09 ECU channels

Channels received by AutronicSM4 V1.09 ECU are:

ID	CHANNEL NAME	FUNCTION
ECU_1	SM4_RPM	RPM
ECU_2	SM4_SPEED	Vehicle speed
ECU_3	SM4_TURBO_SPD	Turbo speed
ECU_4	SM4_TPS	Throttle position sensor
ECU_5	SM4_IAT	Intake air temperature
ECU_6	SM4_ECT	Engine cooling temperature
ECU_7	SM4_CHARGE_TEMP	Air/Fuel mix temperature
ECU_8	SM4_MAP	Manifold air pressure
ECU_9	SM4_EXHAUST_PRESS	Exhausted pressure
ECU_10	SM4_AF_RATIO	Air/Fuel ratio
ECU_11	SM4_CAM_1	CAM 1
ECU_12	SM4_CAM_2	CAM 2
ECU_13	SM4_INJECT_PW	Injection power
ECU_14	SM4_IGN_ANG1	Ignition angle 1
ECU_15	SM4_IGN_ANG2	Ignition angle 2
ECU_16	SM4_KNOC_RET	Knock retard
ECU_17	SM4_BATT_VOLT	Battery supply
ECU_18	SM4_OIL_PRESS	Oil pressure
ECU_19	SM4_FUEL_PRESS	Fuel pressure
ECU_20	SM4_USER3	Custom channels 3
ECU_21	SM4_USER4	Custom channels 4
ECU_22	SM4_ERR_1	Error 1
ECU_23	SM4_ERR_2	Error 2