AiM Infotech

Nemesis TCS Kit

Release 1.03

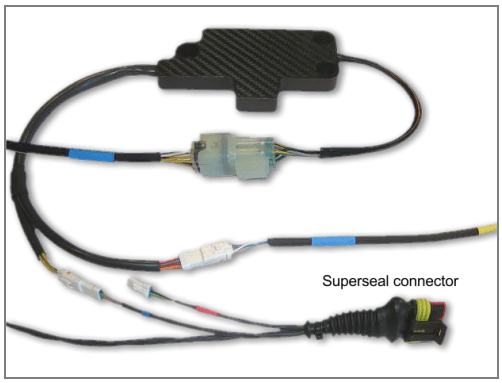
1 Supported protocols

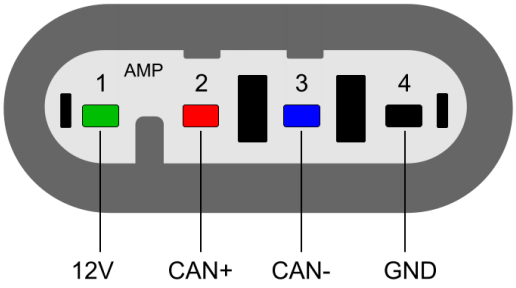
This tutorial explains how to connect Nemesis TCS kit to AiM devices. Supported protocols are:

- Nemesis TCS
- Nemesis TCS 2 Cylinders (properly developed for 2 cylinders vehicles)
- Nemesis TCS 4 Cylinders (properly developed for 4 cylinders vehicles)

2 Wiring connection

Nemesis TCS kit features a data transmission bus based on CAN on the 4 ways Superseal connector that comes with the kit. Here below TCS kit on the left and Superseal connector pinout on the right.





All AiM devices are provided with a 120 Ohm CAN termination resistor. To make them communicate with Nemesis TCS kit it is necessary to remove it. SoloDL and EVO4 resistor is on the ECU connection cable and it is thereby possible to remove it, while in all MXL the resistor is integrated and not removable. For this reason the wiring connection is different.

Superseal pin	Pin function	Nemesis cable colour	EVO4, SoloDL cable	MXL cable
1	12V	Red	+Vb	+Vb
2	CAN+	Green	CAN+	CAN+
3	CAN-	Yellow	CAN-	n.c.
4	Ground	Black	GND	GND and CAN-

3 AiM device configuration

Befor connecting the ECU to AiM device, set this up using AiM Race Studio software. The parameters to select in the device configuration are:

Run Race Studio 2 software and follow this path:

- ECU manufacturer “Nemesis”
- ECU Model:
  - “TCS” or
  - "TCS_2_Cylinders" for 2 cylinders vehicles or
  - "TCS_4_Cylinders" for 4 cylinders vehicles

4 Available channels

Channels received by AiM devices connected to Nemesis TCS kit depend on the selected protocol.

4.1 "TCS" protocol available channels

Channels received by AiM devices connected to "Nemesis" "TCS" protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	TCS_RPM	RPM
ECU_2	TCS_WHEEL_F	Front wheel speed
ECU_3	TCS_WHEEL_R	Rear wheel speed
ECU_4	TCS_TPS	Throttle position sensor
ECU_5	TCS_BATTVOLT	Battery supply
ECU_6	TCS_TPS_VOLT	Throttle position sensor voltage
ECU_7	TCS_T_IGNCOIL1	Time of ignition coil cylinder 1

ECU_8	TCS_T_IGNCOIL2	Time of ignition coil cylinder 2
ECU_9	TCS_T_IGNCOIL3	Time of ignition coil cylinder 3
ECU_10	TCS_T_IGNCOIL4	Time of ignition coil cylinder 4
ECU_11	TCS_TC_MAP_LEV	Traction control on map switch
ECU_12	TCS_TC_SLIP_COR	Traction control slip correction
ECU_13	TCS_QUICK_SHFT	Quick shift
ECU_14	TCS_QUICK_RET	Quick shift retard in degrees
ECU_15	TCS_TL_TEETH_F	Lowest time period between front speed signal teeth in uSec
ECU_16	TCS_TH_TEETH_F	Highest time period between front speed signal teeth in uSec
ECU_17	TCS_TL_TEETH_R	Lowest time period between rear speed signal teeth in uSec
ECU_18	TCS_TH_TEETH_R	Highest time period between rear speed signal teeth in uSec
ECU_19	TCS_DIAG_ERR1	Diagnosis error 1
ECU_20	TCS_DIAG_ERR2	Diagnosis error 2
ECU_21	TCS_DIAG_ERR3	Diagnosis error 3
ECU_22	TCS_DIAG_ERR4	Diagnosis error 4
ECU_23	TCS_MIN_SPEED	Minimum speed
ECU_24	TCS_MIN_TPS	Throttle position sensor minimum value
ECU_25	TCS_WH_DETEC	Wheelie detection
ECU_26	TCS_WH_ACTIV	Wheelie active
ECU_27	TCS_QS_STATUS	Quick shift status
ECU_28	TCS_QS_REQUEST	Quick shift requests
ECU_29	TCS_QS_CUTTING	Quick shift cutting
ECU_30	TCS_TC_EN_POD	Traction control enabled by pod (personal output digital)
ECU_31	TCS_QS_EN_POD	Quick shift enable by pod (personal output digital)
ECU_32	TCS_PIT_LIM	Pit limitation by pod
ECU_33	TCS_TC_EN_DB	Traction control enabled by database
ECU_34	TCS_TC_ACT	Traction control active
ECU_35	TCS_QS_ACT	Quick shift active
ECU_36	TCS_SPEED_LIM	Actual pit lane speed limiter
ECU_37	TCS_TC_VOLT	Traction control voltage
ECU_38	TCS_TC_TEMP	Traction control temperature

4.2 "TCS_2_Cylinders" protocol available channels

Channels received by AiM devices connected to "Nemesis" "TCS_2_Cylinders" protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	TCS_RPM	RPM
ECU_2	TCS_WHEEL_F	Front wheel speed
ECU_3	TCS_WHEEL_R	Rear wheel speed
ECU_4	TCS_TPS	Throttle position sensor
ECU_5	TCS_BATTVOLT	Battery supply
ECU_6	TCS_TPS_Raw	Throttle position sensor raw value
ECU_7	TCS_T_IGNCOIL1	Time of ignition coil cylinder 1
ECU_8	TCS_T_IGNCOIL2	Time of ignition coil cylinder 2
ECU_9	TCS_SPD_Virt	Virtual speed value
ECU_10	TCS_TYRE_SLIP%	Tyre slip percentage
ECU_11	TCS_TC_MAP_LEV	Traction control on map switch
ECU_12	TCS_TC_SLIP_COR	Traction control slip correction
ECU_13	TCS_QUICK_SHFT	Quick shift
ECU_14	TCS_QUICK_RET	Quick shift retard in degrees
ECU_15	TCS_CORNER_POS	Corner position
ECU_16	TCS_SYST_ST_2	System status 2
ECU_17	TCS_SYST_ST_1	System status 1
ECU_18	TCS_DIAG_ERR1	Diagnosis error 1
ECU_19	TCS_DIAG_ERR2	Diagnosis error 2
ECU_20	TCS_DIAG_ERR3	Diagnosis error 3
ECU_21	TCS_DIAG_ERR4	Diagnosis error 4

4.3 "TCS_4_Cylinders" protocol available channels

Channels received by AiM devices connected to "Nemesis" "TCS_4_Cylinders" protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	TCS_RPM	RPM
ECU_2	TCS_WHEEL_F	Front wheel speed
ECU_3	TCS_WHEEL_R	Rear wheel speed
ECU_4	TCS_TPS	Throttle position sensor
ECU_5	TCS_BATTVOLT	Battery supply
ECU_6	TCS_TPS_Raw	Throttle position sensor raw value
ECU_7	TCS_T_IGNCOIL1	Time of ignition coil cylinder 1
ECU_8	TCS_T_IGNCOIL2	Time of ignition coil cylinder 2
ECU_9	TCS_SPD_Virt	Virtual speed value
ECU_10	TCS_TYRE_SLIP%	Tyre slip percentage
ECU_11	TCS_TC_MAP_LEV	Traction control on map switch
ECU_12	TCS_TC_SLIP_COR	Traction control slip correction
ECU_13	TCS_QUICK_SHFT	Quick shift
ECU_14	TCS_QUICK_RET	Quick shift retard in degrees
ECU_15	TCS_CORNER_POS	Corner position
ECU_16	TCS_SYST_ST_2	System status 2
ECU_17	TCS_SYST_ST_1	System status 1
ECU_18	TCS_DIAG_ERR1	Diagnosis error 1
ECU_19	TCS_DIAG_ERR2	Diagnosis error 2
ECU_20	TCS_DIAG_ERR3	Diagnosis error 3
ECU_21	TCS_DIAG_ERR4	Diagnosis error 4