

AiM Infotech

PT100 Thermo resistor
Race Studio 2 configuration

Release 1.00



1 Introduction

This datasheet explains how to configure the car/bike PT100 thermo resistor using AiM Race Studio 2 software.

2 Setup with con Race Studio 2

To load the sensor in the logger configuration:

- run the software, select the logger in use and the configuration to set the sensor on (in the example EVO4) and enter "Channels" layer
- select the channel where set the sensor on (in the example Channel 1)
- Select "Thermoresistance PT100" in Sensor type column as shown here below.

The screenshot shows the RaceStudio 2.55.94 software interface. The 'Channels' tab is selected, displaying a table of channel configurations. The table has columns for Channel identifier, Enabled/disabled, Channel name, Sampling frequency, Sensor type, Measure unit, Low scale, and High scale. The row for 'CH_1' is highlighted in yellow, and its 'Sensor type' is set to 'Thermoresistance PT100'. A red box highlights the 'Thermoresistance PT100' option in the dropdown menu for the sensor type of CH_1.

Channel identifier	Enabled/disabled	Channel name	Sampling frequency	Sensor type	Measure unit	Low scale	High scale
RPM	<input type="checkbox"/> Disabled	Engine	10 Hz	Engine revolution speed	rpm	0	20000
SPD_1	<input checked="" type="checkbox"/> Enabled	Speed1	10 Hz	Speed	km/h .1	0.0	250.0
SPD_2	<input checked="" type="checkbox"/> Enabled	Speed2	10 Hz	Speed	km/h .1	0.0	250.0
CH_1	<input checked="" type="checkbox"/> Enabled	Channel_1	10 Hz	Thermoresistance PT100	°C	0	5
CH_2	<input checked="" type="checkbox"/> Enabled	Channel_2	10 Hz	Thermocouple	V .1	0.0	5.0
CH_3	<input checked="" type="checkbox"/> Enabled	Channel_3	10 Hz	Thermoresistance PT100	deg .1	0.0	5.0
CH_4	<input checked="" type="checkbox"/> Enabled	Channel_4	10 Hz	Temperature VDO 50-150 °C	V .1	0.0	5.0
CH_5	<input checked="" type="checkbox"/> Disabled	Channel_5	10 Hz	Temperature VDO 60-200 °C	V .1	0.0	5.0
CALC_GEAR	<input type="checkbox"/> Disabled	Calculated_Gear	10 Hz	Water temp. (CLIO)	#	0	9
ACC_1	<input checked="" type="checkbox"/> Enabled	Acc_Laterale	10 Hz	Water temp. (SUZUKI SUPERSP...			
ACC_2	<input checked="" type="checkbox"/> Enabled	Acc_Longitudinale	10 Hz	Pressure VDO 0-2 bar	g .01	-3.00	3.00
ACC_3	<input checked="" type="checkbox"/> Enabled	Acc_Verticale	10 Hz	Pressure VDO 0-5 bar	g .01	-3.00	3.00
LOG_TMP	<input checked="" type="checkbox"/> Enabled	Datalogger_Temp	10 Hz	Pressure VDO 0-10 bar	g .01	-3.00	3.00
BATT	<input checked="" type="checkbox"/> Enabled	Battery	1 Hz	AIRBOX pressure sensor - X05SN	°C	0	50
ECU_1	<input checked="" type="checkbox"/> Enabled	ECU_RPM	10 Hz	AIRBOX pressure sensor - X05SN	V .1	5.0	15.0
ECU_2	<input checked="" type="checkbox"/> Enabled	ECU_TPS	10 Hz	Distance potentiometer	rpm	0	10000
ECU_3	<input checked="" type="checkbox"/> Enabled	ECU_ECT	10 Hz	Zero based potentiometer	% .1	0.0	100.0
ECU_4	<input checked="" type="checkbox"/> Enabled	ECU_OIL_T	10 Hz	Mid zero potentiometer	°C	0	150
ECU_5	<input checked="" type="checkbox"/> Enabled	ECU_STP	10 Hz	Lambda sensor BOSCH	°C	0	150
ECU_6	<input checked="" type="checkbox"/> Enabled	ECU_STP	10 Hz	Lambda sensor NGK TL1111W1			
ECU_7	<input checked="" type="checkbox"/> Enabled	ECU_STP	10 Hz	Water pitot speed sensor			
ECU_8	<input checked="" type="checkbox"/> Enabled	ECU_STP	10 Hz	Gyro			
ECU_9	<input checked="" type="checkbox"/> Enabled	ECU_STP	10 Hz	External vertical accelerometer			
ECU_10	<input checked="" type="checkbox"/> Enabled	ECU_STP	10 Hz	External horiz. accelerometer			

- The sensor is set on the desired channel as here below
- Transmit the configuration to the logger pressing "Transmit".

The screenshot shows the RaceStudio 2.55.94 interface. In the top-left sidebar, the 'Device Configuration' menu is selected. The main window displays the 'System manager' section with a 'Transmit' button highlighted by a red box. Below this, a table lists various channels and their configurations. The row for 'CH_1' is highlighted in yellow, indicating it is the selected channel. The 'Transmit' button is also highlighted with a red box.

Channel identifier	Enabled/disabled	Channel name	Sampling frequency	Sensor type	Measure unit	Low scale	High scale
RPM	<input type="checkbox"/> Disabled	Engine	10 Hz	Engine revolution speed	rpm	0	20000
SPD_1	<input checked="" type="checkbox"/> Enabled	Speed1	10 Hz	Speed	km/h .1	0.0	250.0
SPD_2	<input checked="" type="checkbox"/> Enabled	Speed2	10 Hz	Speed	km/h .1	0.0	250.0
CH_1	<input checked="" type="checkbox"/> Enabled	Channel_1	10 Hz	Thermoresistance PT100	°C	0	5
CH_2	<input checked="" type="checkbox"/> Enabled	Channel_2	10 Hz	Generic linear 0-5 V	V .1	0.0	5.0
CH_3	<input checked="" type="checkbox"/> Enabled	Channel_3	10 Hz	Mid zero potentiometer	deg .1	0.0	5.0
CH_4	<input checked="" type="checkbox"/> Enabled	Channel_4	10 Hz	Generic linear 0-5 V	V .1	0.0	5.0
CH_5	<input type="checkbox"/> Disabled	Channel_5	10 Hz	Generic linear 0-5 V	V .1	0.0	5.0
CALC_GEAR	<input type="checkbox"/> Disabled	Calculated_Gear	10 Hz	Calculated Gear	#	0	9
ACC_1	<input checked="" type="checkbox"/> Enabled	Acc_Laterale	10 Hz	Lateral accelerometer	g .01	-3.00	3.00
ACC_2	<input checked="" type="checkbox"/> Enabled	Acc_Longitudinale	10 Hz	Longitudinal accelerometer	g .01	-3.00	3.00
ACC_3	<input checked="" type="checkbox"/> Enabled	Acc_Verticale	10 Hz	Vertical internal accelerometer	g .01	-3.00	3.00
LOG_TMP	<input checked="" type="checkbox"/> Enabled	Datalogger_Temp	10 Hz	Cold joint	°C	0	50
BATT	<input checked="" type="checkbox"/> Enabled	Battery	1 Hz	Battery	V .1	5.0	15.0
ECU_1	<input checked="" type="checkbox"/> Enabled	ECU_RPM	10 Hz	Engine speed sensor	rpm	0	10000
ECU_2	<input checked="" type="checkbox"/> Enabled	ECU_TPS	10 Hz	Percentage sensor	% .1	0.0	100.0
ECU_3	<input checked="" type="checkbox"/> Enabled	ECU_ECT	10 Hz	Temperature sensor	°C	0	150
ECU_4	<input checked="" type="checkbox"/> Enabled	ECU_OIL_T	10 Hz	Temperature sensor	°C	0	150
ECU_5	<input checked="" type="checkbox"/> Enabled	ECU_OIL_P	10 Hz	Pressure sensor	bar .1	0	10
ECU_6	<input checked="" type="checkbox"/> Enabled	ECU_AIRBOX_P	10 Hz	Pressure sensor	mbar	0	2500
ECU_7	<input checked="" type="checkbox"/> Enabled	ECU_INT_AIR_T	10 Hz	Temperature sensor	°C	0	80
ECU_8	<input checked="" type="checkbox"/> Enabled	ECU_ACC_LAT	10 Hz	Accelerometer	m/s^2	-50	50
ECU_9	<input checked="" type="checkbox"/> Enabled	ECU_ACC_LONG	10 Hz	Accelerometer	m/s^2	-50	50
ECU_10	<input checked="" type="checkbox"/> Enabled	ECU_YAW_RATE	10 Hz	Steering wheel speed	deg/s	-100	100
ECU_11	<input checked="" type="checkbox"/> Enabled	ECU_STEER_ANG	10 Hz	Angle sensor	deg .1	-180.0	180.0
ECU_12	<input checked="" type="checkbox"/> Enabled	ECU_SPEED	10 Hz	Speed sensor	km/h .1	0.0	300.0
ECU_13	<input checked="" type="checkbox"/> Enabled	ECU_SPEED_FL	10 Hz	Speed sensor	km/h .1	0.0	300.0
ECU_14	<input checked="" type="checkbox"/> Enabled	ECU_SPEED_FR	10 Hz	Speed sensor	km/h .1	0.0	300.0