

Introduction

Aim instruments can measure and record cylinder head temperature using a sensor (thermocouple) positioned under the spark plug. The thermocouple presents a turn in the lower part to make installation and disinstallation easier. All A im thermocouples are **K**-type sensors

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Installation notes

The head temperature sensor sits between the spark plug and the cylinder head. To keep the sensor in contact with the cylinder head, it is necessary to remove the washer from the plug when installing the thermocouple.

While running the thermocouple cable along the chassis, be careful to keep it as far as possible from other cables (such as RPM or lap receiver cables) in order to minimize interferences between the cables.

ATTENTION: Before screwing back the spark plug inside the cylinder head, ensure that the sensor is firmly mated with the cylinder head and, when tightening and loosening the spark plug, minimize movement of the sensor. Failure to observe this precaution may result in damage to the sensor

For a correct installation, please watch **Figure 2**:

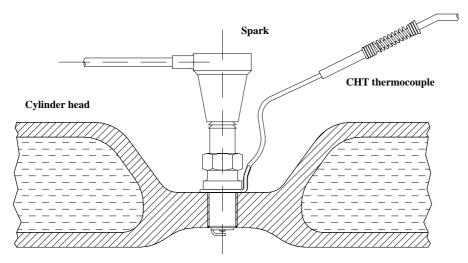


Figure 2: Cylinder head thermocouple installation

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Software

Once the thermocouple has been installed, it is necessary to configurate it. In order to correctly configurate the sensor, please use **Race Studio 2**, the software properly developed by Aim to configure your data logger and to analyze stored data.

Race Studio 2

In **Race Studio 2** main window, reported here above, is possible to choose your Aim instrument. Once selected your gauge, please press *"System manager"* button.



Please note: **MyChron 3 Basic** automatically recognizes the sensor and needs no temperature sensor configuration.

Sensor configuration

Once reached "*System manager*" main window, please press "Channels" button to configure the sensor you have installed on your vehicle. The following screenshot appears.

General	Display		Channels	Show ADE courts Customize sensor					
	Logger iden	histon	Transmit	Receive		Onlin	•	Colk	eate
N Channel iden	Enabled/disc	Channel name	Sampling to	Sensor type	Measu	Lower bound	Upper bound	Param 1	Param 2
1 RPM	Enabled	Engine	10 Hz	Engine revolution speed	Ipm	0.000	20000.000	1.000	25000
2 SPD_1	Enabled	Speed_1	10 Hz	Speed	km/h	0.000	250.000	1666.000	1
3 SPD_2	Disabled	Speed_2	10 Hz	Speed	km/h	0.000	250.000	1666.000	1.
4 CH_1	Enabled	Channel_1	10 Hz	K thermocouple	10	0.000	150.000		
5 CH_2	Enabled	Channel_2	10 Hz	K thermoscouple -	t	0.000	50.000		
6 CH_3	Enabled	Channel_3	10 Hz	Pressure VDO 0.5 bar	1.0	0.000	150.000		
7 CH 4	Enabled	Channel 4	10 Hz	Pressure VDO 1-10 bar	T	0.000	500 000		
8 CH_5	Enabled	Channel 5	10 Hz	External vertical accelerom	τ	0.000	150.000		
9 CH_6	Enabled	Channel_6	10 Hz	Potentiometer distance Zero based potentiometer	T	0.000	500.000		
10 CH 7	Enabled	Channel 7	10 Hz	Mid zero potentiometer	3	0.000	150.000		
11 CH_8	Enabled	Channel_8	10 Hz	Lambda sond	T	0.000	500.000		
12 ACC_1	Enabled	Acc_1	10 Hz	Lambda cond NGK TL711	10	-3.000	3.000		
13 ACC_2	Enabled	Acc_2	10 Hz	Longitudinal accelerometer	9	-3.000	3.000		
14 LOG_TMP	Enabled	Datalogger_Tem	p 10 Hz	Cold joint	τ.	0.000	50.000		
<		•		• C.		• • • •			1
Configuration name		Logger name		Display name		Available time		Total frequency	
bit		EVD3 - 8 channels - 8 Mb		Mycheon 3		853.37 [hma]		131 (Hz)	

To configure the sensor is necessary to double-click in the box corresponding to "Sensor type" column and to "Ch_x" row (where x represents the channel number where you wish to install the sensor): a menu like the one reported in the previous screenshot appears.

Please, select "K Thermocouple" sensor.

Once selected the correct thermocouple type, is necessary to configure the visualization's lower and upper boundary values.

In order to set these values, please double-click in the row corresponding to the channel where you have installed the thermocouple and in the columns corresponding to lower and upper boundary and fill the boxes with the correct temperature value.

K-type thermocouples do not need to be calibrated.

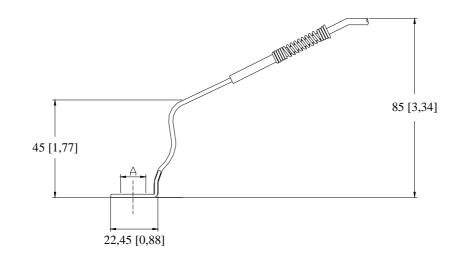
Transmitting the configuration

Once the sensor has been correctly configured, please transmit the configuration to your gauge pressing "Transmit" button.

During transmission, please do not to switch the gauge off.



Dimensions



Dimensions in millimeters [inches]

Dimensions table – "A"

1	Temperature signal 0-50 mV
2	GND
3	Not connected

Function

Pin

Technical characteristics

Description	Value			
Temperature range	From 0° to 300°C [32° to 572°F]			
Cable length	1400 mm [55"]			
Cable type	Compensated			

Note 1: CHT thermocouple is supplied with a 1400 mm long compensated cable



3 pins male Binder 712 connectors pinout: solder termination view