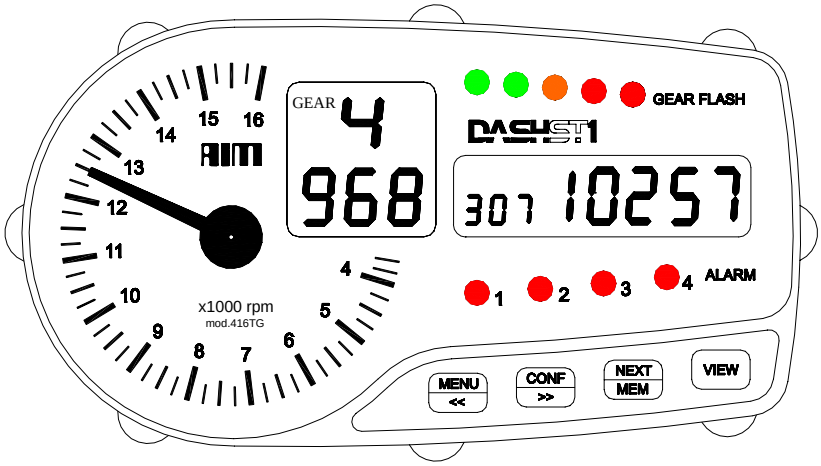


Figure 1: **Dash ST1 "standalone"**

Introduction

Dash ST1 "standalone" is a complete and robust dashboard with an analogic rev-counter.
This logger is usable for displaying lap time, lap number, RPM, speed, temperature or pressure inputs.
Moreover, your **Dash ST1 "standalone"** includes a small but extremely useful data logger (memory size 64 kbyte) that records lap times, RPM and speed at a sampling frequency of 10 Hz.
It is then possible to revisit the recorded values both on the displays and on the PC, using our professional Race Studio 2 software (included in the kit).

Your **Dash ST1** has a fully configurable sequential shiftlights, warning lamps (for High/Low temperature / pressure alarms) and a small integrated gear number display.

The dashboard can show the engaged gear either sampled from an "on-board" gear sensor or calculated from the RPM vs. speed ratio.
The analogic display is available with 3 different scales: 10,000 / 16.000 / 20,000 RPM.

Please, refer to **Figure 2** for further information concerning the gauge's display.

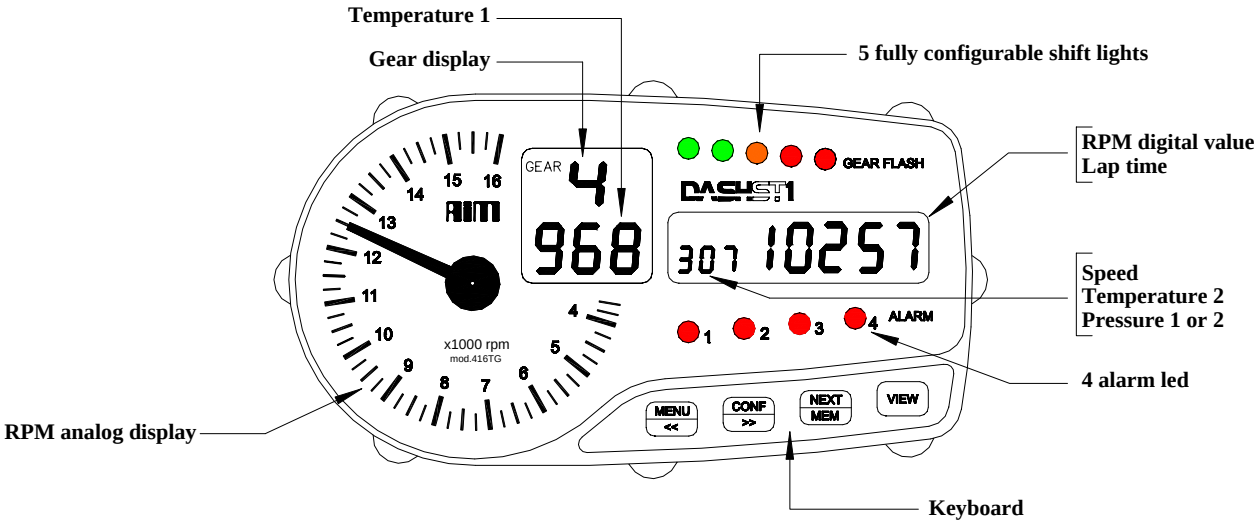


Figure 2: Dash ST1 "standalone" display

Installation notes

- We recommend to choose a place where the logger is not in contact with oil or fuel; please make sure that the logger is not installed too close to heat sources and protect it from vibrations (if available, use anti-vibration mountings/silent blocks).
- We remind you that your **Dash ST1 "standalone"** is not equipped with internal batteries, it thereby needs to be powered by an external 9 ÷ 15 V power source (i.e. the car /bike battery).

How to connect Dash ST1 to the PC

In order to connect your **Dash ST1 "standalone"** to the PC, please use the USB data download cable and plug it both in the gauge's USB port and in the PC's USB port, as shown in **Figure 3**. Moreover, **please use a 9 ÷ 15 Volts external power source** to switch on the gauge.

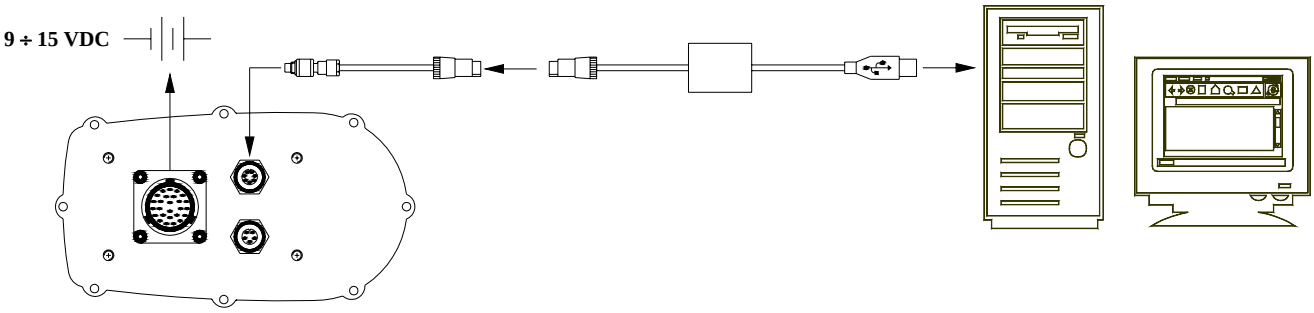
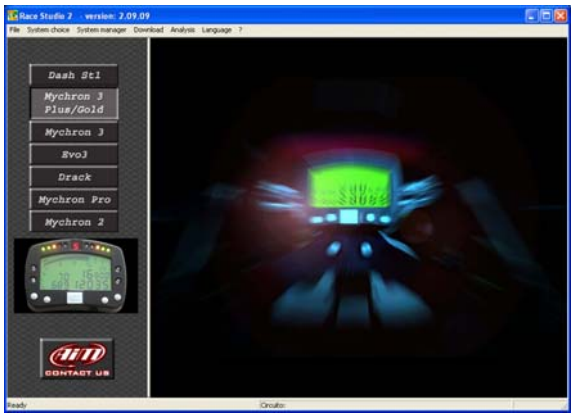


Figure 3: How to connect your **Dash ST1 "standalone"** to the PC

Software

Once the data logger has been installed and the sensors plugged in it, to acquire consistent and correct information, the data logger needs to be configured. For a correct configuration, please use **Race Studio 2**, the software properly developed by Aim to configure its instruments and analyze stored data.

In **Race Studio 2** main window, shown here below, you can choose your data logger.



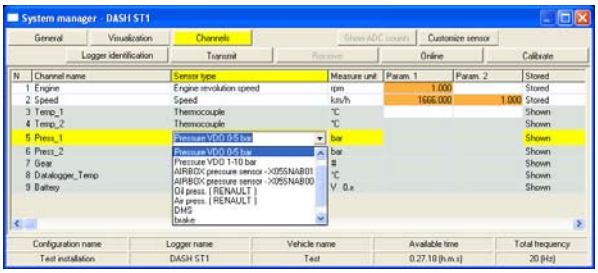
Please, select "Dash ST1" and, then, press "System manager" button.

Then, please follow these configuration steps:

1. Set the desired input channels;
2. Configure the display;
3. Transmit the configuration to the logger;

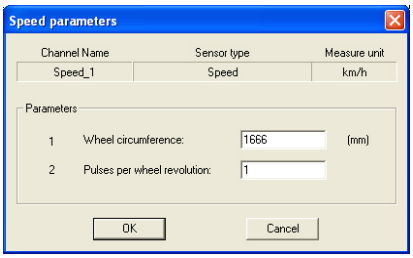
1) How to set the input channels

Press "Channels" button to set the sensors you have installed on your gauge.



To set an input channel, please double-click on the cell corresponding to the desired channel: the screenshot above appears.
You may connect up to 2 temperature sensors (on channels labelled as "Temp_1" and "Temp_2") and up to 2 pressure sensors (on channels "Press_1" and "Press_2").

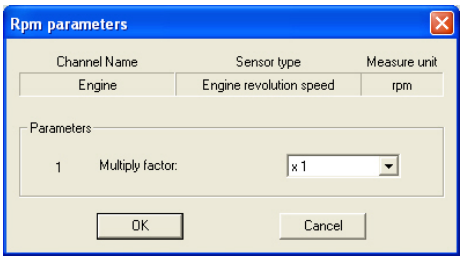
To configure the **speed sensor**, click twice in "Param 1" column and in the row corresponding to "speed" channel. The following screenshot appears:



The user is requested to set two values:

- *Number of pulses on wheel revolution*: please fill this box with the number of magnets installed on the wheel.
- *Wheel circumference*: this option allows the user to set the wheel circumference (in mm or in inches). This value is fundamental to correlate the wheel revolution speed to the kart speed.

To configure the **RPM sensor** click twice in "Param 1" column and in the row corresponding to "RPM" channel. The following screenshot appears:

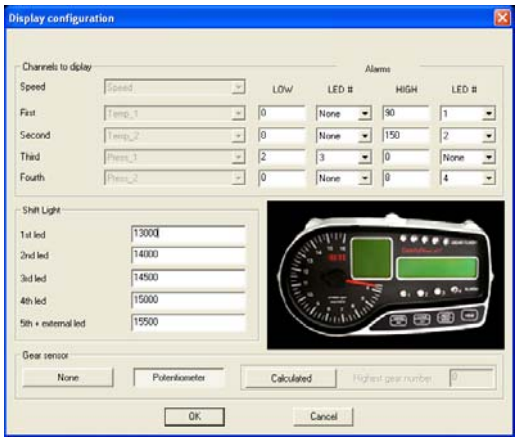


You are requested to set:

- *Multiply factor*: please fill this box with the number of pulses per engine revolution;

2) How to configure the display

Once the desired input channels set, press "Visualization" button to set alarms, shift lights etc… The following screenshot appears.



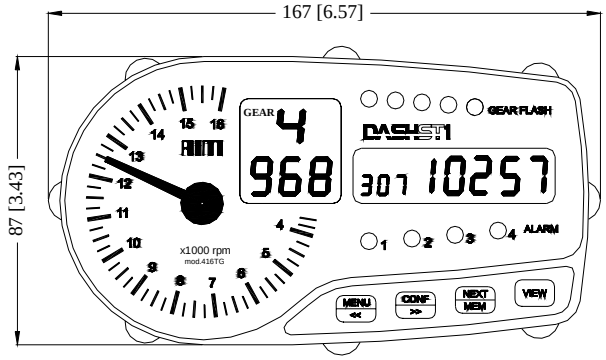
To correctly configure your **Dash ST1 "standalone"** it is necessary to set all the parameters reported in this dialog box:

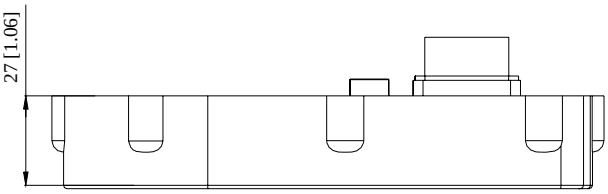
- Shift lights;
- Alarms led: you may choose both the led and the "alarm type" (i.e. maximum or minimum alarm).

3) How to transmit the configuration

Once the input channels set and configured, you have to transmit the configuration to the instrument pressing "Transmit" button.
Please remember: to transmit the configuration, the gauge must be switched on and connected to the PC, as shown in **Figure 3**.

Dimensions





Dimensions in millimeters [inches]

Connector details (Channels inputs)

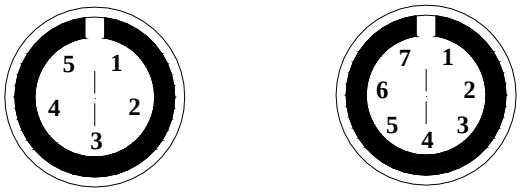
Pin	Function	Pin	Function
A	+Temp 1	c	GND
S	-Temp 1 (GND)	Y	+ VB
B	+Temp 2	L	Speed
T	-Temp 2 (GND)	b	GND
C	+Press 1	Z	+ VB
U	-Press 1 (GND)	H	Gear flash 1
D	+V ref1	J	Gear flash 2
E	+Press 2	K	+ VB
F	-Press 2 (GND)	N	RPM 150-400 V (coil input)
V	+V ref2	M	RPM 8-50 V (square wave input)
G	+ Gear	a	GND
W	- Gear (GND)	R	+ V battery (input)
X	Optic lap	P	GND

Connector details (Keyboard remoting)

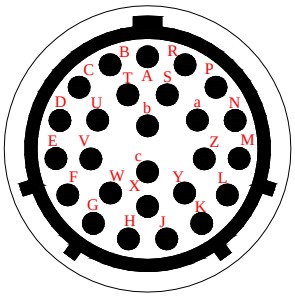
Pin	Function	Pin	Function
1	View	4	Menu
2	Mem	5	GND
3	Conf		

Connector details (USB/CAN)

Pin	Function	Pin	Function
1	CAN +	5	I2C SDA
2	CAN -	6	RTS 232
3	+ V batt	7	GND
4	I2C SCL		



5 & 7 pins female Binder 712 connectors pinout: external view



26 pins MS female connector (outside view)

Technical characteristics

General characteristics	Value
Input channels	2
Max sampling frequency per channel	10 Hz
Total sampling frequency	20 Hz
External power	From 9 to 15 VDC
Voltage output (V reference)	4.5 V (for thermoresistors and VDO sensors)
Internal memory	64 kbytes flash EPROM
PC interface	USB port

Other characteristics	Value
Dash ST1 dimensions	167x87x27 mm
RPM display scales	10,000 / 16,000 / 20,000
Environmental	IP 65