AiM Infotech

Water/oil temperature sensor PT100 M10/M5 thermo resistor

Release 1.05

1
Introduction

The built AiM devices for car/bike applications can measure and sample water/oil temperature using a sensor (thermo resistor) placed in the cooling system/oil sump.
The sensor part number is:

- PT100 M10: **X05TRM10A4512BPRS;**
- PT100 M5:**X025TRM05A4514BPR.**

N.B.: the available sensors for karting products are not compatible with car/bike systems. Please, refer exclusively to the products codes mentioned above.
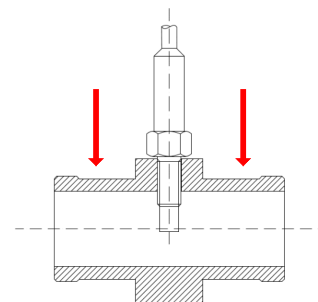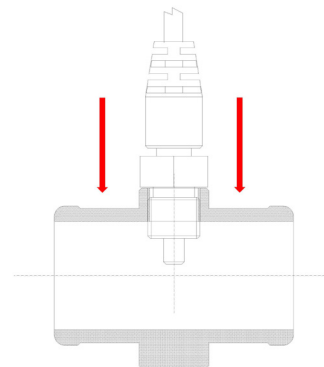
2
Installation and connection

The thermo resistor must be placed in the cooling system/oil sump.
It is recommended to install the sensor far from heat and electromagnetic interference sources (like RPM cable or lap receiver cables).

With reference to the images here below (upper image, PT100 M10 fitting; lower image, PT100 M5 fitting), to install the sensor use the optional M10 or M5 thread inline water/oil fitting (part number: PT100 M10 fitting **LAA54120R**; PT100 M5 fitting: **LAA541100**) shown on the left:
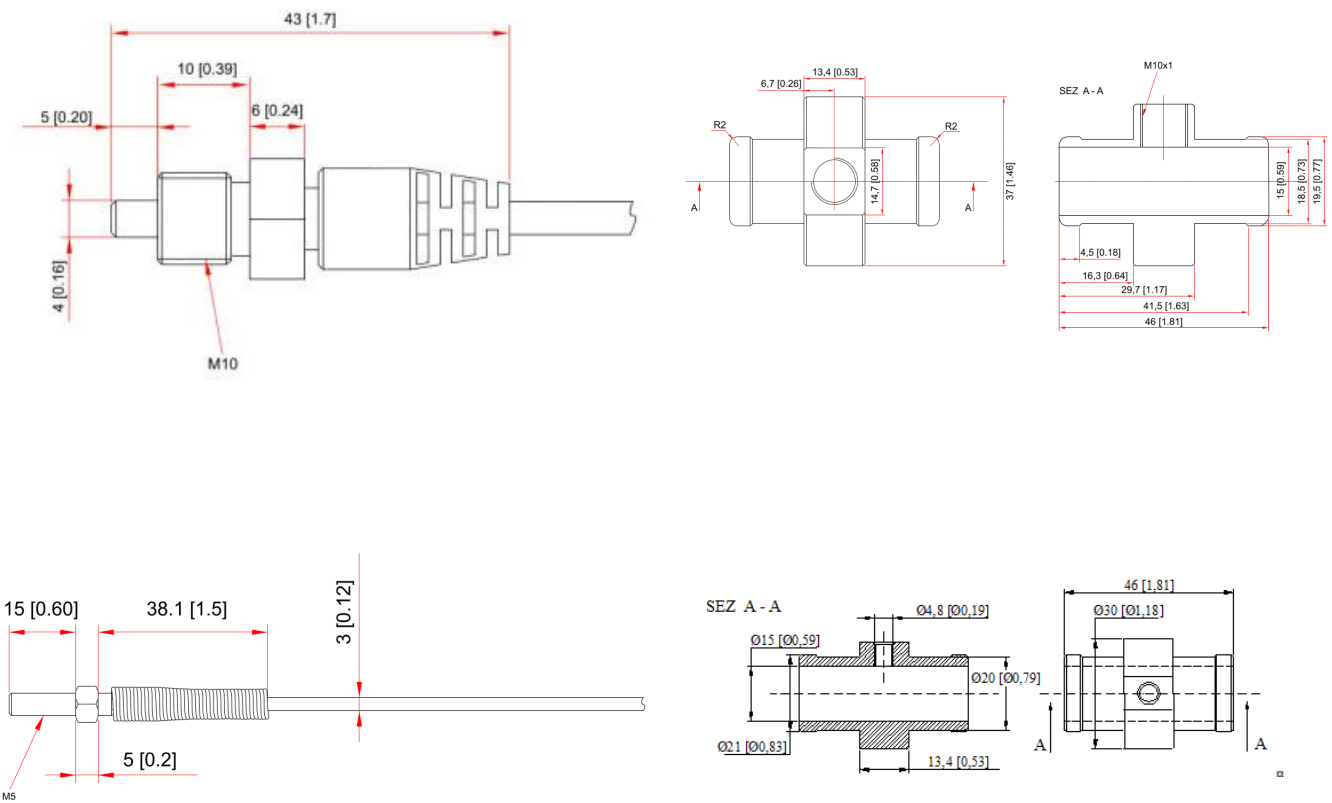- cut the water pipe
- connect the inline water fitting to the pipe, fixing two metal wraps in the points highlighted in the draw below
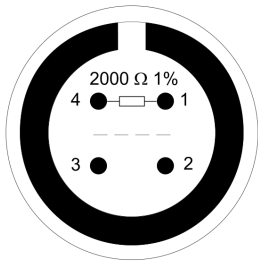- screw the thermo resistor in the threaded hole as shown on the right.

3
Dimensions, pinout and technical characteristics

The draws here below show the sensors dimensions on the left and the inline water/oil fitting dimensions on the right in millimetres [inches] (PT100 M10, upper images; PT100 M5, lower images).

Both sensors end with 4 pins male 719 Binder connector that features a 2kΩ 1% resistor between pins 1 and 4. Here below you see the connector pinout solder termination view as well as the connection table.

Pin	Function
1	Analog signal
2	GND
3	Not connected
4	+Vreference

The sensors technical characteristics are:

- Temperature working range: 0/150°C
- cable sensor length: 250 mm

4
Extension cables

These sensors are sold with a 25 cm cable and standard lengths extension cables are available as optional.

Extension cables part numbers, specified below for each one, change according to their length and the device sensor to be connected to.

Mandatory extension cable for connection with:
- EVO4
- EVO4S
- Channel Expansion

V02PCB05BTXG – cable length: 500 mm
V02PCB10BTXG – cable length: 1000 mm
V02PCB15BTXG – cable length: 1500 mm
V02PCB20BTXG – cable length: 2000 mm
V02PCB25BTXG – cable length: 2500 mm
V02PCB30BTXG – cable length: 3000 mm
V02PCB35BTXG – cable length: 3500 mm
V02PCB40BTXG – cable length: 4000 mm

Mandatory extension cable for connection with:
- MXG/MXG1.2
- MXS/MXS1.2
- MXL2
- MXS Strada/MXS Strada 1.2
- MXm
- EVO5
- MXL Strada/Pista/Pro05

V02PCB05B – cable length: 500mm
V02PCB10B – cable length: 1000mm
V02PCB15B – cable length: 1500mm
V02PCB20B – cable length: 2000mm
V02PCB25B – cable length: 2500mm
V02PCB30B – cable length: 3000mm
V02PCB35B – cable length: 3500 mm
V02PCB40B – cable length: 4000 mm