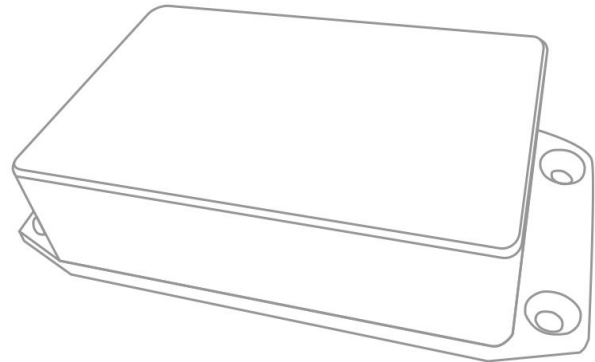


Temperature Sensor Datasheet

Spring, 2016

Overview

The temperature sensor is an accessory that allows up to 3 simultaneous temperature measurements with $\pm 0.4^{\circ}\text{C}$ accuracy. Temperature thresholds can be established on the device's configuration that allows you to combine with other conditions for highly customized event reporting. The temperature sensor is fully integrated with the Pegasus Gateway and its APIs.



Features

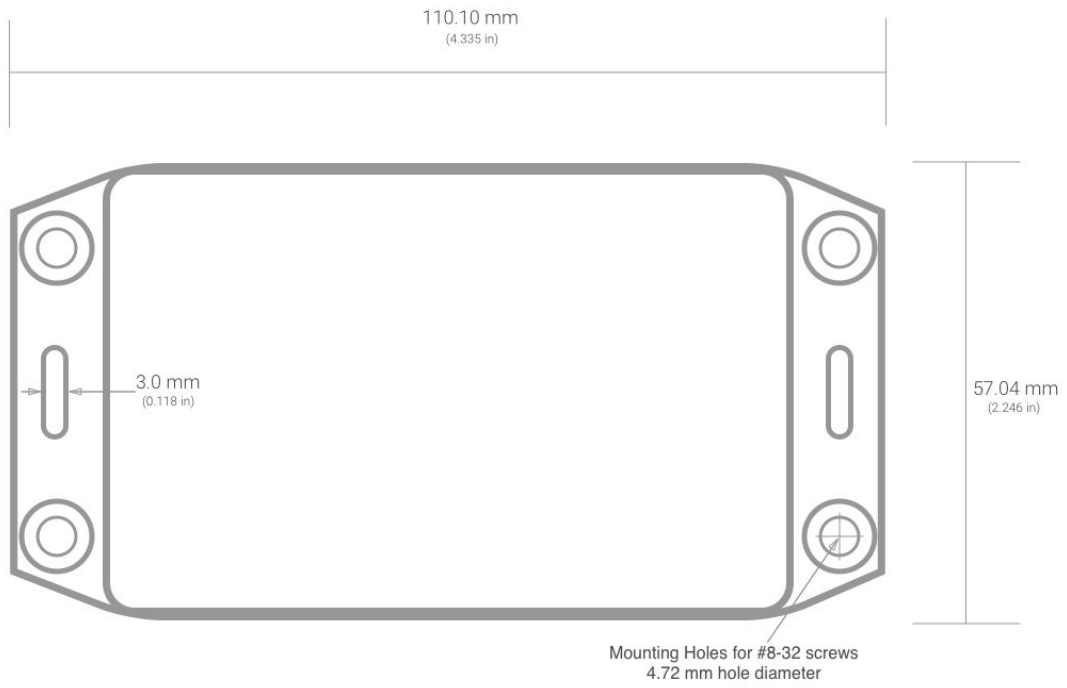
- Report temperature values periodically and on any event generated
- Establish thresholds and create events when the temperature falls below or above these thresholds
- Perform different actions based on thresholds (activate outputs, send sms, etc..)

Technical Specifications

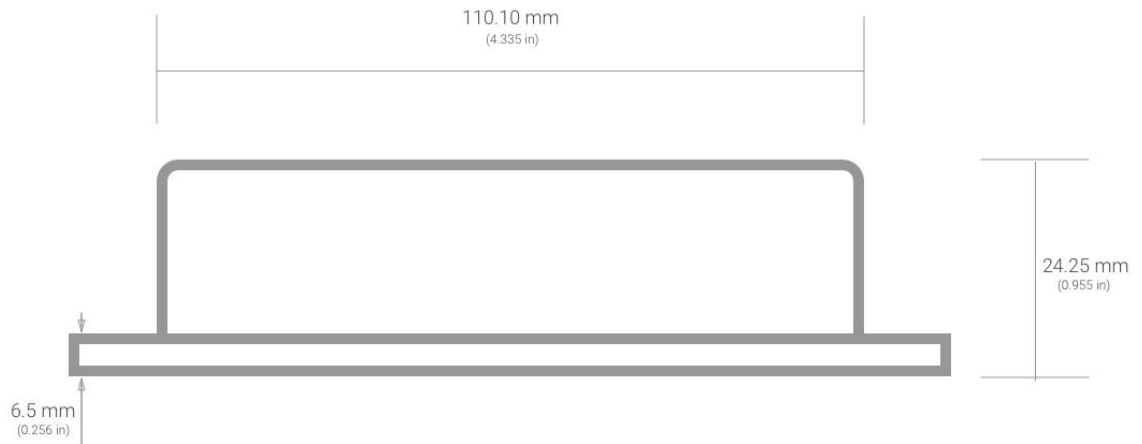
Sensor	
Temperature Accuracy	60°C to 0°C $\pm 0.2^{\circ}\text{C}$ / 0°C to -12°C $\pm 0.3^{\circ}\text{C}$ / -12°C to -23°C $\pm 0.4^{\circ}\text{C}$
Temperature Range	-23°C to 60°C
Dimensions	110.10 mm x 57.04 mm x 24.25 mm [LxWxH]
Sensor Resistance at 0°C	9795 Ω
Sensor Resistance at 100°C	204.0 Ω
Dimensions	
Length	Cable Length Approx. 9 Meters [24 AWG]
Size of 1 Probe	(h) 52.4 mm (w) 6 mm

Dimensions

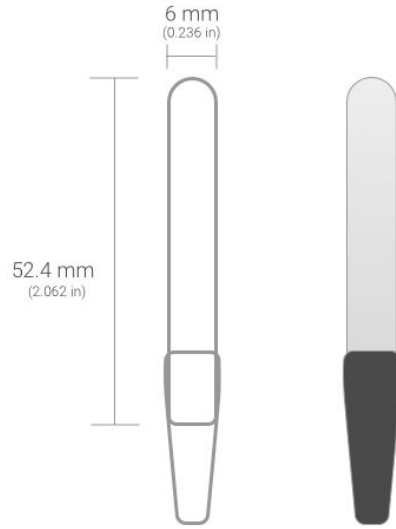
Top-down View



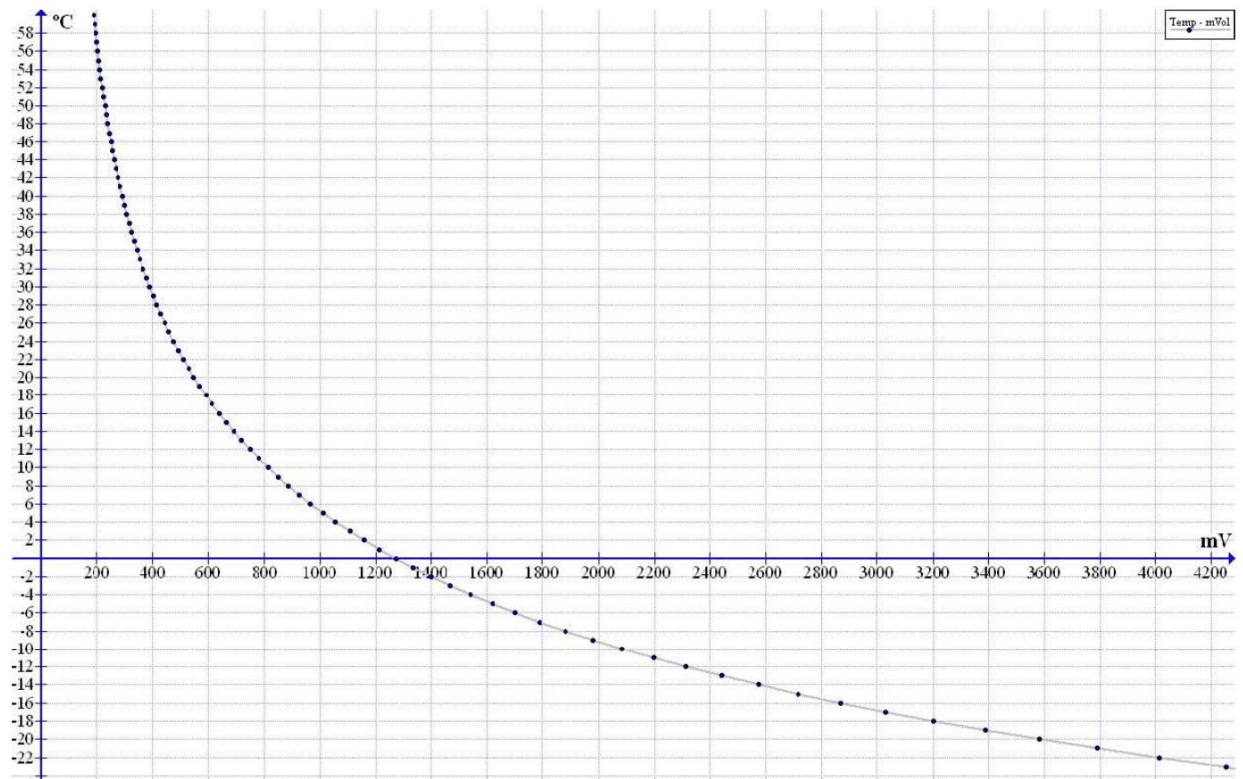
Side View



Probes



Graph with Temperature and milliVolt Values



Temperature / mV Table

milliVolts	Temp(°C)	milliVolts	Temp(°C)	milliVolts	Temp(°C)
189	60	365	32	1057	4
192	59	377	31	1106	3

195	58	389	30	1158	2
199	57	401	29	1213	1
203	56	414	28	1271	0
207	55	428	27	1333	-1
211	54	443	26	1398	-2
215	53	458	25	1467	-3
219	52	474	24	1540	-4
224	51	491	23	1618	-5
229	50	509	22	1700	-6
234	49	528	21	1788	-7
239	48	548	20	1881	-8
245	47	569	19	1980	-9
250	46	590	18	2085	-10
256	45	613	17	2196	-11
263	44	638	16	2314	-12
269	43	663	15	2440	-13
276	42	690	14	2574	-14
283	41	718	13	2716	-15
291	40	749	12	2868	-16
299	39	780	11	3030	-17
307	38	814	10	3202	-18
315	37	849	9	3386	-19
324	36	886	8	3583	-20
334	35	925	7	3791	-21
344	34	967	6	4014	-22
354	33	1010	5	4252	-23

The values shown in the table above have an error margin of:

60°C to 0°C: $\pm 0.2^{\circ}\text{C}$

0°C to -12°C: $\pm 0.3^{\circ}\text{C}$

-12°C to -23°C: $\pm 0.4^{\circ}\text{C}$

Safety Precautions

The analog/temperature sensor accessory has protection against transient voltage spikes and reverse polarity, but a professional installation from a trusted technician is required when working with wiring inside vehicles.

Installation Tips

- When installing the temperature sensor make sure you don't pinch off any of the sensors with any nearby door hinges.
- Do not install the sensor or it's probe near a light source or the fan, placing it in the middle of the room/container you are trying to measure provides the best results.

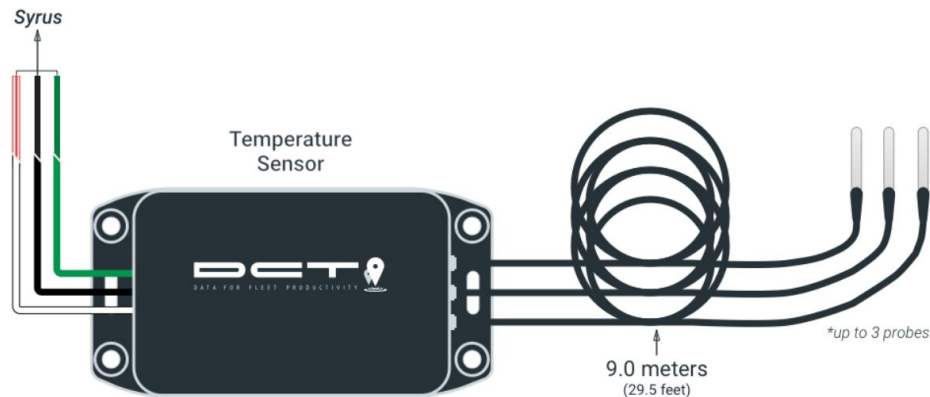
5

- If installing in a refrigerated truck, the recommended location to install the sensor is inside the refrigerated box above the cabin.
- The 1-wire cable is susceptible to electrical interferences, make sure if you're passing it through the refrigerated box you should consider using a CAT5E UTP cable as these cables reduce electrical interferences and are shielded for these types of applications.
- It is important not to place the sensors next to any metal surface as these surfaces have a high thermal conductivity and will give you elevated temperature results.
- It is important that the main power of the sensor does not fluctuate, as fluctuations in the power can lead to undesired temperature readings.
- The probes can be mounted with small cable plastic clamps such as: [\[reference\]](#)



Installation

Follow the pinout guide below and connect all cables of the temperature sensor as follow



Pinout

Accessory Pinout					
PIN		Color	Name	I/O	Description
1		Green	VIN	IN	Main Power: 12 Volts - 32 Volts. Connect directly to Syrus green cable

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2		Black	GND	GND	Connect directly to Syrus ground cable from harness (Brown cable on Syrus 3, and black cable on Syrus 2)
3		White	1-wire	IN/OUT	1-wire communication cable with Syrus. Connect directly to Syrus 1-wire cable (red/white color)

FAQ

How long can I extend the 1-wire cable to install inside a cabin?

The 1-wire cable from the Syrus to the temperature sensor can be extended up to **20 meters**. Make sure you use the same cable gauge or a thicker gauge when extending this cable. Consider using a twisted cable like UTP CAT5e.