Calibrating/Offsetting Temperature on Multisensor 6

Modified on: Tue, 29 Sep, 2020 at 4:57 PM

Easy Excel Programmable Sheet
If you have excel, you can input your offset using values (-10, 10) to determine the correct hexidecimal or decimal value that you need to use to input into either firmware V1.07 or V1.06.

Click here to download (https://aeotec.freshdesk.com/helpdesk/attachments/6036329198) Multisensor 6 firmware V1.07 or V1.06 Parameter 201 Easy Sheet.

Example Calculations
If you find that your Multisensor 6 is mis-calibrated for any reason, you will be able to create an offset for the temperature values. You will be able to offset the current temperature from a range of -10.0 to 10.0 C or F depending on which is being used. The below example is value in both firmware V1.06 and V1.07 (even with the new byte change to V1.07).

Parameter 201 [1 byte] will set the offset temperature using signed decimals which will allow for negative offset and positive offset.

201 (0xC9)	Temperature calibration (the available value range is [-100,100] or [-10.0℃,10℃]). Note: 1. The value contains one decimal point. E.g. if the value is set to 20, the calibration value is 2.0 ℃ (EU/AU version) or 2.0 ℉ (US version) 2. The calibration value = standard value - measure value. E.g. If measure value =25.3℃ and the standard value = 23.2℃, so the calibration value= 23.2℃ - 25.3℃= -2.1℃ (0xEB). If the measure value =30.1℃ and the standard value = 33.2℃, so the calibration value= 33.2℃ - 30.1℃=3.1℃ (0x1F).	0	1

Setting a positive offset value (+5.5 value)
Parameter 201 [1 byte]: 55

Setting a negative offset value (-3.2 value)
256 is the maximum size of a byte in decimals.
(256 - 32) = 224
Parameter 201 [1 byte]: 224

V1.07 Changes to Parameter 201

Why value 0 Yields 2 (US) or 1 (EU/AU)
The 201 settings are now 2 byte size instead of 1.

The settings now look like this: **0xXXYY**

XX = Adjustment temperature
YY = Type of Temperature in C or F (01 = C, 02 = F these are automatic depending on EU/AU or US versions)

by setting XX to 0

you get 0x0002 which is just a value of 2, or for the EU/AU versions it would yield 0x0001 which is just a value of 1.

This is why it always defaults to 2 for US and 1 for EU.AU versions.

Setting adjustment to (positive) +1.5

Parameter 201 [2 byte hex] = 0x0F02 (US) or 0x0F01 (EU/AU) (offset by +1.5 F)
Parameter 201 [2 byte dec] = 3842 (US) or 3841 (EU/AU)

Set setting **Parameter 201 [1 byte dec] = 15** is acceptable, this will report back as 3842 (US) or 3841 (EU/AU) after the Multisensor 6's re-adjustment on the configuration setting.

Setting Adjustments to (negative) -2.5
(256 - 25) = 231
231 decimal = 0xE7 hexidecimal

Parameter 201 [2 byte hex] = 0xE702 (US) or 0xE701 (EU/AU) (offset by +1.5 F)
Parameter 201 [2 byte dec] = 59138 (US) or 59137 (EU/AU)

Set setting **Parameter 201 [1 byte dec] = 231** is acceptable (in some gateways/softwares, it can be inputted as **Parameter 201 [1 byte dec] = -25**), this will report back as 59138 (US) or 59137 (EU/AU) after the Multisensor 6's re-adjustment on the configuration setting.

What other parameter settings are available on the Multisensor 6? You can find them in the engineering sheet for the Multisensor 6 here: **https://aeotec.freshdesk.com/solution/articles/6000088070-gen5-6** (https://aeotec.freshdesk.com/solution/articles/6000088070-gen5-6)

You may download the direct engineering sheet for the Multisensor 6 here: **https://aeotec.freshdesk.com/helpdesk/attachments/6009584695** (https://aeotec.freshdesk.com/helpdesk/attachments/6009584695)