

- CycleCount = 0x0, TemperatureCount = 0x000
- CycleCount = 0x1, TemperatureCount = 0x2BC
- CycleCount = 0x1, TemperatureCount = 0x2BC
- CycleCount = 0x1, TemperatureCount = 0x2BC
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- CycleCount = 0x1, TemperatureCount = 0x2BC
- CycleCount = 0x2, TemperatureCount = 0x2BA
- CycleCount = 0x2, TemperatureCount = 0x2BA
- CycleCount = 0x2, TemperatureCount = 0x2BA
- CycleCount = 0x2, TemperatureCount = 0x2BA
- CycleCount = 0x2, TemperatureCount = 0x2BA
- CycleCount = 0x2, TemperatureCount = 0x2BA
- CycleCount = 0x2, TemperatureCount = 0x2BA
- CycleCount = 0x2, TemperatureCount = 0x2BA
- CycleCount = 0x2, TemperatureCount = 0x2BA
- CycleCount = 0x2, TemperatureCount = 0x2BA
- CycleCount = 0x2, TemperatureCount = 0x2BA
- CycleCount = 0x3, TemperatureCount = 0x2BD
- CycleCount = 0x3, TemperatureCount = 0x2BD
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- CycleCount = 0x3, TemperatureCount = 0x2BD
- CycleCount = 0x3, TemperatureCount = 0x2BD
- CycleCount = 0x0, TemperatureCount = 0x2AA
- CycleCount = 0x0, TemperatureCount = 0x2AA
- CycleCount = 0x0, TemperatureCount = 0x2AA
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- CycleCount = 0x0, TemperatureCount = 0x2AA
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- CycleCount = 0x0, TemperatureCount = 0x2AA
- CycleCount = 0x0, TemperatureCount = 0x2AA

IMPORTANT: THE CURRENT FUNCTION IS PRELIMINARY, WE ARE WORKING ON THE CHARACTERIZATION OF THE SENSOR FOR A MORE ACCURATE FUNCTION.

HOW TEMPERATURE SENSOR WORKS

- PRELIMINARY FUNCTION for temperature calculation:

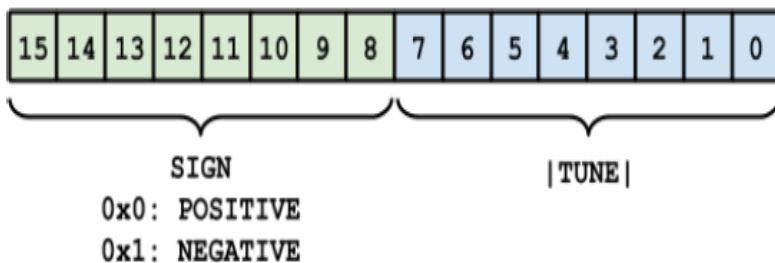
$$T = (N + TUNE - 500)/5.4817 + 24.9$$

Where:

- T: Temperature measured in Celsius [°C]
- N: TemperatureCount
- TUNE: Correction parameter for TemperatureCount use to improve measurement accuracy.

- Read TUNE data(Calibration Data) from:

- MemBank parameter: [hex] 0x3 (User Bank, 3 in decimal)
- WordPtr parameter: [hex] 0x1F (31 in decimal)
- WordCount parameter: [hex] 0x1 (1 in decimal)
- Replied Data Structure:

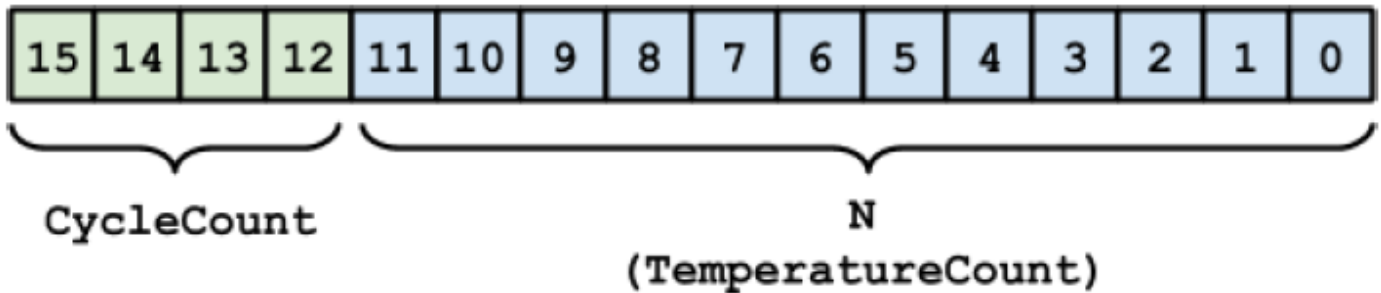


For example using INTERMEC reader (Intermec use the double value for WordPointer and WordCount)

```
read hex(3:62,2)
HCAB10001 H0004 //sample HCAB10001 has TUNE = +4
HCAB10002 H0103 //sample HCAB10002 has TUNE = -3
```

- Read N (TemperatureCount) from:

- MemBank parameter: [hex] 0x0 (Reserved Bank, 0 in decimal)
- WordPtr parameter: [hex] 0x08 (8 in decimal)
- WordCount parameter: [hex] 0x1 (1 in decimal)
- Replied Data Structure:



CycleCount: increment its value when a new temperature conversion ended and its value is cyclic (goes from 0 to 3 and back to 0).

N: TemperatureCount is the temperature sensed and to calculate the current temperature need to use the proper sample equation

For example using INTERMEC reader ([Intermec use the double value for WordPointer and WordCount](#))

```
read hex(0:16,2) hex(0:16,2) hex(0:16,2) hex(0:16,2) hex(0:16,2) hex(0:16,2) hex(0:16,2) hex(0:16,2)
HCAB10002 H31FE H31FE H31FE H015A H015A H015A H1158 H1158
```

From example:

○ H31FE: CycleCount = 3, N = 0x1FE (510 in decimal)

The first data belongs to a previous measure, in this case defined with CycleCount = 3. **IGNORE THIS FIRST VALUE**

○ H015A: CycleCount = 0, N = 0x15A (346 in decimal)

The CycleCount change from 3 to 0, that indicates a new measure available.

USE THIS VALUE

● Use **N** and **TUNE** to calculate the current temperature using the given function. From the example consider the sample:

○ EPC = HCAB10002

○ N = 346 [0x15A]

○ TUNE = -3

Calculating Temperature:

$$T = (N + TUNE - 500) / 5.4817 + 24.9$$

$$T = (346 - 3 - 500) / 5.4817 + 24.9$$

$$T = -3.74^{\circ}\text{C}$$