MiCS-VZ-89TE - Power-on Self-Test

Parameter	Criteria	Failed Diagnostic Indicator
Sensor Resistance Range	Range Check	PWM < 5 % at Power ON
Sensor Operating Power	Range Check	PWM < 5 % at Power ON

MiCS-VZ-89TE – PWM Output

After Power-on self-test (2 seconds) , the device will provide either a single "Failed Diagnostic Level" in case of sensor failure of the sensor or PWM multiplexed output indicating **"CO_ equivalent_ Level"** and **"VOC _isobutylene_equivalent Level"** referred to the isobutylene sensitivity unit.

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A simple manner to test the reactivity and sensitivity of gas sensor is to expose to alcohol bottleneck for example

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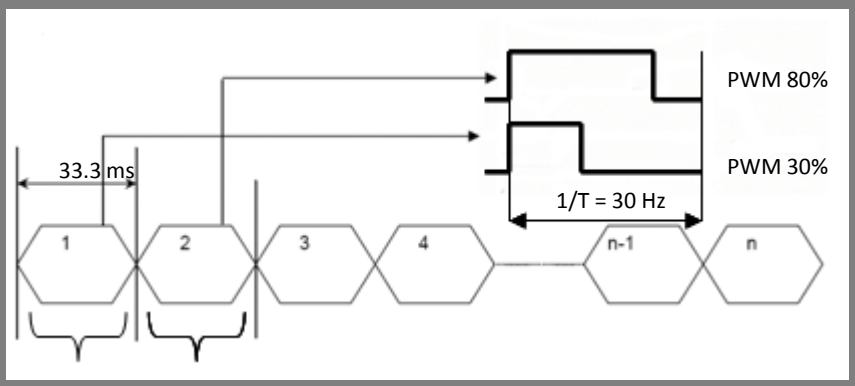
CO2 equ [ppm]	PWM Output [%]
400	55
1027	70.7
1654	86.4
2000	95

VOC (isobutylene) [ppb]	PWM Output [%]
0	5
200	13
500	25
1000	45



tVOC from 5% to 45%

CO2 equ from 55% to 95%

MiCS-VZ-89TE Output

Out of this initial period, the device will have the I2C data CO2 equivalent [ppm] and tVOC equivalent referred to the isobutylene sensitivity unit [ppb].

D1: Data_byte_1: tVOC: [13…242] -> tVOC [ppb] = (D1-13) * (1000/229)
D2: Data_byte_2: CO2_equ: [13…242] -> CO2_equ [ppm] = (D2 -13) * (1600/229) + 400
D3: Data_byte_3: RS first byte(MSB) -> Resistor value [Ω] = 10*(D5+ (256*D4) + (65536*D3))
D4: Data_byte_4: RS second byte
D5: Data_byte_5: RS third byte(LSB)
D6: Status
D7: CRC