



LamaPLC: All sensors in a table

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Type of measurement	Model	Power voltage	Measurement, range, accuracy	Communication	Note
<div style="background-color: #a00; color: white; padding: 2px; display: inline-block; width: 15px; height: 15px; margin-bottom: 5px;">G</div> <p>CO₂ VOC</p>	<p>Sciosense CCS811</p> 	<p>3.3V (1.8 .. 3.6V)</p>	<p>equivalent CO₂ (eCO₂): 400 ppm .. 32768 ppm equivalent Total Volatile Organic Compound (eTVOC): 0 ppb .. 29206 ppb.</p>	<p>I²C default address: 0x5A / 0x5B</p>	<p>Standard (100kbit/s) and fast (400kbit/s) I²C interface Power Consumption maximum: 46 mW</p>
<div style="display: flex; gap: 5px;"> <div style="background-color: #a00; color: white; padding: 2px; display: inline-block; width: 15px; height: 15px;">G</div> <div style="background-color: #00a000; color: white; padding: 2px; display: inline-block; width: 15px; height: 15px;">T</div> <div style="background-color: #0000a0; color: white; padding: 2px; display: inline-block; width: 15px; height: 15px;">H</div> </div> <p>CO₂ Air-quality Temperature Humidity</p>	<p>Sensirion SCD40-D-R2</p> 	<p>3.3V / 5V (2.4 .. 5.5V)</p>	<p>CO₂ output range: 0 .. 40'000 ppm CO₂ measurement accuracy: ± 40 ppm Humidity measurement range: 0 %RH .. 100 %RH Humidity measurement accuracy: ±6 %RH Temperature measurement range: 10°C .. 60°C Temperature measurement accuracy: ±1.5 °C</p>	<p>I²C default address: 0x62</p>	<p>SCL clock frequency: 100 kHz</p>
<div style="background-color: #a00; color: white; padding: 2px; display: inline-block; width: 15px; height: 15px; margin-bottom: 5px;">G</div> <p>Smoke gas Combustible gas</p>	<p>Winsen MQ-2</p> 	<p>5V</p>	<p>Flammable gas concentration: 300 .. 10'000ppm Heater Resistance; RH: 29Ω ±3Ω room tem. Heater consumption; PH: ≤950mW Sensitivity;S: Ro(in air) / Rs (2000 ppm C₃H₈) ≥ 5 Output Voltage;Vs: 2.5V□4.0V□in 2000 ppm C₃H₈ Concentration Slope;α: ≤0.6 (R3000 ppm / R1000 ppm C₃H₈)</p>	<p>analog signal</p>	<p>Lifespan: 10 years Preheat time: Over 24 hour</p>

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<p>G</p> <p>Alcohol gas</p> <p>Small sensitivity: Benzine gas</p>	<p>Winsen MQ-3</p> 	5V	<p>Detecting concentration scope 0.05 mg / 10 mg/L Alcohol</p> <p>Sensing Resistance: 1 MΩ - 8 MΩ (0.4 mg/L alcohol)</p>	analog signal	Preheat time: Over 24 hour
<p>G</p> <p>CH₄ gas Natural gas LNG</p> <p>Small sensitivity: Alcohol Smoke</p>	<p>Winsen MQ-4</p> 	5V	<p>Detecting concentration scope 200-10'000ppm CH₄, natural gas</p> <p>Sensing Resistance: 10KΩ- 60KΩ (1000ppm CH₄)</p>	analog signal	Preheat time: Over 24 hour
<p>G</p> <p>LPG Iso-butane Propane</p> <p>Small sensitivity: Alcohol Smoke</p>	<p>Winsen MQ-5</p> 	5V	<p>Detecting concentration scope 200-10'000ppm LPG,LNG, Natural gas, Iso-butane, Propane, Town gas</p> <p>Sensing Resistance: 10KΩ- 60KΩ (5000 ppm methane)</p>	analog signal	Preheat time: Over 24 hour
<p>G</p> <p>Town gas Natural gas LPG LNG Iso-butane Propane</p> <p>Small sensitivity: Alcohol Smoke</p>	<p>Winsen MQ-6</p> 	5V	<p>Detecting concentration scope 200-10'000ppm LPG ,iso-butane, propane, LNG</p> <p>Sensing Resistance: 10KΩ- 60KΩ (10'00ppm LPG)</p>	analog signal	Preheat time: Over 24 hour
<p>G</p> <p>CO</p>	<p>Winsen MQ-7</p> 	5V	<p>Detecting concentration scope over 300 ppm CO (Carbon Monoxide)</p> <p>Sensing Resistance: 2KΩ- 20KΩ (100 ppm CO)</p>	analog signal	Preheat time: Over 48 hour

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<p>G</p> <p>H₂</p> <p>Small sensitivity: Alcohol LPG cooking fumes</p>	<p>Winsen MQ-8</p> 	5V	<p>Detecting concentration scope 100-10000ppm Hydrogen (H₂)</p> <p>Sensing Resistance: 10KΩ- 60KΩ (1000 ppm H₂)</p>	analog signal	Preheat time: Over 24 hour
<p>G</p> <p>CO CH₄ gas LPG</p>	<p>Winsen MQ-9</p> 	5V	<p>Detecting range 20 ppm .. 2000 ppm carbon monoxide 500 ppm .. 10'000 ppm CH₄ 500 ppm .. 10'000 ppm LPG</p> <p>Sensing Resistance: 2KΩ- 20KΩ (100 ppm CH₄)</p>	analog signal	Preheat time: Over 48 hour
<p>G</p> <p>NO_x NH₃ alcohol Benzene smoke CO₂</p>	<p>Winsen MQ-135</p> 	5V	<p>Detecting range 10 ppm .. 300 ppm NH₃ 10 ppm .. 1000 ppm Benzene 10 ppm .. 300 ppm Alcohol</p> <p>Sensing Resistance: 30KΩ- 200KΩ (100 ppm NH₃)</p>	analog signal	Preheat time: Over 24 hour
<p>G</p> <p>Oxygen</p>	<p>AlphaSense O2-A2</p> 	5V	<p>Range of oxygen sensor: 0..30 % Load resistance: 47-100 Ω</p>	analog signal	-
<p>G</p> <p>Methane Natural gas</p>	<p>GL Sciences TGS-2611</p> 	5V	<p>Sensor resistance in 5000ppm of methane at 20°C and 65% R.H. Sensor resistance: 0.68 .. 6.8 kΩ in 5000 ppm methane</p>	analog signal	Conditioning period before test: 7 days
<p>G T H</p> <p>CO₂ humidity temperature</p>	<p>Sensirion SCD-30</p> 	3.3V / 5V	<p>Humidity range: 0 .. 100 %RH Temperature range: -40°C .. 70°C CO₂ range: 0 .. 40'000 ppm (I²C, UART), 0 .. 5'000 ppm (PWM)</p>	UART (Modbus Point to Point; TTL Logic), PWM and I ² C	Response time: 20s Sensor lifetime: 15 years

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 NO ²	MEMS GM-102b 	5V	Detection Range: 0.1~10ppm (NO ²) Heater Resistance: 80Ω±20Ω room temperature	analog signal	-
 alcohol gas	MEMS GM-302b 	5V	Detection Range: 1..500ppm (Ethanol vapor) 80Ω±20Ω room temperature	analog signal	-
 Alcohol (C ₂ H ₅ OH) Hydrogen(H ₂) Formaldehyde(CH ₂ O)	MEMS GM-502b 	5V	Detection: Alcohol (C ₂ H ₅ OH), 10..500ppm Detection: Hydrogen(H ₂), 1..1000ppm Detection: Formaldehyde(CH ₂ O), 10..100ppm	analog signal	-
 Carbon monoxide (CO) Hydrogen (H ₂)	MEMS GM-702b 	5V	Detection: Carbon monoxide sensor (CO) : 10..5000ppm Hydrogen sensor (H ₂): 10..500ppm	analog signal	-
 Carbon monoxide (CO) Methane (CH ₄) Ethanol (C ₂ H ₅ OH) Propane (C ₃ H ₈) Butane (C ₄ H ₁₀) Hydrogen (H ₂) Hydrogen sulfide (H ₂ S) Ammonia (NH ₃)	Fermion MICS-5524 V1.0 	5V	The module is intended for educational and hobby purposes! Measuring range: 1 .. 1000 ppm (carbon monoxide CO) 10 .. 500ppm (Ethanol C ₂ H ₅ OH) 1 .. 1000ppm (Hydrogen H ₂) 1 .. 500 ppm (NH ₃ ammonia) > 1000 ppm (methane CH ₄)	analog signal	-

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