LoRa Sensor Node

- Carbon Dioxide (CO2) and Temperature & Humidity

Aecl®

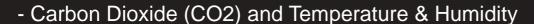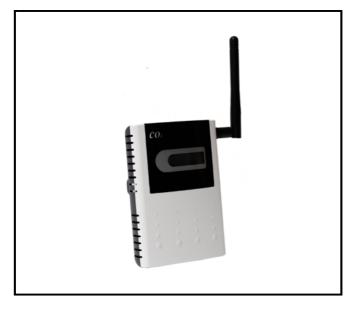## Features

- LoRaWAN compliant
- High Receiver Sensitivity, long range solution
- Integrated with calibrated CO2 sensor
  - ■ Accuracy : ± 30 ppm or $\pm 3\%$ of reading
  - ■ Range : 0 ~ 10,000 ppm
- Integrated with Compensated Temp/RH sensor
- Wide range DC power-in, 8~24V /or Micro-USB DC power-in, 5V
- Display CO2 concentration, Temp/ RH

DVC-301 series are designed to measure carbon dioxide, Temperature and Humidity by LoRa long-range and low-power wireless connectivity. It is integrated LoRa wireless technology, CO2 Sensor knowhow and high-performance MCU solution for various IoT markets usage. With calibrated CO2 sensor module and compensated Temperature/Humidity sensor integration, the data is ready for use. It is perfect for monitoring air quality in schools, office buildings, greenhouses, factories, hotels, hospitals, transportation lines and anywhere high levels of carbon dioxide are generated.

Specifications

Model name	DVC-301WxD-2 series	DVC-301WxD-1 series
Wireless		
Standard/ Protocol	Comply with LoRaWAN protocol	
Frequency	862-870 MHz ISM bands	902-928 MHz ISM bands
Tx Power	Up to 100mW	
Sensitivity	-132 dBm @ 980Kbps	
Receiver	LoRaWAN comply Receiver Gateway	
Antenna	824~960 MHz 2dBi SMA Male connector	
Sensor Operation		
Sensing element	CO2: Gold-plated infrared (NDIR) wave-guide technology with Automatic Baseline Correction (ABC) and passive gas diffusion (no moving parts) Temperature & humidity: CMOS sensor	
Response time	CO2: < 10 sec. @ 30 cc/min. flow rate 　　　< 3 min. diffusion time Temperature: min. 3 sec.；max. 30sec. at τ 63% Humidity: < 8 sec. at τ 63%	
Accuracy (at 25℃)	CO2: ± 30ppm + (± reading *3%) Temperature: ±0.3℃ Humidity: ±3 %RH	
Repeatability	CO2: ± 20ppm + (±reading * 1%) Temperature: ±0.1℃ Humidity: ±0.1 %RH	
Zero Drift	CO2: < ± 10ppm/yr. with Automatic Baseline Correction (ABC) Temperature: < 0.04 ℃/year Humidity: < 0.5 %RH/yr.	
Measurement range*	CO2: 0 ~ 10,000ppm Temperature: -40 ~ +125℃ Humidity: 0 ~ 95 %RH	
Pressure dependence	CO2: 1.6% reading per kPa	

System operation	
Temperature	-10 ~ +60 ℃
Humidity	0 ~ 95%RH, Non-condensing
Storage temperature	-20 ~ +70 ℃.
Warm-up time	≤ 1 min. (at full specs ≤ 15 minutes)
Signal output	NA
Alarm output	NA
Power supply	Wide range DC power-in, 8~24V /or Micro-USB DC power-in, 5V
Power consumption	TBD
Installation	Wall-mount
Dimension (mm)	Wall-mount: 113.57(H) x 80(W) x 28.79(D)
Case material	ABS

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Order information

Part Number	Description
DVC-301WxD-2000	LoRaWAN 868MHz CO2 sensor device
DVC-301WxD-1000	LoRaWAN 915MHz CO2 sensor device

Relative product information

Part Number	Description
DVC-101WxD-20000	LoRaWAN 868MHz CO sensor device
DVC-101WxD-10000	LoRaWAN 915MHz CO sensor device
DVC-201WxD-20000	LoRaWAN 868MHz PM2.5 sensor device
DVC-201WxD-10000	LoRaWAN 915MHz PM2.5 sensor device