



**CL-201-WF**  
**CL-202-WF**  
**CL-203-WF**  
**CL-204-WF**  
**CL-205-WF**  
**CL-206-WF**  
**CL-207-WF**  
**CL-208-WF**

Remote CO/CO<sub>2</sub>/NH<sub>3</sub>/H<sub>2</sub>S/HCHO/TVOC/Temperature/  
Humidity/Dew Point Data Logger Module

### Features

- Able to record CO, CO<sub>2</sub>, HCHO, H<sub>2</sub>S, NH<sub>3</sub>, TVOC, Temperature, Humidity and Dew Point Measurements
- Non-dispersive Infrared (NDIR) CO<sub>2</sub> Senso
- Up to 450,000 records with date and time stamps
- Simple and Powerful Software Utility, iOS APP and Android App Included
- Supports the DCON and Modbus RTU/TCP Protocols
- Supports the MQTT Protocol for Ethernet Interface
- Includes RS-485/Ethernet/Wi-Fi Communication Interfaces
- Relay Output for Alarm or IAQ Device Control
- Compatible with IEEE802.11b/g/n standards
- Includes redundant power inputs: PoE (IEEE 802.3af, Class 1) and DC input
- Support Infrastructure and Limit-AP Modes for Wireless Networks
- Ceiling Mounting or Wall Mounting



### Introduction

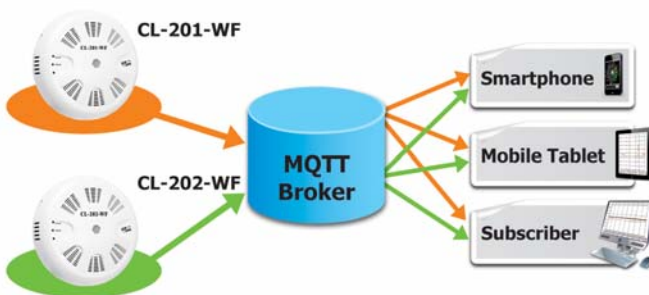
The CL-200-WF is an IAQ (Indoor Air Quality) monitoring module that includes Wi-Fi, Ethernet and RS-485 interfaces, It provides a WLAN connection which complies with the IEEE802.11b/g/n standards. With the popularity of 802.11 network infrastructure, the modules provide an easy method of incorporating wireless connectivity into monitoring and control systems. The CL-200-WF series of Data Logger devices can be used to record CO, CO<sub>2</sub>, HCHO, H<sub>2</sub>S, NH<sub>3</sub>, TVOC, Temperature, Humidity and Dew Point information, including date and time stamps, and are able to store up to 450,000 downloadable records.

Real-time data can be accessed from the CL-200-WF Data Logger from anywhere and at any time using the free Windows software, the iOS App or the Android App, as long as they are connected to the same local network as the Data Logger.

Support is provided for popular industrial protocols such as DCON, Modbus RTU, and Modbus TCP. For Ethernet interface, it also supports the emerging machine-to-machine (M2M)/IoT (Internet of Things) connectivity protocol – MQTT. The CL-200-WF Data Logger can be connected via widely used communication interfaces including RS-485, Ethernet, PoE and Wi-Fi, meaning that the device can be easily integrated into existing HMI or SCADA systems, and is easily maintained in a distributed control system.

#### Supports the MQTT Protocol for IoT Applications Features (Ethernet Interface Only)

The MQTT protocol is designed for the efficient exchange of real-time data between a sensor and a mobile device. It operates via TCP/IP and is in widest use today in "machine-to-machine" (M2M) and "Internet of Things" applications.

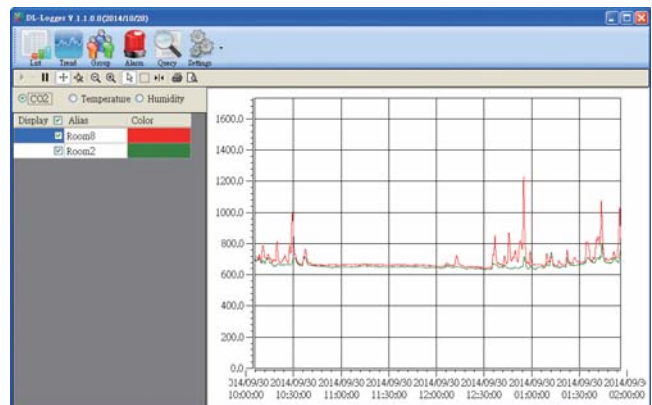


#### Simple and Powerful CL-200-WF Utility

The DL300 Utility can be used to configure the modules, monitor real-time data, group CL-200-WF modules so that the status of distribution groups can be viewed and managed. The utility also allows the log data to be downloaded and exported to a .CSV file that can then be imported into any industry-standard software or spread sheet for analysis.

#### Get Real-time Data Anywhere and Anytime

Real-time data from the CL-200-WF data logger can be accessed from anywhere and at any time using the DL300 Utility, the iOS or Android App, or via a regular web browser, as long as they are connected to the same local network as the data logger.



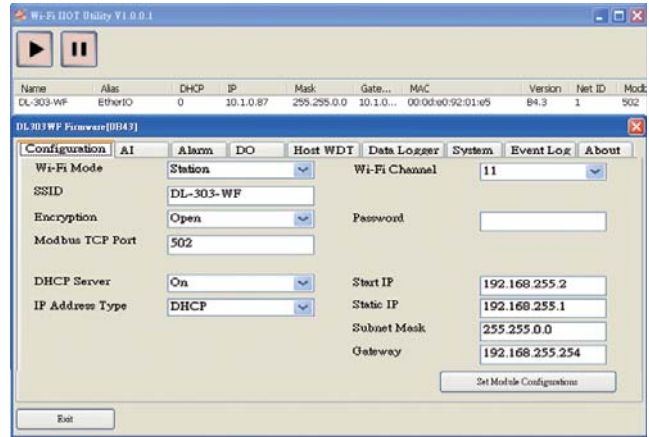
➔ Real-time data from the CL-200-WF series can be accessed from anywhere and at any time using the WF-IIOT-Utility and iOS App.



▲ iOS APP QR CODE



▲ Android APP QR CODE

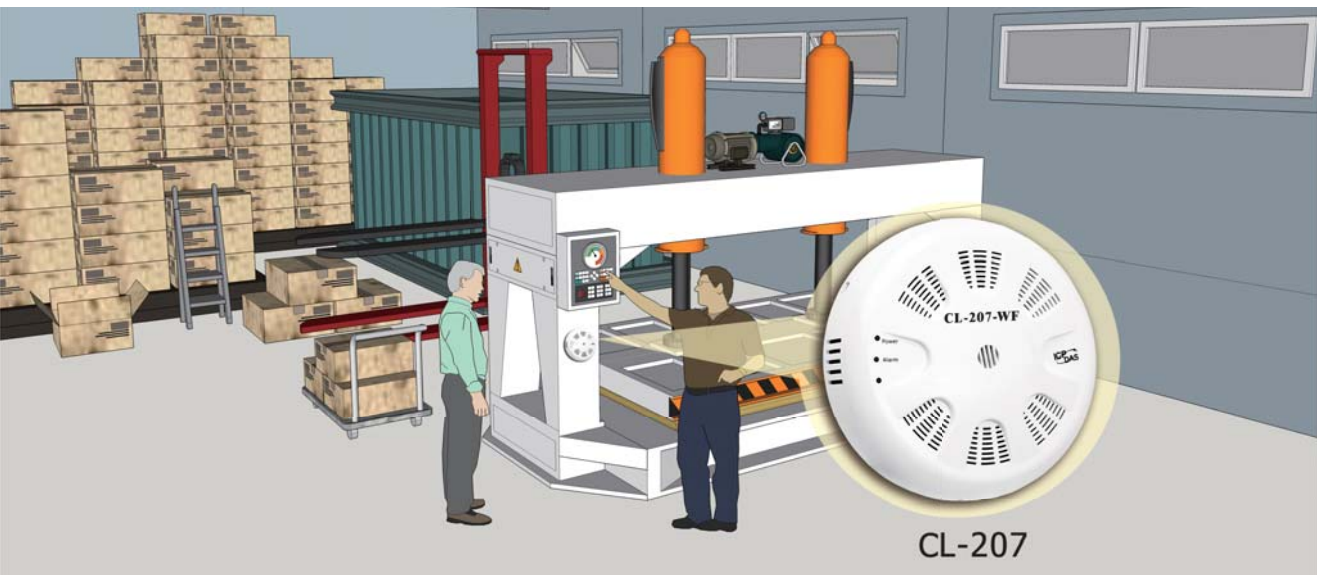


## ■ Applications

- Transportation of Food or Pharmaceuticals
- Blood Stations and Pharmacies
- Warehouse Management
- Food and Beverage Industry (HACCP)
- Building and Energy Management
- Museums, Archives and Galleries

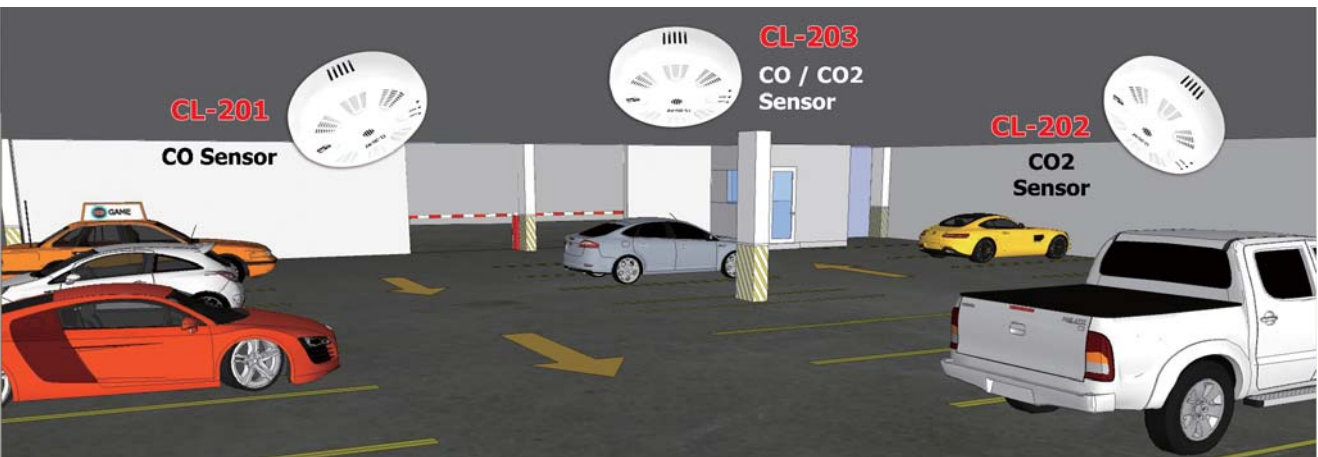
## ■ HCHO (Formaldehyde) / VOC Detector Automatic Solution

The **HCHO/VOC** detector provides an instantaneously warning of toxic formaldehyde, which can be found in a plywood factory, furniture factory and new interior remodelling house commonly.



## ■ Indoor or Underground Parking Lot Automatic Monitoring Solution

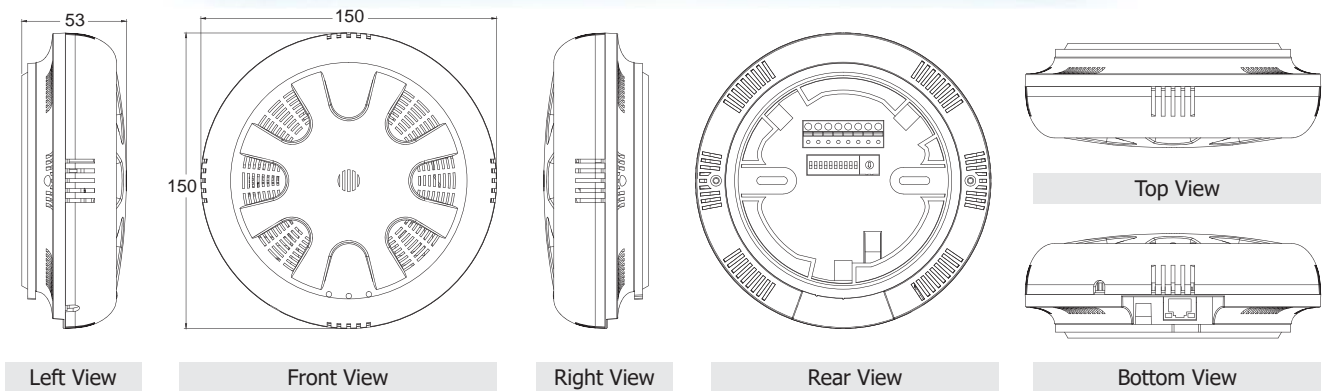
The air quality automation system for indoor or underground parking lot can use the CL-200-WF series modules to monitor the health and safety information, such as CO, CO<sub>2</sub>, temperature, humidity and dew point, and more...



## Applications



## Dimensions (Units: mm)



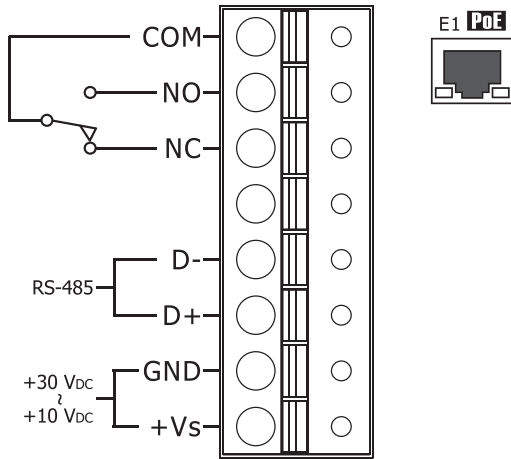
## System Specifications

Model	CL-201-WF	CL-202-WF	CL-203-WF	CL-204-WF	CL-205-WF	CL-206-WF	CL-207-WF	CL-208-WF
<b>System</b>								
CO/CO <sub>2</sub> /HCHO/TVOC/H <sub>2</sub> S/NH <sub>3</sub> /RH/T Alarm					Yes			
Real Time Clock					Yes			
Data Logger					Yes, up to 450,000 records			
Relay Output					Form A×1, SPST 30 VDC @ 16 A or 250 VAC @ 16 A			
<b>Communication</b>								
RS-485 Port					Baud Rate = 1200 ~ 115200 bps			
Ethernet Port					10/100 Base-TX, 8-Pin RJ-45 x1 (Auto-negotiating, Auto-MDI/MDIX, LED indicators)			
Security					IP filter (whitelist) and Password (web)			
Protocol					Modbus/RTU(RS-485), Modbus TCP(Ethernet, Wi-Fi) and MQTT(Ethernet)			
Dual Watchdog					Yes, Module (2.3 seconds), Communication (Programmable)			
<b>Wi-Fi Interface</b>								
Antenna					Antenna = 1 dBi (PCB Antenna)			
Output Power					18 dBm @ 1 DSSS, 14.5 dBm @ 54 OFDM			
Receive Sensitivity					-95.7 dBm @ 1 DSSS, -74.0 dBm @ 54 OFDM			
Standard Supported					IEEE 802.11 b/g/n			
Wireless Mode					Infrastructure & Limited AP			
Encryption					WEP, WPA and WPA2			
Transmission Range					50 meters (LOS)			
<b>Electrical</b>								
Powered from Terminal Block					+12 to +48 VDC			
Power Consumption	1.9 W (Max.)	2.0 W (Max.)	2.0 W (Max.)	2.0 W (Max.)	2.2 W (Max.)	2.2 W (Max.)	2.1 W (Max.)	2.0 W (Max.)
<b>Mechanical</b>								
Installation					Ceiling Mounting/Wall Mounting			
Protection Class					IP20			
Dimensions (D x H)					Ø 150 mm x 53 mm			
<b>Environment</b>								
Operating Temperature					0 to +50°C			
Storage Temperature					-30 to +75°C			
Humidity					10 to 90% RH, Non-condensing			

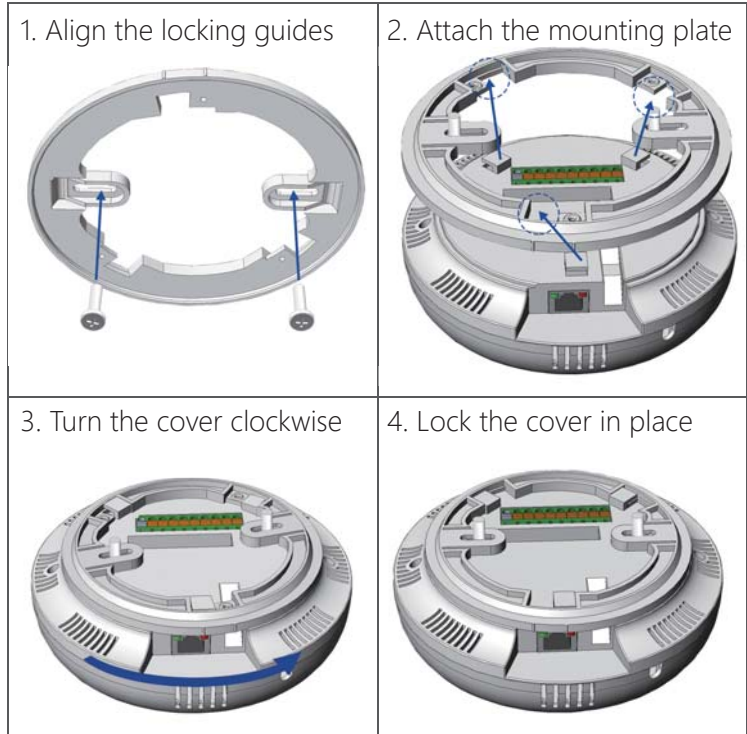
## I/O Specifications

Model	CL-201-WF	CL-202-WF	CL-203-WF	CL-204-WF	CL-205-WF	CL-206-WF	CL-207-WF	CL-208-WF
<b>CO Measurement</b>								
Range	0 to 1000 ppm (Electrochemical)	-	0 to 1000 ppm (Electrochemical)			-		
Resolution	1 ppm	-	1 ppm			-		
Accuracy	±5% of measured value	-	±5% of measured value			-		
Response Time	30 seconds	-	30 seconds			-		
Warm-up Time	300 seconds	-	300 seconds			-		
<b>CO2 Measurement</b>								
Range	-	0 to 9999 ppm (NDIR)				-		
Resolution	-	1 ppm				-		
Accuracy	-	±40 ppm ±3% of measured value				-		
Response Time	-	120 seconds				-		
Warm-up Time	-	5 minutes				-		
<b>HCHO Measurement</b>								
Range	-	-	0 to 2000 ppb (Electrochemical)		-	0 to 2000 ppb (Electrochemical)		-
Resolution	-	-	1 ppb		-	1 ppb		-
Accuracy	-	-	-		-	-		-
Response Time	-	-	≤60 seconds		-	≤60 seconds		-
Warm-up Time	-	-	180 seconds		-	180 seconds		-
<b>TVOC Measurement</b>								
Range	-	-	0 to 60000 ppb (MEMS Metal Oxide)		-	0 to 60000 ppb (MEMS Metal Oxide)		-
Resolution	-	-	1 ppb		-	1 ppb		-
Accuracy	-	-	±15%		-	±15%		-
Response Time	-	-	60 seconds		-	60 seconds		-
Warm-up Time	-	-	180 seconds		-	180 seconds		-
<b>NH3 Measurement</b>								
Range	-	-	0 to 100 ppm (Electrochemical)		-			-
Resolution	-	-	1 ppm		-			-
Accuracy	-	-	±5% of measured value		-			-
Response Time	-	-	< 120 Sec		-			-
Warm-up Time	-	-	180 Sec		-			-
<b>H2S Measurement</b>								
Range	-	-	0 to 100 ppm (Electrochemical)		-			-
Resolution	-	-	1 ppm		-			-
Accuracy	-	-	±5% of measured value		-			-
Response Time	-	-	< 120 Sec		-			-
Warm-up Time	-	-	180 Sec		-			-
<b>Temperature Measurement</b>								
Range	-10 to +50°C							
Resolution	0.1°C							
Accuracy	±0.6°C							
<b>Relative Humidity Measurement</b>								
Range	0 to 100% RH, Non-condensing							
Resolution	0.1% RH, Non-condensing							
Accuracy	±5% RH, Non-condensing							
<b>Dew Point</b>								
Range	Calculated using temperature and relative humidity							
Resolution	0.1°C							

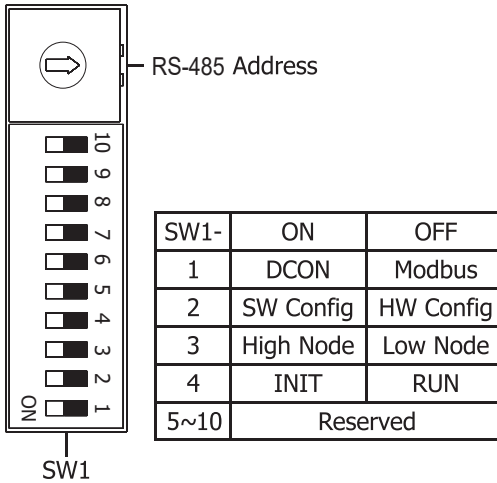
## Pin Assignments & WireConnections Mounting



### Ceiling Mounting

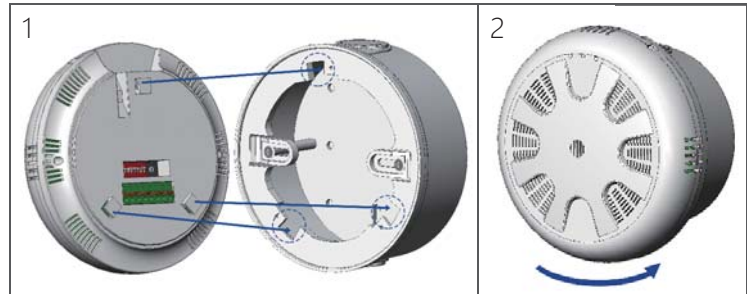


### DIP Switch Settings



### Wall Mounting

(Requires External Wall Box EWB-C150)



### Ordering Information

<b>CL-201-WF CR</b>	Remote CO/Temperature/Humidity/Dew Point Data Logger with Ethernet/RS-485/Wi-Fi Interfaces and PoE (RoHS)
<b>CL-202-WF CR</b>	Remote CO <sub>2</sub> /Temperature/Humidity/Dew Point Data Logger with Ethernet/RS-485/Wi-Fi Interfaces and PoE (RoHS)
<b>CL-203-WF CR</b>	Remote CO/CO <sub>2</sub> /Temperature/Humidity/Dew Point Data Logger with Ethernet/RS-485/Wi-Fi Interfaces and PoE (RoHS)
<b>CL-204-WF CR</b>	Remote HCHO/TVOC/Temperature/Humidity/Dew Point Data Logger with Ethernet/RS-485/Wi-Fi Interfaces and PoE (RoHS)
<b>CL-205-WF CR</b>	Remote NH <sub>3</sub> /Temperature/Humidity/Dew Point Data Logger with Ethernet/RS-485/Wi-Fi Interfaces and PoE (RoHS)
<b>CL-206-WF CR</b>	Remote H <sub>2</sub> S/Temperature/Humidity/Dew Point Data Logger with Ethernet/RS-485/Wi-Fi Interfaces and PoE (RoHS)
<b>CL-207-WF CR</b>	Remote HCHO/Temperature/Humidity/Dew Point Data Logger with Ethernet/RS-485/Wi-Fi Interfaces and PoE (RoHS)
<b>CL-208-WF CR</b>	Remote TVOC/Temperature/Humidity/Dew Point Data Logger with Ethernet/RS-485/Wi-Fi Interfaces and PoE (RoHS)

### Accessories

EWB-C150	External Wall Box for CL-200 series
CA-RJ45-04	RJ45 Cable, Male-Female, 30cm (90°)