

# DL-301-WF/DL-302-WF/ DL-303-WF/DL-307-WF

CO/CO2/HCHO/Temperature/Humidity/
Dew Point Data Logger (Asia Only)

## Features

- Simultaneous Display for CO, CO2, Temperature, Humidity and Dew Point
- Non-dispersive Infrared (NDIR) CO2 Sensor
- 2.8" LCD Touch Screen
- Able to store up to 450,000 records with date and time stamps
- Touch-screen and Web-based Configuration Interface
- Simple and Powerful Software Utility, iOS APP and Android App Included
- Able to Display Multilingual Messages on the Screen
- Supports the DCON, Modbus RTU, Modbus TCP and MQTT Protocols
- Includes RS-485/Ethernet/Wi-Fi Communication Interfaces
- Compatible with IEEE802.11b/g/n standards
- Support infrastructure and limit-AP modes for wireless networks
- Relay Output for Audible/Visual Alarm or IAQ Device Control
- Includes redundant power inputs: PoE (IEEE 802.3af, Class 1) and DC input
- Desktop, DIN-Rail or Wall Mounting

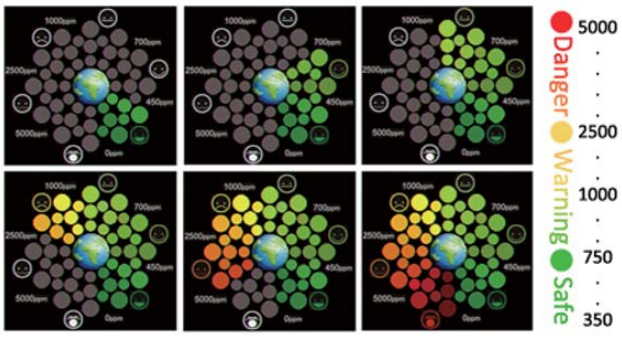
RoHS

## Introduction

The DL-300-WF series is an IAQ(Indoor Air Quality) monitoring module with 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 make an easy way to incorporate wireless connectivity into monitoring and control systems. The DL-300-WF series of data logger devices can be used to record CO, CO2, temperature, humidity and dew point information, including date and time stamps, and are able to store up to 450,000 downloadable records.

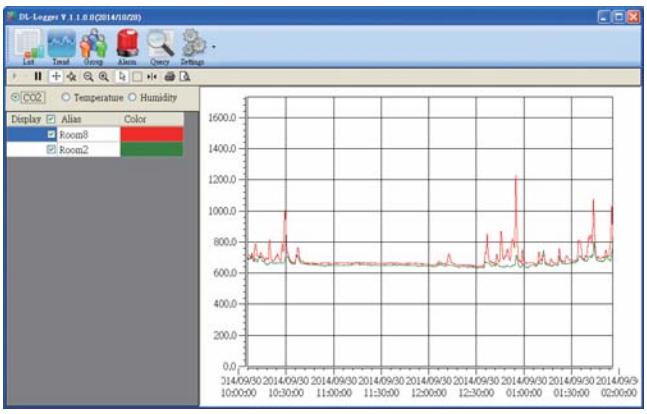
Real-time data can be accessed from the DL-300-WF data logger from anywhere and at any time using the free Windows software, the iOS App or the Android App, as long as they are connected to the same local network as the data logger. Support is provided for popular industrial protocols such as DCON, Modbus RTU, and Modbus TCP, as well as the emerging machine-to-machine (M2M)/)IoT (Internet of Things) connectivity protocol – MQTT. The DL-300-WF Data Logger can be connected via widely used communication interfaces including RS-485, Ethernet and PoE, meaning that the device can be easily integrated into existing HMI or SCADA systems, and is easy to be maintained in a distributed control system.

### ➲ Large 2.8" LCD Touch Screen, with clear Color Chart to indicate the CO/CO2 Level




### ➲ Simple and Powerful DL-300 Utility

The DL300 Utility can be used to configure the modules, monitor real-time data, group DL-300 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.

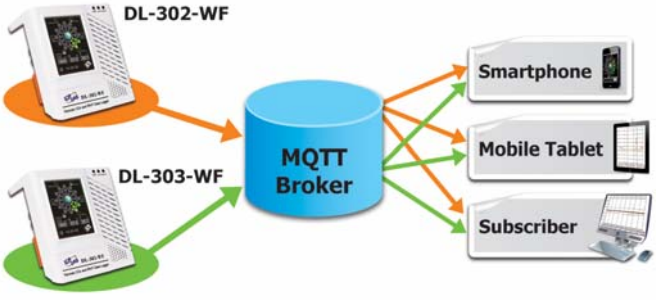


### ➲ Multi-platform Remote Access Software

Real-time data from the DL-300 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.



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



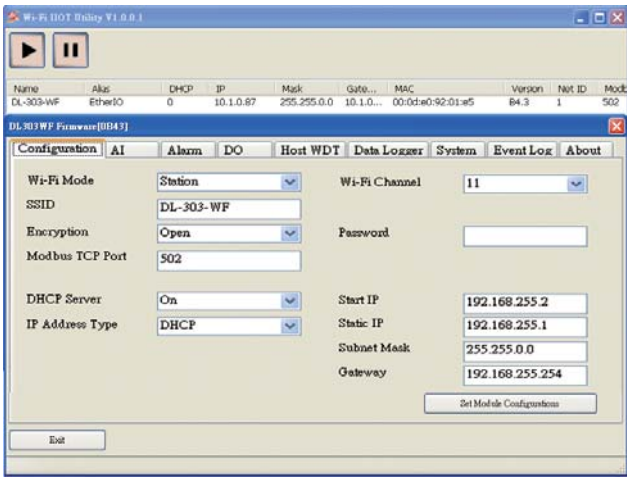



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➲ **Real-time data from the DL-300-WF series can be accessed from anywhere and at any time using the WF-IIOT-Utility and iOS App.**

▲ iOS APP QR CODE

▲ Android APP QR CODE



▲ WiFi_IIOT_Utility

➲ **Display Messages in Multiple Languages**

The display-message-on-screen function supports multiple language character sets based on UTF-8 encoding. Either pre-configured messages or dynamic messages can be remotely displayed using Modbus commands, or a dynamic message can be sent via the web-based interface.

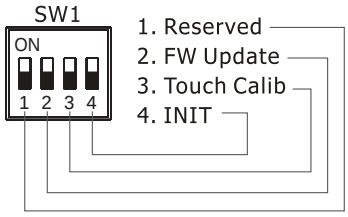


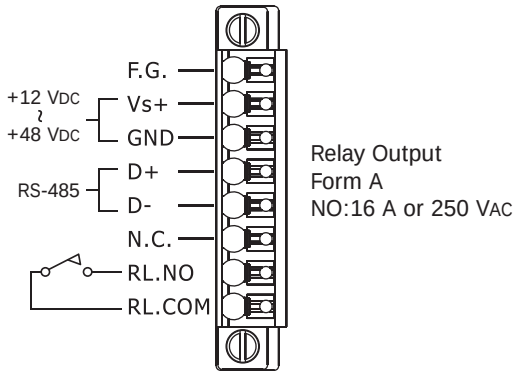

## Applications

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

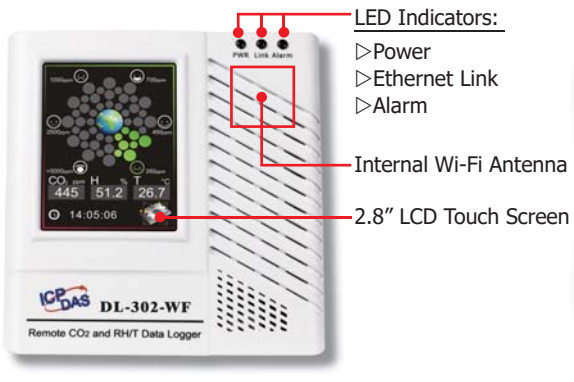


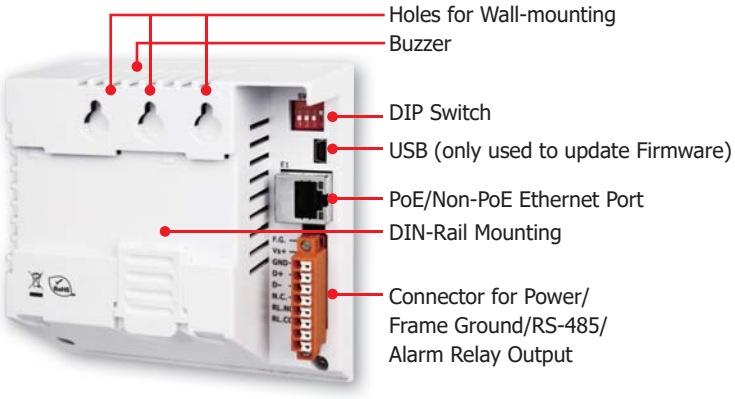

## Pin Assignments & Wire Connections




## Appearance






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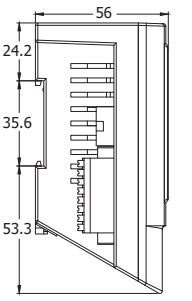
## Specifications

| Model | DL-301-WF | DL-302-WF | DL-303-WF | DL-307-WF |
|---|---|---|---|---|
| **HCHO Measurement** | | | | |
| Range | | - | | 0 ppb to 2000 ppb (Electrochemical) |
| Resolution | | - | | 1 ppb |
| Accuracy | | - | | 0 ~ 300ppb : ±30ppb<br>> 300ppb : ±10% |
| Response Time | | - | | ≤60 seconds |
| Warm-up Time | | - | | 180 seconds |
| **TVOC Measurement** | | | | |
| Range | | - | | 0 ppb to 60000 ppb (MEMS Metal Oxide) |
| Resolution | | - | | 1 ppb |
| Accuracy | | - | | ±15% |
| Response Time | | - | | 60 seconds |
| Warm-up Time | | - | | 180 seconds |
| **CO Measurement** | | | | |
| 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 | - |
| **CO2 Measurement** | | | | |
| Range | - | 0 to 9999 ppm (NDIR) | | - |
| Resolution | - | 1 ppm | | - |
| Accuracy | - | ±40 ppm ±3% of measured value | | - |
| Response Time | - | 120 seconds | | - |
| Warm-up Time | - | 60 seconds | | - |
| **Temperature Measurement** | | | | |
| Range | -10 to +50°C | | | |
| Resolution | 0.1°C | | | |
| Accuracy | ±0.6°C | | | |
| **Relative Humidity Measurement** | | | | |
| Range | 0 to 100% RH, Non-conden sing | | | |
| Resolution | 0.1% RH, Non-condensing | | | |
| Accuracy | ±5% RH, Non-condensing | | | |
| **Dew Point** | | | | |
| Range | Calculated using temperature and relative humidity | | | |
| Resolution | 0.1°C | | | |
| **System** | | | | |
| CO Alarm | Yes | - | Yes | - |
| CO2 Alarm | - | Yes | Yes | - |
| Real-time Clock | Yes | | | |
| Data Logger | Yes, 450,000 Records | | | |
| Alarm Relay Output | Form A×1, SPST. 30 VDC @ 16 A or 250 VAC @ 16 A | | | |
| **Software** | | | | |
| Built-in Web Server | Yes | | | |
| **Communication** | | | | |
| 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 | ModbusRTU(RS-485), Modbus TCP(Ethernet/Wi-Fi) and MQTT(Ethernet) | | | |
| Dual Watchdog | Yes, Module (2.3 seconds), Communication (Programmable) | | | |
| **Wi-Fi Interface** | | | | |
| 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) | | | |
| **Electrical** | | | | |
| Powered from Terminal Block | +12 to +48 VDC | | | |
| Powered from PoE | IEEE 802.3af, Class 1 (48 V) | | | |
| Power Consumption PoE | 1.8 W (Max.) | 1.8 W (Max.) | 1.9 W (Max.) | 1.8 W (Max.) |
| Power Consumption Non-PoE | 1.7 W (Max.) | 1.7 W (Max.) | 1.8 W (Max.) | 1.7 W (Max.) |
| **Mechanical** | | | | |
| Dimensions (L x W x H) | 114 mm x 106 mm x 56 mm | | | |
| Installation | Desktop, DIN-Rail or Wall Mounting | | | |
| **Environment** | | | | |
| Operating Temperature | 0 to +50°C | | | |
| Storage Temperature | -30 to +75°C | | | |
| Humidity | 10 to 90% RH, Non-condensing | | | |

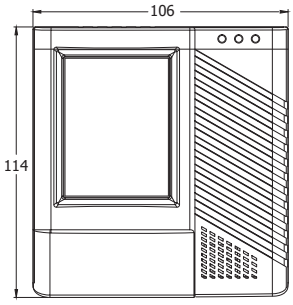


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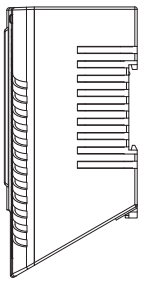
## Dimensions (Units: mm)

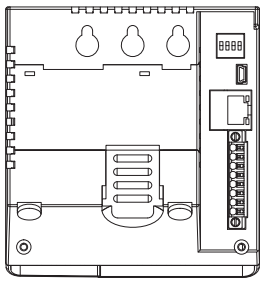


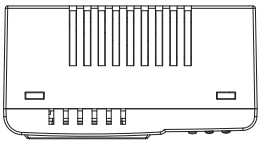
Left View

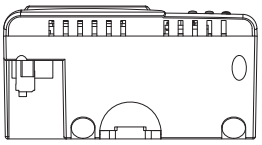


Front View


Right View


Rear View


Top View


Bottom View

## Ordering Information

| | |
|---|---|
| **DL-301-WF CR** | Remote CO/Temperature/Humidity/Dew Point Data Logger with Safety Alarm (RS-485, Ethernet, PoE, Wi-Fi) (RoHS) (Asia Only) |
| **DL-302-WF CR** | Remote CO2/Temperature/Humidity/Dew Point Data Logger with Safety Alarm (RS-485, Ethernet, PoE, Wi-Fi) (RoHS) (Asia Only) |
| **DL-303-WF CR** | Remote CO/CO2/Temperature/Humidity/Dew Point Data Logger with Safety Alarm (RS-485, Ethernet, PoE, Wi-Fi) (RoHS) (Asia Only) |
| **DL-307-WF CR** | Remote HCHO/Temperature/Humidity/Dew Point Data Logger with Safety Alarm <br>(RS-485, Ethernet, PoE, Wi-Fi) (RoHS) (Asia Only) |

## Accessories

| | |
|---|---|
|  **NS-205 CR** | Unmanaged 5-port Industrial Ethernet Switch. 24 VDC Input (RoHS) |
|  **NS-205PSE CR** | Unmanaged Ethernet switch with 4-PoE and 1 RJ45 uplink connectors. 48 VDC Input (RoHS) |
|  **NS-205PSE-24V CR** | Unmanaged Ethernet switch with 4-PoE and 1 RJ45 uplink connectors. 24 VDC Input (RoHS) |
|  **MDR-20-24 CR** | 24V/1A, 24 W Power Supply with DIN-Rail Mounting (RoHS) |
|  **MDR-60-48 CR** | 48V/1.25A, 60 W Single Output Industrial DIN Rail Power Supply (RoHS) |
|  **tM-7561 CR** | USB to Isolated RS-485 Converter (RoHS) |
|  **IOP760AM** | Ethernet/UART to Wi-Fi Converter(RoHS) |
|  **APW77BAM** | Wi-Fi Access Point (with category A plug type) (RoHS) |



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