



- DL-311-IP65**
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- DL-315-IP43**
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- DL-318-IP65**

Remote CO/CO₂/HCHO/TVOC/NH₃/H₂S/Temperature/
Humidity/Dew Point/Pressure Data Logger Module

Features

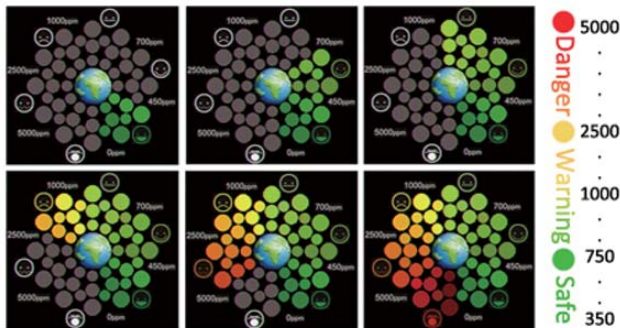
- Able to record CO, CO₂, HCHO, TVOC, NH₃, H₂S, Temperature, Humidity, Dew Point and Pressure Measurements
- Non-dispersive Infrared (NDIR) CO₂ Sensor
- Electrochemical Sensor
- 2.8" LCD Touch Screen
- Touch-screen and Web-based Configuration Interface
- Simple and Powerful Software Utility, iOS APP and Android App Included
- Able to Display Multilingual Messages on the Screen
- Supports the DCON, Modbus RTU/TCP, and MQTT Protocols
- Includes RS-485/Ethernet/PoE Communication Interfaces
- Relay Output for Audible/Visual Alarm or IAQ Device Control
- Includes redundant power inputs: PoE (IEEE 802.3af, Class 1) and DC input
- IP65/IP43 Protection Approval



Introduction

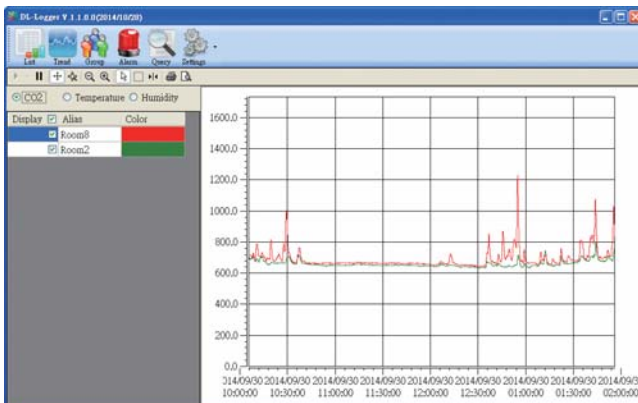
The DL-310-IP65 series of Data Logger devices can be used to record CO, CO₂, HCHO, TVOC, NH₃, H₂S, Temperature, Humidity, Dew Point and Pressure information, including date and time stamps, and are able to store up to 450,000 downloadable records. Real-time data can be accessed from the DL-310-IP65 series 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-310-IP65 series 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. The IP65/IP43 version of DL-310-IP65 series is designed for industrial applications in harsh environments that provides IP65/IP43 grade protection approval. The rugged RJ-45 ensures tight, robust connections, and guarantees reliable operation, even for applications that are subject to high vibration and shock.

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

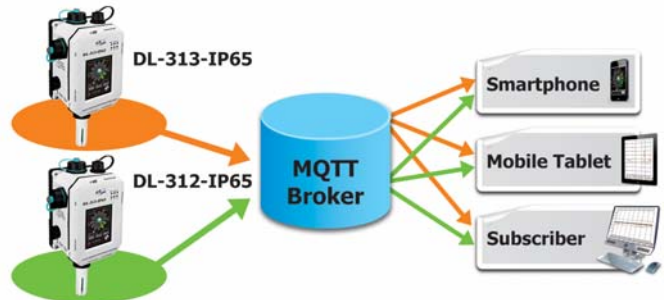


Simple and powerful utility

The iAir Utility can be used to configure the modules, monitor real-time data, group DL-310 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.



Supports the MQTT Protocol for IoT Applications



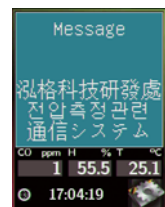
Multi-platform Remote Access Software

Real-time data from the DL-310 Data Logger can be accessed from anywhere and at any time using the iAir 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.



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

Mushroom Farm

Mushroom growth yield requires long time to monitor the environment of CO₂ concentration, temperature and humidity values, and its growth environment is high humidity condition. The general equipment cannot work in such environment, but the DL-312-IP65 can be used to record CO₂, temperature, humidity and dew point information with date and time stamps in the operating temperature from -20°C to +50°C, and are able to store up to 450,000 downloadable records. The WISE-5231-3GWA features timer and schedule functions. It allows user to schedule specific date or time for control logic execution, or perform specific tasks such as time delay. With calendar user interface provided, schedule setting can be more efficient and flexible. This does not require programming, only some simple settings will be able to achieve the farm production control and quality control, production resume ... and so on.



Pig Farm

Ammonia and Hydrogen sulfide are two of the most harmful gases in animal farming environment. They will directly affect animals' growth and immunity. Pig farm requires long-term immediate monitoring the environment of NH₃ concentration, temperature and humidity values. The general equipment cannot work in such environment, but the DDL-315-IP43 can be used to record NH₃, temperature, humidity and dew point information with date and time stamps in the operating temperature from -20°C to +50°C, and are able to store up to 450,000 downloadable records. The WISE-5231-3GWA features timer and schedule functions. It allows user to schedule specific date or time for control logic execution, or perform specific tasks such as time delay. With calendar user interface provided, schedule setting can be more efficient and flexible. This does not require programming, only some simple settings will be able to achieve the farm production control and quality control, production resume ... and so on.



■ Specifications

| COM Ports | | |
|-----------------------------|------------------------------------------------------------------------------------------|-------------------------------|
| Ports | 1 x RS-485 | |
| Baud Rate | 1200 ~ 115200 bps | |
| Protocol | DCON, Modbus/RTU | |
| Ethernet | | |
| Ports | 10/100 Base-TX, 8-Pin RJ-45 x1(Auto-negotiating, Auto-MDI/MDIX, LED indicators) | |
| PoE | Yes | |
| Protocol | Modbus/TCP, MQTT | |
| Software | | |
| Built-in Web Server | Built-in Web Server | |
| CPU Module | | |
| Real Time Clock | Yes | |
| Watchdog Timer | Yes, Module (2.3 sec), Communication (Programmable) | |
| System | | |
| Security | IP filter (whitelist) and Password (web) | |
| Real Time Clock | Yes | |
| Data Logger | Yes, up to 450,000 records | |
| Relay Output | | |
| Type | PhotoMos Relay × 4, 100 VDC @ 1 A | |
| Display | | |
| Backlight Life | 20,000 hours | |
| Brightness | 160 cd/m ² | |
| Touch Panel | Yes | |
| LCD Information Displayed | 2.8 TFT (Resolution 240 x 320 x 16), Defective Pixels ≤ 3 Backlight Life 20,000 hours | |
| LED Indicators | | |
| Status | PWR | Green for normal operation |
| | Link | Green for the Ethernet-linked |
| | S1~S4 | Red for an alarm condition |
| Power | | |
| Consumption | PoE | 3.1 W (Max) |
| | Non-PoE | 3.0 W (Max) |
| Powered from PoE | IEEE 802.3af, Class 1 (48V) | |
| Powered from Terminal Block | +12 to +48 VDC | |
| Mechanical | | |
| Dimensions (mm) | 116 x 211 x 70 (W x L x H) | |
| Installation | DIN-Rail or Wall Mounting | |
| Ingress Protection Rating | DL-31X-IP65 DL-315-IP43 | |
| Environment | | |
| Operating Temperature | -20 ~ +50°C | |
| Storage Temperature | -30 ~ +75°C | |
| Humidity | 10 ~ 90% RH, Non-condensing | |

| DL-31X-IP65 Series | Type of Sensor | | | | | | | | Communication |
|--------------------|----------------|-----------|----------------|-----------------|------|-----------------|------------------|------|-----------------------|
| | T & RH | Pressures | Gas Monitoring | | | | | | |
| | | | CO | CO ₂ | HCHO | NH ₃ | H ₂ S | TVOC | |
| DL-311-IP65 | √ | √ | √ | - | - | - | - | - | RS-485 + Ethernet/PoE |
| DL-312-IP65 | √ | √ | - | √ | - | - | - | - | |
| DL-313-IP65 | √ | √ | √ | - | - | - | - | - | |
| DL-314-IP65 | √ | √ | - | - | √ | - | - | √ | |
| DL-315-IP43 | √ | √ | - | - | - | √ | - | - | |
| DL-316-IP65 | √ | √ | - | - | - | - | √ | - | |
| DL-317-IP65 | √ | √ | - | - | √ | - | - | - | |
| DL-318-IP65 | √ | √ | - | - | - | - | - | √ | |

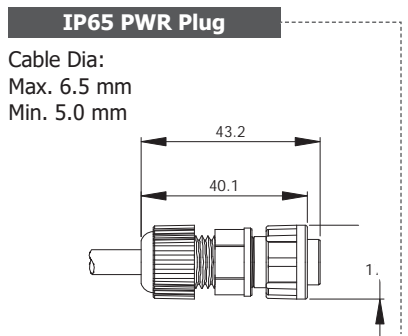
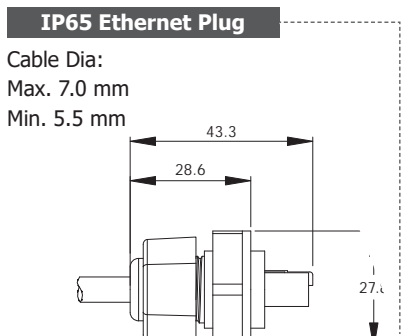
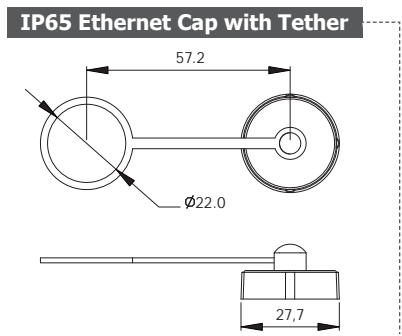
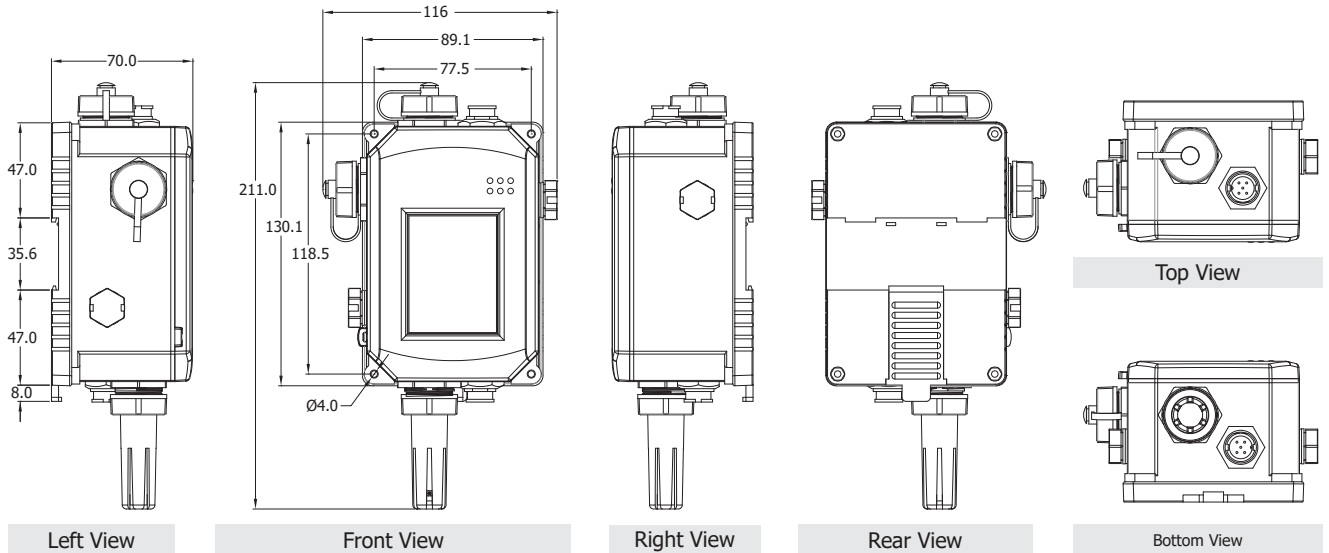
I/O Specifications

| Type of sensor | Rang | Resolution | Accuracy | Response Time | Warm-up Time | Life Time |
|-------------------|----------------------------------------------------|-------------------------|-------------------------------------|---------------|--------------|-----------|
| CO | 0 to 1000 ppm (Electrochemical) | 1 ppm | ±5% of measured value | 30 seconds | 60 seconds | 5 years |
| CO ₂ | 0 ~ 9999 ppm (NDIR) | 1 ppm | ±30 ppm ±3% of measured value | 120 seconds | 300 seconds | 15 years |
| HCHO | 0 ppb to 2000 ppb (Electrochemical) | 1 ppm | 0 ~ 300ppb : ±30ppb > 300ppb : ±10% | ≤60 seconds | 180 seconds | 3 years |
| TVOC | 0 ppb to 60000 ppb (MEMS Metal Oxide) | 1 ppm | ±15% | 60 seconds | 180 seconds | 5 years |
| NH ₃ | 0 to 100 ppm (Electrochemical) | 1 ppm | ±5% of measured value | < 40 seconds | 60 seconds | 2 years |
| H ₂ S | 0 to 100 ppm (Electrochemical) | 1 ppm | ±5% of measured value | < 30 seconds | 60 seconds | 2 years |
| Temperature | -20 to +50°C | 0.1°C | ±0.6°C | - | - | 10 years |
| Relative Humidity | 0 to 100% RH, Non-condensing | 0.1% RH, Non-condensing | ±5% RH, Non-condensing | - | - | 10 years |
| Dew Point | Calculated using temperature and relative humidity | 0.1°C | - | - | - | 10 years |
| Pressure | 300 ~ 1200 hpa | 0.1 hpa | 1 hpa | - | - | - |

Appearance






Dimensions (Units: mm)



Ordering Information

| | |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| DL-311-IP65 CR | IP65 Remote CO/Temperature/Humidity/Dew Point/Pressure Data Logger with Safety Alarm (RS-485, Ethernet, PoE) (RoHS) |
| DL-312-IP65 CR | IP65 Remote CO ₂ /Temperature/Humidity/Dew Point/Pressure Data Logger with Safety Alarm (RS-485, Ethernet, PoE) (RoHS) |
| DL-313-IP65 CR | IP65 Remote CO/CO ₂ /Temperature/Humidity/Dew Point/Pressure Data Logger with Safety Alarm (RS-485, Ethernet, PoE) (RoHS) |
| DL-314-IP65 CR | IP65 Remote HCHO/TVOC/Temperature/Humidity/Dew Point/Pressure Data Logger with Safety Alarm (RS-485, Ethernet, PoE) (RoHS) |
| DL-315-IP43 CR | IP43 Remote NH ₃ /Temperature/Humidity/Dew Point/Pressure Data Logger with Safety Alarm (RS-485, Ethernet, PoE) (RoHS) |
| DL-316-IP65 CR | IP65 Remote H ₂ S/Temperature/Humidity/Dew Point/Pressure Data Logger with Safety Alarm (RS-485, Ethernet, PoE) (RoHS) |
| DL-317-IP65 CR | IP65 Remote HCHO/Temperature/Humidity/Dew Point/Pressure Data Logger with Safety Alarm (RS-485, Ethernet, PoE) (RoHS) |
| DL-318-IP65 CR | IP65 Remote TVOC/Temperature/Humidity/Dew Point/Pressure Data Logger with Safety Alarm (RS-485, Ethernet, PoE) (RoHS) |

Accessories

| Mode Name | NS-205-IP67 | NS-208PSE-IP67 | NS-208-IP67 |
|----------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Picture |  |  |  |
| PoE | — | 802.3af x 8 | — |
| Input Voltage Range | +10 VDC ~ +30 VDC (1 kV Isolated) | +46 VDC ~ +53 VDC | +12 VDC ~ +53 VDC |
| Installation | Wall Mounting | Wall Mounting | |
| Dimensions (W x L x H)(Unit: mm) | 85 x 76 x 137 | 190 x 155 x 104 | |

| | | |
|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>IP67 RJ-45 Plug</p>  <p>4SASO-0001</p> | <p>Cap with Tether</p>  <p>4SASO-0004</p> | <p>IP67 Waterproof Cable, 1M</p>  <p>CA-05BFFM-LL7A01</p> |
|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|