DL-301/DL-302/DL-303

CO/CO2/Temperature/Humidity/Dew Point Data Logger

Features

- Simultaneous Display for CO, CO2, Temperature, Humidity and Dew Point
- Measurement Range
  - CO: 0 ~ 1000 ppm
  - CO2: 0 ~ 9999 ppm
- 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
- Free 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/PoE Communication Interfaces
- Relay Output for Audible/Visual Alarm or IAQ Device Control
- Desktop, DIN-Rail or Wall Mounting

Introduction

The DL-300 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 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 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
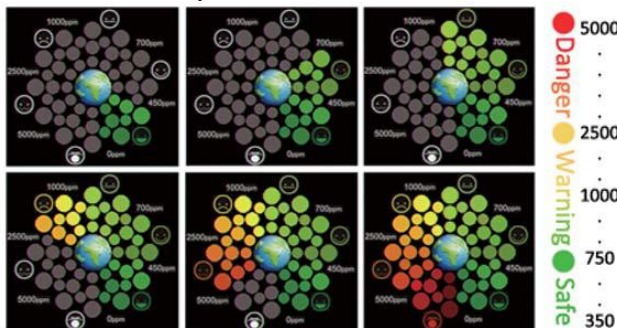

⟳ Free and Power DL300 Utility Software

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.
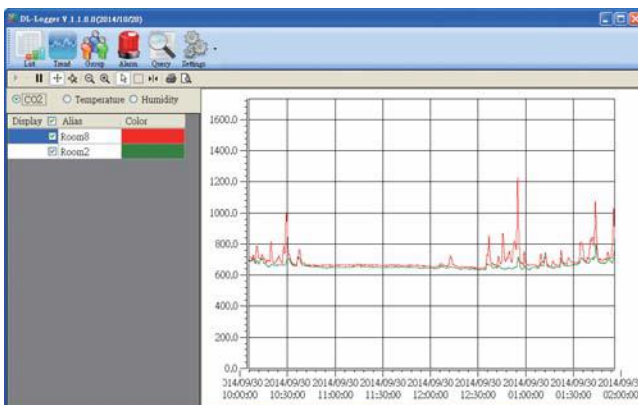
### ⟳ Supports the MQTT Protocol for IoT Applications
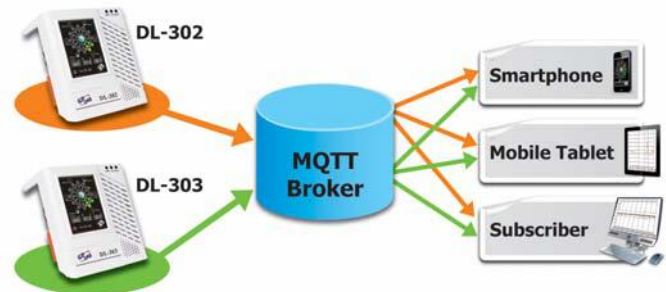
⟳ Multi-platform Remote Access Software

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.


⟳ 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.
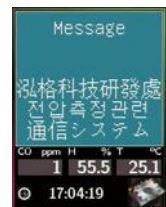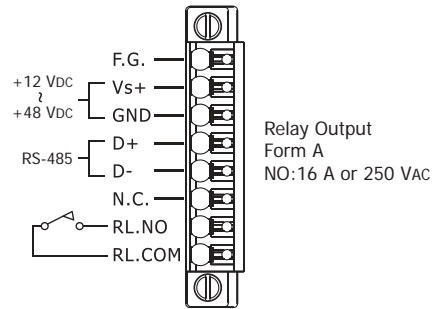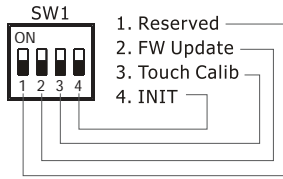
◾ Applications

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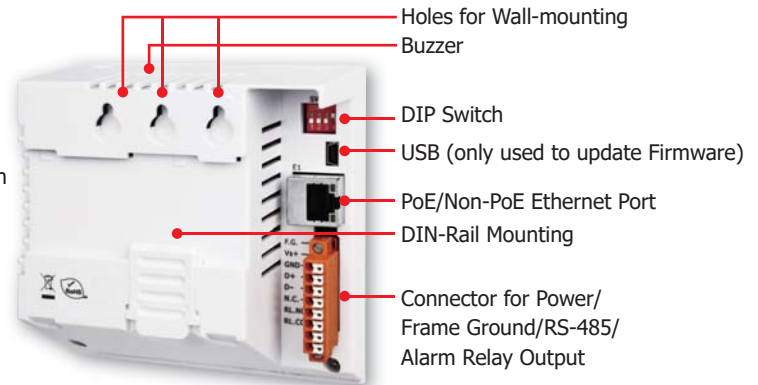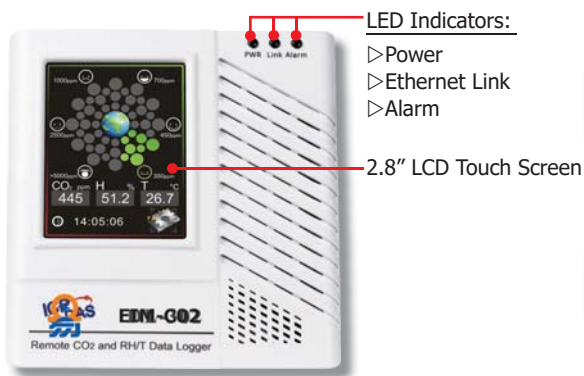- Warehouse Management
- Museums, Archives and Galleries
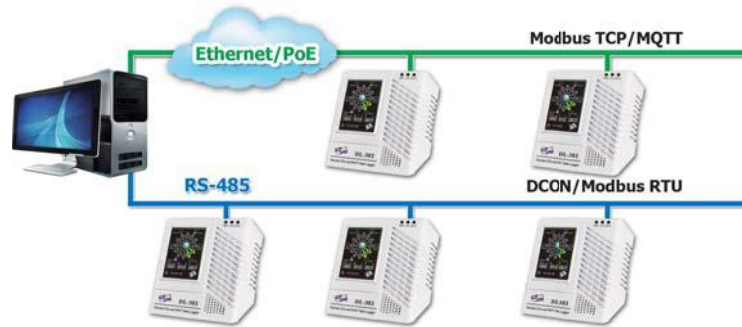
◾ Specifications

Model	DL-301	DL-302	DL-303
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	-	±30 ppm ±3% of measured value	
Response Time	-	20 sec	
Warm-up Time	-	60 sec	
Temperature Measurement			
Range	-10 to +50°C		
Resolution	0.1°C		
Accuracy	±0.6°C		
Relative Humidity Measurement			
Range	0 to 100% RH, Non-condensing		
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		
Relay Output	Form A×1, SPST 30 V_{DC} @ 16 A or 250 V_{AC} @ 16 A		
Interface	RS-485/Ethernet/PoE		
Main Machine Interface			
LCD	2.8 TFT (Resolution 240 x 320 x 16), Defective Pixels <= 3		
Backlight Life	20,000 hours		
Brightness	160 cd/m2		
Touch Panel	Yes		
Electrical			
Powered from Terminal Block	+12 to +48 V_{DC}		
Powered from PoE	IEEE 802.3af, Class 1 (48 V)		
Power Consumption — PoE	1.84 W (Max.)	2.65 W (Max.)	2.83 W (Max.)
Power Consumption — Non-PoE	1.74 W (Max.)	2.14 W (Max.)	2.24 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		

▰ Pin Assignments & Wire Connections

SW1

ON
1 2 3 4

1. Reserved
2. FW Update
3. Touch Calib
4. INIT

+12 V$_{DC}$
~
+48 V$_{DC}$

RS-485

F.G.
Vs+
GND
D+
D-
N.C.
RL.NO
RL.COM

Relay Output
Form A
NO:16 A or 250 V$_{AC}$

▰ Appearance

LED Indicators:
▷Power
▷Ethernet Link
▷Alarm

2.8" LCD Touch Screen

Holes for Wall-mounting
Buzzer

DIP Switch
USB (only used to update Firmware)
PoE/Non-PoE Ethernet Port
DIN-Rail Mounting
Connector for Power/
Frame Ground/RS-485/
Alarm Relay Output

▰ Dimensions (Units: mm)

56
24.2
35.6
53.3

106
114

Left View | Front View | Right View | Rear View | Top View / Bottom View

▰ Ordering Information

DL-301 CR	Remote CO/Temperature/Humidity/Dew Point Data Logger with Safety Alarm (RoHS)
DL-302 CR	Remote CO2/Temperature/Humidity/Dew Point Data Logger with Safety Alarm (RoHS)
DL-303 CR	Remote CO/CO2/Temperature/Humidity/Dew Point Data Logger with Safety Alarm (RoHS)

▰ Accessories

NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch. 24 V$_{DC}$ Input (RoHS)		MDR-20-24 CR	24V/1A, 24 W Power Supply with DIN-Rail Mounting (RoHS)
NS-205PSE CR	Unmanaged Ethernet switch with 4-PoE and 1 RJ45 uplink connectors. 48 V$_{DC}$ Input (RoHS)		MDR-60-48 CR	48V/1.25A, 60 W Single Output Industrial DIN Rail Power Supply (RoHS)
NS-205PSE-24V CR	Unmanaged Ethernet switch with 4-PoE and 1 RJ45 uplink connectors. 24 V$_{DC}$ Input (RoHS)		tM-7561 CR	USB to Isolated RS-485 Converter (RoHS)