

Environmental Monitoring Mini Weather Station



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IIoT3 Environmental Monitoring Overview

With the rapid development of the economy and industry, air pollution is increasing, through ICP DAS environmental sensor products, we can monitor the fine particle matter (PM2.5) and formaldehyde/methane in the air. It also monitors the CO2 concentration, temperature, and humidity of the environment, and provides a wide range of environmental information to effectively improve indoor and outdoor environmental quality. Other products such as liquid leakage detection, distance measurement, infrared temperature measurement, and wireless solutions are provided for IIoT applications such as industrial safety and intelligent buildings.

1 Air Quality Monitoring

Indoor Gas Detection Module: CL Series P.8

Temperature / Humidity / Particle Matter / Gas Monitoring



DL Series (water/dustproof) P.12

Temperature / Humidity / illumination / Dew Point / Sea Level / Particle Matter / Gas Monitoring



Mini Weather Station: DLW Series P.24

Measures weather information (wind speed, wind direction, pressure, illumination, sea level, temperature, humidity), particle matter (PM1, PM2.5, PM10), and various gases.



2 IR Sensor PIR Series P.33

The PIR series can detect infrared waves generated by human within a range of approximately 8 meters in diameter with a 360° coverage area for indoor motion detection.



3 Industrial Sensor P.36

iSN Series

Leakage / Illumination / Distance Measurement / Thermal Imaging Monitoring



4 Wireless solution P.47

iWSN/iXN/iSOS Series

The series module use 433MHz wireless low frequency communication technology and solve the problem of difficult wiring in the field.



1 Air Quality Monitoring

**T & RH /
Air Pressure**



DL-10

**T & RH /
Illumination**



DL-100S



DL-110S

**Wind Speed and Direction / Air Pres-
sure / Sea Level / T & RH / Illumina-
tion/ Gas / Paritcle Matter**



DLW-1000

Air Quality Monitoring

T & RH / Air Pressure / Gas



DL-300



DL-300-IP65

**T & RH / Air Pressure / Gas /
Paritcle Matter**



DL-1000



CL-200

The environmental sensing module can detect temperature and humidity, air pressure, hazardous gases, and paritcle matter in a variety of fields. It has RS-485, Ethernet/PoE, and WiFi communication interfaces, and supports DCON, Modbus RTU/TCP, and MQTT, the new M2M/IoT (Internet of Things) communication protocol widely used by the industry. - MQTT, with the advantage of communication network capability, can be integrated into the server system to reduce wiring and maintenance costs.

Features:

Multi-platform Remote Access Software

Users can access the real-time data monitored by the module at any time within the same network, no longer limited by distance, location.... It is also possible to send messages to the screen to instruct the field personnel on the job from a remote location.

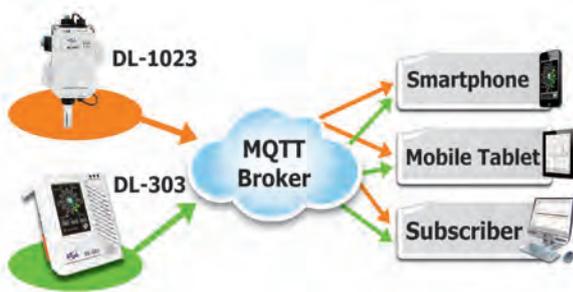


▲ iOS APP



▲ Android APP

■ Supports MQTT Protocol for IoT Applications



■ PoE

Provides both PoE and DC power inputs, and can be set to redundant power supply. (except DL-10)

■ Data Logging Function

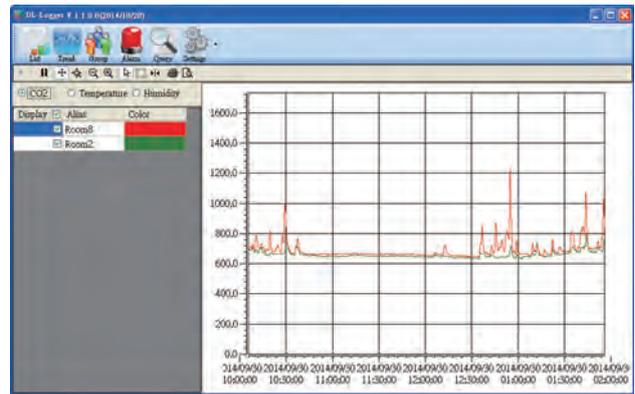
Data logging function with time stamps (Except DL-10)

■ Provide WF-IIoT-Utility Software

Real-time data can be accessed anytime, anywhere by supporting CL-200, DL-300, and DL-1000 WF models.

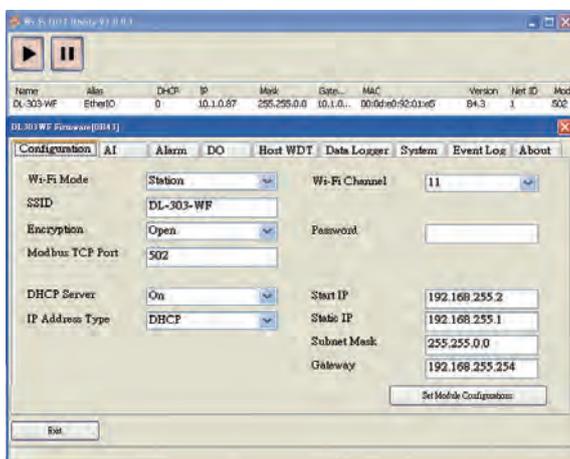
■ Free management software

By using iAir Utility, you can search for CL/DL/DLW modules via Ethernet, set the module configuration, and monitor real-time data. The utility can download the log data and export it to a CSV format that can be imported into any industry-standard software or spreadsheet for analysis.



■ Web-based configuration interface

Built-in web-based interface, users can view the values and settings of the module through the web-based interface as if they are on the same domain. (Except DL-10)



Environmental Monitoring Function:

1

Air Quality Monitoring



Series No.	CL-200	DL-10	DL-100	DL-110/120
Illumination	-	-	-	0~100,000 Lux
Temperature	R: -10°C ~ +50°C A: ±0.6°C	R: -20°C ~ +60°C A: ±0.4°C	R: -20°C ~ +60°C A: max. ±0.3°C	
Humidity	R: 0 ~ 100% RH A: ±5% RH / Resolution: 0.1% RH	R: 10 ~ 95% RH A: ±3% RH	R: 0 ~ 100% RH A: max. ±1.8% RH	
Air Pressure	-	300~1200hPa	-	
Dew Point	Range: ratio of Temperature to RH / Resolution: 0.1°C			
Wind Speed				
Wind Direction				
precipitation				
Sea Level				
CO				
CO2	0 to 999 ppm			
HCHO	0 ~ 2000 ppb			
TVOC	0 ~ 60000 ppb			
NH3	0 ~ 100 ppm			
H2S	0 ~ 100 ppm			
O2	0 ~ 25 vol%			
PM1/PM2.5/PM10	0 to 1,000 µg/m3			
Data Logger	450,000 records	-	510 to 650,000 records	
IP Rate	IP20	-	IP65/IP66/IP67	
Display Screen	-	-	Monochrome LCD	
Communication	RS-485 / Ethernet / PoE / WiFi DCON, Modbus RTU, Modbus TCP, MQTT	Modbus RTU	RS-485 / ZigBee / Ethernet / PoE DCON, Modbus RTU, Modbus TCP, MQTT	

Environmental Monitoring Function:



Series No.	DL-300	DL-1000	DLW-1000
Lumination	-	-	0~200,000Lux
Temperature	R: 0°C~ 50°C (IP65 version -20°C ~ 50°C) A: ±6°C / Resolution: 0.1% RH		R: -40°C ~ +80°C A: ±0.5°C
Humidity	R: 0 ~ 100% RH A: ±5% RH / Resolution: 0.1% RH		
Air Pressure	300~1200hPa		
Dew Point	Range: ratio of Temperature to RH / Resolution: 0.1°C		
Wind Speed			0 ~ 40 m/s
Wind Direction			0 ~ 359°
precipitation			0 ~ 100 mm/hr
Sea Level			-50 ~ 9000 m
CO	0 ~ 1000 ppm	0 ~ 1000 ppm	0 ~ 1000 ppm
CO2	0 ~ 9999 ppm	0 ~ 9999 ppm	0 ~ 9999 ppm
HCHO	0 ~ 2000 ppb	0 ~ 2000 ppb	0 ~ 2000 ppb
TVOC	0 ~ 60000 ppb	0 ~ 60000 ppb	0 ~ 60000 ppb
NH3	0 ~ 100 ppm	0 ~ 100 ppm	0 ~ 100 ppm
H2S	0 ~ 100 ppm	0 ~ 100 ppm	0 ~ 100 ppm
O2	-	0 ~ 25 vol%	0 ~ 25 vol%
PM1/PM2.5/PM10	-	0 to 1,000 µg/m3	0 to 1,000 µg/m3
Data Logger	180,000 to 540,000 records		
IP Rate	IP30/IP65	IP43	IP54/IP67
Display Screen	2.8" Full Color Touch LCD	-	-
Communication	RS-485 / Ethernet PoE / WiFi DCON, Modbus RTU, Modbus TCP, MQTT		RS-485 /Ethernet / PoE Modbus RTU, Modbus TCP, MQTT

CL-200 Series

1

Air Quality Monitoring



Features:

- Able to record Temperature, Humidity, and Dew Point Measurements
- Able to record CO, CO₂, H₂S, NH₃, HCHO, and TVOC Measurements
- Up to 450,000 records with date and time stamps
- Supports the DCON, Modbus RTU/TCP, and MQTT Protocols
- Includes RS-485/Ethernet Communication Interfaces
- Relay Output for Alarm or IAQ Device Control

Introduction :

The **CL-200 series** is an indoor environmental data collector, in addition to temperature and humidity measurement, other gases such as formaldehyde (HCHO), total volatile organic compounds (TVOC), carbon monoxide (CO), carbon dioxide (CO₂), hydrogen sulfide (H₂S), ammonia (NH₃), and PM_{2.5} can also be selected on demand.

The **CL-200 series** has a built-in memory that can store up to 450,000 records, providing you with real-time data collection and recording capabilities. Combined with a variety of interfaces, it supports Wi-Fi and IoT MQTT protocols and can be used in other devices, including SCADA or HMI, to meet the needs of various indoor environments.



CL-2



Particle Matter Sensor

- 1 : PM2.5
- 2 : PM2.5/1/10 +Particle

* PM Sizes:
0.3µm, 0.5µm,
1µm, 2.5µm,
5µm, 10µm

Types of Gas Sensor

- 1 : CO
- 2 : CO2
- 3 : CO+CO2
- 4 : HCHO + TVOC
- 5 : NH3
- 6 : H2S
- 7 : HCHO
- 8 : TVOC

Communication

- E : Ethernet/PoE
- WF : Wi-Fi

Sensor	Range and Descriptions
CO	0 ~ 1000 ppm
CO2	0 ~ 9999 ppm (NDIR)
HCHO	0 ~ 2000 ppb
TVOC	0 ~ 60000 ppb (MEMS)
NH3	0 ~ 100 ppm

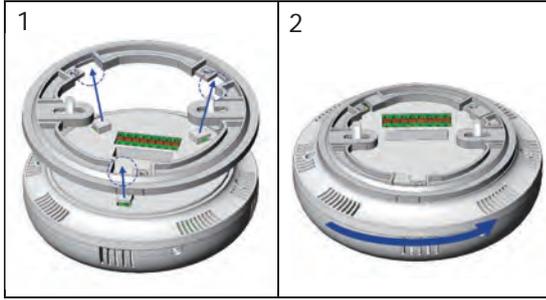
Sensor	Range and Descriptions
H2S	0 ~ 100 ppm
CH4	500 ~ 7000 PPM
PM2.5	0 ~ 400 µg/m3; Resolution: 1µg/m3;
Temperature	-10°C ~ 50°C / Accuracy: ±0.6°C
Humidity	0 ~ 100 % RH / Accuracy: ±5% RH

Models		Accessory	Sensor Type		
Ethernet/PoE	Wi-Fi	Filter	Particle Matter	Fumes	Humiture
CL-201-E	CL-201-WF	-	-	CO	Temp RH
CL-202-E	CL-202-WF			CO2	
CL-203-E	CL-203-WF			CO + CO2	
CL-204-E	CL-204-WF			HCHO + TVOC	
CL-205-E	CL-205-WF			NH3	
CL-206-E	CL-206-WF			H2S	
CL-207-E	CL-207-WF			HCHO	
CL-208-E	CL-208-WF			TVOC	
CL-210-E	CL-210-WF	Replaceable Filter	PM2.5	-	Temp RH
CL-211-E	CL-211-WF			CO	
CL-212-E	CL-212-WF			CO2	
CL-213-E	CL-213-WF			CO + CO2	
CL-220-E	CL-220-WF	Replaceable Filter	PM1 PM2.5 PM10 Particle (PM Sizes: 0.3µm, 0.5µm, 1µm, 2.5µm, 5µm, 10µm)	-	Temp RH
CL-221-E	CL-221-WF			CO	
CL-222-E	CL-222-WF			CO2	
CL-223-E	CL-223-WF			CO + CO2	
CL-224-E	CL-224-WF			HCHO + TVOC	
CL-225-E	CL-225-WF			NH3	
CL-226-E	CL-226-WF			H2S	
CL-227-E	CL-227-WF			HCHO	
CL-228-E	CL-228-WF			TVOC	
CL-229-E	CL-229-WF			CO + CO2 + HCHO + TVOC	
CL-250-E	CL-250-WF	-	O ₂	-	Temp RH
CL-251-E	CL-251-WF			CO	
CL-252-E	CL-252-WF			CO2	
CL-253-E	CL-253-WF			CO + CO2	

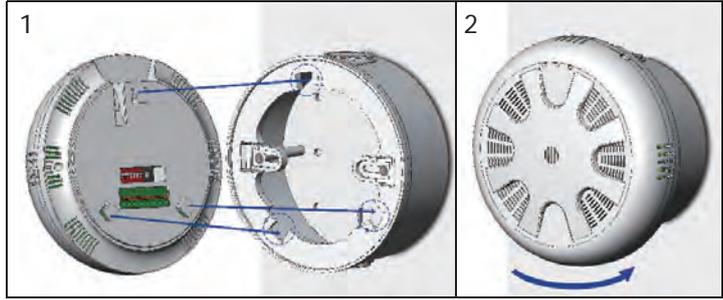
* All modules have RS-485 Interface

Installation: CL-200 Series

■ Ceiling Mounting

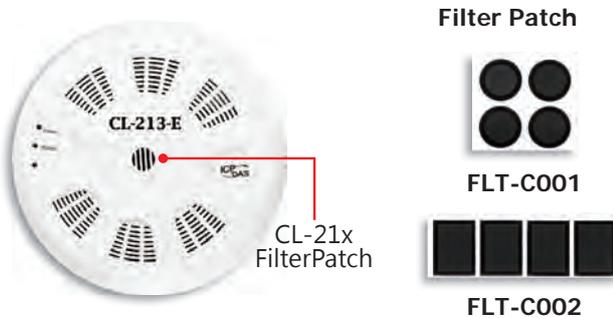


■ Wall Mounting (+ External Wall Box EWB-C150)



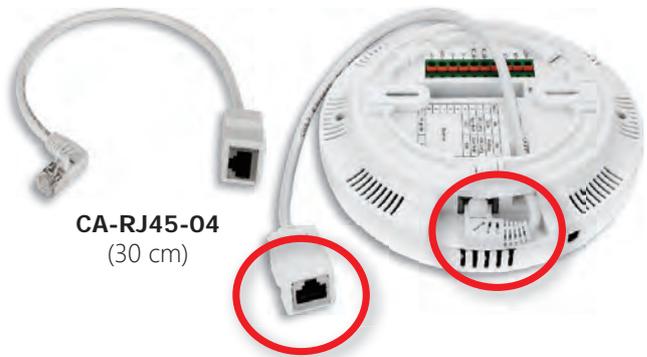
Replaceable Filter Patch

CL-2xx offers a replaceable filter patch. This makes users to replace only the filter patch rather than uninstall all devices. CL-21x uses the round filters, CL-22x uses the rectangular filters.



CL-2xx-E + RJ45 Cable

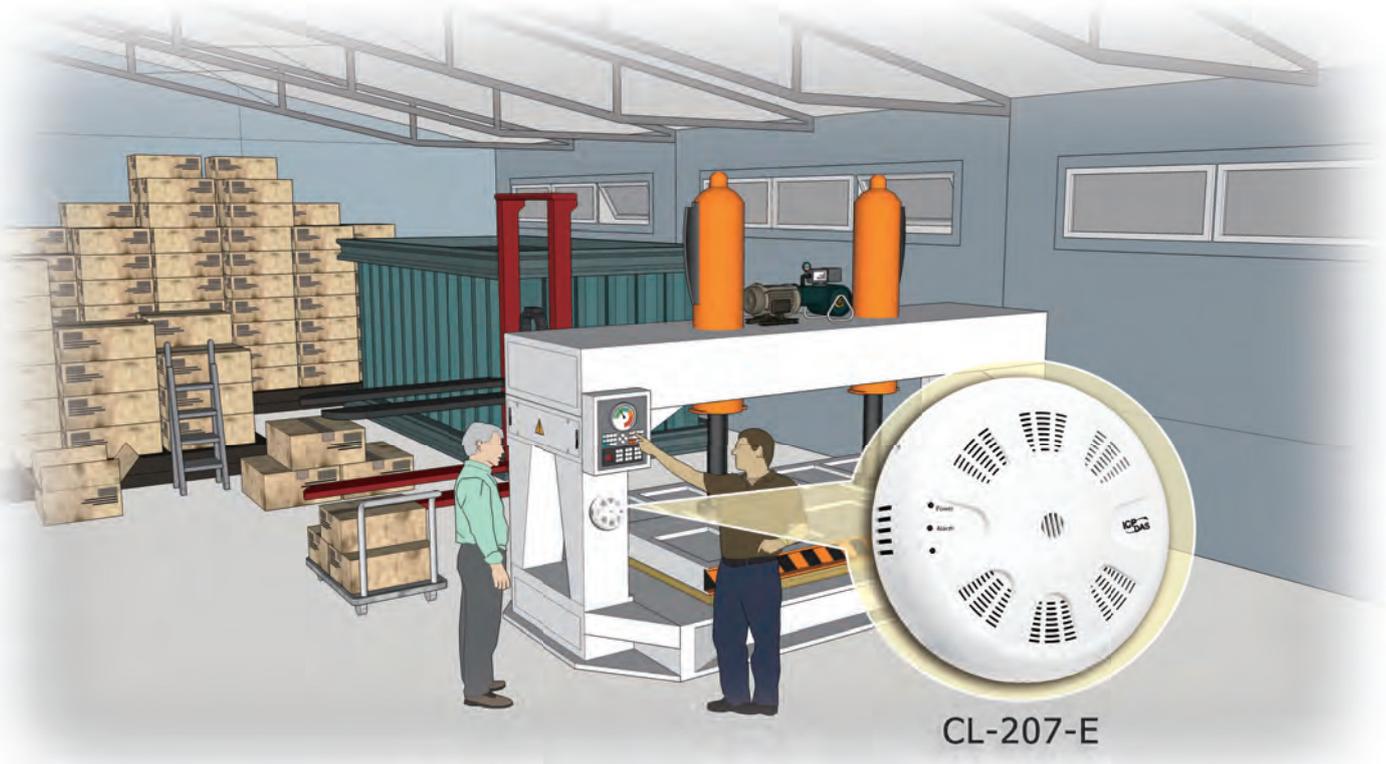
CL-2xx-E (Ethernet Type) are with optional angle-bent RJ45 cable to smoothly install the Ethernet plug in the hole of the ceiling-mounted.



Applications:

■ HCHO (Formaldehyde) Detector Automatic Solution

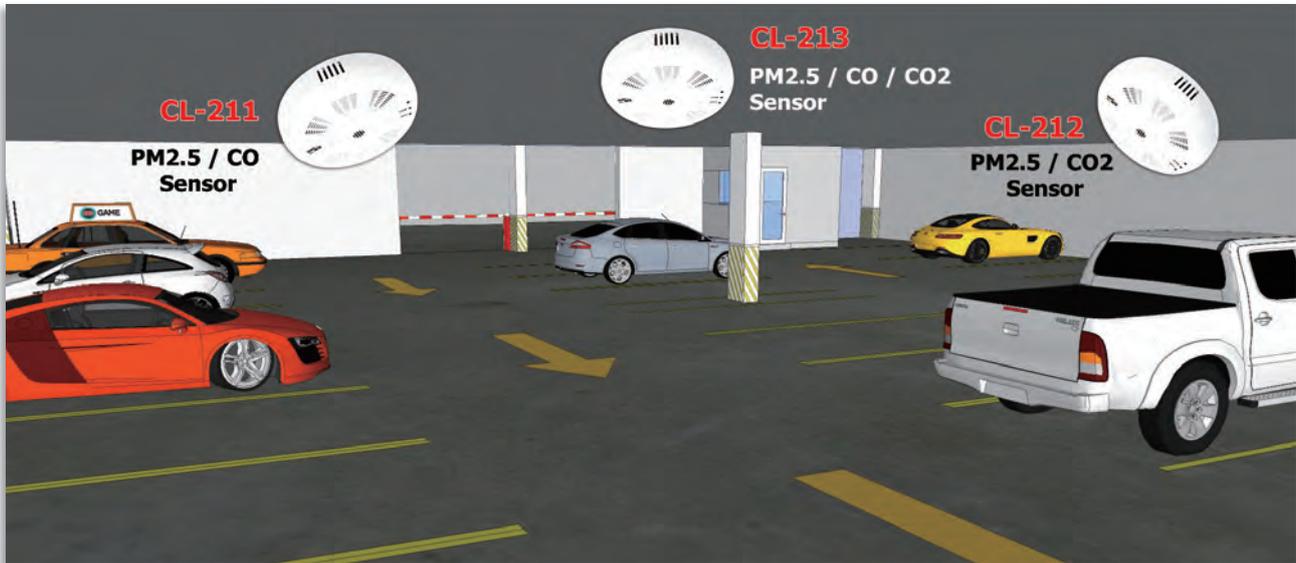
Suitable for plywood factories, furniture factories and newly decorated interior spaces.



CL-207-E

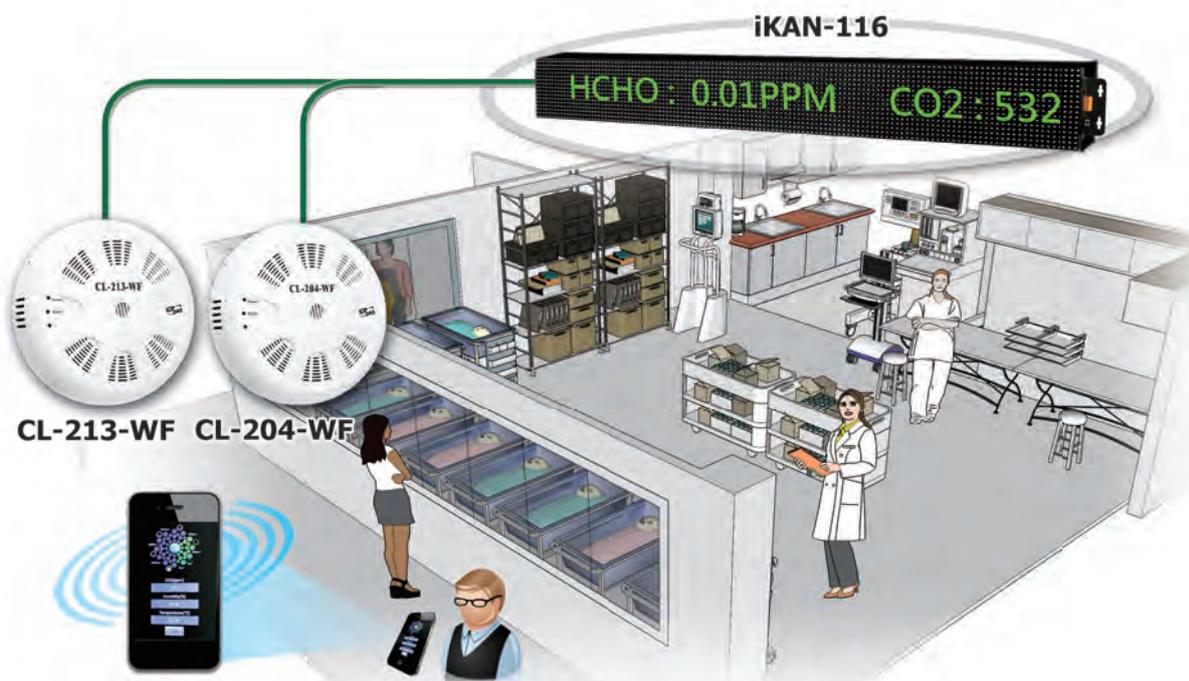
Indoor or Underground Parking Lot Automatic Monitoring Solution

The air quality automation system for indoor or underground parking lot can use the CL-200 series modules to monitor the health and safety information, such as PM2.5, CO, CO2, temperature, humidity, dew point, and etc...



Preschool Air Quality Monitoring

Indoor air quality is a key matter for children in preschool. ICP DAS provide a solution toward this environment include CL-213-E, CL-204-E modules to monitor the fumes and Particle Matters such as PM1, PM2.5, PM10, CO, CO2, HCHO, TVOC, and etc. Combine with ICP DAS iKAN series LED monitors, teachers in the preschool can easily check the real-time Air Quality Index. Furthermore, diversity of SCADA software is also compatible with these monitoring modules and can upload received data into remote database. Teachers can use their mobile App to remotely check the AQI or other fumes data to make sure that the Air Quality is always in the safety range.



DL-10 Series



Features:

- Compact size (25 x 20.2 x 30 mm) , space saving
- Magnetic or wall mounting
- Monitoring Temperature, Humidity, Dew Point, Air Pressure, and Sea Level
- RS-485 Communication interface
- Modbus RTU Protocol

DL-100 Series



Features:

- IP66/IP67 protection approval, suitable for outdoor use.
- Monochrome LCD screen display
- Monitoring Temperature, Humidity, Dew Point, Air Pressure, and Sea Level
- Data logging function (with time stamps)
- RS-485, Ethernet (Support PoE), Wi-Fi communication interface
- Modbus RTU, Modbus TCP, MQTT, Zigbee, DCON protocols

Applications:

- Farms, Seed Storage
- Food and beverage industry (HACCP)
- Blood stations, pharmacies
- Building and energy management
- Warehouses
- Museums, archives, galleries



Greenhouse Automation

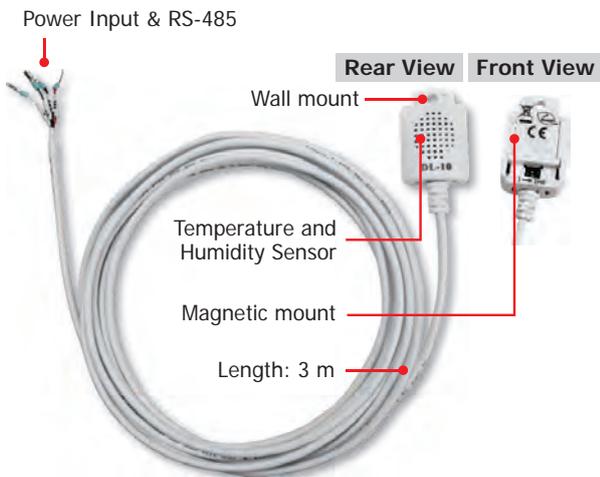


Selection Guide:

DL-10/DL-100 Series: Temperature / Humidity											
Series / Model		Sensor			DO x 2	Interface	Protocol	Cover Color	IP Code		
		Temp.	RH	Air Pressure Sea Level							
DL-10	DL-10	Yes	Accuracy 3%RH	-	-	RS-485	Modbus RTU	White	-		
	DL-10-BK										
	DL-11-BK										
	DL-11			Yes							
DL-100	DL-100TM485S	Yes	Accuracy 1.8%RH	-	-	-	-	White	IP66		
	DL-100TM485S-W										
	DL-100TM485PS										
	DL-100TM485PS-W										
	DL-100TMS-ZT							Accuracy 2% RH			
	DL-100S-E DL-100S-E-W										
DL-101	DL-101S-WF	Yes	Accuracy 3% RH	-	-	-	-	Black	IP67		
	DL-101S-E DL-101S-E-W									White	IP66

Appearance:

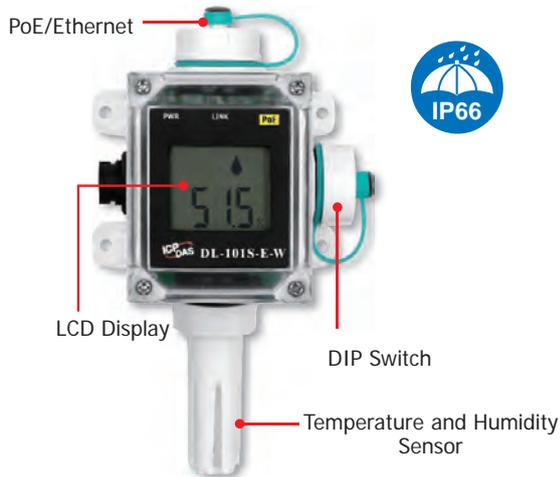
DL-10



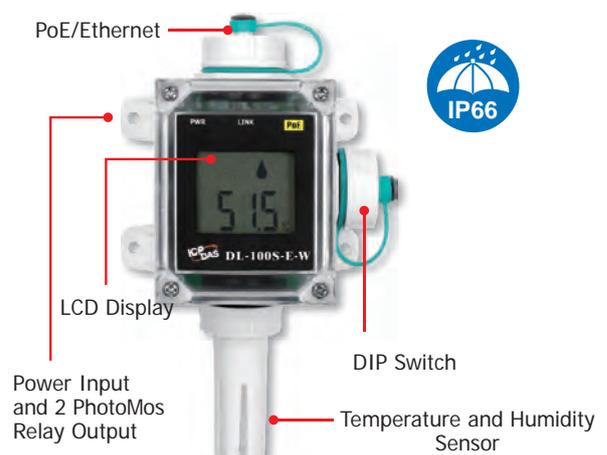
DL-100T485PS-W



DL-101S-E-W



DL-100S-E-W



Selection Guide:

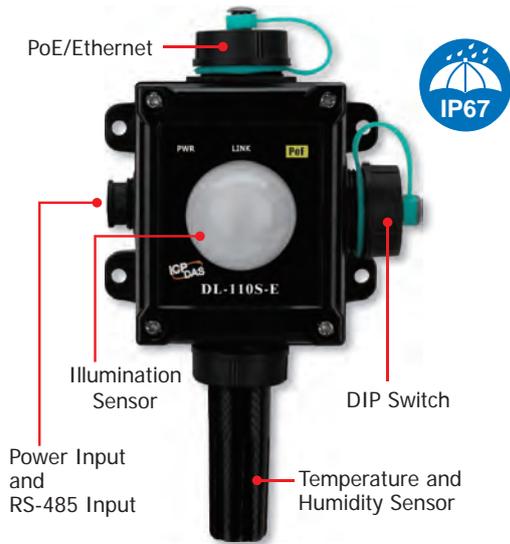
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Air Quality Monitoring

DL-110/DL-120/iSN-201 Series: Temperature/Humidity/Illumination								
Series/Model			Sensor			Interface	Cover Color	IP Code
			Temp.	RH	Illumination Measurement			
Out-door	DL-110	DL-110S-E	Yes	Accuracy 3% RH	0-100,000 (Lux)	RS-485/ Ethernet/PoE	Black	IP65
		DL-110S-E-W				Wi-Fi		IP67
		DL-111S-WF						
	DL-120	DL-120-E	-	-	RS-485/ Ethernet/PoE	Black	IP65	
		DL-120-E-W				White		
In-door	iSN-201	iSN-201-E	Yes	Accuracy 3% RH	0-20,000 (Lux)	RS-485/ Ethernet/PoE	White	IP20
		iSN-201-WF				RS-485/ Ethernet/PoE/ Wi-Fi		

Appearance:

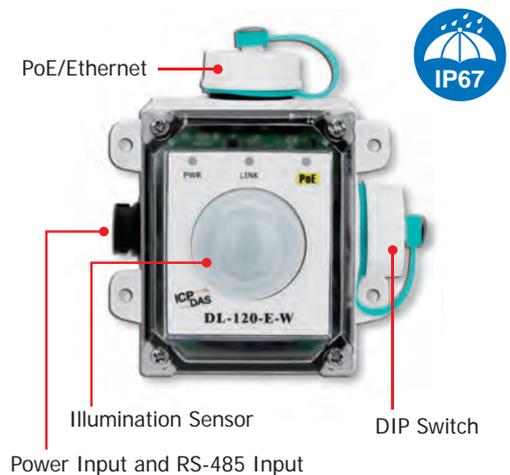
DL-110S-E



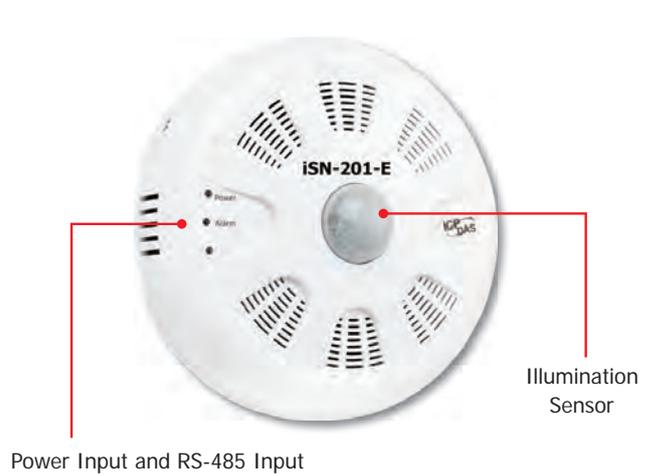
DL-110S-E-W



DL-120-E-W



iSN-201-E



DL-300-IP60 Series

DL-310-IP60 Series



Features:

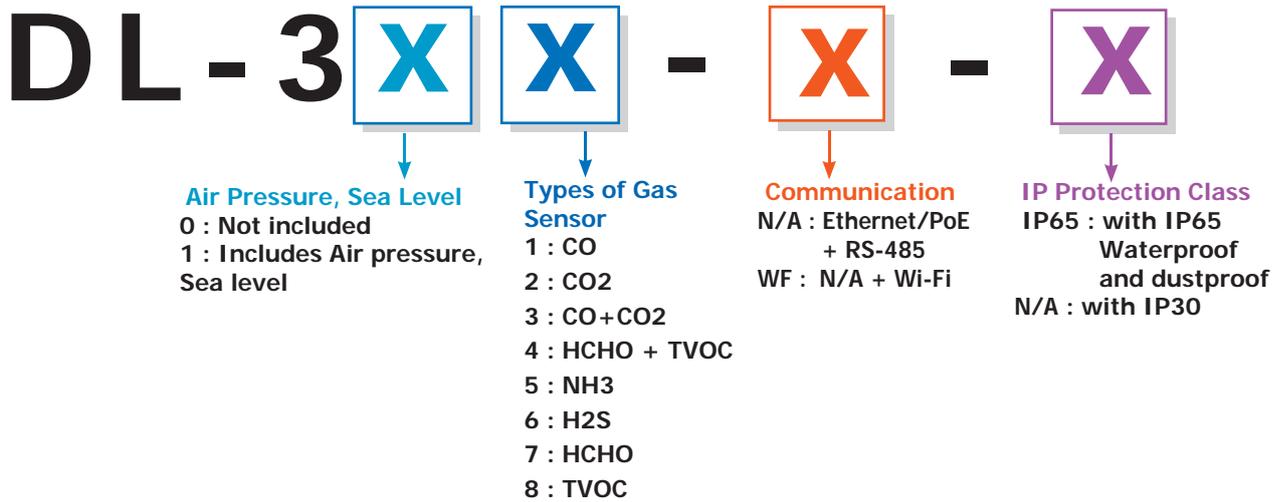
- Support temperature, humidity, air pressure, and sea level monitoring
- Support multi-gas monitoring
- Recording function (including time stamp)
- Support wired/wireless communication interfaces (RS-485/Ethernet/PoE/Wi-Fi)
- Buzzer & Relay Output for Audible/Visual Alarm
- IP65 Degree of Protection
- 2.8" LCD touch screen

Introduction:

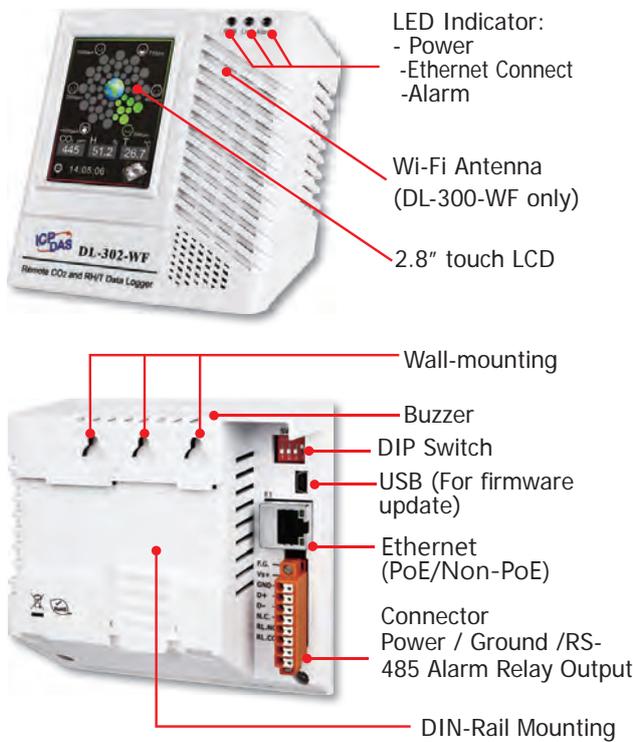
All modules of the DL-300 series can record information about CO, CO₂, temperature, humidity, air pressure, sea level, and dew point for 24 hours a day. The modules support various communication protocols and interfaces, including RS-485, Ethernet, PoE, and Wi-Fi. The series is equipped with a 2.8" LCD touch screen and an IP65 enclosure and performs the real-time warning function.

Selection Guide:

DL-300 Series		Type of Sensor			Communication	IP Code
Ethernet & RS-485	Wi-Fi	Gas Sensor	Air Pressure Sea Level	T & RH		
DL-301	DL-301-WF	CO		Yes	N/A type: Ethernet/PoE + RS-485 WF type: Wi-Fi + Ethernet/PoE + RS-485	-
DL-301-IP65	DL-301-WF-IP65					IP65
DL-302	DL-302-WF	CO ₂				-
DL-302-IP65	DL-302-WF-IP65					IP65
DL-303	DL-303-WF	CO + CO ₂				-
DL-303-IP65	DL-303-WF-IP65					IP65
DL-304	DL-304-WF	HCHO + TVOC				-
DL-304-IP65	DL-304-WF-IP65					IP65
DL-305	DL-305-WF	NH ₃				-
DL-305-IP65	DL-305-WF-IP65					IP65
DL-306	DL-306-WF	H ₂ S				-
DL-306-IP65	DL-306-WF-IP65					IP65
DL-307	DL-307-WF	HCHO				-
DL-307-IP65	DL-307-WF-IP65					IP65
DL-308	DL-308-WF	TVOC				-
DL-308-IP65	DL-308-WF-IP65					IP65
DL-311-IP65	DL-311-WF-IP65	CO	Yes	IP65		
DL-312-IP65	DL-312-WF-IP65	CO ₂				
DL-313-IP65	DL-313-WF-IP65	CO + CO ₂				
DL-314-IP65	DL-314-WF-IP65	HCHO + TVOC				
DL-315-IP65	DL-315-WF-IP65	NH ₃				
DL-316-IP65	DL-316-WF-IP65	H ₂ S				
DL-317-IP65	DL-317-WF-IP65	HCHO				
DL-318-IP65	DL-318-WF-IP65	TVOC				



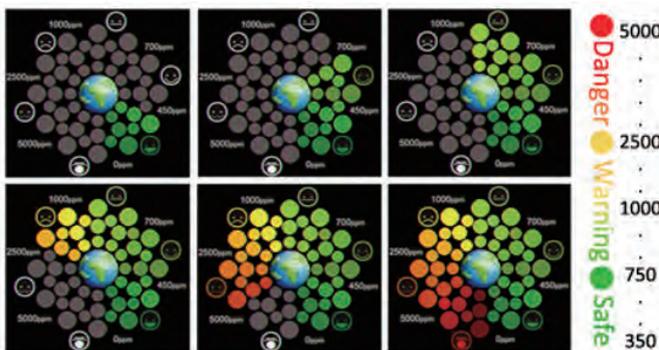
Series with IP30



Series with IP65



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



■ Display Messages in Multiple Languages

The display-message-on-screen function supports multiple language character sets based on UTF-8 encoding. Users can remotely display either pre-configured messages or dynamic messages to prompt an operator with a daily schedule or IAQ device control instructions.



Smart Buildings - Monitoring Air Quality in Museums and Art Galleries

Artworks, cultural relics, and antiques in collection storage warehouses are susceptible to mold growth, color loss, corrosion, or deformation caused by environmental variables - temperature, humidity, lighting, and materials used for interior design. Due to large indoor spaces and a shortage of human resources, temperature & humidity control and management of the collection are concerns that need to be addressed. The DL-303-IP65 and DL-307-IP65, industrial gas sensors, can monitor indoor temperature, humidity, HCHO, and CO of various rooms in real time, and transmit the data to the WISE-5231M-4GE edge controller via RS-485 (Modbus RTU). The aggregated data are then sent back to the IoTstar IIoT cloud management software in the control center via 4G wireless communication, enabling the right personnel to keep abreast of the indoor air quality at anytime. For integration, users can employ the iSN-104 liquid leak detection module and ALM-Horn-MRTU-BR alarm siren. In the event of liquid leakage, the WISE-5231M-4GE edge controller immediately triggers the alarm siren to alert on-site personnel to take action.

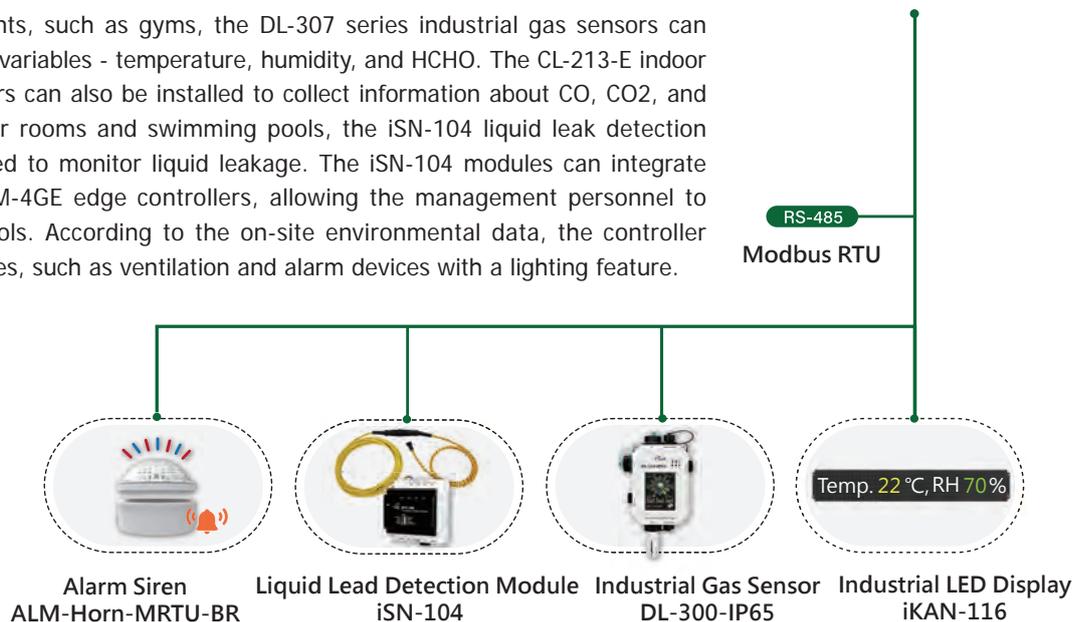
Smart Parking Garages - Monitoring Air Quality in Underground Enclosed Spaces

Air pollutants produced by vehicle exhausts tend to accumulate in underground enclosed parking garages. Although air quality can be improved by periodically turning on/off the supply and exhaust fans, this can often be ineffective. ICP DAS's DL-303-IP65 industrial gas sensors and CL-213-E indoor air quality data loggers can detect temperature, humidity, CO, CO2, and PM2.5 in the environment. When the readings exceed the set value, exhaust fans can be activated. Conversely, when the readings fall below the set value, exhaust fans can be turned off to reduce unnecessary power consumption. Also, the real-time data can be displayed on the iKAN series industrial LED display, helping the management personnel monitor and control the air quality accurately.



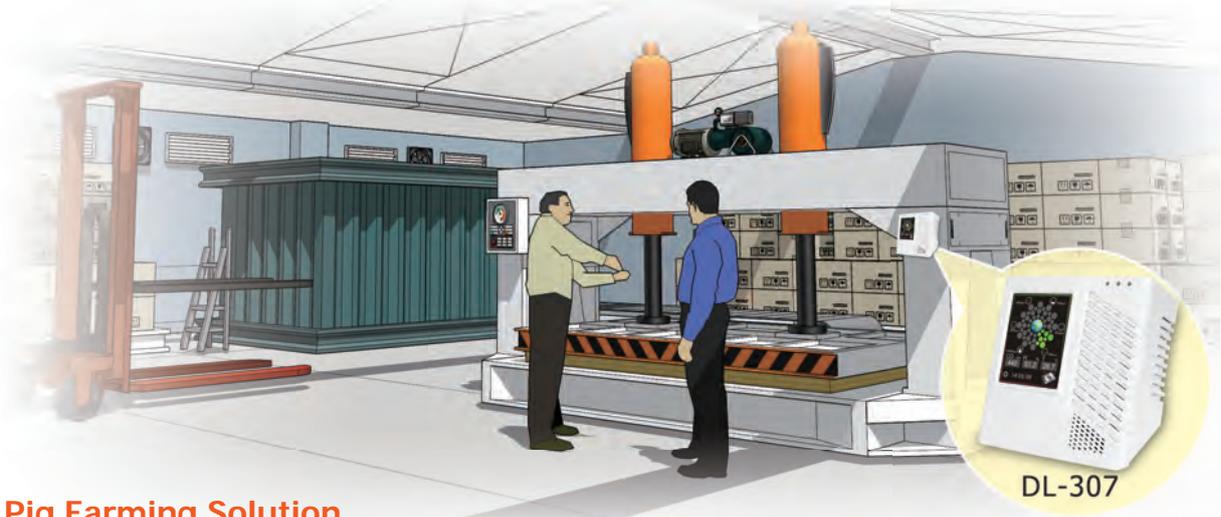
Smart Gyms - Building Comfortable Workout Spaces

In indoor environments, such as gyms, the DL-307 series industrial gas sensors can detect environmental variables - temperature, humidity, and HCHO. The CL-213-E indoor air quality data loggers can also be installed to collect information about CO, CO2, and PM2.5. In the shower rooms and swimming pools, the iSN-104 liquid leak detection modules can be added to monitor liquid leakage. The iSN-104 modules can integrate with the WISE-5231M-4GE edge controllers, allowing the management personnel to configure logic controls. According to the on-site environmental data, the controller triggers various devices, such as ventilation and alarm devices with a lighting feature.



HCHO (Formaldehyde) Detector Automatic Solution

The DL-307 is a 1-ch HCHO detector with data logger that provides an instantaneously warning of toxic formaldehyde, which can be found in a plywood factory, furniture factory and new interior remodelling house commonly. Real-time data can be accessed from the DL-307 from anywhere and at any time using the free Windows software, the iOS App or the Android App.



Pig Farming Solution

Ammonia (NH3) and hydrogen sulfide (H2S) are among the most significant pollutant gases in Pig Farming relating to animal and worker well-being. Large quantities of NH3 and H2S emissions can have negative impacts on growth and immunity of the animals. Therefore, it requires long term environmental monitoring. However, a general device on market may not function properly under such environment. By using DL-305-IP65, it can monitor the concentration of NH3 & H2S, temperature, and humidity information with date and timestamps over a wide range of operating temperature from -20°C to +50°C, and are able to store up to 450,000 downloadable records. The WISE-5231M-4GE 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. No programming is required, only a few simple settings will be able to achieve the farm production control and quality control, production resume and so on.



Greenhouse Monitoring Solution

The greenhouse monitoring solution include **WISE-5231M-4GE**, **DL-110-E** and **DL-300/DL-100** series. It provide the environmental monitoring operation for illumination, temperature and humidity. Based on the built-in intelligent logic engine of WISE, the solution can automatically control the operation of sprinkler, lamp and curtain to help the plants grow well, increase crop yield and improve quality.

Based on the functions provided by **WISE-523xM-4GE** with **iCAM** series network camera, it can perform the personnel access control operation for greenhouse, and send the alarm message by SMS, Email, **LINE/WeChat** to the related personnel for the emergency event notification. WISE can connect with the IoTstar cloud management software to help user to build the IoT cloud solutions in a easy way, and monitor the situation of the greenhouse remotely.



Mushroom Farming Solution

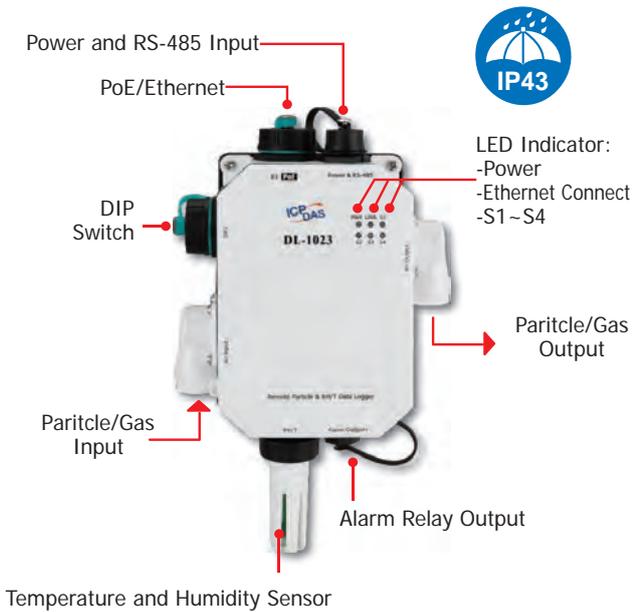
Mushrooms are very fragile in nature, so do not need too much sunlight. A temperature ranging between 18°C to 35°C is considered as the ideal one and favorable for mushroom farming. Also, a good moisture level is more beneficial in enhancing the good development of mushrooms. For this, humidity of 85 to 90 % of air should be maintained. The general equipment cannot work in such environment, but the **DL-302-IP65** can be implement in this mushroom farming to record **CO₂**, temperature and humidity information. By the way, **WISE-5231M-4GE** here is a controller with built-in logic control to receive and send SMS messages when there is something wrong.



DL-1000 Series

1

Air Quality Monitoring



Features:

- PM1/2.5/10, CO, CO2, HCHO, TVOC, NH3, H2S, O2, Pressure, Temperature, Humidity, and Dew Point Measurements
- Web-based Configuration Interface
- Up to 180,000 records with date and time stamps
- Free Software Utility, and iOS and Android apps
- 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
- IP 43 Protection Approval

Introduction :

DL-1000 is a series of paritcle and gas measurement module that can measure the concentration of aerosols in the air, such as: PM2.5, PM1, PM10 and the number of paritcles (0.3µm, 0.5µm, 1µm, 2.5µm, 5µm, 10µm). In addition, various fume concentrations related to human health can also be measured. For example: CO/CO2/HCHO/NH3/H2S/TVOC. DL-1000 can record data and send alarm when concentration is too high.

■ Differences of DL-1000 and DL-300-IP65

1. DL-1000 add the function to measure PM1, PM2.5, PM10, and Paritcle in the air.
2. DL-1000 has replaceable filter patches, but DL-300-IP65 doesn't.
3. DL-300-IP65 has a 2.8-inch screen, but DL-1000 doesn't.
4. DL-300-IP65 has IP65 waterproof, but DL-1000 has IP43.

DL-1 X X X - X

Air Pressure, Sea Level
 0 : Not included
 1 : Includes Air pressure, Sea level

Paritcle Matter Sensor
 1 : PM2.5
 2 : PM2.5/1/10 +Paritcle
 * PM Sizes:
 0.3µm, 0.5µm, 1µm, 2.5µm, 5µm, 10µm

Types of Gas Sensor
 0 : Paritcle
 1 : CO
 2 : CO2
 3 : CO+CO2
 4 : HCHO+TVOC
 5 : NH3
 6 : H2S
 7 : HCHO
 8 : TVOC

Communication
 □ : Ethernet/PoE
 WF : Wi-Fi

Selection Guide:

Series	DL-1000/DL-1100/DL-1030/DL-1050 Series		Type of Sensor				Communication
	Basic Type	Wi-Fi	Particle	Gas Sensor	Air Pressure Sea Level	T & RH	
DL-1000	DL-1020	DL-1020-WF	PM1 PM2.5 PM10 Particle	-	-		
	DL-1021	DL-1021-WF		CO			
	DL-1022	DL-1022-WF		CO2			
	DL-1023	DL-1023-WF		CO + CO2			
	DL-1024	DL-1024-WF		HCHO + TVOC			
	DL-1025	DL-1025-WF		NH3			
	DL-1026	DL-1026-WF		H2S			
	DL-1027	DL-1027-WF		HCHO			
DL-1100	DL-1120	DL-1120-WF	(PM Sizes: 0.3µm, 0.5µm, 1µm, 2.5µm, 5µm, 10µm)	-	Yes		
	DL-1121	DL-1121-WF		CO			
	DL-1122	DL-1122-WF		CO2			
	DL-1123	DL-1123-WF		CO + CO2			
	DL-1124	DL-1124-WF		HCHO + TVOC			
	DL-1125	DL-1125-WF		NH3			
	DL-1126	DL-1126-WF		H2S			
	DL-1127	DL-1127-WF		HCHO			
DL-1128	DL-1128-WF	TVOC					
DL-1030	DL-1038	DL-1038-WF	PM1 PM2.5 PM10 Particle	-	-		
DL-1130	DL-1138	DL-1138-WF	(PM Sizes: 0.3µm, 0.5µm, 1µm, 2.5µm, 5µm, 10µm) CO CO ₂	TVOC	Yes		
DL-1050	DL-1050	DL-1050-WF	O ₂	-	-		
	DL-1051	DL-1051-WF		CO			
	DL-1052	DL-1052-WF		CO2			
	DL-1053	DL-1053-WF		CO + CO2			
DL-1150	DL-1150	DL-1150-WF	O ₂	-	Yes		
	DL-1151	DL-1151-WF		CO			
	DL-1152	DL-1152-WF		CO2			
	DL-1153	DL-1153-WF		CO + CO2			

Basic type:
RS-485 +
Ethernet/PoEWF type:
Wi-Fi
+ RS-485
+ Ethernet/
PoE

■ Replaceable Filter Patch (FLT-C001)

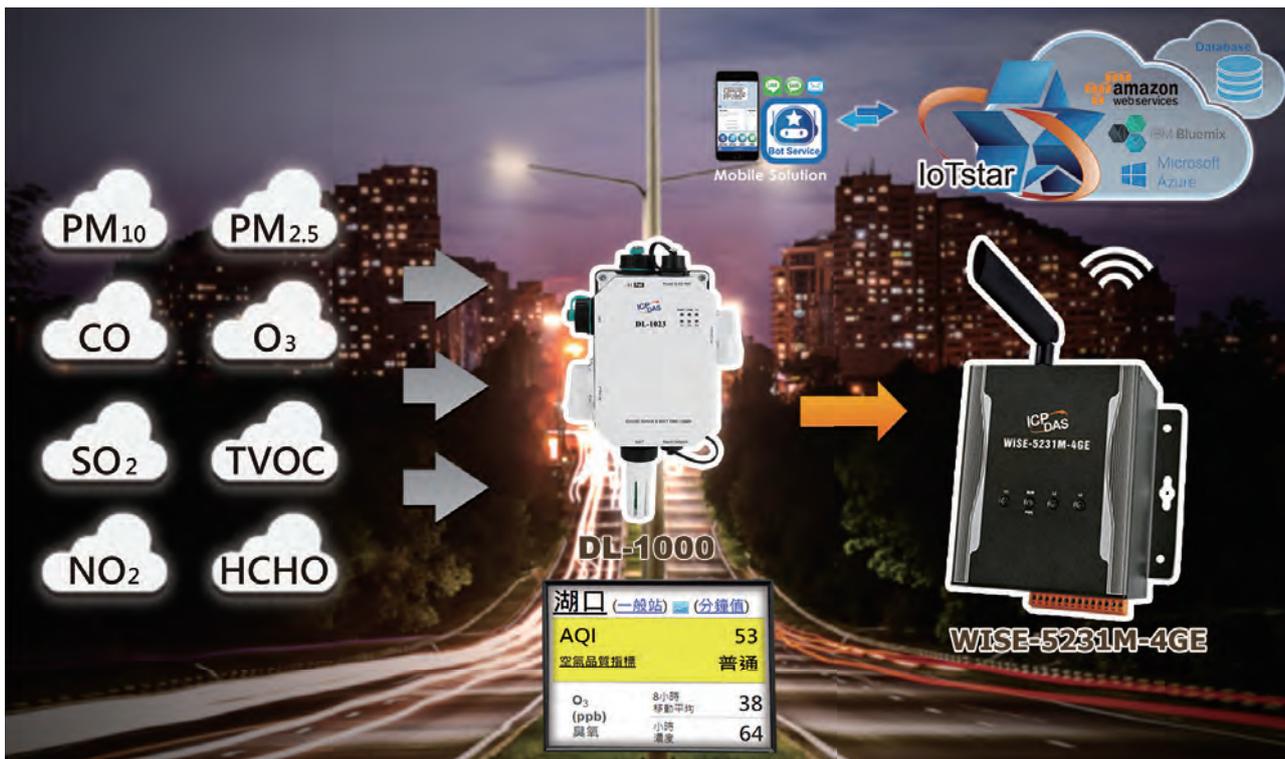
Generally, the PM2.5 measuring sensor on the market is usually installed in outdoor applications. Because the outdoor air is quite dusty, the measuring channel of PM2.5 sensor is easily clogged by aerosol, resulting in continued alarms for the heavy concentration. Due to the error data from the clogged sensor, this module is returned to the factory for repair. Downtime during the repair period often causes significant cost and losses. In order to solve this problem, ICP DAS design the CL-200 series and DL-1000 series with replaceable patch, FLT-C001, which makes it easy for users to replace them without uninstall the devices. Cost of repair and time can be reduced by this innovated mechanical design.



Applications :

■ Intelligent Street Lighting in Smart City

In smart city applications, smart street lights integrate various communication technologies and are no longer illumination only. The high-density construction of streetlights have become one of the most important sources of government collecting road information in recent years. DL-1000 series products, with standard industrial communication protocol Modbus RTU/TCP, can integrate with smart streetlights to achieve outdoor air quality monitoring such as: O₃, CO, CO₂, SO₂, NO₂, TVOC, HCHO, and Particle Matter 1/2.5/10. Due to these aerosol could accumulate around the sensor and would cause error record after using for a period, DL-1000 support replaceable dust filter patch to easily change the patches inside the filter hood rather than uninstall the device.



Outdoor Mobile Air Quality Detection Application

In developed countries, the Air Quality detection, statistics and evaluation is the most for improvement. In a vast area, it can only rely on the vehicle moving to record status of air quality, and to offline extract these and send back sorting out. ICP DAS DL-1000 series can integrate with our 3G/ 4G controllers to transmit data back to control center wirelessly.



Factory Gas Detection Application

In some factories, H₂S is one of the harmful gases. Due to the colorless and odorless are two characteristics quite hard to find or feel it, sometimes the workers inside the factory get injured inevitably. Joint liability from the injury brings the company a massive fines.

DL-1026 H₂S detector module can put in the spot. It equip with standard industrial protocols and with high flexible to integrate information from devices and transmit back to control center. When the concentration of gas is too high, DL-1026 can also send alarm signals to inform relative person to evacuate people there.



DLW-1000 Series

1

Air Quality Monitoring



Features:

- Real-time measurement of outdoor weather information and hazardous gas detection.
- Molding in one, can be matched with straight/horizontal rod body, easy to install.
- Provide RS-485 and Ethernet (PoE) communication interfaces.
- Support Modbus RTU/TCP, MQTT communication protocols.
- Can be integrated with the WISE controller to set alarm notifications to keep you informed.
- Recording function (including time stamp)
- IP54/IP67 Degree of Protection
- Replaceable filter

Introduction :

Mini Automated Surface Observation Area:

The minimized sensors of gas/powder pollution are placed on PCB to help monitor the air quality index to identify the source of the contamination.

Positive and Negative Pressure Ventilation System:

Active ventilation produces the pressure difference between the inside and outside of the module, which causes airflow, creates turbulence, mixes the air evenly, and makes the data precise.

IP Protection Rating:

The system has an IP54 rating for the fan intake and output, which can withstand water ingress from a low angle during a storm. There is also a waterproof connector for RS-485 and Ethernet (supports PoE), to ensure the device will work in extreme conditions.

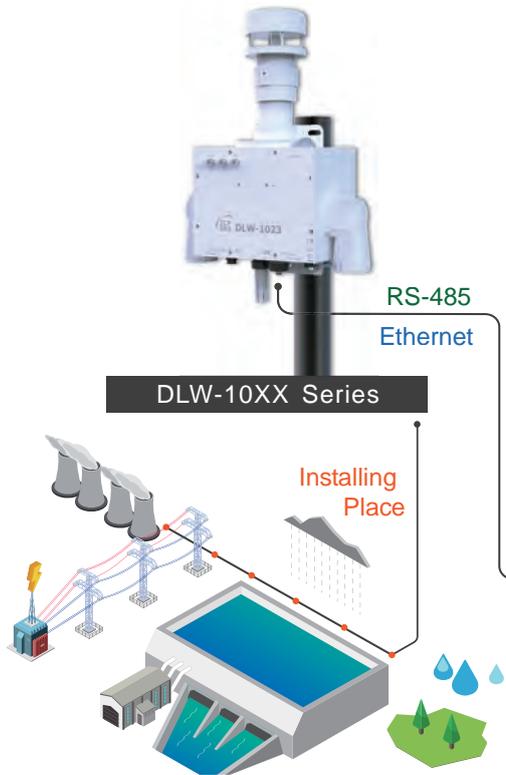
Replaceable Filter Patch:

The intake and output filters are replaceable. The 45ppi filter sponge prevents dust particles and cotton wool from entering, thereby extending the life of the gas sensor chips. It is only necessary to replace the filter patch by yourself during regular maintenance, which significantly reduces the repair times.

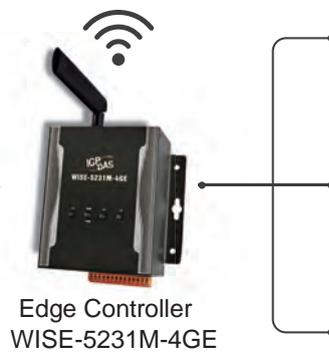


Applications :

Outdoor Weather Information Visualization Solution



▲ Visualization Dashboard for Intelligent Monitoring



Large scale farming Application

The DLW-1000 can collect data on temperature, humidity, precipitation, illumination, gas, wind direction and speed. The collected data helps to analyze the problem of planting, seedling, irrigation, fertilization of plants, protection from pests and diseases, and also helps to set up the traceability system to improve the quality of the crop.

Meanwhile, the edge controller WISE-5231M-4GE, combined with the data acquisition monitoring module M-7000, can collect data from environmental sensors in remote areas where communication is poor. The combination of WISE-5231M-4GE and M-7000 integrates collection, transformation, and management of environmental data to demonstrate the convenience that smart farming brings.

■ Industrial exhaust emissions monitoring:

As the global trend of ESG becomes more and more popular, to find a balance between energy and environmental protection, ICP DAS suggests strict control of exhaust emissions, together with the measurement and assessment of air quality.

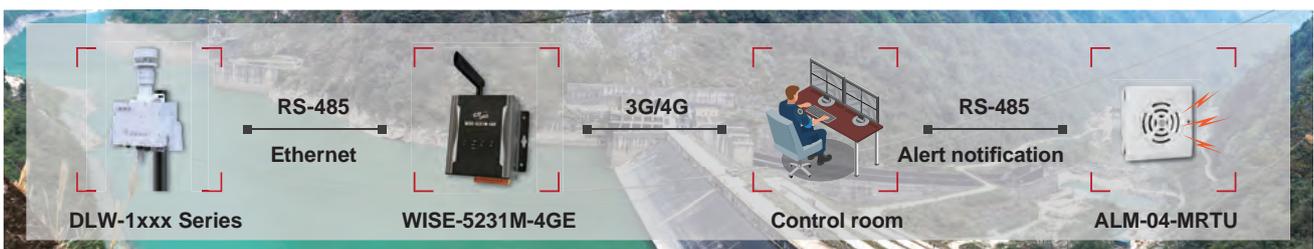
The DLW-1000 can be easily installed and used anywhere, for example, in smoke stacks with a height of 50 or 100m, as well as in storage tanks for raw materials in the petrochemical industry. In addition to temperature, humidity, pressure, illumination, precipitation, wind direction and speed, the DLW-1000 also measures PM1/2.5/10, CO, CO2, O2, NH3, H2S, TVOC, HCHO and more. Combining the DLW-1000 with the edge controller WISE-5231M-4GE, you can perform logic control, data collection and transmission, device management, and problem reporting wirelessly.

■ Data Management Solution for Multiple Stations

In India, since many tributaries of the Indus River Basin are separated by mountains, combined with a large territory of the country and poor communication infrastructure in some areas, domestic and industrial water use directly rely on pumping stations.

Taking pumping stations in the drainage basin as a basis, ICP DAS uses WISE-5231M-4GE, equipped with edge computing and remote maintenance functions, to collect information on water quality, flow rate, water level, and valve monitoring status in the pumping stations.

Data can be sent back to the control center in Mumbai through the 4G, and users can simultaneously and remotely monitor and maintain their equipment. Besides this, adding a DLW-1000 to pumping stations enables users to notice climate changes in advance; coupled with the real-time data, the controlling center can evacuate the village before a heavy rainfall.



■ Combination of the IoT & agricultural technology:

The minimized sensors of gas/powder pollution are placed on PCB to help monitor the air quality index to identify the source of the Smart greenhouses maintain the best growing conditions for plants through accurate data collection and a greenhouse temperature control system combined with an IoT system that automatically controls light, temperature, watering and CO2 levels.

In addition to providing gas and weather data for the green house IoT system , the DLW-1000 can be connected with PM-3133, a smart power meter that collects energy data, analyzes greenhouse energy consumption, and sends the data back to the control center via WISE-5231M-4GE, which realizes the combination between the IoT and agricultural technology.



■ Air quality and weather data collecting solution for marine affairs and ports

As marine transportation plays a critical role in international trade, marine affairs and ports have become indicators of productivity. For example, the Greenport Impact Assessment considers the air quality of a port in real-time. The monitored parameters are exhaust emissions from ships, machinery, and vehicles fueled by diesel or heavy fuel oil.

The industrial DLW-1000 from ICP DAS can measure wind speed, wind direction, precipitation, illumination, and collect data on H2S, NOX, and PM2.5. We can implement air pollution reduction policies in commercial ports to improve air quality by combining weather data and A IS in adjacent seas surrounding Taiwan.

DLW-1000 Series :

1

DLW-1



- 0 : Wind Speed, Wind Direction, RH/T, Pressure, Illuminance, Sea Level
- 2 : PM1/2.5/10+Particle
- 1 : CO
- 5 : NH₃
- 3 : PM1/2.5/10+CO+CO₂+Particle
- 2 : CO₂
- 6 : H₂S
- 4 : NH₃
- 3 : CO+CO₂
- 7 : HCHO
- 5 : O₂
- 4 : HCHO+TVOC
- 8 : TVOC

Air Quality Monitoring

DLW-10XX Series	Sensor													Mechanical
	Gas Monitoring							Particulates	Weather Monitoring					
	CO	CO ₂	HCHO	TVOC	NH ₃	H ₂ S	O ₂	PM1, PM2.5, PM10 Particle	Wind Speed Wind Direction Temperature Humidity	Pressure / Sea Level	Illuminance	Precipitation		
DLW-1000	-	-	-	-	-	-	-	-						A
DLW-1001	√	-	-	-	-	-	-	-						B
DLW-1002	-	√	-	-	-	-	-	-						
DLW-1003	√	√	-	-	-	-	-	-						
DLW-1004	-	-	√	√	-	-	-	-						
DLW-1005	-	-	-	-	√	-	-	-						
DLW-1006	-	-	-	-	-	√	-	-						
DLW-1007	-	-	√	-	-	-	-	-						
DLW-1008	-	-	-	√	-	-	-	-						
DLW-1020	-	-	-	-	-	-	-	√						
DLW-1021	√	-	-	-	-	-	-	√						
DLW-1022	-	√	-	-	-	-	-	√						
DLW-1023	√	√	-	-	-	-	-	√						
DLW-1024	-	-	√	√	-	-	-	√						
DLW-1025	-	-	-	-	√	-	-	√						
DLW-1026	-	-	-	-	-	√	-	√						
DLW-1027	-	-	√	-	-	-	-	√						
DLW-1028	-	-	-	√	-	-	-	√						
DLW-1034	√	√	√	√	-	-	-	√	√	√	√	-		
DLW-1035	√	√	-	-	√	-	-	√						
DLW-1036	√	√	-	-	-	√	-	√						
DLW-1037	√	√	√	-	-	-	-	√						
DLW-1038	√	√	-	√	-	-	-	√						
DLW-1041	√	-	-	-	√	-	-	-						
DLW-1042	-	√	-	-	√	-	-	-						
DLW-1043	√	√	-	-	√	-	-	-						
DLW-1044	-	-	√	√	√	-	-	-						
DLW-1046	-	-	-	-	√	√	-	-						
DLW-1047	-	-	√	-	√	-	-	-						
DLW-1048	-	-	-	√	√	-	-	-						
DLW-1050	-	-	-	-	-	-	√	-						
DLW-1051	√	-	-	-	-	-	√	-						
DLW-1052	-	√	-	-	-	-	√	-						
DLW-1053	√	√	-	-	-	-	√	-						
DLW-1054	-	-	√	√	-	-	√	-						
DLW-1055	-	-	-	-	√	-	√	-						
DLW-1056	-	-	-	-	-	√	√	-						
DLW-1057	-	-	√	-	-	-	√	-						
DLW-1058	-	-	-	√	-	-	√	-						

DLW-1100 Series :

DLW-1



- 1 : Wind Speed, Wind Direction, RH/T, Pressure, Illuminance, Sea Level, Precipitation
 2 : PM1/2.5/10+Particle
 3 : PM1/2.5/10+CO+CO₂+Particle
 4 : NH₃
 5 : O₂
 1 : CO
 2 : CO₂
 3 : CO+CO₂
 4 : HCHO+TVOC
 5 : NH₃
 6 : H₂S
 7 : HCHO
 8 : TVOC



Air Quality Monitoring

DLW-11XX Series	Sensor													Mechanical
	Gas Monitoring							Particulates	Weather Monitoring					
	CO	CO ₂	HCHO	TVOC	NH ₃	H ₂ S	O ₂	PM1, PM2.5, PM10 Particle	Wind Speed Wind Direction Temperature Humidity	Pressure / Sea Level	Illuminance	Precipitation		
DLW-1100	-	-	-	-	-	-	-	-						A
DLW-1101	√	-	-	-	-	-	-	-						
DLW-1102	-	√	-	-	-	-	-	-						
DLW-1103	√	√	-	-	-	-	-	-						
DLW-1104	-	-	√	√	-	-	-	-						
DLW-1105	-	-	-	-	√	-	-	-						
DLW-1106	-	-	-	-	-	√	-	-						
DLW-1107	-	-	√	-	-	-	-	-						
DLW-1108	-	-	-	√	-	-	-	-						
DLW-1120	-	-	-	-	-	-	-	√						
DLW-1121	√	-	-	-	-	-	-	√						
DLW-1122	-	√	-	-	-	-	-	√						
DLW-1123	√	√	-	-	-	-	-	√						
DLW-1124	-	-	√	√	-	-	-	√						
DLW-1125	-	-	-	-	√	-	-	√						
DLW-1126	-	-	-	-	-	√	-	√						
DLW-1127	-	-	√	-	-	-	-	√						
DLW-1128	-	-	-	√	-	-	-	√						
DLW-1134	√	√	√	√	-	-	-	√	√	√	√	√		B
DLW-1135	√	√	-	-	√	-	-	√	√	√	√	√		
DLW-1136	√	√	-	-	-	√	-	√	√	√	√	√		
DLW-1137	√	√	√	-	-	-	-	√	√	√	√	√		
DLW-1138	√	√	-	√	-	-	-	√	√	√	√	√		
DLW-1141	√	-	-	-	√	-	-	-						
DLW-1142	-	√	-	-	√	-	-	-						
DLW-1143	√	√	-	-	√	-	-	-						
DLW-1144	-	-	√	√	√	-	-	-						
DLW-1146	-	-	-	-	√	√	-	-						
DLW-1147	-	-	√	-	√	-	-	-						
DLW-1148	-	-	-	√	√	-	-	-						
DLW-1150	-	-	-	-	-	-	√	-						
DLW-1151	√	-	-	-	-	-	√	-						
DLW-1152	-	√	-	-	-	-	√	-						
DLW-1153	√	√	-	-	-	-	√	-						
DLW-1154	-	-	√	√	-	-	√	-						
DLW-1155	-	-	-	-	√	-	√	-						
DLW-1156	-	-	-	-	-	√	√	-						
DLW-1157	-	-	√	-	-	-	√	-						
DLW-1158	-	-	-	√	-	-	√	-						

DLW-1200 Series :

1

DLW-1

2

X

C

- 2: Wind Speed, Wind Direction, RH/T
- 2: PM1/2.5/10+Particle
3: PM1/2.5/10+CO+CO₂+Particle
4: NH₃
5: O₂
- 1: CO
2: CO₂
3: CO+CO₂
4: HCHO+TVOC
- 5: NH₃
6: H₂S
7: HCHO
8: TVOC

Air Quality Monitoring

DLW-12XX Series	Sensor													Mechanical
	Gas Monitoring							Particulates	Weather Monitoring					
	CO	CO ₂	HCHO	TVOC	NH ₃	H ₂ S	O ₂	PM1, PM2.5, PM10 Particle	Wind Speed Wind Direction Temperature Humidity	Pressure / Sea Level	Illuminance	Precipitation		
DLW-1200	-	-	-	-	-	-	-	-						C
DLW-1201	√	-	-	-	-	-	-	-						
DLW-1202	-	√	-	-	-	-	-	-						
DLW-1203	√	√	-	-	-	-	-	-						
DLW-1204	-	-	√	√	-	-	-	-						
DLW-1205	-	-	-	-	√	-	-	-						
DLW-1206	-	-	-	-	-	√	-	-						
DLW-1207	-	-	√	-	-	-	-	-						
DLW-1208	-	-	-	√	-	-	-	-						
DLW-1220	-	-	-	-	-	-	-	√						
DLW-1221	√	-	-	-	-	-	-	√						
DLW-1222	-	√	-	-	-	-	-	√						
DLW-1223	√	√	-	-	-	-	-	√						
DLW-1224	-	-	√	√	-	-	-	√						
DLW-1225	-	-	-	-	√	-	-	√						
DLW-1226	-	-	-	-	-	√	-	√						
DLW-1227	-	-	√	-	-	-	-	√						
DLW-1228	-	-	-	√	-	-	-	√						
DLW-1234	√	√	√	√	-	-	-	√	√	-	-	-	-	D
DLW-1235	√	√	-	-	√	-	-	√						
DLW-1236	√	√	-	-	-	√	-	√						
DLW-1237	√	√	√	-	-	-	-	√						
DLW-1238	√	√	-	√	-	-	-	√						
DLW-1241	√	-	-	-	√	-	-	-						
DLW-1242	-	√	-	-	√	-	-	-						
DLW-1243	√	√	-	-	√	-	-	-						
DLW-1244	-	-	√	√	√	-	-	-						
DLW-1246	-	-	-	-	√	√	-	-						
DLW-1247	-	-	√	-	√	-	-	-						
DLW-1248	-	-	-	√	√	-	-	-						
DLW-1250	-	-	-	-	-	-	√	-						
DLW-1251	√	-	-	-	-	-	√	-						
DLW-1252	-	√	-	-	-	-	√	-						
DLW-1253	√	√	-	-	-	-	√	-						
DLW-1254	-	-	√	√	-	-	√	-						
DLW-1255	-	-	-	-	√	-	√	-						
DLW-1256	-	-	-	-	-	√	√	-						
DLW-1257	-	-	√	-	-	-	√	-						
DLW-1258	-	-	-	√	-	-	√	-						

DLW-1300 Series :

DLW-1



- 3 : Wind Speed, Wind Direction, 2 : PM1/2.5/10+Particle
RH/T, Pressure, Sea Level
- 3 : PM1/2.5/10+CO+CO₂+Particle
4 : NH₃
5 : O₂
- 1 : CO
2 : CO₂
3 : CO+CO₂
4 : HCHO+TVOC
- 5 : NH₃
6 : H₂S
7 : HCHO
8 : TVOC



Air Quality Monitoring

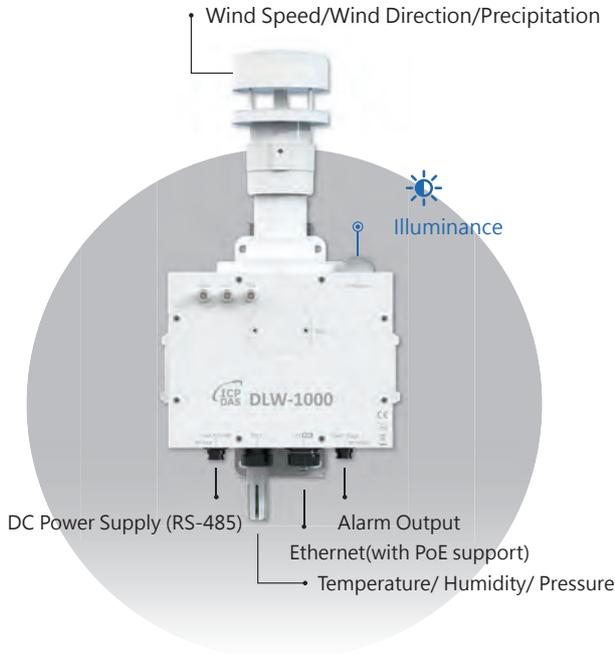
DLW-13XX Series	Sensor													Mechanical
	Gas Monitoring							Particulates	Weather Monitoring					
	CO	CO ₂	HCHO	TVOC	NH ₃	H ₂ S	O ₂	PM1, PM2.5, PM10 Particle	Wind Speed Wind Direction Temperature Humidity	Pressure / Sea Level	Illuminance	Precipitation		
DLW-1300	-	-	-	-	-	-	-	-						C
DLW-1301	√	-	-	-	-	-	-	-						
DLW-1302	-	√	-	-	-	-	-	-						
DLW-1303	√	√	-	-	-	-	-	-						
DLW-1304	-	-	√	√	-	-	-	-						
DLW-1305	-	-	-	-	√	-	-	-						
DLW-1306	-	-	-	-	-	√	-	-						
DLW-1307	-	-	√	-	-	-	-	-						
DLW-1308	-	-	-	√	-	-	-	-						
DLW-1320	-	-	-	-	-	-	-	√						
DLW-1321	√	-	-	-	-	-	-	√						
DLW-1322	-	√	-	-	-	-	-	√						
DLW-1323	√	√	-	-	-	-	-	√						
DLW-1324	-	-	√	√	-	-	-	√						
DLW-1325	-	-	-	-	√	-	-	√						
DLW-1326	-	-	-	-	-	√	-	√						
DLW-1327	-	-	√	-	-	-	-	√						
DLW-1328	-	-	-	√	-	-	-	√						
DLW-1334	√	√	√	√	-	-	-	√						
DLW-1335	√	√	-	-	√	-	-	√	√	√	-	-		D
DLW-1336	√	√	-	-	-	√	-	√						
DLW-1337	√	√	√	-	-	-	-	√						
DLW-1338	√	√	-	√	-	-	-	√						
DLW-1341	√	-	-	-	√	-	-	-						
DLW-1342	-	√	-	-	√	-	-	-						
DLW-1343	√	√	-	-	√	-	-	-						
DLW-1344	-	-	√	√	√	-	-	-						
DLW-1346	-	-	-	-	√	√	-	-						
DLW-1347	-	-	√	-	√	-	-	-						
DLW-1348	-	-	-	√	√	-	-	-						
DLW-1350	-	-	-	-	-	-	√	-						
DLW-1351	√	-	-	-	-	-	√	-						
DLW-1352	-	√	-	-	-	-	√	-						
DLW-1353	√	√	-	-	-	-	√	-						
DLW-1354	-	-	√	√	-	-	√	-						
DLW-1355	-	-	-	-	√	-	√	-						
DLW-1356	-	-	-	-	-	√	√	-						
DLW-1357	-	-	√	-	-	-	√	-						
DLW-1358	-	-	-	√	-	-	√	-						

Mechanism Type :

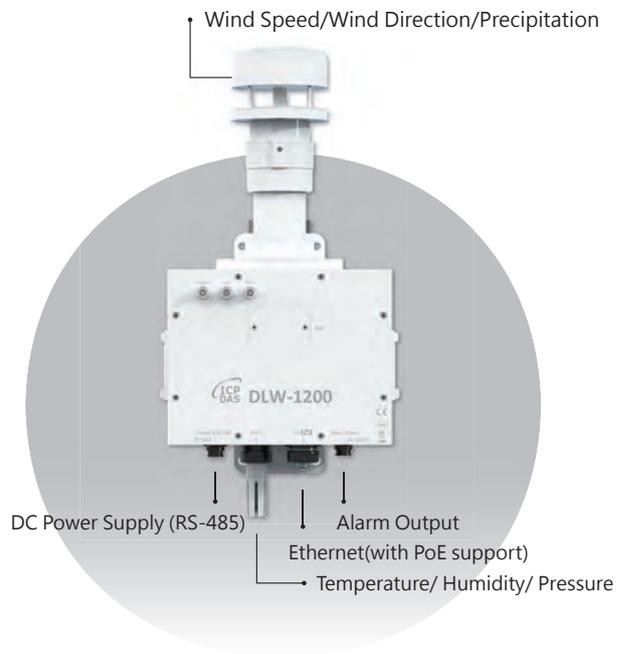
1

Air Quality Monitoring

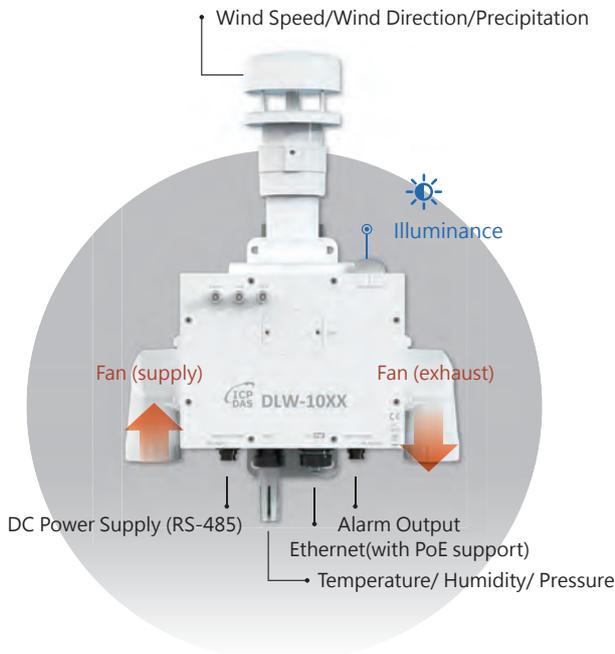
DLW-1000/DLW-1100 **Type : A**



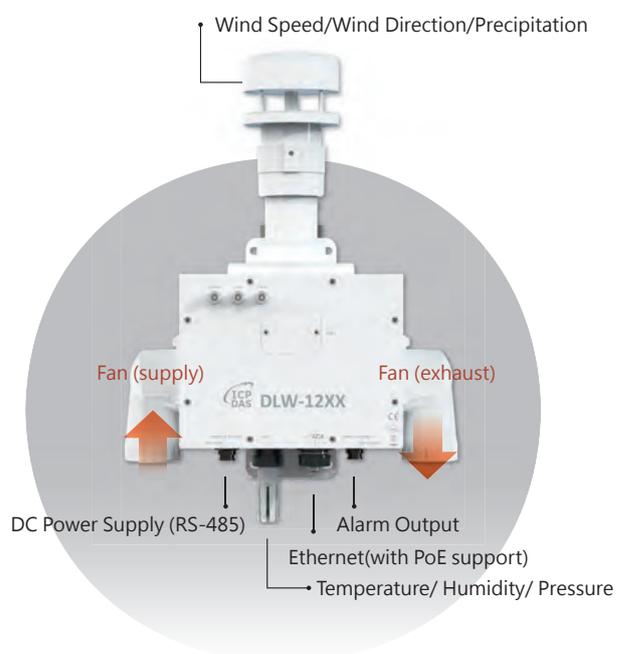
DLW-1200/DLW-1300 **Type : C**



DLW-10xx/DLW-11xx **Type : B**



DLW-12xx/DLW-13xx **Type : D**



2 IR Sensor PIR Series

Passive Infrared Motion Sensor Temperature/Humidity



Features:

- Adjustable Time-Delay / Lux / Sensitivity
- Internal Photosensor for Smart Switch Control
- LED Indicator for PIR/Temperature Sensor
- Temperature Sensor for Measuring Room Temperature or Fire Alarm
- Relay Output Used to Control the Light Via the PIR/ Temperature Sensor
- Suitable for loads up to 1500 W (Incandescent) and 300 W (Fluorescent)
- Multiple Communication Interfaces and Protocols
- Ceiling Surface Mount Design

Introduction:

The **PIR series** can detect infrared waves generated by human within a range of approximately 8 meters in diameter with a 360° coverage area for indoor motion detection, and can be configured to auto-switch on a light if the motion is detected. It also has a temperature sensor for measuring room temperature or can be set up to activate a fire alarm. The **PIR series** especially is suitable for BA applications. There are RS-485/ZigBee/Ethernet/Bluetooth/Wi-Fi models can be selected. Different models support DCON, Modbus RTU/TCP or MQTT protocol, and can be integrated to HMI/SCADA/central control system.

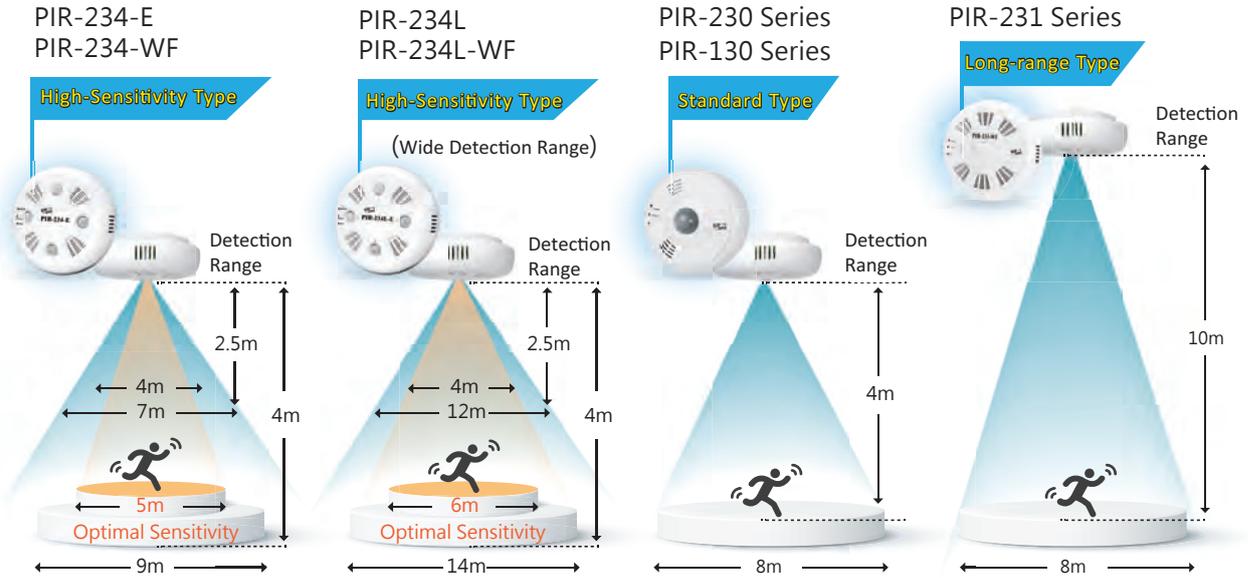
Selection Guide:

類型	Standard Type				High-Sensitivity Type				Long-range Type	
Models	PIR-130- AC	PIR-130- DC	PIR-230-E	PIR-230- WF	PIR-234- E	PIR-234- WF	PIR-234L	PIR-234L-WF	PIR-231- E	PIR-231-WF
Sensor Type	PIR Motion Sensor / Temperature				PIR Motion Sensor Temperature / Humidity					
Passive Infrared (PIR) Motion Sensor										
Time-delay	Hardware: 8-step Switch-selectable (sec) Software: 16-step (sec)									
LUX Control	Hardware: 2 mode (Dawn and dusk) / Software: 5-step								-	
Detection Range	4 meters max.								10 meters max.	
Detection Field of View	8 meters				9 meters		14 meters		8 meters	
Temperature Sensor										
Range	-25 ~ +100°C				-40°C ~ +120°C					
Fire Alarm	65 °C (Programmable)									
Measurement	Resolution: 0.0625°C / Accuracy: ±2°C				Resolution: 0.1°C / Accuracy: ±0.6°C					
Relative Humidity Measurement										
Range	-				0 ~ 100 % RH					
Measurement	-				Resolution: 0.1% RH / Accuracy: ±5% RH					
I/O Channel										
Relay Output	1									
Communication										
Protocol	DCON, Modbus RTU				DCON, Modbus RTU, Modbus TCP, MQTT					
Wired Interface	Yes, RS-485 x 1				Yes, RS-485 x 1 and Ethernet/PoE x 1					
Wireless Interface	-	-	-	Wi-Fi	-	Wi-Fi	-	Wi-Fi	-	Wi-Fi

Introduction :

2

IR Sensor PIR Series

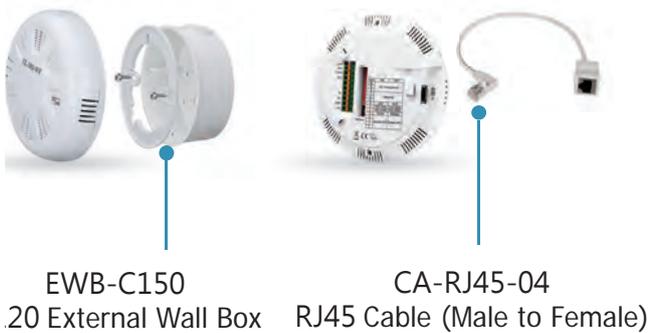


- ▶ PoE-capable PIR-230, 231, and PIR-234 Motion Sensor Module can be supplied with power via Ethernet without additional cabling.
- ▶ Support Various Communication Protocols and Interfaces.
- ▶ Built-in Temperature and Humidity Sensors

PIR series supports many communication interfaces (Rs-485, Ethernet, Wi-Fi) and protocols (DCON, Modbus RTU, Modbus TCP, and MQTT). This allows seamless integration with HMI or SCADA systems and facilitates easy maintenance in distributed systems.

PIR-234, 231, and 230 Motion Sensor Modules have built-in temperature and humidity sensors, while the PIR-130 Motion Sensor Module only has the built-in temperature sensor. These sensors enable the Pir modules to offer temperature & humidity monitoring in addition to human motion detection.

Optional Accessories



EWB-C150 20 External Wall Box
CA-RJ45-04 RJ45 Cable (Male to Female)

Installation Type

Ceiling Mounting

(Basic Accessories)



Wall Mounting

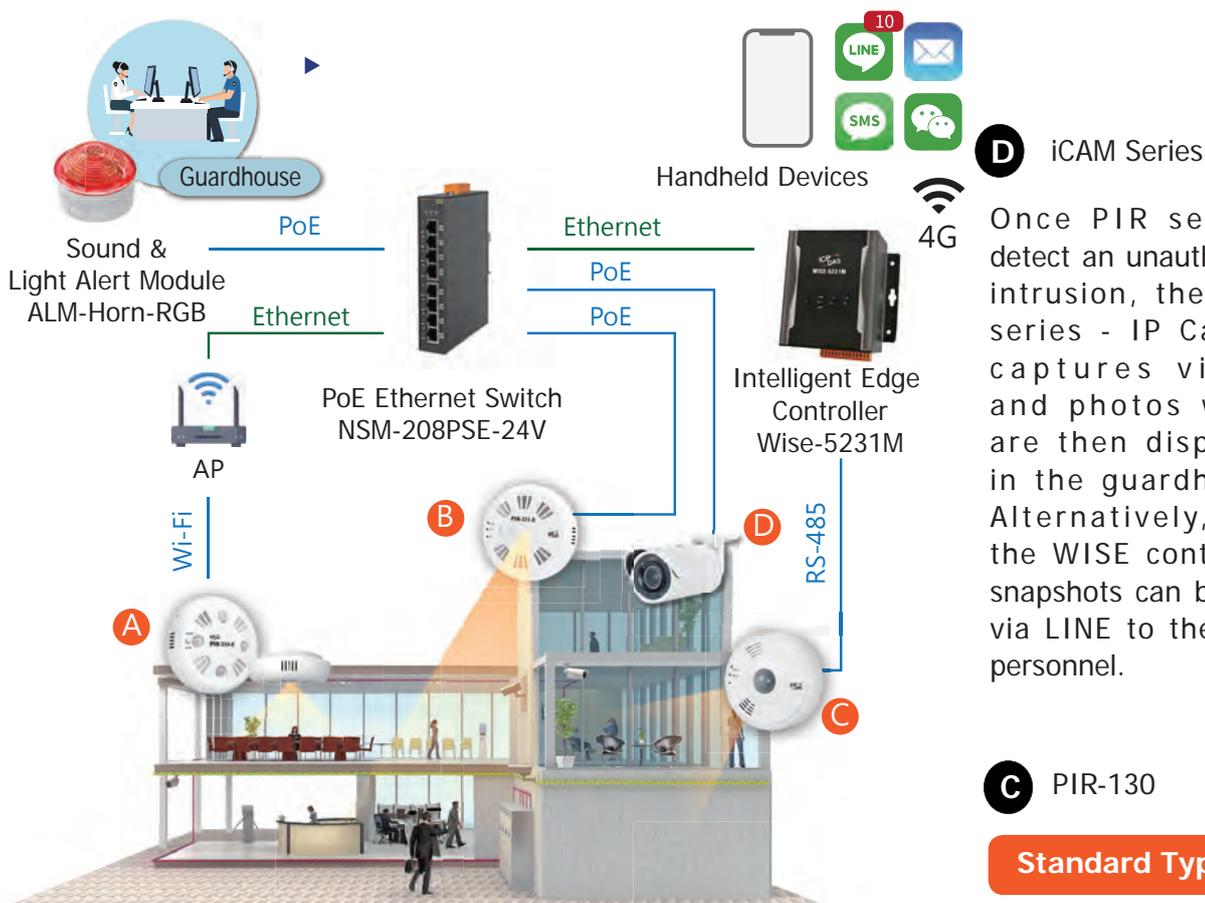
(External Wall Box Required)



■ Building Automation & Integrated IoT Applications :

Various Communication Protocols / PIR integrates with Building Monitoring Applications Easily / Greatly Ease the Burden on Staff Conducting Inspections

Integration of the PIR series and WISE controllers enables the detection of intrusions during off-hours. Besides, real-time alert messages can be sent via LINE or email to the right personnel. With an additional iCAM series - IP Camera, management staff can access live videos/photos of events for further verification.



A PIR-234-WF

High-Sensitivity Type

In meeting rooms, where the movement of individuals is subtle, PIR-234 Motion Sensor Module is recommended for lighting control.

B PIR-231-E

Long-range Type

In spaces with high ceilings, PIR-231 Motion Sensor featuring a long detection range (height) is recommended for applications.

C PIR-130

Standard Type

In office buildings, where people pass by often and show noticeable movements, PIR-130 Motion Sensor Module is recommended to detect human walking motion for lighting control.

D iCAM Series

Once PIR sensors detect an unauthorized intrusion, the iCAM series - IP Camera captures videos and photos which are then displayed in the guardhouse. Alternatively, with the WISE controller, snapshots can be sent via LINE to the right personnel.

3 Industrial Sensor iSN Series

**Leakage
Detection**



iSN-101

**Illumination
/T&H Detection**



iSN-201-E

**ToF Rangerfinder
Module**



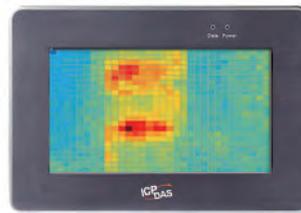
iSN-301V

**Thermal
imaging Module**



iSN-811C-MTCP

**Temperature Data
Concentrator**



VPD-170-IRT

iSN Series Selection Guide:

Model	Type	Range	Interface
iSN-101	Liquid Leakage	1-ch detection 26 KΩ ~ 580 KΩ (adjustable)	RS-485, Modbus RTU, DCON
iSN-104		4-ch detection 26 KΩ ~ 580 KΩ (adjustable)	Ethernet/PoE, Modbus TCP/UDP, MQTT
iSN-104-E			
iSN-201-E	Illumination	0 ~ 20,000 Lux	RS-485, Ethernet/PoE, DCON, Modbus RTU, Modbus TCP, MQTT
iSN-201-WF			RS-485, Ethernet/PoE, Wi-Fi, DCON, Modbus RTU, Modbus TCP, MQTT
iSN-301H	ToF Distance measurement	Horizontal detection 5cm~4m, FoV 27°	RS-485, Modbus RTU, DCON
iSN-301V		Vertical detection 5cm~4m, FoV 27°	
iSN-811-MRTU	IR Temperature Measurement	-20°C~250°C	RS-485, Modbus RTU
iSN-811C-MTCP		-20°C~250°C, Includes images	Ethernet/PoE, Modbus TCP, MQTT, RESTful
iSN-812-MRTU			RS-485, Modbus RTU
iSN-812-MTCP		-40°C~300°C	Ethernet/PoE, Modbus TCP, MQTT, RESTful

Leakage Detection Module



iSN-101

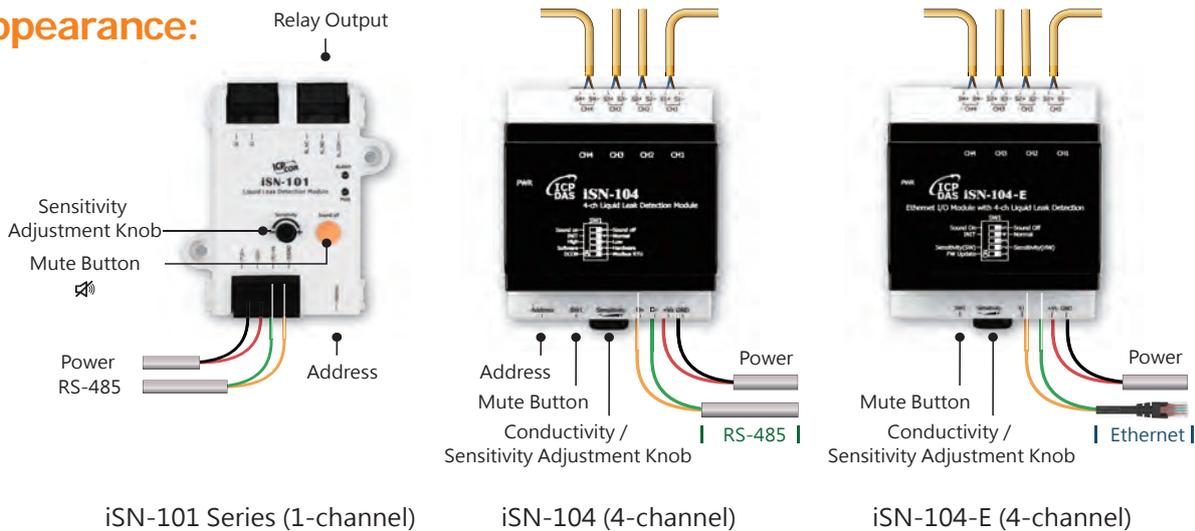
iSN-104

Features:

- 1-ch / 4-ch Liquid Leak Detection
- Real-time alarm function
- Detection distance up to 500 meters
- Sensitivity adjustable detection
- Supports the DCON and the Modbus RTU Protocols
- Detectable Liquids: Water, Juice, Beer, Alcohol

Small leaks can cause big problems ranging from equipment downtime and damage to industrial safety issues. If leaks are detected in time, many losses and problems can be avoided. The ICP DAS's liquid leak detection module can detect liquid leakage and pipeline rupture, as well as send real-time alarm messages to reduce losses that may be caused by liquid leakage.

Appearance:



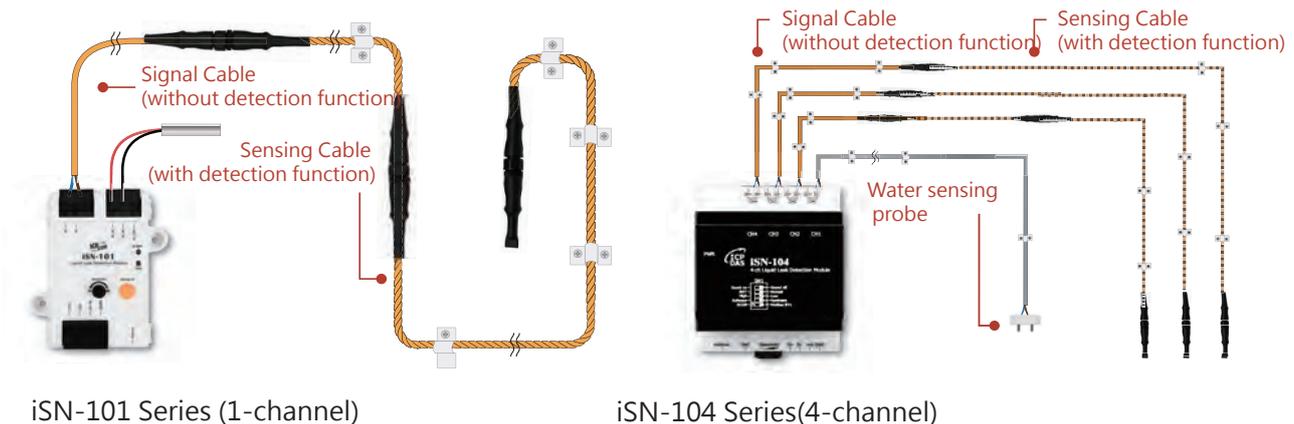
iSN-101 Series (1-channel)

iSN-104 (4-channel)

iSN-104-E (4-channel)

ICP DAS provides two different cables for use with iSN series modules. The detection cable with detection function and the signal cable without detection function can be used together to extend the signal transmission distance. The longest measurement distance can be up to 500 meters, and a suitable combination of cables can be used according to the detection needs.

■ Detection Distance up to 500 Meters



iSN-101 Series (1-channel)

iSN-104 Series(4-channel)

Description of iSN Series Liquid Leak Detector

ICP DAS offers two types of leak detectors: detection probe and detection cable. Both detectors can be used with the ICP DAS's iSN series liquid leak detection module. They can also be applied according to the needs of customers.

1. **Water Sensing Cable**-The water sensing cable installed near the possible leaking pipe or area to detect leakage with an alarm.



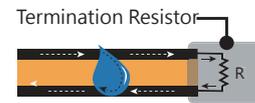
CA-LLD-DC100 X -L100



- ✓ Disconnection detection function **provided**.
- ✓ Connection of multiple detection cables **supported**.



Disconnection detection alarm

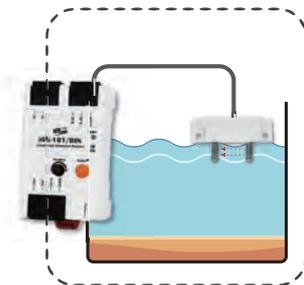


Liquid Leak detection alarm

2. **Water Sensing Probe**- The water sensing probe that installed in fixed possible leak locations to detect.



CA-LLD-DP100



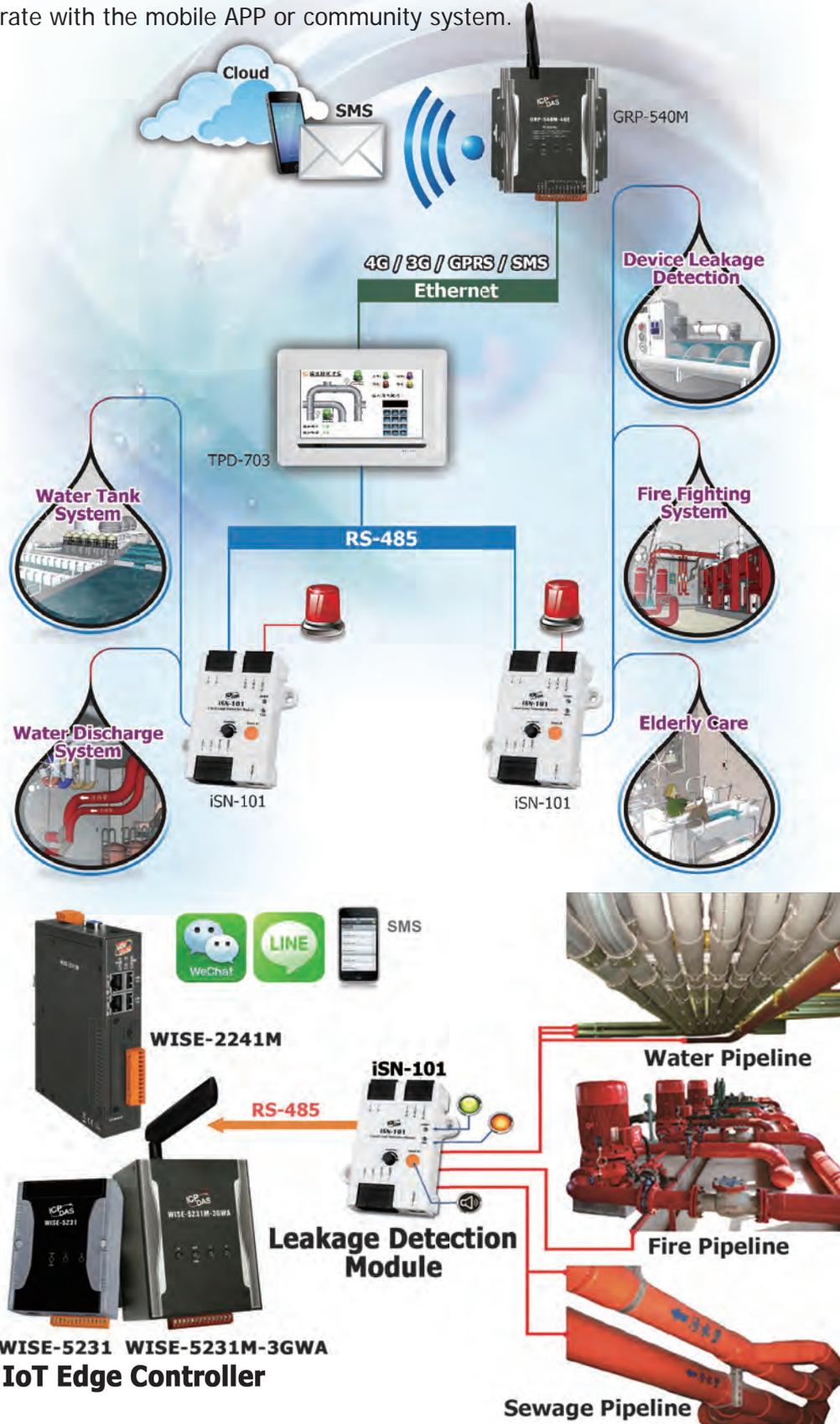
- ✓ Can detect specific location.
- ✓ Can detect specific water level.

The liquid leakage detection probe is designed to detect liquid leakage at a **specific location** or **water level**. The liquid must touch both probes at the same time to trigger an alarm.

Model	Installation Method	Signal Cable	Detection Cable	Detection Probe	Ch.	Communication Interface	Operating Temperature
iSN-101	Wall Mounting	-	-	-	1	RS-485 (Modbus RTU, DCON)	-25°C ~ +75°C
iSN-101/DIN	DIN-Rail Mounting	-	-	-			
iSN-101/S	Wall Mounting	3m	1m	-			
iSN-101/S/DIN	DIN-Rail Mounting	3m	1m	-			
iSN-101/S2	Wall Mounting	3m	3m	-			
iSN-101/S2/DIN	DIN-Rail Mounting	3m	3m	-			
iSN-101/S3	Wall Mounting	-	-	Yes			
iSN-101/S3/DIN	DIN-Rail Mounting	-	-	Yes			
iSN-104	DIN-Rail Mounting	-	-	-	4	Ethernet (Modbus TCP) / PoE	
iSN-104-E	DIN-Rail Mounting	-	-	-			

Leakage Monitoring Application :

The leakage monitoring is applied to the water pipes, fire pipes and sewage pipes of buildings, as well as the detecting of domestic water, drainage and electric equipment, which can effectively achieve water saving and ensure the safety of living. The iSN-101 can detect leakages, send out signal and alarms, combine with the WISE IoT Edge Controller or TPD/VPD Touch HMI, and to further integrate with the mobile APP or community system.



ToF Time-of Flight Rangerfinder Module



Features:

- Non-contact Distance Measurement (Time-of-Flight)
- Distance Measurement: 5 cm ~ 4 m
- Typical Full Field-of-View (FoV): 27°
- Programmable Region-of-Interest (ROI) Size and Position
- Supports the DCON and the Modbus RTU Protocols

iSN-301H/DIN iSN-301V

Introduction:

The iSN-301 is a Time-of-Flight sensing module that is designed specifically for non-contact distance measurement. It can measure distance up to 4 meters. The module can be configured to trigger LED alarm when the distance is too short or too long. It is possible to program the size and position of the ROI to adjust the sensor FoV. The module can be easily integrated with the host controller connected in the same RS-485 network via DCON or Modbus RTU protocol.

Appearance:



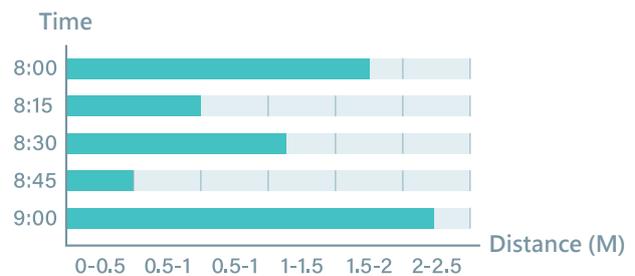
Installation:



Application:



iSN-301 series offers adjustable detection zones and threshold ranges for distances, enabling human presence detection in target zones or seats based on changes in distance measurements.



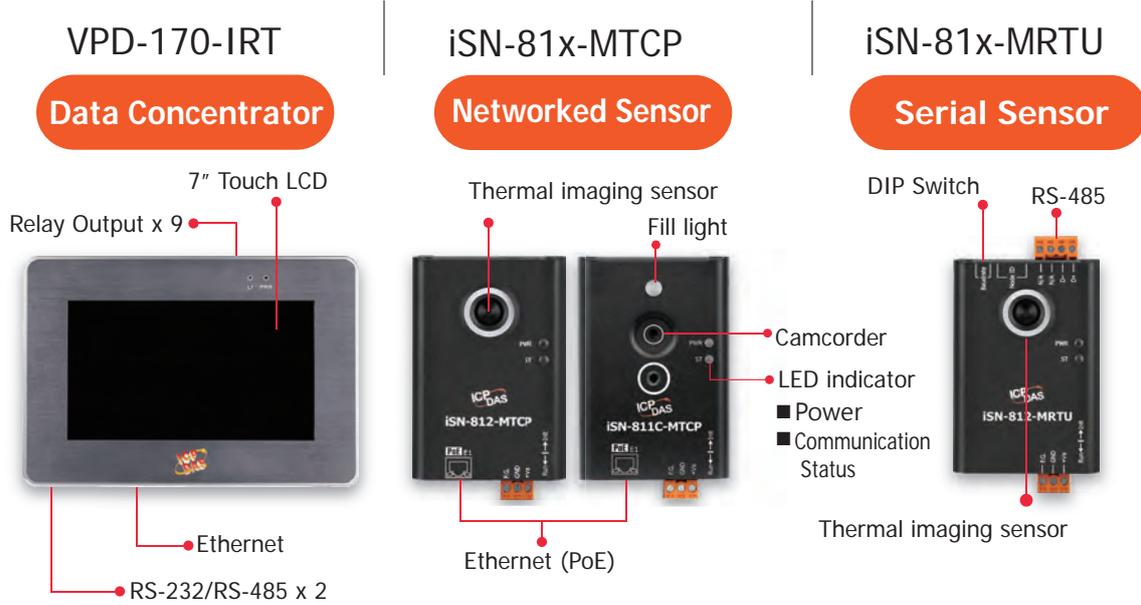
Selection Guide:

Model	iSN-301H	iSN-301H/DIN	iSN-301V	iSN-301V/DIN
Detection Range	5cm ~ 4m			
Detection Fld of View	27° ; Diameter 0.8m meters Max.			
Auracy	±5% (±20 cm)			
Resolution	1 mm			
Update Time	160 ~ 6000 ms, programmable			
Sensor Direction	Horizontal		Vertical	
Ports	1 x RS-485			
Baud Rate	Software Configurable : 1200 ~ 115200 bps			
Data Format	N,8,1 / O,8,1 / E,8,1 / N,8,2			
Protocol	Modbus RTU or DCON			
Node Address	0 ~ 255 for software configuration 96~127 for hardware configuration			
Reverse Polarity Protection	Yes			
Protocol	10 ~ 30 VDC			
Consumption	1.2W Max.			



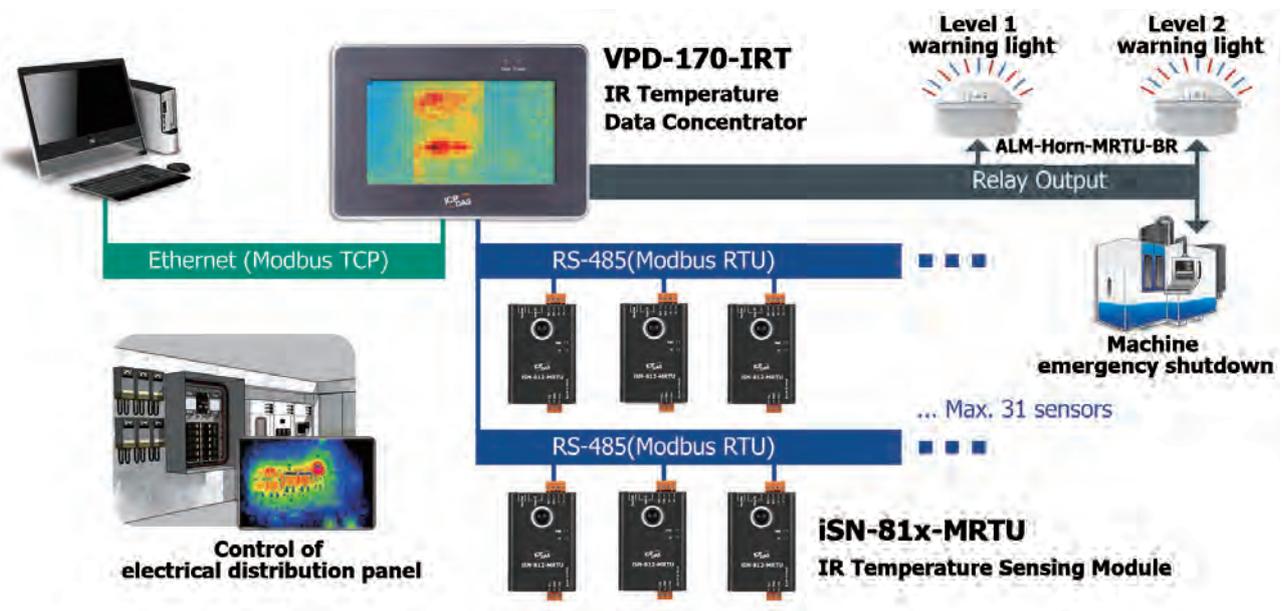
IR Temperature Sensing Solution

Infrared Temperature Sensing solution features visible temperature monitoring. The iSN-8xx series uses the most advanced Infrared Imaging technology to detect infrared radiation or heat, and can also generate clear images based on the detected temperature difference. It is non-intrusive monitoring and provides solution in real-time temperature monitoring and alarm notification for applications in industrial safety and quality control of the production line. The module features uninterrupted temperature monitoring function, which can effectively avoid hidden risks due to accidental power failure, service interruption or device failure, and effectively reduce the cost spending on manual inspection/scanning at scheduled time.



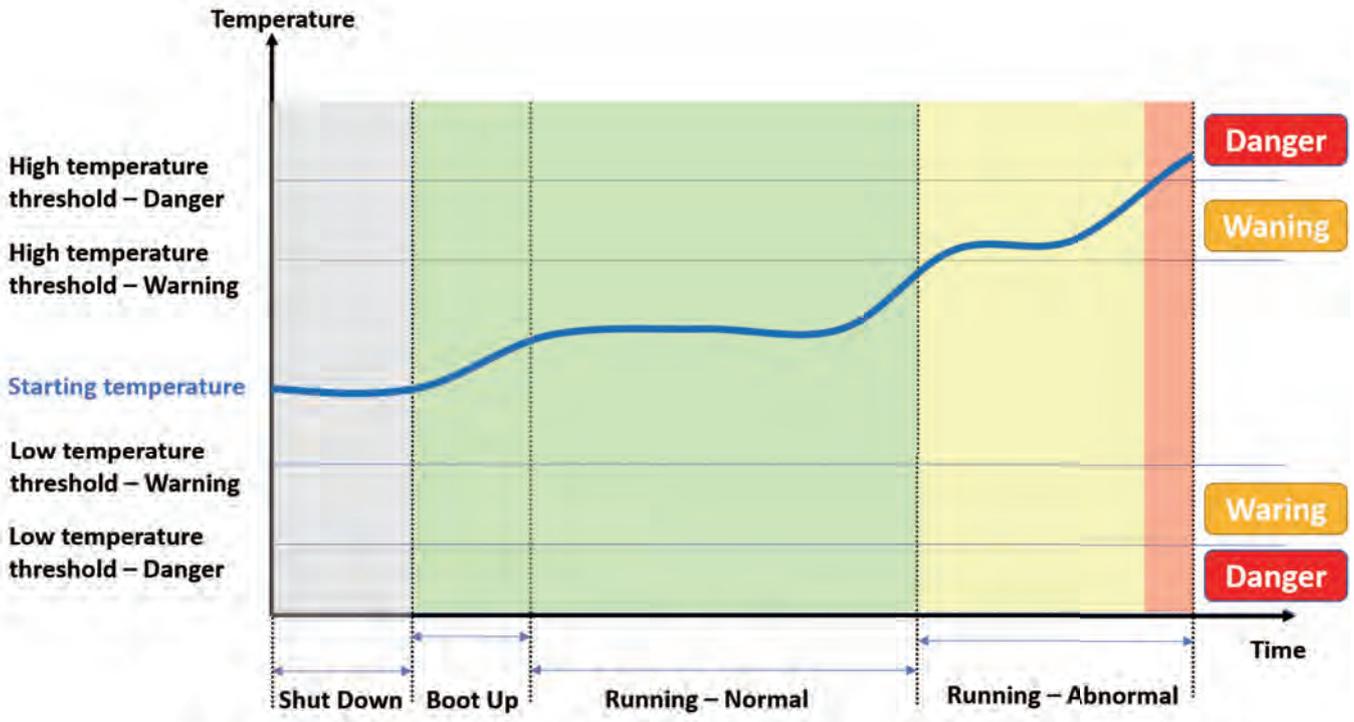
IR Temperature Sensing Application Architecture

With the help of thermal imaging output, the iSN-8xx series can not only provide full plane monitoring of the temperature, but also provide automatic alarm output when the temperature exceeds a preset threshold, and effectively perform the temperature trend analysis and provide maintenance guidance.



Device Alarm Prediction

Equipment failures are mostly due to the continuously overheated. If the non-contact temperature measurement is used, the warning threshold and the danger threshold can be set. When the temperature of the object rises abnormally and exceeds the threshold, a warning will be issued immediately, so that the purpose of preventing equipment failure in advance can be achieved.



Safety Monitoring System for Electrical Distribution Cabinet

The industrial sensing module can meet the requirements for long-term monitoring and alarm notification of the electrical distribution cabinet. It can monitor and record the temperature, current or liquid leakage of the parts such as cables or transformers inside the electrical distribution cabinet. It will send alarm notification when unusual event occurs such as over-temperature, or unusual power consumption. Furthermore, it will evaluate whether the cable is aging or the device is overloaded to arrange appropriate maintenance or replacement for the device.

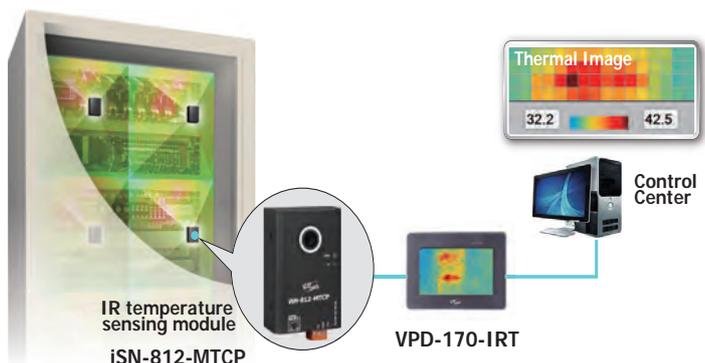
Traditional Monitoring Program

- Rely on professionals and experience for inspection
- Unable to continuously measure the temperature of the device or the panel, or can only detect a single point locally

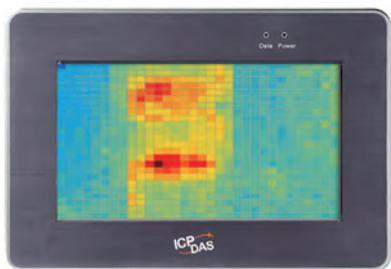
Brand-new Type of Monitoring

- Quickly check abnormal parts without relying on professionals
- Continuously measure the overall temperature of equipment and trays
- Accumulative analysis of data to achieve purposes of early warning and automation

	Part	Whole
On-going Monitoring	Thermocouple 	
Periodic Monitoring	Heat-resistant Terminal Socket 	Thermal Imager 



Temperature Data Concentrator



(7")

VPD-170-IRT

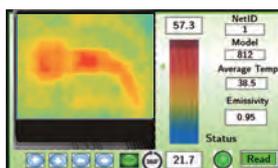
Features:

- High-resolution color touch screen
- Front Panel: IP65 Waterproof
- Temperature threshold setting function
- Provide 9-ch relays
- Provide thermal image
- Support Max. 31 iSN-81x-MRTU connections
- Support Modbus TCP/RTU protocol
- Provide connection detecting function for iSN-81x-MRTU

Introduction:

The **VPD-170-IRT** series is a Temperature Data Concentrator that has ability to perform up to 31 iSN-81x-MRTU modules via RS-485 and allows up to 8 Modbus TCP masters to get the temperature data via the Ethernet. The VPD-170-IRT series provide a touch panel to configure all settings of each iSN-81x-MRTU and VPD-170-IRT module on the RS-485 and show the thermal image of the measured object.

Software:



- Simultaneous connection of up to 31 modules via software.
- Quickly search and set the thermal sensing module: high temperature alarm, warning threshold type, temperature range and average value display
- Display the connection status and temperature data of each thermal sensing module

Specification:

Model	VPD-170-IRT		
Display	LCD 7" TFT (Resolution 800 x 480)	Buzzer/Reset Button	Yes
COM Ports	RS-232/RS-485x2/RJ-45, 10/100 Base-TX	Ingress Protection Rating	Front Panel: NEMA 4 / IP65
		Operating Temperature	-10~+60°C
Protocol	Modbus RTU/ Modbus TCP	Power	DC: +12~ 48VDC / PoE: 48VDC
Relay Type (Form A)	9 x Single Relay (Form A)	Humidity	10-90% RH, Non- condensing

IR Temperature Sensing Module



Features:

- Non-contact temperature measurement
- Temperature threshold detection
- Support Modbus RTU/TCP protocol
- Offers Wall-mount, magnetic and universal joint for installation

iSN-811-MRTU
iSN-812-MRTU
iSN-811C-MTCP
iSN-812-MTCP

Introduction:

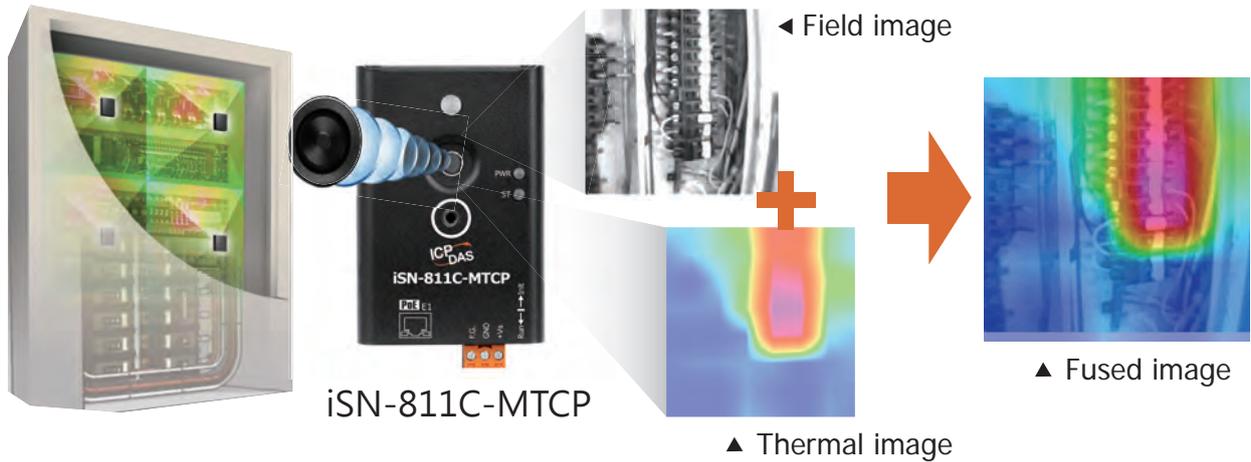
The iSN-81x-MRTU and iSN-81x-MTCP series are Infrared temperature sensing modules developed for non-contact temperature measurement. The modules present the temperature status of the whole surface by thermal imaging and provide a variety of temperature pixels and temperature threshold detection functions to meet various temperature measurement needs. They also provide Modbus RTU protocol that users can put into the SCADA system very easily.

Selection Guide:

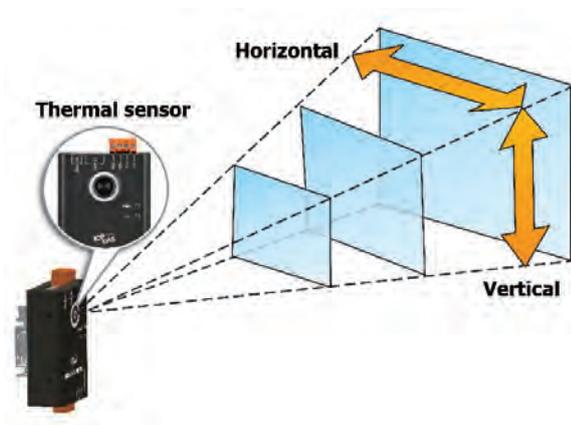
Model	iSN-811-MRTU	iSN-812-MRTU	iSN-811C-MTCP	iSN-812-MTCP
COM Ports	1 x RS-485 (115200 bps Max.)		1 x RJ-45, 10/100Base-TX PoE (IEEE 802.3af, Class 1)	
Protocol	Modbus RTU		Modbus TCP	
Temperature Range	-20 ~ +250°C	--40 ~ +300°C	-20 ~ +250°C	-40 ~ +300°C
Accuracy	±5°C Max.			
Resolution	0.1°C			
IR Sensor Pixel	64 (8x8)	768 (32x24)	64 (8x8)	768 (32x24)
IR Sensor FOV	60° x 60°	110° x 75°	60° x 60°	110° x 75°
Sensing Type	IR			
Sensing Distance	1 M			
Camcorder			CMOS	
Resolution			QVGA(320x240)	
Input Range	+10 ~ +30 VDC		+10 ~ +30 VDC and PoE	
Consumption	1.7W	1W	1.7W	1W
Dimensions/Installation	52 x 95 x 27 (mm) (W x H x D) / Wall-mount, magnetic and universal joint			

Integrated Thermal Imaging and Field Imaging for Instant Determination of Field Abnormal Conditions

The iSN-811C-MTCP uses a thermal imaging sensor and visible light cameras provide fused dual-image information for faster problem detection. It is the first choice for electrical anomalies, mechanical overheating, device checking, and other troubleshooting tools.



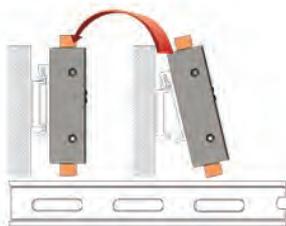
iSN-81x-MRTU FOV (Field of View)



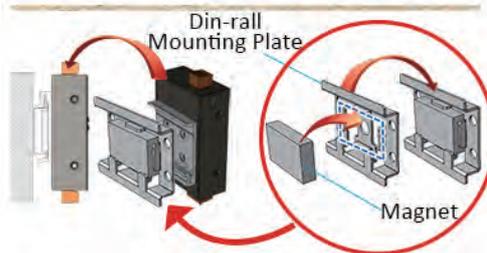
Model	Sensing range / Object distance 25 cm		FOV	
	X Axis (cm)	Y Axis (cm)	X Axis (°)	Y Axis (°)
iSN-811-MRTU	29	29	60	60
iSN-811C-MTCP				
iSN-812-MRTU	71	38	110	75
iSN-812-MTCP				

Mechanism and Installation:

Various Installation Modes Wall Mount



Magnetic Installation

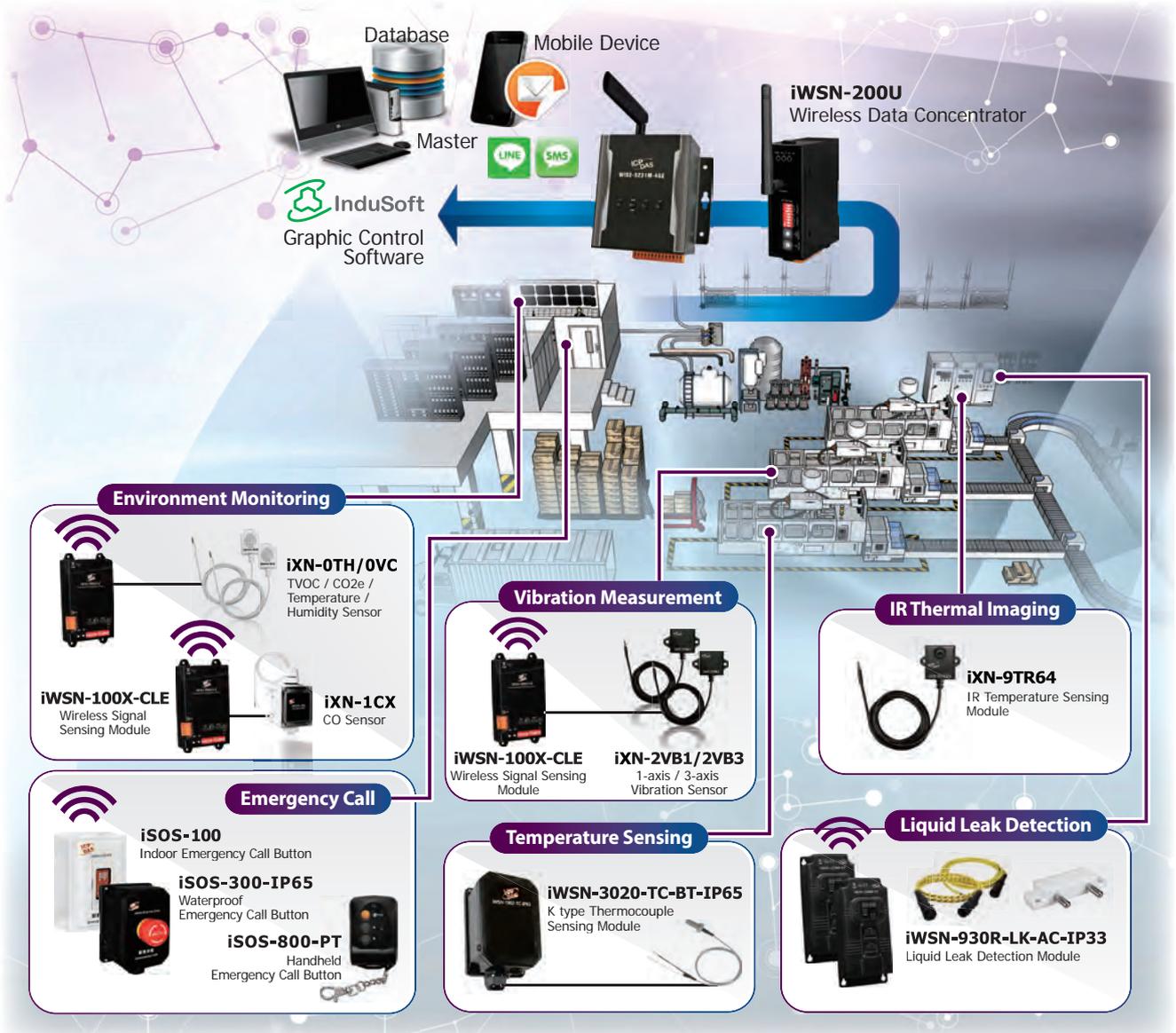


Universal Mount Installation



4 Wireless Solution

iWSN Series use in Environment Monitoring System integrates temperature and humidity, gas (CO, CO2e, TVOC), vibration, IR Thermal Imaging, and wireless transmission functions. Its low power consumption can be used with the CT inductive charging and only need to adjust the DIP switch to complete module settings. There is no need to stop the production process, which can significantly save system setup time and reduce maintenance costs. In addition, the iWSN series is also available in an external power supply and disposable battery to meet different field requirements. The iWSN series is also equipped with a Wireless Emergency Alert system, which can meet the needs of security warnings at the same time.



4 Wireless Solution

Functions	Models	
Data Concentrator	iWSN-200U/iWSN-200E	iWSN-200R
Wireless Signal Sensing Module	iWSN-100X-CLE/iWSN-101X-CLE	iSOS Series
Sensor	iXN-0TH/iXN-0VC/iXN-1CX/iXN-2VB1/ iXN-2VB3/iXN-9TR1/iXN-9TR64	-
Power Supply	DC Power/ Rechargeable battery + CT charging	Primary Battery/ Rechargeable battery + Solar Cell

Descriptions

Due to the rising risks of environmental disasters, personal safety, and property losses in the manufacturing process, the risk of production interruptions for enterprises also increases. To keep business operations uninterrupted, through data integration, enhance factory automation, and environmental safety monitoring. For example, importing a factory monitoring system to perform centralized monitoring and automation management of remote control for the operating status of various industrial equipment. It has become an important trend in factory automation. Based on the maturity of network technology, The application of factory automation and environmental monitoring takes shape, however, the network technology is limited by the wired solutions for various sensors, difficulties during installation and construction, resulting in a dilemma for the enterprise. ICP DAS iWSN series provide a wide range of monitoring technologies with wireless communication technology, improving industrial safety issues, and promoting the factory to move towards the servitization of manufacturing.



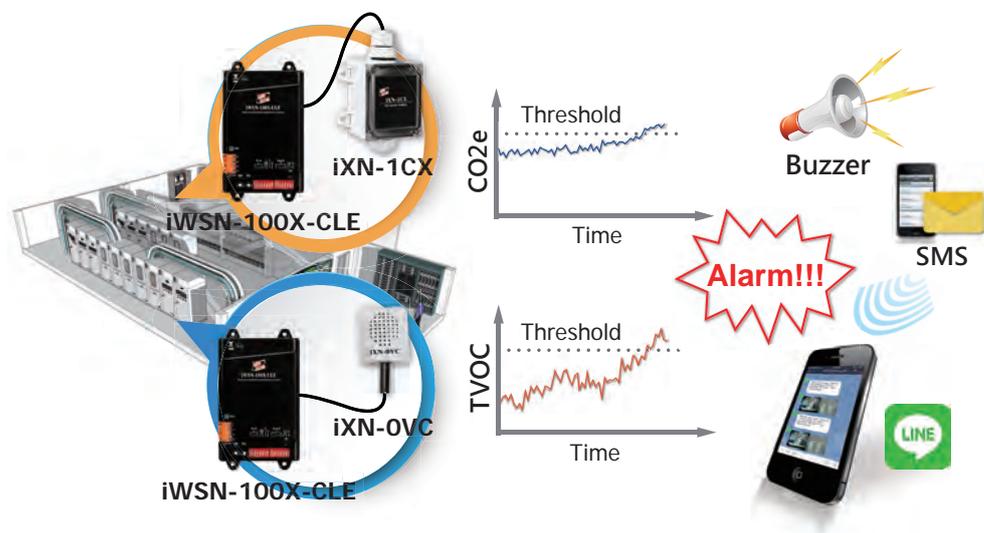
Applications

Factory Environment Detection

When the factory is in normal operation, regardless of CO₂e, TVOC and CO data must follow the standard specifications, and make sure it is within the normal range, the data is abnormal, it probably means that the machine or air conditioner is in abnormal working condition. If the air ventilation is not carried out in time, it may lead to the abnormal physical condition of the personnel. In serious cases, it may even affect the lives of the personnel and cause unmanageable occupational accidents.

Use iWSN-100X-CLE / iWSN-101X-CLE with iXN-0CX and iXN-0VC to monitor CO₂e, TVOC, and CO data.

According to long-term records of the relationship between motor operation and the atmosphere in the factory, when the air data is abnormal, an alarm will be issued and ventilation will be performed. Avoid the loss of personal safety caused by environmental factors.



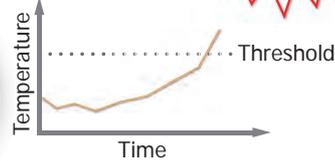
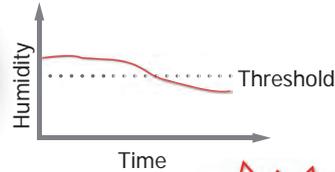
Temperature & Humidity Detection

The server and IT equipment in a control room usually have high standard requirements in temperature and humidity control. When the temperature and humidity exceed the standard for equipment to operate normally, it may cause calculation errors, equipment parts failure or premature damage, which may affect the operation of the equipment and may cause unpredictable losses to entities such as banks or carrier that require to perform data exchange in real time. iWSN-100X-CLE can work with iXN-0TH to provide solution for continuous monitoring of temperature and humidity in control rooms and warehouses. When the temperature and humidity data is abnormal, and alarm can be triggered to notify relevant personnel in advance to adjust or repair the air-conditioning system to avoid unusual changes in temperature and humidity that may cause equipment failures or premature damage to inventory materials.

Machine Room



Warehouse

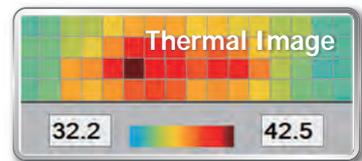
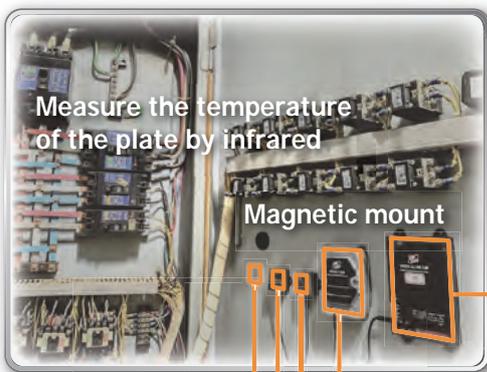


4

Wireless Solution

Security Monitoring Applications of Thermal Imaging

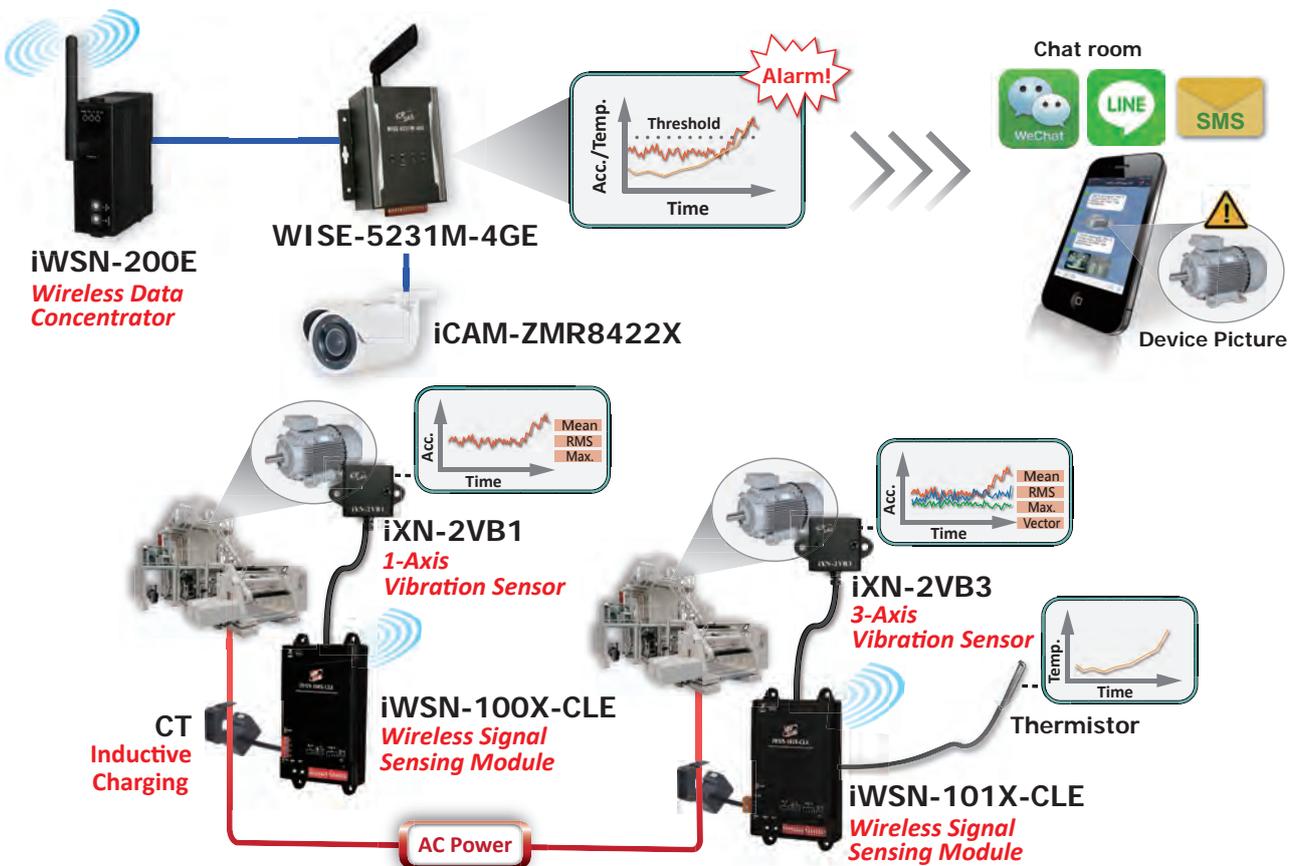
The distribution board will be damaged due to various failures of the machine.(overload, overcurrent, dust accumulation on-site, etc.) Eventually, the rising temperature causes insulation deterioration on the line and leads to an industrial safety crisis. iWSN-100X-CLE/iWSN-101X-CLE with iXN-9TR1/iXN-9TR64 temperature sensor series to meet the long-term electrical switchboard monitoring and alarm requirements. Provides temperature monitoring records of wiring and transformer equipment in the distribution board. The system also extends the monitoring of electricity and water leakage to achieve all-around monitoring. Alarms will be issued in case of over-temperature, abnormal power consumption, or water leakage, to avoid accidents caused by machine failure and to evaluate whether it is a case of aging wiring or equipment overload for repair and replacement.



Vibration Measurement

In order to maintain normal production operations in factories, regular maintenance must be performed on important equipment. In the past, the vibration data is obtained by on-site inspection; the equipment is regularly checked one by one in a regular route. The data is manually recorded on papers which is labor-intensive, time-consuming and error-prone. The data is not easy to retrieve and analyze, and duplicate measurements or inappropriate inspections may occur.

ICP DAS iWSN Vibration Sensor Series uses **iWSN-100X-CLE/iWSN-101X-CLE**, and **iXN-2VB1/iXN-2VB3** with thermistor for measuring vibration of the device and temperature detection. The data of vibration/temperature can be long-term recorded and then effectively solve the reliability issue that on-site inspection may involve. Its self-powered wireless design makes it easy to be installed and maintained. The onsite personnel can also set the limit range via WISE series IIoT Edge Controller so that when the collected data exceeds the range of the limit, the alarm message or image of the device can be sent via SMS or LINE/WeChat groups immediately. The control center or related personnel can be notified in real time and estimate or arrange when maintenance should be performed.



Wireless Signal Sensing Module

Features:

- Built-in a chargeable Li-ion battery, and energy harvest from the CT induced electricity
- Split-core current transformer (CT) for easy installation
- Uses 433 MHz RF communication
- CT induced current or DC power supply
- Wall-mount mechanism and magnet for installation



iWSN-100X-CLE iWSN-101X-CLE



Wiring Display

The iWSN environment sensing module is suitable for measuring various signals, such as temperature, humidity, CO₂e, TVOC, CO, IR temperature, and vibration. In addition, it can also be widely used in energy saving, big data analysis and predictive maintenance applications.

4

Wireless Solution

Models		iWSN-100X-CLE	iWSN-101X-CLE
RF Interface			
Radio Frequency		433 MHz	
RF Channels		0 ~ 15 configured by DIP switch	
Transmission Distance		LoS 100 M	
Working Duty		1 / 10 / 30 / 60 sec., and 3 / 5 / 10 / 30 min. configured by DIP switch	
Temperature Measurement (Optional)			
Channels			1
Range		-	0 °C ~ +80 °C
Accuracy			± 2 °C
Power			
Split-Core CT	Channels	1	
	Input Voltage	50Hz or 60Hz, 500V (Max.)	
	Input Type	Φ16mm(100A); Φ24mm(200A); Φ36mm(400A): Only for charging	
Battery		Li-ion battery (Compliant with UL1642) charged by CT induced current	
DC Power Supply		1~3 Vdc , 1A	
Mechanism			
Dimension (L x W x H)		152 mm x 85 mm x 25 mm	152 mm x 94 mm x 21 mm
Installation		Wall or Magnetic mounting	
Others			
Operation Temperature		0°C ~ +45°C	
Expansion Interface		Y (Support iXN-0TH, iXN-0VOC, iXN1CO, iXN-2VIB1, iXN-2VIB3)	

Gas Monitoring Expansion Module

Features:

- Approach to the real wireless deployment with iWSN-100X-CLE
- iXN-0TH provides temperature, humidity measurement
- iXN-0VC provides CO₂e, TVOC measurement
- iXN-1CX provides CO measurement

The iXN-0TH can measure temperature and humidity, the iXN-0VC can measure CO₂e and TVOC, and the iXN-1CX can measure CO. Connected iWSN-100X-CLE/iWSN-101X-CLE by audio cable, user can approach to the real wireless deployment, and widely use in the application of saving power, big data analysis, and predict maintenance.



iXN-0TH/iXN-0VC



iXN-1CX

Models	iXN-0TH	iXN-0VC	iXN-1CX
Temperature Measurement			
Range	-20°C ~ +60°C		
Resolution	0.1°C	-	-
Accuracy	±0.3°C		
Humidity Measurement			
Range	10 ~ 95% RH		
Resolution	0.1% RH	-	-
Accuracy	±3% RH @ 20~80% RH		
IAQ Measurement			
Range		TVOC: 0 ~ 60000 ppb CO ₂ e: 400 ~ 60000 ppm	CO: 0 ~ 1000 ppm
Resolution	-	TVOC: 1 ppb (0 ~ 2008 ppb) 6 ppb (2008 ~ 11110 ppb) 32 ppb (11110 ~ 60000 ppb) CO ₂ e: 1 ppm (400 ~ 1479 ppm) 3 ppm (1479 ~ 5144 ppm) 9 ppm (5144 ~ 17597 ppm) 31 ppm (17597 ~ 60000 ppm)	CO: 1 ppm
Power			
Consumption	0.005W	0.16W	0.017W
Input Type	iWSN sensing module powered by audio cable		
Mechanism			
Dimension (L x W x H)	30mm x 25mm x 20.2mm		131mm x 91mm x 20.2mm
Installation	Wall or Magnetic mounting		
Cable Length	27 cm		22 cm
Environment			
Operation Temperature	-20°C ~ +60°C	0°C ~ +45°C	
Storage Temperature	-30 ~ +80°C		
Humidity	10 ~ 95% RH, non-condensing		

Vibration Sensing Module

The iXN vibration sensing module is suitable for measuring vibration data. The data can be provided to field personnel for reference through the controller of ICP DAS.

Features:

- Suitable for sampling low frequency rotating equipment.
- Wireless transmission, easy to build and maintain.
- Edge computing, low power consumption.



iXN-2VB1/2VB3

Vibration Measurement

- It is suitable for sampling equipment operating at low frequencies as an immediate failure warning.



4

Wireless Solution

Models	iXN-2VB1	iXN-2VB3
Sensing Parameter		
Type	1-Axis MEMS	3-Axis MEMS
Sampling Rate	10 kHz (Max.)	1.5 kHz (Max.)
Range	±8g	
Output Interface		
Type	Acceleration: RMS, Max. / Velocity: RMS	Acceleration: RMS, Max., triaxial vector
Mechanism		
Dimension (L x W x H)	51mm x 30mm x 15mm	
Installation	Wall or Magnetic mounting	
Others		
Operation Temperature	-25 ~ +75	

IR Temperature Sensing Module

The iXN IR Temperature Sensing Module uses non-contact temperature measurement and wireless transmission, enabling temperature measurement for objects that are dangerous and inaccessible.

Features:

- Wireless transmission, easy to build and maintain.
- Measurements can be performed without disturbing the normal operation.



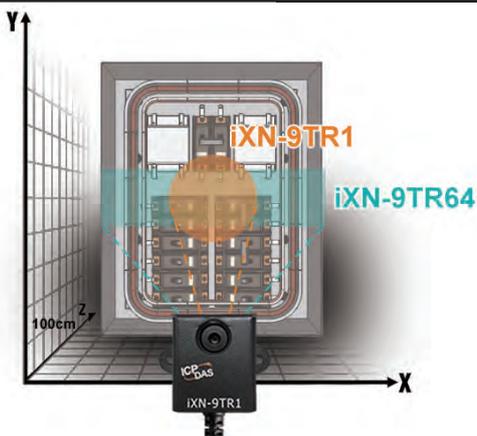
iXN-9RT1/9TR64



iXN-7TRS3

Models	iXN-9TR1 Single Point Infrared Sensor	iXN-9TR64 Infrared Array Sensors
Sensing Parameter		
Pixel	1	4x16
FOV	35°	120° x 25°
Range	0°C ~ 300°C	
Accuracy (Environmental Temp. 25°C)	0°C ~ 180°C : ±2°C 180°C ~ 240°C : ±3°C 240°C ~ 300°C : ±4°C	±1° C ±1.5%* To-Ta To: Temperature of the object Ta: Environmental Temperature
Mechanism		
Dimension (L x W x H)	51mm x 35mm x 20mm	
Installation	Wall or Magnetic mounting	
Others		
Operation Temperature	0°C ~ 125°C	0°C ~ 85°C

Models	iXN-7TRS3 I/O Extension Module
Sensing Parameter	
Channels	3
Interface	3.5mm audio cable
Consumption	Working Duty: 1 sec./21 A, 10 sec./13 A, 30 sec./12 A, 60 sec./12A
Input Type	iWSN sensing module powered by audio cable
Mechanism	
Dimension (L x W x H)	115 mm x 72 mm x 35 mm
Installation	DIN-Rail Mounting



Models	Sensing Range/ Object Distance 25 cm		FOV	
	X axis	Y axis	X axis	Y axis
iXN-9TR1	86.5 cm	16 cm	120°	25°
iXN-9TR64	71.5 cm	38 cm	110°	75°

Temperature Sensing Module

Features:

- 16 RF channels
- Built-in a disposable lithium battery
- Support 433MHz Radio Frequency
- Temperature measurement range:
0°C ~ +150°C / 0°C ~ +1300°C
- Supports 2 channels K-Type thermocouple temperature measurement
- Wall-mount, DIN-Rail or magnet adsorption



iWSN-3020-TC-BT-IP65
iWSN-3020-TCF-BT-IP65
iWSN-3020-TCF-DC-IP65

Temperature Monitoring of Conveyor Bearings

During the operation of belt conveyor, the bearing of the roller will generate heat due to friction. The greater the wear, the higher the temperature. To monitor the bearing temperature can not only evaluate service life and maintenance timing, but also avoid unplanned downtime. However, working sites are often dusty, with no power available or with difficult wiring. In response to problems above, iWSN-3020 series, which features IP65 outer case, built-in batteries and wireless communication mechanism, can function adequately in application under harsh environments and monitor the conveyor belt constantly.



4

Wireless Solution

Models		iWSN-3020-TC-BT-IP65	iWSN-3020-TCF-BT-IP65	iWSN-3020-TCF-DC-IP65
RF Interface				
Radio Frequency/Channels		433 MHz / 0~15 configured by DIP switch		
Transmission Distance		LoS 100 M		
Working Duty		1 / 10 / 30 / 60 sec. configured by DIP switch		
Sensing Parameter				
Thermocouple Temperature	Channels/Type	2 (Differential) / K-Type		
	Range/Accuracy	0°C ~ 150°C / ±2°C	0°C ~ +1300°C / ±1°C	
Power				
Power Supply		One-shot battery (CR123A, 3.0V, 1700mAh) x 2	+10 ~ +30 VDC	
Others				
Dimension (L x W x H)		160 mm x 89 mm x 72 mm		
Ingress Protection/Installation		IP65 / Wall, DIN-Rail or Magnetic mount		
Operation Temperature		0 °C ~ +60 °C	-25°C ~ +75°C	

Liquid Leak Detection Module

Features:

- Support 3-ch leakage detection, adjustable detection sensitivity
- Extension cables and detection cables up to 500 meters
- AC power supply, no need for external power transformer
- Built-in leakage buzzer alarm and relay output
- Support mute contact to mute the buzzer alarm



iWSN-930R-LK-AC-IP33

Leakage monitoring of pipelines

iWSN-930R-LK-AC-IP33 will periodically report the detection status to the iWSN-200 series module through the wireless interface. The HMI software of the central monitoring center can read back this status by iWSN-2200 series module through Modbus TCP/RTU protocol. When the module detects a liquid leakage, the buzzer alarm will be triggered to notify the personnel on-site to react to the emergency in time, and will automatically send the leakage event to iWSN-2200 series module so that the central monitoring center can read this status and then notify the relevant personnel. This series of modules can not only effectively meet the needs of water saving, but also quickly detect liquid leakage onsite, protecting the personnel from falling due to wet floor and avoiding short circuit damage to electrical equipment caused by liquid leakage.



Models		iWSN-930R-LK-AC-IP33
RF Interface		
Radio Frequency/Channels		433 MHz / 0 ~ 15 configured by DIP switch
Transmission Distance		LoS 100 M
Working Duty		1 / 10 / 30 / 60 sec. configured by DIP switch
Sensing Parameter		
Analog Input	Channels	3
	Cable Length	500 公尺 (Including extension/leakage detection cable)
	Contact	1 (Built-in buzzer)
Relay Output	Channels	1
	Specification	0.5 A @ 125 VAC ; 2 A @ 30 VDC
Mechanism		
Dimension (L x W x H)		185 mm x 85mm x 45mm
Installation		Wall-mounting
Others		
Power		50/60 Hz 100 ~ 240 VAC
Operation Temperature		-20°C ~ +50°C

Emergency Call System

Overview:

The emergency call system can be applied to enterprises, hospitals, schools, and to build effective protection and emergency call systems in public spaces such as blind spot area, bathrooms, and production lines. It provides reliable, fast and effective alarm return, avoiding regrets caused by processing delays. Once an emergency call is triggered, the system can immediately locate the sending location for the fastest and most accurate treatment.



One-click Instant Help
Simultaneous Alarm & Monitoring



Accurate Positioning
Save Time by Locating Alarm Locations



Multiple Power Supplies
Use Primary Battery or Dye-sensitized Solar Cell

4

Application Architecture

In a factory or a public space, whether in a restroom, a parking lot, etc., an emergency situation may occur and call for help. When an emergency situation occurs, the parties or security personnel only need to press the emergency call button, and the module will immediately send an emergency call to the control center in a high-frequency state. The emergency call system is also combined with instant messaging, which can send alarm messages to the mobile phones of relevant management personnel, so as to call for help at the first time and increase the chance of successful rescue.



Wireless Solution

Emergency Call Button Module



iSOS-100

Indoor
Emergency Call Button



iSOS-300-IP65

IP65
Emergency Call Button



iSOS-800-PT

Handheld
Emergency Call Button

Features:

- Powered by built-in disposable lithium batteries
- Support 433MHz Radio Frequency
- Selectable 16 Radio Frequency Channels
- Ensure system stability by Handshaking

Models	iSOS-100	iSOS-300-IP65	iSOS-800-PT
RF Interface			
Radio Frequency	433 MHz		
Channels	0 ~ 15 configured by DIP switch		
Transmission Distance	LoS 50 M		
Working Duty	1/10/30/60 sec., 3/5/10/30 min. configured by DIP switch; Emergency Trigger: 1 sec.		
Other			
Dimension (L x W x H)	138mm x 92mm x 52mm	146mm x 85mm x 95mm	70mm x 43mm x 21mm
Ingress Protection/Installation	- / Wall mounting	IP65 / Wall mounting	- / lobster clasp
Battery	CR123A (3.0 V) x 1; Battery Life: 2 years (Working Duty: 1 min.)		
Operation Temperature	-25 °C ~ +60 °C		



iSOS-109

Indoor Rechargeable
Emergency Call Button



SP-S2-DS

Dye-sensitized
Solar Cell

Features:

- Built-in rechargeable lithium battery for power supply
- Battery charging with dye-sensitive solar powered modules

Models	iSOS-109
RF Interface	
Radio Frequency	433 MHz
Channels	0 ~ 15 configured by DIP switch
Transmission Distance	LoS 50 M
Working Duty	1/10/30/60 sec., 3/5/10/30 min. configured by DIP switch
Emergency Trigger Duty	1 sec.
Other	
Dimension of Emergency Call Button	138mm x 92mm x 52mm (L x W x H)
Dimension of Dye-sensitized Solar Cell	133mm x 85mm x 84 mm (L x W x H)
Ingress Protection/Installation	- /Wall mounting
Battery	Rechargeable lithium battery 3.3V, 1100mAh x 1 (With overdischarge, overcharge and short-circuit protection)
Dye-sensitized Solar Cell	SP-S2-DS
Dye-sensitized Solar Cell Specification	Output Power: 1.96mW; Voc: 0.65V; Isc: 4.10mA
Operation Temperature	-25 °C ~ +60 °C



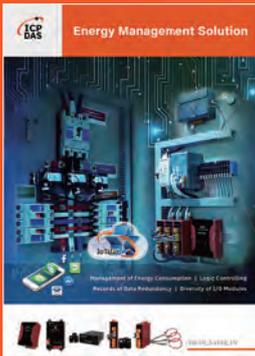
IloT 1 Software . Controller / Server

- Cloud Management Software: IoTStar
- SCADA System Software: AVEVA Edge
- Condition Monitoring Solution: ExoWISE
- Edge Controller WISE Series:
- Communication Server: UA Series
- MQTT Communication Server: BRK Series



IloT 2 Access Control Security / Factory Automation

- WISE Surveillance Solution
- IP Camera iCAM Series
- Smart Access Control
- IloT and Smart Phone Integration
- MQTT I/O Module MQ Series
- Stack Light Monitoring Module
- Emergency Voice/Visual Alert Module
- Industrial LED Message Display
- Bluetooth LE Gauge Master
- Temperature Data Logger
- Signal Conditioning Modules
- No-touch Infrared Sensor Switch



Energy Management Solution

- InduSoft SCADA Software
- Smart Power Meter Concentrator
- Smart Power Meter
- True RMS Input Module
- TouchPAD Devices - VPD Series



Industrial Fieldbus Product

- RS-485
- Industrial Ethernet
- Profinet
- CAN bus
- CANopen
- Devicenet
- J1939
- PROFIBUS
- HART
- Ethernet/IP
- BACnet



ZigBee Wireless Product Solutions

- ZigBee Wireless Network Applications
- ZigBee Converters
- ZigBee Repeater
- ZigBee Bridge
- ZigBee I/O Group Module
- ZigBee I/O Module
- ZigBee Modbus Data Concentrator
- Accessories



UA Series / BRK Series: IloT Cloud Solution

- IloT Cloud Solution Products
- IloT Communication Server: UA-2000 /5000/7000 Series
- Support Logic Control IFTTT
- MQTT Communication Server: BRK-2000 Series
- OPC UA I/O Module: U-7000 Series



WISE - Intelligent IloT Edge Controller & I/O Module

- WISE IloT Edge Controller & I/O Module
- Cloud Management
- Applications
- Product Specification
- Solution Integration



Smart Building, Smart Home Automation

- Video Intercom & Access Control
- Touch HMI - TouchPAD Series
- Smart Lighting Control
- Energy Saving - PM/PMC Series
- Environmental - DL/CL Series
- Motion Detector - PIR Series
- Wi-Fi Wireless - WF Series
- Infrared Wireless - IR Series
- ZigBee Wireless - ZT Series
- IloT Server & Concentrator
- LED Display - iKAN Series

