ICP DAS

# IIoT -2-

# Access Control Security
# Factory Automation




Vol. IIoT2_4.23.10_EN

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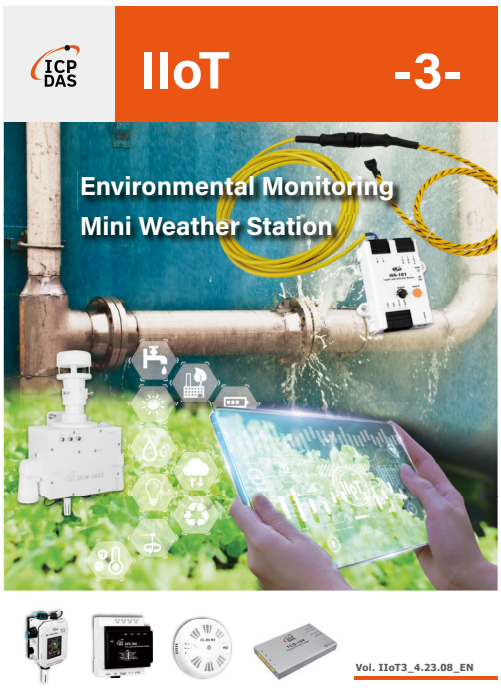


# IIoT2 Overview

IIoT is the new trend which extends the concept of the IoT to industrial settings and other industrial sectors. IIoT enables the collection, analysis, and exchange of data between devices and systems in industrial environments. To meet the requirements of IIoT, ICP DAS offers edge computing products, I/O sensors, communication modules to work together to create a network that can monitor, control and optimize a industrial operation.

## 1 Security Identification and Monitoring System: WISE/iCAM/MQ Series

The WISE (Edge Controller) series with iCAM (IP Camera) series to implement new surveillance solution. It can also be used with MQ (MQTT I/O module) series.

## 2 SL/tSL Series

The stack light monitoring module which support Modbus RTU, Modbus TCP and MQTT protocol.

## 3 ALM Series

The ALM series module with WISE series can make logic control alarms.

## 4 iKAN Series

The industrial LED message display which support Modbus protocol.(Multiple languages and seven colors are optional)


## 5 GAM Series

The bluetooth LE mitutoyo gauge data collector which support bluetooth protocol.


## 6 TCD Series

The temperature data loggers with K-type thermocouple sensors.

## 7 SG-3000 Series

The signal conditioning modules are used to accept wide range of input signals and provide 0 ~ 10 VDC, 0 ~ 20 mA, 4 ~ 20 mA output signals.

## 8 ACS Series

The No-touch infrared sensor switch provides multiple operating modes.

# Chapter 1. Security Identification and Monitoring System

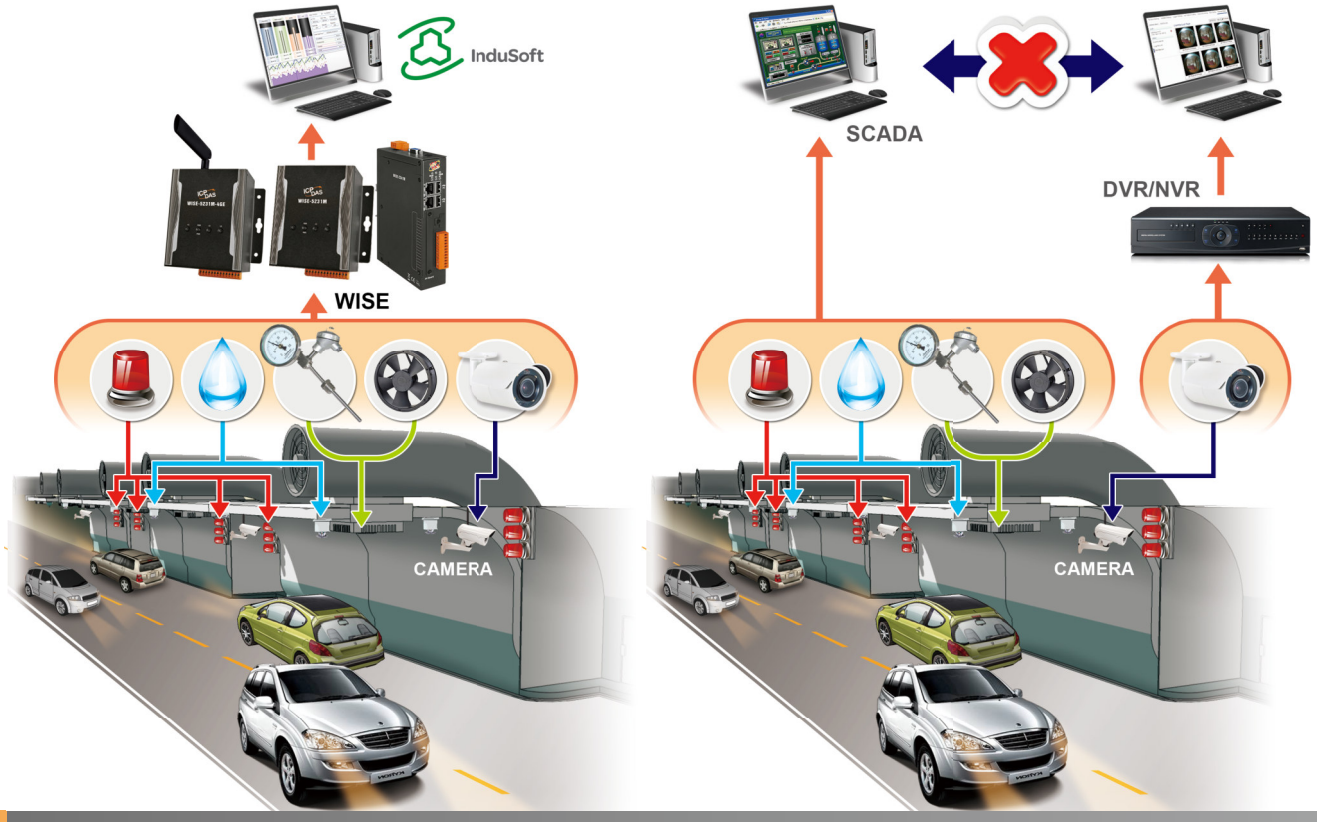
## 1-1 WISE Surveillance Solution

### WISE IIoT Edge Controller + iCAM IP Camera

A general surveillance system on current market usually features separated systems: the camera DVR/NVR as a system, and the I/O monitoring as another system; each system operates independently. For now the DVR/NVR system of the camera usually records video for 24H/7Day without interruption, it requires huge storage space and sufficient network bandwidth; therefore the system implementation fee is usually high. In addition, when playback a certain video, it does not allow to search the suspicious activities of related I/O (temperature, doors and windows switch, water level, etc.) at the same time.

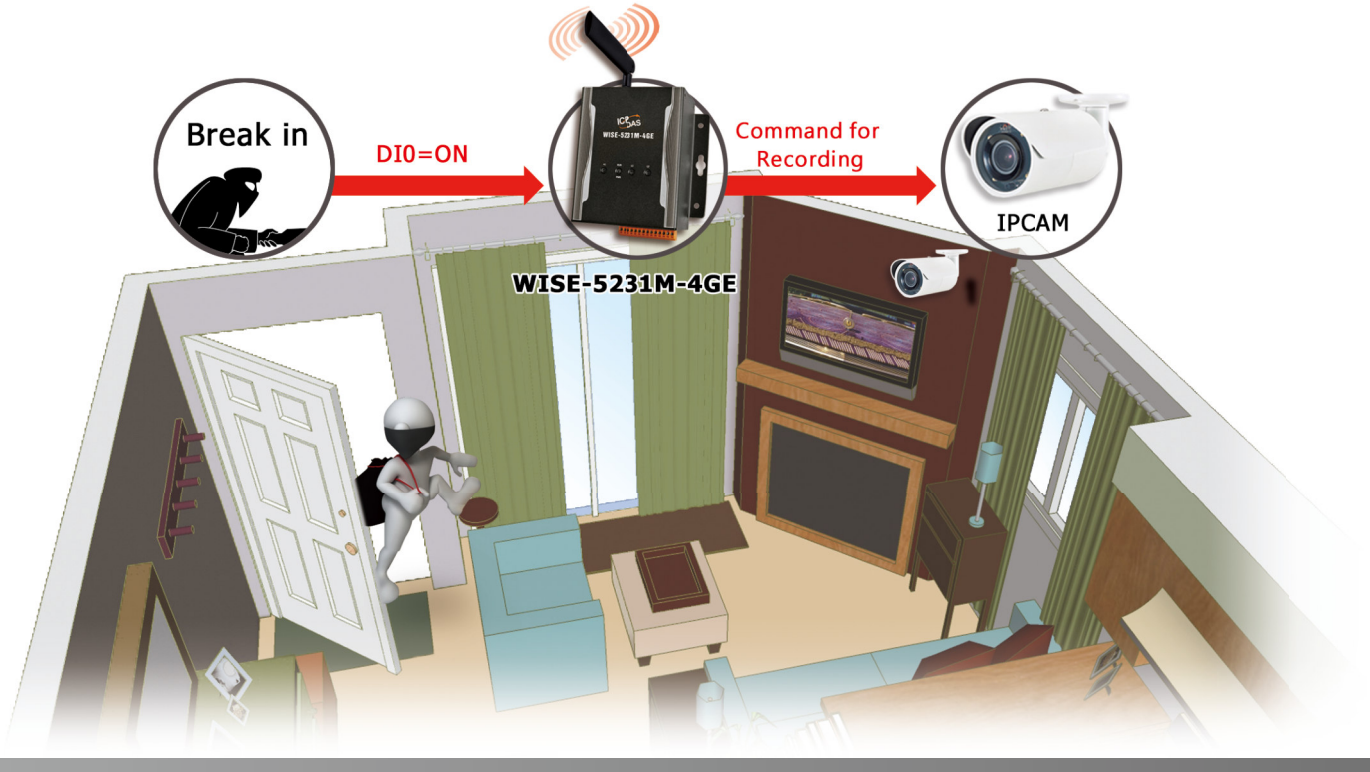
ICP DAS WISE surveillance solution integrates logic control, I/O, camera and data log in one single WISE controller. WISE allows two-way interactions between the I/O and the camera; it enables to record a piece of video or to take images when there is an event triggered by either I/O condition or ROI (Region of Interest) by camera. In this way, the storage size can be reduced significantly and the connection between I/O event and Video/Image can be built for easy query.

| ICP DAS WISE Surveillance Solution | Regular Surveillance Solution |
|---|---|
| 1. One WISE controller to integrate camera and I/O | 1. Two independent systems: SCADA & DVR/NVR |
| 2. Records key video and image, only needs a few storage memory. | 2. Record video 24H/7Days, needs huge storage memory. |
| 3. Two-way interaction between I/O and Video/Image | 3. I/O and Video/Image are independent |
| 4. Can work stand along or be integrated into a SCADA system | 4. Needs a host PC to run the SCADA |
| 5. One stop shopping/service for<br>● Controller: WISE Series<br>● I/O Modules: Various options for RS-485, Ethernet interfaces<br>● Camera: Bullet, Fisheye, Dual Lens<br>● SCADA: InduSoft | 5. Buy from different venders for SCADA, I/O Modules, DVR/NVR |



## Perform Interlocking Operations of I/O & Video Recording by IP Camera

WISE-523x/WISE-2x4xM supports ICP DAS iCAM IP Camera series. Users can trigger the connected IP camera to perform snapshot or video recording with IF-THEN-ELSE logic rules. WISE-523x/WISE-2x4xM provides the IP Camera Status webpage to display the event list ordered by time, and you can just click and play the images or videos on the browser. In additional, WISE-523x/WISE-2x4xM provides remote backup mechanism to upload images and videos to the remote FTP server automatically.

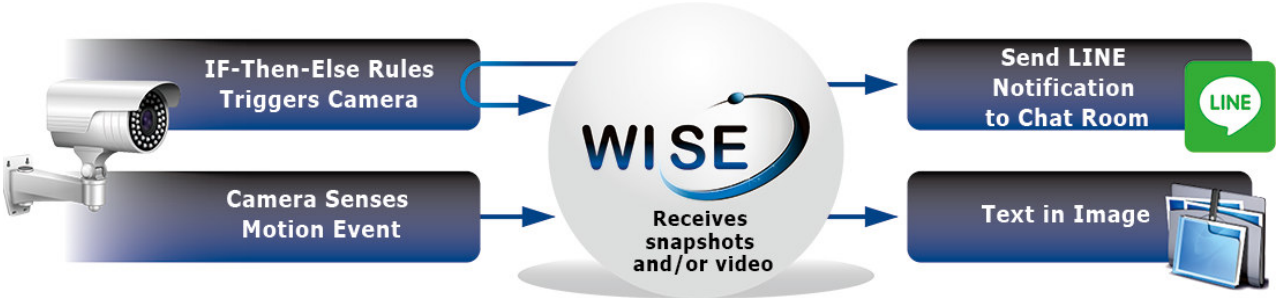



## OSD (On Screen Display)

WISE-523x/2x4xM can connect with iCAM series IP cameras. There are two methods to get images and videos:

(1) If-Then-Else rule sends commands to trigger camera to take snapshots and/or a video.

(2) Camera takes snapshots and/or a video when senses motion event. And then sends the snapshots and/or video to the WISE controller.




iCAM-ZMR8422X

iCAM-MR6422X

iCAM-MR6322

| | |
|---|---|
| Camera Name on OSD | Yes |
| Time Stamp on OSD | Yes |
| Text Message on OSD | Yes, user defined (Chinese and English fonts) |
| No. of LINE Notification | 2 |

## OSD with camera name, time stamp and user's defined text message.

WISE controller has to sends **2** LINE notifies to delivery completed information.

DI#0 triggers camera
From WISE#1
**<IF>**
XV-Board XV310 DI0=Status Change
**<THEN>**
iCAM-MR6322(192.168.255.2:80) Snapshot Capture(One Time)
**<ELSE>**
No action

☐ If-Then-Else rule

▼ LINE APP chat room

# 1-2 IP Camera : iCAM Series

## Auto Focus IR IP Bullet Camera

### iCAM-ZMR8422X

**Bullet Type, Auto focus with zoom**

2MP | 1080P Full HD | IP67 | ONVIF | PoE 802.3af

### Features

- Full HD 2.0 megapixel CMOS image sensor
- 1080P True H.264 AVC High Profile video compression
- H.264 and Motion JPEG multi-profile video streaming
- Auto focus with zoom / focus motorized lens
- 3D noise reduction (MCTF), 2D WDR function
- HDR function up to 100dB
- Digital PTZ and ROI (Region of Interest) supported
- Day and Night IR-cut removable LED, radiant distance up to 30m
- Built-in 4GB MicroSD Card
- ONVIF Profile S supported
- IP67-rated Housing

**iCAM-ZMR8422X** is a day and night 2MP auto-focused vandal resistant bullet IR IP camera. It features a full HD 2.0 megapixel CMOS image sensor. The camera has built-in IR-cut filter which allows clearer images at day and night operations even in the low lux condition. The high efficiency IR LED radiant distance can extend up to 30 meters. Its auto-focus feature allows users to automatically focus the camera from a distant location. With motorized lens, all you need to do with zoom/focus adjustments is simply a click on browsers.

## IR IP Dome Camera

### iCAM-MR6422X iCAM-MR6322

**Dome Type / Vari-Focal** **Dome Type / Fixed**

2MP | 1080P Full HD | IP67 | ONVIF | PoE 802.3af

### Features

- Full HD 2 megapixel CMOS image sensor
- 1080P High Profile video compression
- H.264/MJPEG multi-profile video streaming
- HDR function up to 100dB
- IR cut filter for day/night operations, radiant distance up to 30m
- Built-in 4GB MicroSD Memory Card
- ONVIF Profile S supported
- IP67-rated Housing
- Lens: iCAM-MR6322 4mm
  iCAM-MR6422X 2.8 – 12mm
- Aperture: iCAM-MR6322 F1.4
  iCAM-MR6422X F2.0
- IR Angle: iCAM-MR6322 60°
  iCAM-MR6422X 60°/ 90°

**iCAM-MR6422X** / **iCAM-MR6322** are the IR Dome IP Camera which have built-in Sense up+ technology to deliver stunning video in low-light conditions. It features 1080p at 30 frames per second and intelligent video surveillance (IVS) functions. Utilizing intelligent image signal processing, HDR, AGC control, and 3D Noise Reduction, the combination successfully delivers the ultimate low-light image without motion blur. Support PoE, privacy masking, white balance, as well as the minimum illumination 0.117 Lux at F1.4 for iCAM-MR6422X, and 0.13 Lux at F2.0 for iCAM-MR6322.

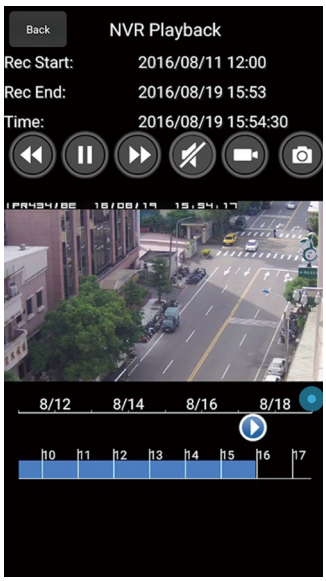
# Selection Guide:

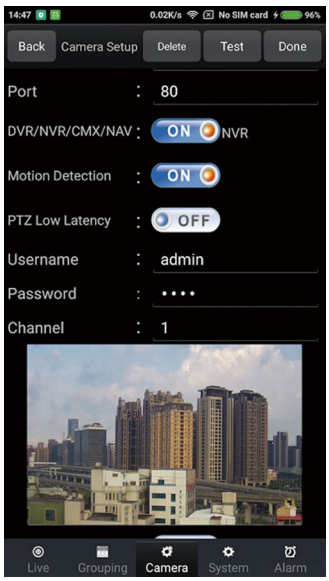


| Model | iCAM-ZMR8422X | iCAM-MR6422X | iCAM-MR6322 |
|---|---|---|---|
| **Lens/Night vision (infrared LED)** | | | |
| Focal Length | Vari-Focal: 2.8 to 8 mm | Vari-Focal: 2.8 – 8 mm | Fixed-Focal: 4 mm |
| Aperture | F1.6, Bullet | F1.4, Dome | F2.0, Dome |
| Angle of View | Horizontal: 102.3°W–51.6°T<br>Vertical: 51.3°W–24.9° T<br>Diagonal: 128.2°W–57.3°T | Horizontal: 102°W–34°T<br>Vertical: 54°W–20° T<br>Diagonal: 122°W–39°T | Horizontal: 90°<br>Vertical: 45°<br>Diagonal: 107° |
| Beam Spread | 60° | 60° , 90° | 60° |
| Radiant Distance | 30 M | | |
| Infrared Cut Filter | Auto/Day(Color)/Night (Mono)/Schedule | | |
| Image Sensor | 1/2.7" CMOS image sensor | | |
| **Video Streaming** | | | |
| Protocol/<br>Video Compression/<br>Number of streams | RTSP, RTCP, ONVIF Profile S,<br>H2.64 & MJPEG,<br>4 configurable streams, configurable frame rate and bandwidth, multi-profile video streaming | | |
| OSD<br>(On Screen Display) | Text overlay for date, time, camera name and user defined text | | |
| **General** | | | |
| IP Rating | IP67 | | |
| Certifications | CE, FCC(EMI CLASS B) | | |
| Encryption | Base64 HTTP encryption, HTTPS encryption | | |
| Dimension(mm) | 68(W) × 69(H) × 214(D) mm | Ø 120 × 106(H) mm | Ø110 × 89(H) mm |

## Android and iOS Mobile APP: IPCamPlus

**iCAM-ZMR8422X/iCAM-MR6422X / iCAM-MR6322** provide smart phone APP for Android and iOS platform. Apps allow you to catch the firsthand notifications and to take over all event situations in realtime. Furthermore, using the App can also allow you to reward the recorded video remotely. While the alarm is triggerred, App will send a notifi cation message to the user immediately.



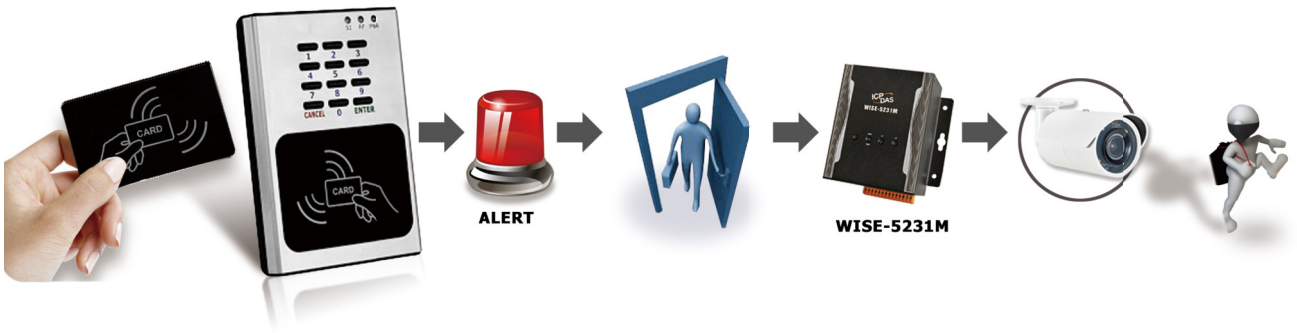


# 1-3 Smart Access Control

## WISE IIoT Edge Controller
## + Access Control Reader + Camera + Alarm

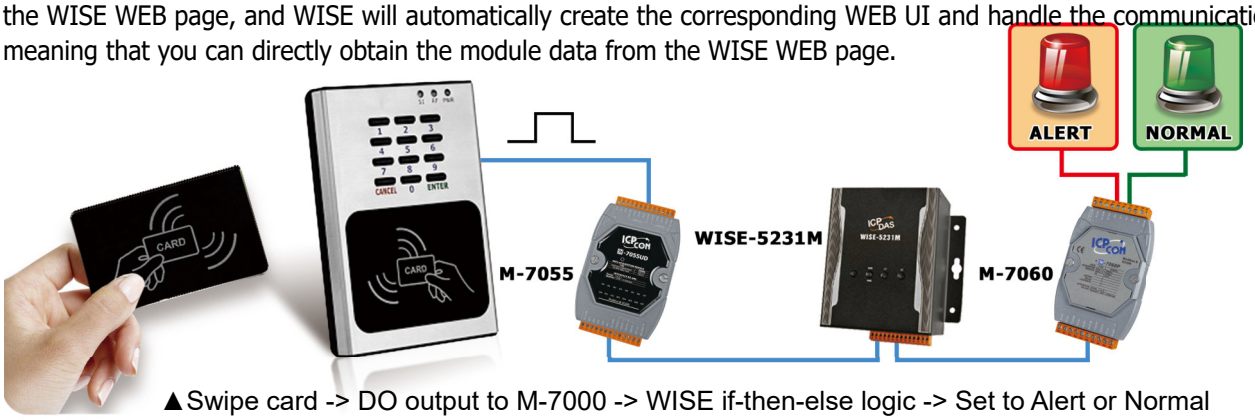

ICP DAS Smart Access Control System can solve problems of traditional systems. In traditional systems, the controllers need to be developed by professional software engineers, and the control projects need to collect all statuses of the sensors and handle the communication of the I/O modules. When expanding the system in the future, it needs a lot of human power and time to modify the projects, which costs more and gets poor benefits. Moreover, the integration is not easy due to the sensors and image monitoring are mostly separated.

The WISE-523x/WISE-2x4xM IIoT Edge controller in the ICP DAS Access Control System support I-7000/M-7000 I/O modules in default and no programming is required to implement logic content to display the sensor status of the I/O modules on the webpage. The WISE  has built-in IF-THEN-ELSE Logic Rule Engine, which can be easily selected on the webpage to complete the access control system. More importantly, the WISE also supports two-way CGI command communication mechanism, which can easily integrate IP camera images.



## Using ACS series card reader to connect M-7000 I/O to achieve multi-group alarm loops

1. Multi-condition door access: Supports 3 conditions for door opening card only, password only, or card + password. It can be configured using an access control application or attendance application.
2. Provides the PC software for authorization and password management, and supports updating card recorder information to a remote database via an Ethernet connection.
3. Supports electric door lock control and allows you to connect this via an M-7000 I/O module to detect trigger conditions for the WISE if-then-else logic control.
4. WISE supports most M-7000 I/O modules, so you can select a module from the supported list that can be found on the WISE WEB page, and WISE will automatically create the corresponding WEB UI and handle the communication, meaning that you can directly obtain the module data from the WISE WEB page.

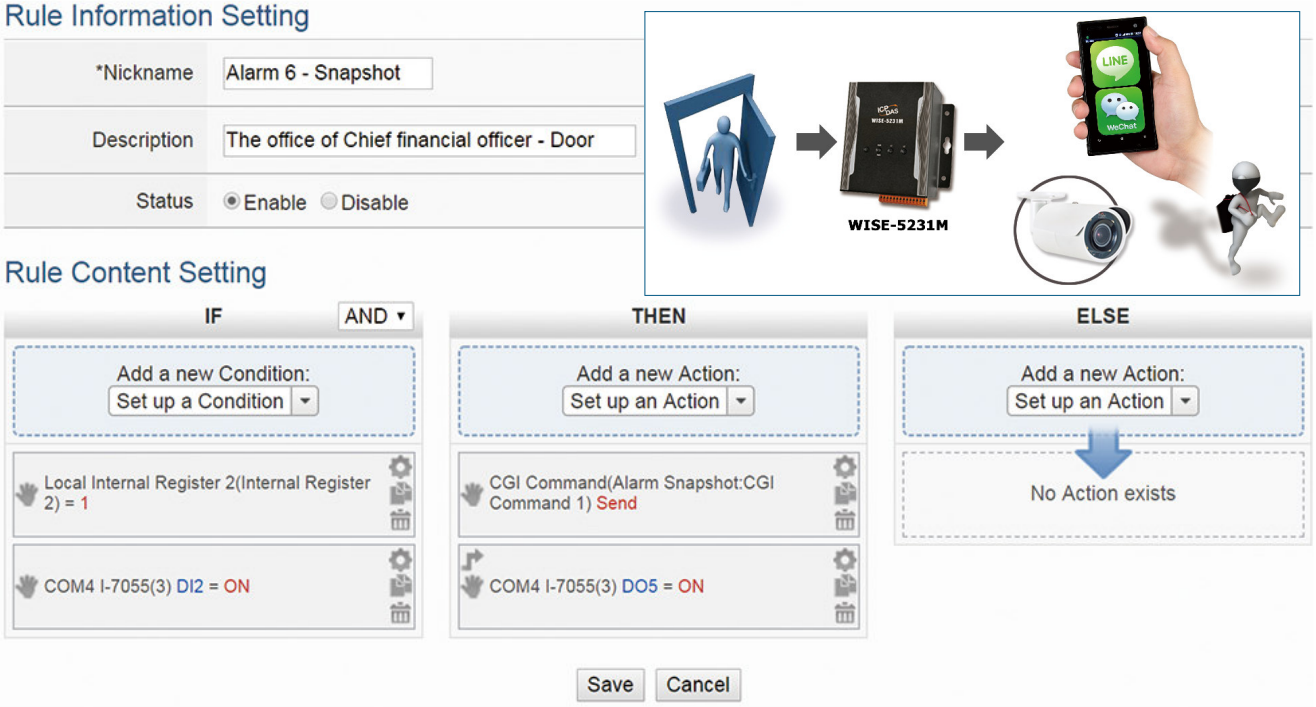



▲Swipe card -> DO output to M-7000 -> WISE if-then-else logic -> Set to Alert or Normal


◄ The M-7041 module transmits the data from door/window sensors and infrared motion detectors to the WISE-523x.

## WISE provides logic control to achieve the access control, camera capture and the alert notify of the mobile phone

1. The WISE logic control function can set the status of I/O module as a logical control condition: Using the WISE logic control function can implement the access control function easily by clicking on the webpage without any additional programming.
2. WISE uses CGI commands to let iCAM capture images with the simple and fast setting.



# 1-4 IIoT and Smart Phone Integration Solution

## WISE + Sensor +

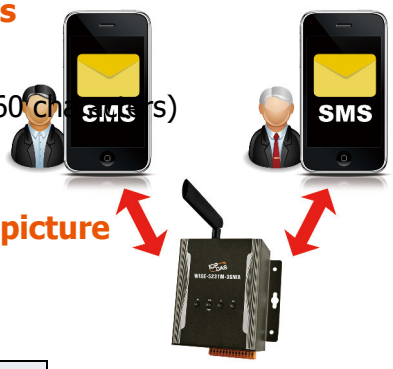
The **WISE-523x/WISE-2x4xM** series is the **IIoT Edge Controller** designed by ICP DAS for industrial IoT application. In addition to the simple, easy-to-use, flexible and full-featured features of the past, the new features of Instant Messaging (IM) technology with Mobile phone were also released. The I/O data and pictures taken by the WISE/Camera can be instantly pushed to the LINE/WeChat contacts and chat rooms on the smart phone.

Please note: WISE-284xM also supports Telegram.


# WISE message notification to smart phone

## SMS : Sends alert messages and receives commands

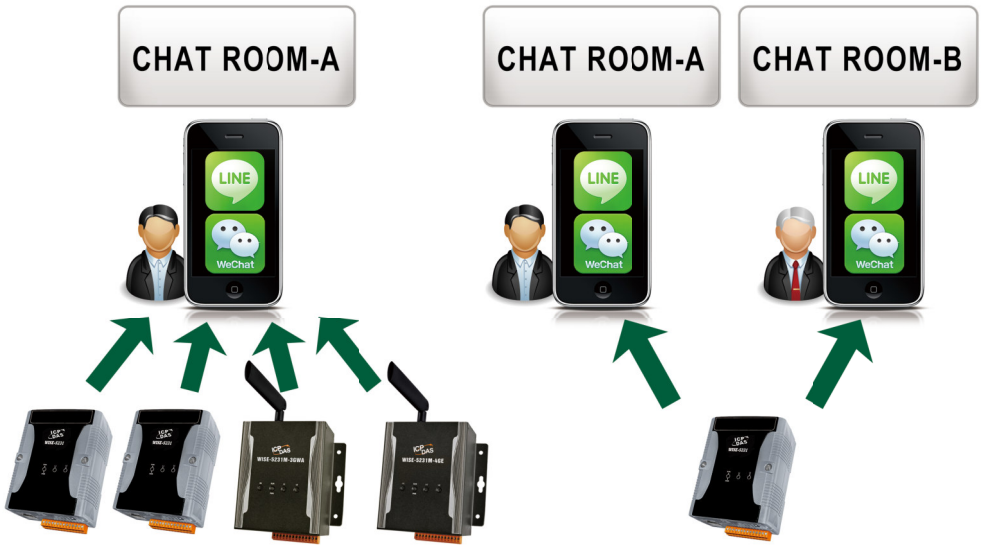
- The same SMS can be sent to multiple phone numbers
- The same SMS can include multiple variable values (SMS < 160 characters)
- Phone number must be authorized to send SMS commands



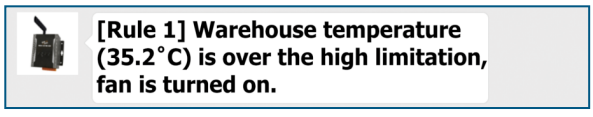

## LINE/WeChat/Telegram: Sends alert messages and picture

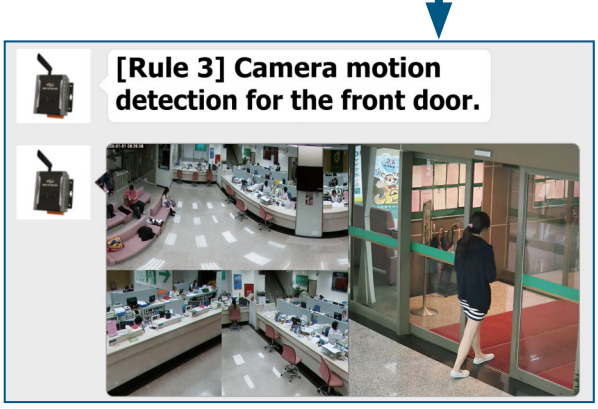
- **Object: Contact, Chat Room**
- **Content:**

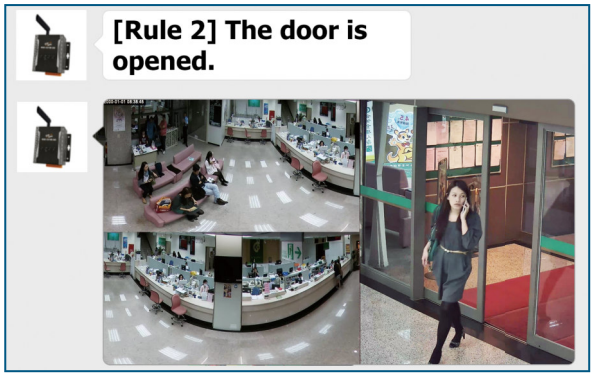
| | LINE | WeChat | Telegram |
|---|---|---|---|
| **Text** | 1000 / **hour** | 6000 / day, **Expandable** | **20 / Minute** |
| **Picture** | 50 / **hour** | | |
| **Video** | N/A | | |




- **When:**
  - **Triggered by WISE If-Then-Else rules**
  - **Triggered by camera motion detection**




**☑ WeChat Function Using Note**

An Enterprise WeChat account in China is required for WISE to send the messages to the members under the enterprise WeChat account.

# 1-5 MQTT I/O Module: MQ Series

MQ-7200M is an I/O module designed for Internet of Things. It supports MQTT V3.1 client. Through the MQTT broker (can be installed on private cloud or public cloud), it can flexibly exchange data between I/O modules and other MQTT clients.

Compared to request/response type of Ethernet I/O modules, MQTT I/O modules bring two obvious benefits:

**1. Reduce the Ethernet communication packets**

The behavior of most request/response type of Ethernet I/O modules is: the master polls every modules periodically no matter the data is changed or not. MQTT I/O modules can be configured to publish data to the broker periodically or an event happens. Thus the Ethernet communication packets can be obviously reduced.

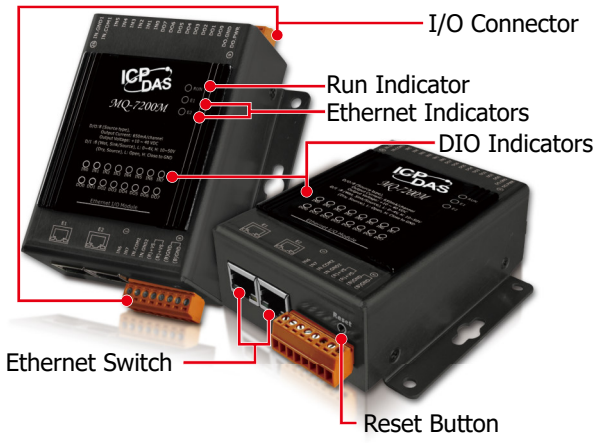
**2. Simplify the network configuration**

MQTT I/O modules can be configured as dynamic IP address. Only the MQTT broker needs a domain name or a static IP address. Thus the networking configuration for each MQTT I/O module can be the same. Thus the configuring work becomes simplified.

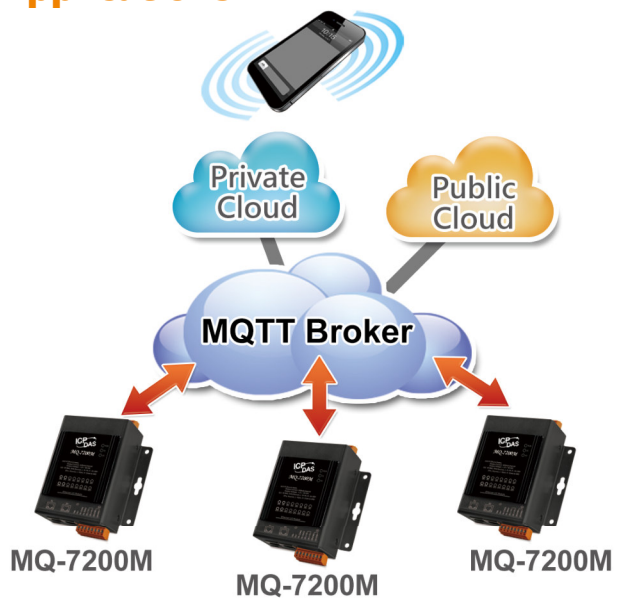
## Features:

- Support MQTT V3.1 Client Point
- Built-in Web Server for Configuration
- 2-port Ethernet Switch (LAN Bypass) for Daisy-Chain Wiring
- Build-in LED indicators

## Appearance:




## Applications:




## Selection Guide:

| Module Name | DI | | | DO | | | |
|---|---|---|---|---|---|---|---|
| | Channel | Type | Sink/Source | Channel | Type | Sink/Source | Max. Load |
| **MQ-7244M** | 8 | Wet | Sink/Source | 8 | Open Collector | Sink | 650 mA/Channel |
| **MQ-7251M** | 16 | Wet | Sink/Source | - | - | - | - |
| **MQ-7252M** | 8 | Wet | Sink/Source | 8 | Open Collector | Source | 650 mA/Channel |
| **MQ-7253M** | 16 | Dry | Source | - | - | - | - |
| **MQ-7255M** | 8 | Dry, Wet | Sink/Source | 8 | Open Collector | Source | 650 mA/Channel |
| **MQ-7260AM** | 6 | Dry, Wet | Sink/Source | 6 | Power Relay | Form A | 5A |

# Chapter 2. Factory Automation

## 2-1 Stack Light Monitoring Module: SL/tSL Series

**ICP DAS's Stack Light Monitoring**

**Modules Light Up Smart Factories**


**tSL-PA4R1**

RS-485/Ethernet

**SL-P6R1-WF**

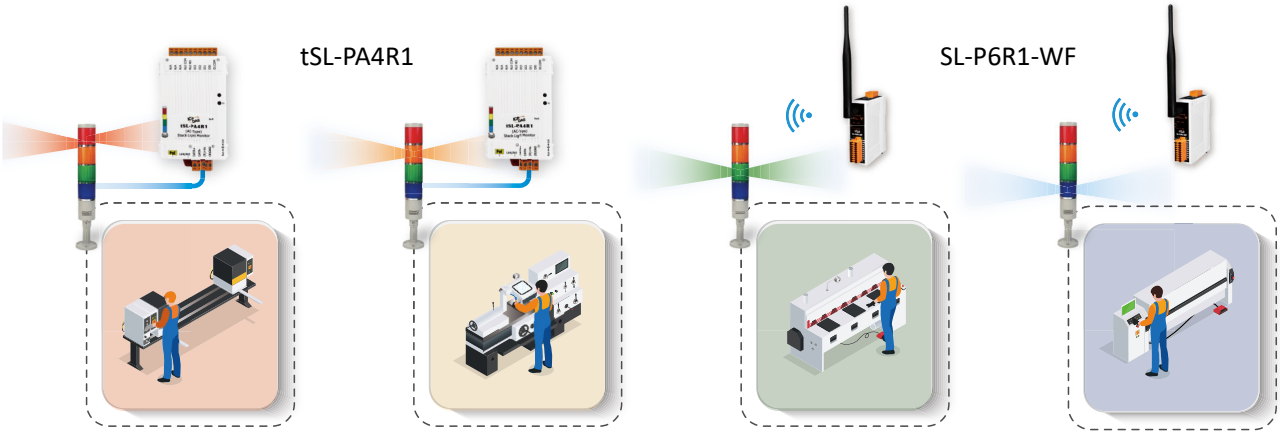
Wi-Fi / RS-485 / Ethernet

### The best helper for the Andon system

- Stack lights status monitoring
- Easy device expansion
- Support wired/ wireless communication
- Support Modbus RTU/TCP, MQTT communication protocols
- Status monitoring for up to 81 user-defined color segment combinations
- Report the duration of the previous status for MES & ERP to calculate the availability

# Product introduction

The normal operation of the machine is related to the availability and production cost of the machine. However, there is a severe shortage of labor, which, in turn, increases the cost of labor. Fortunately, with the help of ICP DAS's stack light monitoring modules, users can monitor the status of machine lights, and if an abnormal situation occurs, an alarm will be immediately triggered. Thus, it is possible to reduce labor costs for monitoring machines and their idle time. ICP DAS's stack light monitoring modules are divided into two series: tiny tSL series with 4-channels and wireless SL series with 6-channels respectively. The modules contain 4 or 6-channels of DC/AC digital input and 1-channel of relay output. They can communicate via RS-485, Ethernet, or Wi-Fi, monitor the machine status without affecting its operation, and check the operational status of field equipment in real-time; all this ultimately allows users to build a smart factory.



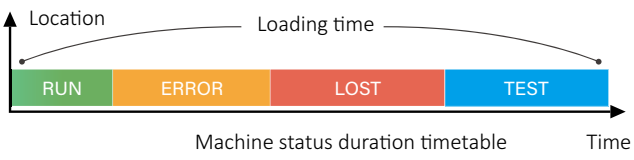

## Customizable color signals

Users can set the values of various color signals, such as operating, idle, processing, and processing error, and then convert the signal combinations into a status value. ICP DAS' modules can directly read the results according to the status value, without the need to read each signal one by one, and issue an alarm when equipment error is detected, informing the on-site personnel to solve the problem immediately.

## Providing accurate data for MES and ERP to calculate the availability

The stack light monitoring modules provide information about the duration of the previous light status. By status duration, users can control the amount of time that the machine spends in operating, troubleshooting, and processing. Then, MES and ERP can be combined for availability calculation and problem analysis.

- Availability = Operating time/ Loading time x 100%




## Detection of the flashing status

ICP DAS's stack light monitoring modules have the edge computing function that can determine the on/off status of the stack lights as well as the flashing status.

## Low network load

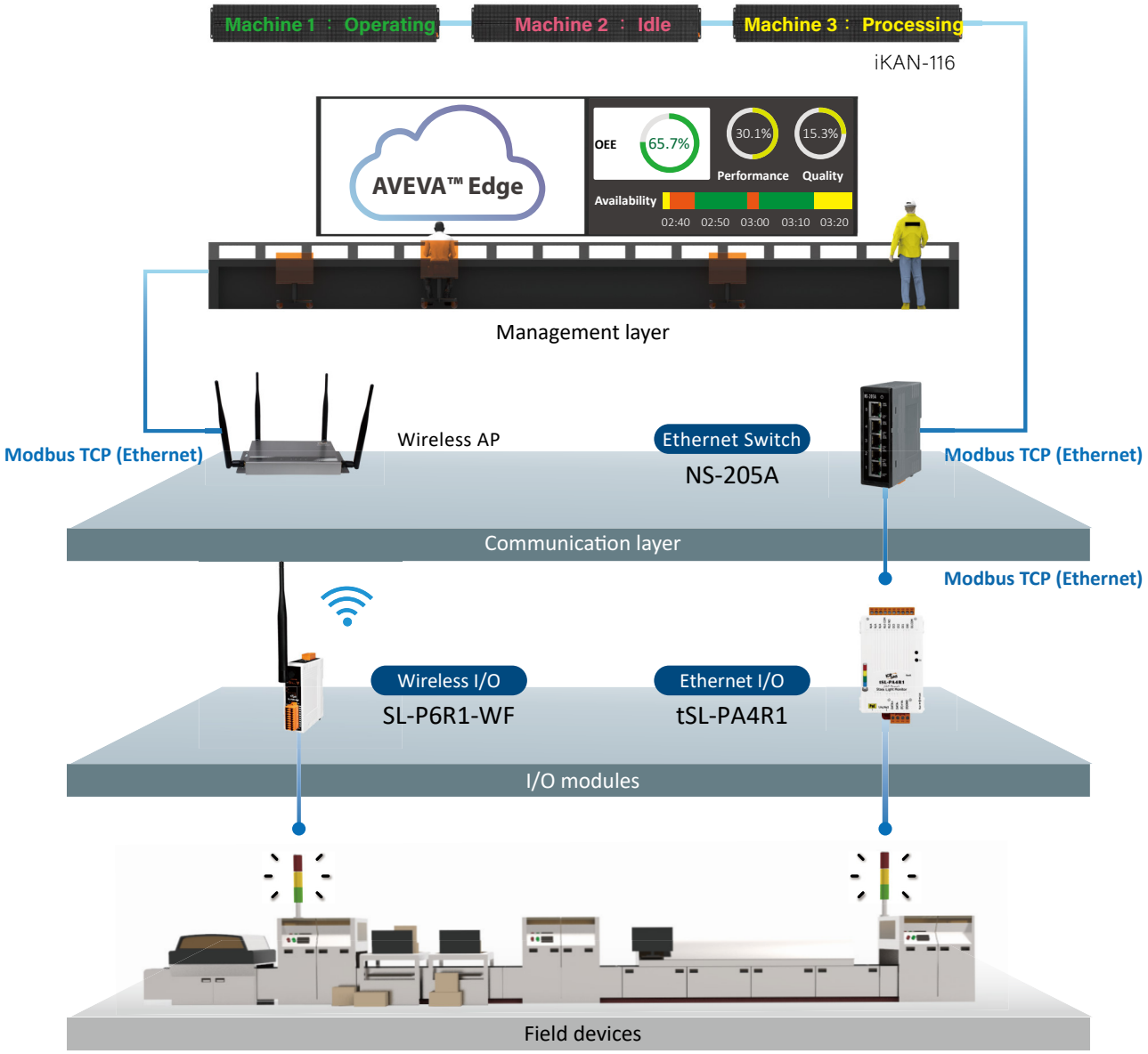
In addition to supporting the standard Modbus communication protocol, the ICP DAS's stack light monitoring modules also support the MQTT communication protocol. In the past, it was required to poll light status regularly. But now, with the help of ICP DAS's modules, when the light status changes, information about this will be immediately sent back to the control center, which has helped to significantly reduce the load on the network.

## Web-based configuration interface

The tiny tSL series products and wireless SL series products have a built-in web server that allows users to easily install and configure them without the need for additional software or programming skills. Users can quickly login to the module through a web browser on a smartphone or computer to set up configurations.

## OEE optimization

With the help of ICP DAS's modules, the machine operational status monitoring system can transmit information to the SCADA system in the control center through wired/wireless communication methods and display the machine status in real-time on the iKAN display on the field side. In this way, personnel can easily monitor the machine's status and quickly troubleshoot equipment, which reduces machine idle time and helps achieve production goals.




## Recommended products


Industrial LED Display

iKAN Series

Ethernet Switch

NS-205A

Edge Controller

WISE-5231M-4GE

AVEVA™ Edge

AVEVA Edge

SCADA

## Application scope

The stack light monitoring modules can be applied to control the factory machines. They will display the real-time status of machines in the factory and control center and issue an alarm when an equipment error is detected, reducing the machine's idle time. Also, the monitoring modules provide stack lights status reports for management personnel to analyze the availability and achieve the preventive maintenance and diagnosis, thereby helping to build a smart factory.

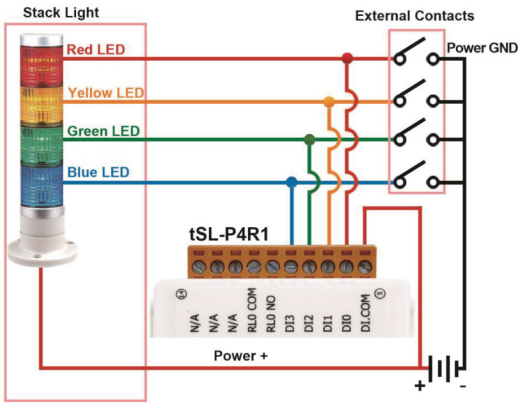




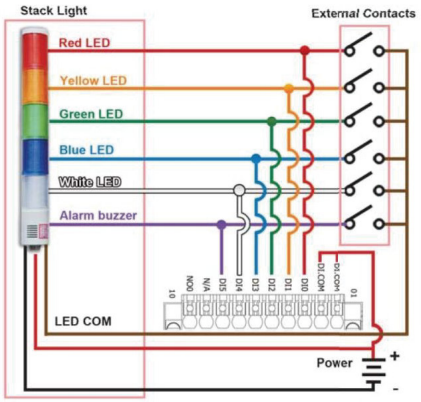
Factory automation | Machine automation | Remote maintenance | Remote diagnosis | Equipment testing

## Connection methods

**tSL SERIES**




**SL SERIES**




## Selection guide

| Model | | tSL-P4R1 | tSL-PA4R1 | SL-P6R1-WF | SL-PA6R1-WF |
|---|---|---|---|---|---|
| Channel | DI | 4(DC) | 4(AC) | 6(DC) | 6(AC) |
| | DO | 1(Power Relay) | 1(Power Relay) | 1(Power Relay) | 1(Power Relay) |
| Communication interface | | RS-485, Ethernet, PoE | | RS-485, Ethernet, PoE, Wi-Fi | |
| Dimension(mm) | | 52 x 98 x 27(W x L x H) | | 33 x 108 x 127(W x L x H) | |
| Wi-Fi Transmission distance | | N/A | | 50mm | |
| Communication protocol | | Modbus RTU(RS-485), Modbus TCP (Ethernet, Wi-Fi), MQTT (Ethernet) | | | |
| Installation method | | DIN-Rail mounting | | | |
| Operating temperature | | -25°C ~ +75 °C | | | |
| Power input | | PoE/DC | | | |
| Built-in Web configuration interface | | Yes(Ethernet) | | | |

# 2-2 Voice Alert Module: ALM Series

**ALM-04-MRTU ALM-06-WF**

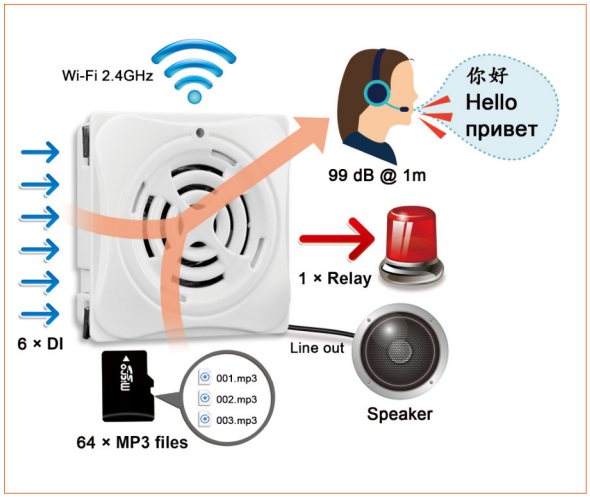
## 特色:

- 4/6 x DI, 1 x Relay output
- MP3 Audio, external Line Out
- Support up to 64 audio files
- 8 Alarm modes
- ALM-06-WF
  - Support 6 Single channel or 31 Binary + 1 single channel
  - WiFi communication Support AP (Access Point) and STA (Station) modes
  - Modbus TCP protocol
  - Support PC Utility, Android APP
- ALM-04-MRTU
  - RS-485 Interface
  - Modbus RTU protocol
  - Support 4 Single channel or 15 Binary channel

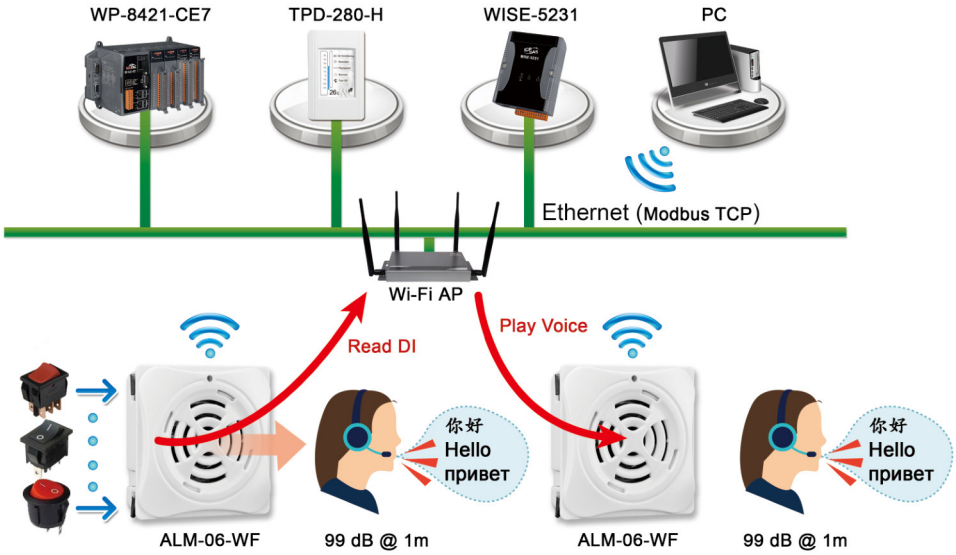
## Introduction:

**ALM Series** is equipped with a 4 GB microSD card to store MP3 files. ALM Series can play the MP3 files when the DI status matches the pre-defined conditions. The built-in speaker power is only 3W. It is about 99 dB, 1 meter away the module. When requires for louder sound, the module also features audio line out to external speaker.

**ALM Series** provides 8 modes to define the DI conditions to play MP3 files. And every condition not only plays the MP3 files but also can be configured to turn on the built-in relay to trigger a warning lamp. That means with ALM Series can have both voice and light warning.




## Applications:

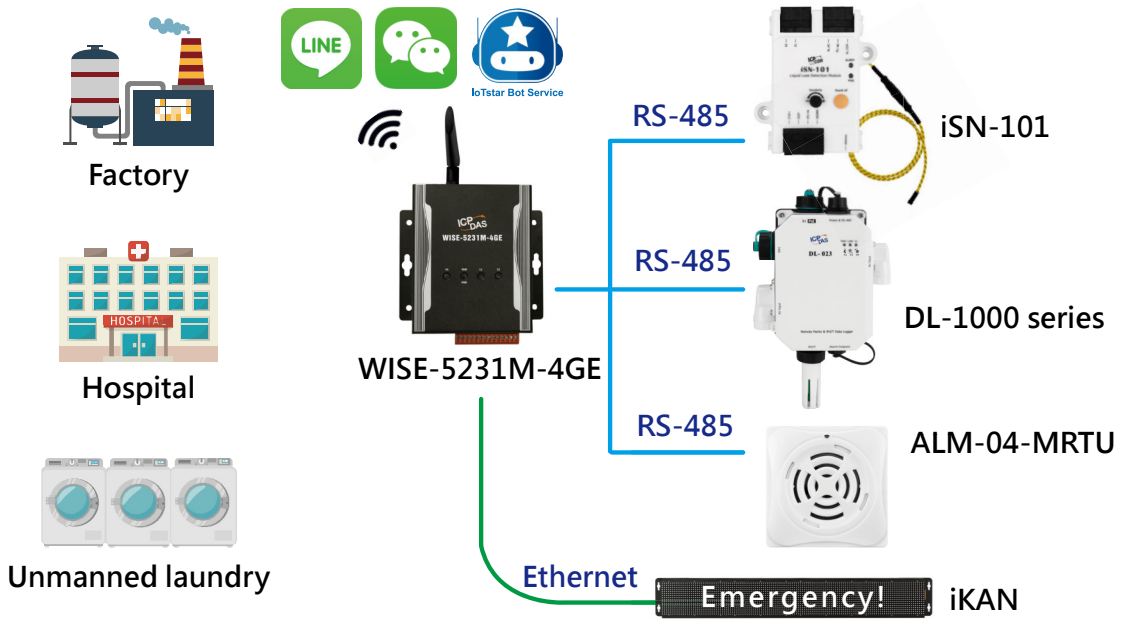


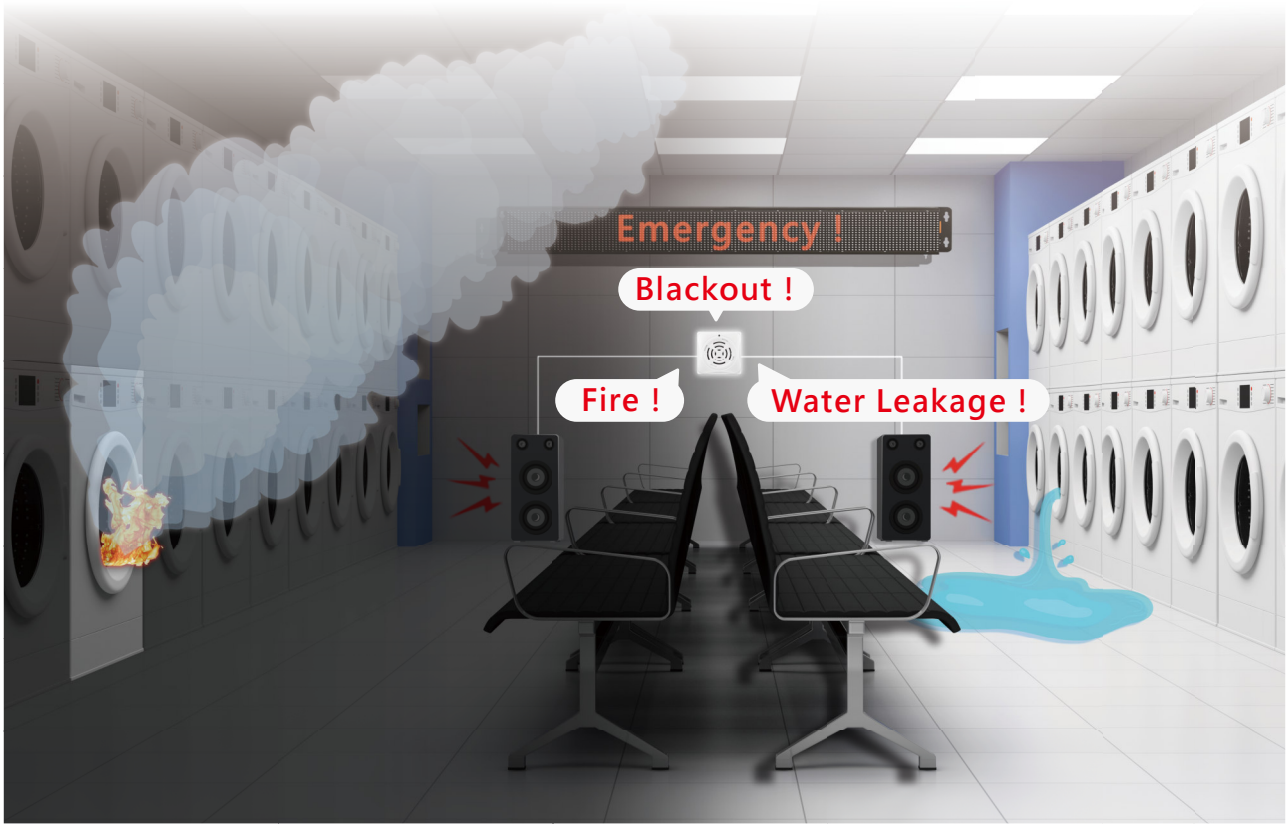

| Model | RS-485 | Wi-Fi (2.4 GHz) | DI (Dry) | DO | Audio Playback | Sound Device | Sound Pressure Level/Output |
|---|---|---|---|---|---|---|---|
| **ALM-06-WF** | - | Yes | 6 | Relay DC 50 V/ 100 mA x 1 | MP3/ 64x Files | Speaker | 99dB @ 1KHz/1meter/3W |
| **ALM-04-MRTU** | Yes | - | 4 | | | | |

# Application of Environmental iAlarm – Visual and Sound notify

The ICP DAS ALM-06-WF/ALM-04-MRTU Smart Buzzer module can be configured via Wi-Fi, and has a 99db volume alarm and eight-voice alarm modes that can be used to notify personnel of different situations in a complex area.

The ALM-04-MRTU combines our DL-1000 series environment sensor, the iSN-101 leak detection module, and a WISE-5231M-4GE edge controller that can detect multiple air factors, plus fire, water leakage or current failure in an unmanned laundry. Besides, it can also generate a voice alarm to warn personnel nearby and send an instant LINE notification to the manager.



# Emergency Visual Alert Module: ALM-Horn Series

IP43

**ALM-Horn-BR**
**ALM-Horn-RGB**
**ALM-Horn-WF-BR**
**ALM-Horn-MRTU-BR**

## Features:

■ **ALM-Horn-BR : Standard Version (Non-COMM.)**
- Piezo Buzzer Output
- 4 Selectable Alarm Tones
- Maximum Sound Pressure Level of 120dB
- Water-clear Upper Cover with 8 Blue + 8 RED Ultra Bright LED
- Equipped with Dry Contact Input, N.O. or N.C. Mode is Selectable, Open Collector Output

■ **Special For ALM-Horn-WF-BR (Wi-Fi Version)**
- Complies with the Complies with the IEEE 802.11b/g/n Standards
- Support WEP、WPA and WPA2
- Conduct the Communication Detection and Module Configuration via Wi-Fi
- Support Modbus TCP and Remote Alarm Commands
- Support Access Point(AP, 1 Client)and Station(STA)

■ **Special For ALM-Horn-MRTU-BR (RS-485 Version)**
- Support RS-485 Interface
- Support Modbus RTU and Remote Alarm Commands

■ **Special For ALM-Horn-RGB (Ethernet Version)**
- Support PoE Ethernet Interface
- Support Modbus TCP and Remote Alarm Commands
- 8 user define RGB 3 color Ultrabright LED

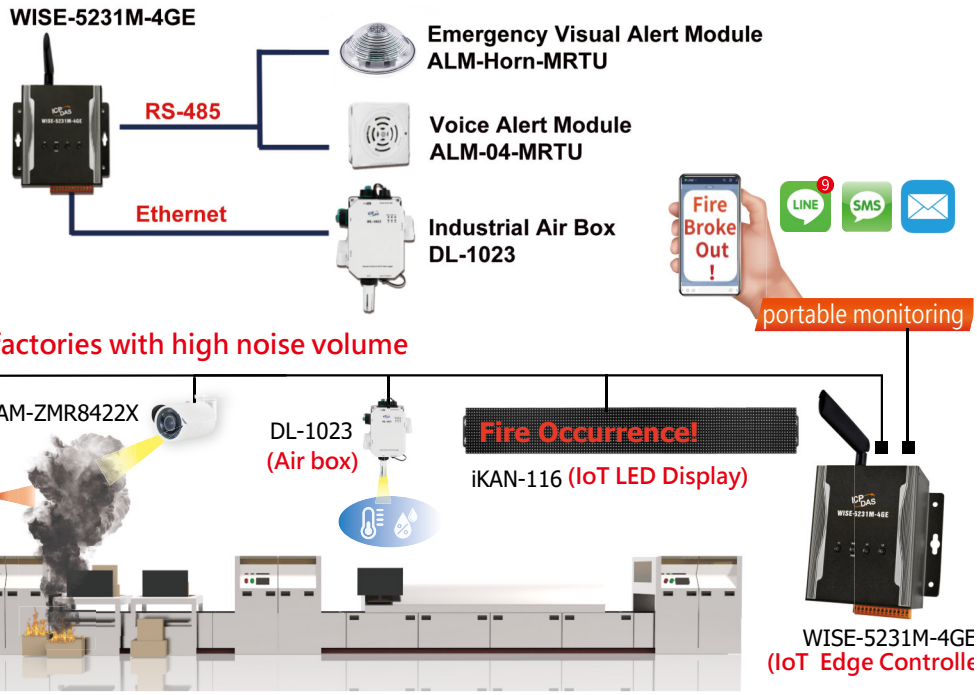
## Introduction:

The ALM-Horn Series include 4 models, -BR with water clear upper cover, Blue + Red LED, ALM-Horn as standard siren, ALM-Horn-WF have WLAN connection complies with the IEEE802.11b/g/n standards, support Modbus TCP protocol & HTML, ALM-Horn-MRTU have RS-485 interface support Modbus RTU protocol, ALM-Horn-RGB have PoE Ethernet interface support Modbus TCP protocol.

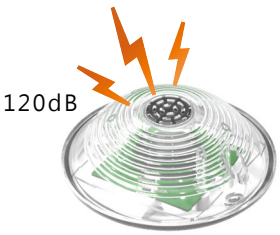
ALM-Horn series device include 1-channel digital input for any dry contact output such as SA, BA, FA..etc, and 1-channel digital output Each device has 4 kinds of alarm tone, NC/NO input mode select by switchs. The ALM-Horn-WF & -MRTU &-RGB support Modbus protocol, Which makes perfect integration for monitoring or control in SCADA software, HMI Modbus & Utilitys. ALM-Horn series have High Sound Pressure output, wide input power range & IP43 waterproof.

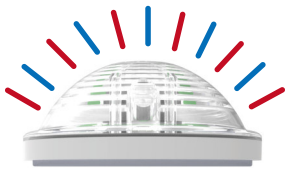
## Applications:

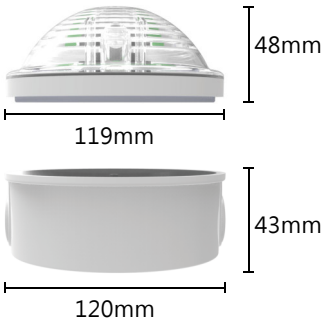
- Fire Alarm System
- Building Automation
- Security Automation
- Machine Automation
- Factory Automation
- Testing Equipment



## Selection Guide:





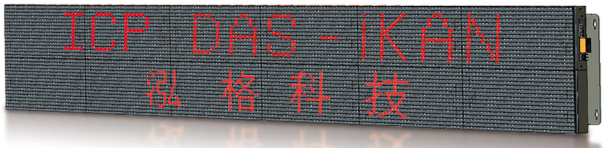

ALM-Horn Series EWB-C150 Expansion module box

| Module | ALM-Horn-BR | ALM-Horn-WF-BR | ALM-Horn-MRTU-BR | ALM-Horn-RGB |
|---|---|---|---|---|
| **Audio** | | | | |
| Sound Pressure Level | 120 ±5 dB @10cm/3.0 KHz (W/O waterproof membrane) | | | |
| LED | Water clear upper cover with 8 RED UltraBright RED LED<br>-BR: With 8 Blue + 8 RED UltraBright LED | | | Water clear upper cover with 8 RGB Ultrabright 3 color LED |
| Volume Control | no | | | |
| **Digital Input** | | | | |
| Channels / Input Type | 1 / Dry Contact: Sink | | | |
| Dry Contact Level | NO: Open, NC: Close to GND | | | |
| Photo-Isolation | 3750 VDC | | | |
| Input Condition | Pulse Width must > 150mSec or more | | | |
| **Digital Output** | | | | |
| Channels / Output Type | 1 / Open Collector (Sink) | | | |
| Max Load Current | 400 mA | | | |
| Load Voltage | +3.5 VDC ~ +30 VDC | | | |
| **Dip Switch Select** | | | | |
| SW1,2 | 4 kinds of alarm Tone | | | |
| SW4 | Input Mode (NO/NC) select | | | |
| **Interface** | | | | |
| Type | - | Wi-Fi 2.4G | RS-485 | Ethernet |
| Encryption | - | WEP, WPA and WPA2 | - | Password and IP Filter |
| Protocol | - | - | Modbus RTU | Modbus TCP, Modbus UDP, HTTP |
| Service | | TCP, Modbus TCP, HTML | - | - |
| **LED Indicators** | | | | |
| Power/Status | 2 colors LED, Blue for System status, Red for Alarm status. | | | System status, network communication, PoE power indicator |
| **Mechanism** | | | | |
| Dimensions (Ø x H) | 119 mm x 119 mm x 48 mm | | | |
| Installation | Panel Mount/Wall Mount | | | |
| Ingress Protection Rating | IP43 | | | |
| **Power Requirements** | | | | |
| Input Voltage Range | 12 ~ 48 VDC with Reverse Protection (Vin to GND) | | | |
| PoE | N/A | | | Y, Class 3 MAX 6.6W |
| Consumption | 0.4 W Standby. | 0.7 W Standby. | 0.48 W Standby. | 0.7 W Standby. |

# 2-3 Industrial LED Message Display: iKAN Series


**iKAN-116S/iKAN-124S**


**iKAN-116/iKAN-124 Series**



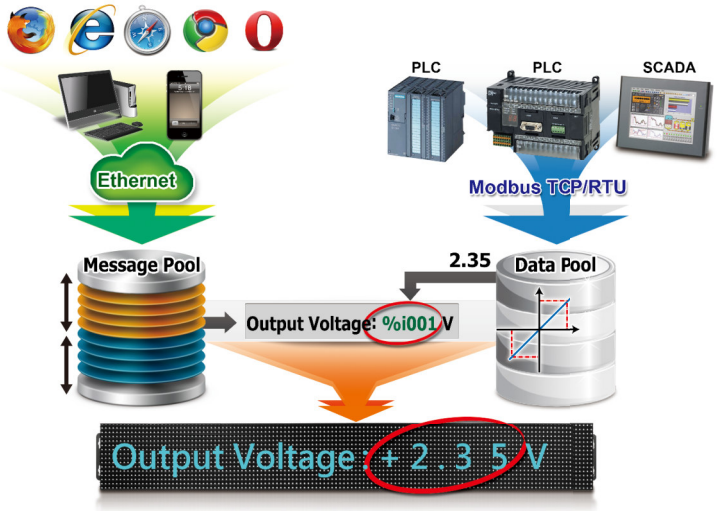

**iKAN-208/iKAN-216/iKAN-224 Series**

## Features:

- Support multiple languages: text height of 16/11.5 cm
- 7 colors, including red, blue, yellow, green, light blue, purple and white
- Able to store up to 128 messages with priority configuration
- Convert 8 Modbus numbers into ASCII messages Instantly
- Integrate both text and variables in a single message
- Support Modbus TCP/RTU/CGI protocols
- Built-in RTC (Real Time Clock )
- Web-based User Interface
- Can be remotely controlled via a PLC, PC, or smart phone

## Introduction:

The iKAN series is a family of industrial Modbus LED message display devices that deliver industrial-grade anti-noise capabilities as well as reliability and stability. ASCII characters and Unicode characters, which can be used to display multiple languages, are supported for presenting formatted messages. Support for the popular Modbus industrial protocol is provided meaning that iKAN display devices can easily integrate into existing PLC and SCADA environments. The iKAN series allows data written from a PC or a PLC to display on a formatted message in real-time. Seven colors are available for the text, which can be used to indicate different degrees of importance of the message, as well as significantly increase the readability of the message in an industrial arena.




### Built-in RTC

Date and time, 24 hour format including second, minute, hour, date, day of the week, month, year.


### Smart Phone Controllable

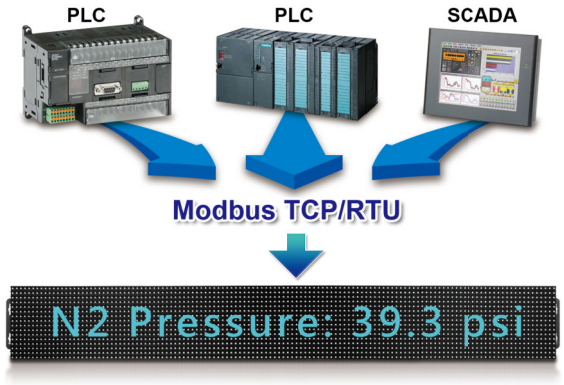
Messages can be edited using a standard web browser on a PC, mobile device, or smartphone without any limitations related to specific control tools or programs.

## IP65 Rating

The iKAN IP65 model is totally waterproof and dustproof so it can be installed in dirty, soiled, or semi-outdoor environments, such as eaves, open halls, outdoor canopies, or beneath a sunroof.

## Support Modbus TCP/RTU protocols

The popular Modbus industrial protocols are provided. iKAN can be easily integrated into PLC/SCADA.




## Indoor Air Quality Display

The iKAN device can be used to display indoor air quality monitoring data from ICP DAS DL sensor modules, including details of the CO, CO2, and PM2.5 levels, the temperature, and the humidity, without requiring any programming skills or knowledge.


## Message Editing

**• Edit default messages:**

A maximum of 128 messages with priority can be preconfigured from the first moment that the iKAN display is switched on. When the display is in operation, the focus needs only be on message management rather than the need to frequently update the messages.


**• Convert 8 Modbus data into ASCII character messages Instantly:**

8 Modbus control registers sets can be assigned to 4 messages; each of which contains up to 64 ASCII characters. It allows the Modbus controller to write text message to be displayed on the iKAN device.

## Message Priority

Messages with instant priority have a higher priority than other messages. Once a message with instant priority is enabled, the common message currently being displayed will be suspended until the instant message is disabled. This feature allows the most important information to be displayed in an emergency situation.

## Selection Guide

**iKAN-X XX S A - XXX - IP65**

**ROWS:**
1: One Row
2: Two Row

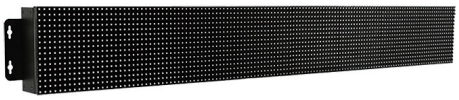
**LED Size:**
S: Small Size
Null: Normal Size

**Protocol Interfaces:**
Null:Modbus
PFB:Modbus+PROFIBUS
PFN:Modbus+PROFINET
CPS:Modbus+CANOpen

**Characters (1 Row)**
08: 8 Characters
16: 16 Characters
24: 24 Characters

**RoHS Compliant:**
A: Non RoHS Compliant
Null: RoHS Compliant

**IP Rating**
Null:None
IP65: IP65



**iKAN-116 series**
- One Row
- 16 Characters

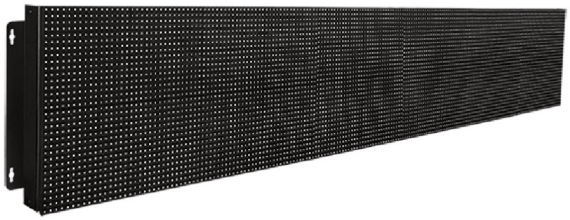
**iKAN-124 series**
- One Row
- 24 Characters

**Modbus LED Display (RoHS Compliant)**

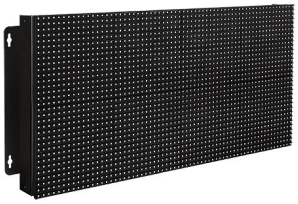
| Model | Mechanical | | | | Display | Communication Interfaces | | |
|---|---|---|---|---|---|---|---|---|
| | Dimensions (mm) (W × H × D) | Weight | Housing Material | Installation | Message Pool | Ethernet | | COM Ports |
| iKAN-116 | 1346 × 160 × 49 | 4 Kg | Aluminum | Wall mountin | 128 common messages (Allows you to set Priority) Up to 20 Unicode characters or 50 ASCII characters each | 2 × RJ-45, 10/100 Base-TX | Modbus TCP Slave Max. 8 connections | RS-485 × 2 |
| iKAN-116S | 834 × 115 × 37.5 | 2 Kg | | | | | | |
| iKAN-124 | 1986 × 160 × 49 | 4.6 Kg | | | | | | |
| iKAN-124S | 1218 × 115 × 37.5 | 2.5 Kg | | | | | | |
| iKAN-208 | 707 x 320 x 50 | 4 Kg | | | | | | |
| iKAN-216 | 1346 × 320 × 49 | 8 Kg | | | | | | |
| iKAN-224 | 1986 × 320 × 49 | 12 Kg | | | | | | |

**Modbus LED Display (Non RoHS Compliant)**

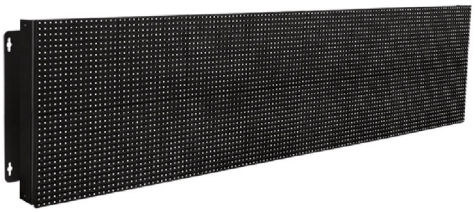
| Model | Mechanical | | | | Display | Communication Interfaces | | |
|---|---|---|---|---|---|---|---|---|
| | Dimensions (mm) (W × H × D) | Weight | Housing Material | Installation | Message Pool | Ethernet | | COM Ports |
| iKAN-116A | 1346 × 160 × 49 | 4 Kg | Aluminum | Wall mountin | 128 common messages (Allows you to set Priority) Up to 20 Unicode characters or 50 ASCII characters each | 2 × RJ-45, 10/100 Base-TX | Modbus TCP Slave Max. 8 connections | RS-485 × 2 |
| iKAN-124A | 1986 × 160 × 49 | 4.6 Kg | | | | | | |
| iKAN-208A | 707 x 320 x 50 | 4 Kg | | | | | | |
| iKAN-216A | 1346 × 320 × 49 | 8 Kg | | | | | | |
| iKAN-224A | 1986 × 320 × 49 | 12 Kg | | | | | | |



**iKAN-224 series**
- Two Row
- 24 Characters



**iKAN-208 series**
- Two Row
- 8 Characters



**iKAN-216 series**
- Two Row
- 16 Characters



| Modbus LED Display (Call Sale) (RoHS Compliant) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Model | Mechanical | | | | Display | Communication Interfaces | | |
| | Dimensions (mm) (W × H × D) | Weight | Housing Material | Installation | Message Pool | Ethernet | | COM Ports |
| iKAN-116-IP65 | 1346 × 160 × 49 | 4 Kg | Aluminum | Wall mountin | 128 common messages (Allows you to set Priority) Up to 20 Unicode characters or 50 ASCII characters each | 2 × RJ-45, 10/100 Base-TX | Modbus TCP Slave Max. 8 connections | RS-485 × 2 |
| iKAN-124-IP65 | 1986 × 160 × 49 | 4.6 Kg | | | | | | |
| iKAN-208-IP65 | 707 x 320 x 50 | 4 Kg | | | | | | |
| iKAN-216-IP65 | 1346 × 320 × 49 | 8 Kg | | | | | | |
| iKAN-224-IP65 | 1986 × 320 × 49 | 12 Kg | | | | | | |

| Modbus LED Display (Call Sale) (Non RoHS Compliant) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Model | Mechanical | | | | Display | Communication Interfaces | | |
| | Dimensions (mm) (W × H × D) | Weight | Housing Material | Installation | Message Pool | Ethernet | | COM Ports |
| iKAN-116A-IP65 | 1346 × 160 × 49 | 4 Kg | Aluminum | Wall mountin | 128 common messages (Allows you to set Priority) Up to 20 Unicode characters or 50 ASCII characters each | 2 × RJ-45, 10/100 Base-TX | Modbus TCP Slave Max. 8 connections | RS-485 × 2 |
| iKAN-124A-IP65 | 1986 × 160 × 49 | 4.6 Kg | | | | | | |
| iKAN-208A-IP65 | 707 x 320 x 50 | 4 Kg | | | | | | |
| iKAN-216A-IP65 | 1346 × 320 × 49 | 8 Kg | | | | | | |
| iKAN-224A-IP65 | 1986 × 320 × 49 | 12 Kg | | | | | | |

# 2-4 Bluetooth LE Mitutoyo Gauge Data Collector: GAM Series


**GAM-100**

## Features:

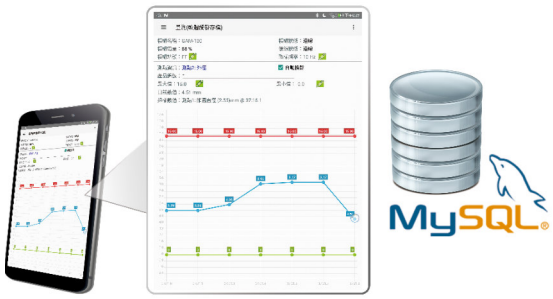
- Frequency: ISM 2.4 GHz
- Standard: Bluetooth 4.0
- Wireless transmission range up to 20 meters (Line of Sigh)
- Compatible with Mitutoyo SPC interface
- LED indicators for Battery / RF link / Charge LEDs
- Support different transmission rate: 1/2/5/10 Hz
- Support Trigger button and 3.5 mm foot switch connector to log data
- Support different trigger mode: Single and Continuous
- Power by micro USB chargeable Li-ion battery
- Battery Usage Life: 100 HR/ 10 Hz
- Support Android APP for gauge data acquisition and configuration

## Introduction

The GAM-100 is a Bluetooth Low Energy (Bluetooth LE/Bluetooth 4.0) gauge master for Mitutoyo gauges, with SPC output. The gauge master connects Mitutoyo gauges by SPC interface. A smart phone or tablet can use Bluetooth to get Mitutoyo gauge date through the gauge master. With the built-in micro USB chargeable Li-ion battery, the gauge master can work for 100 hours. To get and log the data, an Android APP is designed for a mobile device. The data can be kept in the local memory storage or uploaded to the remote MySQL server.

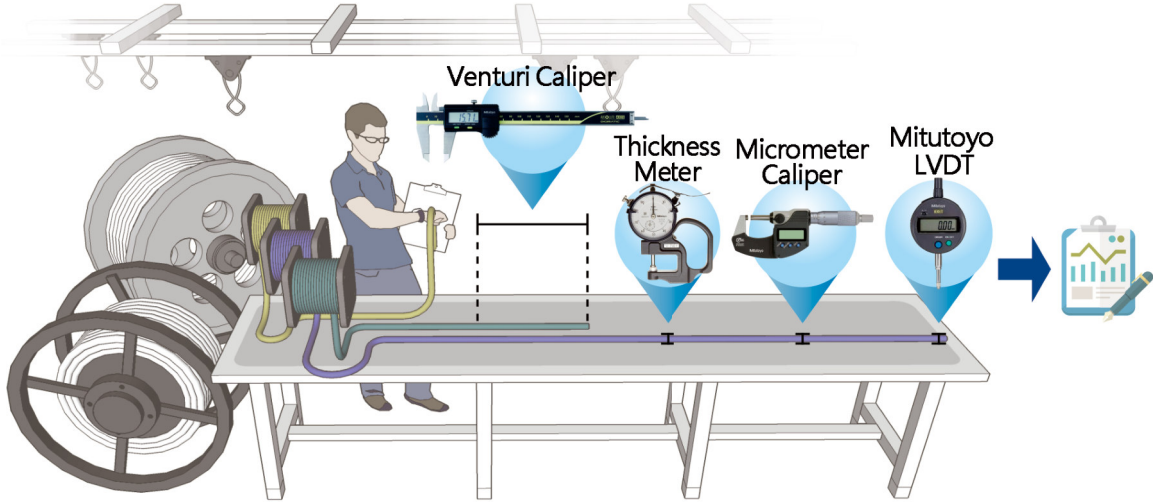
## Android APP

- Device search function
- Real-time gauge data display
- Trigger mode setting
- Upload data to remote MySQL server
- Device number setting
- Work order generating
- Gauge data record (*.csv)




## Application

The cable factory uses Mitutoyo thickness gauges, micrometer calipers, vernier calipers, and other gauges, to conduct quality inspections during the production process. During the process, it is necessary to hold the product and the measurement tool at the same time to record the data in the form by handwriting until the test is completed, which is laborious and time-consuming. To optimize the quality of the inspection process, ICP DAS provides a GAM-100 that is integrated with a work-order system. It performs measurement triggering and data recording of Mitutoyo gauges, and then forwards data to a remote database for big data analysis purposes, including AI modeling, production history, consumption ratio... and other extended applications.



## Application Features

- Customized work order, automated data collection.
- GAM-100 binds to work-order, and imports automatically.
- Support footswitch to trigger measurement, improve operation convenience.
- Data record based on work orders and equipment bound, and synchronous write MySQL database.
- Reduce the time consumption of data recording and improve the accuracy of data.
- Provide the basis for production efficiency analysis and process improvement.


## Application Architecture


## Specification

| Model | GAM-100 |
|---|---|
| CPU | 32 bit, Microprocessor |
| **RF Standard** | |
| Wireless Standard | Bluetooth 4.0 |
| Transmit Range | 20 m (LOS) |
| Antenna | Chip Antenna |
| Sampling Rate | 1, 2, 5, or 10 Hz, confi gured by APP |
| LED Indicators | 1 x Battery, 1 x RF link, 1 x Battery Charge |
| Mitutoyo Gauges | 293-230-30/500-171-30/543-782/547-361S/543-401B/573-701 |
| **Power** | |
| Power Supply | Li-ion battery charged by DC 5V Micro USB interface |
| Battery Usage Life | 100 hours / 10 Hz |
| **Mechanism** | |
| Casing | Plastic |
| Dimensions (W x L x H) | 84 mm x 59 mm x 22 mm |
| **Environment** | |
| Operating Temperature | 0°C ~ +45°C |
| Storage Temperature | 0°C ~ +45°C |
| Humidity | 10~90% |

# 2-5 Temperature Data Logger: TCD Series

**TCD-104/S400/B**
4-ch K-type Thermocouple

**TCD-108/S400/B**
8-ch K-type Thermocouple

## Features:

- 4/8-channel K-type thermocouple (±0.5℃ Accuracy)
- hermocouple length: 50 cm
- Sampling Rate: 50 ms to 60000 seconds
- Max. recording for each channel: : 450,000 / 300,000
- Powered by 4x AAA batteries : (60 hours @ 50 ms sampling rate)
- 400℃ operating temperature with thermal insulation box
- Easy-to-use software interface
- Traceable temperature data

## Introduction:

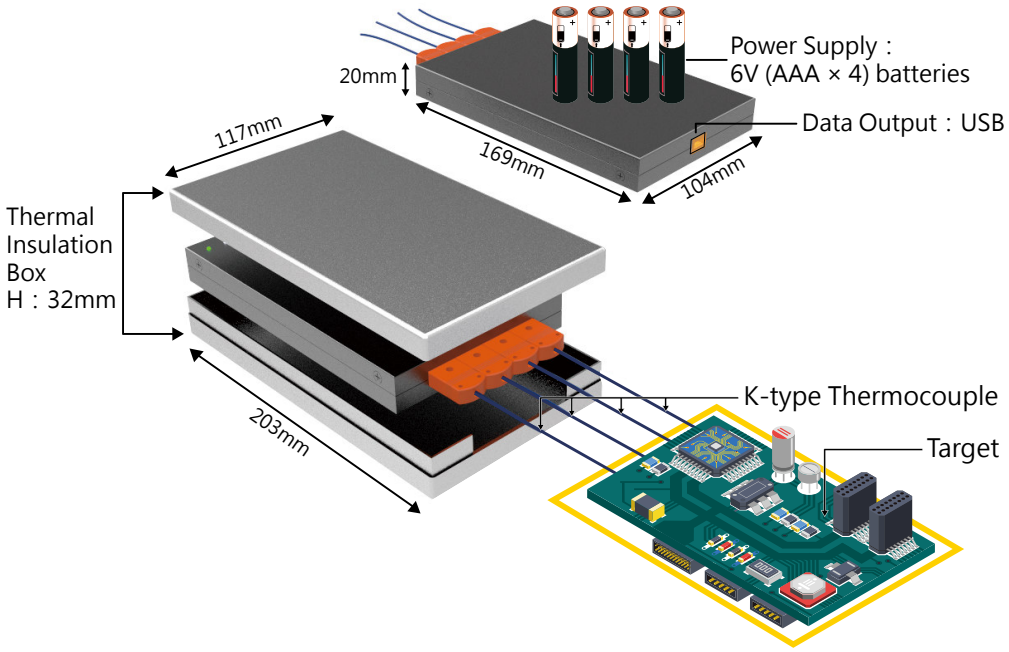
TCD-104/TCD-108 temperature measurement module can provide high-precision temperature measuring capability with standard K-type thermocouple. Besides, TCD-104/TCD-108 has built-in over-temperature protection, intelligent temperature data logging capability, automatic analysis result output (highest Tin temperature, tinning time, heating rate, etc.).

## Applications:

SMD assembly manufacturing, PC board manufacturing, footwear manufacturing, food industry, pharmaceutical industry and any temperature measurement required industries.

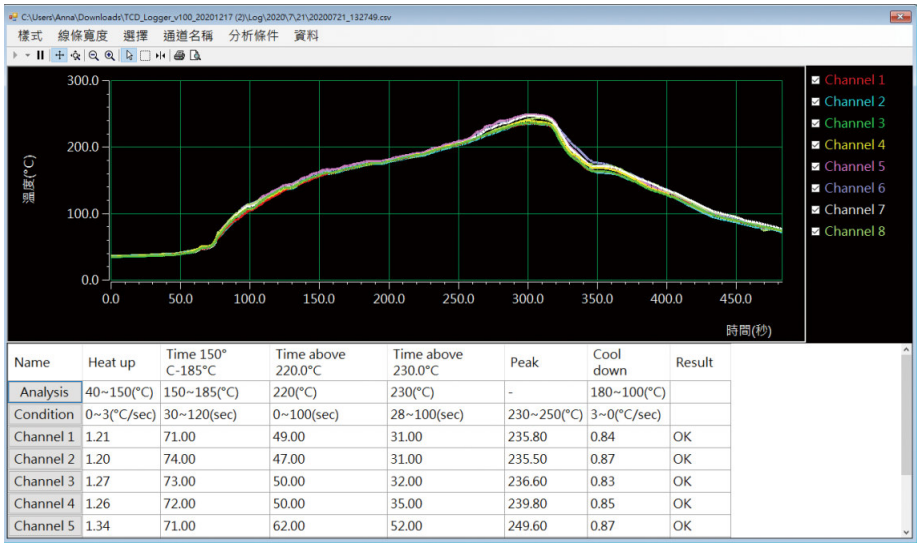
## Appearance:

TCD-104 and TCD-108 are temperature data loggers with 4/8-channel K-type thermocouple sensors. They are powered by 4x AAA batteries for working more than 60 hours. With an optional thermal insulation box, they can operate in 400℃ environment. TCD-104 and TCD-108 are suitable for the industries that concern the temperature change in their manufacturing process, especially heating curve in ovens.




## Software: iTCLogger Utility

iTCLogger Utility is used to configure and download the data from TCD-104 and TCD-108 via the USB. It can display the trend chart and calculate some static values, like max., min, mean




| Name | Heat up | Time 150° C-185°C | Time above 220.0°C | Time above 230.0°C | Peak | Cool down | Result |
|---|---|---|---|---|---|---|---|
| Analysis | 40~150(°C) | 150~185(°C) | 220(°C) | 230(°C) | - | 180~100(°C) | |
| Condition | 0~3(°C/sec) | 30~120(sec) | 0~100(sec) | 28~100(sec) | 230~250(°C) | 3~0(°C/sec) | |
| Channel 1 | 1.21 | 71.00 | 49.00 | 31.00 | 235.80 | 0.84 | OK |
| Channel 2 | 1.20 | 74.00 | 47.00 | 31.00 | 235.50 | 0.87 | OK |
| Channel 3 | 1.27 | 73.00 | 50.00 | 32.00 | 236.60 | 0.83 | OK |
| Channel 4 | 1.26 | 72.00 | 50.00 | 35.00 | 239.80 | 0.85 | OK |
| Channel 5 | 1.34 | 71.00 | 62.00 | 52.00 | 249.60 | 0.87 | OK |

## Selection Guide:

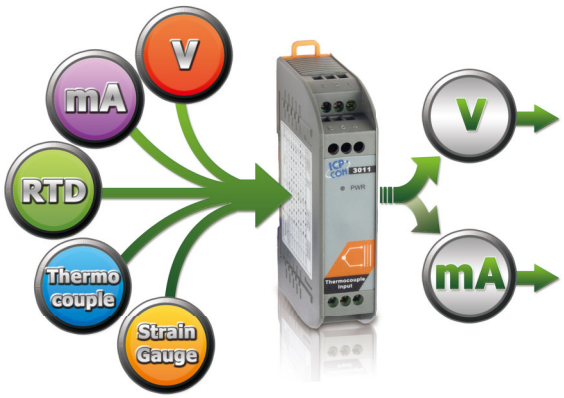
| Model | Channel | Data Logger | Thermocouple Type | Cable Length | Communication |
|---|---|---|---|---|---|
| **TCD-104/S400/B** | 4 | 450,000 records | K-Type | 50 cm | USB |
| **TCD-108/S400/B** | 8 | 300,000 records | | | |

# 2-6 Signal Conditioning Modules: SG-3000

**SG-3000 series** signal conditioning modules are used to accept wide range of input signals, such as voltage, current, temperature (thermocouple and RTD) and provide 0 ~ 10 VDC, 0 ~ 20 mA, 4 ~ 20 mA output signals.

It gives following good features for industrial applications:

- 3-way (power/input/output) isolation (1000 VDC)
- Wide operating temperature (-25 ~ +75°C)
- DIN-Rail mounting
- Input and output connectors on the opposite side
- Signal range configurable by switch




## Selection Guide:

**Analog Conditioning Modules**

| Models | Input | | | Output | | |
|---|---|---|---|---|---|---|
| | Channel | Signal | Bandwidth | Channel | Voltage | Current |
| SG-3011-G | 1 | Thermocouple | 10 Hz | 1 | 0 ~ 10 VDC | 0 ~ 20 mA |
| SG-3011H-G | | | 500 Hz/10 Hz | | | |
| SG-3013-G | 1 | RTD | - | 1 | 0 ~ 5 VDC<br>0 ~ 10 VDC | 0 ~ 20 mA<br>4 ~ 20 mA |
| SG-3016-G | 1 | Strain Gauge | 600 Hz | 1 | ±5 VDC, ±10 VDC,<br>0 ~ 5 VDC, 0 ~ 10 VDC | 0 ~ 20 mA |
| SG-3016-80-G | | | 80 Hz | | | |
| SG-3071-G | 1 | Voltage<br>(±5 VDC, ±10 VDC) | 1 kHz | 1 | ±5 VDC, ±10 VDC | 0 ~ 20 mA<br>4 ~ 20 mA |
| SG-3081-G | 1 | Current<br>(0 ~ 20 mA, 4 ~ 20 mA) | 1 kHz | 1 | 0 ~ 5 VDC, 0 ~ 10 VDC | 0 ~ 20 mA<br>4 ~ 20 mA |
| SG-3383 | 1 | 4 ~ 20 mA | 2.5 kHz | 3 | - | 4 ~ 20 mA |

**Analog Conditioning Modules (Vibration)**

| Models | Input for Accelerometer | | | | | Output | |
|---|---|---|---|---|---|---|---|
| | Channel | Signal | Excitation | Bandwidth | Supported Accelerometer | Channel | Signal |
| SG-3037-G | 3 | Voltage<br>(0 ~ 24 VDC) | 24 VDC | 50 kHz | iSN-703-F1-L015<br>(3-axis) | 3 | ±10 VDC |
| SG-3227 | 2 | IEPE<br>(0 ~ 28 VDC) | 2/4/6/10 mA | x1, x10 Gain: 80 kHz<br>x100 Gain: 50 kHz | iSN-701-F15-L030<br>iSN-701-F15-L060<br>(1-axis) | 2 | ±10 VDC |

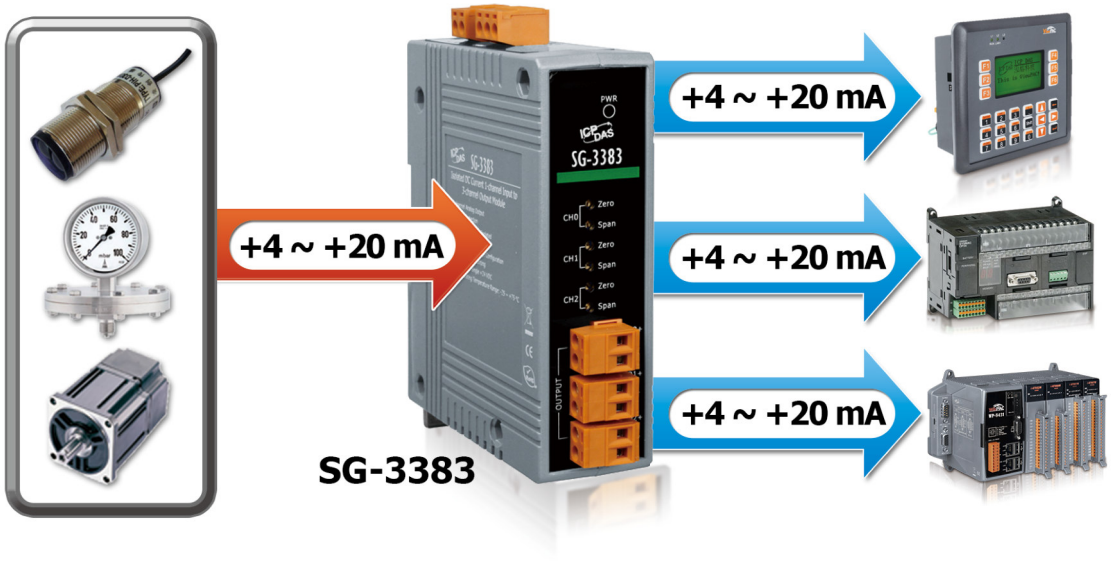
**Analog Conditioning Modules (Current PWM regulator)**

| Models | Input | | Output | |
|---|---|---|---|---|
| | Channel | Signal | Channel | Type |
| SG-3784M | 4 | 4 ~ 20 mA | 4 | PWM, Open Collector |
| tSG-3781B | 1 | 4 ~ 20 mA | 1 | PWM, Open Collector |
| tSG-3781L | 1 | 4 ~ 20 mA | 1 | PWM, Open Collector |

**Power Conditioning Modules**

| Models | PW-3090-24S-R | PW-3090-12S-R | PW-3090-5S-R | PW-3090-5D-R | PW-3090-15D-R |
|---|---|---|---|---|---|
| Pictures |  |  |  |  |  |
| Input | 18 ~ 36 V (non-regulated) | 18 ~ 36 V (non-regulated) | 18 ~ 36 V (non-regulated) | 18 ~ 36 V (non-regulated) | 18 ~ 36 V (non-regulated) |
| Output | 24 V @ 0.4 A (Max.) | 12 V @ 0.8 A (Max.) | 5 V @ 2 A (Max.) | ±5 VDC @ 1 A (Max.) | ±15 VDC @ 0.3A(Max.) |
| Isolation | 1000 VDC | | | | |
| Efficiency | 83% Typical | | | | |
| Operating Temperature | -25 ~ +75°C | | | | |
| Dimensions (W × H × D) | 25 mm × 114 mm × 70 mm | | | | |

## Application:




**Triaxial Accelerometers**
**iSN-703-F1-L015**

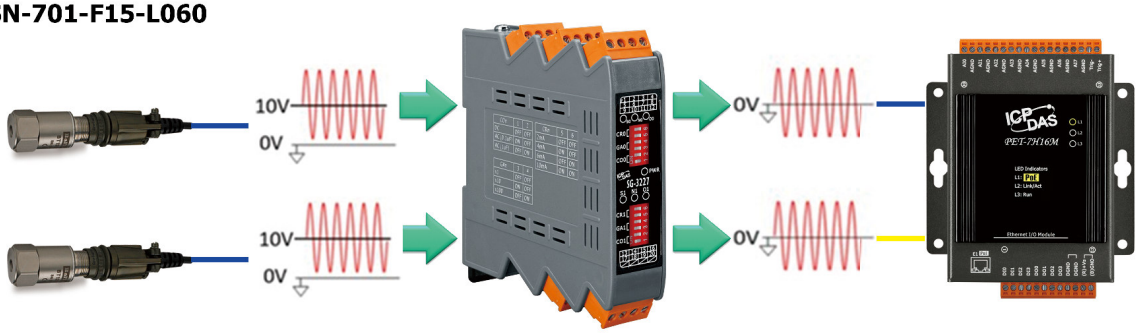
**Triaxial Signal Conditioner**
**SG-3037**

**DAQ Module**
**PET-7H16M**


**IEPE Accelerometers**
**iSN-701-F15-L030**
**iSN-701-F15-L060**

**IEPE Signal Conditioner**
**SG-3227**

**DAQ Module**
**PET-7H16M**



# 2-7 No-touch Infrared Sensor Switch

ACS-20W-MRTU

ACS-20B-MRTU

## Features:

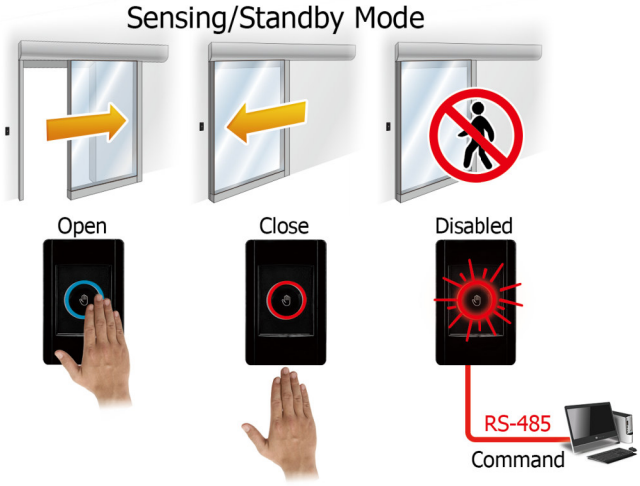
- Special infrared code to against interference
- Multiple operating modes: Sensing/Standby, Lock, Toggle Switch
- Provides 8 lockup periods each day
- Double-color status indicator
- Induction distance: 1 ~ 12 cm
- Relay hold time: 0.5 ~ 20 sec
- With Relay (N.C. and N.O. output)
- The switches time recording: 1,600 records
- Communication interface and protocol: RS-485/Modbus RTU

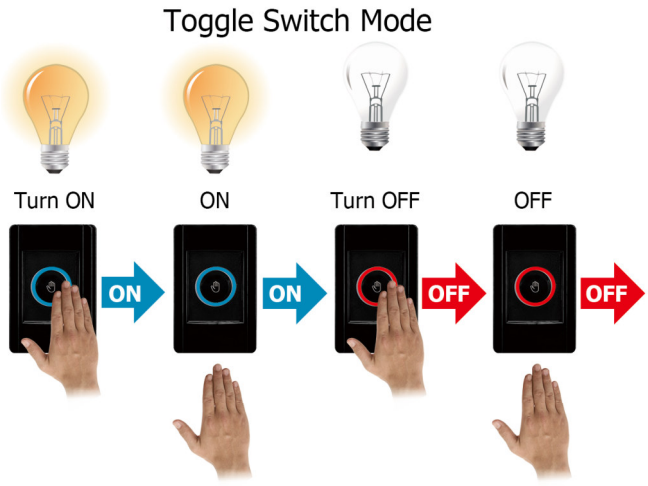
The No-touch Infrared Sensor Switch from ICP DAS can be used to open a door using palm induction, which makes it more convenient when entering or exiting a room or building. The inductive distance and the delay time for door opening are adjustable, and has red and blue indicator lights to show the status of the switch. As people enter and exit the door using the No-touch Infrared Sensor Switches, a time stamp recording the action can be simultaneously logged.

The No-touch Infrared Sensor Switch includes an RS-485 interface and provides Modbus RTU communication, which can remotely enable/disable the switch and get the induction time records by the access control system.

Additionally, the No-touch Infrared Sensor Switch is not only used for access control system but also help you control other electronic devices. While it is triggered in toggle mode at the first time, the switch outputs ON signal, and next time outputs OFF signal.

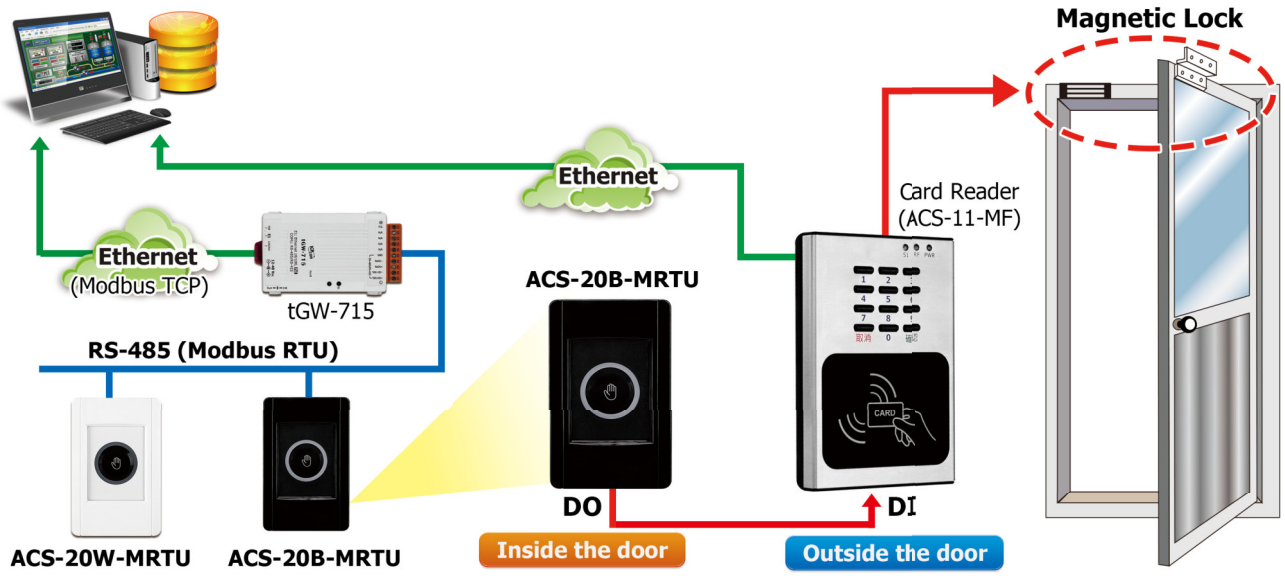
The No-touch Infrared Sensor Switch can be used with electric doors to prevent issues related to the spread of infectious bacteria via touch. The switches can be used in medical institutions, retail stores, the food industry, industrial plants, and offices, etc. to provide an excellent sanitary environment.

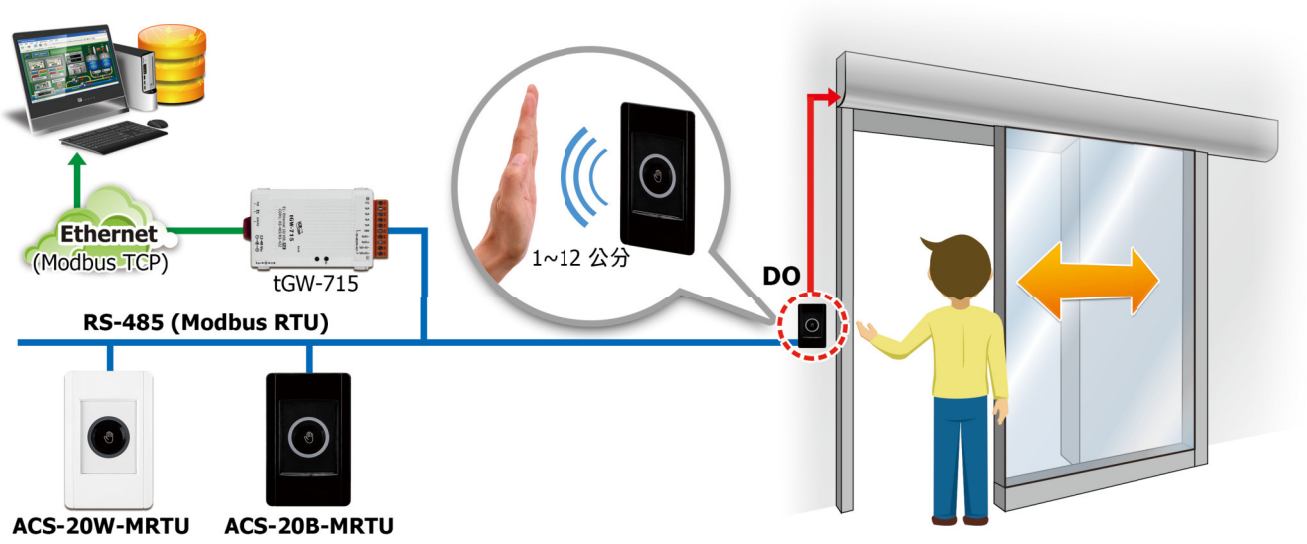



| Specification | | Description |
|---|---|---|
| Induction distance | | 1 ~ 12 cm (adjustable) |
| Relay hold time | | 0.5 ~ 20 sec (adjustable) |
| Indicator LED light | | Red (Standby); Blue (Sensing) |
| Relay | Type | Form C |
| | Rated Current | 0.5 A @ 120 VAC, 2 A @ 30 VDC |
| The switches recording times | | 1,600 records |
| Communication interface and Protocol | | RS-485 / Modbus RTU |
| Power Input | | +10 ~ +30 VDC |
| Dimensions (W × L × H) | | 75 mm × 119 mm × 24 mm |

## Applications:



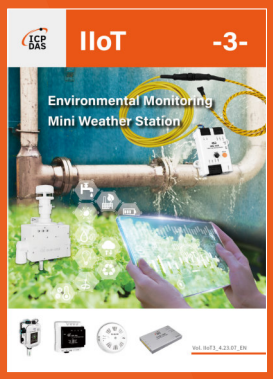




## External Wall Box and Outlet Box:

| External Wall Box | | Outlet Box | |
|---|---|---|---|
|  EWB-T28-BK |  |  OB120 |  |
|  EWB-T28 | | | |


## IIoT 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




## IIoT 3
## Environmental Monitoring / Mini Weather Station

- Smart Environmental Monitoring: CL Series
- Air Box: DL Series
- Mini Weather StationMotion: DLW Series
- Detector: PIR Series
- Industrial Sensor Network Detection: iSN Series
- Wireless Environmental Solution: iWSN/iXN/iSOS Series


## 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: IIoT Cloud Solution

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


## WISE - Intelligent IIoT Edge Controller & I/O Module

- WISE IIoT 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
- IIoT Server & Concentrator
- LED Display - iKAN Series

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