IR Temperature Sensor
iSN-81X Series

IIoT Applications for
Distribution Cabinet Monitoring

- HMI centralized management of remote sensors.

- Data logging analysis to achieve preventive maintenance.

- Non-contact measurement reduces process intervention.

iSN-812-MRTU **iSN-811C-MTCP** **VPD-170-IRT**

≫ Features

Using thermal imaging technology to monitor the temperature inside the distribution cabinet. It is a new way to reduce inspection time and risks of abnormal stops.
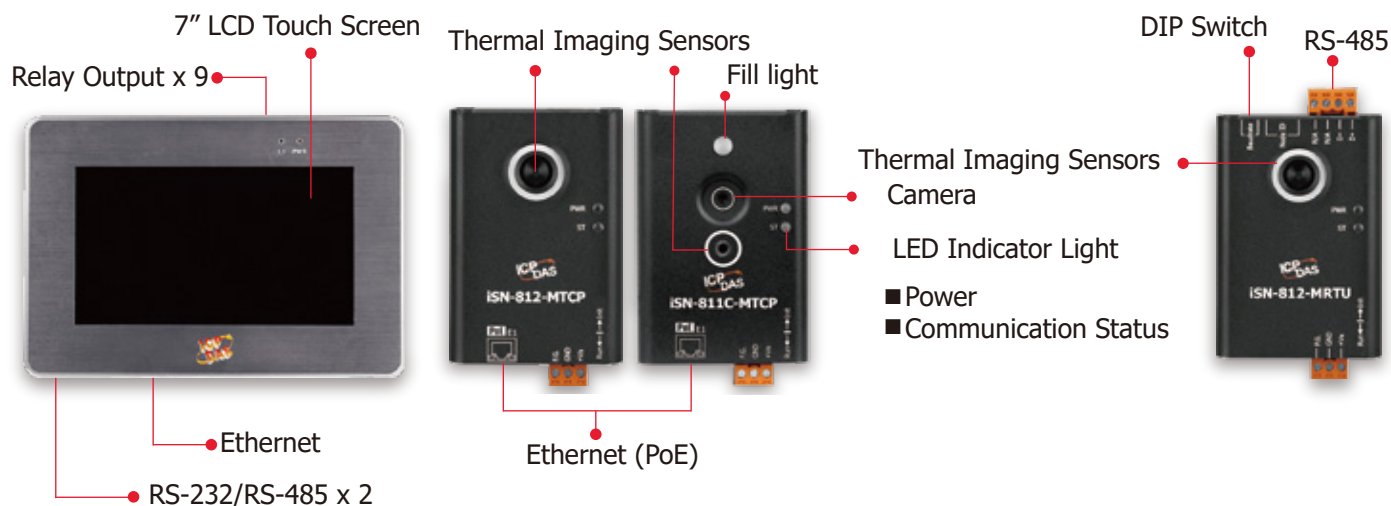
VPD-170-IRT

iSN-81x-MTCP

iSN-81x-MRTU

Data Concentrator

IR Temperature Sensing Module

7" LCD Touch Screen

Relay Output x 9

Thermal Imaging Sensors

Fill light

DIP Switch

RS-485

Thermal Imaging Sensors Camera

LED Indicator Light
- Power
- Communication Status

iSN-812-MTCP

iSN-811C-MTCP

iSN-812-MRTU

Ethernet

Ethernet (PoE)

RS-232/RS-485 x 2

Thermal Imaging + Real-time Streaming Determine Abnormal Conditions On-site

iSN-811C-MTCP is the first choice for detecting electrical anomalies, mechanical overheating, equipment inspections, and other troubleshooting tasks. It combines thermal imaging sensors and visible light cameras, offering integrated dual-image information for quicker problem detection.
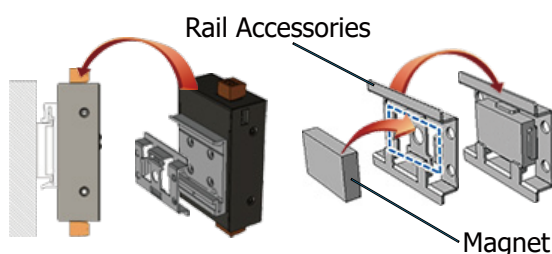
◄ Camera Images

+

iSN-811C-MTCP

▲ Image Fusion

▲ Thermal Images
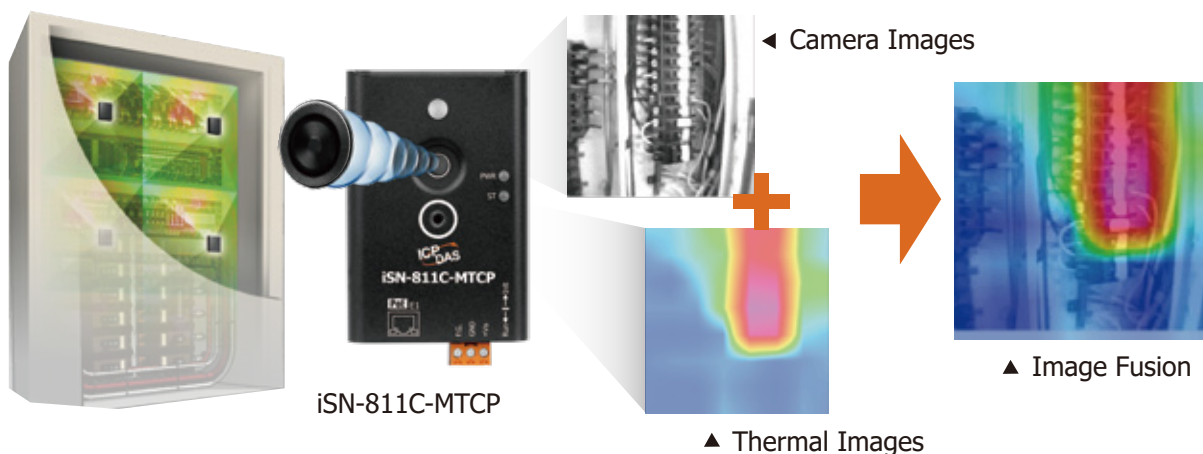
Various installation options for various fields

Rail Mounting
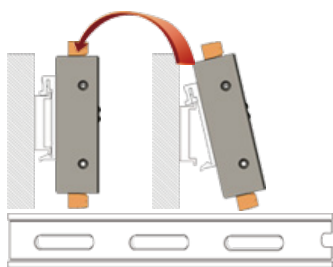
Magnetic Mounting

Universal Holder

Rail Accessories

Magnet

Magnet

Universal Joint
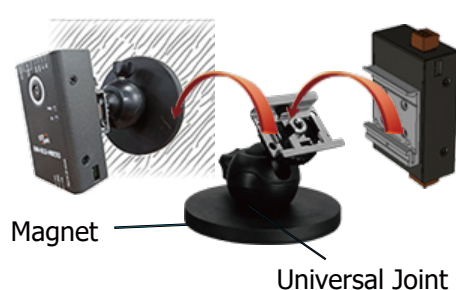
Supports Modbus / MQTT / RESTful Communication Protocols

Modbus

Industrial Standards	Local Area Network	Centralized Management

Modbus TCP

Modbus TCP

Control Center

Modbus RTU

Modbus RTU

Modbus Slave

Data Concentrator

IR Utility

MQTT

IOT Standards	Send Proactively	Decentralized management

MQTT Broker

Subscribe

Publish 30.8°C

Publish 30.8°C

Publish 47.2°C

Publish 47.2°C

Subscribe

Subscribe

HTTP Client

MQTT Client

REST

Cloud Storage	Cross-platform Applications	Decentralized Management

HTTP Client

RESTful API

RESTful API

RESTful API

HTTP Server

Internet

Cross Platform Web Browser

iSN-800 series integrates detection modules and WISE controllers, allowing the temperature measurement system to be expanded to include monitoring needs such as power, gas, and vibration. Abnormal alarm notification to grasp the on-site situation in real time.
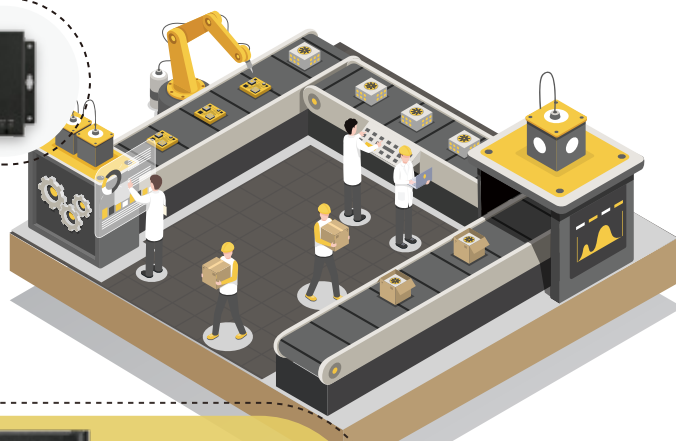
Production Line

Accelerometer Data Logger
(Thermistor Input)
AR-300-T

Image Fusion

▲ Assembly line/Machine

IR Temperature Sensing Module
iSN-811C-MTCP

Modbus TCP
Ethernet

PoE Ethernet Switch
NSM-208PSE

Liquid Leak Detection Module
iSN-104-E

Smart Power Meter
PM-2133D-MTCP
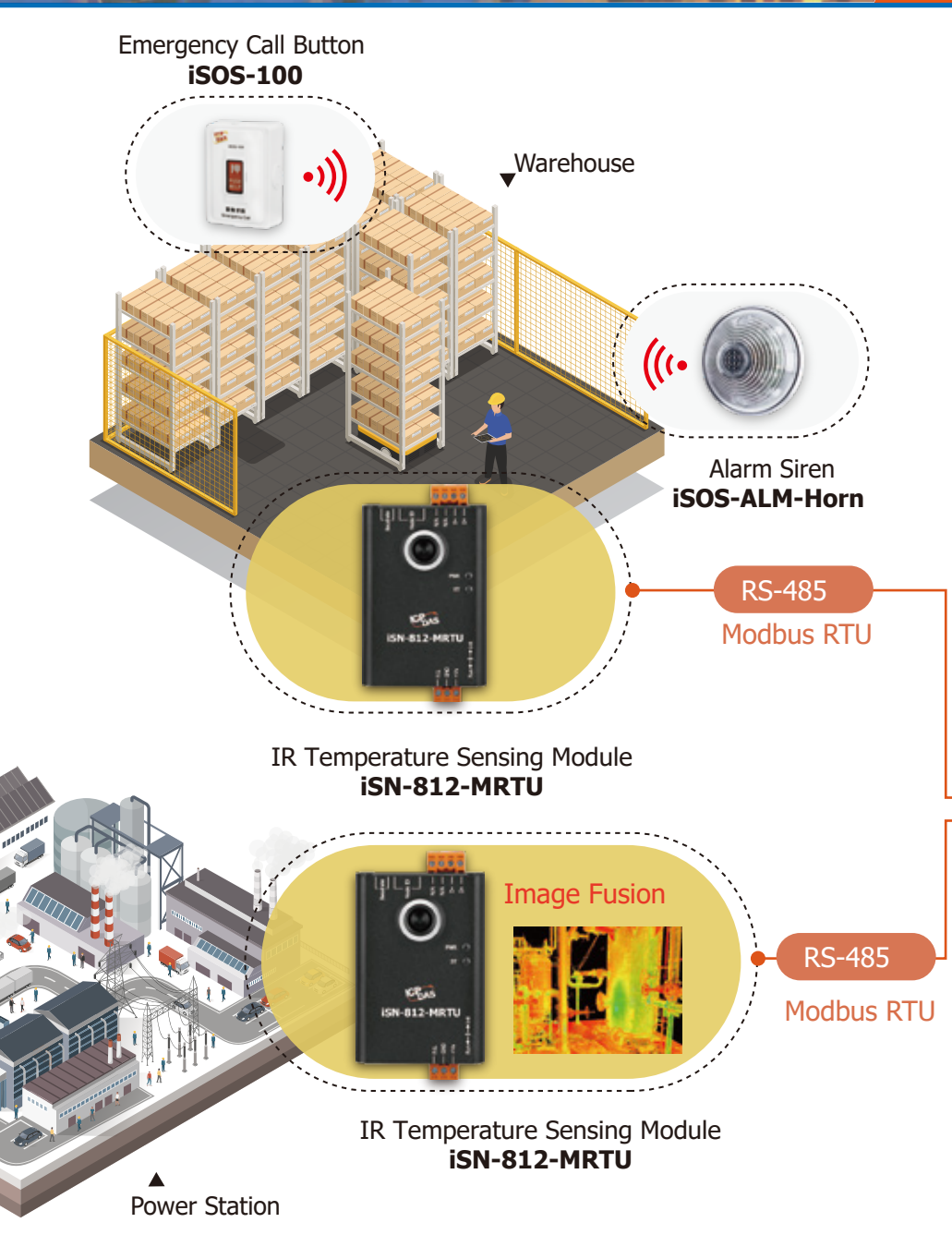
Modbus TCP
Ethernet

Edge Controller
WISE-5231M

4G

Bot service

≫ Production Line – Safety and Preventive

Temperature, vibration, and power monitoring reduce failures and defective products. Exceptions are sent to Line messages for immediate processing to reduce abnormal losses.

- iSN-811C-MTCP monitors the temperature and real-time image of equipment and distribution cabinet.

- Comprehensive monitoring of vibration (AR-300T), liquid leakage (iSN-104-E), and power (PM-2133D-MTCP).

- WISE-5231M-4GE sends abnormal messages for immediate processing.

Emergency Call Button
iSOS-100

Warehouse

Alarm Siren
iSOS-ALM-Horn

RS-485
Modbus RTU

IR Temperature Sensing Module
iSN-812-MRTU

Image Fusion

RS-485
Modbus RTU

IR Temperature Sensing Module
iSN-812-MRTU

Power Station

Supply Chain

Modbus Data Concentrator
MDC-714i

Wireless Data Concentrator
iWSN-200E

Industrial Gas Sensors
DL-302-IP65

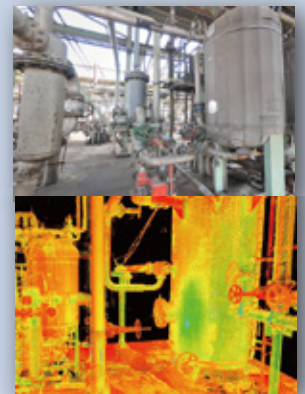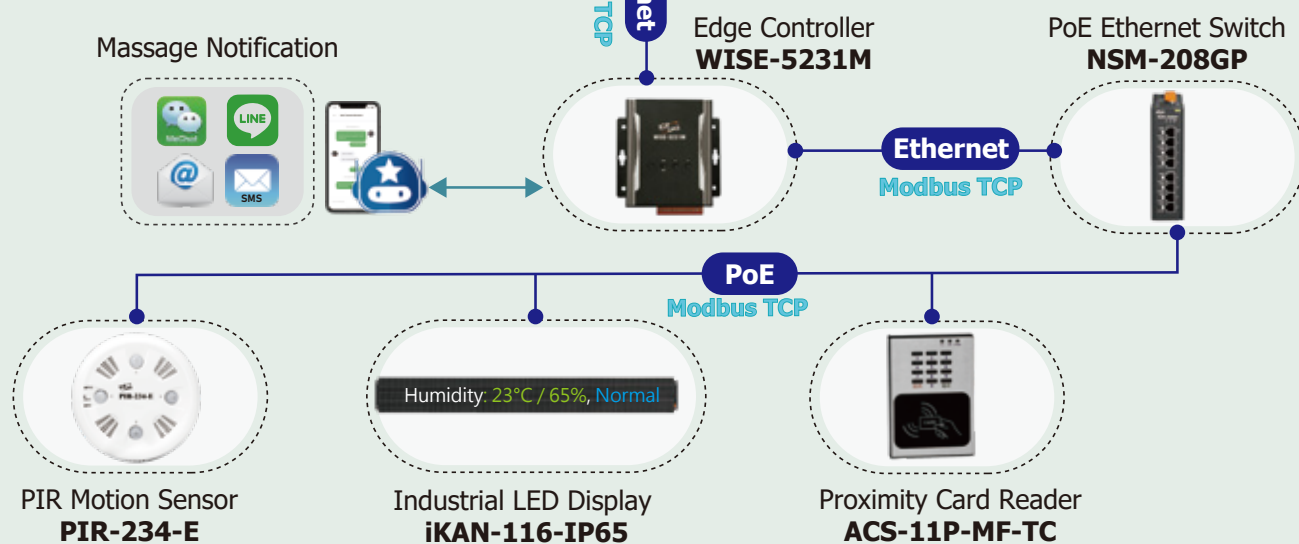Monitoring Software
AVEVA Edge

Modbus TCP
Ethernet

≫ Warehouse-Safety and Protection

The stability of raw materials and logistics is closely related to product quality, and it is crucial to ensure the safety of the storage environment (low temperature, flammable materials, etc.).

- iSN-812-MRTU monitors warehouse and conveyor temperatures for secure raw material management.

- DL-302-IP65 performs environmental harmful gas detection.

- iSOS-100 emergency call links with the iSOS-ALM-Horn siren.

Control Box Temperature and Environment Monitoring

RS-485
Modbus RTU

iSN-812-MRTU

VPD-170-IRT

Modbus TCP **Ethernet**

Massage Notification

Edge Controller
WISE-5231M

PoE Ethernet Switch
NSM-208GP

Ethernet
Modbus TCP

PoE
Modbus TCP

Humidity: 23°C / 65%, Normal

PIR Motion Sensor
PIR-234-E

Industrial LED Display
iKAN-116-IP65

Proximity Card Reader
ACS-11P-MF-TC

As functionality increased, machines and wiring inside the distribution cabinet have become more complex. Inconsistent inspections raise accident risks. To ensure safety and manage the machine room environment, IoT devices are used for real-time monitoring with zero downtime.

- Distribution cabinet Monitoring : The IRT sensor continuously monitors the temperature inside the case in a non-contact, large-area manner.

- Labor Management: Card swiping check-in and human body movement detection improve labor efficiency.

- Real-time Information : Real-time information and abnormal event notification.

IR temperature sensing module
iSN-811C-MTCP

iSN-811C-MTCP

Ethernet
Modbus TCP

Baidu Cloud
Microsoft Azure
amazon web services
IBM Bluemix

Modbus RTU
RS-485

SCADA
VP-6239-CE7
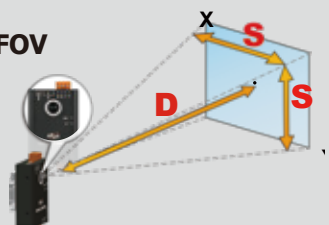
Power Meter
PM-3133-100

Alarm Siren
ALM-Horn-MRTU

IIOT Communication Server
UA-5231M

In order to avoid heat disasters and downtime of machines caused by poor contact, aging, and damaged parts in electrical control board. ICPDAS provides in-panel monitoring, including temperature and power information collection, analysis, and alarms to avoid errors and effectively improve quality and utilization rate.

- Temperature Monitoring: Large-area temperature monitoring and real-time image transmission.
- Power Management: Data tracking and carbon emission basic data analysis.
- Cloud Application: IIoT communication server, combined with cloud and abnormal notification.

Selection Guide

IR Temperature Sensing Modules

Model Name	iSN-811C-MTCP (With Camera)	iSN-811-MRTU	iSN-812-MTCP	iSN-812-MRTU
IR Sensor				
Pixel	64 (8 x 8)		768 (32 x 24)	
Range	50°C~250°C		-40°C~300°C	
Accuracy/Resolution	±5°C Max. / 0.1°C			
Effective Distance	1m			
FOV	X: 60° / D : S =1 : 1.15 Y: 60° / D : S =1 : 1.15		X: 110° / D : S =1 : 2.86 Y: 75° / D : S =1 : 1.53	
Camera				
Max. Resolution	QVGA (320 x 240)	––		
Fill light	Yes	––		
Interface				
Port	Ethernet, PoE	RS-485	Ethernet, PoE	RS-485
Protocol	Modbus TCP / MQTT / RESTful	Modbus RTU	Modbus TCP / MQTT / RESTful	Modbus RTU

IR Temperature Data Concentrator

Model	VPD-170-IRT		
Type	LCD 7" TFT (Resolution 800 x 480)	Buzzer/Reset Button	Yes
Ports	RS-232 / RS-485 x 2 / RJ-45, 10/100 Base-TX	IP Rating	Front Panel: NEMA 4 /IP65
		Operating Temp	-10 ~ +60° C
Protocol	Modbus RTU / Modbus TCP	Power	DC: +12 ~ 48 VDC / PoE: 48 VDC
Relay	9 x Single Relay(Form A)	Humidity	10 ~ 90% RH, Non-condensing