ICP DAS
Industrial Automation Technology
Innovator and Enhancer.



Solution ››

Wireless Energy Management

iWSN Power Meter

CFV & Energy Consumption Calculation
ESG Energy Management Real-Time Monitoring

Wireless Communication
Low-Interference & Long-Distance
Sub-GHz Wireless Communication

Retransmission & Addendum
Timestamps for data integrity and machine-difference energy-saving application

Circuit Protection
Built-in 2A Fuse to keep the main circuit safe

No-need Extra Power Wiring
Powers by the measured voltage cable; no extra power wiring is needed

IP33 Anti-splash & Anti-touch
Avoiding fire sprinkler impacts and inadvertent contact with firefighters



iWSN-9601/9603 Series

Vol. iWSN_F.2.25.11_EN

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Introduction

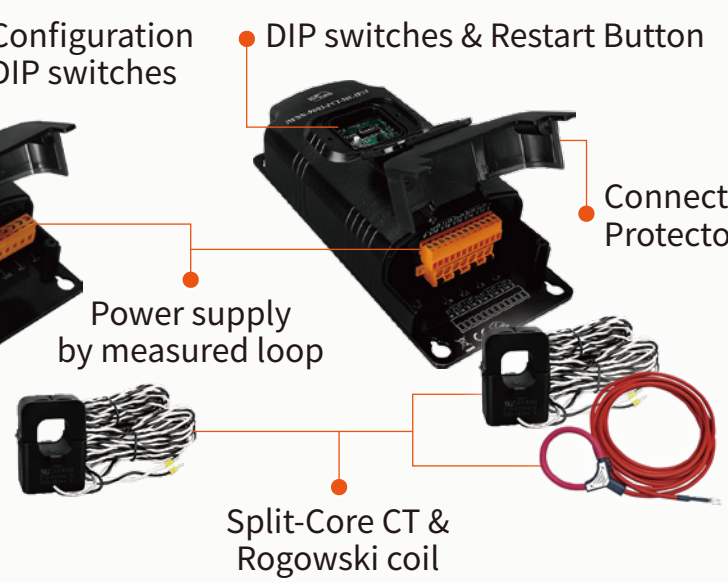
iWSN-9601 Series

Single-phase



iWSN-9603 Series

Three-phase



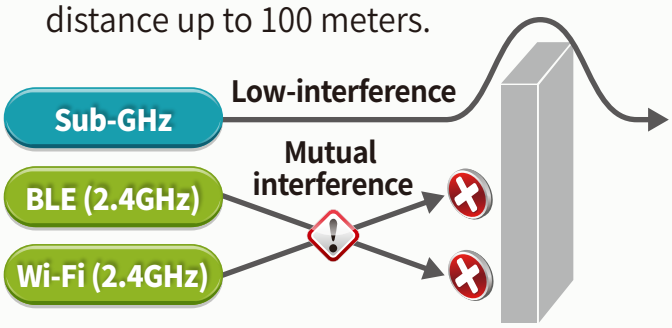
iWSN-200x Series

Data Concentrator



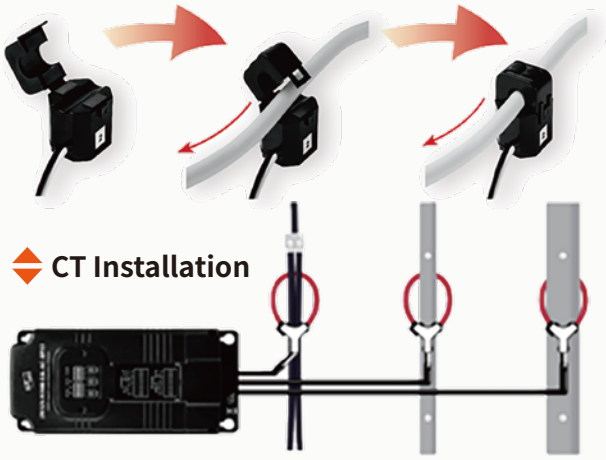
Sub-GHz wireless transmission

Good transmissibility, transmission distance up to 100 meters.



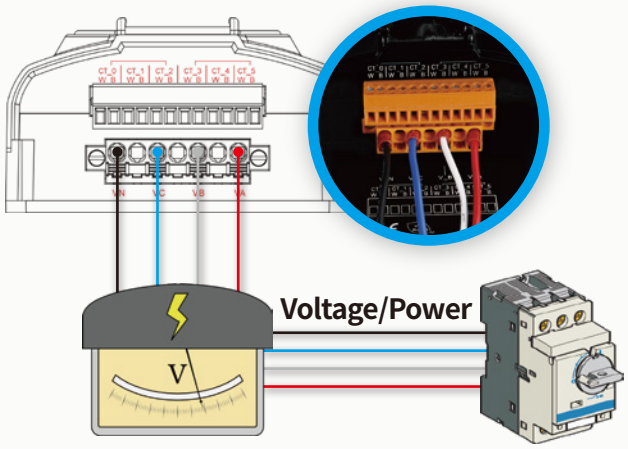
Support for multiple CTs

Split-Core design, depending on model and measurement range.



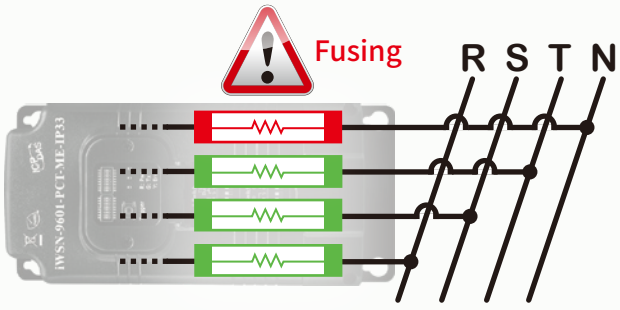
Minimalistic wiring design

Power supply and measurement share the same circuit to save wiring cost.



Built-in 2A fuse

Fuse design for uninterrupted production.

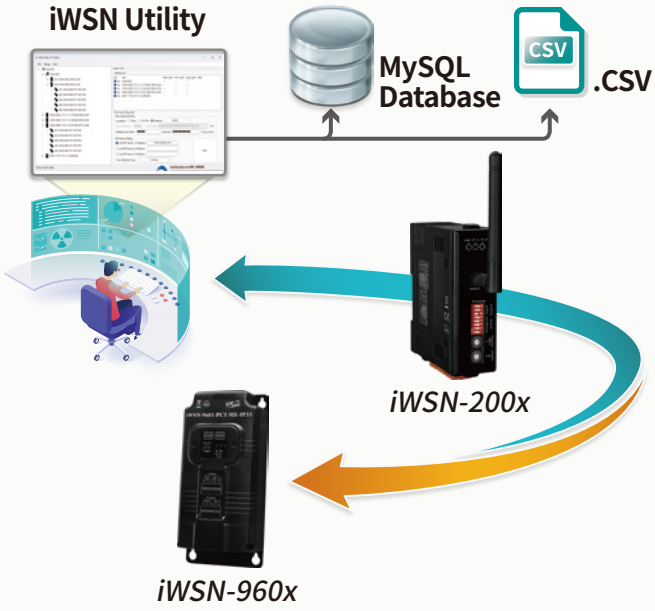


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Complete and real-time data, broken patches

◆ Utility with wireless retransmission mechanism and addendum function to ensure data integrity (CSV / MySQL storage support)

◆ iWSN Sensing Module Real-time Data Display

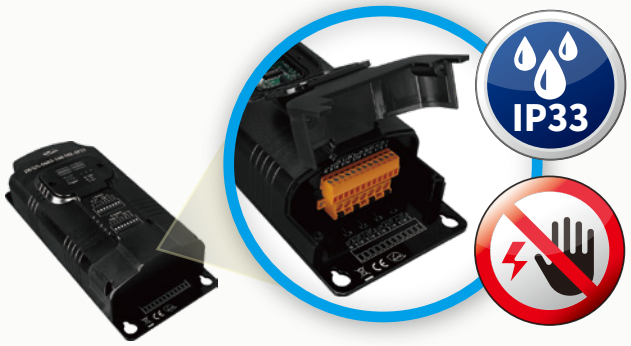


Multi-Network Segment Domain

Provides 16 frequency bands and 4 group IDs that can be combined to create up to 64 subdomains, with 31 sensing modules in a single subdomain.

Water-proof Design

Modules can be installed on outside of control box. The IP33 water-proof design effectively reduces the risk of short-circuiting, leakage, and inadvertent contact caused by exposed contacts during sprinkler firefighting.



Time Stamp for Electricity Refill

◆ Built-in real-time clock (RTC)

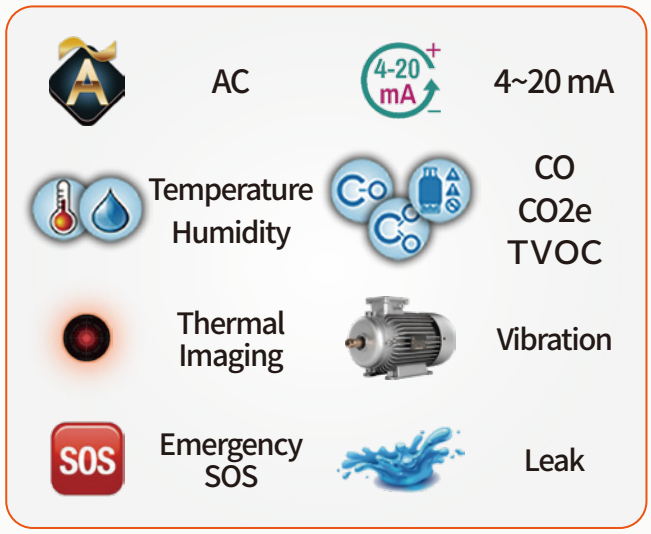
◆ Power Information with Time Stamping

◆ Mechanical Difference Analysis and Carbon Footprint Calculation



Multi-Sensor Module

The Data Concentrator can integrate with other iWSN sensing modules to enhance system functionality and application flexibility by expanding the sensing modules.



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Wireless Monitoring Solution for Energy Management

Magnetic Resistor
CA-TM-M200-L050P

Environmental Sensing
iWSN-101X-CLE

Vibration Measurement
iXN-2VB3

Single-phase Power Measurement
iWSN-9601-160-ME-IP33

Internet

RS-485

Data Concentrator
iWSN-200U

Touch HMI Device
TPD-433-H

Industrial LED Display
iKAN-116S

Edge

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The iWSN-960x wireless power meters with PMD edge controllers and IoTStar meet the needs of energy management and ESG applications. The timestamps attached to the power information along with the start and end times of the production process can be used to analyze the power consumption of product processes and calculate carbon footprints.





Computing Controller
WISE-5231M



Management Software
IoTstar

Panel Factory - Predictive Maintenance Strategy

Monitor the data of robotic arms in the panel factory and upload the measurement data to cloud AI for big data analysis to establish the health index of the equipment. Through the information flow with MES and ERP system, we can plan timely and appropriate maintenance plan and spare parts preparation to realize the predictive maintenance strategy.

- iWSN-9601: Measurement of circuit current of single-phase motors
- iWSN Environmental Sensing Module: Thermal resistors measure the motor temperature and iXN-2VB3 measures the motor 3-axis vibration value.
- TPD-433-H: Read data collected by iWSN-200U to determine the health level of the device and display it on the screen.

  WISE-5231M: Collect multiple sets of TPD-433-H information, centralize it and push out the alarm message.

ESG Net Zero Carbon Process - Energy Management

In response to the global demand for net-zero carbon emissions, the production costs of various industries will increase as a result of the inclusion of carbon tax calculations. Energy management is one of the most important issues in the supply chain to effectively reduce carbon emissions. The semiconductor and panel manufacturing industry covers a large number of equipment in the manufacturing process, and monitoring the energy consumption of equipment in clean rooms with limited space is a major challenge.

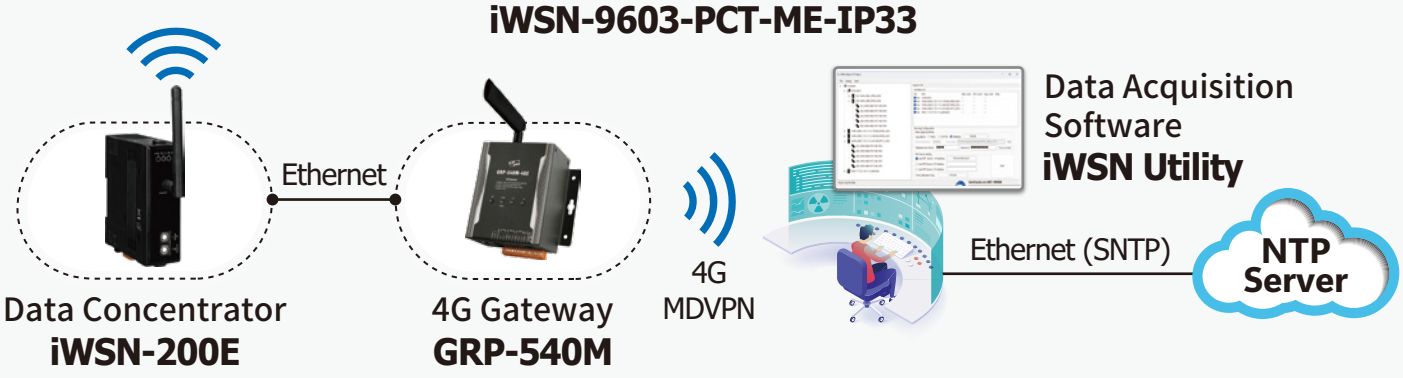
- iWSN-9603: Installed outside the equipment distribution panel, overcoming the complicated wiring and space requirements.
- iWSN-200U: The data collected by iWSN wireless meters or sensing modules are transmitted back to the monitoring system in real time for energy consumption analysis, contract capacity planning and energy saving strategy evaluation.

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Semiconductor Plant Performance & Energy Consumption Differential Analysis



Three Phase Power Measurement
iWSN-9603-PCT-ME-IP33



Data Concentrator
iWSN-200E

4G Gateway
GRP-540M

Green Factory -
:: Differential Analysis of Performance & Energy Consumption

Semiconductor manufacturers set energy consumption standards for the same type of machine, and evaluate maintenance or machine parameter adjustments based on power consumption differences to achieve energy saving and predictive maintenance. However, the number of machines is large and the cost of construction is high. A portable structure is used to monitor the energy consumption of the target machine, and the radio meter is periodically transferred to another machine for further measurement.

- iWSN-9603 is easily removable and installable with a powerful magnet for sequential access to machine power information.
- iWSN-200E collects data and then connects to the corresponding address via 4G gateway and MDVPN network to obtain power information.
- The power information is time-stamped, so that the energy consumption of machines can be compared according to the start and end times of the process, and solutions can be evaluated for high energy-consuming equipment.

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Carbon Footprint Certification Information Calculation Benchmark for Steel Industry



Energy Saving, Carbon Reduction and Carbon Inventory - Energy Efficiency Optimization Strategies

Steel casting is a high energy-consuming industry. In order to comply with the Net Zero Carbon Emission Policy, it is necessary to implement energy saving programs and carbon inventories. There are many trivial matters that need to be taken care of during the metal melting process, and there is no time to worry about the high temperature of the molten iron caused by the furnace melting at full power and wasting electricity.

- iWSN-9603 measures the instantaneous power and electricity of the circumferential furnace, the power of the rolling mill motor, and obtains the process operation information.
- VPD-173N-64 collects power information from weighing controller's raw material weight and iWSN-200U to predict required power consumption.
- The audible and visual alarm module reminds you to adjust the output power of the high frequency melting furnace to the power required for heat preservation.

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Selection Guide

iWSN-960X-PCT-ME-IP33

Power Supply
1：Single-phase
3：Three-phase

CT Types
PCT：Split core CT (Purchase)
160：Split core CT 100A x 6 groups
240：Split core CT 200A x 6 groups
360：Split core CT 400A x 6 groups
RCT500P：Rogowski coil 500A x 6 groups
RCT1000P：Rogowski coil 1000A x 6 groups
RCT2000P：Rogowski coil 2000A x 6 groups

IP33 Protection

iWSN-960x Series — iWSN Wireless Intelligent Power Meter

Single-Phase Six Circuits	Models	CT Inside Diameter	Max. Current	Wh Accuracy	Sensing Specifications
	iWSN-9601-PCT-ME-IP33	For purchase	Depended on CTs	2 %	Voltage: 58.0 ~ 277.0 VAC Instantaneous Power: 0 ~ 3276.7 kW Electricity: 0 ~ 65535 kWh Current THD: 0 ~ 399.99 % Voltage THD: 0 ~ 399.99 % Power Factor: -1.0000 ~ +1.0000 Time Stamp: Year, Month, Day, Hour, Minute, Second
	iWSN-9601-160-ME-IP33	16 mm	100 A	1 %	
	iWSN-9601-240-ME-IP33	24 mm	200 A		
	iWSN-9601-360-ME-IP33	36 mm	400 A		

Three-Phase Dual Circuit	Models	CT Inside Diameter	Max. Current	Wh Accuracy	Sensing Specifications
	iWSN-9603-PCT-ME-IP33	For purchase	Depended on CTs	2 %	Voltage: Three-phase 100.0 ~ 480.0 VAC Instantaneous Power: Three-phase 0 ~ 2497967.295 kW Electricity: Three-phase 0 ~ 10000000.00 kWh Current THD: 0 ~ 399.99 % Voltage THD: 0 ~ 399.99 % Power Factor: -1.0000 ~ +1.0000 Time Stamp: Year, Month, Day, Hour, Minute, Second
	iWSN-9603-160-ME-IP33	16 mm	100 A	1 %	
	iWSN-9603-240-ME-IP33	24 mm	200 A		
	iWSN-9603-360-ME-IP33	36 mm	400 A		
	iWSN-9603-RCT500P-ME-IP33	55 mm	500 A	2 %	
	iWSN-9603-RCT1000P-ME-IP33	80mm	1000 A		
	iWSN-9603-RCT2000P-ME-IP33	105 mm	2000 A		

iWSN-200x Series — iWSN Wireless Data Concentrator

	Models	Max. Current	Relay
	iWSN-200U	RS-232/RS-485 x 1（Choose one to use）	X
	iWSN-200R	RS-485 x 1	O
	iWSN-200E	10/100 Mbps Ethernet x 1（POE / External power supply）	X

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