EtherNet/IP Solution



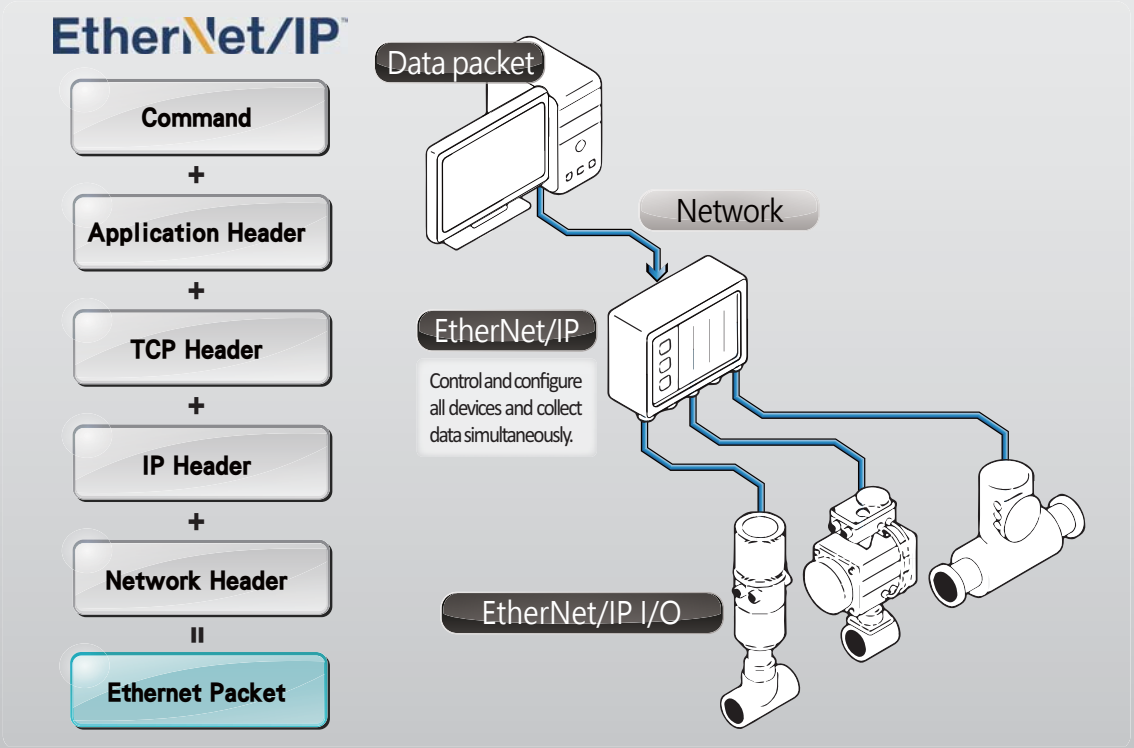


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EtherNet/IP™ Solution

EtherNet/IP is a CIP protocol implemented through IEEE 802.3 and TCP/IP protocols. It is an open network specification like DeviceNet and ControlNet, and an industrial application layer protocol for industrial automation applications. EtherNet/IP uses Ethernet protocols, including TCP (Transport Control Protocol), IP (Internet Protocol) and other technologies, and being based on standard Ethernet technology also means that EtherNet/IP can be compatible with current All known Ethernet devices communicate and apply. EtherNet/IP organizes network devices into consolidated objects in which access, behavior, and extended attributes are defined, allowing access to a large number of different devices using the protocol. Based on these agreements, EtherNet/IP can support seamlessly integrated systems from industrial plants to enterprise networks.

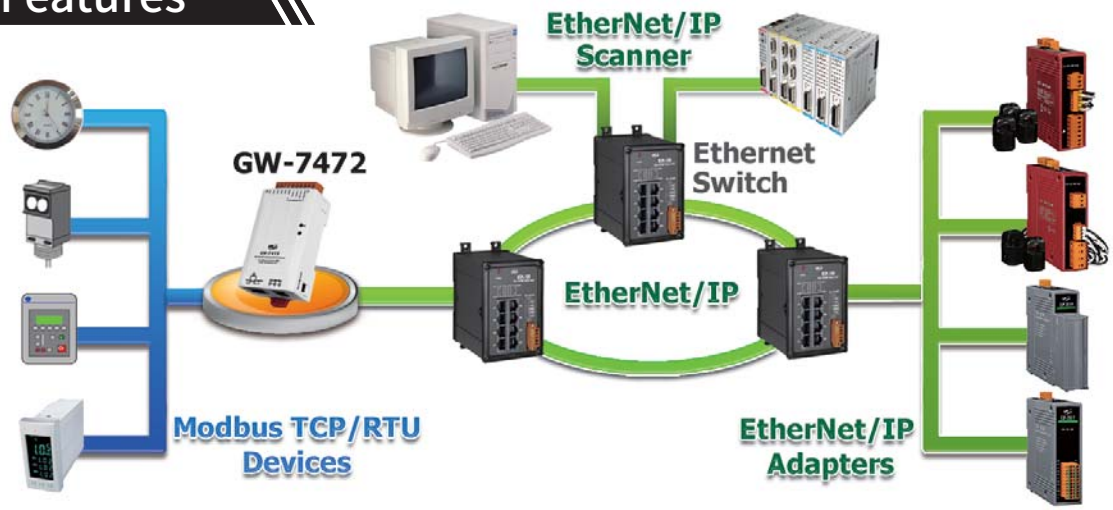


Advantages

- ❒ **Compatibility:** Using traditional Ethernet and compatible with common protocols and transmission devices makes applications easy to import and implement.
- ❒ **Standardization:** Devices must be QoS-based EtherNet/IP certified.
- ❒ **Universality:** The ubiquity of EtherNet/IP in industrial sites makes it the protocol of choice.
- ❒ **Supportability:** ICP DAS provides tools and instant customer service to quickly integrate projects.

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Features

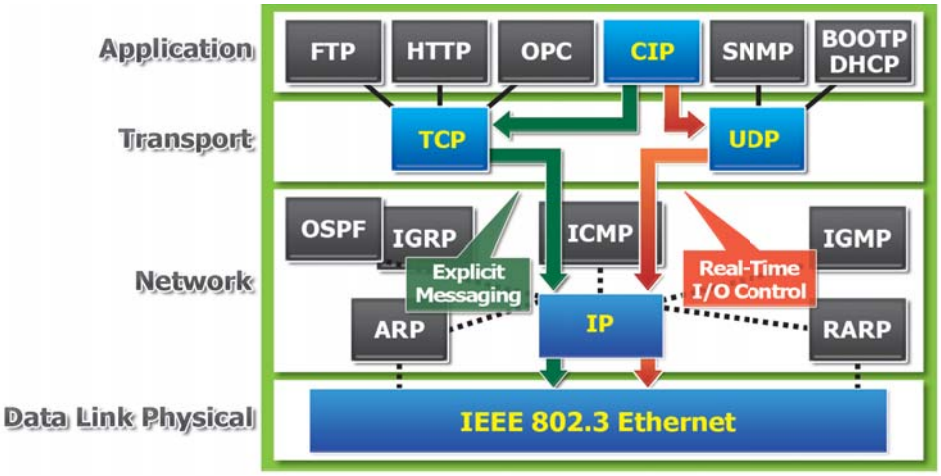


Various Topologies

EIP series provides Ethernet port. It provides Star/Bus/Daisy Chain/Ring topology connections to accelerate field expansion and production line change management. It is compatible with IT networks, but it can be easily set up without professional IT technicians.

Data Exchange

Provide a parameter integration setting interface for quick configuration and import.

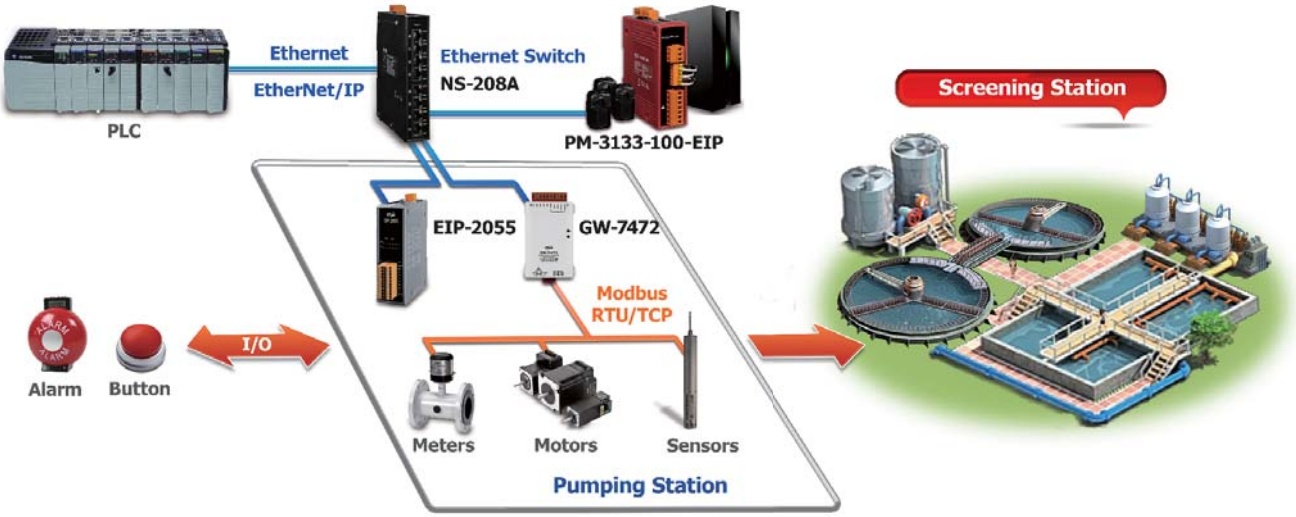


Function	Data Integration, Non-real-time Automation Procedures	Time-critical Discrete Automation	Motion Control
Comm. Protocol	.NET, DCOM, TCP/IP	Common Industrial Protocol	Software & Hardware Solutions (Integrated with Ethernet/IP network protocol), PTP
Comm. Rate	10 ms ~ 1000 ms	1 ms ~ 100 ms	100 ms
Applicable Industries	Oil & Gas, Chemicals, Energy, Water Treatment	Automotive, Food, Semiconductor, Steel, Pharmaceutical	Discrete Automation Collections
Application Equipment	Pumps, Compressors, Mixers, Instruments	Material Handling, Filling, Labelling, Palletizing, Packaging	Printer, Wiredrawing, Web Making, Pick & Place

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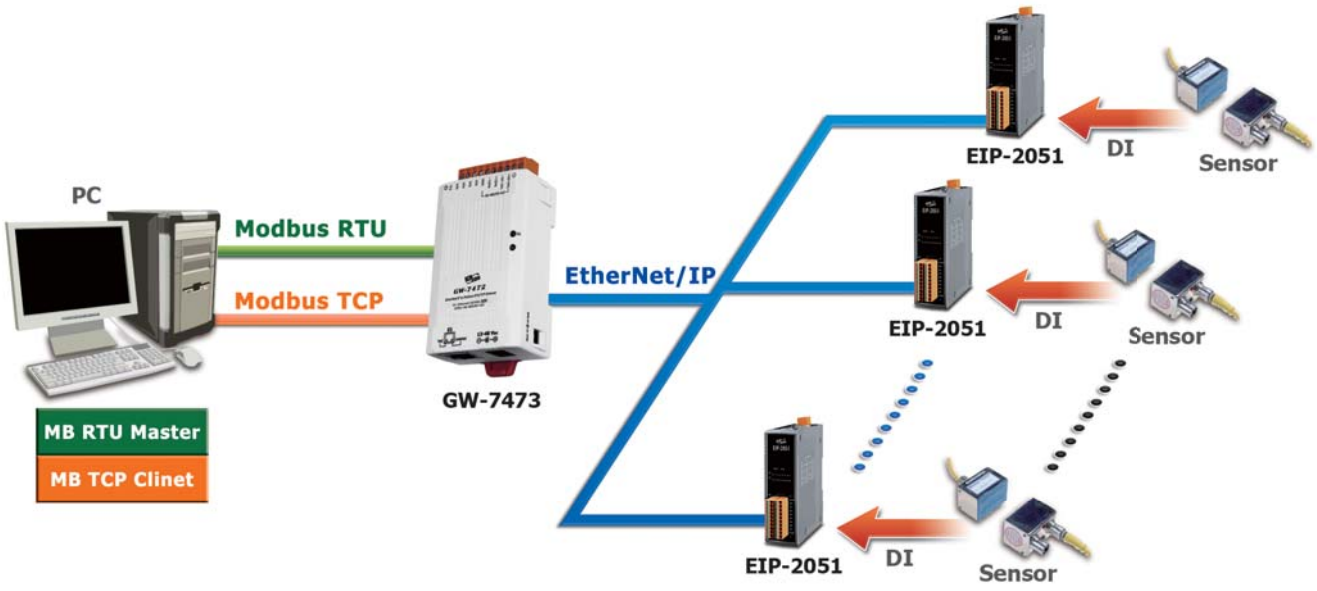
Applications

The application of sewage treatment plant is getting more and more important. The sewage treatment plant needs to reconstruct the control system. We provide a GW-7472 solution AB PLC (Allen-Bradley ControlLogix 5563 via 1756-ENBT) convert the data between EtherNet/IP and Modbus.
In the control room, GW-7472 gets the motors, meters and sensors information and publishes these data to PLC. PLC can also transmit data to the Modbus device via GW-7472.The power consumption status can also be monitored through the PM-3133-100P-EIP to ensure the quality of water service operation.





In the screw factory, screws and other components need to be counted at the same time. ICP DAS provides GW-7473 and EIP-2000 module solutions, so that the user does not need to use PLC as the EtherNet/IP host. The EIP-2000 module can receive I/O status messages and publish the messages to GW-7473, and the owner can use Modbus RTU or Modbus TCP on the PC to read the data.



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EtherNet/IP Gateway



GW-7472



GW-7473

Features:

- Ethernet Protocol: EtherNet/IP Adpter/Scanner
- Support Explicit & Implicit connections
- Support Modbus RTU & Modbus TCP protocols
- Removable terminal block connector
- Tiny form-factor and low power consumption
- Redundant power inputs: PoE

Utility Features :

- Network/UART parameters and Modbus devices configuration
- Easy test to transmit/receive EtherNet/IP data

GW-7472 and GW-7473 are gateways for EtherNet/IP and Modbus protocols, among which GW-7472 is an EtherNet/IP slave, and GW-7473 is an EtherNet/IP master. Users can use EtherNet/IP PLC to Read Modbus slave devices, or use Modbus master devices to access EtherNet/IP slave devices. Through the GW-7472 or GW-7473, users can easily convert the data between the EtherNet/IP side and the Modbus side, so that the protocol networks at both ends can be connected quickly and conveniently.

Model		GW-7472	GW-7473
Serial Interface			
COM1		RS-495/RS-422 (Choose one to use)	
Protocol		Modbus RTU Master	Modbus RTU Slave
Ethernet Interface			
Ports		10/100 Base-TX, PoE (IEEE802.3af, Class 1)	
Connector		RJ-45 x 1	
Protocol	EtherNet/IP	Adapter	Scanner
	ModbusTCP	Client	Server
Hardware			
Watchdog Timer (WDT)		Yes	
ESD Protection		Contact 4kV Class A	
Mechanism			
Dimensions (W x L x H)		52 mm x 27 mm x 77.4 mm	
Installation		DIN-Rail Mounting	
Fireproof		UL94-V0	
Power			
Power Input		PoE: IEEE 802.3af, Class 1 DC jack: +12 ~ 48 VDC	
Consumption		0.05A@24Vdc	
Environment			
Operating Temperature		-25℃ ~ +75℃	
Storage Temperature		-30 ~ +80°C	
Humidity		10 ~ 90% RH, Non-condensing	

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Digital I/O Module



EIP-2042/2051/2055/2060

Features:

- Powerful 32-bit MCU handles efficient network traffic
- Support ARP,TCP, UDP, ICMP, DHCP, BOOTP and TFTP protocols
- Easy firmware update via Ethernet
- Removable terminal block connector
- Power-On-Value
- Safe-Value

Utility Features :

- Network and Power-On/Safe Value parameters configuration
- Setting files management

EIP-2042 / EIP-2051 / EIP-2055 / EIP-2060 are multi-channel IO modules. It is designed as an EtherNet/IP adapter.Users can obtain the output status as well as the connection status. In addition, ICPDAS provides software utility to easily configure and test the EIP-2000 modules via Ethernet. Users can seamlessly integrate these modules into the Ethernet network from the industrial floor to the enterprise. The EIP-2000 allows daisy chain connection which permits the flexibility in locating devices, eases installation and lowers infrastructure costs.

Model	EIP-2042	EIP-2051	EIP-2055	EIP-2060
Digital Output				
Channels/Type	16 (Open Collector)	-	8 (Open Collector)	6 (Power Relay)
Sink/Source (NPN/PNP)	Sink		Sink	FORM A
Load Voltage	+3.5 ~ +50V		+3.5 ~ +50V	30 VDC / 125 VAC
Max. Load Current	Non-RevB: 700mA; RevB: 650mA		Non-RevB: 700mA; RevB: 650mA	5A @ 30 VDC 5A @ 125 VAC
Isolation	3000 VDC		3000 VDC	
Digital Input/Counter				
Channels/Type	-	16 (Wet/Dry Contact)	8 (Wet/Dry Contact)	6 (Wet Contact)
Sink/Source (NPN/PNP)		Sink / Source		
Voltage Level		ON: +5 ~ +50 VDC, OFF: +1 VDC Max.		
Max. Counts		32-bit (4294967295)		
Frequency		3 kHz		
Input Impedance		7.5 kΩ		
Overvoltage protection		+70 VDC		
Communication Interface				
Ethernet	IEEE 802.3, 10/100 Base-TX, 8-pin RJ-45 x 2; support daisy chain connection			
Mechanism				
Dimensions (H x W x D)	110 mm x 90 mm x 33 mm			
Installation	DIN-Rail Mounting			
Environment				
Operating Temperature	-25℃ ~ +75℃			
Humidity	10 ~ 90% RH, Non-condensing			
Power				
Input Range	+10 ~ 30 VDC			
Consumption	3.2W	2.9W	2.9W	3.3W

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Analog Input Module





EIP-2017 **EIP-2019/S**

Features:

- Powerful 32-bit MCU handles efficient network traffic
- Support ARP,TCP, UDP, ICMP, DHCP, BOOTP and TFTP protocols
- Easy firmware update via Ethernet
- Removable terminal block connector
- Support cold-junction compensation (CJC) (Only EIP-2019/S)
- Internal resistors (125Ω) selectable

Utility Features :

- Network/IP/AI parameters configuration
- Setting files management

EIP-2017 and EIP-2019/S are multi-channel analog input module, support voltage and current (internal resistors selectable) input type. In addition, EIP-2019/S supports thermocouple measurement and provides automatically cold-junction compensation (CJC) for each channel. The accuracy of the measurement is smaller than 0.1% FSR. The Module is designed as an EtherNet/IP adapter. Users can obtain the input status as well as the connection status.

Model	EIP-2017	EIP-2019/S
Analog Input		
Channels	8-ch differential / 16-ch single-ended	8
Input Type	Voltage: ±150 mV, ±500 mV, ±1 V, ±5 V, ±10 V	Voltage: ±15 mV, ±50 mV, ±100 mV, ±150 mV, ±500 mV, ±1 V, ±2.5 V, ±5 V, ±10 V
	Current: 0 ~ +20 mA, +4 ~ +20 mA, ±20 mA (Jumper Selectable in DIFF mode. An external resistor is required in SE mode)	Thermocouple: B,C,E,J,K,N,R,S,T
		Current: ±20 mA
Resolution	16 bits	
Accuracy	± 0.1 %	
Zero Drift	-	± 20 uV/℃
Span Drift		± 25 ppm/℃
Sampling Rate	10 samples/second	
Input Impedance	Voltage Input: >400 kΩ, Current Input: 125 Ω	
Overvoltage protection	240 Vrms	
Isolation	3000 VDC	
Communication Interface		
Ethernet	10/100 Base-TX, 8-pin RJ-45 x 2; support daisy chain connection	
Standard Supported	EtherNet/IP	
Mechanism		
Dimensions (H x W x D)	110 mm x 90 mm x 33 mm	
Installation	DIN-Rail Mounting	
Environment		
Operating Temperature	-25℃ ~ +75℃	
Humidity	10 ~ 90% RH, Non-condensing	
Power		
Input Range	+10 ~ 30 VDC	
Consumption	3.8W	

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3-phase Power Meter



PM-3133 Series

Features:

- Bi-directional Energy
- True RMS Power Measurements
- Energy Analysis for 3P4W, 3P3W, 1P3W, 1P2W
- Voltage Measurements Up to 500 V
- Supports Clip-on CT
- Supports Rogowski Coil Soft CT (PM-3133-RCT series only)
- Total Harmonic Distortion (THD)
- Supports EtherNet/IP Protocol

ICP DAS brings the most powerful, cost-effective, advanced Smart Power Meters series that gives you access to real-time electric usage for three-phase power measurement. With its high accuracy, the power meter series can be applied to both low voltage primary side and/ or medium/high voltage secondary side and enables the users to obtain accurate energy consumption. These compact size and cost-effective power meters are equipped with revolutionary wired clip-on CT. In the PM-3133-RCT series, the meters can be equipped with Rogowski Coil CT. It is "ropestyle" Current Transformer which delivers "Easy Installation" features for large window size.

Model	PM-3133-xxxP-EIP*	PM-3133i-xxxP-EIP*	PM-3133-RCTxxxP-EIP**
AC Power Measurement			
Wiring	3P4W-3CT, 3P3W-2CT, 3P3W-3CT, 1P2W-1CT, 1P3W-2CT		
Loops	Three-phase		
Input Voltage	10 ~ 500 V	10 ~ 600 V; built-in isolation transformer	10 ~ 500 V
Input Current	CTØ10 mm (0.05 A ~ 60 A), CTØ16 mm (0.1 A ~ 100 A), CTØ24 mm (0.15 A ~ 200 A), CTØ36 mm (0.3 A ~ 300 A), CTØ36 mm (0.3 A ~ 400 A)		CTØ55 mm (5 A ~ 500 A), CTØ80 mm (5 A ~ 1000 A), CTØ105 mm (5 A ~ 2000 A), CTØ185 mm (5 A ~ 4000 A)
Input Frequency	50/60 Hz		
W Accuracy	Better than 0.5% (PF=1)		Better than 2% (PF=1)
Power Parameter Measurement	True RMS voltage (Vrms), True RMS current (Irms), Active Power (kW), Active Energy (kWh), Apparent Power (kVA), Apparent Energy (kVAh), Reactive Power (kVAR), Reactive Energy (kVARh), Power Factor (PF), Frequency		
Data Update Rate	1 Second		
CT			
Includes CTs	3 x Clip		3 x Rogowski
Max. Current	60/100/200/300/400A		500/1000/2000/4000 A
Inside Diameter	10/16/24/36mm		55/80/105/185 mm
Ethernet			
Protocol	EtherNet/IP adapter		
Power			
Input Range	+12 ~ 48 VDC		
Relay			
Alarm Output	Form A (NO) x 2	NA	Form A (NO) x 2

*xxx is 100(CTφ10mm) / 160(CTφ16mm) / 240(CTφ24mm) / 360(CTφ36mm) / 400(CTφ36mm)
**xxx is 500(CTφ55mm) / 1000(CTφ80mm) / 2000(CTφ105mm) / 4000(CTφ185mm)

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LED Display Power Meter



PM-2133D

Features:

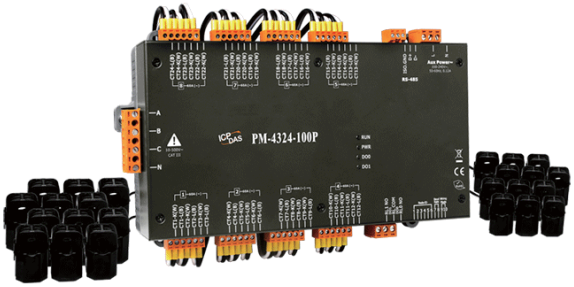
- Bi-directional Energy
- True RMS Power Measurements
- Energy Analysis for 3P4W, 3P3W, 1P3W, 1P2W
- Voltage Measurements Up to 500 V
- Clip-on CT for Easy Installation
- W Accuracy Better than 0.5% (PF=1)
- Total Harmonic Distortion (THD)
- 8-Digit LED Display
- Supports EtherNet/IP Protocol

ICP DAS brings the most powerful, cost-effective, advanced Smart Power Meters PM-2133D series that gives you access to real-time electric usage for three-phase power measurement. With its high accuracy (<0.5%, PF=1), the PM-2133D series can be applied to both low voltage primary side and/or medium/high voltage secondary side and enables the users to obtain reliable and accurate energy consumption readings from the monitored equipments in real time under operation. These compact size and cost-effective power meters are equipped with revolutionary wired clip-on CT (various types, support input current up to 400 A). It operates over a wide input voltages range 10 ~ 500 VAC which allows worldwide compatibility. This meter has LED display shows power.

Model	PM-2133D-xxxP-EIP*
LED	
LED Indicator	Yes, 8-digit
AC Power Measurement	
Wiring	3P4W-3CT, 3P3W-2CT, 3P3W-3CT, 1P2W-1CT, 1P3W-2CT
Loops	Three-phase
Measurement Voltage	10 ~ 500 V
Measurement Current	CTØ10 mm (0.05 A ~ 60 A), CTØ16 mm (0.1 A ~ 100 A), CTØ24 mm (0.15 A ~ 200 A), CTØ36 mm (0.3 A ~ 300 A), CTØ36 mm (0.3 A ~ 400 A)
Frequency	50/60 Hz
W Accuracy	Better than 0.5% (PF=1)
Power Parameter Measurement	True RMS voltage (Vrms), True RMS current (Irms), Active Power (kW), Active Energy (kWh), Apparent Power (kVA), Apparent Energy (kVAh), Reactive Power (kVAR), Reactive Energy (kVARh), Power Factor (PF), Frequency
Data Update Rate	1 Second
CT	
Includes CTs	3 x Clip
Max. Current	60/100/200/300/400A
Inside Diameter	10/16/24/36mm
Ethernet	
Protocol	EtherNet/IP adapter
Power	
Input Range	+85 ~ 264 VAC
*xxx is 100(CTφ10mm) / 160(CTφ16mm) / 240(CTφ24mm) / 360(CTφ36mm) / 400(CTφ36mm)	

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Multi-circuit Smart Power Meter



PM-4324 Series

Features:

- Bi-directional Energy
- 8 Three Phase Circuits or 24 Single Phase Circuits
- True RMS Power Measurements
- Energy Analysis for 3P4W, 3P3W, 1P3W, 1P2W
- Voltage Measurements Up to 500 V
- Easy install with split core CT
- W Accuracy Better than 0.5% (PF=1)
- Total Harmonic Distortion (THD)
- Support EtherNet/IP Protocol
- Support 2 Power Relay Output (Form A)

The PM-4324 series multi-circuit power meter monitors up to 8 three-phase circuits or 24 single-phase circuits, or any combination of single or three-phase circuits. The PM-4324 series can measure up to 24 currents via external Current Transformers (CTs). This flexibility makes the PM-4324 series perfect for multi-tenant facilities such as residential projects, office buildings and shopping malls. This compact instrument is designed to easily fit into existing panelboards or be flush mounted nearby, thus eliminating the need for expensive retrofit projects or for allocating extra space for the device. The PM-4324A is the same model as the PM-4324, except for the AC Measurement. The PM-4324A has 2 separate main circuit inputs that can use in the different power system.

Model	PM-4324-xxxP-EIP*	PM-4324A-xxxP-EIP*	PM-4324D-xxxP-EIP*
LED			
LED Display	NA		Yes
AC Power Measurement			
Wiring	3P4W-3CT, 3P3W-2CT, 3P3W-3CT, 1P2W-1CT, 1P3W-2CT		
Loops	8 Three Phase Circuits or 24 Single Phase Circuits		
Input Voltage	10 ~ 500 V		10 ~ 600 V
Independent Circuit	NA	YES	NA
Input Current	CTØ10 mm (0.05 A ~ 60 A), CTØ16 mm (0.1 A ~ 100 A), CTØ24 mm (0.15 A ~ 200 A), CTØ36 mm (0.3 A ~ 300 A), CTØ36 mm (0.3 A ~ 400 A)		
Input Frequency	50/60 Hz		
W Accuracy	Better than 0.5% (PF=1)		
Power Parameter Measurement	True RMS voltage (Vrms), True RMS current (Irms), Active Power (kW), Active Energy (kWh), Apparent Power (kVA), Apparent Energy (kVAh), Reactive Power (kVAR), Reactive Energy (kVARh), Power Factor (PF), Frequency		
Data Update Rate	1 Second		
CT			
Includes CTs	24 x Clip		
Ethernet			
Protocol	EtherNet/IP adapter		
Power			
Input Range	+85 ~ +264 VAC (277 VAC available)		
Alarm Output	Form A (Normal Open) x 2		
*xxx is 100(CTφ10mm) / 160(CTφ16mm) / 240(CTφ24mm) / 360(CTφ36mm) / 400(CTφ36mm)			

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Industrial Fieldbus

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



IIoT Product

- IIoT Software and Hardware
- Security Identifi cation & Monitoring System
- Environmental Monitoring
- Factory Automation
- Energy Management Solution
- Vibration Measurement Solution



Machine Automation

- Motionnet Solutions
- EtherCAT Motion Control Solutions
- Ethernet Motion Control Solutions
- Serial Communication Motion Control Solutions
- PC-based Motion Control Cards
- PAC Solutions - Motion Modules



TouchPAD HMI Solutions

- Introduction
- TPD/VPD Products Series
- Video Intercom & Access Control Series
- TPD/VPD Application



Energy Management Solution

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



Intelligent IIoT Edge Controller & I/O Module

- WISE IIoT Edge Controller & I/O Module
- Cloud Management
- Applications
- Product Specifi cation
- Intelligent Surveillance Solution



PAC 9000 Series

- AXP/ALX-9000 Series
- XP-9000-WES7/
- XP-9000-IoT/
- LX-9000/LP-9000 Series
- e-9K Series Module
- I-9K Series Module
- 2000 Series PAC
- iBPC Series BoxPC
- Touch Monitor



Wireless Solution

- WLAN Products
- Radio Modems
- 3G/4G Products
- NB-IoT Solution
- GPS Products
- Bluetooth LE Converters
- ZigBee Products
- Infrared Wireless Modules
- Wireless Modbus Data Concentrators
- WLS (Wireless Locating System)

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