Power Meter Concentrator

PMD Series

**10.4" TFT LCD**
**PMD-4201**

**7" TFT LCD**
**PMD-2201**

# PMD-2201/4201
Industrial IoT Power Meter Concentrator with Touch Panel

## Features

- No extra software tool is required, using browsers to perform system operations
- Support at most 24 ICP DAS Modbus Power Meters (with maximum 16 ICP DAS Modbus TCP Power Meters) and 8 Modbus I/O modules.
  * Support at most 4 ICP DAS PM-4324 series Power Meters.
- 7"/10.4" TFT LCD (with Touch Panel) & PoE (Power over Ethernet) supported
- Display real-time or historical power data by browser or local display
- Provide power data statistics report by browser
- Data file auto send-back & recovery when network is resumed after disconnection
- Built-in IF-THEN-ELSE logic engine for thought-out power demand management
- Provide alarm message notification function via Email or LINE
- Adjust device operations by its power status via Modbus I/O modules
- Provide Schedule and Timer function for operations of I/O modules (devices)
- Support Modbus TCP/RTU Slave protocol for seamless integration with SCADA
- Support SNMP and MQTT protocols
- Support Connection with IoT Cloud Platform (Microsoft Azure and IBM Bluemix); Support ICP DAS IoTstar Cloud software.
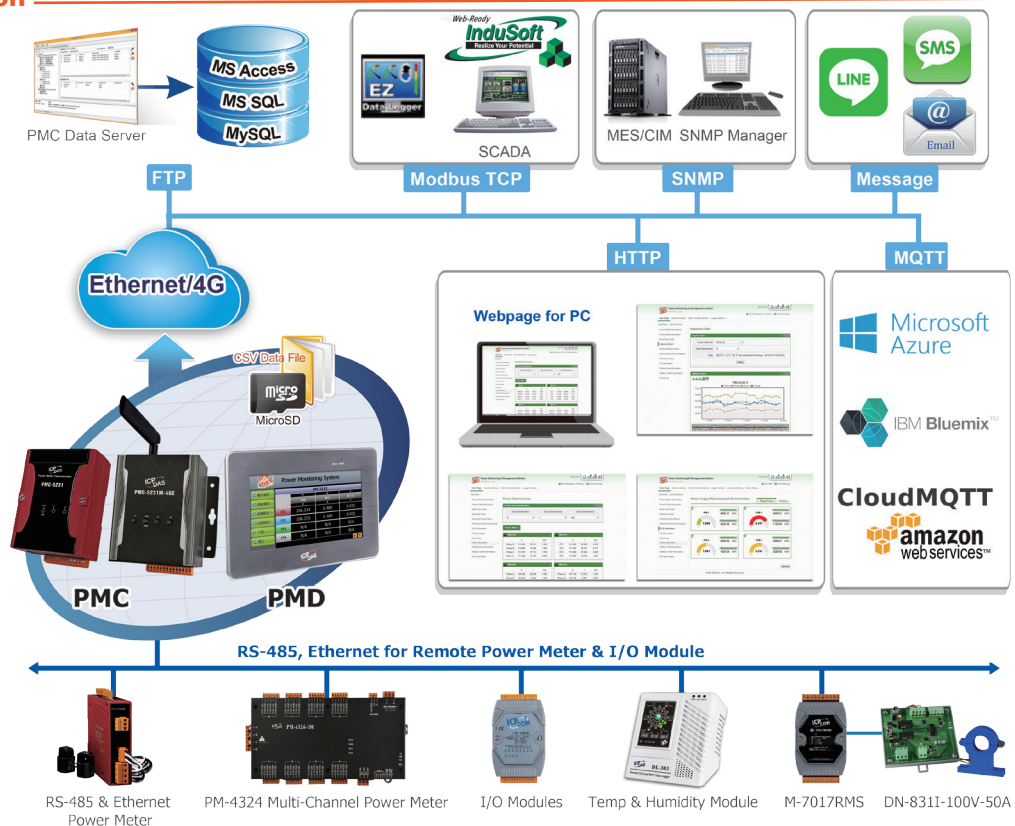
## Introduction

PMD is equipped with the TFT LCD (with Touch Panel) and designed for panel mount installation. It provides an easy way for viewing the power data and setting the system parameters at the local side. PMD also is equipped with built-in Web Server that allows direct connections via browsers to the PMD for viewing power data and setting the system parameters. PMD also supports the Modbus TCP/RTU, SNMP, FTP and MQTT protocols for seamless integration with the back-end SCADA/MES/IT/IoT/Network Management systems.

In addition to ICP DAS M-7000 I/O modules, the PMD could connect to standard Modbus TCP/RTU Slave modules. By working with the I/O modules, and functions such as IF-THEN-ELSE logic rule execution and alarm notification functions including Email/SNMP Trap, PMD offers more thought-out power demand management and alarm notification functions, and is able to perform load shedding of the devices if required, and enables real-time monitoring and control of the power consumption of the devices.

When using PMD to build a power management and monitoring system, during the whole process of system development, no programming is required; it takes a few clicks on web page to complete all settings; it is easy for the user to quickly view the power data of the devices and furthermore process the data for statistics and analysis. The PMD is an easy-to-use and easy-to-build total solution for power management and monitoring that makes more efficient energy usage.

## Application



RS-485, Ethernet for Remote Power Meter & I/O Module

RS-485 & Ethernet Power Meter | PM-4324 Multi-Channel Power Meter | I/O Modules | Temp & Humidity Module | M-7017RMS | DN-831I-100V-50A

## ■ Specifications

| Model | PMD-2201 | PMD-4201 |
|---|---|---|
| **System Software** | | |
| Embedded Service | PMC Runtime, Web server, FTP server | |
| **CPU Module** | | |
| CPU | 32-bit ARM CPU(720MHz) | 32-bit ARM CPU(1GHz) |
| DRAM | 512MB | |
| Flash (SSD) | 256MB | |
| Memory Expansion | microSD socket with 4 GB micro SDHC card (support up to 32 GB) | SD socket with 4 GB SDHC card (support up to 32 GB) |
| LED Indicator | 2 LEDs for Power and Running (Run, PWR) | |
| Rotary Switch | Yes (0 to 9) | |
| **LCD** | | |
| Diagonal Size | 7" (16:9) | 10.4" (4:3) |
| Resolution | 800 x 480 | 800 x 600 |
| Brightness (cd/m2) | 400 | |
| Contrast Ratio | 500:1 | |
| LED Backlight Life (hrs) | 20,000 | 50,000 |
| Touch Panel | 4-wire, resistive type; light transmission: 80 % | 5-wire, resistive type; light transmission: 80 % |

| Model | PMD-2201 | PMD-4201 |
|---|---|---|
| **Communication Ports** | | |
| Ethernet | 1 x RJ-45 10/100/1000 Base-TX | |
| USB 2.0 (host) | 2 | |
| COM 1 | RS-485 (Data+, Data-) (9-wire DB9 connector); 2500 $V_{DC}$ isolated | |
| COM 2 | RS-485 (Data+, Data-) (9-wire DB9 connector); 2500 $V_{DC}$ isolated | |
| COM 3 | - | RS-485 (Data+, Data-, GND); 2500 $V_{DC}$ isolated |
| **Mechanical** | | |
| Dimensions (W x H x D) | 213mm x 148mm x 44mm | 291mm x 229mm x 54mm |
| Panel Cut-Out (W x H) | 197mm x 133mm, +/- 1mm | 277mm x 215mm, +/- 1mm |
| Installation | Panel Mounting | |
| Ingress Protection | Front panel: NEMA 4/IP65 | |
| **Environmental** | | |
| Operating Temperature | -10 °C ~ +60 °C | |
| Storage Temperature | -20 °C ~ +70 °C | |
| Ambient Relative Humidity | 10 ~ 90% RH (non-condensing) | |
| **Power** | | |
| Input Range | +12$V_{DC}$ to +48 $V_{DC}$ | |
| Power from PoE | IEEE 802.3af | |
| Consumption | 6W | 13W |

## ■ Appearance

### PMD-2201

7" LCD Touch Panel
800 x 480 (16:9)

microSD Socket    LED Indicator x 2

Rotary SW.

Earphone-out
COM2
(RS-232/RS-485)
COM1
(RS-232/RS-485)
LAN
USB x 2
Power

### PMD-4201

10.4" LCD Touch Panel
800 x 600 (4:3)

SD Socket    LED Indicator x 2

DIP SW.

Rotary SW.
Earphone-out
COM2
(RS-232/RS-485)
COM1(RS-232/RS-485)
LAN
USB x 2
Power &
COM3(RS-485)
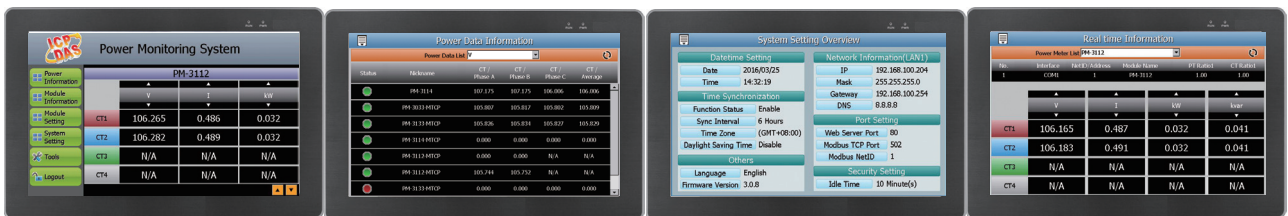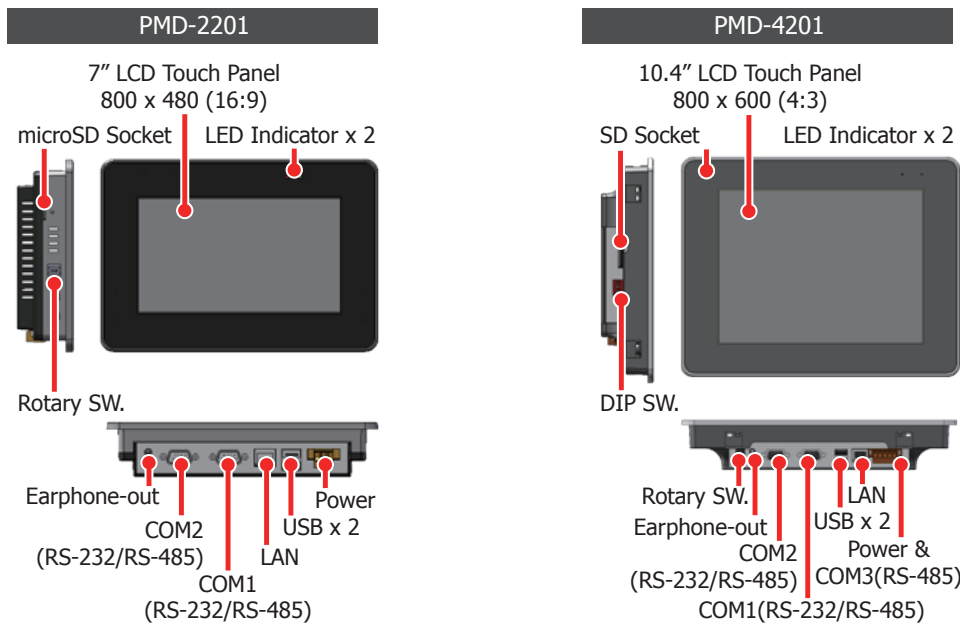


## ■ Ordering Information

| PMD-2201 CR | Industrial IoT Power Meter Concentrator with 7" Display (English) (RoHS) |
|---|---|
| PMD-4201 CR | Industrial IoT Power Meter Concentrator with 10.4" Display (English) (RoHS) |

## ■ Accessories

| Power Meter | Modbus RTU: PM-2133, PM-3133, PM-3112, PM-3114, PM-3033, PM-4312 and PM-4324 |
|---|---|
| | Modbus TCP: PM-3112-MTCP, PM-3114-MTCP, PM-3133-MTCP, PM-3033-MTCP, PM-4312-MTCP and PM-4324-MTCP |
| DP-660 | 24 $V_{DC}$/2.5 A, 60 W and 5 $V_{DC}$/0.5 A, 2.5 W Power Supply with DIN-Rail Mounting |
| MDR-60-24 CR | 24 $V_{DC}$/2.5 A, 60 W Power Supply with DIN-Rail Mounting (RoHS) |