



## PDS(M)-734(D) PPDS(M)-734(D)-MTCP

Programmable (1x RS-232, 1x RS-485 and  
1x RS-422/485) Serial-to-Ethernet Device Server  
with 4x DI and 4x DO

### Features

- Incorporate Serial Devices in an Ethernet network
- "Virtual COM" Extend COM Ports
- Virtual COM supports 32-bit and 64-bit Windows 7 SP1/10/2012/2016
- Powerful Programmable Device Server
- Watchdog Timer suitable for use in harsh environments
- Serial Port +/- 4 kV ESD Protection Circuit
- Self-Tuner ASIC Controller on the RS-485 Port
- Built-in High Performance MiniOS7 from ICP DAS
- Supports Modbus TCP to RTU/ASCII Gateway
- Supports Latched D/I and Counter Functions
- Palm-Sized with multiple Serial Ports



### System Specifications

| Models                         | PDS-734<br>PDSM-734  | PDS-734D<br>PDSM-734D  | PPDS-734-MTCP<br>PPDSM-734-MTCP | PPDS-734D-MTCP<br>PPDSM-734D-MTCP |
|--------------------------------|--|--|---------------------------------|-----------------------------------|
| <b>CPU</b>                     |  |  |                                 |                                   |
| CPU                            | 80186, 80 MHz or compatible  |  |                                 |                                   |
| SRAM                           | 512 KB   |  |                                 |                                   |
| Flash Memory                   | Flash ROM: 512 KB; Erase unit is one sector (64 KB); 100,000 erase/write cycles                              |  |                                 |                                   |
| EEPROM                         | 16 KB; Data retention: 40 years; 1,000,000 erase/write cycles  |  |                                 |                                   |
| Built-in Watchdog Timer        | Yes  |  |                                 |                                   |
| <b>Communication Interface</b> |  |  |                                 |                                   |
| Non-isolated                   | COM1   | RS-232 (TxD, RxD, RTS, CTS, GND)                               |                                 |                                   |
|                                | COM2   | RS-485 (D2+, D2-, GND)   |                                 |                                   |
|                                | COM3   | RS-422 (TxD+, TxD-, RxD+, RxD-, GND) or RS-485 (D3+, D3-, GND) |                                 |                                   |
| Ethernet                       | 10/100 Base-TX, RJ-45 port (Auto-negotiating, auto MDI/MDI-X, LED indicator)                                 |  |                                 |                                   |
| PoE                            | -  |  | IEEE 802.3af                    |                                   |
| <b>COM Port Formats</b>        |  |  |                                 |                                   |
| Data Bit                       | 7, 8: for COM1 and COM2 · 5, 6, 7, 8: for COM3   |  |                                 |                                   |
| Parity                         | None, Even, Odd, Mark, Space<br>None parity is required when using 8 data bits and 2 stop bits on COM1/COM2. |  |                                 |                                   |
| Stop Bit                       | 1, 2: for COM1 ~ COM3  |  |                                 |                                   |
| Baud Rate                      | 115200 bps max.  |  |                                 |                                   |
| <b>LED Indicators</b>          |  |  |                                 |                                   |
| 5-digit 7 Segment              | -  | Yes  | -                               | Yes                               |
| System                         | Red  |  |                                 |                                   |
| PoE                            | -  |  | Green                           |                                   |
| <b>Power</b>                   |  |  |                                 |                                   |
| Protection                     | Power Reverse Polarity Protection  |  |                                 |                                   |
| Required Supply Voltage        | +10 Vdc ~ +30 Vdc  |  | PoE or +12 Vdc ~ +48 Vdc        |                                   |
| Power Consumption              | 2.0 W  | 2.7 W  | 2.2 W                           | 2.9 W                             |
| <b>Mechanical</b>              |  |  |                                 |                                   |
| Flammability                   | Fire Retardant Materials (UL94-V0 Level)   |  |                                 |                                   |
| Dimensions (W x L x H)         | (P)PDS: 72 mm x 35 mm x 123 mm · (P)PDSM: 102 mm x 29 mm x 125 mm  |  |                                 |                                   |
| Installation                   | DIN-Rail or Wall mounting  |  |                                 |                                   |
| Casing                         | Metal for PDSM/PPDSM · Plastic for other   |  |                                 |                                   |
| <b>Environment</b>             |  |  |                                 |                                   |
| Operating Temperature          | -25 °C ~ +75 °C  |  |                                 |                                   |
| Storage Temperature            | -40 °C ~ +80 °C  |  |                                 |                                   |
| Humidity                       | 5 ~ 90% RH, non-condensing   |  |                                 |                                   |

## Introduction

The PDS-700 series is a family of Programmable Device Servers, also known as "Serial-to-Ethernet gateway", that are designed for linking RS-232/422/485 devices to an Ethernet network. The user-friendly VxComm Driver/Utility allows users to easily turn the built-in COM ports of the PDS-700 series into standard COM ports on a PC. By virtue of its protocol independence, a small-core OS and high flexibility, the PDS-700 series is able to meet the demands of every network-enabled application.

The PDS-700 series includes a powerful and reliable Xserver programming structure that allows you to design your robust Ethernet applications in one day. The built-in, high-performance MiniOS7 boots the PDS-700 up in just one second and gives you fastest responses. It also works as a Modbus TCP to RTU/ASCII gateway that supports most SCADA/HMI communications based on the Modbus/TCP protocol.

The PPDS-700-MTCP series features true IEEE 802.3af-compliant (classification, Class 1) Power over Ethernet (PoE) using a standard category 5 Ethernet cable to receive power from a PoE switch like the NS-205PSE. The PDSM-700 is the PDS-700 with Metal Case (RoHS) and the PPDSM-700-MTCP is the PPDS-700-MTCP with Metal Case (RoHS). Metal Case version includes stronger protection than PDS-700 and PPDS-700-MTCP.

The PDS(M)-734(D) and PPDS(M)-734(D)-MTCP is equipped with 1 RS-232 port, 1 RS-485 port, 1 RS-422/485 port and DI/DO. The removable on-board terminal block connector is designed for easy and robust wiring in industrial situations.

## Wiring

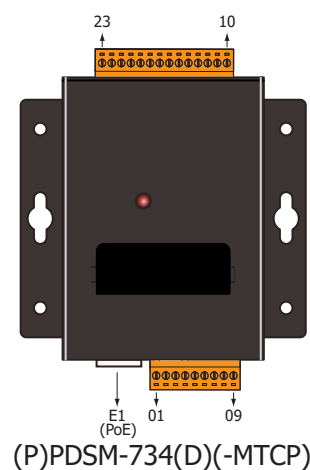
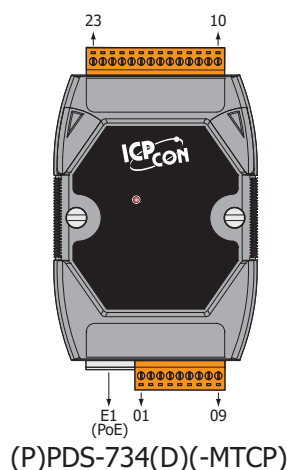
| Input Type     | DI Value as 0                | DI Value as 1                 |
|----------------|------------------------------|-------------------------------|
| Relay Contact  | <b>Relay ON</b><br>          | <b>Relay Off</b><br>          |
|                | <b>Voltage &lt; 1V</b><br>   | <b>Voltage &gt; 3.5V</b><br>  |
| Open Collector | <b>Open Collector On</b><br> | <b>Open Collector Off</b><br> |
|                | Output Type                  | DO Command as 1               |
| Drive Relay    | <b>Relay ON</b><br>          | <b>Relay Off</b><br>          |
|                | <b>Resistance Load</b><br>   |                               |

## I/O Specifications

| Models                |                                  |
|-----------------------|----------------------------------|
| <b>Digital Output</b> |                                  |
| Output Channel        | 4                                |
| Output Type           | Open Collector (Sink/NPN)        |
| Load Voltage          | 30 V <sub>DC</sub> , max.        |
| Load Current          | 100 mA, max.                     |
| Isolated Voltage      | Non-isolated                     |
| <b>Digital Input</b>  |                                  |
| Input Channel         | 4                                |
| Input Type            | Source (Dry Type), Common Ground |
| Off Voltage Level     | +1 V max.                        |
| On Voltage Level      | +3.5 ~ +30 V                     |
| Isolated Voltage      | Non-isolated                     |
| Counters              | Channels: 4                      |
|                       | Max. Count: 16-bit (65535)       |
|                       | Max. Input Frequency: 100 Hz     |
|                       | Min. Pulse Width: 5 ms           |

## Pin Assignments

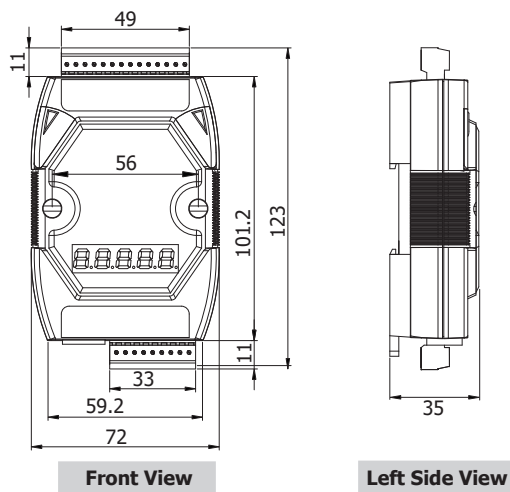
| Terminal No. | Pin Assignment      |
|--------------|---------------------|
| E1           | Link/Act<br>10/100M |
| COM1         | 01 CTS1             |
|              | 02 RTS1             |
|              | 03 RxD1             |
|              | 04 TxD1             |
| 05           | INIT*               |
| COM2         | 06 D2+              |
|              | 07 D2-              |
|              | 08 (R)+Vs           |
|              | 09 (B)GND           |



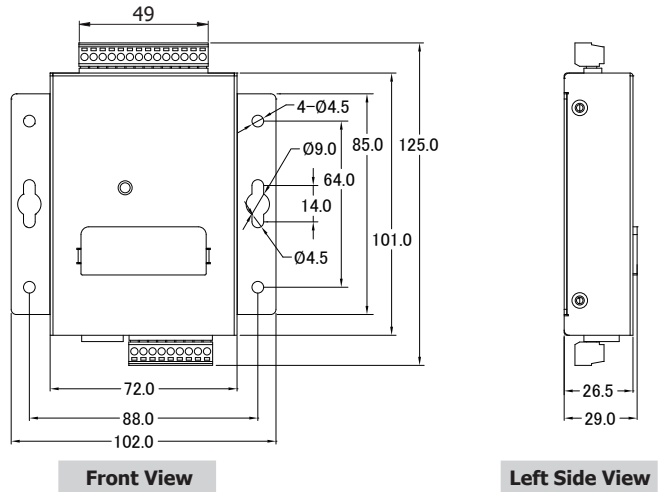
| Terminal No. | Pin Assignment |
|--------------|----------------|
| DO           | 23 DO3         |
|              | 22 DO2         |
|              | 21 DO1         |
|              | 20 DO0         |
| 19           | DO.PWR         |
| 18           | GND            |
| DI           | 17 DI3         |
|              | 16 DI2         |
|              | 15 DI1         |
|              | 14 DI0         |
| COM3         | 13 RxD3-       |
|              | 12 RxD3+       |
|              | 11 TxD3-/D3-   |
|              | 10 TxD3+/D3+   |

## ■ Dimensions (Units: mm)

----- (P)PDS-734(D) ▼



----- (P)PDSM-734(D)(-MTCP) ▼



## ■ Ordering Information

|                    |  |
|--------------------|--|
| PDS-734 CR         | Programmable (1x RS-232, 1x RS-485 and 1x RS-422/485) Serial-to-Ethernet Device Server with 4x DI and 4x DO (RoHS)<br>Includes CA-0910 Cable   |
| PDS-734D CR        | Programmable (1x RS-232, 1x RS-485 and 1x RS-422/485) Serial-to-Ethernet Device Server with 4x DI and 4x DO and LED Display (RoHS)<br>Includes CA-0910 Cable                                   |
| PPDS-734-MTCP CR   | Programmable (1x RS-232, 1x RS-485 and 1x RS-422/485) Serial-to-Ethernet Device Server with 4x DI and 4x DO, PoE and Modbus Gateway (RoHS)<br>Includes CA-0910 Cable                           |
| PPDS-734D-MTCP CR  | Programmable (1x RS-232, 1x RS-485 and 1x RS-422/485) Serial-to-Ethernet Device Server with 4x DI and 4x DO, PoE, Modbus Gateway and LED Display (RoHS)<br>Includes CA-0910 Cable              |
| PDSM-734 CR        | Programmable (1x RS-232, 1x RS-485 and 1x RS-422/485) Serial-to-Ethernet Device Server with 4x DI and 4x DO (Metal Case) (RoHS)<br>Includes CA-0910 Cable                                      |
| PDSM-734D CR       | Programmable (1x RS-232, 1x RS-485 and 1x RS-422/485) Serial-to-Ethernet Device Server with 4x DI and 4x DO and LED Display (Metal Case) (RoHS)<br>Includes CA-0910 Cable                      |
| PPDSM-734-MTCP CR  | Programmable (1x RS-232, 1x RS-485 and 1x RS-422/485) Serial-to-Ethernet Device Server with 4x DI and 4x DO, PoE and Modbus Gateway (Metal Case) (RoHS)<br>Includes CA-0910 Cable              |
| PPDSM-734D-MTCP CR | Programmable (1x RS-232, 1x RS-485 and 1x RS-422/485) Serial-to-Ethernet Device Server with 4x DI and 4x DO, PoE, Modbus Gateway and LED Display (Metal Case) (RoHS)<br>Includes CA-0910 Cable |

## ■ Accessories

|              |   |
|--------------|---|
| CA-0903 CR   | DB9 Female to 5-wire Cable [RS-232], 30cm (RoHS)              |
| NS-205 CR    | Unmanaged 5-port Industrial Ethernet Switch (RoHS)            |
| NS-205PSE CR | Unmanaged 5-port 10/100 Mbps PoE (PSE) Ethernet Switch (RoHS) |



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