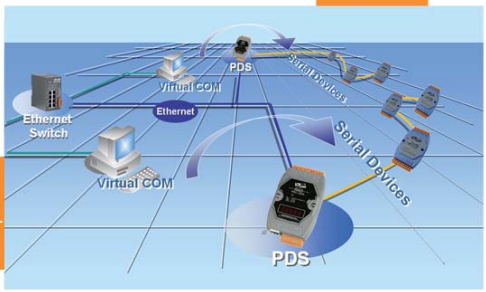
Programmable Device Server

3

3.1. Overview

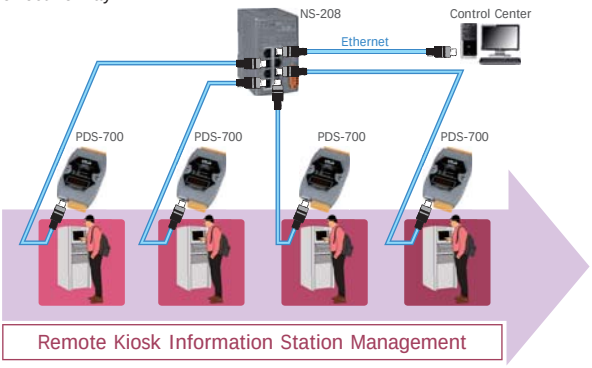
Serial Devices to Ethernet Gateway



Take your serial devices to the modern world.
Programmable Device Server

The ICP DAS Programmable Device Server is designed to bring network connectivity to your serial devices. The programmable features allow developers to quickly build custom applications that turn “dull” serial devices into “intelligent” devices right away without modifying their hardware or software configuration.

With extensive experience accumulated over many years, a great number of serial devices such as PLCs, bar code readers, RFID readers, meters and motion controllers, etc., have been widely used in various applications. As the advances in communication technologies in recent years, continue to drive optimization of data accessibility and remote operation ability, a wide variety of industries have begun to feel the urge to upgrade their latency serial communications to Ethernet network connections. The ICP DAS PDS series of products are your best choice for implementing this scenario in a robust, reliable and cost-effective way.



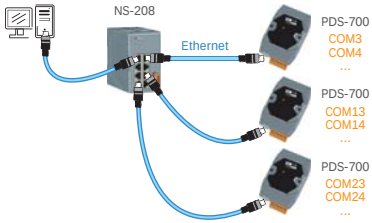
Remote Kiosk Information Station Management

VxComm driver & utility
Where remote serial devices become part of your PC

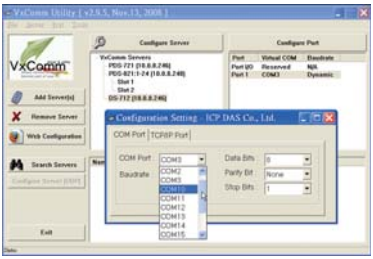
The VxComm Driver creates virtual COM port(s) on Windows NT 4.0/2000/XP/2003/Vista32 systems and maps them to the remote serial port(s) of the PDS/DS series. The user's serial client programs need to only be changed to the virtual COM port access the serial devices that are allocated on the Internet or Ethernet network via the PDS/DS series.

Easy Serial Device Networking with “transparency”

The most intuitive and easiest way to remotely control serial devices is to access those devices transparently via a network with no software modification required. The ICP DAS PDS product line offers two transparent applications:



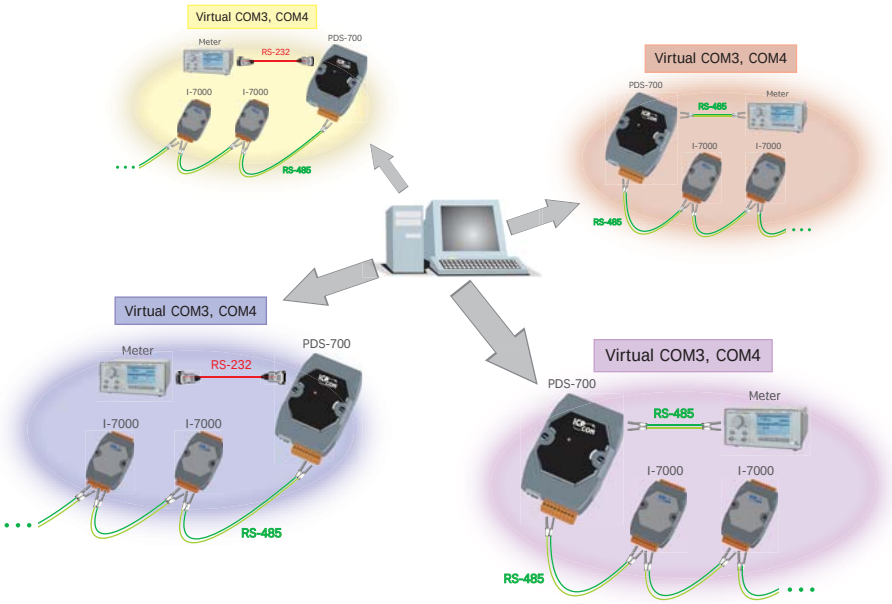
◆ Socket Connections:
Using a TCP/IP socket connection, client programs can exchange information with specific PDS/DS serial ports and talk to serial devices directly. For example, simply create a socket connection to the TCP/IP port 10001 (default) of the PDS/DS device and you can then access Port1 of the PDS/DS remotely. This is an OS-independent method and works well on most OS (operating systems) that provide socket functions.



◆ Virtual COM Ports:
ICP DAS developed a specific function called "Virtual COM" that simulates PDS serial ports as fixed PC COM ports. Virtual COM ports appear to the system and applications as real ports. Once established, users can immediately enjoy the convenience that networking provides.

DynaCOM Technology

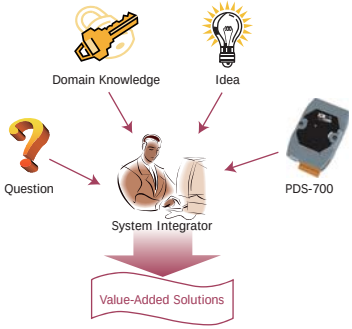
ICP DAS Virtual COM also supports an exclusive function - Dynamic Virtual COM Mapping (DynaCOM); if the system can only access limited or fixed numbers of COM Ports, specific PDS serial ports can be dynamically assigned to the corresponding COM port numbers.



DynaCOM use same virtual COM ports mapping to several PDS dynamically

Programmable Enhanced “Device Servers”

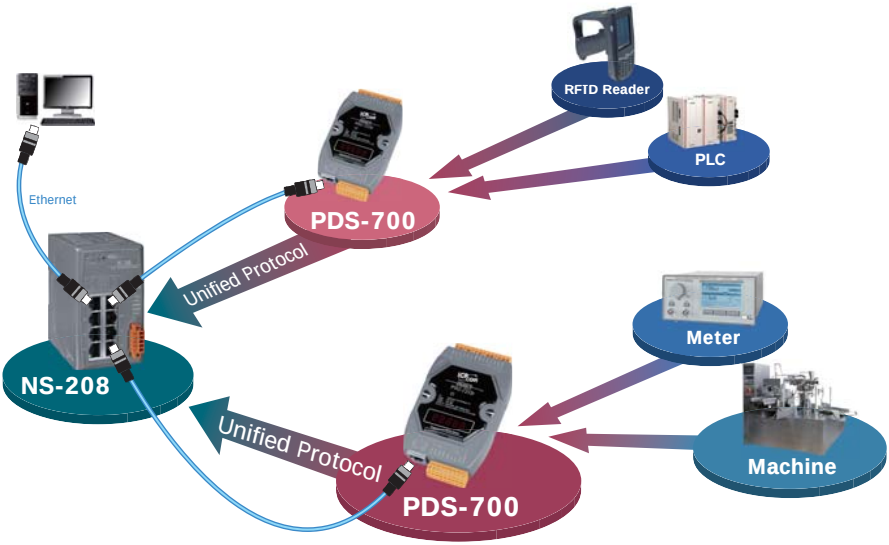
The programmable features of the PDS series of products makes it possible to effectively implement exclusive protocols and exclusive communication mechanisms for complex PDS-based applications. This provides the following advantages:



◆ Effective network transmission:
Place your customized software on the PDS to directly perform processes locally. The effective data and information can be periodically sent back to the PC based on a schedule that can be planned in advance and the devices will work independently on-site, even when not connected to a network. Therefore, the design of system can be much more flexible. This also reduces the need to rely on the network, which is an inevitable factor for conventional DS (Device Server) as it has to keep on “talking” to the PC via the network to ensure the status maintains transparency.

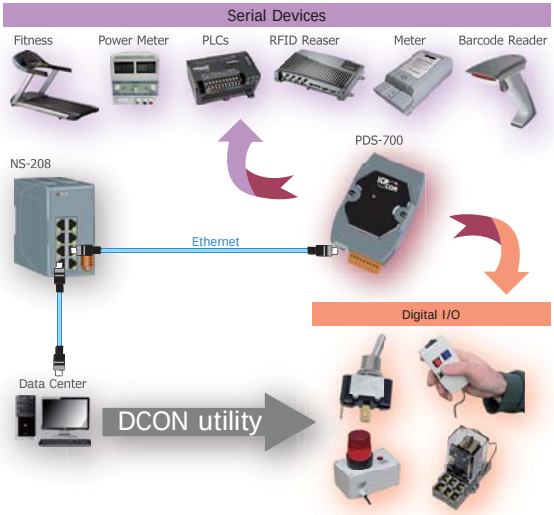
◆ Previous development efforts can be duplicated:
Along with serial devices, you can place your customized or value-added software on the PDS to implement an intelligent Ethernet controller. This controller can then be used in applications for future projects, dramatically reducing programming requirements. In addition, your value-added software is embedded in the PDS, so if a computer system undergoes hardware replacement or upgrade, incompatibility issues don’t need to be considered, which therefore reduces system maintenance work.

Programmable Protocol Converter



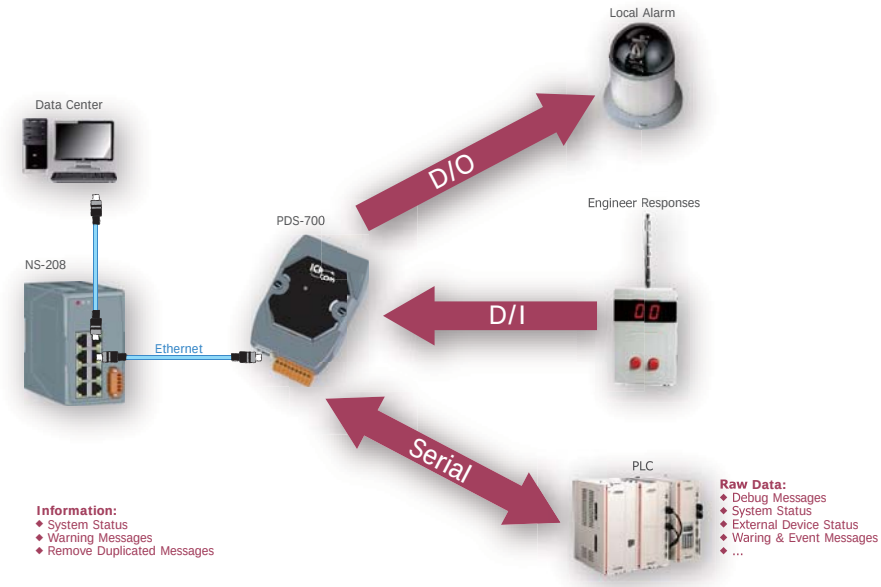
Virtual I/O Highly Integrates On-Site Messages

I/O acquisition is very important when performing on-site integration, so, along with DCON utility provided by ICP DAS, the RS-485 of PDS is able to be connected to I-7000 series products to offer abundant I/O modules for various purposes. For easier on-site integration operations, some PDS models also provide Digital I/O, which is also supported by the DCON utility, the EZ Data Logger or other DCON client programs.



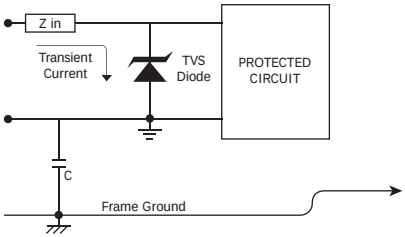
"Virtual I/O" is an extension of "Virtual COM" technology that simulates the PDS's digital I/Os control as a virtual COM port (Port I/O) application on the PC. You are now able to access the PDS's digital I/Os using the DCON protocol through the virtual COM port.
In addition, the DCON utility and EZ Data Logger also support control of the PDS's digital I/Os through the use of "Virtual I/O" technology, so you can monitor PDS's digital I/Os and complete the I/Os application in a convenient way.

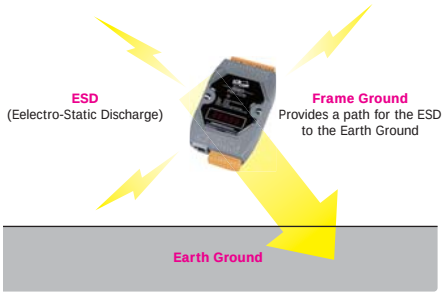
Programmable Data Monitor, Filter and I/O Controls



ESD Protection and Frame Ground

The PDS series offers TVS diode ESD protection technology with a frame ground design that protects your system from being damaged by high potential voltages.





Under normal operating conditions, the TVS diode presents high impedance (appears as an open circuit) to the protected component. If the voltage exceeds the limitation, the TVS diode avalanches, providing a low impedance path for the transient current. As a result, the transient current is diverted away from the protected components and shunted through the TVS diode. The device returns to a high impedance state after the transient threat has passed.

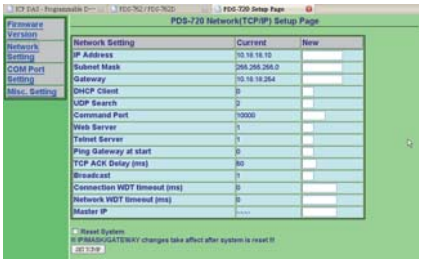
Self-Tuner Inside

The PDS series is equipped with a “Self-Tuner” chip that automatically controls the sending/receiving direction of the RS-485 ports.

Without the presence of Self-Tuner, users need to enable the RS-485 transmitter before transmitting, and disable the transmitter after the transmission is complete. The time required to enable and disable the transmitter (direction control) is the major source of many communication issues, and it is very difficult to debug. The built-in Self-Tuner in the PDS effectively removes this direction control issue and also simplifies the software/firmware programming required for communication applications.

Easy Web Configuration

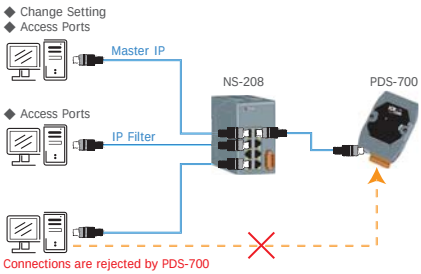
The PDS also contains a built-in web server that enables users to conveniently configure the PDS. A web browser, like IE or Firefox, can be used to connect to the PDS to modify the configuration, such as: IP address, subnet mask, gateway, DHCP client, UDP search, Web Server, Telnet Server, TCP ACK delay, Watchdog timeout, Master IP, Filter IP, COM port baud rate, data format and transfer mode, etc.



Master IP and Filter IP

The PDS can use a master IP setting that allows a client to configure the PDS and COM ports. This prevents the configuration of the PDS and COM ports from being changed by other clients.

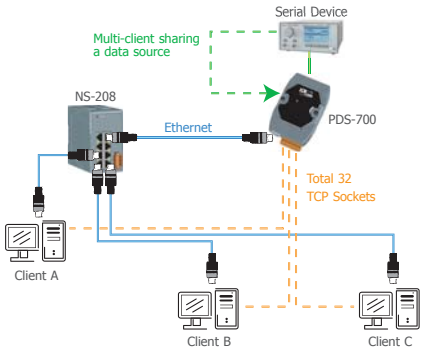
The IP filter setting limits which client PCs are able to access the PDS module via specific IP addresses. Connections from other clients will be rejected by the PDS.



Data Sharing with Multiple Clients

M0: Transparent Mode (Multi-echo)
In transparent mode, the PDS sends data from a serial device to each client that is connected to the same serial port of the PDS. Thus, each connected client has a copy of the same data from the serial device.

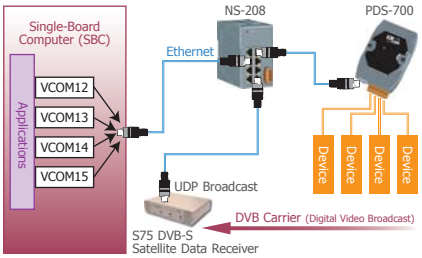
M1: Slave Mode (Single-echo)
In slave mode, the PDS only sends data from a serial device to the client that requires the service. If there are no requirements from the client, then data will not be sent to the client. The PDS services each client individually when sharing data from the serial device, but the clients do not have a copy of the same data.



UDP Flood Attack Protection

A UDP flood attack is a denial-of-service (DoS) attack that sends a large number of UDP packets to a remote host. As a result, the affected system will be forced into replying to many packets, eventually causing the host to be unreachable by other clients.

The UDP function can be disabled on the PDS if the network suffers a flood attack or receives a large numbers of UDP packets from the network devices. This protects the PDS from UDP flood attacks.



Industrial PoE Solution

Power over Ethernet (PoE) allows power and data to be carried over a single Ethernet cable, so a device can operate solely from the power it receives through the data cable. This innovation allows greater flexibility in office design, higher efficiency in systems design, and faster turnaround time in set-up and implementation.

When using PoE devices such as the PPDS-700-MTCP, PPDS-700-IP67 and PET-7000 (Ethernet I/O module with PoE), you can select the ICP DAS "PoE" switch — "NS-205PSE"- as the power source. The NS-205PSE automatically detects whether the connected devices are PoE devices or not. This mechanism ensures that the NS-205PSE will work with both PoE and non-PoE devices simultaneously.

As a power source for PoE devices, the NS-205PSE requires a power input ranging from +46 V_{DC} ~ +55 V_{DC}.

Modbus/TCP to Modbus/RTU Gateway

Modbus has become a de facto standard communications protocol in the industry, and is now the most commonly available means of connecting industrial electronic devices.

Modbus allows for communication between many devices connected to the same network, for example a system that measures temperature and humidity and communicates the results to a computer. Modbus is often used to connect a supervisory computer with a remote terminal unit (RTU) in supervisory control and data acquisition (SCADA) systems.

The default firmware of the µPAC-7186EX(D)-MTCP and PPDS-700-MTCP devices allows them to become a single Modbus/TCP to multiple Modbus/RTU converter. You can simply use the Modbus Utility to configure the device and then set a connection between the SCADA/HMI software and the µPAC-7186EX(D)-MTCP and PPDS-700-MTCP.

Selection Guide

PDS-700 Series Comparison Table

Series	Ethernet	Virtual COM	Virtual I/O	Programmable	Modbus	Casing
PDS-700	10/100 M	Yes	Yes	Yes	-	Fire Retardant Plastic
PPDS-700-MTCP	10/100 M, PoE	Yes	Yes	Yes	Yes	Fire Retardant Plastic
PDSM-700	10/100 M	Yes	Yes	Yes	-	Metal
PPDSM-700-MTCP	10/100 M, PoE	Yes	Yes	Yes	Yes	Metal
DS-700	10/100 M	Yes	-	-	-	Fire Retardant Plastic
PPDS-700-IP67	10/100 M, PoE	Yes	-	Yes	-	IP67 Waterproof Plastic

PDS-700 Selection Guide

Model Name	Ethernet	DI/DO	COM1	COM2	COM3	COM4	COM5	COM6	COM7	COM8	Page
PDS-720 PDS-720D	10/100 M	-	5-wire RS-232	2-wire RS-485	-	-	-	-	-	-	3-2-1
PDS-721 PDS-721D	10/100 M	6/7	5-wire RS-232	2-wire RS-485	-	-	-	-	-	-	3-2-3
PDS-732 PDS-732D	10/100 M	4/4	5-wire RS-232	2-wire RS-485	5-wire RS-232	-	-	-	-	-	3-2-5
PDS-734 PDS-734D	10/100 M	4/4	5-wire RS-232	2-wire RS-485	RS-422/ RS-485	-	-	-	-	-	3-2-7
PDS-742 PDS-742D	10/100 M	-	5-wire RS-232	2-wire RS-485	5-wire RS-232	9-wire RS-232	-	-	-	-	3-2-9
PDS-743 PDS-743D	10/100 M	4/4	5-wire RS-232	2-wire RS-485	3-wire RS-232	3-wire RS-232	-	-	-	-	3-2-11
PDS-752 PDS-752D	10/100 M	-	5-wire RS-232	2-wire RS-485	5-wire RS-232	5-wire RS-232	5-wire RS-232	-	-	-	3-2-13
PDS-755 PDS-755D	10/100 M	-	5-wire RS-232	2-wire RS-485	2-wire RS-485	2-wire RS-485	2-wire RS-485	-	-	-	3-2-15
PDS-762 PDS-762D	10/100 M	1/2	5-wire RS-232	2-wire RS-485	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-wire RS-232	-	-	3-2-17
PDS-782 PDS-782D	10/100 M	-	5-wire RS-232	2-wire RS-485	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-2-19
PDS-782-25 PDS-782D-25	10/100 M	-	5-wire RS-232	2-wire RS-485	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-2-21

PPDS-700-MTCP Selection Guide

Model Name	Ethernet	DI/DO	COM1	COM2	COM3	COM4	COM5	COM6	COM7	COM8	Modbus	Page
PPDS-712-MTCP	10/100 M, PoE	-	5-wire RS-232	-	-	-	-	-	-	-	Yes	3-3-1
PPDS-715-MTCP	10/100 M, PoE	-	RS-422 RS-485	-	-	-	-	-	-	-	Yes	3-3-3
PPDS-720-MTCP PPDS-720D-MTCP	10/100 M, PoE	-	5-wire RS-232	2-wire RS-485	-	-	-	-	-	-	Yes	3-2-1
PPDS-721-MTCP PPDS-721D-MTCP	10/100 M, PoE	6/7	5-wire RS-232	2-wire RS-485	-	-	-	-	-	-	Yes	3-2-3
PPDS-732-MTCP PPDS-732D-MTCP	10/100 M, PoE	4/4	5-wire RS-232	2-wire RS-485	5-wire RS-232	-	-	-	-	-	Yes	3-2-5
PPDS-734-MTCP PPDS-734D-MTCP	10/100 M, PoE	4/4	5-wire RS-232	2-wire RS-485	RS-422/ RS-485	-	-	-	-	-	Yes	3-2-7
PPDS-742-MTCP PPDS-742D-MTCP	10/100 M, PoE	-	5-wire RS-232	2-wire RS-485	5-wire RS-232	9-wire RS-232	-	-	-	-	Yes	3-2-9
PPDS-743-MTCP PPDS-743D-MTCP	10/100 M, PoE	4/4	5-wire RS-232	2-wire RS-485	3-wire RS-232	3-wire RS-232	-	-	-	-	Yes	3-2-11
PPDS-752-MTCP PPDS-752D-MTCP	10/100 M, PoE	-	5-wire RS-232	2-wire RS-485	5-wire RS-232	5-wire RS-232	5-wire RS-232	-	-	-	Yes	3-2-13
PPDS-755-MTCP PPDS-755D-MTCP	10/100 M, PoE	-	5-wire RS-232	2-wire RS-485	2-wire RS-485	2-wire RS-485	2-wire RS-485	-	-	-	Yes	3-2-15
PPDS-762-MTCP PPDS-762D-MTCP	10/100 M, PoE	1/2	5-wire RS-232	2-wire RS-485	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-wire RS-232	-	-	Yes	3-2-17
PPDS-782-MTCP PPDS-782D-MTCP	10/100 M, PoE	-	5-wire RS-232	2-wire RS-485	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-wire RS-232	Yes	3-2-19

Note: COM1 of PPDS-715-MTCP is 4-wire RS-422 or 2-wire RS-485 with 2000 V_{rms} Isolation.

DS-700 Selection Guide

Series	Ethernet	Isolation	COM1	COM2 ~ COM8	DI/DO	Programmable	Page
DS-712	10/100 M	-	5-wire RS-232	-	-	-	3-3-1
DS-715	10/100 M	2000 V_{rms}	4-wire RS-422 or 2-wire RS-485	-	-	-	3-3-3

PPDS-700-IP67 Selection Guide

Series	Ethernet	COM1	COM2	COM3	COM4	IP67	Page
PPDS-741-IP67	10/100 M, PoE	5-wire RS-232	2-wire RS-485	2-wire RS-485	2-wire RS-485	Yes	3-4-1
PPDS-742-IP67	10/100 M, PoE	5-wire RS-232	2-wire RS-485	5-wire RS-232	2-wire RS-485	Yes	3-4-1
PPDS-743-IP67	10/100 M, PoE	5-wire RS-232	2-wire RS-485	5-wire RS-232	5-wire RS-232	Yes	3-4-1

3.2. PDS-700 & PPDS-700-MTCP Programmable Device Servers

NEW **PDS-720(D)**

Available soon **PPDS-720(D)-MTCP**

Programmable Device Server with 1 RS-232 port and 1 RS-485 port

RS-232/RS-485

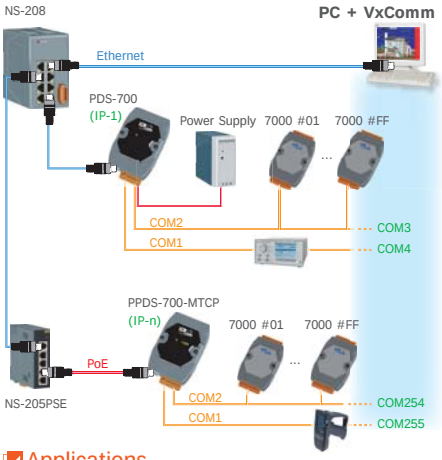
Features

- Incorporate Serial Devices in an Ethernet network
- Virtual COM on Windows NT 4.0, 2000/XP/2003 and Vista32
- Powerful Programmable Device Server
- Watchdog Timer suitable for use in harsh environments
- Power Reverse Polarity Protection
- Serial Port +/-4 kV ESD Protection Circuit
- Self-Tuner ASIC Controller on the RS-485 Port
- 5-digit LED Display (for versions with a display)
- RoHS Compliant with no Halogen
- Built-in High Performance MiniOS7 from ICP DAS
- 10/100 Base-TX Ethernet, RJ-45 Port (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- PPDS-720(D)-MTCP supports Modbus/TCP and Modbus/RTU
- PPDS-720(D)-MTCP supports PoE (IEEE 802.3af, Class 1)
- Low power consumption
- Palm-Sized with multiple Serial Ports
- Made from fire retardant materials (UL94-V0 Level)

CE FC RoHS PoE

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.
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 PPDS-700-MTCP also works as a Modbus/TCP to Modbus/RTU gateway that supports most SCADA/HMI communications based on the Modbus/TCP protocol.
The PDS-720(D) and PPDS-720(D)-MTCP is equipped with 1 RS-232 port and 1 RS-485 port. The removable on-board terminal block connector is designed for easy and robust wiring in industrial situations.



Applications

Factory, Building and Home Automation

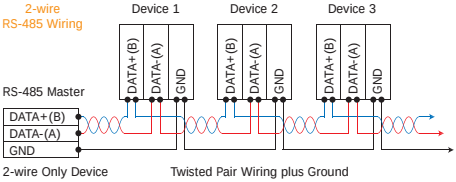
System Specifications

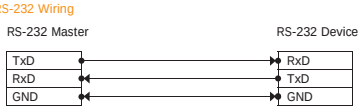
Models		PDS-720	PDS-720D	PPDS-720-MTCP	PPDS-720D-MTCP
CPU					
CPU		80186, 80 MHz or compatible			
SRAM		512 KB			
Flash Memory		Flash ROM: 512 KB; Erase unit is one sector (64 KB); 100,000 erase/write cycles			
EEPROM		16 KB; Data retention: 40 years; 1,000,000 erase/write cycles			
Built-in Watchdog Timer		Yes			
Communication Interface					
Non-isolated	COM1	RS-232 (TxD, RxD, RTS, CTS, GND)			
	COM2	RS-485 (D2+, D2-, GND)			
Ethernet		10/100 Base-TX, RJ-45 port (Auto-negotiating, auto MDI/MDI-X, LED indicator)			
PoE		-		IEEE 802.3af	
COM Port Formats					
Data Bit		7, 8: for COM1 and COM2			
Parity		None, Even, Odd, Mark, Space			
Stop Bit		1: for COM1 and COM2			
Baud Rate		115200 bps max.			
LED Indicators					
5-digit 7 Segment		-	Yes	-	Yes
System		Red			
PoE		-		Green	
Power					
Protection		Power Reverse Polarity Protection			
Required Supply Voltage		+10 Vdc ~ +30 Vdc (non-regulated)		PoE or +12 Vdc ~ +48 Vdc (non-regulated)	
Power Consumption		2.0 W	2.7 W	2.2 W	2.9 W
Mechanical					
Flammability		Fire Retardant Materials (UL94-V0 Level)			
Dimensions		72 mm x 112 mm x 35 mm (W x H x D)			
Installation		DIN-Rail or Wall mounting			
Environment					
Operating Temperature		-25 °C ~ +75 °C			
Storage Temperature		-40 °C ~ +80 °C			
Humidity		5 ~ 90% RH, non-condensing			

Pin Assignments

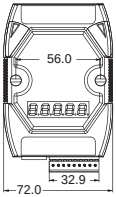
Terminal No.		Pin Assignment
E1		Link/Act 10/100M
COM1	01	CTS1
	02	RTS1
	03	RxD1
	04	TxD1
	05	INIT*
COM2	06	D2+
	07	D2-
	08	(R)+Vs
	09	(B)GND

Wiring

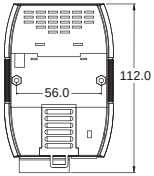




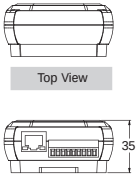
Dimensions (Unit: mm)



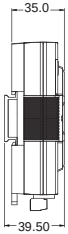
Front View



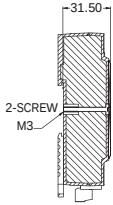
Back View



Bottom View



Din-Rail Mounting Bracket



Side View

Ordering Information

PDS-720 CR	Programmable Device Server with 1 RS-232 port and 1 RS-485 port (RoHS) Includes One CA-0910 Cable
PDS-720D CR	Programmable Device Server with 1 RS-232 port, 1 RS-485 port and an LED Display (RoHS) Includes One CA-0910 Cable
PPDS-720-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 1 RS-232 port and 1 RS-485 port (RoHS) Includes One CA-0910 Cable
PPDS-720D-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 1 RS-232 port, 1 RS-485 port and an LED Display (RoHS) Includes One CA-0910 Cable

Accessories

GPSU06U-6	24 Vdc/0.25 A, 6 W Power Supply
MDR-20-24	24 Vdc/1 A, 24 W Power Supply with DIN-Rail Mounting
DIN-KA52F-48	48 Vdc/0.52 A, 25 W Power Supply with Din-Rail Mounting
CA-0903	9-Pin Female D-Sub and RS-232 Connector Cable, 30 cm Cable
CA-0910	9-Pin Female D-Sub and 3-wire RS-232 Cable, 1 m Cable
NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch (RoHS)
NS-205PSE CR	Unmanaged Ethernet Switch with 4 PoE Ports and 1 RJ-45 Uplink (RoHS)

NEW **PDS-721(D)**

Available soon **PPDS-721(D)-MTCP**

Programmable Device Server with 1 RS-232 port and 1 RS-485 port

RS-232/RS-485

Features

- Incorporate Serial Devices in an Ethernet network
- Virtual COM on Windows NT 4.0, 2000/XP/2003 and Vista32
- Powerful Programmable Device Server
- Watchdog Timer suitable for use in harsh environments
- Power Reverse Polarity Protection
- Serial Port +/-4 kV ESD Protection Circuit
- Self-Tuner ASIC Controller on the RS-485 Port
- 5-digit LED Display (for versions with a display)
- RoHS Compliant with no Halogen
- Built-in High Performance MiniOS7 from ICP DAS
- 10/100 Base-TX Ethernet, RJ-45 Port (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- PPDS-721(D)-MTCP supports Modbus/TCP and Modbus/RTU
- PPDS-721(D)-MTCP supports PoE (IEEE 802.3af, Class 1)
- Supports D/I, Latched D/I and Counter Functions
- Low power consumption
- Palm-Sized with multiple Serial Ports

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.

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 PPDS-700-MTCP also works as a Modbus/TCP to Modbus/RTU gateway that supports most SCADA/HMI communications based on the Modbus/TCP protocol.

The PDS-721(D) and PPDS-721(D)-MTCP is equipped with 1 RS-232 port, 1 RS-485 port and DI/DO. The removable on-board terminal block connector is designed for easy and robust wiring in industrial situations.

Applications

Factory, Building and Home Automation

I/O Specifications

Models: PDS-721/PDS-721D/PPDS-721-MTCP/PPDS-721D-MTCP	
Digital Output	
Output Channel	7
Output Type	Open Collector (Sink/NPN)
Load Voltage	30 Vdc, max.
Load Current	100 mA, max.
Isolated Voltage	Non-isolated
Digital Input	
Input Channel	6
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: 6
	Max. Count: 16-bit (65535)
	Max. Input Frequency: 100 Hz
	Min. Pulse Width: 5 ms

System Specifications

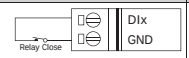
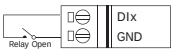
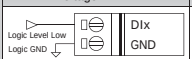
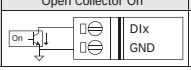
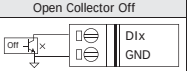
Models		PDS-721	PDS-721D	PPDS-721-MTCP	PPDS-721D-MTCP
CPU					
CPU		80186, 80 MHz or compatible			
SRAM		512 KB			
Flash Memory		Flash ROM: 512 KB; Erase unit is one sector (64 KB); 100,000 erase/write cycles			
EEPROM		16 KB; Data retention: 40 years; 1,000,000 erase/write cycles			
Built-in Watchdog Timer		Yes			
Communication Interface					
Non-isolated	COM1	RS-232 (TxD, RxD, RTS, CTS, GND)			
	COM2	RS-485 (D2+, D2-, GND)			
Ethernet		10/100 Base-TX, RJ-45 port (Auto-negotiating, auto MDI/MDI-X, LED indicator)			
PoE		-		IEEE 802.3af	
COM Port Formats					
Data Bit		7, 8: for COM1 and COM2			
Parity		None, Even, Odd, Mark, Space			
Stop Bit		1: for COM1 and COM2			
Baud Rate		115200 bps max.			
LED Indicators					
5-digit 7 Segment		-	Yes	-	Yes
System		Red			
PoE		-		Green	
Power					
Protection		Power Reverse Polarity Protection			
Required Supply Voltage		+10 Vdc ~ +30 Vdc (non-regulated)		PoE or +12 Vdc ~ +48 Vdc (non-regulated)	
Power Consumption		2.0 W	2.7 W	2.2 W	2.9 W
Mechanical					
Flammability		Fire Retardant Materials (UL94-V0 Level)			
Dimensions		72 mm x 123 mm x 35 mm (W x H x D)			
Installation		DIN-Rail or Wall mounting			
Environment					
Operating Temperature		-25 °C ~ +75 °C			
Storage Temperature		-40 °C ~ +80 °C			
Humidity		5 ~ 90% RH, non-condensing			

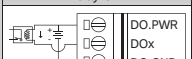
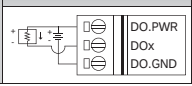
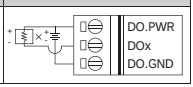
Pin Assignments

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

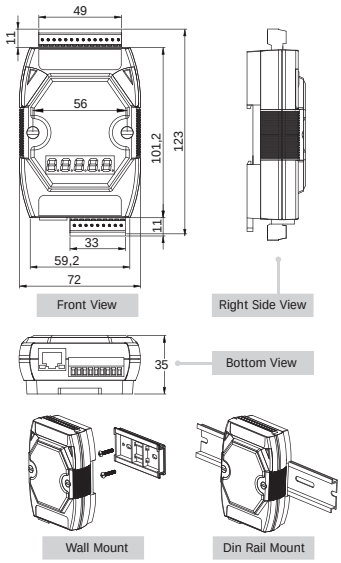
Terminal No.		Pin Assignment
DI	23	DI0
	22	DI1
	21	DI2
	20	DI3
	19	DI4
	18	DI5
DO	17	DO.PWR
	16	DO0
	15	DO1
	14	DO2
	13	DO3
	12	DO4
	11	DO5
	10	DO6

Wiring

Input Type	DI Value as 0	DI Value as 1
Relay Contact	Relay ON	Relay Off
		
TTL/CMOS Logic	Voltage < 1V	Voltage > 3.5V
		
Open Collector	Open Collector On	Open Collector Off
		

Output Type	DO Command as 1	DO Command as 0
Drive Relay	Relay ON	Relay Off
		
Resistance Load		
		

Dimensions (Unit: mm)



Ordering Information

PDS-721 CR	Programmable Device Server with 1 RS-232 port and 1 RS-485 port (RoHS) Includes One CA-0910 Cable
PDS-721D CR	Programmable Device Server with 1 RS-232 port , 1 RS-485 port and an LED Display (RoHS) Includes One CA-0910 Cable
PPDS-721-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 1 RS-232 port and 1 RS-485 port (RoHS) Includes One CA-0910 Cable
PPDS-721D-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 1 RS-232 port, 1 RS-485 port and an LED Display (RoHS) Includes One CA-0910 Cable

Accessories

GPSU06U-6	24 Vdc/0.25 A, 6 W Power Supply
MDR-20-24	24 Vdc/1 A, 24 W Power Supply with DIN-Rail Mounting
DIN-KA52F-48	48 Vdc/0.52 A, 25 W Power Supply with Din-Rail Mounting
CA-0903	9-Pin Female D-Sub and RS-232 Connector Cable, 30 cm Cable
CA-0910	9-Pin Female D-Sub and 3-wire RS-232 Cable, 1 m Cable
NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch (RoHS)
NS-205PSE CR	Unmanaged Ethernet Switch with 4 PoE Ports and 1 RJ-45 Uplink (RoHS)

NEW **PDS-732(D)**

Available soon **PPDS-732(D)-MTCP**

Programmable Device Server with 2 RS-232 ports and 1 RS-485 port

RS-232/RS-485

Features

- Incorporate Serial Devices in an Ethernet network
- Virtual COM on Windows NT 4.0, 2000/XP/2003 and Vista32
- Powerful Programmable Device Server
- Watchdog Timer suitable for use in harsh environments
- Power Reverse Polarity Protection
- Serial Port +/-4 kV ESD Protection Circuit
- Self-Tuner ASIC Controller on the RS-485 Port
- 5-digit LED Display (for versions with a display)
- RoHS Compliant with no Halogen
- Built-in High Performance MiniOS7 from ICP DAS
- 10/100 Base-TX Ethernet, RJ-45 Port (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- PPDS-732(D)-MTCP supports Modbus/TCP and Modbus/RTU
- PPDS-732(D)-MTCP supports PoE (IEEE 802.3af, Class 1)
- Supports D/I, Latched D/I and Counter Functions
- Low power consumption
- Palm-Sized with multiple Serial Ports

CE FC RoHS PoE

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.

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 PPDS-700-MTCP also works as a Modbus/TCP to Modbus/RTU gateway that supports most SCADA/HMI communications based on the Modbus/TCP protocol.

The PDS-732(D) and PPDS-732(D)-MTCP is equipped with 2 RS-232 ports, 1 RS-485 port and DI/DO. The removable on-board terminal block connector is designed for easy and robust wiring in industrial situations.

Applications

Factory, Building and Home Automation

I/O Specifications

Models: PDS-732/PDS-732D/PPDS-732-MTCP/PPDS-732D-MTCP	
Digital Output	
Output Channel	4
Output Type	Open Collector (Sink/NPN)
Load Voltage	30 VDC, max.
Load Current	100 mA, max.
Isolated Voltage	Non-isolated
Digital Input	
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

System Specifications

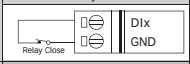
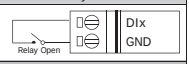
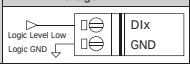
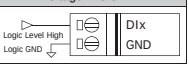
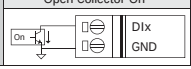
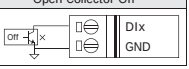
Models		PDS-732	PDS-732D	PPDS-732-MTCP	PPDS-732D-MTCP
CPU					
CPU		80186, 80 MHz or compatible			
SRAM		512 KB			
Flash Memory		Flash ROM: 512 KB; Erase unit is one sector (64 KB); 100,000 erase/write cycles			
EEPROM		16 KB; Data retention: 40 years; 1,000,000 erase/write cycles			
Built-in Watchdog Timer		Yes			
Communication Interface					
Non-isolated	COM1	RS-232 (TxD, RxD, RTS, CTS, GND)			
	COM2	RS-485 (D2+, D2-, GND)			
	COM3	RS-232 (TxD, RxD, RTS, CTS, GND)			
Ethernet		10/100 Base-TX, RJ-45 port (Auto-negotiating, auto MDI/MDI-X, LED indicator)			
PoE		-		IEEE 802.3af	
COM Port Formats					
Data Bit		7, 8: for COM1 and COM2 5, 6, 7, 8: for COM3			
Parity		None, Even, Odd, Mark, Space			
Stop Bit		1: for COM1 and COM2 1, 2: for COM3			
Baud Rate		115200 bps max.			
LED Indicators					
5-digit 7 Segment		-	Yes	-	Yes
System		Red			
PoE		-		Green	
Power					
Protection		Power Reverse Polarity Protection			
Required Supply Voltage		+10 VDC ~ +30 VDC (non-regulated)		PoE or +12 VDC ~ +48 VDC (non-regulated)	
Power Consumption		2.0 W	2.7 W	2.2 W	2.9 W
Mechanical					
Flammability		Fire Retardant Materials (UL94-V0 Level)			
Dimensions		72 mm x 123 mm x 35 mm (W x H x D)			
Installation		DIN-Rail or Wall mounting			
Environment					
Operating Temperature		-25 °C ~ +75 °C			
Storage Temperature		-40 °C ~ +80 °C			
Humidity		5 ~ 90% RH, non-condensing			

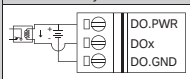
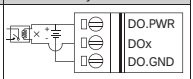
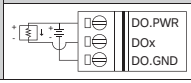
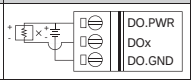
Pin Assignments

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

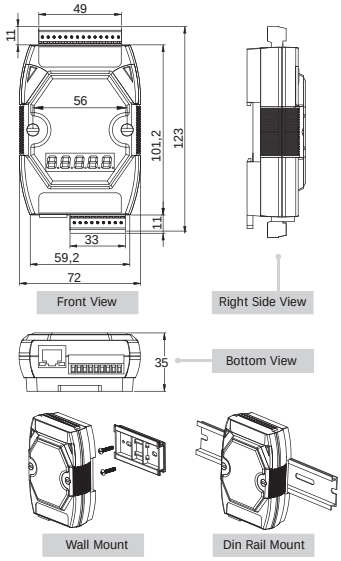
Terminal No.		Pin Assignment
DO	23	DO3
	22	DO2
	21	DO1
	20	DO0
	19	DO.PWR
	18	GND
DI	17	DI3
	16	DI2
	15	DI1
	14	DI0
COM3	13	RxD3
	12	TxD3
	11	RTS3
	10	CTS3

Wiring

Input Type	DI Value as 0	DI Value as 1
Relay Contact	Relay ON	Relay Off
		
TTL/CMOS Logic	Voltage < 1V	Voltage > 3.5V
		
Open Collector	Open Collector On	Open Collector Off
		

Output Type	DO Command as 1	DO Command as 0
Drive Relay	Relay ON	Relay Off
		
Resistance Load		
		

Dimensions (Unit: mm)



Ordering Information

PDS-732 CR	Programmable Device Server with 2 RS-232 ports and 1 RS-485 port (RoHS) Includes One CA-0910 Cable
PDS-732D CR	Programmable Device Server with 2 RS-232 ports, 1 RS-485 port and an LED Display (RoHS) Includes One CA-0910 Cable
PPDS-732-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 2 RS-232 ports and 1 RS-485 port (RoHS) Includes One CA-0910 Cable
PPDS-732D-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 2 RS-232 ports, 1 RS-485 port and an LED Display (RoHS) Includes One CA-0910 Cable

Accessories

GPSU06U-6	24 Vdc/0.25 A, 6 W Power Supply
MDR-20-24	24 Vdc/1 A, 24 W Power Supply with DIN-Rail Mounting
DIN-KA52F-48	48 Vdc/0.52 A, 25 W Power Supply with Din-Rail Mounting
CA-0903	9-Pin Female D-Sub and RS-232 Connector Cable, 30 cm Cable
CA-0910	9-Pin Female D-Sub and 3-wire RS-232 Cable, 1 m Cable
NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch (RoHS)
NS-205PSE CR	Unmanaged Ethernet Switch with 4 PoE Ports and 1 RJ-45 Uplink (RoHS)
DN-09-2	I/O Connector Block with DIN-Rail Mounting and Two 9-Pin Male Header. Includes CA-0915 x 2 (9-Pin Male-Female D-Sub Cable 1.5 m)
DN-09-2F	I/O Connector Block with DIN-Rail Mounting and Two 9-Pin Male Header. Includes CA-0910F x 2 (9-Pin Female-Female D-Sub Cable 1.0 m)

NEW **PDS-734(D)**

Available soon **PPDS-734(D)-MTCP**

Programmable Device Server with
1 RS-232 port, 1 RS-485 port and 1 RS-422/485 port

RS-232/RS-422/RS-485

Features

- Incorporate Serial Devices in an Ethernet network
- Virtual COM on Windows NT 4.0, 2000/XP/2003 and Vista32
- Powerful Programmable Device Server
- Watchdog Timer suitable for use in harsh environments
- Power Reverse Polarity Protection
- Serial Port +/-4 kV ESD Protection Circuit
- Self-Tuner ASIC Controller on the RS-485 Port
- 5-digit LED Display (for versions with a display)
- RoHS Compliant with no Halogen
- Built-in High Performance MiniOS7 from ICP DAS
- 10/100 Base-TX Ethernet, RJ-45 Port
  (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- PPDS-734(D)-MTCP supports Modbus/TCP and Modbus/RTU
- PPDS-734(D)-MTCP supports PoE (IEEE 802.3af, Class 1)
- Supports D/I, Latched D/I and Counter Functions
- Low power consumption
- Palm-Sized with multiple Serial Ports

CE FC RoHS PoE

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.

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 PPDS-700-MTCP also works as a Modbus/TCP to Modbus/RTU gateway that supports most SCADA/HMI communications based on the Modbus/TCP protocol.

The PDS-734(D) and PPDS-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.

Applications

Factory, Building and Home Automation

I/O Specifications

Models: PDS-734/PDS-734D/PPDS-734-MTCP/PPDS-734D-MTCP	
Digital Output	
Output Channel	4
Output Type	Open Collector (Sink/NPN)
Load Voltage	30 V_{DC}, max.
Load Current	100 mA, max.
Isolated Voltage	Non-isolated
Digital Input	
Input Channel	4
Input Type	Source (Dry Type), Common Ground
Off Voltage Level	+1 V max.
On Voltage Level	+3.5 ~ +30 V
Isolate Voltage	Non-isolated
Counters	Channels: 4
	Max. Count: 16-bit (65535)
	Max. Input Frequency: 100 Hz
	Min. Pulse Width: 5 ms

System Specifications

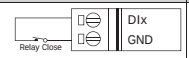
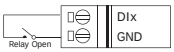
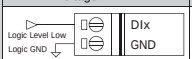
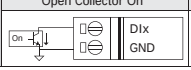
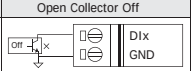
Models		PDS-734	PDS-734D	PPDS-734-MTCP	PPDS-734D-MTCP
CPU					
CPU		80186, 80 MHz or compatible			
SRAM		512 KB			
Flash Memory		Flash ROM: 512 KB; Erase unit is one sector (64 KB); 100,000 erase/write cycles			
EEPROM		16 KB; Data retention: 40 years; 1,000,000 erase/write cycles			
Built-in Watchdog Timer		Yes			
Communication Interface					
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	
COM Port Formats					
Data Bit		7, 8: for COM1 and COM2 5, 6, 7, 8: for COM3			
Parity		None, Even, Odd, Mark, Space			
Stop Bit		1: for COM1 and COM2 1, 2: for COM3			
Baud Rate		115200 bps max.			
LED Indicators					
5-digit 7 Segment		-	Yes	-	Yes
System		Red			
PoE		-		Green	
Power					
Protection		Power Reverse Polarity Protection			
Required Supply Voltage		+10 V_{DC} ~ +30 V_{DC} (non-regulated)		PoE or +12 V_{DC} ~ +48 V_{DC} (non-regulated)	
Power Consumption		2.0 W	2.7 W	2.2 W	2.9 W
Mechanical					
Flammability		Fire Retardant Materials (UL94-V0 Level)			
Dimensions		72 mm x 123 mm x 35 mm (W x H x D)			
Installation		DIN-Rail or Wall mounting			
Environment					
Operating Temperature		-25 °C ~ +75 °C			
Storage Temperature		-40 °C ~ +80 °C			
Humidity		5 ~ 90% RH, non-condensing			

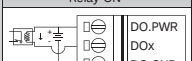
Pin Assignments

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

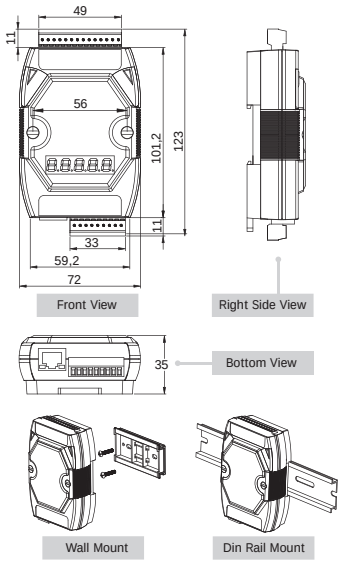
Terminal No.		Pin Assignment
DO	23	DO3
	22	DO2
	21	DO1
	20	DO0
	19	DO.PWR
	18	GND
DI	17	DI3
	16	DI2
	15	DI1
	14	DI0
COM3	13	RxD3-
	12	RxD3+
	11	TxD3-/D3-
	10	TxD3+/D3+

Wiring

Input Type	DI Value as 0	DI Value as 1
Relay Contact	Relay ON	Relay Off
		
TTL/CMOS Logic	Voltage < 1V	Voltage > 3.5V
		
Open Collector	Open Collector On	Open Collector Off
		

Output Type	DO Command as 1	DO Command as 0
Drive Relay	Relay ON	Relay Off
		
Resistance Load		
		

Dimensions (Unit: mm)



Ordering Information

PDS-734 CR	Programmable Device Server with 1 RS-232 port, 1 RS-485 port and 1 RS-422/485 port (RoHS) Includes One CA-0910 Cable
PDS-734D CR	Programmable Device Server with 1 RS-232 port, 1 RS-485 port, 1 RS-422/485 port and an LED Display (RoHS) Includes One CA-0910 Cable
PPDS-734-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 1 RS-232 port, 1 RS-485 port and 1 RS-422/485 port (RoHS) Includes One CA-0910 Cable
PPDS-734D-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 1 RS-232 port, 1 RS-485 port, 1 RS-422/485 port and an LED Display (RoHS) Display (RoHS). Includes One CA-0910 Cable

Accessories

GPSU06U-6	24 Vdc/0.25 A, 6 W Power Supply
MDR-20-24	24 Vdc/1 A, 24 W Power Supply with DIN-Rail Mounting
DIN-KA52F-48	48 Vdc/0.52 A, 25 W Power Supply with Din-Rail Mounting
CA-0903	9-Pin Female D-Sub and RS-232 Connector Cable, 30 cm Cable
CA-0910	9-Pin Female D-Sub and 3-wire RS-232 Cable, 1 m Cable
NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch (RoHS)
NS-205PSE CR	Unmanaged Ethernet Switch with 4 PoE Ports and 1 RJ-45 Uplink (RoHS)

NEW **PDS-742(D)**

Available soon **PPDS-742(D)-MTCP**

Programmable Device Server with 3 RS-232 ports and 1 RS-485 port

RS-232/RS-485

Features

- Incorporate Serial Devices in an Ethernet network
- Virtual COM on Windows NT 4.0, 2000/XP/2003 and Vista32
- Powerful Programmable Device Server
- Watchdog Timer suitable for use in harsh environments
- Power Reverse Polarity Protection
- Serial Port +/-4 kV ESD Protection Circuit
- Self-Tuner ASIC Controller on the RS-485 Port
- 5-digit LED Display (for versions with a display)
- RoHS Compliant with no Halogen
- Built-in High Performance MiniOS7 from ICP DAS
- 10/100 Base-TX Ethernet, RJ-45 Port (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- PPDS-742(D)-MTCP supports Modbus/TCP and Modbus/RTU
- PPDS-742(D)-MTCP supports PoE (IEEE 802.3af, Class 1)
- Low power consumption
- Palm-Sized with multiple Serial Ports
- Made from fire retardant materials (UL94-V0 Level)

CE FC RoHS PoE

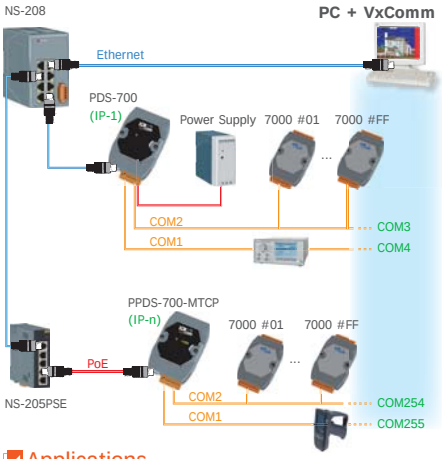
Introduction

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.

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 PPDS-700-MTCP also works as a Modbus/TCP to Modbus/RTU gateway that supports most SCADA/HMI communications based on the Modbus/TCP protocol.

The PDS-742(D) and PPDS-742(D)-MTCP is equipped with 3 RS-232 ports and 1 RS-485 port. The removable on-board terminal block connector is designed for easy and robust wiring in industrial situations.



Applications

Factory, Building and Home Automation

System Specifications

Models		PDS-742	PDS-742D	PPDS-742-MTCP	PPDS-742D-MTCP
CPU					
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			
Communication Interface					
Non-isolated	COM1	RS-232 (TxD, RxD, RTS, CTS, GND)			
	COM2	RS-485 (D2+, D2-, GND)			
	COM3	RS-232 (TxD, RxD, RTS, CTS, GND)			
	COM4	RS-232 (TxD, RxD, RTS, CTS, GND, DSR, DTR, DCD, RI)			
Ethernet		10/100 Base-TX, RJ-45 port (Auto-negotiating, auto MDI/MDI-X, LED indicator)			
PoE		-		IEEE 802.3af	
COM Port Formats					
Data Bit		7, 8: for COM1 and COM2 5, 6, 7, 8: for COM3 and COM4			
Parity		None, Even, Odd, Mark, Space			
Stop Bit		1: for COM1 and COM2 1, 2: for COM3 and COM4			
Baud Rate		115200 bps max.			
LED Indicators					
5-digit 7 Segment		-	Yes	-	Yes
System		Red			
PoE		-		Green	
Power					
Protection		Power Reverse Polarity Protection			
Required Supply Voltage		+10 V_{DC} ~ +30 V_{DC} (non-regulated)		PoE or +12 V_{DC} ~ +48 V_{DC} (non-regulated)	
Power Consumption		2.0 W	2.7 W	2.2 W	2.9 W
Mechanical					
Flammability		Fire Retardant Materials (UL94-V0 Level)			
Dimensions		72 mm x 123 mm x 35 mm (W x H x D)			
Installation		DIN-Rail or Wall mounting			
Environment					
Operating Temperature		-25 °C ~ +75 °C			
Storage Temperature		-40 °C ~ +80 °C			
Humidity		5 ~ 90% RH, non-condensing			

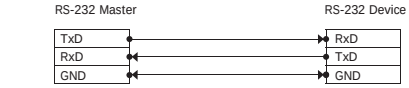
Pin Assignments

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

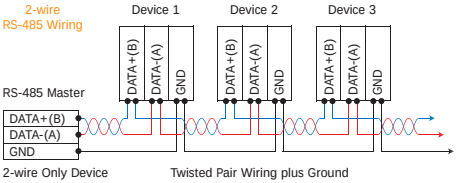
Terminal No.		Pin Assignment
COM4	23	DI4
	22	DCD4
	21	DTR4
	20	DSR4
	19	CTS4
	18	RTS4
	17	TxD4
	16	RxD4
	15	GND4
COM3	14	GND3
	13	RxD3
	12	TxD3
	11	RTS3
	10	CTS3

Wiring

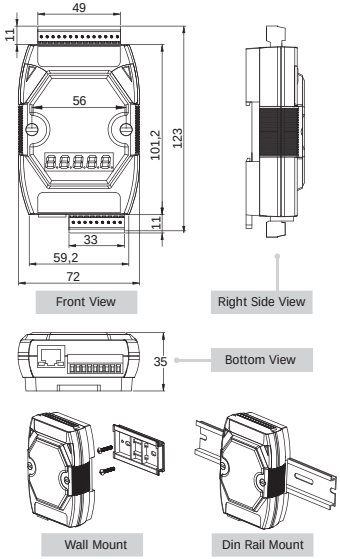
3-wire RS-232 Wiring



2-wire RS-485 Wiring



Dimensions (Unit: mm)



Ordering Information

PDS-742 CR	Programmable Device Server with 3 RS-232 ports and 1 RS-485 port (RoHS) Includes One CA-0910 Cable
PDS-742D CR	Programmable Device Server with 3 RS-232 ports, 1 RS-485 port and an LED Display (RoHS) Includes One CA-0910 Cable
PPDS-742-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 3 RS-232 ports and 1 RS-485 port (RoHS) Includes One CA-0910 Cable
PPDS-742D-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 3 RS-232 ports, 1 RS-485 port and an LED Display (RoHS) Includes One CA-0910 Cable

Accessories

GPSU06U-6	24 Vdc/0.25 A, 6 W Power Supply
MDR-20-24	24 Vdc/1 A, 24 W Power Supply with DIN-Rail Mounting
DIN-KA52F-48	48 Vdc/0.52 A, 25 W Power Supply with Din-Rail Mounting
CA-0903	9-Pin Female D-Sub and RS-232 Connector Cable, 30 cm Cable
CA-0910	9-Pin Female D-Sub and 3-wire RS-232 Cable, 1 m Cable
NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch (RoHS)
NS-205PSE CR	Unmanaged Ethernet Switch with 4 PoE Ports and 1 RJ-45 Uplink (RoHS)
DN-09-2	I/O Connector Block with DIN-Rail Mounting and Two 9-Pin Male Header. Includes CA-0915 x 2 (9-Pin Male-Female D-Sub Cable 1.5 m)
DN-09-2F	I/O Connector Block with DIN-Rail Mounting and Two 9-Pin Male Header. Includes CA-0910F x 2 (9-Pin Female-Female D-Sub Cable 1.0 m)

NEW PDS-743(D)

Available soon PPDS-743(D)-MTCP

Programmable Device Server with 3 RS-232 ports and 1 RS-485 port

RS-232/RS-485

Features

- Incorporate Serial Devices in an Ethernet network
- Virtual COM on Windows NT 4.0, 2000/XP/2003 and Vista32
- Powerful Programmable Device Server
- Watchdog Timer suitable for use in harsh environments
- Power Reverse Polarity Protection
- Serial Port +/-4 kV ESD Protection Circuit
- Self-Tuner ASIC Controller on the RS-485 Port
- 5-digit LED Display (for versions with a display)
- RoHS Compliant with no Halogen
- Built-in High Performance MiniOS7 from ICP DAS
- 10/100 Base-TX Ethernet, RJ-45 Port (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- PPDS-743(D)-MTCP supports Modbus/TCP and Modbus/RTU
- PPDS-743(D)-MTCP supports PoE (IEEE 802.3af, Class 1)
- Supports D/I, Latched D/I and Counter Functions
- Low power consumption
- Palm-Sized with multiple Serial Ports

CE FC RoHS PoE

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.

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 PPDS-700-MTCP also works as a Modbus/TCP to Modbus/RTU gateway that supports most SCADA/HMI communications based on the Modbus/TCP protocol.

The PDS-743(D) and PPDS-743(D)-MTCP is equipped with 3 RS-232 ports, 1 RS-485 port and DI/DO. The removable on-board terminal block connector is designed for easy and robust wiring in industrial situations.

Applications

Factory, Building and Home Automation

I/O Specifications

Models: PDS-743/PDS-743D/PPDS-743-MTCP/PPDS-743D-MTCP	
Digital Output	
Output Channel	4
Output Type	Open Collector (Sink/NPN)
Load Voltage	30 VDC, max.
Load Current	100 mA, max.
Isolated Voltage	Non-isolated
Digital Input	
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

System Specifications

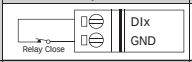
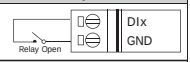
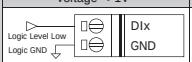
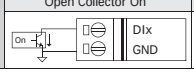
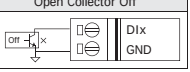
Models		PDS-743	PDS-743D	PPDS-743-MTCP	PPDS-743D-MTCP
CPU					
CPU		80186, 80 MHz or compatible			
SRAM		512 KB			
Flash Memory		Flash ROM: 512 KB; Erase unit is one sector (64 KB); 100,000 erase/write cycles			
EEPROM		16 KB; Data retention: 40 years; 1,000,000 erase/write cycles			
Built-in Watchdog Timer		Yes			
Communication Interface					
Non-isolated	COM1	RS-232 (TxD, RxD, RTS, CTS, GND)			
	COM2	RS-485 (D2+, D2-, GND)			
	COM3	RS-232 (TxD, RxD, GND)			
	COM4	RS-232 (TxD, RxD, GND)			
Ethernet		10/100 Base-TX, RJ-45 port (Auto-negotiating, auto MDI/MDI-X, LED indicator)			
PoE		-		IEEE 802.3af	
COM Port Formats					
Data Bit		7, 8: for COM1 and COM2 5, 6, 7, 8: for COM3 and COM4			
Parity		None, Even, Odd, Mark, Space			
Stop Bit		1: for COM1 and COM2 1, 2: for COM3 and COM4			
Baud Rate		115200 bps max.			
LED Indicators					
5-digit 7 Segment		-	Yes	-	Yes
System		Red			
PoE		-		Green	
Power					
Protection		Power Reverse Polarity Protection			
Required Supply Voltage		+10 VDC ~ +30 VDC (non-regulated)		PoE or +12 VDC ~ +48 VDC (non-regulated)	
Power Consumption		2.0 W	2.7 W	2.2 W	2.9 W
Mechanical					
Flammability		Fire Retardant Materials (UL94-V0 Level)			
Dimensions		72 mm x 123 mm x 35 mm (W x H x D)			
Installation		DIN-Rail or Wall mounting			
Environment					
Operating Temperature		-25 °C ~ +75 °C			
Storage Temperature		-40 °C ~ +80 °C			
Humidity		5 ~ 90% RH, non-condensing			

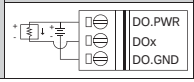
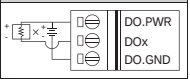
Pin Assignments

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

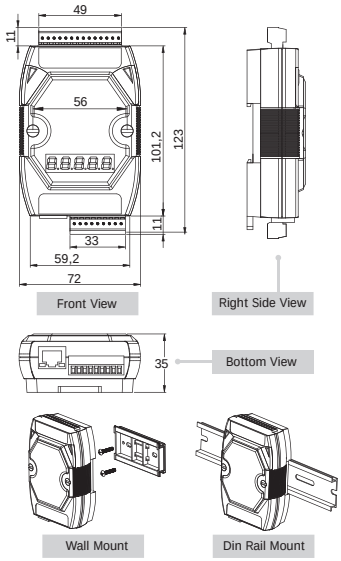
Terminal No.		Pin Assignment
DO	23	DO3
	22	DO2
	21	DO1
	20	DO0
	19	DO.PWR
	18	GND
DI	17	DI3
	16	DI2
	15	DI1
	14	DI0
COM3	13	TxD3
	12	RxD3
COM4	11	TxD4
	10	RxD4

Wiring

Input Type	DI Value as 0	DI Value as 1
Relay Contact	Relay ON	Relay Off
		
TTL/CMOS Logic	Voltage < 1V	Voltage > 3.5V
		
Open Collector	Open Collector On	Open Collector Off
		

Output Type	DO Command as 1	DO Command as 0
Drive Relay	Relay ON	Relay Off
		
Resistance Load		
		

Dimensions (Unit: mm)



Ordering Information

PDS-743 CR	Programmable Device Server with 3 RS-232 ports and 1 RS-485 port (RoHS) Includes One CA-0910 Cable
PDS-743D CR	Programmable Device Server with 3 RS-232 ports, 1 RS-485 port and an LED Display (RoHS) Includes One CA-0910 Cable
PPDS-743-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 3 RS-232 ports and 1 RS-485 port (RoHS) Includes One CA-0910 Cable
PPDS-743D-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 3 RS-232 ports, 1 RS-485 port and an LED Display (RoHS) Includes One CA-0910 Cable

Accessories

GPSU06U-6	24 Vdc/0.25 A, 6 W Power Supply
MDR-20-24	24 Vdc/1 A, 24 W Power Supply with DIN-Rail Mounting
DIN-KA52F-48	48 Vdc/0.52 A, 25 W Power Supply with Din-Rail Mounting
CA-0903	9-Pin Female D-Sub and RS-232 Connector Cable, 30 cm Cable
CA-0910	9-Pin Female D-Sub and 3-wire RS-232 Cable, 1 m Cable
NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch (RoHS)
NS-205PSE CR	Unmanaged Ethernet Switch with 4 PoE Ports and 1 RJ-45 Uplink (RoHS)
DN-09-2	I/O Connector Block with DIN-Rail Mounting and Two 9-Pin Male Header. Includes CA-0915 x 2 (9-pin Male-Female D-Sub Cable 1.5 m)
DN-09-2F	I/O Connector Block with DIN-Rail Mounting and Two 9-Pin Male Header. Includes CA-0910F x 2 (9-pin Female-Female D-Sub Cable 1.0 m)

NEW **PDS-752(D)**

Available soon **PPDS-752(D)-MTCP**

Programmable Device Server with 4 RS-232 ports and 1 RS-485 port

RS-232/RS-485

Features

- Incorporate Serial Devices in an Ethernet network
- Virtual COM on Windows NT 4.0, 2000/XP/2003 and Vista32
- Powerful Programmable Device Server
- Watchdog Timer suitable for use in harsh environments
- Power Reverse Polarity Protection
- Serial Port +/-4 kV ESD Protection Circuit
- Self-Tuner ASIC Controller on the RS-485 Port
- 5-digit LED Display (for versions with a display)
- RoHS Compliant with no Halogen
- Built-in High Performance MiniOS7 from ICP DAS
- 10/100 Base-TX Ethernet, RJ-45 Port (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- PPDS-752(D)-MTCP supports Modbus/TCP and Modbus/RTU
- PPDS-752(D)-MTCP supports PoE (IEEE 802.3af, Class 1)
- Low power consumption
- Palm-Sized with multiple Serial Ports
- Made from fire retardant materials (UL94-V0 Level)

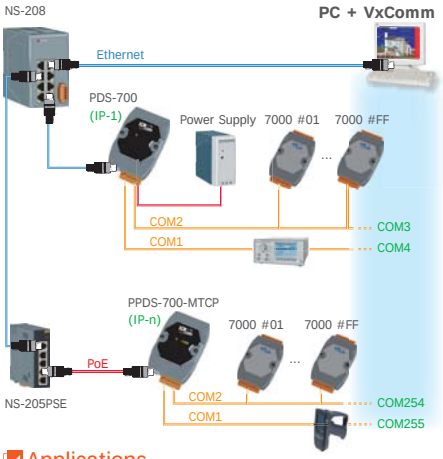
Introduction

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.

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 PPDS-700-MTCP also works as a Modbus/TCP to Modbus/RTU gateway that supports most SCADA/HMI communications based on the Modbus/TCP protocol.

The PDS-752(D) and PPDS-752(D)-MTCP is equipped with 4 RS-232 ports and 1 RS-485 port. The removable on-board terminal block connector is designed for easy and robust wiring in industrial situations.



Applications

Factory, Building and Home Automation

System Specifications

Models		PDS-752	PDS-752D	PPDS-752-MTCP	PPDS-752D-MTCP
CPU					
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			
Communication Interface					
Non-isolated	COM1	RS-232 (TxD, RxD, RTS, CTS, GND)			
	COM2	RS-485 (D2+, D2-, GND)			
	COM3	RS-232 (TxD, RxD, RTS, CTS, GND)			
	COM4	RS-232 (TxD, RxD, RTS, CTS, GND)			
	COM5	RS-232 (TxD, RxD, RTS, CTS, GND)			
Ethernet		10/100 Base-TX, RJ-45 port (Auto-negotiating, auto MDI/MDI-X, LED indicator)			
PoE		-		IEEE 802.3af	
COM Port Formats					
Data Bit		7, 8: for COM1 and COM2 5, 6, 7, 8: for COM3 ~ COM5			
Parity		None, Even, Odd, Mark, Space			
Stop Bit		1: for COM1 and COM2 1, 2: for COM3 ~ COM5			
Baud Rate		115200 bps max.			
LED Indicators					
5-digit 7 Segment		-	Yes	-	Yes
System		Red			
PoE		-		Green	
Power					
Protection		Power Reverse Polarity Protection			
Required Supply Voltage		+10 V_{DC} ~ +30 V_{DC} (non-regulated)		PoE or +12 V_{DC} ~ +48 V_{DC} (non-regulated)	
Power Consumption		2.0 W	2.7 W	2.2 W	2.9 W
Mechanical					
Flammability		Fire Retardant Materials (UL94-V0 Level)			
Dimensions		72 mm x 123 mm x 35 mm (W x H x D)			
Installation		DIN-Rail or Wall mounting			
Environment					
Operating Temperature		-25 °C ~ +75 °C			
Storage Temperature		-40 °C ~ +80 °C			
Humidity		5 ~ 90% RH, non-condensing			

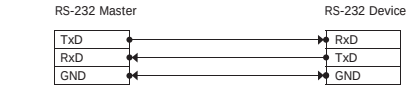
Pin Assignments

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

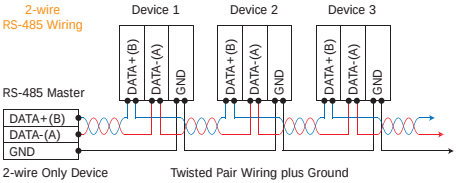
Terminal No.		Pin Assignment
COM5	23	RxD5
	22	TxD5
	21	RTS5
	20	CTS5
	19	GND
COM4	18	RxD4
	17	TxD4
	16	RTS4
	15	CTS4
	14	GND
COM3	13	RxD3
	12	TxD3
	11	RTS3
	10	CTS3

Wiring

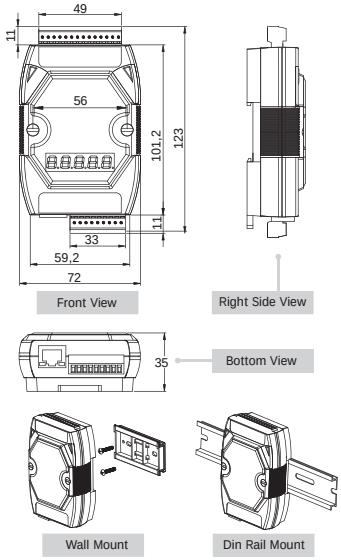
3-wire RS-232 Wiring



2-wire RS-485 Wiring



Dimensions (Unit: mm)



Ordering Information

PDS-752 CR	Programmable Device Server with 4 RS-232 ports and 1 RS-485 port (RoHS) Includes One CA-0910 Cable
PDS-752D CR	Programmable Device Server with 4 RS-232 ports, 1 RS-485 port and an LED Display (RoHS) Includes One CA-0910 Cable
PPDS-752-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 4 RS-232 ports and 1 RS-485 port (RoHS) Includes One CA-0910 Cable
PPDS-752D-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 4 RS-232 ports, 1 RS-485 port and an LED Display (RoHS) Includes One CA-0910 Cable

Accessories

GPSU06U-6	24 Vdc/0.25 A, 6 W Power Supply
MDR-20-24	24 Vdc/1 A, 24 W Power Supply with DIN-Rail Mounting
DIN-KA52F-48	48 Vdc/0.52 A, 25 W Power Supply with Din-Rail Mounting
CA-0903	9-Pin Female D-Sub and RS-232 Connector Cable, 30 cm Cable
CA-0910	9-Pin Female D-Sub and 3-wire RS-232 Cable, 1 m Cable
NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch (RoHS)
NS-205PSE CR	Unmanaged Ethernet Switch with 4 PoE Ports and 1 RJ-45 Uplink (RoHS)
DN-09-2	I/O Connector Block with DIN-Rail Mounting and Two 9-Pin Male Header. Includes CA-0915 x 2 (9-Pin Male-Female D-Sub Cable 1.5 m)
DN-09-2F	I/O Connector Block with DIN-Rail Mounting and Two 9-Pin Male Header. Includes CA-0910F x 2 (9-Pin Female-Female D-Sub Cable 1.0 m)

NEW **PDS-755(D)**

Available soon **PPDS-755(D)-MTCP**

Programmable Device Server with 1 RS-232 port and 4 RS-485 ports

RS-232/RS-485

Features

- Incorporate Serial Devices in an Ethernet network
- Virtual COM on Windows NT 4.0, 2000/XP/2003 and Vista32
- Powerful Programmable Device Server
- Watchdog Timer suitable for use in harsh environments
- Power Reverse Polarity Protection
- Serial Port +/-4 kV ESD Protection Circuit
- Self-Tuner ASIC Controller on the RS-485 Port
- 5-digit LED Display (for versions with a display)
- RoHS Compliant with no Halogen
- Built-in High Performance MiniOS7 from ICP DAS
- 10/100 Base-TX Ethernet, RJ-45 Port (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- PPDS-755(D)-MTCP supports Modbus/TCP and Modbus/RTU
- PPDS-755(D)-MTCP supports PoE (IEEE 802.3af, Class 1)
- Low power consumption
- Palm-Sized with multiple Serial Ports
- Made from fire retardant materials (UL94-V0 Level)

CE FC RoHS PoE

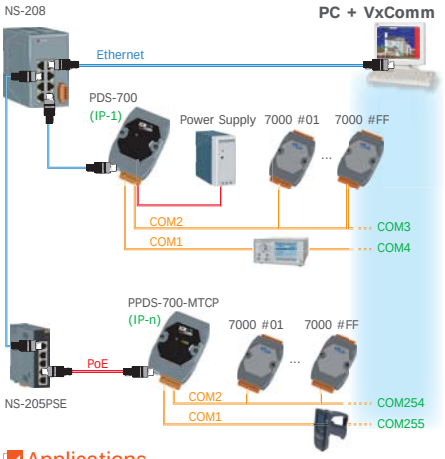
Introduction

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.

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 PPDS-700-MTCP also works as a Modbus/TCP to Modbus/RTU gateway that supports most SCADA/HMI communications based on the Modbus/TCP protocol.

The PDS-755(D) and PPDS-755(D)-MTCP is equipped with 1 RS-232 port and 4 RS-485 ports. The removable on-board terminal block connector is designed for easy and robust wiring in industrial situations.



Applications

Factory, Building and Home Automation

System Specifications

Models		PDS-755	PDS-755D	PPDS-755-MTCP	PPDS-755D-MTCP
CPU					
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			
Communication Interface					
Non-isolated	COM1	RS-232 (TxD, RxD, RTS, CTS, GND)			
	COM2	RS-485 (D2+, D2-, GND)			
	COM3	RS-485 (DATA+, DATA-, GND)			
	COM4	RS-485 (DATA+, DATA-, GND)			
	COM5	RS-485 (DATA+, DATA-, GND)			
Ethernet		10/100 Base-TX, RJ-45 port (Auto-negotiating, auto MDI/MDI-X, LED indicator)			
PoE		-		IEEE 802.3af	
COM Port Formats					
Data Bit		7, 8: for COM1 and COM2 5, 6, 7, 8: for COM3 ~ COM5			
Parity		None, Even, Odd, Mark, Space			
Stop Bit		1: for COM1 and COM2 1, 2: for COM3 ~ COM5			
Baud Rate		115200 bps max.			
LED Indicators					
5-digit 7 Segment		-	Yes	-	Yes
System		Red			
PoE		-		Green	
Power					
Protection		Power Reverse Polarity Protection			
Required Supply Voltage		+10 V_{DC} ~ +30 V_{DC} (non-regulated)		PoE or +12 V_{DC} ~ +48 V_{DC} (non-regulated)	
Power Consumption		2.0 W	2.7 W	2.2 W	2.9 W
Mechanical					
Flammability		Fire Retardant Materials (UL94-V0 Level)			
Dimensions		72 mm x 123 mm x 35 mm (W x H x D)			
Installation		DIN-Rail or Wall mounting			
Environment					
Operating Temperature		-25 °C ~ +75 °C			
Storage Temperature		-40 °C ~ +80 °C			
Humidity		5 ~ 90% RH, non-condensing			

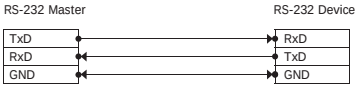
Pin Assignments

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

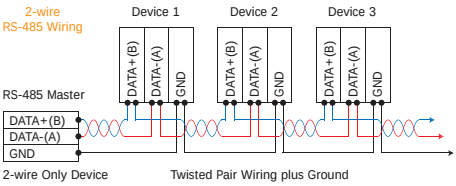
Terminal No.		Pin Assignment
COM5	23	DATA+
	22	DATA-
	21	--
	20	--
	19	--
	18	--
COM4	17	DATA+
	16	DATA-
	15	--
	14	--
	13	--
	12	--
COM3	11	DATA+
	10	DATA-

Wiring

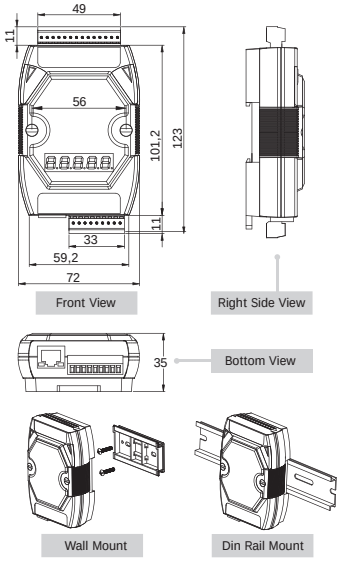
3-wire RS-232 Wiring



2-wire RS-485 Wiring



Dimensions (Unit: mm)



Ordering Information

PDS-755 CR	Programmable Device Server with 1 RS-232 port and 4 RS-485 ports (RoHS) Includes One CA-0910 Cable
PDS-755D CR	Programmable Device Server with 1 RS-232 port, 4 RS-485 ports and an LED Display (RoHS) Includes One CA-0910 Cable
PPDS-755-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 1 RS-232 port and 4 RS-485 ports (RoHS) Includes One CA-0910 Cable
PPDS-755D-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 1 RS-232 port, 4 RS-485 ports and an LED Display (RoHS) Includes One CA-0910 Cable

Accessories

GPSU06U-6	24 Vdc/0.25 A, 6 W Power Supply
MDR-20-24	24 Vdc/1 A, 24 W Power Supply with DIN-Rail Mounting
DIN-KA52F-48	48 Vdc/0.52 A, 25 W Power Supply with Din-Rail Mounting
CA-0903	9-Pin Female D-Sub and RS-232 Connector Cable, 30 cm Cable
CA-0910	9-Pin Female D-Sub and 3-wire RS-232 Cable, 1 m Cable
NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch (RoHS)
NS-205PSE CR	Unmanaged Ethernet Switch with 4 PoE Ports and 1 RJ-45 Uplink (RoHS)

NEW **PDS-762(D)**

Available soon **PPDS-762(D)-MTCP**

Programmable Device Server with 5 RS-232 ports and 1 RS-485 port

RS-232/RS-485

Features

- Incorporate Serial Devices in an Ethernet network
- Virtual COM on Windows NT 4.0, 2000/XP/2003 and Vista32
- Powerful Programmable Device Server
- Watchdog Timer suitable for use in harsh environments
- Power Reverse Polarity Protection
- Serial Port +/-4 kV ESD Protection Circuit
- Self-Tuner ASIC Controller on the RS-485 Port
- 5-digit LED Display (for versions with a display)
- RoHS Compliant with no Halogen
- Built-in High Performance MiniOS7 from ICP DAS
- 10/100 Base-TX Ethernet, RJ-45 Port (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- PPDS-762(D)-MTCP supports Modbus/TCP and Modbus/RTU
- PPDS-762(D)-MTCP supports PoE (IEEE 802.3af, Class 1)
- Supports D/I, Latched D/I and Counter Functions
- Low power consumption
- Palm-Sized with multiple Serial Ports

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.

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 PPDS-700-MTCP also works as a Modbus/TCP to Modbus/RTU gateway that supports most SCADA/HMI communications based on the Modbus/TCP protocol.

The PDS-762(D) and PPDS-762(D)-MTCP is equipped with 5 RS-232 ports, 1 RS-485 port and DI/DO. The removable on-board terminal block connector is designed for easy and robust wiring in industrial situations.

Applications

Factory, Building and Home Automation

I/O Specifications

Models: PDS-762/PDS-762D/PPDS-762-MTCP/PPDS-762D-MTCP	
Digital Output	
Output Channel	2
Output Type	Open Collector (Sink/NPN)
Load Voltage	30 V_{DC}, max.
Load Current	100 mA, max.
Isolated Voltage	Non-isolated
Digital Input	
Input Channel	1
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: 1
	Max. Count: 16-bit (65535)
	Max. Input Frequency: 100 Hz
	Min. Pulse Width: 5 ms

System Specifications

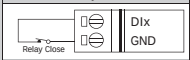
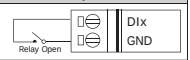
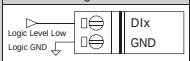
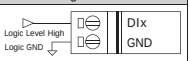
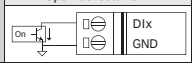
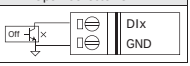
Models		PDS-762	PDS-762D	PPDS-762-MTCP	PPDS-762D-MTCP
CPU					
CPU		80186, 80 MHz or compatible			
SRAM		512 KB			
Flash Memory		Flash ROM: 512 KB; Erase unit is one sector (64 KB); 100,000 erase/write cycles			
EEPROM		16 KB; Data retention: 40 years; 1,000,000 erase/write cycles			
Built-in Watchdog Timer		Yes			
Communication Interface					
Non-isolated	COM1	RS-232 (TxD, RxD, RTS, CTS, GND)			
	COM2	RS-485 (D2+, D2-, GND)			
	COM3	RS-232 (TxD, RxD, GND)			
	COM4	RS-232 (TxD, RxD, GND)			
	COM5	RS-232 (TxD, RxD, GND)			
	COM6	RS-232 (TxD, RxD, GND)			
Ethernet		10/100 Base-TX, RJ-45 port (Auto-negotiating, auto MDI/MDI-X, LED indicator)			
PoE		-		IEEE 802.3af	
COM Port Formats					
Data Bit		7, 8: for COM1 and COM2 5, 6, 7, 8: for COM3 ~ COM6			
Parity		None, Even, Odd, Mark, Space			
Stop Bit		1: for COM1 and COM2 1, 2: for COM3 ~ COM6			
Baud Rate		115200 bps max.			
LED Indicators					
5-digit 7 Segment		-	Yes	-	Yes
System		Red			
PoE		-		Green	
Power					
Protection		Power Reverse Polarity Protection			
Required Supply Voltage		+10 V_{DC} ~ +30 V_{DC} (non-regulated)		PoE or +12 V_{DC} ~ +48 V_{DC} (non-regulated)	
Power Consumption		2.0 W	2.7 W	2.2 W	2.9 W
Mechanical					
Flammability		Fire Retardant Materials (UL94-V0 Level)			
Dimensions		72 mm x 123 mm x 35 mm (W x H x D)			
Installation		DIN-Rail or Wall mounting			
Environment					
Operating Temperature		-25 °C ~ +75 °C			
Storage Temperature		-40 °C ~ +80 °C			
Humidity		5 ~ 90% RH, non-condensing			

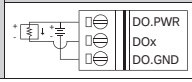
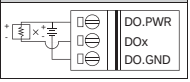
Pin Assignments

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

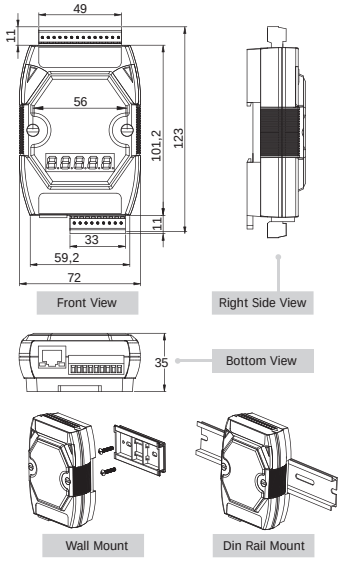
Terminal No.		Pin Assignment
DO	23	DO1
	22	DO0
	21	DO.PWR
DI	20	DI0
	19	GND
COM6	18	TxD6
	17	RxD6
COM5	16	TxD5
	15	RxD5
	14	GND
COM4	13	TxD4
	12	RxD4
COM3	11	TxD3
	10	RxD3

Wiring

Input Type	DI Value as 0	DI Value as 1
Relay Contact	Relay ON	Relay Off
		
TTL/CMOS Logic	Voltage < 1V	Voltage > 3.5V
		
Open Collector	Open Collector On	Open Collector Off
		

Output Type	DO Command as 1	DO Command as 0
Drive Relay	Relay ON	Relay Off
		
Resistance Load		
		

Dimensions (Unit: mm)



Ordering Information

PDS-762 CR	Programmable Device Server with 5 RS-232 ports and 1 RS-485 port (RoHS) Includes One CA-0910 Cable
PDS-762D CR	Programmable Device Server with 5 RS-232 ports, 1 RS-485 port and an LED Display (RoHS) Includes One CA-0910 Cable
PPDS-762-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 5 RS-232 ports and 1 RS-485 port (RoHS) Includes One CA-0910 Cable
PPDS-762D-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 5 RS-232 ports, 1 RS-485 port and an LED Display (RoHS) Includes One CA-0910 Cable

Accessories

GPSU06U-6	24 Vdc/0.25 A, 6 W Power Supply
MDR-20-24	24 Vdc/1 A, 24 W Power Supply with DIN-Rail Mounting
DIN-KA52F-48	48 Vdc/0.52 A, 25 W Power Supply with Din-Rail Mounting
CA-0903	9-Pin Female D-Sub and RS-232 Connector Cable, 30 cm Cable
CA-0910	9-Pin Female D-Sub and 3-wire RS-232 Cable, 1 m Cable
NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch (RoHS)
NS-205PSE CR	Unmanaged Ethernet Switch with 4 PoE Ports and 1 RJ-45 Uplink (RoHS)
DN-09-2	I/O Connector Block with DIN-Rail Mounting and Two 9-Pin Male Header. Includes CA-0915 x 2 (9-Pin Male-Female D-Sub Cable 1.5 m)
DN-09-2F	I/O Connector Block with DIN-Rail Mounting and Two 9-Pin Male Header. Includes CA-0910F x 2 (9-Pin Female-Female D-Sub Cable 1.0 m)

NEW **PDS-782(D)**

Available soon **PPDS-782(D)-MTCP**

Programmable Device Server with 7 RS-232 ports and 1 RS-485 port

RS-232/RS-485

Features

- Incorporate Serial Devices in an Ethernet network
- Virtual COM on Windows NT 4.0, 2000/XP/2003 and Vista32
- Powerful Programmable Device Server
- Watchdog Timer suitable for use in harsh environments
- Power Reverse Polarity Protection
- Serial Port +/-4 kV ESD Protection Circuit
- Self-Tuner ASIC Controller on the RS-485 Port
- 5-digit LED Display (for versions with a display)
- RoHS Compliant with no Halogen
- Built-in High Performance MiniOS7 from ICP DAS
- 10/100 Base-TX Ethernet, RJ-45 Port (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- PPDS-782(D)-MTCP supports Modbus/TCP and Modbus/RTU
- PPDS-782(D)-MTCP supports PoE (IEEE 802.3af, Class 1)
- Low power consumption
- Palm-Sized with multiple Serial Ports
- Made from fire retardant materials (UL94-V0 Level)

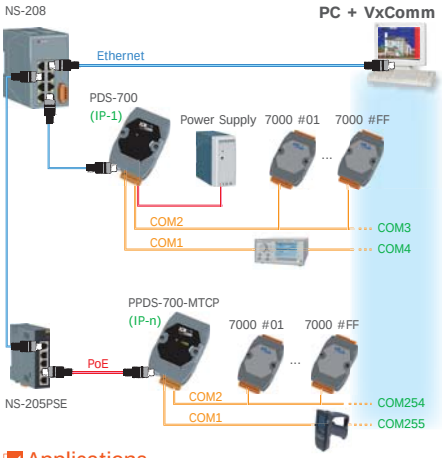
Introduction

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.

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 PPDS-700-MTCP also works as a Modbus/TCP to Modbus/RTU gateway that supports most SCADA/HMI communications based on the Modbus/TCP protocol.

The PDS-782(D) and PPDS-782(D)-MTCP is equipped with 7 RS-232 ports and 1 RS-485 port. The removable on-board terminal block connector is designed for easy and robust wiring in industrial situations.



Applications

Factory, Building and Home Automation

System Specifications

Models		PDS-782	PDS-782D	PPDS-782-MTCP	PPDS-782D-MTCP
CPU					
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			
Communication Interface					
Non-isolated	COM1	RS-232 (TxD, RxD, RTS, CTS, GND)			
	COM2	RS-485 (D2+, D2-, GND)			
	COM3	RS-232 (TxD, RxD, GND)			
	COM4	RS-232 (TxD, RxD, GND)			
	COM5	RS-232 (TxD, RxD, GND)			
	COM6	RS-232 (TxD, RxD, GND)			
	COM7	RS-232 (TxD, RxD, GND)			
	COM8	RS-232 (TxD, RxD, GND)			
Ethernet		10/100 Base-TX, RJ-45 port (Auto-negotiating, auto MDI/MDI-X, LED indicator)			
PoE		-		IEEE 802.3af	
COM Port Formats					
Data Bit		7, 8: for COM1 and COM2			
Parity		None, Even, Odd, Mark, Space			
Stop Bit		1: for COM1 and COM2			
Baud Rate		115200 bps max.			
LED Indicators					
5-digit 7 Segment		-	Yes	-	Yes
System		Red			
PoE		-		Green	
Power					
Protection		Power Reverse Polarity Protection			
Required Supply Voltage		+10 Vdc ~ +30 Vdc (non-regulated)		PoE or +12 Vdc ~ +48 Vdc (non-regulated)	
Power Consumption		2.0 W	2.7 W	2.2 W	2.9 W
Mechanical					
Flammability		Fire Retardant Materials (UL94-V0 Level)			
Dimensions		72 mm x 123 mm x 35 mm (W x H x D)			
Installation		DIN-Rail or Wall mounting			
Environment					
Operating Temperature		-25 °C ~ +75 °C			
Storage Temperature		-40 °C ~ +80 °C			
Humidity		5 ~ 90% RH, non-condensing			

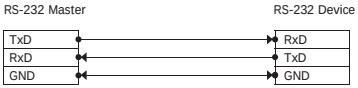
Pin Assignments

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

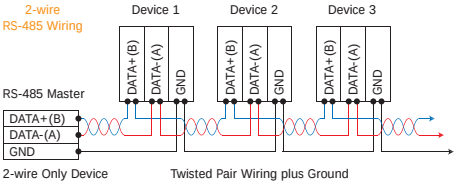
Terminal No.		Pin Assignment
COM8	23	TxD8
	22	RxD8
COM7	21	TxD7
	20	RxD7
	19	GND
COM6	18	TxD6
	17	RxD6
COM5	16	TxD5
	15	RxD5
	14	GND
COM4	13	TxD4
	12	RxD4
COM3	11	TxD3
	10	RxD3

Wiring

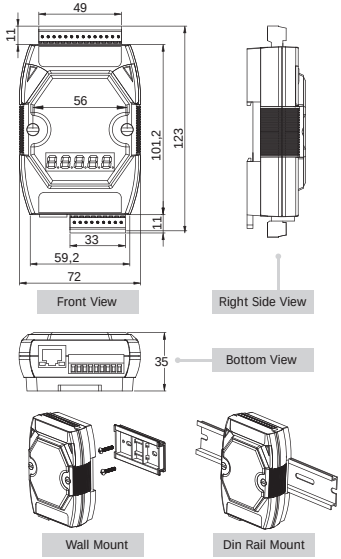
3-wire RS-232 Wiring



2-wire RS-485 Wiring



Dimensions (Unit: mm)



Ordering Information

PDS-782 CR	Programmable Device Server with 7 RS-232 ports and 1 RS-485 port (RoHS) Includes One CA-0910 Cable
PDS-782D CR	Programmable Device Server with 7 RS-232 ports, 1 RS-485 port and an LED Display (RoHS) Includes One CA-0910 Cable
PPDS-782-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 7 RS-232 ports and 1 RS-485 port (RoHS) Includes One CA-0910 Cable
PPDS-782D-MTCP CR	Programmable Device Server with PoE, Modbus/TCP, 7 RS-232 ports, 1 RS-485 port and an LED Display (RoHS) Includes One CA-0910 Cable

Accessories

GPSU06U-6	24 Vdc/0.25 A, 6 W Power Supply
MDR-20-24	24 Vdc/1 A, 24 W Power Supply with DIN-Rail Mounting
DIN-KA52F-48	48 Vdc/0.52 A, 25 W Power Supply with Din-Rail Mounting
CA-0903	9-Pin Female D-Sub and RS-232 Connector Cable, 30 cm Cable
CA-0910	9-Pin Female D-Sub and 3-wire RS-232 Cable, 1 m Cable
NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch (RoHS)
NS-205PSE CR	Unmanaged Ethernet Switch with 4 PoE Ports and 1 RJ-45 Uplink (RoHS)
DN-09-2	I/O Connector Block with DIN-Rail Mounting and Two 9-Pin Male Header. Includes CA-0915 x 2 (9-Pin Male-Female D-Sub Cable 1.5 m)
DN-09-2F	I/O Connector Block with DIN-Rail Mounting and Two 9-Pin Male Header. Includes CA-0910F x 2 (9-Pin Female-Female D-Sub Cable 1.0 m)

PDS-782-25/D6
PDS-782D-25/D6

PProgrammable Device Server with 7 RS-232 ports and 1 RS-485 port

RS-232/RS-485

Features

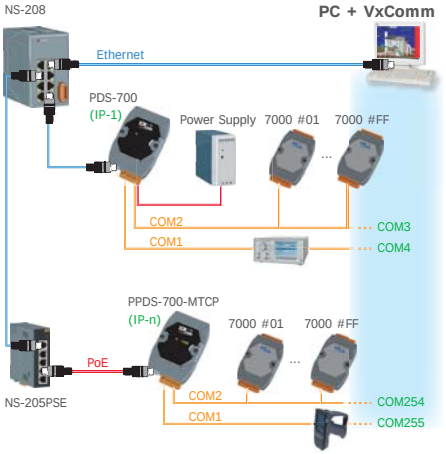
- Incorporate Serial Devices in an Ethernet network
- Virtual COM on Windows NT 4.0, 2000/XP/2003 and Vista32
- Powerful Programmable Device Server
- Watchdog Timer suitable for use in harsh environments
- Power Reverse Polarity Protection
- Serial Port +/-4 kV ESD Protection Circuit
- Self-Tuner ASIC Controller on the RS-485 Port
- 5-digit LED Display (for versions with a display)
- RoHS Compliant with no Halogen
- Built-in High Performance MiniOS7 from ICP DAS
- 10/100 Base-TX Ethernet, RJ-45 Port (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- ODM Service Is Available
- Low power consumption
- Palm-Sized with multiple Serial Ports
- Made from fire retardant materials (UL94-V0 Level)
- Male DB-9 Connector

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.

PDS-782(D)-25/D6 is equipped with 7 RS-232 ports and 1 RS-485 port. The CA-9-2505D cable converts the DB-25 connector of PDS-782(D)-25/D6 to 6 Male DB-9 connectors for easy wiring with serial devices that have female DB-9 connectors.



Applications

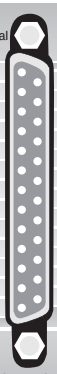
Factory, Building and Home Automation

System Specifications

Models		PDS-782-25/D6	PDS-782D-25/D6
CPU			
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	
Communication Interface			
Non-isolated	COM1	RS-232 (TxD, RxD, RTS, CTS, GND)	
	COM2	RS-485 (D2+, D2-, GND)	
	COM3	RS-232 (TxD, RxD, GND)	
	COM4	RS-232 (TxD, RxD, GND)	
	COM5	RS-232 (TxD, RxD, GND)	
	COM6	RS-232 (TxD, RxD, GND)	
	COM7	RS-232 (TxD, RxD, GND)	
	COM8	RS-232 (TxD, RxD, GND)	
Ethernet		10/100 Base-TX, RJ-45 Port (Auto-negotiating, auto MDI/MDI-X, LED indicator)	
COM Port Formats			
Data Bit		7, 8: for COM1 and COM2 5, 6, 7, 8: for COM3 ~ COM8	
Parity		None, Even, Odd, Mark, Space	
Stop Bit		1: for COM1, COM2 1, 2: for COM3 ~ COM8	
Baud Rate		115200 bps max.	
LED Indicators			
5-digit 7 Segment		-	Yes
System		Red	
Power			
Protection		Power Reverse Polarity Protection	
Required Supply Voltage		+12 V_{DC} ~ +48 V_{DC} (non-regulated)	
Power Consumption		2.0 W	2.7 W
Mechanical			
Flammability		Fire Retardant Materials (UL94-V0 Level)	
Dimensions (W x H x D)		72 mm x 116 mm x 35 mm	
Installation		DIN-Rail or Wall mounting	
Environment			
Operating Temperature		-25 °C ~ +75 °C	
Storage Temperature		-40 °C ~ +80 °C	
Humidity		5 ~ 95% RH, non-condensing	

Pin Assignments

Pin Assignment	Terminal No.		Pin Assignment
N/A	01	14	COM8_RxD
N/A	02	15	COM8_TxD
COM8_GND	03	16	COM7_RxD
N/A	04	17	COM7_TxD
COM7_GND	05	18	COM6_RxD
N/A	06	19	COM6_TxD
COM6_GND	07	20	COM5_RxD
N/A	08	21	COM5_TxD
COM5_GND	09	22	COM4_RxD
N/A	10	23	COM4_TxD
COM4_GND	11	24	COM3_RxD
N/A	12	25	COM3_TxD
COM3_GND	13	Shield	F.G.

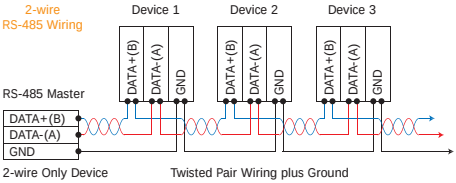


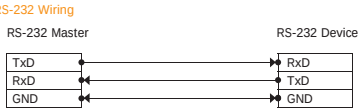
25-Pin Male D-Sub Connector

Pin Assignment	Terminal No.		Pin Assignment
GND	05	09	--
--	04	08	--
TxD	03	07	--
RxD	02	06	--
--	01		

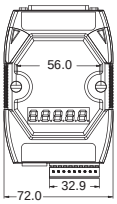
RS-232 Female DB-25 to Male DB-9 Connector

Wiring

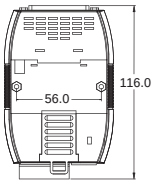




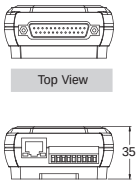
Dimensions (Unit: mm)



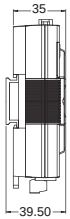
Front View



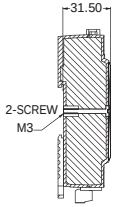
Back View



Bottom View



Din-Rail Mounting Bracket



Side View

Ordering Information

PDS-782-25/D6 CR	Programmable Device Server with 7 RS-232 ports and 1 RS-485 port (RoHS) Includes One CA-0910 Cable and One CA-9-2505D Cable
PDS-782D-25/D6 CR	Programmable Device Server with 7 RS-232 ports, 1 RS-485 port and an LED Display (RoHS) Includes One CA-0910 Cable and One CA-9-2505D Cable

Accessories

GPSU06U-6	24 V_{DC}/0.25 A, 6 W Power Supply
MDR-20-24	24 V_{DC}/1 A, 24 W Power Supply with DIN-Rail Mounting
CA-0903	9-Pin Female D-Sub and RS-232 Connector Cable, 30 cm Cable
CA-0910	9-Pin Female D-Sub and 3-wire RS-232 Cable, 1 m Cable
CA-9-2505D	DB-25 Male (D-Sub) to 6-port DB-9 Male (D-Sub) Cable
NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch (RoHS)
DN-09-2	I/O Connector Block with DIN-Rail Mounting and Two 9-Pin Male Header Includes CA-0915 x 2 (9-Pin Male-Female D-Sub Cable 1.5 m)
DN-09-2F	I/O Connector Block with DIN-Rail Mounting and Two 9-Pin Male Header Includes CA-0910F x 2 (9-Pin Female-Female D-Sub Cable 1.0 m)

3.3. DS-700 Serial-to Ethernet Device Servers

NEW **DS-712**

Available soon **PPDS-712-MTCP**

Serial-to-Ethernet Device Server with 1 RS-232 port

RS-232

Features

- Incorporate Serial Devices in an Ethernet network
- "Virtual COM" Extend COM Ports
- Virtual COM on Windows NT 4.0, 2000/XP/2003 and
- High Performance Device Server
- Watchdog Timer suitable for use in harsh environments
- Power Reverse Polarity Protection
- Serial Port +/-4 kV ESD Protection Circuit
- RoHS Compliant with no Halogen
- Built-in High Performance MiniOS7 from ICP DAS
- 10/100 Base-TX, RJ-45 Port (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- PPDS-712-MTCP supports Modbus/TCP and Modbus/RTU
- PPDS-712-MTCP supports PoE (IEEE 802.3af, Class 1)
- Low power consumption
- Palm-Size with DIN-Rail Mounting
- Made from fire retardant materials (UL94-V0 Level))
- Male DB-9 Connector

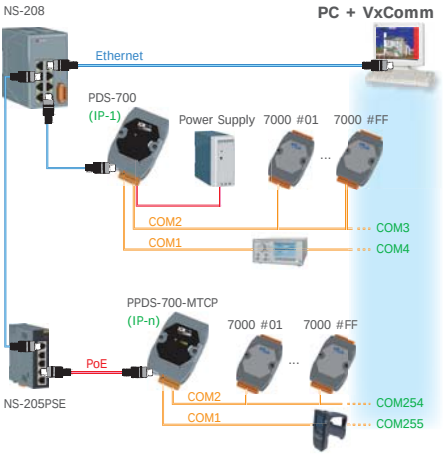
CE FC RoHS PoE

Introduction

The DS-700 is a series of Serial-to-Ethernet Device Servers that are designed for linking RS-232/422/485 devices to an Ethernet network. By using the VxComm Driver/Utility, the built-in COM port of the DS-700 series can be virtualized to a standard PC COM port in Windows. By virtue of its protocol independence, a small size and flexibility, the DS-700 series meets the demands of virtually any network-enabled application.

The DS-712 is equipped with a male DB-9 connector and supports a 5-wire RS-232 port, while the DS-715 is equipped with a removable terminal block connector and supports a 4-wire RS-422 port or a 2-wire RS-485 port with 2000 V_{rms} isolation.

The DS-700 is a non-programmable device server, while the PPDS-700-MTCP is a programmable product. 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 PPDS-700-MTCP also works as a Modbus/TCP to Modbus/RTU gateway that supports most SCADA/HMI communications based on the Modbus/TCP protocol.



Applications

Factory, Building and Home Automation

System Specifications

Models		DS-712	PPDS-712-MTCP
CPU			
CPU		80186, 80 MHz or compatible	
SRAM		512 KB	
Flash Memory		Flash ROM: 512 KB	
EEPROM		16 KB; Data retention: 40 years	
Built-in Watchdog Timer		Yes	
Communication Interface			
Non-isolated	COM1	RS-232 (TxD, RxD, RTS, CTS, GND)	
Ethernet		10/100 Base-TX, RJ-45 port (Auto-negotiating, auto MDI/MDI-X, LED indicator)	
PoE		-	IEEE 802.3af
COM Port Formats			
Data Bit		7, 8: for COM1	
Parity		None, Even, Odd, Mark, Space	
Stop Bit		1: for COM1	
Baud Rate		115200 bps max.	
LED Indicators			
L1		Run (Red)	
L2		Link/Act (Red)	
L3		10/100M (Orange)	
PoE		-	Green
Power			
Protection		Power Reverse Polarity Protection	
Required Supply Voltage		+12 V_{DC} ~ +48 V_{DC} (non-regulated)	PoE or +12 V_{DC} ~ +48 V_{DC} (non-regulated)
Power Consumption		2.0 W	2.2 W
Mechanical			
Flammability		Fire Retardant Materials (UL94-V0 Level)	
Dimensions		72 mm x 118 mm x 35 mm (W x H x D)	
Installation		DIN-Rail or Wall mounting	
Environment			
Operating Temperature		-25 °C ~ +75 °C	
Storage Temperature		-40 °C ~ +80 °C	
Humidity		5 ~ 90% RH, non-condensing	

Pin Assignments

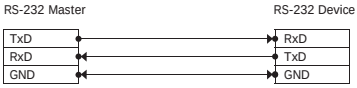
Terminal No.	Pin Assignment
E1	
01	N/A
02	N/A
03	N/A
04	N/A
05	INIT*
06	N/A
07	N/A
08	(R)+Vs
09	(B)GND

Pin Assign-ment	Terminal No.	Pin Assign-ment
GND	05	09 --
--	04	08 CTS
TxD	03	07 RTS
RxD	02	06 --
--	01	

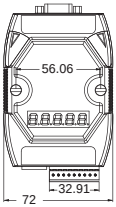
COM1: Male DB-9 Connector

Wiring

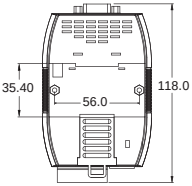
3-wire RS-232 Wiring



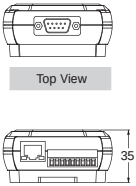
Dimensions (Unit: mm)



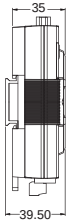
Front View



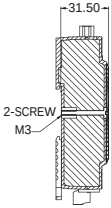
Back View



Bottom View



Din-Rail Mounting Bracket



Side View

Ordering Information

DS-712 CR	Device Server with 1 RS-232 port (RoHS)
PPDS-712-MTCP CR	Programmable Device Server with PoE, Modbus/TCP and 1 RS-232 port (RoHS)

Accessories

GPSU06U-6	24 Vdc/0.25 A, 6 W Power Supply
MDR-20-24	24 Vdc/1 A, 24 W Power Supply with DIN-Rail Mounting
DIN-KA52F-48	48 Vdc/0.52 A, 25 W Power Supply with Din-Rail Mounting
CA-0915	9-Pin Male-Female D-Sub Cable, 1.5 m Cable
NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch (RoHS)
NS-205PSE CR	Unmanaged Ethernet Switch with 4 PoE Ports and 1 RJ-45 Uplink (RoHS)
DN-09-2F	I/O Connector Block with DIN-Rail Mounting and Two 9-Pin Male Header Includes CA-0910F x 2 (9-Pin Female-Female D-Sub Cable 1.0 m)

NEW **DS-715**

Available soon **PPDS-715-MTCP**

Serial-to-Ethernet Device Server with 1 RS-422/RS-485 port

RS-422/485

Features

- Incorporate Serial Devices in an Ethernet network
- "Virtual COM" extends PC COM ports
- Virtual COM on Windows NT 4.0, 2000/XP/2003 and
- High Performance Device Server
- Watchdog Timer suitable for use in harsh environments
- Power Reverse Polarity Protection
- Serial Port +/-4 kV ESD Protection Circuit
- Self-Tuner ASIC Controller on the RS-485 Port
- RoHS Compliant with no Halogen
- Built-in High Performance MiniOS7 from ICP DAS
- 10/100 Base-TX, RJ-45 Port
  (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- PPDS-715-MTCP supports Modbus/TCP and Modbus/RTU
- PPDS-715-MTCP supports PoE (IEEE 802.3af, Class 1)
- Low power consumption
- Palm-Size with DIN-Rail Mounting
- Made from fire retardant materials (UL94-V0 Level)

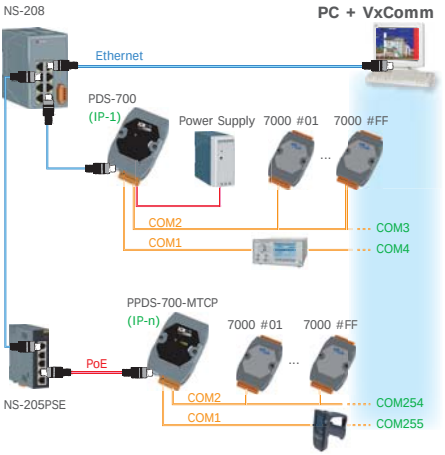
CE FC RoHS PoE

Introduction

The DS-700 is a series of Serial-to-Ethernet Device Servers that are designed for linking RS-232/422/485 devices to an Ethernet network. By using the VxComm Driver/Utility, the built-in COM port of the DS-700 series can be virtualized to a standard PC COM port in Windows. By virtue of its protocol independence, a small size and flexibility, the DS-700 series meets the demands of virtually any network-enabled application.

The DS-712 is equipped with a male DB-9 connector and supports a 5-wire RS-232 port, while the DS-715 is equipped with a removable terminal block connector and supports a 4-wire RS-422 port or a 2-wire RS-485 port with 2000 V_{rms} isolation.

The DS-700 is a non-programmable device server, while the PPDS-700-MTCP is a programmable product. 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 PPDS-700-MTCP also works as a Modbus/TCP to Modbus/RTU gateway that supports most SCADA/HMI communications based on the Modbus/TCP protocol.



Applications

Factory, Building and Home Automation

System Specifications

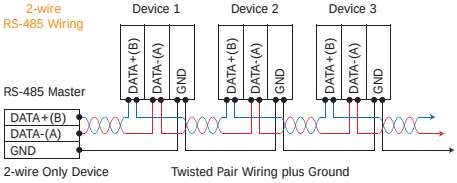
Models	DS-715	PPDS-715-MTCP
CPU		
CPU	80186, 80 MHz or compatible	
SRAM	512 KB	
Flash Memory	Flash ROM: 512 KB	
EEPROM	16 KB; Data retention: 40 years	
Built-in Watchdog Timer	Yes	
Communication Interface		
Isolated (2000 V_{rms}) COM1	RS-422 (TxD+, TxD-, RxD+, RxD-) RS-485 (D2+,D2-)	
Ethernet	10/100 Base-TX, RJ-45 port (Auto-negotiating, auto MDI/MDI-X, LED indicator)	
PoE	-	IEEE 802.3af
COM Port Formats		
Data Bit	7, 8: for COM1	
Parity	None, Even, Odd, Mark, Space	
Stop Bit	1: for COM1	
Baud Rate	115200 bps max.	
LED Indicators		
L1	Run (Red)	
L2	Link/Act (Red)	
L3	10/100M (Orange)	
PoE	-	Green
Power		
Protection	Power Reverse Polarity Protection	
Required Supply Voltage	+12 V_{DC} ~ +48 V_{DC} (non-regulated)	PoE or +12 V_{DC} ~ +48 V_{DC} (non-regulated)
Power Consumption	2.0 W	2.2 W
Mechanical		
Flammability	Fire Retardant Materials (UL94-V0 Level)	
Dimensions	72 mm x 124 mm x 35 mm (W x H x D)	
Installation	DIN-Rail or Wall mounting	
Environment		
Operating Temperature	-25 °C ~ +75 °C	
Storage Temperature	-40 °C ~ +80 °C	
Humidity	5 ~ 90% RH, non-condensing	

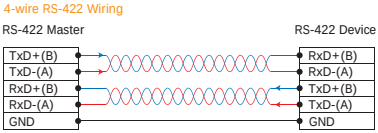
Pin Assignments

Terminal No.	Pin Assignment
E1	
01	N/A
02	N/A
03	N/A
04	N/A
05	INIT*
06	N/A
07	N/A
08	(R)+Vs
09	(B)GND

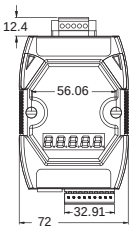
COM1 (RS-422/485)
F.G.
Tx+/D+
Tx-/D-
Rx+
Rx-

Wiring

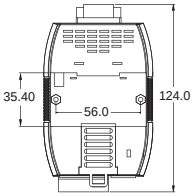




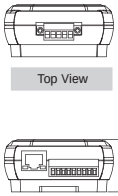
Dimensions (Unit: mm)

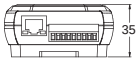


Front View

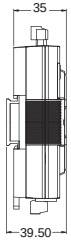


Back View

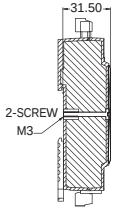

Top View



Bottom View



Din-Rail Mounting Bracket



Side View

Ordering Information

DS-715 CR	Device Server with 1 Isolated RS-422/RS-485 port (RoHS)
PPDS-715-MTCP CR	Programmable Device Server with PoE, Modbus/TCP and 1 Isolated RS-422/485 port (RoHS)

Accessories

GPSU06U-6	24 Vdc/0.25 A, 6 W Power Supply
MDR-20-24	24 Vdc/1 A, 24 W Power Supply with DIN-Rail Mounting
DIN-KA52F-48	48 Vdc/0.52 A, 25 W Power Supply with Din-Rail Mounting
NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch (RoHS)
NS-205PSE CR	Unmanaged Ethernet Switch with 4 PoE Ports and 1 RJ-45 Uplink (RoHS)

3.4. PPDS-700-IP67 Programmable Device Servers

RS-232/RS-485

Features

- Incorporate Serial Devices in an Ethernet network
- "Virtual COM" extends PC COM ports
- Virtual COM on Windows NT 4.0, 2000/XP/2003 and Vista32
- Powerful Programmable Device Server
- Watchdog Timer suitable for use in harsh environments
- Power Reverse Polarity Protection
- Serial Port +/-4 kV ESD Protection Circuit
- Self-Tuner ASIC Controller on the RS-485 Port
- Low power consumption
- RoHS Compliant with no Halogen
- Built-in High Performance MiniOS7 from ICP DAS
- 10/100 Base-TX Ethernet, RJ-45 Port (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- Plastic Casing with IP67 Waterproof
- Supports PoE (IEEE 802.3af, Class 1)
- ODM Service is available

CE FC RoHS PoE IP67

Introduction

The PPDS-700-IP67 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 PPDS-700-IP67 series into standard COM ports on a PC. By virtue of its protocol independence, a small-core OS and high flexibility, the PPDS-700-IP67 series is able to meet the demands of every network-enabled application.

The PPDS-700-IP67 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 PPDS-700-IP67 up in just one second and gives you fastest responses.

The PPDS-700-IP67 is a special design for the toughest applications. It can be directly mounted to any machine or convenient flat surface. The rugged packaging and IP67 connectors are rated to protect against water, oil, dust, vibration, and much more.

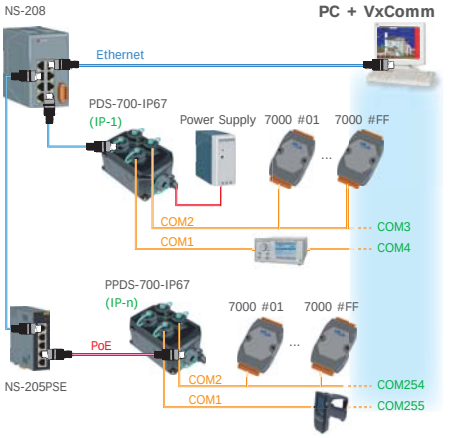
The PPDS-700-IP67 supports PoE (Power over Ethernet) function that allows power and data to be carried over a single Ethernet cable, so a device can operate solely from the power it receives through the data cable. This innovation allows greater flexibility in office design, higher efficiency in systems design, and faster turnaround time in set-up and implementation. When there is no PoE switch on site, the PPDS-700-IP67 accepts power input from a +12 V_{DC} ~ +48 V_{DC} adapter.

When using PoE devices such as the PPDS-700-MTCP, PPDS-700-IP67 and PET-7000 (Ethernet I/O module with PoE), you can select the ICP DAS "PoE" switch — "NS-205PSE" — as the power source. The NS-205PSE automatically detects whether the connected devices are PoE devices or not. This mechanism ensures that the NS-205PSE will work with both PoE and non-PoE devices simultaneously.

As a power source for PoE devices, the NS-205PSE requires a power input ranging from +46 V_{DC} ~ +55 V_{DC}.

Applications

Factory, Building and Home Automation



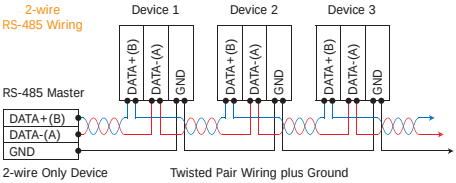
Specifications

Models	PPDS-741-IP67(/DIN)	PPDS-742-IP67(/DIN)	PPDS-743-IP67(/DIN)
CPU			
CPU	80186, 80MHz 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		
Watchdog Timer	Yes		
Communication Interface			
COM1	5-wire RS-232		
COM2	Isolated 2-wire RS-485		
COM3	Isolated 2-wire RS-485	5-wire RS-232	5-wire RS-232
COM4	Isolated 2-wire RS-485	Isolated 2-wire RS-485	5-wire RS-232
Ethernet	10/100 Base-TX, RJ-45 port (Auto-negotiating, Auto MDI/MDI-X, LED indicators), PoE (IEEE 802.3af, Class 1)		
COM Port Formats			
Data Bit	5, 6, 7, 8		
Parity	None, Even, Odd, Mark, Space		
Stop Bit	1, 2		
Baud Rate	115200 bps max.		
LED Indicators			
System	Red: Sys		
Ethernet	Green: Link/Act (E1)		
	Orange: 10/100M (E1)		
OM1 ~ COM4	Green: RxD		
	Orange: TxD		
Power			
Protection	Power input reverse polarity protection		
Required Supply Voltage	+12 Vdc ~ +48 Vdc (non-regulated) or PoE (IEEE 802.3af, Class 1)		
Power Consumption	2.2 W		
Mechanical			
Flammability	Fire Retardant Materials (UL94-V0 Level)		
Dimensions (W x H x D)	85 mm x 76 mm x 137 mm (89 mm x 90 mm x 138 mm for /DIN versions)		
Installation	Wall mounting (DIN-Rail mounting for /DIN versions)		
Environment			
Operating Temperature	-10 °C ~ +60 °C		
Storage Temperature	-10 °C ~ +60 °C		
Humidity	100% RH for operating temperature -10 °C ~ +60 °C		

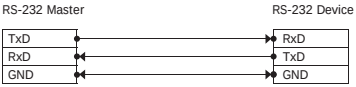
Note:
5-wire RS-232: TxD, RxD, CTS, RTS, GND
Isolated 2-wire RS-485: DATA+, DATA-, GND; Self-tuner Inside; 2500 V_{rms} Isolation

Wiring

2-wire RS-485 Wiring

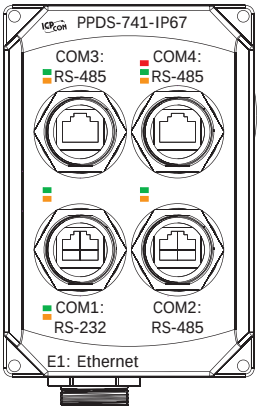


3-wire RS-232 Wiring

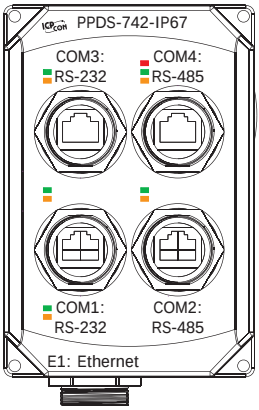


Pin Assignments

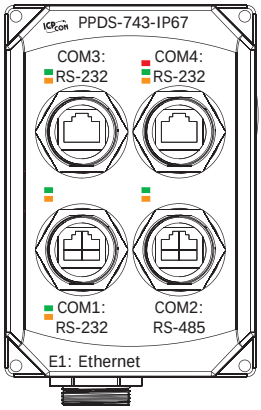
PDS-741-IP67



PDS-742-IP67



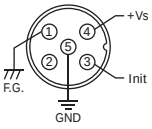
PDS-743-IP67



COM1 ~ COM4

Pin	5-wire RS-232	2-wire RS-485
1	--	--
2	RTS	--
3	GND	GND
4	TxD	--
5	RxD	DATA+
6	--	DATA-
7	CTS	--
8	--	--

DC +12 ~ +48 V_{DC}

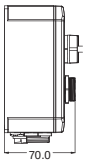


Pin	Name
1	F.G.
2	--
3	Init
4	+Vs
5	GND

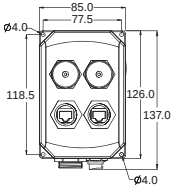
LED Indicators		
System	Red	Sys.
Ethernet	Green	Link/Act (E1)
	Orange	10/100M (E1)
COM1 ~ COM4	Green	RxD
	Orange	TxD

Dimensions (Unit: mm)

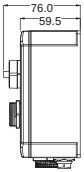
PPDS-741-IP67/PPDS-742-IP67/PPDS-743-IP67



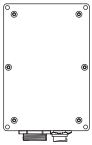
Left Side View



Front View

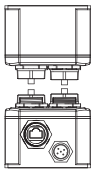


Right Side View



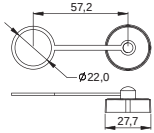
Back View

Top View



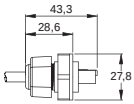
Bottom View

IP67 Ethernet Cap with Tether



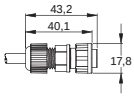
IP67 Ethernet Plug

Cable Dia:
Max. 7.0 mm
Min. 5.5 mm



IP67 PWR Plug

Cable Dia:
Max. 6.5 mm
Min. 5.0 mm



Ordering Information

PPDS-741-IP67 CR	Programmable Device Server with 1 RS-232 port, 3 RS-485 ports, PoE and IP67 Casing (RoHS)
PPDS-741-IP67/DIN CR	Programmable Device Server with 1 RS-232 port, 3 RS-485 ports, PoE, IP67 Casing and DIN-Rail Mounting (RoHS)
PPDS-742-IP67 CR	Programmable Device Server with 2 RS-232 ports, 2 RS-485 ports, PoE and IP67 Casing (RoHS)
PPDS-742-IP67/DIN CR	Programmable Device Server with 2 RS-232 ports, 2 RS-485 ports, PoE, IP67 Casing and DIN-Rail Mounting (RoHS)
PPDS-743-IP67 CR	Programmable Device Server with 3 RS-232 ports, 1 RS-485 port, PoE and IP67 Casing (RoHS)
PPDS-743-IP67/DIN CR	Programmable Device Server with 3 RS-232 ports, 1 RS-485 port, PoE, IP67 Casing and DIN-Rail Mounting (RoHS)

Accessories

GPSU06U-6	24 V_{DC}/0.25 A, 6 W Power Supply
MDR-20-24	24 V_{DC}/1 A, 24 W Power Supply with DIN-Rail Mounting
DIN-KA52F-48	48 V_{DC}/0.52 A, 25 W Power Supply with Din-Rail Mounting
NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch (RoHS)
NS-205PSE CR	Unmanaged Ethernet Switch with 4 PoE Ports and 1 RJ-45 Uplink (RoHS)

3.5. PDSM-700 & PPDSM-700-MTCP Programmable Device Servers

NEW PDSM-700D

Available soon PPDSM-700D-MTCP

Selection Guide

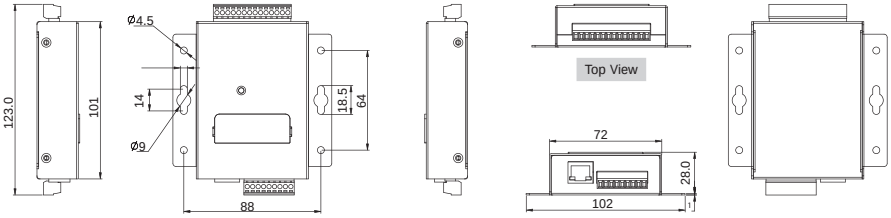
PDSM-700 Selection Guide

Model Name	Ethernet	DI/DO	COM1	COM2	COM3	COM4	COM5	COM6	COM7	COM8	Modbus	Page
PDSM-721 PDSM-721D	10/100 M	6/7	5-wire RS-232	2-wire RS-485	-	-	-	-	-	-	-	3-5-1
PDSM-732 PDSM-732D	10/100 M	4/4	5-wire RS-232	2-wire RS-485	5-wire RS-232	-	-	-	-	-	-	3-5-1
PDSM-734 PDSM-734D	10/100 M	4/4	5-wire RS-232	2-wire RS-485	RS-422/ RS-485	-	-	-	-	-	-	3-5-1
PDSM-742 PDSM-742D	10/100 M	-	5-wire RS-232	2-wire RS-485	5-wire RS-232	9-wire RS-232	-	-	-	-	-	3-5-1
PDSM-743 PDSM-743D	10/100 M	4/4	5-wire RS-232	2-wire RS-485	3-wire RS-232	3-wire RS-232	-	-	-	-	-	3-5-1
PDSM-752 PDSM-752D	10/100 M	-	5-wire RS-232	2-wire RS-485	5-wire RS-232	5-wire RS-232	5-wire RS-232	-	-	-	-	3-5-1
PDSM-755 PDSM-755D	10/100 M	-	5-wire RS-232	2-wire RS-485	2-wire RS-485	2-wire RS-485	2-wire RS-485	-	-	-	-	3-5-1
PDSM-762 PDSM-762D	10/100 M	1/2	5-wire RS-232	2-wire RS-485	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-wire RS-232	-	-	-	3-5-1
PDSM-782 PDSM-782D	10/100 M	-	5-wire RS-232	2-wire RS-485	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-wire RS-232	-	3-5-1

PPDSM-700-MTCP Selection Guide

Model Name	Ethernet	DI/DO	COM1	COM2	COM3	COM4	COM5	COM6	COM7	COM8	Modbus	Page
PPDSM-721-MTCP PPDSM-721D-MTCP	10/100 M, PoE	6/7	5-wire RS-232	2-wire RS-485	-	-	-	-	-	-	Yes	3-5-1
PPDSM-732-MTCP PPDSM-732D-MTCP	10/100 M, PoE	4/4	5-wire RS-232	2-wire RS-485	5-wire RS-232	-	-	-	-	-	Yes	3-5-1
PPDSM-734-MTCP PPDSM-734D-MTCP	10/100 M, PoE	4/4	5-wire RS-232	2-wire RS-485	RS-422/ RS-485	-	-	-	-	-	Yes	3-5-1
PPDSM-742-MTCP PPDSM-742D-MTCP	10/100 M, PoE	-	5-wire RS-232	2-wire RS-485	5-wire RS-232	9-wire RS-232	-	-	-	-	Yes	3-5-1
PPDSM-743-MTCP PPDSM-743D-MTCP	10/100 M, PoE	4/4	5-wire RS-232	2-wire RS-485	3-wire RS-232	3-wire RS-232	-	-	-	-	Yes	3-5-1
PPDSM-752-MTCP PPDSM-752D-MTCP	10/100 M, PoE	-	5-wire RS-232	2-wire RS-485	5-wire RS-232	5-wire RS-232	5-wire RS-232	-	-	-	Yes	3-5-1
PPDSM-755-MTCP PPDSM-755D-MTCP	10/100 M, PoE	-	5-wire RS-232	2-wire RS-485	2-wire RS-485	2-wire RS-485	2-wire RS-485	-	-	-	Yes	3-5-1
PPDSM-762-MTCP PPDSM-762D-MTCP	10/100 M, PoE	1/2	5-wire RS-232	2-wire RS-485	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-wire RS-232	-	-	Yes	3-5-1
PPDSM-782-MTCP PPDSM-782D-MTCP	10/100 M, PoE	-	5-wire RS-232	2-wire RS-485	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-wire RS-232	3-wire RS-232	Yes	3-5-1

Dimensions (Unit: mm)



Left Side View | Front View | Right Side View | Back View | Bottom View

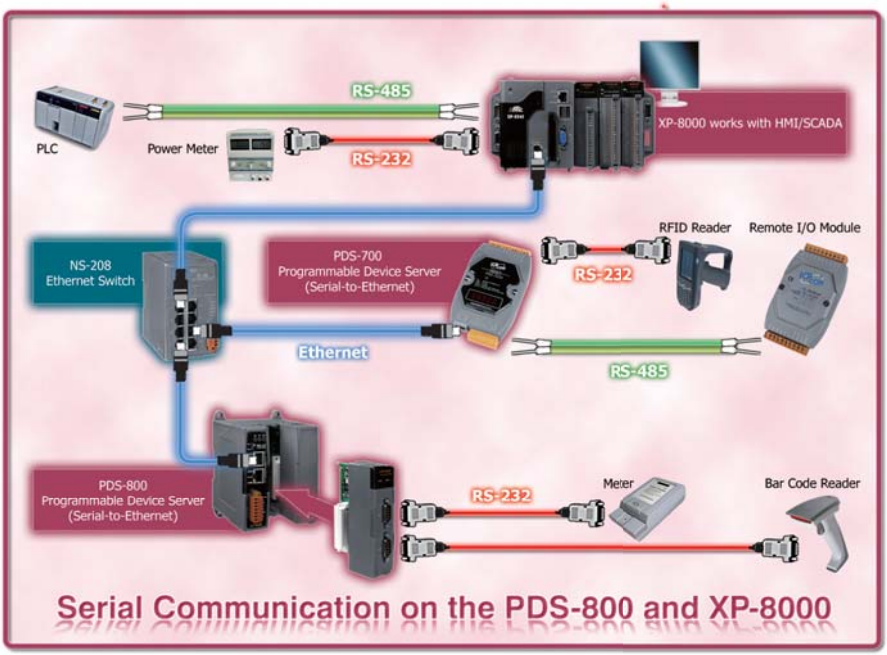
Ordering Information

PDSM-721 CR	PDS-721 with Metal Case (RoHS). Includes One CA-0910 Cable
PDSM-721D CR	PDS-721D with Metal Case (RoHS). Includes One CA-0910 Cable
PDSM-732 CR	PDS-732 with Metal Case (RoHS). Includes One CA-0910 Cable
PDSM-732D CR	PDS-732D with Metal Case (RoHS). Includes One CA-0910 Cable
PDSM-734 CR	PDS-734 with Metal Case (RoHS). Includes One CA-0910 Cable
PDSM-734D CR	PDS-734D with Metal Case (RoHS). Includes One CA-0910 Cable
PDSM-742 CR	PDS-742 with Metal Case (RoHS). Includes One CA-0910 Cable
PDSM-742D CR	PDS-742D with Metal Case (RoHS). Includes One CA-0910 Cable
PDSM-743 CR	PDS-743 with Metal Case (RoHS). Includes One CA-0910 Cable
PDSM-743D CR	PDS-743D with Metal Case (RoHS). Includes One CA-0910 Cable
PDSM-752 CR	PDS-752 with Metal Case (RoHS). Includes One CA-0910 Cable
PDSM-752D CR	PDS-752D with Metal Case (RoHS). Includes One CA-0910 Cable
PDSM-755 CR	PDS-755 with Metal Case (RoHS). Includes One CA-0910 Cable
PDSM-755D CR	PDS-755D with Metal Case (RoHS). Includes One CA-0910 Cable
PDSM-762 CR	PDS-762 with Metal Case (RoHS). Includes One CA-0910 Cable
PDSM-762D CR	PDS-762D with Metal Case (RoHS). Includes One CA-0910 Cable
PDSM-782 CR	PDS-782 with Metal Case (RoHS). Includes One CA-0910 Cable
PDSM-782D CR	PDS-782D with Metal Case (RoHS). Includes One CA-0910 Cable

PPDSM-721-MTCP CR	PPDS-721-MTCP with Metal Case (RoHS). Includes One CA-0910 Cable
PPDSM-721D-MTCP CR	PPDS-721D-MTCP with Metal Case (RoHS). Includes One CA-0910 Cable
PPDSM-732-MTCP CR	PPDS-732-MTCP with Metal Case (RoHS). Includes One CA-0910 Cable
PPDSM-732D-MTCP CR	PPDS-732D-MTCP with Metal Case (RoHS). Includes One CA-0910 Cable
PPDSM-734-MTCP CR	PPDS-734-MTCP with Metal Case (RoHS). Includes One CA-0910 Cable
PPDSM-734D-MTCP CR	PPDS-734D-MTCP with Metal Case (RoHS). Includes One CA-0910 Cable
PPDSM-742-MTCP CR	PPDS-742-MTCP with Metal Case (RoHS). Includes One CA-0910 Cable
PPDSM-742D-MTCP CR	PPDS-742D-MTCP with Metal Case (RoHS). Includes One CA-0910 Cable
PPDSM-743-MTCP CR	PPDS-743-MTCP with Metal Case (RoHS). Includes One CA-0910 Cable
PPDSM-743D-MTCP CR	PPDS-743D-MTCP with Metal Case (RoHS). Includes One CA-0910 Cable
PPDSM-752-MTCP CR	PPDS-752-MTCP with Metal Case (RoHS). Includes One CA-0910 Cable
PPDSM-752D-MTCP CR	PPDS-752D-MTCP with Metal Case (RoHS). Includes One CA-0910 Cable
PPDSM-755-MTCP CR	PPDS-755-MTCP with Metal Case (RoHS). Includes One CA-0910 Cable
PPDSM-755D-MTCP CR	PPDS-755D-MTCP with Metal Case (RoHS). Includes One CA-0910 Cable
PPDSM-762-MTCP CR	PPDS-762-MTCP with Metal Case (RoHS). Includes One CA-0910 Cable
PPDSM-762D-MTCP CR	PPDS-762D-MTCP with Metal Case (RoHS). Includes One CA-0910 Cable
PPDSM-782-MTCP CR	PPDS-782-MTCP with Metal Case (RoHS). Includes One CA-0910 Cable
PPDSM-782D-MTCP CR	PPDS-782D-MTCP with Metal Case (RoHS). Includes One CA-0910 Cable

3.6. XPAC-8000 & PDS-800 Programmable Device Servers

XP-8000 Programmable Automation Controller



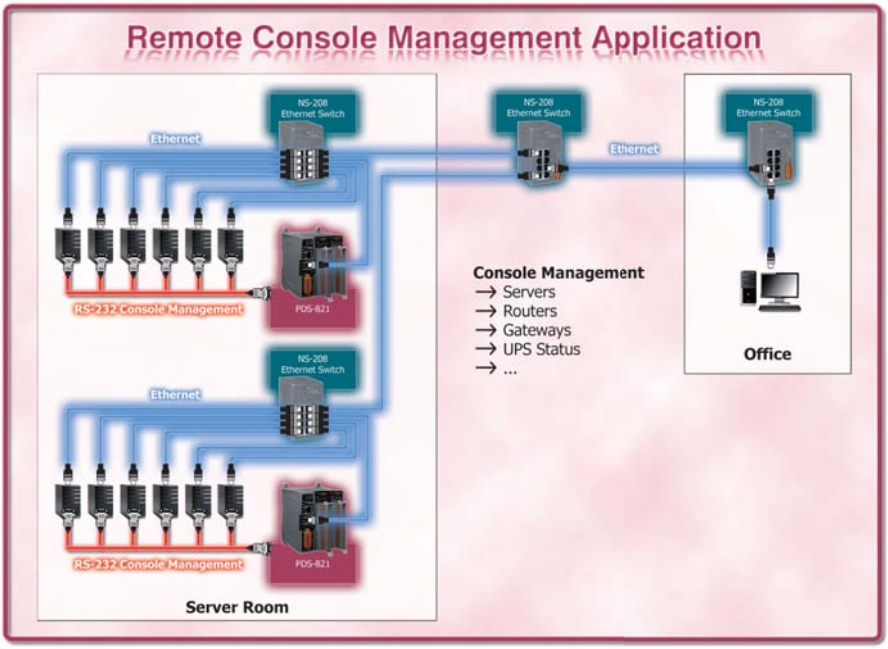
The XP-8000 series is new-generation of PACs from ICP DAS. The XP-8000 is equipped with an AMD LX 800 CPU (500 MHz), uses Windows Embedded Standard 2009 and provides 0, 3 or 7 slots for various high-profile I-8K and I-87K I/O modules. Windows Embedded Standard 2009 is compatible with Windows XP Professional, and therefore, most Win32 desktop programs can directly run on the XP-8000 without software modification.

Users can operate HMI/SCADA software on the XP-8000 using an LCD display, keyboard and a mouse in the same way they usually do on a regular PC. The number of communication ports on the XP-8000/PDS-800 can be expanded by connecting additional serial modules. Users can also install the VxComm Driver on the XP-8000 to create a hugh amount of virtual COM ports that can be remotely mapped to the serial ports on the PDS-700/PDS-800.

Selection Guide

Model Name	OS	CPU	Flash	RAM	VGA Resolution	Ethernet	USB	CF Card	RS-232/ RS-485	Slots	Page
XP-8041	Windows Embedded Standard 2009	AMD LX 800	4 GB	1 GB	640 x 480 ~ 1600 x 1200	RJ-45 x 2, 10/100 Base-TX	2	8 GB (supports up to 32 GB)	5	0	3-6-3
XP-8341									4	3	
XP-8741									4	7	

Programmable Device Server with I/O Expansion Slot(s)



Selection Guide

Model Name	Slots	CPU	RAM/ Flash Disk	Ethernet	Operating System	Console Port	(Optional) Max. Serial Ports	Page
PDS-811	1	80186, 80 MHz	512 KB/ 512 KB	2-port Ethernet Switch	MiniOS7	3-wire RS-232	4	3-6-5
PDS-821	2	80186, 80 MHz	512 KB/ 512 KB	2-port Ethernet Switch	MiniOS7	3-wire RS-232	8	3-6-5
PDS-842	4	PXA270, 520 MHz	128 MB/ 48 MB	Dual-LAN (Independent)	Linux	3-wire RS-232	16	3-6-7
PDS-882	8	PXA270, 520 MHz	128 MB/ 48 MB	Dual-LAN (Independent)	Linux	3-wire RS-232	32	3-6-7

Optional Serial Modules

Model Name	Interface	Ports	FIFO	Isolation	Self-Tuner	Connector	Page
I-8112iW	9-wire RS-232	2	128 Bytes	2500 V_{rms}	-	DB-9	3-6-9
I-8114W	9-wire RS-232	4	128 Bytes	-	-	DB-37	3-6-11
I-8114iW	5-wire RS-232	4	128 Bytes	2500 V_{rms}	-	DB-37	3-6-11
I-8142iW	4-wire RS-422 2-wire RS-485	2	128 Bytes	2500 V_{rms}	Yes	Terminal Block	3-6-13
I-8144iW	4-wire RS-422 2-wire RS-485	4	128 Bytes	2500 V_{rms}	Yes	Terminal Block	3-6-13

NEW

XP-8041/8341/8741

XP-8041: Standard XP-8000 with 0 I/O Slot
XP-8341: Standard XP-8000 with 3 I/O Slots
XP-8741: Standard XP-8000 with 7 I/O Slots

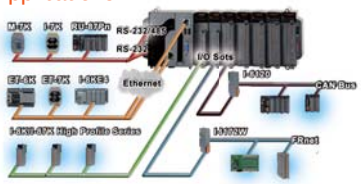
Features

- Windows Embedded Standard 2009
- IIS, ASP.NET, .NET Framework 3.5
- SQL Server 2005 Express Edition
- VS6.0, VS.NET 2003/2005/2008 Supported
- AMD LX 800 CPU (32-bit and 500 MHz)
- 1 GB RAM, 4 GB Built-in Flash, 8 GB CF Card
- One VGA Port, Dual USB Ports
- Dual Ethernet Ports (10/100M)
- 4/5 Serial Ports (RS-232/RS-485)
- Dual Watchdog Timers
- Operating Temperature: -25 °C ~ +75 °C

Introduction

The XP-8x41 Series (XP-8041, XP-8341, XP-8741) is the new generation of PACs from ICP DAS. It is equipped with an AMD LX 800 CPU (500 MHz) running a Windows Embedded Standard 2009 operating system, and provides connectivity for VGA, USB, Ethernet, RS-232/RS-485, and 0, 3 or 7 slots for high performance parallel I/O modules (high profile I-8K series) and serial-type I/O modules (high profile I-87K I/O modules).
The Windows Embedded Standard 2009 operating system has many advantages. Most of all, Windows Embedded Standard 2009 has the same Win32 API as Windows XP Professional, that is, almost every desktop program can be easily ported to Windows Embedded Standard 2009. This effectively reduces the effort required by developers and shortens the time to market.

Applications

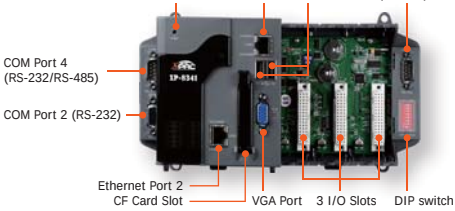


System Specifications

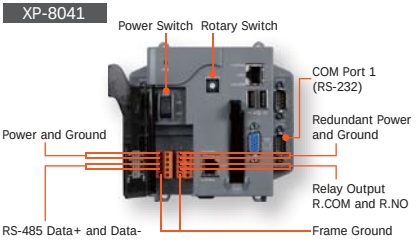
Models		XP-8041	XP-8341	XP-8741
System Software				
OS		Microsoft Windows Embedded Standard 2009 (including SQL Server 2005 Express; Internet Information Service 5.1)		
CPU Module				
CPU		AMD LX 800 processor		
System Memory		1 GB DDR SDRAM		
Dual Battery Backup SRAM		512 KB (for 5 years data retention)		
Flash		4 GB as IDE Master		
EEPROM		16 KB; Data Retention: 40 years; 1,000,000 erase/write cycles		
CF Card		8 GB (support up to 32 GB)		
64-bit Hardware Serial Number		Yes		
Dual Watchdog Timers		Yes		
Rotary Switch		Yes (0 ~ 9)		
DIP Switch		-	Yes (8 bits)	
VGA & Communication Ports				
VGA		640 x 480 ~ 1600 x 1200		
Ethernet		RJ-45 x 2, 10/100 Base-TX (Auto-negotiating, Auto MDI/MDI-X, LED indicators)		
USB 2.0		2		
COM 1		RS-232 (RxD, TxD and GND); non-isolated	Internal communication with I-87K modules in slots	
COM 2		RS-232 (RxD, TxD and GND); non-isolated		
COM 3	RS-485	D2+, D2-; internal self-turner ASIC		
	Isolated	3000 V_{DC}		
COM 4		RS-232/RS-485 (RxD, TxD, CTS, RTS and GND for RS-232, Data+ and Data- for RS-485); non-isolated		
COM 5		RS-232 (RxD, TxD, CTS, RTS, DSR, DTR, CD, RI and GND); non-isolated		
I/O Expansion Slots				
Slot		0 slot	3 slots	7 slots
Hot Swap * Will be available		-	For High Profile I-87K Modules Only	
Mechanical				
Dimensions (W x L x H)		137 mm x 132 mm x 125 mm	231 mm x 132 mm x 125 mm	355 mm x 132 mm x 125 mm
Installation		DIN-Rail or Wall Mounting		
Environmental				
Operating Temperature		-25 °C ~ +75 °C		
Storage Temperature		-30 °C ~ +85 °C		
Ambient Relative Humidity		5% ~ 90% RH, non-condensing		
Power				
Input Range		+10 V_{DC} ~ +30 V_{DC}		
Isolation		1 kV		
Redundant Power Inputs		Yes, with one power relay (1 A @ 24 V_{DC}) for alarm		
Capacity		1.8A, 5V supply to CPU and backplane, total 15 W	1.8A, 5V supply to CPU and backplane, 5.2A, 5V supply to I/O expansion slots, total 35 W	2.0A, 5V supply to CPU and backplane, 5.0A, 5V supply to I/O expansion slots, total 35 W
Consumption		14.4 W (0.6 A @ 24 V_{DC})	14.4 W (0.6 A @ 24 V_{DC})	16.8 W (0.7 A @ 24 V_{DC})

Appearance

XP-8341

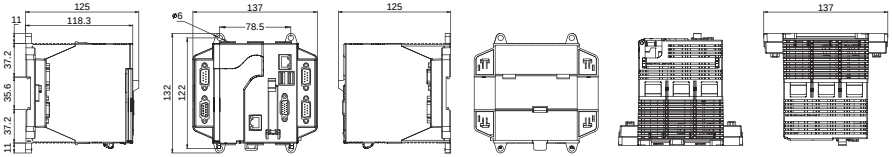


XP-8041

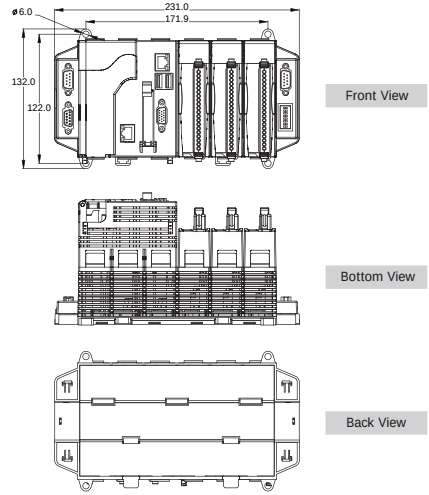


Dimensions (Unit: mm)

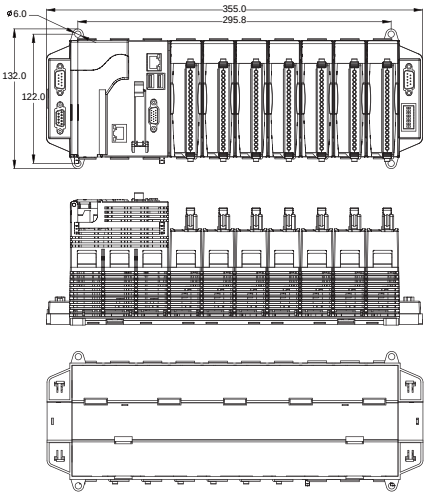
XP-8041



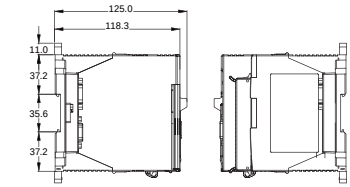
XP-8341



XP-8741



XP-8341/XP-8741



Ordering Information

XP-8041-EN CR	Standard XP-8000 with 0 I/O Slot (English Version of OS) (RoHS)
XP-8341-EN CR	Standard XP-8000 with 3 I/O Slots (English Version of OS) (RoHS)
XP-8741-EN CR	Standard XP-8000 with 7 I/O Slots (English Version of OS) (RoHS)
XP-8041-TC CR	Standard XP-8000 with 0 I/O Slot (Traditional Chinese Version of OS) (RoHS)
XP-8341-TC CR	Standard XP-8000 with 3 I/O Slots (Traditional Chinese Version of OS) (RoHS)
XP-8741-TC CR	Standard XP-8000 with 7 I/O Slots (Traditional Chinese Version of OS) (RoHS)
XP-8041-SC CR	Standard XP-8000 with 0 I/O Slot (Simplified Chinese Version of OS) (RoHS)
XP-8341-SC CR	Standard XP-8000 with 3 I/O Slots (Simplified Chinese Version of OS) (RoHS)
XP-8741-SC CR	Standard XP-8000 with 7 I/O Slots (Simplified Chinese Version of OS) (RoHS)

Accessories

DP-660	24 VDC/2.5 A, 60 W and 5 VDC/0.5 A, 2.5 W Power Supply with DIN-Rail Mounting
DP-1200	24 VDC/5.0 A, 120 W Power Supply with DIN-Rail Mounting
MDR-20-24	24 VDC/1.0 A, 24 W Power Supply with DIN-Rail Mounting
MDR-60-24	24 VDC/2.5 A, 60 W Power Supply with DIN-Rail Mounting

Available soon

PDS-811/PDS-821

Programmable Device Server with I/O Expansion Slot(s)

Features

- Incorporate Serial Devices in an Ethernet network
- "Virtual COM" extends PC COM ports
- VxComm Driver for Windows NT 4.0, 2000/XP/2003 and Vista32
- Programmable Internet/Ethernet Controller
- Watchdog Timer suitable for use in harsh environments
- 2-port 10/100 Base-TX Ethernet Switch (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- Power Reverse Polarity Protection
- 3-wire RS-232 Console Port
- RS-232 TxD/RxD LED Indicators
- System Status LED Indicator
- ESD Protection and Frame Ground Design
- RoHS Compliant with no Halogen
- Built-in High Performance MiniOS7 from ICP DAS
- Low power consumption
- Made from fire retardant materials (UL94-V0 Level)

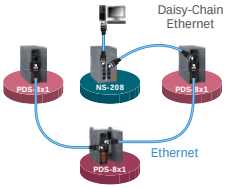
Introduction

The PDS-811 and PDS-821 programmable device servers (PDS) are compact, modular, intelligent, rugged, and are designed for networking RS-232 and RS-422/485 serial devices to an Ethernet network. The PDS-811 has one I/O expansion slot, while PDS-821 has two I/O expansion slots that can be used to attach various 2- or 4-port serial communication modules. Therefore, a maximum of 4 serial ports can be installed on the PDS-811 or a maximum of 8 serial ports can be installed on the PDS-821.

Note: There is no serial module built-in to the PDS-811 or PDS-821 by default.

The PDS-811 and PDS-821 controllers are equipped with a 2-port 10/100 Base-TX Ethernet Switch that can be used to connect two network segments. The Ethernet Switch processes and routes data on the data-link layer (layer 2) of the OSI model to create a different collision domain per switch port. Using a switch allows you to attain dedicated bandwidth on point-to-point connections with every computer, and therefore run in full duplex mode with no collisions. Furthermore, the built-in 2-port Ethernet Switch on the PDS-811/821 enables network wiring to be simplified by cascading your Ethernet devices.

The PDS-8x1 series contains a built-in operating system, the MiniOS7, which offers a stable and high performance environment that is similar to DOS. The MiniOS7 can boot up the PDS-8x1 series within just one second, with the added benefit of no virus problems and a small footprint. Furthermore, the PDS-8x1 series is designed for low power consumption, maintenance elimination (no hard disk and no fan), and is constructed from fire retardant materials (UL94-V0 level) with a robust case.



Applications

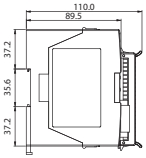
- Factory Automation
- Building Automation
- Home Automation

System Specifications

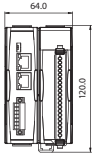
Models	PDS-811	PDS-821
CPU		
CPU	80186, 80 MHz or compatible	
SRAM	512 KB	
Flash Memory	512 KB	
EEPROM	16 KB	
NVRAM	-	
RTC (Real Time Clock)	-	
64-bit Hardware Serial Number	-	
Built-in Watchdog Timer	Yes	
I/O Expansion Slots	1 Slot	2 Slots
Communication Interface		
COM1 (Console)	RS-232 (TxD, RxD, GND)	
Ethernet	2-port 10/100 Base-TX Ethernet Switch (Auto-negotiating, auto MDI/MDI-X, LED indicator)	
COM Port Formats		
Speed	115200 bps max.	
Data Bit	7, 8	
Parity	None, Even, Odd	
Stop Bit	1	
LED Indicators		
TxD/RxD	Yes (for COM1 console port)	
System	Yes	
Power		
ESD Protection	Yes (with Frame Ground)	
Protection	Power Reverse Polarity Protection	
Required Supply Voltage	+10 V_{DC} ~ +30 V_{DC} (non-regulated)	
Power Consumption	0.6 A @ 5 V for CPU and Backplane, 1.0 A @ 5 V for Plug-in Modules, Total: 8 W	
Mechanical		
Flammability	Fire Retardant Materials (UL94-V0 Level)	
Dimensions (W x L x H, Unit: mm)	64 x 110 x 120	95 x 110 x 132
Installation	DIN-Rail	DIN-Rail or Wall mounting
Environment		
Operating Temperature	-25 °C ~ +75 °C	
Storage Temperature	-40 °C ~ +80 °C	
Humidity	5 ~ 95% RH, non-condensing	

Dimensions (Unit: mm)

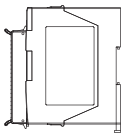
PDS-811



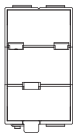
Left Side View



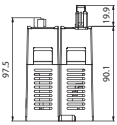
Front View



Right Side View



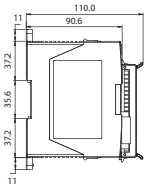
Back View



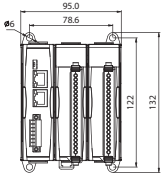
Bottom View

Top View

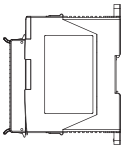
PDS-821



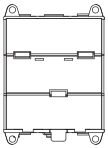
Left Side View



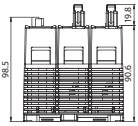
Front View



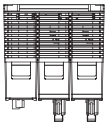
Right Side View



Back View

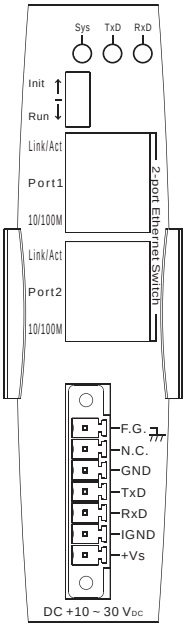


Bottom View



Top View

Pin Assignments



Ordering Information

PDS-811 CR	Programmable Device Server with 1 Expansion Slot (RoHS). Includes One CA-0910 Cable.
PDS-821 CR	Programmable Device Server with 2 Expansion Slots (RoHS). Includes One CA-0910 Cable.

Accessories

CA-0910	9-Pin Female D-Sub & 3-wire RS-232 Cable, 1 m Cable
MDR-20-24	24 VDC/1 A, 24 W Power Supply with DIN-Rail Mounting
NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch (RoHS)

PDS-842/PDS-882

Programmable Device Server with I/O Expansion Slot(s)

Features

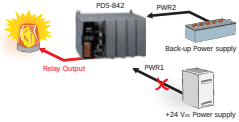
- Incorporate Serial Devices in an Ethernet network
- "Virtual COM" extends PC COM ports
- VxComm Driver for Windows NT 4.0, 2000/XP/2003 and Vista32
- Programmable Internet/Ethernet Controller
- Watchdog Timer suitable for use in harsh environments
- Dual-LAN, 10/100 Base-TX Ethernet (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- Power Reverse Polarity Protection
- 3-wire RS-232 Console Port
- RS-232 TxD/RxD LED Indicators
- System Status LED Indicator
- ESD Protection and Frame Ground Design
- Low power consumption
- Made from fire retardant materials (UL94-V0 Level)

Introduction

The PDS-842 and PDS-882 programmable device servers (PDS) are compact, modular, intelligent, rugged, and are designed for networking RS-232/422/485 serial devices to an Ethernet network. The PDS-842 has 4 I/O expansion slots, while the PDS-882 has 8 I/O expansion slots that can be used to attach various 2- or 4-port serial communication modules. Therefore, a maximum of 16 serial ports can be installed on the PDS-842 or a maximum of 32 serial ports can be installed on the PDS-882.

By using the PDS-842 or PDS-882, users can transparently access serial devices over the Internet.
This PDS, coupled with a large built-in RAM buffer, allows for fast transmission and prevents congestion of serial data on the network. A built-in powerful 32-bit RISC processor offers exceptional performance at low power consumption.

The PDS-842 and PDS-882 provides two Ethernet ports, which can be used to implement redundant Ethernet communication and separate Ethernet communication (one for global Internet, one for private Ethernet). To prevent the PDS-842 and PDS-882 from failing due to power loss, the power module is designed with two inputs, so that the module can continue working even if one power input fails, and, meanwhile, there is a relay output available for informing users about the power failure.



Applications

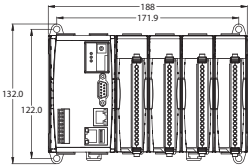
- Factory Automation
- Building Automation
- Home Automation

System Specifications

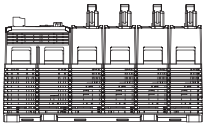
Models	PDS-842	PDS-882
CPU		
CPU	PXA270 or compatible (32-bit and 520 MHz)	
SDRAM	64 MB	
Flash Memory	48 MB	
EEPROM	16 KB	
NVRAM	-	
RTC (Real Time Clock)	Yes	
64-bit Hardware Serial Number	Yes	
Built-in Watchdog Timer	Yes	
I/O Expansion Slots	4 Slots	8 Slots
Communication Interface		
COM1 (Console)	RS-232 (TxD, RxD, GND)	
COM2	RS-485 (D+, D-); 3000 VDC isolated	
Ethernet	RJ-45 x 2, Dual 10/100 Base-TX Ethernet Controller (Auto-negotiating, auto MDI/MDI-X, LED indicator)	
COM Port Formats		
Speed	115200 bps max.	
Data Bit	7, 8	
Parity	None, Even, Odd	
Stop Bit	1	
LED Indicators		
System	Yes	
Power		
ESD Protection	Yes (with Frame Ground)	
Protection	Power Reverse Polarity Protection	
Redundant Power Inputs	Yes, with one relay for warning alarm	
Required Supply Voltage	+18 VDC ~ +48 VDC	
Power Consumption	8.4 W (0.35 A @ 24 VDC)	9.1 W (0.38 A @ 24 VDC)
Mechanical		
Flammability	Fire Retardant Materials (UL94-V0 Level)	
Dimensions (W x L x H, Unit: mm)	188 x 132 x 111	312 x 132 x 111
Installation	DIN-Rail or Wall mounting	
Environment		
Operating Temperature	-25 °C ~ +75 °C	
Storage Temperature	-30 °C ~ +85 °C	
Humidity	5 ~ 90% RH, non-condensing	

Dimensions (Unit: mm)

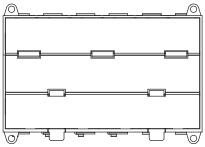
PDS-842



Front View

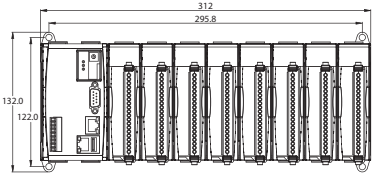


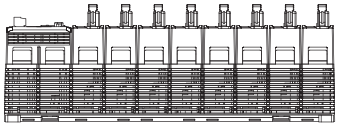
Bottom View

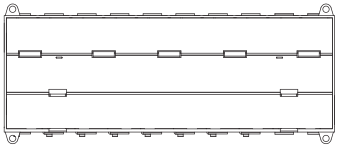


Back View

PDS-882

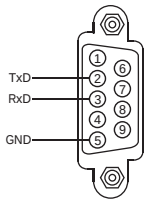




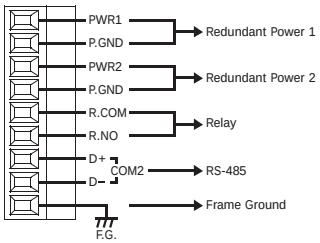


Pin Assignments

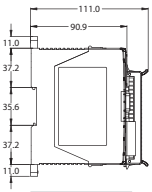
COM1: RS-232



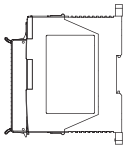
Terminal Block



PDS-842/882



Left Side View



Right Side View

Ordering Information

PDS-842	Programmable Device Server with 4 Expansion Slots
PDS-882	Programmable Device Server with 8 Expansion Slots

Accessories

KA-52F	24 VDC/1.04 A, 25 W Power Supply
DIN-KA52F	24 VDC/1.04 A, 25 W Power Supply with Din-Rail Mounting
MDR-60-24	24 VDC/2.5 A, 60 W Power Supply with DIN-Rail Mounting
CA-0915	9-Pin Male-Female D-Sub Cable, 1.5 m Cable
NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch (RoHS)

NEW

I-8112iW-G

2-port Isolated RS-232 Module

RS-232 Interface

Features

- High-profile Module
- 2500 V_{rms} Isolation
- Serial Port with +/-4 kV ESD Protection
- Internal 128-byte Hardware FIFO for each Port
- Baud Rate of up to 115200 bps
- LED Indicators for TxD, RxD and Power Status
- RoHS Compliant with no Halogen
- Low power consumption
- Made from fire retardant materials (UL94-V0 Level)

Introduction

The I-8112iW-G provides 2 isolated RS-232 serial ports. It is equipped with a 128-byte hardware FIFO for each port and offers speeds up to 115.2 kbps with support for full-duplex communication.

In harsh industrial environments, the onboard ESD protection devices attempt to divert any potentially damaging charges away from sensitive circuitry and protect the I-8112iW-G from permanent damage.

The serial communication modules are designed for use with intelligent devices like bar code readers, serial printers, intelligent sensors, instrumentation equipment, computers, and almost any device with an RS-232 or RS-422/485 port.

Applications

- Factory Automation
- Building Automation
- Home Automation

I/O Specifications

RS-232 Interface	
Number of Ports	2
Interface	TxD, RxD, RTS, CTS, DSR, DTR, DCD, RI, GND
Controller	16C950 Compatible
	Speed: 115200 bps max.
	Data Bit: 5, 6, 7, 8
	Stop Bit: 1, 1.5, 2
	Parity: None, Even, Odd, Mark, Space
	FIFO: Internal 128 bytes for each port
Interrupt	Shared Interrupt
Bus	Parallel I/O Module
Connector	DB-9 (Male)
Intra-module Isolated, Field to Logic	2500 V_{rms}
ESD Protection	+/-4 kV (Contact for each channel)

System Specifications

LED Indicators	
Power	1 LED
TxD	2 LEDs
RxD	2 LEDs
Power	
Power Consumption	1.5 W
Mechanical	
Dimensions (W x L x H)	31 mm x 86 mm x 114 mm
Environment	
Operating Temperature	-25 °C ~ +75 °C
Storage Temperature	-40 °C ~ +85 °C
Humidity	5 ~ 95% RH, non-condensing

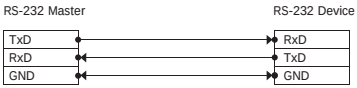
Software

Software
Supports interrupt driven software library
Supports VxCOM library

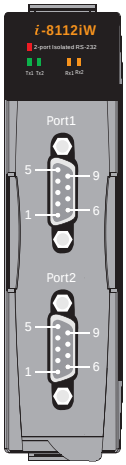
Wiring

DTE Device (Computer) DB-9		DTE to DCE Connections	DCE Device (Modem) DB-9	
Pin# DB-9	RS-232 Signal Names	Signal Direction	Pin# DB-9	RS-232 Signal Names
#1 Carrier Detector	DCD	←	#1 Carrier Detector	DCD
#2 Receive Data	RxD	←	#2 Transmit Data	TxD
#3 Transmit Data	TxD	→	#3 Receive Data	RxD
#4 Data Terminal Ready	DTR	→	#4 Data Set Ready	DSR
#5 Signal Ground/Common (SG)	GND	↔	#5 Signal Ground/Common (SG)	GND
#6 Data Set Ready	DSR	←	#6 Data Terminal Ready	DTR
#7 Request to Send	RTS	→	#7 Clear to Send	CTS
#8 Clear to Send	CTS	←	#8 Request to Send	RTS
#9 Ring Indicator	RI	←	#9 Ring Indicator	RI
Soldered to DB-9 Metal Shield	FGND	↔	Soldered to DB-9 Metal Shield	FGND

3-wire RS-232 Wiring



Pin Assignments



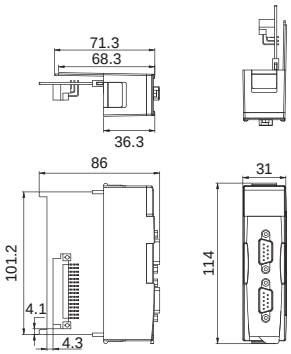
Pin Assignment	Terminal No.	Pin Assignment
GND1	05	
DTR1	04	09 RI1
TxD1	03	08 CTS1
RxD1	02	07 RTS1
DCD1	01	06 DSR1

Port1 — 9-Pin Male D-Sub Connector

Pin Assignment	Terminal No.	Pin Assignment
GND2	05	
DTR2	04	09 RI1
TxD2	03	08 CTS2
RxD2	02	07 RTS2
DCD2	01	06 DSR2

Port2 — 9-Pin Male D-Sub Connector

Dimensions (Unit: mm)



Ordering Information

I-8112iW-G CR	2-port Isolated RS-232 Module (RoHS)

Accessories

CA-0915	9-Pin Male-Female D-Sub Cable, 1.5 m

I-8114W-G/I-8114iW-G

I-8114W-G: 4-port RS-232 Module
I-8114iW-G: 4-port Isolated S-232 Module

RS-232 Interface

Features

- High-profile Module
- 2500 V_{rms} Isolation for I-8114iW
- Serial Port with +/-4 kV ESD Protection
- Internal 128-byte Hardware FIFO for each Port
- Baud Rate of up to 115200 bps
- LED Indicators for TxD, RxD and Power Status
- RoHS Compliant with no Halogen
- Low power consumption
- Made from fire retardant materials (UL94-V0 Level)

Introduction

The I-8114W-G provides 4 non-isolated RS-232 serial ports, while the I-8114iW-G provides 4 isolated RS-232 serial ports. It is equipped with a 128-byte hardware FIFO for each port and offers speeds up to 115.2 kbps with support for full-duplex communication.

In harsh industrial environments, the onboard ESD protection devices attempt to divert any potentially damaging charges away from sensitive circuitry and protect the I-8114W-G/I-8114iW-G from permanent damage.

The serial communication modules are designed for use with intelligent devices like bar code readers, serial printers, intelligent sensors, instrumentation equipment, computers, and almost any device with an RS-232 or RS-422/485 port.

Applications

- Factory Automation
- Building Automation
- Home Automation

I/O Specifications

Models	I-8114W	I-8114iW
RS-232 Interface		
Number of Ports	4	
Interface	TxD, RxD, RTS, CTS, DSR, DTR, DCD, RI, GND	TxD, RxD, RTS, CTS, GND
Controller	16C950 Compatible	
	Speed: 115200 bps max.	
	Data Bit: 5, 6, 7, 8	
	Stop Bit: 1, 1.5, 2	
	Parity: None, Even, Odd, Mark, Space	
	FIFO: Internal 128 bytes for each port	
Interrupt	Shared Interrupt	
Bus	Parallel I/O Module	
Connector	DB-37 (Female)	
Intra-module Isolated, Field to Logic	-	2500 V_{rms}
ESD Protection	+/-4 kV (Contact for each channel)	

System Specifications

Models	I-8114W	I-8114iW
LED Indicators		
Power	1 LED	
TxD	4 LEDs	
RxD	4 LEDs	
Power		
Power Consumption	1.25 W	1.75 W
Mechanical		
Dimensions (W x L x H)	31 mm x 85 mm x 114 mm	
Environment		
Operating Temperature	-25 °C ~ +75 °C	
Storage Temperature	-40 °C ~ +85 °C	
Humidity	5 ~ 95% RH, non-condensing	

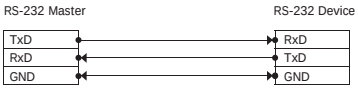
Software

Software
Supports interrupt driven software library
Supports VxCOM library

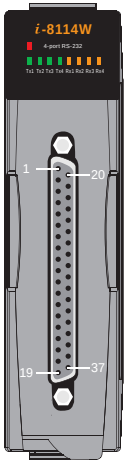
Wiring

DTE Device (Computer) DB-9		DTE to DCE Connections	DCE Device (Modem) DB-9	
Pin# DB-9	RS-232 Signal Names	Signal Direction	Pin# DB-9	RS-232 Signal Names
#1 Carrier Detector	DCD	←	#1 Carrier Detector	DCD
#2 Receive Data	RxD	←	#2 Transmit Data	TxD
#3 Transmit Data	TxD	→	#3 Receive Data	RxD
#4 Data Terminal Ready	DTR	→	#4 Data Set Ready	DSR
#5 Signal Ground/Common (SG)	GND	↔	#5 Signal Ground/Common (SG)	GND
#6 Data Set Ready	DSR	←	#6 Data Terminal Ready	DTR
#7 Request to Send	RTS	→	#7 Clear to Send	CTS
#8 Clear to Send	CTS	←	#8 Request to Send	RTS
#9 Ring Indicator	RI	←	#9 Ring Indicator	RI
Soldered to DB-9 Metal Shield	FGND	→	Soldered to DB-9 Metal Shield	FGND

3-wire RS-232 Wiring

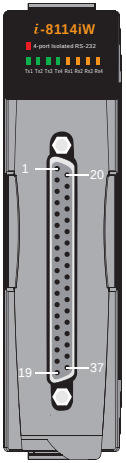


Pin Assignments



Pin Assignment	Terminal No.		Pin Assignment
N.C.	01	20	RI3
DCD3	02	21	DTR3
GND	03	22	DSR3
CTS3	04	23	RTS3
RxD3	05	24	TxD3
RI4	06	25	DCD4
DTR4	07	26	GND
DSR4	08	27	CTS4
RTS4	09	28	RxD4
TxD4	10	29	RI2
DCD2	11	30	DTR2
GND	12	31	DSR2
CTS2	13	32	RTS2
RxD2	14	33	TxD2
RI1	15	34	DCD1
DTR1	16	35	GND
DSR1	17	36	CTS1
RTS1	18	37	RxD1
TxD1	19		

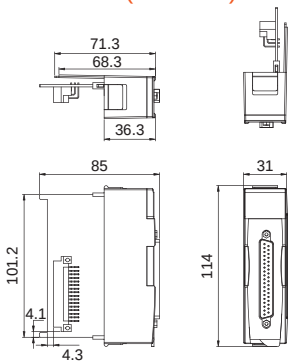
37-Pin Female D-Sub Connector



Pin Assignment	Terminal No.		Pin Assignment
N.C.	01	20	N.C.
N.C.	02	21	N.C.
GND3	03	22	N.C.
CTS3	04	23	RTS3
RxD3	05	24	TxD3
N.C.	06	25	N.C.
N.C.	07	26	GND4
N.C.	08	27	CTS4
RTS4	09	28	RxD4
TxD4	10	29	N.C.
N.C.	11	30	N.C.
GND2	12	31	N.C.
CTS2	13	32	RTS2
RxD2	14	33	TxD2
N.C.	15	34	N.C.
N.C.	16	35	GND1
N.C.	17	36	CTS1
RTS1	18	37	RxD1
TxD1	19		

37-Pin Female D-Sub Connector

Dimensions (Unit: mm)



Ordering Information

I-8114W-G CR	4-port RS-232 Module (RoHS)
I-8114W-G/D2 CR	4-port RS-232 Module (RoHS) Includes One CA-9-3705 Cable
I-8114iW-G CR	4-port Isolated RS-232 Module (RoHS)
I-8114iW-G/D2 CR	4-port Isolated RS-232 Module (RoHS) Includes One CA-9-3705 Cable

Accessories

CA-4002	37-Pin Male D-Sub Connector with Plastic Cover.
CA-9-3705	DB-37 Male (D-Sub) to 4-port DB-9 Male (D-Sub) Cable 0.5 m Cable for I-8114W-G/I-8114iW-G (90°)

I-8142iW-G/I-8144iW-G

I-8142iW-G: 2-port Isolated RS-422/485 Module
I-8144iW-G: 4-port Isolated RS-422/485 Module

RS-422/485 Interface

Features

- High-profile Module
- 2500 V_{rms} Isolation
- Serial Port with +/-4 kV ESD Protection
- Internal 128-byte Hardware FIFO for each Port
- Baud Rate of up to 115200 bps
- LED Indicators for TxD, RxD and Power Status
- Built-in Self-Tuner or Auto-Direction Control
- RoHS Compliant with no Halogen
- Low power consumption
- Made from fire retardant materials (UL94-V0 Level)

Introduction

The I-8142iW-G provides 2 isolated RS-422/485 serial ports, while the I-8144iW-G provides 4 isolated RS-422/485 serial ports. It is equipped with a 128-byte hardware FIFO for each port and offers speeds up to 115.2 kbps with support for RS-422 full-duplex communication.

In harsh industrial environments, the onboard ESD protection devices attempt to divert any potentially damaging charges away from sensitive circuitry and protect the I-8142iW-G/I-8144iW-G from permanent damage.

The serial communication modules are designed for use with intelligent devices like bar code readers, serial printers, intelligent sensors, instrumentation equipment, computers, and almost any device with an RS-232 or RS-422/485 port.

Applications

- Factory Automation
- Building Automation
- Home Automation

I/O Specifications

Models	I-8142iW	I-8144iW
RS-422/485 Interface		
Number of Ports	2	4
Interface	Isolated RS-422/485 (The RS-422 and RS-485 can not be used simultaneously) RS-422: TxD+, TxD-, RxD+, RxD-, GND RS-485: D+, D-, GND	
2-wire Cabling/ 4-wire Cabling	Belden 8941 (2P twisted-pair cable)/ Belden 8942 (4P twisted-pair cable), If different cables are used, the transmission distance may change	
Transfer Distance	Max. of 1,200 m at 9.6 kbps; Max. of 400 m at 115.2 kbps	
4-wire Cabling	Max. of 256 devices. in a single RS-485 network without using a repeater	
Controller	16C950 Compatible	
	Speed: 115200 bps max.	
	Data Bit: 5, 6, 7, 8	
	Stop Bit: 1, 1.5, 2	
	Parity: None, Even, Odd, Mark, Space	
	FIFO: Internal 128 bytes for each port	
Self-Tuner Asic inside	Yes	
Interrupt	Shared Interrupt	
Bus	Parallel I/O Module	
Connector	Removable 20-Pin Terminal Block	
Intra-module Isolated, Field to Logic	2500 V_{rms}	
ESD Protection	+/-4 kV (Contact for each channel)	

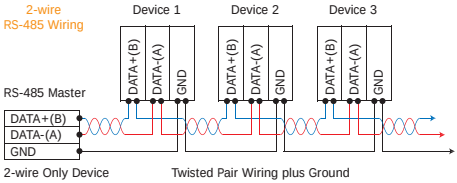
System Specifications

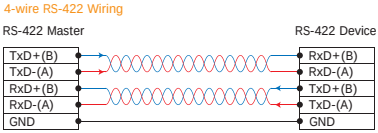
Models	I-8142iW	I-8144iW
LED Indicators		
Power	1 LED	
TxD	2 LEDs	4 LEDs
RxD	2 LEDs	4 LEDs
Power		
Power Consumption	1.5 W (Without Resistor)	1.75 W (Without Resistor)
	2 W (With 2 Resistors, 1/4 Watt, 120 Ω 5%)	3 W (With 4 Resistors, 1/4 Watt, 120 Ω 5%)
Mechanical		
Dimensions (W x L x H)	30 mm x 102 mm x 115 mm	
Environment		
Operating Temperature	-25 °C ~ +75 °C	
Storage Temperature	-40 °C ~ +85 °C	
Humidity	5 ~ 95% RH, non-condensing	

Software

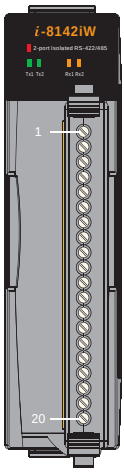
Software
Supports interrupt driven software library
Supports VxCOM library

Wiring

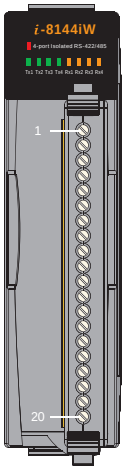




Pin Assignments

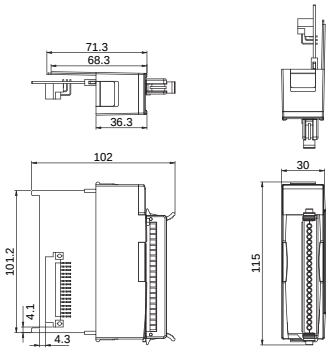


Terminal No.	Pin Assignment
01	D1+/TxD1+
02	D1-/TxD1-
03	RxD1+
04	RxD1-
05	GND1
06	D2+/TxD2+
07	D2-/TxD2-
08	RxD2+
09	RxD2-
10	GND2
11	N.C.
12	N.C.
13	N.C.
14	N.C.
15	N.C.
16	N.C.
17	N.C.
18	N.C.
19	N.C.
20	N.C.



Terminal No.	Pin Assignment
01	D1+/TxD1+
02	D1-/TxD1-
03	RxD1+
04	RxD1-
05	GND1
06	D2+/TxD2+
07	D2-/TxD2-
08	RxD2+
09	RxD2-
10	GND2
11	D3+/TxD3+
12	D3-/TxD3-
13	RxD3+
14	RxD3-
15	GND3
16	D4+/TxD4+
17	D4-/TxD4-
18	RxD4+
19	RxD4-
20	GND4

Dimensions (Unit: mm)



Ordering Information

I-8142iW-G CR	2-port Isolated RS-422/485 Module (RoHS)
I-8144iW-G CR	4-port Isolated RS-422/485 Module (RoHS)

3.7. μPAC-7186EX(D)-MTCP Modbus to Ethernet Gateway

NEW

μPAC-7186EX(D)-MTCP

Modbus/RTU to Modbus/TCP Gateway

Features

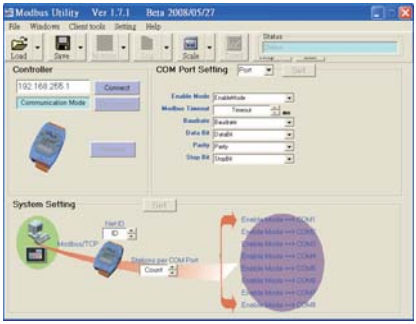
- Incorporate Serial Devices in an Ethernet network
- Supports Modbus/TCP and Modbus/RTU
- "Virtual COM" extends PC COM ports
- VxComm Driver for Windows NT 4.0, 2000/XP/2003 and Vista32
- Programmable Internet/Ethernet Controller
- Watchdog Timer suitable for use in harsh environments
- 10/100 Base-TX (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- Power Reverse Polarity Protection Circuit
- RS-485 Port ESD Protection Circuit
- Self-Tuner ASIC Controller on the RS-485 Port
- 5-digit LED Display (for versions with a display)
- RoHS Compliant with no Halogen
- Built-in High Performance MiniOS7 from ICP DAS
- Low power consumption
- Made from fire retardant materials (UL94-V0 Level)

Introduction

The Modbus communications protocol has become the de facto industry standard, and is now the most commonly available means of connecting industrial electronic devices.

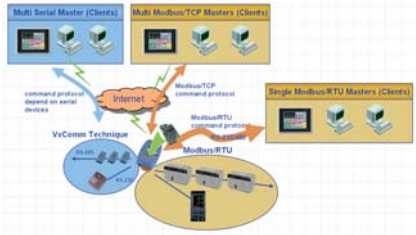
Modbus allows for communication between many devices connected to the same network, for example a system that measures temperature and humidity and communicates the results to a computer. Modbus is often used to connect a supervisory computer with a remote terminal unit (RTU) in supervisory control and data acquisition (SCADA) systems.

The μPAC-7186EX(D)-MTCP uses a default firmware to become a single Modbus/TCP to multiple Modbus/RTU converter. You can simply use the Modbus Utility to configure the device and then set the connection between the SCADA or HMI software and the μPAC-7186EX(D)-MTCP.



The μPAC-7186EX(D)-MTCP can also link to legacy serial devices that don't support Modbus/RTU. To use this function, you need to install the VxComm driver on the host PCs and create virtual COM ports for the remote serial ports on the μPAC-7186EX(D)-MTCP. You can then directly access the remote serial devices via the virtual COM ports.

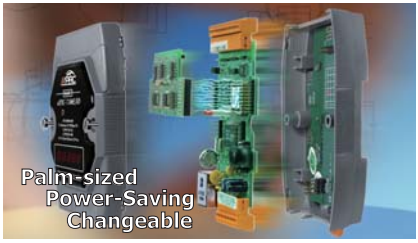
Using the Modbus SDK, users can develop their own custom Modbus firmware, allowing extra functions and integration of serial devices. In this way, the μPAC-7186EX(D)-MTCP becomes a powerful controller.



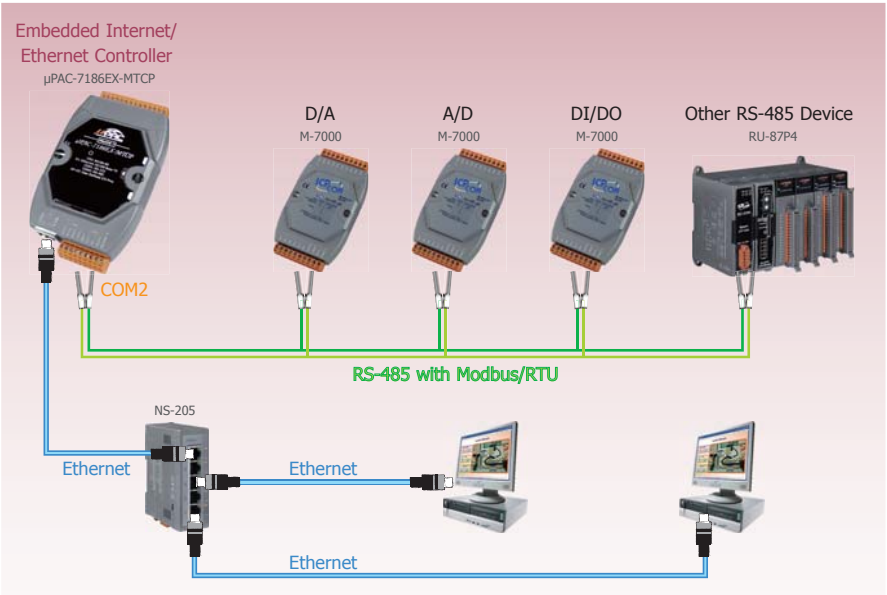
The μPAC-7186EX(D)-MTCP contains a built-in operating system, the MiniOS7, which offers a stable and high performance environment that is similar to DOS. The MiniOS7 can boot up the μPAC-7186EX(D)-MTCP within just one second, with the added benefit of no virus problems and a small footprint. Furthermore, the μPAC-7186EX(D)-MTCP is designed for low power consumption, maintenance elimination (no hard disk and no fan), and is constructed from fire retardant materials (UL94-V0 level) with a robust case.

I/O Expansion Bus and Expansion Board

The μPAC-7186EX(D)-MTCP supports a single I/O expansion bus for plugging with a X-board. ICP DAS provides many optional X-boards for the μPAC-7186EX(D)-MTCP, which offers various I/O functions, such as D/I, D/O, A/D, D/A, Timer/Counter, UART, flash memory, battery backup SRAM and AsicKey... etc.



Applications



Specifications

Models	μPAC-7186EX-MTCP	μPAC-7186EXD-MTCP
CPU		
CPU	80186, 80 MHz or compatible	
SRAM	512 KB	
Flash Memory	512 KB	
EEPROM	16 KB	
NVRAM	31 Bytes (battery backup, data valid for up to 10 years)	
RTC (Real Time Clock)	Yes	
Hardware Serial Number	Yes (64-bit)	
Built-in Watchdog Timer	Yes	
Communication Interface		
COM1	RS-232 (TxD, RxD, RTS, CTS, GND)	
COM2	RS-485 (D2+, D2-, GND)	
Ethernet	10/100 Base-TX, RJ-45 port (Auto-negotiating, auto MDI/MDI-X, LED indicator)	
COM Port Formats		
Speed	115200 bps max.	
Data Bit	7, 8	
Parity	None, Even, Odd	
Stop Bit	1	
LED Indicators		
5-Digit 7 Segment	-	Yes
System	Yes	
Power		
ESD Protection	Yes (with Frame Ground)	
Protection	Power Reverse Polarity Protection	
Required Supply Voltage	+10 V_{DC} ~ +30 V_{DC} (non-regulated)	
Power Consumption	1.5 W	2.5 W
Mechanical		
Flammability	Fire Retardant Materials (UL94-V0 Level)	
Dimension (W x H x D)	72 mm x 123 mm x 35 mm	
Installation	DIN-Rail or Wall mounting	
Environment		
Operating Temperature	-25 °C ~ +75 °C	
Storage Temperature	-40 °C ~ +80 °C	
Humidity	5 ~ 95% RH, non-condensing	

Pin Assignments

µPAC-7186EX(D)-MTCP

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

I/O Expansion Bus

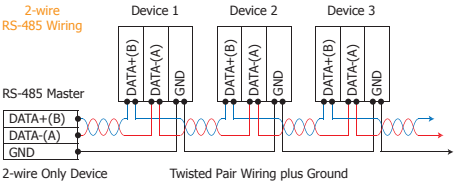
J1			
GND	01	02	GND
CLKOUTA	03	04	ARDY
INT0	05	06	INT1
VCC	07	08	RESET
GND	09	10	RESET\
TO0	11	12	TO1
TI0	13	14	TI1
SCLK	15	16	DIO9
DIO4	17	18	DIO14
VCC	19	20	VCC

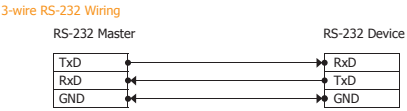
CON20A JDIP20P

J2			
MA0	01	02	AD0
MA1	03	04	AD1
MA2	05	06	AD2
MA3	07	08	AD3
MA4	09	10	AD4
MA5	11	12	AD5
MA6	13	14	AD6
MA7 (or NC)	15	16	AD7
INT4 (or NC)	17	18	WRITE\
CS\	19	20	READ\

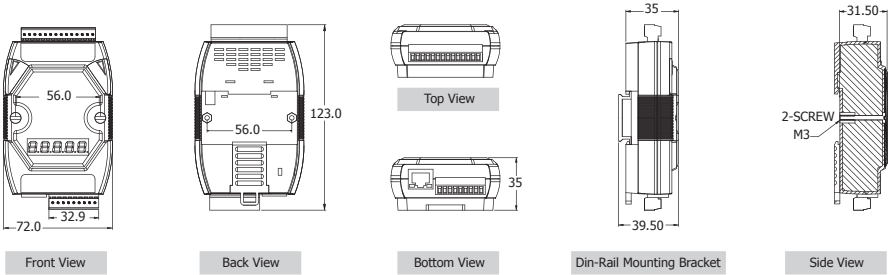
CON20A JDIP20P

Wiring





Dimensions (Unit: mm)



Ordering Information

µPAC-7186EX-MTCP CR	µPAC-7186EX with Default Modbus/TCP Firmware (RoHS)
µPAC-7186EXD-MTCP CR	µPAC-7186EXD with Default Modbus/TCP Firmware (RoHS)

Accessories

GPSU06U-6	24 V_{DC}/0.25 A, 6 W Power Supply
MDR-20-24	24 V_{DC}/1 A, 24 W Power Supply with DIN-Rail Mounting
CA-0903	9-Pin Female D-Sub and RS-232 Connector Cable, 30 cm Cable
CA-0910	9-Pin Female D-Sub and 3-wire RS-232 Cable, 1 m Cable
NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch (RoHS)