



## PDS-220Fx

Programmable (1x RS-232 and 1x RS-422/485)  
Serial-to-Fiber Device Server

### Features

- Adds optical fiber connectivity to serial devices
- "Virtual COM" extends PC COM ports
- VxComm Utility supports 32/64-bit Windows 7 SP1/10/2012/2016
- Powerful programmable device server
- Watchdog Timer suitable for use in harsh environments
- Serial Port +/-4 kV ESD Protection Circuit
- Self-Tuner ASIC controller on the RS-485 port
- Built-in High Performance MiniOS7 from ICP DAS
- Supports Modbus TCP to RTU/ASCII Gateway
- Low power consumption

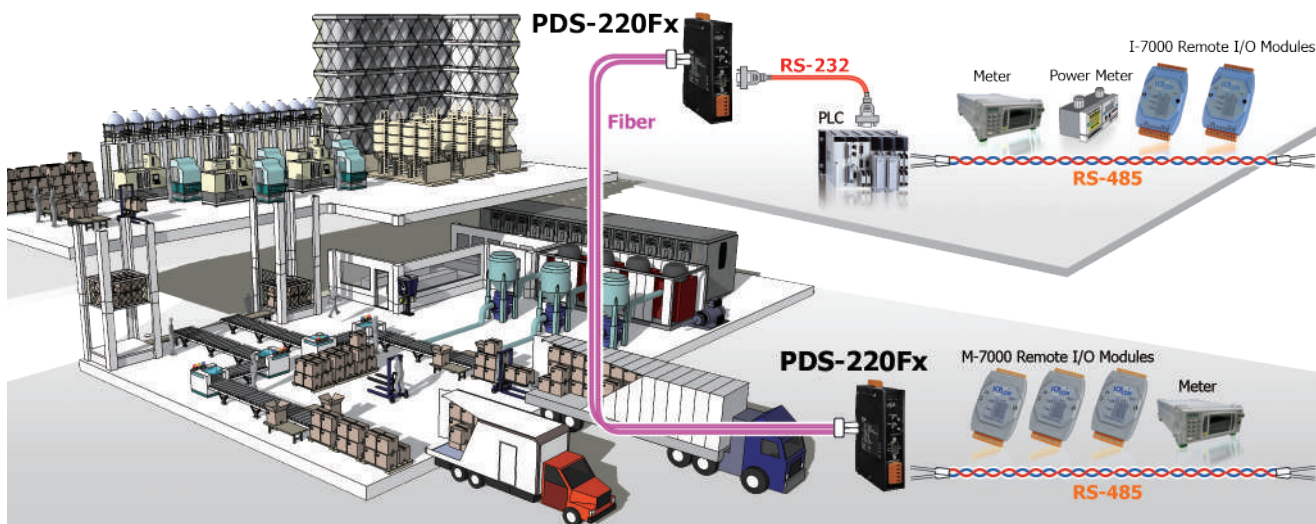


### Introduction

The PDS-220Fx series is a family of Programmable Device Servers, also known as "Serial-to-Fiber gateway", that are designed for adding optical fiber connectivity to RS-232/422/485 devices.

**The fiber-optic communications permits transmission over longer distances than other forms of communications because of the signals travel along them with less loss and no crosstalk. It has following important features:**



- **Immunity to electromagnetic interference (EMI) — Motors, relays, welders and other industrial equipment generate a tremendous amount of electrical noise that can cause major problems with copper cabling.**
- **High electrical resistance, making it safe to use near high voltage equipment or between areas with different earth potentials.**
- **No sparks — important in flammable or explosive gas environments.**
- **Not electromagnetically radiating, and difficult to tap without disrupting the signal — important in high-security environments.**



The user-friendly VxComm Utility allows users to easily turn the built-in COM ports of the PDS-220Fx series into standard COM ports on a PC. By virtue of its protocol independence, a small-core OS and high flexibility, the PDS-220Fx series is able to meet the demands of every network-enabled application.

The PDS-220Fx 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-220Fx up in just one second and gives you fastest responses. The PDS-220Fx is equipped with 1 RS-232 port and 1 RS-422/485 port. The removable onboard terminal block connector is designed for easy and robust wiring in industrial situations.

## System Specifications

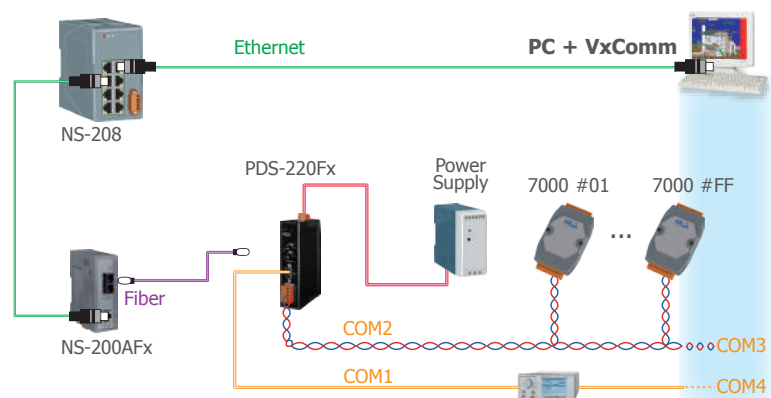
Models	PDS-220FT	PDS-220FC	PDS-220FCS	PDS-220FCS-60	
<b>CPU</b>					
CPU	80186, 80 MHz or compatible				
SRAM	512 KB				
Flash	512 KB; Erase unit is one sector (64 KB); 100,000 erase/write cycles				
EEPROM	16 KB; Data retention: 40 years; 1,000,000 erase/write cycles				
Peripheral	Watchdog Timer, Init Pin				
<b>Communication Interface</b>					
COM1	Male DB-9, 5-wire RS-232 (Rx, Tx, CTS, RTS, GND); Note: +/- 4 kV ESD Protection				
COM2	Removable Terminal Block 2-wire RS-485 (D+, D-, GND) with Self-Tuner ASIC or 4-wire RS-422 (TxD+, TxD-, RxD+, RxD-, GND) Note: +/- 4 kV ESD Protection				
Fiber Port	100 Base-FX, ST connector	100 Base-FX, SC connector			
					
Mode	Fiber Cables	Multi-mode: 50/125, 62.5/125 or 100/140 μm		Single-mode: 8.3/125, 8.7/125, 9/125 or 10/125 μm	
	Wavelength	1300 or 1310 nm			
	Min. TX Output	-20 dBm		-15 dBm	-5 dBm
	Max. TX Output	-14 dBm		-8 dBm	-0 dBm
	Max. RX Sensitivity	-32 dBm		-34 dBm	-35 dBm
	Min. RX Overload	-8 dBm		-5 dBm	
Budget	12 dBm		19 dBm	30 dBm	
Distance	2 km, (62.5/125 μm recommended) for full duplex		<b>30 km</b> , (9/125 μm recommended) for full duplex	<b>60 km</b> , (9/125 μm recommended) for full duplex	
<b>COM Port (16C550 or compatible UART)</b>					
Data Bit	7, 8				
Parity	None, Even, Odd, Mark, Space				
Stop Bit	1, 2				
Baud Rate	115200 bps max.				
<b>LED Indicators</b>					
Link/Act	Green				
System	Red				
<b>Power</b>					
Power Input	+12 Vdc ~ +48 Vdc (non-regulated)				
Power Consumption	0.14 A @ 24 Vdc				
Protection	Power Reverse Polarity Protection, EMS Protection (Frame GND)				
<b>Mechanical</b>					
Dimensions (W x L x H)	(31 x 121 x 157)mm	(31 x 123 x 157)mm			
Installation	DIN-Rail mounting				
<b>Environment</b>					
Operating Temperature	-25 °C ~ +75 °C				
Storage Temperature	-30 °C ~ +85 °C				
Humidity	10 ~ 90% RH, non-condensing				

## Applications

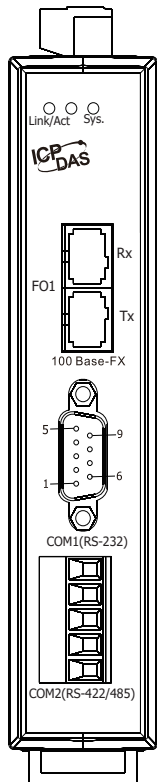
Factory Automation

Building Automation

Home Automation



## Pin Assignments

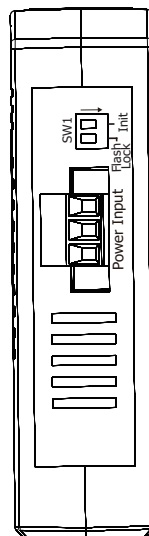


Pin Assignment	Terminal No.	Terminal No.	Pin Assignment
GND	05	09	--
--	04	08	CTS
TxD	03	07	RTS
RxD	02	06	--
--	01		

COM1: Male DB-9 Connector

Terminal No.	Pin Assignment
01	TxD+/D+
02	TxD-/D-
03	RxD+
04	RxD-
05	GND

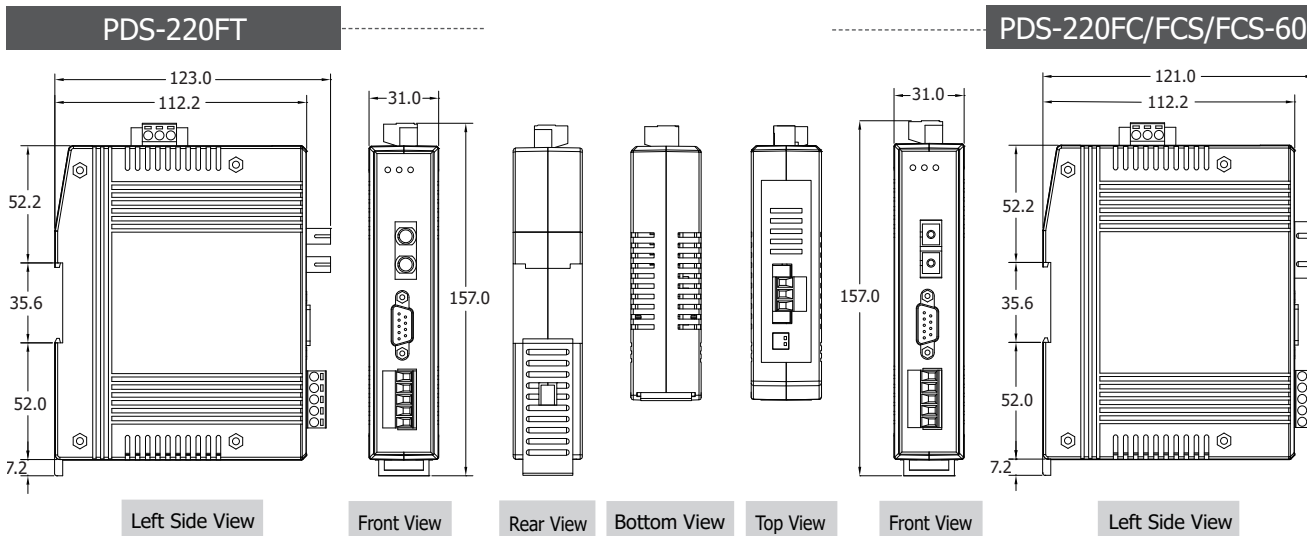
COM2: Removable Terminal Block



Terminal No.	Pin Assignment
03	PWR
02	P.GND
01	F.G.

Power Input: Removable Terminal Block

## Dimensions (Unit: mm)



## Ordering Information

PDS-220FT CR	Programmable Device Server with (1x RS-232 and 1x RS-422/485) 1 Multi-mode ST Fiber Port (2 km) (RoHS)
PDS-220FC CR	Programmable Device Server with (1x RS-232 and 1x RS-422/485) 1 Multi-mode SC Fiber Port (2 km) (RoHS)
PDS-220FCS CR	Programmable Device Server with (1x RS-232 and 1x RS-422/485) 1 Single-mode SC Fiber Port (30 km) (RoHS)
PDS-220FCS-60 CR	Programmable Device Server with (1x RS-232 and 1x RS-422/485) 1 Single-mode SC Fiber Port (60 km) (RoHS)

## Accessories

NS-200AFC-T CR	Industrial 10/100 Base-T to 100 Base-FX Media Converter; 1 multi mode, SC connector (RoHS)
NS-200AFCS-60T CR	Industrial 10/100 Base-T to 100 Base-FX Media Converter; 1 (60 km) single mode, SC connector (RoHS)
NS-200AFCS-T CR	Industrial 10/100 Base-T to 100 Base-FX Media Converter; 1 single mode, SC connector (RoHS)
NS-200AFT-T CR	Industrial 10/100 Base-T to 100 Base-FX Media Converter; 1 multi mode, ST connector (RoHS)
NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch (RoHS)
CA-0903 CR	DB9 Female to 5-wire Cable [RS-232], 30cm (RoHS)
CA-0910 CR	DB9 Female to 3-wire Cable [RS-232; Pin2, Pin3 and Pin5], 1M (RoHS)