3-6 Programmable Serial-to-Fiber Device Server

PDS-220Fx   *NEW*

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

CE FC RoHS

PDS-220FT

PDS-220FC
PDS-220FCS
PDS-220FCS-60

Features ▶▶▶▶

- Adds optical fiber connectivity to serial devices
- Virtual COM for 32-bit and 64-bit Windows XP/2003/Vista/7
- Watchdog Timer suitable for use in harsh environments
- Serial Port +/-4 kV ESD Protection Circuit
- RoHS Compliant & no Halogen
- 100 Base-FX (SC/ST connector)
- Low power consumption

- "Virtual COM" extends PC COM ports
- Powerful Programmable Device Server
- Power Reverse Polarity Protection
- Self-tuner ASIC Controller on the RS-485 port
- Built-in high performance MiniOS7 from ICP DAS
- ODM Service is available
- Made from fire-retardant materials (UL94-V0 level)

☼ 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:
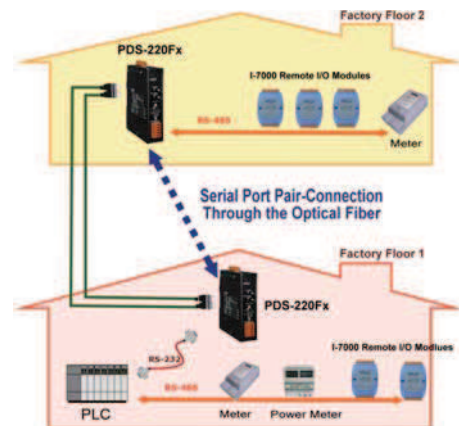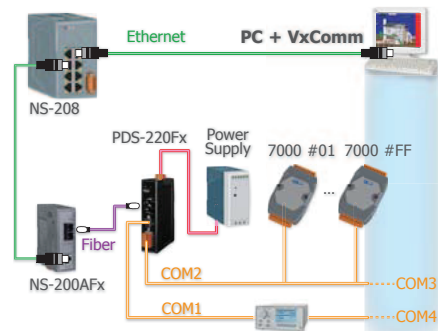
- **Immunity to electromagnetic interference (EMI) — Motors, relays, welders and other industrial equipment generate a tremendous amount of electrical noise that can cause major problems with copper cabling.**
- **High electrical resistance, making it safe to use near high voltage equipment or between 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.**

Because of these reasons, optical fibers have largely replaced copper wire communications in core networks in the developed world.

The user-friendly VxComm Driver/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.
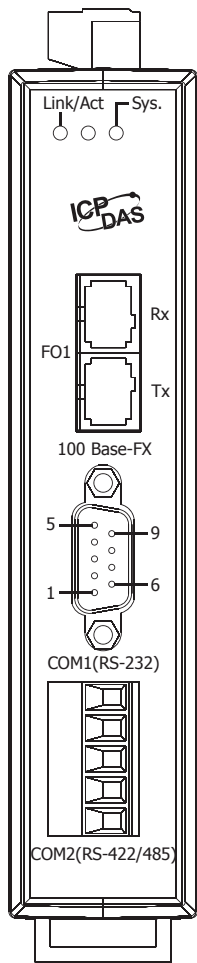
☼ Applications

○ Factory Automation   ○ Building Automation   ○ Home Automation

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Serial Device Server

System Specifications

Models	PDS-220FT	PDS-220FC	PDS-220FCS	PDS-220FCS-60
CPU				
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			
Built-in Watchdog Timer	Yes			
Init Pin	Yes			
Communication Interface				
COM1	Male DB-9, 5-wire RS-232 (RxD, TxD, 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		

		PDS-220FT	PDS-220FC	PDS-220FCS	PDS-220FCS-60
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	**30 km**, (9/125 µm ecommended) for full duplex		**60 km**, (9/125 µm ecommended) for full duplex

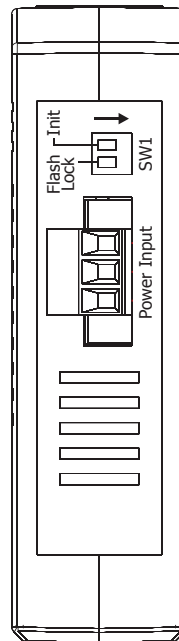|	
COM Port Formats	
UART	16C550 or compatible
Data Bit	7, 8
Parity	None, Even, Odd, Mark, Space
Stop Bit	1, 2
Baud Rate	115200 bps max.
LED Indicators	
Link/Act	Green
System	Red
Power	
Power Input	+12 V_{DC} ~ +48 V_{DC} (non-regulated)
Power Consumption	0.14 A @ 24 V_{DC}
Protection	Power Reverse Polarity Protection
Frame GND	Yes, for EMS Protection
Mechanical	
Flammability	Fire-Retardant Materials (UL94-V0 Level)
Dimensions (W x L x H)	31 mm x 121 mm x 157 mm / 31 mm x 123 mm x 157 mm
Installation	DIN-Rail mounting
Environment	
Operating Temperature	-25 °C ~ +75 °C
Storage Temperature	-30 °C ~ +85 °C
Humidity	10 ~ 90% RH, non-condensing

Pin Assignments

Pin Assign-ment	Terminal	No.		No.	Pin Assign-ment
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

Link/Act   Sys.

FO1   Rx   Tx

100 Base-FX

COM1(RS-232)

COM2(RS-422/485)

Flash Lock   Init   SW1

Power Input

Ordering Information

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

Accessories

GPSU06U-6 CR	24 V_{DC}/0.25 A, 6 W Power Supply
MDR-20-24 CR	24 V_{DC}/1 A, 24 W Power Supply with DIN-R
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-200AFT CR	Industrial 10/100 Base-T to 100 Base-FX Media Converter; 1 Multi-mode ST connector (RoHS)
NS-200AFC CR	Industrial 10/100 Base-T to 100 Base-FX Media Converter; 1 Multi-mode SC connector (RoHS)
NS-200AFCS CR	Industrial 10/100 Base-T to 100 Base-FX Media Converter; 1 Single-mode SC connector (RoHS)
NS-200AFCS-40T CR	Industrial 10/100 Base-T to 100 Base-FX Media Converter; 1 (40 km) Single-mode SC connector (RoHS)
NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch (RoHS)
DIN-KA52F-48 CR	48V/0.52A, 25 W Power Supply with DIN-Rail Mounting (RoHS, for NS-205PSE)

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6

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