RECOMMENDED POWER SUPPLY
12V, 24V, OR 48V /40W, DIN-RAIL, SLIM
MODEL: CF-MDR-40-12, CF-MDR-40-24
OR CF-MDR-40-48

Industrial Unmanaged Gigabit Ethernet Switch / FO Converter

(Star and Daisy-Chain Fiber Optic Networks)

Part Number: USW-2206-SFP

Fiber Optic Interface: SFP

CE FC

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■ INTRODUCTION

The USW-2206-SFP is a rugged, fan-less, industrial-grade, unmanaged Gigabit Ethernet switch that features 4 unmanaged 10/100/1000M Ethernet ports and 2 full-duplex 1000M SFP ports. The USW-2206-SFP can be configured as a star, a daisy-chain, or a combination of star and daisy-chain network. It supports up to 255 fiber nodes via SFP modules, and depending on the fiber cable and the type of SFP module used, each fiber node can extend the 10/100/1000M Ethernet's distance to 12.4/25/37/50/62/75/100 miles (20/40/60/80/100/120/160 km) for single-mode fiber networks, or 0.3 miles (0.55 km) for multi-mode fiber networks. The USW-2206-SFP overcomes the limitations of a conventional point-to-point fiber network and dramatically expands the Ethernet data network in terms of distance and flexibility. The USW-2206-SFP is a plug and play Gigabit switch featuring auto-negotiation for 10, 100 and 1000M data rates, and it supports MDI (straight-through) and MDI-X (auto-crossover), no DIP switch or jumper settings are required.

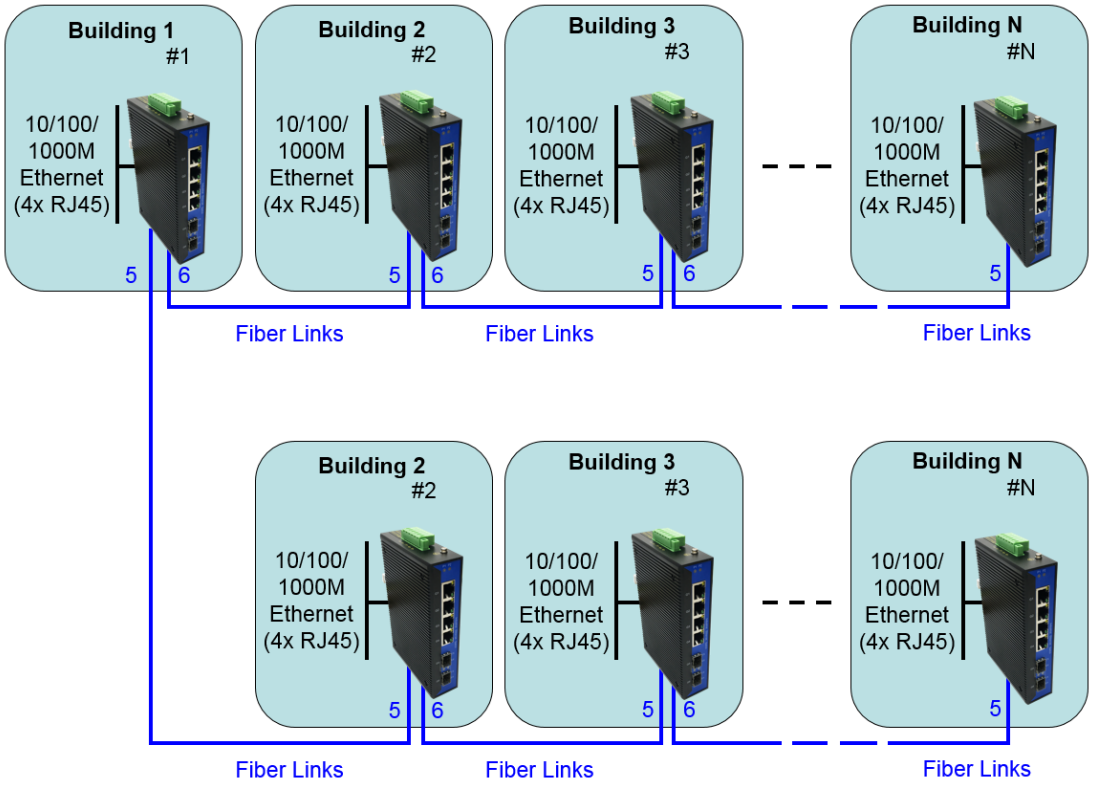
■ FEATURES

- Rugged industrial-grade Unmanaged Gigabit Ethernet Switch and Fiber Optic Media Converter.
- Designed for harsh industrial environments (DIN-Rail mounting).
- 4x Gigabit RJ45 ports for 10/100/1000M Ethernet (auto-negotiation).
- 2x Gigabit SFP ports.
- Supports up to 255 fiber nodes via SFP modules.
- Plug and play, no DIP switch or jumper settings are required.
- Supports Auto-Negotiation, MDI and MDI-X auto-crossover.
- Full redundant power supply and power alarm relay output.
- Protects against ESD (15kV), overload current, reversed power polarity, and broadcast storm.
- Operating temperature: -40ºF to 185ºF (-40ºC to 85ºC).
- Surface Mount Technology manufactured to RoHS and ISO-9001 standards.
- Compliance: CE, FCC.
- 5-Year manufacturer's warranty.

■ SPECIFICATIONS

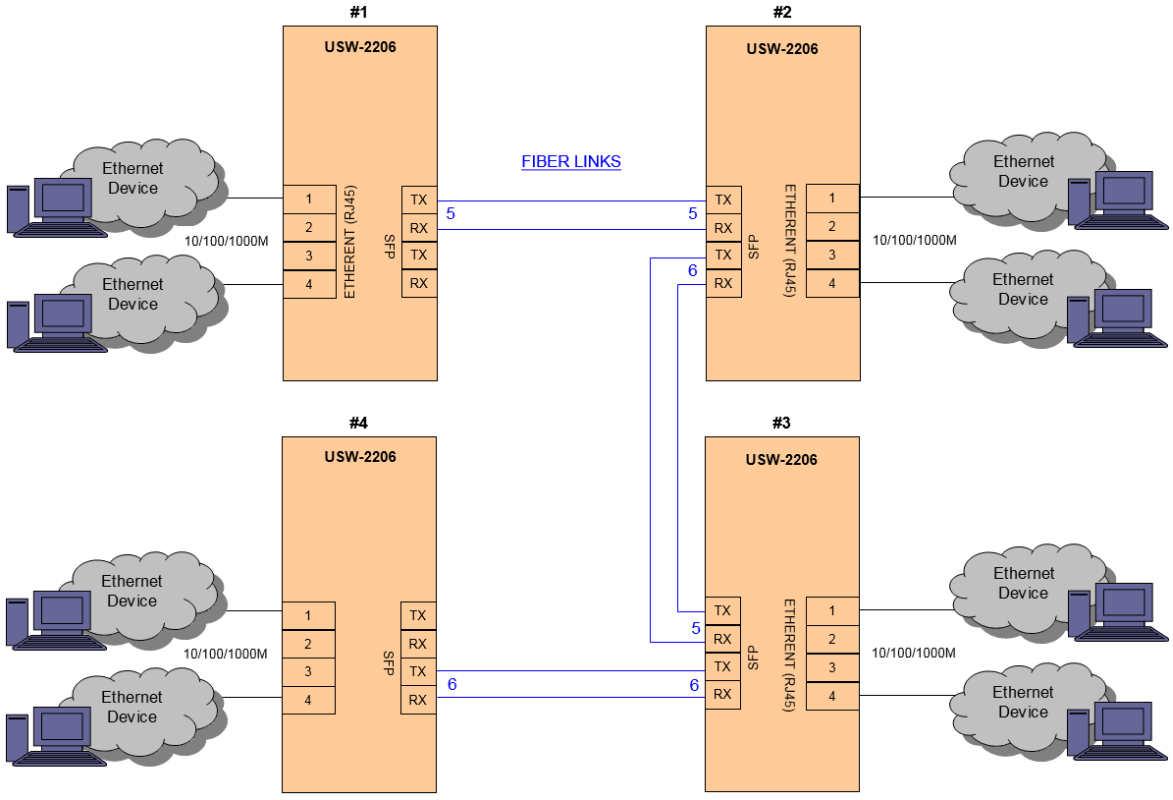
Compatibility:	IEEE802.3; IEEE802.3u; IEEE802.3x; IEEE802.3ab; IEEE802.3z
Power Source:	12 to 48 VDC (redundant dual inputs; power alarm relay output)
Power Consumption:	<5W
Number of Ports:	4x Gigabit Ethernet ports (10/100/1000M auto-negotiation) 2x Gigabit SFP ports
Ethernet Switch Type:	Unmanaged/Layer 2
Switching Method:	Store and forward
MAC Table:	1K
Protection:	Up to 15kV ESD; Overload current; Reversed power polarity; Broadcast storm
Distance (Ethernet):	328ft (100m)
Distance (Fiber):	Depending on SFP modules. Single-mode: 12.4/25/37/50/62/75/100 miles (20/40/60/80/100/120/160km); Multi-mode: 0.3 miles (550m)
Max. Number of Fiber Nodes:	255
Connectors (Ethernet):	4x RJ45
Connectors (Fiber):	2x SFP
Connectors (Power):	6-way terminal block (2x V1 power, 2x V2 power, 2x alarm)
Dimensions (H x W x D):	6.1x4.3x1.3 in (154x108x33 mm)
IP Rating:	IP 40
Weight:	1 lb (450 g)
Operating Temperature:	-40ºF to 185ºF (-40ºC to 85ºC)
Operating Humidity:	5% to 95% Non-condensing

■ APPLICATION

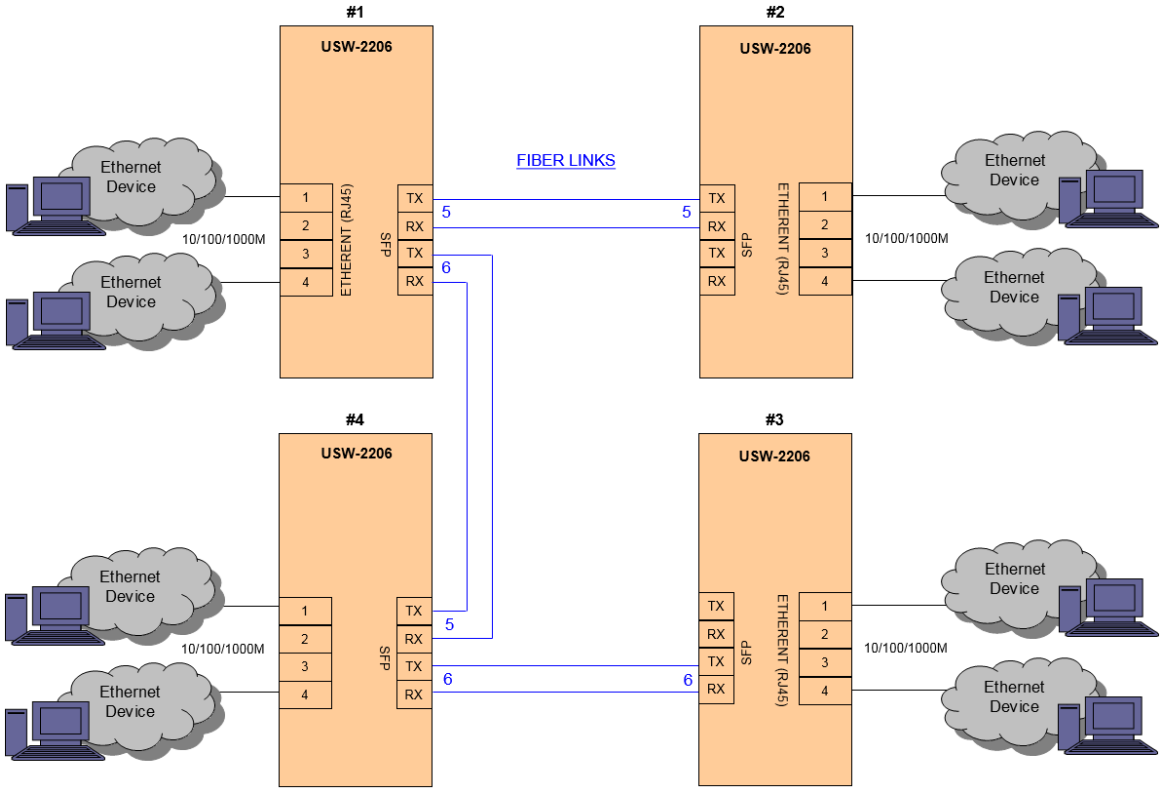


APPLICATION 1: STAR + DAISY-CHAIN FIBER LINKS

■ CONNECTIONS

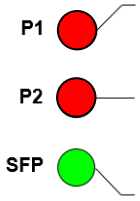


CONNECTION 1: DAISY-CHAIN FIBER CONNECTION DIAGRAM

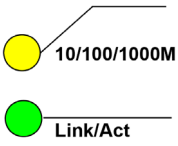


CONNECTION 2: STAR + DAISY-CHAIN FIBER CONNECTION DIAGRAM

■ LED INDICATORS

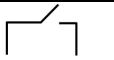


PWR1 Indicator
ON: Power supply 1 on
OFF: Power supply 1 off
PWR2 Indicator
ON: Power supply 2 on
OFF: Power supply 2 off
SFP Indicator
ON: The unit is connected to a network
OFF: No network connection



10/100/1000M Indicator
ON: The unit is connected to a 1000M network
OFF: The unit is connected to a 10/100M network or is disconnected
Link/Act Indicator
ON: The unit is connected to a network
Flashing: Sending/receiving data
OFF: No network connection

■ INPUTS/OUTPUTS

Power 1 & 2 Inputs	
V1+/V1-: Power Supply 1 Input (12 to 48 VDC) V2+/V2-: Power Supply 2 Input (12 to 48 VDC)	
Power Alarm Output	
	Normally-Open Relay Alarm Output (Maximum Load: 1A/24VDC)

■ TROUBLESHOOTING

- Make sure power supply (12 to 48 VDC) is connected and turned ON.
- Check LEDs and ensure connections are correct (note: DO NOT connect as a ring network as otherwise broadcast storm could occur).
- Diagnose a suspected bad link by using a cable tester or other hardware tools.
- Ping or scan network devices with your computer's CLI (Command Line Interface) or other software tools.