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

(Point-to-Point Fiber Optic Network)

Part Number: USW-2203-SFP

Fiber Optic Interface: SFP

CE FC

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■ INTRODUCTION

The USW-2203-SFP is a rugged, fan-less, industrial-grade, unmanaged Gigabit Ethernet switch to fiber optic media converter that provides one channel for media conversion between 10/100/1000M Ethernet and 1000M fiber optic links (via SFP modules). The USW-2203-SFP works in pair (point to point) and it runs on a light-speed fiber backbone inherently resistant to radio and electrical interference, such as EMI/RFI, transient surges, and ground loops. Depending on the fiber cable and the type of SFP module used, a single-mode media converter can extend the 10/100/1000M Ethernet's distance to 12.4/25/37/50/62/75/100 miles (or 20/40/60/80/100/120/160 km), while a multi-mode media converter can extend the 10/100/1000M Ethernet's distance to 0.3 miles (0.55 km). The USW-2203-SFP is a plug and play unit featuring auto-negotiation for 10, 100 or 1000M data rates, it also 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 to Fiber Optic Media Converter.
- Designed for harsh industrial environments (DIN-Rail mounting).
- 2x Gigabit RJ45 ports for 10/100/1000M Ethernet (auto-negotiation).
- 1x Gigabit SFP port.
- Plug and play, no DIP switch or jumper settings are required.
- Supports Auto-Negotiation, MDI and MDI-X auto-crossover.
- Protects against ESD (15kV), overload current, and reversed power polarity.
- Protects against 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
Power Consumption:	<3.5W
Number of Ports:	2x Gigabit Ethernet ports (10/100/1000M auto-negotiation) 1x Gigabit SFP port
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)
Connectors (Ethernet):	2x RJ45
Connectors (Fiber):	1x SFP
Connectors (Power):	2-way terminal block
Dimensions (H x W x D):	4.8x1.3x3.6 in (123x33x91 mm)
IP Rating:	IP 40
Weight:	0.66 lb (300 g)
Operating Temperature:	-40ºF to 185ºF (-40ºC to 85ºC)
Operating Humidity:	5% to 95% Non-condensing

■ CONNECTIONS

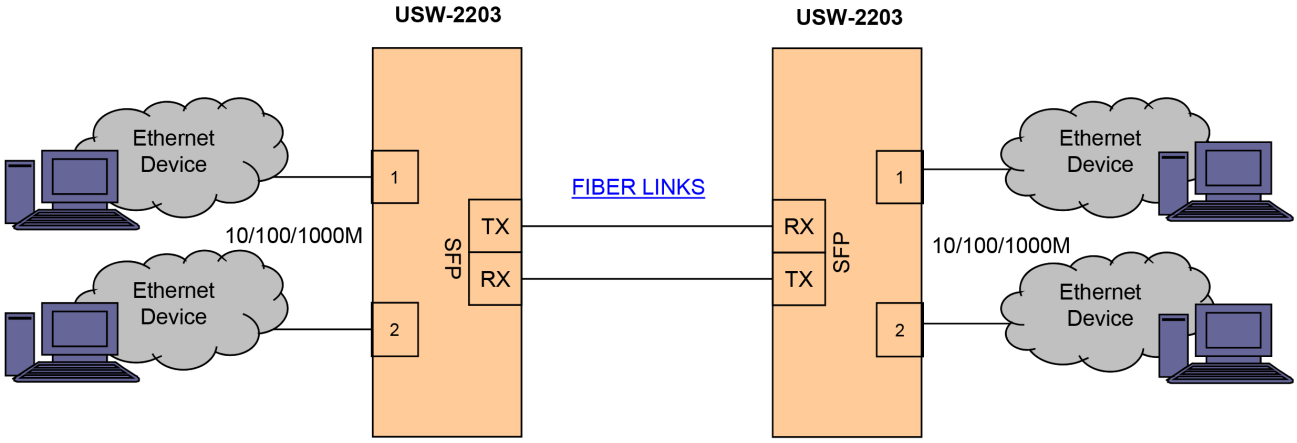
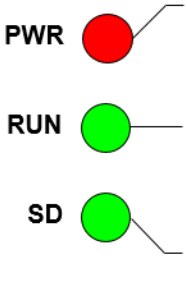


FIGURE 1: POINT-TO-POINT GIGABIT FIBER LINKS

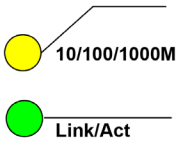
■ LED INDICATORS



RUN Indicator
ON: Power supply on
OFF: Power supply off

PWR Indicator
ON: The unit is working
OFF: The unit is not working

SD Indicator
ON: Network connected
Flashing: Network activity
OFF: No network connection

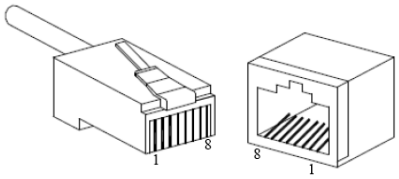


10/100/1000M Indicator
ON: The unit is connected to a 1000M network
OFF: The unit is connected to a 10 /100M network or is disconnected

Link/Act Indicator
ON: The unit is connected to a network
Flashing: Sending/receiving data
OFF: No network connection

■ RJ45 PIN ASSIGNMENTS

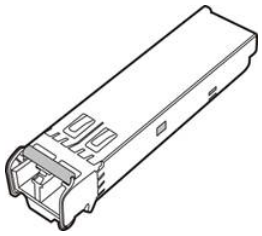
RJ45 (Ethernet)	Terminal Block
1	TX+
2	TX-
3	RX+
6	RX-
4,5,7,8 (Not Connected)	-



■ INPUTS/OUTPUTS

Power Input
V1+/V1-: Power Supply Input (12 to 48 VDC)

■ COMPATIBLE SFP MODULES



Model	MM/SM (Fiber)	Connectors	Wavelength	TX Distance
SFP-MM850-LC-550M	Multi-Mode	2x LC	850nm	0.3 miles (550m)
SFP-SM1310-LC-20KM	Single-Mode	2x LC	1310nm	12.4 miles (20km)
SFP-SM1310-LC-40KM	Single-Mode	2x LC	1310nm	25 miles (40km)
SFP-SM1550-LC-40KM	Single-Mode	2x LC	1550nm	25 miles (40km)
SFP-SM1550-LC-60KM	Single-Mode	2x LC	1550nm	37 miles (60km)
SFP-SM1550-LC-80KM	Single-Mode	2x LC	1550nm	50 miles (80km)
SFP-SM1550-LC-100KM	Single-Mode	2x LC	1550nm	62 miles (100km)
SFP-SM1550-LC-120KM	Single-Mode	2x LC	1550nm	75 miles (120km)
SFP-SM1550-LC-160KM	Single-Mode	2x LC	1550nm	100 miles (160km)

■ 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.