

Mini-size Gigabit Ethernet Fiber Converter for Industry

DS201

Industrial 1-port Gigabit Ethernet to Fiber Media Converter

The industrial-grade fiber optic media converter DS201 can operate in either low latency converter mode or store & forward switching mode. The fiber interface supports 100Mbps/1000Mbps SFP by dip switch configuration. It detects and changes to switch mode if the copper and fiber speed or duplex are different. In converter mode, the Link Fault Pass-Through (Link Loss Forwarding) reaches low latency with bi-directional alert and auto-recovery. The 16Kbytes jumbo frame forwarding capability guarantees high-speed Giga communications. Wide operation temperature -40~75°C and heavy industrial EMC design brings DS201 suitable for any industrial application.



Features & Benefit

Ethernet Media Converter

- Converts Optical Signal and Gigabit Ethernet Electrical Signal
- SFP Socket Supports IEEE 802.3u 100Base-FX, IEEE 802.3az 1000Base-FX
- RJ-45 supports IEEE802.3u 100Bas-TX, IEEE802.3ab 1000Base-TX

Link Fault Pass Through / Link Loss Forward

- Bi-Directional Link Loss Forwarding for Real Time Far-End Fault Link Alert
- Bi-Directional Auto Recovery for Ethernet Optical Fiber and Ethernet RJ-45 Communication

Dual Forwarding Modes

Pure Converter:

- RJ-45 and Fiber working in balanced Speed and Duplex mode
- Minimum Forwarding Latency – 8.2x10⁻⁹ Sec.

Ethernet Switching Store-and-Forward:

- RJ-45 and Fiber working in un-balanced speed and duplex mode
- TX 100/1000Mbps Auto-Negotiation, Auto MDI/MDI-X
- IEEE 802.3x Flow-Control & Back-Pressure
- CRC Error Packet Filtering

Large Packet Forwarding

- 16Kbytes Jumbo frame for Gigabit speed forwarding

Industrial Compliance

- IEC 61000-6-2/ IEC 61000-6-4 Heavy Industrial EMC
- EN 50121-4 Railway Track Side EMC
- High Level Electro Magnetic Susceptibility – Level 3

Easy DIP switch Configuration

- Forced RJ-45 100Mbps Half Duplex
- Forced Fiber 100Mbps
- Link Fault Pass Through / Link Loss Forward

Hardened System Design

- Operates Under -40 ~75°C Environment
- Wide Range Redundant Power Input, 10~60Vdc or AC18~30V
- Ingress Protection – IP31

Compact Size Design

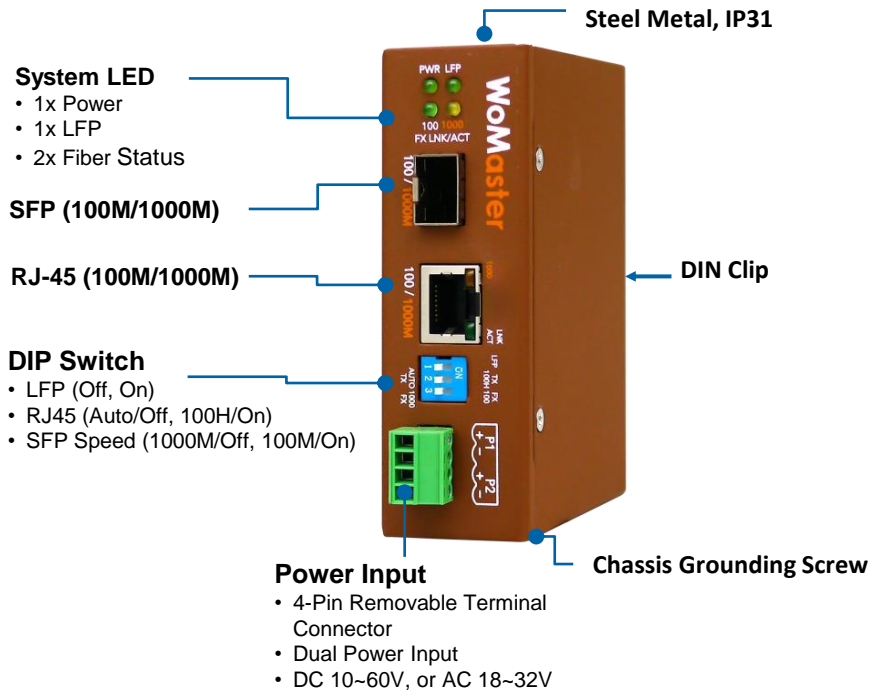
- Minimal Install Space Requirement
- Easy Cable Reorganization

Special Vertical Market Application

- Factory Automation – Real Time Machine Communication
- Railway Track Side – PLC Communication
- Low AC Voltage application – AC18~30V Building Automation

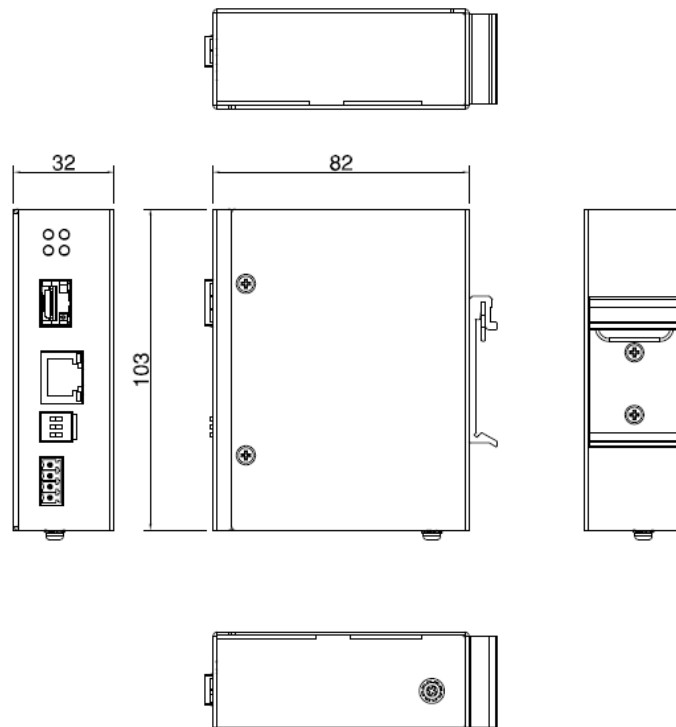


Interfaces



Dimensions

Dimension: 32mm(w) x 103mm(H) x 82mm(D)



Technology													
Standard	IEEE 802.3 10Base-T Ethernet												
	IEEE 802.3u 100Base-TX/ 100Base-FX Fast Ethernet												
	IEEE 802.3ab 1000Base-T / IEEE 802.3z Gigabit Fiber												
	IEEE 802.3x Flow Control and back-pressure												
Performance													
Forwarding Mode	Switching Mode: Store and Forward technology with CRC Check Pure Converter: Direct Forward packet with lower latency Note: if RJ-45 speed and duplex mode is not the same as Fiber, the device works in Switching mode												
Packet Buffer Memory	128K bits												
Transfer performance	1488100pps, supports 16KBytes Jumbo frame size												
Interface													
Ethernet Port	1 x Ethernet RJ45, 10/100/1000Mbps Auto Negotiation, Auto MDI/MDI-X 1 x 100Base-FX / 1000Base-FX (SFP Socket with SFP Transceiver Hot-swappable)												
System LED (To Be Update)	1 x Power: Green On (Power is supplying) / Off (Power off) 1 x LLF: LLF Enable (Green On) / LLF Event Occurred (Green Blinking)												
Ethernet Port LED (RJ-45)	1000Mbps Link Speed (Yellow On) 10/100/1000 Mbps Link (Green On), 10/100/1000Mbps Activity (Green Blinking)												
Fiber Port LED	1 x 1000Mbps Fiber: Link (Yellow on)/ Activity (Yellow Blinking) 1 x 100Mbps Fiber: Link (Green on)/ Activity (Green Blinking)												
DIP Switch	<table border="1"> <thead> <tr> <th>DIP No.#</th> <th>Status</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>DIP 1</td> <td>On Off</td> <td>Enable Link Fault Pass Through/ Far End Fault Alert function Disable Link Fault Pass Through (Default Off)</td> </tr> <tr> <td>DIP 2</td> <td>On Off</td> <td>RJ-45 Forced at 100Mbps Half Duplex mode RJ-45 Auto Negotiation (Default Off – Auto Negotiation)</td> </tr> <tr> <td>DIP 3</td> <td>On Off</td> <td>SFP Port Forced at 100Mbps Speed SFP Port 1000Mbps (Default Off – 1000Mbps)</td> </tr> </tbody> </table>	DIP No.#	Status	Description	DIP 1	On Off	Enable Link Fault Pass Through/ Far End Fault Alert function Disable Link Fault Pass Through (Default Off)	DIP 2	On Off	RJ-45 Forced at 100Mbps Half Duplex mode RJ-45 Auto Negotiation (Default Off – Auto Negotiation)	DIP 3	On Off	SFP Port Forced at 100Mbps Speed SFP Port 1000Mbps (Default Off – 1000Mbps)
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Note: It is necessary to perform power reset to activate the new configuration when DIP switch or SFP Transceiver change.													
Power input	4-Pin Removable Terminal Connector with Power Redundancy, Polarity Auto Reverse <ul style="list-style-type: none"> V1(+), V2(+): Redundant Power Input (V+) or L1/L2 (Low AC Voltage) V1(-), V2(-): Common (V-) for Redundant Power Input V1 and V2, or N1/N2 (Low AC Voltage) 												
Power Requirement													
Input Voltage	DC 24V, Rating 10~60Vdc, Redundant Power Input with Auto Polarity Reverse function Low AC Voltage 18~30Vac for the Building Automation Control												
Auto Polarity Reverse	Yes												
Power Consumption	Max. 3W@24VDC (to be update)												
Mechanical													
Installation	35mm DIN Rail												
Enclosure Material	Steel Metal												
Dimension	32mm (W) x 103mm (H) x 82mm (D) / without DIN Rail Clip and SFP Transceiver												
Ingress Protection	IP31												
Weight	315g* without package												

Environmental	
Operating Temperature & Humidity	-40°C~75°C, 0%~95% Non-Condensing (I-Grade)
Storage Temperature	-40°C~85°C
MTBF	>200,000 hours
Hi-Pot Insulation	AC1.0KV for Power/Ethernet port to Chassis Ground
Warranty	5 years

Standard	
Safety *	IEC 60950-1, UL
EMC *	IEC/ EN61000-6-2, IEC/EN61000-6-4
EMI *	CISPR 22, FCC part 15B Class A
EMS *	IEC61000-4-2 ESD EN61000-4-3 RS EN61000-4-4 EFT EN61000-4-5 Surge EN61000-4-6 CS EN61000-4-8 Magnetic Field
Environment *	IEC 60068-2-27 Shock / IEC 60068-2-31 /IEC 60068-2-6 vibration
Railway *	EN50121-4 (by Request)

* Pending



Ordering Information

Model Name	Description
DS201	Industrial Gigabit Ethernet Fiber Media Converter, 1 RJ-45, 1 SFP Socket, Redundant Power, DC 10~60V, AC18~30V
	Package List
	1 x Product Unit
	1 x 4-pin Removable Terminal Connector
	1 x Attached Din Clip
	1 x Quick Installation Guide