

JetCon 2301

Industrial Fast Ethernet to Fiber Media Converter



- One port 10/100 TX to 100 FX media converter
- Auto Link Loss Forwarding for fault detection
- Supports Multi-forwarding mode : Store and forward, modify cut-through, pure converter and converter mode
- Supports Auto MDI/MDI-X, Auto Negotiation
- Supports Multi-mode 2KM, Single-mode 30KM
- Extreme Low Data Forwarding Latency- 1.6 x 10⁻⁶ S
- Redundant Wide range 10~60V DC Power inputs with DC polarity protection
- Supports 1.5KV Hi-Pot isolation protection
- -25~70°C operating temperature for hazardous environment applications (JetCon 2301-w -40~70°C available by request)

Overview

JetCon 2301 is a single port Fast Ethernet to Fiber media converter, compliant with EN50155, EN 50121-3-2 and EN 50121-4 Railway standards to provide excellent performance under harsh environments featuring intensive vibration/shock and severe electromagnetic interference. Users can benefit from the Single-mode and Multi-mode fiber optic ports of the media converter for providing extended distance transmission of up to 30KM.

The JetCon 2301 supports 4 types of forwarding modes - store and forward, modify cut-through, pure converter and converter modes for fulfilling extreme low latency requirements – Fieldbus and EtherCAT, with invariant forwarding latency in 64~1600 bytes packet length. To forward link status changes for alerting remote or central management systems, JetCon 2301 features remote Link Loss Forwarding technology as a result providing easy maintenance and greatly saving time. Users can easily activate forwarding mode and LLF functions by adjusting the DIP switch and resetting the converter to apply reconfigurations. Moreover, the

device provides alarm relay to trigger out a real alarm signal for port or power events.

JetCon 2301 power redundancy with wide range DC10V~60V inputs and built-in reverse polarity protection for ensuring the power continuity in the system.

Combining 1.5KV Hi-PoT isolation protection and -40~70°C wide operating temperature range, JetCon 2301 withstands vibration and shock in heavy machinery industry and interferes electromagnetic allying power substation environments while keeping your applications running non-stop.

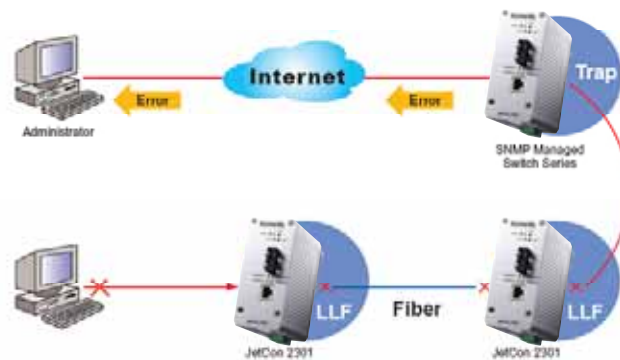


Link Loss Forwarding Technology

When using traditional fiber converters, users often encounter the following problem: a fiber converter acting like an ordinary unmanaged 2-port switch. When one of the fiber converter's ports fails (e.g. the TX port), the other one (e.g. FX port) continues to receive data via the media (e.g. fiber), confusing the device on the other end of the media by indicating that the connection is still intact. But, by the time the disconnection is found, this error causes a great

amount of data loss.

If a port loses the connection for any reason, it will activate Link Loss Forwarding to shut down the other port; hence, allowing the device on the other end of the media to detect the disconnection. The administrator over the network can be informed of the disconnection immediately, and react promptly to the situation, greatly reducing loss caused by any link failure.



- Industrial PoE Switch
- IP67/68 Ethernet Switch
- Rackmount Managed Switch
- Gigabit Switch
- Redundant Switch
- Entry-Level Switch
- Networking Computer
- Communication Computer
- Ethernet I/O Server
- Serial Device Server
- Media Converter**
- Multiport Serial Card
- SFP Module
- Din Rail Power Supply

Specification

Technology

Standard:

- IEEE 802.3 10Base-T
- IEEE 802.3u 100Base-TX
- IEEE 802.3u 100Base-FX
- IEEE 802.3x Flow Control and Back Pressure

Forwarding Technology: Supports 4 types of forwarding mode, store and forward, modify cut-through, pure converter and converter mode with auto negotiation. This feature is selected by DIP-switch.

Link Lose Forward: Supports Bi-directional Link Loss Forwarding function.

TX Auto Sensing/Forced: RJ-45 port supports auto-negotiation and forced mode – 10Mbps/Half Duplex.

Packet Length: 64~1600Bytes @ Pure Converter mode.

Forwarding Latency:

- Store and Forward: 250uS
- Modify Cut-Through: 17uS
- Converter : 1.6uS

IEEE 802.3 flow control /back-pressure:

Enabled by DIP Switch.

Event Alarm: Supports port link down and power event alarm relay output, controlled by DIP switch.

Digital Output: Dry Relay Output with 1A @24V DC ability

Interface

Ethernet copper port: 1 10/100TX ports with Auto MDI/MDI-X, Auto Negotiation.

Fiber port:

1 100Mbps Fiber port, SC or ST (optional).

JetCon 2301-m: 2KM (Max.)

- Wave-length: 1310nm
- Min TX Power:-19dBm
- Max TX Power:-14dBm
- Min RX Sensitivity:-14dBm
- Max RX Sensitivity:-31dBm
- Link budget:12dBm

JetCon 2301-s : 30KM (Max.)

- Wave-length:1310nm
- Max TX Power:-8dBm
- Min TX Power:-15dBm
- Max RX Sensitivity:-34dBm
- Min RX Sensitivity:-8dBm
- Link budget: 19dBm

Ethernet Copper Cable:

- RJ-45 Ethernet port : 100 Meters
- 10Base-T: 2-pairs UTP/STP Cat-3,4 TIA/EIA 568-B cable
- 100Base-TX : 2/4 pairs UTP/STP Cat.5 TIA/EIA 568-B cable

Specification

Diagnostic LEDs:

System Power (Green on) : Power 1 , 2

Relay Alarm: Active (Red)

Link Loss Forwarding : Far end fault event occurred (Red on)

Op. Mode: Convert (Green on) (Controlled by DIP Switch 4)

Fiber Ethernet Port: Link/Activity (Green on/Blinking), Full Duplex/Collision (Yellow on/Yellow Blinking)

Ethernet Port: Link/Activity (Green on/Blinking), Full Duplex/Collision (Yellow On/ Yellow Blinking)

DIP Switch:

DIP Switch 1: LLF Enable/Disable, default disable (DIP 1 off)

DIP Switch 2: TX port Auto-Negotiation (OFF)/10H (ON), default disable (DIP 2 off)

DIP Switch 3 & 4: Forwarding Mode Selection, default store & forward mode (DIP 3,4 off)

DIP Switch 5: Power Alarm, default disable (DIP 5 off)

DIP Switch 6: Port Alarm, default disable (DIP 6 off)

DIP Switch 7: Flow Control, default enable (DIP 7 off)

Power Connector: Removable Terminal Block

Digital Output: Removable Terminal Block

Power Requirements

Power Supply:

DC 10~60V with polarity reverses correction.

Supports Positive/Negative power system

System power 5 Watts / DC 48V

Mechanical

System Installation: DIN Rail installation

Enclosure protection: Ingress Protection code - 30

Dimensions: 99 (D) x55(W)x 120(H), unit:mm

Weight: To Be Update.

Environmental

Operating Temperature:

-25~ 70°C (JetCon 2310-w -40~ 70°C)

Operating Humidity: 5% ~ 95% (non-condensing)

Storage Temperature: -40 ~ 70°C

Storage Humidity: 0%~ 95% non-condensing

Regulatory Approvals

EMI: CE/EN 55022 class A, FCC Class A,

Compliance with EN 50155 EMI

EN 61000-3-2:2006, EN 61000-3-3, EN 61000-6-2

EMS: CE/ EN 55024, EN 61000-6-4,

Compliance with EN 50155 EMS

IEC 61000-4-2,IEC61000-4-3, IEC61000-4-4,IEC61000-4-5,

IEC61000-4-6, IEC61000-4-8

Safety: Hi-pot Testing – AC 1.5KV

Shock: IEC 60068-2-27

Vibration: IEC 60068-2-6

Free fall: IEC 60068-2-32

Ordering Information

JetCon 2301-m Industrial Fast Ethernet to Fiber Media Converter, SC, Multi-mode / 2KM

JetCon 2301-s Industrial Fast Ethernet to Fiber Media Converter, SC, Single-mode / 30KM

Includes:

- JetCon 2301-m / 2310-s
- Quick Installation Guide