Industrial Optical Bypass Switch

JetCon 1900

The JetCon 1900 Optical Bypass Switch is an ideal solution for optical-node failure in a daisy-chain or other ring network infrastructures. In the traditional optical network topology, the optical path breaks that may cause the node system crash or node power-down. With relay bypass, node is instead simply bypassed in the event of a failure, and the rest of the network is unaffected. The JetCon 1900 Optical Bypass Switch prevents and save the communication from the dangerous of node-crash. It is commonly used in some of major optical network, like as railway communication system, factory automation, power substation where node failure is not allowed.

Heavy Industry | **EN50121-4** | **ITS** | **-40~75°C** | **1310nm 1550nm**

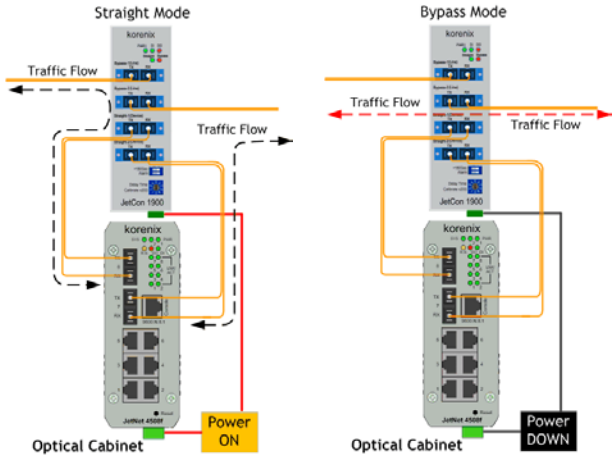
Feature

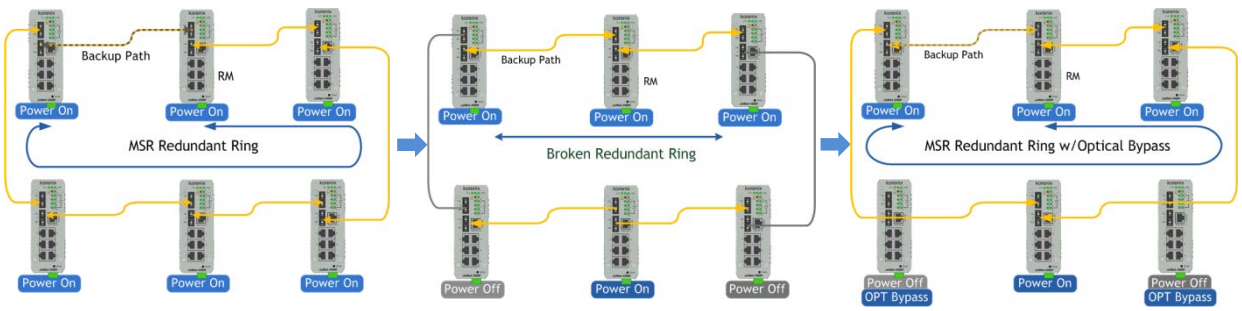
- Rescue Optical Communication Crisis from Node-Down
- Supports 1310nm, 1550nm optical wavelength communication
- Ethernet Fiber, Telecom Fiber Communication
- Single-mode optical fiber cable
- Smart Node Recovery Time Delay
- Multi-Event Alarm Output
- Watch-Dog Embedded
- Isolated Redundant Power System
- Higher Level EMS Protection
- Heavy Industrial EMC
- Compliance with EN50121-4 EMC, NEMA TS2 Environment
- Railway Road Side , Substation, Intelligent Traffic Control

Recovers Communication From Power Failure

JetCon 1900 supports the function of optical path straight/bypass mode for daisy-chain or other optical ring networks. It offers a simple mechanism to switch both of upload and down load fiber path when a power system failure occurred, and a path restores when power back. It offers a simple way to reduce the risk of optical network fragmentation which is caused by the power system.

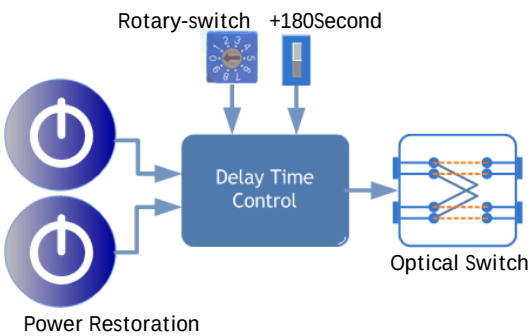
Optical bypass function recovers a node down (power off) for a ring topology.





Smart Restoration Delay Timer

The function of optical switch recovery time delay ensures the connecting device's operational system is performing well from the power recovery, and not launch any unstable signals to backbone during the booting. The count-down recovery timer supports 0~360 Sec, and can be configured by Rotary-switch and DIP-switch.



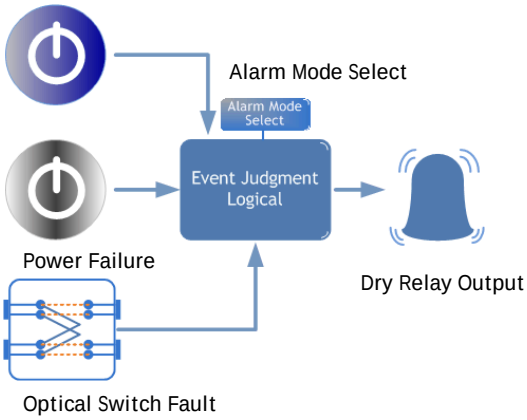
Wide Ranges of Optical Communication

Dual Lenses – 1310nm/1550nm integrated in one. Fully cover Fast Ethernet, Gigabit Ethernet, SONET, SDH and ATM optical communications.

	JetCon 1900 (1310nm)	JetCon 1900 (1550nm)
100Base-FX (1310nm)	Single Mode (30Km, 60Km)	N/A
100Base-FX (1550nm)	N/A	Single Mode (90Km,100Km)
1000Base-X (1310nm)	Single Mode (10Km, 20Km)	N/A
1000Base-X (1550nm)	N/A	Single Mode (40Km, 60Km)
10Gbps	Single Mode (10KM)	Single Mode (40KM,80KM,100KM)
155Mbps SONET/SDH/ATM (1310nm)	Single Mode	Single Mode

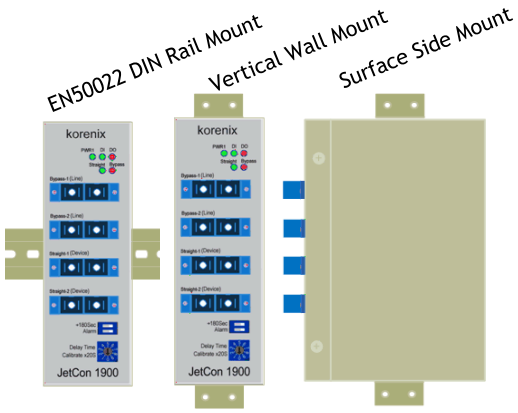
Event Alarm Warns Against Power And Optical Failure

The JetCon 1900 provides an alarm relay output for two event warning modes which are (1) power event mode, and (2) power and optical switch event mode. Both are monitored by the micro controller in real time and warned if a failure is detected. It offers one dry relay output to trigger and enabled external alarm system.



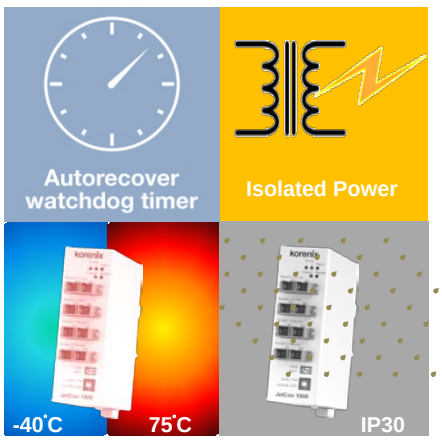
Flexible Mounting Options Save Spaces In Cabinets

The JetCon 1900 can be equipped with EN50022 DIN Rail mounting or wall mounting kits for flat or vertical attached wall mounting to provide better optical cable layout in vertical ways, for example, The wall mounting is designed for a smaller space installation like the road site optical access control cabinet, or any optical communication cabinet.



Highly Reliable In Harsh Environments

The JetCon 1900 is equipped with IP30 steel housing and effective cooling design to operate temperature from -40 to 75˚C. Its isolated redundant power circuit helps to resist the natural lighting noise from the main power system. A build-in watchdog timer checks the real-time status of itself and recovers it from abnormal conditions.



Highest Level EMC For Industrial Applications

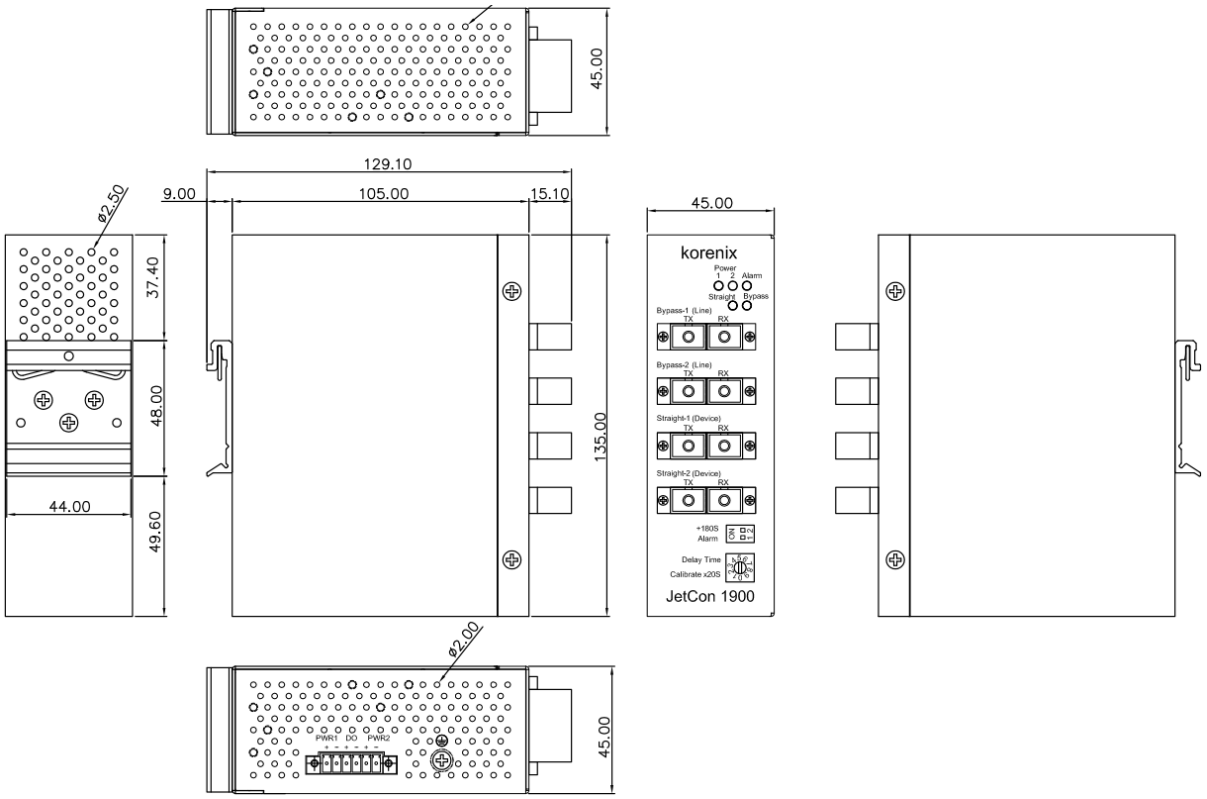
The JetCon 1900 has exceeded the EMC level of heavy industrial, railway EN50121-4, and substation standards by its outstanding protection.

IEC61000	4-2 (ESD)	4-3 (RS)	4-4 (EFT)	4-5 (Surge)	4-6 (CS)	4-8 (PFMF)	4-9 (PMF)
JetCon 1900	**8KV/15KV Level-4**	**20V/m Level-4**	**4KV Level-4**	**4KV Level-4**	**10V Level-3**	**100A/m, 1000A/m Level-5**	**300A Level-4**
Railway Standard	6KV/8KV Level-3	20V/m Level-4	2KV Level-3	2KV/1KV Level-3	10V/m Level-3	30A/m, 300A/m Level-4	300A/m Level-4
Substation Standard	8KV/15KV Level-4	20V/m Level-4	4KV 2KV Level-4	4KV,2KV Level-4	10V/m Level-3	100A/m, 1000A/m Level-5	300A/m Level-4

Specification

Technology	
Optical Wavelength	Either 1310nm (1260nm~1360nm) or 1550nm (1510nm~1610nm)
Optical Fiber Cable	Single Mode fiber, 8/125um or 9/125um
Performance	
Optical Switching time	5ms (Typical), 10ms (Maximum)
Insertion Loss	Bypass insertion loss: 1.3~1.6dB (Max) Straight insertion loss: 1.3~1.6dB (Max)
Restoration Time Delay	0~360 Seconds. Controlled by Rotary switch and DIP-switch “+180”
Watchdog	Hardware based Watchdog timer with 10 seconds down counter
Alarm Output	Alarm DIP-switch off (default): monitor power event Alarm DIP-switch on: monitor power and internal optical lens event Alarm Carry ability: DC30V/1A
Hi-Pot	AC 1.5KV – Power and Case
Insulation	500Vdc/60 Seconds, 9999MΩ insulation resistance between power and case
Interface	
Straight Fiber Port	2 Duplex SC Connectors for straight connects to Local Device
Bypass Fiber Port	2 Duplex SC Connectors fro bypass connects to main Line (Backbone)
Power, Relay	6-pin terminal block connector with screws for power and dry relay output
Diagnostic LED	Power Status (Green) x2: On (Power is applying) Alarm (Red): On (Event occurred) Straight (Green): On (Optical straight connects to local device-Normal state) Bypass (Red blinking): On (Optical bypass and connects both of main line from previous and next node-Abnormal state)
Power Requirement	
System Power	Isolated redundant power input with and polarity reverse protection.
Power Input	Typical operating voltage: DC24V, 10~60V variation
Power Consumption	1.2W @ DC24V
Mechanical	
Installation	EN50022 DIN Rail Mounting, Wall mounting kits for Vertical and Side-Surface mount
Case	Steel
Protection	IP30
Dimensions	135mm (H) x 45mm (W) x 105mm (D)
Environment	
Operating Temperature	-40~75°C
Operating Humidity	0~95%, non-condensing
Storage Temperature	-40~80°C
Storage Humidity	0~95%, non-condensing
Approvals	
Emission (EMI)	IEC/EN61000-6-2, FCC Class A, CISPR 16-1-2/2-1/2-3, CISPR 22
Immunity (EMS)	IEC/EN61000-6-4, IEC/EN 61000-4-2/-4-3/-4-4/-4-5/-4-6/-4-8/-4-9

Dimension (Unit = mm)



Ordering Information

JetCon 1900 Industrial Optical Bypass Switch, 1310nm/1550nm wavelength, single mode

- JetCon 1900 x1
- Quick Installation Guide
- DIN Rail kit
- Wall Mounting kit with screws