

TS-FBS-4T-2F

2 Bypass Fiber to 4 UTP 10/100/1000Mbps Managed Industrial Fiber Bypass Switch



Key Features:

- 4 x 10/100/1000Mbps Auto-sensing RJ45 ports
- 2 x 2.5G SFP fiber ports, 2 x Bypass ports
- 4 KV Ethernet surge protection, adapt to a harsh outdoor environment
- Support Auto MDI/MDIX
- Flow control mode: full duplex with IEEE 802.3x standard, half-duplex with Back pressure standard
- IEEE 802.3 10Base-T and IEEE 802.3u 100Base-TX compliant
- A store-and-forward switching mechanism
- Operating environment temperature: -40 ° ~ 85 ° c
- Support cable diagnosis and can locate the fault point
- Support IEEE802.3az EEE (Energy Efficient Ethernet) Management, optimize power consumption
- Support STP, RSTP, MSTP, ITU-T G.8032 Ethernet Protection Ring(EPR)
- Support Qos, transport classification Qos, Cos, bandwidth control (input/output direction), storm suppression ,differentiated services
- Support IEEE802.1q VLAN, VLAN port ,based Mac VLAN, IP subnet VLAN, Protocol VLAN, VLAN convert, MVR
- Support dynamic IEEE802.3ad LACP link aggregation, static link aggregation
- Support IGMP/MLD snooping V1/V2/V3, IGMP filtering/ modulating, IGMP searching
- Support IGMP agent report, MLD snooping
- Safety: based on port and Mac IEEE802.1X, RADIUS, ACL, TACACS+, HTTP/HTTPS, SSL/SSH v2
- Support Cisco® like CLI, Web management, SNMP v1/v2c/v3, Telnet
- Support software upgrade via TFTP and HTTP, firmware redundancy prevents upgrade failing
- Support DHCP client/Relay/Snooping/Snooping option 82/Relay option 82

- Support RMON, MIB II, mirror image, event log, DNS, NTP/SNTP, IEEE802.1ab LLDP
- Support IPV6 Telnet server /ICMP v6, SNMP, HTTP, SSH/SSL, NTP/SNTP,TFTP, QoS, ACL.

Introduction:

TS-FBS-4T-2F is a 10/100/1000 Mbps industrial fiber bypass switch supporting following features

- Wide voltage dual power input
- Web GUI management
- Din rail installation
- FCC and CE certification

And as an indispensable part of optical communication & protection system, the fiber bypass is highly reliable and stable for different optical path needs such as

- Metropolitan area network (MAN)
- Dynamic configuration of add/drop multiplexing
- System monitoring
- Laboratory research and development

Meantime, the fiber pass switch characterizes

- Low Insertion Loss
- Wide Wavelength Range
- Low Channel Crosstalk

Specification:

Product	10/100/1000Mbps Managed Industrial Fiber Bypass
Name	Switch (2F+4TP)
Model No.	TS-FBS-4T-2F
Port	2 x 2.5G SFP port SM: 1310nm/1550nm,20Km ;1490nm/1550nm, 40~120Km; MM: 1310nm, 2Km; 4x10/100/1000M UTP RJ45 (Support MDI/MDIX auto-sensing)
Standard	IEEE 802.3, IEEE802.3U, IEEE802.3ab, IEEE802.3z, IEEE802.1d STP, IEEE802.1w RSTP,IEEE802.1s MSTP, ITU-T G.8023 EPR/Y.1344, IEEE802.1Q, IEEE802.1X, IEEE802.3ad, IEEE802.3x, IEEE802.3af, IEEE802.3at, IEEE802.1ad, IEEE802.1p, IEEE802.1ab, IEEE802.3az
VLAN ID	4096
Jumbo Frame	9.6KB
MAC Address Table	8K
Switching features	Transmission mode: storage and forward System bandwidth: 58Gbps (non-traffic jam)

Network media	10BASE-T: CAT3, CAT4, CAT5 un-shielded twisted pair(≤100m) 100/1000BASE-TX: CAT5 or above shielded twisted pair(≤100m) SFP port, transmission distance: 20Km, 40Km, 60Km, 80Km, 100Km
LEDs	Power, network, fiber, bypass
Power supply	Input voltage: DC 9-52V; No-load power: 5W; Reverse connection: support
Environment	Working Temp: -40°~ 85°C ; Storage Temp: -40°~ 85°C; Working humidity: 10%~90%, non-condensing; Storage humidity: 10%~95%, non-condensing
Industry Standards	EMI : FCC Part 15 Subpart B Class A, EN 55022 Class A EMS : EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 3, EN 61000-4-4 (EFT) Level 3, EN 61000-4-5 (Surge) Level 3, EN 61000-4-6 (CS) Level 3, EN 61000-4-8; Traffic Control : NEMA-TS2; Vibration : IEC 60068-2-6; Freefall : IEC 60068-2-32; Shock : IEC 60068-2-27; Rail Traffic : EN 50121-4
Mechanical information	Shell: Corrugated metal shell; Safety class: IP40; Dimension: 155 x 113x 60mm

Fiber Bypass:

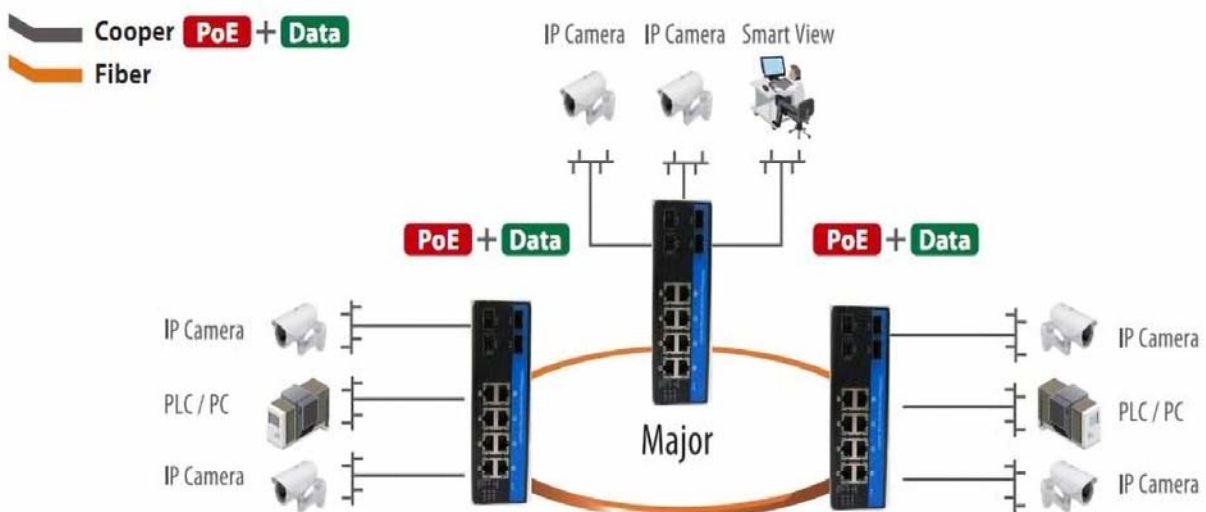
Category	Unit	Specification	
Wavelength range	Nm	850±40/1300±40	1260~1650
Test wavelength	Nm	850/1300	1310/1550
Insert loss	db	850/1300	Typ:0.6 Max:1.0
Return loss	db	MM≥30 SM≥50	
Channel crosstalk	db	MM≥35 SM≥55	
Polarization loss	db	≤0.05	
Wavelength loss	db	≤0.05	
Temperature loss	db	≤0.05	
Repeat-ability	db	≤0.05	
Operating voltage	V	3.3v-5v	
Service life	Times	≥100000000	
Switching time	ms	≤10	

Transmission optical power	mw	≤500
Operating temperature	°C	-20~+70
Storage temperature	°C	-40~+85

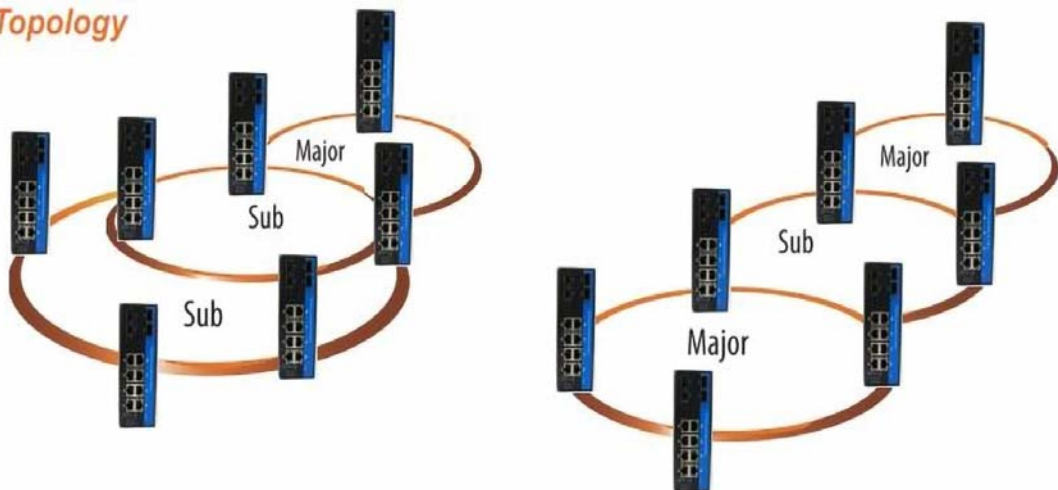
Application:

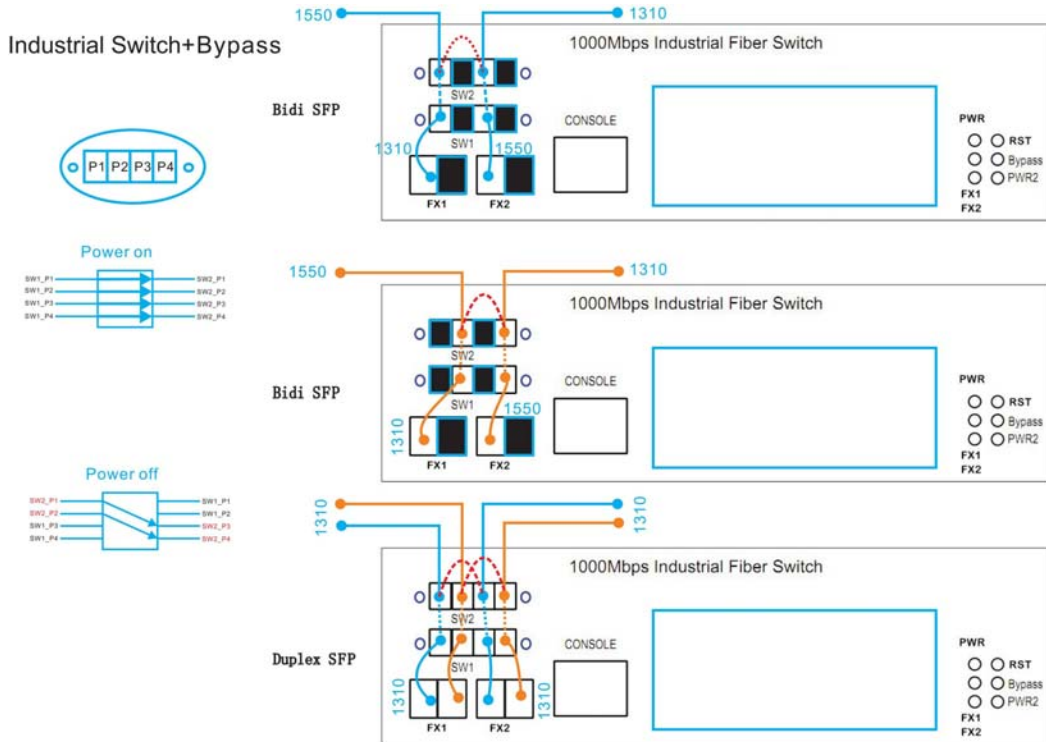
Application & ERPS (Ethernet Ring Protection Switching) topology

Single-Ring Topology



Multi-Ring Topology





Industrial Ethernet Switch+Bypass

