



## FMS-D2S-4P

4\*10/100/1000Base-T + 2\*1G/2.5GBase-X



Picture 1 Layer 2+ Managed Industrial PoE++ Switch

### Description

The FIBRAIN FMS-D2S-4P series are the highly reliable managed industrial PoE switches with 4-port 10/100/1000-T PoE and 2-port 1000/2500Base-X fiber optical interfaces. They comply with IEEE802.3af PoE, IEEE802.3at PoE+, IEEE802.3bt PoE++ standard protocol, the Max power output consumption per port can reach 90W (1-2 ports), which are the idea solution for those high power consumption industrial networking PDs. They support ERPS redundant network and the self-recovery mechanism is less than 20ms on full load which allows you to scheme a reliable Ethernet network by building a redundant ring topology as your back-up solution. FMS-D2S-4P series also support DI/DO/RS485 and robust layer 2 management function, which can fulfill the special needs of industrial automation applications.

FMS-D2S-4P series are the high cost-effective easy-to-use devices, which provide essential industrial Ethernet networking function, including wide range power input 44-57VDC, redundant power design with polarity reverse protection, robust IP40 fan-less housing with Din-rail installation, wide operation temperature from -40°C to 75°C as well as high-level EMI/EMC capability. They are the best choice for heavy industrial factory, transportation, oil & gas, chemical, IP Surveillance and processing automation area where environmental conditions are harsh and critical



## Key features

- 4\*10/100/1000Base-T RJ45 PoE, 2\*1G/2.5GBase-X SFP
- Redundant power 44-57V input with polarity reverse/over-voltage/over-current protection
- Complies with IEEE802.3af PoE, IEEE802.3at PoE+ and IEEE802.3bt PoE++ standard
- Layer 3 features: Support IPv4/IPv6 static routing, DHCP server
- Support Layer 2 management function: VLAN/VLAN Classification/QinQ/STP, RSTP, MSTP/Port Mirroring/ DHCP/ Multicast/ ACL/ IGMP/QoS/LLDP/802.1X/Dying Gasp/SFP DDM/IPV6 management/ PoE management/Web/SNMP/Telnet/TFTP/Web upgrading
- Support G.8032 ERPS protocol, recovery time ≤20ms
- Support 6KV surge protection and ESD: Air-15kV, Contact-8kV Protection
- IP40 fan-less and Din-rail hardware design
- Operation temperature: -40°C ~+75°C

## Specification

<b>Interface</b>	2x fiber port, 4x Cooper RJ45 ports
<b>Ethernet</b>	4x 10/100/1000Base-T RJ45 PoE/PoE+, 1-2 ports support PoE++ 2x 1000/2500Base-X SFP
<b>Management Port</b>	1xRJ45 Console port (115200,8,N,1), 1xUSB 2.0 (optional)
<b>Data &amp; Alarm channel (optional)</b>	1 channel RS485 1 channel DI(digital input) 1 channel DO(digital output)
<b>Standard</b>	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Ethernet IEEE 802.3ab 1000Base-T Ethernet IEEE 802.3z 1000Base-X Ethernet IEEE802.3x Flow Control and Back Pressure IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1Q VLAN ITU-T G.8032 ERPS IEEE 802.1X Port Authentication Network Control IEEE 802.1ab LLDP IEEE 802.3ad LACP IEEE802.3af PoE IEEE802.3at PoE+ IEEE802.3bt PoE++



## Power parameter

Input voltage	44-57VDC(802.3af) 52-57VDC(802.3at/802.3bt) redundant power input
Input current	3A Max
Total power consumption	Full loading without PoE ≤8W PoE PoE power budget ≤240W
Connector	Removable 4-pin terminal
Reverse polarity protection	Support
Over-voltage protection	Support
Over-current protection	Support

## Layer 2 Functions

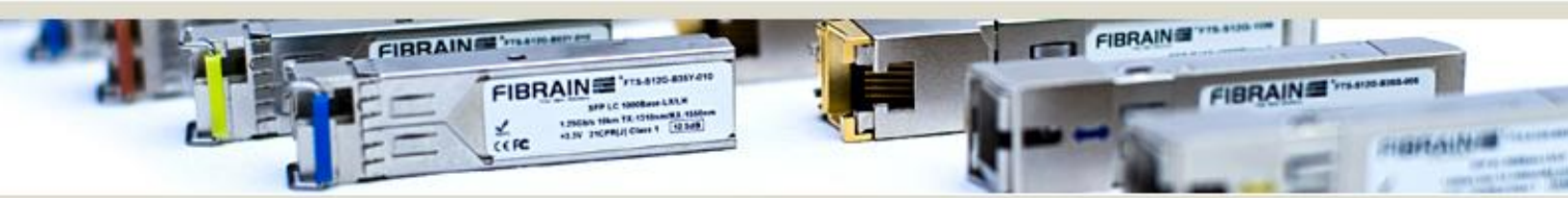
Port aggregation	Support GE port aggregation Support 2.5GE aggregation Support static aggregation Support LACP dynamic aggregation Up to 64 aggregation groups and up to 8 ports per group
Port features	Support IEEE802.3x flow control, Support interface counters, Support port isolation, Port mirroring ( One-to-One, Many-to-One) Support loop detection(Port-based; VLAN-based) Support broadcast storm suppression(broadcast; unknown multicast; unknown unicast)
Mac-address table management	Support static Mac-address management Support dynamic Mac-address Management Support filtering Mac-address Support MAC limit based on port and VLAN Support MAC flapping based on port and VLAN
VLAN	Support access mode Support trunk mode Support hybrid mode
VLAN classification	Mac Based VLAN IP Based VLAN Protocol Based VLAN



GVRP	Normal mode Fixed mode Forbidden mode
QinQ	Port-based QinQ VLAN-based QinQ(VLAN-stacking; VLAN-mapping) Flow-based QinQ
LLDP	LLDP (Link Layer Discovery Protocol)
Ring network protocol	Support IEEE802.1D-STP Support IEEE802.1W-RSTP Support IEEE802.1S-MSTP  Support G.8032 ERPS protocol, single ring, sub Ring and major ring Recovery time ≤20ms

## L2 Multicast and Security functions

IGMP snooping	Support IGMP snooping
Group address	Support group address
ACL	IP Standard ACL MAC extend ACL IP extend ACL IPv6 ACL
Qos	Support QoS Class, remarking Support SP, WRR queue scheduling Ingress port-based rate-limit Egress port-based rate-limit Support policy-based QoS
802.1x	Port access control Mac-address access control RADIUS server
Port-security	Port-security
IP source guard	IP Port/MAC binding
ARP-check	Support ARP-check and ARP packet filtering for illegal users
Access control	Support Telnet/SSH/HTTP/HTTPS user access control



## Management & Maintenance functions

User Management	Support password protection Support user authorization management
SNMP	Supporting SNMP V1/V2C/V3 version
Web Management	Web Management Support HTTP V1.1 Support HTTPS
CLI management	Console/Telnet command line management
RMON	Support RMON(Remote Monitoring) alarm
Firmware upgrade	Firmware upgrade
Fault Detection	Ping/Traceroute Dying gasp Support optical transceiver DDM function
Cable detection	Support copper port cable detection
PoE management	Support 802.3af/802.3at/802.3bt Support PD watchdog Support PoE priority management Support Max PoE power configuration for each port Support alarm waterline configuration Support reserved power configuration
NTP	Network Time Protocol
Syslog/Debug	Syslog/Debug Syslog send to three servers
Configuration import/export	Support FTP/TFTP remote import/export Support USB import/export
Dual partition manage	Support dual partition switching

## Application Protocol Functions

DHCP Snooping	DHCP snooping trust port Support remote-id/circuit-id configuration DHCP option-82
DHCP client	Support DHCP client
Telnet server	Support telnet server
Telnet client	Support telnet client
SSH server	Support SSH server
TACACS	Support TACACS (the terminal access controller





	accesses the control system)
sflow	Support network traffic analysis
TFTP	Support TFTP Client
ARP	ARP table aging
IPv4 / IPv6	static routing

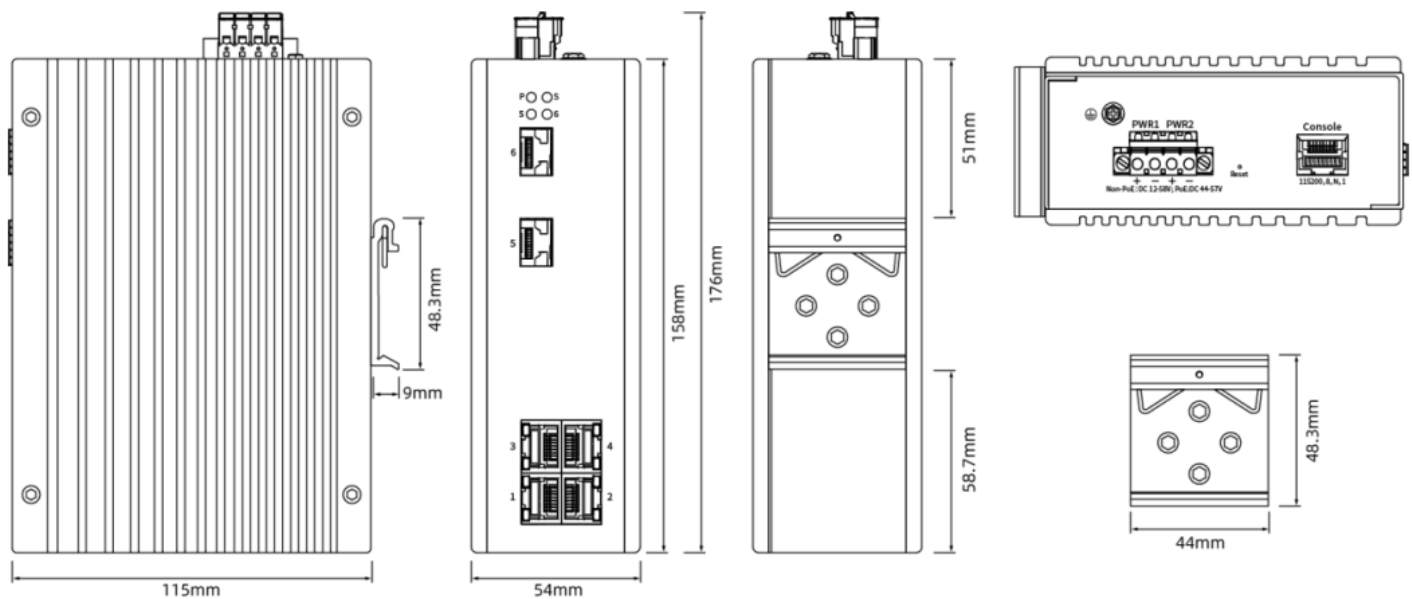
### Other information

Switching Features	
Switching capacity	18Gbps
Packet forwarding	26.7Mpps
MAC address	16k
VLAN	4k
Buffer	12Mbit
Forwarding delay	<5us
Jumbo Frame	Support 10Kbytes
MDX/MIDX	Support
Watchdog	Support
Mechanical structure	
Case protection	IP40
Installation meth	Din-rail
Dimension(W*D*H)mm	54*115*158mm
Weight	1.15 kg
Operating environment	
Operating temperature	-40°C~+75°C
Storage/transportation temperature	-40°C~+85°C
Relative humidity	Operation humidity: 10%-90%RH Storage humidity: 5%-95%RH
Industrial Standard	
EMS	Surge protection of power: IEC 61000-4-5 6KV/4KV(8/20us) Surge protection of Ethernet ports: IEC 61000-4-5 6KV/2KV(10/700us) RS: IEC 61000-4-3 80 MHz-1 GHz: 10 V/m EFT: IEC 61000-4-4 4K/2K CS: IEC 61000-4-6 10V ESD: IEC 61000-4-2 Contact: 8K; Air: 15K



EMI	FCC Part 15B Class
Shock	IEC 60068-2-27
Free fall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Certification	CE/FCC/RoHS

### Structure diagram



### Ordering information

**FMS-D2S-4P** – Layer 2+ Managed industrial PoE switch with 4\*10/100/1000Base-T RJ45 PoE ports and 2\*1000/2500Base-X SFP slots, complies with IEEE802.3af, IEEE802.3at, IEEE802.3bt standard, DC44-57V input, redundant dual power supply, Din-rail installation. Operation temperature: -40°C~+75°C