FMS-D2S-16P

16*10/100/1000Base-T + 2*1G/2.5GBase-X

Picture 1 Layer 2+ Managed Industrial PoE Switch

Description

The FIBRAIN FMS-D2S-16P is the highly reliable layer 2+ managed industrial PoE switch with 16-port 10/100/1000-T PoE and 2-port 1G/2.5GBase-X SFP slots. It complies with IEEE802.3af, IEEE802.3at standard PoE protocol, the Max power consumption can reach 30W (PoE+) per port. It supports 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. It also supports Layer 3 IPv4/IPv6 static routing features and powerful Layer 2 management and secure function, which all making them ideal for large-scale industrial networks.

FMS-D2S-16P is also a high cost-effective easy-to-use device, which provides essential industrial Ethernet networking function, including wide range power input 44-57VDC, redundant power design with polarity reverse/over-voltage/over-current 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. It is the best choice for heavy industrial factory, transportation, oil & gas, chemical, IP Surveillance and processing automation area where environmental conditions are harsh and crucial.

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Key features

- 16*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+ 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

Interface	2x fiber port, 16x Cooper RJ45 ports
Ethernet	16x 10/100/1000Base-T RJ45 PoE, 2x 1000/2500Base-X SFP
Management Port	1xRJ45 Console port (115200,8,N,1)
Alarm port	One digital output for relay alarm, alarm relay current carry ability: 1A@24VDC
Standard	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+

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Power parameter

Input voltage	44-57VDC(802.3af) 52-57VDC(802.3at/802.3bt) redundant power input
Input current	5.8A Max
Total power consumption	Full loading without PoE ≤15W PoE PoE power budget ≤240W
Connector	Removable 6-pin terminal block
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

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GVRP	Normal mode Fixed mode Forbidden mode
QinQ	Port-based QinQ VLAN-based QinQ 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

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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
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)

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sflow	Support network traffic analysis
ARP	ARP table aging
TFTP	Support TFTP Client
IPv4 / IPv6	static routing

Other information

Switching Features	
Switching capacity	42Gbps
Packet forwarding	62.5Mpps
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	1.55 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

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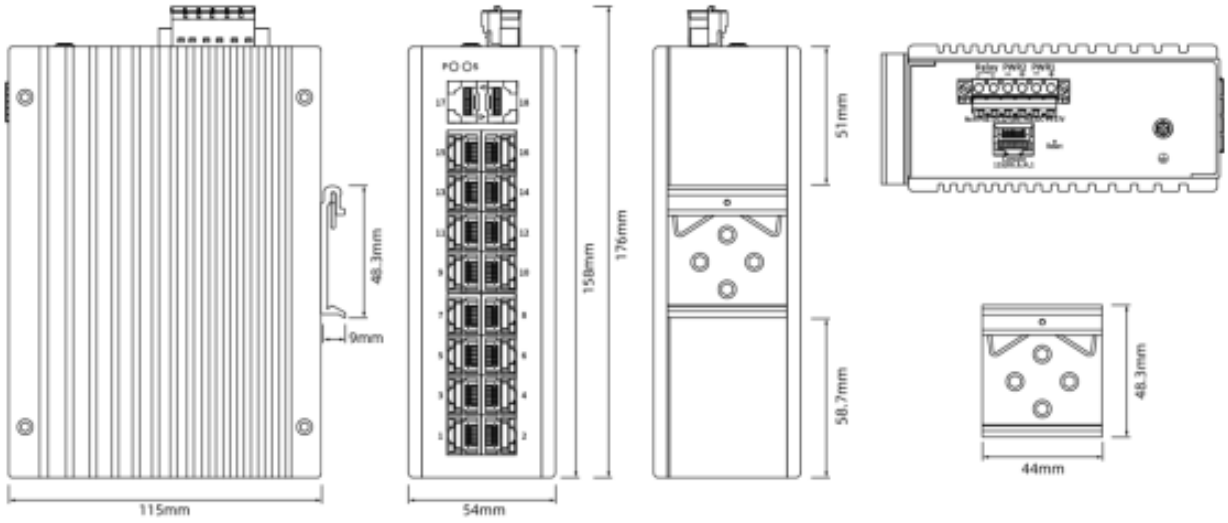
Shock	IEC 60068-2-27
Free fall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Certification	CE/FCC/RoHS

Structure diagram



Ordering information

FMS-D2S-16P – Layer 2+ Managed industrial PoE switch with 16*10/100/1000Base-T RJ45 PoE ports and 2*1G/2.5GBase-X SFP slots, complies with IEEE802.3af, IEEE802.3at standard, DC44-57V input, redundant dual power supply, Din-rail installation. Operation temperature: -40°C～+75°

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