

FLC-2028GH-4XF-T-X6SB6 | 28 Port Industrial L2+ Managed Gigabit POE ++ Switch



FEATURES

- 24*10/100/1000Base-T RJ45 PoE++ and 4*1G/2.5G/10GBase-X SFP+ port
- IEEE802.3at PoE+ and IEEE802.3bt PoE++ standard
- Full L2 and light L3 features. Support G.8032 ERPS.
- Support DI/DO/RS485 and USB one key configuration & upgrading
- Support 6KV surge protection; ESD: Air-15KV, Contact-8KV Protection
- IP40 Rackmount housing design; Operating temperature -40~75 degree C

DESCRIPTION

FLC-2028GH-4XF-T-X6SB6 is an industrial grade managed PoE++ switch with 24-port 10/100/1000-T PoE++, 4-port 1G/2.5G/10GBase-X SFP+. It complies with IEEE802.3at PoE+ and IEEE802.3bt PoE++ standard, the max power output consumption for Port 1- Port2 can reach 90W, which is the ideal solution for those higher power consumption industrial networking PDs. It is a L2+ managed PoE++ switch. It supports ERPS redundant network and the self-recovery mechanism 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. IPv4/IPv6 static routing, DHCP server, DI/DO/RS485, robust Layer 2 management and secure functions can help users expand their networks quickly and efficiently.

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SPECIFICATIONS

Interface	Fiber ports	Copper RJ45 ports
	4	24 (Port 1 to 2 support PoE++)
Ethernet	24*10/100/1000Base-T RJ45 PoE++ 4*1G/2.5G/10GBase-X SFP+	
Size of RAM	512MB	
Size of Flash	512MB	
Management port	1*RJ45 Console port (115200,8,N,1) 1*USB 2.0	
Data & Alarm Channel (Removable 8 pin terminal block)	Vout: VO+, VO—	5V output (0.2A MAX)
	1 channel RS485: A, B	Serial server: Modbus protocol transparent transmission Network Side: TCP protocol supports client and server mode Serial Port Side: Supports RTU communication mode and serial port transmission parameter settings
	1 channel digital input: DI+, DI-	Status "1": 12V-30V Status "0": -30V~3V Max input current: 8 mA
	1 channel digital output	Normally open, Normally closed, Pulse 2A@30V DC, 0.3A@125V AC
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 IEEE 802.3ae 10Gigabit 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	
POE Standard	IEEE802.3af PoE IEEE802.3at PoE+ IEEE802.3bt PoE++	

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LED Indicators		
P (Power indicator)	Off: the device is power off or failed	On: the device power on is normal
S (System status indicator)	Blinking: device initialization	On: device on normal operation
USB (USB status indicator) Green	Off: USB flash drive not insert or not detected by device	
	On: USB flash drive is detected by device	
	Blinking: device is reading and writing data from USB flash drive	
ALM (Fault status indicator)	Off: Device on normal working state	On: Fault alarm
1-24 (Copper ports indicators) Green	Off: ports link down	
	On: ports link up	
	Blinking: data on TX/RX	
1-24 (PoE status indicators) Yellow	Off: PoE Off	
	On: PoE On	
25-28 (Fiber ports indicators) Green	Off: ports link down	
	On: ports link up	
	Blinking: data on TX/RX	
Power parameter		
Input voltage	44-57VDC (IEEE802.3af)	
	52-57VDC (IEEE802.3at/802.3bt) redundant power input	
Input current	9A Max	
Total power consumption	Full loading without PoE≤20W PoE power budget ≤ 370W	
Connector	Removable 2*2pin terminal block	
Reverse polarity protection	Support	
Over-current protection	Support	

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Layer 2 switching	
Port aggregation	Support GE port aggregation
	Support 2.5GE aggregation
	Support 10GE 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)
	broadcast storm suppression (broadcast; unknown multicast; unknown unicast)
VLAN	IEEE802.1Q tagged VLAN
	Mac based VLAN, IP based VLAN, Protocol based VLAN, Voice VLAN, specially divide VLAN for user voice data flow; Private VLAN, divide a VLAN broadcast domain into multiple subdomains to form a double-layer VLAN structure
	VLAN range: 1-4094
	access mode/trunk mode/hybrid mode
Mac-address table management	Static Mac-address and dynamic Mac-address Management
	Support filtering Mac-address
	Support MAC limit based on port and VLAN
	Support MAC flapping based on port and VLAN
16K Mac-address table size	

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GVRP	Normal mode
	Fixed mode
	Forbidden mode
QinQ	Port-based QinQ
	VLAN-based QinQ
	VLAN mapping
	Flow-based QinQ
LLDP	Link Layer Discovery Protocol
	Med
SPAN	Number of Sessions: 7
	Many-to-one
RSPAN	Remote Switch Port Analyzer
MSTP	802.1D STP
	802.1W RSTP
	802.1S MSTP
	BPDU Guard
	Number of Single Ring Device Connections: 20
ERPS G.8032	Major ring
	Sub ring
	Recovery time $\leq 20\text{ms}$
	Number of Single Ring Device Connections: No limit
QoS	QoS Class, Remarking
	Support SP, WRR Queue Scheduling
	Ingress Port-based Rate-limit
	Egress Port-based Rate-limit
	Egress port-queue shaper
	Policy-based QoS
	Port Queue Numbers: 8
DHCPv4 Snooping	DHCP snooping trust port
	DHCP snooping option-82
	DHCP snooping circuit-id and remote-id customized

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L2 Multicast	
IGMP	IGMP v1 , v2, v3
IGMP Snooping	Internet Group Management Protocol Snooping
	Fast Leave
	Multicast Table Size: 1K
PIM-SM	Protocol Independent Multicast-Sparse Mode
Security features	
ACL	IP Standard ACL
	IP Extended ACL
	MAC extend ACL
	IPv6 ACL
	Time Range
	ACL apply on VLAN
802.1x	ACL entries, include input and output
	Port access control
	Mac-address access control
Port-security	RADIUS server
IP source guard	Port-security
ARP-check	IP Source Guard, Port-based IP/Mac Binding Access
DAI	Support ARP-check and ARP packet filtering for illegal users
Anti-gateway ARP Spoofing	Dynamic ARP Inspection
Ddos	Prevent Gateway ARP Spoofing
Access control	Ddos attack protection
AAA	Support Telnet/SSH/HTTP/HTTPS user access control
	RADIUS authentication access switch
	TACACS authentication access switch
Reliability	
Loop Detect	Authorization
EFM	Loop detect, based on port or VLAN
Management & Maintenance functions	
Dual Stack	The Ethernet in the first mile, 802.3ah
System Log Management	IPv4 and IPv6 Dual Stack Management
	Syslog Level 7 to 0
	Corresponding Debug/Info/Notice/Warning/ Err/ Critical/ Alert
Support connecting up to 3 Servers	
For IPv4 and IPv6	

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User Management	Password protection, support MD5/SHA256/SHA512 algorithm
	Local Management of User Privilege
	Remote authorization by RADIUS or TARCAS
	Enable privilege protection
	User password complexity requirements
	User login fail protection
	User Privilege Level 0 to 15
Login Service Management	Up to 8 users online simultaneously
	Access control based on IPv4 or IPv6 ACL
Firmware Management	Firmware upgraded by WEB
	Firmware upgraded by CLI
	Dual partition
Web Management	Web Management
	Support HTTP V1.1
	Support HTTPS
	For IPv4 and IPv6
CLI management	Console/Telnet command line management
Fault Detection	Ping/Traceroute, For IPv4 and IPv6
	Dying gasp
	Optical transceiver DDM
	One click fault information collection
	Cable detection
DNS	Domain Name System
NTP	Network Time Protocol, For IPv4 and IPv6
	Support domain name configuration
Configuration Import /Export	FTP/TFTP based remote configuration import and export
sFlow	Sampled flow
SNMP	Version SNMPV2C/V3
MQTT	Message Queuing Telemetry Transport
RMON	Support RMON (Remote Monitoring) alarm
POE Management	IEEE802.3af/802.3at/802.3bt, PD watchdog, PoE priority management, Max PoE power configuration for each port, alarm threshold configuration, reserved power configuration, PoE schedule, POE legacy mode
Dual partition management	Support dual partition switching

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SPECIFICATIONS

Application Protocol Functions

Telnet server	Support telnet server for IPv4 and IPv6
Telnet client	Support telnet client for IPv4 and IPv6
SCP (Secure Copy Protocol)	SCP client/server for IPv4 and IPv6
SFTP	sftp client/server for IPv4 and IPv6
SSH server	Support login based on user password-SSH2, support IPv4, IPv6 Support public key-based login
TACACS	Support TACACS (the terminal access controller accesses the control system)
TFTP	Support TFTP Client

Layer 3 features

Static Route	Support VLAN interface and route port
	IPv4 static routing table entry configuration
	ARP dynamic learning and static configuration
	IPv6 static routing table entry configuration
	Neighbor discovery and static configuration
	Routing prefix table size 4k for IPv4, for IPv6 divide by 4
DHCPv4 Client	Dynamic host configuration protocol for IPv4
DHCPv6 Client	Dynamic host configuration protocol for IPv6
DHCPv4 Relay	DHCP Relay for IPv4
DHCPv4 Server	DHCP Server for IPv4

Switching features

Switching capacity	128Gbps
Packet forwarding rate	190.4Mpps
MAC address table	16K
VLAN	4K
Buffer	12Mbit
Forwarding delay	<5us
Jumbo Frame	Support 10Kbytes
MDX/MIDX	Support
Watchdog	Support

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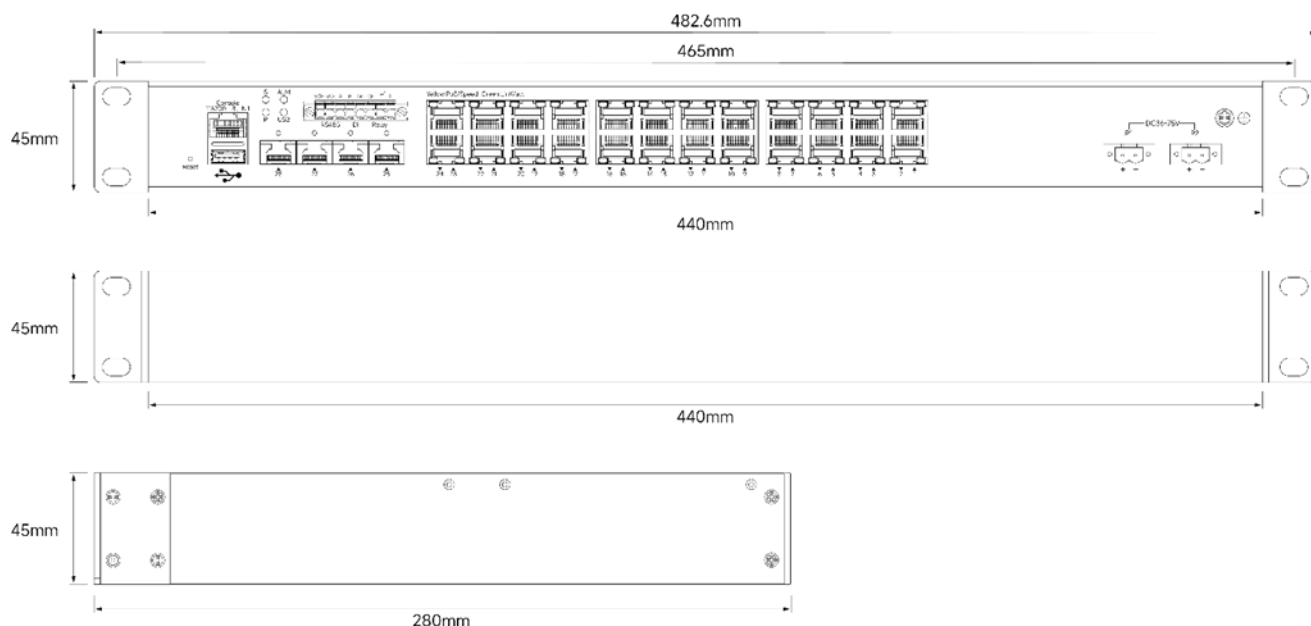
SPECIFICATIONS

Mechanical structure	
Case protection	IP40
Installation method	Rack-Mount
Dimension(W*D*H)mm	440*45*280mm
Weight	5.3 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 A
Shock	IEC 60068-2-27
Free fall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Certification	CE/RoHS/REACH/FCC
MTBF	> 200,000 hours
Warranty	5 years

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DIMENSIONS

Unit: mm



ORDERING INFORMATION

Model name	Description
FLC-2028GH-4XF-T-X6SB6	24-port 10/100/1000 Base-T RJ45 PoE++ 90W ports 4-port 1G/2.5G/10G Base-X SFP slots 44~57VDC redundant power input IP40 Din-rail, IEEE802.3at/bt