

# EKI-8528-4XF / EKI-8528-4XFL

## Industrial L3/L2 Full Gigabit Modular with 4x10G SFP+ Managed Ethernet Switch



### Features

- IEC 61850-3 Edition 2 certified for reliable substation performance
- 3 x 8 Gigabit ports hot-swappable module slots + 4 x 10G SFP+ ports
- VRRP, RIPv1/v2, OSPFv2/v3, PIM and NAT supported (EKI-8528-4XF only)
- TSN and 1588v2(PTP) supported
- IEEE C37.238 power profiles supported
- Redundancy: X-Ring Pro (< 20ms @250units), X-Chain
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- Wide operating temperature range of -40~85°C
- Dual power module slot options for 110/220V<sub>AC</sub>/V<sub>DC</sub> or 24/48V<sub>DC</sub> input
- IEC 62439-3 Clause 4 (PRP) and Clause 5 (HSR) compliant
- Industrial Cybersecurity Certified: IEC 62443-4-1

### Introduction

EKI-8528 series is a standard 19" rackmount Layer 3 and 2 modular managed switch which provides up to 24 Gigabit ports and 4x10Gigabit uplink solution, it is designed for medium and large Industrial networking environment, as a distribution level L3 switch, it supports RIPv1/v2, OSPFv2/v3, VRRP routing protocols, PIM multiple routing feature and provides 4.5K routing table size for data exchange among multiple network nodes.

Users can choose different Ethernet modules (RJ45 or SFP) and Power modules(24/48V<sub>DC</sub> or 110/220V<sub>AC</sub>/V<sub>DC</sub>) for bringing high flexibility to fulfil various kinds of industrial scenario, such as power substation and trackside signaling which are connecting the wide area of networking devices.

### Specifications

#### Interface

- Ethernet port 3 x 8 port module slots\*
- Console port RJ45 (RS-232)
- Relay output 2-pin Terminal Block
- Power Connection 2 x Power supply module slots\*
- USB port Type A

\* Please refer to the accessory list for details on the interface and power modules.

#### LED Display

- System LEDs PWR1, PWR2, SYS, Alarm
- Port LED Link Speed, link/ Act

#### Switch Properties

- DRAM 256MB
- Flash 128MB
- Switching capacity 128 Gbps
- Forwarding rate 95 Mpps
- Max. IGMP Group 1024
- Max static VLANs 256
- VLAN ID range 1-4094
- MAC table 32K
- Jumbo frame 10KB
- Packet Buffer 32Mbits
- Max Priority Queues 8

#### Physical

- Enclosure Metal shell and die-casting
- Protection Class IP 30
- Installation 1U 19" Rackmount
- Dimensions(WxHxD) 438 x 44 x 363.5mm (17.24" x 1.73" x 14.31")
- Weight 5.5 kg

#### Environment

- Operating Temperature -40 to 85°C with full 28xGigabit port operation  
-40 to 75°C with 24xGigabit + 4x10G SFP+ port operation
- Storage Temperature -40 ~ 85°C (-40 ~ 185°F)
- Ambient Relative Humidity 5 ~ 95% (non-condensing)

#### Power

- System Power Consumption 75 Watts(Max)
- Input Voltage High Voltage module: 110/220 V<sub>AC</sub>/V<sub>DC</sub>  
Low Voltage module: 24/48 V<sub>DC</sub>
- Over current Protection Supported
- Reverse Polarity Protection Supported

\* Please refer to accessory list for detail on the power modules.

#### Switch Standards

- IEEE 802.3 for 10BaseT
- IEEE 802.3u for 100BaseT(X) and 100BaseFX
- IEEE 802.3ab for 1000BaseT(X)
- IEEE 802.3z for 1000BaseSX/LX/LHX/ZX
- IEEE802.3ae for 10GBase over Fiber
- IEEE 802.3x for flow control
- IEEE 802.1D-2004 for Spanning Tree Protocol
- IEEE 802.1w for Rapid Spanning Tree Protocol
- IEEE 802.1s for Multiple Spanning Tree Protocol
- IEEE 802.1p for Class of Service
- IEEE 802.1Q for VLAN Tagging
- IEEE 802.1X for authentication
- IEEE 802.3ad for Port Trunk with LACP

#### Certification

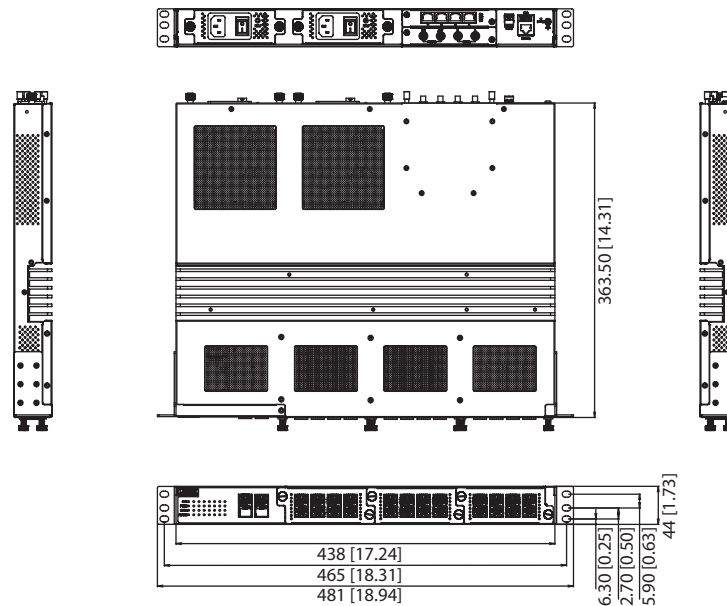
- Safety EN62368
- EMI CISPR 22, 32, FCC Part 15B Class A
- EMS EN61000-4-2 (ESD); EN61000-4-3 (RS); EN61000-4-4 (EFT); EN61000-4-5 (Surge); EN61000-4-6 (CS); EN61000-4-6(CS); EN-61000-4-8 (PFMF)
- Shock IEC60068-2-27
- Freefall IEC60068-2-32
- Vibration IEC60068-2-6
- Substation IEC61850-3, IEEE1613
- Railway EN50121-4
- Cybersecurity IEC 62443-4-1

#### L2 Features

- Link Aggregate Static Trunk, 802.3ad LACP
- VLAN 802.1Q Tag-based, 802.1v Protocol-based VLAN, 802.1ad VLAN stacking, GVRP, GMRP, MAC/IP subnet/Private/Voice VLAN
- Port Mirroring Per port, Multi-source port
- IP Multicast IGMP Snooping v1/v2/v3, MLD Snooping
- Redundancy IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP

## Dimensions

Unit: mm



### L3 Feature (EKI-8528-4XF only)

- Routing protocol: Static Routing, RIP v1/v2, OSPFv2, VRRPv2, PIM-SM
- Routing Table: IPv4 up to 3K, IPv6 up to 1.5K

### QoS

- Priority Queue: Scheduling WRR (Weighted Round Robin), SP (Strict Priority)
- Class of Service: IEEE 802.1p based CoS, IP TOS, DSCP, Port priority
- Rate Limit: Ingress/Egress Rate limit

### Security

- Loop detection: Port-based detection/ prevention
- Storm Control: Broadcast, Unknown multicast, Unknown unicast
- Port Security: Static MAC, MAC violation notice
- Authentication: 802.1x (Port-Based, MAC-Based), RADIUS, TACACS+
- Account Manager: Multiple Account, 0-15 User Privilege
- IP Security: IP source guard, DHCP snooping, ARP spoofing
- ACL: L2, L3 Access Control List

### Management

- OAM: IEEE802.1ag, Continuity Check, IEEE802.3ah, Link Monitor, Remote Loopback, Dying Gasp, Diagnostic features
- PTP: IEEE1588v2, Boundary/ Transparent Clock
- DHCP: Client, Server, DHCP Relay, Option 82 relay
- Config & Access: IPv4/ IPv6, SNMP v1/v2c/v3, WEB GUI, Telnet, RMON, SSH 2.0, SSL(TLSv1)
- Upgrade/ Backup: Standard MIB, Private MIB
- Others: TFTP, HTTP, Dual firmware image

### Power Substation



- IEC 61850: GOOSE QoS, C37.238 Power Profile

### TSN



- Standardized Real-Time Ethernet: Time Sensitive Networks (TSN), IEEE 802.1AS, IEEE 802.1Qci, IEEE 802.1CB, IEEE 802.1Qbv, IEEE 802.1Qbu, IEEE 802.3br

## Accessories (Need to be ordered separately)


### Ethernet Modules

	Part Number	Description
	EKI-ME08-8GF-A	Gigabit SFP Module with 8 x 100/1000Base SFP ports
	EKI-ME08-8GT-A	Gigabit Ethernet Module with 8 x 10/100/1000BaseTX ports

### Power Supply Modules

	Part Number	Description
	EKI-MP01-ACO-A	High Voltage Power Supply Input Voltage: 110/220 V <sub>AC</sub> /V <sub>DC</sub> Operating Voltage: 90-264 V <sub>AC</sub> or 88-370 V <sub>DC</sub>
	EKI-MP01-DC-A	Low Voltage Power Supply Input Voltage: 24/48 V <sub>DC</sub> Operating Voltage: 24 to 48 V <sub>DC</sub>

### IIoT Modules

	Part Number	Description
	EKI-MI01-PRP-A	HSR/PRP module with 2 x 100/1000Base SFP ports (for HSR/PRP) and 1 x 10/100/1000Base-TX interlink port

## Ordering Information

Part Number	Software	1000/10G Base SFP+ Ports	100/1000 Base SFP ports	10/100/1000 BaseTX Ports	Note
EKI-8528-4XF-A	Layer 3	4	Up to 24	Up to 24	Ethernet and Power supply module need to be ordered separately.
EKI-8528-4XFL-A	Layer 2				