# EKI-9226G-20FMI EKI-9226G-20FOI

IEC-61850-3 Industrial Rackmount L2 Managed Switch with 48  $V_{\text{DC}}$  IEC-61850-3 Industrial Rackmount L2 Managed Switch with AC/DC



#### Features

- IEC-61850-3 and IEEE1613 certified for Power Energy.
- 20 x Gigabit SFP ports + 6 x Gigabit x RJ-45 ports
- SFP socket for easy and flexible fiber expansion
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), HTTPS, SSH, and SNMPv3
- Redundancy: Gigabit X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D), MSTP
- Dual Power input and 2 relay output
- Wide operating temperature range of -40 ~ 85°C

## Introduction

The EKI-9226G series are designed for power substation automation applications requiring IEC 61850-3 certification. Thanks to its -40 ~ 85°C wide operating temperature, it can operate well in extremely harsh environments. Designed with 20 Gigabit SFP ports and 6 Gigabit RJ-45 ports, these this series of switches provide abundant and flexible connection options. Finally, the EKI-9226G series feature dual power inputs to ensure system stability and 2 relay output for greater user flexibility.

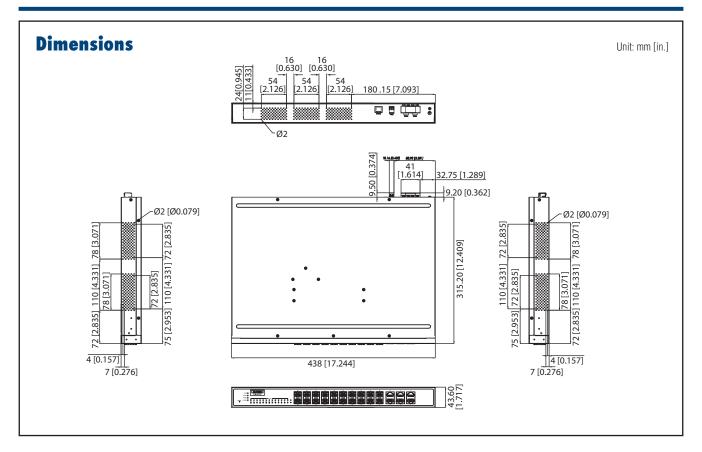
**Drotoction** 

## **Specifications**

#### **Communications**

<ul> <li>cable suggested for Gigabit port) SFP: Up to 110 km (depends on SFP) Gigabit copper: 10/100/1000 Mbps, Auto-Negotiation Gigabit fiber: Up to 1000 Mbps</li> <li>Interface</li> <li>Connectors</li> <li>6 x RJ45 (Ethernet) 20 x SFP ports 3-pin removable screw terminal (power) 4-pin removable screw terminal (relay)</li> <li>LED Indicators</li> <li>10/100TX: Link/activity, duplex/collision Gigabit copper: Link/activity, speed (1000 Mbps) SFP: Link/activity</li> <li>Console</li> <li>RS-232 (RJ45)</li> <li>Mechanism</li> <li>Enclosure</li> <li>P30, metal shell with solid mounting kit</li> <li>Dimensions (W x H x D) 438 x 44 x 315 2 mm</li> <li>Cable suggested for Gigabit port) SFP: Link/activity are speed to compare the state of the st</li></ul>	oommanioationo			
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<ul> <li>Transmission Distance</li> <li>Transmission Distance</li> <li>Ethernet: Up to 100 m (4- wire Cat.5e, Cat.6 RJ45 cable suggested for Gigabit port) SFP: Up to 110 km (depends on SFP)</li> <li>Transmission Speed</li> <li>Gigabit copper: 10/100/1000 Mbps, Auto-Negotiation Gigabit fiber: Up to 1000 Mbps</li> <li>Interface</li> <li>Connectors</li> <li>6 x RJ45 (Ethernet) 20 x SFP ports 3-pin removable screw terminal (power) 4-pin removable screw terminal (relay)</li> <li>LED Indicators</li> <li>10/100TX: Link/activity, duplex/collision Gigabit copper: Link/activity, speed (1000 Mbps) SFP: Link/activity</li> <li>Console</li> <li>RS-232 (RJ45)</li> <li>Mechanism</li> <li>Enclosure</li> <li>IP30, metal shell with solid mounting kit</li> <li>Dimensions (W x H x D) Mounting</li> <li>1U 19" rack mount</li> <li>Power Consumption Power Input</li> <li>Power Input</li> <li>KI-9226G-20FMI: 48V<sub>pc</sub> EKI-9226G-20FOI: 90 - 264V<sub>x/2</sub>/88 - 370V<sub>pc</sub></li> </ul>	- LAN	10/100/1000BASE-TX, optional 100BASE-FX,	Environment	
InterfaceConnectorsGigabit copper: 10/100/1000 Mbps, Auto-Negotiation Gigabit fiber: Up to 1000 MbpsCoperating Humidity5 - 95% (non-condensi 5 - 95% (non-condensi 		1000BASE-SX/LX/LHX/XD/ZX/EZX	<ul> <li>Operating Temperature</li> </ul>	-40 ~ 85°C (-40 ~ 185°F)
SFP: Up to 110 km (depends on SFP) Gigabit copper: 10/100/1000 Mbps, Auto-Negotiation Gigabit fiber: Up to 1000 MbpsStorage Humidity3 = 93.9 (non-condensiInterfaceGigabit copper: 10/100/1000 MbpsStorage Humidity5 = 95% (non-condensiInterface20 x SFP ports 3-pin removable screw terminal (power) 	<ul> <li>Transmission Distance</li> </ul>	Ethernet: Up to 100 m (4- wire Cat.5e, Cat.6 RJ45	<ul> <li>Storage Temperature</li> </ul>	-40 ~ 85°C (-40 ~ 185°F)
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InterfaceCertification• Connectors6 x RJ45 (Ethernet) 20 x SFP ports 3-pin removable screw terminal (power) 4-pin removable screw terminal (relay)• Safety EMSUL 60950 • EMI• LED Indicators10/100TX: Link/activity, duplex/collision Gigabit copper: Link/activity, speed (1000 Mbps) SFP: Link/activity• EMSEN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-6 EN 61000-4-6 EN 61000-4-6• ConsoleRS-232 (RJ45)• ShockIEC 60068-2-27 • Freefall• EnclosureIP30, metal shell with solid mounting kit • Dimensions (W x H x D) 438 x 44 x 315.2 mm • U1 19" rack mount• ShockIEC 60068-2-6 • Power Automation • Railway Application• Power•S5W• ShockIEC 61850-3, IEEE1613 • N50121-4• Power Input55W55W• ShockIEC 61850-3, IEEE1613 • N50121-4			<ul> <li>Storage Humidity</li> </ul>	5 ~ 95% (non-condensing)
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SFP: Link/activity       EN61000-6-2         • Console       RS-232 (RJ45)         Mechanism       EN61000-6-4         • Enclosure       IP30, metal shell with solid mounting kit         • Dimensions (W x H x D)       438 x 44 x 315.2 mm         • Mounting       1U 19" rack mount         • Power       IEC 60068-2-6         • Power Consumption       35W         • Power Input       EKI-9226G-20FMI: 48V <sub>DC</sub> EKI-9226G-20FOI: 90 ~ 264V <sub>AC</sub> /88 ~ 370V <sub>DC</sub>		5 II · , , I · ,		
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Mechanism       IP30, metal shell with solid mounting kit       Freefall       IEC 60068-2-32         Dimensions (W x H x D) 438 x 44 x 315.2 mm       IEC 60068-2-6       Vibration       IEC 60068-2-6         Mounting       1U 19" rack mount       IEC 60068-2-6       Power Automation       IEC 61850-3, IEEE1613         Power       Power Consumption       35W       Railway Application       EKI-9226G-20FMI: 48V <sub>DC</sub> Power Input       EKI-9226G-20FOI: 90 ~ 264V <sub>AC</sub> /88 ~ 370V <sub>DC</sub> S70V <sub>DC</sub> IEC 60068-2-6	<ul> <li>Console</li> </ul>	RS-232 (RJ45)		EN61000-6-4
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<ul> <li>Mounting 1U 19" rack mount</li> <li>Power Automation Railway Application</li> <li>Railway Application</li> <li>EN50121-4</li> <li>Power Consumption 35W</li> <li>Power Input EKI-9226G-20FMI: 48V<sub>DC</sub> EKI-9226G-20FOI: 90 ~ 264V<sub>AC</sub>/88 ~ 370V<sub>DC</sub></li> </ul>		,	<ul> <li>Vibration</li> </ul>	IEC 60068-2-6
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Power Input         EKI-9226G-20FMI: 48Vpc           EKI-9226G-20FOI: 90 ~ 264VAc/88 ~ 370Vpc	Power			
EKI-9226G-20F0I: 90 ~ 264V <sub>AC</sub> /88 ~ 370V <sub>DC</sub>	Power Consumption	35W		
Fault Output     2 relay outputs				
	<ul> <li>Fault Output</li> </ul>	2 relay outputs		

### EKI-9226G-20FMI EKI-9226G-20F0I



#### **L2 Features**

<ul> <li>L2 MAC Address</li> <li>Jumbo Frame</li> <li>VLAN Group</li> <li>VLAN</li> </ul>	8K 9 KB 4093 (VLAN ID 1~4093) Mac-based VLAN, protocol-based VLAN, IP subnet-based VLAN, port-based VLAN, GVRP
<ul> <li>Port Mirroring</li> </ul>	Per port, multi-source port
<ul> <li>IP Multicast</li> </ul>	IGMP snooping v1/v2/v3, MLD snooping, IGMP immediate leave
<ul> <li>Storm Control</li> </ul>	Broadcast, multicast, unknown unicast
<ul> <li>Spanning Tree</li> </ul>	IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro
QoS	
<ul> <li>Priority Queue Scheduling</li> </ul>	WRR, SP
<ul> <li>Class of Service</li> </ul>	IEEE 802.1p-based CoS, IP TOS, DSCP-based CoS
<ul> <li>Rate Limiting</li> </ul>	Egress rate limit, ingress rate limit
<ul> <li>Link Aggregation</li> </ul>	IEEE 802.3ad dynamic port trunking, static port trunking
Security	
<ul> <li>Port Security</li> </ul>	Static, dynamic
<ul> <li>Authentication</li> </ul>	802.1x (port-based), RADIUS, TACACS+
ACL	550 rules

IP Source Guard

#### Management

- DHCP
- AccessSecurity Access

NTP

Software Upgrade

- private MIB
  - SSH 2.0, SSL
  - TFTP, HTTP, dual image

Client, server, relay, option 66/67

NTP client

### **Ordering Information**

- EKI-9226G-20FMI-AE
- EKI-9226G-20F0I-AE
- Industrial Rackmount L2 Managed Switch with 48 V<sub>DC</sub> Industrial Rackmount L2 Managed Switch with

SNMP v1/v2c/v3, WEB, Telnet, RMON, standard MIB,

 $90 \sim 264 V_{AC}/88 \sim 370 V_{DC}$ 

Advanced Security

## Note: For SFP copper type, only 1000Mbps supported.