# EKI-7708G-4FP
# EKI-7708G-4FPI

**4G+4G SFP Port Gigabit Managed Redundant Industrial PoE Switch**

## Features

- 4 x Gigabit Ethernet ports + 4 x SFP ports
- Support 4 x IEEE 802.3at/af PoE ports for PD demands
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D)
- IXM function for fast deployment
- Security Pack with 802.1X, ACL, RADIUS, TACACS+, MAB Authentication, SNMPv3, HTTPS, SSH, and SFTP
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- Supports NMS for easy and visualized to monitor and manage network remotely
- Dual 48 $V_{DC}$ power input and 1 x relay output

## Introduction

The EKI-7708G-4FP/4FPI support 4 Gigabit IEEE 802.3 af/at PoE ports and 4 SFP (mini-GBIC) ports. These switches can provide up to 30 W per port to fulfill high-power-consumption powered device requirements. They are embedded with Advantech's IXM function, which can benefit users with fast deployment while saving a substantial amount on engineering time and costs. The EKI-7708G series also support NMS to help IT managers with networking maintenance and failure prevention. Finally, the series are equipped with X-Ring Pro, which can achieve ultra-high-speed recovery times of <20 ms, thus ensuring network stability. The EKI-7708G-4FPI in particular also features a wide operating temperature of -40 ~ 75°C and NEMA TS2 rating, making it ideal for use in traffic applications. The EKI-7708G-4FP/4FPI meet the EN50121-4 European railway standard requirements for emissions and railway platform/trackside deployment.

## Specifications

### Interfaces / Communications

| | |
|---|---|
| **I/O Port** | 4 x 10/100/1000BASE-T/TX RJ-45 |
| | 4 x SFP (mini-GBIC) port |
| | Auto-Negotiation, Full/Half Duplex Mode |
| | Auto MDI/MDI-X Connection |
| **Standards** | IEEE 802.3 for 10BaseT |
| | IEEE 802.3u for 100BaseT(X)/FX |
| | IEEE 802.3ab 1000BaseT(X) |
| | IEEE 802.3z for 1000BaseSX/LX/LHX/ZX |
| | IEEE 802.3x for Flow Control |
| **PoE** | Port 1 ~ Port 4: IEEE 802.3at/af |
| **Console Port** | RS-232 (RJ45) |
| **Power Connector** | 6-pin screw Terminal Block (including relay) |

### Physical

| | |
|---|---|
| **Enclosure** | Metal Shell |
| **Protection Class** | IP 30 |
| **Installation** | DIN-Rail, Wall-mount |
| **Dimensions (W x H x D)** | 74 x 152 x 105 mm (2.91" x 5.98" x 4.13") |

### LED Indicators

| | |
|---|---|
| **System LED** | PWR1, PWR2, SYS, Alarm and R.M. |
| **Port LED** | Link / Speed / Activity / PoE |

### Environment

| | |
|---|---|
| **Operating Temperature** | -40 ~ 75°C (-40 ~ 167°F) (EKI-7708G-4FPI) |
| | -10 ~ 60°C (-40 ~ 140°F) (EKI-7708G-4FP) |
| **Storage Temperature** | -40 ~ 85°C (-40 ~ 185°F) |
| **Ambient Relative Humidity** | 5 ~ 95% (non-condensing) |
| **Overload Current Protection** | Present |
| **Reverse Polarity Protection** | Present |
| **MTBF** | 910,074 hours |

### Power

| | |
|---|---|
| **Power Consumption** | 12.1W @ 48$V_{DC}$ (System) |
| **Power Input** | 48 $V_{DC}$ (46 to 57 $V_{DC}$) |
| | 53 -57 $V_{DC}$ is recommended for 802.3at redundant dual power input |
| **Power Budget** | 120W |
| **Fault Output** | 1 Relay Output |

### Certification

| | |
|---|---|
| **Safety** | UL 61010-2-201 |
| **EMI** | CE, CISPR 32, FCC Part 15B Class A |
| **EMS** | IEC 61000-4-2 |
| | IEC 61000-4-3 |
| | IEC 61000-4-4 |
| | IEC 61000-4-5 |
| | IEC 61000-4-6 |
| | IEC 61000-4-8 |
| | IEC 61000-4-11 |
| **EMC** | EN 61000-6-2 |
| | EN 61000-6-4 |
| **Shock** | IEC 60068-2-27 |
| **Freefall** | IEC 60068-2-32 |
| **Vibration** | IEC 60068-2-6 |
| **Traffic control** | NEMA TS-2 |
| **Railway Trackside** | EN 50121-4 |

### Switch Properties

| | |
|---|---|
| **Switch Capacity** | 16Gbps |
| **Transmission Rate** | 11.9Mpps |
| **MAC Table Size** | 8K |
| **Jumbo Frame** | 1,0240 Bytes |
| **Packet Buffer Size** | 4.1Mb |
| **Max. IGMP Group** | 256 |
| **Max. VLAN Group** | 256 (VLAN ID 1 ~ 4094) |

**EKI-7708G-4FP/4FPI**

## Dimensions

Unit: mm [inch]
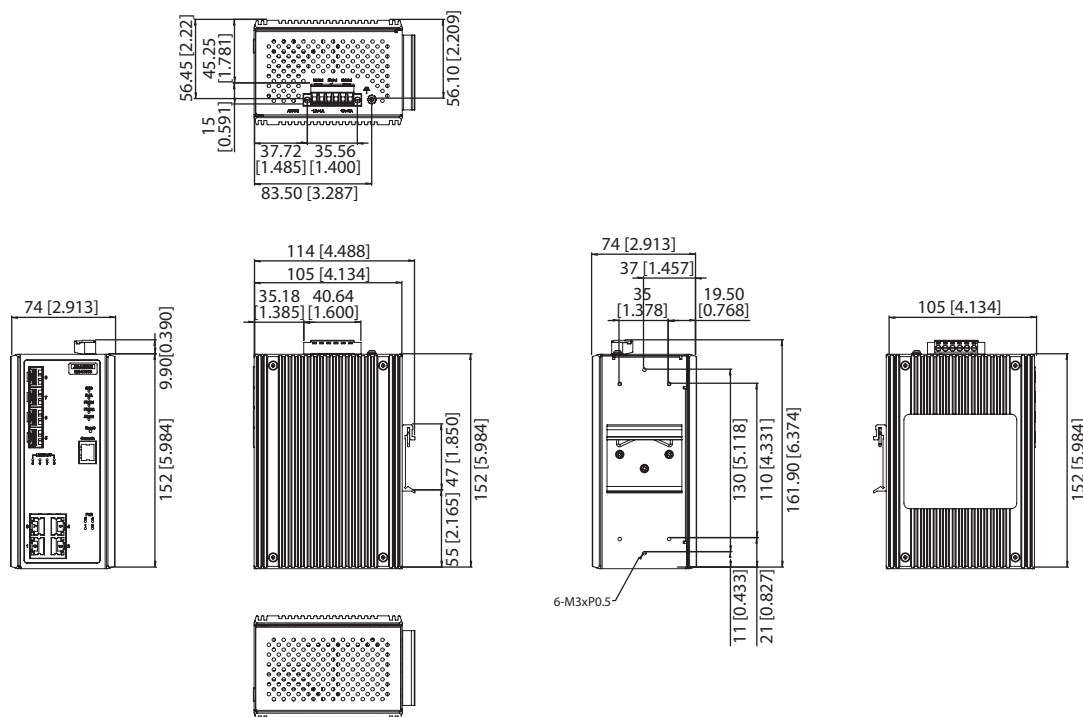


**Panel Cut-out Dimensions (W x H x D): 74 x 152 x 105 mm (2.913 x 5.98 x 4.134 inch)**

## L2 Features

- **VLAN Arrange** — 802.1Q Tag-based VLAN, 802.1ad QinQ VLAN Stacking
- **Port Mirroring** — 1 to 1, N to 1
  Max. Mirror Session: 4
- **RSPAN** — Remote Switched Port Analysis
- **GARP** — GVRP, GMRP
- **IP Multicast** — IGMP Snooping v1/v2/v3, MLD Snooping, IGMP Immediate leave
- **Storm Control** — Broadcast, Multicast, Unknown unicast
- **LLDP** — 802.1ab LLDP, LLDP-MED
- **Industrial Protocol** — Modbus/TCP
- **Redundancy** — IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro, with ultra high-speed recovery time less than 20ms, ERPS(G.8032)

## QoS

- **Priority Queue Scheduling** — WRR (Weighted Round Robin), SP (Strict Scheduling Priority) Hybrid Priority, Max. Priority Queues: 8
- **Class of Service** — IEEE 802.1p Based CoS, IP TOS, DSCP based CoS
- **Rate Limiting** — Ingress Rate limit, Egress Rate limit
- **Link Aggregation** — IEEE 802.3ad Dynamic Port Trunking, Static Port Trunking

## Security

- **Port Security** — Static/Dynamic MAC, Max. Learning Limit, MAC Violation Notice
- **802.1X** — Port-based/MAC-based Authentication (MD5/PEAP/TLS/TTLS Encryption)
- **MAB** — MAC Authentication Bypass
- **Authentication** — RADIUS, TACAS+
- **IP Security** — IP Source Guard, DHCP Snooping, ARP Spoofing Prevention
- **ACL** — Access Control List (IP-ACL, MAC-ACL) Max. ACL Entries: 128

## Management

- **PoE** — PoE system settings, port settings and status
- **DHCP** — Client, Server, Option66/67/82, DHCP Relay
- **Access** — SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB-II, Private MIB, Ethernet-Like MIB, RMON MIB (Group 1, 2, 3, 9)
- **Security Access** — SSH2.0, SSL
- **Software Upgrade** — TFTP, SFTP, HTTP, Dual Image
- **NTP** — SNTP client

## Ordering Information

- **EKI-7708G-4FPI-AE** — 4GE + 4G SFP Port Managed PoE Ethernet Switch w/ Wide Temp.
- **EKI-7708G-4FP-AE** — 4GE + 4G SFP Port Managed PoE Ethernet Switch

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