## Industrial Wireless Product Selection Guide

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<tr>
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**Managed Redundant Industrial Ethernet Switches**

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To view all of Advantech's Industrial Ethernet Solutions, please visit www.advantech.com/products.
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<td>FCC</td>
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*Note: Transmit Output Power & Receive Sensitivity are specified on data sheet.*
# Industrial Ethernet Product Selection Guide

## EN50155 Ethernet Switches

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<td>EN50155 IP67 8-port M12 + 2-port Fiber Optic Managed Ethernet Switch with Wide Temperature</td>
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## Managed Ethernet Switches

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**Page**: 9-20, 9-21, 9-22, 9-23, 9-24, 9-25
## Managed Ethernet Switches

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# Industrial Ethernet Product Selection Guide

## Unmanaged Ethernet Switches

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### Selection Guide

#### Model Name
- **EKI-2525PA**: 5-port Industrial PoE Switch with 24/48 Vdc Power Input
- **EKI-2528PAI**: 8-port Industrial PoE Switch with 24/48 Vdc Power Input and Wide Temperature
- **EKI-2701HPI**: Industrial PoE+ Injector with Wide Temperature
- **EKI-2701PSI**: Industrial PoE Splitter with Wide Temperature

#### Description
- **Ports Number**: 5, 8, 2, 2
- **10/100Base-T (X)**: 1, 4, -, -
- **100BaseFX**: -, -, -, -
- **10/100/1000Base-T (X)**: -, -, 1, 1
- **1000Base-SX/LX/LHX/XD/ZX/EZX**: -, -, -, -
- **PoE (10/100 Mbps)**: 4, 4, 1 (10/100/1000 Mbps), 1 (10/100/1000 Mbps)
- **M12 Connector (10/100 Mbps)**: -, -, -, -
- **DI/DO**: -, -, -, -
- **Console**: -, -, -, -

#### Interface
- **Redundancy**: -, -, -, -
- **Diagnostics**: -, -, -, -
- **VLAN**: -, -, -, -
- **Configuration**: -, -, -, -
- **SNMP**: -, -, -, -
- **Security**: -, -, -, -
- **Traffic Control**: -, -, -, -
- **2 x Unregulated 100 – 240 Vac**: -, -, -, -
- **Relay Output**: V, V, V, -
- **DIN-rail Mount**: V, V, V, V
- **Wall Mount**: V, V, V, V
- **Rack Mount**: -, -, -, -
- **IP30**: V, V, V, V
- **ESD (Ethernet)**: V, V, V, V
- **Surge (EFT for power)**: V, V, V, V
- **Power Reverse**: V, V, V, V
- **-10 ~ 60°C (14 ~ 140°F)**: V, -, -, -
- **-40 ~ 75°C (-40 ~ 167°F)**: -, V, V, V
- **-40 ~ 85°C (-40 ~ 185°F)**: -, -, -, -
- **CE**: V, V, V, V
- **FCC**: V, V, V, V
- **UL/cUL 60950-1**: V, V, V, V
- **Class 1, Division 2**: -, -, -, -
- **UL 508**: -, -, -, -

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### Media Converters

#### Model Name

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<th>EKI-2541M/S</th>
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<td>Wall Mount</td>
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<td>Rack Mount</td>
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Introduction

EKI-6311GN is a feature rich wireless AP/CPE which provides a reliable wireless connectivity for industrial environments. The PoE injector enhances flexibility in deployment of this AP/CPE even where the DC power supply is hard to fulfill. As an 802.11n compliant device, EKI-6311GN provides 3 times higher data rates than legacy 802.11g devices. With the support of STP, WMM and IGMP snooping protocols, EKI-6311GN effectively improves the reliability of wireless connectivity, especially in applications that need high reliability and high throughput data transmission. To secure wireless connections, EKI-6311GN implements the latest encryption technologies including WPA2/WPA/802.1x for powerful security authentication.

Specifications

Standard Support

- **Wireless**
  - IEEE 802.11b/g/n
  - IEEE 802.3u MDI / MDIX 10/100 Fast Ethernet
  - IEEE 802.11b/g wireless LAN interface

- **Ethernet**
  - IEEE 802.11n wireless LAN standard
  - Passive 12 V PoE, max. distance: 20 meters

- **Certifications**
  - US FCC Part 15 Class B & C & E
  - Europe ETSI 300 328, ETSI 301 489-1&17, EN 60950 compliant and CE Mark

- **Data Rates**
  - 802.11b: 11, 5.5, 2, 1 Mbps, auto-fallback
  - 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps, auto-fallback

- **IEEE 802.11n:**
  - 6, 6.5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32 MHz

Physical Specifications

- **Power**
  - DC 12 V / 1.0A, AC Adapter 100 V ~ 240 V
- **Dimensions (W x H x D)**
  - 60 x 165 x 34 mm (2.36" x 6.50" x 1.34")
- **Mounting**
  - DIN-rail, Pole
- **Weight**
  - 0.5 Kg

Environment

- **Operating Temperature**
  - Non Heater: -20 ~ 70°C (-4 ~ 158°F)
  - Heater: -20 ~ 60°C (-4 ~ 140°F)
- **Storage Temperature**
  - -30 ~ 80°C (-22 ~ 176°F)
- **Humidity**
  - 10% ~ 95% non-condensing

Interface Operation Modes

- **Access Point (AP) / Customer Premise Equipment (CPE)**

Antenna

- **Antenna Configuration**
  - 1x1 (1 Tx, 1 Rx)
- **Default configuration**
  - Embedded 8 dBi directional antenna (Vertical-Pol)
- **Reserved N-type Connectors**
  - Switchable by software
- **Equipped N-to-RSMA adapter and 5dBi dipole antenna for indoor AP applications.**

Other Features

- **Telnet, FTP, SNMP, Password Changes, Firmware updates, Configuration Files**
- **Radio on/off, WMM/Regatta Mode, Output Power Control, Fragmentation Length, Beacon Interval**
- **RTS/CTS threshold, DTIM Interval**

Modulation Techniques

- **IEEE 802.11n**
  - OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
- **IEEE 802.11b**
  - DSSS (DBPSK, DQPSK, CCK)
- **IEEE 802.11g**
  - OFDM (BPSK, QPSK, 16-QAM, 64-QAM)

Channel Support

- **IEEE 802.11b/g/gn**
  - HT20
  - FCC: CH1 ~ CH11; ETSI: CH1 ~ CH13
- **IEEE 802.11n**
  - HT40
  - FCC: CH3 ~ CH9, ETSI: CH3 ~ CH11

Wireless Transmission Rates

- **Transmitted Power**
  - 802.11b: 26 dBm
  - 802.11g: 26 dBm @ 6 Mbps, 24 dBm @ 54 Mbps
  - 802.11n: HT20: 26 dBm @ MCS0, 22 dBm @ MCS7
  - 802.11n: HT40: 26 dBm @ MCS0, 21 dBm @ MCS7

Receiver Sensitivity

- **802.11b Sensitivity**
  - -93 dBm @ 1 Mbps
  - -88 dBm @ 11 Mbps

Ordering Information

- **EKI-6311GN**
  - 802.11 b/g/n Wireless Access Point/CPE (US)
- **EKI-6311GN-EU**
  - 802.11 b/g/n Wireless Access Point/CPE (EU)
Introduction
EKI-6331AN is a feature rich wireless AP/CPE which provides a reliable 5GHz wireless connectivity for industrial environments. The PoE injector enhances flexibility in deployment of this AP/CPE even where the DC power supply is hard to fulfill. As an 802.11n compliant device, EKI-6331AN provides 3 times higher data rates than legacy 802.11a devices. With MIMO 2 x 2 technology, EKI-6331AN provides both robust wireless connectivity as well as high throughput rate in wireless transmission. With the support of WMM and IGMP snooping protocols, EKI-6331AN effectively improves the reliability of wireless connectivity, especially in applications that need high reliability and high throughput data transmission. To secure wireless connections, EKI-6331AN implements the latest encryption technologies including WPA2/WPA/802.1x for powerful security authentication.

Specifications

Standard Support
- Wireless: IEEE 802.11 a/n
- Ethernet: IEEE 802.3u MDI / MDIX 10/100 Fast Ethernet
- LAN: IEEE 802.11a wireless LAN interface
- Certifications: US FCC Part 15, EN 301 489-1&17, EN 60950 compliant and CE Mark, EN 302 502 (5725-5850 MHz DFS)

Data Rates
- IEEE 802.11a: 54, 48, 36, 24, 18, 12, 9, 6 Mbps, auto-fallback

Physical Specifications
- Power: 15 Vdc @ 0.8A; AC Adapter 100 V ~ 240 V
- Dimensions (W x H x D): 111 x 256 x 48 mm (4.37" x 10.08" x 1.89")
- Mounting: Pole
- Weight: 0.5 Kg

Environment
- Operating Temp.: -20 ~ 70°C (-4 ~ 158°F)
- Storage Temperature: -30 ~ 80°C (-22 ~ 176°F)
- Humidity: 5% ~ 95% non-condensing

Interface Operation Modes
- Access Point (AP) / Customer Premise Equipment (CPE)

Antenna
- Antenna Configuration: 2 x 2 (2T2R)
- Default embedded 14~16 dBi (Dual-polarity)
- Reverse SMA Connectors (configured by software)

Other Features
- Management: Telnet, FTP, SNMP, Web UI
- Security: Open System, Shared Key, 802.1X only, WPA, WPA2, WPA-PSK (TKIP)
- Wireless: Radio on/off, WMM/Regatta Mode, Output Power Control, Fragmentation Length, Beacon Interval, RTS/CTS Threshold, DTIM Interval

Modulation Techniques
- IEEE 802.11n: OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
- IEEE 802.11a: OFDM (BPSK, QPSK, 16-QAM, 64-QAM)

Channel Support
- FCC: 5725-5850 MHz
- CE: 5470-5725 MHz, 5725-5850 MHz

Wireless Transmission Rates
- IEEE 802.11a: 6-24 Mbps: 24 dBm, 54 Mbps: 21 dBm
- IEEE 802.11n: HT20 - MCS0: 23 dBm, MCS15: 20 dBm, HT40 - MCS0: 23 dBm, MCS15: 19 dBm
- Note: bandedge exclusive (Controllable for different country regulations)

Receiver Sensitivity
- IEEE 802.11a: 54 Mbps: -76 dBm
- IEEE 802.11n: HT20 - MCS15: -70 dBm, HT40 - MCS15: -66 dBm

Ordering Information
- EKI-6331AN: IEEE 802.11 a/n Wireless AP/CPE
- EKI-6331AN-EU: IEEE 802.11 a/n Wireless AP/CPE (EU)
**Introduction**

EKI-6340 series are perfect wireless Mesh AP for your outdoor deployment. With self-healing & self-forming capabilities, the wireless network is free from interruption even part of Mesh nodes failed. It’s especially critical to infrastructures where wired solutions are hard to deploy. The ultra-fast roaming seamlessly enables the applications of high-speed mobility. The low latency and high throughput multiple hopping features greatly enables the extension of network coverage. This high throughput Mesh network perfectly covers growing rich data demands such as video security, surveillance and entertainment. Comprehensive security features prevent system from intrusion. IP67 sturdy waterproof enclosure with wide-temperature design enables excellent performances under all harsh outdoor environments.

**Specifications**

**Standard Support**
- Wireless: IEEE 802.11a/b/g/n compliant
- Ethernet: IEEE 802.11, IEEE 802.3/802.3u/802.3ab, IEEE 802.3at PoE, 802.1d, 802.1w, 802.1q, 802.1p
- Data Rates: IEEE 802.11b: 1, 2, 5.5, 11 Mbps, IEEE 802.11a, g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps, IEEE 802.11n: @ 800ns (400ns) GI 20 MHz BW, 1 Nss: 65 (72.2) Mbps maximal, 2 Nss: 130 (144.4) Mbps maximal, 40 MHz BW, 1 Nss: 135 (150) Mbps maximal, 2 Nss: 270 (300) Mbps maximal

**Physical Specifications**
- Power: Dual redundant 12 – 48 Vdc, IEEE 802.3at PoE
- Dimensions (W x H x D): 225 x 242 x 65 (8.86” x 9.53” x 2.56”)
- Weight: 2.25 Kg
- Enclosure: Metal, IP67 protection
- Mounting: Pole, Wall, VESA

**Environment**
- Operating Temperature: -35 – 75°C (-31 – 167°F)
- Storage Temperature: -40 – 85°C (-40 – 185°F)
- Ambient Relative Humidity: 5% – 100% (non-condensing)

**Interface**
- Antenna: N-type female connector
- Power: M12 D-code connector
- LAN: M25 cable gland

**System Operation Mode**
- Bridge/ Router/ Mesh

**Other Features**
- DHCP Client/Server, Static routing table, RIP v1&v2, WMM, Multi-SSID (up to 16x ESSID for each radio), traffic limitation, IEEE 802.11h DFS, Syslog, L2 management utility, HTTP(s), Telnet, SSH, CLI, SNMP, installation utilities.

**Modulation Techniques**
- IEEE 802.11a/n: OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
- IEEE 802.11b: DSSS (DBPSK, DQPSK, CCK)
- IEEE 802.11g/n: OFDM (BPSK, QPSK, 16-QAM, 64-QAM)

**Frequency Range**
- **USA**: 2.400 – 2.483 GHz, 5.725 – 5.825 GHz
- **Europe**: 2.400 – 2.483 GHz, 5.15 – 5.35 GHz, 5.47 – 5.725 GHz
- **China**: 2.400 – 2.483 GHz, 5.725 – 5.85 GHz

Note: radio is capable to be operated within FCC DFS2 band or ETSI/EC DFS band, or other countries which is regulating or is planning to regulate mid -5 GHz band. The usage of mid -5 GHz band is subject to the regulatory approval status.

**Features**
- Highly secured self-healing & self-forming Mesh capability
- Ultra-fast roaming (hand-over switch time ≤ 20 ms)
- High throughput multiple hopping (≥100 Mbps @10 hops)
- Ease of use installation utilities: antenna alignment, distance calculation and site survey tools
- Compliant with IEEE 802.11 a/b/g/n
- Up to 3 radios for Mesh back haul and Access Point
- MIMO 2 x 2, up to 300 Mbps data rate
- Dual 12 – 48 V redundant DC input power
- 802.3 at PoE input
- Gigabit Ethernet support
- WEP, WPA, WPAP2-PSK/EAP (IEEE 802.1X/RADIUS, TKIP and AES)
- IP67 enclosure, wide operating temperature range
- EN50155 compliant
### Transmit Power Settings (Typical Composite Power) Tolerance: +2/-2 dB

<table>
<thead>
<tr>
<th>Data Rate</th>
<th>IEEE Spec (1 Rx dBm)</th>
<th>Typical/Maximum (2 Rx dBm)</th>
<th>Data Rate</th>
<th>IEEE Spec (1 Rx dBm)</th>
<th>Typical/Maximum (2 Rx dBm)</th>
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</thead>
<tbody>
<tr>
<td>802.11a</td>
<td></td>
<td></td>
<td>802.11ah/HT40</td>
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<td>802.11b/HT20</td>
<td>-79</td>
<td>-94/-90</td>
</tr>
<tr>
<td>802.11g</td>
<td></td>
<td></td>
<td>802.11ah/HT20</td>
<td>-81</td>
<td>-94/-90</td>
</tr>
</tbody>
</table>

### Receiver Sensitivity

<table>
<thead>
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<th>IEEE Spec (1 Rx dBm)</th>
<th>Typical/Maximum (2 Rx dBm)</th>
<th>Data Rate</th>
<th>IEEE Spec (1 Rx dBm)</th>
<th>Typical/Maximum (2 Rx dBm)</th>
</tr>
</thead>
<tbody>
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<td></td>
<td>802.11b/HT20</td>
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<td>-94/-90</td>
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<tr>
<td>802.11g</td>
<td></td>
<td></td>
<td>802.11ah/HT20</td>
<td>-81</td>
<td>-94/-90</td>
</tr>
</tbody>
</table>
### EKI-6351 Series

**IEEE 802.11 a/b/g/n**

**Wi-Fi Mesh AP/Station**

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#### Introduction

The EKI-6351 series are perfect wireless AP/stations for your deployment. With self-healing & self-forming capabilities, the wireless network is free from interruption even if part of the Mesh node fails. Ultra-fast roaming seamlessly enables the applications to achieve high-speed mobility. This high throughput Mesh network covers the increasing data demands of applications such as video security, surveillance and entertainment.

Comprehensive security features prevent the system from intrusion whilst the wide operating temperature range enables excellent performances in harsh outdoor environments. EKI-6351B is dual band configurable AP/CPE with Giga Ethernet which enables to perform high throughput rate.

#### Features

**Unique features of EKI-6351 Series:**
- Highly secured self-healing & self-forming Mesh capability
- Ultra-fast roaming (hand-over switch time ≤ 20 ms)
- High throughput multiple hopping (≤ 100 Mbps @ 10 hops)

**Common features:**
- Ease of use installation utilities: antenna alignment, distance calculation and site survey tools
- Compliant with IEEE 802.11a/b/g
- MIMO 2 x 2 11n, up to 300 Mbps data rate
- Dual 2.4 – 48 V redundant DC input power
- 802.3at PoE input
- Gigabit Ethernet support
- WEP, WPA, WPA2-PSK/EAP (IEEE 802.1X/RADIUS, TKIP and AES)
- Wide operating temperature range from -35 to 75°C
- EN50155 compliant

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#### Specifications

**Standard Support**

<table>
<thead>
<tr>
<th>Wireless</th>
<th>IEEE 802.11a/b/g/n compliant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethernet</td>
<td>IEEE 802.11i, IEEE 802.3ab/802.3u, IEEE 802.3at PoE, 802.1d, 802.1q, 802.1p</td>
</tr>
<tr>
<td>Data Rates</td>
<td>802.11b: 1, 2, 5.5, 11 Mbps</td>
</tr>
<tr>
<td></td>
<td>802.11a, g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</td>
</tr>
<tr>
<td></td>
<td>Passive 15 V PoE, max. distance: 20 meters</td>
</tr>
<tr>
<td></td>
<td>IEEE 802.11n: 800ns (400ns) GI</td>
</tr>
<tr>
<td></td>
<td>20 MHz BW</td>
</tr>
<tr>
<td></td>
<td>1 Nss: maximal</td>
</tr>
<tr>
<td></td>
<td>2 Nss: 130 (144.4) Mbps maximal</td>
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<tr>
<td></td>
<td>40 MHz BW</td>
</tr>
<tr>
<td></td>
<td>1 Nss: 135 (150) Mbps maximal</td>
</tr>
<tr>
<td></td>
<td>2 Nss: 270 (300) Mbps maximal</td>
</tr>
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</table>

**Physical Specifications**

<table>
<thead>
<tr>
<th>Power</th>
<th>Dual redundant 12 – 48 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Consumption</td>
<td>Normal operation: Max. 17 W</td>
</tr>
<tr>
<td></td>
<td>Cold start: Max. 13W</td>
</tr>
<tr>
<td>Dimensions (W x H x D)</td>
<td>37 x 140 x 95 mm (1.46&quot; x 5.51&quot; x 3.74&quot;)</td>
</tr>
<tr>
<td>Weight</td>
<td>0.63 Kg</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Metal, IP30 protection</td>
</tr>
<tr>
<td>Mounting</td>
<td>DIN-rail, Wall</td>
</tr>
</tbody>
</table>

**Environment**

| Operating Temperature | -35 ~ 75°C (-31 ~ 167°F) |
| Storage Temperature   | -40 ~ 85°C (-40 ~ 185°F) |
| Ambient Relative Humidity | 5% – 100% (non-condensing) |

**Interface**

<table>
<thead>
<tr>
<th>Antenna</th>
<th>2 x RSMA connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>Terminal block</td>
</tr>
<tr>
<td>LAN</td>
<td>RJ45</td>
</tr>
</tbody>
</table>

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#### System Operation Mode

- EKI-6351-A - Bridge/Router/Mesh
- EKI-6351-B - Bridge/Router
- EKI-6351-C - Bridge/Mesh

#### Other Features

- DHCP Client/Server*, Static routing table*, RIP v1&v2*, WMM, Multi-SSID (up to 16x ESSID for each radio), traffic limitation, IEEE 802.11h DFS, Syslog, L2 management utility, HTTP (s), Telnet, SSH, CLI, SNMP, installation utilities.

#### Modulation Techniques

- IEEE 802.11a/h OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
- IEEE 802.11b DSSS (DBPSK, DQPSK, CCK)
- IEEE 802.11g/h OFDM (BPSK, QPSK, 16-QAM, 64-QAM)

#### Frequency Range

- **USA** 2.400 – 2.483 GHz, 5.15 – 5.25 GHz, 5.725 – 5.825 GHz
- **Europe** 2.400 – 2.483 GHz, 5.15 – 5.35 GHz, 5.47 – 5.725 GHz
- **China** 2.400 – 2.483 GHz, 5.725 – 5.85 GHz

Note: radio is capable to be operated within FCC DFS2 band or ETSI/EC DFS band, or other countries which is regulating or is planning to regulate mid-5 GHz band. The usage of mid-5 GHz band is subject to the regulatory approval status.

#### Certificates

- **EMC** US FCC Part 15 Class B & C, & E, Europe ETSI 301 489-1&17
- **Radio** ETSI 300 328, ETSI 301 893, FCC 15.247
- **Rail Traffic** ENS0155, ENS0121-1/-4
- **Safety** EN 60950
 transmit power settings (typical composite power) tolerance: +2/-2 dB

<table>
<thead>
<tr>
<th>802.11a</th>
<th>802.11b</th>
<th>802.11g</th>
<th>802.11n 2.4GHz/HT20</th>
<th>802.11n 2.4GHz/HT40</th>
<th>802.11n 5GHz/HT20</th>
<th>802.11n 5GHz/HT40</th>
</tr>
</thead>
<tbody>
<tr>
<td>+19 dBm @ 6, 9, 12, 18, 24 Mbps</td>
<td>+19 dBm</td>
<td>+22 dBm @ 6, 9, 12, 18, 24 Mbps</td>
<td>+20 dBm @ MCS 0/8</td>
<td>+20 dBm @ MCS 0/8</td>
<td>+18 dBm @ MCS 0/8</td>
<td>+17 dBm @ MCS 0/8</td>
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<tr>
<td>+18 dBm @ 36 Mbps</td>
<td>-</td>
<td>+21 dBm @ 36 Mbps</td>
<td>+20 dBm @ MCS 1/9</td>
<td>+20 dBm @ MCS 1/9</td>
<td>+18 dBm @ MCS 1/9</td>
<td>+17 dBm @ MCS 1/9</td>
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<tr>
<td>+17 dBm @ 48 Mbps</td>
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<td>+20 dBm @ 48 Mbps</td>
<td>+20 dBm @ MCS 2/10</td>
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<td>+18 dBm @ MCS 4/12</td>
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<td>-</td>
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<td>-</td>
<td>+20 dBm @ MCS 5/13</td>
<td>+19 dBm @ MCS 5/13</td>
<td>+18 dBm @ MCS 5/13</td>
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<td>-</td>
<td>+18 dBm @ MCS 6/14</td>
<td>+17 dBm @ MCS 6/14</td>
<td>+16 dBm @ MCS 6/14</td>
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<td>+16 dBm @ MCS 7/15</td>
<td>+15 dBm @ MCS 7/15</td>
<td>+13 dBm @ MCS 7/15</td>
<td>+12 dBm @ MCS 7/15</td>
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receiver sensitivity

<table>
<thead>
<tr>
<th>Data Rate</th>
<th>IEEE Spec (1 Rx dBm)</th>
<th>Typical/Maximum (2 Rx dBm)</th>
<th>Data Rate</th>
<th>IEEE Spec (1 Rx dBm)</th>
<th>Typical/Maximum (2 Rx dBm)</th>
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<tr>
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<td>802.11g</td>
<td>802.11n HT40</td>
<td>802.11n HT20</td>
<td>802.11n HT40</td>
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<tr>
<td>6M</td>
<td>-80</td>
<td>-93/-89</td>
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<tr>
<td>9M</td>
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<td>MCS1</td>
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<td>12M</td>
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<td>-92/-88</td>
<td>MCS2</td>
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Introduction
EKI-6558TI and EKI-6559TMI are EN50155 certified IP67 wide temperature industrial switches which are especially designed for railway industry and harsh environments. M12 connectors secure highly reliable connectivity for industrial communication applications. EN50155 certification ensures the use of railway application. EKI-6559TMI also provides two additional fiber optic ports to extend communication range. Both EKI-6558TI and EKI-6559TMI provide Advantech’s X-Ring protocol, which enables users to establish a redundant Ethernet network with ultra high-speed recovery (less than 20 ms). They also support advanced network standards to optimize network performance, reduce maintenance cost, and secure network safety.

Specifications

Communications
- **Standard**: IEEE 802.3, 802.3u, 802.3ad, 802.1Q, 802.1X, 802.1p, 802.1Q, 802.1X
- **LAN**: 10/100Base-T(X), 100Base-FX
- **Transmission Speed**: Up to 100 Mbps

Interface
- **Ethernet**: M12, 4-pole D-coded, Female x 8
- **Fiber Optic**: LC type waterproof x 2
- **Console**: M12, 8-pole A-coded, Female x 1

Network Management
- **Configuration**: Web browser, Telnet, Serial console, TFTP, SNMPv1/ v2c/V3, Port Speed/Duplex Configuration
- **VLAN**: IEEE 802.1Q, GVRP, Port-based VLAN
- **Redundancy**: Advantech X-Ring (Recovery time < 20 ms at 250 pcs full loading ring structure), Dual Homing, Couple Ring, 802.1w, RSTP/STP
- **Security**: IP Access security, port security, DHCP Server, Port and IP Binding, 802.1X Port Access Control, SSH/SSL
- **Traffic Control**: IGMP Snooping/Query for multicast group management, Port Trunking, Static/802.3ad LACP Rate limit, and storm control
- **Diagnostics**: Port Mirroring, Real-time traffic statistic, MAC Address Table, SNTP, Syslog, Email Alert, SNMP Trap, RMON

Mechanism
- **Enclosure**: IP67, aluminum shell with solid mounting kits
- **Dimensions (W x H x D)**: 193 x 176 x 62.5 mm (7.59” x 6.93” x 2.46”)
- **Mounting**: Wall

Power
- **Power Consumption**: Max. 8.1 W
- **Power Input**: 12 ~ 48 VDC, redundant dual inputs
- **Power Connector**: M12, 5-pole A-coded, male x 1
- **P-Fail Output**: 1A @ 24 VDC
- **P-Fail Connector**: M12, 8-pole A-coded, Female x 1

Protection
- **Power Reverse**: Present

Environment
- **Operating Temperature**: -40 ~ 75°C (-40 ~ 167°F)
- **Storage Temperature**: -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity**: 5% ~ 95% (non-condensing)
- **Storage Humidity**: 0% ~ 95% (non-condensing)
- **MTBF**: 388,201 hours (EKI-6558TI) / 320,420 hours (EKI-6559TMI)

Certifications
- **Safety**: UL 508
- **EMI**: FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS**: EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8
- **Shock**: IEC 61373
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 61373
- **Railway**: EN50155, EN 50121-3-2, EN 50121-4

Ordering Information
- **EKI-6558TI**: EN50155 8-port M12 Managed Ethernet Switch
- **EKI-6559TMI**: EN50155 8-port M12+ 2-port Fiber Optic Managed Ethernet Switch

EN50155 IP67 8-port M12 Managed Ethernet Switch with Wide Temperature
EN50155 IP67 8-port M12+ 2-port Fiber Optic Managed Ethernet Switch with Wide Temperature
Introduction

EKI-6528TI and EKI-6528TPI are EN50155 certified industrial switches with IP40 protection and wide temperature support designed for railway applications. EKI-6528TPI provides four PoE ports that support IEEE 802.3af and can provide up to 15.4 watts of power per port. M12 connectors ensure highly reliable connectivity for industrial communication applications. With IP40 compact metal housings, these switches are protected against dusty environments and are a good fit for many industrial applications. Under no-power condition, ‘Auto Bypass’ function ensures the Ethernet signal connection through internal circuitry. This feature provides non-stop communication to rolling stocks even no power exists in some of the carriages.

Specifications

**Communications**
- **Standard**
  - IEEE 802.3
  - IEEE 802.3u
  - IEEE 802.3x
  - IEEE 802.3af
- **LAN**
  - 10/100Base-T (X)
- **Transmission Speed**
  - Up to 100 Mbps

**Interface**
- **Ethernet**
  - M12, 4-pole D-coded, Female x 8

**Mechanism**
- **Enclosure**
  - IP40 protected metal shell
- **Dimensions (W x H x D)**
  - 92 x 180 x 42 mm (3.62” x 7.08” x 1.65”)
- **Mounting**
  - DIN-rail, Wall

**Power**
- **Power Consumption**
  - Max. 3.36 W (EKI-6528TI)
  - Max. 72 W (EKI-6528TPI)
- **Power Input**
  - 24 – 48 VDC, redundant dual inputs (for EKI-6528TPI)
  - 12 – 48 VDC, redundant dual inputs (for EKI-6528TI)
- **Power Connector**
  - M12, 5-pole A-coded, male x 1
- **P-Fail Output**
  - 1A @ 24 VDC
- **P-Fail Connector**
  - M12, 5-pole A-coded, Female x 1

**Protection**
- **Power Reverse**
  - Present
- **Overload Current**
  - Present

**Environment**
- **Operating Temperature**
  - -40 – 75°C (-40 – 167°F)
- **Storage Temperature**
  - -40 – 85°C (-40 – 185°F)
- **Operating Humidity**
  - 5 – 95% (non-condensing)
- **Storage Humidity**
  - 0 – 95% (non-condensing)
- **MTBF**
  - 391,307 hours (EKI-6528TI)
  - 348,384 hours (EKI-6528TPI)

**Certifications**
- **Safety**
  - UL 60950-1
- **EMI**
  - FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS**
  - EN 61000-4-2
  - EN 61000-4-3
  - EN 61000-4-4
  - EN 61000-4-5
  - EN 61000-4-6
  - EN 61000-4-8
- **Shock**
  - IEC 61373
- **Freefall**
  - IEC 60068-2-32
- **Vibration**
  - IEC 61373
- **Railway**
  - EN50155, EN 50121-3-2, EN 50121-4

**Ordering Information**
- **EKI-6528TI**
  - EN50155 8-port M12 Unmanaged Ethernet Switch
- **EKI-6528TPI**
  - EN50155 8-port M12 Unmanaged PoE Switch
Introducion

EKI-4668C supports up to 24 x 10/100 Base-TX and four Gigabit combo ports for high speed transmissions and is a multilayered managed Ethernet switch which provides a resilient and redundant architecture with Advantech’s X-Ring technology. EKI-4668C also offers many advanced features like QoS, rate-limiting, IGMP, multicasting support, high performance IP routing and SNMP support to optimize network performance, ease maintenance, secure network safety and improve network operation.

Specifications

Communications
- **Standard**: IEEE 802.3, 802.3u, 802.3x, 802.1D, 802.1w, 802.1p, 802.1Q, Basic-TX, Optional 1000Base-SX/LX/LH/X/2X2/EX
- **LAN**: 10/100/1000Base-T (X), Optional 1000Base-SX/LX/LH/X/2X2/EX
- **Transmission Distance**: Ethernet: Up to 100 m (4- wire Cat.5e), SFP: Up to 110 km (depends on SFP)
- **Transmission Speed**: Gigabit Copper: 10/100/1000 Mbps, Auto-Negotiation. SFP: Up to 1000 Mbps

Interface
- **Connectors**: 24 x 10/100Base-TX, 4 x RJ45/SFP (mini-GBIC) combo ports
- **LED Indicators**: 10/100/1000 T (X): Link/Activity, Duplex/Collision, Gigabit Copper: Link/Activity, Speed, SFP: Link/Activity
- **Console**: RS-232 (RJ45)

Power
- **Power Consumption**: Max. 50 W
- **Power Input**: AC Power: 100 – 240 V, 50/60 Hz

Environment
- **Operating Temperature**: -10 – 55°C (-14 – 131°F)
- **Storage Temperature**: -20 – 70°C (-4 – 158°F)
- **Operating Humidity**: 10 – 95% (non-condensing)
- **Storage Humidity**: 10 – 95% (non-condensing)
- **MTBF**: 438,889 hours

Mechanism
- **Enclosure**: IP30, metal shell with solid mounting kits
- **Dimensions (W x H x D)**: 438 x 44.5 x 270 mm (17.24” x 1.75” x 10.62”)
- **Mounting**: 1U 19” Rack mount

Network Management
- **MAC Address**: 16K
- **IP Routing**: Wire-speed IP routing, RIPV1/V2, OSPF V2, Static routing
- **Configuration**: Web browser, Telnet, Serial console, TFTP, SNMP v1/v2c/v3, OPC (with external SNMP-OPC server), Port Speed/Duplex Configuration
- **VLAN**: IEEE 802.1Q, GVRP, Port-based VLAN
- **Redundancy**: Advantech X-Ring (Recovery time < 100 ms, 802.1w/D/RSTP/STP
- **Security**: IP Access security, port security, DHCP Server, Port and IP Binding, 802.1X Port Access Control
- **Traffic Control**: IGMP Snooping/Query for multicast group management Port Trunking, Static/802.3ad LACP, Rate limit and storm control, IEEE 802.1p QoS CoS/TOS/DSCP priority queuing, WRR queuing, IEEE 802.3x flow control
- **Diagnostics**: Port Mirroring, Real-time traffic statistic, MAC Address Table, SNTP, Syslog, E-Mail Alert, SNMP Trap, RMON

Certifications
- **Safety**: UL 60950-1, CAN/CSA-C22.2 No.60950

Ordering Information
- **EKI-4668C**: 24 FE + 4 Combo Port L3 Managed Ethernet Switch

Accessories
- **1702062680**: Power Cable US Plug 1.8 m
- **1702062685**: Power Cable EU Plug 1.8 m
- **1702031851**: Power Cable UK Plug 1.8 m
- **1702031836**: Power Cable China/Australia Plug 1.8 m
Introduction
EKI-4654R is compliant with the IEC 61850-3 & IEEE 1613 certifications for power automation systems and supports 24 Fast Ethernet ports and 2 x 100Base SFP slots for different SFP modules for various application. EKI-4654R has long range voltage redundancy power input which provides convenient and uninterrupted power supply. EKI-4654R also supports many advanced network standards to optimize performance, ease maintenance issues and secure network safety.

Specifications

Communications
- **Standard**: IEEE 802.3, 802.3u, 802.3z, 802.1D, 802.1w, 802.1p, 802.1Q, 802.1X, 802.3ad
- **LAN**: 10/100Base-TX (X), Optional 1000Base-SX/LX/LH/XD/ZX/ZX
- **Transmission Distance**: Ethernet: Up to 100 m (4-wire Cat.5e), SFP: Up to 110 km (depends on SFP)
- **Transmission Speed**: Ethernet: 10/100 Mbps Auto-Negotiation, Copper: 10/100 Mbps, Auto-Negotiation, Fiber: Up to 1000 Mbps

Interface
- **Connectors**: 24 x 10/100 Base-TX + 2 x SFP (mini-GBIC) ports
- **LED Indicators**: System: Power 1, Power 2, Alarm (Red), R.M, Copper: Link/Activity, Full duplex/collision, SFP: Link/Activity
- **Console**: RS-232 (RJ45)

Network Management
- **Configuration**: Web browser, Telnet, Serial console, TFTP, SNMP v1/v2c/v3, Port Speed/Duplex Configuration
- **VLAN**: IEEE 802.1Q, GVRP, Port-based VLAN
- **Redundancy**: Advantech X-Ring (Recovery time < 20 ms at 250 pcs full loading ring structure, Dual Homing, Couple Ring, 802.1w/D STP/RSTP)
- **Security**: IP Access security, port security, DHCP Server, Port and IP Binding, 802.1X Port Access Control
- **Traffic Control**: IGMP Snooping/Query for multicast group management, Port Trunking, Static 802.3ad LACP Rate limit and storm control
- **Diagnostics**: Port Mirroring, Real-time traffic statistic, MAC Address Table, SNMP, Syslog, E-Mail Alert, SNMP Trap, RMON

Mechanism
- **Enclosure**: IP30, metal shell with solid mounting kits
- **Dimensions (W x H x D)**: 440 x 44 x 280 mm (17.31" x 1.73" x 11.02")
- **Mounting**: 1U 19" Rack mount

Power
- **Power Consumption**: Max. 36 W
- **Power Input**: 2 x 100 ~ 240 VAC/100 ~ 240 VDC (Redundancy)
- **Fault Output**: 1 Relay Output

Protection
- **Power Reverse**: Present
- **Overload Current**: Present

Environment
- **Operating Temperature**: -40 ~ 85°C (-40 ~ 185°F)
- **Storage Temperature**: -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity**: 5 ~ 95% (non-condensing)
- **Storage Humidity**: 0 ~ 95% (non-condensing)
- **MTBF**: 284,409 hours

Certifications
- **Safety**: UL 60950-1, CAN/CSA-C22.2 No.60950
- **EMI**: FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS**: EN 61000-3-2/3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8
- **Shock**: IEC 60068-2-27
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 60068-2-6
- **Substation**: IEC 61850-3, IEC 1613

Ordering Information
- **EKI-4654R**: 24 FE + 2 SFP (Mini-GBIC) Managed Redundant Ethernet Switch

RoHS
COMPLIANT
2002/95/EC
EKI-7758F

4G+4 SFP Gigabit Managed Redundant Industrial Ethernet Switch

Features
- All Gigabit Ethernet ports for 4 Copper and 4 SFP
- SFP sockets for easy and flexible fiber expansion
- Redundancy: Gigabit X-Ring (ultra high-speed recovery time < 20 ms), RSTP/STP (802.1w/1D)
- Management: Web, Telnet, Serial Console, SNMP
- Control: VLAN/GVRP, QoS, IGMP Snooping/Query, LACP, Rate Limit
- Security: IP/MAC and port binding, DHCP Server, IP access list, 802.1X
- Diagnostic: Port statistic, Port Mirroring, RMON, Trap, Email Alert, Syslog
- Dual 12 – 48 VDC power input and 1 relay output

Introduction
EKI-7758F supports 8 Gigabit ports with 4 x Ethernet and 4 x SFP. To create reliability in your network, the EKI-7758F comes equipped with a proprietary redundant network protocol -- X-Ring that was developed by Advantech, which provides users with an easy way to establish a redundant Ethernet network with ultra high-speed recovery time less than 20 ms. Furthermore, EKI-7758F also supports many advanced network standards to optimize network performance, ease maintenance issues, and secure network safety.

Specifications

Communications
- **Standard**
  - IEEE 802.3, 802.3u, 802.3z, 802.1D, 802.1w
- **LAN**
  - 10/100 Base-T (X), Optional 100 Base-FX
- **Transmission Distance**
  - 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)
- **Transmission Speed**
  - Gigabit Copper: 10/100/1000 Mbps, Auto-Negotiation

Interface
- **Connectors**
  - 4 x RJ45 (Ethernet)
  - 4 x SFP (mini-GBIC) ports
- **LED Indicators**
  - 6-pin removable screw terminal (Power & Relay)
  - Gigabit Copper: Link/Activity, Speed
- **Console**
  - RS-232 (RJ45)

Network Management
- **Configuration**
  - Web browser, Telnet, Serial console, TFTP, SNMPv1/v2c, Port Speed/Duplex Configuration
- **VLAN**
  - IEEE 802.1Q, GVRP, Port-based VLAN
- **Redundancy**
  - Advantech X-Ring (Recovery time < 20 ms at 250 pcs full loading ring structure), Dual Homing, Couple Ring, 802.1w/1D RSTP/STP
- **Security**
  - IP Access security, port security, DHCP Server, Port and IP Binding, 802.1X Port Access Control, SSH/SSL
- **Traffic Control**
  - IGMP Snooping/Query for multicast group management Port Trunking, Static/802.3ad LACP
- **Diagnostics**
  - Port Mirroring, Real-time traffic statistic, MAC Address Table, SNTP, Syslog, E-Mail Alert, SNMP Trap, RMON

Mechanism
- **Enclosure**
  - IP30, metal shell with solid mounting kits
- **Mounting**
  - DIN-rail, Wall

Power
- **Power Consumption**
  - Max. 17 W
- **Power Input**
  - 12 – 48 VDC, redundant dual inputs
- **Fault Output**
  - 1 Relay Output

Protection
- **Power Reverse**
  - Present
- **Overload Current**
  - Present

Environment
- **Operating Temperature**
  - -10 – 60°C (14 – 140°F)
- **Storage Temperature**
  - -40 – 85°C (-40 – 185°F)
- **Operating Humidity**
  - 5 – 95% (non-condensing)
- **Storage Humidity**
  - 0 – 95% (non-condensing)
- **MTBF**
  - 289,777 hours

Certifications
- **Safety**
  - UL 60950-1, CAN/CSA-C22.2 No.60950
- **EMI**
  - FCC Part 15 Subpart B Class A
- **EMS**
  - EN 61000-6-2
  - EN 61000-4-4
  - EN 61000-4-5
  - EN 61000-4-6
  - EN 61000-4-8

Ordering Information
- **EKI-7758F**
  - 4G+4 SFP Managed Gigabit Ethernet Switch
Introduction
EKI-7656C supports 16 Fast Ethernet ports and 2 Gigabit combo ports. To create reliability in your network, the EKI-7656C comes equipped with a proprietary redundant network protocol -- X-Ring that was developed by Advantech, which provides users with an easy way to establish a redundant Ethernet network with ultra high-speed recovery time less than 20 ms. Furthermore, EKI-7656C also supports many advanced network standards to optimize network performance, ease maintenance issues, and secure network safety.

Specifications

Communications
- **Standard**
  802.3, 802.3u, 802.3z, 802.1D, 802.1w, 802.1X, 802.3ad, 802.3ab
- **LAN**
  10/100/1000Base-T (X), Optional 100Base-FX, 1000Base-SX/LX/LHX/LX/LX/ZX/EZX
- **Transmission Distance**
  Ethernet: up to 100 m, 4-wire Cat.5e, Cat.6 RJ45 cable suggested for Gigabit port
- **Transmission Speed**
  Ethernet: 10/100 Mbps Auto-Negotiation
  Gigabit Copper: 10/100/1000 Mbps, Auto-Negotiation, SFP: Up to 1000 Mbps

Interface
- **Connectors**
  16 x RJ45 (Ethernet), 2 x RJ45/SFP (mini-GBIC) combo ports
  6-pin removable screw terminal (Power&Relay)
- **LED Indicators**
  System: PWR, PWR1, PWR2, R.M., P-Fail
  Ethernet: Link/Activity, Duplex/Collision
  Gigabit Copper: Link/Activity, Speed (1000 Mbps)
  SFP: Link/Activity
- **Console**
  RS-232 (RJ45)

Network Management
- **Diagnostics**
  Port Mirroring, Real-time traffic statistic, MAC Address Table, SNMP, Syslog, Email Alert, SNMP Trap, RMON
- **VLAN**
  IEEE 802.1Q, GVRP, Port-based VLAN
- **Configuration**
  Web browser, Telnet, Serial console, TFTP
- **Redundancy**
  Advantech X-Ring (Recovery time < 200 ms at 250 ports)
  Dual Homing, Couple Ring, 802.1w/D RSTP/STP
- **Security**
  IP Access security, port security, DHCP Server, Port and IP Binding, 802.1X Port Access Control, SSH/SSL, IGMP Snooping/Query for multicast group management Port Trunking, Static/802.3ad LACP
- **Traffic Control**
  Rate limit and storm control

Mechanism
- **Enclosure**
  IP30, metal shell with solid mounting kits
- **Dimensions (W x H x D)**
  79 x 152 x 105 mm (3.11" x 5.98" x 4.13")
- **Mounting**
  DIN-rail, Wall

Power
- **Power Consumption**
  Max. 10.7 W
- **Power Input**
  12 – 48 VDC, redundant dual inputs
- **Fault Output**
  1 Relay Output

Protection
- **Power Reverse**
  Present
- **Overload Current**
  Present

Environment
- **Operating Temperature**
  -10 ~ 60°C (14 ~ 140°F)
  -40 ~ 75°C (-40 ~ 167°F) (EKI-7656CI)
- **Storage Temperature**
  -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity**
  5 ~ 95% (non-condensing)
- **Storage Humidity**
  0 ~ 95% (non-condensing)
- **MTBF**
  295,000 hours

Certifications
- **Safety**
  UL 60950-1, CAN/CSA-C22.2 No.60950
- **EMI**
  FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS**
  EN 61000-4-2
  EN 61000-4-4
  EN 61000-4-5
  EN 61000-4-6
  EN 61000-4-8
- **Shock**
  IEC 60068-2-27
- **Freefall**
  IEC 60068-2-32
- **Vibration**
  IEC 60068-2-6

Ordering Information
- **EKI-7656C**
  16FE + 2G Combo Port Managed Ethernet Switch
- **EKI-7656CI**
  16FE + 2G Combo Port Managed Ethernet Switch w/ Wide Temp
Introducing EKI-7659C/CI

EKI-7659C supports 8 Fast Ethernet ports and 2 Gigabit combo ports. To create reliability in your network, the EKI-7659C comes equipped with a proprietary redundant network protocol – X-Ring that was developed by Advantech, which provides users with an easy way to establish a redundant Ethernet network with ultra-high-speed recovery time less than 20 ms. Furthermore, EKI-7659C also supports many advanced network standards to optimize network performance, ease maintenance issues, and secure network safety.

Specifications

**Communications**
- **Standard**: IEEE 802.3, 802.3u, 802.3x, 802.1Q, 802.1p, 802.1Q, 802.1x, 802.3ad, 802.1ab
- **LAN**: 10/100/1000Base-T, (X), Optional 10GBase-FX, 1000Base-SX/LX/LH/GX/EX/EXZ
- **Transmission Distance**: Ethernet: Up to 100 m (4 - wire Cat.5e, Cat.6 RJ45 cable suggested for Gigabit port)
- **Transmission Speed**: Ethernet: 10/100 Mbps Auto-Negotiation
- **Gigabit Copper**: 10/100/1000 Mbps, Auto-Negotiation
- **Gigabit Fiber**: Up to 1000 Mbps

**Interface**
- **Connectors**: 8 x RJ45 (Ethernet) 2 x RJ45/SFP (mini-GBIC) combo ports
- **LED Indicators**: 6-pin removable screw terminal (Power & Relay)
- **System**: PWR, PWR1, PWR2, R.M., P-Fail
- **Gigabit Copper**: Link/Activity, Duplex/Collision
- **Gigabit Fiber**: Link/Activity, Speed (1000 Mbps)
- **SFP**: Link/Activity
- **Console**: RS-232 (RJ45)

**Network Management**
- **Configuration**: Web browser, Telnet, Serial console, TFTP, SNMPv1, v2c/v3, Port Speed/Duplex Configuration
- **VLAN**: IEEE 802.1Q, GVRP, Port-based VLAN
- **Redundancy**: Advanced X-Ring (Recovery time < 20 ms at 250 pcs full loading ring structure), Dual Homing, Couple Ring, Advantech X-Ring
- **Security**: IP Access security, port security, DHCP Server, Port and IP Binding, 802.1x Port Access Control, SSH/SSL
- **Traffic Control**: IGMP Snooping/Query for multicast group management, Port Trunking, Static/802.3ad LACP, Rate limit and storm control
- **Diagnostics**: Port Mirroring, Real-time traffic statistic, MAC Address Table, SNMP, Syslog, E-Mail Alert, SNMP Trap, RMON3

**Mechanism**
- **Enclosure**: IP30, metal shell with solid mounting kits
- **Dimensions (W x H x D)**: 79 x 152 x 105 mm (3.11" x 5.98" x 4.13")
- **Mounting**: DIN-rail, Wall

**Power**
- **Power Consumption**: Max. 10.7 W
- **Power Input**: 12 – 48 Vdc, redundant dual inputs
- **Fault Output**: 1 Relay Output

**Protection**
- **Power Reverse**: Present
- **Overload Current**: Present

**Environment**
- **Operating Temperature**: -10 – 60°C (-14 – 140°F)
- **Storage Temperature**: -40 – 85°C (-40 – 185°F)
- **Operating Humidity**: 5 – 95% (non-condensing)
- **Storage Humidity**: 0 – 95% (non-condensing)
- **MTBF**: 284,409 hours

**Certifications**
- **Safety**: UL 60950-1, CAN/CSA-C22.2 No.60950
- **EMI**: FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS**: EN 61000-4-2
- **EN 61000-4-4
- **EN 61000-4-5
- **EN 61000-4-6
- **EN 61000-4-8
- **Iec 60668-2-27
- **Iec 60668-2-32
- **Iec 60668-2-6

**Ordering Information**
- **EKI-7659C**: 8FE + 2G Combo Port Managed Ethernet Switch
- **EKI-7659CI**: 8FE + 2G Combo Port Managed Ethernet Switch w/ Wide Temp

**Specifications**

**Port Mirroring, Real-time traffic statistic, MAC Address Table, SNMP, Syslog, E-Mail Alert, SNMP Trap, RMON3**

**Features**
- 2 Gigabit Copper/SFP combo ports, plus 8 Fast Ethernet ports
- SFP socket for Easy and Flexible Fiber Expansion
- Redundancy: Gigabit X-Ring (ultra high-speed recovery time < 20 ms), RSTP/STP (802.1w/1D)
- Management: Web, Telnet, Serial Console, SNMP
- Control: VLAN/GVRP, QoS, IGMP Snooping/Query, LACP Rate Limit
- Security: IP/MAC and port binding, DHCP Server, IP access list, 802.1X, SNMPv3
- Diagnostic: Port Static, Port Mirroring, RMON, Trap, Email Alert, Syslog
- Dual 12 – 48 Vdc power input and 1 relay output
- Supports wide operating temperatures from -40 to 75°C (EKI-7659CI)

**Ordering Information**

8-Port Fast Ethernet + 2 Gigabit Combo Port Managed Ethernet Switch

**Features**
- Redundant Industrial Ethernet Switch
- 8+2G Combo Port Managed Ethernet Switch

**Ordering Information**

8 FE + 2G Combo Port Managed Ethernet Switch
Introduction

EKI-7657C supports 7 Fast Ethernet ports and 3 Gigabit combo ports with 2 x Digital Input and Digital Output ports. To create reliability in your network, the EKI-7657C comes equipped with a proprietary redundant network protocol -- X-Ring that was developed by Advantech, which provides users with an easy way to establish a redundant Ethernet network with ultra-high-speed recovery time less than 20 ms. Furthermore, EKI-7657C also supports many advanced network standards to optimize network performance, ease maintenance issues, and secure network safety.

Specifications

Communications
- **Standard**
  - IEEE 802.3, 802.3u, 802.3x, 802.1D, 802.1w, 802.1p, 802.1Q, 802.1X, 802.3ad, 802.3ab
- **LAN**
  - 10/100/1000Base-T (X), Optional 100Base-FX, 1000Base-X/LX/LHX/XD/ZX/EZX
- **Transmission Distance**
  - 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)
- **Transmission Speed**
  - Ethernet: 10/100 Mbps Auto-Negotiation
  - Gigabit Copper: 10/100/1000 Mbps, Auto-Negotiation
  - Gigabit Fiber: Up to 1000 Mbps

Interface
- **Connectors**
  - 7 x RJ45 (Ethernet)
  - 3 x RJ45/SFP (mini-GBIC) combo ports
  - 1 x 6-pin removable terminal (Power & Relay)
- **LED Indicators**
  - System: PWR, PWR1, PWR2, R.M., P-Fail
  - 10/100T (X): Link/Activity, Duplex/Collision
  - Gigabit Copper: Link/Activity, Speed (1000 Mbps)
  - SFP: Link/Activity
  - 6-pin removable terminal (DI/DO)
- **Console**
  - RS-232 (RJ45)

Network Management
- **Configuration**
  - Web browser, Telnet, Serial console, TFTP, SNMPv1/v2/v3, Port Speed/Duplex Configuration
- **VLAN**
  - IEEE 802.1Q, GVRP
- **Redundancy**
  - Advantech X-Ring (ultra high-speed recovery time < 20 ms), RSTP/STP
- **Security**
  - IP Access Security, port security, DHCP Server, IP and MAC binding, 802.1X
- **Traffic Control**
  - IGMP Snooping/Query for multicast group management
  - Port Trunking, Static/802.3ad LACP
  - Rate limit and storm control
- **Diagnostics**
  - Port Mirroring, Real-time traffic statistic, MAC Address Table, SNTP, Syslog, Email Alert, SNMP Trap, RMON

Mechanism
- **Enclosure**
  - IP30, metal shell with solid mounting kits
- **Dimensions (W x H x D)**
  - 79 x 152 x 105 mm (3.11” x 5.98” x 4.13”)
- **Mounting**
  - DIN-rail, Wall

Power
- **Power Consumption**
  - Max. 10.7 W
- **Power Input**
  - 12 – 48 Vdc, redundant dual inputs
- **Fault Output**
  - 1 Relay Output

Protection
- **Power Reverse**
  - Present
- **Overload Current**
  - Present

Environment
- **Operating Temperature**
  - 10 – 60°C (14 – 140°F)
- **Storage Temperature**
  - -40 – 85°C (40 – 185°F)
- **Operating Humidity**
  - 5 – 95% (non-condensing)
- **Storage Humidity**
  - 0 – 95% (non-condensing)
- **MTBF**
  - 284,409 hours

Certifications
- **Safety**
  - UL 60950-1, CAN/CSA-C22.2 No.60950
- **EMI**
  - FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS**
  - EN 61000-4-2
  - EN 61000-4-3
  - EN 61000-4-4
  - EN 61000-4-5
  - EN 61000-4-6
  - EN 61000-4-8
- **Shock**
  - IEC 60068-2-27
- **Freefall**
  - IEC 60068-2-32
- **Vibration**
  - IEC 60068-2-6

Ordering Information
- **EKI-7657C**
  - 7FE + 3G Combo Port Managed Ethernet Switch w/2 x DI/DD
Introduction

EKI-7654C supports 4 Fast Ethernet ports and 2 Gigabit combo ports. To create reliability in your network, the EKI-7654C comes equipped with a proprietary redundant network protocol — X-Ring that was developed by Advantech, which provides users with an easy way to establish a redundant Ethernet network with ultra high-speed recovery time less than 20 ms. Furthermore, EKI-7654C also supports many advanced network standards to optimize network performance, ease maintenance issues, and secure network safety.

Specifications

Communications

- **Standard**: IEEE 802.3, 802.3u, 802.3x, 802.1D, 802.1w, 802.1p, 802.1Q, 802.1X, 802.3ad, 802.3ab
- **LAN**: 100Base-TX, 10/1000Base-T, Optional 100Base-FX, 1000Base-SX/LX/LH/L0/DX/EZX

Transmission Distance

- **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)

Transmission Speed

- **Ethernet**: 10/100 Mbps Auto-Negotiation
- **Gigabit Copper**: 10/100/1000 Mbps, Auto-Negotiation
- **Gigabit Fiber**: Up to 1000 Mbps

Interface

- **Connectors**: 4 x RJ45 (Ethernet) 2 x RJ45/SFP (mini-GBIC) combo ports 6-pin removable screw terminal (Power & Relay)
- **LED Indicators**: System: PWR, PWR1, PWR2, R.M., P-Fail 10/100T (X): Link/Activity, Duplex/Collision Gigabit Copper: Link/Activity, Speed (1000 Mbps)
- **Console**: RS-232 (RJ45)

Network Management

- **Configuration**: Web browser, Telnet, Serial console, TFTP, SNMPv1/ v2c/v3, Port Speed/Duplex Configuration
- **VLAN**: IEEE 802.1Q, GVRP, Port-based VLAN
- **Redundancy**: Advantech X-Ring (Recovery time < 20 ms at 250 pcs full loading ring structure), Dual Homing, Couple Ring, 802.1w/D RSTP/STP
- **Security**: IP Access security, port security, DHCP Server, IP access list, 802.1X, SNMPv3, Diagnostic: Port Statistic, Port Mirroring, RMON, SNMP Trap, SMTP, Syslog
- **Traffic Control**: Gigabit Snooping/Query for multicast group management Port Trunking, Static 802.3ad LACP Rate limit and storm control
- **Diagnostics**: Port Mirroring, Real-time traffic statistic, MAC Address Table, SNTP, Syslog, E-Mail Alert, SNMP Trap, RMON

Mechanism

- **Enclosure**: IP30, metal shell with solid mounting kits
- **Mounting**: DIN-rail, Wall

Power

- **Power Consumption**: Max. 10.7 W
- **Power Input**: 12 ~ 48 Vdc, redundant dual inputs
- **Fault Output**: 1 Relay Output

Protection

- **Power Reverse**: Present
- **Overload Current**: Present

Environment

- **Operating Temperature**: -10 ~ 60°C (14 ~ 140°F)
- **Storage Temperature**: -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity**: 5 ~ 95% (non-condensing)
- **Storage Humidity**: 0 ~ 95% (non-condensing)
- **MTBF**: 284,409 hours

Certifications

- **Safety**: UL 60950-1, CAN/CSA-C22.2 No.60950
- **EMI**: FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS**: EN 61000-4-2
- **Shock**: IEC 60068-2-27
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 60068-2-6

Ordering Information

- **EKI-7654C**: 4FE + 2G Combo Port Managed Ethernet Switch

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**EKI-7654C**

4+2G Combo Port Gigabit Managed Redundant Industrial Ethernet Switch

**Features**

- 2 Gigabit Copper/SFP combo ports, plus 4 Fast Ethernet ports
- Full/half duplex mode flow control
- MDI/MDI-X auto crossover
- SFP socket for Easy and Flexible Fiber Expansion
- Redundancy: Gigabit X-Ring (ultra high-speed recovery time < 20 ms), RSTP/STP (802.1w/1D)
- Management: Web, Telnet, Serial Console, SNMP
- Control: VLAN/GVRP, QOS, SNMP Snooping/Query, LACP, Rate
- Limit Security: IP/MAC and port binding, DHCP Server, IP access list, 802.1X, SNMPv3 Diagnostic: Port Statistic, Port Mirroring, RMON, SNMP Trap, SMTP, Syslog
- Dual 12 ~ 48 Vdc, power input and 1 relay output
Industrial Ethernet Solutions

**EKI-7556MI**

16+2 SC Type Fiber Optic Managed Industrial Ethernet Switch with Wide Temperature

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**Features**
- 2 x SC type fiber ports (Multi-mode), plus 16 Fast Ethernet ports
- Redundancy: X-Ring (ultra high-speed recovery time < 20 ms), RSTP/STP (802.1w/1D)
- Management: Web, Telnet, Serial Console, SNMP
- Control: VLAN/GVRP, QoS, IGMP Snooping/Query, LACP Rate Limit
- Security: IP/MAC and port binding, DHCP Server, IP access list, 802.1X, SNMPv3
- Diagnostic: Port Statistic, Port Mirroring, RMON, Trap, Email Alert, Syslog
- Dual 12 ~ 48 VDC power input and 1 relay output
- Supports wide operating temperature -40 ~ 75°C

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**Introduction**

EKI-7556MI supports 16 Fast Ethernet ports and 2 SC type fiber optic ports. To create reliability in your network, the EKI-7556MI comes equipped with a proprietary redundant network protocol -- X-Ring that was developed by Advantech, which provides users with an easy way to establish a redundant Ethernet network with ultra high-speed recovery time less than 20 ms. Furthermore, EKI-7556MI also supports many advanced network standards to optimize network performance, ease maintenance issues, and secure network safety.

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**Specifications**

**Communications**
- **Standard**
  - IEEE 802.3, 802.3u, 802.3ad, 802.1Q, 802.1x, 802.1w
- **LAN**
  - 10/100Base-T(X), 100Base-FX
- **Transmission Distance**
  - Ethernet: Up to 100 m
  - Multi-mode Fiber: Up to 2 km
- **Transmission Speed**
  - Up to 100 Mbps

**Interface**
- **Connectors**
  - 16 x RJ45 ports
  - 2 x SC-type fiber-optic connectors
- **LED Indicators**
  - System: PWR, PWR1, PWR2, R.M., P-Fail
  - 10/100T (X): Link/Activity, Duplex/Collision
- **Console**
  - RS-232 (RJ45)

**Network Management**
- **Configuration**
  - Web browser, Telnet, Serial console, TFTP, SNMPv1/v2c/v3, Port Speed/Duplex Configuration
  - Advantech X-Ring (Recovery time < 20 ms at 250 pcs full loading ring structure), Dual Homing, Couple Ring, 802.1w/D/RSTP/STP
- **VLAN**
  - IEEE 802.1Q, GVRP, Port-based VLAN
- **Redundancy**
  - 802.1w/D RSTP/STP
- **Security**
  - IP Access security, port security, DHCP Server, Port and IP Binding, 802.1X Port Access Control, SSH/SSL
- **Traffic Control**
  - IGMP Snooping/Query for multicast group management Port Trunking, Static 802.3ad LACP Rate limit and storm control IEEE 802.3p QoS CoS/TOS/DSCP, priority queuing IEEE 802.3x flow control
- **Diagnostics**
  - Port Mirroring, Real-time traffic statistic, MAC Address Table, SNTP, Syslog, Email Alert, SNMP Trap, RMON

**Mechanism**
- **Enclosure**
  - IP30, metal shell with solid mounting kits
- **Dimensions (W x H x D)**
  - 79 x 152 x 105 mm (3.11” x 5.98” x 4.13”)
- **Mounting**
  - DIN-rail, Wall

**Power**
- **Power Consumption**
  - Max. 10.75 W
- **Power Input**
  - 12 ~ 48 VDC, redundant dual inputs
- **Fault Output**
  - 1 Relay Output

**Protection**
- **Power Reverse**
  - Present
- **Overload Current**
  - Present

**Environment**
- **Operating Temperature**
  - -40 ~ 75°C (-40 ~ 167°F)
- **Storage Temperature**
  - -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity**
  - 5 ~ 95% (non-condensing)
- **Storage Humidity**
  - 0 ~ 95% (non-condensing)
- **MTBF**
  - 218,490 hours

**Certifications**
- **Safety**
  - UL 508
- **EMI**
  - FCC Part 15 Subpart B Class A, EN 55022 Class A
  - EN 61000-4-2
  - EN 61000-4-3
  - EN 61000-4-4
  - EN 61000-4-5
  - EN 61000-4-6
  - EN 61000-4-8
- **Shock**
  - IEC 60068-2-27
- **Freefall**
  - IEC 60068-2-32
- **Vibration**
  - IEC 60068-2-6

**Ordering Information**

- **EKI-7556MI**
  - 16FE + 2-port Multi-mode Fiber Managed Ethernet Switch w/Wide Temp
## Introduction

Both EKI-7554SI and EKI-7559MI support 2 SC type fiber ports, EKI-7554SI/MI 4 Fast Ethernet ports and EKI-7559SI/MI can support up to 8 Fast Ethernet ports. To create reliability in your network, the EKI-7554SI/MI come equipped with a proprietary redundant network protocol – X-Ring that was developed by Advantech, which provides users with an easy way to establish a redundant Ethernet network with ultra high-speed recovery time less than 20 ms. Furthermore, EKI-7554SI/MI also supports many advanced network standards to optimize network performance, ease maintenance issues, and secure network safety.

## Specifications

### Communications

- **Standard**: IEEE 802.3, 802.3u, 802.3ad, 802.1Q, 802.1p, 802.1Q, 802.11w, 802.1Q, 802.1Q
- **LAN**: 10/100Base-T(X), 100Base-FX
- **Transmission Distance**: Up to 100 m
- **Single-mode Fiber**: Up to 2 km (EKI-7554MI)
- **Multi-mode Fiber**: Up to 30 km (EKI-7554SI/MI)
- **Transmission Speed**: Up to 100 Mbps

### Interface

- **Connectors**: 4 x RJ45 ports (EKI-7554SI/MI)
- **LED Indicators**: 2 x SC type fiber optic connectors
- **Console**: RS-232 (RJ45)

### Network Management

- **Configuration**: Web browser, Telnet, Serial console, TFTP, SNMPv1/v2c/v3, Port Speed/Duplex Configuration
- **VLAN**: IEEE 802.1Q, QoS, Port-based VLAN
- **Redundancy**: Advantech X-Ring (recovery time < 20 ms at 250 pcs full load ring structure), Dual Homing, Couple Ring, IEEE 802.1W/RSTP/STP
- **Security**: IP Access security, port security, DHCP Server, Port and IP Binding, 802.1X Port Access Control, SSH/SSL, IGMP Snooping/Query for multicast group management
- **Traffic Control**: Port Trunking, Static/802.1Q, GVRP, Port-based VLAN
- **QoS**: IEEE 802.1p, 802.1Q, 802.1X, 802.1Q, 802.1Q

### Features

- 2 x SC type fiber ports, plus 4  Fast Ethernet ports (EKI-7554SI/MI)
- Redundancy: X-Ring (high-speed recovery time < 20 ms), RSTP/STP (802.1W/1D)
- Management: Web, Telnet, Serial Console, SNMP
- Control: VLAN/GVRP, DoS, IGMP Snooping/Query, LACP Rate Limit
- Security: IP/MAC, port binding, DHCP Server, IP access list, 802.1X, SNMPv3
- Diagnostic: Port Statistic, Port Mirroring, RMON, Trap, Email Alert, Syslog
- Dual 2 ~ 48 VDC power input and 1 relay output
- Supports wide operating temperature: -40 ~ 75°C

### Power

- **Power Consumption**: Max. 7.7 W (EKI-7554SI/MI)
- **Power Input**: Max. 8.4 W (EKI-7559SI/MI)
- **Fault Output**: 12 ~ 48 VDC, redundant dual inputs

### Protection

- **Power Reverse**: Present
- **Overload Current**: Present

### Environment

- **Operating Temperature**: -40 ~ 75°C (-40 ~ 167°F)
- **Storage Temperature**: -40 ~ 85°C (-40 ~ 185°F)
- **Storage Humidity**: 5 ~ 95% (non-condensing)
- **Humidity**: 5 ~ 95% (non-condensing)
- **MTBF**: 262,230 hours (EKI-7554SI/MI)
- **264,964 hours (EKI-7559SI/MI)

### Certifications

- **Safety**: UL 60950-1, CAN/CSA-C22.2 No.60950
- **EMI**: FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS**: EN 61000-4-2, EN 61000-4-4, EN 61000-4-6, EN 61000-4-8
- **Shock**: IEC 60608-2-27
- **Freefall**: IEC 60608-2-32
- **Vibration**: IEC 60608-2-6

### Ordering Information

- **EKI-7554SI**: 4FE + 2-port Single-mode Fiber Managed Ethernet Switch with Wide Temp
- **EKI-7554MI**: 4FE + 2-port Multi-mode Fiber Managed Ethernet Switch with Wide Temp
- **EKI-7559SI**: 8FE + 2-port Single-mode Fiber Managed Ethernet Switch with Wide Temp
- **EKI-7559MI**: 8FE + 2-port Multi-mode Fiber Managed Ethernet Switch with Wide Temp
## Introduction

EKI-2748FI and EKI-2748CI supports Gigabit Ethernet and SFP/Combo ports. To enhance reliability in industrial communication network, it equipped with Advantech owned redundant network protocol -- X-Ring, which provides users with an easy way to establish a redundant Ethernet network with ultra high-speed recovery time less than 20 ms. Furthermore, EKI-2748FI and EKI-2748CI also support advanced network standards to optimize network performance, reduce maintenance cost, and secure network safety.

## Specifications

### Communications

- **Standard**
  - IEEE 802.3, 802.3u, 802.3x, 802.1d, 802.1w, 802.1Q, 802.1X, 802.3ad, 802.3ab
- **LAN**
  - 100Base-T (X), 10/1000Base-T, Optional 100Base-FX, 1000Base-SX/LX/LHX/XD/ZX/EZX
- **Transmission Speed**
  - Gigabit Copper: 10/100/1000 Mbps, Auto-Negotiation
  - SFP: Up to 1000 Mbps

### Interface

- **Connectors**
  - RJ45 x 4; SFP Combo: 100/1000 SFP *4 (EKI-2748FI)
  - RJ45 x 6; SFP Combo: RJ45 x 2; 100/1000 Mini-GBIC x 2 (EKI-2748CI)
- **LED Indicators**
  - System: PWR1, PWR2, P-Fail, R-Master
  - Gigabit Copper: Link/Activity, Speed
  - SFP: Link/Activity
- **Console**
  - RS-232 (RJ45)

### Network Management

- **Configuration**
  - SNMP v1/v2c/v3, Web, Telnet, CLI
- **VLAN**
  - IEEE 802.1Q, GVRP, Port-based VLAN
- **Redundancy**
  - Advantech X-Ring (Recovery time < 20 ms at 250 pcs full loading ring structure), Dual Homing, Couple Ring,
  - IEEE 802.1w/d RSTP/STP
- **Security**
  - IP Access security, port security, DHCP Server, Port and IP Binding, 802.1X Port Access Control, SSH/SSL
- **Traffic Control**
  - IGMP Snooping/Query for multicast group management, Port Trunking, Static IEEE 802.1p QoS/
  - CoS/S/CoS priority queuing, IEEE 802.3x flow control
- **Diagnostics**
  - Port Mirroring, Real-time traffic statistic, MAC Address Table, SNTF, Syslog, E-Mail Alert, SNMP Trap, RMON, DMI

### Mechanism

- **Enclosure**
  - IP30, metal shell with solid mounting kits
- **Dimensions (W x H x D)**
  - 59.6 x 152 x 105 mm (2.35" x 5.98" x 4.13")
- **Mounting**
  - DIN-rail, Wall

### Power

- **Power Consumption**
  - Max. 12.21 W (EKI-2748FI)
  - Max. 15.12 W (EKI-2748CI)
- **Power Input**
  - 12 ~ 48 Vdc, 24 Vac (18 ~ 30 Vac)
- **Fault Output**
  - 1 Relay Output

### Protection

- **Power Reverse**
  - Present
- **Overload Current**
  - Present

### Environment

- **Operating Temperature**
  - 40 ~ 75°C (-40 ~ 167°F)
- **Storage Temperature**
  - -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity**
  - 5 ~ 95% (non-condensing)
- **Storage Humidity**
  - 5 ~ 95% (non-condensing)
- **MTBF**
  - 248,507 hours (EKI-2748CI)
  - 289,385 hours (EKI-2748FI)

### Certifications

- **Safety**
  - UL 508
  - Class I, Division 2
- **EMI**
  - FCC Part 15 Subpart B Class A, EN 55022 Class A
  - EN 61000-4-2
  - EN 61000-4-3
  - EN 61000-4-4
  - EN 61000-4-5
  - EN 61000-4-6
  - EN 61000-4-8
- **Shock**
  - IEC 60068-2-27
- **Freefall**
  - IEC 60068-2-32
- **Vibration**
  - IEC 60068-2-6

### Ordering Information

- **EKI-2748FI**
  - 6Gx + 2G Combo Port Managed Ethernet Switch
  - w/ Wide Temp
- **EKI-2748CI**
  - 4Gx + 3SFP Managed Ethernet Switch w/ Wide Temp

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**Features**

- All Gigabit ports for Copper and SFP/Combo interfaces
- SFP sockets for easy and flexible fiber expansion
- Redundancy: Gigabit X-Ring (ultra high-speed recovery time < 20 ms), RSTP/STP (802.1w/1D)
- Management: Web, Telnet, Serial Console, SNMP v1/v2c/v3
- Control: VLAN/GVRP, QoS, IGMP Snooping/Query, LACP Rate Limit
- Security: IP/MAC and port binding, DHCP Server, IP access list, 802.1X
- Diagnostic: Port statistic, Port Mirroring, RMON, Trap, Email Alert, Syslog
- Dual 12 ~ 48 Vdc, power input and 1 relay output

**Ordering Information**

- EKI-2748FI: 6Gx + 2G Combo Port Managed Ethernet Switch w/ Wide Temp
- EKI-2748CI: 4Gx + 3SFP Managed Ethernet Switch w/ Wide Temp
**Introduction**

EKI-2548I and EKI-2548SI/MI is a cost effective managed industrial Ethernet switch which supports Fast Ethernet. To enhance reliability in industrial communication network, it is equipped with Advantech owned redundant network protocol -- X-Ring, which provides users with an easy way to establish a redundant Ethernet network with ultra high-speed recovery time less than 20 ms. Furthermore, EKI-2548I and EKI-2548SI/MI also support advanced network standards to optimize network performance, reduce maintenance cost, and secure network safety.

**Specifications**

**Communications**
- **Standard**: IEEE 802.3, 802.3u, 802.3x, 802.1w, 802.1Q
- **LAN**: 10/100Base-TX
- **Transmission Distance**: Ethernet: Up to 100 m, Multi-mode Fiber: Up to 2 km (EKI-2548MI), Single-mode Fiber: Up to 30 km (EKI-2548SI)
- **Transmission Speed**: Up to 100 Mbps

**Interface**
- **Connectors**: 8 x RJ45 ports (EKI-2548I), 6 x RJ45 ports + 2 x SC type fiber optic (EKI-2548SI/MI)
- **LED Indicators**: System: PWR1, PWR2, P-Fail, R-Master, Ethernet port: Link/Activity, Speed, Fiber port: Link/Activity
- **Reset Button**: Reset and restore to factory default

**Network Management**
- **Configuration**: SNMP v1/v2c, Web
- **VLAN**: IEEE 802.1Q, Port based VLAN
- **Redundancy**: Advantech X-Ring, Dual Homing, Couple Ring, IEEE 802.1d STP, and IEEE 802.1w RSTP
- **Security**: IP access security
- **Traffic Control**: IGMP Snooping/Query for multicast group management, rate limit and storm control
- **Diagnostics**: Port Mirroring, SNTP, Systolg, SNMP Trap, Email Alert

**Mechanism**
- **Enclosure**: IP30, metal shell with solid mounting kits
- **Mounting**: DIN-rail, Wall

**Power**
- **Power Consumption**: Max. 7.6 W (EKI-2548I), Max. 10.6 W (EKI-2548SI/MI)
- **Power Input**: 12 ~ 48 VDC, 24 VDC (18 ~ 30 VDC)
- **Fault Output**: 1 Relay Output, 1A @ 24 VDC

**Protection**
- **Power Reverse**: Present
- **Overload Current**: Present

**Environment**
- **Operating Temperature**: -40 ~ 75°C (-40 ~ 167°F)
- **Storage Temperature**: -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity**: 5 ~ 95% (non-condensing)
- **Storage Humidity**: 5 ~ 95% (non-condensing)
- **MTBF**: 215,266 hours (EKI-2548I), 337,238 hours (EKI-2548MI)

**Certifications**
- **Safety**: UL 508, Class I, Division 2
- **EMI**: FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS**: EN 61000-4-2, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8
- **Shock**: IEC 60068-2-27
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 60068-2-6

**Ordering Information**
- **EKI-2548SI**: 6Tx + 2-port Single-mode Fiber Managed Ethernet Switch w/Wide Temp
- **EKI-2548MI**: 6Tx + 2-port Multi-mode Fiber Managed Ethernet Switch w/Wide Temp
- **EKI-2548I**: 8Tx Managed Ethernet Switch w/Wide Temp
Introduction

EKI-4524I/4524RI is designed to be compliant with the IEC 61850-3 certification for power automation systems and supports 24 Fast Ethernet ports and 2 x 100Base SFP slots for different SFP modules in any application. EKI-4524I/4524RI has wide range voltage power input which provides convenient and uninterrupted power supply. EKI-4524RI has two sides (Front and Rear) LED indicator to show the link status conveniently. It also provides relay output for an event alarm. Quick notification and fast response time can shorten service procedures and reduce data loss in the field.

Specifications

Communications
- **Standard**: IEEE 802.3, 802.3u, 802.3x
- **LAN**: 10/100Base-TX
- **Transmission Distance**: Ethernet: Up to 100 m
  SFP: Up to 30 km (depends on SFP)
- **Transmission Speed**: Up to 100 Mbps

Interface
- **Connectors**: 24 x RJ45 (Ethernet)
  2 x SFP (mini-GBIC) ports (EKI-4524RI)
- **LED Indicators**: System: PWR
  Copper: Link/Activity, Speed
  SFP: Link/Activity

Mechanism
- **Enclosure**: IP30, metal shell with solid mounting kits
- **Dimensions (W x H x D)**:
  - (EKI-4524I): 440 x 44 x 280 mm (17.31” x 1.73” x 11.02”)
  - (EKI-4524RI): 440 x 44 x 224 mm (17.31” x 1.73” x 8.81”)
- **Mounting**: 1U 19” Rack mount

Power
- **Power Input**: 100 – 240 VAC 50/60 Hz
  100 – 240 VDC
- **Fault Output**: 1 Relay Output (20 mA @ 250 VDC)

Protection
- **Power Reverse**: Present

Environment
- **Operating Temperature**: -40 – 75°C (-40 – 167°F)
- **Storage Temperature**: -40 – 85°C (-40 – 185°F)
- **Operating Humidity**: 5 - 95% (non-condensing)
- **Storage Humidity**: 5 - 95% (non-condensing)

Certifications
- **EMI**: FCC Part 15 Subpart B Class A
- **EMS**: EN 61000-4-2, Level 4
  EN 61000-4-3, Level 3
  EN 61000-4-4, Level 4
  EN 61000-4-5, Level 3
  EN 61000-4-6, Level 3
  EN 61000-4-8, Level 4
  EN 61000-4-11
- **Shock**: IEC 60068-2-27
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 60068-2-6
- **Substation**: IEC 61850-3 compliant

Ordering Information
- **EKI-4524I**: 24FE Ethernet Switch w/ Wide Temp
- **EKI-4524RI**: 24FE+2 FX-SFP Port Ethernet Switch w/ Wide Temp

RoHS
COMPLIANT
2002/95/EC

EKI-4524I  EKI-4524RI
**Introduction**

Aside from 2 Gigabit fiber optic/copper combo ports, the EKI-7626C/CI comes equipped with 16 x 10/100Base-T (X) fast Ethernet ports. Traditional RJ45 ports can be used for up-linking wide-band paths in short distances (< 100 m), or the appropriate replaceable SFP module can be used for the application of wideband uploading and long distance transmissions to flexibly fill field requests. The long MTBF (Mean Time Between Failures) ensures low operation and maintenance cost. EKI-7626C/CI includes a switch controller that can automatically sense transmission speeds (10/100 Mbps) The RJ45 interface can also be auto-detected, so MDI or MDI-X is automatically selected and a cross-over cable is not required. All Ethernet ports have memory buffers that support the store-and-forward mechanism, which assures that data can be transmitted properly.

**Specifications**

**Communications**
- Standard: IEEE 802.3, 802.3ab, 802.3u, 802.3z
- LAN: 100Base-TX, 10/100Base-T, Optional 100Base-FX, 100Base-SX/LX/X/XD/EZ
- Transmission Distance: Ethernet: Up to 100 m (4-wire Cat.5e, Cat.6 RJ45 cable suggested for Gigabit port) Gigabit Fiber: Up to 110 km (depending on SFP)
- Transmission Speed: Ethernet: 10/100 Mbps Auto-Negotiation Gigabit Copper: 10/100/1000 Mbps, Auto-Negotiation SFP: Up to 1000 Mbps

**Interface**
- Connectors: 16 x RJ45 (Ethernet) with 2 x RJ45/SFP (mini-GBIC) combo ports (EKI-7626C/CI)
- LED Indicators: PWR1, PWR2, P-Fail
- RJ45 interface: Link/Activity, Speed (1000 Mbps)

**Protection**
- Reverse Polarity: Present
- Overload Current: Present

**Environment**
- Operating Temperature: -10 ~ 60°C (14 ~ 140°F)
- Wide Temp. Model: -40 ~ 75°C (-40 ~ 167°F)
- Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)
- Operating Humidity: 5 ~ 95% (non-condensing)
- Storage Humidity: 5 ~ 95% (non-condensing)
- MTBF: 295,000 hours

**Certifications**
- Safety: UL 60950-1, CAN/CSA-C22.2 No.60950
- EMI: FCC Part 15 Subpart B Class A, EN 55022 Class A
- EMS: EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8
- Shock: IEC 60668-2-27
- Freefall: IEC 60668-2-32
- Vibration: IEC 60668-2-6

**Ordering Information**
- EKI-7626C: 16+2G Combo Port Unmanaged Ethernet Switch
- EKI-7626CI: 16+2G Combo Port Unmanaged Ethernet Switch w/ Wide Temp
Introduction
Aside from 2 Gigabit fiber optic/copper combo ports, the EKI-7629C/CI comes equipped with 8 x 10/100Base-TX fast Ethernet ports. Traditional RJ45 ports can be used for up-linking wide-band paths in short distances (< 100 m), or the appropriate replaceable SFP module can be used for the application of wideband uploading and long distance transmissions to flexibly fit field requests. The long MTBF (Mean Time Between Failures) ensures low operation and maintenance cost. EKI-7629C/CI includes a switch controller that can automatically sense transmission speeds (10/100 Mbps) The RJ45 interface can also be auto-detected, so MDI or MDI-X is automatically selected and a cross-over cable is not required. All Ethernet ports have memory buffers that support the store-and-forward mechanism, which assures that data can be transmitted properly.

Specifications

Communications
- **Standard:** IEEE 802.3, 802.3ab, 802.3u, 802.3x, 802.3z, 1000Base-TX, 10/100Base-T, Optional 10GBase-FX, 1000Base-SX/LX/XE/ZX/EZ
- **LAN:** 100Base-TX, 10/1000Base-T, Optional 100Base-FX, 1000Base-SX/LX/LH/XO/ZX/EZ
- **Transmission Distance:** Ethernet: Up to 100 m (4- wire Cat.5e, Cat.6 RJ45 cable suggested for Gigabit port), Gigabit Fiber: Up to 110 km (depending on SFP)
- **Transmission Speed:** Ethernet: 10/100 Mbps Auto-Negotiation, Gigabit Copper: 10/100/1000 Mbps, Auto-Negotiation SFP: Up to 1000 Mbps

Interface
- **Connectors:** 8 x RJ45 (Ethernet) with 2 x RJ45/SFP (mini-GBIC) combo ports (EKI-7629C/CI), 6-pin removable screw terminal (Power & Relay)
- **LED Indicators:** System: PWR1, PWR2, P-Fail, Gigabit Copper: Link/Activity, Speed (1000 Mbps), Gigabit SFP: Link/Activity

Power
- **Power Consumption:** Max. 6.5 W
- **Power Input:** 12 – 48 Vdc, redundant dual inputs
- **Fault Output:** 1 Relay Output

Mechanism
- **Dimensions (W x H x D):** 79 x 152 x 105 mm (3.11” x 5.98” x 4.13”)
- **Enclosure:** IP30, Metal shell with solid mounting kits
- **Mounting:** DIN-rail, Wall

Protection
- **Reverse Polarity:** Present
- **Overload Current:** Present

Environment
- **Operating Temperature:** -10 – 60°C (14 – 140°F), Wide Temp. Model -40 – 75°C (-40 – 167°F)
- **Storage Temperature:** -40 – 85°C (-40 – 185°F)
- **Operating Humidity:** 5 – 95% (non-condensing)
- **Storage Humidity:** 0 – 95% (non-condensing)
- **MTBF:** 295,000 hours

Certifications
- **Safety:** UL 60950-1, CAN/CSA-C22.2 No.60950
- **EMI:** FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS:** EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8
- **Shock:** IEC 60664-2-27
- **Freetfall:** IEC 60664-2-32
- **Vibration:** IEC 60664-2-6

Ordering Information
- **EKI-7629C:** 8+2G Combo Port Unmanaged Ethernet Switch
- **EKI-7629CI:** 8+2G Combo Port Unmanaged Ethernet Switch w/ Wide Temp
Introduction

EKI-7526I and EKI-7526MI are cost effective unmanaged industrial Ethernet switches which support 16 x 10/100Base-TX fast Ethernet ports. Traditional fiber optic ports can be used for up-linking and long distance transmissions to flexibly fit the field requests (EKI-7526MI Only). The long MTBF (Mean Time Between Failures) ensures low operation and maintenance costs. All Ethernet ports have memory buffers that support the store-and-forward mechanism, which assures that data can be transmitted properly. Both EKI-7526I and EKI-7526MI support advanced network standards to optimize network performance, reduce maintenance costs, and secure network safety.

Specifications

Communications
- Standard: IEEE 802.3, 802.3u, 802.3x
- LAN: 10/100Base-T (X), Optional 100Base-FX
- Transmission Distance: Ethernet: Up to 100 m (4- wire Cat.5e), Multi-mode Fiber: Up to 2 km
- Transmission Speed: Ethernet: 10/100 Mbps Auto-Negotiation

Interface
- Connectors: 16 x RJ45 (Ethernet), EKI-7526I, 16 x RJ45 (Ethernet) with 2 x SC type fiber optic, EKI-7526MI, 6-pin removable screw terminal (Power & Relay)
- LED Indicators: System: PWR1, PWR2, P-Fail, 10/100T (X): Link/Activity, Duplex/Collision

Power
- Power Consumption: Max. 8.9 W
- Power Input: 12 – 48 Vdc, redundant dual inputs
- Fault Output: 1 Relay Output

Mechanism
- Dimensions (W x H x D): 79 x 152 x 105 mm (3.11” x 5.98” x 4.13”)
- Enclosure: IP20, Metal shell with solid mounting kits
- Mounting: DIN-rail, Wall

Protection
- Reverse Polarity: Present
- Overload Current: Present

Environment
- Operating Temperature: -40 – 75°C (-40 ~ 167°F)
- Storage Temperature: -40 – 85°C (-40 ~ 185°F)
- Operating Humidity: 5 – 95% (non-condensing)
- Storage Humidity: 0 – 95% (non-condensing)
- MTBF: 237,130 hours

Certifications
- Safety: UL 508
- EMI: FCC Part 15 Subpart B Class A, EN 55022 Class A
- EMS: EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8
- Shock: IEC 60068-2-27
- Freefall: IEC 60068-2-32
- Vibration: IEC 60068-2-6

Ordering Information
- EKI-7526I: 16FE Unmanaged Ethernet Switch w/Wide Temp
- EKI-7526MI: 16FE + 2 x Multi-mode Fiber Unmanaged Ethernet Switch w/Wide Temp
Introduction

EKI-7529MI/ST come equipped with 8 x 10/100Base-TX fast Ethernet ports. Traditional ST fiber optic ports can be used for uplinking and long distance transmissions to flexibly fit field requests. The RJ45 interface can also be auto-detected, so MDI or MDI-X is automatically selected and a cross-over cable is not required. All Ethernet ports have memory buffers that support the store-and-forward mechanism, which assures that data can be transmitted properly. Furthermore, the power line of EKI-7529MI/ST supports Surge and EFT protection which secure equipment against unregulated voltage and make systems safer and more reliable.

Specifications

Communications
- Standard: IEEE 802.3, 802.3u, 802.3x
- LAN: 10/100Base-T (X), Optional 100Base-FX
- Transmission Distance: Ethernet: Up to 100 m
  Multi-mode Fiber: Up to 2 km

Transmission Speed
- Ethernet: Port 1~2: 10 Mbps
  Port 3~8: 10/100 Mbps Auto-Negotiation

Interface
- Connectors: 8 x RJ45 (Ethernet) with 2 x ST-type fiber optic connectors
  6-pin removable screw terminal (Power & Relay)
- LED Indicators: System: PWR1, PWR2, P-Fail
  10/100T (X): Link/Activity, Duplex/Collision
- Dip Switch: DIP1 (Port 1 and 2): ON: 10M Full Force/
  OFF: 10M Full Auto-Negotiation
  DIP2: ON: Broadcast Storm filter enable/
  OFF: Broadcast Storm filter Disable

Power
- Power Consumption: Max. 6.7W
- Power Input: 12 ~ 48 VDC, redundant dual inputs
- Fault Output: 1 Relay Output
- Mechanism: Power Failure Protection
- Dimensions (W x H x D): 79 x 152 x 105 mm (3.11" x 5.98" x 4.13")
- Enclosure: IP30, Metal shell with solid mounting kits
- Mounting: DIN-rail, Wall

Protection
- Reverse Polarity: Present

Environment
- Operating Temperature: -40 ~ 75°C (-40 ~ 167°F)
- Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)
- Operating Humidity: 5 ~ 95% (non-condensing)
- Storage Humidity: 0 ~ 95% (non-condensing)
- MTBF: 289,329 hours

Certifications
- Safety: UL 508
- EMI: FCC Part 15 Subpart B Class A, EN 55022 Class A
- EMS: EN 61000-4-2
  EN 61000-4-3
  EN 61000-4-4
  EN 61000-4-5
  EN 61000-4-6
  EN 61000-4-8
- Shock: IEC 60068-2-27
- Freefall: IEC 60068-2-32
- Vibration: IEC 60068-2-6

Ordering Information
- EKI-7529MI/ST: 8 + 2-port Multi-mode Fiber Ethernet Switch w/ ST and Wide Temp

RoHS COMPLIANT 2002/95/EC
Introduction

The EKI-2725/2728 supports Gigabit Ethernet. The power is a +12 – 48 VDC redundant input design, and is secured with a double protection mechanism: Power Polarity Reverse Protect and an Overload Current Resetable Fuse. The former tolerates reverse power wiring while the later secures the system from overload currents. As the power supply turns normal, EKI-2725/2728 will automatically get back to normal operation state. Each port of EKI-2725/2728 has 2 LED’s to show the link status transmission speed and collision status. It also provides a relay output for an event alarm. In the event of a power failure, the built-in LED will activate the alarm to notify administrators. Engineers can simply verify the hardware status by checking the LED, and have troubleshooting easy and quick. EKI-2725/2728 comes with compact metal housing that rates IP30 to help against from dusty industrial environments.

Specifications

Communications
- Standard: IEEE 802.3, 802.3u, 802.3x, 802.3ab
- LAN: 100Base-TX, 10/100Base-T
- Transmission Distance: Up to 100 m (4-wire Cat.5e, Cat.6 RJ45 cable)
- Transmission Speed: Up to 1000 Mbps

Interface
- Connectors: 5 x RJ45 (EKI-2725) or 8 x RJ45 (EKI-2728)
- LED Indicators: P1, P2, P-Fail
- 10/100/1000T (X): Link/Activity, Duplex/Collision

Power
- Power Consumption: Max. 4.6W
- Power Input: 12 – 48 VDC, redundant dual inputs
- Fault Output: 1 Relay Output

Mechanism
- Dimensions (W x H x D): 37 x 140 x 95 mm (1.46” x 5.51” x 3.74”)
- Enclosure: IP30, Metal shell with solid mounting kits
- Mounting: DIN-rail, Wall

Protection
- Power Reverse: Present
- Overload current: Present

Environment
- Operating Temperature: -10 – 60°C (14 – 140°F)
- Storage Temperature: -40 – 85°C (-40 – 185°F)
- Operating Humidity: 95% (non-condensing)
- Storage Humidity: 0 – 95% (non-condensing)
- MTBF: 627,958 hours

Certifications
- Safety: UL 60950-1, CAN/CSA-C22.2 No.60950 Class I, Division 2 (EKI-2728)
- EMI: FCC Part 15 Subpart B Class A, EN 55022 Class A
- EMS: EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8
- Shock: IEC 60068-2-27
- Freefall: IEC 60068-2-32
- Vibration: IEC 60068-2-6

Ordering Information
- EKI-2725: 5-port Gigabit Unmanaged Ethernet Switch
- EKI-2728: 8-port Gigabit Unmanaged Ethernet Switch

EKI-2725 EKI-2728
5-port Gigabit Unmanaged Industrial Ethernet Switch
8-port Gigabit Unmanaged Industrial Ethernet Switch

Features
- Provides 5/8 Gigabit Ethernet ports with Auto MDI/MDI-X
- Supports 10/100/1000 Mbps Auto Negotiation
- Supports jumbo frame transmission up to 9kbytes
- Provides Slim size, DIN-rail with IP30 metal mechanism
- Supports Redundant 12 – 48 VDC power input and P-Fail Relay
- Provides broadcast storm protection
**Introduction**

EKI-2728MI is a cost effective unmanaged industrial Ethernet switch which supports Giga Ethernet. It supports Green Power requirement, furthermore, EKI-2728MI also supports advanced network standards to optimize network performance, reduce maintenance cost, and secure network safety.

**Specifications**

**Communications**
- **Standard**: IEEE 802.3, 802.3u, 802.3x, 802.1ab, 802.1z, 10/100/1000Base-Tx
- **LAN**: 10/100/1000Base-Tx
- **Transmission Distance**: Ethernet: Up to 100 m, Fiber: Up to 2 km
- **Transmission Speed**: Up to 1000 Mbps

**Interface**
- **Connectors**: 6 x RJ45 ports, 2 x SC type fiber optic
- **LED Indicators**: System: PWR1, PWR2, P-Fail, Gigabit Ethernet copper: Link/Activity, speed (10/100/1000 Mbps), Fiber SC: Link/Activity

**Mechanism**
- **Enclosure**: IP30, metal shell with solid mounting kits
- **Dimensions (W x H x D)**: 59.6 x 152 x 105 mm (2.35” x 5.98” x 4.13”)
- **Mounting**: DIN-rail, Wall

**Power**
- **Power Consumption**: Max. 10.2 W
- **Power Input**: 12 ~ 48 VDC, 24 VDC (18 ~ 30 VDC)
- **Fault Output**: 1 Relay Output, 1 A @ 24 VDC

**Protection**
- **Power Reverse**: Present

**Environment**
- **Operating Temperature**: -40 ~ 75°C (-40 ~ 167°F)
- **Storage Temperature**: -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity**: 5 ~ 95% (non-condensing)
- **Storage Humidity**: 0 ~ 95% (non-condensing)
- **MTBF**: 505,863 hours

**Certifications**
- **Safety**: UL 508, Class I, Division 2
- **EMI**: FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS**: EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6 EN 61000-4-8
- **Shock**: IEC 60068-2-27
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 60068-2-6

**Ordering Information**
- **EKI-2728MI**: 6Gx+2 Multi-mode Fiber Unmanaged Ethernet Switch w/ Wide Temp
### Introduction

The EKI-2525/2528 supports a Fast Ethernet solution. The power is a +12 – 48 Vdc redundant input design, and is secured with a double protection mechanism: Power Polarity Reverse Protect and an Overload Current Resettable Fuse. The former tolerates reverse power wiring while the later secures the system from overload currents. As the power supply turns normal, EKI-2525/2528 will automatically get back to work. Each port of EKI-2525/2528 has 2 LED’s to show the link status transmission speed and collision status. It also provides a relay output for an event alarm. In the event of a power failure, the built-in LED will activate the alarm to notify administrators. Engineers can simply verify the hardware status by checking the LED, and have troubleshooting easy and quick. EKI-2525/2528 comes with compact metal housing that rates IP30 to help against from dusty industrial environments.

### Specifications

#### Communications
- **Standard**: IEEE 802.3, 802.3u, 802.3x
- **LAN**: 10/100Base-T (X)
- **Transmission Distance**: Up to 100 m
- **Transmission Speed**: Up to 100 Mbps

#### Interface
- **Connectors**: 8 x RJ45 (EKI-2528) or 5 x RJ45 (EKI-2525)
- **LED Indicators**: P1, P2, P-Fail
  - 10/100T (X): Link/Activity, Duplex/Collision

#### Power
- **Power Consumption**: EKI-2525: Max. 5 W
  - EKI-2528: Max. 3 W
- **Power Input**: 12 – 48 Vdc, redundant dual inputs
- **Fault Output**: 1 Relay Output

#### Mechanism
- **Dimensions (W x H x D)**: 37 x 140 x 95 mm (1.46” x 5.51” x 3.74”)
- **Enclosure**: IP30, Metal shell with solid mounting kits
- **Mounting**: DIN-rail, Wall

#### Protection
- **Reverse Polarity**: Present
- **Overload current**: Present

### Environment
- **Operating Temperature**: -10 ~ 60°C (14 ~ 140°F)
- **Storage Temperature**: -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity**: 5 ~ 95% (non-condensing)
- **Storage Humidity**: 0 ~ 95% (non-condensing)
- **MTBF**: EKI-2528: 689,000 hours (EKI-2528)
  - 412,590 hours (EKI-2525)

### Certifications
- **Safety**: UL 60950-1, CAN/CSA-C22.2 No.60950 Class I, Division 2
- **EMI**: FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS**: EN 61000-4-2
  - EN 61000-4-3
  - EN 61000-4-4
  - EN 61000-4-5
  - EN 61000-4-6
  - EN 61000-4-8
- **Shock**: IEC 60068-2-27
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 60068-2-6

### Ordering Information
- **EKI-2525**: 5-port Ethernet Switch
- **EKI-2525I**: 5-port Ethernet Switch w/ Wide Temp
- **EKI-2528**: 8-port Ethernet Switch
- **EKI-2528I**: 8-port Ethernet Switch w/ Wide Temp

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**Features**

- Provides 5/8 Fast Ethernet ports with Auto MDI/MDI-X
- Supports 10/100 Mbps Auto-Negotiation
- Provides broadcast storm protection
- Provides compact size with DIN-rail/Wall mount, and IP30 metal mechanism
- Supports redundant 12 – 48 Vdc power input and P-Fail relay
- Supports wide operating temperatures from -40 to 75°C (EKI-2525I/EKI-2528I)

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**Certification**

RoHS COMPLIANT

2002/95/EC
**Introduction**

EKI-2525M/2526M/2526S are industrial-grade Ethernet switches that enable you to expand your industrial network fast and cost-effectively. The EKI-2525M/2526M/2526S have four 10/100 Mbps Ethernet ports, and additionally the EKI-2525M/2526M provides one or two multi-mode fiber-optic ports, while the EKI-2526S provides two single-mode fiber-optic ports. Using fiber-optics, you can prevent noise from interfering with your system and supports high-speed (100 Mbps) and high-distance (up to 30 km) transmissions.

EKI-2525M/2526M/2526S have industrial-grade designs, assuring high reliability and stability in harsh environments, making it a robust bridge between enterprise fiber-optic backbones and Ethernet devices. EKI-2525M/2526M/2526S includes a switch controller that can automatically sense transmission speeds. The RJ45 interface can also be auto-detected, so MDI or MDI-X is automatically selected and a crossover cable is not required. All the Ethernet ports have memory buffers that support the store and forward mechanism, assuring all data is transmitted properly.

**Specifications**

### Communications
- **Standard**: IEEE 802.3, 802.3u, 802.3x
- **LAN**: 10/100Base-T (X), 100Base-FX
- **Transmission Distance**
  - Multi-mode Fiber: Up to 2 km (EKI-2525M/2526M)
  - Single-mode Fiber: Up to 30 km (EKI-2526S)
- **Transmission Speed**: Up to 100 Mbps
- **Optical Fiber**
  - Wavelength: 1310 nm
  - Multi-Mode (EKI-2525M/2526M): Tx Power: -14/-20 dBm, Rx Sensitivity: -31 dBm
  - Parameters: 50/125 um, 62.5/125 um
  - Single-Mode (EKI-2526S): Tx Power: -8/-15 dBm, Rx Sensitivity: -34 dBm
  - Parameters: 9/125 um

### Interface
- **Connectors**
  - 4 x RJ45 ports
  - 1 x SC type fiber optic connector (EKI-2525M) or 2 x SC type fiber optic connector (EKI-2526M/S)
- **LED Indicators**
  - P1, P2, P-Fail
  - 10/100T (X): Link/Activity, Duplex/Collision

### Power
- **Power Consumption**
  - EKI-2525M: Max. 5 W
  - EKI-2526M: Max. 6.41 W
  - EKI-2526S: Max. 6.45 W
- **Power Input**
  - 12 ~ 48 Vdc, redundant dual inputs
- **Fault Output**
  - 1 Relay Output

### Mechanism
- **Dimensions (W x H x D)**: 37 x 140 x 95 mm (1.46" x 5.51" x 3.74")
- **Enclosure**: IP30, Metal shell with solid mounting kits
- **Mounting**: DIN-rail, Wall
- **Protection**
  - Reverse Polarity: Present
  - Overload current: Present

### Environment
- **Operating Temperature**: -10 ~ 60°C (14 ~ 140°F)
- **Storage Temperature**: -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity**: 5 ~ 95% (non-condensing)
- **Storage Humidity**: 0 ~ 95% (non-condensing)
- **MTBF**: 610,453 hours

### Certifications
- **Safety**: UL 60950-1, CAN/CSA-C22.2 No.60950
- **EMI**: FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS**: EN 61000-4-2, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6
- **Shock**: IEC 60068-2-27
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 60068-2-6

### Ordering Information
- **EKI-2525M**: 5-port Ethernet Switch w/ 1-port 100FX Multi-mode
- **EKI-2526M**: 4-port Ethernet Switch w/ 2-port 100FX Multi-mode
- **EKI-2526S**: 4-port Ethernet Switch w/ 2-port 100FX Single-mode
Introduction

EKI-7659CPI supports 8 Power over Ethernet (PoE) ports and 2 Gigabit combo ports. The PoE device helps realize a centralized power supply solution and provides up to 15.4 watts of power per port. To create reliability in your network, the EKI-7659CPI comes equipped with a proprietary redundant network protocol -- X-Ring that was developed by Advantech, which provides users with an easy way to establish a redundant Ethernet network with ultra high-speed recovery time less than 20 ms. Furthermore, EKI-7659CPI also supports many advanced network standards to optimize network performance, ease maintenance issues, and secure network safety.

Specifications

Communications
- Standard: IEEE 802.3, 802.3u, 802.3x, 802.3ad, 802.3af, 802.1Q, 802.1D, 802.1w, 802.1P, 802.1Q, 802.1X, 802.1v, 802.1v, 802.1Q
- LAN: 10/100/1000Base-T (X), Optional 100Base-FX, 1000Base-SX/LX/LH/XX/20ZX/EZX
- Transmission Distance: Ethernet: Up to 100 m (4- wire Cat.5e, Cat.6 RJ45 cable suggested for Gigabit ports), SFP: Up to 110 km (depends on SFP)
- Transmission Speed: Ethernet: 10/100 Mbps Auto-Negotiation, Gigabit Copper: 10/100/1000 Mbps, Auto-Negotiation, Gigabit Fiber: Up to 1000 Mbps

Interface
- Connectors: 8 x RJ45 (Ethernet), 2 x RJ45/SFP (mini-GBIC) combo ports
- LED Indicators: 6-pin removable screw terminal (Power&Relay), 10/100T (X): Link/Activity, Duplex/Collision, Gigabit Copper: Link/Activity, Speed (1000 Mbps), SFP: Link/Activity
- Console: RS-232 (RJ45)

Network Management
- Configuration: Web browser, Telnet, Serial console, TFTP, SNMPv1/v2c/v3, Port Speed/Duplex Configuration
- VLAN: IEEE 802.1Q, GVRP, Port-based VLAN
- Redundancy: Advantech X-Ring (Recovery time < 20 ms at 250 pcs full loading ring structure), Dual Homing, Couple Ring, 802.1w/D RSTP/STP
- Security: IP Access security, port security, DHCP Server, Port and IP Binding, 802.1X Port Access Control, SSH/SSL
- Traffic Control: IGMP Snooping/Query for multicast group management, Port Trunking, Static/802.3ad LACP, Rate limit and storm control
- Diagnostics: Port Mirroring, Real-time traffic statistic, MAC Address Table, SNTF, Syslog, E-Mail Alert, SNMP Trap, RMON

Mechanism
- Enclosure: IP30, metal shell with solid mounting kits
- Dimensions (W x H x D): 79 x 152 x 105 mm (3.11” x 5.98” x 4.13”)
- Mounting: DIN-rail, Wall

Power
- Power Consumption: 116 W (Full load PoE)
- Power Input: 48 Vdc, redundant dual power input
- Power Output: 15.4W at 48V (per PoE port)
- Fault Output: 1 Relay Output

Protection
- Power Reverse: Present
- Overload Current: Present

Environment
- Operating Temperature: -40 ~ 75°C (-40 ~ 167°F)
- Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)
- Operating Humidity: 5 ~ 95% (non-condensing)
- Storage Humidity: 0 ~ 95% (non-condensing)
- MTBF: 190,200 hours

Certifications
- Safety: UL 60950-1, CAN/CSA-C22.2 No.60950
- EMI: FCC Part 15 Subpart B Class A, EN 55022 Class A
- EMS: EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8
- Shock: IEC 60068-2-27
- Freefall: IEC 60068-2-32
- Vibration: IEC 60068-2-6

Ordering Information
- EKI-7659CPI: 8FE + 2G Combo Port Managed PoE Ethernet Switch w/Wide Temp
**Introduction**

The EKI-2525P/EKI-2525SPI is a 5-port unmanaged PoE (Power-over-Ethernet) Industrial Ethernet switch and EKI-2526PI is a 6-port unmanaged PoE Industrial Ethernet switch, they support 4 PoE ports which are classified as power source equipments (PSE). The PoE devices makes centralized power supply come true and provides up to 15.4 watts of power per port. Advantech EKI PoE devices can be used to power IEEE 802.3af compliant powered devices (PD) by Ethernet cable and eliminates the need for additional power wiring. Advantech EKI PoE devices come equipped with all the standard features of the EKI family. Furthermore, it offers a 48 VDC redundant power input design (EKI-2525P/EKI-2526PI), and is secured with a double protection mechanism; Power Polarity Reverse Protect and an Overload Current Resettable Fuse. Advantech EKI PoE devices come with compact metal housing that rates IP30 to help against from dusty industrial environments.

**Specifications**

**Communications**
- **Standard**: IEEE 802.3, 802.3u, 802.3x, 802.3af
- **LAN**: 10/100Base-T (X)
- **Transmission Distance**: Ethernet: Up to 100 m (EKI-2525P/EKI-2526PI), Single-mode Fiber: Up to 30 km (EKI-2525SPI)
- **Transmission Speed**: Up to 100 Mbps
- **Fiber Optics (EKI-2525SPI)**
  - **Single-mode**: 1310 nm
  - **Tx Power**: -8/-15 dBm
  - **Rx Sensitivity**: -34 dBm
  - **Parameters**: 9/125 um

**Interface**
- **Connectors**
  - PoE Ports: 4 (Ports 1 ~ 4)
  - Ethernet x1 (EKI-2525P)
  - 1xSC type fiber connector (EKI-2525SPI)
  - Ethernet x2 (EKI-2526PI)
  - 6-pin removable screw terminal (power & relay)
- **LED Indicators**
  - P1, P2, P-Fail
  - 10/100TX: Link/Activity, Duplex/Collision

**Power**
- **Power Consumption**
  - EKI-2525P: 65 W (Full load PoE)
  - EKI-2525SPI: 62.5 W (Full load PoE)
  - EKI-2526PI: 62.6 W (Full load PoE)
- **Power Input**
  - 46 VDC (EKI-2525P/EKI-2525SPI), redundant dual inputs
- **Power Output**
  - 15.4 W at 48 V (per PoE port)
- **Fault Output**
  - 1 Relay Output

**Mechanism**
- **Dimensions (W x H x D)**
  - EKI-2525P: 37 x 140 x 95 mm (1.46" x 5.51" x 3.74")
  - EKI-2525SPI: 46.5 x 140 x 95 mm (1.81" x 5.51" x 3.74")
- **Enclosure**
  - IP30, Metal shell with solid mounting kits
- **Mounting**
  - DIN-rail, Wall

**Features**
- Provides 5/6 Fast Ethernet ports with 4 PoE ports with injector function
- Provides 1 x 100 Mbps Single-mode SC type fiber optic port (EKI-2525SPI)
- Supports 10/100 Mbps Auto Negotiation
- Provides broadcast storm protection
- Supports Ethernet ESD protection
- Provides Slim size, DIN-rail/Wall mount with IP30 metal mechanism
- Supports Redundant 48 VDC power input and P-Fail relay
- Supports operating temperatures from -10 to 60°C (EKI-2525P)
- Supports wide operating temperature -40 ~ 75°C (EKI-2525SPI/EKI-2526PI)

**Protection**
- **Reverse Polarity**: Present
- **Overload current**: Present

**Environment**
- **Operating Temperature**
  - -10 ~ 60°C (14 ~ 140°F) (EKI-2525P)
  - -40 ~ 75°C (-40 ~ 167°F) (EKI-2525SPI/EKI-2526PI)
- **Storage Temperature**
  - -40 ~ 85°C (-40 ~ 185°F)
- **Storage Humidity**
  - 0 ~ 95% (non-condensing)
- **MTBF**: 440,132 hours

**Certifications**
- **Safety**: UL 60950-1, CAN/CSA-C22.2 No.60950
- **EMI**: FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS**: EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8
- **Shock**: IEC 60068-2-27
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 60068-2-6

**Ordering Information**
- **EKI-2525P**: 5-port Switch with 4 port-PoE
- **EKI-2525SPI**: 5-port Switch with 4 port-PoE and 1-port 100FX Single-mode (Wide Temp)
- **EKI-2526PI**: 6-port Switch with 4 port-PoE
Introduction
The EKI-2525PA and EKI-2528PAI are a 5/8-port unmanaged PoE (Power-over-Ethernet) Industrial Ethernet switches that supports 4 PoE ports which are classified as power source equipment (PSE). These PoE devices make centralized power supply possible and provide up to 15.4 watts of power per port. Advantech EKI PoE devices can be used to power IEEE 802.3af compliant powered devices (PD) through Ethernet cable and eliminate the need for additional power wiring. Advantech EKI PoE devices come equipped with all the standard features of the EKI family. Furthermore, they offer a 24/48 Vdc redundant power input design and is secured with a double protection mechanism; Power Polarity Reverse Protect and an Overload Current Resettable Fuse. Advantech EKI PoE devices come with compact metal housing that rates IP30 to help against from dusty industrial environments.

Specifications

Communications
- **Standard**: IEEE 802.3, 802.3u, 802.3ab, 802.3af
- **LAN**: 10/100Base-T (X)
- **Transmission Distance**: Up to 100 m
- **Transmission Speed**: Up to 100 Mbps

Interface
- **Connectors**: PoE Ports: 4 (Ports 1 – 4) and 2 (Ports 5 – 8), EKI-2525PA and EKI-2528PAI. Ethernet ports: 4 (Port 5 – Port 8), EKI-2528PAI, 6-pin removable screw terminal (power & relay)
- **LED Indicators**: P1, P2, P-Fail, 10/100TX: Link/Activity, Duplex/Collision

Power
- **Power Consumption**: EKI-2525PA: 62.5 W (Full load PoE) and EKI-2528PAI: 65 W (Full load PoE)
- **Power Input**: 24/48 Vdc, redundant dual inputs
- **Power Output**: 15.4 W at 48 V (per PoE port)
- **Fault Output**: 1 Relay Output

Mechanism
- **Dimensions (W x H x D)**: 48.6 x 140 x 95 mm (1.91" x 5.51" x 3.74")
- **Enclosure**: IP30, Metal shell with solid mounting kits
- **Mounting**: DIN-rail, Wall

Protection
- **Reverse Polarity**: Present
- **Overload current**: Present

Environment
- **Operating Temperature**: -10 ~ 60°C (-14 ~ 140°F) (EKI-2525PA)
- **Wide temp. model**: -40 ~ 75°C (-40 ~ 167°F) (EKI-2528PAI)
- **Storage Temperature**: -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity**: 5 ~ 95% (non-condensing)
- **Storage Humidity**: 0 ~ 95% (non-condensing)
- **MTBF**: 440,132 hours

Certifications
- **Safety**: UL 60950-1, CAN/CSA-C22.2 No.60950 (EKI-2525PAI), UL 508 (EKI-2528PAI)
- **EMI**: FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS**: EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8
- **Shock**: IEC 6068-2-27
- **Freefall**: IEC 6068-2-32
- **Vibration**: IEC 6068-2-6

Ordering Information
- **EKI-2525PA**: 5-port Switch with 4 port-PoE and 24/48 Vdc Power Input
- **EKI-2528PAI**: 8-port Switch with 4 port-PoE and 24/48 Vdc Power Input (Wide Temp)
**Introduction**

With the technology of PoE (Power over Ethernet), we can transfer both data and electrical power to Ethernet-enabled devices using a standard CAT5 cable. EKI-2701HPI is compliant IEEE 802.3af/at and inject 30W for PD device. This product can operate in a wide range of Temp. between -40 to 75°C and support wide power input range between 24 to 48 VDC.

**Specifications**

**Communications**
- **Standard**: IEEE 802.3, 802.3u, 802.3x, 802.3af/at, 802.3ab
- **LAN**: 10/100/1000Base-T (X)
- **Transmission Distance**: Up to 100 m
- **Transmission Speed**: up to 1000 Mbps

**Interface**
- **Connectors**:
  - PoE OUT: RJ45
  - DATA IN: RJ45
  - 6-pin removable screw terminal
- **LED Indicators**: PWR1, PWR2, PoE status, Link/Activity

**Power**
- **Power Consumption**: Max. 35 W (Full load PoE)
- **Power Input**: 24 – 48 Vdc, redundant dual power inputs
- **Power Output**: 30 W @ 24 Vdc

**Mechanism**
- **Dimensions (W x H x D)**: 27 x 120 x 85 mm (1.06” x 4.72” x 3.34”)
- **Enclosure**: IP30, Metal shell with solid mounting kits
- **Mounting**: DIN-rail, Wall

**Protection**
- **Reverse**: Present
- **Overload Current**: Present

**Environment**
- **Operating Temperature**: -40 – 75°C (40 – 167°F)
- **Storage Temperature**: -40 – 85°C (40 – 185°F)
- **Operating Humidity**: 5 – 95% (non-condensing)
- **Storage Humidity**: 0 – 95% (non-condensing)
- **MTBF**: 440,132 hours

**Certifications**
- **Safety**: UL 60950-1, CAN/CSA-C22.2 No.60950
- **EMI**: FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS**: EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8
- **Shock**: IEC 60068-2-27
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 60068-2-6

**Ordering Information**
- **EKI-2701HPI**: PoE+ Injector, support a full 30 W output

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**Features**

- Supports 10/100/1000Base-T (X) for PoE+ OUT and Data IN
- IEEE 802.3af/at compliant, supports a full 30 watt output
- Power isolation and short circuit protection for power output
- Power input (24 – 48 Vdc), inject 30 W for each port
- Provides slim size and DIN-rail/Wall mount with IP30 metal mechanism
- Supports operating temperatures from -40 to 75°C
Introduction

With the technology of PoE (Power over Ethernet), we can transfer both data and electrical power to Ethernet-enabled devices using a standard Ethernet CAT5 cable, EKI-2701PSI plays the role of powered device (PD) and splits power from PoE to Ethernet devices. In this case, both power and data can be transmitted up to 328 feet (100m) from power source equipment (PSE). This product can operate in a wide range of temperature between -40 and 75°C, and the rugged hardware design makes EKI-2701PSI perfect to ensure your PoE Ethernet equipment can meet industrial applications demanding.

Specifications

Communications
- **Standard**: IEEE 802.3, 802.3u, 802.3af, 802.3ab
- **LAN**: 10/100/1000 Base-TX
- **Transmission Distance**: Up to 100 m
- **Transmission Speed**: up to 1000 Mbps

Interface
- **Connectors**: PoE IN: RJ-45
- **LED Indicators**: Power, Link/Activity, Duplex/Collision

Power
- **Power Consumption**: Max. 17.76 W
- **Power Input**: 44 - 57 Vdc
- **Power Output**: 12.95 W @ 24 Vdc

Mechanism
- **Dimensions (W x H x D)**: 37 x 140 x 95 mm (1.46” x 5.51” x 3.74”)
- **Enclosure**: IP30, Metal shell with solid mounting kits
- **Mounting**: DIN-rail, Wall
- **Protection**: Overload current - Present

Environment
- **Operating Temperature**: -40 - 75°C (-40 - 167°F)
- **Storage Temperature**: -40 - 85°C (-40 - 185°F)
- **Operating Humidity**: 5 - 95% (non-condensing)
- **Storage Humidity**: 0 - 95% (non-condensing)
- **MTBF**: 440,132 hours

Certifications
- **Safety**: UL 60950-1, CAN/CSA-C22.2 No.60950
- **EMI**: FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS**: EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8
- **Shock**: IEC 60068-2-27
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 60068-2-6

Ordering Information
- **EKI-2701PSI**: PoE Splitter w/ Wide Temp

RoHS COMPLIANT
**Introduction**

EKI-2541M/2541S is designed to convert Ethernet networks to fiber networks by transparently converting Ethernet signals to optic signals. The advantages of fiber optics are wide bandwidth, EMI immunity and long-distance transmissions. Therefore, EKI-2541M/2541S is an ideal solution for “fiber to building” applications at central offices or local sites. EKI-2541M/2541S supports MDI/MDIX auto detection, so you don’t need to use crossover wires. Furthermore, the EKI-2541M/2541S can work normally from -10 to 60°C and accepts a wide voltage range from 12 – 48 VDC. Besides, it also provides 3,000 VDC surge (EFT) protection against over-voltage, so it is suitable for harsh operating environments.

**Link Fault Pass-Through (LFP)**

EKI-2541M/2541S is an enhanced Ethernet to fiber-optic converter. Aside from its standard features, the versatile EKI-2541M/2541S also has the LFP (Link Fault Pass-through) feature. When one side of the link fails, the other side continues transmitting packets, and waiting for a response that never arrives from the disconnected side. Use the internal jumper to enable the LFP function, then EKI-2541M/2541S will force the link to shut down as soon as noticed that the other link has failed, giving the application software a chance to react to the situation.

**Specifications**

**Communications**
- **Standard**
  - IEEE 802.3, 802.3u, 802.3x
- **LAN**
  - 10/100Base-T (X), 100Base-FX
- **Transmission Distance**
  - Ethernet: Up to 100 m
  - Fiber: Multi-mode: up to 2 km
  - Fiber: Single-mode: up to 30 km
- **Transmission Speed**
  - Up to 100 Mbps
- **Optical Fiber**
  - Multi-mode (EKI-2541M/MI)
    - Wavelength: 1310 nm
    - Tx Power: -14/-20 dBm
    - Rx Sensitivity: -31 dBm
    - Parameters: 50/125 um, 62.5/125 um
  - Single-mode (EKI-2541S/SI)
    - Wavelength: 1310 nm
    - Tx Power: -8/-15 dBm
    - Rx Sensitivity: -34 dBm
    - Parameters: 9/125 um

**Interface**
- **Connectors**
  - 1 x RJ45
  - 1 x SC type fiber connector
- **LED Indicators**
  - P1, P2, P-Fail
  - Ethernet: HDX/MDIX, LNK/ACT
- **DIP Switch**
  - Port/Power Alarm, LFP
  - Fiber: HDX/MDIX, Converter/switch

**Power**
- **Power Consumption**
  - Max. 2.7 W
- **Power Input**
  - 12 – 48 VDC, redundant dual inputs

**Mechanism**
- **Dimensions (W x H x D)**
  - 37 x 140 x 95 mm (1.46” x 5.51” x 3.74”)
- **Mounting**
  - DIN-rail, Wall
- **Enclosure**
  - IP30, Metal shell with solid mounting

**Protection**
- **Power Reverse**
  - Present
- **Overload current**
  - Present

**Environment**
- **Operating Temperature**
  - -10 – 60°C (14 – 140°F)
- **Wide Temp. model**
  - -40 – 75°C (-40 – 167°F)
- **Operating Humidity**
  - 5% – 95% (non-condensing)
- **Storage Humidity**
  - 0% – 95% (non-condensing)
- **MTBF**
  - 577,175 hours

**Certifications**
- **Safety**
  - UL 60950-1, CAN/CSA-C22.2 No.60950
- **EMI**
  - FCC Part 15 Subpart B Class A, EN 55022 Class A
  - EN 61000-4-3
  - EN 61000-4-4
  - EN 61000-4-5
  - EN 61000-4-6
  - EN 61000-4-8
- **Shock**
  - IEC 60068-2-27
- **Freefall**
  - IEC 60068-2-32
- **Vibration**
  - IEC 60068-2-6

**Ordering Information**
- **EKI-2541M**
  - Ethernet to Multi-mode Fiber Converter
- **EKI-2541MI**
  - Ethernet to Multi-mode Fiber Converter w/ Wide Temp.
- **EKI-2541S**
  - Ethernet to Single-mode Fiber Converter
- **EKI-2541SI**
  - Ethernet to Single-mode Fiber Converter w/ Wide Temp.


**Introduction**

EKI-2741 Series

EKI-2741 is designed to convert Gigabit Ethernet networks to Gigabit fiber networks by transparently converting Ethernet signals to optic signals. Therefore, EKI-2741 is an ideal solution for “fiber to building” applications at central offices or local sites. EKI-2741 supports MDI/MDI-X auto detection, so you don’t need to use crossover wires. Furthermore, the EKI-2741 accepts a wide voltage range from 12 ~ 48 VDC. Besides, it also provides 3,000 VDC surge (EFT) protection against over-voltage, so it is suitable for harsh operating environments.

EKI-2741 is an enhanced gigabit Ethernet to fiber optic converter. Aside from its standard features, the versatile EKI-2741 also has the LFP (Link Fault Pass-through) feature. When one side of the link fails, the other side continues transmitting packets, and waiting for a response that never arrives from the disconnected side. EKI-2741 will force the link to shut down as soon as noticed that the other link has failed, giving the application software a chance to react to the situation.

**Features**

- Provides 1 x 1000 Mbps Ethernet port with RJ45 connector
- Provides 1 x 1000 Mbps fiber port with SC or SFP (mini-GBC) type connector for 1000Base-SX/LX device
- Provides DIP switch for full/half duplex setting
- Supports MDI/MDI-X auto crossover
- Supports Auto-Negotiation
- Supports redundant 12 ~ 48 VDC power input
- Provides flexible mounting: DIN-rail and Wall mount
- Provides Link Fault Pass-through (LFP)
- Supports wide operating temperatures from -40 to 75°C (EKI-2741LXI)
- Jumbo Frame: 9K bytes

**Specifications**

**Communications**

- **Standard**: IEEE 802.3, 802.3u, 802.3ab, IEEE 802.3z
- **LAN**: 10/100/1000Base-T (X), 1000Base-SX or 1000Base-LX
- **Transmission Distance**: Ethernet: Up to 100 m
  - **Fiber**:
    - Multi-mode: Up to 550 m
    - Single-mode: Up to 10 km (EKI-2741LXI/LX/LXI) or up to 110 km (EKI-2741F)
    - SFP: Up to 110 km (EKI-2741F)
  - **Up to 1000 Mbps**
- **Optical Fiber**
  - **Multi-mode** (EKI-2741SX):
    - Wavelength: 850 nm
    - Tx Power: ~4/~6 dBm
    - Rx Sensitivity: ~18 dBm
    - Parameters: 50/125 um, 62.5/125 um
  - **Single-mode** (EKI-2741LXI/LX):
    - Wavelength: 1310 nm
    - Tx Power: ~3/~5 dBm
    - Rx Sensitivity: ~20 dBm
    - Parameters: 9/125 um

**Interface**

- **Connectors**: 1 x RJ45
  - 1 x SC type fiber connector (EKI-2741SX)
- **LED Indicators**: P1, P2, P-Fail
- **DIP Switch**
- **Power**
  - **Power Consumption**: 5.28 W (EKI-2741F), 5.18 W (EKI-2741SX), 5.30 W (EKI-2741LXI/LX)
  - **Power Input**: 12 ~ 48 VDC, redundant dual inputs

**Mechanism**

- **Dimensions (W x H x D)**: 37 x 140 x 95 mm (1.46” x 5.51” x 3.74”)
- **Enclosure**: IP30, Metal shell with solid mounting kits
- **Mounting**: DIN-rail, Wall

**Protection**

- **Power Reverse**: Present
- **Overload current**: Present

**Environment**

- **Operating Temperature**: -10 ~ 60°C (14 ~ 140°F)
  - **Wide Temp Model**: -40 ~ 75°C (-40 ~ 167°F)
- **Storage Temperature**: -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity**: 5 ~ 95% (non-condensing)
- **Storage Humidity**: 0 ~ 95% (non-condensing)
- **MTBF**: 515,600 hours (EKI-2741F), 525,300 hours (EKI-2741SX/LX/LXI)

**Certifications**

- **Safety**: UL 60950-1, CAN/CSA-C22.2 No.60950
- **EMI**: FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS**: EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-6, EN 61000-4-8
- **Shock**: IEC 68068-2-27
- **Freefall**: IEC 68068-2-32
- **Vibration**: IEC 68068-2-6

**Ordering Information**

- **EKI-2741F**: Giga Ethernet to SFP Fiber Converter
- **EKI-2741SX**: Giga Ethernet to 1000Base-SX Fiber Converter
- **EKI-2741LXI**: Giga Ethernet to 1000Base-LX Fiber Converter
- **EKI-2741LXI**: Giga Ethernet to 1000Base-LX Converter w/Wide Temp

**Online Download** www.advantech.com/products
Introduction

Advantech’s Small Form-factor Pluggable (SFP) transceiver family is available with a variety of different types, allowing users to select the appropriate transceiver for each link to provide the required optical reach over the available optical fiber type. Advantech’s SFP transceiver immovable lock design can fix SFP module into the switch firmly. Besides Advantech’s SFP transceiver’s compact design provides high port density and compliant with Fast Ethernet and IEEE 802.3z Gigabit Ethernet Standards. Advantech’s SFP transceivers ensure your networks operate with maximum performance, reliability, and flexibility.

Specifications

<table>
<thead>
<tr>
<th>Category</th>
<th>Distance</th>
<th>Model Name</th>
<th>Wave length</th>
<th>Tx Power</th>
<th>Rx sensitivity</th>
<th>Link Budget</th>
<th>Operating Temperature</th>
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</thead>
<tbody>
<tr>
<td>100Base-FX</td>
<td>M.M. (2 km)</td>
<td>SFP-FXM/LC</td>
<td>1310 nm</td>
<td>-14 dBm -- -20 dBm</td>
<td>-31 dBm (Min)</td>
<td>11dB</td>
<td>0 – 70°C (32 – 158°F)</td>
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<td></td>
<td>S.M. (30 km)</td>
<td>SFP-FXS/LC-30</td>
<td>1310 nm</td>
<td>-8 dBm -- -15 dBm</td>
<td>-34 dBm (Min)</td>
<td>11dB</td>
<td></td>
</tr>
<tr>
<td>1000Base</td>
<td>SX (550 m)</td>
<td>SFP-GSX/LC</td>
<td>850 nm</td>
<td>-4 dBm -- -9.5 dBm</td>
<td>-18 dBm (Min)</td>
<td>19dB</td>
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<tr>
<td></td>
<td>LX (10 km)</td>
<td>SFP-GLX/LC-10E</td>
<td>1310 nm</td>
<td>-3 dBm -- -9.5 dBm</td>
<td>-20 dBm (Min)</td>
<td>19dB</td>
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<td></td>
<td>LX (20 km)</td>
<td>SFP-GLX/LC-20E</td>
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<td>-2 dBm -- -8 dBm</td>
<td>-23 dBm (Min)</td>
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<td>LX (40 km)</td>
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<td>-24 dBm (Min)</td>
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<td>XD (50 km)</td>
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<td>ZK (70 km)</td>
<td>SFP-GZX/LC-70E</td>
<td>1550 nm</td>
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<td>-24 dBm (Min)</td>
<td>20dB</td>
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</table>

Ordering Information

- SFP-FXM/LC: 100Base-FX Multi-mode SFP module
- SFP-FXS/LC-30E: 100Base-FX Single-mode SFP module
- SFP-GSX/LC: 100Base-SX Multi-mode SFP module
- SFP-GLX/LC-10E: 1000Base-LX Single-mode SFP module (10 km)
- SFP-GLX/LC-20E: 1000Base-LX Single-mode SFP module (20 km)
- SFP-GLX/LC-40E: 1000Base-LX Single-mode SFP module (40 km)
- SFP-GXD/LC-50E: 1000Base-XD Single-mode SFP module (50 km)
- SFP-GZX/LC-70E: 1000Base-ZX Single-mode SFP module (70 km)
- SFP-GTX/RJ45: 1000Base RJ45 SFP module