

EKI-6528TI

EKI-6528TPI

EN50155 8-port M12 Unmanaged Switch with Wide Temperature

EN50155 8-port M12 Unmanaged PoE Switch with Wide Temperature



Features

- Auto Bypass between Port 1 and Port 2
- EN50155 certified
- Wide redundant power design
- 8-port 10/100 Mbps M12 type connector with IP40 protection
- 4-port PoE type M12 (EKI-6528TPI)
- Dual redundant power input
- Supports wide operating temperature -40 ~ 75°C



Introduction

The 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 V_{DC}, redundant dual inputs (for EKI-6528TPI)
12 ~ 48 V_{DC}, redundant dual inputs (for EKI-6528TI)
- **Power Connector** M12, 5-pole A-coded, male x 1
- **P-Fail Output** 1A @ 24 V_{DC}
- **P-Fail Connector** M12, 8-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)

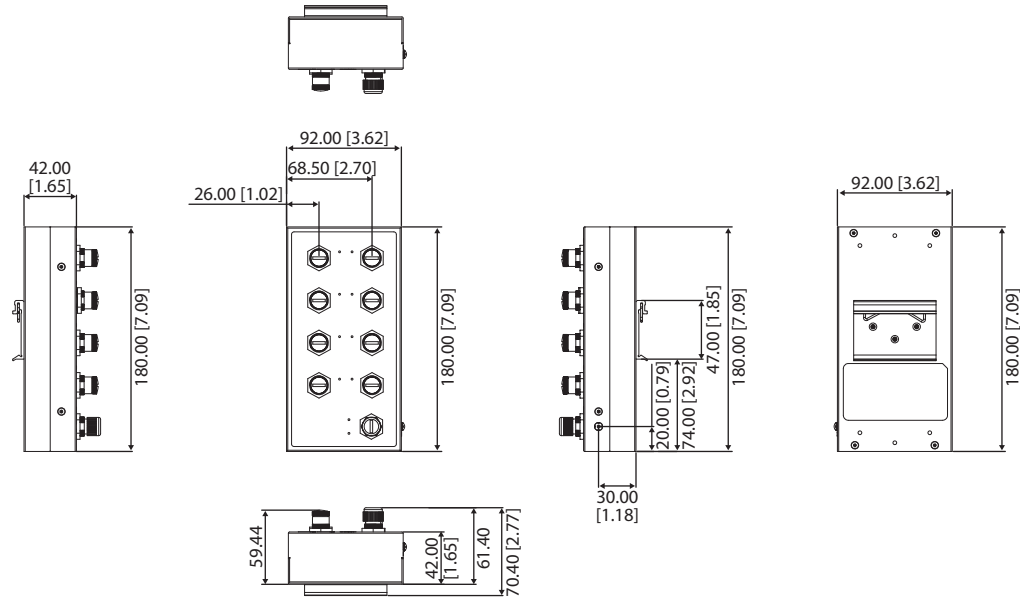
Certification

- **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

Dimensions

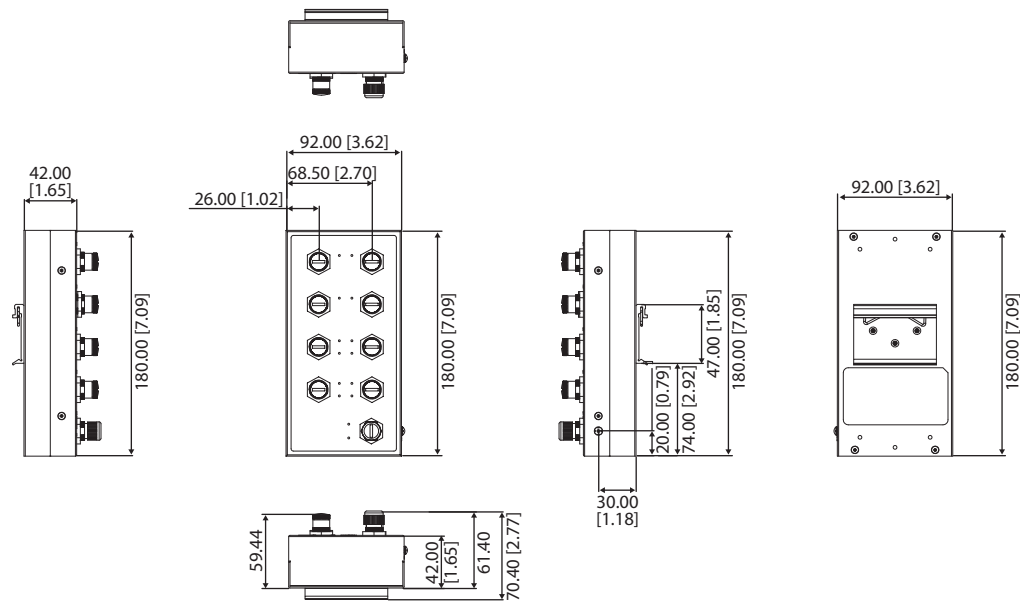
Unit: mm [inch]

EKI-6528TI



Panel Cut-out Dimensions: 92.00 x 180.00 x 42.00 mm (3.62" x 7.09 x 1.65")

EKI-6528TPI



Panel Cut-out Dimensions: 92.00 x 180.00 x 42.00 mm (3.62" x 7.09 x 1.65")

Ordering Information

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

EKI-6558TI

EKI-6559TMI

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



EKI-6558TI

EKI-6559TMI



Features

- EN50155 certified
- Supports X-Ring Pro function (ultra high-speed recovery time < 20 ms)
- Wide redundant power design
- Provides M12 connector with IP67 protection
- Provides Waterproof fiber optic connector
- TFTP firmware updates and system configure restore and backup
- Dual 12 ~ 48 V_{DC} power input and 1 relay output
- Supports wide operating temperature -40 ~ 75°C
- Provides 100 Mbps LC type connector

Introduction

The 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 Pro 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, 802.3x, 802.3ad, 802.1D, 802.1w, 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, Multi-mode (EKI-6559TMI)
- **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, IPv6
- **VLAN** IEEE 802.1Q, GVRP, Port-based VLAN
- **Redundancy** Advantech X-Ring Pro (Recovery time < 20 ms at 250 pcs full loading ring structure), Dual Homing, Dual Ring, Couple Ring, 802.1w/D RSTP/STP
- **Security** IP Access security, port security, DHCP Server, Port and IP Binding, 802.1X Port Access Control, SSL
- **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, IEEE 802.3x flow control
- **Diagnostics** Port Mirroring, Real-time traffic statistic, MAC Address Table, SNMP, 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 V_{DC}, redundant dual inputs
- **Power Connector** M12, 5-pole A-coded, male x 1
- **P-Fail Output** 1A @ 24 V_{DC}
- **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)

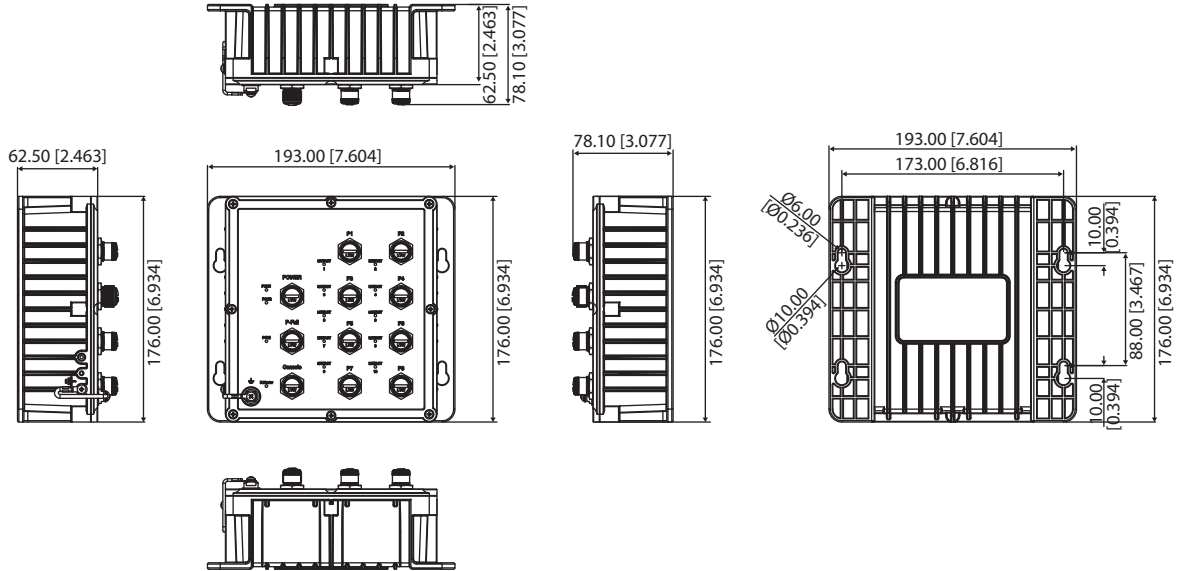
Certification

- **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

Dimensions

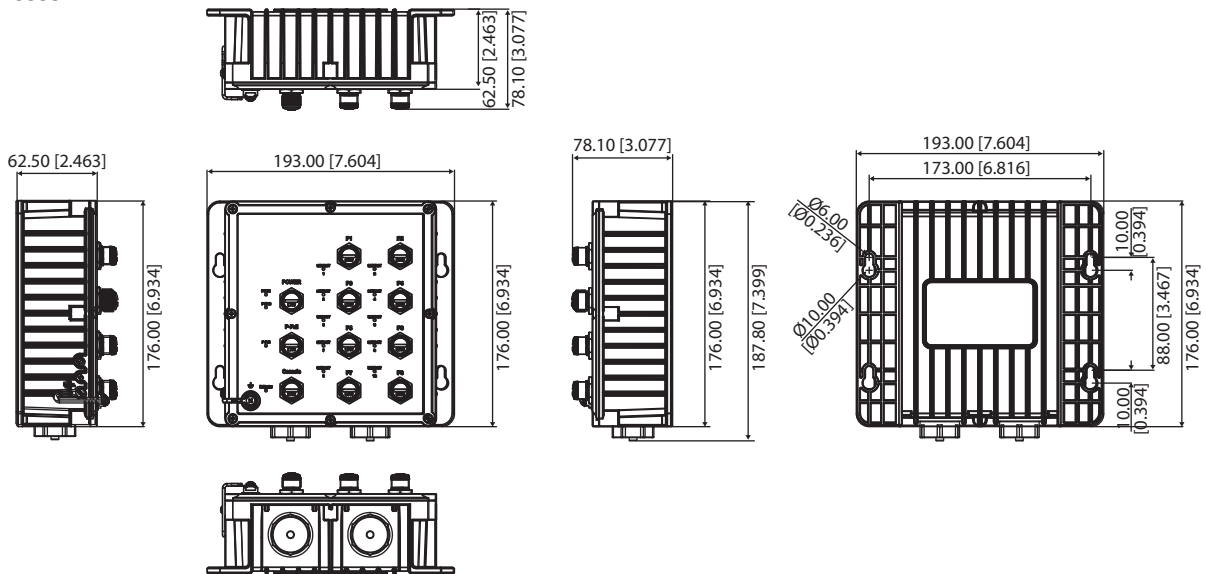
Unit: mm [inch]

EKI-6558TI



Panel Cut-out Dimensions: 193 x 176 x 62.5 (7.604" x 6.934" x 2.463")

EKI-6559TMI



Panel Cut-out Dimensions: 193 x 176 x 62.5 (7.604" x 6.934" x 2.463")

Ordering Information

- **EKI-6558TI** EN50155 8-port M12 Managed Ethernet Switch
- **EKI-6559TMI** EN50155 8-port M12+ 2-port FX Managed Ethernet Switch

EKI-9512

EN 50155 12-port Full Gigabit Managed Ethernet Switch



Features

- Complies with EN50155
- All Gigabit connections support dual ring protection and non-blocking traffic forwarding
- 8 x M12 Gigabit ports and 2 pairs M12 Gigabit ports with bypass relay function
- X-Ring Pro supports rapid and predictable convergence
- Provides M12 connector with IP67 protection
- Supports wide operating temperatures from -40 ~ 70°C

Introduction

EKI-9512 M12 Managed Ethernet Switch is designed for railway applications, including rolling stock. EKI-9512 switch uses M12 connectors to ensure tight, robust connections, and to guarantee reliable operation against environmental disturbances, such as vibration and shock. EKI-9512 provides 12 Gigabit Ethernet M12 ports. In addition, EKI-9512 provides a wide power input range of 24/36/48/72/96/110 V_{DC}; the dual, isolated power input increases the reliability of your communications system. The -40 to 70° C operating temperature and IP67-rated waterproof enclosure allow deployment in harsh environments. EKI-9512 is compliant with the essential sections of the European railway standard EN 50155, EN50121-3-2, covering operating temperature, power input voltage, surge, ESD, and vibration, making the switches suitable for a variety of industrial applications.

Specifications

Interface

- **I/O Port** 12 x 10/100/1000BaseT M12 X-Code
- **Console Port** M12 A-Code
- **F/W Backup Port** USB (M12 A-Code)
- **Power Connector** M23 6 pin

Physical

- **Enclosure** Aluminum Shell
- **Protection Class** IP 67
- **Installation** Wall Mount, DIN Rail (Optional)
- **Dimensions (W x D x H)** 254 x 174 x 64.5 (mm)
- **Weight** 3.5 kg

LED Display

- **System LEDs** PWR1, PWR2, SYS, CFG, ALM
- **Port LED** Data

Environment

- **Operating Temperature** -40 ~ 70°C (-40 ~ 158°F)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Ambient Relative Humidity** 5 ~ 95% (non-condensing)

Power

- **Power Consumption** ~ 26.4 Watts (System)
- **Power Input** 24/36/48/72/96/110 V_{DC} dual inputs
Supports Overload Current Protection
Supports Reverse Polarity Protection

Certification

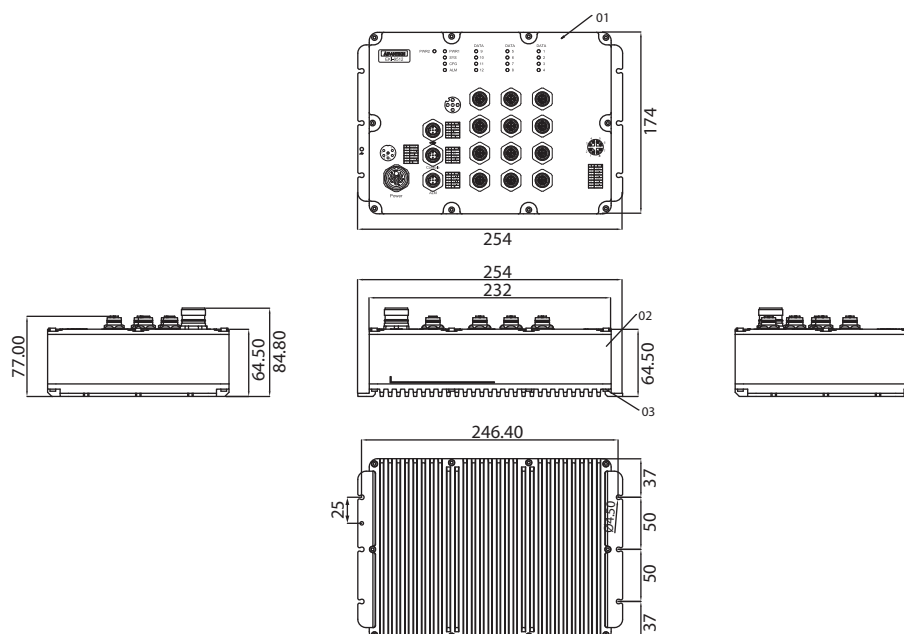
- **EMI** FCC Part 15 Subpart B Class A
CE EN55022 (CISPR)
EN55024 Class A
- **EMS** EN61000-4-2 (ESD); EN61000-4-3 (RS); EN61000-4-4 (EFT); EN61000-4-5 (Surge); EN61000-4-6 (CS)
- **Shock** IEC 61373
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 61373
- **Rail Traffic** EN 50155; EN50121-3-2

L2 Features

- **L2 MAC Address** 16K
- **Jumbo Frame** 9KB
- **VLAN Group** 4093 (VLAN ID 1~4093)
- **VLAN** Mac based VLAN, Protocol based VLAN, IP subnet based VLAN, Port based VLAN, GVRP
- **Port Mirroring** Per port, Multi-source port
- **IP Multicast** IGMP Snooping v1/v2/v3, MLD Snooping, IGMP Immediate leave
- **Storm Control** Broadcast, Multicast, Unknown unicast
- **Spanning Tree** IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro

Dimensions

Unit: mm



QoS

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

Security

- **Port Security** Static, Dynamic
- **Authentication** 802.1x (Port-Based), RADIUS, TACACS+
- **ACL** 550 rules
- **Advanced Security** IP Source Guard

Management

- **DHCP** Client, Server, Relay, Option 66/67
- **Access** SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security Access** SSH 2.0, SSL
- **Software Upgrade** TFTP, HTTP, Dual Image
- **NTP** NTP client

Ordering Information

- **EKI-9512-C0IDW10E** 12 x M12 GbE Managed Ethernet Switch, including 24/36/48/72/96/110 V_{DC} dual power inputs

EKI-9512D

EN 50155 12-port Managed Ethernet Switch



Features

- Complies with EN50155
- All 10/100 Mbps connections support dual ring protection and non-blocking traffic forwarding
- X-Ring Pro supports rapid and predictable convergence
- Provides M12 connector with IP67 protection
- Supports wide operating temperatures from -40 ~ 70°C

Introduction

EKI-9512D M12 Managed Ethernet Switch is designed for railway applications, including rolling stock. EKI-9512D switch uses M12 connectors to ensure tight, robust connections, and to guarantee reliable operation against environmental disturbances, such as vibration and shock. EKI-9512D provides 12 Fast Ethernet M12 ports. In addition, EKI-9512D provides a wide power input range of 24/36/48/72/96/110 V_{DC}; the dual, isolated power input increases the reliability of your communications system. The -40 to 70° C operating temperature and IP67-rated waterproof enclosure allow deployment in harsh environments. EKI-9512D is compliant with the essential sections of the European railway standard EN 50155, EN50121-3-2 covering operating temperature, power input voltage, surge, ESD, and vibration, making the switches suitable for a variety of industrial applications.

Specifications

Interface

- **I/O Port** 12 x 10/100BaseT M12 D-Code
- **Console Port** M12 A-Code
- **F/W Backup Port** USB (M12 A-Code)
- **Power Connector** M23 6 pin

Physical

- **Enclosure** Aluminum Shell
- **Protection Class** IP 67
- **Installation** Wall Mount, DIN Rail (Optional)
- **Dimensions (W x D x H)** 254 x 174 x 64.5 (mm)
- **Weight** 3.5 kg

LED Display

- **System LEDs** PWR1, PWR2, SYS, CFG, ALM
- **Port LED** Data

Environment

- **Operating Temperature** -40 ~ 70°C (-40 ~ 158°F)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Ambient Relative Humidity** 5 ~ 95% (non-condensing)

Power

- **Power Consumption** ~ 26.4 Watts (System)
- **Power Input** 24/36/48/72/96/110 V_{DC} dual inputs
Supports Overload Current Protection
Supports Reverse Polarity Protection

Certification

- **EMI** FCC Part 15 Subpart B Class A
CE EN55022 (CISPR)
EN55024 Class A
- **EMS** EN61000-4-2 (ESD); EN61000-4-3 (RS); EN61000-4-4 (EFT); EN61000-4-5 (Surge); EN61000-4-6 (CS)
- **Shock** IEC 61373
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 61373
- **Rail Traffic** EN 50155; EN50121-3-2

L2 Features

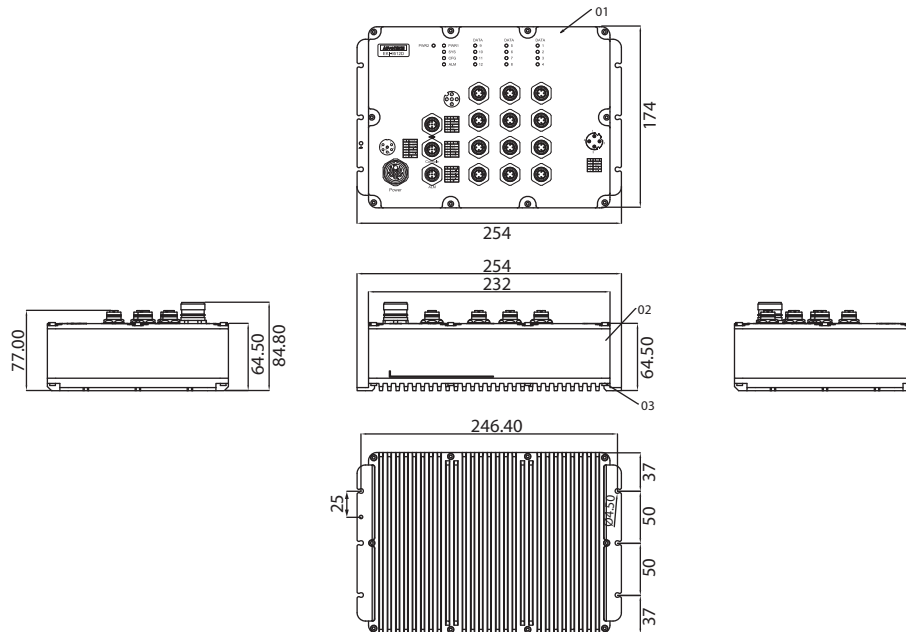
- **L2 MAC Address** 16K
- **Jumbo Frame** 9KB
- **VLAN Group** 4093 (VLAN ID 1-4093)
- **VLAN** Mac based VLAN, Protocol based VLAN, IP subnet based VLAN, Port based VLAN, GVRP
- **Port Mirroring** Per port, Multi-source port
- **IP Multicast** IGMP Snooping v1/v2/v3, MLD Snooping, IGMP Immediate leave
- **Storm Control** Broadcast, Multicast, Unknown unicast
- **Spanning Tree** IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro

QoS

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

Dimensions

Unit: mm



Security

- **Port Security** Static, Dynamic
- **Authentication** 802.1x (Port-Based), RADIUS, TACACS+
- **ACL** 550 rules
- **Advanced Security** IP Source Guard

Management

- **DHCP** Client, Server, Relay, Option 66/67
- **Access** SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security Access** SSH 2.0, SSL
- **Software Upgrade** TFTP, HTTP, Dual Image
- **NTP** NTP client

Ordering Information

- **EKI-9512-CFIDW10E** 12 x M12 managed Ethernet Switch, including 24/36/48/72/96/110 V_{DC} dual power inputs

EKI-9512DP

EN 50155 12-port Managed Ethernet Switch with PoE/PoE+



Features

- Complies with EN50155
- All 10/100 Mbps connections support dual ring protection and non-blocking traffic forwarding
- X-Ring Pro supports rapid and predictable convergence
- IEEE 802.3at PoE+ to supply 30W power
- IEEE 802.3af PoE to supply 15.4 power
- IEEE 802.3af/802.3at per port with system PoE power management
- Provides M12 connector with IP67 protection
- Supports wide operating temperatures from -40 to 70°C

Introduction

EKI-9512DP M12 Managed Ethernet Switch is designed for railway applications, including rolling stock. EKI-9512DP switch uses M12 connectors to ensure tight, robust connections, and to guarantee reliable operation against environmental disturbances, such as vibration and shock. EKI-9512DP provides 12 Fast Ethernet M12 ports with 8 IEEE 802.3at/af compliant PoE+/PoE ports. The PoE+/PoE switch is classified as power source equipment (PSE) and provides up to 30/15.4 watts of power per port, and can be used for IEEE 802.3at/af compliant powered devices (PDs), such as IP cameras, wireless access points, and IP phones. In addition, EKI-9512DP provides a wide power input range of 24/36/48 V_{DC}, 72/96/110 V_{DC}; the dual, redundant power input increases the reliability of your communications system. The -40 to 70°C operating temperature and IP67-rated waterproof enclosure allow deployment in harsh environments. EKI-9512DP is compliant with the essential sections of the European railway standard EN 50155, EN50121-3-2 covering operating temperature, power input voltage, surge, ESD, and vibration, making the switches suitable for a variety of industrial applications.

Specifications

Interface

- I/O Port** 12 x 10/100BaseT M12 D-Code
- Console Port** M12 A-Code
- F/W Backup Port** USB (M12 A-Code)
- Power Connector** M23 6 pin

Physical

- Enclosure** Aluminum Shell
- Protection Class** IP 67
- Installation** Wall Mount, DIN Rail (Optional)
- Dimensions (W x D x H)** 254 x 174 x 64.5 (mm)
- Weight** 3.5 kg

LED Display

- System LEDs** PWR1, PWR2, SYS, CFG, ALM
- Port LED** Data, PoE

Environment

- Operating Temperature** -40 ~ 70°C (-40 ~ 158°F)
- Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- Ambient Relative Humidity** 5 ~ 95% (non-condensing)

Power

- Power Consumption** ~ 26.4 Watts (System)
~ 90 Watts (Power Source Equipment)
Supports up to 8 ports PoE/PoE+
- Power Input** 24 / 36 / 48 V_{DC} dual inputs (EKI-9512P-LV)
72 / 96 / 110 V_{DC} dual inputs (EKI-9512P-HV)
Supports Overload Current Protection
Supports Reverse Polarity Protection

Certification

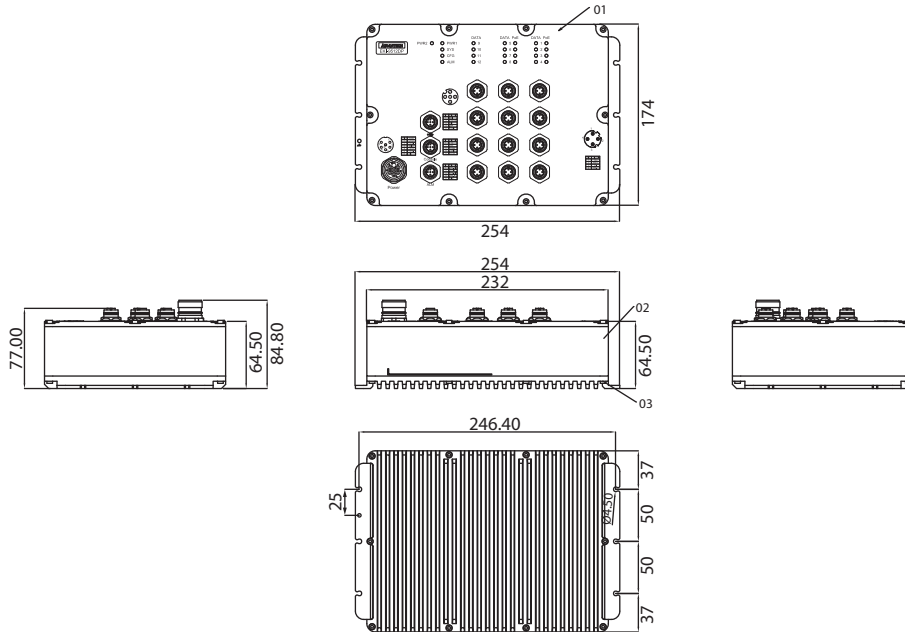
- EMI** FCC Part 15 Subpart B Class A
CE EN55022 (CISPR)
EN55024 Class A
- EMS** EN61000-4-2 (ESD); EN61000-4-3 (RS); EN61000-4-4 (EFT); EN61000-4-5 (Surge); EN61000-4-6 (CS)
- Shock** IEC 61373
- Freefall** IEC 60068-2-32
- Vibration** IEC 61373
- Rail Traffic** EN 50155; EN50121-3-2

L2 Features

- L2 MAC Address** 16K
- Jumbo Frame** 9KB
- VLAN Group** 4093 (VLAN ID 1-4093)
- VLAN** Mac based VLAN, Protocol based VLAN, IP subnet based VLAN, Port based VLAN, GVRP
- Port Mirroring** Per port, Multi-source port
- IP Multicast** IGMP Snooping v1/v2/v3, MLD Snooping, IGMP Immediate leave
- Storm Control** Broadcast, Multicast, Unknown unicast
- Spanning Tree** IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro

Dimensions

Unit: mm



QoS

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

Security

- **Port Security** Static, Dynamic
- **Authentication** 802.1x (Port-Based), RADIUS, TACACS+
- **ACL** 550 rules
- **Advanced Security** IP Source Guard

Management

- **DHCP** Client, Server, Relay, Option 66/67
- **Access** SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security Access** SSH 2.0, SSL
- **Software Upgrade** TFTP, HTTP, Dual Image
- **NTP** NTP client

Ordering Information

- **EKI-9512-PFIDL10E** 12x M12 Managed Ethernet Switch with PoE/PoE +, including 24/36/48 VDC dual power inputs
- **EKI-9512-PFIDH10E** 12x M12 Managed Ethernet Switch with PoE/PoE +, including 72/96/110 VDC dual power inputs

EKI-9512D

EN 50155 12-port Managed Ethernet Switch



Features

- Complies with EN50155
- All 10/100 Mbps connections support dual ring protection and non-blocking traffic forwarding
- X-Ring Pro supports rapid and predictable convergence
- Provides M12 connector with IP67 protection
- Supports wide operating temperatures from -40 ~ 70°C

Introduction

EKI-9512D M12 Managed Ethernet Switch is designed for railway applications, including rolling stock. EKI-9512D switch uses M12 connectors to ensure tight, robust connections, and to guarantee reliable operation against environmental disturbances, such as vibration and shock. EKI-9512D provides 12 Fast Ethernet M12 ports. In addition, EKI-9512D provides a wide power input range of 24/36/48/72/96/110 V_{DC}; the dual, isolated power input increases the reliability of your communications system. The -40 to 70° C operating temperature and IP67-rated waterproof enclosure allow deployment in harsh environments. EKI-9512D is compliant with the essential sections of the European railway standard EN 50155, EN50121-3-2 covering operating temperature, power input voltage, surge, ESD, and vibration, making the switches suitable for a variety of industrial applications.

Specifications

Interface

- I/O Port** 12 x 10/100BaseT M12 D-Code
- Console Port** M12 A-Code
- F/W Backup Port** USB (M12 A-Code)
- Power Connector** M23 6 pin

Physical

- Enclosure** Aluminum Shell
- Protection Class** IP 67
- Installation** Wall Mount, DIN Rail (Optional)
- Dimensions (W x D x H)** 254 x 174 x 64.5 (mm)
- Weight** 3.5 kg

LED Display

- System LEDs** PWR1, PWR2, SYS, CFG, ALM
- Port LED** Data

Environment

- Operating Temperature** -40 ~ 70°C (-40 ~ 158°F)
- Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- Ambient Relative Humidity** 5 ~ 95% (non-condensing)

Power

- Power Consumption** ~ 26.4 Watts (System)
- Power Input** 24/36/48/72/96/110 V_{DC} dual inputs
Supports Overload Current Protection
Supports Reverse Polarity Protection

Certification

- EMI** FCC Part 15 Subpart B Class A
CE EN55022 (CISPR)
EN55024 Class A
- EMS** EN61000-4-2 (ESD); EN61000-4-3 (RS); EN61000-4-4 (EFT); EN61000-4-5 (Surge); EN61000-4-6 (CS)
- Shock** IEC 61373
- Freefall** IEC 60068-2-32
- Vibration** IEC 61373
- Rail Traffic** EN 50155; EN50121-3-2

L2 Features

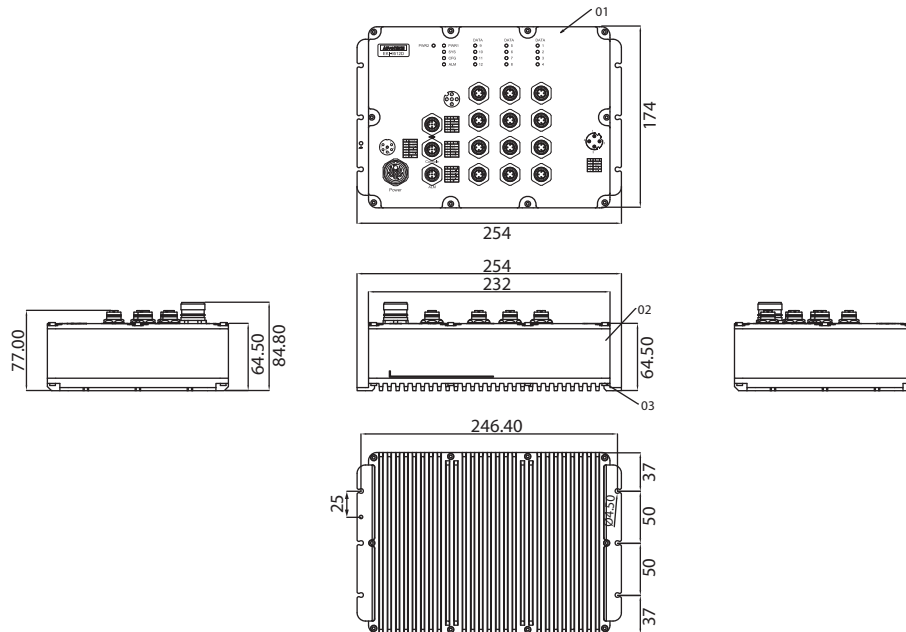
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- Jumbo Frame** 9KB
- VLAN Group** 4093 (VLAN ID 1-4093)
- VLAN** Mac based VLAN, Protocol based VLAN, IP subnet based VLAN, Port based VLAN, GVRP
- Port Mirroring** Per port, Multi-source port
- IP Multicast** IGMP Snooping v1/v2/v3, MLD Snooping, IGMP Immediate leave
- Storm Control** Broadcast, Multicast, Unknown unicast
- Spanning Tree** IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro

QoS

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

Dimensions

Unit: mm



Security

- **Port Security** Static, Dynamic
- **Authentication** 802.1x (Port-Based), RADIUS, TACACS+
- **ACL** 550 rules
- **Advanced Security** IP Source Guard

Management

- **DHCP** Client, Server, Relay, Option 66/67
- **Access** SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security Access** SSH 2.0, SSL
- **Software Upgrade** TFTP, HTTP, Dual Image
- **NTP** NTP client

Ordering Information

- **EKI-9512-CFIDW10E** 12 x M12 managed Ethernet Switch, including 24/36/48/72/96/110 V_{DC} dual power inputs

EKI-9512P

EN 50155 12-port Full Gigabit Managed Ethernet Switch with PoE/PoE+

Preliminary



Features

- Complies with EN50155
- All Gigabit connections support dual ring protection and non-blocking traffic forwarding
- 8 x M12 Gigabit ports and 2 pairs M12 Gigabit ports with bypass relay function
- X-Ring Pro supports rapid and predictable convergence
- IEEE 802.3at PoE+ to supply 30W power
- IEEE 802.3af PoE to supply 15.4 power
- IEEE 802.3af/802.3at per port with system PoE power management
- Provides M12 connector with IP67 protection
- Supports wide operating temperatures from -40 to 70°C

Introduction

EKI-9512P M12 Managed Ethernet Switch is designed for railway applications, including rolling stock. EKI-9512P switch uses M12 connectors to ensure tight, robust connections, and to guarantee reliable operation against environmental disturbances, such as vibration and shock. EKI-9512P provides 12 Gigabit Ethernet M12 ports with 8 IEEE 802.3at/af compliant PoE+/PoE ports. The PoE+/PoE switch is classified as power source equipment (PSE) and provides up to 30/15.4 watts of power per port, and can be used for IEEE 802.3at/af compliant powered devices (PDs), such as IP cameras, wireless access points, and IP phones. In addition, EKI-9512P provides a wide power input range of 24/36/48 V_{DC}, 72/96/110 V_{DC}; the dual, redundant power input increases the reliability of your communications system. The -40 to 70°C operating temperature and IP67-rated waterproof enclosure allow deployment in harsh environments. EKI-9512P is compliant with the essential sections of the European railway standard EN 50155, EN50121-3-2 covering operating temperature, power input voltage, surge, ESD, and vibration, making the switches suitable for a variety of industrial applications.

Specifications

Interface

- I/O Port** 12 x 10/100/1000BaseT M12 X-Code
- Console Port** M12 A-Code
- F/W Backup Port** USB (M12 A-Code)
- Power Connector** M23 6 pin

Physical

- Enclosure** Aluminum Shell
- Protection Class** IP 67
- Installation** Wall Mount, DIN Rail (Optional)
- Dimensions (W x D x H)** 254 x 174 x 64.5 (mm)
- Weight** 3.5 kg

LED Display

- System LEDs** PWR1, PWR2, SYS, CFG, ALM
- Port LED** Data, PoE

Environment

- Operating Temperature** -40 ~ 70°C (-40 ~ 158°F)
- Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- Ambient Relative Humidity** 5 ~ 95% (non-condensing)

Power

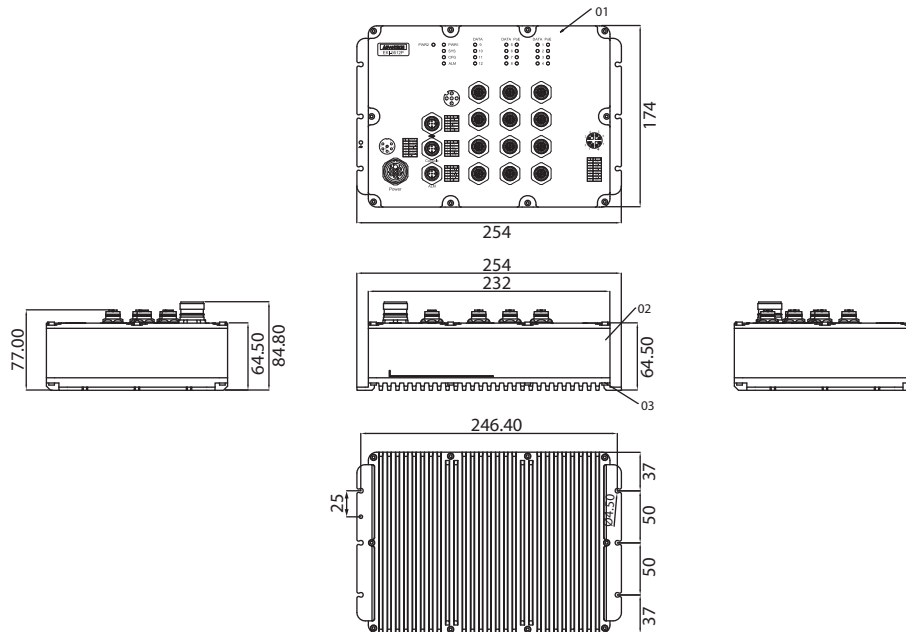
- Power Consumption** ~ 26.4 Watts (System)
~ 90 Watts
Supports up to 8 ports PoE/PoE+
- Power Input** 24 / 36 / 48 VDC dual inputs (EKI-9512P-LV)
72 / 96 / 110 VDC dual inputs (EKI-9512P-HV)
Supports Overload Current Protection
Supports Reverse Polarity Protection

Certification

- EMI** FCC Part 15 Subpart B Class A
CE EN55022 (CISPR)
EN55024 Class A
- EMS** EN61000-4-2 (ESD); EN61000-4-3 (RS); EN61000-4-4 (EFT); EN61000-4-5 (Surge); EN61000-4-6 (CS) Safety
- Shock** IEC 61373
- Freefall** IEC 60068-2-32
- Vibration** IEC 61373
- Rail Traffic** EN 50155; EN50121-3-2
- Patent** <http://www.advantech.com/legal/patent>

Dimensions

Unit: mm



L2 Features

- **L2 MAC Address** 16K
- **Jumbo Frame** 9KB
- **VLAN Group** 4093 (VLAN ID 1-4093)
- **VLAN** Mac based VLAN, Protocol based VLAN, IP subnet based VLAN, Port based VLAN, GVRP
- **Port Mirroring** Per port, Multi-source port
- **IP Multicast** IGMP Snooping v1/v2/v3, MLD Snooping, IGMP Immediate leave
- **Storm Control** Broadcast, Multicast, Unknown unicast
- **Spanning Tree** IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro

QoS

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

Security

- **Port Security** Static, Dynamic
- **Authentication** 802.1x (Port-Based), RADIUS, TACACS+
- **ACL** 550 rules
- **Advanced Security** IP Source Guard

Management

- **DHCP** Client, Server, Relay, Option 66/67
- **Access** SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security Access** SSH 2.0, SSL
- **Software Upgrade** TFTP, HTTP, Dual Image
- **NTP** NTP client

Ordering Information

- **EKI-9512-POIDL10E** 12x M12 GbE Managed Ethernet Switch with PoE/PoE+, including 24/36/48 V_{DC} dual power inputs
- **EKI-9512-POIDH10E** 12x M12 GbE Managed Ethernet Switch with PoE/PoE+, including 72/96/110 V_{DC} dual power inputs

EKI-9512P

EN 50155 12-port Full Gigabit Managed Ethernet Switch with PoE/PoE+

Preliminary



Features

- Complies with EN50155
- All Gigabit connections support dual ring protection and non-blocking traffic forwarding
- 8 x M12 Gigabit ports and 2 pairs M12 Gigabit ports with bypass relay function
- X-Ring Pro supports rapid and predictable convergence
- IEEE 802.3at PoE+ to supply 30W power
- IEEE 802.3af PoE to supply 15.4 power
- IEEE 802.3af/802.3at per port with system PoE power management
- Provides M12 connector with IP67 protection
- Supports wide operating temperatures from -40 to 70°C

Introduction

EKI-9512P M12 Managed Ethernet Switch is designed for railway applications, including rolling stock. EKI-9512P switch uses M12 connectors to ensure tight, robust connections, and to guarantee reliable operation against environmental disturbances, such as vibration and shock. EKI-9512P provides 12 Gigabit Ethernet M12 ports with 8 IEEE 802.3at/af compliant PoE+/PoE ports. The PoE+/PoE switch is classified as power source equipment (PSE) and provides up to 30/15.4 watts of power per port, and can be used for IEEE 802.3at/af compliant powered devices (PDs), such as IP cameras, wireless access points, and IP phones. In addition, EKI-9512P provides a wide power input range of 24/36/48 V_{DC}, 72/96/110 V_{DC}; the dual, redundant power input increases the reliability of your communications system. The -40 to 70°C operating temperature and IP67-rated waterproof enclosure allow deployment in harsh environments. EKI-9512P is compliant with the essential sections of the European railway standard EN 50155, EN50121-3-2 covering operating temperature, power input voltage, surge, ESD, and vibration, making the switches suitable for a variety of industrial applications.

Specifications

Interface

- I/O Port** 12 x 10/100/1000BaseT M12 X-Code
- Console Port** M12 A-Code
- F/W Backup Port** USB (M12 A-Code)
- Power Connector** M23 6 pin

Physical

- Enclosure** Aluminum Shell
- Protection Class** IP 67
- Installation** Wall Mount, DIN Rail (Optional)
- Dimensions (W x D x H)** 254 x 174 x 64.5 (mm)
- Weight** 3.5 kg

LED Display

- System LEDs** PWR1, PWR2, SYS, CFG, ALM
- Port LED** Data, PoE

Environment

- Operating Temperature** -40 ~ 70°C (-40 ~ 158°F)
- Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- Ambient Relative Humidity** 5 ~ 95% (non-condensing)

Power

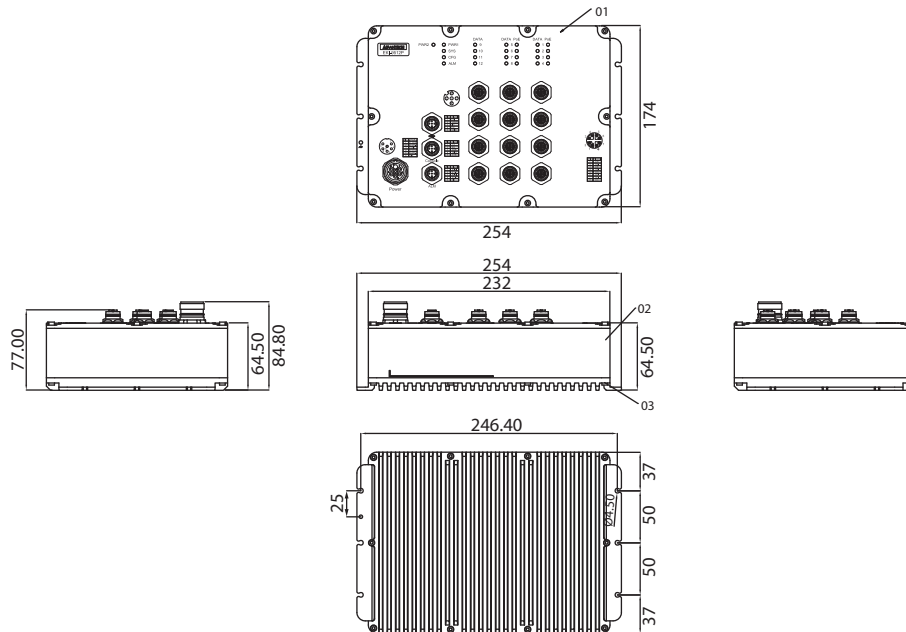
- Power Consumption** ~ 26.4 Watts (System)
~ 90 Watts
Supports up to 8 ports PoE/PoE+
- Power Input** 24 / 36 / 48 VDC dual inputs (EKI-9512P-LV)
72 / 96 / 110 VDC dual inputs (EKI-9512P-HV)
Supports Overload Current Protection
Supports Reverse Polarity Protection

Certification

- EMI** FCC Part 15 Subpart B Class A
CE EN55022 (CISPR)
EN55024 Class A
- EMS** EN61000-4-2 (ESD); EN61000-4-3 (RS); EN61000-4-4 (EFT); EN61000-4-5 (Surge); EN61000-4-6 (CS) Safety
- Shock** IEC 61373
- Freefall** IEC 60068-2-32
- Vibration** IEC 61373
- Rail Traffic** EN 50155; EN50121-3-2
- Patent** <http://www.advantech.com/legal/patent>

Dimensions

Unit: mm



L2 Features

- **L2 MAC Address** 16K
- **Jumbo Frame** 9KB
- **VLAN Group** 4093 (VLAN ID 1-4093)
- **VLAN** Mac based VLAN, Protocol based VLAN, IP subnet based VLAN, Port based VLAN, GVRP
- **Port Mirroring** Per port, Multi-source port
- **IP Multicast** IGMP Snooping v1/v2/v3, MLD Snooping, IGMP Immediate leave
- **Storm Control** Broadcast, Multicast, Unknown unicast
- **Spanning Tree** IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro

QoS

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

Security

- **Port Security** Static, Dynamic
- **Authentication** 802.1x (Port-Based), RADIUS, TACACS+
- **ACL** 550 rules
- **Advanced Security** IP Source Guard

Management

- **DHCP** Client, Server, Relay, Option 66/67
- **Access** SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security Access** SSH 2.0, SSL
- **Software Upgrade** TFTP, HTTP, Dual Image
- **NTP** NTP client

Ordering Information

- **EKI-9512-POIDL10E** 12x M12 GbE Managed Ethernet Switch with PoE/PoE+, including 24/36/48 V_{DC} dual power inputs
- **EKI-9512-POIDH10E** 12x M12 GbE Managed Ethernet Switch with PoE/PoE+, including 72/96/110 V_{DC} dual power inputs

EKI-9516

EN 50155 16-port Full Gigabit Managed Ethernet Switch



Features

- Complies with EN50155
- All Gigabit connections support dual ring protection and non-blocking traffic forwarding
- 12 x M12 Gigabit ports and 2 pairs M12 Gigabit ports with bypass relay function
- X-Ring Pro supports rapid and predictable convergence
- Provides M12 connector with IP67 protection
- Operating Temperature: -40 ~ 70° C

Introduction

EKI-9516 M12 Managed Ethernet Switch is designed for railway applications, including rolling stock. EKI-9516 switch uses M12 connectors to ensure tight, robust connections, and to guarantee reliable operation against environmental disturbances, such as vibration and shock. EKI-9516 provides 16 Gigabit Ethernet M12 ports. In addition, EKI-9516 provides a wide power input range of 24/36/48/72/96/110 V_{DC}; the dual, isolated power input increases the reliability of your communications system. The -40 to 70° C operating temperature and IP67-rated waterproof enclosure allow deployment in harsh environments. EKI-9516 is compliant with the essential sections of the European railway standard EN 50155, EN50121-3-2 covering operating temperature, power input voltage, surge, ESD, and vibration, making the switches suitable for a variety of industrial applications.

Specifications

Interface

- **I/O Port** 16 x 10/100/1000Base-T M12 X-Code
- **Console Port** M12 A-Code
- **F/W Backup Port** USB (M12 A-Code)
- **Power Connector** M23 6 pin

Physical

- **Enclosure** Aluminum Shell
- **Protection Class** IP 67
- **Installation** Wall Mount, DIN Rail (Optional)
- **Dimensions (W x D x H)** 254 x 174 x 64.5 (mm)
- **Weight** 3.6 kg

LED Display

- **System LEDs** PWR1, PWR2, SYS, CFG, ALM
- **Port LED** Data

Environment

- **Operating Temperature** -40 ~ 70°C (-40 ~ 158°F)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Ambient Relative Humidity** 5 ~ 95% (non-condensing)

Power

- **Power Consumption** ~ 26.4 Watts (System)
- **Power Input** 24/36/48/72/96/110 V_{DC} dual inputs
Supports Overload Current Protection
Supports Reverse Polarity Protection

Certification

- **EMI** FCC Part 15 Subpart B Class A
CE EN55022 (CISPR)
EN55024 Class A
- **EMS** EN61000-4-2 (ESD); EN61000-4-3 (RS); EN61000-4-4 (EFT); EN61000-4-5 (Surge); EN61000-4-6 (CS)
- **Shock** IEC 61373
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 61373
- **Rail Traffic** EN 50155; EN50121-3-2

L2 Features

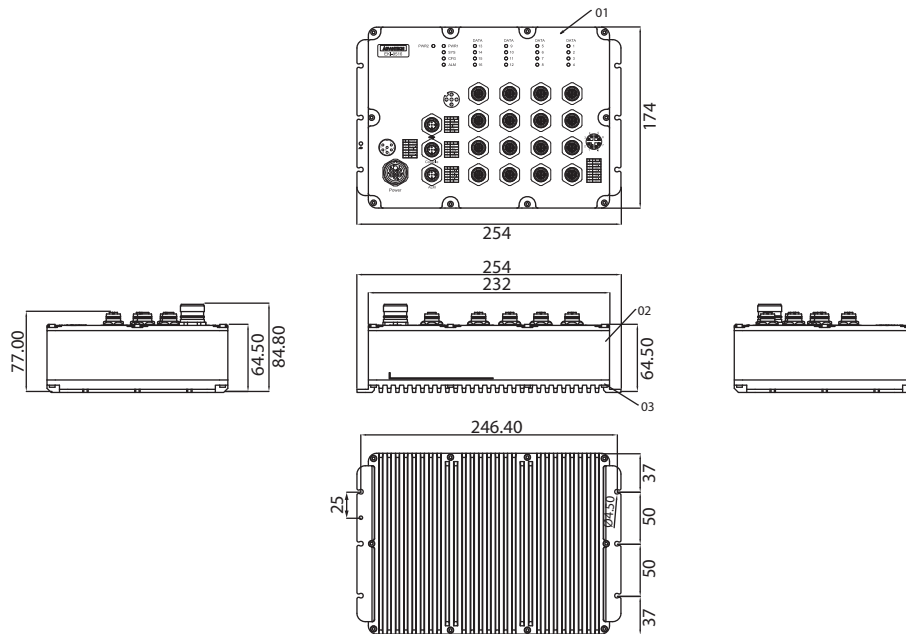
- **L2 MAC Address** 16K
- **Jumbo Frame** 9KB
- **VLAN Group** 4093 (VLAN ID 1-4093)
- **VLAN** Mac based VLAN, Protocol based VLAN, IP subnet based VLAN, Port based VLAN, GVRP
- **Port Mirroring** Per port, Multi-source port
- **IP Multicast** IGMP Snooping v1/v2/v3, MLD Snooping, IGMP Immediate leave
- **Storm Control** Broadcast, Multicast, Unknown unicast
- **Spanning Tree** IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro

QoS

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

Dimensions

Unit: mm



Security

- **Port Security** Static, Dynamic
- **Authentication** 802.1x (Port-Based), RADIUS, TACACS+
- **ACL** 550 rules
- **Advanced Security** IP Source Guard

Management

- **DHCP** Client, Server, Relay, Option 66/67/82
- **Access** SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security Access** SSH 2.0, SSL
- **Software Upgrade** TFTP, HTTP, Dual Image
- **NTP** NTP client

Ordering Information

- **EKI-9516-C0IDW10E** 16x M12 GbE Managed Ethernet Switch including 24/36/48/72/96/110 V_{DC} dual power inputs

EKI-9516D

EN 50155 16-port Managed Ethernet Switch



Features

- Complies with EN50155
- All 10/100 Mbps connections support dual ring protection and non-blocking traffic forwarding
- X-Ring Pro supports rapid and predictable convergence
- Provides M12 connector with IP67 protection
- Operating Temperature: -40 ~ 70° C

Introduction

EKI-9516D M12 Managed Ethernet Switch is designed for railway applications, including rolling stock. EKI-9516D switch uses M12 connectors to ensure tight, robust connections, and to guarantee reliable operation against environmental disturbances, such as vibration and shock. EKI-9516D provides 16 10/100 Mbps Ethernet M12 ports. In addition, EKI-9516D provides a wide power input range of 24/36/48/72/96/110 V_{DC}; the dual, isolated power input increases the reliability of your communications system. The -40 to 70° C operating temperature and IP67-rated waterproof enclosure allow deployment in harsh environments. EKI-9516D is compliant with the essential sections of the European railway standard EN 50155, EN50121-3-2 covering operating temperature, power input voltage, surge, ESD, and vibration, making the switches suitable for a variety of industrial applications.

Specifications

Interface

- I/O Port** 16 x 10/100Base-T M12 D-Code
- Console Port** M12 A-Code
- F/W Backup Port** USB (M12 A-Code)
- Power Connector** M23 6 pin

Physical

- Enclosure** Aluminum Shell
- Protection Class** IP 67
- Installation** Wall Mount, DIN Rail (Optional)
- Dimensions (W x D x H)** 254 x 174 x 64.5 (mm)
- Weight** 3.6 kg

LED Display

- System LEDs** PWR1, PWR2, SYS, CFG, ALM
- Port LED** Data

Environment

- Operating Temperature** -40 ~ 70°C (-40 ~ 158°F)
- Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- Ambient Relative Humidity** 5 ~ 95% (non-condensing)

Power

- Power Consumption** ~ 26.4 Watts (System)
- Power Input** 24/36/48/72/96/110 V_{DC} dual inputs
Supports Overload Current Protection
Supports Reverse Polarity Protection

Certification

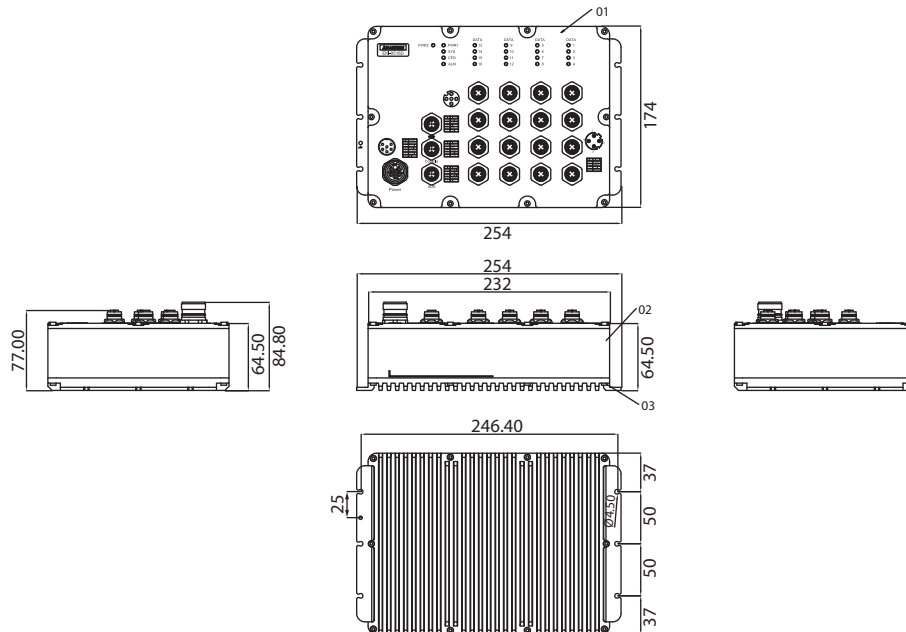
- EMI** FCC Part 15 Subpart B Class A
CE EN55022 (CISPR)
EN55024 Class A
- EMS** EN61000-4-2 (ESD); EN61000-4-3 (RS); EN61000-4-4 (EFT); EN61000-4-5 (Surge); EN61000-4-6 (CS)
- Shock** IEC 61373
- Freefall** IEC 60068-2-32
- Vibration** IEC 61373
- Rail Traffic** EN 50155; EN50121-3-2

L2 Features

- L2 MAC Address** 16K
- Jumbo Frame** 9KB
- VLAN Group** 4093 (VLAN ID 1~4093)
- VLAN** Mac based VLAN, Protocol based VLAN, IP subnet based VLAN, Port based VLAN, GVRP
- Port Mirroring** Per port, Multi-source port
- IP Multicast** IGMP Snooping v1/v2/v3, MLD Snooping, IGMP Immediate leave
- Storm Control** Broadcast, Multicast, Unknown unicast
- Spanning Tree** IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro

Dimensions

Unit: mm



QoS

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

Security

- **Port Security** Static, Dynamic
- **Authentication** 802.1x (Port-Based), RADIUS, TACACS+
- **ACL** 550 rules
- **Advanced Security** IP Source Guard

Management

- **DHCP** Client, Server, Relay, Option 66/67
- **Access** SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security Access** SSH 2.0, SSL
- **Software Upgrade** TFTP, HTTP, Dual Image
- **NTP** NTP client

Ordering Information

- **EKI-9516D-CFIDW10E** 16x M12 Managed Ethernet Switch, including 24/36/48/72/96/110 V_{DC} dual power inputs

EKI-9516DP

EN 50155 16-port Managed Ethernet Switch with PoE/PoE+



Features

- Complies with EN50155
- All 10/100 Mbps connections support dual ring protection and non-blocking traffic forwarding
- X-Ring Pro supports rapid and predictable convergence
- IEEE 802.3at PoE+ to supply 30W power
- IEEE 802.3af PoE to supply 15.4 power
- IEEE 802.3af/802.3at per port with system PoE power management
- Provides M12 connector with IP67 protection
- Operating Temperature: -40 ~ 70° C

Introduction

EKI-9516DP M12 Managed Ethernet Switch is designed for railway applications, including rolling stock. EKI-9516DP switch uses M12 connectors to ensure tight, robust connections, and to guarantee reliable operation against environmental disturbances, such as vibration and shock. EKI-9516DP provides 16 10/100 Mbps Ethernet M12 ports with 12 IEEE 802.3at/af compliant PoE+/PoE ports. The PoE+/PoE switch is classified as power source equipment (PSE) and provides up to 90 watts of power per system, and can be used for IEEE 802.3at/af compliant powered devices (PDs), such as IP cameras, wireless access points, and IP phones. In addition, EKI-9516DP provides a wide power input range of 24/36/48 V_{DC}, 72/96/110 V_{DC}; the dual, isolated power input increases the reliability of your communications system. The -40 to 70° C operating temperature and IP67-rated waterproof enclosure allow deployment in harsh environments. EKI-9516DP is compliant with the essential sections of the European railway standard EN 50155, EN50121-3-2 covering operating temperature, power input voltage, surge, ESD, and vibration, making the switches suitable for a variety of industrial applications.

Specifications

Interface

- **I/O Port** 16 x 10/100Base-T M12 D-Code
- **Console Port** M12 A-Code
- **F/W Backup Port** USB (M12 A-Code)
- **Power Connector** M23 6 pin

Physical

- **Enclosure** Aluminum Shell
- **Protection Class** IP 67
- **Installation** Wall Mount, DIN Rail (Optional)
- **Dimensions (W x D x H)** 254 x 174 x 64.5 (mm)
- **Weight** 3.6 kg

LED Display

- **System LEDs** PWR1, PWR2, SYS, CFG, ALM
- **Port LED** Data, PoE

Environment

- **Operating Temperature** -40 ~ 70°C (-40 ~ 158°F)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Ambient Relative Humidity** 5 ~ 95% (non-condensing)

Power

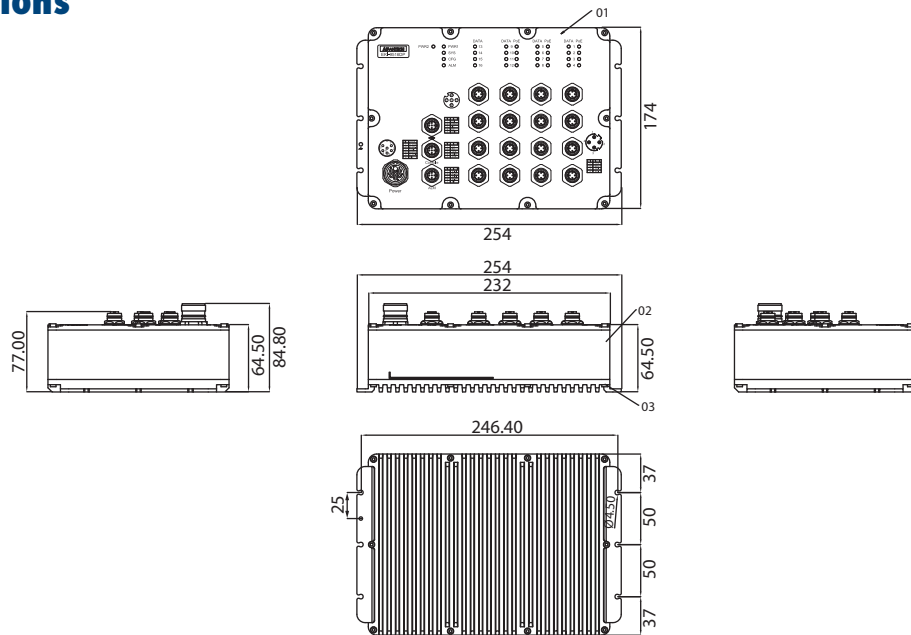
- **Power Consumption** ~ 26.4 Watts (System)
~90 Watts (Power Source Equipment)
Supports up to 12 ports PoE/PoE+
- **Power Input** 24 / 36 / 48 V_{DC} dual inputs (EKI-9516DP-LV)
72 / 96 / 110 V_{DC} dual inputs (EKI-9516DP-HV)
Supports Overload Current Protection
Supports Reverse Polarity Protection

Certification

- **EMI** FCC Part 15 Subpart B Class A
CE EN55022 (CISPR)
EN55024 Class A
- **EMS** EN61000-4-2 (ESD); EN61000-4-3 (RS); EN61000-4-4 (EFT); EN61000-4-5 (Surge); EN61000-4-6 (CS)
- **Shock** IEC 61373
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 61373
- **Rail Traffic** EN 50155; EN50121-3-2
- **Patent** <http://www.advantech.com/legal/patent>

Dimensions

Unit: mm



L2 Features

- **L2 MAC Address** 16K
- **Jumbo Frame** 9KB
- **VLAN Group** 4093 (VLAN ID 1-4093)
- **VLAN** Mac based VLAN, Protocol based VLAN, IP subnet based VLAN, Port based VLAN, GVRP
- **Port Mirroring** Per port, Multi-source port
- **IP Multicast** IGMP Snooping v1/v2/v3, MLD Snooping, IGMP Immediate leave
- **Storm Control** Broadcast, Multicast, Unknown unicast
- **Spanning Tree** IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro

QoS

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

Security

- **Port Security** Static, Dynamic
- **Authentication** 802.1x (Port-Based), RADIUS, TACACS+
- **ACL** 550 rules
- **Advanced Security** IP Source Guard

Management

- **DHCP** Client, Server, Relay, Option 66/67
- **Access** SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security Access** SSH 2.0, SSL
- **Software Upgrade** TFTP, HTTP, Dual Image
- **NTP** NTP client

Ordering Information

- **EKI-9516-PFIDL10E** 16x M12 Managed Ethernet Switch with PoE/PoE +, including 24/36/48 VDC dual power inputs
- **EKI-9516-PFIDH10E** 16x M12 Managed Ethernet Switch with PoE/PoE +, including 72/96/110 VDC dual power inputs

EKI-9516DP

EN 50155 16-port Managed Ethernet Switch with PoE/PoE+



Features

- Complies with EN50155
- All 10/100 Mbps connections support dual ring protection and non-blocking traffic forwarding
- X-Ring Pro supports rapid and predictable convergence
- IEEE 802.3at PoE+ to supply 30W power
- IEEE 802.3af PoE to supply 15.4 power
- IEEE 802.3af/802.3at per port with system PoE power management
- Provides M12 connector with IP67 protection
- Operating Temperature: -40 ~ 70° C

Introduction

EKI-9516DP M12 Managed Ethernet Switch is designed for railway applications, including rolling stock. EKI-9516DP switch uses M12 connectors to ensure tight, robust connections, and to guarantee reliable operation against environmental disturbances, such as vibration and shock. EKI-9516DP provides 16 10/100 Mbps Ethernet M12 ports with 12 IEEE 802.3at/af compliant PoE+/PoE ports. The PoE+/PoE switch is classified as power source equipment (PSE) and provides up to 90 watts of power per system, and can be used for IEEE 802.3at/af compliant powered devices (PDs), such as IP cameras, wireless access points, and IP phones. In addition, EKI-9516DP provides a wide power input range of 24/36/48 V_{DC}, 72/96/110 V_{DC}; the dual, isolated power input increases the reliability of your communications system. The -40 to 70° C operating temperature and IP67-rated waterproof enclosure allow deployment in harsh environments. EKI-9516DP is compliant with the essential sections of the European railway standard EN 50155, EN50121-3-2 covering operating temperature, power input voltage, surge, ESD, and vibration, making the switches suitable for a variety of industrial applications.

Specifications

Interface

- **I/O Port** 16 x 10/100Base-T M12 D-Code
- **Console Port** M12 A-Code
- **F/W Backup Port** USB (M12 A-Code)
- **Power Connector** M23 6 pin

Physical

- **Enclosure** Aluminum Shell
- **Protection Class** IP 67
- **Installation** Wall Mount, DIN Rail (Optional)
- **Dimensions (W x D x H)** 254 x 174 x 64.5 (mm)
- **Weight** 3.6 kg

LED Display

- **System LEDs** PWR1, PWR2, SYS, CFG, ALM
- **Port LED** Data, PoE

Environment

- **Operating Temperature** -40 ~ 70°C (-40 ~ 158°F)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Ambient Relative Humidity** 5 ~ 95% (non-condensing)

Power

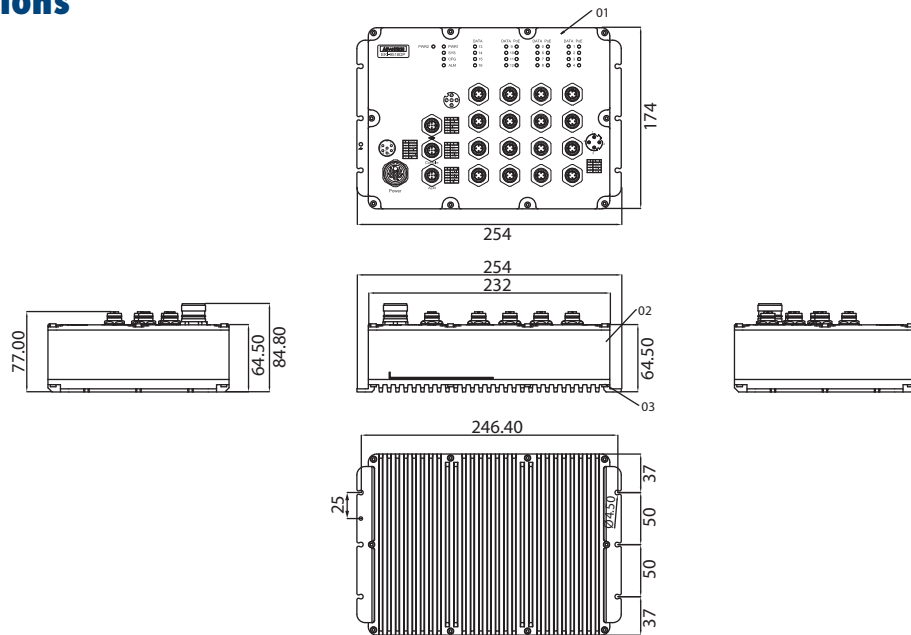
- **Power Consumption** ~ 26.4 Watts (System)
~90 Watts (Power Source Equipment)
Supports up to 12 ports PoE/PoE+
- **Power Input** 24 / 36 / 48 V_{DC} dual inputs (EKI-9516DP-LV)
72 / 96 / 110 V_{DC} dual inputs (EKI-9516DP-HV)
Supports Overload Current Protection
Supports Reverse Polarity Protection

Certification

- **EMI** FCC Part 15 Subpart B Class A
CE EN55022 (CISPR)
EN55024 Class A
- **EMS** EN61000-4-2 (ESD); EN61000-4-3 (RS); EN61000-4-4 (EFT); EN61000-4-5 (Surge); EN61000-4-6 (CS)
- **Shock** IEC 61373
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 61373
- **Rail Traffic** EN 50155; EN50121-3-2
- **Patent** <http://www.advantech.com/legal/patent>

Dimensions

Unit: mm



L2 Features

- **L2 MAC Address** 16K
- **Jumbo Frame** 9KB
- **VLAN Group** 4093 (VLAN ID 1-4093)
- **VLAN** Mac based VLAN, Protocol based VLAN, IP subnet based VLAN, Port based VLAN, GVRP
- **Port Mirroring** Per port, Multi-source port
- **IP Multicast** IGMP Snooping v1/v2/v3, MLD Snooping, IGMP Immediate leave
- **Storm Control** Broadcast, Multicast, Unknown unicast
- **Spanning Tree** IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro

QoS

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

Security

- **Port Security** Static, Dynamic
- **Authentication** 802.1x (Port-Based), RADIUS, TACACS+
- **ACL** 550 rules
- **Advanced Security** IP Source Guard

Management

- **DHCP** Client, Server, Relay, Option 66/67
- **Access** SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security Access** SSH 2.0, SSL
- **Software Upgrade** TFTP, HTTP, Dual Image
- **NTP** NTP client

Ordering Information

- **EKI-9516-PFIDL10E** 16x M12 Managed Ethernet Switch with PoE/PoE +, including 24/36/48 VDC dual power inputs
- **EKI-9516-PFIDH10E** 16x M12 Managed Ethernet Switch with PoE/PoE +, including 72/96/110 VDC dual power inputs

EKI-9516P

EN 50155 16-port Full Gigabit Managed Ethernet Switch with PoE/PoE+



Features

- Complies with EN50155
- All Gigabit connections support dual ring protection and non-blocking traffic forwarding
- 12 x M12 Gigabit ports and 2 pairs M12 Gigabit ports with bypass relay function
- X-Ring Pro supports rapid and predictable convergence
- IEEE 802.3at PoE+ to supply 30W power
- IEEE 802.3af PoE to supply 15.4 power
- IEEE 802.3af/802.3at per port with system PoE power management
- Provides M12 connector with IP67 protection
- Operating Temperature: -40 ~ 70° C

Introduction

EKI-9516P M12 Managed Ethernet Switch is designed for railway applications, including rolling stock. EKI-9516P switch uses M12 connectors to ensure tight, robust connections, and to guarantee reliable operation against environmental disturbances, such as vibration and shock. EKI-9516P provides 16 Gigabit Ethernet M12 ports with 12 IEEE 802.3at/af compliant PoE+/PoE ports. The PoE+/PoE switch is classified as power source equipment (PSE) and provides up to 90 watts of power per system, and can be used for IEEE 802.3at/af compliant powered devices (PDs), such as IP cameras, wireless access points, and IP phones. In addition, EKI-9516P provides a wide power input range of 24/36/48 V_{DC}, 72/96/110 V_{DC}; the dual, isolated power input increases the reliability of your communications system. The -40 to 70° C operating temperature and IP67-rated waterproof enclosure allow deployment in harsh environments. EKI-9516P is compliant with the essential sections of the European railway standard EN 50155, EN50121-3-2 covering operating temperature, power input voltage, surge, ESD, and vibration, making the switches suitable for a variety of industrial applications.

Specifications

Interface

- I/O Port** 16 x 10/100/1000BaseT M12 X-Code
- Console Port** M12 A-Code
- F/W Backup Port** USB (M12 A-Code)
- Power Connector** M23 6 pin

Physical

- Enclosure** Aluminum Shell
- Protection Class** IP 67
- Installation** Wall Mount, DIN Rail (Optional)
- Dimensions (W x D x H)** 254 x 174 x 64.5 (mm)
- Weight** 3.6 kg

LED Display

- System LEDs** PWR1, PWR2, SYS, CFG, ALM
- Port LED** Data, PoE

Environment

- Operating Temperature** -40 ~ 70°C (-40 ~ 158°F)
- Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- Ambient Relative Humidity** 5 ~ 95% (non-condensing)

Power

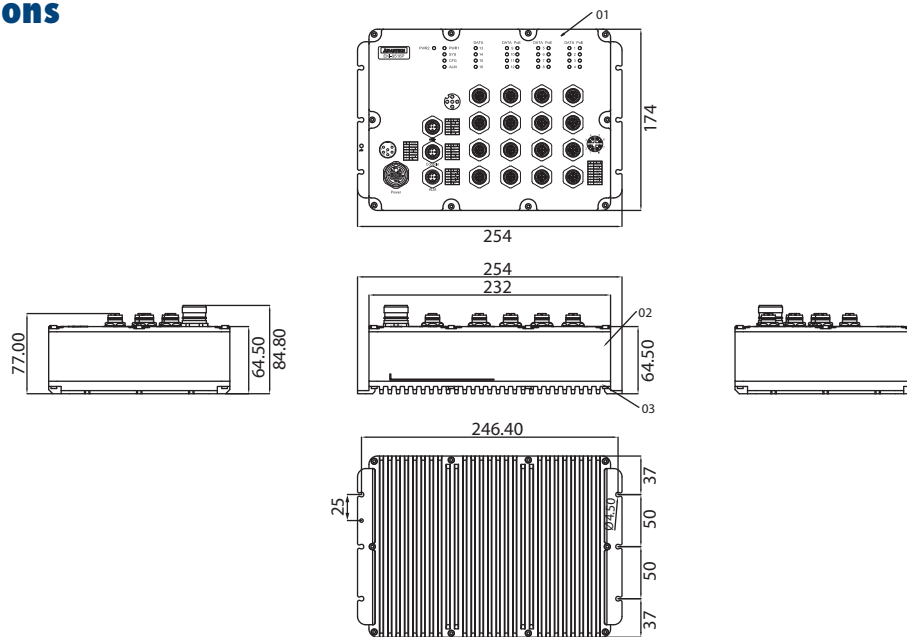
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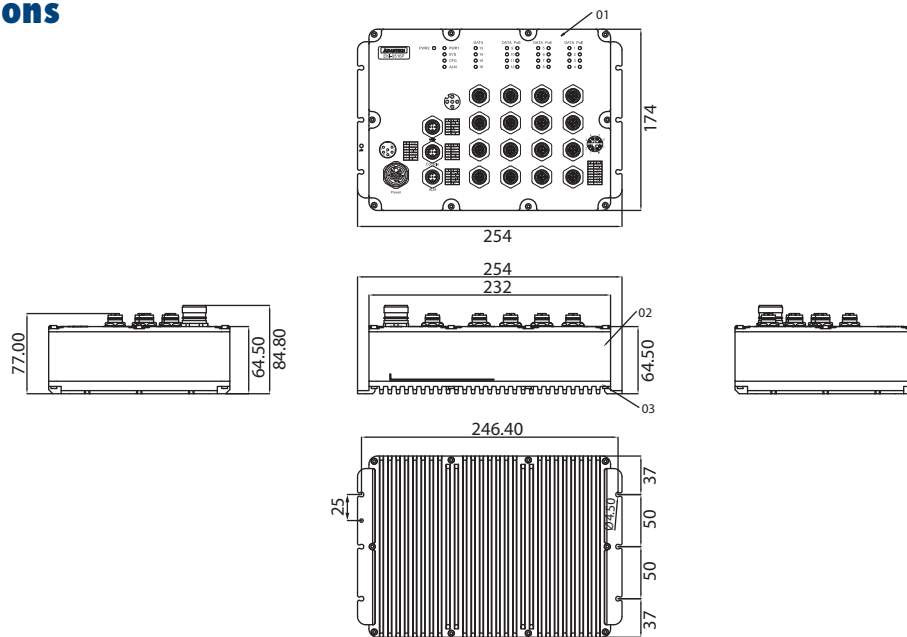
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