6 Industrial Communication

Industrial Communication in the IoT Era

Connecting legacy devices to IoT

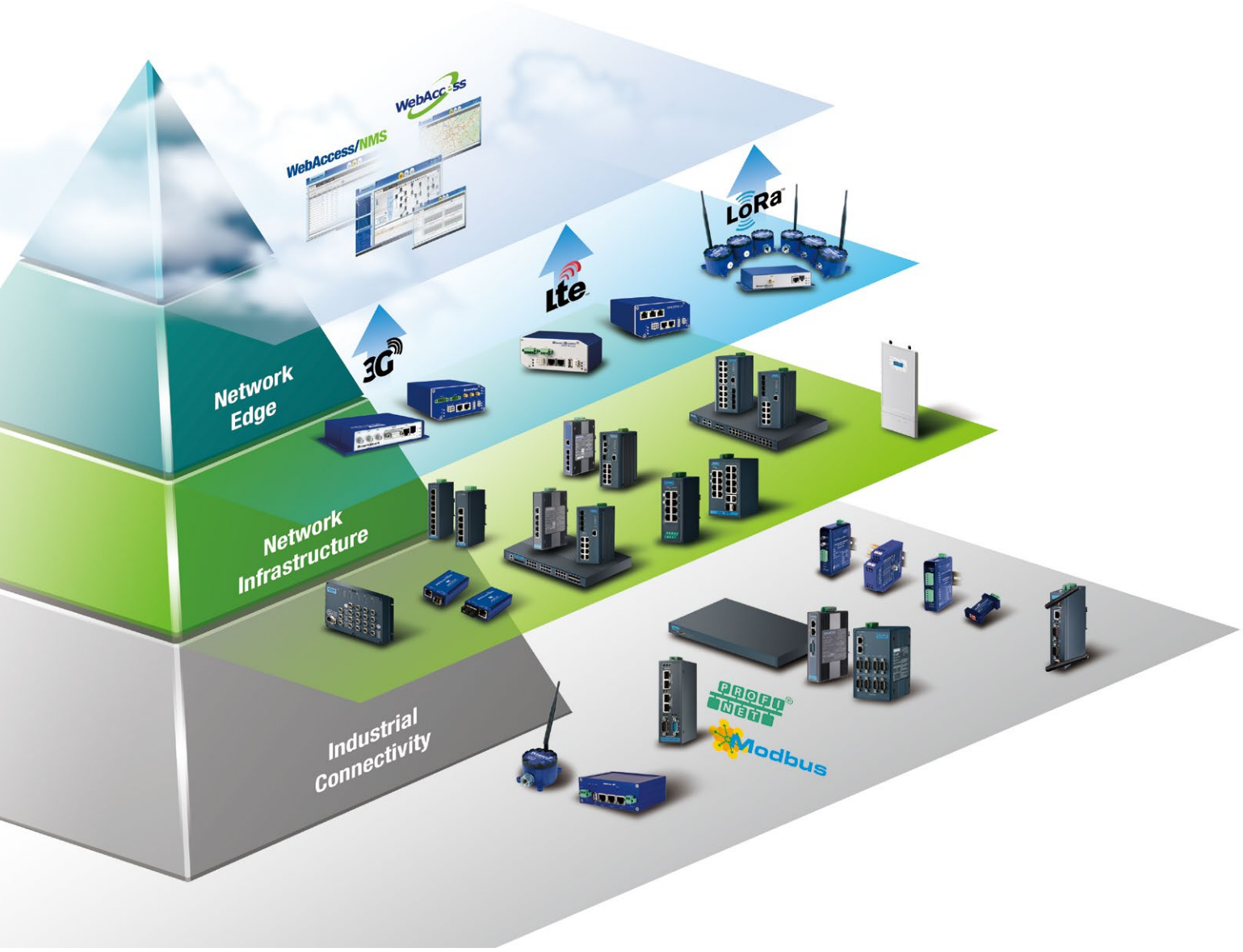
Most legacy devices are isolated and unconnected, but the use of legacy network technologies still prevails in industrial automation and new solutions that connect legacy devices to modern networking systems are needed in order to extend the useful life of existing machinery as to avoid an expansive machine purchase or major upgrade.

Moving from Closed to Open, IP-based Networks

The adoption of an open, IP-based network has gained in popularity for their ability to connect every machine, device, and equipment together on the same network either by wired or wireless technologies in order to maximize the true benefits of IoT.

Empowered Edge Computing

Bringing intelligence to where the action takes place – edge computing processes data locally, at the edge of the network, near the source of the data, then passes data from the local area network to the cloud. It is an attractive technology which not only provides a faster response, but also helps relieve the workload of the cloud, making the cost of building your IoT Infrastructure much lower. Advantech's industrial communication solutions offer various wired and wireless communication technologies, ensuring a secure and seamless connection of every layer in the industrial communication network.



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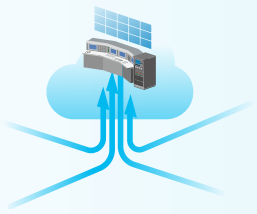
Our Technologies

Interconnected Solutions for an Intelligent Planet

In the IoT era, equipment and machines are able to connect and communicate with each other to increase productivity, efficiency, and scalability. The core mission of Advantech's iConnectivity Group is to offer best-in-class industrial communication solutions including both wired and wireless technologies that can truly help integrators leverage the full potential of IoT in the most effective and productive way.



WebAccess/NMS

Advantech's WebAccess/NMS provides centralized remote network management for industrial vertical applications.

- Auto networking topology
- Configuration backup and restore
- Network monitoring and reporting
- Dynamic connectivity indication

Network Edge

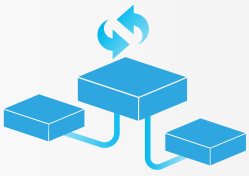
Advantech's cellular routing solutions open up endless possibilities for IoT. Advantech's cellular routers support direct communication between MQTT-enabled devices and the cloud and their built-in Node-RED technology enables smart data processing and monitoring using Advantech's WISE/PaaS management software.

- Support for operation with global 3G/LTE coverage
- Cyber security protection via firewall, NAT, and VPN
- Intelligent gateways support LoRa, and Mesh networks

Wired & Wireless Network Infrastructure

Advantech provides a comprehensive product portfolio to help users build a robust, secure and scalable wired or wireless networking infrastructure.

- Supports various industrial Ethernet protocols, such as TCP/IP, Ethernet/IP, PROFINET, CC-link, and ODVA
- Compliant with C1D2, ATEX, IECEx certifications for hazardous environments
- Cyber security protection within the network
- Layer 3 routing protocols: RIP, OSPF, and VRRP
- Advantech's patented IXM technology for rapid deployment, saving up to 90% of engineering time and resources



Protocol & Interface Conversion Solutions

Advantech offers numerous wired and wireless products to convert different legacy protocols and interfaces to modern networking systems to avoid a complete overhaul of existing equipment and devices, saving cost and avoiding software programming errors.

- Supports various industrial Ethernet protocols including TCP/IP, Ethernet/IP, and PROFINET
- Surge protection and field isolation
- Connects to edge sensors via LoRa and MESH technologies
- Serial-to-Ethernet and USB-to-Serial conversion

Industrial Ethernet Solutions

EN50155 Ethernet Switches






Model Name		EKI-9512E-4EETB	EKI-9528E-4GMP EKI-9528G-4GMP	EKI-9520E-4GMP EKI-9520G-4GMP	EKI-9510G-2GMPH EKI-9510G-2GMPL	EKI-9510E-2GMPH EKI-9510E-2GMPL	EKI-9508G-MPH EKI-9508G-MPL
Description		EN 50155 12-port Ethernet Train Backbone Router	EN 50155 28-port Managed Ethernet Switch/With PoE	EN 50155 20-port Managed Ethernet Switch/With PoE	EN 50155 10-port Full Gigabit Managed Ethernet Switch/With PoE	EN 50155 10-port Managed Ethernet Switch/With PoE	EN 50155 8-port Full Gigabit Managed Ethernet Switch/With PoE
Interface	Ports Number	12	28	20	10	10	8
	10/100Base-T (X)	12	-	-	-	-	-
	100BaseFX	-	-	-	-	-	-
	10/100/1000Base-T (X)	-	12	4	2	2	-
	1000Base-SX/LX/LHX/XD/ZX/EZX	-	-	-	-	-	-
	PoE (10/100 Mbps)	-	16 (EKI-9528E-4GMP)	16 (EKI-9520E-4GMP)	-	8	-
	PoE (10/100/1000 Mbps)	-	16 (EKI-9528G-4GMP)	16 (EKI-9520G-4GMP)	8	-	8
	DI/DO	-	-	-	-	-	-
	Console	✓	✓	✓	✓	✓	✓
Network Management	Redundancy	✓	✓	✓	✓	✓	✓
	Diagnostics	✓	✓	✓	✓	✓	✓
	VLAN	✓	✓	✓	✓	✓	✓
	Configuration	✓	✓	✓	✓	✓	✓
	SNMP	✓	✓	✓	✓	✓	✓
	Security	✓	✓	✓	✓	✓	✓
	Traffic Control	✓	✓	✓	✓	✓	✓
Power	12 ~ 48 V DC	-	-	-	-	-	-
	24 ~ 110 V DC	✓	✓	✓	EKI-9510G-2GMPL: 24~48V DC EKI-9510G-2GMPH: 72~110V DC	EKI-9510E-2GMPL: 24~48V DC EKI-9510E-2GMPH: 72~110V DC	EKI-9508G-MPL: 24~48V DC EKI-9508G-MPH: 72~110V DC
	100 ~ 240 V AC	-	-	-	-	-	-
	Relay Output	✓	✓	✓	-	-	-
Mechanism	DIN-rail Mount	-	-	-	-	-	-
	Wall Mount	✓	✓	✓	✓	✓	✓
	Rack Mount	-	-	-	-	-	-
	IP Level	IP67	IP67	IP67	IP40	IP40	IP40
Protection	ESD (Ethernet)	✓	✓	✓	✓	✓	✓
	Surge (EFT for power)	✓	✓	✓	✓	✓	✓
	Power Reverse	✓	✓	✓	✓	✓	✓
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	-	-	-	-	-	-
	-40 ~ 75°C (-40 ~ 167°F)	✓	✓	✓	✓	✓	✓
	-40 ~ 85°C (-40 ~ 185°F)	-	-	-	-	-	-
Certifications	CE	✓	✓	✓	✓	✓	✓
	FCC	✓	✓	✓	✓	✓	✓
	UL/cUL 60950-1	-	-	-	-	-	-
	Class 1, Division 2	-	-	-	-	-	-
	UL 508	-	-	-	-	-	-
	Others	EN50155	EN50155	EN50155	EN50155	EN50155	EN50155

✓ : supported, - : not supported, △ : optional

Industrial Ethernet Solutions

EN50155 Ethernet Switches





Model Name		EKI-9508E-MPH EKI-9508E-MPL	EKI-9512 EKI-9512P	EKI-9512D EKI-9512DP	EKI-9516 EKI-9516P	EKI-9516D EKI-9516DP
Description		EN 50155 8-port Managed Ethernet Switch/With PoE	EN 50155 12-port Full Gigabit Managed Ethernet Switch/With PoE + PoE+	EN 50155 12-port Managed Ethernet Switch /With PoE/PoE+	EN 50155 16-port Full Gigabit Managed Ethernet Switch/With PoE/PoE+	EN 50155 16-port Managed Ethernet Switch/With PoE/PoE+
Interface	Ports Number	8	12	12	16	16
	10/100Base-T (X)	-	-	12(EKI-9512D) 4(EKI-9512DP)	-	16(EKI-9516D) 4(EKI-9516DP)
	100BaseFX	-	-	-	-	-
	10/100/1000Base-T (X)	-	12(EKI-9512) 4(EKI-9512P)	-	16(EKI-9516) 4(EKI-9516P)	-
	1000Base-SX/LX/LHX/XD/ZX/EZX	-	-	-	-	-
	PoE (10/100 Mbps)	8	-	8(EKI-9512DP)	-	12(EKI-9516DP)
	PoE (10/100/1000 Mbps)	-	8(EKI-9512P)	-	12(EKI-9516P)	-
	DI/DO	-	-	-	-	-
	Console	✓	✓	✓	✓	✓
Network Management	Redundancy	✓	✓	✓	✓	✓
	Diagnostics	✓	✓	✓	✓	✓
	VLAN	✓	✓	✓	✓	✓
	Configuration	✓	✓	✓	✓	✓
	SNMP	✓	✓	✓	✓	✓
	Security	✓	✓	✓	✓	✓
	Traffic Control	✓	✓	✓	✓	✓
Power	12 ~ 48 V DC	-	-	-	-	-
	24 ~ 110 V DC	EKI-9508E-MPL: 24~48V DC EKI-9508G-MPH: 72~110V DC	EKI-9512P-LV: 24~48V DC EKI-9512P-HV: 72~110V DC EKI-9512-WV: 24~110V DC	EKI-9512DP-LV: 24~48V DC EKI-9512DP-HV: 72~110V DC EKI-9512D-WV: 24~110V DC	EKI-9516P-LV: 24~48V DC EKI-9516P-HV: 72~110V DC EKI-9516-WV: 24~110V DC	EKI-9516DP-LV: 24~48V DC EKI-9516DP-HV: 72~110V DC EKI-95126-WV: 24~110V DC
	100 ~ 240 V AC	-	-	-	-	-
	Relay Output	-	✓	✓	✓	✓
Mechanism	DIN-rail Mount	-	-	-	-	-
	Wall Mount	✓	✓	✓	✓	✓
	Rack Mount	-	-	-	-	-
	IP Level	IP40	IP67	IP67	IP67	IP67
Protection	ESD (Ethernet)	✓	✓	✓	✓	✓
	Surge (EFT for power)	✓	✓	✓	✓	✓
	Power Reverse	✓	✓	✓	✓	✓
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	-	-	-	-	-
	-40 ~ 75°C (-40 ~ 167°F)	✓	✓	✓	✓	✓
	-40 ~ 85°C (-40 ~ 185°F)	-	-	-	-	-
Certifications	CE	✓	✓	✓	✓	✓
	FCC	✓	✓	✓	✓	✓
	UL/cUL 60950-1	-	-	-	-	-
	Class 1, Division 2	-	-	-	-	-
	UL 508	-	-	-	-	-
	Others	EN50155	EN50155	EN50155	EN50155	EN50155

✓ : supported, - : not supported, △ : optional

1 Software and Industry Solutions
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5 Automation Computers and Controllers
6 Industrial Communication
7 Remote I/O Modules
8 Industrial I/O and Video Solutions

Industrial Ethernet Solutions

L3 Managed Switches

Model Name		EKI-9728G-4X8CI	EKI-9628G-4CI	EKI-9612G-4FI
Description		L3 28-port Managed Switch w/ 4 x 10GbE ports	L3 28-port Managed Switch	L3 12-port Managed Switch
Interface	Ports Number	28	28	12
	10/100Base-T (X)	-	-	-
	100BaseFX	-	-	-
	10/100/1000Base-T (X)	16+8 (combo)	24+4 (combo)	8
	1000Base-SX/LX/ LHX/XD/ZX/EZX	8 (combo)	4 (combo)	4 x SFP
	PoE (10/100 Mbps)	-	-	-
	PoE (10/100/1000 Mbps)	-	-	-
	HSR/PRP	4	-	-
	Console	✓	✓	✓
Network Management	Redundancy	✓	✓	✓
	Diagnostics	✓	✓	✓
	VLAN	✓	✓	✓
	Configuration	✓	✓	✓
	SNMP	✓	✓	✓
	Security	✓	✓	✓
	Traffic Control	✓	✓	✓
Power	12 ~ 48 V DC	-	✓	✓
	24 ~ 110 V DC	-	-	-
	100 ~ 240 V AC	90~264 V_{AC}	-	-
	Relay Output	-	-	-
Mechanism	DIN-rail Mount	-	-	✓
	Wall Mount	-	-	-
	Rack Mount	✓	✓	-
	IP Level	IP30	IP30	IP30
Protection	ESD (Ethernet)	✓	✓	✓
	Surge (EFT for power)	✓	✓	✓
	Power Reverse	✓	✓	✓
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	-	-	-
	-40 ~ 75°C (-40 ~ 167°F)	✓	✓	✓
	-40 ~ 85°C (-40 ~ 185°F)	-	-	-
Certifications	CE	✓	✓	✓
	FCC	✓	✓	✓
	UL/cUL 60950-1	-	-	-
	Class 1, Division 2	-	-	-
	UL 508	-	✓	✓
Others		-	-	-

IEC 61850-3 Managed Industrial Ethernet Switches

Model Name		EKI-9228G-20FOI EKI-9228G-20FMI	EKI-9226G-20FOI EKI-9226G-20FMI	EKI-9213E-2CPHR
Description		28-port Full Giga Managed Switch	26-port Full Giga Managed Switch	13-port Managed Switch support HSR/PRP
Interface	Ports Number	28	26	13
	10/100Base-T (X)	-	-	8
	100BaseFX	-	-	-
	10/100/1000Base-T (X)	24+4 (Combo)	20	-
	1000Base-SX/LX/ LHX/XD/ZX/EZX	4 x SFP(Combo)	6 x SFP	3 x SFP
	PoE (10/100 Mbps)	-	-	-
	PoE (10/100/1000 Mbps)	-	-	-
	HSR/PRP	-	-	2 x RJ-45/SFP combo
	Console	✓	✓	✓
Network Management	Redundancy	✓	✓	✓
	Diagnostics	✓	✓	✓
	VLAN	✓	✓	✓
	Configuration	✓	✓	✓
	SNMP	✓	✓	✓
	Security	✓	✓	✓
	Traffic Control	✓	✓	✓
Power	12 ~ 48 V DC	EKI-9228G-20FMI (48 V_{DC})	EKI-9226G-20FMI (48 V_{DC})	✓
	24 ~ 110 V DC	-	-	-
	100 ~ 240 V AC	EKI-9228G-20FMI (90 ~ 264 V_{AC})	EKI-9226G-20FOI (90 ~ 264 V_{AC})	✓
	Relay Output	✓	✓	✓
Mechanism	DIN-rail Mount	-	-	✓
	Wall Mount	-	-	✓
	Rack Mount	✓	✓	✓
	IP Level	IP30	IP30	IP30
Protection	ESD (Ethernet)	✓	✓	✓
	Surge (EFT for power)	✓	✓	✓
	Power Reverse	✓	✓	✓
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	-	-	-
	-40 ~ 75°C (-40 ~ 167°F)	-	-	-
	-40 ~ 85°C (-40 ~ 185°F)	✓	✓	✓
Certifications	CE	✓	✓	✓
	FCC	✓	✓	✓
	UL/cUL 60950-1	-	✓	✓
	Class 1, Division 2	-	-	-
	UL 508	✓	-	-
Others		IEC 618500-3	IEC 618500-3	IEC 618500-3

✓ : supported, - : not supported, △ : optional

Industrial Ethernet Solutions

Managed Ethernet Switches

Model Name		EKI-7428G-4FA	EKI-7428G-20FA	EKI-7708G-2FVI	EKI-7710E-2C EKI-7710E-2CI	EKI-7710G-2C EKI-7710G-2CI	EKI-7712E-4F EKI-7712E-4FI	EKI-7712G-2FVI	EKI-7712G-4F EKI-7712G-4FI
Description		24Giga+4SFP Giga ports Managed Redundant Switch w/ AC Input	8Giga+20SFP Giga ports Managed Redundant Switch w/ AC Input	4Giga + 2VDSL+2SFP Giga ports Managed Redundant Industrial Switch	8FE+2G Port Gigabit Managed Redundant Industrial Switch	8G+2G Port Gigabit Managed Redundant Industrial Switch/ with Wide Temperature	8FE+4G SFP Port Gigabit Managed Redundant Industrial Switch/ with Wide Temperature	8Giga + 2VDSL+2SFP Giga ports Managed Redundant Industrial Switch	8G+4G SFP Port Gigabit Managed Redundant Industrial Switch/ with Wide Temperature
Interface	Ports Number	28	28	8	10	10	12	12	12
	10/100Base-T (X)	-	-	4	8	-	-	-	-
	100BaseFX	-	-	-	-	-	-	-	-
	10/100/1000Base-T (X)	24	8	-	2	8	8	8	8
	1000Base-SX/LX/ LHX/XD/ZX/EZX	4	20	4 (2SFP+2VDSL)	2	2	4	4 (2SFP+2VDSL)	4
	PoE (10/100 Mbps)	-	-	-	-	-	-	-	-
	PoE (10/100/1000 Mbps)	-	-	-	-	-	-	-	-
	HSR/PRP	-	-	-	-	-	-	-	-
	Console	✓	✓	✓	✓	✓	✓	✓	✓
Network Management	Redundancy	✓	✓	✓	✓	✓	✓	✓	✓
	Diagnostics	✓	✓	✓	✓	✓	✓	✓	✓
	VLAN	✓	✓	✓	✓	✓	✓	✓	✓
	Configuration	✓	✓	✓	✓	✓	✓	✓	✓
	SNMP	✓	✓	✓	✓	✓	✓	✓	✓
	Security	✓	✓	✓	✓	✓	✓	✓	✓
	Traffic Control	✓	✓	✓	✓	✓	✓	✓	✓
Power	12 ~ 48 V DC	-	-	✓	✓	✓	✓	✓	✓
	24 ~ 110 V DC	-	-	-	-	-	-	-	-
	100 ~ 240 V AC	✓	✓	-	-	-	-	-	-
	Relay Output	-	-	✓	-	-	-	✓	-
Mechanism	DIN-rail Mount	-	-	✓	✓	✓	✓	✓	✓
	Wall Mount	-	-	✓	✓	✓	✓	✓	✓
	Rack Mount	✓	✓	-	-	-	-	-	-
	IP Level	-	-	30	IP30	IP30	IP30	30	IP30
Protection	ESD (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓
	Surge (EFT for power)	✓	✓	✓	✓	✓	✓	✓	✓
	Power Reverse	✓	✓	✓	✓	✓	✓	✓	✓
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	-10 ~ 55°C (14 - 131°F)	-10 ~ 55°C (14 - 131°F)	-	✓	✓	✓	-	✓
	-40 ~ 75°C (-40 ~ 167°F)	-	-	✓	✓	✓	✓	✓	✓
	-40 ~ 85°C (-40 ~ 185°F)	-	✓	-	-	-	-	-	-
Certifications	CE	✓	✓	✓	✓	✓	✓	✓	✓
	FCC	✓	✓	✓	✓	✓	✓	✓	✓
	UL/cUL 60950-1	✓	✓	-	-	-	-	-	-
	Class 1, Division 2	-	-	-	-	-	-	-	-
	UL 508	-	-	-	✓	✓	✓	-	✓
Others		-	-	UL 61010	NEMA TS2 EN50121-4	NEMA TS2 EN50121-4	NEMA TS2 EN50121-4	UL 61010	NEMA TS2 EN50121-4

✓ : supported, - : not supported, △ : optional

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Industrial Ethernet Solutions

Managed Ethernet Switches

Model Name		EKI-7720E-4F EKI-7720E-4FI	EKI-7720G-4F EKI-7720G-4FI	EKI-7706E-2F/I	EKI-7706G-2F/I	EKI-7708E-4F/I	EKI-7708G-4F/I	EKI-7716E-4F/I	EKI-7716G-4F/I
Description		16FE+4G SFP Port Gigabit Managed Redundant Industrial Switch with Wide Temperature	16G+4G SFP Port Gigabit Managed Redundant Industrial Switch/ with Wide Temperature	4FE+2SFP Giga ports Managed Redundant Industrial Switch	4Giga+2SFP Giga ports Managed Redundant Industrial Switch	4FE+4SFP Giga ports Managed Redundant Industrial Switch	4Giga+4SFP Giga ports Managed Redundant Industrial Switch	8FE+4SFP+4G Combo port Managed Redundant Industrial Switch	8GE+4SFP+4G Combo port Managed Redundant Industrial Switch
Interface	Ports Number	20	20	6	6	8	8	16	16
	10/100Base-T (X)	-	-	4	-	4	-	8 + 4 (Combo)	-
	100BaseFX	-	-						
	10/100/1000Base-T (X)	16	16	-	4	-	4	-	8 + 4 (Combo)
	1000Base-SX/LX/ LHX/XD/ZX/EZX	4	4	2	2	4	4	4 + 4 (Combo)	4 + 4 (Combo)
	PoE (10/100 Mbps)	-	-	-	-	-	-	-	-
	PoE (10/100/1000 Mbps)	-	-	-	-	-	-	-	-
	DI/DO	-	-	-	-	-	-	-	-
	Console	✓	✓	✓	✓	✓	✓	✓	✓
Network Management	Redundancy	✓	✓	✓	✓	✓	✓	✓	✓
	Diagnostics	✓	✓	✓	✓	✓	✓	✓	✓
	VLAN	✓	✓	✓	✓	✓	✓	✓	✓
	Configuration	✓	✓	✓	✓	✓	✓	✓	✓
	SNMP	✓	✓	✓	✓	✓	✓	✓	✓
	Security	✓	✓	✓	✓	✓	✓	✓	✓
	Traffic Control	✓	✓	✓	✓	✓	✓	✓	✓
Power	12 ~ 48 V DC	✓	✓	✓	✓	✓	✓	✓	✓
	24 ~ 110 V DC	-	-	-	-	-	-	-	-
	100 ~ 240 V AC	-	-	-	-	-	-	-	-
	Relay Output	-	-	-	-	-	-	-	-
Mechanism	DIN-rail Mount	✓	✓	✓	✓	✓	✓	✓	✓
	Wall Mount	✓	✓	✓	✓	✓	✓	✓	✓
	Rack Mount	-	-	-	-	-	-	-	-
	IP Level	IP30	IP30	-	-	-	-	-	-
Protection	ESD (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓
	Surge (EFT for power)	✓	✓	✓	✓	✓	✓	✓	✓
	Power Reverse	✓	✓	✓	✓	✓	✓	✓	✓
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	✓	✓	EKI-7706E-2F	EKI-7706G-2F	EKI-7708E-4F	EKI-7708G-4F	EKI-7716E-4F	EKI-7716G-4F
	-40 ~ 75°C (-40 ~ 167°F)	✓	✓	EKI-7706E-2FI	EKI-7706G-2FI	EKI-7708E-4FI	EKI-7708G-4FI	EKI-7716E-4FI	EKI-7716G-4FI
	-40 ~ 85°C (-40 ~ 185°F)	-	-	-	-	-	-	-	-
Certifications	CE	✓	✓	✓	✓	✓	✓	✓	✓
	FCC	✓	✓	✓	✓	✓	✓	✓	✓
	UL/cUL 60950-1	-	-	-	-	-	-	-	-
	Class 1, Division 2	-	-	-	-	-	-	-	-
	UL 508	✓	✓	-	-	-	-	-	-
	Others	NEMA TS2 EN50121-4	NEMA TS2 EN50121-4	UL 61010	UL 61010	UL 61010	UL 61010	UL 61010	UL 61010

✓ : supported, - : not supported, △ : optional

Industrial Ethernet Solutions

Managed Protocol Switches






Model Name		EKI-5526/I-EI EKI-5528/I-EI	EKI-5526/I-PN EKI-5528/I-PN	EKI-5526/I-MB EKI-5528/I-MB	EKI-5626C/I-EI EKI-5629C/I-EI	EKI-5626C/I-PN EKI-5629C/I-PN	EKI-5626C/I-MB EKI-5629C/I-MB
Description		16/8 port Entry-Level Managed Switch Supporting EtherNet/IP	16/8 port Entry-Level Managed Switch Supporting PROFINET	16/8 port Entry-Level Managed Switch Supporting Modbus	18/10 port Entry-Level Managed Switch Supporting EtherNet/IP	18/10 port Entry-Level Managed Switch Supporting PROFINET	18/10 port Entry-Level Managed Switch Supporting Modbus
Interface	Ports Number	16/8	16/8	16/8	16/8	16/8	16/8
	10/100Base-T (X)	16/8	16/8	16/8	16/8	16/8	16/8
	100BaseFX	-	-	-	-	-	-
	10/100/1000Base-T (X)	-	-	-	2/2	2/2	2/2
	1000Base-SX/LX/ LHX/XD/ZX/EZX	-	-	-	2/2	2/2	2/2
	PoE (10/100 Mbps)	-	-	-	-	-	-
	PoE (10/100/1000 Mbps)	-	-	-	-	-	-
	DI/DO	-	-	-	-	-	-
	Console	-	-	-	-	-	-
Network Management	Redundancy	✓	✓	✓	✓	✓	✓
	Diagnostics	✓	✓	✓	✓	✓	✓
	VLAN	✓	✓	✓	✓	✓	✓
	Configuration	✓	✓	✓	✓	✓	✓
	SNMP	✓	✓	✓	✓	✓	✓
	Security	✓	✓	✓	✓	✓	✓
	Traffic Control	✓	✓	✓	✓	✓	✓
Power	12 ~ 48 V DC	✓	✓	✓	✓	✓	✓
	24 ~ 110 V DC	-	-	-	-	-	-
	100 ~ 240 V AC	-	-	-	-	-	-
	Relay Output	✓	✓	✓	✓	✓	✓
Mechanism	DIN-rail Mount	✓	✓	✓	✓	✓	✓
	Wall Mount	✓	✓	✓	✓	✓	✓
	Rack Mount	-	-	-	-	-	-
	IP Level	IP30	IP30	IP30	IP30	IP30	IP30
Protection	ESD (Ethernet)	✓	✓	✓	✓	✓	✓
	Surge (EFT for power)	✓	✓	✓	✓	✓	✓
	Power Reverse	✓	✓	✓	✓	✓	✓
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	✓	✓	✓	✓	✓	✓
	-40 ~ 75°C (-40 ~ 167°F)	✓	✓	✓	✓	✓	✓
	-40 ~ 85°C (-40 ~ 185°F)	-	-	-	-	-	-
Certifications	CE	✓	✓	✓	✓	✓	✓
	FCC	✓	✓	✓	✓	✓	✓
	UL/cUL 60950-1	-	-	-	-	-	-
	Class 1, Division 2	✓	✓	✓	✓	✓	✓
	UL 508	✓	✓	✓	✓	✓	✓
	Others	-	-	-	-	-	-

✓ : supported, - : not supported, △ : optional

Industrial Ethernet Solutions

Unmanaged Ethernet Switches







Model Name		EKI-5726FI	EKI-5729FI	EKI-5726I	EKI-5728/I	EKI-5626CI	EKI-5629CI	EKI-5528/I EKI-5525/I
Description		16-port+2 SFP Gigabit Ethernet Switch	8-Port+2 SFP Gigabit Ethernet Switch	16-port Gigabit Ethernet Switch	5/8-port Gigabit Ethernet Switch	16FE + 2GE Combo Ethernet Switch	8FE + 2GE Combo Ethernet Switch	8/5-port Fast Ethernet Switch
Interface	Ports Number	16	8	16	5/8	18	10	8/5
	10/100Base-T (X)	-	-	-	-	16	8	8/5
	100BaseFX	✓	✓	-	-	-	-	-
	10/100/1000Base-T (X)	16	8	16	5/8	-	-	-
	1000Base-SX/LX/ LHX/XD/ZX/EZX	✓	✓	-	-	2	2	-
	PoE (10/100 Mbps)	-	-	-	-	-	-	-
	PoE (10/100/1000 Mbps)	-	-	-	-	-	-	-
	DI/DO	-	-	-	-	-	-	-
	Console	✓	✓	-	-	-	-	-
Network Management	Redundancy	-	-	-	-	-	-	-
	Diagnostics	-	-	-	-	-	-	-
	VLAN	-	-	-	-	-	-	-
	Configuration	✓	✓	✓	-	-	-	-
	SNMP	✓	✓	✓	✓	-	-	-
	Security	-	-	-	-	-	-	-
	Traffic Control	-	-	-	-	-	-	-
Power	12 ~ 48 V DC	✓	✓	✓	✓	✓	✓	✓
	24 ~ 110 V DC	-	-	-	-	-	-	-
	100 ~ 240 V AC	-	-	-	-	-	-	-
	Relay Output	✓	✓	✓	✓	✓	✓	✓
Mechanism	DIN-rail Mount	✓	✓	✓	✓	✓	✓	✓
	Wall Mount	✓	✓	✓	✓	✓	✓	✓
	Rack Mount	-	-	-	-	-	-	-
	IP Level	IP30	IP30	IP30	IP30	IP30	IP30	IP30
Protection	ESD (Ethernet)	✓	✓	✓	✓	✓	✓	✓
	Surge (EFT for power)	✓	✓	✓	✓	✓	✓	✓
	Power Reverse	✓	✓	✓	✓	✓	✓	✓
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	-	-	-	-	-	-	-
	-40 ~ 75°C (-40 ~ 167°F)	✓	✓	✓	✓	✓	✓	✓
	-40 ~ 85°C (-40 ~ 185°F)	-	-	-	-	-	-	-
Certifications	CE	✓	✓	✓	✓	✓	✓	✓
	FCC	✓	✓	✓	✓	✓	✓	✓
	UL/cUL 60950-1	-	-	-	-	-	-	-
	Class 1, Division 2	✓	✓	✓	✓	✓	✓	✓
	UL 508	✓	✓	✓	✓	✓	✓	✓
	Others	-	-	-	-	-	-	-

✓ : supported, - : not supported, △ : optional

Industrial Ethernet Solutions

Unmanaged Ethernet Switches





Model Name		EKI-5525SI/MI Series	EKI-5524SSI/MMI Series	EKI-2728M/MI	EKI-2725/I	EKI-2728/I
Description		4-port +1x100FX port (Single/Multi-mode, SC/ST type), Fast Ethernet Switch	4-port + 2x100FX port (Single/Multimode, SC/ST type), Fast Ethernet Switch	6G+2G Multi-Mode Unmanaged Ethernet Switch	5-port Gigabit Unmanaged Industrial Ethernet Switch	8-port Gigabit Unmanaged Industrial Ethernet Switch
Interface	Ports Number	4	6	8	5	8
	10/100Base-T (X)	4	4	-	-	-
	100BaseFX	1	2	-	-	-
	10/100/1000Base-T (X)	-	-	6	5	8
	1000Base-SX/LX/ LHX/XD/ZX/EZX	-	-	2	-	-
	PoE (10/100 Mbps)	-	-	-	-	-
	PoE (10/100/1000 Mbps)	-	-	-	-	-
	DI/DO	-	-	-	-	-
	Console	-	-	-	-	-
Network Management	Redundancy	-	-	-	-	-
	Diagnostics	-	-	-	-	-
	VLAN	-	-	-	-	-
	Configuration	-	-	-	-	-
	SNMP	-	-	-	-	-
	Security	-	-	-	-	-
	Traffic Control	-	-	-	-	-
Power	12 ~ 48 V DC	✓	✓	✓	✓	✓
	24 ~ 110 V DC	-	-	-	-	-
	100 ~ 240 V AC	-	-	-	-	-
	Relay Output	✓	✓	✓	✓	✓
Mechanism	DIN-rail Mount	✓	✓	✓	✓	✓
	Wall Mount	✓	✓	✓	✓	✓
	Rack Mount	-	-	-	-	-
	IP Level	IP30	IP30	IP30	IP30	IP30
Protection	ESD (Ethernet)	✓	✓	✓	✓	✓
	Surge (EFT for power)	✓	✓	✓	✓	✓
	Power Reverse	✓	✓	✓	✓	✓
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	-	-	EKI-2728M	EKI-2725	EKI-2728
	-40 ~ 75°C (-40 ~ 167°F)	✓	✓	EKI-2728MI	EKI-2725I	EKI-2728I
	-40 ~ 85°C (-40 ~ 185°F)	-	-	-	-	-
Certifications	CE	✓	✓	✓	✓	✓
	FCC	✓	✓	✓	✓	✓
	UL/cUL 60950-1	-	-	-	✓	✓
	Class 1, Division 2	✓	✓	✓	-	-
	UL 508	✓	✓	✓	-	-
	Others	-	-	-	-	-

✓ : supported, - : not supported, △ : optional

Industrial Ethernet Solutions

Unmanaged Ethernet Switches





Model Name		EKI-2428G-4FA	EKI-2728S/2728SI	EKI-2525M/S	EKI-2526M/S	EKI-2525LI-AE
Description		24Giga+4SFP Giga ports Unmanaged Switch w/ AC Input	6GE+2G Single-Mode Fiber Port Unmanaged Ethernet Switch	4+1 100FX Port Multi-mode/Single-mode Unmanaged Industrial Ethernet Switch	4+2 100FX Port Multi-mode/ Single-mode Industrial Ethernet Switch	5Fast Ethernet ports Slim Type Unmanaged Switch
Interface	Ports Number	28	8	5	6	5
	10/100Base-T (X)	-	-	4	4	5
	100BaseFX	-	-	1	2	-
	10/100/1000Base-T (X)	24	6	-	-	-
	1000Base-SX/LX/ LHX/XD/ZX/EZX	4	2 x SC Single Mode	-	-	-
	PoE (10/100 Mbps)	-	-	-	-	-
	PoE (10/100/1000 Mbps)	-	-	-	-	-
	DI/DO	-	-	-	-	-
	Console	-	-	-	-	-
Network Management	Redundancy	-	-	-	-	-
	Diagnostics	-	-	-	-	-
	VLAN	-	-	-	-	-
	Configuration	-	-	-	-	-
	SNMP	-	-	-	-	-
	Security	-	-	-	-	-
	Traffic Control	-	-	-	-	-
Power	12 ~ 48 V DC	-	✓	✓	✓	✓
	24 ~ 110 V DC	-	-	-	-	-
	100 ~ 240 V AC	✓	-	-	-	-
	Relay Output	-	✓	✓	✓	-
Mechanism	DIN-rail Mount	-	✓	✓	✓	✓
	Wall Mount	-	✓	✓	✓	✓
	Rack Mount	✓	-	-	-	-
	IP Level	20	IP30	IP30	IP30	40
Protection	ESD (Ethernet)	✓	✓	✓	✓	✓
	Surge (EFT for power)	✓	✓	✓	✓	✓
	Power Reverse	-	✓	✓	✓	✓
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	-10 ~ 55°C (14 - 131°F)	EKI-2728S	✓	✓	-
	-40 ~ 75°C (-40 ~ 167°F)	-	EKI-2728SI	-	-	✓
	-40 ~ 85°C (-40 ~ 185°F)	-	-	-	-	-
Certifications	CE	✓	✓	✓	✓	✓
	FCC	✓	✓	✓	✓	✓
	UL/cUL 60950-1	-	✓	✓	✓	✓
	Class 1, Division 2	-	-	-	-	-
	UL 508	-	-	-	-	-
	Others	-	-	-	-	-

✓ : supported, - : not supported, △ : optional

Industrial Ethernet Solutions

Industrial PoE Switches & Solutions






Model Name		EKI-7708G-4FP/I	EKI-7708G-2FVPI	EKI-7708E-4FP/I	EKI-7710G-2CPI EKI-7710G-2CP	EKI-7710E-2CP EKI-7710E-2CPI	EKI-7712G-4FP EKI-7712G-4FPI
Description		4Giga+4SFP Giga ports Managed Redundant Industrial PoE Switch	4Giga+2VDSL+2SFP Giga ports Managed Redundant Industrial PoE Switch	4FE+4SFP Giga ports Managed Redundant Industrial PoE Switch	8G+2G Port Gigabit Managed Redundant Industrial PoE Switch	8FE+2G Port Gigabit Managed Redundant Industrial PoE Switch	8G+4G Port Gigabit Managed Redundant Industrial PoE Switch
Interface	Ports Number	8	8	8	10	10	12
	10/100Base-T (X)	-	4	-	-	-	-
	100BaseFX	-	-	-	-	-	-
	10/100/1000Base-T (X)	-	-	-	8	8	8
	1000Base-SX/LX/ LHX/XD/ZX/EZX	4	4(2SFP+2VDSL)	4	2	2	4
	PoE (10/100 Mbps)	-	-	4	-	8	-
	PoE (10/100/1000 Mbps)	4	-	-	8	-	8
	DI/DO	-	-	-	-	-	-
	Console	✓	✓	✓	✓	✓	✓
Network Management	Redundancy	✓	✓	✓	✓	✓	✓
	Diagnostics	✓	✓	✓	✓	✓	✓
	VLAN	✓	✓	✓	✓	✓	✓
	Configuration	✓	✓	✓	✓	✓	✓
	SNMP	✓	✓	✓	✓	✓	✓
	Security	✓	✓	✓	✓	✓	✓
	Traffic Control	✓	✓	✓	✓	✓	✓
Power	12 ~ 48 V DC	48 VDC	48 VDC	48 VDC	✓	✓	48 VDC
	24 ~ 110 V DC	-	-	-	-	-	-
	100 ~ 240 V AC	-	-	-	-	-	-
	Relay Output	✓	✓	✓	-	-	✓
Mechanism	DIN-rail Mount	✓	✓	✓	✓	✓	✓
	Wall Mount	✓	✓	✓	✓	✓	✓
	Rack Mount	-	-	-	-	-	-
	IP Level	-	30	-	IP30	IP30	IP30
Protection	ESD (Ethernet)	✓	✓	✓	✓	✓	✓
	Surge (EFT for power)	✓	✓	✓	✓	✓	✓
	Power Reverse	✓	✓	✓	✓	✓	✓
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	EKI-7708G-4FP	-	EKI-7708E-4FP	7710G-2CP	7710E-2CP	7712G-4F
	-40 ~ 75°C (-40 ~ 167°F)	EKI-7708G-4FPI	✓	EKI-7708E-4FPI	7710G-2CPI	7710E-2CPI	7712G-4FI
	-40 ~ 85°C (-40 ~ 185°F)	-	-	-	-	-	-
Certifications	CE	✓	✓	✓	✓	✓	✓
	FCC	✓	✓	✓	✓	✓	✓
	UL/cUL 60950-1	-	-	-	-	-	-
	Class 1, Division 2	-	-	-	-	-	-
	UL 508	-	-	-	✓	✓	✓
	Others	UL 61010	UL 61010	UL 61010	-	-	-

✓ : supported, - : not supported, △ : optional

Industrial Ethernet Solutions

Power Over Ethernet (PoE) Switches






Model Name		EKI-7712G-2FVPI	EKI-5624P/5624PI	EKI-5729P/5729PI	EKI-2726FHPI	EKI-2528PAI	EKI-2525P
Description		8Giga+2VDSL+2SFP Giga ports Managed Redundant Industrial PoE Switch	4FE PoE+2G Unmanaged Ethernet Switch, IEEE802.3af/at, E-Mark, 12V~24V$_{DC}$	8GE PoE+2G Unmanaged Ethernet Switch, IEEE802.3af/at, E-Mark, 12V~24V$_{DC}$	4G+2 SFP W/ 4 IEEE 802.3 High Power PoE Industrial Wide Temperature Switch	8-port Industrial PoE Switch with 24/48V$_{DC}$ Power Input and Wide Temperature	5-port Industrial PoE Switch
Interface	Ports Number	12	6	8	6	8	5
	10/100Base-T (X)	-	4	-	-	4	1
	100BaseFX	-	-	-	-	-	-
	10/100/1000Base-T (X)	8	2	-	4	-	-
	1000Base-SX/LX/ LHX/XD/ZX/EZX	4 (2SFP+2VDSL)	-	-	2	-	-
	PoE (10/100 Mbps)	-	-	-	4 (PoE+, 30W)	4	4
	PoE (10/100/1000 Mbps)	-	-	8	-	-	-
	DI/DO	-	-	-	-	-	-
	Console	✓	-	-	-	-	-
Network Management	Redundancy	✓	-	-	-	-	-
	Diagnostics	✓	-	-	-	-	-
	VLAN	✓	-	-	-	-	-
	Configuration	✓	-	-	-	-	-
	SNMP	✓	-	-	-	-	-
	Security	✓	-	-	-	-	-
	Traffic Control	✓	-	-	-	-	-
Power	12 ~ 48 V DC	48 V$_{DC}$	12 ~ 24 V$_{DC}$	-	48 V$_{DC}$	24/48 V$_{DC}$	48 V$_{DC}$
	24 ~ 110 V DC	-	-	-	-	-	-
	100 ~ 240 V AC	-	-	-	-	-	-
	Relay Output	✓	✓	✓	✓	✓	✓
Mechanism	DIN-rail Mount	✓	✓	✓	✓	✓	✓
	Wall Mount	✓	✓	✓	✓	✓	✓
	Rack Mount	-	-	-	-	-	-
	IP Level	IP30	IP30	IP30	IP30	IP30	IP30
Protection	ESD (Ethernet)	✓	✓	✓	✓	✓	✓
	Surge (EFT for power)	✓	✓	✓	✓	✓	✓
	Power Reverse	✓	✓	✓	✓	✓	✓
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	-	✓	✓	-	-	✓
	-40 ~ 75°C (-40 ~ 167°F)	✓	✓	✓	✓	✓	-
	-40 ~ 85°C (-40 ~ 185°F)	-	-	-	-	-	-
Certifications	CE	✓	✓	✓	✓	✓	✓
	FCC	✓	✓	✓	✓	✓	✓
	UL/cUL 60950-1	-	✓	✓	-	-	✓
	Class 1, Division 2	-	-	-	-	-	-
	UL 508	-	-	-	✓	✓	-
	Others	UL 61010	✓	✓	-	-	-

✓ : supported, - : not supported, △ : optional

Industrial Ethernet Solutions

Power Over Ethernet (PoE) Switches


Model Name		EKI-2526PI	EKI-2525PA
Description		6-port Industrial PoE Switch with Wide Temperature	5-port Industrial PoE Switch with 24/48 V DC Power Input
Interface	Ports Number	6	5
	10/100Base-T (X)	2	1
	100BaseFX	-	-
	10/100/1000Base-T (X)	-	-
	1000Base-SX/LX/ LHX/XD/ZX/EZX	-	-
	PoE (10/100 Mbps)	4	4
	PoE (10/100/1000 Mbps)	-	-
	DI/DO	-	-
	Console	-	-
Network Management	Redundancy	-	-
	Diagnostics	-	-
	VLAN	-	-
	Configuration	-	-
	SNMP	-	-
	Security	-	-
	Traffic Control	-	-
Power	12 ~ 48 V DC	48 V_{DC}	24/48 V_{DC}
	24 ~ 110 V DC	-	-
	100 ~ 240 V AC	-	-
	Relay Output	✓	✓
Mechanism	DIN-rail Mount	✓	✓
	Wall Mount	✓	✓
	Rack Mount	-	-
	IP Level	IP30	IP30
Protection	ESD (Ethernet)	✓	✓
	Surge (EFT for power)	✓	✓
	Power Reverse	✓	✓
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	-	✓
	-40 ~ 75°C (-40 ~ 167°F)	✓	-
	-40 ~ 85°C (-40 ~ 185°F)	-	-
Certifications	CE	✓	✓
	FCC	✓	✓
	UL/cUL 60950-1	✓	-
	Class 1, Division 2	-	-
	UL 508	-	✓
	Others	-	-

Media Converters


Model Name		EKI-2741F/FI/ SX/SXI/LX/LXI	EKI-2541M/MI/S/SI
Description		10/100/1000TX to Fiber Optic Gigabit Industrial Media Converters	10/100TX to Multi-mode / Single-mode SC Type Fiber Optic Industrial Media Converters
Interface	Ports Number	2	2
	10/100Base-T (X)	-	1
	100BaseFX	-	1
	10/100/1000Base-T (X)	1	-
	1000Base-SX/LX/ LHX/XD/ZX/EZX	1	-
	PoE (10/100 Mbps)	-	-
	PoE (10/100/1000 Mbps)	-	-
	DI/DO	-	-
	Console	-	-
Network Management	Redundancy	-	-
	Diagnostics	-	-
	VLAN	-	-
	Configuration	-	-
	SNMP	-	-
	Security	-	-
	Traffic Control	-	-
Power	12 ~ 48 V DC	✓	✓
	24 ~ 110 V DC	-	-
	100 ~ 240 V AC	-	-
	Relay Output	✓	✓
Mechanism	DIN-rail Mount	✓	✓
	Wall Mount	✓	✓
	Rack Mount	-	-
	IP Level	IP30	IP30
Protection	ESD (Ethernet)	✓	✓
	Surge (EFT for power)	✓	✓
	Power Reverse	✓	✓
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	EKI-2741F/SX/LX	EKI-2541M
	-40 ~ 75°C (-40 ~ 167°F)	EKI-2741FI/SXI/LXI	EKI-2541MI/SI
	-40 ~ 85°C (-40 ~ 185°F)	-	-
Certifications	CE	✓	✓
	FCC	✓	✓
	UL/cUL 60950-1	✓	✓
	Class 1, Division 2	✓	✓
	UL 508	✓	✓
	Others	-	-

✓ : supported, - : not supported, △ : optional

EKI-9512E-4EETB

EN 50155 12-Port Train Router

Features

- EN50155 train router for rolling stock backbone
- 8 x 10/100 Mbps M12 D-coded + 4 x 10/100 Mbps M12 D-coded w/bypass
- TTDP (IEC-61375-2-5)
- M12 connector w/IP67 protection
- Supports wide operating temperatures from -40 to 70°C
- Wide range power input (24/36/48/72/96/110 V_{DC})

Introduction

The EKI-9512E-4EETB M12 train router is designed for railway applications, including rolling stock. It uses M12 connectors to ensure tight, robust connections and to guarantee reliable operation against environmental disturbances such as vibration and shock. EKI-9512E-4EETB provides 12 fast Ethernet M12 ports. In addition, it supports 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. With a -40 to 70° C operating temperature and IP67-rated waterproof enclosure, this unit is suitable for deployment in harsh environments. The EKI-9512D complies with the essential sections of the European railway standard EN 50155, EN50121-3-2, covering operating temperature, power input voltage, surge protection, ESD protection, and vibration protection, making this line of switches suitable for a variety of industrial applications.

Specifications

Interface

I/O Port	12 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	3.5 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

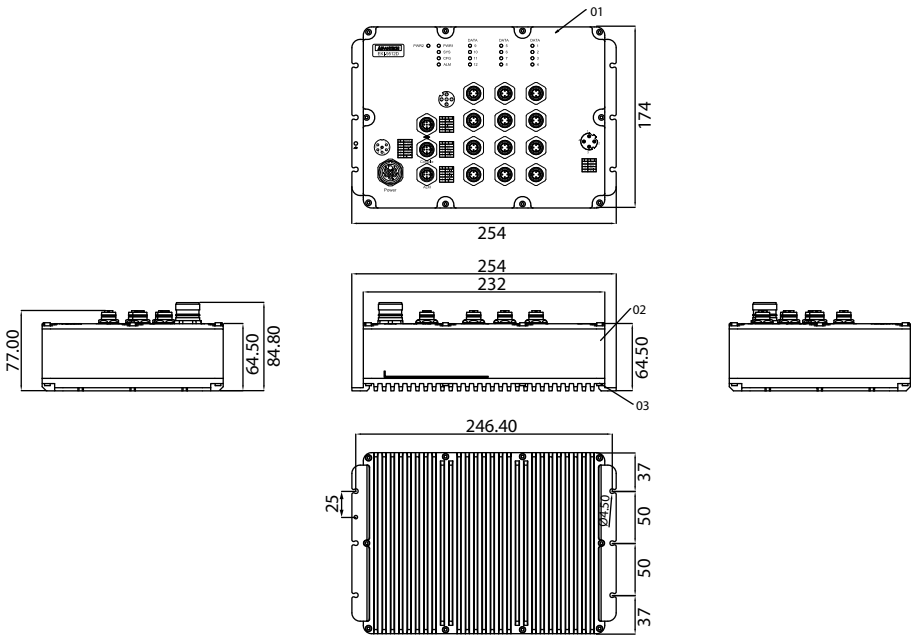
L2 MAC Address	16K
Jumbo Frame	9KB
VLAN Group	4094 (VLAN ID 1~4094)
VLAN	802.1 QVLAN
Port Mirroring	Per port, Multi-source port
IP Multicast	IGMP Snooping v1/v2/v3, MLD Snooping
Storm Control	Broadcast, Multicast, Unknown unicast
Spanning Tree	IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP

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

Management

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

Routing

- **Routing Redunancy** VRRP
- **NAT** 1-1 NAT, N-1 NAT , port forwarding

Ordering Information

- **EKI-9512E-4EETB** EN50155 Train Router M12 8 x D-coded + 4 x D-coded w/ bypass

EKI-9528E-4GMPW
EKI-9528E-4GMW

EN 50155 28-Port Managed PoE M12 Ethernet Switch 24~110 V_{DC}
EN 50155 28-Port Managed M12 Ethernet Switch 24~110 V_{DC}

Preliminary

Features

- Complies with EN50155
- 16 x M12 D-coded PoE 10/100 Mbps ports + 4 x M12 X-coded 10/100/1000Mbps ports w/bypass + 8 x M12 X-coded 10/100/1000 Mbps ports
- 16-port PoE support IEEE802.3 at/af (EKI-9528E-4GMPW)
- X-Ring Pro supports rapid and predictable convergence
- M12 connector with IP67 protection
- Wide operating temperature of -40 ~ 70°C

Introduction

The EKI-9528E M12 managed Ethernet switch is designed for railway applications, including rolling stock. It uses M12 connectors to ensure tight, robust connections and to guarantee reliable operation against environmental disturbances such as vibration and shock. The EKI-9528E provides 16 fast Ethernet M12 D-coded ports and 4 Gigabit M12 X-coded ports. The dual isolated power input increases the reliability of your communications system while the -40~70°C operating temperature and IP67-rated waterproof enclosure allow for deployment in harsh environments. Moreover, the EKI-9528E complies with the essential sections of EN 50155, EN50121-3-2 covering operating temperature, power input voltage, surge protection, ESD protection, and vibration protection, making the switches suitable for a variety of industrial applications.

Specifications

Interface

I/O Port	16 x 10/100 Mbps M12 D-Coded PoE 8 x 10/100/100 Mpbs M12 X-Coded 4 x 10/100/100 Mpbs M12 X-Coded w/ Bypass
Console port	M12
Power Connector	M23

Physical

Enclosure	Aluminum Shell
Protection Class	IP 67
Installation	Wall Mount
Dimensions (W x D x H)	262 x 178 x 82.5 mm

LED Display

System LEDs	PWR1, PWR2, SYS, Alarm
Port LED	Data, PoE

Environment

Operating Temperature	-40 ~ 70°C (-40 ~ 158°F)
Storage Temperature	-40 ~ 85°C (-40 ~ 185°F)
Ambient Relative Humidity	10~ 95% (non-condensing)

Power

Power Consumption	20 Watts
Power Input	24/48/72/96/110 V_{DC} dual inputs
PoE Power Pudget	150 Watts

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
Certificate	EN 50155; EN50121-3-2

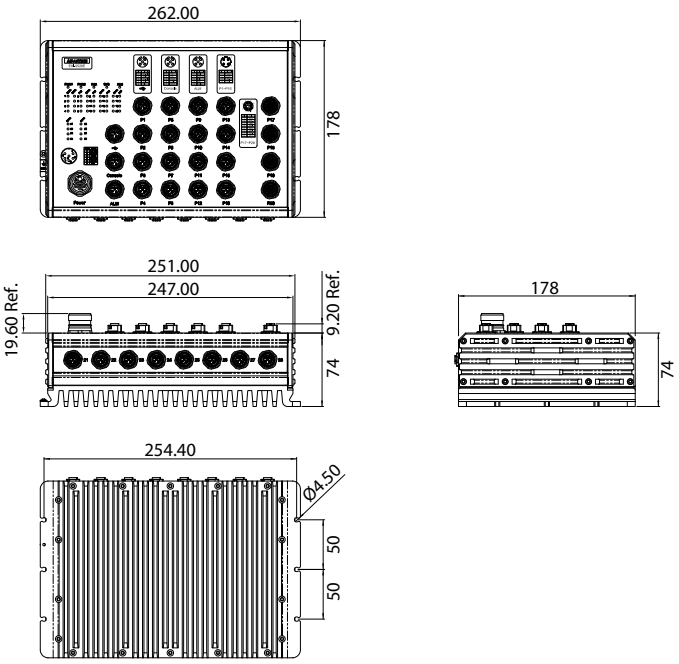
L2 Features

L2 MAC Address	8K
Jumbo Frame	9KB
VLAN Group	4K (VLAN ID 1~4094)
VLAN	Mac based VLAN, Protocol based VLAN, IP subnet based VLAN, Port based VLAN, Q in Q (VLAN Stacking), 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

EKI-9528E-4GMPW
EKI-9528E-4GMW

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
- **Link Aggregation** IEEE 802.3ad Dynamic Port Trunking, Static Port Trunking

Security

- **Port Security** Static, Dynamic
- **Authentication** 802.1x (Port-Based, MAC-Based), RADIUS, TACACS+
- **ACL** 1K rules
- **Advanced Security** IP Source Guard, ARP inspection, DHCP Snooping

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

IPv6 Features

- **IPv4/IPv6** IPv4/IPv6 Dual Protocol Stack
- **IPv6** HTTP, SSH, Telnet, TFTP SNTP, SMTP
-

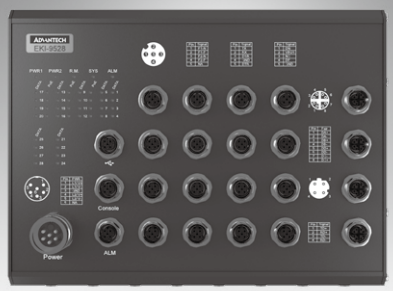
Ordering Information

- **EKI-9528E-4GMPW-AE** 16 x M12 D-Coded PoE + 12 x M12 X-Coded Managed Ethernet Switch, 24~110V_{DC} duall power input
- **EKI-9528E-4GMW-AE** 16 x M12 D-Coded + 12 x M12 X-Coded Managed Ethernet Switch, 24~110V_{DC} duall power input

EKI-9520E-4GMPW
EKI-9520E-4GMW

EN 50155 20-Port Managed PoE M12 Ethernet Switch 24~110 V_{DC}
EN 50155 20-Port Managed M12 Ethernet Switch 24~110 V_{DC}

Preliminary



Features

- Complies with EN50155
- 16 x M12 D-coded PoE 10/100 Mbps ports + 4 x M12 X-coded 10/100/1000Mbps ports w/bypass
- 16-port PoE support IEEE802.3 at/af (EKI-9520E-4GMPW)
- X-Ring Pro supports rapid and predictable convergence
- M12 connector w/IP67 protection
- Wide operating temperature of -40 ~ 70°C

Introduction

The EKI-9520E M12 managed Ethernet switch is designed for railway applications, including rolling stock. It uses M12 connectors to ensure tight, robust connections and to guarantee reliable operation against environmental disturbances such as vibration and shock. The EKI-9520E provides 16 fast Ethernet M12 D-coded ports and 4 Gigabit M12 X-coded ports. The dual isolated power input increases the reliability of your communications system while the -40 to 70°C operating temperature and IP67-rated waterproof enclosure allow for deployment in harsh environments. Moreover, the EKI-9520E complies with the essential sections of EN 50155, EN50121-3-2 covering operating temperature, power input voltage, surge protection, ESD protection, and vibration protection, making it suitable for a variety of industrial applications.

Specifications

Interface

- **I/O Port** 16 x 10/100 Mbps M12 D-Coded PoE
  4 x 10/100/1000 Mpbs M12 X-Coded w/ Bypass
- **Console port** M12
- **Power Connector** M23

Physical

- **Enclosure** Aluminum Shell
- **Protection Class** IP 67
- **Installation** Wall Mount
- **Dimensions (W x D x H)** 262 x 178 x 82.5 mm

LED Display

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

Environment

- **Operating Temperature** -40 ~ 70°C (-40 ~ 158°F)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Ambient Relative Humidity** 10~ 95% (non-condensing)

Power

- **Power Consumption** 20 Watts
- **Power Input** 24/48/72/96/110 V_{DC} dual inputs
- **PoE Power Pudget** 150 Watts

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
- **Certificate** EN 50155; EN50121-3-2

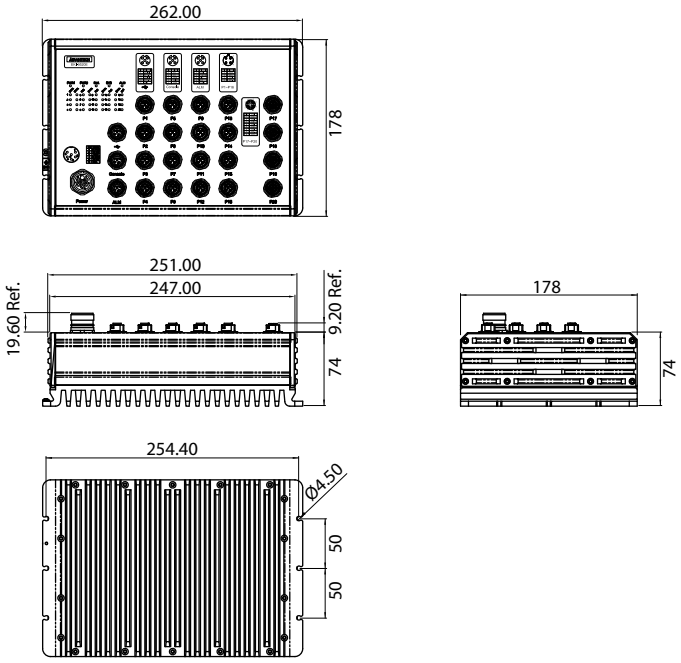
L2 Features

- **L2 MAC Address** 8K
- **Jumbo Frame** 9KB
- **VLAN Group** 4K (VLAN ID 1~4094)
- **VLAN** Mac based VLAN, Protocol based VLAN, IP subnet based VLAN, Port based VLAN, Q in Q (VLAN Stacking), 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

EKI-9520E-4GMPW
EKI-9520E-4GMW

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
- **Link Aggregation** IEEE 802.3ad Dynamic Port Trunking, Static Port Trunking

Security

- **Port Security** Static, Dynamic
- **Authentication** 802.1x (Port-Based, MAC-Based), RADIUS, TACACS+
- **ACL** 1K rules
- **Advanced Security** IP Source Guard, ARP inspection, DHCP Snooping

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

IPv6 Features

- **IPv4/IPv6** IPv4/IPv6 Dual Protocol Stack
- **IPv6** HTTP, SSH, Telnet, TFTP SNTP, SMTP

Ordering Information

- **EKI-9520E-4GMPW-AE** 16 x M12 D-Coded PoE + 4 x M12 X-Coded Managed Ethernet Switch, 24~110V_{DC} duall power input
- **EKI-9520E-4GMW-AE** 16 x M12 D-Coded + 4 x M12 X-Coded Managed Ethernet Switch, 24~110V_{DC} duall power input

EKI-9510E-2GMPH
EKI-9510E-2GMPL

EN 50155 10-Port Managed PoE M12 Ethernet Switch 72/96/110 V_{DC}
EN 50155 10-Port Managed PoE M12 Ethernet Switch 24/48 V_{DC}

Features

- Complies with EN50155
- 8 x M12 D-coded 10/100 Mbps PoE ports + 2 x M12 X-coded 10/100/1000 Mbps ports
- 8-port PoE support IEEE802.3 at/af
- Power input
- EKI-9510E-2GMPH: 72/96/110 V_{DC}
- EKI-9510E-2GMPL: 24/48 V_{DC}
- X-Ring Pro supports rapid and predictable convergence
- M12 connector with IP40 protection
- Wide operating temperature of -40 ~ 70°C

Introduction

The EKI-9510E M12 managed Ethernet switch is designed for railway applications, including rolling stock. It uses M12 connectors to ensure tight, robust connections and to guarantee reliable operation against environmental disturbances such as vibration and shock. The EKI-9510E provides 8 fast Ethernet M12 D-coded ports and 2 Gigabit M12 X-coded ports. The dual isolated power input increases the reliability of your communications system while the -40 to 70°C operating temperature and IP40-rated waterproof enclosure allow for deployment in harsh environments. Moreover, the EKI-9510E complies with the essential sections of EN 50155, EN50121-3-2 covering operating temperature, power input voltage, surge protection, ESD protection, and vibration protection, making the switches suitable for a variety of industrial applications.

Specifications

Interface

I/O Port	8 x 10/100 Mbps M12 D-Coded 2 x 10/100/1000 Mpbs M12 X-Coded
Console port	M12 A-Coded
Power Connector	M12 A-Coded

Physical

Enclosure	Aluminum Shell
Protection Class	IP 40
Installation	Wall Mount
Dimensions (W x D x H)	216 x 132 x 59.3 mm

LED Display

System LEDs	PWR1, PWR2, SYS, R.M., Alarm
Port LED	Data, PoE

Environment

Operating Temperature	-40 ~ 70°C (-40 ~ 158°F)
Storage Temperature	-40 ~ 85°C (-40 ~ 185°F)
Ambient Relative Humidity	10~ 95% (non-condensing)

Power

Power Consumption	10 Watts
Power Input	EKI-9510E-2GMPH: 72/96/110 V_{DC} dual inputs EKI-9510E-2GMPL: 24/48 V_{DC} dual inputs
PoE Power Pudget	EKI-9510E-2GMPH: 120 Watts EKI-9510E-2GMPL :60 Watts

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
Certificate	EN 50155; EN50121-3-2

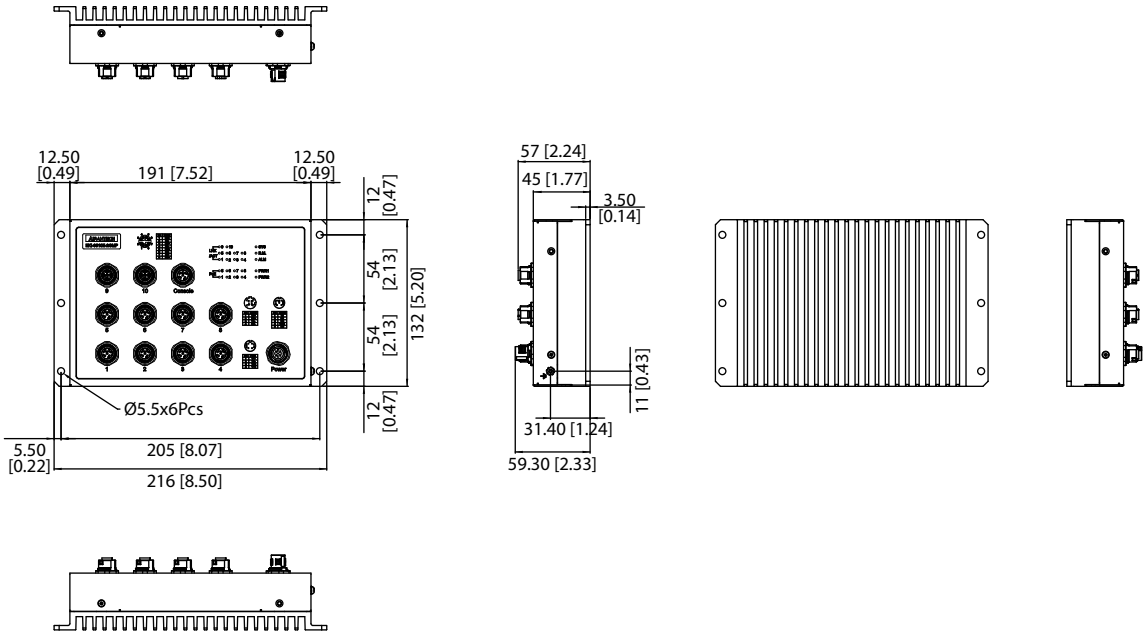
L2 Features

L2 MAC Address	8K
Jumbo Frame	9KB
VLAN Group	256 (VLAN ID 1~4093)
VLAN	802.1Q 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

EKI-9510E-2GMPH
EKI-9510E-2GMPL

Dimensions

Unit: mm [inch]



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
- **Link Aggregation** — IEEE 802.3ad Dynamic Port Trunking, Static Port Trunking

Security

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

Management

- **DHCP** — Client, Server, 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 server/client

Ordering Information

- **EKI-9510E-2GMPH-AE** — 8 x M12 D-Coded PoE + 2 x M12 X-Coded Managed Ethernet Switch, 72/96/110V_{DC} duall power input
- **EKI-9510E-2GMPL-AE** — 8 x M12 D-Coded PoE + 2 x M12 X-Coded Managed Ethernet Switch, 24/48V_{DC} duall power input

EKI-9508E-MPH
EKI-9508E-MPL

EN 50155 8-Port M12 PoE Managed Ethernet Switch 72/96/110 V_{DC}
EN 50155 8-Port M12 PoE Managed Ethernet Switch 24/48 V_{DC}

Features

- Complies with EN50155
- 8 port M12 D-coded 10/100Mbps PoE ports
- Power input
- EKI-9510E-MPH: 72/96/110 V_{DC}
- EKI-9510E-MPL: 24/48 V_{DC}
- X-Ring Pro supports rapid and predictable convergence
- IEEE 802.3at PoE+ to supply 30 W of power
- IEEE 802.3af PoE to supply 15.4 W of power
- M12 connector with IP40 protection
- Operating temperature of -40 ~ 70°C

CE FC

Introduction

The EKI-9508E M12 managed Ethernet switch is designed for railway applications, including rolling stock and wayside installations. It uses M12 connectors to ensure tight, robust connections and to guarantee reliable operation against environmental disturbances such as vibration and shock. It provides 8 fast Ethernet M12 D-coded ports with 8 IEEE 802.3at/af PoE ports. The PoE+/PoE switch is classified as power source equipment and provides up to 100 W of PoE power budget and can be used for IEEE 802.3at/af-compliant powered devices such as IP cameras, wireless access points, and IP phones.

Specifications

Interface

- **I/O Port** 8 x 10/100BASE-T M12 D-Coded
- **Console port** M12 A-Coded
- **Power Connector** M12 A-Coded

Physical

- **Enclosure** Metal Shell
- **Protection Class** IP 40
- **Installation** Wall Mount
- **Dimensions (W x D x H)** 122.5 x 179.4 x 71.8 mm

LED Display

- **System LEDs** PWR1, PWR2 R.M., SYS
- **Port LED** Data, PoE

Environment

- **Operating Temperature** -40 ~ 70 °C
- **Storage Temperature** -40 ~ 85 °C
- **Ambient Relative Humidity** 10 ~ 95% (non-condensing)

Power

- **Power Consumption** ~ 5 Watts (System)
- **PoE Power Budget** ~ 100 Watts (EKI-9508E-MPH)
  ~ 80 Watts (EKI-9508E-MPL))
- **Power Input** EKI-9508E-MPH (72/96/110 V_{DC})
  EKI-9508E-MPL (24/48 V_{DC})
  Dual inputs Supports Overload Current Protection Supports Reverse Polarity Protection

Certification

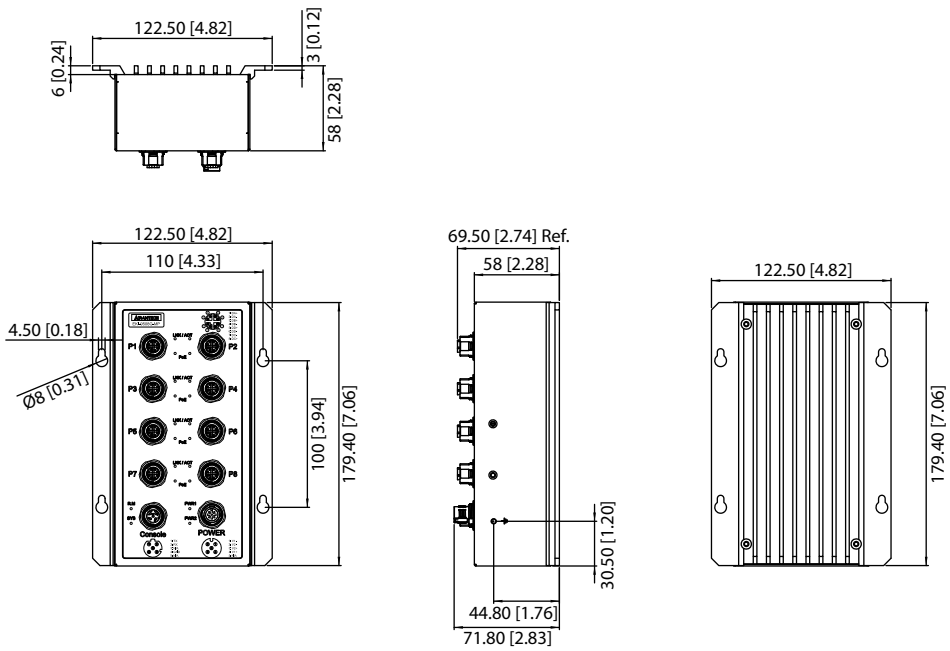
- **EMI** FCC Part 15 Subpart B Class A
  CE EN55022 (CISPR)
  EN55024 Class A
- **EMS** EN61000-6-2; EN61000-6-4; EN61000-4-2 (ESD)
  EN61000-4-3 (RS); EN61000-4-4 (EFT);
  EN61000-4-5 (Surge) ; EN61000-4-6 (CS);
  EN61000-4-8 (Magnetic Field)
- **Shock** IEC 61373
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 61373
- **Rail Traffic** EN 50155; EN50121-3-2

L2 Features

- **L2 MAC Address** 8K
- **Jumbo Frame** 9KB
- **VLAN Group** 4K (VLAN ID 1~4094)
- **VLAN** Mac based VLAN, Protocol based VLAN, IP subnet based VLAN, Port based VLAN, Q in Q (VLAN Stacking), 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 [inch]



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
- **Link Aggregation** IEEE 802.3ad Dynamic Port Trunking, Static Port Trunking

Security

- **Port Security** Static, Dynamic
- **Authentication** 802.1x (Port-Based, MAC-Based), RADIUS, TACACS+
- **ACL** 1K rules
- **Advanced Security** IP Source Guard, ARP inspection, DHCP Snooping

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

IPv6 Features

- **IPv4/IPv6** IPv4/IPv6 Dual Protocol Stack
- **IPv6** HTTP, SSH, Telnet, TFTP SNTP, SMTP

Ordering Information

- **EKI-9508E-MPH-AE** Layer 2 Managed Switch, 8 x M12 Fast Ethernet with PoE/PoE+, 72/96/110 VDC dual power input
- **EKI-9508E-MPL-AE** Layer 2 Managed Switch, 8 x M12 Fast Ethernet with PoE/PoE+, 24/48 VDC dual power input

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
- M12 connector with IP67 protection
- Supports wide operating temperatures from -40 ~ 70°C

Introduction

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

Specifications

Interface

I/O Port	12 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	3.5 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

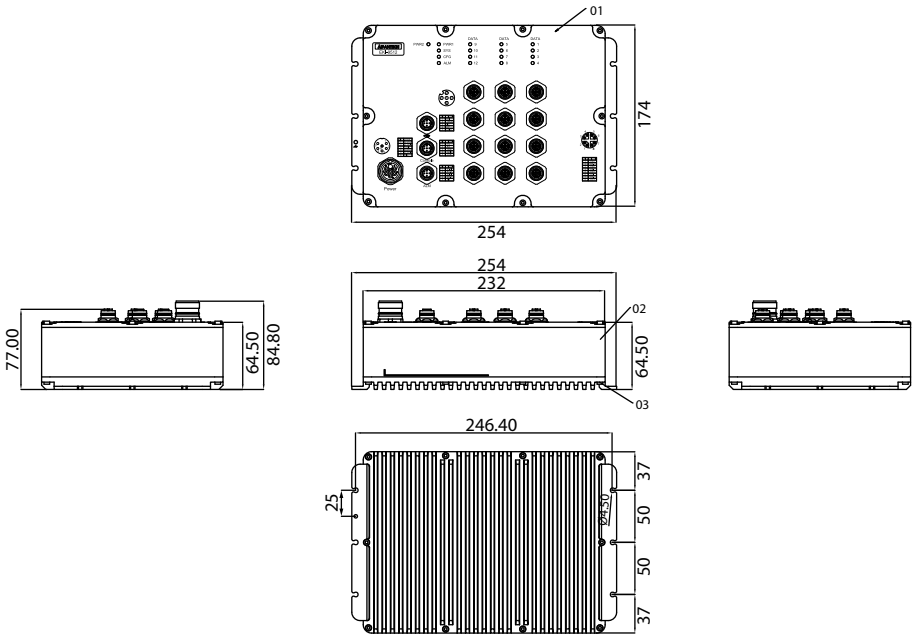
EMI	FCC Part 15 Subpart B Class A CE EN55022 (CISPR) EN55024 Class A
EMS	EN61000-4-2 (ESD); EN61000-4-3 (RS); EN61000-4-4 (EFT); EN61000-4-5 (Surge); EN61000-4-6 (CS)
Shock	IEC 61373
Freefall	IEC 60068-2-32
Vibration	IEC 61373
Rail Traffic	EN 50155; EN50121-3-2

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-9512P

EN 50155 12-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
- 8 x M12 Gigabit ports and 2 pairs M12 Gigabit ports w/bypass relay function
- X-Ring Pro supports rapid and predictable convergence
- IEEE 802.3at PoE+ to supply 30 W of power
- IEEE 802.3af PoE to supply 15.4 W of power
- IEEE 802.3af/802.3at per port with system PoE power management
- M12 connector with IP67 protection
- Wide operating temperatures of -40 to 70°C

Introduction

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

Specifications

Interface

- **I/O Port** 12 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** 3.5 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

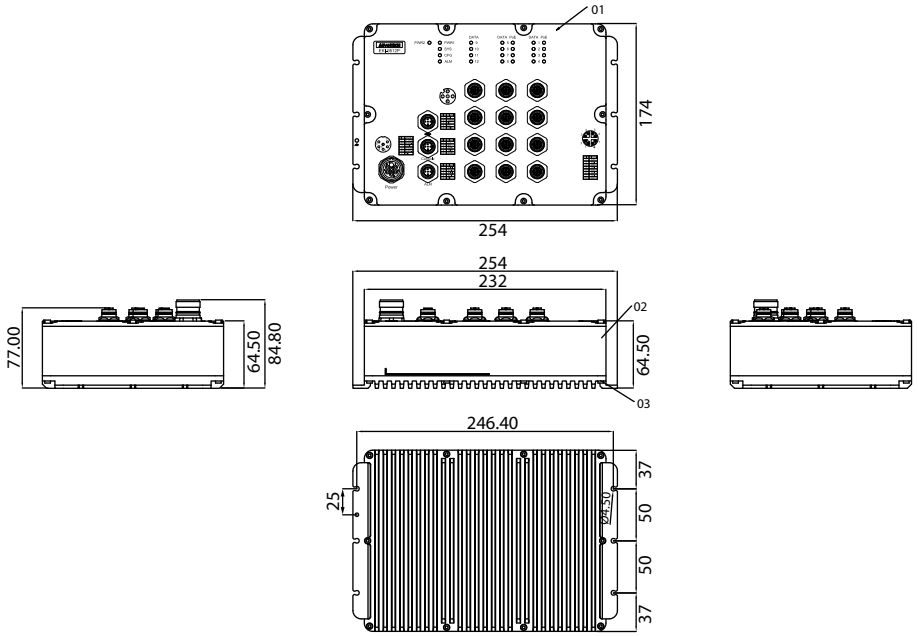
- **Power Consumption** ~ 26.4 Watts (System)
~ 90 Watts
Supports up to 8 ports PoE/PoE+
- **Power Input** 24 / 36 / 48 VDC dual inputs (EKI-9512P-LV)
72 / 96 / 110 VDC dual inputs (EKI-9512P-HV)
Supports Overload Current Protection
Supports Reverse Polarity Protection

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-P0IDL10E** 12x M12 GbE Managed Ethernet Switch with PoE/PoE +, including 24/36/48 V_{DC} dual power inputs
- **EKI-9512-P0IDH10E** 12x M12 GbE Managed Ethernet Switch with PoE/PoE +, including 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
- M12 connector with IP67 protection
- Wide operating temperatures of -40 ~ 70°C

Introduction

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

Specifications

Interface

- **I/O Port** 12 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** 3.5 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

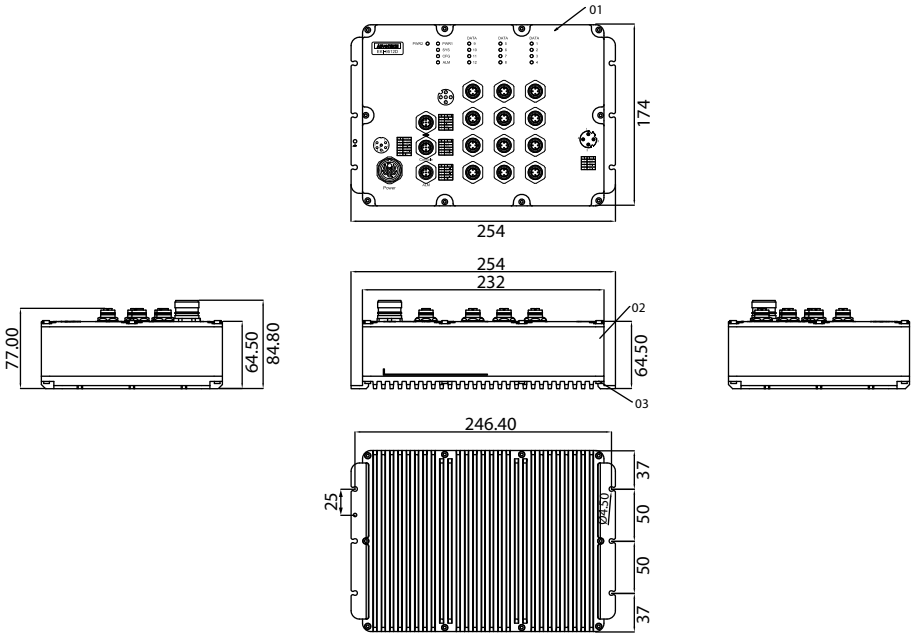
- **L2 MAC Address** 16K
- **Jumbo Frame** 9KB
- **VLAN Group** 4093 (VLAN ID 1~4093)
- **VLAN** Mac based VLAN, Protocol based VLAN, IP subnet based VLAN, Port based VLAN, GVRP
- **Port Mirroring** Per port, Multi-source port
- **IP Multicast** IGMP Snooping v1/v2/v3, MLD Snooping, IGMP Immediate leave
- **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 30 W of power
- IEEE 802.3af PoE to supply 15.4 W of power
- IEEE 802.3af/802.3at per port with system PoE power management
- M12 connector with IP67 protection
- Supports wide operating temperatures from -40 to 70°C

Introduction

The EKI-9512DP M12 managed Ethernet switch is designed for railway applications, including rolling stock. It uses M12 connectors to ensure tight, robust connections and to guarantee reliable operation against environmental disturbances such as vibration and shock. The 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 and provides up to 30/15.4 W of power per port and can be used for IEEE 802.3at/af-compliant powered devices such as IP cameras, wireless access points, and IP phones. In addition, the EKI-9512DP provides a wide power input range of 24/36/48 VDC, 72/96/110 V_{DC}, and its 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. This unit complies with the essential sections of the European railway standard EN 50155, EN50121-3-2 covering operating temperature, power input voltage, surge protection, ESD protection, and vibration protection, making it suitable for a variety of industrial applications.

Specifications

Interface

- **I/O Port**: 12 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**: 3.5 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

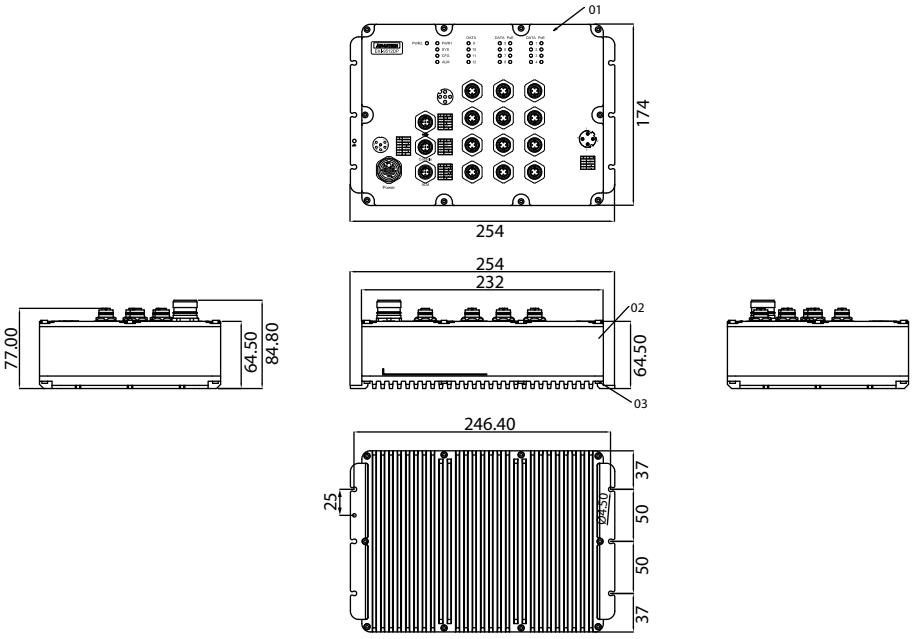
- **EMI**: FCC Part 15 Subpart B Class A
CE EN55022 (CISPR)
EN55024 Class A
- **EMS**: EN61000-4-2 (ESD); EN61000-4-3 (RS); EN61000-4-4 (EFT); EN61000-4-5 (Surge); EN61000-4-6 (CS)
- **Shock**: IEC 61373
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 61373
- **Rail Traffic**: EN 50155; EN50121-3-2

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-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 w/bypass relay function
- X-Ring Pro supports rapid and predictable convergence
- M12 connector with IP67 protection
- Wide operating temperature of -40 ~ 70°C

Introduction

The EKI-9516 M12 managed Ethernet switch is designed for railway applications, including rolling stock. It uses M12 connectors to ensure tight, robust connections and to guarantee reliable operation against environmental disturbances such as vibration and shock. The EKI-9516 provides 16 Gigabit Ethernet M12 ports. In addition to a wide power input range of 24/36/48/72/96/110 V_{DC}, the EKI9516's dual isolated power input increases the reliability of your communications system, while the -40 to 70°C operating temperature and IP67-rated waterproof enclosure allow for deployment in harsh environments. The EKI-9516 complies with the essential sections of the European railway standard EN 50155, EN50121-3-2 covering operating temperature, power input voltage, surge protection, ESD protection, and vibration protection, making it 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

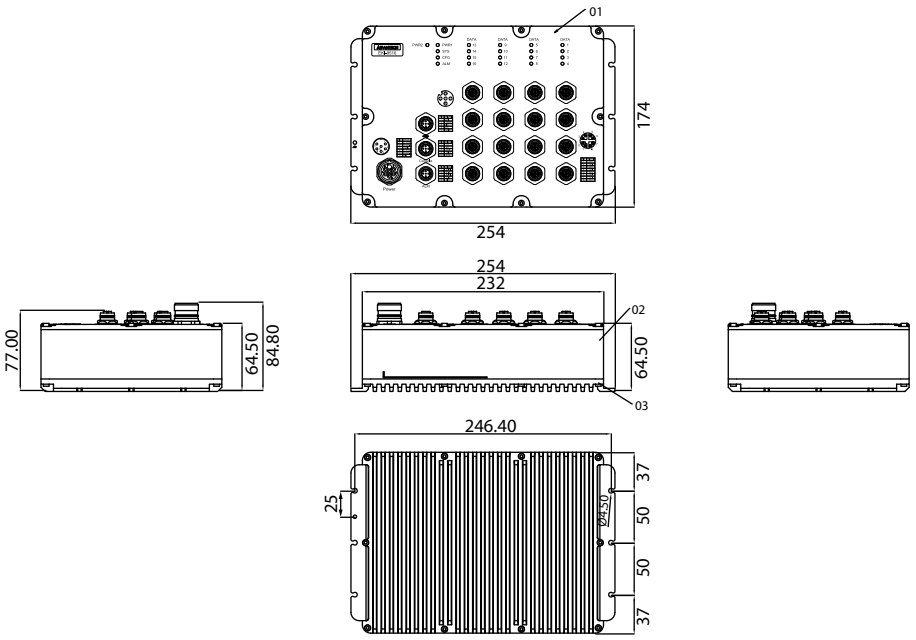
- **L2 MAC Address** 16K
- **Jumbo Frame** 9KB
- **VLAN Group** 4093 (VLAN ID 1~4093)
- **VLAN** Mac based VLAN, Protocol based VLAN, IP subnet based VLAN, Port based VLAN, GVRP
- **Port Mirroring** Per port, Multi-source port
- **IP Multicast** IGMP Snooping v1/v2/v3, MLD Snooping, IGMP Immediate leave
- **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-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 w/bypass relay function
- X-Ring Pro supports rapid and predictable convergence
- IEEE 802.3at PoE+ to supply 30 W of power
- IEEE 802.3af PoE to supply 15.4 W of power
- IEEE 802.3af/802.3at per port with system PoE power management
- Provides M12 connector with IP67 protection
- Wide operating temperature of -40 ~ 70°C

Introduction

The EKI-9516P M12 managed Ethernet switch is designed for railway applications, including rolling stock. It uses M12 connectors to ensure tight, robust connections and to guarantee reliable operation against environmental disturbances such as vibration and shock. The 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 and provides up to 90 W of power per system and can be used for IEEE 802.3at/af-compliant powered devices such as IP cameras, wireless access points, and IP phones. In addition, the EKI-9516P provides a wide power input range of 24/36/48 V_{DC}, 72/96/110 V_{DC}, and its dual isolated power input increases the reliability of your communications system. Additionally, the -40 to 70°C operating temperature and IP67-rated waterproof enclosure allow for deployment in harsh environments. The EKI-9516P complies with the essential sections of the European railway standard EN 50155, EN50121-3-2 covering operating temperature, power input voltage, surge protection, ESD protection, and vibration protection, 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 (10" x 6.85" x 2.54")
- **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

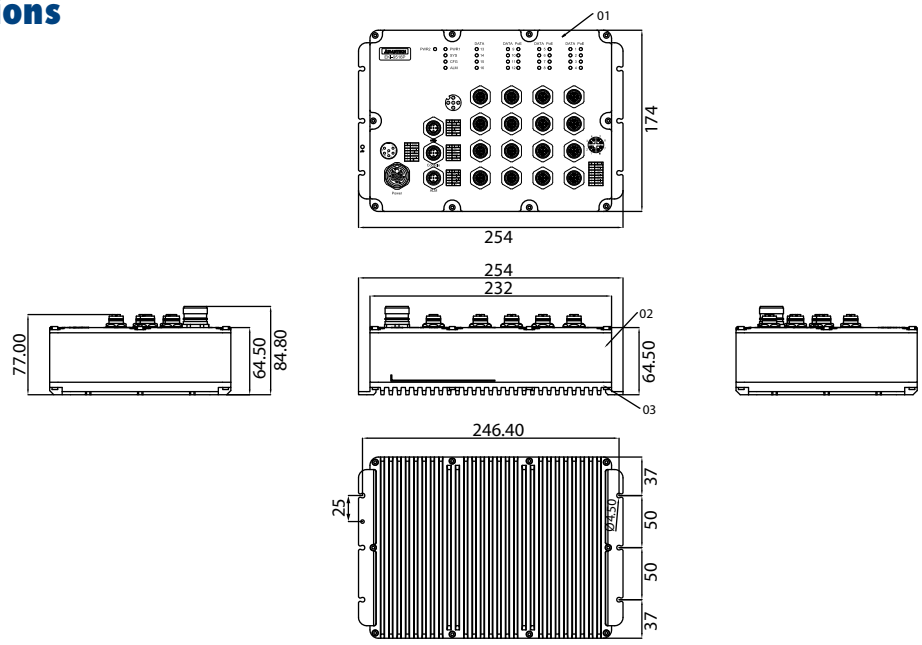
- **Power Consumption** ~ 26.4 Watts (System)
~90 Watts (Power Source Equipment)
Supports up to 12 ports PoE/PoE+
- **Power Input** 24 / 36 / 48 V_{DC} dual inputs (EKI-9516P-LV)
72 / 96 / 110 V_{DC} dual inputs (EKI-9516P-HV)
Supports Overload Current Protection
Supports Reverse Polarity Protection

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-P0IDL10E** 16 x M12 Managed Ethernet Switch with PoE/PoE +, including 24/36/48 V_{DC} dual power inputs
- **EKI-9516-P0IDH10E** 16 x M12 Managed Ethernet Switch with PoE/PoE +, including 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
- Wide operating temperature of -40 ~ 70°C

Introduction

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

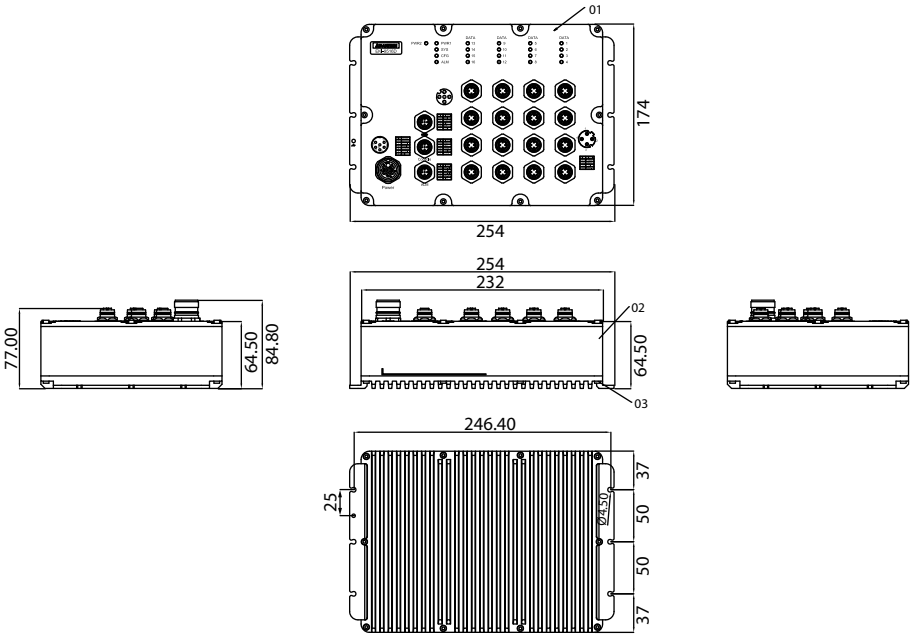
- **EMI** FCC Part 15 Subpart B Class A
  CE EN55022 (CISPR)
  EN55024 Class A
- **EMS** EN61000-4-2 (ESD); EN61000-4-3 (RS); EN61000-4-4 (EFT); EN61000-4-5 (Surge); EN61000-4-6 (CS)
- **Shock** IEC 61373
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 61373
- **Rail Traffic** EN 50155; EN50121-3-2

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

- 16 x Gigabit RJ-45 ports + 4 x 10GbE SFP ports + 8 x Gigabit combo ports
- L3 function: static route, RIP v1/v2, OSPF v2, VRRP
- SFP socket for easy and flexible fiber expansion
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB
- Security: 802.1x HTTPS, SSH, and SNMPv3
- Dual power input and 2 x relay output
- Wide operating temperature of -40 ~ 85°C

Introduction

The EKI-9516DP M12 managed Ethernet switch is designed for railway applications, including rolling stock. It uses M12 connectors to ensure tight, robust connections and to guarantee reliable operation against environmental disturbances such as vibration and shock. The 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 and provides up to 90 W of power per system, and it can be used for IEEE 802.3at/af-compliant powered devices such as IP cameras, wireless access points, and IP phones. In addition, the EKI-9516DP provides a wide power input range of 24/36/48 V_{DC}, 72/96/110 V_{DC}, and its dual isolated power input increases the reliability of your communications system. Additionally, it has a -40 to 70°C operating temperature range and IP67-rated waterproof enclosure, thus allowing for deployment in harsh environments. The EKI-9516DP complies with the essential sections of the European railway standard EN 50155, EN50121-3-2 covering operating temperature, power input voltage, surge protection, ESD protection, and vibration protection, making it 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

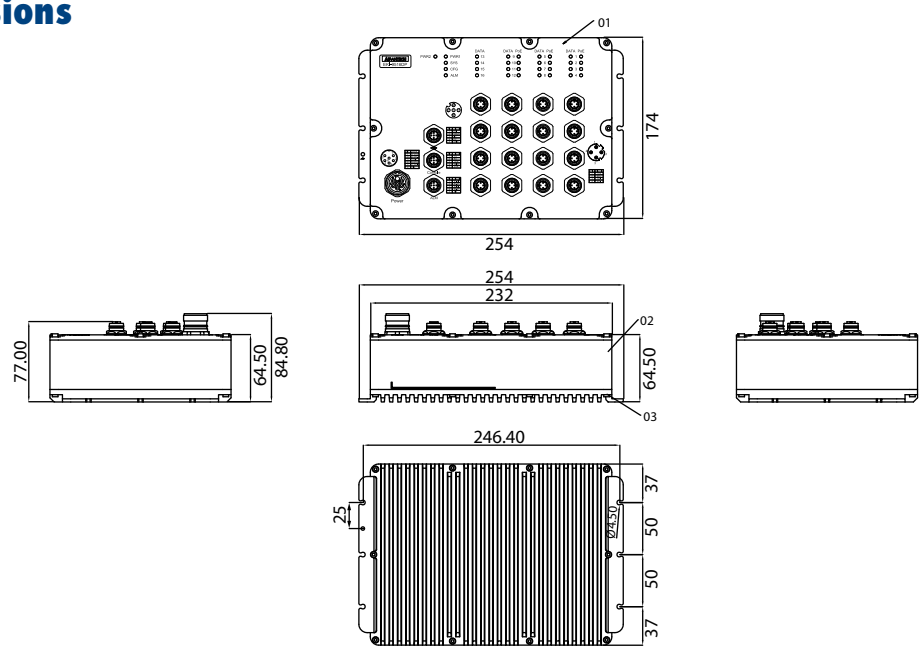
- **Power Consumption** ~ 26.4 Watts (System)
~90 Watts (Power Source Equipment)
Supports up to 12 ports PoE/PoE+
- **Power Input** 24 / 36 / 48 V_{DC} dual inputs (EKI-9516DP-LV)
72 / 96 / 110 V_{DC} dual inputs (EKI-9516DP-HV)
Supports Overload Current Protection
Supports Reverse Polarity Protection

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-9728G-4X8CI

Industrial Rackmount L3 Managed Switch with AC/DC

Features

- 16 x Gigabit RJ-45 ports + 4 x 10GbE SFP ports + 8 x Gigabit combo ports
- L3 function: static route, RIP v1/v2, OSPF v2, VRRP
- SFP socket for easy and flexible fiber expansion
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB
- Security: 802.1x HTTPS, SSH, and SNMPv3
- Dual power input and 2 x relay output
- Wide operating temperature range of -40 ~ 85˚C

Introduction

The EKI-9728G is an L3 management switch that supports RIP v1/v2, OSPF v2, and VRRP. Its wide operating temperature of -40 ~ 85°C means that it can operate reliably in harsh environments. Designed with 16 Gigabit ports, 4 10GbE SFP ports, and 8 Gigabit ports, this unit provides abundant and flexible connection options. Finally, the EKI-9728G series feature dual power inputs to ensure system stability, and 2 relay outputs for greater user flexibility.

Specifications

Communications

Standard	IEEE 802.3, 802.3u, 802.3x, 802.3z, 802.1D, 802.1w, 802.1p, 802.1Q, 802.1X, 802.3ad, 802.3ab
LAN	10/100/1000BASE-TX, optional 100BASE-FX, 1000BASE-SX/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	16 x RJ45 (Ethernet) 8 x RJ45/SFP (mini-GBIC) combo ports 4 x SFP Ports 3-pin removable screw terminal (Power) 4-pin removable screw terminal (Relay)
LED Indicators	10/100T (X): Link/Activity, Duplex/Collision Gigabit Copper: Link/Activity, Speed (1000 Mbps) SFP: Link/Activity
Console	RS-232 (RJ45)

Mechanism

Enclosure	IP30, metal shell with solid mounting kits
Dimensions (W x H x D)	442 x 44 x 352 mm (17.4" x 1.73" x 13.85")
Mounting	1U 19" Rack mount

Power

Power Consumption	19.24 W @ $110V_{AC}$
Power Input	90 ~ 264AC/88 ~ $370V_{DC}$
Fault Output	2 Relay Outputs

Protection

Power Reverse	Present
Overload Current	Present

Environment

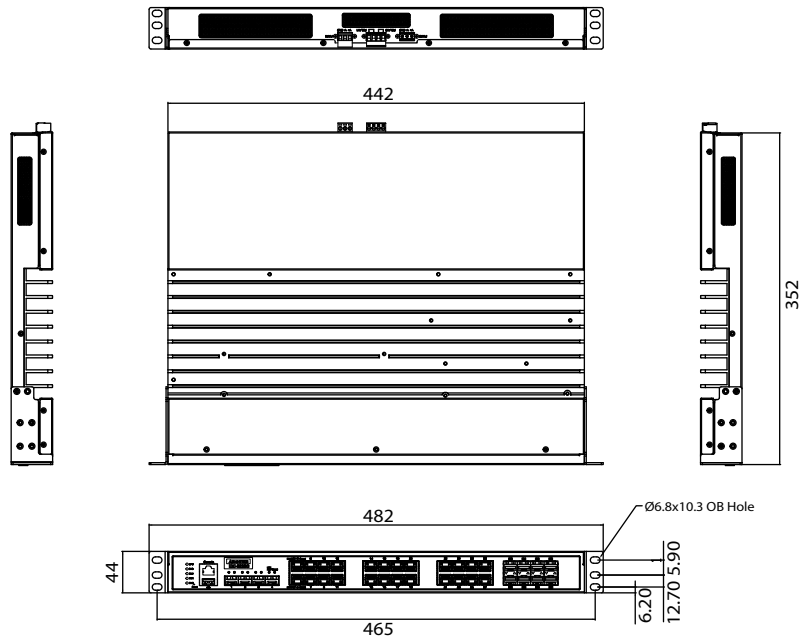
Operating Temperature	-40 ~ 85°C (-40 ~ 185°F)
Storage Temperature	-40 ~ 85°C (-40 ~ 185°F)
Operating Humidity	10 ~ 95% (non-condensing)
Storage Humidity	10 ~ 95% (non-condensing)

Certification

EMI	CE FCC EN55022 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

Dimensions

Unit: mm



L2 Features

- **L2 MAC Address** 16K
- **Jumbo Frame** 12KB
- **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
- **Unicast Routing** Static Routing, RIPV1/V2, OSPF

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+
- **Advanced Security** IP Source Guard

Management

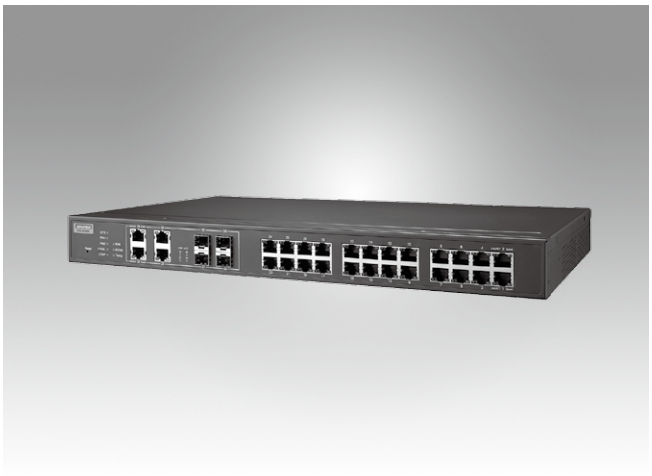
- **DHCP** Client, Server
- **Access** SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security Access** SSH 2.0, SSL
- **Software Upgrade** TFTP, HTTP, Dual Image
- **NTP** SNTP client
- **Routing Redunance** VRRP

Ordering Information

- **EKI-9728G-4X8CI-AE** Ind. Rackmount L3 Managed Switch with AC/DC

EKI-9628G-4CI

24G+4G Combo Ports Industrial L3 Managed Switch



Features

- Rackmount 24G+4G combo port L3 managed switch
- L3 function: static route, NAT
- SFP socket for easy and flexible fiber expansion
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB
- Security: 802.1x ,HTTPS, SSH, and SNMPv3
- Redundancy: Gigabit X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D), MSTP
- Wide operating temperature range of -40 ~ 70°C

Introduction

The EKI-9628G is an industrial-class L3 managed switch that supports static route and NAT. Embedded with 24 Gigabit ports and 4 Gigabit combo ports, it is designed for rackmount installation and can be deployed in demanding industrial environments. It is suitable for edge-to-core industrial networks and supports operating temperatures of -40 ~ 70°C. It is also embedded with Advantech IXM, which benefits users with fast deployment, which can dramatically save on engineering time and cost.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x, 802.3z, 802.1D, 802.1w, 802.1p, 802.1Q, 802.1X, 802.3ad, 802.3ab
- **LAN** 10/100/1000BASE-TX, optional 100BASE-FX, 1000BASE-SX/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** Gigabit Copper: 10/100/1000 Mbps, Auto-Negotiation
  Gigabit Fiber: Up to 1000 Mbps

Interface

- **Connectors** 24 x RJ45 (Ethernet)
  4 x RJ45/SFP (mini-GBIC) combo ports
  4-pin removable screw terminal (Power)
  3-pin removable screw terminal (Relay)
- **LED Indicators** 10/100T (X): Link/Activity, Duplex/Collision
  Gigabit Copper: Link/Activity, Speed (1000 Mbps)
  SFP: Link/Activity
- **Console** RS-232 (RJ45)

Management

- **Configuration** Web browser, Telnet, Serial console, TFTP, SNMPv1/v2c/v3, Port Speed/Duplex Configuration, IPv6
- **VLAN** IEEE 802.1Q, GVRP
- **Redundancy** Advantech X-Ring, 802.1w/D RSTP/STP
- **Security** IP Access security, port security, DHCP client, 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, IEEE 802.3x flow control
- **Diagnostics** Port Mirroring, Real-time traffic statistic, MAC Address Table, SNTP, Syslog, E-Mail Alert, SNMP Trap, RMON
- **Unicast Routing** NAT,Static routing

Mechanism

- **Enclosure** IP30, metal shell with solid mounting kits
- **Dimensions (W x H x D)** 438 x 43.6 x 259.20 mm (17.24" x 1.72" x 10.2")
- **Mounting** 1U 19" Rack mount

Power

- **Power Consumption** 20W @ 24V
- **Power Input** 12-48 V_{DC}
- **Fault Output** 2 Relay Outputs

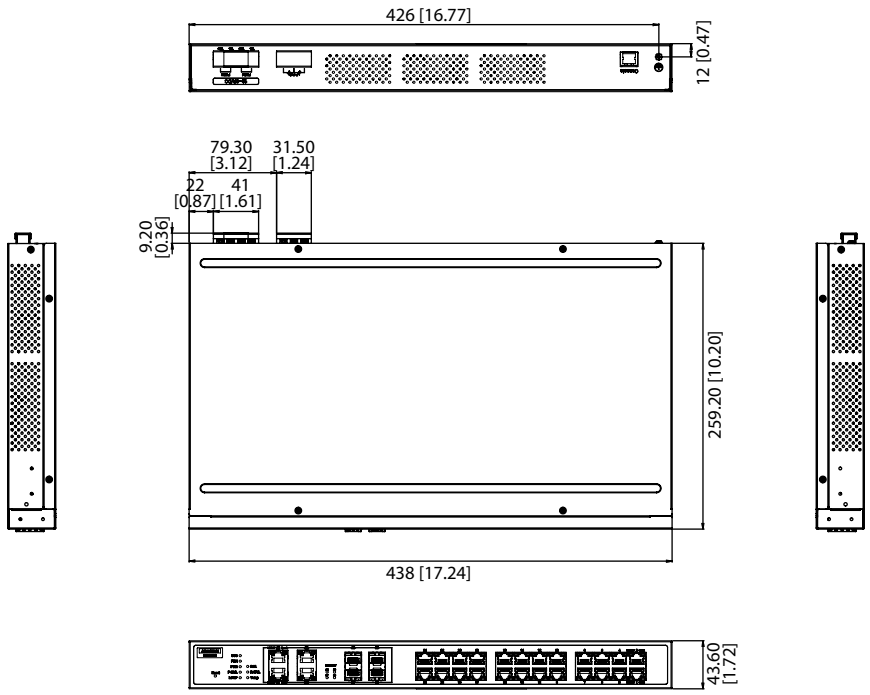
Protection

- **Power Reverse** Present
- **Overload Current** Present
- **Environment**
- **Operating Temperature** -40 ~ 70°C (-40 ~ 158°F)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity** 10 ~ 95% (non-condensing)
- **Storage Humidity** 10 ~ 95% (non-condensing)
- **MTBF** 787,940 hours

Certification

Dimensions

Unit: mm [inch]



- **Safety** UL 61010-2-201
- **EMI** CE FCC EN55022 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
- **Railway Track Side** EN 50121-4
- **Patent** http://www.advantech.com/legal/patent

Ordering Information

- **EKI-9628G-4CI-AE** 24GE +4G Combo Port L3 rackmount Managed Ethernet Switch w/ Wide Temp

EKI-9612G-4FI

8G+4G SFP Ports Industrial L3 Managed Switch

Features

- DIN rail L3 switch 8 Gigabit ports + 4 SFP ports
- L3 function: static route, NAT
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D)
- Security: 802.1x
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- Wide operating temperature range of -40 ~ 75°C
- Dual 12 ~ 48 V_{DC} power input and 1 x relay output

Introduction

The EKI-9612G-4FI is a DIN rail L3 switch that supports static route and NAT. It comes with 8 Gigabit ports and 4 SFP (mini-GBIC) ports. It provides an abundance of ports for connecting to a range of different devices. The EKI-9612G series is equipped with X-Ring Pro for ultra-high-speed recovery times of <20 ms, thus ensuring network stability. The switch also features a wide operating temperature range of -40 to 75°C.

Specifications

Interface

- **I/O Port** 8 x 10/100/1000BASE-T/TX RJ-45
  4 x SFP (mini-GBIC) port
- **Console port** RS-232 (RJ45)
- **Power Connector** 6-pin screw Terminal Block (including relay)

Physical

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

LED Display

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

Environment

- **Operating Temperature** -40 ~ 75°C (-40 ~ 167°F)
- **Storage Temperature** -40 ~ 85°C
- **Ambient Relative Humidity** 10 ~ 95% (non-condensing)
- **Humidity** 10 ~ 95% (non-condensing)

Power

- **Power Consumption** 12.1W @ 48V_{DC} (System)
- **Power Input** 12 ~ 48 V_{DC}, redundant dual power input
- **Fault Output** 1 Relay Output

Certification

- **EMI** CE, FCC Class A
- **Safety** UL61010-2-201
- **EMC** EN 61000-4-2
  EN 61000-4-3
  EN 61000-4-4
  EN 61000-4-5
  EN 61000-4-6
  EN 61000-4-8
  EN50121-4*
- **Shock** IEC 60068-2-27
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 60068-2-6
- **Traffic control** NEMA TS2*

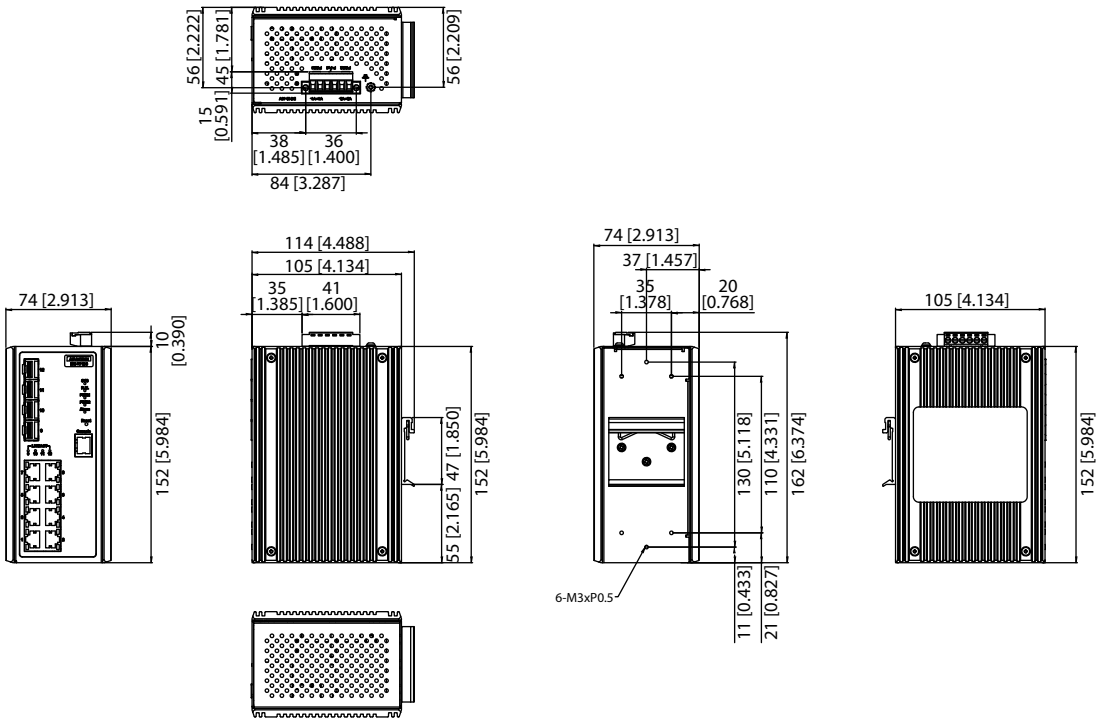
*= Compliant

L2 Features

- **L2 MAC Address** 8K
- **Jumbo Frame** 9216 Bytes
- **VLAN Group** 256 (VLAN ID 1 ~ 4094)
- **VLAN Arrange** Q-in-Q (VLAN Stacking), 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
- **Redundancy** IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro, with ultra high-speed recovery time less than 20ms

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 105 (4.137) x 152 (5.984) x 74 (2.91)

QoS

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

Security

- **Port Security** — Static, Dynamic
- **Authentication** — 802.1x (Port-Based, MD5/PEAP Encryption)

Management

- **DHCP** — Client, Server, Option66/67/82
- **Access** — SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security access** — SSH2.0, SSL
- **Software upgrade** — TFTP, HTTP, Dual Image
- **Unicast Routing** — NAT,Static routing

Ordering Information

- **EKI-9612G-4FI-AE** — L3 switch 8G + 4G SFP Port Managed Ethernet Switch w/Wide Temp

EKI-9228G-8CMI
EKI-9228G-8COI

Industrial Rackmount L2 Managed Switch with 48 V_{DC}
Industrial Rackmount L2 Managed Switch with AC/$_{DC}$

Features

- 16 x Gigabit RJ-45 ports + 4 Gigabit x SFP ports + 8 x Gigabit combo ports
- SFP socket for easy and flexible fiber expansion
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), HTTPS, SSH, and SNMPv3
- Redundancy: Gigabit X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D), MSTP
- Dual power input and 2 x relay output
- Wide-range operating temperature of -40 ~ 85˚C

Introduction

The EKI-9228G series are designed for power substation automation applications requiring IEC 61850-3 certification. Thanks to its -40 ~ 85°C wide operating temperature range, these switches can operate reliably in extremely harsh environments. Designed with 16 Gigabit ports, 4 Gigabit SFP ports, and 8 Gigabit ports, it provides abundant and flexible connection options. Finally, the EKI-9228G series feature dual power inputs to ensure system stability and 2 relay outputs for greater user flexibility.

Specifications

Communications

Standard	IEEE 802.3, 802.3u, 802.3x, 802.3z, 802.1D, 802.1w, 802.1p, 802.1Q, 802.1X, 802.3ad, 802.3ab
LAN	10/100/1000BASE-TX, optional 100BASE-FX, 1000BASE-SX/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	16 x RJ45 (Ethernet) 8 x RJ45/SFP (mini-GBIC) combo ports 4 x SFP Ports 3-pin removable screw terminal (Power) 4-pin removable screw terminal (Relay)
LED Indicators	10/100T (X): Link/Activity, Duplex/Collision Gigabit Copper: Link/Activity, Speed (1000 Mbps) SFP: Link/Activity
Console	RS-232 (RJ45)

Mechanism

Enclosure	IP30, metal shell with solid mounting kits
Dimensions (W x H x D)	442 x 44 x 352 mm (17.4" x 1.73" x 13.85")
Mounting	1U 19" Rack mount

Power

Power Consumption	EKI-9228G-8CMI: 19.21 W @ 48V EKI-9228G-8COI: 19.24 W @ 110V_{AC}
Power Input	EKI-9228G-8CMI: 48V_{DC} EKI-9228G-8COI: 90 ~ 264AC/88 ~ 370V_{DC}
Fault Output	2 Relay Outputs

Protection

Power Reverse	Present
Overload Current	Present

Environment

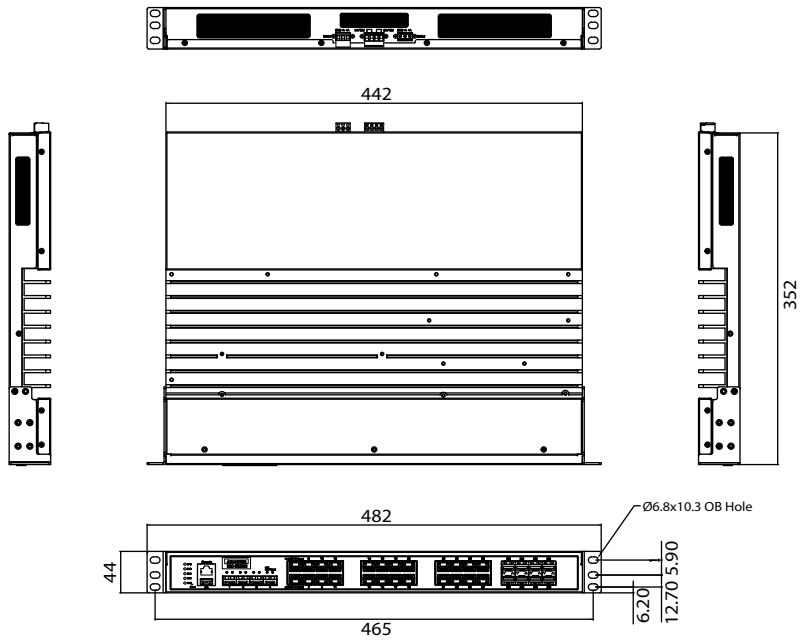
Operating Temperature	-40 ~ 85°C (-40 ~ 185°F)
Storage Temperature	-40 ~ 85°C (-40 ~ 185°F)
Operating Humidity	10 ~ 95% (non-condensing)
Storage Humidity	10 ~ 95% (non-condensing)

Certification

Safety	UL 60950
EMI	CE FCC EN55022 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
Power Automation	IEC 61850-3

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-9228G-8CMI-AE** Ind. Rackmount L2 Managed Switch with 48VDC
- **EKI-9228G-8COI-AE** Ind. Rackmount L2 Managed Switch with AC/DC

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

Industrial Rackmount L2 Managed Switch with 48 V_{DC}
Industrial Rackmount L2 Managed Switch with AC/DC

Features

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

Introduction

The EKI-9226G series are designed for power substation automation applications requiring IEC 61850-3 certification. Thanks to its -40 ~ 85˚C wide operating temperature, it can operate well in extremely harsh environments. Designed with 20 Gigabit SFP ports and 4 Gigabit RJ-45 ports, these this series of switches provide abundant and flexible connection options. Finally, the EKI-9226G series feature dual power inputs to ensure system stability and 2 relay output for greater user flexibility.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x, 802.3z, 802.1D, 802.1w, 802.1p, 802.1Q, 802.1X, 802.3ad, 802.3ab
- **LAN** 10/100/1000BASE-TX, optional 100BASE-FX, 1000BASE-SX/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** Gigabit copper: 10/100/1000 Mbps, Auto-Negotiation
  Gigabit fiber: Up to 1000 Mbps

Interface

- **Connectors** 6 x RJ45 (Ethernet)
  20 x SFP ports
  3-pin removable screw terminal (power)
  4-pin removable screw terminal (relay)
- **LED Indicators** 10/100TX: Link/activity, duplex/collision
  Gigabit copper: Link/activity, speed (1000 Mbps)
  SFP: Link/activity
- **Console** RS-232 (RJ45)

Mechanism

- **Enclosure** IP30, metal shell with solid mounting kit
- **Dimensions (W x H x D)** 438 x 44 x 315.2 mm
- **Mounting** 1U 19" rack mount

Power

- **Power Consumption** 35W
- **Power Input** EKI-9226G-20FMI: 48V_{DC}
  EKI-9226G-20FOI: 90 ~ 264$_{AC}$/88 ~ 370V_{DC}
- **Fault Output** 2 relay outputs

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** 10 ~ 95% (non-condensing)
- **Storage Humidity** 10 ~ 95% (non-condensing)

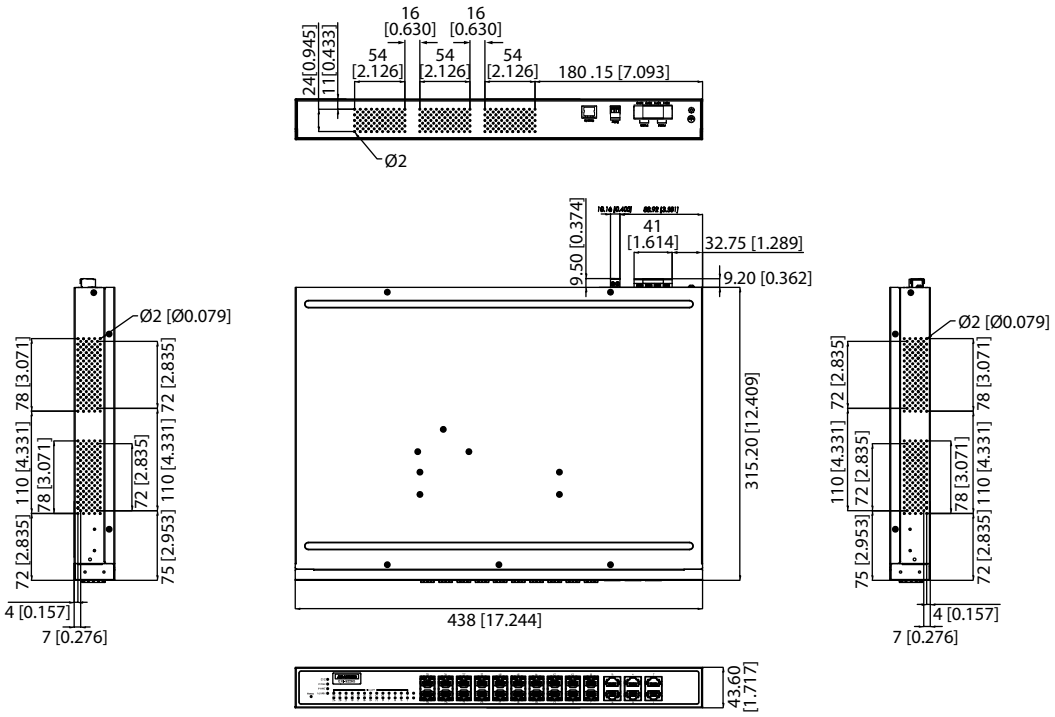
Certification

- **Safety** UL 60950
- **EMI** CE FCC 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
- **Power Automation** IEC 61850-3

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

Dimensions

Unit: mm [in.]



L2 Features

- **L2 MAC Address** 8K
- **Jumbo Frame** 9 KB
- **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, SP
- **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-9226G-20FMI-AE** Industrial Rackmount L2 Managed Switch with 48 V_{DC}
- **EKI-9226G-20FOI-AE** Industrial Rackmount L2 Managed Switch with AC/DC

EKI-9213E-2CPHRI

8FE+3GSFP + 2 HSR/PRP Port Managed Redundant Industrial Switch

Features

- 8 Fast Ethernet ports + 3G SFP ports + 2 HSR/PRP combo ports
- Complies with IEC 62439-3 Clause 4 (PRP) and Clause 5 (HSR)
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D)
- IXM function enables fast deployment
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- Dual 12 ~ 48 V_{DC} power input + 1 relay output
- IEC 61850-3 and IEEE 1613 compliant

Introduction

The EKI-9213E-2CPHR support 8 fast Ethernet ports, 3G SFP ports, and 2 HSR/PRP combo ports. It can provide users abundant port options for connecting a range of different device types. It is embedded with Advantech IXM function, which can benefit users by ensuring rapid deployment and can dramatically save on engineering time and costs. The EKI-9213E series also support NMS to help IT managers with networking maintenance and failure prevention. Finally, this series is equipped with X-Ring Pro, which can achieve ultra-high-speed recovery times of <20 ms, thus ensuring network stability. The EKI-9213E meets IEC 62439-3 Clause 4 (PRP) and IEC 62439-3 Clause 5 (HSR), thus ensuring the highest level of system availability in electrical substations requiring zero recovery times.

Specifications

Interface

I/O Port	8 x 10/100BASE-T/TX RJ-45 3 x SFP (mini-GBIC) 2 x Combo HSR/PRP
Console port	RS-232 (RJ45)
Power Connector	6-pin screw Terminal Block (including relay)

Physical

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

LED Display

System LED	PWR1, PWR2, SYS, Alarm and R.M.
Port LED	Link / Speed / Activity , HSR, PRP

Environment

Operating Temperature	-40 ~ 75°C (-40 ~ 167°F)
Storage Temperature	-40 ~ 85°C
Ambient Relative Humidity	10 ~ 95% (non-condensing)
Humidity	10 ~ 95% (non-condensing)

Power

Power Consumption	12.1W @ 48V_{DC} (System)
Power Input	12 ~ 48 V_{DC}, redundant dual power input
Fault Output	1 Relay Output

Certification

EMI	CE, FCC Class A
Safety	UL61010-2-201
EMC	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
Power Substation	IEC 61850-3

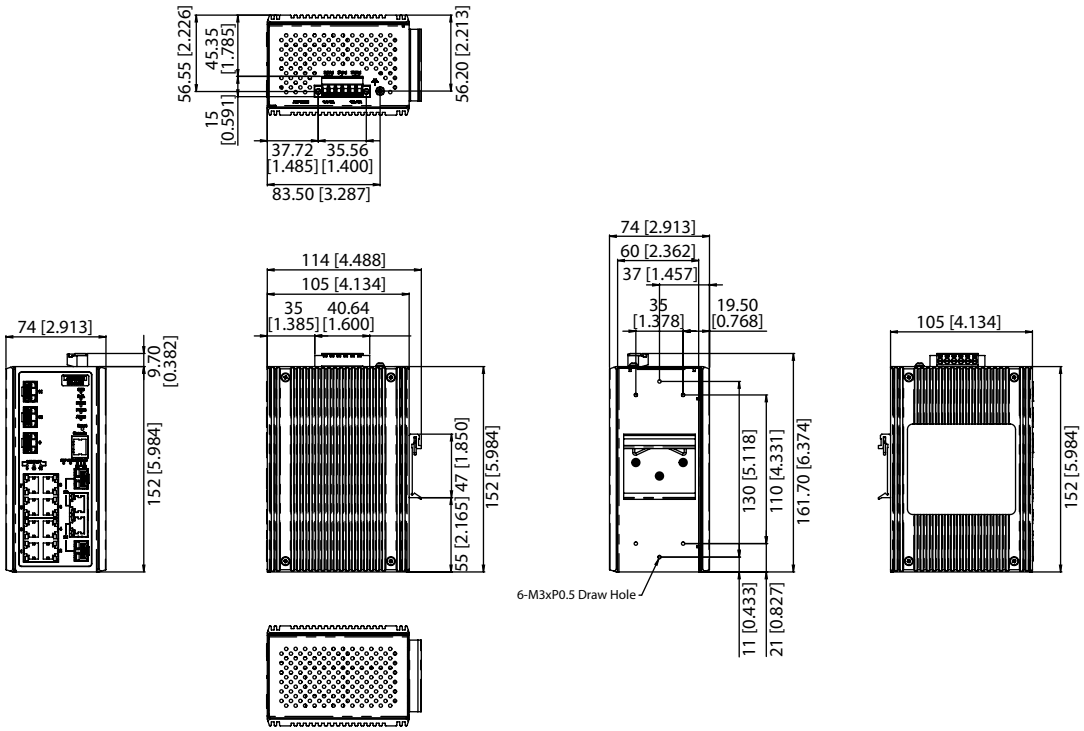
*= Compliant

L2 Features

L2 MAC Address	8K
Jumbo Frame	9216 Bytes
VLAN Group	256 (VLAN ID 1 ~ 4094)
VLAN Arrange	Port based VLAN, Q-in-Q (VLAN Stacking), 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
Redundancy	IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro, with ultra high-speed recovery time less than 20ms, PRP, HSR

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 74 (2.910) x 152 (5.984) x 105 (4.134)

QoS

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

Security

- **Port Security** — Static, Dynamic
- **Authentication** — 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption)

Management

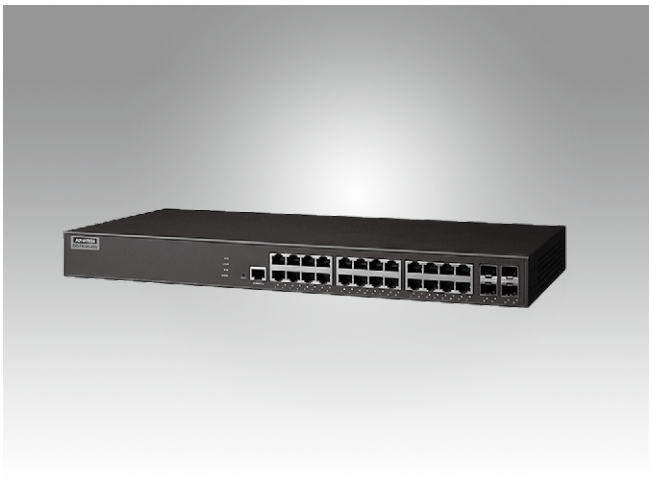
- **DHCP** — Client, Server, Option66/67/82
- **Access** — SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security access** — SSH2.0, SSL
- **Software upgrade** — TFTP, HTTP, Dual Image
- **NTP** — SNTP client

Ordering Information

- **EKI-9213E-2CPHRI-AE** — IEC 61850-3 8FE + 3SFP + 2 Combo HSR/PRP Port Managed Ethernet Switch

EKI-7428G-4FA

24GE+4G SFP Port L2 Managed Switch with AC Input



Features

- 24 x Gigabit copper ports + 4 x Gigabit SFP ports
- SFP socket for easy and flexible fiber expansion
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB
- IXM function enables fast deployment
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), HTTPS, SSH, and SNMPv3
- Redundancy: Gigabit X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D), MSTP
- 100~240 V_{AC} power input

Introduction

The EKI-7428G-4FA is an industrial-class L2 full managed switch with 24 Gigabit ports and 4 Gigabit SFP ports. It is designed for rackmount installation and can be deployed in demanding industrial environments. It is suitable for edge-to-core industrial networks and integrates L2 switching software, which is optimized for scale and performance, delivering wire speeds up to 56 Gbps across all ports for L2 traffic forwarding.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x, 802.3z, 802.1D, 802.1w, 802.1p, 802.1Q, 802.1X, 802.3ad, 802.3ab
- **LAN** 10/100/1000BASE-TX, optional 100BASE-FX, 1000BASE-SX/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** Gigabit Copper: 10/100/1000 Mbps, Auto-Negotiation
  Gigabit Fiber: Up to 1000 Mbps

Interface

- **Connectors** 24 x RJ45 (Ethernet)
  4 x RJ45/SFP (mini-GBIC) ports
- **LED Indicators** 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, IPv6
- **VLAN** IEEE 802.1Q, GVRP, Port-based VLAN
- **Redundancy** Advantech X-Ring, 802.1w/D RSTP/STP
- **Security** IP Access security, port security, DHCP client, 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, IEEE 802.3x flow control
- **Diagnostics** Port Mirroring, Real-time traffic statistic, MAC Address Table, SNTP, Syslog, E-Mail Alert, SNMP Trap, RMON

Mechanism

- **Enclosure** Metal shell with solid mounting kits
- **Dimensions (W x H x D)** 442 x 44 x 211.1 mm (17.4" x 1.73" x 8.31")
- **Mounting** 1U 19" Rack mount

Power

- **Power Consumption** 18W
- **Power Input** 100~240V single AC power input

Protection

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

Environment

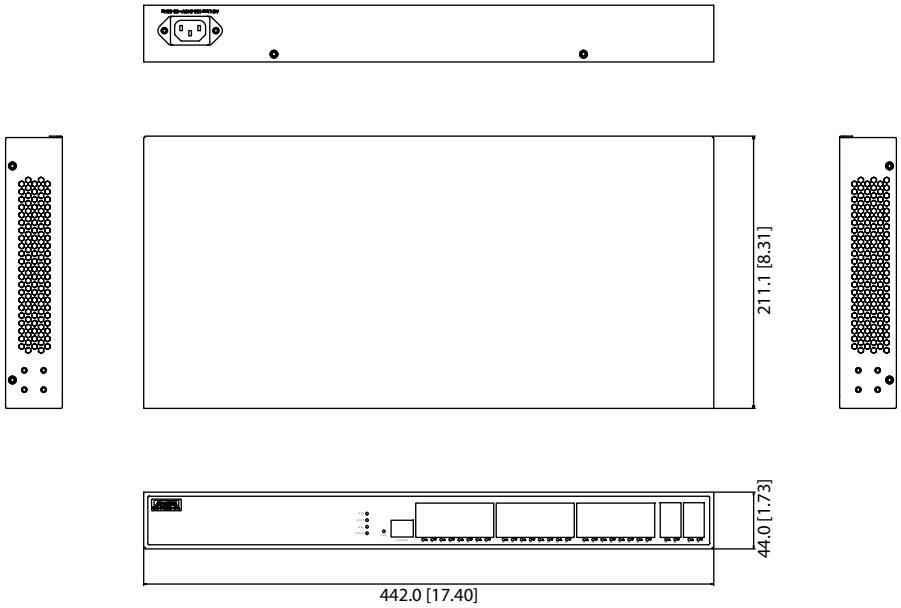
- **Operating Temperature** 0 ~ 55°C (32 ~ 131°F)
- **Storage Temperature** -20 ~ 70°C (-4 ~ 158°F)
- **Operating Humidity** 10 ~ 95% (non-condensing)
- **Storage Humidity** 10 ~ 95% (non-condensing)
- **MTBF** 620,427 hours

Certification

- **EMI** CE FCC 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

Dimensions

Unit: mm [inch]



Ordering Information

- **EKI-7428G-4FA-AE** 24GE+4G SFP Port Managed Ethernet Switch

EKI-7428G-20FA

20GE SFP + 8G Port L2 Managed Switch with AC Input

Features

- 20 x Gigabit SFP ports + 8 x Gigabit copper ports
- SFP socket for easy and flexible fiber expansion
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB
- IXM function enables fast deployment
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), HTTPS, SSH, and SNMPv3
- Redundancy: Gigabit X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D), MSTP
- 100~240 V_{AC} power input
- Operating temperature range of 0 ~ 55°C

Introduction

The EKI-7428G-20FA is an industrial-class L2 full managed switch with 20 Gigabit SFP ports and 8 Gigabit ports. It is designed for rackmount installation and can be deployed in demanding industrial environments. It is suitable for edge-to-core industrial networks and integrates L2 switching software, which is optimized for scale and performance, delivering wire speeds up to 56 Gbps across all ports for L 2 traffic forwarding.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x, 802.3z, 802.1D, 802.1w, 802.1p, 802.1Q, 802.1X, 802.3ad, 802.3ab
- **LAN** 10/100/1000BASE-TX, optional 100BASE-FX, 1000BASE-SX/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** Gigabit Copper: 10/100/1000 Mbps, Auto-Negotiation
  Gigabit Fiber: Up to 1000 Mbps

Interface

- **Connectors** 8 x RJ45 (Ethernet)
  20 x SFP (mini-GBIC) ports
- **LED Indicators** 10/100/1000T (X): Link/Activity, Duplex/Collision
  SFP: Link/Activity
- **Console** RS-232 (RJ45)

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, 802.1w/D RSTP/STP
- **Security** IP Access security, port security, DHCP client, 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, IEEE 802.3x flow control
- **Diagnostics** Port Mirroring, Real-time traffic statistic, MAC Address Table, SNTP, Syslog, E-Mail Alert, SNMP Trap, RMON

Mechanism

- **Enclosure** Metal shell with solid mounting kits
- **Dimensions (W x H x D)** 442 x 44 x 211.1 mm (17.4" x 1.73" x 8.31")
- **Mounting** 1U 19" Rack mount

Power

- **Power Consumption** 38W
- **Power Input** 100~240V single AC power input

Protection

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

Environment

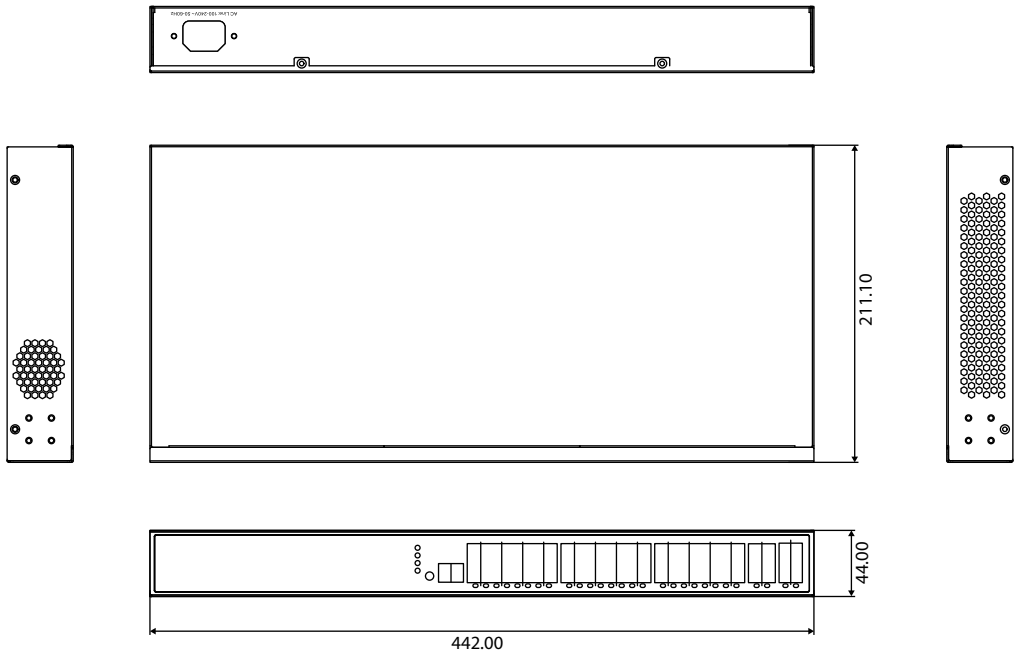
- **Operating Temperature** 0 ~ 55°C (32 ~ 131°F)
- **Storage Temperature** -20 ~ 70°C (-4 ~ 158°F)
- **Operating Humidity** 5 ~ 90% (non-condensing)
- **Storage Humidity** 5 ~ 90% (non-condensing)
- **MTBF** 363,619 hours

Certification

- **EMI** CE FCC 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

Dimensions

Unit: mm [inch]



Ordering Information

- **EKI-7428G-20FA-AE** 20G SFP Port+8GE Managed Ethernet Switch

EKI-7708G-2FV
EKI-7712G-2FV

4GE + 2G SFP + 2 VDSL2 Port Managed Redundant Industrial Switch
8GE + 2G SFP + 2 VDSL2 Port Managed Redundant Industrial Switch

Features

- 4 x Gigabit + 2 x Gigabit SFP + 2 VDSL2 ports (EKI-7708G-2FV)
- 8 x Gigabit + 2 x Gigabit SFP + 2 VDSL2 ports (EKI-7712G-2FV)
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP, and MSTP (802.1w/1D/1s)
- IXM function enables fast deployment
- Security: 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- NEMA TS2 for traffic control
- EN50121-4 approval for railway trackside deployment
- 100/100 Mbps up to 400 m over CAT 5e
- Dual 12 ~ 48 V_{DC} power input + 1 x relay output

Introduction

The EKI-7712G-2FV and EKI-7708G-2FV provide 8/4 Gigabit ports, 2 Gigabit SFP ports, and 2 VDSL2 ports. These switches provide abundant port options, thus providing support for connecting a range of different devices. They also come embedded with Advantech IXM function for fast deployment, thus have a marked impact in saving on engineering time and costs. This series also support NMS to help IT managers with networking maintenance and failure prevention. Finally, they are equipped with X-Ring Pro redundancy for ultra-high-speed recovery times of <20 ms. These switches also incorporate the latest VDSL2 technology and can be easily adapted to existing applications with existing 2-wire cable (e.g., phone line systems), thus avoiding unnecessary costs associated with rewiring. It can substantially extend Ethernet service on UTP wire with distances up to 3000 m, and even with a rate of 100Mbps for up to 400 m on standard CAT-5e2 cable.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x, 802.3ad, 802.3ab, 802.3z, 802.1D, 802.1w, 802.1s, 802.1P, 802.1Q, 802.1X
- **LAN** 10/100/1000BASE-TX, optional 100BASE-FX, 1000BASE-SX/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)
  VDSL2: With the rate of 100Mbps speed up to 400 m on a standard CAT 5e2 wire cable
- **Transmission Speed** Gigabit copper: 10/100/1000 Mbps, auto negotiation
  Gigabit fiber: Up to 1000 Mbps

Interface

- **Connectors** 4/8 x RJ45 (Gigabit Ethernet)
  2 x SFP (mini-GBIC)
  2 x VDSL ports
  6-pin screw terminal block connector
  4-pin for power, 2-pin for relay
- **LED Indicators** PWR1, PWR2, SYS, Alarm, and R.M.
  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, IPv6
- **VLAN** IEEE 802.1Q, GVRP, port-based VLAN
- **Redundancy** Advantech X-Ring, 802.1w/1D/1s RSTP, STP, MSTP
- **Security** IP access security, port security, DHCP client, 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, IEEE 802.3x flow 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 kit
- **Dimensions (W x H x D)** 74 x 152 x 105 mm (2.91" x 5.98" x 4.13")
- **Mounting** DIN rail, wall mount

Power

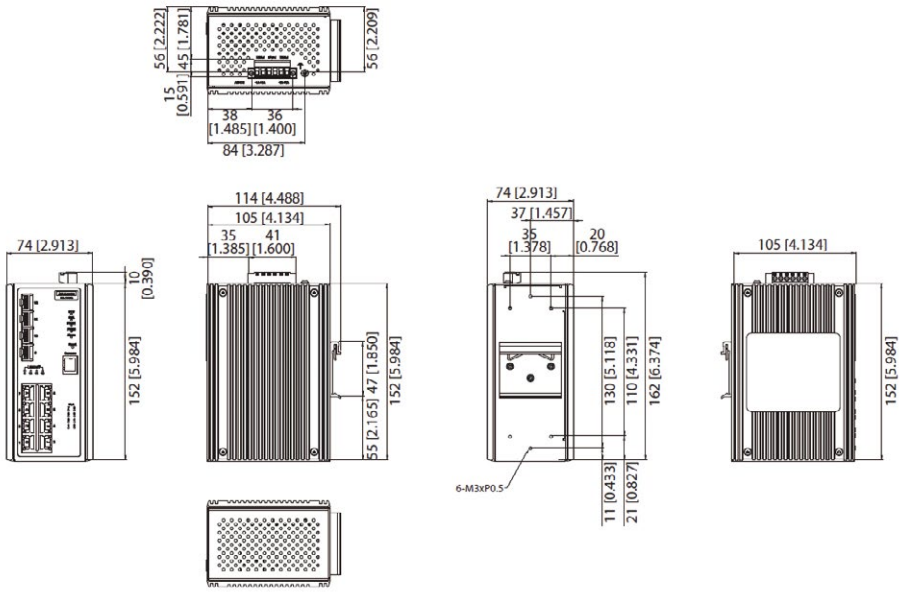
- **Power Consumption** 15 W @ 48 V_{DC} (system)
- **Power Input** 12 ~ 48 V_{DC}
- **Fault Output** 1 x relay output

Protection

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

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 105 x 152 x 74 mm (4.13" x 5.98" x 2.91")

Environment

- **Operating Temperature** -10~60°C (14~140°F)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity** 10 ~ 95% (non-condensing)
- **Storage Humidity** 10 ~ 95% (non-condensing)

Certification

- **Safety** UL 61010
- **EMI** CE, FCC 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
  NEMA TS2
- **Shock** IEC 60068-2-27
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 60068-2-6
- **Railway Track Side** EN 50121-4
- **Patent** http://www.advantech.com/legal/patent

Ordering Information

- **EKI-7708G-2FV-AE** 4GE + 2G SFP + 2 VDSL2 port Managed Industrial Switch
- **EKI-7712G-2FV-AE** 8GE + 2G SFP + 2 VDSL2 port Managed Industrial Switch

EKI-7710E-2C
EKI-7710E-2CI

8FE+2G Port Gigabit Managed Redundant Industrial Switch

Features

- 8 x fast Ethernet ports + 2 x Gigabit Copper/SFP combo ports
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D)
- IXM function enables fast deployment
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- Wide operating temperature range -40 ~ 75 °C (EKI-7710E-2CI)
- Dual 12 ~ 48 V_{DC} power input and 1 x relay output

Introduction

The EKI-7710E-2C and EKI-7710E-2CI support 8 fast Ethernet ports and 2 Gigabit combo ports. These units are also embedded with Advantech's IXM function for fast deployment, which can save a considerable amount on engineering time and costs. The EKI-7710E series also support NMS to help IT managers with networking maintenance and failure prevention. Finally, the series are equipped with X-Ring Pro, which can achieve ultra-high-speed recovery times of <20 ms, thus ensuring network stability.

Specifications

Interface

I/O Port	8 x 10/100BASE-T/TX RJ-45 2 x RJ-45/SFP (mini-GBIC) Combo port
Console port	RS-232 (RJ45)
Power Connector	6-pin screw Terminal Block (including relay)

Physical

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

LED Display

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

Environment

Operating Temperature	-40 ~ 75 °C (-40 ~ 167 °F) 7710E-2CI -10 ~ 60 °C (-40 ~ 140 °F) 7710E-2C
Storage Temperature	-40 ~ 85 °C
Ambient Relative Humidity	10 ~ 95% (non-condensing)
Humidity	10 ~ 95% (non-condensing)

Power

Power Consumption	12.1W @ 48V_{DC} (System)
Power Input	12 ~ 48 V_{DC}, redundant dual power input
Fault Output	1 Relay Output

Certification

EMI	CE, FCC Class A
Safety	UL508 UL60950*, C1D2*
EMC	EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6 EN 61000-4-8 EN50121-4*
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Traffic control	NEMA TS2*

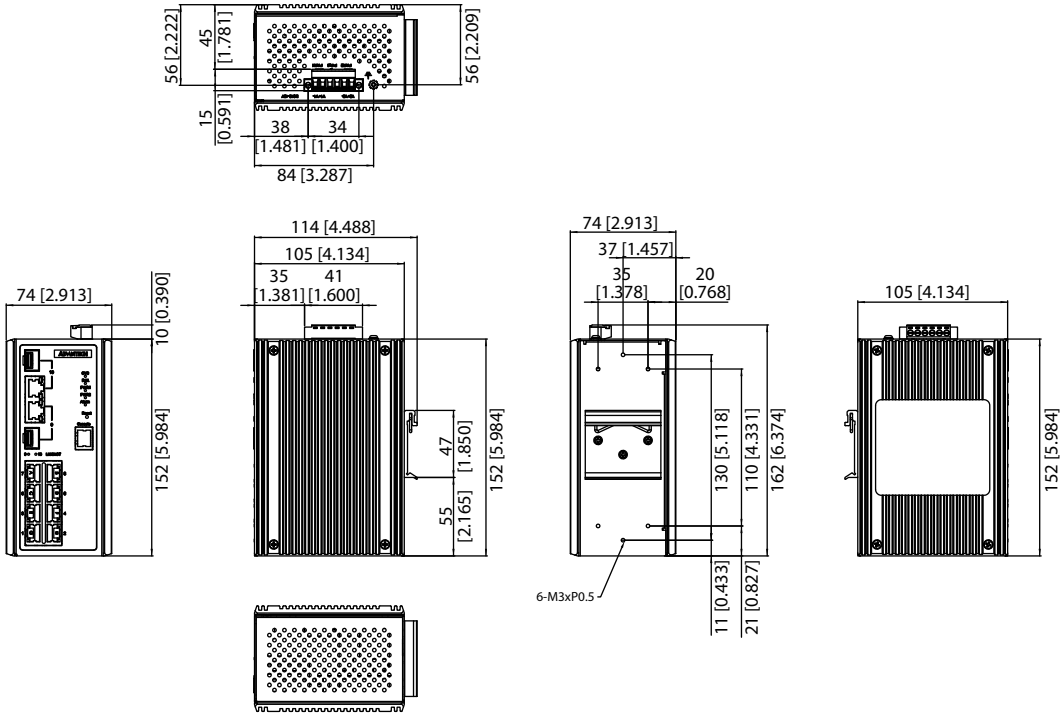
*= Compliant

L2 Features

L2 MAC Address	8K
Jumbo Frame	9216 Bytes
VLAN Group	256 (VLAN ID 1 ~ 4094)
VLAN Arrange	Port based VLAN, Q-in-Q (VLAN Stacking), 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
Redundancy	IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro, with ultra high-speed recovery time less than 20ms

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 105 (4.137) x 152 (5.984) x 74 (2.91)

QoS

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

Security

- **Port Security** Static, Dynamic IP Source Guard, ARP Spoofing Prevention, Access Control List, DHCP Snooping
- **Authentication** 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption), TACACS+

Management

- **DHCP** Client, Server, Option66/67/82
- **Access** SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security access** SSH2.0, SSL
- **Software upgrade** TFTP, HTTP, Dual Image
- **NTP** SNTP client

Ordering Information

- **EKI-7710E-2CI-AE** 8FE + 2G Combo Port Managed Ethernet Switch w/ Wide Temp
- **EKI-7710E-2C-AE** 8FE + 2G Combo Port Managed Ethernet Switch

EKI-7710G-2C
EKI-7710G-2CI

8G+2G Port Gigabit Managed Redundant Industrial Switch

Features

- 8 x Gigabit ports + 2 x Gigabit copper/SFP combo ports
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D)
- IXM function enables fast deployment
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- Wide operating temperature range of -40 ~ 75°C (EKI-7710G-2CI)
- Dual 12 ~ 48 V_{DC} power input and 1 x relay output

Introduction

The EKI-7710G-2C and EKI-7710G-2CI support 8 Gigabit ports and 2 Gigabit combo ports. These units provide users with abundant port options for connecting many different device types. Additionally, it is embedded with Advantech IXM function, which can benefit users for fast deployment and can save considerably on engineering time and costs. The EKI-7710G series also support NMS to help IT managers with networking maintenance and failure prevention. Finally, this series is equipped with X-Ring Pro, which can achieve ultra-high-speed recovery times of <20 ms, thus ensuring network stability.

Specifications

Interface

I/O Port	8 x 10/100/1000BASE-T/TX RJ-45 2 x RJ-45/SFP (mini-GBIC)Combo port
Console port	RS-232 (RJ45)
Power Connector	6-pin screw Terminal Block (including relay)

Physical

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

LED Display

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

Environment

Operating Temperature	-40 ~ 75°C (-40 ~ 167°F) 7710G-2CI -10 ~ 60°C (-40 ~ 140°F) 7710G-2C
Storage Temperature	-40 ~ 85°C
Ambient Relative Humidity	10 ~ 95% (non-condensing)
Humidity	10 ~ 95% (non-condensing)

Power

Power Consumption	12.1W @ 48 V_{DC} (System)
Power Input	12 ~ 48 V_{DC}, redundant dual power input
Fault Output	1 Relay Output

Certification

EMI	CE, FCC Class A
Safety	UL508 UL60950*, C1D2*
EMC	EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6 EN 61000-4-8 EN 50121-4*
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Traffic control	NEMA TS2*

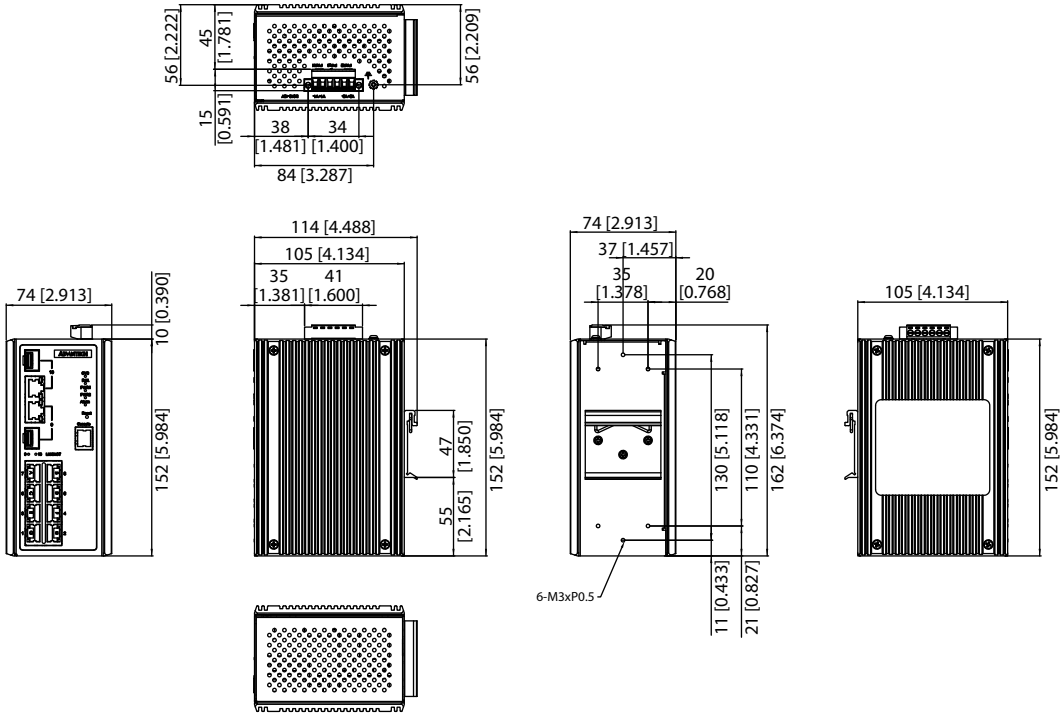
*= Compliant

L2 Features

L2 MAC Address	8K
Jumbo Frame	9216 Bytes
VLAN Group	256 (VLAN ID 1 ~ 4094)
VLAN Arrange	Port based VLAN, Q-in-Q (VLAN Stacking), 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
Redundancy	IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro, with ultra high-speed recovery time less than 20ms

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 105 (4.137) x 152 (5.984) x 74 (2.91)

QoS

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

Security

- **Port Security** — Static, Dynamic IP Source Guard, ARP Spoofing Prevention, Access Control List, DHCP Snooping
- **Authentication** — 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption), TACACS+

Management

- **DHCP** — Client, Server, Option66/67/82
- **Access** — SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security access** — SSH2.0, SSL
- **Software upgrade** — TFTP, HTTP, Dual Image
- **NTP** — SNTP client

Ordering Information

- **EKI-7710G-2CI-AE** — 8G + 2G Combo Port Managed Ethernet Switch w/Wide Temp
- **EKI-7710G-2C-AE** — 8G + 2G Combo Port Managed Ethernet Switch

EKI-7712E-4F
EKI-7712E-4FI

8FE+4SFP Port Gigabit Managed Redundant Industrial Switch

Features

- 8 fast Ethernet ports + 4 SFP ports
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D)
- IXM function enables fast deployment
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- NEMA TS2 for traffic control
- EN50121-4 approval for railway trackside deployment
- Wide operating temperature of -40 ~ 75°C (EKI-7712E-4FI)
- Dual 12 ~ 48 V_{DC} power input and 1 x relay output

Introduction

The EKI-7712E-4F and EKI-7712E-4FI provide abundant port options for connecting to various different device types, with 8 fast Ethernet ports and 4 SFP (mini-GBIC) ports. These units are embedded with Advantech's IXM function for fast deployment, which can dramatically save on engineering time and costs. The EKI-7712E series also support NMS to help IT managers with networking maintenance and failure prevention. Finally, the series are equipped with X-Ring Pro, which can achieve ultra-high-speed recovery times of <20 ms, thus ensuring network stability. The EKI-7712G-4FI features a wide operating temperature of -40 to 75°C and NEMA TS2 rating, making it ideal for use in traffic applications. Both switches comply with EN50121-4 European railway standard requirements for emissions and railway platform and trackside deployment.

Specifications

Interface

- **I/O Port**: 8 x 10/100BASE-T/TX RJ-45
4 x SFP (mini-GBIC) port
- **Console port**: RS-232 (RJ45)
- **Power Connector**: 6-pin screw Terminal Block (including relay)

Physical

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

LED Display

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

Environment

- **Operating Temperature**: -40 ~ 75 °C (-40 ~ 167 °F) (7712E-4FI)
-10 ~ 60 °C (-40 ~ 140 °F) (7712E-4F)
- **Storage Temperature**: -40 ~ 85 °C
- **Ambient Relative Humidity**: 10 ~ 95% (non-condensing)
- **Humidity**: 10 ~ 95% (non-condensing)

Power

- **Power Consumption**: 12.1W @ 48V_{DC} (System)
- **Power Input**: 12 ~ 48 V_{DC}, redundant dual power input
- **Fault Output**: 1 Relay Output

Certification

- **EMI**: CE, FCC Class A
- **Safety**: UL61010-2-201
IEC60950*
- **EMC**: EN 61000-4-2
EN 61000-4-3
EN 61000-4-4
EN 61000-4-5
EN 61000-4-6
EN 61000-4-8
EN50121-4*
- **Shock**: IEC 60068-2-27
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 60068-2-6
- **Traffic control**: NEMA TS2*

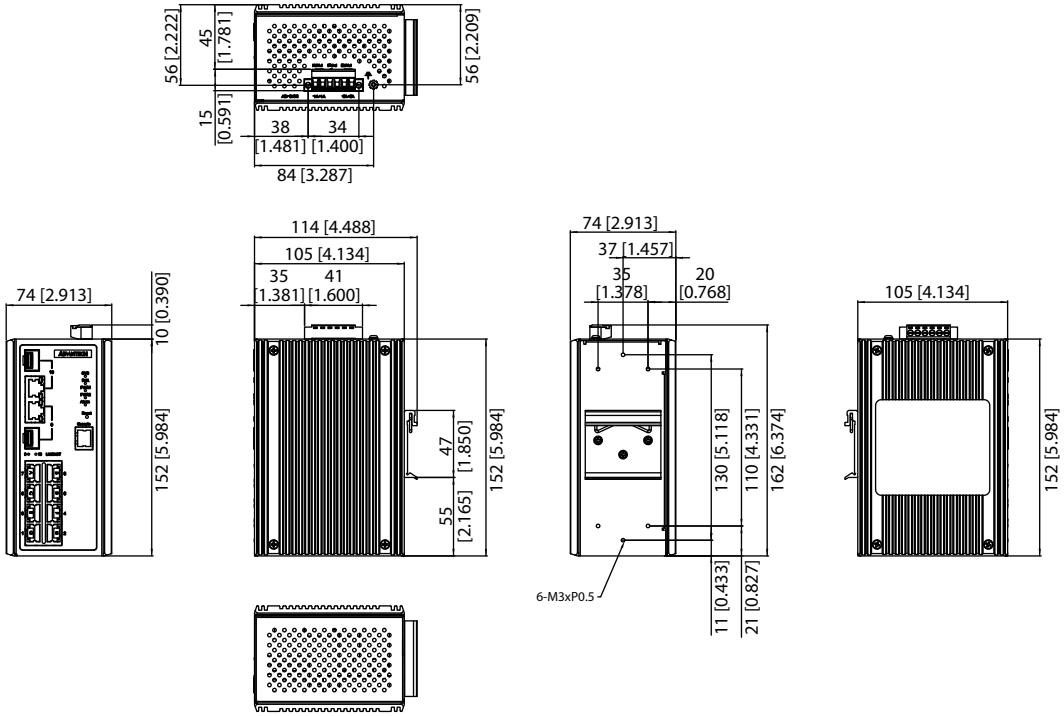
*= Compliant

L2 Features

- **L2 MAC Address**: 8K
- **Jumbo Frame**: 9216 Bytes
- **VLAN Group**: 256 (VLAN ID 1 ~ 4094)
- **VLAN Arrange**: Port based VLAN, Q-in-Q (VLAN Stacking), 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
- **Redundancy**: IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro, with ultra high-speed recovery time less than 20ms

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 105 (4.137) x 152 (5.984) x 74 (2.91)

QoS

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

Security

- **Port Security** Static, Dynamic IP Source Guard, ARP Spoofing Prevention, Access Control List, DHCP Snooping,
- **Authentication** 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption), TACACS+

Management

- **DHCP** Client, Server, Option66/67/82
- **Access** SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security access** SSH2.0, SSL
- **Software upgrade** TFTP, HTTP, Dual Image
- **NTP** SNTP client

Ordering Information

- **EKI-7712E-4FI-AE** 8FE + 4SFP Port Managed Ethernet Switch w/Wide Temp
- **EKI-7712E-4F-AE** 8FE + 4SFP Port Managed Ethernet Switch

EKI-7712G-4F
EKI-7712G-4FI

8G+4SFP Port Gigabit Managed Redundant Industrial Switch

Features

- 8 x Gigabit ports + 4 x SFP ports
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D)
- IXM function enables fast deployment
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- NEMA TS2 for traffic control
- EN50121-4 approval for railway trackside deployment
- Wide operating temperature range of -40 ~ 75°C (EKI-7712G-4FI)
- Dual 12 ~ 48 V_{DC} power input and 1 x relay output

Introduction

The EKI-7712G-4F and EKI-7712G-4FI provide users with abundant port options for connecting to a range of different device types with 8 Gigabit ports and 4 SFP (mini-GBIC) ports. These units are embedded with Advantech's IXM function, which can benefit users with fast deployment and can save considerably on engineering time and costs. The EKI-7712G series also support NMS to help IT managers with networking maintenance and failure prevention. Finally, the series are equipped with X-Ring Pro, which can achieve ultra-high-speed recovery times of <20 ms, thus ensuring network stability. The EKI-7712G-4FI also features a wide operating temperature of -40 to 75°C and NEMA TS2 rating, making it ideal for use in traffic applications. Both the EKI-7712G-4F and EKI-7712G-4FI comply with EN50121-4 European railway standard requirements for emissions and railway platform and trackside deployment.

Specifications

Interface

I/O Port	8 x 10/100/1000BASE-T/TX RJ-45 4 x SFP (mini-GBIC) port
Console port	RS-232 (RJ45)
Power Connector	6-pin screw Terminal Block (including relay)

Physical

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

LED Display

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

Environment

Operating Temperature	-40 ~ 75°C (-40 ~ 167°F) (7712G-4FI) -10 ~ 60°C (-40 ~ 140°F) (7712G-4F)
Storage Temperature	-40 ~ 85°C
Ambient Relative Humidity	10 ~ 95% (non-condensing)
Humidity	10 ~ 95% (non-condensing)

Power

Power Consumption	12.1W @ 48V_{DC} (System)
Power Input	12 ~ 48 V_{DC}, redundant dual power input
Fault Output	1 Relay Output

Certification

EMI	CE, FCC Class A
Safety	UL61010-2-201 IEC60950*
EMC	EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6 EN 61000-4-8 EN50121-4*
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Traffic control	NEMA TS2*

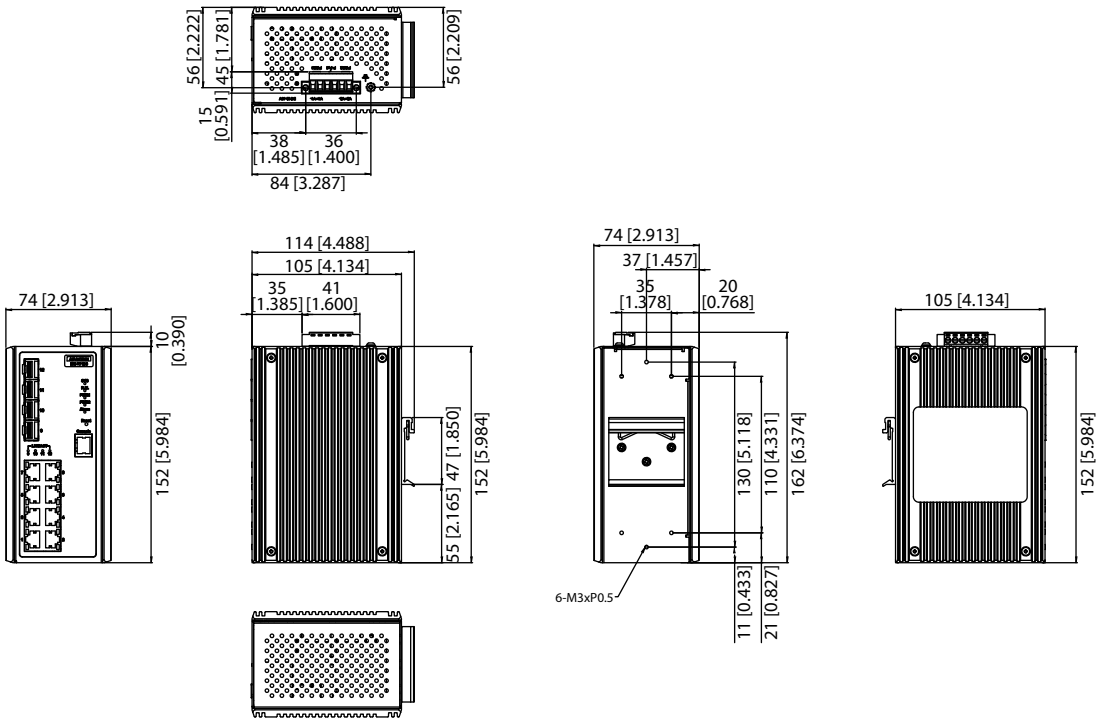
*= Compliant

L2 Features

L2 MAC Address	8K
Jumbo Frame	9216 Bytes
VLAN Group	256 (VLAN ID 1 ~ 4094)
VLAN Arrange	Port based VLAN, Q-in-Q (VLAN Stacking), 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
Redundancy	IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro, with ultra high-speed recovery time less than 20ms

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 105 (4.137) x 152 (5.984) x 74 (2.91)

QoS

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

Security

- **Port Security** — Static, Dynamic IP Source Guard, ARP Spoofing Prevention, Access Control List, DHCP Snooping
- **Authentication** — 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption), TACACS+

Management

- **DHCP** — Client, Server, Option66/67/82
- **Access** — SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security access** — SSH2.0, SSL
- **Software upgrade** — TFTP, HTTP, Dual Image
- **NTP** — SNTP client

Ordering Information

- **EKI-7712G-4FI-AE** — 8GE + 4SFP Port Managed Ethernet Switch w/Wide Temp
- **EKI-7712G-4F-AE** — 8GE + 4SFP Port Managed Ethernet Switch

EKI-7720E-4F
EKI-7720E-4FI

16FE+4SFP Port Gigabit Managed Redundant Industrial Switch

Features

- 16 fast Ethernet ports + 4 SFP ports
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D)
- IXM function enables fast deployment
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption),, RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- NEMA TS2 for traffic control
- EN50121-4 approval for railway trackside deployment
- Wide operating temperature range of -40 ~ 75°C (EKI-7720E-4FI)
- Dual 12 ~ 48 V_{DC} power input and 1 x relay output
- Support Security Pack to against internal and external cyber threats

Introduction

The EKI-7720E-4F and EKI-7720E-4FI provide users with abundant port options to connect to a range of different device types with 16 fast Ethernet ports and 4 SFP (mini-GBIC) ports. These switches are embedded with Advantech's IXM function, which can benefit users with fast deployment and can dramatically save on engineering time and costs. The series also support NMS to help IT managers with networking maintenance and failure prevention. Finally, these switches are equipped with X-Ring Pro, which can achieve ultra-high-speed recovery times of <20 ms, thus ensuring network stability. The EKI-7720E-4FI also features a wide operating temperature of -40 ~ 75°C.

Specifications

Interface

- **I/O Port**: 16 x 10/100BASE-T/TX RJ-45
4 x SFP (mini-GBIC) port
- **Console port**: RS-232 (RJ45)
- **Power Connector**: 6-pin screw Terminal Block (including relay)

Physical

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

LED Display

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

Environment

- **Operating Temperature**: -40 ~ 75 °C (-40 ~ 167 °F) (7720E-4FI)
-10 ~ 60 °C (-40 ~ 140 °F) (7720E-4F)
- **Storage Temperature**: -40 ~ 85 °C
- **Ambient Relative Humidity**: 10 ~ 95% (non-condensing)
- **Humidity**: 10 ~ 95% (non-condensing)

Power

- **Power Consumption**: TBC
- **Power Input**: 12 ~ 48 V_{DC}, redundant dual power input
- **Fault Output**: 1 Relay Output

Certification

- **EMI**: CE, FCC Class A
- **Safety**: UL61010-2-201
IEC60950*
- **EMC**: EN 61000-4-2
EN 61000-4-3
EN 61000-4-4
EN 61000-4-5
EN 61000-4-6
EN 61000-4-8
EN50121-4
- **Shock**: IEC 60068-2-27
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 60068-2-6
- **Traffic control**: NEMA TS2

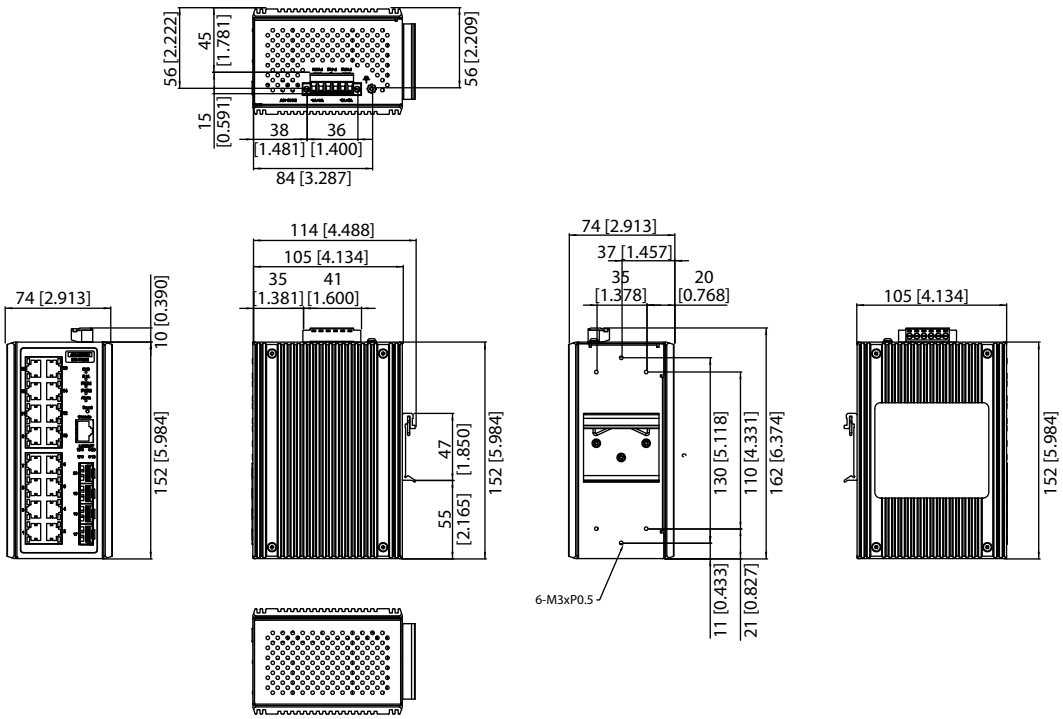
*= Compliant

L2 Features

- **L2 MAC Address**: 8K
- **Jumbo Frame**: 9216 Bytes
- **VLAN Group**: 256 (VLAN ID 1 ~ 4094)
- **VLAN Arrange**: Port based VLAN, Q-in-Q (VLAN Stacking), 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
- **Redundancy**: IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro, with ultra high-speed recovery time less than 20ms

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 105 (4.137) x 152 (5.984) x 74 (2.91)

QoS

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

Security

- **Port Security** Static, Dynamic IP Source Guard, ARP Spoofing Prevention, Access Control List, DHCP Snooping,
- **Authentication** 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption), TACACS+

Management

- **DHCP** Client, Server, Option66/67/82
- **Access** SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security access** SSH2.0, SSL
- **Software upgrade** TFTP, HTTP, Dual Image
- **NTP** SNTP client

Ordering Information

- **EKI-7720E-4FI-AE** 16FE + 4SFP Port Managed Ethernet Switch w/Wide Temp
- **EKI-7720E-4F-AE** 16FE + 4SFP Port Managed Ethernet Switch

EKI-7720G-4F
EKI-7720G-4FI

16GE+4SFP Port Gigabit Managed Redundant Industrial Switch

Features

- 16 x Gigabit Ethernet ports + 4 x SFP ports
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D)
- IXM function enables fast deployment
- Security: 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- NEMA TS2 for traffic control
- EN50121-4 approval for railway trackside deployment
- Wide operating temperature range of -40 ~ 75°C (EKI-7720G-4FI)
- Dual 12 ~ 48 V_{DC} power input and 1 x relay output
- Support Security Pack to against internal and external cyber threats

Introduction

The EKI-7720G-4F and EKI-7720G-4FI provide users with abundant port options for connecting to various device types with 16 Gigabit Ethernet ports and 4 SFP (mini-GBIC) ports. These switches are embedded with Advantech's IXM function, which can benefit users with fast deployment and can dramatically save on engineering time and costs. The series also support NMS to help IT managers with networking maintenance and failure prevention. Finally, these switches are equipped with X-Ring Pro, which can achieve ultra-high-speed recovery times of <20 ms, thus ensuring network stability. The EKI-7720G-4FI in particular features a wide operating temperature range of wide -40 ~ 75°C.

Specifications

Interface

- **I/O Port**: 16 x 10/100/1000BASE-T/TX RJ-45
4 x SFP (mini-GBIC) port
- **Console port**: RS-232 (RJ45)
- **Power Connector**: 6-pin screw Terminal Block (including relay)

Physical

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

LED Display

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

Environment

- **Operating Temperature**: -40 ~ 75°C (-40 ~ 167°F) (7720G-4FI)
-10 ~ 60°C (-40 ~ 140°F) (7720G-4F)
- **Storage Temperature**: -40 ~ 85°C
- **Ambient Relative Humidity**: 10 ~ 95% (non-condensing)
- **Humidity**: 10 ~ 95% (non-condensing)

Power

- **Power Consumption**: TBC
- **Power Input**: 12 ~ 48 V_{DC}, redundant dual power input
- **Fault Output**: 1 Relay Output

Certification

- **EMI**: CE, FCC Class A
- **Safety**: UL61010-2-201
IEC60950*
- **EMC**: EN 61000-4-2
EN 61000-4-3
EN 61000-4-4
EN 61000-4-5
EN 61000-4-6
EN 61000-4-8
EN50121-4
- **Shock**: IEC 60068-2-27
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 60068-2-6
- **Traffic control**: NEMA TS2

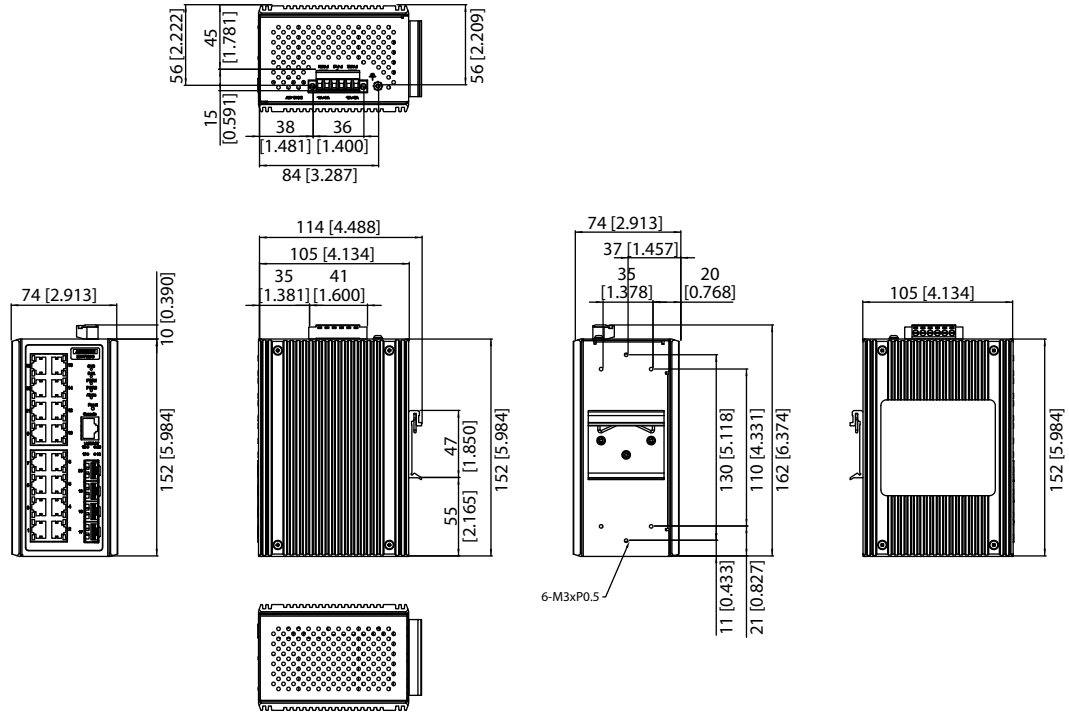
*= Compliant

L2 Features

- **L2 MAC Address**: 8K
- **Jumbo Frame**: 9216 Bytes
- **VLAN Group**: 256 (VLAN ID 1 ~ 4094)
- **VLAN Arrange**: Port based VLAN, Q-in-Q (VLAN Stacking), 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
- **Redundancy**: IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro, with ultra high-speed recovery time less than 20ms

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 105 (4.137) x 152 (5.984) x 74 (2.91)

QoS

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

Security

- **Port Security** — Static, Dynamic IP Source Guard, ARP Spoofing Prevention, Access Control List, DHCP Snooping,
- **Authentication** — 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption), TACACS+

Management

- **DHCP** — Client, Server, Option66/67/82
- **Access** — SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security access** — SSH2.0, SSL
- **Software upgrade** — TFTP, HTTP, Dual Image
- **NTP** — SNTP client

Ordering Information

- **EKI-7720G-4FI-AE** — 16GE + 4SFP Port Managed Ethernet Switch w/Wide Temp
- **EKI-7720G-4F-AE** — 16GE + 4SFP Port Managed Ethernet Switch

EKI-7706E-2F
EKI-7706E-2FI

4FE+2SFP Fast Ethernet Managed Redundant Industrial Switch

Features

- 4 fast Ethernet ports + 2 SFP ports
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D)
- IXM function enables fast deployment
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- Wide operating temperature range of -40 ~ 85 °C (EKI-7706E-2FI)
- Dual 12~48 V_{DC} power input and 1 x relay output
- Support Security Pack to against internal and external cyber threats

Introduction

The EKI-7706E-2F and EKI-7706E-2FI support 4 fast Ethernet ports and 2 SFP ports. They provide abundant port options for connecting to various device types and are embedded with Advantech's IXM function, which benefits users with fast deployment and considerable savings on engineering time and costs. The EKI-7706E series also support NMS to help IT managers with networking maintenance and failure prevention. Finally, the series is equipped with X-Ring Pro, which can achieve ultra-high-speed recovery times of <20 ms, thus ensuring network stability.

Specifications

Interface

- **I/O Port**: 4 x 10/100BASE-T/TX RJ-45
2 x SFP (mini-GBIC) port
- **Console port**: RS-232 (RJ45)
- **Power Connector**: 6-pin screw terminal block (including relay)

Physical

- **Enclosure**: Metal Shell
- **Protection Class**: IP 30
- **Installation**: DIN-Rail
- **Dimensions (W x H x D)**: 43 x 120 x 84 mm (1.69" x 4.72" x 3.31")

LED Display

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

Environment

- **Operating Temperature**: -40 ~ 85 °C (-40 ~ 185 °F) EKI-7706E-2FI
-10 ~ 60 °C (14 ~ 140 °F) EKI-7706E-2F
- **Storage Temperature**: -40 ~ 85 °C (-40 ~ 185 °F)
- **Ambient Relative Humidity**: 10 ~ 95% (non-condensing)
- **Humidity**: 10 ~ 95% (non-condensing)

Power

- **Power Consumption**: 5.28W @ 48V_{DC} (System)
- **Power Input**: 12~48 V_{DC}, redundant dual power input
- **Fault Output**: 1 Relay Output

Certification

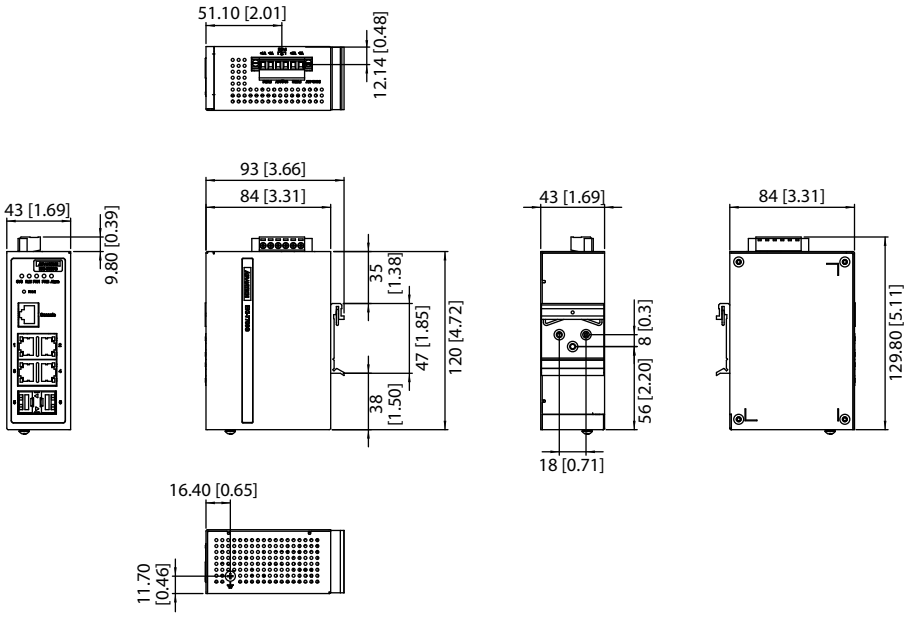
- **EMI**: CE, FCC Class A
- **Safety**: UL61010
- **EMC**: EN 61000-4-2
EN 61000-4-3
EN 61000-4-4
EN 61000-4-5
EN 61000-4-6
EN 61000-4-8
- **Shock**: IEC 60068-2-27
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 60068-2-6

L2 Features

- **L2 MAC Address**: 8K
- **Packet Buffer**: 4.1 Mbit
- **VLAN Group**: 256 (VLAN ID 1~4094)
- **VLAN Arrange**: Port based VLAN, Q-in-Q (VLAN Stacking), 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
- **Redundancy**: IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro, with ultra high-speed recovery time less than 20ms

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 84 (3.31) x 120 (4.72) x 43 (1.69)

QoS

- **Priority Queue** — WRR (Weighted Round Robin), SP (Strict Scheduling Priority) hybrid priority
- **Class of Service** — IEEE 802.1p based CoS, IP TOS, DSCP based CoS
- **Rate Limiting** — Ingress rate limit, egress rate limit
- **Link Aggregation** — IEEE 802.3ad dynamic port trunking, static port trunking

Security

- **Port Security** — Static, Dynamic IP Source Guard, ARP Spoofing Prevention, Access Control List, DHCP Snooping
- **Authentication** — 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption), TACACS+

Management

- **DHCP** — Client, server, option 66/67/82
- **Access** — SNMP v1/v2c/v3, WEB, Telnet, RMON, standard MIB, private MIB
- **Security access** — SSH2.0, SSL
- **Software upgrade** — TFTP, HTTP, dual image
- **NTP** — SNTP client

Ordering Information

- **EKI-7706E-2FI-AE** — 4FE + 2SFP Port Managed Ethernet Switch w/ Wide Temp
- **EKI-7706E-2F-AE** — 4FE + 2SFP Port Managed Ethernet Switch

EKI-7706G-2F
EKI-7706G-2FI

4GE+2SFP Gigabit Managed Redundant Industrial Switch

Features

- 4 Gigabit Ethernet ports + 2 SFP ports
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D)
- IXM function enables fast deployment
- Security: 802.1x (Port-based, MD5/TLS/TTLS/PEAP encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- Wide operating temperature range of -40 ~ 85°C (EKI-7706G-2FI)
- Dual 12~48 V_{DC} power input and 1 x relay output
- Support Security Pack to against internal and external cyber threats

Introduction

The EKI-7706G-2F and EKI-7706G-2FI support 4 Gigabit Ethernet and 2 SFP ports. They provide abundant port options for connecting to various device types and are embedded with Advantech's IXM function, which can benefit users with fast deployment while saving considerably on engineering time and costs. The EKI-7706G series also support NMS to help IT managers with networking maintenance and failure prevention. Finally, the series are equipped with X-Ring Pro, which can achieve ultra-high-speed recovery times of <20 ms, thus ensuring network stability.

Specifications

Interface

- **I/O Port**: 4 x 10/100/1000BASE-T/TX RJ-45; 2 x SFP (mini-GBIC) port
- **Console port**: RS-232 (RJ45)
- **Power Connector**: 6-pin screw terminal block (including relay)

Physical

- **Enclosure**: Metal Shell
- **Protection Class**: IP 30
- **Installation**: DIN-Rail
- **Dimensions (W x H x D)**: 43 x 120 x 84 mm (1.69" x 4.72" x 3.31")

LED Display

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

Environment

- **Operating Temperature**: -40 ~ 85 °C (-40 ~ 185 °F) EKI-7706G-2FI; -10 ~ 60 °C (14 ~ 140 °F) EKI-7706G-2F
- **Storage Temperature**: -40 ~ 85 °C (-40 ~ 185 °F)
- **Ambient Relative Humidity**: 10 ~ 95% (non-condensing)
- **Humidity**: 10 ~ 95% (non-condensing)

Power

- **Power Consumption**: 5.28W @ 48V_{DC} (System)
- **Power Input**: 12~48 V_{DC}, redundant dual power input
- **Fault Output**: 1 Relay Output

Certification

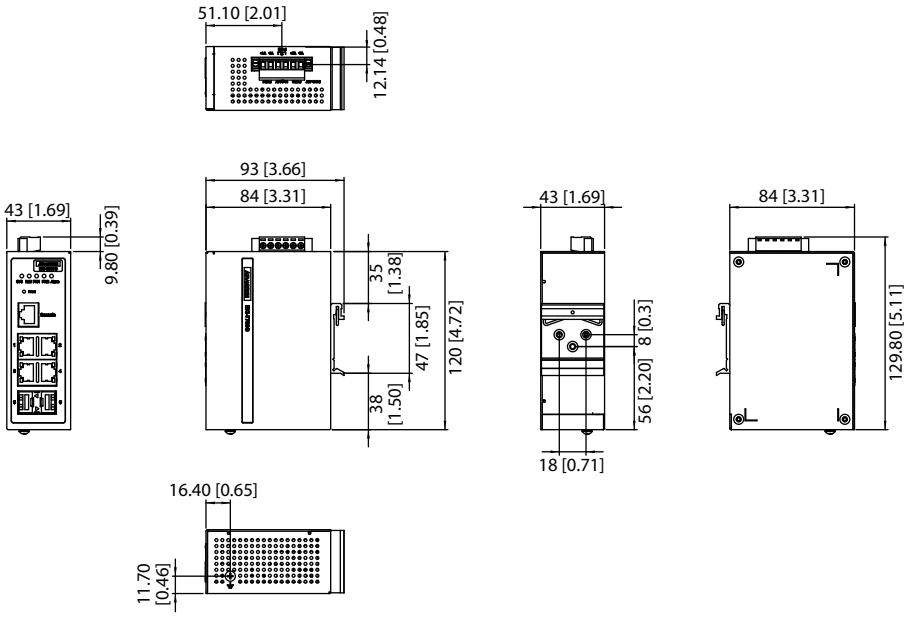
- **EMI**: CE, FCC Class A
- **Safety**: UL61010
- **EMC**: EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8
- **Shock**: IEC 60068-2-27
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 60068-2-6

L2 Features

- **L2 MAC Address**: 8K
- **Packet Buffer**: 4.1 Mbit
- **VLAN Group**: 256 (VLAN ID 1~4094)
- **VLAN Arrange**: Port based VLAN, Q-in-Q (VLAN Stacking), 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
- **Redundancy**: IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro, with ultra high-speed recovery time less than 20ms

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 84 (3.31) x 120 (4.72) x 43 (1.69)

QoS

- **Priority Queue** — WRR (Weighted Round Robin), SP (Strict Scheduling Priority) hybrid priority
- **Class of Service** — IEEE 802.1p based CoS, IP TOS, DSCP based CoS
- **Rate Limiting** — Ingress rate limit, egress rate limit
- **Link Aggregation** — IEEE 802.3ad dynamic port trunking, static port trunking

Security

- **Port Security** — Static, Dynamic IP Source Guard, ARP Spoofing Prevention, Access Control List, DHCP Snooping
- **Authentication** — 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption), TACACS+

Management

- **DHCP** — Client, server, option 66/67/82
- **Access** — SNMP v1/v2c/v3, WEB, Telnet, RMON, standard MIB, private MIB
- **Security access** — SSH2.0, SSL
- **Software upgrade** — TFTP, HTTP, dual image
- **NTP** — SNTP client

Ordering Information

- **EKI-7706G-2FI-AE** — 4GE + 2SFP Port Managed Ethernet Switch w/ Wide Temp
- **EKI-7706G-2F-AE** — 4GE + 2SFP Port Managed Ethernet Switch

EKI-7708E-4F
EKI-7708E-4FI

4FE+4G SFP Port Gigabit Managed Redundant Industrial Switch

Features

- 4 x fast Ethernet ports + 4 x SFP ports
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D)
- IXM function for fast deployment
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- NEMA TS2 for traffic control
- EN50121-4 approval for railway trackside deployment
- Wide operating temperature range of -40 ~ 75°C (EKI-7708E-4FI)
- Dual 12 ~ 48 V_{DC} power input and 1 x relay output

Introduction

The EKI-7708E-4F and EKI-7708E-4FI provide users with abundant port options for connecting to various device types, with 4 fast Ethernet ports and 4 SFP (mini-GBIC) ports. These switches are embedded with Advantech's IXM function, which can benefit users with fast deployment while offering considerable savings on engineering time and costs. The series also support NMS to help IT managers with networking maintenance and failure prevention. Finally, these switches are equipped with X-Ring Pro, which can achieve ultra-high-speed recovery times of <20 ms, thus ensuring network stability. The EKI-7708E-4FI features a wide operating temperature range of -40 ~ 75°C and a NEMA TS2 rating, making it ideal for use in traffic applications. Both switches in this series meet the EN50121-4 European railway standard requirements for emissions and railway platform and trackside deployment.

Specifications

Interface

I/O Port	4 x 10/100BASE-T/TX RJ-45 4 x SFP (mini-GBIC) port
Console port	RS-232 (RJ45)
Power Connector	6-pin screw Terminal Block (including relay)

Physical

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

LED Display

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

Environment

Operating Temperature	-40 ~ 75°C (-40 ~ 167°F) (7708E-4FI) -10 ~ 60°C (-40 ~ 140°F) (7708E-4F)
Storage Temperature	-40 ~ 85°C
Ambient Relative Humidity	10 ~ 95% (non-condensing)
Humidity	10 ~ 95% (non-condensing)

Power

Power Consumption	12.1W @ 48V_{DC} (System)
Power Input	12 ~ 48 V_{DC}, redundant dual power input
Fault Output	1 Relay Output

Certification

EMI	CE, FCC Class A
EMC	EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6 EN 61000-4-8 EN50121-4*
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Traffic control	NEMA TS2*

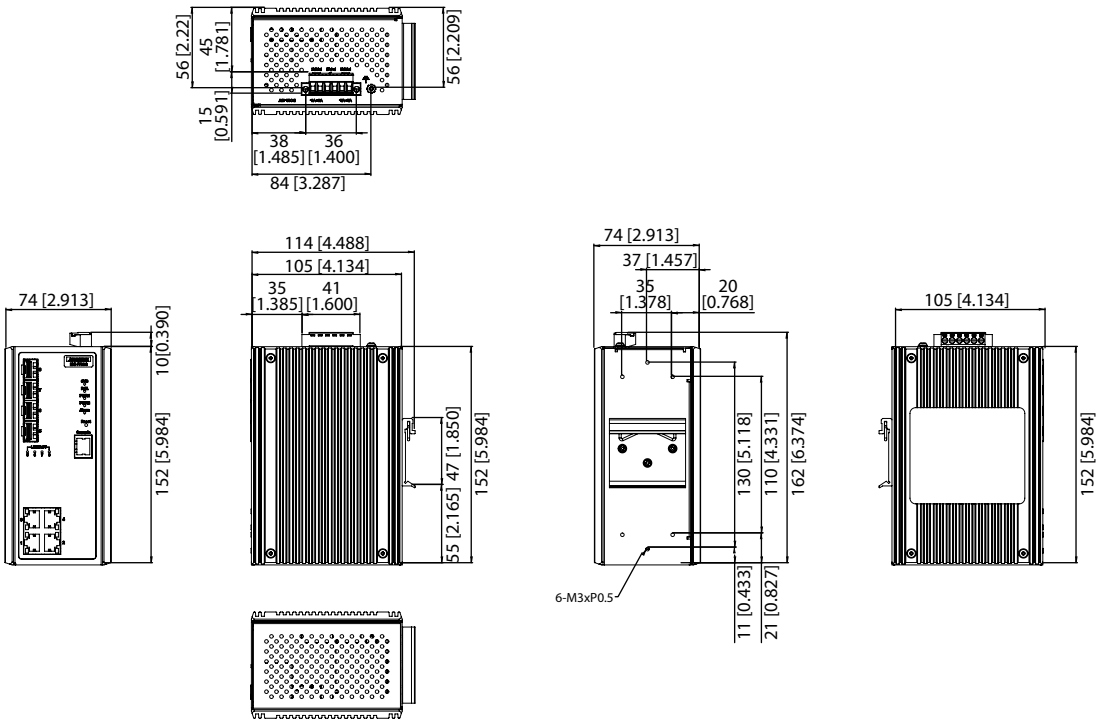
*= Compliant

L2 Features

L2 MAC Address	8K
Jumbo Frame	9216 Bytes
VLAN Group	256 (VLAN ID 1 ~ 4094)
VLAN Arrange	Port based VLAN, Q-in-Q (VLAN Stacking), 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
Redundancy	IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro, with ultra high-speed recovery time less than 20ms

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 105 (4.137) x 152 (5.984) x 74 (2.91)

QoS

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

Security

- **Port Security** — Static, Dynamic IP Source Guard, ARP Spoofing Prevention, Access Control List, DHCP Snooping,
- **Authentication** — 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption), TACACS+

Management

- **DHCP** — Client, Server, Option66/67/82
- **Access** — SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security access** — SSH2.0, SSL
- **Software upgrade** — TFTP, HTTP, Dual Image
- **NTP** — SNTP client

Ordering Information

- **EKI-7708E-4FI-AE** — 4FE + 4G SFP Port Managed Ethernet Switch w/Wide Temp
- **EKI-7708E-4F-AE** — 4FE + 4G SFP Port Managed Ethernet Switch

EKI-7708G-4F
EKI-7708G-4FI

4GE+4G SFP Port Gigabit Managed Redundant Industrial Switch

Features

- 4 x Gigabit ports + 4 x SFP ports
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D)
- IXM function enables fast deployment
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- NEMA TS2 for traffic control
- EN50121-4 approval for railway trackside deployment
- Wide operating temperature range of -40 ~ 75°C (EKI-7708G-4FI)
- Dual 12 ~ 48 V_{DC} power input and 1 x relay output

Introduction

The EKI-7708G-4F and EKI-7708G-4FI provide users with abundant port options for connecting to various device types with 4 Gigabit ports and 4 SFP (mini-GBIC) ports. These switches are embedded with Advantech's IXM function, which can benefit users with fast deployment and a marked reduction in engineering time and costs. The EKI-7708G series also support NMS to help IT managers with networking maintenance and failure prevention. Finally, the series are equipped with X-Ring Pro, which can achieve ultra-high-speed recovery times of <20 ms to ensure network stability. The EKI-7708G-4FI in particular also features a wide operating temperature range of -40 to 75°C and a NEMA TS2 rating, making it ideal for use in traffic applications. Furthermore, these switches meet the EN50121-4 European railway standard requirement for emissions and railway platform and trackside deployment.

Specifications

Interface

- **I/O Port**: 4 x 10/100/1000BASE-T/TX RJ-45
4 x SFP (mini-GBIC) port
- **Console port**: RS-232 (RJ45)
- **Power Connector**: 6-pin screw Terminal Block (including relay)

Physical

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

LED Display

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

Environment

- **Operating Temperature**: -40 ~ 75°C (-40 ~ 167°F) (7708G-4FI)
-10 ~ 60°C (-40 ~ 140°F) (7708G-4F)
- **Storage Temperature**: -40 ~ 85°C
- **Ambient Relative Humidity**: 10 ~ 95% (non-condensing)
- **Humidity**: 10 ~ 95% (non-condensing)

Power

- **Power Consumption**: 12.1W @ 48V_{DC} (System)
- **Power Input**: 12 ~ 48 V_{DC}, redundant dual power input
- **Fault Output**: 1 Relay Output

Certification

- **EMI**: CE, FCC Class A
- **EMC**: EN 61000-4-2
EN 61000-4-3
EN 61000-4-4
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EN 61000-4-6
EN 61000-4-8
EN50121-4*
- **Shock**: IEC 60068-2-27
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 60068-2-6
- **Traffic control**: NEMA TS2*

*= Compliant

L2 Features

- **L2 MAC Address**: 8K
- **Jumbo Frame**: 9216 Bytes
- **VLAN Group**: 256 (VLAN ID 1 ~ 4094)
- **VLAN Arrange**: Port based VLAN, Q-in-Q (VLAN Stacking), GVRP
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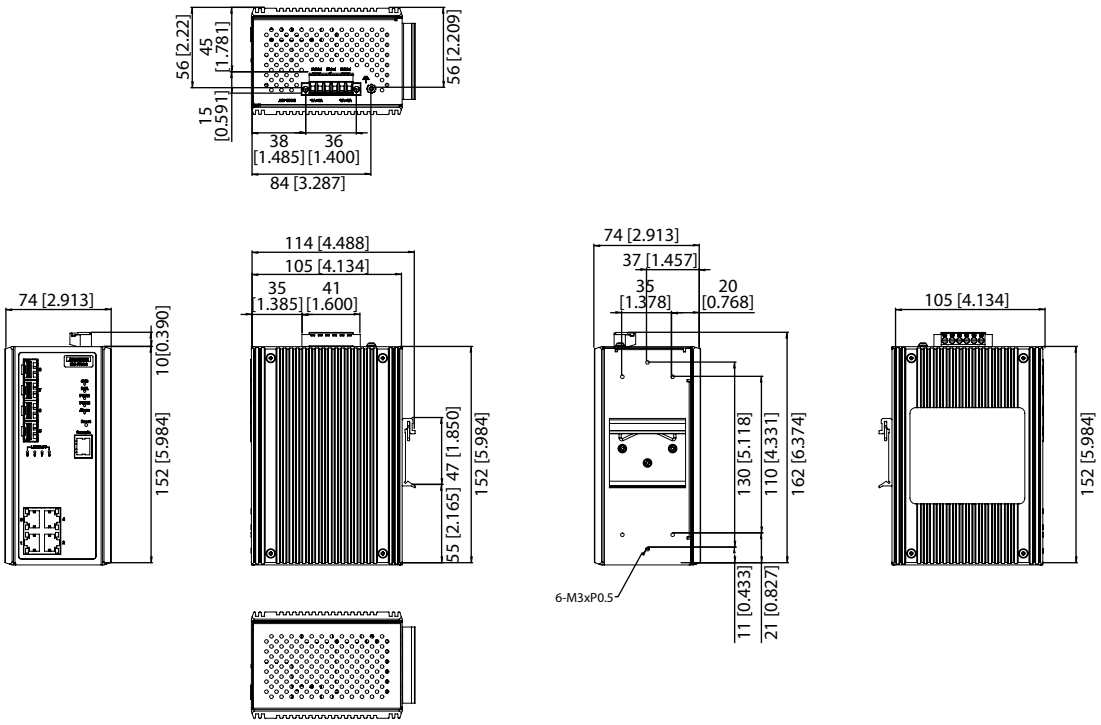
- **Storm Control**: Broadcast, Multicast, Unknown unicast
- **Redundancy**: IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro, with ultra high-speed recovery time less than 20ms

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 105 (4.137) x 152 (5.984) x 74 (2.91)

QoS

- **Priority Queue Scheduling** — WRR (Weighted Round Robin), SP (Strict Scheduling Priority) Hybrid Priority
- **Class of Service** — IEEE 802.1p Based CoS, IP TOS, DSCP based CoS
- **Rate Limiting** — Ingress Rate limit, Egress Rate limit
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Security

- **Port Security** — Static, Dynamic IP Source Guard, ARP Spoofing Prevention, Access Control List, DHCP Snooping,
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Management

- **DHCP** — Client, Server, Option66/67/82
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- **Software upgrade** — TFTP, HTTP, Dual Image
- **NTP** — SNTP client

Ordering Information

- **EKI-7708G-4FI-AE** — 4GE + 4G SFP Port Managed Ethernet Switch w/Wide Temp
- **EKI-7708G-4F-AE** — 4GE + 4G SFP Port Managed Ethernet Switch

EKI-7716E-4F4C
EKI-7716E-4F4CI

8FE+4SFP+4G Combo Port Managed Redundant Industrial Switch

Features

- 8 x fast Ethernet + 4 x Gigabit SFP + 4 x Gigabit Copper/SFP combo ports
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP, and MSTP (802.1w/1D/1s)
- IXM function enables fast deployment
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- NEMA TS2 for traffic control
- EN50121-4 approval for railway trackside deployment
- Wide operating temperature range of -40 ~ 75°C (EKI-7716E-4F4CI)
- Dual 12 ~ 48 V_{DC} power input and 1 x relay output

Introduction

The EKI-7716E-4F4C and EKI-7716E-4F4CI offer 8 fast Ethernet, 4 Gigabit SFP (mini-GBIC), and 4 Gigabit combo ports. These switches provide abundant port options for connecting to various device types. They are also embedded with Advantech IXM function for fast deployment, which can dramatically save on engineering time and costs. The EKI-7716E series also support NMS to help IT managers with networking maintenance and failure prevention. Finally, they are equipped with X-Ring Pro redundancy for ultra-high-speed recovery times of <20 ms. The EKI-7716E-4F4CI also features a wide operating temperature range of -40 to 75°C and a NEMA TS2 rating, making it ideal for use in traffic applications. These switches also meet the EN50121-4 European railway standard for emissions and EMI immunity for railway platforms and trackside deployment.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x, 802.3ad, 802.3ab, 802.3z, 802.1D, 802.1w, 802.1s, 802.1P, 802.1Q, 802.1X
- **LAN** 10/100BASE-TX, 10/100/1000BASE-TX, optional 100BASE-FX, 1000BASE-SX/LX/LHX/XD/ZX/EZX
- **Transmission Distance** Ethernet: Up to 100 m (4- wire Cat.5e, Cat.6 RJ45 cable suggested for both Fast Ethernet/Gigabit port)
  SFP: Up to 110 km (depends on SFP)
- **Transmission Speed** Fast Ethernet: 10/100 Mbps
  Gigabit Copper: 10/100/1000 Mbps, Auto-Negotiation
  Gigabit Fiber: Up to 1000 Mbps

Interface

- **Connectors** 8 x RJ45 (Fast Ethernet)
  4 x SFP (mini-GBIC)
  4 x RJ45/SFP (mini-GBIC) combo ports
  6-pin screw terminal block connector
  (4-pin for Power, 2-pin for Relay)
- **LED Indicators** PWR1, PWR2, SYS, Alarm and R.M.
  10/100T (X): Link/Activity,
  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, IPv6
- **VLAN** IEEE 802.1Q, GVRP, Port-based VLAN
- **Redundancy** Advantech X-Ring, 802.1w/1D/1s RSTP/STP/MSTP
- **Security** IP Security, SSH, SSL, SNMPV3, HTTPS, IP Source Guard, DHCP Snooping, ARP Spoofing Prevention, 802.1X, TACACS+, Access Control List
- **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, SNTP, Syslog, E-Mail Alert, SNMP Trap, RMON

Mechanism

- **Enclosure** IP30, metal shell with solid mounting kits
- **Dimensions (W x H x D)** 74 x 152 x 105 mm (2.91" x 5.98" x 4.13")
- **Mounting** DIN-rail, Wall mount

Power

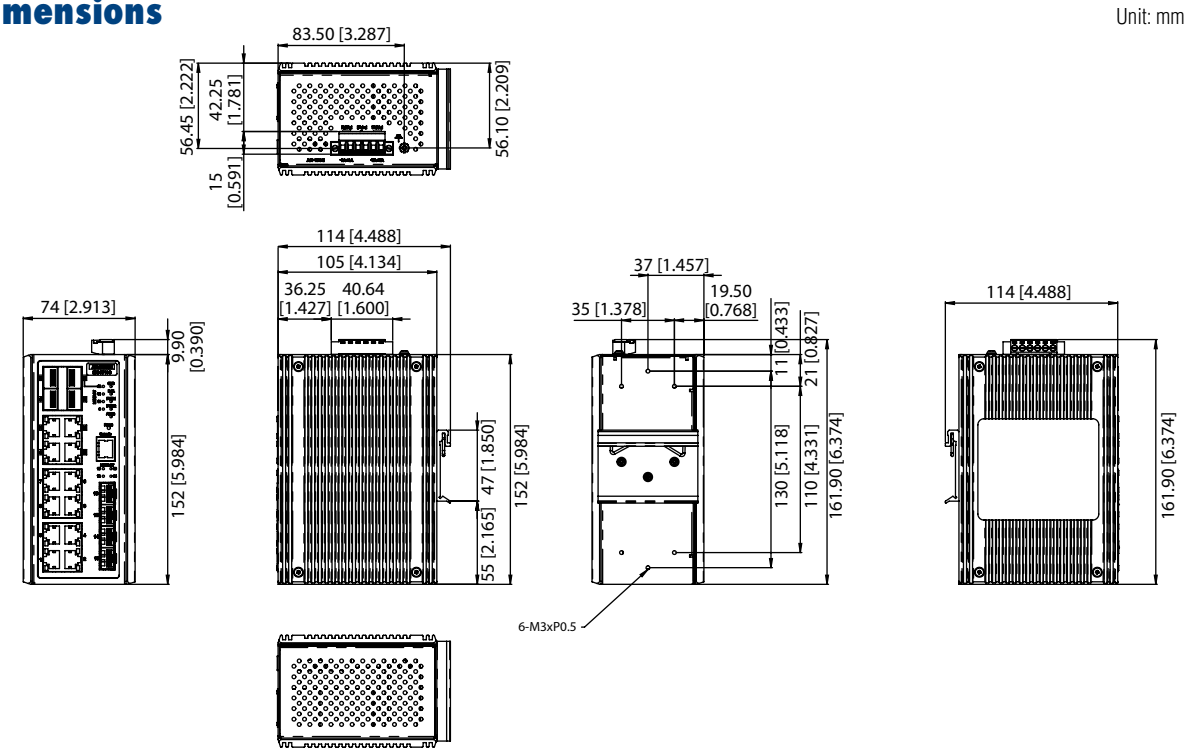
- **Power Consumption** 15W @ 48V (Full Load)
- **Power Input** 12-48 V_{DC}, Redundant Dual Power Input
- **Fault Output** 1 Relay Output

Protection

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

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 74 x 152 x 105 mm (2.91" x 5.98" x 4.13")

Environment

- **Operating Temperature** -10~60°C (14~140°F) (EKI-7716E-4F4C)
  -40~75°C (-40~167°F) (EKI-7716E-4F4CI)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity** 10 ~ 95% (non-condensing)
- **Storage Humidity** 10 ~ 95% (non-condensing)

Certification

- **Safety** UL 61010
- **EMI** CE, FCC 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
  EN 50121-4
  NEMA TS2
- **Shock** IEC 60068-2-27
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 60068-2-6
- **Railway Track Side** EN 50121-4
- **Patent** http://www.advantech.com/legal/patent

Ordering Information

- **EKI-7716E-4F4C-AE** 8FE+4SFP+4G Combo port Managed Industrial Switch
- **EKI-7716E-4F4CI-AE** 8FE+4SFP+4G Combo port Managed Industrial Switch w/Wide Temp.

EKI-7716G-4F4C
EKI-7716G-4F4CI

8GE+4SFP+4G Combo Port Managed Redundant Industrial Switch

Features

- 8 x Gigabit Ethernet + 4 x Gigabit SFP + 4 x Gigabit copper/SFP combo ports
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP, and MSTP (802.1w/1D/1s)
- IXM function enables fast deployment
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- NEMA TS2 for traffic control
- EN50121-4 approval for railway trackside deployment
- Wide operating temperature range of -40 ~ 75°C (EKI-7716G-4F4CI)
- Dual 12 ~ 48 V_{DC} power input and 1 x relay output

Introduction

The EKI-7716G-4F4C and EKI-7716G-4F4CI support 8 Gigabit Ethernet, 4 Gigabit SFP (mini-GBIC), and 4 Gigabit combo ports. They provide abundant port options for connecting to various device types. The series are embedded with Advantech IXM function for fast deployment, which can dramatically save on engineering time and costs. These switches also support NMS to help IT managers with networking maintenance and failure prevention. Finally, they are equipped with X-Ring Pro redundancy for ultra-high-speed recovery times of <20 ms. The EKI-7716G-4F4CI in particular also features a wide operating temperature of -40 to 75°C and a NEMA TS2 rating, making it ideal for use in traffic applications. The EKI-7716G series also meets the EN50121-4 European railway standard for emissions and EMI immunity for railway platforms and trackside deployment.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x, 802.3ad, 802.3ab, 802.3z, 802.1D, 802.1w, 802.1s, 802.1P, 802.1Q, 802.1X
- **LAN** 10/100/1000BASE-TX, optional 100BASE-FX, 1000BASE-SX/LX/LHX/XD/ZX/EZX
- **Transmission Distance** Ethernet: Up to 100 m (4- wire Cat.5e, Cat.6 RJ45 cable suggested for both Fast Ethernet/Gigabit port)
  SFP: Up to 110 km (depends on SFP)
- **Transmission Speed** Gigabit Ethernet: 10/100/1000 Mbps
  Gigabit Copper: 10/100/1000 Mbps, Auto-Negotiation
  Gigabit Fiber: Up to 1000 Mbps

Interface

- **Connectors** 8 x RJ45 (Gigabit Ethernet)
  4 x SFP (mini-GBIC)
  4 x RJ45/SFP (mini-GBIC) combo ports
  6-pin screw terminal block connector
  (4-pin for Power, 2-pin for Relay)
- **LED Indicators** PWR1, PWR2, SYS, Alarm and R.M.
  10/100/1000T (X): Link/Activity,
  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, IPv6
- **VLAN** IEEE 802.1Q, GVRP, Port-based VLAN
- **Redundancy** Advantech X-Ring, 802.1w/1D/1s RSTP/STP/MSTP
- **Security** IP Security, SSH, SSL, SNMPV3, HTTPS, IP Source Guard, DHCP Snooping, ARP Spoofing Prevention, 802.1X, TACACS+, Access Control List
- **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, SNTP, Syslog, E-Mail Alert, SNMP Trap, RMON

Mechanism

- **Enclosure** IP30, metal shell with solid mounting kits
- **Dimensions (W x H x D)** 74 x 152 x 105 mm (2.91" x 5.98" x 4.13")
- **Mounting** DIN-rail, Wall mount

Power

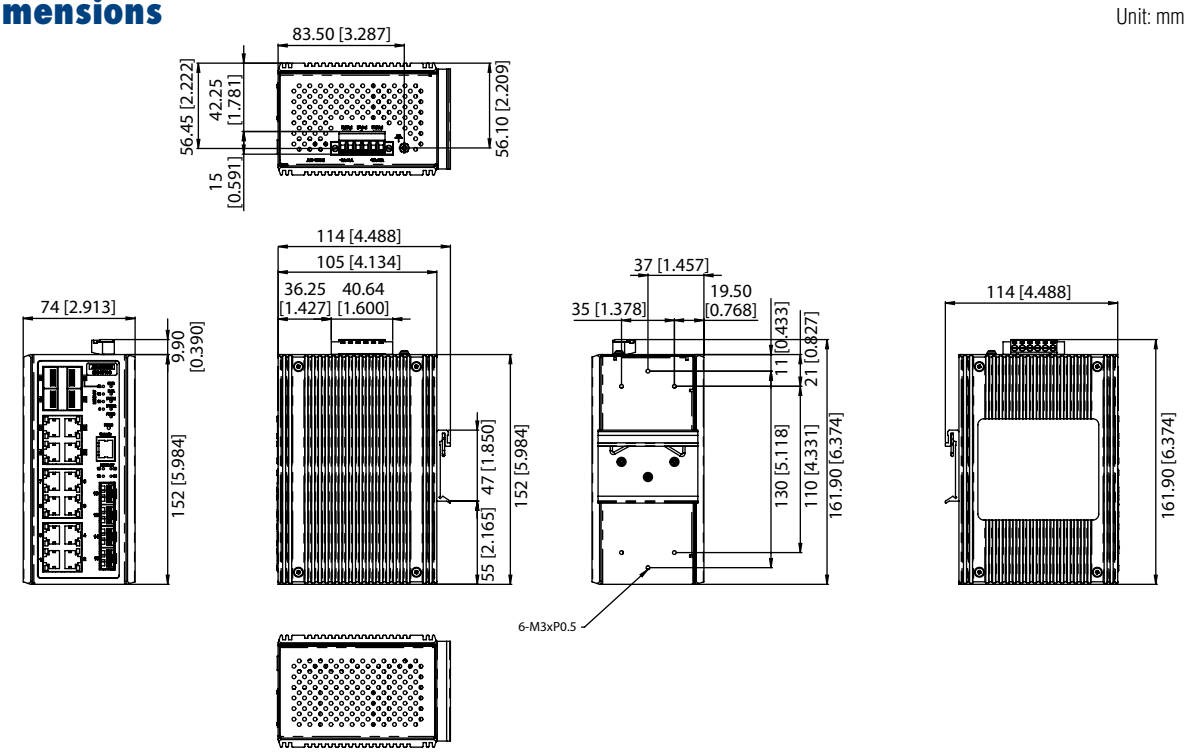
- **Power Consumption** 15W @ 48V (Full Load)
- **Power Input** 12-48 V_{DC}, Redundant Dual Power Input
- **Fault Output** 1 Relay Output

Protection

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

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 74 x 152 x 105 mm (2.91" x 5.98" x 4.13")

Environment

- **Operating Temperature** -10~60°C (14~140°F) (EKI-7716G-4F4C)
  -40~75°C (-40~167°F) (EKI-7716G-4F4CI)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity** 10 ~ 95% (non-condensing)
- **Storage Humidity** 10 ~ 95% (non-condensing)

Certification

- **Safety** UL 61010
- **EMI** CE, FCC 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
  EN 50121-4
  NEMA TS2
- **Shock** IEC 60068-2-27
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 60068-2-6
- **Railway Track Side** EN 50121-4
- **Patent** http://www.advantech.com/legal/patent

Ordering Information

- **EKI-7716G-4F4C-AE** 8GE+4SFP+4G Combo port Managed Industrial Switch
- **EKI-7716G-4F4CI-AE** 8GE+4SFP+4G Combo port Managed Industrial Switch w/Wide Temp.

EKI-5526/I-EI
EKI-5528/I-EI

16-Port Entry-Level Managed Switch Supporting Ethernet/IP
8-Port Entry-Level Managed Switch Supporting Ethernet/IP

Features

- 16 x fast Ethernet RJ-45 (EKI-5526/I-EI) or 8 x fast Ethernet RJ-45 (EKI-5528/I-EI) ports
- Entry-level managed switch
- IXM function enables fast deployment
- Provides Ethernet/IP EDS file, AOI file, and FactoryTalk® View faceplate
- Management: SNMP v1/v2c/v3, WEB, standard MIB, private MIB

Introduction

The EKI-5526/I-EI and EKI-5528/I-EI are the new generation of entry-level managed switch products. They support the Ethernet/IP protocol for communication with Ethernet/IP-based PLCs. Advantech also provides a FactoryTalk® View-compliant faceplate so that users can easily integrate the switch with Allen-Bradley® PLCs. Electronic datasheet (EDS) files are also available for users to customize their faceplate. The devices come in a compact metal housing that is IP30-rated to protect against dusty industrial environments. The wide power input range (8.4 ~ 52.8 V_{DC}) is dedicated to operating in rugged environments where power may be unstable.

Specifications

Communications

Standard	IEEE 802.3, 802.3u, 802.3x, 802.1D, 802.1w,802.1p, 802.1Q, 802.1X, 802.3AD,802.3az
LAN	10/100BASE-TX
Transmission Distance	Ethernet: Up to 100 m
Transmission Speed Ethernet	10/100 Mbps Auto-Negotiation

Interface

I/O Port	EKI-5526/I-EI: 16 x RJ-45 EKI-5528/I-EI: 8 x RJ-45
Power Connector	6-pin screw Terminal Block (including relay)

Physical

Enclosure	Metal Shell
Protection Class	IP 30
Installation	DIN-Rail
Dimensions (W x H x D)	EKI-5526/I-EI: 74 x 120 x 84 mm (2.91" x 4.72" x 3.31") EKI-5528/I-EI: 43 x 120 x 84 mm (1.69" x 4.72" x 3.31")

LED Display

System LED	PWR1, PWR2, P-Fail, Loop detection
Port LED	Link / Speed / Activity

Environment

Operating Temperature	EKI-5526I-EI & EKI-5528I-EI: -40 ~ 75 °C (-40 ~ 167 °F) EKI-5526-EI & EKI-5528-EI: -10 ~ 60 °C (14 ~ 140 °F)
Storage Temperature	-40 ~ 85 °C
Ambient Relative Humidity	10 ~ 95% (non-condensing)
Humidity	10 ~ 95% (non-condensing)
MTBF	EKI-5528/I-EI: 4,176,861 hours EKI-5526/I-EI: 2,788,343 hours

Power

Power Consumption	EKI-5526/I-EI: Max. 8 W EKI-5528/I-EI: Max. 5.2 W
Power Input	12 ~ 48 V_{DC} (8.4 ~ 52.8 V_{DC}), redundant dual power input
Fault Output	1 Relay Output

Certification

EMI	CE, FCC Class A
Safety	UL508, Class 1 Division 2, ATEX
EMC	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

L2 Features

L2 MAC Address	8K
Jumbo Frame	9216 Bytes
VLAN Group	256 (VLAN ID 1 ~ 4094)
VLAN Arrange	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
Redundancy	IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring, with ultra high-speed recovery time less than 20ms

QoS

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

Security

Port Security	Static, Dynamic, MAC address filtering
Authentication	802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption)

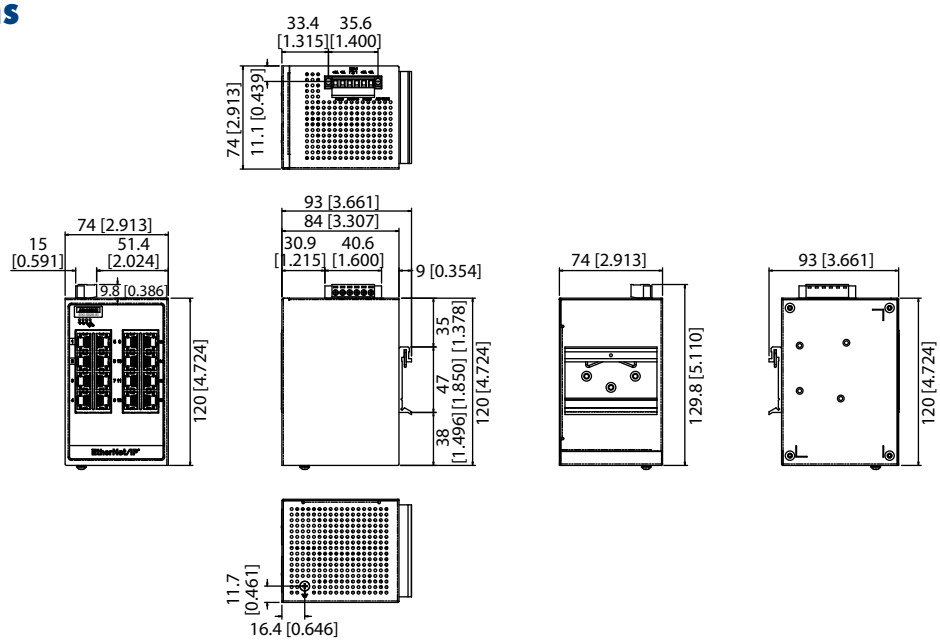
Management

DHCP	Client, Option 82
Access	SNMP v1/v2c/v3, WEB, Standard MIB, Private MIB
Software upgrade	TFTP, HTTP, Dual Image
NTP	SNTP client
Data	Syslog
Protocols	IPV6, LLDP, EtherNet/IP

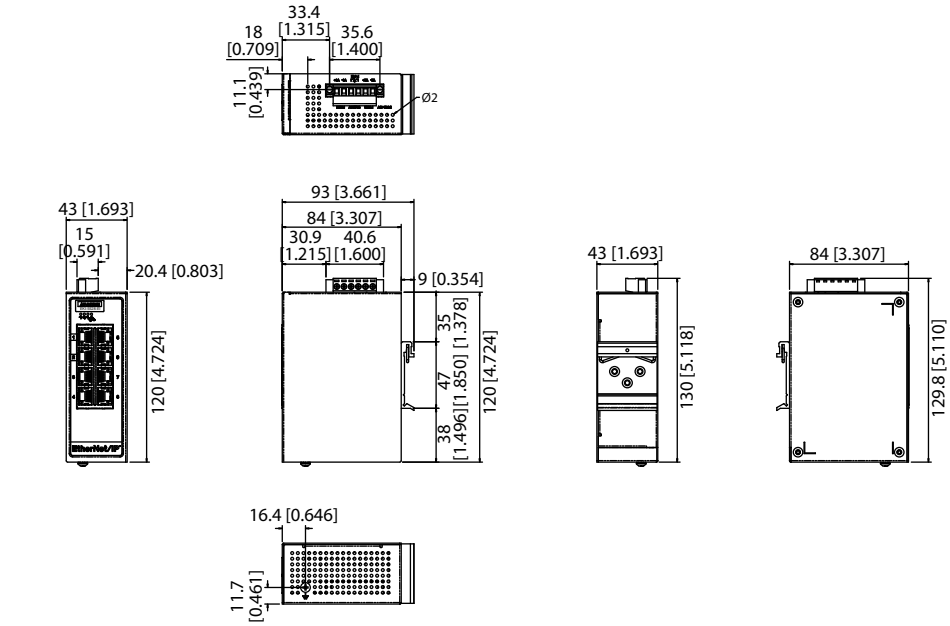
Dimensions

Unit: mm [inch]

EKI-5526/I-EI



EKI-5528/I-EI



Ordering Information

- **EKI-5526-EI-AE** 16 port entry-level managed switch support EtherNet/IP
- **EKI-5526I-EI-AE** 16 port entry-level managed switch support EtherNet/IP w/wide temp.
- **EKI-5528-EI-AE** 8 port entry-level managed switch support EtherNet/IP
- **EKI-5528I-EI-AE** 8 port entry-level managed switch support EtherNet/IP w/wide temp.

EKI-5526/I-PN
EKI-5528/I-PN

16-Port Entry-Level Managed Switch Supporting PROFINET
8-Port Entry-Level Managed Switch Supporting PROFINET

Features

- 16 ports fast Ethernet RJ-45 (EKI-5526/I-PN) or 8 ports fast Ethernet RJ-45
- (EKI-5528/I-PN)
- Entry-level managed switch
- IXM function enables fast deployment
- Provides GSDML files
- Management: SNMP v1/v2c/v3, WEB, standard MIB, private MIB
- Supports Media Redundancy Protocol (MRP) slaves

Introduction

The EKI-5526-PN and EKI-5528-PN are the new generation of entry-level managed switch products. They support media redundancy protocols and meet the PROFINET real-time standard. The devices come with a compact metal housing that is IP30-rated to protect against dusty industrial environments. The wide power input range (8.4 ~ 52.8 V_{DC}) is dedicated to operating in rugged environments where power may be unstable.

Specifications

Communications

Standard	IEEE 802.3, 802.3u, 802.3x, 802.1D, 802.1w,802.1p, 802.1Q, 802.1X, 802.3AD,802.3az
LAN	10/100BASE-TX
Transmission Distance	Ethernet: Up to 100 m
Transmission Speed Ethernet	10/100 Mbps Auto-Negotiation

Interface

I/O Port	EKI-5526/I-PN: 16 x RJ-45 EKI-5528/I-PN: 8 x RJ-45
Power Connector	6-pin screw Terminal Block (including relay)

Physical

Enclosure	Metal Shell
Protection Class	IP 30
Installation	DIN-Rail
Dimensions (W x H x D)	EKI-5526/I-PN: 74 x 120 x 84 mm EKI-5528/I-PN: 43 x 120 x 84 mm

LED Display

System LED	PWR1, PWR2, P-Fail, Loop / Status
Port LED	Link / Speed / Activity

Environment

Operating Temperature	EKI-5526I-PN & EKI-5528I-PN: -40 ~ 75°C (-40 ~ 167°F) EKI-5526-PN & EKI-5528-PN: -10 ~ 60°C (14 ~ 140°F)
Storage Temperature	-40 ~ 85°C
Ambient Relative Humidity	10 ~ 95% (non-condensing)
Humidity	10 ~ 95% (non-condensing)
MTBF	EKI-5528/I-PN: 4,176,861 hours EKI-5526/I-PN: 2,788,343 hours

Power

Power Consumption	EKI-5526/I-PN: Max. 8 W EKI-5528/I-PN: Max. 5.2 W
Power Input	12 ~ 48 V_{DC} (8.4~52.8 V_{DC}), redundant dual power input
Fault Output	1 Relay Output

Certification

EMI	CE, FCC Class A
Safety	UL508, Class 1 Division 2, ATEX
EMC	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

L2 Features

L2 MAC Address	8K
Jumbo Frame	9216 Bytes
VLAN Group	256 (VLAN ID 1~4094)
VLAN Arrange	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
Redundancy	IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring, with ultra high-speed recovery time less than 20ms

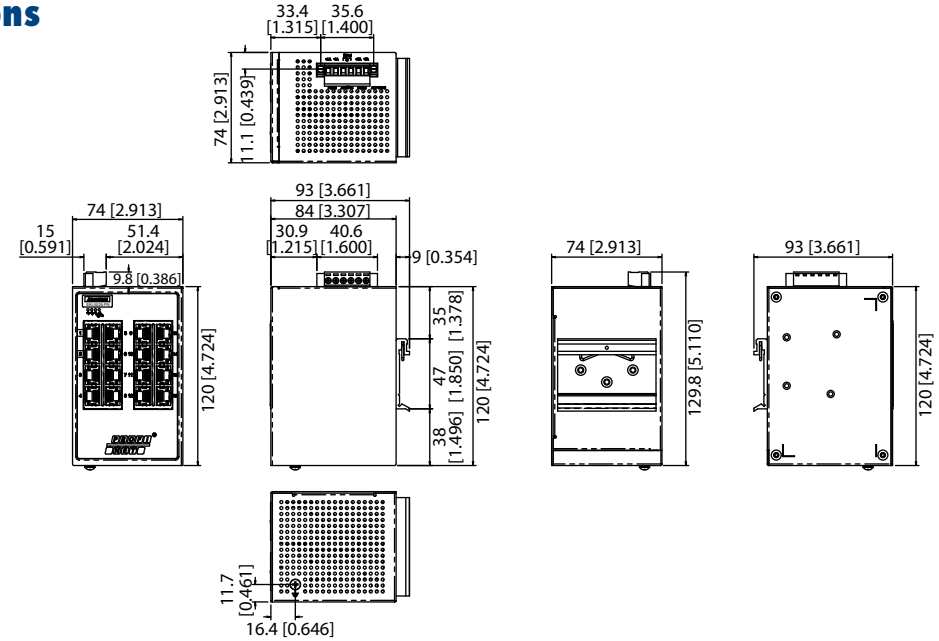
QoS

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

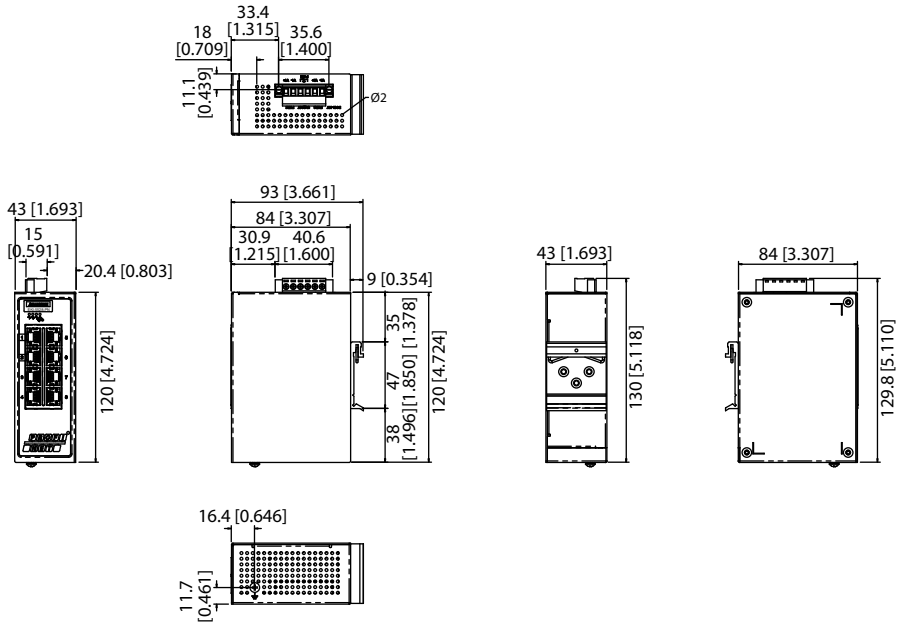
Dimensions

Unit: mm [inch]

EKI-5526/I-PN



EKI-5528/I-PN



Security

- **Port Security** — Static, Dynamic, MAC address filtering
- **Authentication** — 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption)

Management

- **Access** — SNMP v1/v2c/v3, WEB, Standard MIB, Private MIB
- **Software upgrade** — TFTP, HTTP, Dual Image
- **NTP** — SNTP client
- **Data** — Syslog
- **Protocols** — IPV6, LLDP, PROFINET, Media Redundancy Protocol

Ordering Information

- **EKI-5526-PN-AE** — 16 port entry-level managed switch supports PROFINET
- **EKI-5526I-PN-AE** — 16 port entry-level managed switch supports PROFINET w/wide temp.
- **EKI-5528-PN-AE** — 8 port entry-level managed switch supports PROFINET
- **EKI-5528I-PN-AE** — 8 port entry-level managed switch supports PROFINET w/wide temp.

EKI-5526/I-MB
EKI-5528/I-MB

16-Port Entry-Level Managed Switch Supporting Modbus/TCP
8-Port Entry-Level Managed Switch Supporting Modbus/TCP

Features

- 16 ports fast Ethernet RJ-45 (EKI-5526/I-MB) or 8 ports fast Ethernet RJ-45 (EKI-5528/I-MB)
- Entry-level managed switch
- IXM function enables fast deployment
- Management: SNMP v1/v2c/v3, WEB, standard MIB, private MIB

Introduction

The EKI-5526/I-MB and EKI-5528/I-MB are the new generation of entry-level managed switch products. They support basic L2 managed functions such as ring, SNMP, and IGMP. They also support Modbus/TCP and can be easily integrated with SCADA systems. The devices come in a compact metal housing that is IP30-rated to protect against dusty industrial environments. The wide power input range (8.4 ~ 52.8 V_{DC}) is dedicated to operating in rugged environments where power may be unstable.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x, 802.1D, 802.1w,802.1p, 802.1Q, 802.1X, 802.3AD,802.3az
- **LAN** 10/100BASE-TX
- **Transmission Distance** Ethernet: Up to 100 m
- **Transmission Speed Ethernet** 10/100 Mbps Auto-Negotiation

Interface

- **I/O Port** EKI-5526/I-MB: 16 x RJ-45
EKI-55286/I-MB: 8 x RJ-45
- **Power Connector** 6-pin screw Terminal Block (including relay)

Physical

- **Enclosure** Metal Shell
- **Protection Class** IP 30
- **Installation** DIN-Rail
- **Dimensions (W x H x D)** EKI-5526/I-MB: 74 x 120 x 84 mm
EKI-5528/I-MB: 43 x 120 x 84 mm

LED Display

- **System LED** PWR1, PWR2, P-Fail, Loop detection
- **Port LED** Link / Speed / Activity

Environment

- **Operating Temperature** EKI-5526I-MB & EKI-5528I-MB: -40 ~ 75°C (-40 ~ 167°F)
EKI-5526-MB & EKI-5528-MB: -10 ~ 60°C (14 ~ 140°F)
- **Storage Temperature** -40 ~ 85°C
- **Ambient Relative Humidity** 10 ~ 95% (non-condensing)
- **Humidity** 10 ~ 95% (non-condensing)
- **MTBF** EKI-5528/I-MB: 4,176,861 hours
EKI-5526/I-MB: 2,788,343 hours

Power

- **Power Consumption** EKI-5526/I-MB: Max. 8 W
EKI-5528/I-MB: Max. 5.2 W
- **Power Input** 12 ~ 48 V_{DC} (8.4 ~ 52.8 V_{DC}), redundant dual power input
- **Fault Output** 1 Relay Output

Certification

- **EMI** CE, FCC Class A
- **Safety** UL508, Class 1 Division 2, ATEX
- **EMC** 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

L2 Features

- **L2 MAC Address** 8K
- **Jumbo Frame** 9216 Bytes
- **VLAN Group** 256 (VLAN ID 1 ~ 4094)
- **VLAN Arrange** 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
- **Redundancy** IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring, with ultra high-speed recovery time less than 20ms

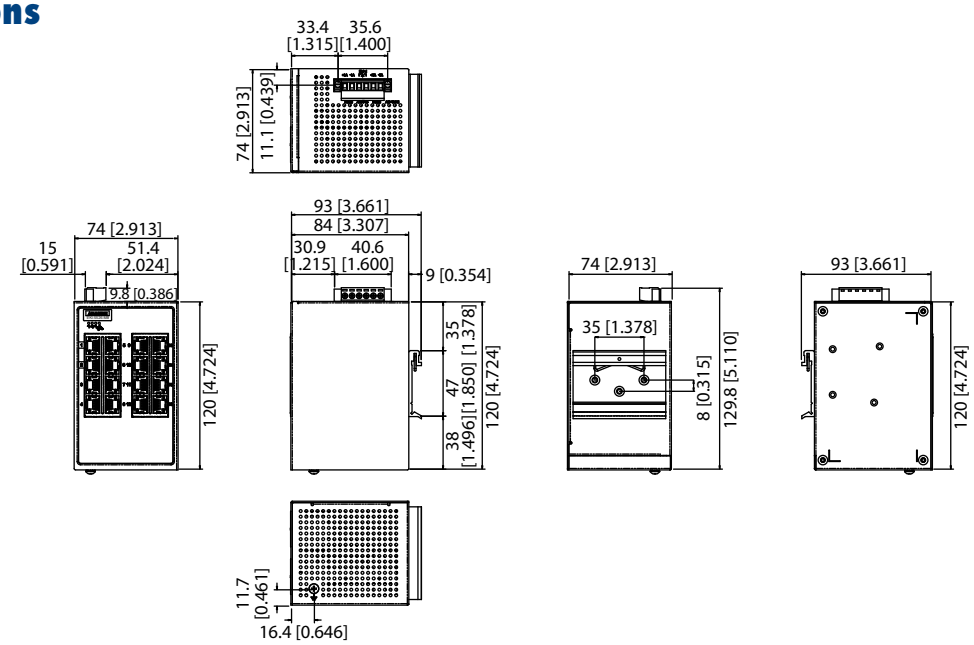
QoS

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

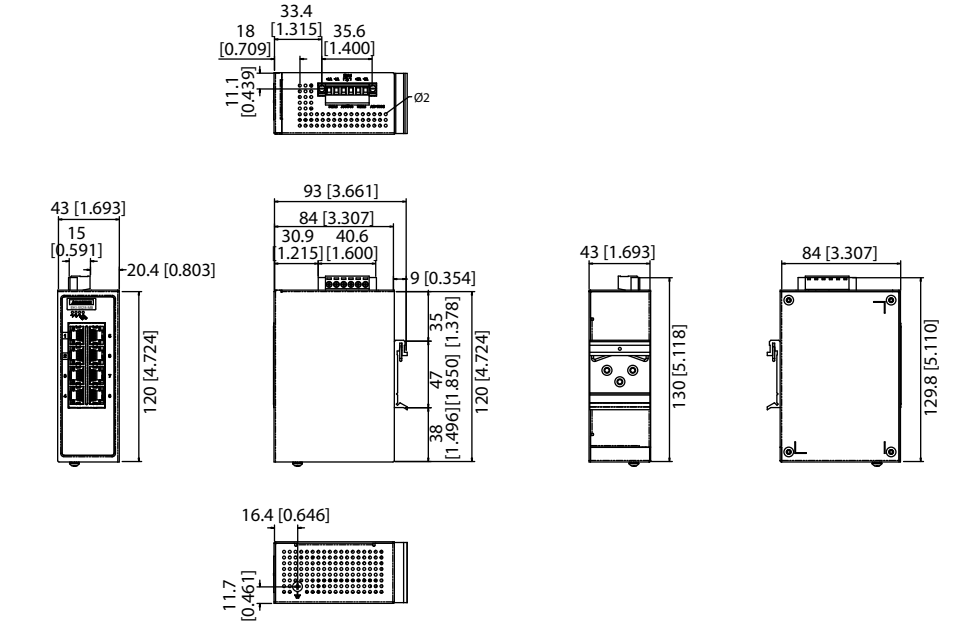
Dimensions

Unit: mm [inch]

EKI-5526/I-MB



EKI-5528/I-MB



Security

- **Port Security** — Static, Dynamic, MAC address filtering
- **Authentication** — 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption)

Management

- **DHCP** — Client, Option 82
- **Access** — SNMP v1/v2c/v3, WEB, Standard MIB, Private MIB
- **Software upgrade** — TFTP, HTTP, Dual Image
- **NTP** — SNTP client
- **Data** — Syslog
- **Protocols** — IPV6, LLDP, Modbus/TCP

Ordering Information

- **EKI-5526-MB-AE** — 16 port entry-level managed switch support Modbus/TCP
- **EKI-5526I-MB-AE** — 16 port entry-level managed switch support Modbus/TCP w/wide temp.
- **EKI-5528-MB-AE** — 8 port entry-level managed switch support Modbus/TCP
- **EKI-5528I-MB-AE** — 8 port entry-level managed switch support Modbus/TCP w/wide temp.

EKI-5626C/I-EI
EKI-5629C/I-EI

16 + 2G Combo Ports Entry-Level Managed Switch Supporting Ethernet/IP
8 + 2G Combo Ports Entry-Level Managed Switch Supporting Ethernet/IP

Features

- 16 Fast Ethernet ports + 2 Gigabit Copper/SFP combo ports (EKI-5626C/I-EI) & 8 Fast Ethernet ports + 2 Gigabit Copper/SFP combo ports (EKI-5629C/I-EI)
- Entry-Level Managed Switch
- IXM function enables fast deployment
- Provides EtherNet/IP EDS (Electronic Data Sheet) file, AOI (Add-On Instructions) file, and FactoryTalk® View faceplate
- Management: SNMP v1/v2c/v3, WEB, Standard MIB, Private MIB

Introduction

The EKI-5626C/I-EI and EKI-5629C/I-EI are the new generation of entry-level managed switch products. They support the Ethernet/IP protocol to communicate with Ethernet/IP-based PLCs. Advantech also provides the FactoryTalk® View-compliant faceplate, so that users can easily integrate the switch with Allen-Bradley® PLCs. EDS files are also available for users to customize their faceplate. The devices come with a compact metal housing that is IP30-rated to protect against dusty industrial environments. The wide power input power (8.4 ~ 52.8 V_{DC}) is dedicated to operating in rugged environments where power may be unstable.

Specifications

Communications

Standard	IEEE 802.3, 802.3u, 802.3x, 802.1D, 802.1w,802.1p, 802.1Q, 802.1X, 802.3AD,802.3az
LAN	10/100BASE-TX
Transmission Distance	Ethernet: UP to 100m (4-wire Cat.5e, Cat.6 RJ-45 cable suggested for Gigabit port) SFP: UP to 110km (depends on SFP)
Transmission Speed Ethernet	Ethernet: 10/100Mbps Auto-Negotiation Gigabit Copper: 10/100/1000Mbps, Auto-Negotiation Gigabit Fiber: UP to 1000Mbps

Interface

I/O Port	EKI-5626C/I-EI: 16 x RJ-45 + 2 x RJ-45/SFP combo ports EKI-5629C/I-EI: 8 x RJ-45 + 2 x RJ-45/SFP combo ports
Power Connector	6-pin screw Terminal Block (including relay)

Physical

Enclosure	Metal Shell
Protection Class	IP 30
Installation	DIN-Rail
Dimensions (W x H x D)	74 x 120 x 84 mm

LED Display

System LED	PWR1, PWR2, P-Fail, Loop detection
Port LED	Link / Speed / Activity

Environment

Operating Temperature	EKI-5626CI-EI & EKI-5629CI-EI: -40 ~ 75°C (-40 ~ 167°F) EKI-5626C-EI & EKI-5629C-EI: -10 ~ 60°C (14 ~ 140°F)
Storage Temperature	-40 ~ 85°C
Ambient Relative Humidity	10 ~ 95% (non-condensing)
Humidity	10 ~ 95% (non-condensing)
MTBF	EKI-5626C/I-EI: 2,825,281 hours EKI-5629C/I-EI: 3,183,604 hours

Power

Power Consumption	EKI-5626C/I-EI: Max 8.2W EKI-5629C/I-EI: Max 5.8W
Power Input	12 ~ 48 V_{DC} (8.4 ~ 52.8 V_{DC}), redundant dual power input
Fault Output	1 Relay Output

Certification

EMI	CE, FCC Class A
Safety	UL508, Class 1 Division 2, ATEX
EMC	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

L2 Features

L2 MAC Address	8K
Jumbo Frame	9216 Bytes
VLAN Group	256 (VLAN ID 1 ~ 4094)
VLAN Arrange	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
Redundancy	IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring, with ultra high-speed recovery time less than 20ms

QoS

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

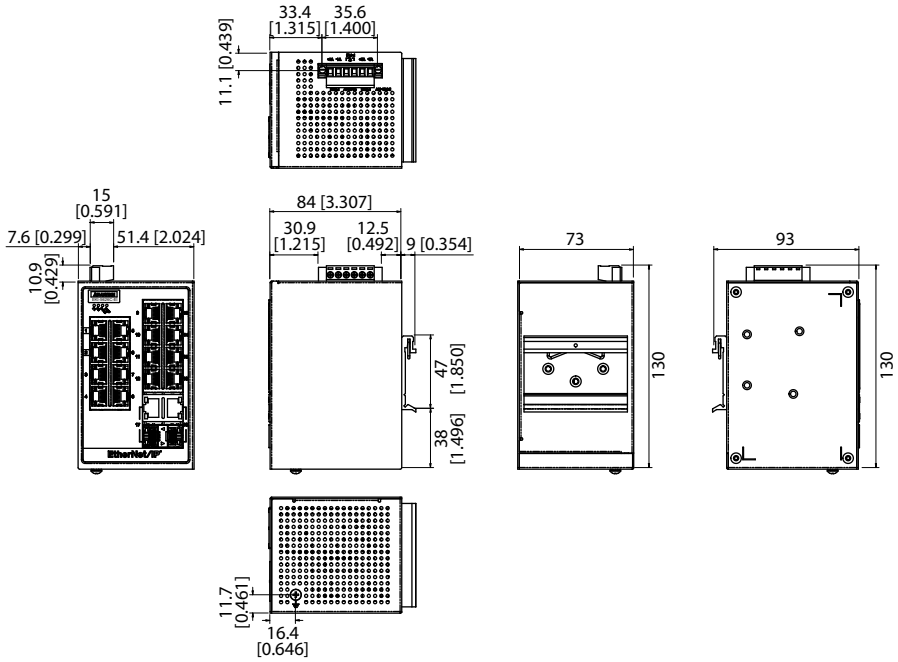
Security

Port Security	Static, Dynamic, MAC address filtering
Authentication	802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption)

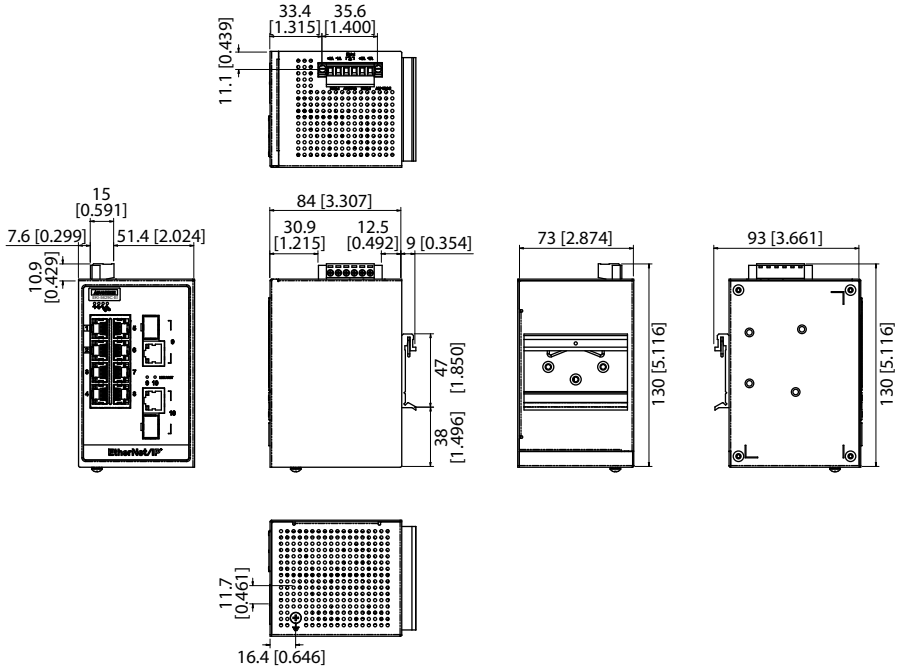
Dimensions

Unit: mm [inch]

EKI-5626C/I-EI



EKI-5629C/I-EI



Management

- **DHCP** Client, Option 82
- **Access** SNMP v1/v2c/v3, WEB, Standard MIB, Private MIB
- **Software upgrade** TFTP, HTTP, Dual Image
- **NTP** SNTP client
- **Data** Syslog
- **Protocols** IPV6, LLDP, EtherNet/IP

Ordering Information

- **EKI-5626C-EI-AE** 16 + 2G Combo ports entry-level managed switch Support EtherNet/IP
- **EKI-5626CI-EI-AE** 16 + 2G Combo ports entry-level managed switch support EtherNet/IP w/wide temp.
- **EKI-5629C-EI-AE** 8 + 2G Combo ports entry-level managed switch support EtherNet/IP
- **EKI-5629CI-EI-AE** 8 + 2G Combo ports entry-level managed switch support EtherNet/IP w/wide temp.

EKI-5626C/I-PN
EKI-5629C/I-PN

16 + 2G Combo Ports Entry-Level Managed Switch Supporting PROFINET

8 + 2G Combo Ports Entry-Level Managed Switch Supporting PROFINET

Features

- 16 x fast Ethernet ports + 2 Gigabit copper/SFP combo ports (EKI-5626C/I-PN) or 8 x fast Ethernet ports + 2 x Gigabit copper/SFP combo ports (EKI-5629C/I-PN)
- Entry-level managed switch
- IXM function enables fast deployment
- Provides GSDML files
- Management: SNMP v1/v2c/v3, WEB, standard MIB, private MIB
- Supports MRP slaves

Introduction

The EKI-5626C/I-PN and EKI-5629C/I-PN are the new generation of entry-level managed switch products. They support media redundancy protocols and the PROFINET real-time standard. The devices come with a compact metal housing that is IP30-rated to protect against dusty industrial environments. The wide power input range (8.4 ~ 52.8 V_{DC}) is dedicated to operating in rugged environments where power may be unstable.

Specifications

Communications

Standard	IEEE 802.3, 802.3u, 802.3x, 802.1D, 802.1w,802.1p, 802.1Q, 802.1X, 802.3AD,802.3az
LAN	10/100BASE-TX
Transmission Distance	Ethernet: UP to 100m (4-wire Cat.5e, Cat.6 RJ-45 cable suggested for Gigabit port) SFP: UP to 110km (depends on SFP)
Transmission Speed Ethernet	Ethernet: 10/100Mbps Auto-Negotiation Gigabit Copper: 10/100/1000Mbps, Auto-Negotiation Gigabit Fiber: UP to 1000Mbps

Interface

I/O Port	EKI-5626C/I-PN: 16 x RJ-45 + 2 x RJ-45/SFP combo ports EKI-5629C/I-PN: 8 x RJ-45 + 2 x RJ-45/SFP combo ports
Power Connector	6-pin screw Terminal Block (including relay)

Physical

Enclosure	Metal Shell
Protection Class	IP 30
Installation	DIN-Rail
Dimensions (W x H x D)	74 x 120 x 84 mm

LED Display

System LED	PWR1, PWR2, P-Fail, Loop/Status
Port LED	Link / Speed / Activity

Environment

Operating Temperature	EKI-5626CI-PN & EKI-5629CI-PN: -40 ~ 75°C (-40 ~ 167°F) EKI-5626C-PN & EKI-5629C-PN: -10 ~ 60°C (14 ~ 140°F)
Storage Temperature	-40 ~ 85°C
Ambient Relative Humidity	10 ~ 95% (non-condensing)
Humidity	10 ~ 95% (non-condensing)
MTBF	EKI-5626C/I-PN: 2,825,281 hours EKI-5629C/I-PN: 3,183,604 hours

Power

Power Consumption	EKI-5626C/I-PN: Max 8.2W EKI-5629C/I-PN: Max 5.8W
Power Input	12 ~ 48 V_{DC} (8.4~52.8 V_{DC}), redundant dual power input
Fault Output	1 Relay Output

Certification

EMI	CE, FCC Class A
Safety	UL508, Class 1 Division 2, ATEX
EMC	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

L2 Features

L2 MAC Address	8K
Jumbo Frame	9216 Bytes
VLAN Group	256 (VLAN ID 1~4094)
VLAN Arrange	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
Redundancy	IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring, with ultra high-speed recovery time less than 20ms

QoS

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

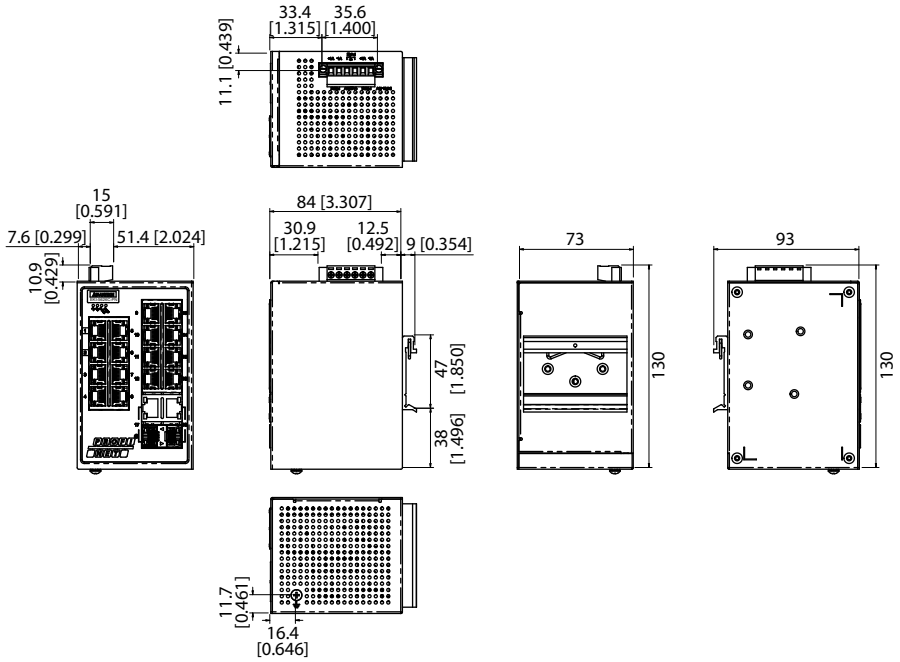
Security

Port Security	Static, Dynamic, MAC address filtering
Authentication	802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption)

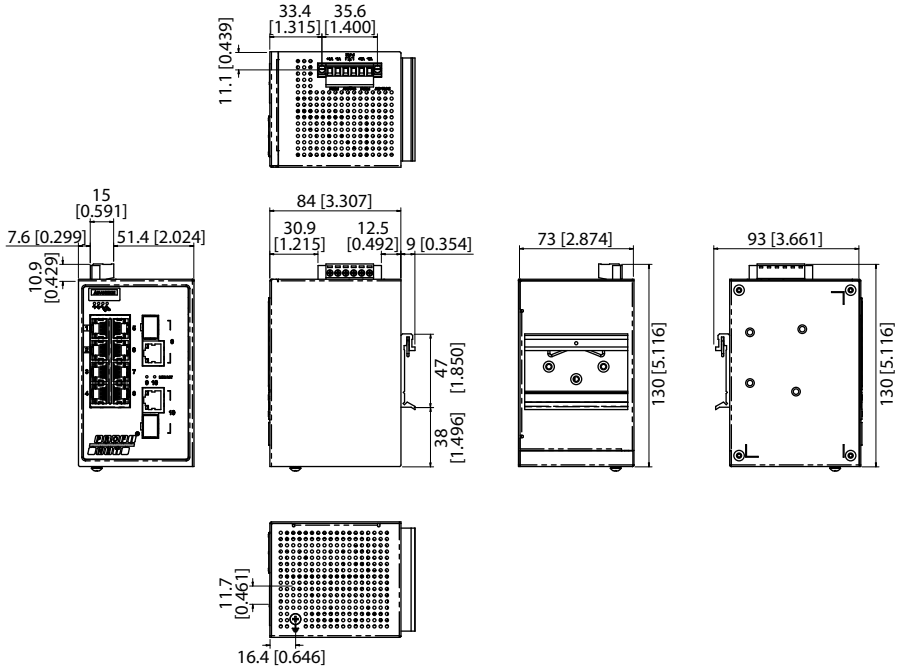
Dimensions

Unit: mm [inch]

EKI-5626C/I-PN



EKI-5629C/I-PN



Management

- **Access** SNMP v1/v2c/v3, WEB, Standard MIB, Private MIB
- **Software upgrade** TFTP, HTTP, Dual Image
- **NTP** SNTP client
- **Data** Syslog
- **Protocols** IPV6, LLDP, PROFINET, Media Redundancy Protocol

Ordering Information

- **EKI-5626C-PN-AE** 16 + 2G Combo ports entry-level managed switch support PROFINET
- **EKI-5626CI-PN-AE** 16 + 2G Combo ports entry-level managed switch support PROFINET w/wide temp.
- **EKI-5629C-PN-AE** 8 + 2G Combo ports entry-level managed switch support PROFINET
- **EKI-5629CI-PN-AE** 8 + 2G Combo ports entry-level managed switch support PROFINET w/wide temp.

EKI-5626C/CI-MB
EKI-5629C/CI-MB

16 + 2G Combo Ports Entry-Level Managed Switch Supporting Modbus/TCP
8 + 2G Combo Ports Entry-Level Managed Switch Supporting Modbus/TCP

Features

- 16 x fast Ethernet ports + 2 x Gigabit copper/SFP combo ports (EKI-5626C/CI-MB) or 8 x fast Ethernet ports + 2 x Gigabit copper/SFP combo ports (EKI-5629C/CI-MB)
- Entry-level managed switch
- IXM function enables fast deployment
- Management: SNMP v1/v2c/v3, WEB, standard MIB, private MIB

Introduction

The EKI-5626C/CI-MB and EKI-5629C/CI-MB are the new generation of entry-level managed switch products. They support basic L2 managed functions such as ring, SNMP, and IGMP. They also support Modbus/TCP and can easily be integrated with SCADA. The devices come with a compact metal housing that is IP30-rated to protect against dusty industrial environments. The wide power input range (8.4 ~ 52.8 V_{DC}) is designed to operate in rugged environments where power may be unstable.

Specifications

Communications

Standard	IEEE 802.3, 802.3u, 802.3x, 802.1D, 802.1w,802.1p, 802.1Q, 802.1X, 802.3AD,802.3az
LAN	10/100BASE-TX
Transmission Distance	Ethernet: UP to 100m (4-wire Cat.5e, Cat.6 RJ-45 cable suggested for Gigabit port) SFP: UP to 110km (depends on SFP)
Transmission Speed Ethernet	Ethernet: 10/100Mbps Auto-Negotiation Gigabit Copper: 10/100/1000Mbps, Auto-Negotiation Gigabit Fiber: UP to 1000Mbps

Interface

I/O Port	EKI-5626C/CI-MB: 16 x RJ-45 + 2 x RJ-45/SFP combo ports EKI-5629C/CI-MB: 8 x RJ-45 + 2 x RJ-45/SFP combo ports
Power Connector	6-pin screw Terminal Block (including relay)

Physical

Enclosure	Metal Shell
Protection Class	IP 30
Installation	DIN-Rail
Dimensions (W x H x D)	74 x 120 x 84 mm (2.91" x 4.72" x 3.31")

LED Display

System LED	PWR1, PWR2, P-Fail, Loop detection
Port LED	Link / Speed / Activity

Environment

Operating Temperature	EKI-5626CI-MB & EKI-5629CI-MB: -40 ~ 75 °C (-40 ~ 167 °F) EKI-5626C-MB & EKI-5629C-MB: -10 ~ 60 °C (14 ~ 140 °F)
Storage Temperature	-40 ~ 85 °C
Ambient Relative Humidity	10 ~ 95% (non-condensing)
Humidity	10 ~ 95% (non-condensing)
MTBF	EKI-5626C/CI-MB: 2,825,281 hours EKI-5629C/CI-MB: 3,183,604 hours

Power

Power Consumption	EKI-5626C/CI-MB: Max 8.2W EKI-5629C/CI-MB: Max 5.8W
Power Input	12 ~ 48 V_{DC} (8.4 ~ 52.8 V_{DC}), redundant dual power input
Fault Output	1 Relay Output

Certification

EMI	CE, FCC Class A
Safety	UL508, Class 1 Division 2, ATEX
EMC	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

L2 Features

L2 MAC Address	8K
Jumbo Frame	9216 Bytes
VLAN Group	256 (VLAN ID 1 ~ 4094)
VLAN Arrange	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
Redundancy	IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring, with ultra high-speed recovery time less than 20ms

QoS

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

Security

Port Security	Static, Dynamic, MAC address filtering
Authentication	802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption)

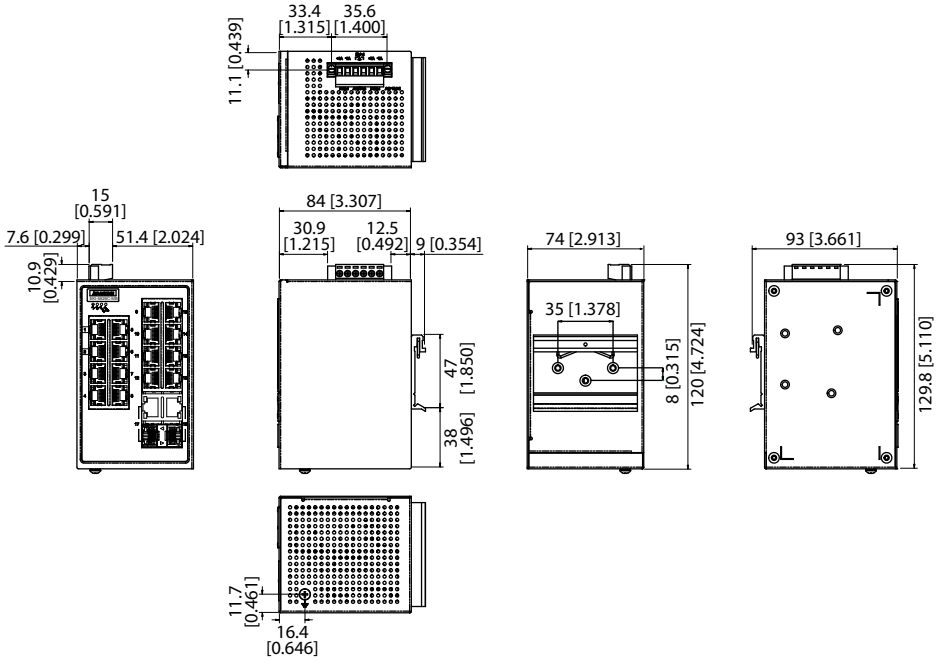
Management

DHCP	Client, Option 82
Access	SNMP v1/v2c/v3, WEB, Standard MIB, Private MIB
Software upgrade	TFTP, HTTP, Dual Image
NTP	SNTP client
Data	Syslog
Protocols	IPV6, LLDP, Modbus/TCP

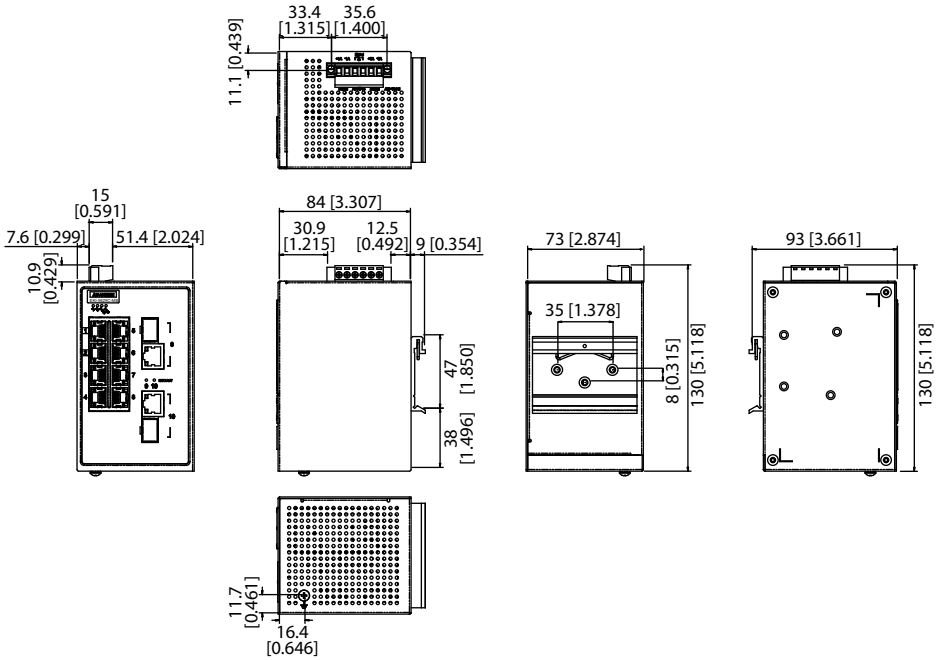
Dimensions

Unit: mm [inch]

EKI-5626C/CI-MB



EKI-5629C/CI-MB



Ordering Information

- **EKI-5626C-MB-AE** 16 + 2G Combo ports entry-level managed switch Support Modbus/TCP
- **EKI-5626CI-MB-AE** 16 + 2G Combo ports entry-level managed switch support Modbus/TCP w/wide temp.
- **EKI-5629C-MB-AE** 8 + 2G Combo ports entry-level managed switch support Modbus/TCP
- **EKI-5629CI-MB-AE** 8 + 2G Combo ports entry-level managed switch support Modbus/TCP w/wide temp.

EKI-5726F / FI

16-Port + 2 SFP Gigabit Ethernet ProView Switch

Features

- Communicates with SCADA software via Modbus/TCP
- Communicates with NMS via SNMP
- Port-based QoS for deterministic data transmission
- Wide operating temperature range of -40 ~ 75°C (EKI-5726FI only)
- Wide power input range of 12 ~ 48 VDC (8.4 ~ 52.8 V_{DC})
- EMS Level 3 protection for extreme outdoor environments
- IEEE 802.3az Energy-Efficient Ethernet
- Jumbo frame support (up to 9,216 Bytes)
- Supports redundant 12 ~ 48 V_{DC} power input and P-Fail relay
- Loop detection

Introduction

The EKI-5726F and EKI-5726FI are the world's first convergence switches for process control and IT networking management. The series use Modbus/TCP to communicate with SCADA software and SNMP to communicate with NMS simultaneously, thereby enabling full read control over devices for control engineers and IT personnel. This line of switches come with the port-based QoS for deterministic data transmission, allowing specific ports to prioritize traffic while delaying less important data via the remaining ports. They use the highest quality components and have an operating temperatures range of -40 ~ 75°C along with EMS Level 3 protection to protect against electromagnetic interference.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x, 802.1p, 802.3az, 802.3ab
- **LAN** 10/100/1000BASE-TX, optional 100BASE-FX, 1000BASE-SX/LX/LHX/XD/ZX/EZX
- **Transmission Distance** Ethernet: UP to 100 m (4-wire Cat.5e, Cat.6 RJ-45 cable suggested for Gigabit port)
  SFP: UP to 110 km (depends on SFP)
- **Transmission Speed** Ethernet: 10/100/1000 Mbps Auto-Negotiation
  Gigabit Copper: 10/100/1000 Mbps, Auto-Negotiation
  Gigabit Fiber: UP to 1000 Mbps

Interface

- **Connectors** 16 x RJ45
  2 x SFP ports
  6-pin removable screw terminal (power & relay)
- **LED Indicators** P1, P2, P-Fail, Loop detection
  10/100/1000T(X): LNK/ACT, Speed
  SFP: LNK/ACT

Switch Properties

- **MAC Table Size** 8K
- **Packet Buffer Size** 4.1M bit
- **Switching Capacity** 36 Gbps
- **Jumbo Frame** 9216 bytes

Power

- **Power Consumption** Max. 9.6W
- **Power Input** 12~48 V_{DC} (8.4~52.8 V_{DC}), redundant dual inputs
- **Fault Output** 1 Relay Output

Mechanism

- **Dimensions (W x H x D)** 74 x 120 x 84 mm
- **Enclosure** IP30, metal shell with solid mounting kits
- **Mounting** DIN-Rail, Wall

Protection

- **Reverse Polarity** Present
- **Overload Current** Present

Environment

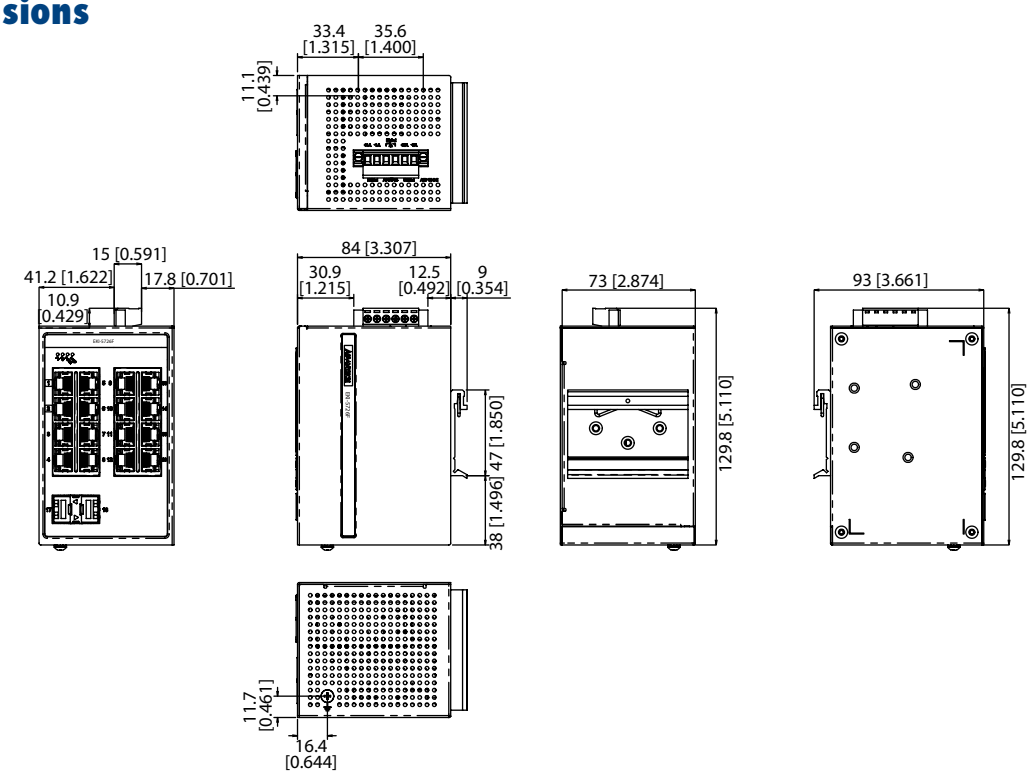
- **Operating Temperature** EKI-5726F: -10~60°C (14~140°F)
  EKI-5726FI: -40~75°C (-40~167°F)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity** 10 ~ 95% (non-condensing)
- **Storage Humidity** 10 ~ 95% (non-condensing)
- **MTBF** 2,788,343 hours

Certification

- **Safety** IEC/EN 60950-1, UL508, Class 1 Division 2, IECEx, ATEX
- **EMC** CE, FCC
- **EMI** FCC Part 15 Subpart B Class A, EN 55011/55022 Class A, EN 61000-6-4
- **EMS** EN 61000-4-2 (Level 3), EN 61000-4-3 (Level 3), EN 61000-4-4 (Level 3), EN 61000-4-5 (Level 3), EN 61000-4-6 (Level 3), EN 61000-4-8 (Level 3)
- **Shock** IEC 60068-2-27
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 60068-2-6

Dimensions

Unit: mm [inch]



Ordering Information

- **EKI-5726F** 16-port+2 SFP Gigabit Ethernet ProView Switch
- **EKI-5726FI** 16-port+2 SFP Gigabit Ethernet ProView Switch with Wide Operating Temperature Range

EKI-5729F / FI

8-Port+2 SFP Gigabit Ethernet ProView Switch

Features

- Communicates with SCADA software via Modbus/TCP
- Communicates with NMS (Networking management system) via SNMP
- Port-based QoS for deterministic data transmission
- Wide operating temperature range of -40 ~ 75°C (EKI-5729FI only)
- Wide range power input of 12 ~ 48 V_{DC} (8.4 ~ 52.8 V_{DC})
- EMS Level 3 protection for extreme outdoor environments
- IEEE 802.3az Energy-Efficient Ethernet
- Jumbo frame support (up to 9,216 Bytes)
- Supports redundant 12 ~ 48 V_{DC} power input and P-Fail relay
- Loop detection

Introduction

The EKI-5729F and EKI-5729FI are the world's first convergence switches for process control and IT networking management. This line of switches use Modbus/TCP to communicate with SCADA software and SNMP to communicate with NMS simultaneously, thereby enabling full read control over devices for control engineers and IT personnel. They come with the port-based QoS for deterministic data transmission, allowing specific ports to prioritize traffic while delaying less important data via the remaining ports. The series use the highest quality components and has a wide operating temperature range of -40 ~ 75°C (EKI-5729FI only) along with EMS Level 3 protection to protect against electromagnetic interference.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x, 802.1p, 802.3az, 802.3ab
- **LAN** 10/100/1000BASE-TX, optional 100BASE-FX, 1000BASE-SX/LX/LHX/XD/ZX/EZX
- **Transmission Distance** Ethernet: UP to 100 m (4-wire Cat.5e, Cat.6 RJ-45 cable suggested for Gigabit port)
  SFP: UP to 110 km (depends on SFP)
- **Transmission Speed** Ethernet: 10/100/1000 Mbps Auto-Negotiation
  Gigabit Copper: 10/100/1000 Mbps, Auto-Negotiation
  Gigabit Fiber: UP to 1000 Mbps

Interface

- **Connectors** 8 x RJ45
  2 x SFP ports
  6-pin removable screw terminal (power & relay)
- **LED Indicators** P1, P2, P-Fail, Loop detection
  10/100/1000T(X): Link/Activity, Speed
  SFP: Link/Activity

Switch Properties

- **MAC Table Size** 8K
- **Packet Buffer Size** 4.1M bit
- **Switching Capacity** 20 Gbps
- **Jumbo Frame** 9216 bytes

Power

- **Power Consumption** Max. 6.8 W
- **Power Input** 12 ~ 48 V_{DC} (8.4 ~ 52.8 V_{DC}), redundant dual inputs
- **Fault Output** 1 Relay Output

Mechanism

- **Dimensions (W x H x D)** 43 x 120 x 84 mm
- **Enclosure** IP30, metal shell with solid mounting kits
- **Mounting** DIN-Rail, Wall

Protection

- **Reverse Polarity** Present
- **Overload Current** Present

Environment

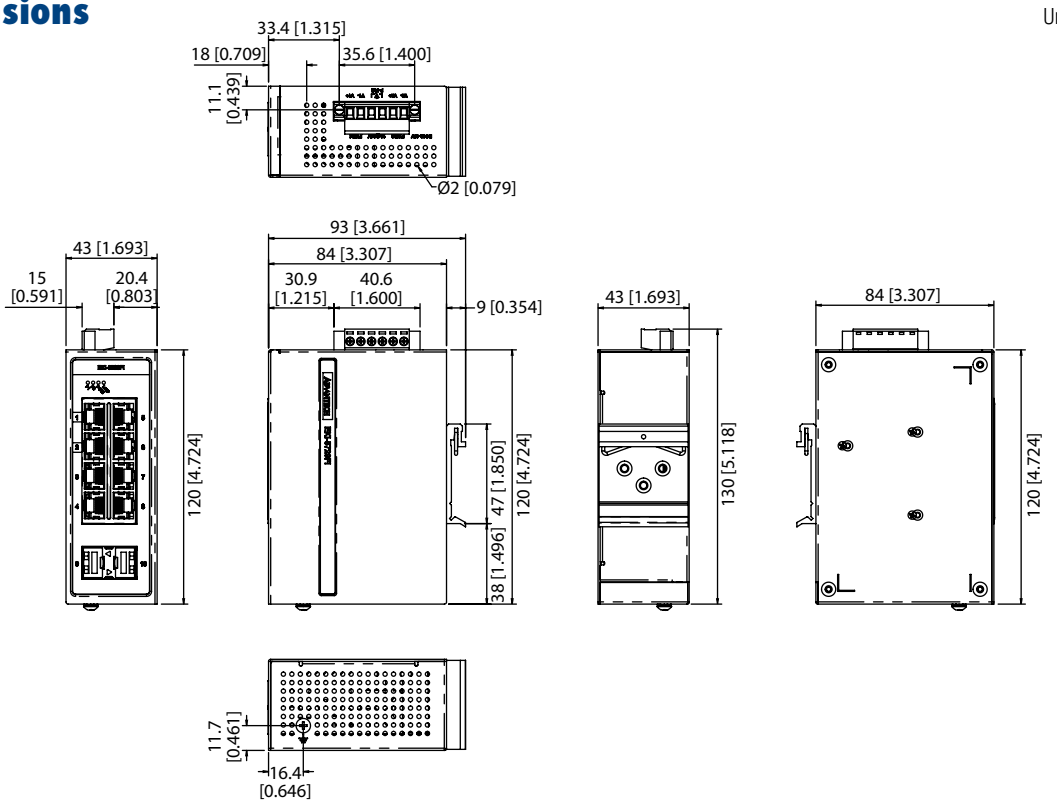
- **Operating Temperature** EKI-5729F: -10 ~ 60°C (14 ~ 140°F)
  EKI-5729FI: -40 ~ 75°C (-40 ~ 167°F)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity** 10 ~ 95% (non-condensing)
- **Storage Humidity** 10 ~ 95% (non-condensing)
- **MTBF** 3,858,286 hours

Certification

- **Safety** IEC/EN 60950-1, UL508, Class 1 Division 2, IECEx, ATEX
- **EMC** CE, FCC, e-Mark
- **EMI** EN 55011/55022 Class A, EN 61000-6-4, FCC Part 15 Subpart B Class A
- **EMS** EN 61000-4-2 (Level 3)
  EN 61000-4-3 (Level 3)
  EN 61000-4-4 (Level 3)
  EN 61000-4-5 (Level 3)
  EN 61000-4-6 (Level 3)
  EN 61000-4-8 (Level 3)
- **Shock** IEC 60068-2-27
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 60068-2-6

Dimensions

Unit: mm [inch]



Ordering Information

- **EKI-5729F** 8-port+2 SFP Gigabit Ethernet ProView Switch
- **EKI-5729FI** 8-port+2 SFP Gigabit Ethernet ProView Switch with Wide Operating Temperature Range

EKI-5725/I
EKI-5728/I

5-Port Gigabit Ethernet ProView Switch

8-Port Gigabit Ethernet ProView Switch

Features

- Communicates with SCADA software via Modbus/TCP
- Communicates with NMS via SNMP
- Port-based QoS for deterministic data transmission
- Wide operating temperature range of -40 ~ 75°C (EKI-5725I and EKI-5728I only)
- Wide power input range of 12 ~ 48V_{DC} (8.4 ~ 52.8V_{DC})
- EMS Level 3 protection for extreme outdoor environments
- IEEE 802.3az Energy-Efficient Ethernet
- Jumbo frame support (up to 9,216 Bytes)
- Supports redundant 12 ~ 48 V_{DC} power input and P-Fail relay
- Loop detection

Introduction

The EKI-5725/I and EKI-5728/I are the world's first convergence switches for process control and IT networking management. This series use Modbus/TCP to communicate with SCADA software and SNMP to communicate with NMS simultaneously, thereby enabling full read control over devices for control engineers or for IT personel. The devices come with the port-based QoS for deterministic data transmission, which allows specific ports to prioritize traffic while delaying less important data via the remaining ports. The EKI-5725/I and EKI-5728/I switches use the highest quality components and can operate in temperatures of -40 ~ 75°C along with EMS Level 3 protection to protect against electromagnetic interference.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x, 802.1p, 802.3az, 802.3ab
- **LAN** 10/100/1000BASE-TX
- **Transmission Distance** Up to 100 m
- **Transmission Speed** Up to 1000 Mbps

Interface

- **Connectors** EKI-5725/I: 5 x RJ45
  EKI-5728/I: 8 x RJ45
  6-pin removable screw terminal (power & relay)
- **LED Indicators** P1, P2, P-Fail, Loop detection
  10/100/1000T(X): Link/Activity, Speed

Switch Properties

- **MAC Table Size** EKI-5725/I: 2K
  EKI-5728/I: 8K
- **Packet Buffer Size** EKI-5725/I: 1M bit
  EKI-5728/I: 4.1M bit
- **Switching Capacity** EKI-5725/I: 10 Gbps
  EKI-5728/I: 16 Gbps
- **Jumbo Frame** 9216 bytes

Power

- **Power Consumption** EKI-5725/I: Max. 2 W
  EKI-5728/I: Max.5.2 W
- **Power Input** 12 ~ 48 V_{DC} (8.4 ~ 52.8 V_{DC}), redundant dual inputs
- **Fault Output** 1 Relay Output

Mechanism

- **Dimensions (W x H x D)** EKI-5725/I: 27 x 120 x 84 mm
  EKI-5728/I: 43 x 120 x 84 mm
- **Enclosure** IP30, metal shell with solid mounting kits
- **Mounting** DIN-Rail, Wall

Protection

- **Reverse Polarity** Present
- **Overload Current** Present

Environment

- **Operating Temperature** EKI-5725 & EKI-5728: -10 ~ 60°C (14 ~ 140°F)
  EKI-5725I & EKI-5728I: -40 ~ 75°C (-40 ~ 167°F)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity** 10 ~ 95% (non-condensing)
- **Storage Humidity** 10 ~ 95% (non-condensing)
- **MTBF** EKI-5725/I: 5,168,110 hours
  EKI-5728/I: 4,176,861 hours

Certification

- **Safety** IEC/EN 60950-1, UL508, Class 1 Division 2, IECEx, ATEX
- **EMC** CE, FCC, e-Mark(EKI-5728/5728I only)
- **EMI** EN 55011/55022 Class A, EN 61000-6-4, FCC Part 15 Subpart B Class A
- **EMS** EN 61000-4-2 (Level 3)
  EN 61000-4-3 (Level 3)
  EN 61000-4-4 (Level 3)
  EN 61000-4-5 (Level 3)
  EN 61000-4-6 (Level 3)
  EN 61000-4-8 (Level 3)
- **Shock** IEC 60068-2-27
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 60068-2-6

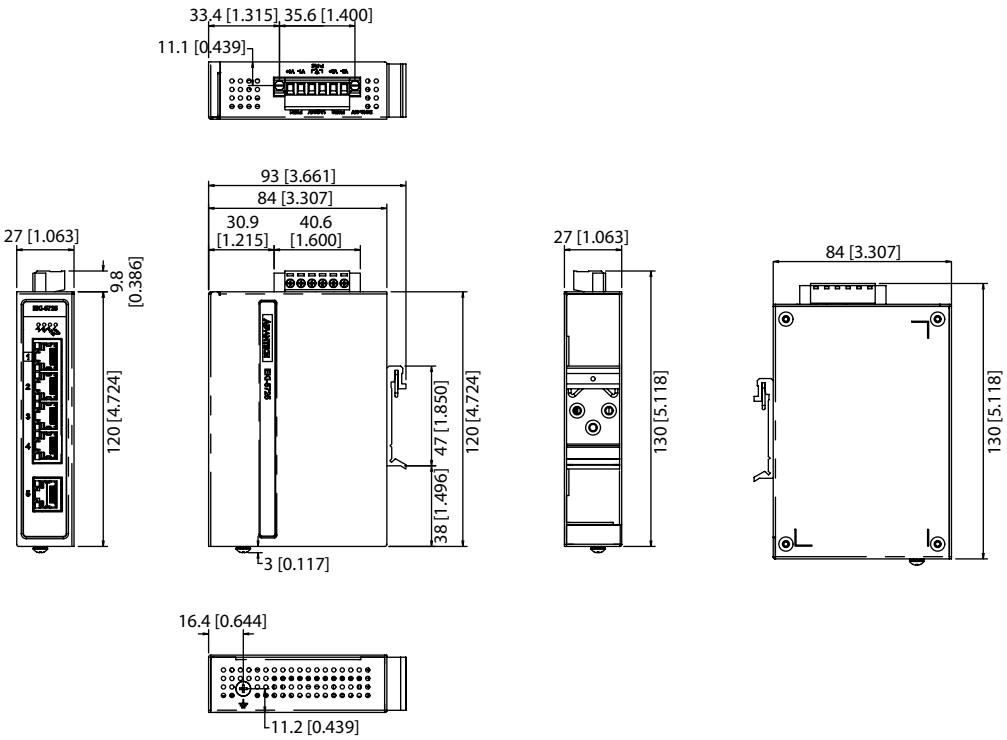
Ordering Information

- **EKI-5725** 5-port Gigabit Ethernet ProView Switch
- **EKI-5725I** 5-port Gigabit Ethernet ProView Switch with Wide Temperature
- **EKI-5728** 8-port Gigabit Ethernet ProView Switch
- **EKI-5728I** 8-port Gigabit Ethernet ProView Switch with Wide Temperature

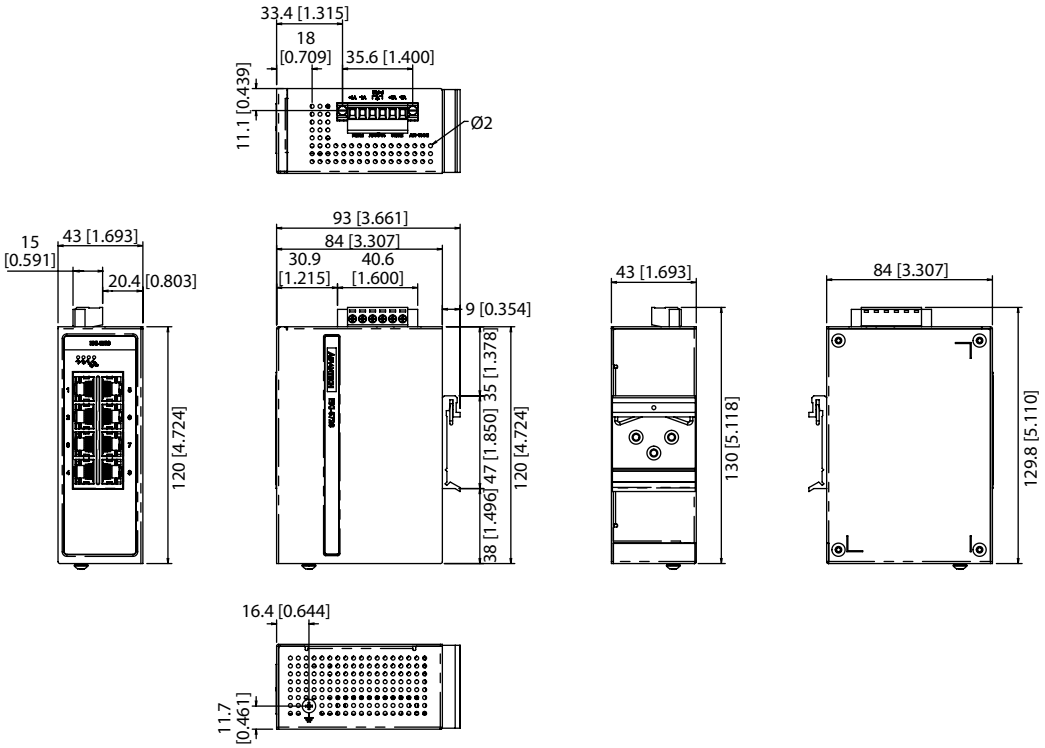
Dimensions

Unit: mm [inch]

EKI-5725/I



EKI-5728/I



EKI-5629C/CI
EKI-5626C/CI

8FE + 2GE Combo Ethernet ProView Switch

16FE + 2GE Combo Ethernet ProView Switch

Features

- Communicates with SCADA software via Modbus/TCP
- Communicates with NMS via SNMP
- Port-based QoS for deterministic data transmission
- Wide operating temperature range of -40 ~ 75°C (EKI-5629CI/5626CI only)
- EMS Level 3 protection for extreme outdoor environments
- Wide power input range of 12 ~ 48 V_{DC} (8.4 ~ 52.8 V_{DC})
- IEEE 802.3az Energy-Efficient Ethernet
- Jumbo Frame Support (up to 9,216 Bytes)
- Supports redundant 12 ~ 48 V_{DC} power input and P-Fail relay
- Loop detection

Introduction

The EKI-5629C/CI and EKI-5626C/CI are the world's first convergence switches for process control and IT networking management. This series uses Modbus/TCP to communicate with SCADA software and SNMP to communicate with NMS simultaneously, thereby allowing full read control over the devices either for control engineers and IT personnel. The devices come with the port-based QoS for deterministic data transmission, allowing enabling specific ports to prioritize traffic while delaying less important data via the remaining ports. The EKI-5629C/CI and EKI-5626C/CI use the highest quality components and can operate in temperatures of -40 ~ 75°C with EMS Level 3 protection against electromagnetic interference.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x, 802.1p, 802.3az , 802.3ab
- **LAN** 10/100/1000BASE-TX, optional 100BASE-FX, 1000BASE-SX/LX/LHX/XD/ZX/EZX
- **Transmission Distance** Ethernet: UP to 100m (4-wire Cat.5e, Cat.6 RJ-45 cable suggested for Gigabit port)
  SFP: UP to 110km (depends on SFP)
- **Transmission Speed** Ethernet: 10/100Mbps Auto-Negotiation
  Gigabit Copper: 10/100/1000Mbps, Auto-Negotiation
  Gigabit Fiber: UP to 1000Mbps

Interface

- **Connectors** EKI-5629C/CI: 8 x Fast Ethernet (RJ45) + 2 x Giga (RJ45/SFP) combo ports
  EKI-5626C/CI:16 x Fast Ethernet (RJ45) + 2 x Giga (RJ45/SFP) combo ports
  6-pin removable screw terminal (power & relay)
- **LED Indicators** P1, P2, P-Fail, Loop detection
  10/100T(X): Link/Activity, Speed
  Gigabit Copper: Link/Activity, Speed (1000 Mbps)
  SFP: Lin k/Activity

Switch Properties

- **MAC Table Size** 8K
- **Packet Buffer Size** 4.1M bit
- **Switch Capacity** EKI-5629C/CI: 5.6 Gbps
  EKI-5626C/CI: 7.2 Gbps
- **Jumbo Frame** 9216 bytes

Power

- **Power Consumption** EKI-5629C/CI: 5.8W
  EKI-5626C/CI: 8.2W
- **Power Input** 12 ~ 48 V_{DC} (8.4 ~ 52.8 V_{DC}), redundant dual inputs
- **Fault Output** 1 Relay Output

Mechanism

- **Dimensions (W x H x D)** 74 x 120 x 84 mm
- **Enclosure** IP30, metal shell with solid mounting kits
- **Mounting** DIN-Rail, Wall

Protection

- **Reverse Polarity** Present
- **Overload Current** Present

Environment

- **Operating Temperature** EKI-5629C/5626C: -10 ~ 60°C (14 ~ 140°F)
  EKI-5629CI/5626CI: -40 ~ 75°C (-40 ~ 167°F)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity** 10 ~ 95% (non-condensing)
- **Storage Humidity** 10 ~ 95% (non-condensing)
- **MTBF** EKI-5629C/CI: 3,183,604 hours
  EKI-5626C/CI: 2,825,281 hours

Certification

- **Safety** IEC/EN 60950-1, UL508, Class 1 Division 2, IECEx, ATEX
- **EMI** FCC Part 15 Subpart B Class A, EN 55011/55022 Class A
- **EMS** EN 61000-4-2 (Level 3)
  EN 61000-4-3 (Level 3)
  EN 61000-4-4 (Level 3)
  EN 61000-4-5 (Level 3)
  EN 61000-4-6 (Level 3)
  EN 61000-4-8 (Level 3)
- **Shock** IEC 60068-2-27
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 60068-2-6

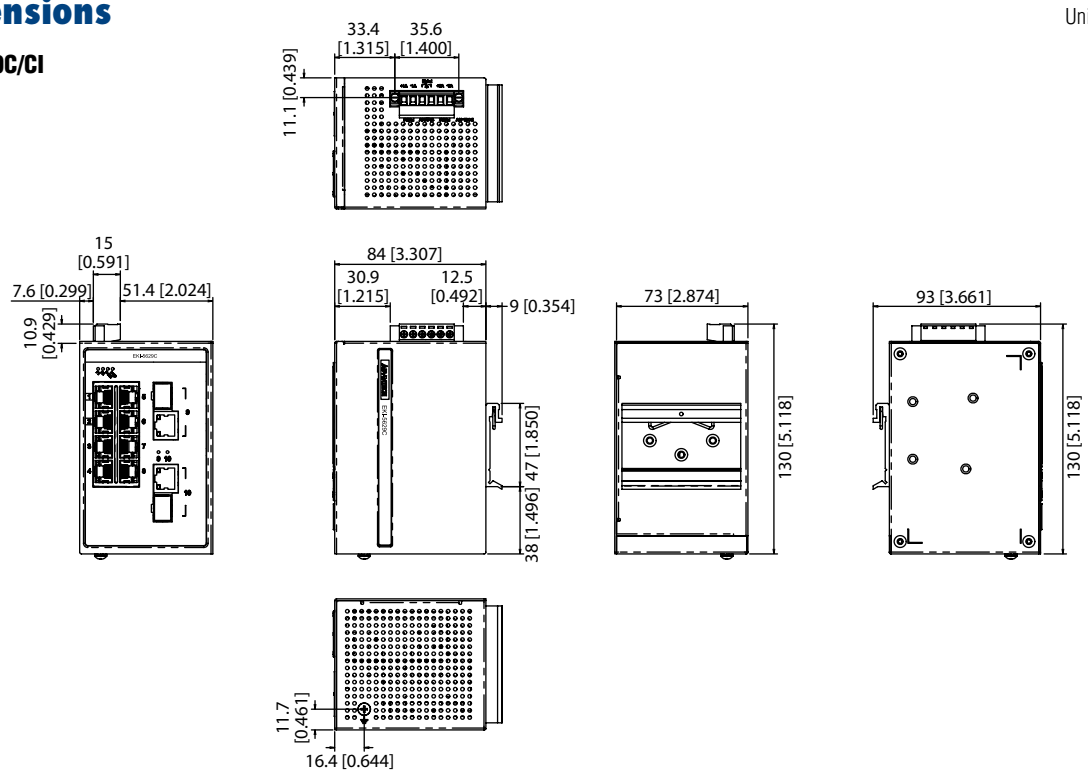
Ordering Information

- **EKI-5629C** 8FE + 2GE Combo Ethernet ProView Switch
- **EKI-5629CI** 8FE + 2GE Combo Ethernet ProView Switch with Wide Temperature
- **EKI-5626C** 16FE + 2GE Combo Ethernet ProView Switch
- **EKI-5626CI** 16FE + 2GE Combo Ethernet ProView Switch with Wide Temperature

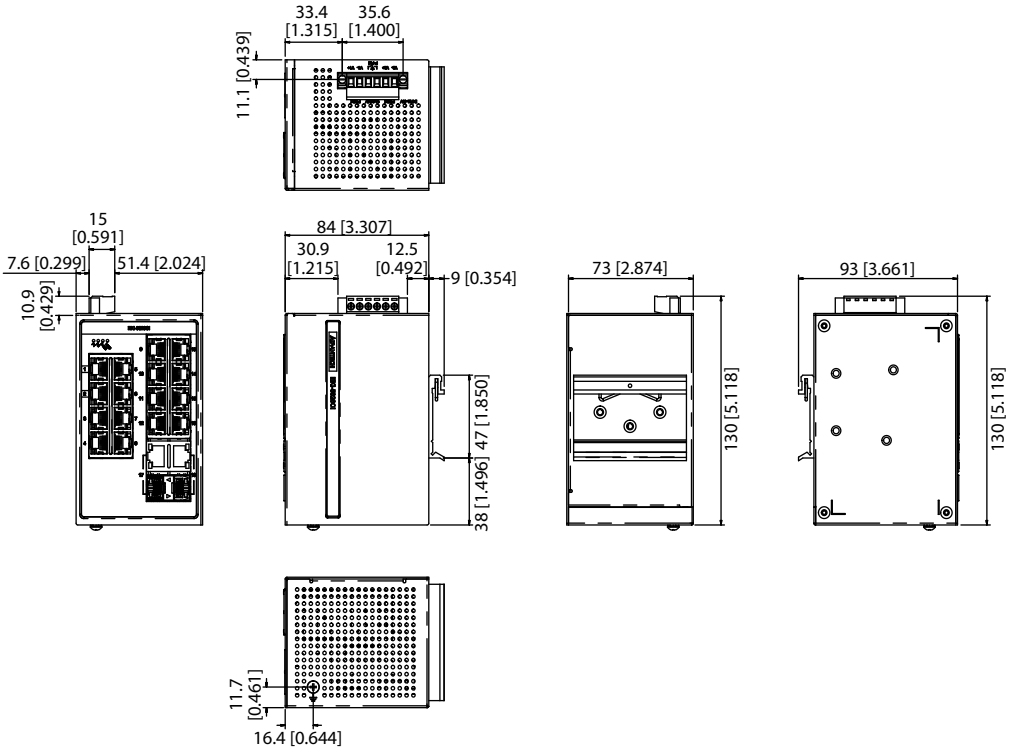
Dimensions

Unit: mm [inch]

EKI-5629C/CI



EKI-5626C/CI



EKI-5525/I
EKI-5528/I

5-Port Fast Ethernet ProView Switch

8-Port Fast Ethernet ProView Switch

Features

- Communicates with SCADA software via Modbus/TCP
- Communicates with NMS (Networking management system) via SNMP
- Port-based QoS for deterministic data transmission
- Wide operating temperature range of -40 ~ 75°C (EKI-5525I and EKI-5528I only)
- Wide power input range of 12 ~ 48 V_{DC} (8.4 ~ 52.8 V_{DC})
- EMS Level 3 protection for extreme outdoor environments
- IEEE 802.3az Energy-Efficient Ethernet
- Jumbo frame support
- Supports redundant 12 ~ 48 V_{DC} power input and P-Fail relay
- Loop detection

Introduction

The EKI-5525/I and EKI-5528/I are the world's first convergence switches for process control and IT networking management. This series use Modbus/TCP to communicate with SCADA software and SNMP to communicate with NMS simultaneously, thereby enabling full read control over devices for control engineers or for IT personnel. The switches come with the port-based QoS for deterministic data transmission, allowing specific ports to prioritize traffic while delaying less important data via the remaining ports. This series of switches use the highest quality components and can operate temperatures of -40 ~ 75°C with EMS Level 3 protection against electromagnetic interference.

Specifications

Communications

Standard	IEEE 802.3, 802.3u, 802.3x, 802.1p, 802.3az
LAN	10/100BASE-TX
Transmission Distance	Up to 100 m
Transmission Speed	Up to 100 Mbps

Interface

Connectors	EKI-5525/I: 5 x RJ45 EKI-5528/I: 8 x RJ45 6-pin removable screw terminal (power & relay)
LED Indicators	P1, P2, P-Fail, Loop detection 10/100T (X): Link/Activity, Speed

Switch Properties

MAC Table Size	EKI-5525/I: 2K EKI-5528/I: 8K
Packet Buffer Size	EKI-5525/I: 1M bit EKI-5528/I: 128K bit
Switching Capacity	EKI-5525/I: 1Gbps EKI-5528/I: 1.6 Gbps
Jumbo Frame	EKI-5525/I: 9216 bytes EKI-5528/I: 2048 bytes

Power

Power Consumption	EKI-5525/I: Max. 2 W EKI-5528/I: Max.3.6 W
Power Input	12 ~ 48 V_{DC} (8.4 ~ 52.8 V_{DC}), redundant dual inputs
Fault Output	1 Relay Output

Mechanism

Dimensions (W x H x D)	EKI-5525/I: 27 x 120 x 84 mm EKI-5528/I: 43 x 120 x 84 mm
Enclosure	IP30, metal shell with solid mounting kits
Mounting	DIN-Rail, Wall

Protection

Reverse Polarity	Present
Overload Current	Present

Environment

Operating Temperature	EKI-5525 & EKI-5528: -10 ~ 60°C (14 ~ 140°F) EKI-5525I & EKI-5528I: -40 ~ 75°C (-40 ~ 167°F)
Storage Temperature	-40 ~ 85°C (-40 ~ 185°F)
Operating Humidity	10 ~ 95% (non-condensing)
Storage Humidity	10 ~ 95% (non-condensing)
MTBF	EKI-5525/I: 5,168,110 hours EKI-5528/I: 5,235,270 hours

Certification

Safety	IIEC/EN60950, UL60950, UL508, Class 1 Division 2, ATEX
EMI	FCC Part 15 Subpart B Class A, EN 55011/55022 Class A
EMS	EN 61000-4-2 (Level 3) EN 61000-4-3 (Level 3) EN 61000-4-4 (Level 3) EN 61000-4-5 (Level 3) EN 61000-4-6 (Level 3) EN 61000-4-8 (Level 3)
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6

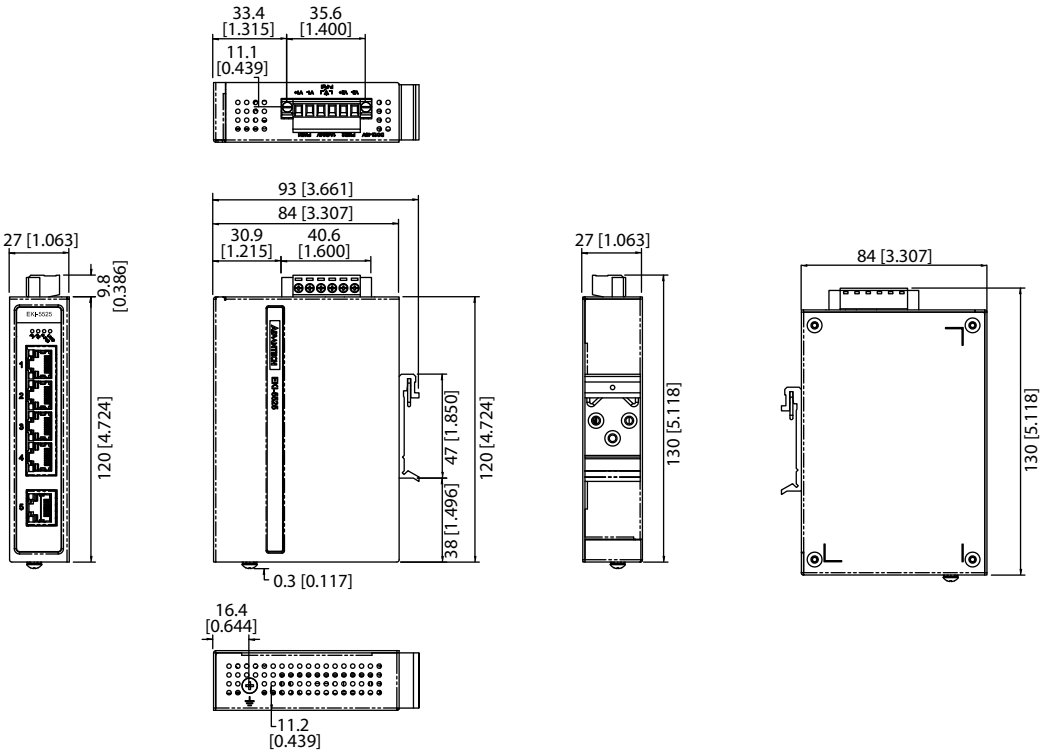
Ordering Information

EKI-5525	5-port Fast Ethernet ProView Switch
EKI-5525I	5-port Fast Ethernet ProView Switch with Wide Temperature
EKI-5528	8-port Fast Ethernet ProView Switch
EKI-5528I	8-port Fast Ethernet ProView Switch with Wide Temperature

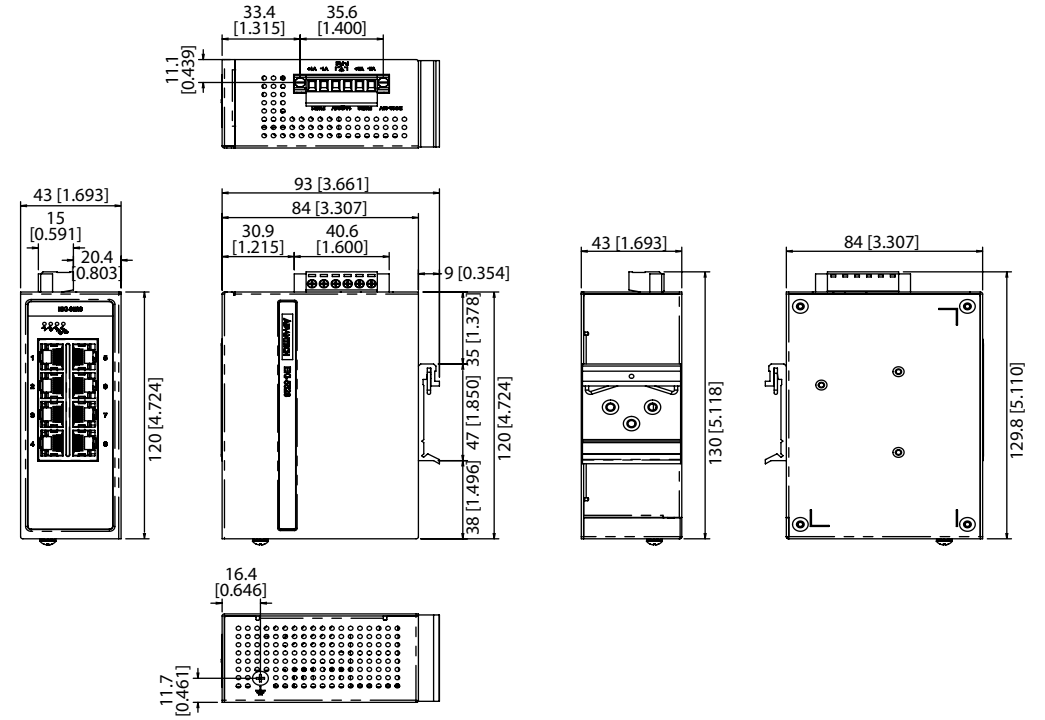
Dimensions

Unit: mm [inch]

EKI-5525



EKI-5528



EKI-5525S/M Series

4-Port +1x100FX Port (Single/Multi-Mode, SC/ST-Type), Fast Ethernet ProView Switch

Features

- Communicates with SCADA software via Modbus/TCP
- Communicates with NMS via SNMP
- Port-based QoS for deterministic data transmission
- Wide operating temperature range of -40 ~ 75°C (EKI-5525SI/SI-ST and EKI-5525MI/MI-ST only)
- Wide power input range of 12 ~ 48 V_{DC} (8.4 ~ 52.8 V_{DC})
- EMS Level 3 protection for extreme outdoor environments
- IEEE 802.3az Energy-Efficient Ethernet
- Jumbo frame support
- Supports redundant 12 ~ 48 V_{DC} power input and P-Fail relay
- Loop detection

Introduction

The EKI-5525S/SI/S-ST/SI-ST and EKI-5525M/MI/M-ST/MI-ST series are the world's first convergence switches for process control and IT networking management. This series use Modbus/TCP to communicate with SCADA software and SNMP to communicate with NMS simultaneously, thereby enabling full read control over devices for control engineers or for IT personnel. The switches come with the port-based QoS for deterministic data transmission, allowing specific ports to prioritize traffic while delaying less important data via the remaining ports. This series of switches use the highest quality components and can operate temperatures of -40 ~ 75°C with EMS Level 3 protection against electromagnetic interference.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x, 802.1p, 802.3az
- **LAN** 10/100BASE-TX, 100BASE-FX
- **Transmission Distance** Ethernet: Up to 100 m
  Multi-mode Fiber: Up to 2 km (EKI-5525M Series)
  Single-mode Fiber: Up to 30 km (EKI-5525S Series)
- **Optical Fiber**
  Multi-Mode (EKI-5525M/MI/M-ST/MI-ST)
  Wavelength:1310nm
  Tx Power: -14/-20 dBm
  Rx Sensitivity: -32 dBm
  Parameters: 50/125 um, 62.5/125 um
  Single-Mode (EKI-5525S/SI/S-ST/SI-ST)
  Wavelength: 1310 nm
  Tx Power: -8/-15 dBm
  Rx Sensitivity: -34 dBm
  Parameters: 9/125 um
- **Transmission Speed** Up to 100 Mbps

Interface

- **Connectors** 4 x RJ45 ports
  1 x SC/ST type fiber optic connectors
  6-pin screw Terminal Block (including relay)
- **LED Indicators** P1,P2, P-Fail, Loop detection
  10/100T(X): Link/Activity, Speed

Switch Properties

- **MAC Table Size** 2K
- **Packet Buffer Size** 1M bit
- **Switching Capacity** 1 Gbps
- **Jumbo Frame** 9216 bytes

Power

- **Power Consumption** Max. 2.8 W
- **Power Input** 12 ~ 48 V_{DC} (8.4 ~ 52.8 V_{DC}), redundant dual inputs
- **Fault Output** 1 Relay Output

Mechanism

- **Dimensions (W x H x D)** 27 x 120 x 84 mm
- **Enclosure** IP30, metal shell with solid mounting kits
- **Mounting** DIN-Rail, Wall

Protection

- **Reverse Polarity** Present
- **Overload Current** Present

Environment

- **Operating Temperature** EKI-5525S/S-ST/M/M-ST: -10 ~ 60°C (14 ~ 140°F)
  EKI-5525SI/SI-ST/MI/MI-ST: -40 ~ 75°C (-40 ~ 167°F)
- **Storage Temperature** -40 ~ 75°C (-40 ~ 167°F)
- **Operating Humidity** 10 ~ 95% (non-condensing)
- **Storage Humidity** 10 ~ 95% (non-condensing)
- **MTBF** 282,703 hours

Certification

- **Safety** IEC/EN 60950-1, UL508, Class 1 Division 2, ATEX, IECEx
- **EMC** CE, FCC
- **EMI** EN 55011/55022 Class A, EN 61000-6-4, FCC Part 15 Subpart B Class A
- **EMS** EN61000-4-2 (ESD) Level 3
  EN61000-4-3 (RS) Level 3
  EN61000-4-4 (EFT) Level 3
  EN61000-4-5 (Surge) Level 3
  EN61000-4-6 (CS) Level 3
  EN61000-4-8 (Magnetic Field) Level 3
- **Shock** IEC 60068-2-27
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 60068-2-6

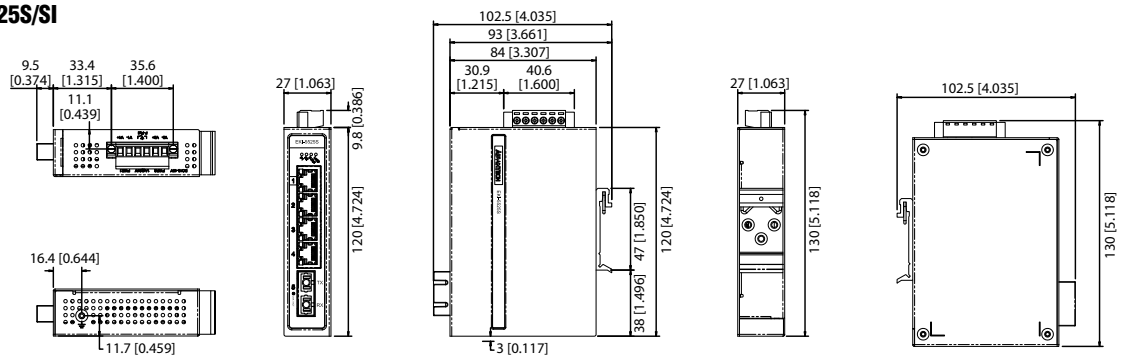
Ordering Information

- **EKI-5525S** 4-port +1 x100FX port (Single -mode, SC type), Fast Ethernet ProView Switch
- **EKI-5525SI** 4-port + 1 x100FX port (Single-mode, SC type), Fast Ethernet ProView Switch with Wide Temperature
- **EKI-5525M** 4-port + 1 x100FX port (Multi-mode, SC type), Fast Ethernet ProView Switch
- **EKI-5525MI** 4-port + 1 x100FX port (Multi-mode, SC type), Fast Ethernet ProView Switch with Wide Temperature
- **EKI-5525S-ST** 4-port + 1 x100FX port (Single-mode, ST type), Fast Ethernet ProView Switch
- **EKI-5525SI-ST** 4-port + 1 x100FX port (Single-mode, ST type), Fast Ethernet ProView Switch with Wide Temperature
- **EKI-5525M-ST** 4-port + 1 x100FX port (Multi-mode, ST type), Fast Ethernet ProView Switch
- **EKI-5525MI-ST** 4-port + 1 x100FX port (Multi-mode, ST type), Fast Ethernet ProView Switch with Wide Temperature

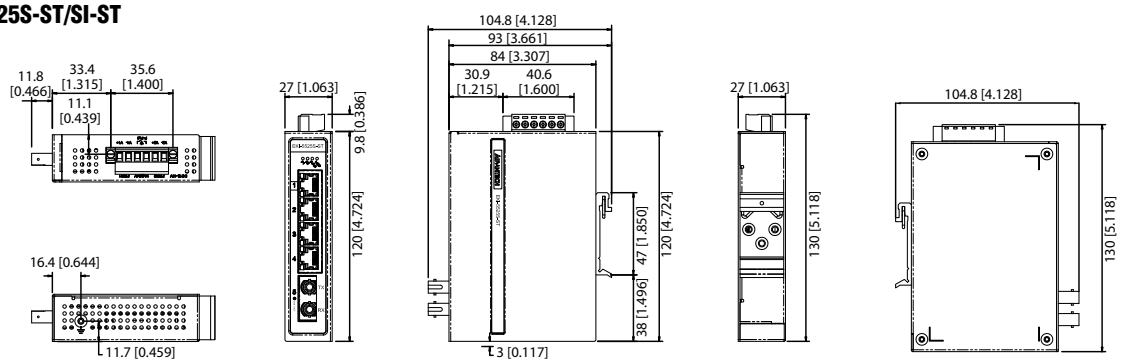
Dimensions

Unit: mm [inch]

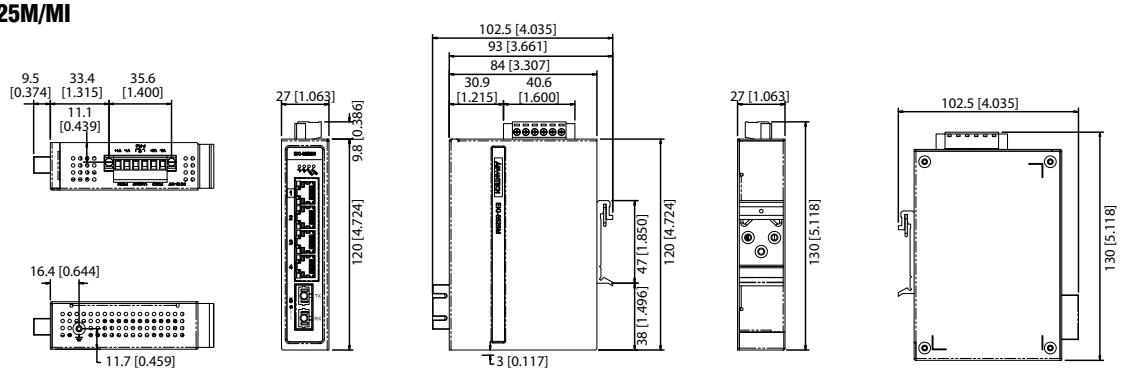
EKI-5525S/SI



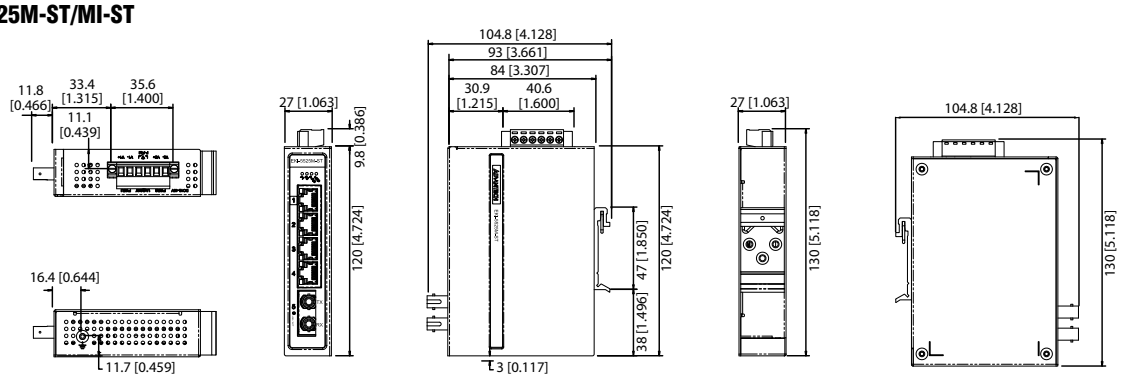
EKI-5525S-ST/SI-ST



EKI-5525M/MI



EKI-5525M-ST/MI-ST



EKI-5524SS/MM Series

4-Port + 2x100FX port (Single/Multi-Mode, SC/ST-Type), Fast Ethernet ProView Switch

Features

- Communicates with SCADA software via Modbus/TCP
- Communicates with NMS via SNMP
- Port-based QoS for deterministic data transmission
- Wide operating temperature range of -40 ~ 75°C (EKI-5524SSI/SSI-ST and EKI-5524MMI/MMI-ST only)
- Wide power input range of 12 ~ 48 V_{DC} (8.4 ~ 52.8 V_{DC})
- EMS Level 3 protection for extreme outdoor environments
- IEEE 802.3az Energy-Efficient Ethernet
- Jumbo frame support
- Supports redundant 12 ~ 48 V_{DC} power input and P-Fail relay
- Loop detection

Introduction

The EKI-5524SS/SSI/SS-ST/SSI-ST and EKI-5524MM/MMI/MM-ST/MMI-ST are the world's first convergence switches for process control and IT networking management. This series use Modbus/TCP to communicate with SCADA software and SNMP to communicate with NMS simultaneously, thereby enabling full read control over devices for control engineers or for IT personnel. The switches come with the port-based QoS for deterministic data transmission, allowing specific ports to prioritize traffic while delaying less important data via the remaining ports. This series of switches use the highest quality components and can operate temperatures of -40 ~ 75°C with EMS Level 3 protection against electromagnetic interference.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x, 802.1p, 802.3az
- **LAN** 10/100BASE-TX, 100BASE-FX
- **Transmission Distance** Ethernet: Up to 100 m
  Multi-mode Fiber: Up to 2 km (EKI-5524MM Series)
  Single-mode Fiber: Up to 30 km (EKI-5524SS Series)
- **Optical Fiber**
  Multi-Mode (EKI-5524MM/MMI/MM-ST/MMI-ST)
  Wavelength:1310nm
  Tx Power: -14/-20 dBm
  Rx Sensitivity: -32 dBm
  Parameters: 50/125 um, 62.5/125 um
  Single-Mode (EKI-5524SS/SSI/SS-ST/SSI-ST)
  Wavelength: 1310 nm
  Tx Power: -8/-15 dBm
  Rx Sensitivity: -34 dBm
  Parameters: 9/125 um
- **Transmission Speed** Up to 100 Mbps

Interface

- **Connectors** 4 x RJ45 ports
  2 x SC/ST type fiber optic connectors
  6-pin screw Terminal Block (including relay)
- **LED Indicators** P1,P2, P-Fail, Loop detection
  10/100T(X): Link/Activity, Speed

Switch Properties

- **MAC Table Size** 2K
- **Packet Buffer Size** 1M bit
- **Switching Capacity** 1.2 Gbps
- **Jumbo Frame** 9216 bytes

Power

- **Power Consumption** Max. 4 W
- **Power Input** 12 ~ 48 V_{DC} (8.4 ~ 52.8 V_{DC}), redundant dual inputs
- **Fault Output** 1 Relay Output

Mechanism

- **Dimensions (W x H x D)** 43 x 120 x 84 mm
- **Enclosure** IP30, metal shell with solid mounting kits
- **Mounting** DIN-Rail, Wall

Protection

- **Reverse Polarity** Present
- **Overload Current** Present

Environment

- **Operating Temperature** EKI-5524SS/SS-ST/MM/MM-ST: -10 ~ 60°C (14 ~ 140°F)
  EKI-5524SSI/SSI-ST/MMI/MMI-ST: -40 ~ 75°C (-40 ~ 167°F)
- **Storage Temperature** -40 ~ 75°C (-40 ~ 167°F)
- **Operating Humidity** 10 ~ 95% (non-condensing)
- **Storage Humidity** 10 ~ 95% (non-condensing)
- **MTBF** 144,890 hours

Certification

- **Safety** IEC/EN 60950-1, UL508, Class 1 Division 2, IECEx, ATEX
- **EMC** CE, FCC
- **EMI** EN 55011/55022 Class A, EN 61000-6-4, FCC Part 15 Subpart B Class A
- **EMS** EN61000-4-2 (ESD) Level 3
  EN61000-4-3 (RS) Level 3
  EN61000-4-4 (EFT) Level 3
  EN61000-4-5 (Surge) Level 3
  EN61000-4-6 (CS) Level 3
  EN61000-4-8 (Magnetic Field) Level 3
- **Shock** IEC 60068-2-27
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 60068-2-6

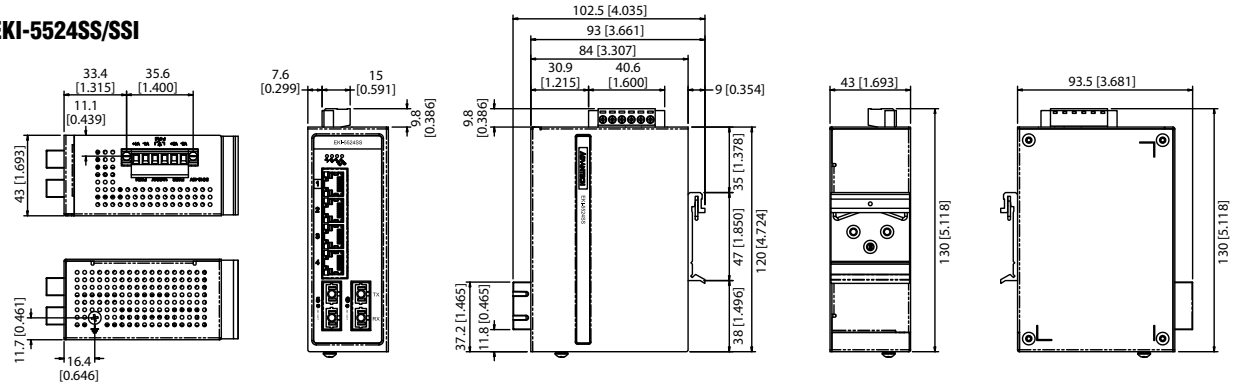
Ordering Information

- **EKI-5524SS** 4-port +2x100FX port (Single -mode, SC type), Fast Ethernet ProView Switch
- **EKI-5524SSI** 4-port + 2x100FX port (Single-mode, SC type), Fast Ethernet ProView Switch with Wide Temperature
- **EKI-5524MM** 4-port + 2 x100FX port (Multi-mode,SC type), Fast Ethernet ProView Switch
- **EKI-5524MMI** 4-port + 2 x100FX port (Multi-mode,SC type), Fast Ethernet ProView Switch with Wide Temperature
- **EKI-5524SS-ST** 4-port + 2 x100FX port (Single-mode,ST type), Fast Ethernet ProView Switch
- **EKI-5524SSI-ST** 4-port + 2 x100FX port (Single-mode,ST type), Fast Ethernet ProView Switch with Wide Temperature
- **EKI-5524MM-ST** 4-port + 2 x100FX port (Multi-mode,ST type), Fast Ethernet ProView Switch
- **EKI-5524MMI-ST** 4-port + 2 x100FX port (Multi-mode,ST type), Fast Ethernet ProView Switch with Wide Temperature

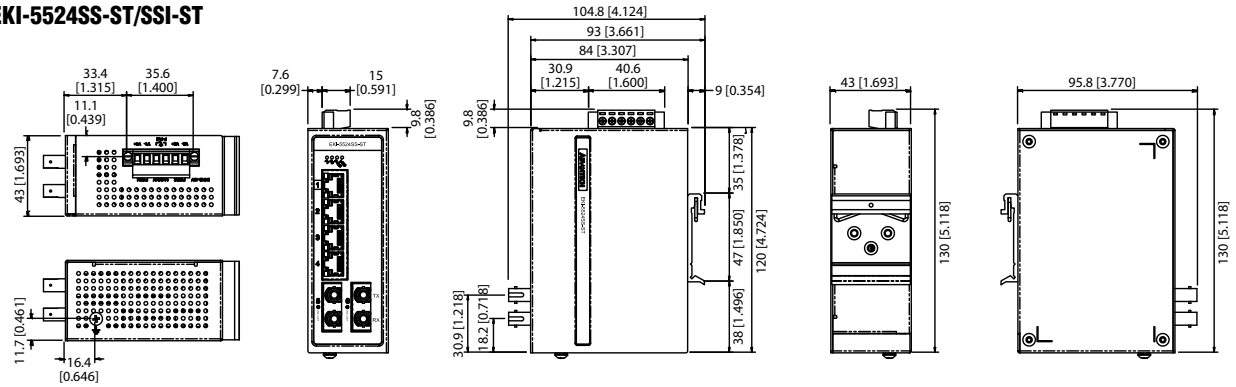
Dimensions

Unit: mm [inch]

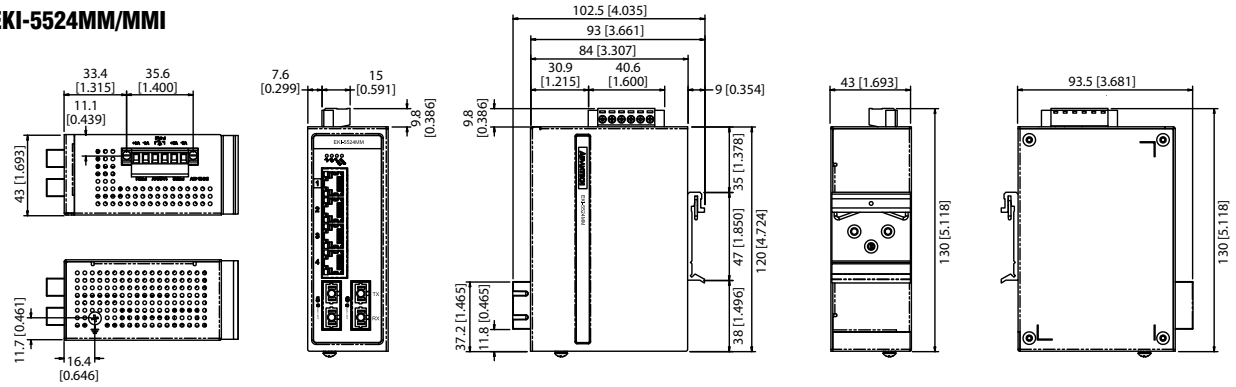
EKI-5524SS/SSI



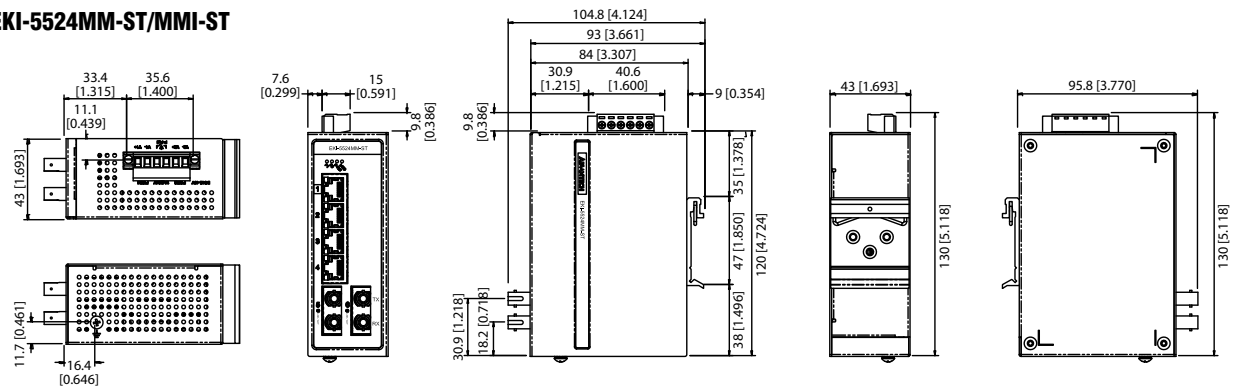
EKI-5524SS-ST/SSI-ST



EKI-5524MM/MMI



EKI-5524MM-ST/MMI-ST



EKI-2728MI

6G+2G Multi-Mode Unmanaged Ethernet Switch with Wide Temperature Support

Features

- Supports 10/100/1000 Mbps auto negotiation
- Supports jumbo frame transmission up to 9 KB
- Slim size, DIN rail with IP30 metal mechanism
- Provides broadcast storm protection
- Redundant DC power supply and one removable AC power input

Introduction

The EKI-2728MI is a cost-effective unmanaged industrial Ethernet switch that supports Gigabit Ethernet. It also features green power requirements and supports advanced network standards to optimize network performance, reduce maintenance costs, and ensure network security.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x, 802.1ab, 802.1z
- **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 V_{DC}, 24 V_{AC} (18 ~ 30 V_{AC})
- **Fault Output** 1 Relay Output, 1 A @ 24 V_{DC}

Protection

- **Power Reverse** Present

Environment

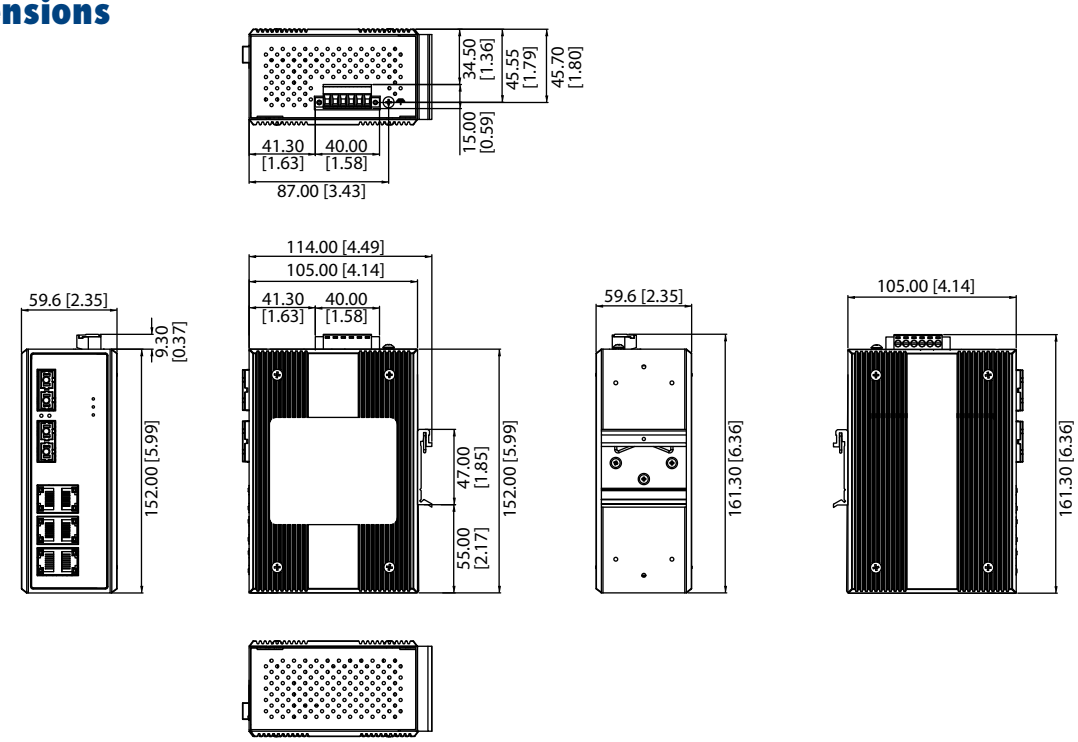
- **Operating Temperature** -40 ~ 75 °C (-40 ~ 167 °F)
- **Storage Temperature** -40 ~ 85 °C (-40 ~ 185 °F)
- **Operating Humidity** 5 ~ 95% (non-condensing)
- **Storage Humidity** 0 ~ 95% (non-condensing)
- **MTBF** 505,863 hours

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

Dimensions

Unit: [mm]



Panel Cut-out Dimensions: 114 x 152 x 59.6 mm (4.49" x 5.99" x 2.35")

Ordering Information

- **EKI-2728MI** 6Gx+2 Multi-mode Fiber Unmanaged Ethernet Switch w/ Wide Temp

EKI-2725/I

5-Port Gigabit Unmanaged Industrial Ethernet Switch

Features

- 5 x Gigabit Ethernet ports with auto MDI/MDI-X
- Supports 10/100/1000 Mbps auto negotiation
- Supports jumbo frame transmission up to KB
- Provides slim size, DIN rail with IP30 metal mechanism
- Redundant 12 ~ 48 V_{DC} power input and P-Fail relay

Introduction

The EKI-2725 supports Gigabit Ethernet, has a +12 ~ 48 V_{DC} redundant input design, and is secured with a double protection mechanism: power polarity reverse protect and an overload current fuse. The former tolerates reverse power wiring while the latter secures the system from overload currents. Each port of the EKI-2725 has 2 LEDs to show the link status transmission speed and collision status and a relay output for alarm events. In the case of 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 perform troubleshooting easily and quickly. The EKI-2725 comes in a compact metal housing with an IP30 rating to protect against dusty industrial environments.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x, 802.3ab
- **LAN** 10/100/1000BASE-TX
- **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
  6-pin removable screw terminal (power & relay)
- **LED Indicators** P1, P2, P-Fail
  10/100/1000T (X): Link/Activity, Duplex/Collision

Power

- **Power Consumption** 2.5W
- **Power Input** 12 ~ 48 V_{DC}, redundant dual inputs
- **Fault Output** 1 Relay Output

Mechanism

- **Dimensions (W x H x D)** 30 x 140 x 95 mm (1.18" 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

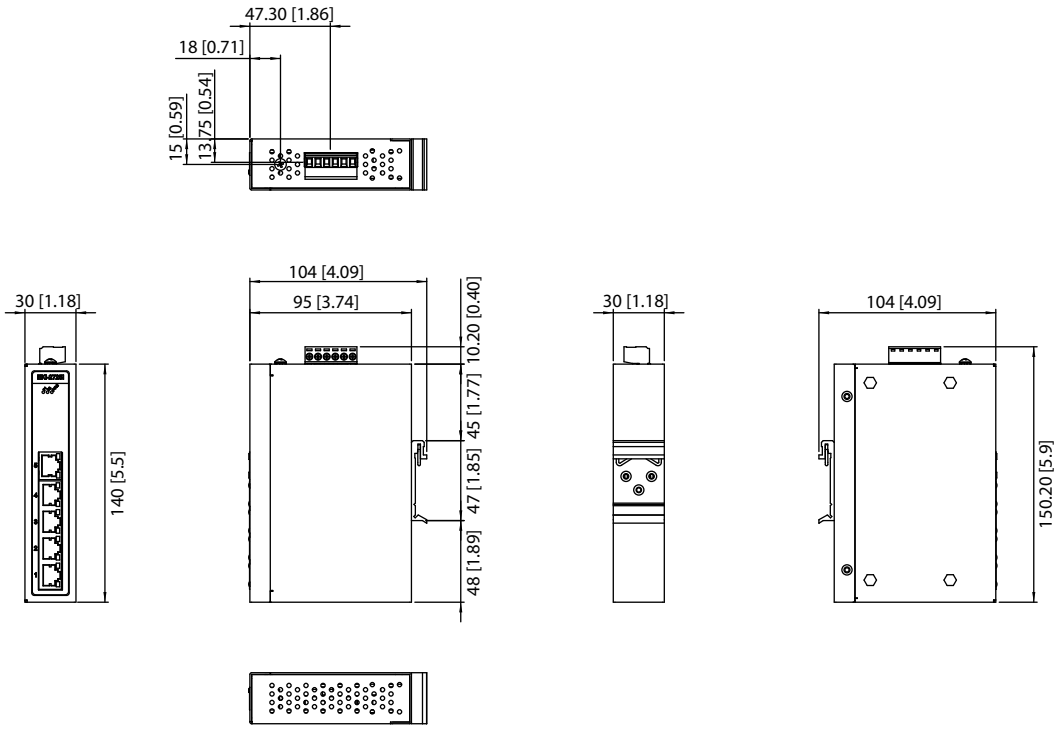
- **Operating Temperature** -10 ~ 60°C (14 ~ 140°F)
  -40 ~ 75°C (-40 ~ 167°F) / (I model)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity** 10 ~ 95% (non-condensing)
- **Storage Humidity** 10 ~ 95% (non-condensing)
- **MTBF** 2,296,909 hours

Certifications

- **Safety** UL 60950
- **EMI** CE, FCC 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

Dimensions

Unit: [mm]



Ordering Information

- **EKI-2725-CE** 5-port Gigabit Unmanaged Switch
- **EKI-2725I-CE** 5-port Gigabit Unmanaged Switch w/wide temp

EKI-2728/I

8-Port Gigabit Unmanaged Industrial Ethernet Switch

Features

- 8 x Gigabit Ethernet ports with auto MDI/MDI-X
- Supports 10/100/1000 Mbps auto negotiation
- Supports jumbo frame transmission up to 10 KB
- Provides slim size, DIN rail with IP30 metal mechanism
- Supports redundant 12 ~ 48 V_{DC} power input and P-Fail relay

Introduction

The EKI-2728 supports Gigabit Ethernet, has a +12 ~ 48 V_{DC} redundant input design, and is secured with a double protection mechanism: power polarity reverse protect and an overload current fuse. The former tolerates reverse power wiring while the latter secures the system from overload currents. Each port of the EKI-2728 has 2 LEDs to show the link status transmission speed and collision status and a relay output for alarm events. In the case of 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 perform troubleshooting easily and quickly. The EKI-2728 comes in a compact metal housing with an IP30 rating to protect against dusty industrial environments.

Specifications

Communications

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

Interface

- **Connectors** 8 x RJ45
  6-pin removable screw terminal (power & relay)
- **LED Indicators** P1, P2, P-Fail
  10/100/1000T (X): Link/Activity, Duplex/Collision

Power

- **Power Consumption** 5.8W
- **Power Input** 12 ~ 48 V_{DC}, redundant dual inputs
- **Fault Output** 1 Relay Output

Mechanism

- **Dimensions (W x H x D)** 30 x 140 x 95 mm (1.18" 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

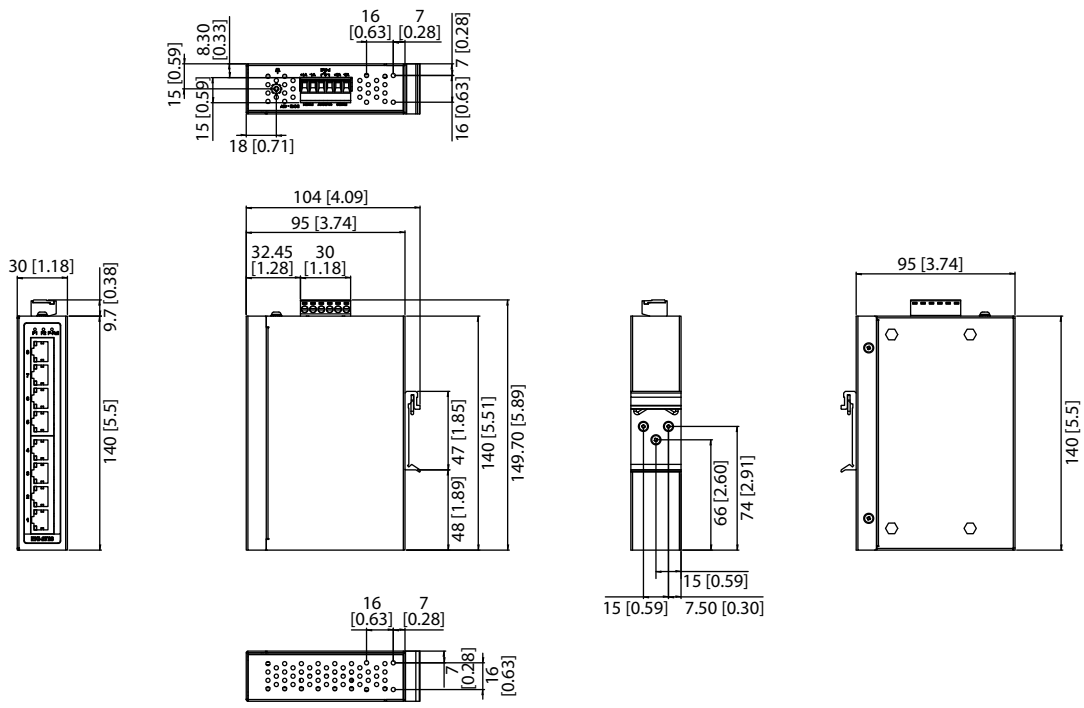
- **Operating Temperature** -10 ~ 60°C (14 ~ 140°F)
  -40 ~ 75°C (-40 ~ 167°F) / (I model)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity** 10 ~ 95% (non-condensing)
- **Storage Humidity** 10 ~ 95% (non-condensing)
- **MTBF** TBD

Certifications

- **Safety** UL 60950
- **EMI** CE, FCC 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

Dimensions

Unit: mm [inch]



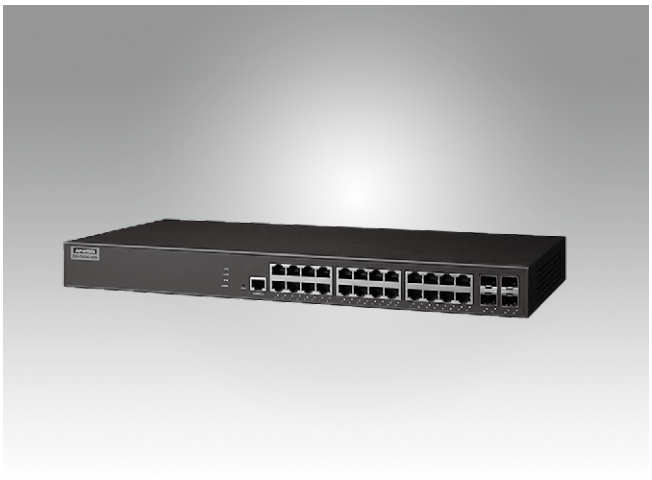
Panel Cut-out Dimensions: 30 x 140 x 95 mm (1.18" x 5.51" x 3.74")

Ordering Information

- **EKI-2728-CE** 8-port Gigabit Unmanaged Switch
- **EKI-2728I-CE** 8-port Gigabit Unmanaged Switch w/wide temp

EKI-2428G-4FA

24GE+4G SFP Port L2 Unmanaged Switch with AC Input



Features

- 24 x Gigabit copper ports + 4 x Gigabit SFP ports
- SFP socket for easy and flexible fiber expansion
- Provides 8K MAC address
- 100~240 V_{AC} power input

Introduction

The EKI-2428G is an unmanaged switch with 24 Gigabit ports and 4 Gigabit SFP ports. It is designed for rack-mount installation, and suitable for edge to core industrial networks. The wire speed across all ports up to 56 Gbps for L2 traffic forwarding.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x, 802.3ab, 802.3z
- **LAN** 10/100/1000BASE-TX, optional 100BASE-FX, 1000BASE-SX/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** Gigabit Copper: 10/100/1000 Mbps, Auto-Negotiation
  Gigabit Fiber: Up to 1000 Mbps

Interface

- **Connectors** 24 x RJ45 (Ethernet)
  4 x SFP (mini-GBIC) ports
- **LED Indicators** 10/100T (X): Link/Activity, Duplex/Collision
  Gigabit Copper: Link/Activity, Speed (1000 Mbps)
  SFP: Link/Activity
- **Debug Port** RS-232 (RJ45)

Mechanism

- **Enclosure** Metal shell with solid mounting kits
- **Dimensions (W x H x D)** 442 x 44 x 211.1 mm (17.4" x 1.73" x 8.31")
- **Mounting** 1U 19" Rack mount

Power

- **Power Consumption** 18W
- **Power Input** 100~240V single AC power input

Protection

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

Environment

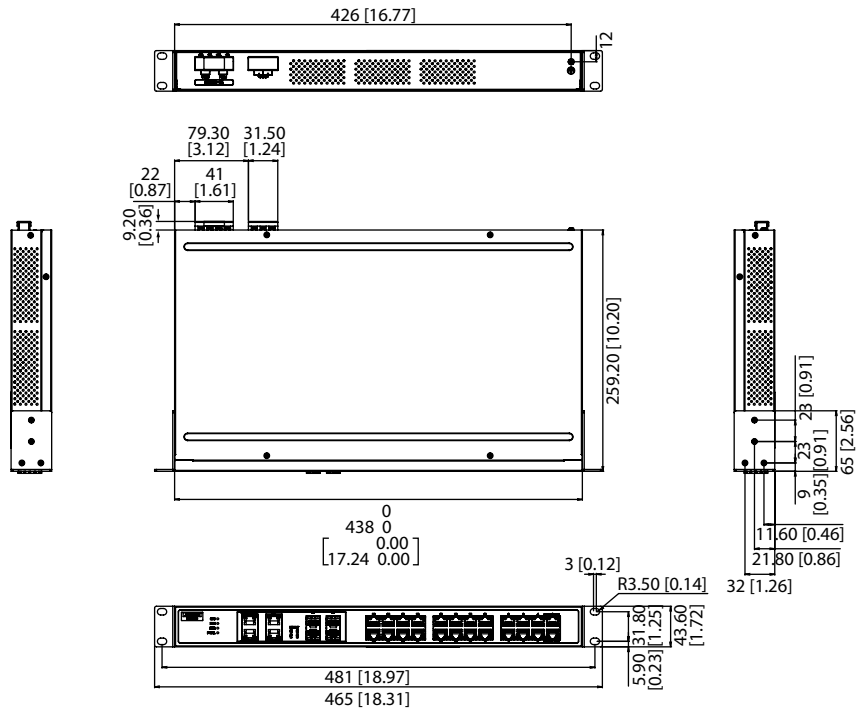
- **Operating Temperature** 0 ~ 55°C (32 ~ 131°F)
- **Storage Temperature** -20 ~ 70°C (-4 ~ 158°F)
- **Operating Humidity** 10 ~ 95% (non-condensing)
- **Storage Humidity** 10 ~ 95% (non-condensing)
- **MTBF** 620,427 hours

Certification

- **EMI** CE FCC 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

Dimensions

Unit: mm [inch]



Ordering Information

- **EKI-2428G-4FA-AE** 24GE+4G SFP Port Unmanaged Ethernet Switch

EKI-2728M/MI
EKI-2728S/SI

6G+2G Multi-Mode SC Fiber Port Unmanaged Ethernet Switch
6G+2G Single-Mode SC Fiber Port Unmanaged Ethernet Switch

Features

- 6 x 10/100/1000 Mbps Ethernet ports with RJ45 connector
- 2 x 1000 Mbps fiber ports with SC-type connector for 1000BASE-SX/LX devices
- Supports MDI/MDI-X auto crossover
- Supports auto negotiation
- Redundant 12 ~ 48 V_{DC} and 24 V_{AC} power input
- Provides flexible mounting: DIN rail and wall mount
- Provides link fault pass-through
- Jumbo frame: 9216 bytes

Introduction

The EKI-2728M/2728S are cost effective unmanaged industrial Ethernet switches that support Giga Ethernet. They also meet green power requirements, and the EKI-2728M/2728S in particular also support advanced network standards, thus allowing users to optimize their network performance, reduce maintenance costs, and secure network safety.

Specifications

Communications

Standard	IEEE 802.3, 802.3u, 802.3ab, 802.3x, IEEE 802.3z
LAN	10/100/1000BASE-TX, 1000BASE-SX, or 1000BASE-LX
Transmission Distance	Ethernet: Up to 100 m Fiber: Multi-mode: Up to 550 m (EKI-2728M/MI) Single-mode: Up to 10 km (EKI-2728S/SI)
Transmission Speed	Up to 1000 Mbps
Optical Fiber	
Multi-mode (EKI-2728M/MI)	Wavelength: 850 nm Tx Power: -4/-9.5 dBm Rx Sensitivity: -18 dBm Parameters: 50/125 um, 62.5/125 um
Single-mode (EKI-2728S/SI)	Wavelength: 1310 nm Tx Power: -3/-9.5 dBm Rx Sensitivity: -20 dBm Parameters: 9/125 um

Interface

Connectors	6 x RJ45 2 x SC type fiber connector 6-pin removable screw terminal (power & relay)
LED Indicators	P1, P2, P-Fail Fiber: LNK/ACT Ethernet: 1000M, LNK/ACT

Power

Power Consumption	7W
Power Input	12 ~ 48 V_{DC}, 24 V_{AC} (18 ~ 30 V_{AC}), redundant dual inputs

Mechanism

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

Protection

Power Reverse	Present
Overload current	Present

Environment

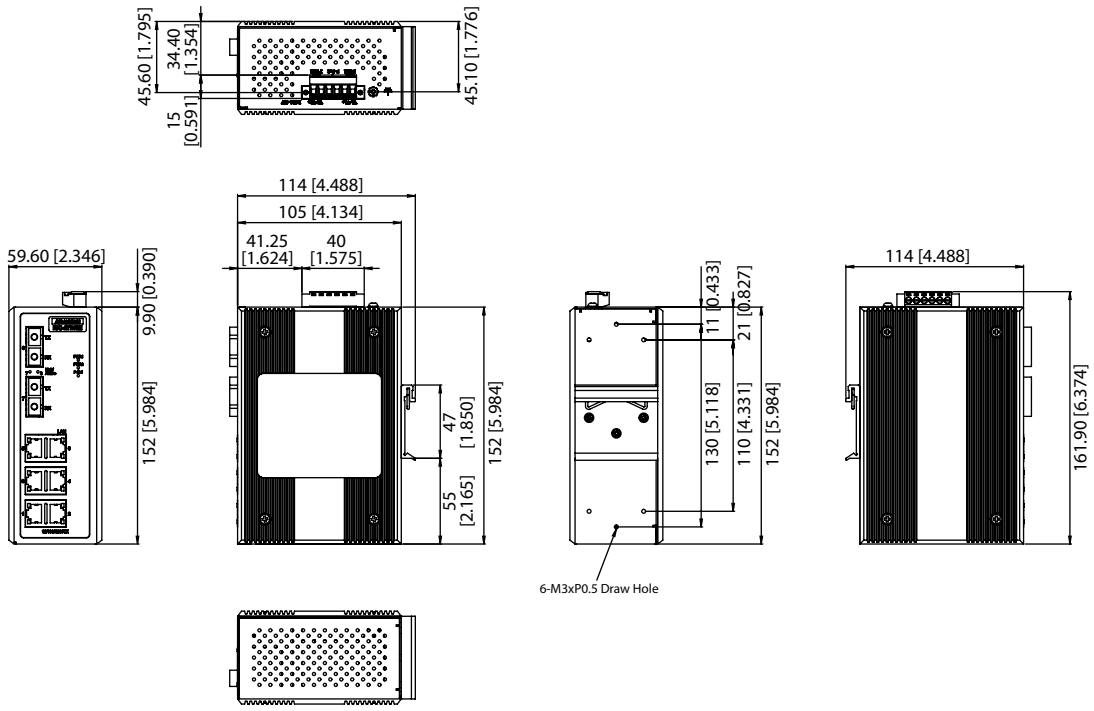
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)
Wide Temp Model	-40 ~ 75°C (-40 ~ 167°F) / (I model)
Storage Temperature	-40 ~ 85°C (-40 ~ 185°F)
Operating Humidity	10 ~ 95% (non-condensing)
Storage Humidity	10 ~ 95% (non-condensing)
MTBF	TBD

Certification

EMI	CE, FCC 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

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 59.6 x 152 x 105 mm (2.35" x 5.98" x 4.13")

Ordering Information

- **EKI-2728M-BE** 6G+2G Multi-mode SC Fiber Unmanaged Ethernet Switch
- **EKI-2728MI-BE** 6G+2G Multi-mode SC Fiber Unmanaged Ethernet Switch w/ Wide Temp
- **EKI-2728S-AE** 6G+2G Single-mode SC Fiber Unmanaged Ethernet Switch
- **EKI-2728SI-AE** 6G+2G Single-mode SC Fiber Unmanaged Ethernet Switch w/ Wide Temp

EKI-2525M/S

4+1 100FX Port Unmanaged Industrial Ethernet Switch

Features

- 4 x 10/100 Mbps Ethernet ports with RJ45 connector
- 1 x 100 Mbps multi-mode SC-type fiber optic port (EKI-2525M)
- 1 x 100 Mbps multi-mode ST-type fiber optic port (EKI-2525M-ST)
- 1 x 100 Mbps single-mode SC-type fiber optic port (EKI-2525S)
- Supports full/half duplex flow control
- Supports MDI/MDI-X auto crossover
- Redundant 12 ~ 48 V_{DC} power input
- Flexible mounting options: DIN rail and wall mount

Introduction

The EKI-2525M/2525S are industrial-grade Ethernet switches that enable you to quickly and cost-effectively expand your industrial network. The EKI-2525M/2525S have four 10/100 Mbps Ethernet ports, with the EKI-2525M additionally providing one multi-mode fiber-optic port and the EKI-2525S providing one single-mode fiber-optic port. Using fiber optics, you can prevent noise interference and achieve high-speed transmission (100 Mbps) over long distances (up to 30 km).

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

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x
- **LAN** 10/100BASE-TX, 100BASE-FX
- **Transmission Distance** Ethernet: Up to 100 m
  Multi-mode Fiber: Up to 2 km (EKI-2525M)
  Single-mode Fiber: Up to 30 km (EKI-2525S)
- **Transmission Speed** Up to 100 Mbps

Optical Fiber

- **Multi-Mode** (EKI-2525M)
  Wavelength: 1310nm
  Tx Power: -14/-20 dBm
  Rx Sensitivity: -31 dBm
  Parameters: 50/125 um, 62.5/125 um
- **Single-Mode** (EKI-2525S)
  Wavelength: 1310 nm
  Tx Power: -8/-15 dBm
  Rx Sensitivity: -34 dBm
  Parameters: 9/125 um

Interface

- **Connectors** 4 x RJ45 ports
  1 x SC type fiber connector (EKI-2525M/S) or
  1 x ST type fiber connector (EKI-2525M-ST)
  6-pin removable screw terminal (Power & Relay)
- **LED Indicators** P1, P2, P-Fail
  10/100TX: Link/Activity, Duplex/Collision

Power

- **Power Consumption** Max. 5 W
- **Power Input** 12 ~ 48 V_{DC}, redundant dual inputs
- **Fault Output** 1 Relay Output

Mechanism

- **Dimensions (W x H x D)** 30 x 140 x 95 mm (1.18" x 5.52" x 3.74")
- **Enclosure** IP30, Metal shell with solid mounting kits
- **Mounting** DIN-rail, Wall

Protection

- **Reverse Polarity** Present
- **Overload Current** Present

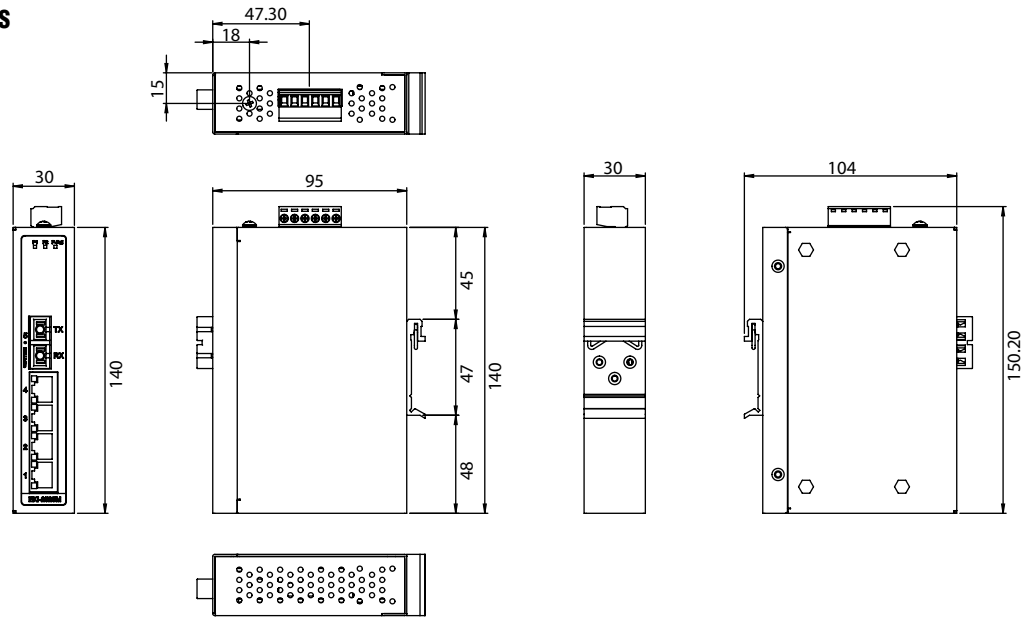
Environment

- **Operating Temperature** -10 ~ 60°C (14 ~ 140°F)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity** 10 ~ 95% (non-condensing)
- **Storage Humidity** 10 ~ 95% (non-condensing)
- **MTBF** 382,904 hours

Dimensions

Unit: mm

EKI-2525M/S



Panel Cut-out Dimensions: 104 x 140 x 30 mm (4.1" x 5.51" x 1.18")

Certification

- **Safety** EKI-2525M-ST/EKI-2525S: UL/cUL 60950
  EKI-2525M: UL/cUL 60950 Class I, Division 2, Groups A, B, C and D
- **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** IEC60068-2-27
- **Freefall** IEC60068-2-32
- **Vibration** IEC60068-2-6

Ordering Information

- **EKI-2525M-BE** 4-port Ethernet Switch w/ 1-port 100FX Multi-mode
- **EKI-2525M-ST-BE** 4-port Ethernet Switch w/ 1-port 100FX Multi-mode (ST type connector)
- **EKI-2525S-AE** 4-port Ethernet Switch w/ 1-port 100FX Single-mode

EKI-2525M
EKI-2526M/S

4+1 100FX Port Multi-Mode/Single Mode Unmanaged Industrial Ethernet Switch
4+2 100FX Port Unmanaged Industrial Ethernet Switch

Features

- 4 x 10/100 Mbps Ethernet ports with RJ45 connector
- 1 x 100 Mbps multi-mode SC-type fiber optic port (EKI-2525M)
- 1 x 100 Mbps multi-mode ST-type fiber optic port (EKI-2525M-ST)
- 1 x 100 Mbps single-mode SC-type fiber optic port (EKI-2525S)
- Supports full/half-duplex flow control
- Supports MDI/MDI-X auto crossover
- Redundant 12 ~ 48 V_{DC} power input
- Flexible mounting options: DIN-rail and wall mount

Introduction

The EKI-2525M/2525S are industrial-grade Ethernet switches that enable you to quickly and cost-effectively expand your industrial network. The EKI-2525M/2525S have four 10/100 Mbps Ethernet ports, with the EKI-2525M providing one multi-mode fiber-optic port and the EKI-2525S providing one single-mode fiber-optic port. Using fiber optics, you can prevent noise interference while leveraging high-speed transmission (100 Mbps) over long distances (up to 30 km).

The EKI-2525M/2525S 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. The EKI-2525M/2525S include a switch controller that can automatically sense transmission speeds. The RJ45 interface can also be auto-detected; thus, MDI or MDI-X will be automatically selected and a crossover cable will not be required. All Ethernet ports have memory buffers with store and forward, assuring all data are transmitted properly.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x
- **LAN** 10/100BASE-TX, 100BASE-FX
- **Transmission Distance** Ethernet: Up to 100 m
  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

- **Multi-Mode** (EKI-2525M/EKI-2526M)
  Wavelength: 1310nm
  Tx Power: -14/-20 dBm
  Rx Sensitivity: -31 dBm
  Parameters: 50/125 um, 62.5/125 um
- **Single-Mode** (EKI-2526S)
  Wavelength: 1310 nm
  Tx Power: -8/-15 dBm
  Rx Sensitivity: -34 dBm
  Parameters: 9/125 um

Interface

- **Connectors** 4 x RJ45 ports
  1 x SC type fiber connector (EKI-2525M) or
  2 x SC type fiber connector (EKI-2526M/S)
  6-pin removable screw terminal (Power & Relay)
- **LED Indicators** P1, P2, P-Fail
  10/100TX: 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 V_{DC}, 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** 10 ~ 95% (non-condensing)
- **Storage Humidity** 10 ~ 95% (non-condensing)
- **MTBF** EKI-2525M: 382,904 hours
  EKI-2526M/2526S: 359,411 hours

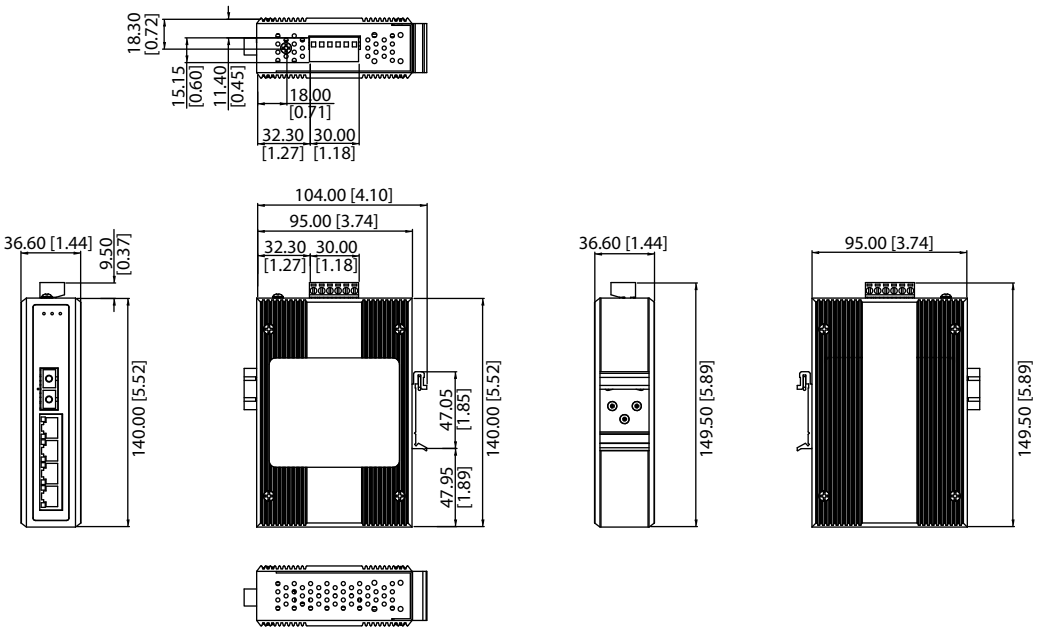
Certification

- **Safety** EKI-2526M/S-ST: UL/cUL 60950
  EKI-2525M/EKI-2526M/S: UL/cUL 60950 Class I, Division 2, Groups A, B, C and D
- **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** IEC60068-2-27
- **Freefall** IEC60068-2-32
- **Vibration** IEC60068-2-6

Dimensions

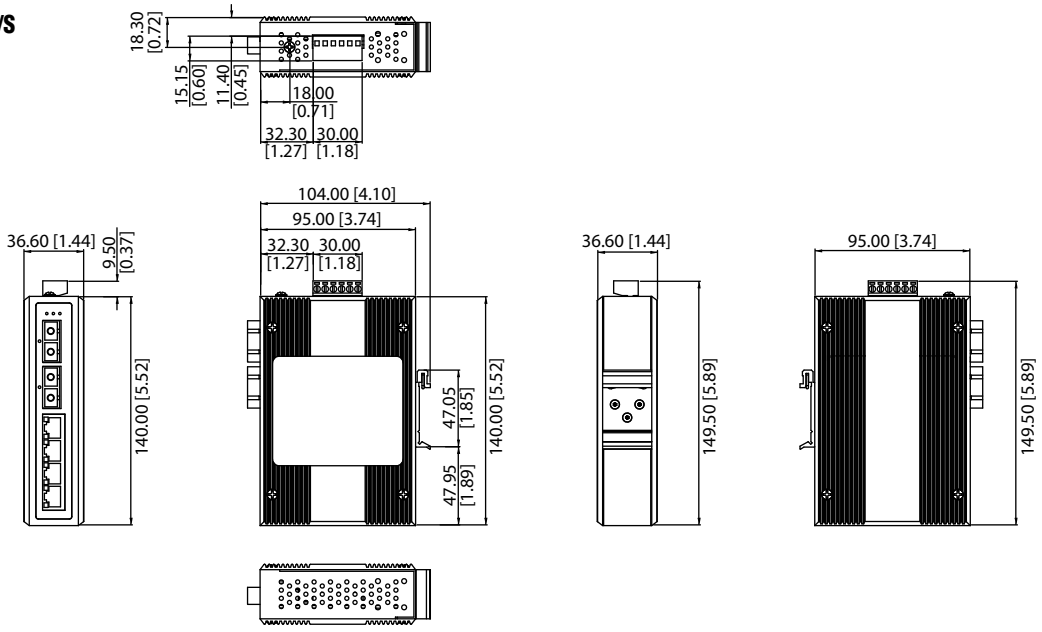
Unit: mm [inch]

EKI-2525M



Panel Cut-out Dimensions: 104 x 140 x 36.6 mm (4.1" x 5.52" x 1.44")

EKI-2526M/S



Panel Cut-out Dimensions: 104 x 140 x 36.6 mm (4.1" x 5.52" x 1.44")

Ordering Information

- **EKI-2525M-AE** 4-port Ethernet Switch w/ 1-port 100FX Multi-mode
- **EKI-2526M-AE** 4-port Ethernet Switch w/ 2-port 100FX Multi-mode
- **EKI-2526S-AE** 4-port Ethernet Switch w/ 2-port 100FX Single-mode
- **EKI-2526S-ST-AE** 4-port Ethernet Switch w/ 2-port 100FX Single-mode (ST type connector)
- **EKI-2526M-ST-AE** 4-port Ethernet Switch w/ 2-port 100FX Multi-mode (ST type connector)

EKI-2525LI

5FE Slim-Type Unmanaged Industrial Ethernet Switch

Features

- 5 x fast Ethernet ports with auto MDI/MDI-X
- Supports 10/100 Mbps auto negotiation
- Compact size with DIN rail and wall mount
- IP40-rated metal enclosure
- Redundant 12 ~ 48 V_{DC} power terminal input plus one DC power jack and P-Fail relay
- Wide operating temperature range of -40 ~ 75°C

Introduction

The EKI-2525LI is a fast Ethernet solution. Power is delivered via a +12 ~ 48 VDC redundant input design with an additional DC power jack, and the unit is secured with power polarity reverse protection. Each port has 2 LED's to show the link status and transmission speed, and a relay output is included for an alarm events. 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, which makes troubleshooting quick and easy. The EKI-2525LI comes with a compact metal enclosure, making it suitable for installation in narrow areas, and its IP40-rated enclosure ensures protection against dusty industrial environments.

Specifications

Communications

- **Standard IEEE** 802.3, 802.3u, 802.3x
- **LAN** 10/100BASE-TX
- **Transmission Distance** Up to 100 m
- **Transmission Speed** Up to 100 Mbps

Interface

- **Connectors** 5 x RJ45
  6-pin removable terminal (power and relay)
  1 x DC power jack
- **LED Indicators** PWR, PWR1, PWR2, PWR fail
  10/100TX: link/activity, duplex

Power

- **Power Consumption** TBD
- **Power Input** 12 ~ 48 V_{DC}, redundant dual inputs
- **Fault Output** 1 relay output

Mechanism

- **Dimensions (W x H x D)** 25 x 80 x 84 mm (0.984" x 3.150" x 3.307")
- **Enclosure** IP40, metal housing with solid mounting kit
- **Mounting** DIN rail, wall

Protection

- **Reverse Polarity** Present
- **Overload Current** Present

Environment

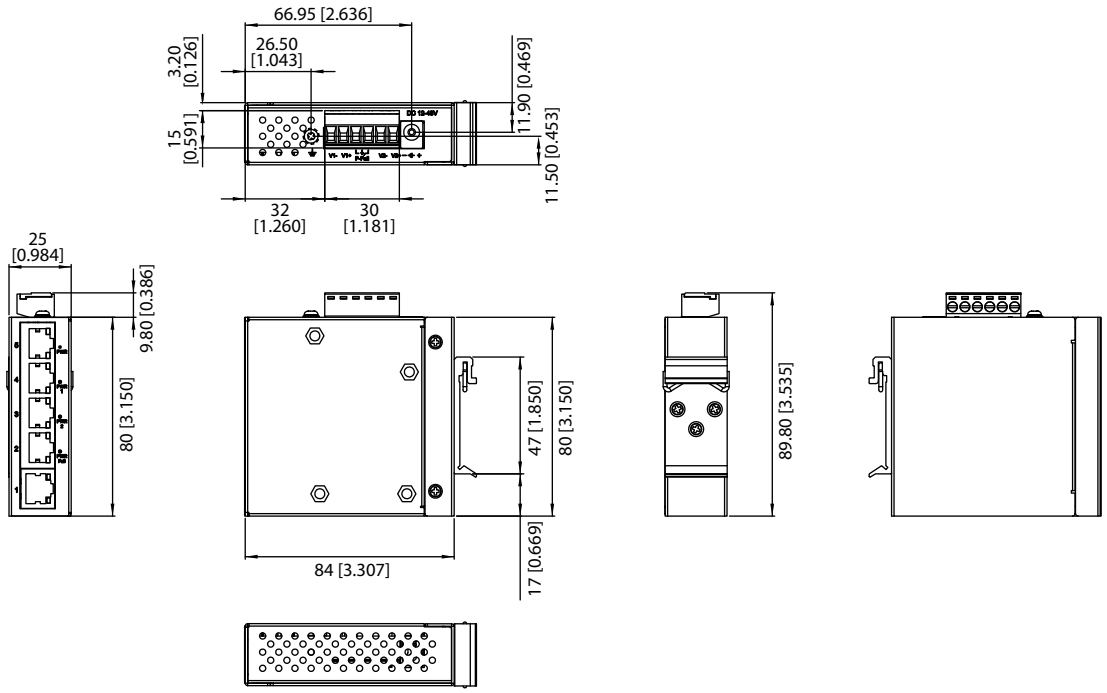
- **Operating Temperature** -40 ~ 75 °C (-40 ~ 167 °F)
- **Storage Temperature** -40 ~ 85 °C (-40 ~ 185 °F)
- **Operating Humidity** 10 ~ 95% (non-condensing)
- **Storage Humidity** 10 ~ 95% (non-condensing)
- **MTBF** TBD

Certification

- **Safety** TBD
- **EMI** CE, FCC 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

Dimensions

Unit: mm [in.]



Panel Cut-Out Dimensions: 25 x 80 x 84 mm (0.984" x 3.150" x 3.307")

Ordering Information

- **EKI-2525LI-AE** 5FE Slim-Type Unmanaged Industrial Ethernet Switch

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

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

Features

- 4 x IEEE 802.3 af/at PoE Gigabit ports + 4 SFP ports
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D)
- IXM function enables fast deployment
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- NEMA TS2 for traffic control
- EN50121-4 approval for railway trackside deployment
- Wide operating temperature range of -40 ~ 75°C (EKI-7708G-4FPI)
- Dual 48 V_{DC} power input and 1 x relay output

Introduction

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

Specifications

Interface

- **I/O Port**: 4 x 10/100BASE-T/TX RJ-45
4 x SFP (mini-GBIC) port
- **Console port**: RS-232 (RJ45)
- **Power Connector**: 6-pin screw Terminal Block (including relay)

Physical

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

LED Display

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

Environment

- **Operating Temperature**: -40 ~ 75°C (-40 ~ 167°F) (7708G-4FPI)
-10 ~ 60°C (-40 ~ 140°F) (7708G-4FP)
- **Storage Temperature**: -40 ~ 85°C
- **Ambient Relative Humidity**: 10 ~ 95% (non-condensing)
- **Humidity**: 10 ~ 95% (non-condensing)

Power

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

Certification

- **EMI**: CE, FCC Class A
- **EMC**: EN 61000-4-2
EN 61000-4-3
EN 61000-4-4
EN 61000-4-5
EN 61000-4-6
EN 61000-4-8
EN50121-4
- **Shock**: IEC 60068-2-27
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 60068-2-6
- **Traffic control**: NEMA TS2

*= Compliant

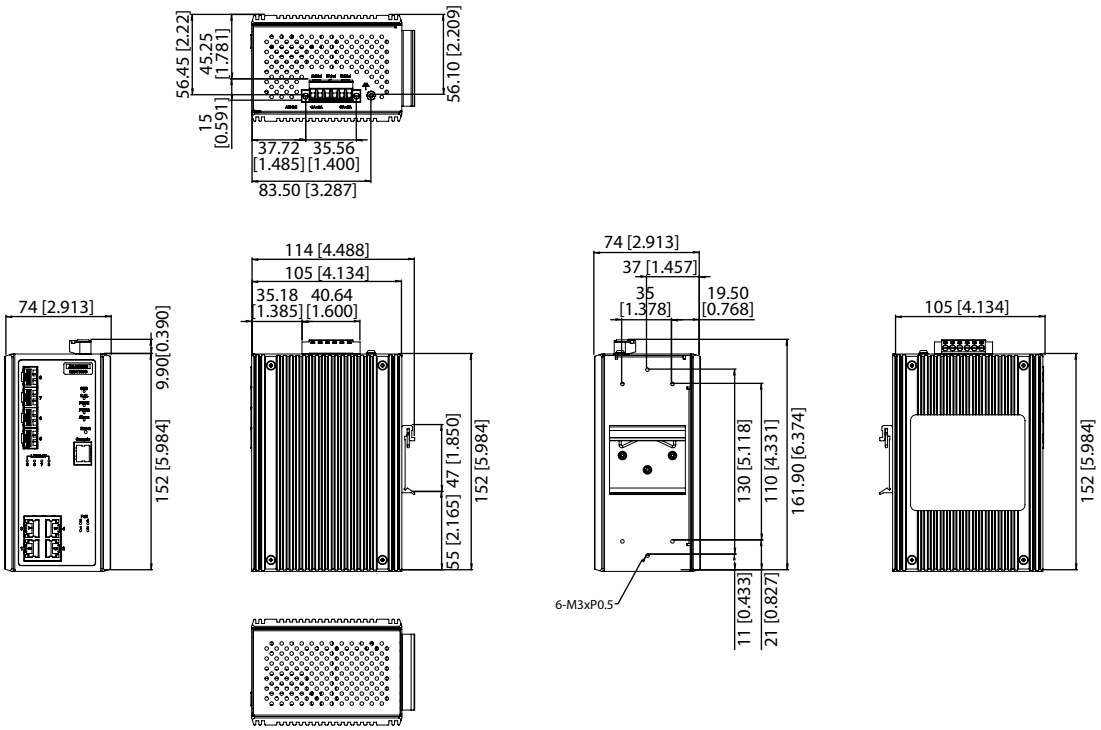
- **Patent**: http://www.advantech.com/legal/patent

L2 Features

- **L2 MAC Address**: 8K
- **Jumbo Frame**: 9216 Bytes
- **VLAN Group**: 256 (VLAN ID 1 ~ 4094)
- **VLAN Arrange**: Port based VLAN, Q-in-Q (VLAN Stacking), 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
- **Redundancy**: IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro, with ultra high-speed recovery time less than 20ms

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 105 x 152 x 74 (4.134" x 5.98" x 2.913")

QoS

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

Security

- **Port Security** — Static, Dynamic IP Source Guard, ARP Spoofing Prevention, Access Control List, DHCP Snooping
- **Authentication** — 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption), TACACS+

Management

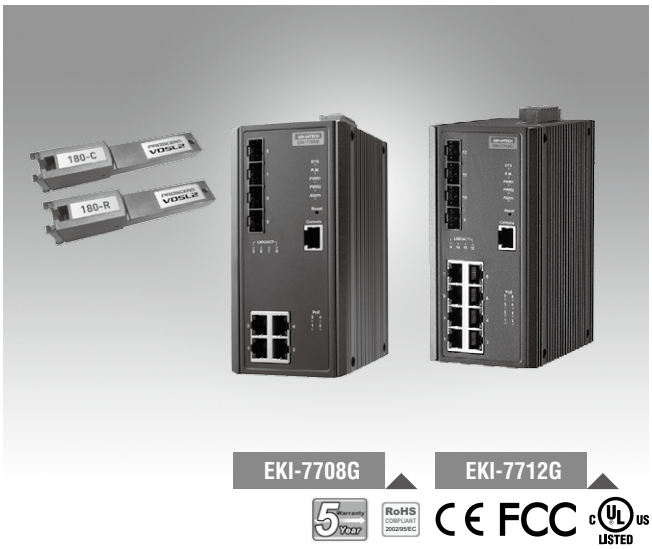
- **DHCP** — Client, Server, Option66/67/82
- **Access** — SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security access** — SSH2.0, SSL
- **Software upgrade** — TFTP, HTTP, Dual Image
- **NTP** — SNTP client

Ordering Information

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

EKI-7708G-2FVPI
EKI-7712G-2FVPI

4GE PoE + 2G SFP + 2 VDSL2 Port Managed Redundant Industrial Switch
8GE PoE + 2G SFP + 2 VDSL2 Port Managed Redundant Industrial Switch



Features

- 4 x Gigabit PoE + 2 x Gigabit SFP + 2 VDSL2 ports (EKI-7708G-2FVPI)
- 8 x Gigabit PoE + 2 x Gigabit SFP + 2 VDSL2 ports (EKI-7712G-2FVPI)
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP and MSTP (802.1w/1D/1s)
- IXM function enables fast deployment
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- NEMA TS2 for traffic control
- EN50121-4 approval for railway trackside deployment
- 100/100 Mbps up to 400 m over CAT 5e
- Dual 12 ~ 48 V_{DC} power input and 1 x relay output

Introduction

The EKI-7712G/7708G-2FVPI support 8/4 Gigabit PoE + 2 Gigabit SFP + 2 VDSL2 ports. These switches provide abundant port options for connecting to various device types. The series are embedded with Advantech IXM function for fast deployment, which can save considerably on engineering time and costs. The EKI-7712G/7708G series also support NMS to help IT managers with networking maintenance and failure prevention. Finally, the series are equipped with X-Ring Pro redundancy for ultra-high-speed recovery times of <20 ms. The switches also incorporate the latest VDSL2 technology, meaning that these SFP modules can be easily adapted to existing applications with existing 2-wire cable (e.g., phone line) to avoid the cost of rewiring. Ethernet service on UTP wire can be extended up to 3000 m, with a rate of 100 Mbps achievable up to 400 m on standard CAT 5e2 cable.

Specifications

Communications

Standard	IEEE 802.3, 802.3u, 802.3x, 802.3ad, 802.3ab, 802.3z, 802.1D, 802.1w, 802.1s, 802.1P, 802.1Q, 802.1X
LAN	10/100/1000BASE-TX, optional 100BASE-FX, 1000BASE-SX/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) VDSL2: With the rate of 100Mbps speed up to 400 meters on a standard Cat 5e 2 wire cable.
Transmission Speed	Gigabit Copper: 10/100/1000 Mbps, Auto-Negotiation Gigabit Fiber: Up to 1000 Mbps

Interface

Connectors	4/8 x RJ45 (Gigabit Ethernet) 2 x SFP (mini-GBIC) 2 x VDSL ports 6-pin screw terminal block connector (4-pin for Power, 2-pin for Relay)
LED Indicators	PWR1, PWR2, SYS, Alarm and R.M. 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, IPv6
VLAN	IEEE 802.1Q, GVRP, Port-based VLAN
Redundancy	Advantech X-Ring, 802.1w/1D/1s RSTP/STP/MSTP
Security	IP Access Security, Port Security, DHCP Client, 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, IEEE 802.3x Flow 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
Dimensions (W x H x D)	74 x 152 x 105 mm (2.91" x 5.98" x 4.13")
Mounting	DIN-rail, Wall mount

Power

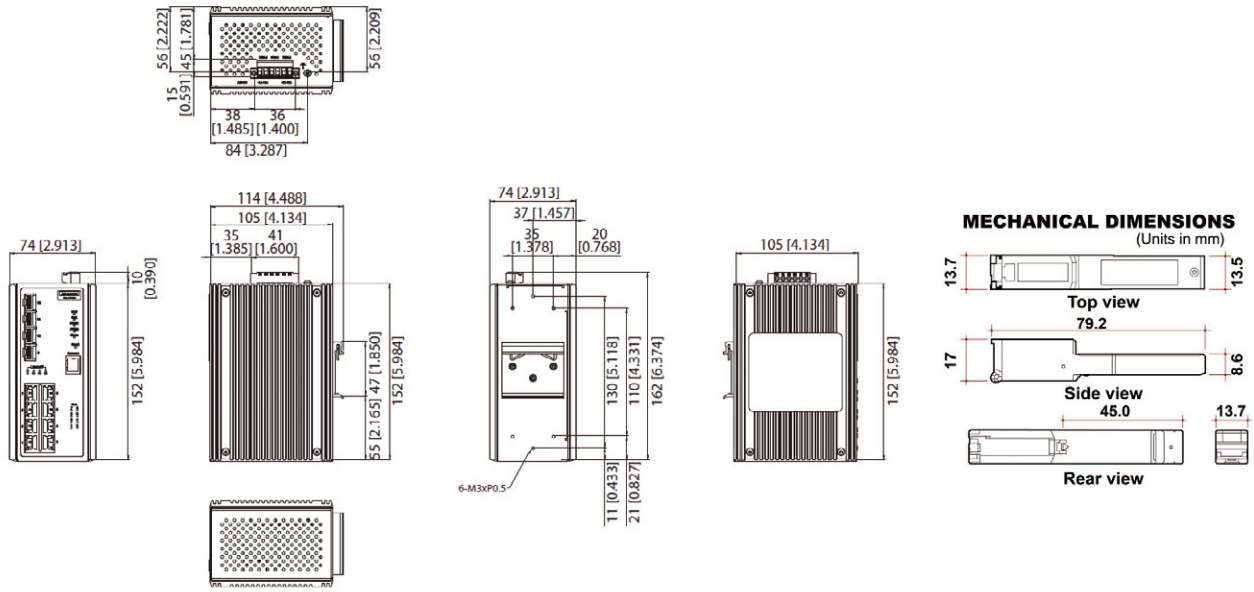
Power Consumption	15W @ 48V_{DC} (System)
Power Input	48 V_{DC} (46 to 57 V_{DC}), 53 -57 V_{DC} is recommended for 802.3at, redundant dual power input
Power Budget	240W
Fault Output	1 Relay Output

Protection

Power Reverse	Present
Overload Current	Present

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 105 x 152 x 74 mm (4.13" x 5.98" x 2.91")

Environment

- **Operating Temperature** -10~60°C (14~140°F) (EKI-7716E-4F4C)
  -40~75°C (-40~167°F) (EKI-7716E-4F4CI)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity** 10 ~ 95% (non-condensing)
- **Storage Humidity** 10 ~ 95% (non-condensing)

Certification

- **Safety** UL 61010
- **EMI** CE, FCC 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
  NEMA TS2
- **Shock** IEC 60068-2-27
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 60068-2-6
- **Railway Track Side** EN 50121-4
- **Patent** http://www.advantech.com/legal/patent

Ordering Information

- **EKI-7708G-2FVPI-AE** 4GE PoE + 2G SFP + 2 VDSL2 port Managed Industrial Switch
- **EKI-7712G-2FVPI-AE** 8GE PoE + 2G SFP + 2 VDSL2 port Managed Industrial Switch

EKI-7708E-4FP
EKI-7708E-4FPI

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

Features

- 4 x IEEE 802.3 af/at PoE fast Ethernet ports + 4 x SFP ports
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D)
- IXM function enables fast deployment
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- NEMA TS2 for traffic control
- EN50121-4 approval for railway trackside deployment
- Wide operating temperature range of -40 ~ 75°C (EKI-7708E-4FPI)
- Dual 48 V_{DC} power input and 1 x relay output

Introduction

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

Specifications

Interface

- **I/O Port**: 4 x 10/100BASE-T/TX RJ-45
4 x SFP (mini-GBIC) port
- **Console port**: RS-232 (RJ45)
- **Power Connector**: 6-pin screw Terminal Block (including relay)

Physical

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

LED Display

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

Environment

- **Operating Temperature**: -40 ~ 75°C (-40 ~ 167°F) (7708E-4FPI)
-10 ~ 60°C (-40 ~ 140°F) (7708E-4FP)
- **Storage Temperature**: -40 ~ 85°C
- **Ambient Relative Humidity**: 10 ~ 95% (non-condensing)
- **Humidity**: 10 ~ 95% (non-condensing)

Power

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

Certification

- **EMI**: CE, FCC Class A
- **EMC**: EN 61000-4-2
EN 61000-4-3
EN 61000-4-4
EN 61000-4-5
EN 61000-4-6
EN 61000-4-8
EN50121-4
- **Shock**: IEC 60068-2-27
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 60068-2-6
- **Traffic control**: NEMA TS2

*= Compliant

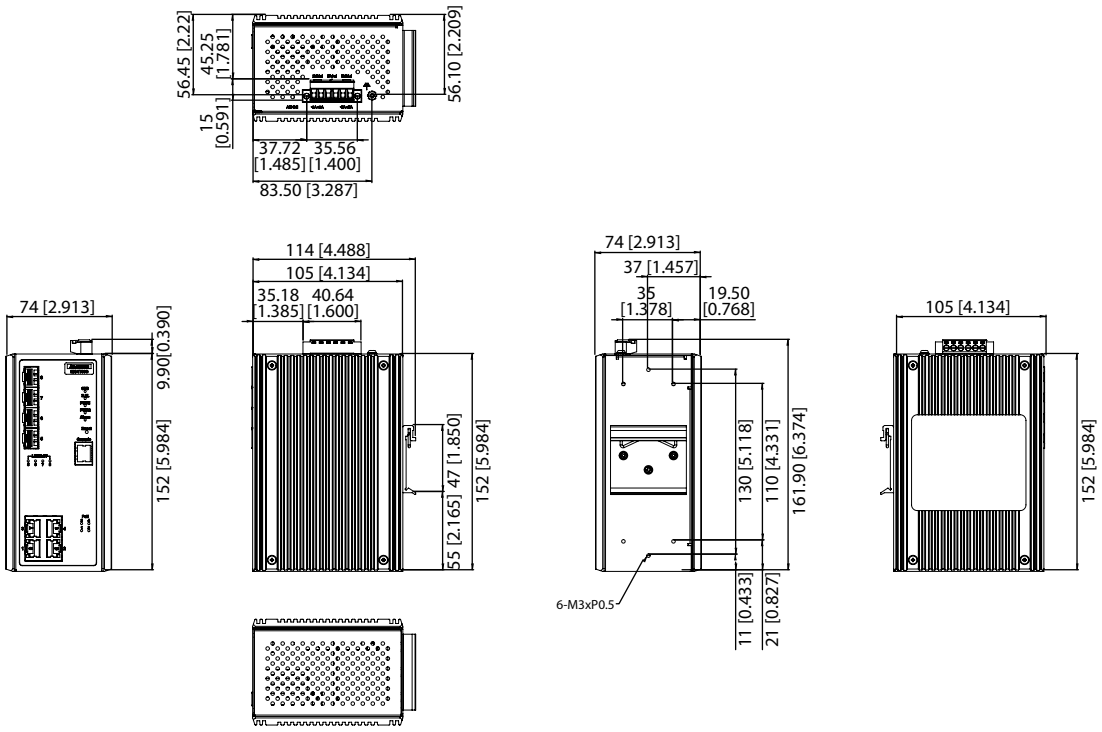
- **Patent**: http://www.advantech.com/legal/patent

L2 Features

- **L2 MAC Address**: 8K
- **Jumbo Frame**: 9216 Bytes
- **VLAN Group**: 256 (VLAN ID 1 ~ 4094)
- **VLAN Arrange**: Port based VLAN, Q-in-Q (VLAN Stacking), 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
- **Redundancy**: IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro, with ultra high-speed recovery time less than 20ms

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 105 x 152 x 74 (4.134" x 5.98" x 2.913")

QoS

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

Security

- **Port Security** — Static, Dynamic IP Source Guard, ARP Spoofing Prevention, Access Control List, DHCP Snooping
- **Authentication** — 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption), TACACS+

Management

- **DHCP** — Client, Server, Option66/67/82
- **Access** — SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security access** — SSH2.0, SSL
- **Software upgrade** — TFTP, HTTP, Dual Image
- **NTP** — SNTP client

Ordering Information

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

EKI-7710G-2CP
EKI-7710G-2CPI

8G+2G Port Gigabit Managed Redundant Industrial PoE Switch

Features

- 8 x IEEE 802.3 af/at PoE Gigabit ports + 2 x Gigabit copper/SFP combo ports
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D)
- IXM function enables fast deployment
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- Wide operating temperature range of -40 ~ 75°C (EKI-7710G-2CPI)
- Dual 24 ~ 48 V_{DC} power input and 1 x relay output

Introduction

The EKI-7710G-2CP/2CPI support 8 Gigabit PoE ports and 2 Gigabit combo ports. They provide up to 30 W per port for high-power-consumption powered devices. They come embedded with Advantech IXM function, which can benefit users with fast deployment and can dramatically save considerably on engineering time and costs. The EKI-7710G series also support NMS to help IT managers with networking maintenance and failure prevention. Finally, they are equipped with X-Ring Pro, which can achieve ultra-high-speed recovery times of <20 ms, thus ensuring network stability.

Specifications

Interface

I/O Port	8 x 10/100/1000BASE-T/TX RJ-45 2 x RJ-45/SFP(mini-GBIC)Combo port
Console port	RS-232 (RJ45)
Power Connector	6-pin screw Terminal Block (including relay)

Physical

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

LED Display

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

Environment

Operating Temperature	-40 ~ 75°C (-40 ~ 167°F) 7710G-2CPI -10 ~ 60°C (-40 ~ 140°F) 7710G-2CP
Storage Temperature	-40 ~ 85°C
Ambient Relative Humidity	10 ~ 95% (non-condensing)
Humidity	10 ~ 95% (non-condensing)

Power

Power Consumption	12.1W @ 48V_{DC} (System)
Power Input	24 ~ 48 V_{DC}, redundant dual power input
Power Budget	120W
Fault Output	1 Relay Output

Certification

EMI	CE, FCC Class A
Safety	UL508 UL60950*, C1D2*
EMC	EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6 EN 61000-4-8 EN50121-4*
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Traffic Control	NEMA TS2*

*= Compliant

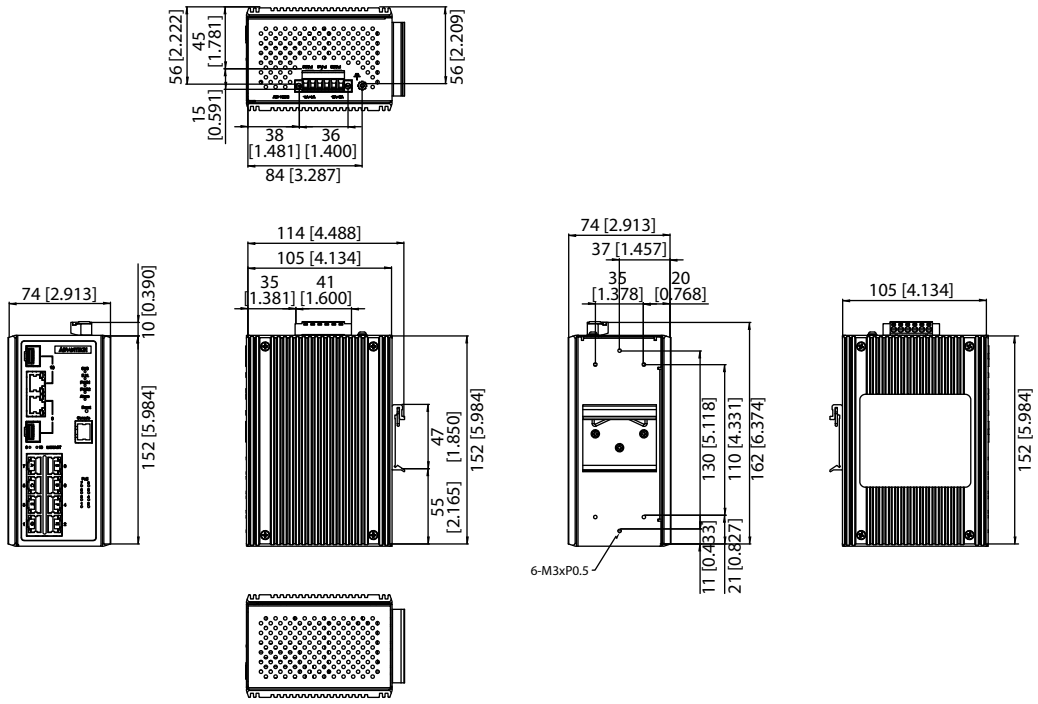
- **Patent** http://www.advantech.com/legal/patent

L2 Features

L2 MAC Address	8K
Jumbo Frame	9216 Bytes
VLAN Group	256 (VLAN ID 1 ~ 4094)
VLAN Arrange	Port based VLAN, Q-in-Q (VLAN Stacking), 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
Redundancy	IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro, with ultra high-speed recovery time less than 20ms

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 105 (4.137) x 152 (5.984) x 74 (2.91)

QoS

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

Security

- **Port Security** — Static, Dynamic IP Source Guard, ARP Spoofing Prevention, Access Control List, DHCP Snooping,
- **Authentication** — 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption), TACACS+

Management

- **DHCP** — Client, Server, Option66/67/82
- **Access** — SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security access** — SSH2.0, SSL
- **Software upgrade** — TFTP, HTTP, Dual Image
- **NTP** — SNTP client

Ordering Information

- **EKI-7710G-2CPI-AE** — 8GE + 2G Combo Port Managed PoE Ethernet Switch w/Wide Temp
- **EKI-7710G-2CP-AE** — 8GE + 2G Combo Port Managed PoE Ethernet Switch

EKI-7710E-2CP
EKI-7710E-2CPI

8FE+2G Port Gigabit Managed Redundant Industrial PoE Switch

Features

- 8 x IEEE 802.3 af/at PoE fast Ethernet ports + 2 x Gigabit copper/SFP combo ports
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D)
- IXM function enables fast deployment
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- Wide operating temperature range (EKI-7710E-2CPI)
- Dual 24 ~ 48 V_{DC} power input and 1 x relay output

Introduction

The EKI-7710E-2CP/2CPI support 8 PoE ports and 2 Gigabit combo ports. They can provide up to 30 W per port for high-power-consumption powered devices. They also features Advantech's IXM function, which can benefit users with fast deployment and can save considerably on engineering time and cost. The series also support NMS to help IT managers with networking maintenance and failure prevention. Finally, they are equipped with X-Ring Pro, which can achieve ultra-high-speed recovery times of <20 ms, thus ensuring network stability.

Specifications

Interface

- **I/O Port**: 8 x 10/100BASE-T/TX RJ-45
2 x RJ-45/SFP(mini-GBIC)Combo port
- **Console port**: RS-232 (RJ45)
- **Power Connector**: 6-pin screw Terminal Block (including relay)

Physical

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

LED Display

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

Environment

- **Operating Temperature**: -40 ~ 75 °C (-40 ~ 167 °F) 7710E-2CPI
-10 ~ 60 °C (-40 ~ 140 °F) 7710E-2CP
- **Storage Temperature**: -40 ~ 85 °C
- **Ambient Relative Humidity**: 10 ~ 95% (non-condensing)
- **Humidity**: 10 ~ 95% (non-condensing)

Power

- **Power Consumption**: 12.1W @ 48V_{DC} (System)
- **Power Input**: 24 ~ 48 V_{DC}, redundant dual power input
- **Power Budget**: 120W
- **Fault Output**: 1 Relay Output

Certification

- **EMI**: CE, FCC Class A
- **Safety**: UL508
UL60950*, C1D2*
- **EMC**: EN 61000-4-2
EN 61000-4-3
EN 61000-4-4
EN 61000-4-5
EN 61000-4-6
EN 61000-4-8
EN50121-4*
- **Shock**: IEC 60068-2-27
- **Freefall**: IEC 60068-2-32
- **Vibration**: IEC 60068-2-6
- **Traffic control**: NEMA TS2*

*= Compliant

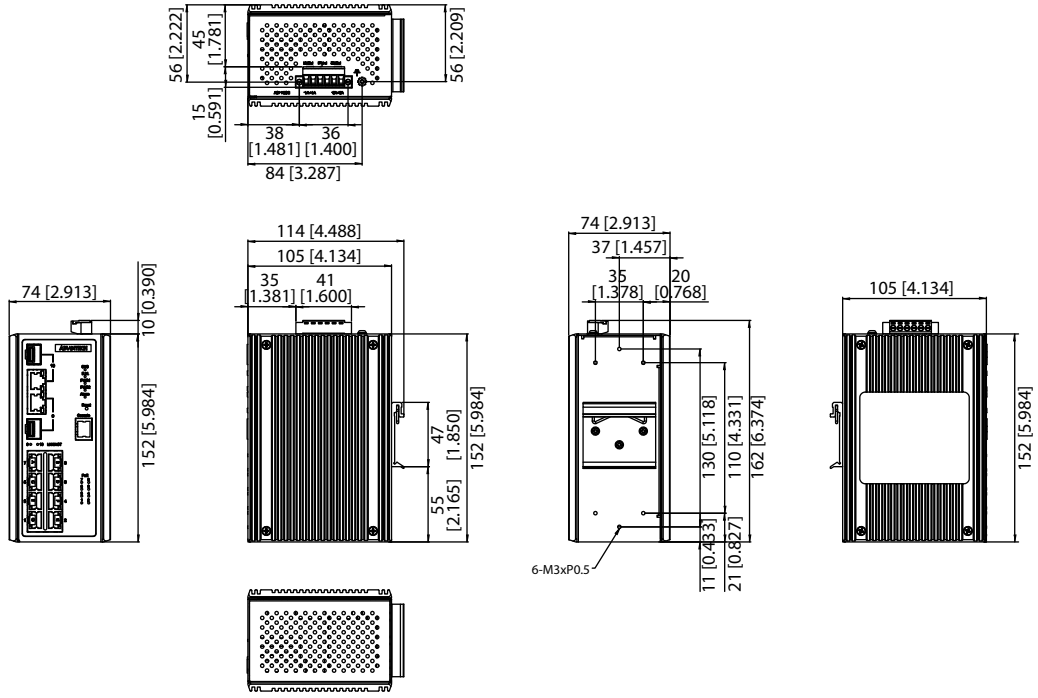
- **Patent**: http://www.advantech.com/legal/patent

L2 Features

- **L2 MAC Address**: 8K
- **Jumbo Frame**: 9216 Bytes
- **VLAN Group**: 256 (VLAN ID 1 ~ 4094)
- **VLAN Arrange**: Port based VLAN, Q-in-Q (VLAN Stacking), 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
- **Redundancy**: IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro, with ultra high-speed recovery time less than 20ms

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 105 (4.137) x 152 (5.984) x 74 (2.91)

QoS

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

Security

- **Port Security** Static, Dynamic IP Source Guard, ARP Spoofing Prevention, Access Control List, DHCP Snooping,
- **Authentication** 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption), TACACS+

Management

- **DHCP** Client, Server, Option66/67/82
- **Access** SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security access** SSH2.0, SSL
- **Software upgrade** TFTP, HTTP, Dual Image
- **NTP** SNTP client

Ordering Information

- **EKI-7710E-2CPI-AE** 8FE + 2G Combo Port Managed PoE Ethernet Switch w/Wide Temp
- **EKI-7710E-2CP-AE** 8FE + 2G Combo Port Managed PoE Ethernet Switch

EKI-7712G-4FP
EKI-7712G-4FPI

8G+4SFP Port Gigabit Managed Redundant Industrial PoE Switch

Features

- 8 x IEEE 802.3 af/at PoE Gigabit ports + 4 x SFP ports
- SFP socket for easy and flexible fiber expansion
- Redundancy: X-Ring Pro (ultra-high-speed recovery time, <20 ms), RSTP/STP (802.1w/1D)
- IXM function enables fast deployment
- Security: 802.1x (port-based, MD5/TLS/TTLS/PEAP encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, standard MIB, private MIB
- NEMA TS2 for traffic control
- EN50121-4 approval for railway trackside deployment
- -40 ~ 75°C wide-range operating temperature (EKI-7712G-4FPI)
- Dual 48 V_{DC} power input and 1 x relay output

Introduction

The EKI-7712G-4FP/4FPI support 8 Gigabit IEEE 802.3 af/at PoE ports and 4 SFP (mini-GBIC) ports. They can provide up to 30 W per port for high-power-consumption powered devices. They are embedded with Advantech's IXM function, which can benefit users with fast deployment and can save considerably engineering time and costs. The EKI-7712G series also support NMS to help IT managers with networking maintenance and failure prevention. Finally, the series are equipped with X-Ring Pro, which can achieve ultra-high-speed recovery times of <20 ms to ensure network stability. The EKI-7712G-4FPI in particular also features a wide operating temperature of -40 ~ 75°C and NEMA TS2 rating, making it ideal for use in traffic applications. Finally, the EKI-7712G-4FP/4FPI have successfully passed the EN50121-4 European railway standard requirements for emissions and railway platform and trackside deployment.

Specifications

Interface

I/O Port	8 x 10/100/1000BASE-T/TX RJ-45 4 x SFP (mini-GBIC) port
Console port	RS-232 (RJ45)
Power Connector	6-pin screw Terminal Block (including relay)

Physical

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

LED Display

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

Environment

Operating Temperature	-40 ~ 75°C (-40 ~ 167°F) (7712G-4FPI) -10 ~ 60°C (-40 ~ 140°F) (7712G-4FP)
Storage Temperature	-40 ~ 85°C
Ambient Relative Humidity	10 ~ 95% (non-condensing)
Humidity	10 ~ 95% (non-condensing)

Power

Power Consumption	12.1W @ 48V_{DC} (System)
Power Input	48 V_{DC} (46 to 57 V_{DC}), 53 -57 V_{DC} is recommended for 802.3at, redundant dual power input
Power Budget	240W
Fault Output	1 Relay Output

Certification

EMI	CE, FCC Class A
Safety	UL61010-2-201 IEC60950*
EMC	EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6 EN 61000-4-8 EN50121-4
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Traffic control	NEMA TS2

*= Compliant

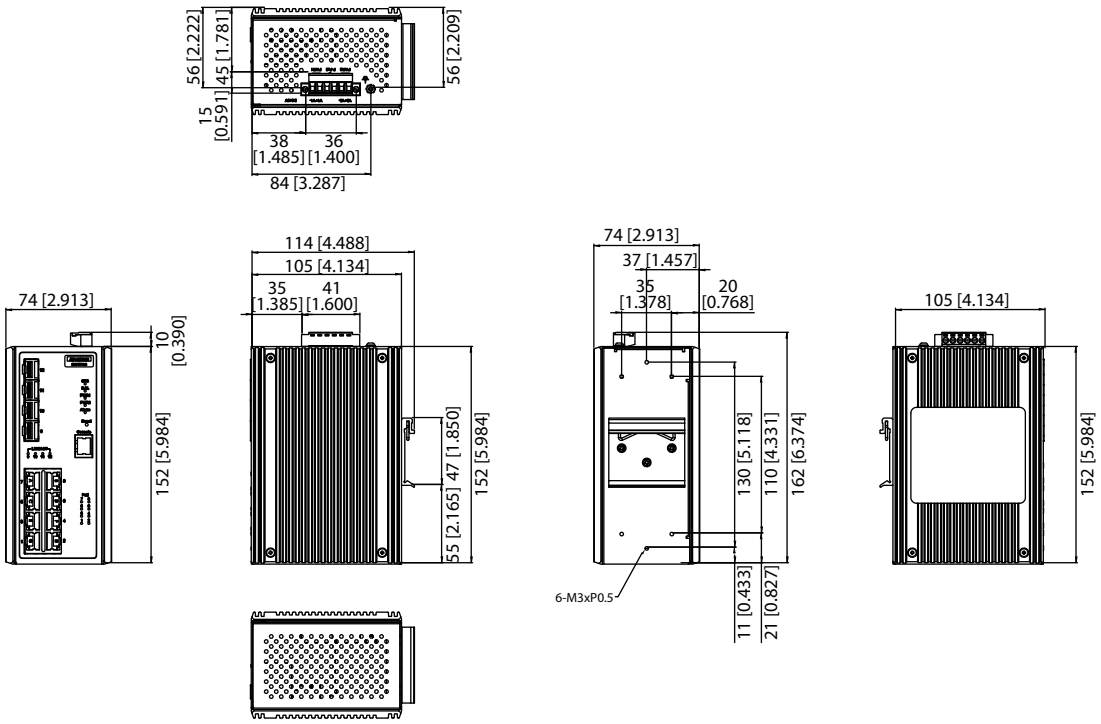
Patent	http://www.advantech.com/legal/patent

L2 Features

L2 MAC Address	8K
Jumbo Frame	9216 Bytes
VLAN Group	256 (VLAN ID 1 ~ 4094)
VLAN Arrange	Port based VLAN, Q-in-Q (VLAN Stacking), 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
Redundancy	IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro, with ultra high-speed recovery time less than 20ms

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 105 x 152 x 74 (4.134" x 5.98" x 2.913")

QoS

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

Security

- **Port Security** — Static, Dynamic IP Source Guard, ARP Spoofing Prevention, Access Control List, DHCP Snooping,
- **Authentication** — 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption), TACACS+

Management

- **DHCP** — Client, Server, Option66/67/82
- **Access** — SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security access** — SSH2.0, SSL
- **Software upgrade** — TFTP, HTTP, Dual Image
- **NTP** — SNTP client

Ordering Information

- **EKI-7712G-4FPI-AE** — 8GE + 4SFP Port Managed PoE Ethernet Switch w/Wide Temp
- **EKI-7712G-4FP-AE** — 8GE + 4SFP Port Managed PoE Ethernet Switch

EKI-5624P
EKI-5624PI

4FE with PoE+2GE Industry Ethernet Proview PoE Switch

Features

- 4 x IEEE 802.3af/at-compliant fast Ethernet ports
- PoE standard + 2 x Gigabit Ethernet ports
- Communicates with SCADA software via Modbus/TCP
- Communicates with NMS via SNMP
- Port-based QoS for deterministic data transmission
- Wide operating temperature range of -40 ~ 60°C (EKI-5624PI)
- EMS Level 3 protection for extreme outdoor environments
- IEEE 802.3az Energy-Efficient Ethernet
- Jumbo frame support (up to 9,216 Bytes)
- Supports redundant 12 ~ 24 V (9 ~ 36 V) power input and P-Fail relay
- Loop detection

Introduction

The EKI-5624P and EKI-5624PI support PoE on Ports 1 ~ 4 and are classified as power source equipment. They are the world's first convergence switches for process control and IT networking management. This series use Modbus/TCP to communicate with SCADA software and SNMP to communicate with NMS simultaneously, thereby allowing full read control over devices for either control engineers or for IT personnel. The switches come with port-based QoS for deterministic data transmission, enabling specific ports to prioritize traffic and delay less important data over the remaining ports. The switches use the highest quality components and can operate at temperatures of -40 ~ 75°C while also possessing EMS Level 3 protection against electromagnetic interference. The switches comply with E-mark for in-vehicle applications and surveillance systems.

Specifications

Communications

- **Standard** IEEE 802.3af/at, 802.3, 802.3u, 802.3ab, 802.3az, 802.3x, 802.1p
- **LAN** 10/100BASE-TX, 10/100/1000BASE-TX
- **Transmission Distance** Up to 100 m
- **Transmission Speed** Up to 1000 Mbps

Interface

- **Connectors** 4 x 10/100BASE-TX with PoE +
  2 x 10/100/1000BASE-TX
  6-pin removable screw terminal (power & relay)

LED Indicators

- **System LED** P1, P2, P-Fail, Loop, PoE
- **Port LED status** 10/100BASE-TX or 10/100/1000BASE-TX: LNK/ACT, Speed, PoE port

Physical

- **Enclosure** Metal / Aluminum Shell with solid mounting kits
- **Protection Class** IP30
- **Installation** DIN-Rail and Wall-Mount
- **Dimensions (W x H x D)** 74 x 152 x 105 mm (2.913 x 5.984 x 4.137) inch

Environment

- **Operating Temperature** Wide Temp Models: -40 to 75°C (-40 to 167°F)
  Standard Models: -25 to 60°C (-4 to 140°F)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Relative Humidity** 10 ~ 95% (non-condensing)

Switch Properties

- **MAC Address** 2K entries
- **Packet Buffer** 1 Mbit
- **Switching Capacity** 4.8 Gbps

Power

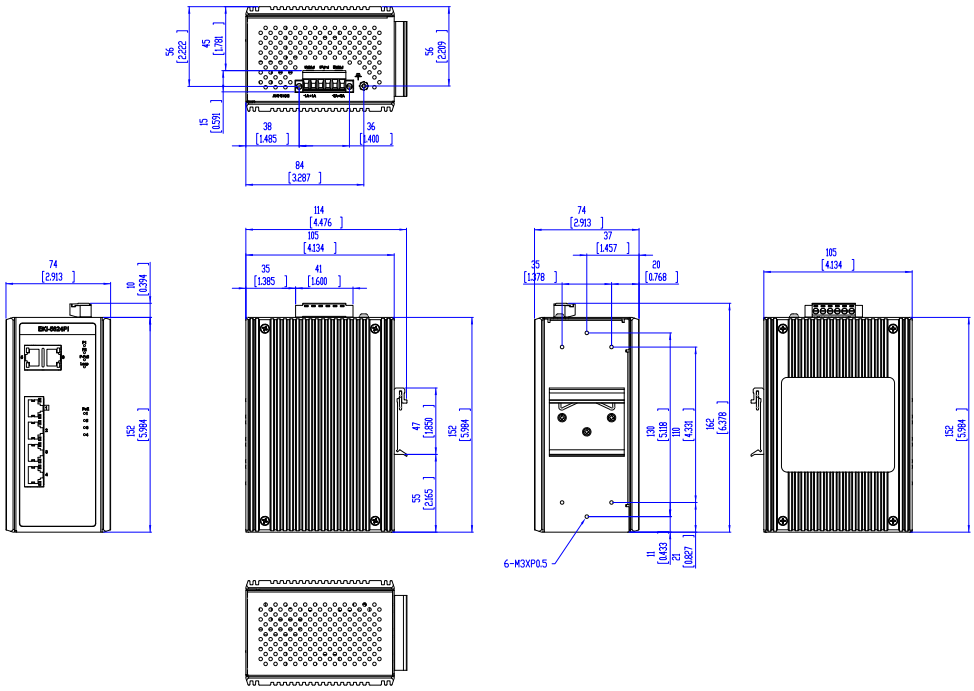
- **Power Consumption** 4.2w (System)
- **Power Input** 12-24 Vdc, (7A-3A)
- **Power Budget** 60w @ 24v
  50w @ 12v

Certification

- **Safety** IEC/EN 60950, UL61010-2-201, e-Mark Comply with *Class 1 Division 2, * IECEx, *ATEX
- **EMC** CE, FCC, e-Mark
- **EMI** EN 55011/ 55022 Class A, EN 61000-6-4, FCC Part 15 Subpart B Class A
- **EMS** EN 55024/ EN 61000-6-2
  EN 61000-4-2 (ESD) Level 3
  EN 61000-4-3 (RS) Level 3;
  EN 61000-4-4 (EFT) Level 3
  EN 61000-4-5 (Surge) Level 3;
  EN 61000-4-6 (CS) Level 3
  EN 61000-4-8 (Magnetic Field) Level 3
- **Shock** IEC 60068-2-27
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 60068-2-6
- **Patent** http://www.advantech.com/legal/patent

Dimensions

Unit: mm [inch]



Ordering Information

- **EKI-5624P** 4 x 10/100BASE-TX with PoE + 2GE , -25 to 60°C operating temperature
- **EKI-5624PI** 4 x 10/100BASE-TX with PoE + 2GE , -40 to 65°C operating temperature

EKI-5729P
EKI-5729PI

8 GE with PoE + 2GE Industry Ethernet Proview PoE Switch

Features

- Full Gigabit Ethernet ports and comply with IEEE
- 802.3af/at PoE standard
- Communicates with SCADA software via Modbus/TCP
- Communicates with NMS (Networking management system) via SNMP
- Port-based QoS for deterministic data transmission
- Wide operating temperature range of -40 ~ 75°C (EKI-5729PI)
- EMS Level 3 protection for extreme outdoor environments
- IEEE 802.3az Energy-Efficient Ethernet
- Jumbo frame support (up to 9,216 Bytes)
- Supports redundant 12 ~ 24 V (9 ~ 36 V) power input and P-Fail relay
- Loop detection

E13 CE FCC

Introduction

The EKI-5729P and EKI-5729PI switches support PoE on Ports 1 ~ 8. These switches are classified as power source equipment and are the world's first convergence switches for process control and IT networking management. The series use Modbus/TCP to communicate with SCADA software and SNMP to communicate with NMS simultaneously, thereby allowing full read control over devices for control engineers or IT personnel. The devices come with port-based QoS for deterministic data transmission, allowing specific ports to prioritize traffic and delay less important data over the remaining ports. The switches use the highest quality components, can operate in temperatures of -40 ~ 75°C, and provide EMS Level 3 protection against electromagnetic interference. The switches comply with E-mark for in-vehicle applications and surveillance systems.

Specifications

Communications

- **Standard** IEEE 802.3af/at, 802.3, 802.3u, 802.3ab, 802.3az, 802.3x, 802.1p
- **LAN** 10/100/1000BASE-T/TX
- **Transmission Distance** Up to 100 m
- **Transmission Speed** Up to 1000 Mbps

Interface

- **Connectors** 8 x 10/100/1000BASE-TX with PoE +
  2 x 10/100/1000BASE-TX
  6-pin removable screw terminal (power & relay)

LED Indicators

- **System LED** P1, P2, P-Fail, Loop, PoE
- **Port LED status** 10/100/1000BASE-TX: LNK /ACT, Speed, PoE port

Physical

- **Enclosure** Metal / Aluminum Shell with solid mounting kits
- **Protection Class** IP30
- **Installation** DIN-Rail and Wall-Mount
- **Dimensions (W x H x D)** 74 x 152 x 105 mm (2.913 x 5.984 x 4.137) inch

Environment

- **Operating Temperature** Wide Temp Models: -40 to 75° C (-40 to 167°F)
  Standard Models: -25 to 60° C (-4 to 140°F)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Relative Humidity** 10 ~ 95% (non-condensing)

Switch Properties

- **MAC Address** 8K entries
- **Packet Buffer** 4.1 Mbit
- **Switching Capacity** 20 Gbps

Power

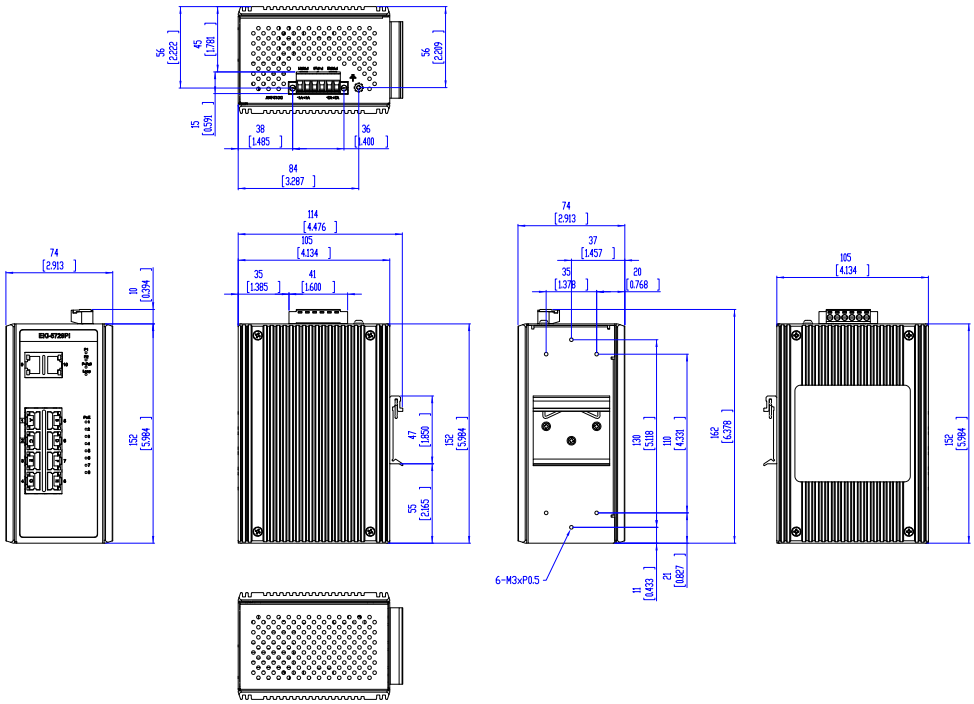
- **Power Consumption** 6w (System)
- **Power Input** 12-24 Vdc, (7A-3A)
- **Power Budget** 60w @ 24v
  50w @ 12v

Certification

- **Safety** UL 61010, e-Mark
- **EMI** CE, FCC Class A
- **EMS** EN 61000-4-2 (ESD) Level 3
  EN 61000-4-3 (RS) Level 3;
  EN 61000-4-4 (EFT) Level 3
  EN 61000-4-5 (Surge) Level 3;
  EN 61000-4-6 (CS) Level 3
  EN 61000-4-8 (Magnetic Field) Level 3
- **Shock** IEC 60068-2-27
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 60068-2-6
- **Patent** http://www.advantech.com/legal/patent

Dimensions

Unit: mm [inch]



Ordering Information

- **EKI-5729P-AE** 8 x 10/100/1000BASE-TX with PoE + 2GE
- **EKI-5729PI-AE** 8 x 110/100/1000BASE-TX with PoE + 2GE, Wide Temp.

EKI-2726FHPI

4G+2 SFP W/ 4 IEEE 802.3 High-Power PoE Industrial Wide Temperature Switch

Features

- All Gigabit Ethernet ports for 4 x copper and 2 x SFP
- Back-plane (switching fabric): 12Gbps
- Embedded 4 ports PoE inject function
- Provides power output of 30 W @ 55 V
- Redundant power design
- IP30-rated chassis design
- Supports operating temperatures of -40 ~ 75°C

Introduction

The EKI-2726 FHPI switch has 4 x 10/100/1000BASE-T Ethernet ports with PoE+ functionality and 2 x SFP sockets. It has been designed to work within a wide operating temperature range. This cost-effective solution meets the high reliability requirements and technical specifications for industrial applications. The equipment also meets the IEEE 802.3 at standard and can provide 30 W output per PoE port.

Specifications

Communications

Standard	IEEE 802.3, 802.3u, 802.3x, 802.3af/at, 802.3ab, 802.3z
LAN	10/100/1000BASE-T 1000BASE-SX/LX/LHX/XD/ZX/EZX
Transmission Distance	Ethernet: Up to 100 m SFP: Up to 110 km (depends on SFP)
Transmission Speed	Copper: 10/100/1000 Mbps, Auto-Negotiation Gigabit Fiber: Up to 1000 Mbps

Interface

Connectors	10/100/1000T(X): RJ-45 x 4 SFP: Gigabit Base x 2
LED Indicators	System: P1, P2, P-Fail, Per port: Link/Activity, Speed, PoE (1 to 4 ports)

Power

Power Consumption	5.5 watts @ 48V_{DC} (Ethernet only)
Power Input	48 V_{DC} (44V_{DC} to 57 V_{DC}), redundant dual inputs
Fault Output	1 Relay Output

Mechanism

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

Protection

Power Reverse	Present
Overload Current	Present

Environment

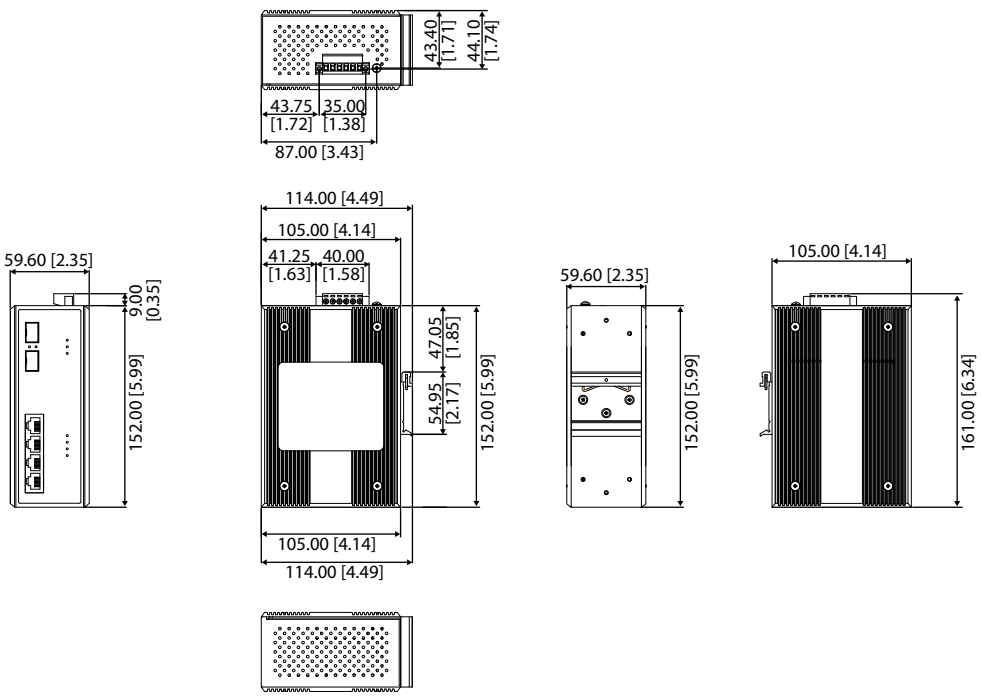
Operating Temperature	-40 ~ 75°C (-40 ~ 167°F)
Storage Temperature	-40 ~ 85°C (-40 ~ 185°F)
Operating Humidity	5 ~ 95% (non-condensing)
MTBF	339,740 hours

Certification

Safety	UL/cUL508 Class I, Division 2, Groups A, B, C and D
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
Patent	http://www.advantech.com/legal/patent

Dimensions

Unit: [mm]



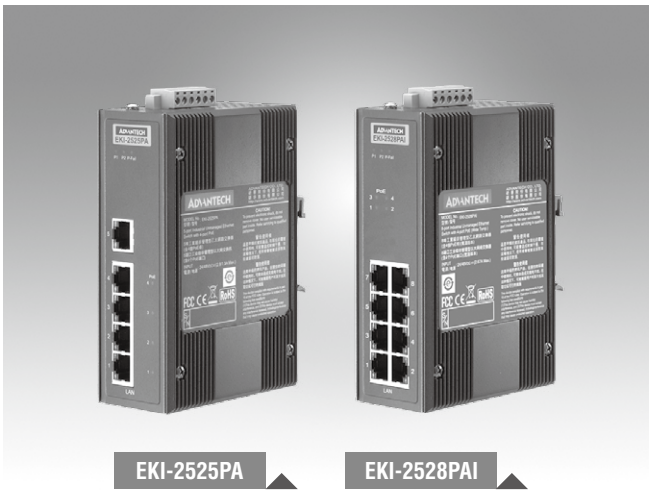
Panel Cut-out Dimensions: 114.00 x 152.00 x 59.60 mm (4.49" x 5.99" x 2.35")

Ordering Information

- **EKI-2726FHPI** 4G+2 SFP Unmanaged Gigabit Switch with 4-port PoE+(IEEE 802.3af/at)

EKI-2525PA
EKI-2528PAI

5-Port Industrial PoE Switch with 24/48 V_{DC} Power Input
8-Port Industrial PoE Switch with 24/48 V_{DC} Power Input and Wide Temperature



Features

- 5/8 x fast Ethernet ports with 4 x PoE ports with injector function
- Supports 10/100 Mbps auto negotiation
- Provides broadcast storm protection
- Ethernet ESD protection
- Power line EFT protection
- Slim size, DIN rail/wall mount options
- IP30-rated enclosure
- Redundant 24/48 V_{DC} power input and P-Fail relay
- Operating temperatures of -10 to 60°C (EKI-2525PA) and -40 ~ 75°C (EKI-2528PAI)

Introduction

The EKI-2525PA and EKI-2528PAI are 5/8-port unmanaged PoE industrial Ethernet switches with 4 PoE ports classified as power source equipment. These PoE switches realize a centralized power supply, providing up to 15.4 W of power per port. Advantech EKI PoE switches can be implemented to power IEEE 802.3af-compliant powered devices via Ethernet cable, thus eliminating the need for additional wiring. Advantech EKI PoE switches come equipped with all the standard features of the EKI family. Furthermore, they offer a 24/48 VDC redundant power input design and are secured with a double protection mechanism: power polarity reverse protect and an overload current resettable fuse. Advantech EKI PoE devices come with an IP30-rated compact metal housing to protect against dust in industrial environments.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x, 802.3af
- **LAN** 10/100BASE-TX
- **Transmission Distance** Up to 100 m
- **Transmission Speed** Up to 100 Mbps

Interface

- **Connectors** PoE Ports: 4 (Ports 1 ~ 4)
  Ethernet ports: 1 (Port 5 ~ Port 8), EKI-2525PA
  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)
  EKI-2528PAI: 65 W (Full load PoE)
- **Power Input** 24/48 V_{DC}, 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

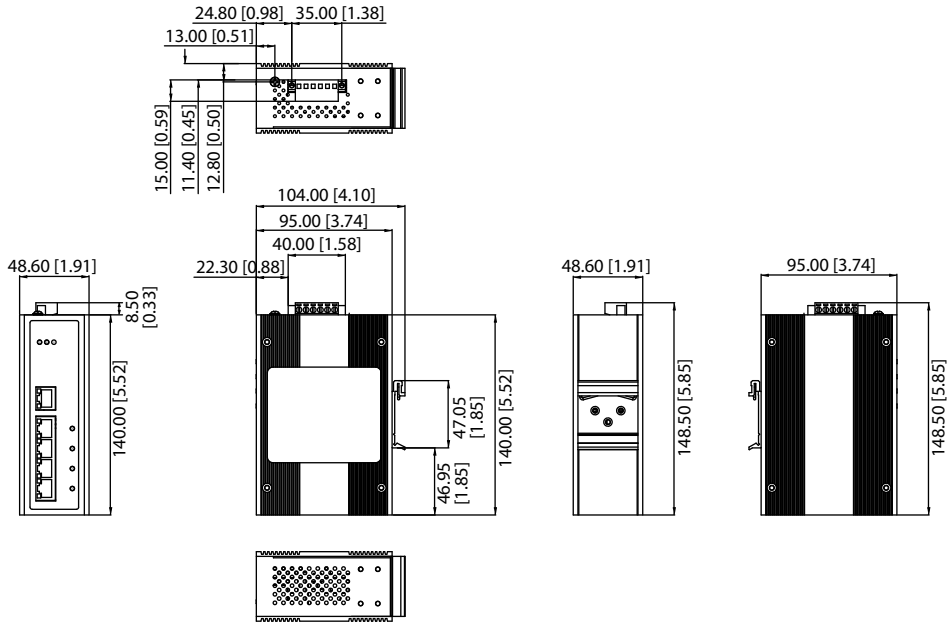
Certification

- **Safety** UL508
- **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
- **Patent** http://www.advantech.com/legal/patent

Dimensions

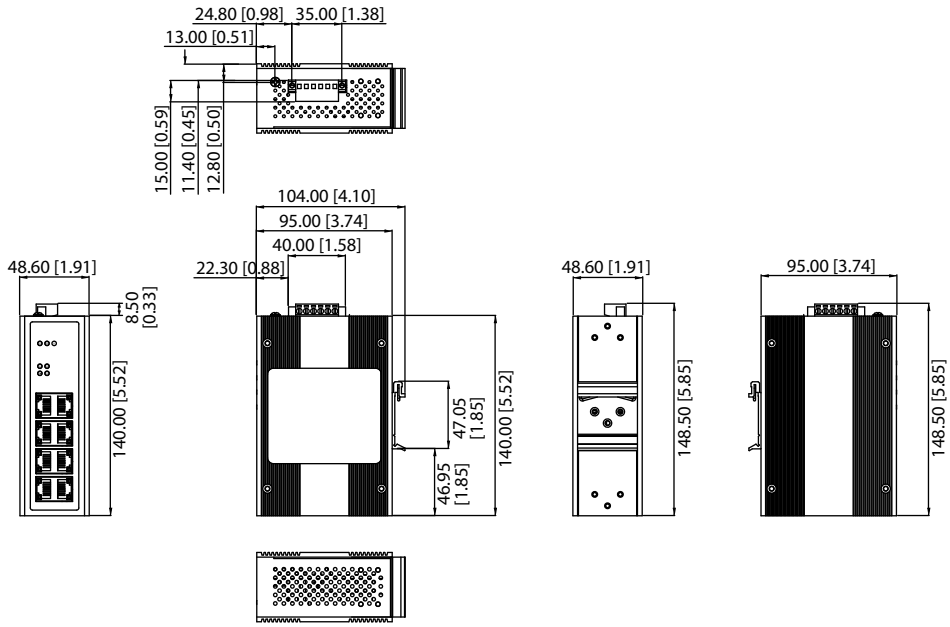
Unit: mm [inch]

EKI-2525PA



Panel Cut-out Dimensions: 104 x 140 x 48.6 mm (4.1" x 5.52" x 1.91")

EKI-2528PAI



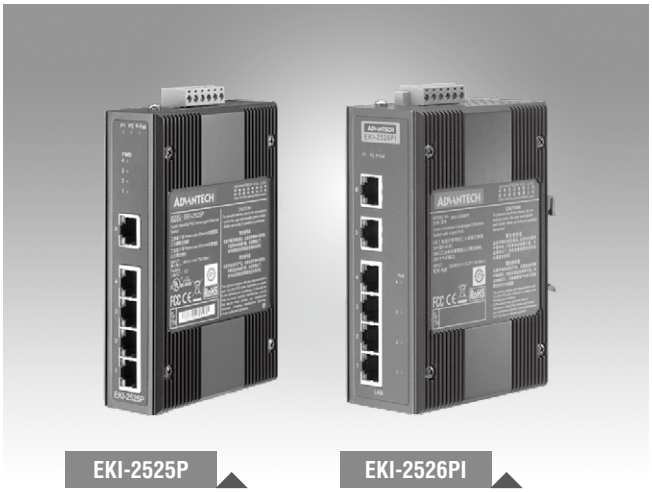
Panel Cut-out Dimensions: 104 x 140 x 48.6 mm (4.1" x 5.52" x 1.91")

Ordering Information

- **EKI-2525PA** 5-port Switch with 4 port-PoE and 24/48 V_{DC} Power Input
- **EKI-2528PAI** 8-port Switch with 4 port-PoE and 24/48 V_{DC} Power Input (Wide Temp)

EKI-2525P
EKI-2526PI

5-Port Industrial PoE Switch
6-Port Industrial PoE Switch with Wide Temperature



Features

- 5/6 x fast Ethernet ports with 4 x PoE ports with injector function
- Supports 10/100 Mbps auto negotiation
- Provides broadcast storm protection
- Ethernet ESD protection
- Slim size, DIN rail/wall mount options
- IP30-rated enclosure
- Redundant 24/48 V_{DC} power input and P-Fail relay
- Operating temperatures of -10 to 60°C (EKI-2525P) and -40 ~ 75°C (EKI-2526PI)

Introduction

The EKI-2525P and EKI-2526PI are 5/6-port unmanaged PoE industrial Ethernet switches with 4 PoE ports classified as power source equipment. These PoE switches realize a centralized power supply, providing up to 15.4 W of power per port. Advantech EKI PoE switches can be implemented to power IEEE 802.3af-compliant powered devices via Ethernet cable, thus eliminating the need for additional wiring. Advantech EKI PoE switches come equipped with all the standard features of the EKI family. Furthermore, they offer a 48 VDC redundant power input design and are secured with a double protection mechanism: power polarity reverse protect and an overload current resettable fuse. Advantech EKI PoE devices come with an IP30-rated compact metal housing to protect against dust in industrial environments.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x, 802.3af
- **LAN** 10/100BASE-TX
- **Transmission Distance** Ethernet: Up to 100 m (EKI-2525P/EKI-2526PI)
- **Transmission Speed** Up to 100 Mbps

Fiber Optics (EKI-252SPI)

- **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)
  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-2526PI: 62.6 W (Full load PoE)
- **Power Input** 48 V_{DC} (EKI-2525P/EKI-2526PI), 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)** 37 x 140 x 95 mm (1.46" x 5.51" x 3.74") (EKI-2525P)
  48.6 x 140 x 95 mm (1.91" x 5.51" x 3.74") (EKI-2526PI)
- **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-2525P)
  -40 ~ 75°C (-40 ~ 167°F) (EKI-2526PI)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity** 5 ~ 95% (non-condensing)
- **Storage Humidity** 0 ~ 95% (non-condensing)
- **MTBF** 440,132 hours

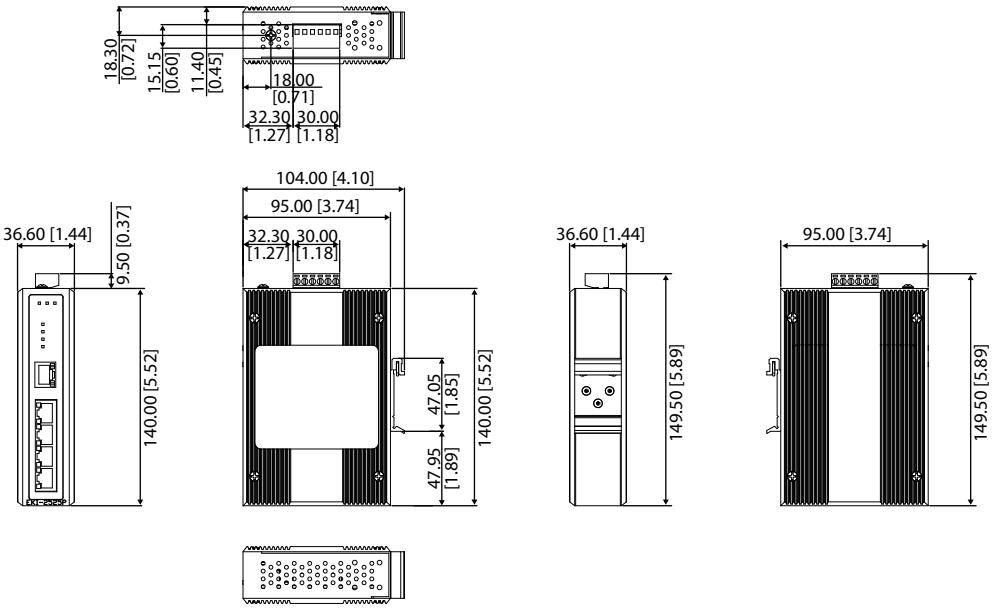
Certification

- **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
- **Patent** http://www.advantech.com/legal/patent

Dimensions

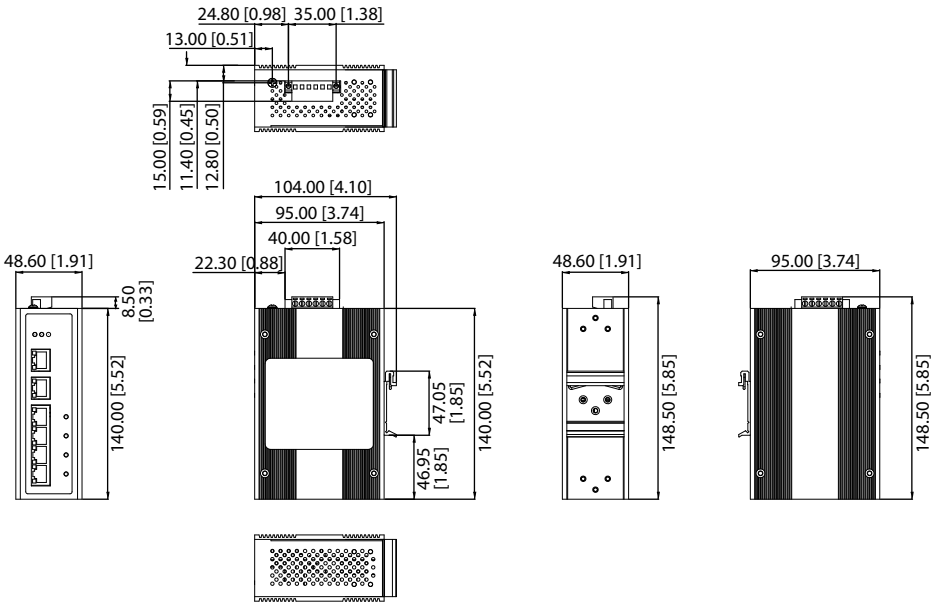
Unit: mm [inch]

EKI-2525P



Panel Cut-out Dimensions: 104.00 x 140.00 x 36.60 mm (4.10" x 5.52 x 1.44")

EKI-2526PI



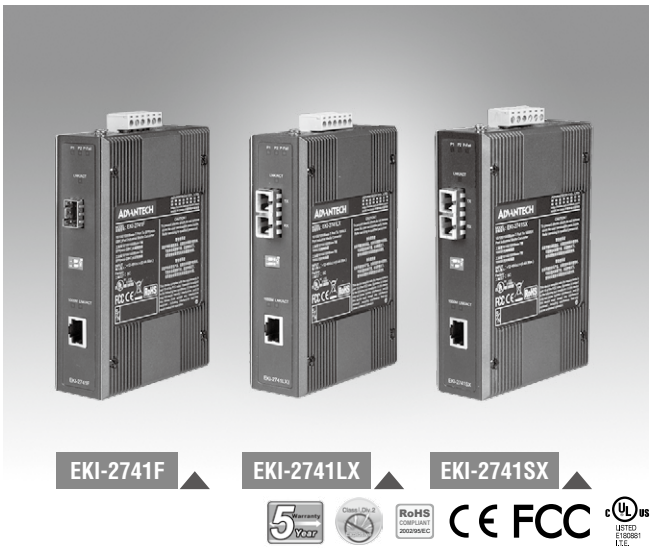
Panel Cut-out Dimensions: 104 x 140 x 48.6 mm (4.1" x 5.52" x 1.91")

Ordering Information

- **EKI-2525P** 5-port Switch with 4 port-PoE
- **EKI-2526PI** 6-port Switch with 4 port-PoE

EKI-2741 Series

10/100/1000-TX to Fiber Optic Gigabit Industrial Media Converters



Features

- 1 x 1000 Mbps Ethernet port with RJ45 connector
- 1 x 1000 Mbps fiber port with SC or SFP (mini-GBIC)-type connector for 1000BASE-SX/LX devices
- Dip switch for full/half duplex setting
- Supports MDI/MDI-X auto crossover
- Supports auto negotiation
- Redundant 12 ~ 48 V_{DC} power input
- Flexible mounting options: DIN rail and wall mount
- Provides link fault pass-through
- Jumbo frame: 9 Kbytes

Introduction

The EKI-2741 is designed to transparently convert Gigabit Ethernet networks to Gigabit fiber networks. Thus, it is ideal for fiber-to-building applications at central offices or local sites. The EKI-2741 supports MDI/MDIX auto detection, eliminating the need to use crossover wires. Furthermore, the EKI-2741 accepts a wide voltage range of 12 ~ 48 V_{DC} and provides 3,000 VDC surge protection (EFT) against overvoltage, making it highly suitable for harsh operating environments. The EKI-2741 is an enhanced Gigabit Ethernet-to-fiber converter. Aside from its standard features, this versatile converter also features link fault pass-through. Typically, 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. However, the EKI-2741 will force the link to shut down as soon as the link failure is detected, thus giving the application software a chance to correct the problem.

Specifications

Communications

Standard	IEEE 802.3, 802.3u, 802.3ab, 802.3x, IEEE 802.3z
LAN	10/100/1000BASE-TX, 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-2741LX) or up to 110 km (EKI-2741F) SFP: Up to 110 km (EKI-2741F)
Transmission Speed	Up to 1000 Mbps
Optical Fiber	
Multi-mode (EKI-2741SX)	Wavelength: 850 nm Tx Power: -4/-9.5 dBm Rx Sensitivity: -18 dBm Parameters: 50/125 um, 62.5/125 um
Single-mode (EKI-2741LX/LXI)	Wavelength: 1310 nm Tx Power: -3/-9.5 dBm Rx Sensitivity: -20 dBm Parameters: 9/125 um

Interface

Connectors	1 x RJ45 1 x SC type fiber connector (EKI-2741SX/LX) or 1 x SFP type fiber connector (EKI-2741F) 6-pin removable screw terminal (power & relay)
LED Indicators	P1, P2, P-Fail Fiber: LNK/ACT Ethernet: 1000M, LNK/ACT
DIP Switch	Port Alarm, LFP

Power

Power Consumption	5.28 W (EKI-2741F/FI) 5.18 W (EKI-2741SX/SXI) 5.30 W (EKI-2741LX/LXI)
Power Input	12 ~ 48 V_{DC}, 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

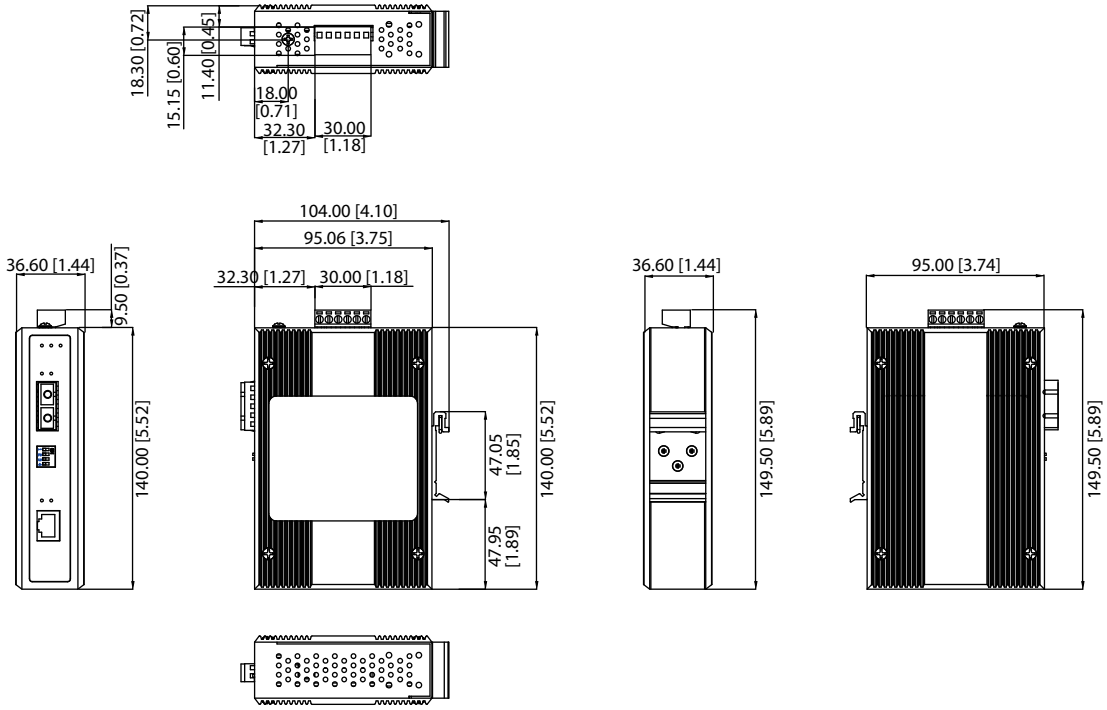
Power Reverse	Present
Overload current	Present

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/FI) 525,300 hours (EKI-2741SX/SXI/LX/LXI)

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 104 x 140 x 36.6 mm (4.1" x 5.52" x 1.44")

Certification

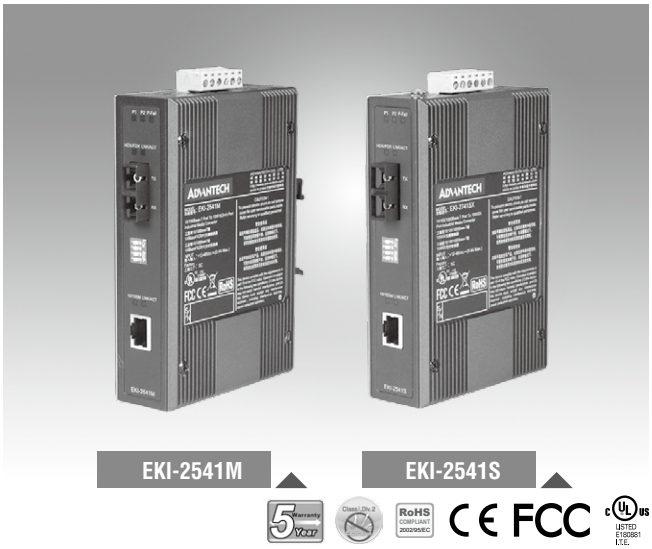
- **Safety** UL 60950-1, CAN/CSA-C22.2 No.60950
- **EMI** FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS** EN 61000-4-2
  EN 61000-4-3
  EN 61000-4-4
  EN 61000-4-5
  EN 61000-4-6
  EN 61000-4-8
- **Shock** IEC 60068-2-27
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 60068-2-6

Ordering Information

- **EKI-2741F** Giga Ethernet to SFP Fiber Converter
- **EKI-2741FI** Giga Ethernet to SFP Fiber Converter with Wide Temp.
- **EKI-2741SX** Giga Ethernet to 1000BASE-SX Fiber Converter
- **EKI-2741SXI** Giga Ethernet to 1000BASE-SX Fiber Converter with Wide Temp.
- **EKI-2741LX** Giga Ethernet to 1000BASE-LX Fiber Converter
- **EKI-2741LXI** Giga Ethernet to 1000BASE-LX Fiber Converter with Wide Temp.

EKI-2541M/MI
EKI-2541S/SI

10/100-TX to Multi-Mode SC-Type Fiber Optic Industrial Media Converter
10/100-TX to Single-Mode SC-Type Fiber Optic Industrial Media Converter



Features

- 1 x 10/100 Mbps Ethernet port with RJ45 connector
- 1 x 100 Mbps multi-mode/single-mode SC-type fiber port
- Internal jumper for link fault pass-through
- Supports full/half duplex flow control
- Supports store and forward transmission
- Supports auto-negotiation
- Supports MDI/MDI-X auto-crossover
- Redundant 12 ~ 48 V_{DC} power input
- Flexible mounting options: DIN rail and panel mount
- Wide operating temperatures range of -40 ~ 75°C (EKI-2541MI/SI)

Introduction

The EKI-2541M/2541S are designed to transparently convert Ethernet networks to fiber networks. The advantages of fiber optics are the wide bandwidth, EMI immunity, and long-distance transmission. Therefore, the EKI-2541M/2541S are ideal for fiber-to-building applications at central offices or local sites. These converters support MDI/MDIX auto detection, thus eliminating the need to use crossover wires. Furthermore, they can operate normally at temperatures of -10 ~ 60°C and they accept a wide voltage range of 12 ~ 48 V_{DC}. They also feature 3,000 V_{DC} surge protection (EFT) against overvoltage, making them highly suitable for harsh operating environments. The EKI-2541M/2541S are enhanced Ethernet to fiber-optic converters. Aside from their standard features, these versatile converters also feature link fault pass-through. Typically, 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. However, the EKI-2541M/2541S will force the link to shut down as soon as the link failure is detected, thus giving the application software a chance to correct the problem.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x
- **LAN** 10/100BASE-TX, 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
  6-pin removable screw terminal (power)
- **LED Indicators** P1, P2, P-Fail
  Ethernet: 10/100 m, LNK/ACT
  Fiber: HDX/FDX, LNK/ACT
- **DIP Switch** Port/Power Alarm, LFP
  Fiber: HDX/FDX, Converter/Switch

Power

- **Power Consumption** Max. 2.7 W
- **Power Input** 12 ~ 48 V_{DC}, 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

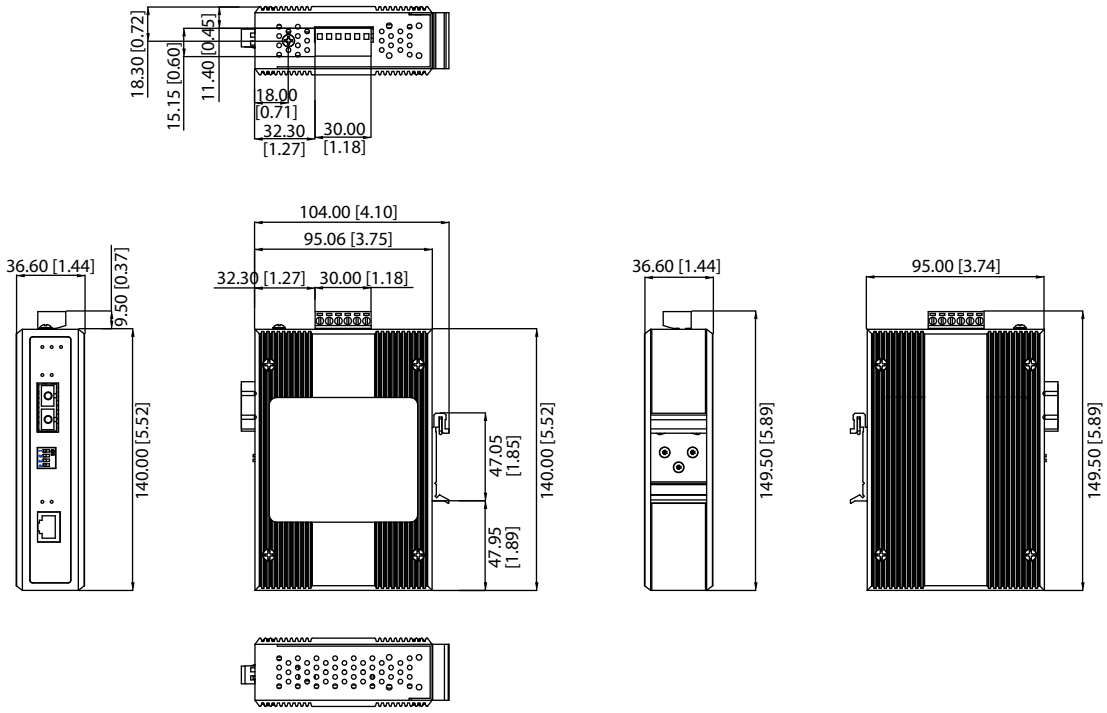
- **Power Reverse** Present
- **Overload current** Present

Environment

- **Operating Temperature** -10 ~ 60°C (14 ~ 140°F)
- **Wide Temp. model** -40 ~ 75°C (-40 ~ 167°F)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity** 5 ~ 95% (non-condensing)
- **Storage Humidity** 0 ~ 95% (non-condensing)
- **MTBF** 577,175 hours

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 104 x 140 x 36.6 mm (4.1" x 5.52" x 1.44")

Certification

- **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-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.

Industrial Wireless and Protocol Gateway Solutions

Wireless Access Points/Client

Model Name		EKI-6331AN	EKI-6332GN
Description		IEEE 802.11 a/n Wi-Fi AP/Client	IEEE 802.11 b/g/n Wi-Fi AP/ Client
Interface	IEEE Standard	IEEE 802.11 a/n	802.11 b/g/n
	100BaseFX	✓	✓
	1000BaseFX	-	-
RF	Frequuency	2.4GHz	5GHz
	MIMO	2T2R	2T2R
	Multi-Hopping	✓	✓
	Mobility/ Roaming	✓	✓
Operating Mode	Mesh	-	-
	Mobility/ Roaming	-	-
	Multi-Hopping	-	-
	AP/CPE	✓	✓
Power	PoE	Passive 24V	Passive 24V
	Power Input Voltage	24VDC	24VDC
	Redundant DC Power Input	-	-
Mechanism	DIN-rail Mount	-	-
	Wall Mount	-	-
	VESA Mount	-	-
	Pole Mount	✓	✓
	IP Grade	IP55	IP55
Operating Temperature	-20 ~ 70°C (-'4 ~ 158°F)	✓	✓
	-40 ~ 70° C ('-40 ~ 158° F)	-	-
Certifications	CE	✓	✓
	FCC	✓	✓
	Others	Telec, ANATEL	Telec

* Note: Transmit Output Power & Receive Sensitivity are specified on data sheet.

✓ : supported, - : not supported, △ : optional

Wireless Devices

Model Name		EKI-1361 EKI-1362	EKI-1361-MB EKI-1362-MB	EKI-6333AC
Description		1/2-port RS-232/422/485 to 802.11b/g/n WLAN Serial Device Server	1/2-port RS-232/422/485 to 802.11b/g/n WLAN Modbus Gateway	IEEE 802.11 a/b/g/n Wi-Fi AP
Connectivity	10/100Base-TX, Fixed	✓	✓	-
	10/100/1000Based-T, Fixed	-	-	✓
	RS-232 only	-	-	-
	RS-232/422/485	✓	✓	-
	Serial connector type	DB9 Male	DB9 Male	-
Operating Mode	Mobility/Roaming	✓	✓	-
	Multi-Hopping	-	-	-
	AP/CPE	-	-	✓
Enclosure & Mount kit	Enclosure	IP30	IP30	IP30
	DIN-rail	✓	✓	✓
	Wall	✓	✓	✓
	VESA Mount	-	-	-
	Pole Mount	-	-	-
Power	Power Input (VDC)	12~48V	12~48V	12~48V
	Power input (PoE)	-	-	-
	Power connector	Terminal block	Terminal block	Terminal block
	Power Consumption (12/24/48VDC) Watts	8W (EKI-1361) 9W (EKI-1362)	8W (EKI-1361-MB) 9W (EKI-1362-MB)	8W
Environment	Operating Temp.	-40 ~ 75°C	-40 ~ 75°C	-40 ~ 75°C
	Operating Humidity	10 ~ 95%	10 ~ 95%	10 ~ 95%
	Input Reverse Protection	✓	✓	✓
Software	Netwrok Protocol	-	Modbus TCP, Modbus RTU/ASCII	-
	Firewall	-	-	-
	Router	-	-	-
	Configuration Options	Web-base, windows utility	Web-base, windows utility	Web-base
	Authentication	Username/Password	Username/Password	Username/Password
	Standard Operation Mode	VCOM, USDG mode (TCP/UDP server, TCP/UDP client), Pair connection/Access Point Mode	Pair connection/Access Point Mode/ Modbus RTU Master/Slave, Modbus ASCII Master/ Slave	Access Point
WLAN	IEEE Standard	a/b/g/n	a/b/g/n	a/b/g/n
	Radio Number	1	1	1
	Security	WEP, WPA/WPA2-Personal, WPA/WPA2-Enterprise	WEP, WPA/WPA2-Personal, WPA/WPA2-Enterprise	WEP, WAP/WAP2-Persona, WAP/WAP2-Enterprise
RF	MIMO	2T2R	2T2R	2T2R
	Maximum Transmit Output Power	19dBm (11n)	19dBm (11n)	19dBm (11n)
	Receive Sensitivity	-93dBm (11g Rx0+Rx1)	-93dBm (11g Rx0+Rx1)	-93dBm (11g Rx0+Rx1)
	Antenna Connector	R-SMA	R-SMA	R-SMA
Cellular	Standard	-	-	-
	Five-band option in UMTS	-	-	-
	Quad-band optin in EDGE/GSM	-	-	-
	Certification (GCF, PTCRB)	-	-	-
Certification	UL60950-1	-	-	-
	EN60950-1	-	-	-
	CE (EN55022 class A, EN55024)	✓	✓	✓
	FCC (part 15 subpart B class A)	✓	✓	✓
	Hazardous Location (Class I, Division 2)	-	-	-
	Radio (EN 301 489-1/-4, EN 301 511)	-	-	-
	Radio (FCC part 22H, part 24E)	-	-	-
	EN 50155	-	-	-

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Industrial Wireless and Protocol Gateway Solutions

Fieldbus Gateway






Model Name		EKI-1221IPNMB	EKI-1221IEIMB	EKI-1242EIMS	EKI-1242PNMS	EKI-1242ECMS	EKI-1242BNMS
Description		Modbus TCP to PROFINET Protocol Gateway	Modbus TCP to EtherNet/IP Protocol Gateway	Modbus RTU/TCP to EtherNet/IP Fieldbus gateway	ModbusRTU/TCP to PROFINET Fieldbus gateway	ModbusRTU/TCP to EtherCAT Fieldbus gateway	ModbusRTU/TCP to BACnet Fieldbus gateway
Connectivity	10/100Base-TX, Fixed	2	2	4	4	4	4
	10/100/1000Based-T, Fixed	-	-	-	-	-	-
	RS-232 only	-	-	-	-	-	-
	RS-232/422/485	-	-	2	2	2	2
	Serial Connector Type	-	-	DB9 male	DB9 male	DB9 male	DB9 male
Operating Mode	Mobility/Roaming	-	-	-	-	-	-
	Multi-Hopping	-	-	-	-	-	-
	AP/CPE	-	-	-	-	-	-
Enclosure & Mount kit	Enclosure	IP30	IP30	IP30	IP30	IP30	IP30
	DIN-rail	✓	✓	✓	✓	✓	✓
	Wall	✓	✓	✓	✓	✓	✓
	VESA Mount	-	-	-	-	-	-
	Pole Mount	-	-	-	-	-	-
Power	Power Input (V_{DC})	(12~48V)	(12~48V)	(12~48V)	(12~48V)	(12~48V)	(12~48V)
	Power input (PoE)	-	-	-	-	-	-
	Power connector	Terminal block	Terminal block	Terminal block	Terminal block	Terminal block	Terminal block
	Power Consumption (12/24/48VDC) Watts	5.2W	5.2W	5.2W	5.2W	5.2W	5.2W
Environment	Operating Temp.	-40~70°C	-40~70°C	-10~60°C	-10~60°C	-10~60°C	-10~60°C
	Operating Humidity	10~95%	10~95%	10~95%	10~95%	10~95%	10~95%
	Input Reverse Protection	✓	✓	✓	✓	✓	✓
Software	Netwrok Protocol	Modbus TCP PROFINET	Modbus TCP EtherNet/IP	Modbus RTU/TCP EtherNet/IP	Modbus RTU/TCP PROFINET	Modbus RTU/TCP EtherCAT	Modbus RTU/TCP BACnet
	Firewall	-	-	-	-	-	-
	Router	-	-	-	-	-	-
	Configuration Options	Web-based	Web-based	Web-based	Web-based	Web-based	Web-based
	Authentication	Username/Password	Username/Password	Username/Password	Username/Password	Username/Password	Username/Password
	Standard Operation mode	Modbus/TCP Master PROFINET Slave	Modbus/TCP Master PROFINET Adaptor	ModbusRTU/TCP Master Ethernet/IP Adapter	ModbusRTU/TCP Master PROFINET Slave	ModbusRTU/TCP Master EtherCAT Slave	ModbusRTU/TCP Master BACNet Slave
WLAN	IEEE Standard	-	-	-	-	-	-
	Radio Number	-	-	-	-	-	-
	Security	-	-	-	-	-	-
RF	MIMO	-	-	-	-	-	-
	Maximum Transmit Output Power	-	-	-	-	-	-
	Receive Sensitivity	-	-	-	-	-	-
	Antenna Connector	-	-	-	-	-	-
Cellular	Standard	-	-	-	-	-	-
	Five-band Options UMTS	-	-	-	-	-	-
	Quad-band Options EDGE/GSM	-	-	-	-	-	-
	Certification (GCF, PTCRB)	-	-	-	-	-	-
Certification	UL60950-1	✓	✓	✓	✓	✓	✓
	EN60950-1	-	-	-	-	-	-
	CE (EN55022 class A, EN55024)	✓	✓	✓	✓	✓	✓
	FCC (part 15 subpart B class A)	✓	✓	✓	✓	✓	✓
	Hazardous Location (Class I, Division 2)	-	-	-	-	-	-
	Radio (EN 301 489-1/-4, EN 301 511)	-	-	-	-	-	-
	Radio (FCC part 22H, part 24E)	-	-	-	-	-	-
	EN 50155	-	-	-	-	-	-

✓ : supported, - : not supported, △ : optional

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Industrial Wireless and Protocol Gateway Solutions

Modbus Gateway
Modbus Router

Model Name		EKI-1221/CI/I EKI-1222/CI/I EKI-1224/CI/I
Description		1/2/4-Port Modbus Gateway
Connectivity	10/100Base-TX, Fixed	2
	10/100/1000Based-T, Fixed	-
	RS-232 only	-
	RS-232/422/485	1/2/4 (CI version: RS-422/485)
	Serial Connector Type	DB9 Male
Operating Mode	Mobility/Roaming	-
	Multi-Hopping	-
	AP/CPE	-
Enclosure & Mount kit	Enclosure	IP30
	DIN-rail	✓
	Wall	✓
	VESA Mount	-
	Pole Mount	-
Power	Power Input (V_{DC})	2* (12~48V)
	Power Input (PoE)	-
	Power Connector	Terminal block
	Power Consumption (12/24/48V_{DC}) Watts	5.2W (EKI-1221/1222) 6.3W (EKI-1224)
Environment	Operating Temp.	EKI-1221/EKI-1222/ EKI-1224: -10 ~ 60°C 'CI & I' models: -40 ~ 70°C
	Operating Humidity	5 ~ 95%
	Input Reverse Protection	-
Software	Netwrok Protocol	Modbus RTU, Modbus TCP, Modbus ASCII
	Firewall	-
	Router	-
	Configuration Options	Windows Utility, Web Browser
	Authentication	-
	Standard Operating Mode	Modbus RTU Master/Slave mode Modbus ASCII Master/ Slave mode
WLAN	IEEE Standard	-
	Radio Number	-
	Security	-
RF	MIMO	-
	Maximum Transmit Output Power	-
	Receive Sensitivity	-
	Antenna Connector	-
Cellular	Standard	-
	Five-band Options UMTS	-
	Quad-band Options EDGE/GSM	-
	Certification (GCF, PTCRB)	-
Certification	UL60950-1	✓
	EN60950-1	-
	CE (EN55022 class A, EN55024)	✓
	FCC (part 15 subpart B class A)	✓
	Hazardous Location (Class I, Division 2)	✓
	Radio (EN 301 489-1/-4, EN 301 511)	-
	Radio (FCC part 22H, part 24E)	-
	EN 50155	-

Serial Device Servers

Model Name		EKI-1521/CI/I EKI-1522/CI/I EKI-1524/CI/I	EKI-1528I-DR EKI-1528CI-DR	EKI-1528/I/TI EKI-1526/I/TI	ADAM-4571/L ADAM-4570/L
Description		1/2/4-port RS-232/422/485 Serial Device Server	8-port RS-232/422/485 Device Server 8-port RS-422/485 Device Server	8/16-port RS-232/422/485 Serial Device Server	1/2-port RS-232/422/485 Serial Device Server
Connectivity	10/100Base-TX, Fixed	2	2	-	1
	10/100/1000Based-T, Fixed	-	-	2	-
	RS-232 only	-	-	-	ADAM-4571L/4570L: 1/2
	RS-232/422/485	1/2/4 (CI version: RS-422/485)	8	8/16	ADAM-4571/4570: 1/2
	Serial Connector Type	DB9 Male	DB9 Male	DB9 male	ADAM-4571/L: DB9 Male ADAM-4570/L: 10-pin RJ48
Enclosure & Mount kit	Enclosure	IP30	IP30	SECC chassis	ABS+PC with solid mounting hardware
	DIN-rail	✓	✓	Rackmount	✓
	Wall	✓	✓	-	✓
	VESA Mount	-	-	-	-
	Pole Mount	-	-	-	-
Power	Power Input (V_{DC})	2* (12~48V)	2* (12~48V)	EKI-1528(I)/ EKI-1526(I): 100 ~ 240 V_{AC}, 50 ~ 60 Hz EKI-1528T(I)/ EKI-1526T(I): 12 ~ 48 V_{DC}, Terminal Block	(10~30V)
	Power Input (PoE)	-	-	-	-
	Power Connector	Terminal block	Terminal block	6-pin removable screw terminal	Terminal block
	Power Consumption (12/24/48V_{DC}) Watts	5.2 W (EKI-1521/ EKI-1522) 6.3 W (EKI-1524)	5 W (EKI-1528I) 6 W (EKI-1528CI)	5.6 W	2.5 W
Environment	Operating Temp.	EKI-1521/EKI-1522/ EKI-1524: -10 ~ 60°C 'CI & I' models: -40 ~ 70°C	-40 ~ 70°C	-10 ~ 60°C (14 ~ 140°F) "I" Model: -40 ~ 75°C (-40 ~ 167°F)	-10 ~ 60°C
	Operating Humidity	5 ~ 95%	10 ~ 95%	10 ~ 95%	5 ~ 95%
	Input Reverse Protection	-	-	-	-
Software	Network Protocol	ARP, ICMP, IPv4, TCP, UDP, BOOTP, DHCP Client, Auto IP, Telnet, SNMP, HTTP, DNS, SMTP, NTP	ARP, ICMP, IPv4, TCP, UDP, BOOTP, DHCP Client, Auto IP, Telnet, SNMP, HTTP, DNS, SMTP, NTP	ARP, ICMP, IPv4, TCP, UDP, BOOTP, DHCP Client, Auto IP, Telnet, SNMP, HTTP, DNS, SMTP, NTP	ARP, ICMP, IPv4, TCP, UDP, BOOTP, DHCP Client, Auto IP, Telnet, SNMP, HTTP, DNS, SMTP
	Firewall	-	-	-	-
	Router	-	-	-	-
	Configuration Options	Windows utility, Telnet console, Web Browser	Windows utility, Telnet console, Web Browser	Windows utility, Telnet console, Web Browser, serial console	Windows utility, Telnet console, Web Browser
	Authentication	-	-	-	-
	Standard Operating Mode	COM Port redirection (Virtual COM) TCP/UDP Server (Polling) Mode TCP/UDP Client (event handling) Mode Pair Connection (P2P) Mode RFC-2217 Mode	COM Port redirection (Virtual COM) TCP/UDP Server (Polling) Mode TCP/UDP Client (event handling) Mode Pair Connection (P2P) Mode RFC-2217 Mode	COM Port redirection (Virtual COM) TCP/UDP Server (Polling) Mode TCP/UDP Client (event handling) Mode Pair Connection (P2P) Mode RFC-2217 Mode	COM Port redirection (Virtual COM) TCP/UDP Server (Polling) Mode TCP/UDP Client (event handling) Mode Pair Connection (P2P) Mode
Certification	UL60950-1	✓	✓	-	-
	EN60950-1	-	-	-	-
	CE(EN55022 class A, EN55024)	✓	✓	✓	✓
	FCC (part 15 subpart B class A)	✓	✓	✓	✓
	Hazardous Location (Class I, Division 2)	✓	-	-	-
	Radio (EN 301 489-1/-4, EN 301 511)	-	-	-	-
	Radio (FCC part 22H, part 24E)	-	-	-	-
	EN 50155	-	-	-	-

✓ : supported, - : not supported, △ : optional

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Industrial Wireless and Protocol Gateway Solutions

Compact Ethernet Media Converters

Compact Ethernet Gigabit Media Converters

PoE, PoE+ Gigabit Media Converters







Model Name		MiniMc with LFPT	IE-MiniMc with LFPT	Giga-MiniMc with LFPT	IE-Giga-MiniMc with LFPT	PoE Giga-MiniMc w/LFPT	PoE+ Giga-MiniMc w/LFPT	IE-MultiWay
Part Numbers		855-11621, 855-11623, 855-11619	855-19822	856-11700, 856-11701, 856-11703	856-18930, 856-18931	PoE:857-11811, 857-11812, 857-11814	857-11911, 857-11912	858-11121
Description		Two Port Copper to Fiber compact 10/100 Media Converter with Link Fault Pass Through, unmanaged	Industrial Two Port Copper to Fiber compact 10/100Media Converter with Link Fault Pass Through, unmanaged	Two Port Copper to Fiber 10/100/1000 Media Converter with Link Fault Pass Through, Unmanaged	Industrial Two Port Copper to Fiber 10/100/1000 Media Converter with Link Fault Pass Through, unmanaged	PoE capable Unmanaged 10/100/1000 Media Converters	PoE+ capable Unmanaged 10/100/1000 Media Converters	Four Port Managed 10/100/1000 switch, with SFP capability, compact form factor
Interface	Ports Number	2	2	2	2	3	3	4
	10/100Base-T (X)	✓	✓	-	-	-	-	-
	100BaseFX	✓	✓	✓	✓	✓	-	✓
	10/100/1000Base-T (X)	-	-	✓	✓	2	2	✓
	1000Base-SX/LX	✓	✓	✓	✓	1	1	✓
	PoE (10/100/1000 Mbps)	-	-	-	-	1	-	-
	PoE+ (10/100/1000 Mbps)	-	-	-	-	✓	2	-
	PoE Reset DSW	-	-	-	-	✓	✓	-
	SFP Port Model Option	✓	-	✓	-	✓	✓	✓
	LFPT	✓	✓	✓	✓	✓	✓	✓
Network Management	Redundancy	-	-	-	-	-	-	✓
	Diagnostics	-	-	-	-	-	-	✓
	VLAN	-	-	-	-	-	-	✓
	Configuration	-	-	-	-	-	-	✓
	SNMP	-	-	-	-	-	-	✓
	Security	-	-	-	-	-	-	✓
	Jumbo Frames	1916	1916	10240	10240	10240	-	10240
Power	100-240VAC	✓	✓	✓	✓	✓	-	✓
	DC voltage	-	7-50 VDC	-	7-50 VDC	-	-	480 VDC
Hardware Mounting	DIN-rail Mount	✓	✓	✓	✓	✓	-	✓
	Wall Mount	✓	✓	✓	✓	✓	-	✓
	Rack Mount	✓	✓	✓	✓	✓	-	✓
	IP Level	-	-	-	-	-	-	-
Protection	ESD (Ethernet)	✓	✓	✓	-	-	-	
	Surge (EFT for power)	✓	✓	✓	✓	✓	✓	✓
	Reverse Polarity	✓	✓	✓	✓	✓	-	✓
Operating Temp	0 ~50°C	✓	-	✓	-	✓	-	-
	-25 ~ 85°C (-13 ~ +185°F)	-	-	-	✓	-	-	-
	-40 ~ 85°C (-40 ~ 185°F)	-	✓	-	-	-	-	✓
Certifications	CE	✓	✓	✓	✓	✓	-	✓
	FCC	✓	✓	✓	✓	✓	-	✓
	UL/cUL 60950-1	✓	✓	✓	✓	✓	-	✓
	Class 1, Division 2	-	-	-	-	-	-	-
	UL 508	-	-	-	-	-	-	-
	MSA compliant	-	-	-	-	-	-	-
	Class 1,Eye-safe Lasers	✓	✓	✓	✓	✓	-	✓

✓ : supported, - : not supported, △ : optional

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Industrial Wireless and Protocol Gateway Solutions

Serial Converters, Isolators and Surge Protectors






Model Name		485DRCI	485SD9R, 485SD9TB	FOSTCDRI	232OPDRI	485OPDRI	HESP4DR
Description		Triple Isolated RS-232 to RS-422/485 Converter	Port Powered RS-232 to RS-485 Converter	Triple Isolated RS-232/422/485 toFiber Converter	Triple Isolated RS-232 DIN Rail Repeater	Triple Isolated RS-485/422 DIN Rail Repeater	Three-stage DIN Rail RS422/485 Surge Protector
Function			Serial Converter		Isolator / Repeater		Surge Protector
Key Features		Class 1 Division 2/ Tripple Isolation, Oil and Gas Applications	Small Form Factor, Port Powered	Fiber to Serial	Class 1 Division 2/ Tripple Isolation, Oil and Gas Applications	Class 1 Division 2/ Tripple Isolation, Oil and Gas Applications	High Energy Surge Protector
Specifications	Temp	-40 to 80°C	0 to 70 C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C
	Isolation	✓	-	✓	✓	✓	-
	Input Power	10 to 48 V_{DC}	Port Powered from RS-232 Ports	10 to 48 V_{DC}	10 to 48 V_{DC}	10 to 48 V_{DC}	-
	Dataline Surge Protection	✓	-	✓	✓	✓	v (5 lines)
	RS-232 Connector	DB9 female	DB9 female	Removable Terminal Blocks	DB9 female & DB9 male	-	-
	RS-422/485 Connector and Power	Remmovable Terminal Blocks	DB9 female or Terminal Block	Remmovable Terminal Blocks	-	Remmovable Terminal Blocks	Terminal Block
	Maximum Buad Rate	115.2 kbps	115.2 kbps	115.2 kbps	115.2 kbps	115.2 kbps	-
	Mounting	DIN Rail	In-line	DIN Rail	DIN Rail	DIN Rail	DIN Rail
	Industrial Rating	Light	-	Light	Light	Light	Light
	UL Rating	UL 508	-	UL 508	UL 508	UL 508	-
	Class 1 Division 2	✓	-	✓	✓	✓	-

✓ : supported, - : not supported, △ : optional

Industrial Wireless and Protocol Gateway Solutions

USB to Serial Converters





Model Name	BB-USOPTL4DR-2	BB-USOPTL4	BB-USO9ML2	BB-USO9ML2-4P	BB-USOPTL4-4P
Series	Industrial	Industrial	Industrial	Industrial	Industrial
Description	USB to RS-422, RS-485 Isolated Converter, Industrial	USB to RS-422, RS-485 Isolated Converter, Commercial	USB to RS-232 Isolated Converter, Commercial	USB to RS-232 Isolated Converter, Industrial	USB to RS-422, RS-485 Isolated Converter, Industrial
Industrial Rating	Light	Light	Light	Light	Light
RS-232	-	-	✓	✓	-
RS-422	✓	✓	-	-	✓
RS-485 2-WIRE	✓	✓	-	-	✓
RS-485 4-WIRE	✓	✓	-	-	✓
TTL 5 V	-	-	-	-	-
TTL 3.3 V	-	-	-	-	-
SERIAL PORTS	2	1	1	4	4
High Retention USB Ports	✓	✓	-	✓	✓
Isolated	✓	✓	✓	✓	✓
Mounting	DIN	In Line	In Line	Panel	Panel
Shock and Vibration	-	-	-	-	-
Heavy Industrial	-	-	-	-	-
Serial Connector	Removable Terminal Block	Removable Terminal Block	DB9 Male	DB9 Male	Removable Terminal Block
Operating Temperature	0 to 70°C	0 to 70°C	0 to 70°C	0 to 70°C	0 to 70°C
Power Input	USB Bus	USB Bus	USB Bus	USB Bus or 10-30V_{DC}	USB Bus or 10-30V_{DC}
Metal Housing	-	-	-	-	-
LED Indicators	✓	✓	✓	✓	✓
UL	-	-	-	-	-
USB Cable Included	✓	✓	✓	✓	✓
Accessory Serial Cable	-	-	BB-9PAMF6	BB-9PAMF6	-
Accessory Power Supply	-	-		BB-MDR-20-24	BB-MDR-20-24
Operating System	Windows 10	Windows 10	Windows 10	Windows 10	Windows 10
Unique or Locked Serial Number	Locked	Unique	Unique	Locked	Locked

✓ : supported, - : not supported, △ : optional

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Industrial Wireless and Protocol Gateway Solutions

Ethernet to Serial Converters





Model Name		VESP211, VESP211-232, VESP211-485	VESR901	VESR921-MC	MESR901	MESR921-MC
Description		Compact Ethernet to Serial Converter	DIN Rail Mount Ethernet to Serial Converter	DIN Rail Mount Ethernet to Serial Converter with Fiber Port	Modbus Ethernet to Modbus Serial Converter	Modbus Ethernet to Modbus Serial Converter with Fiber Port
Function		VCOM, Socket Connection, Paired Mode			Modbus	
Ethernet	Copper Ports	1	1	1	1	1
	Fiber Ports	-	-	1 Multi-mode (SC)	-	1 Multi-mode (SC)
Serial	Port Count	1	1	1	1	1
	DB9	232	232	232	232	232
	Terminal Block	422/485	422/485	422/485	422/485	422/485
Specifications	Temp Spec	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C
	Power DC	10 to 30V_{DC}	10 to 48V_{DC}	10 to 48V_{DC}	10 to 48V_{DC}	10 to 48V_{DC}
	Mounting	Panel	DIN	DIN	DIN	DIN
	Class 1 Division 2	-	✓	✓	✓	✓

Wireless Sensing Network


Industrial Cellular Router




Model Name		Wzzard-LRPv Sensor Node	Wzzard	SmartStart	SmartFlex	SmartSwarm 243	WISE-6610
Part Number		BB-WSLxxxxxx	BB-WSDxxxx	BB-SL306x0110-SWH	BB-SR30xxxxxx	BB-SG30000115-43	WISE-6610-XX00-A
Description		Industrial LoRa Private Node	Intelligent Wireless Sensor Node	Intelligent LTE Router	Flexible, Module LTE Router	Industrial LoRa Private Gateway	LoRaWAN Gateway support up to 100/500 nodes with 868/915MHz
Specifications	Mobile Wireless	LoRa	DUST/BLE	GPRS/3G/LTE/WiFi	GPRS/3G/LTE/WiFi	LoRa	LoRaWAN
	Communication Interface	AI/DI/DO	AI/DI/DO	ETH/RS232/IO	ETH/SD/USB/IO/ RS232&485/POE	ETH/IO	LoRaWAN
	Temp	-40~75 °C	-40~80 °C	-40~75 °C	-40~75 °C	-40~75 °C	-40~75 °C
	Power Input	3.3 V_{DC}	3.3 V_{DC}	9 -36 V_{DC}	10 -69 V_{DC}	9 -36 V_{DC}	9~36 V_{DC}
	Dimensions (W x Hx D)	95 x 116 x 65 mm	95 x 116 x 65 mm	30 x 87 x 127 mm	55 x 97 x 125 mm	30 x 87 x 127 mm	150 x 30 x 83 mm
	Weight	340g	340g	187g	375g	187g	187g

✓ : supported, - : not supported, △ : optional

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Industrial Wireless and Protocol Gateway Solutions

USB Hubs and Isolators





Model Name	BB-UHR304	BB-UHR204	BB-UH104	BB-UHR401	BB-UHR402
Series	Heavy Duty Hub	Heavy Duty Hub	Hub	Heavy Duty Isolator	Heavy Duty Isolator
Description	USB Hub, 4 Port, Isolated, Industrial	USB Hub, 4 Port, Industrial	USB Hub, 4 Port, Light Industrial	USB Isolator, 1 Port, Industrial	USB Isolator, 2 Port, Industrial
USB Standard	2.0	2.0	2.0	2.0	2.0
Isolation	4 KV	-	-	4 KV	4 KV
Maximum USB Speed	12 Mbps	480 Mbps	480 Mbps	12 Mbps	12 Mbps
High Retention USB Ports	✓	✓	✓	✓	✓
Downstream Ports	4	4	4	1	2
Operating Temperature	(-)40 to 80 °C	(-)40 to 80 °C	(-)40 to 80 °C	(-)40 to 80 °C	(-)40 to 80 °C
Shock and Vibration	✓	✓	-	✓	✓
Heavy Industrial	✓	✓	-	✓	✓
USB Bus Power		✓	✓		
External Power Inputs	2	2	-	1	1
Primary External Power Input	Removable Terminal Block	Removable Terminal Block	-	Threaded Barrel Jack	Threaded Barrel Jack
Secondary External Power Input	Threaded Barrel Jack	Threaded Barrel Jack	-	-	-
Metal Housing	✓	✓	-	-	-
LED Indicators	✓	✓	-	✓	✓
DIN Mount	✓	✓	-	✓	✓
Panel Mount	✓	✓	-	✓	✓
In Line	-	-	-	-	-
UL	C1D2	C1D2	-	-	-
USB Cable Included	✓	✓	-	✓	✓
Power Supply Included	-	-	-	✓	✓
Accessory Power Supply	BB-MDR-20-24	BB-MDR-20-24	-	BB-PS12VLB-INT-MED	BB-PS12VLB-INT-MED
Driver	-	-	-	-	-

✓ : supported, - : not supported, △ : optional

Industrial Wireless and Protocol Gateway Solutions

Special Serial Converters

Model Name	BB-232LPTTL	BB-232LPTTL33	BB-422TTL	BB-232CL9R	BB-232CLDR	BB-CANFB	BB-CANOP
Series	TTL Converter	TTL Converter	TTL Converter	Current Loop Converter	Current Loop Converter	CAN (Controller Area Network)	CAN (Controller Area Network)
Description	RS-232 to 5 V TTL Converter	RS-232 to 3.3 V TTL Converter	RS-422 to 5 V TTL Converter	RS-232 to Current Loop Converter	RS-232 to Current Loop Converter	CAN Bus to Fiber Repeater	CAN Bus Isolator
Industrial Rating	Light	Light	Light	Light	Light	Light	Light
Isolated	-	-	-	-	✓	✓	✓
3 Way Isolation	-	-	-	-	-	-	-
Mounting	In Line	In Line	In Line	In Line	DIN	DIN	DIN
RS-232	✓	✓	-	✓	✓	-	-
RS-422	-	-	✓	-	-	-	-
SM Fiber	-	-		-	-	✓	-
3.3 V TTL	-	✓	-	-	-	-	-
5 V TTL	✓	-	✓	-	-	-	-
Current Loop	-	-	-	✓	✓	-	-
CAN	-	-	-	-	-	✓	✓
Operating Temperature	0 to 70 °C	0 to 70 °C	0 to 50 °C	0 to 50 °C	(-)40 to 80 °C	0 to 70 °C	0 to 70 °C
Input Power	Port Powered	Port Powered	12 V_{DC}	12 V_{DC}	10 to 30 V_{DC}	10 to 30 V_{DC}	10 to 30 V_{DC}
Port Power Option	✓	✓	-	-	-	-	-
Power Supply Included	-	-	-	-	-	-	-
Power Connector	-	-	2.5 mm plug	Terminal Block	Terminal Block	Terminal Block	Terminal Block
RS-232 Connector	DB9 F	DB9 F	-	DB9 F	Terminal Block	-	-
TTL Connector	DB9 M	DB9 M	DB25 M	-	-	-	-
Current Loop Connector	-	-	-	Terminal Block	Terminal Block	-	-
CAN Connector	-	-	-	-	-	Terminal Block	Terminal Block
RS-422 Connector	-	-	DB25 F	-	-	-	-
Fiber Connector	-	-	-	-	-	ST	-
Maximum Baud Rate	115.2 kbps	115.2 kbps	115.2 kbps	19.2 kbps	19.2 kbps	250 kbps	250 kbps
Accessory Serial Cable	BB-9PAMF6	BB-9PAMF6	BB-232AMF5	-	-	-	-
Accessory Power Supply	-	-	-	BB-SMI6-12-V-ST	BB-MDR-20-24	BB-MDR-20-24	BB-MDR-20-24

✓ : supported, - : not supported, △ : optional

Industrial Wireless and Protocol Gateway Solutions

IE-SFP Fiber Modules





Model Name	808-38101	808-38103	808-38104	808-38519	808-38520
SFP Type	SFP	SFP	SFP	SFP	SFP
Part Description	IE-SFP/155-ED, MM850-LC	IE-SFP/155-ED, SM1310-LC	IE-SFP/155-ED, SM1310/PLUS -LC	IE-SFP/155-ED, SSFX-SM1310 / PLUS-LC (1310XMT/1550RCV)	IE-SFP/155-ED, SSFX-SM1550 / PLUS-LC (1550XMT/1310RCV)
Typical Speed Mbps	100	100	100	100	100
Mode (Fiber)	Multi Mode	Single Mode	Single Mode	Single Mode	Single Mode
BiDi/Single Strand	-	-	-	✓	✓
Wavelength (nm)	850	1310	1550	1310	1550
Connector Type	LC	LC	LC	LC	LC
Distance (KM)	2	20	40	40	40
Power (dB)	14.5	21	31	26	26
DDMI	Yes	Yes	Yes	Yes	Yes
Temperature	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C
Use With SFP P/N (Works in Pair with)	-	-	-	808-38520	808-38519
MSA (Multi-Source Aggrement)	✓	✓	✓	✓	✓
Laser 1 Class 1 IEC 60825-2	✓	✓	✓	✓	✓
Telecordia GR-468-CORE	✓	✓	✓	✓	✓





Model Name	808-38529	808-38530	808-38201	808-38203	808-38205
SFP Type	SFP	SFP	SFP	SFP	SFP
Part Description	IE-SFP/155-ED, SSFX-SM1310 / LONG-LC (1310XMT/1550RCV)	IE-SFP/155-ED, SSFX-SM1550 / LONG-LC (1550XMT/1310RCV)	IE-SFP/1250-ED, MM850-LC	IE-SFP/1250-ED, SM1310/ PLUS-LC	IE-SFP/ 1250-ED, SM1510/XLONG-LC (LFP260)
Typical Speed Mbps	100	100	1000	1000	1000
Mode (Fiber)	Single Mode	Single Mode	Multi Mode	Single Mode	Single Mode
BiDi/Single Strand	✓	✓	-	-	-
Wavelength (nm)	1310	1550	850	1310	1510
Connector Type	LC	LC	LC	LC	LC
Distance (KM)	60	60	220/550m	30	70
Power (dB)	29	29	7.5	17	21
DDMI	✓	✓	✓	✓	✓
Temperature	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C
Use With SFP P/N (Works in Pair with)	808-38530	808-38529	-	-	-
MSA (Multi-Source Aggrement)	✓	✓	✓	✓	✓
Laser 1 Class 1 IEC 60825-2	✓	✓	✓	✓	✓
Telecordia GR-468-CORE	✓	✓	✓	✓	✓

✓ : supported, - : not supported, △ : optional

Industrial Wireless and Protocol Gateway Solutions




Model Name	808-38206	808-38721	808-38722	808-38723
SFP Type	SFP	SFP	SFP	SFP
Part Description	IE-SFP/1250-ED, MM1310-LC	IE-SFP/1250-ED, SSLX-SM1310-LC (1310XMT/1550RCV)	IE-SFP/1250-ED, SSLX-SM1550 -LC (1550XMT/1310RCV)	IE-SFP/1250-ED, SSLX-SM1310 /PLUS-LC (1310XMT/1550RCV)
Typical Speed Mbps	1000	1000	1000	1000
Mode (Fiber)	Multi Mode	Single Mode	Single Mode	Single Mode
BiDi/Single Strand	-	✓	✓	✓
Wavelength (nm)	1310	1310	1550	1310
Connector Type	LC	LC	LC	LC
Distance (KM)	2	20	20	40
Power (dB)	10	15	15	20
DDMI	✓	✓	✓	✓
Temperature	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C
Use With SFP P/N (Works in Pair with)	-	808-38722	808-38721	808-38724
MSA (Multi-Source Aggrement)	✓	✓	✓	✓
Laser 1 Class 1 IEC 60825-2	✓	✓	✓	✓
Telecordia GR-468-CORE	✓	✓	✓	✓



Model Name	808-38724	808-38600	808-38601
SFP Type	SFP	SFP+	SFP+
Part Description	IE-SFP/1250-ED, SSLX-SM1550 /PLUS-LC (1550XMT/1310RCV)	IE-SFP+SR/10G-ED, MM850-LC	IE-SFP+LR/10G-ED, SM1310-LC
Typical Speed Mbps	1000	10G	10G
Mode (Fiber)	Single Mode	Multi Mode	Single Mode
BiDi/Single Strand	✓	-	-
Wavelength (nm)	1550	850	1310
Connector Type	LC	LC	LC
Distance (KM)	40	33	10
Power (dB)	20	2.8	8.4
DDMI	✓	✓	✓
Temperature	-40 to +85°C	-10 to +70°C	-10 to +70°C
Use With SFP P/N (Works in Pair with)	808-38723	-	-
MSA (Multi-Source Aggrement)	✓	✓	✓
Laser 1 Class 1 IEC 60825-2	✓	✓	✓
Telecordia GR-468-CORE	✓	✓	✓

✓ : supported, - : not supported, △ : optional

EKI-6331AN

IEEE 802.11 a/n Wi-Fi AP/Client

Features

- Complies with IEEE 802.11 a/n
- IP55-rated waterproof design
- MIMO 2 x 2 11n
- External RP-SMA connectors for 2T2R antennas
- High output power
- Passive 24 V PoE
- WPA/WPA2-Enterprise encryption for highly secure wireless networks
- WEP/WPA/WPA2/IEEE 802.1x authentication support
- IGMP snooping protocol support

Introduction

The EKI-6331AN is a feature-rich wireless AP/client that provides reliable 5-GHz wireless connectivity for industrial environments. The PoE injector enhances flexibility in deployment of this AP/client, even where DC power availability may be low. As an 802.11n-compliant device, the EKI-6331AN provides data rates six times higher than legacy 802.11a devices. With MIMO 2 x 2 technology, the EKI-6331AN provides robust wireless connectivity and a high throughput rate for wireless transmission. Furthermore, support for WMM and IGMP snooping protocols ensures that the EKI-6331AN can effectively improve the reliability of wireless connections, especially in applications that require high throughput data transmission. To secure wireless connections, the 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
  IEEE 802.11n wireless LAN standard
  Passive 24 V PoE, max. distance: 50 meters
- **Certification** FCC 15B/C
  EN300328 V17.1
  EN301489 -1/-17
  EN55022/24
  EN60950
  Telec
- **Data Rates** 11a: 54M, 48M, 36M, 24M, 18M, 12M, 9M, 6Mbps auto fallback
  11n: HT20 MCS0 ~ 15 / HT40 MCS0 ~ 15

Physical Specifications

- **Power** DC 24 V / 1A; 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** Wall, Pole
- **Weight** 0.5 Kg

Environment

- **Operating Temp.** -20 ~ 70 °C (-4 ~ 158 °F)
- **Storage Temperature** -40 ~ 70 °C (-40 ~ 158 °F)
- **Humidity** 10% ~ 95% non-condensing

Interface Operation Modes

- Access Point (AP) / Client

Antenna

- Default external 5 dBi Omni antenna
- 2 x RP-SMA connectors (female) for RP-SMA antennae (male)

Other Features

- **Management** Telnet, FTP, SNMP, Web UI
- **Security** Open System , Shared Key, Lagacy 8021X, WPA, WPA2, WPA-PSK (TKIP), WPA2-PSK(AES)
- **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

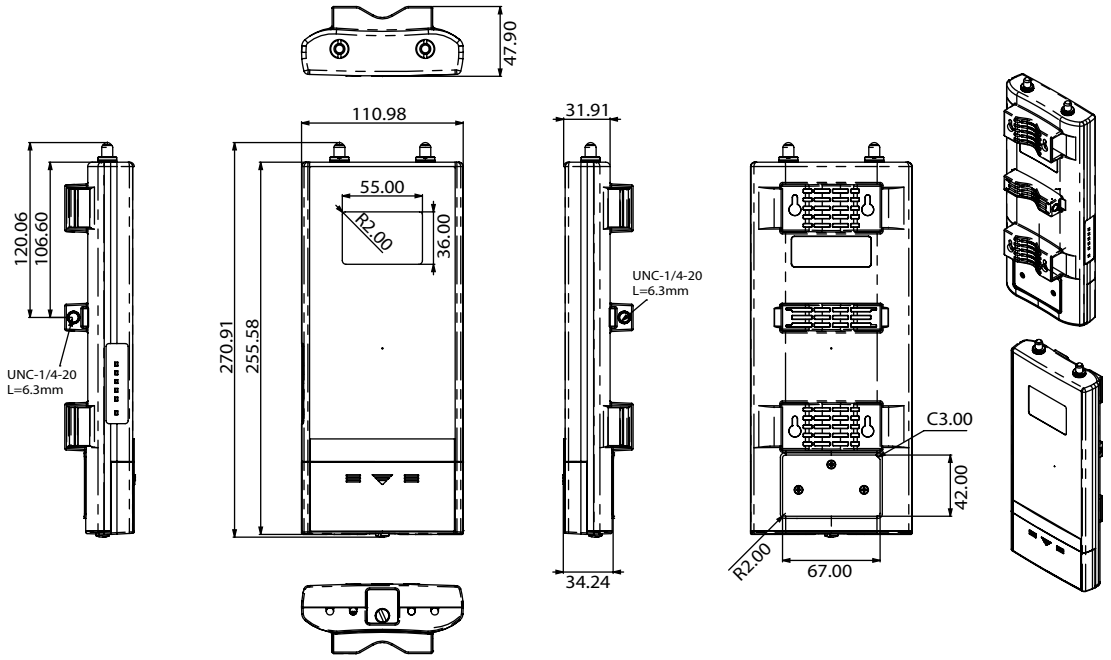
- **FCC** 5.15 GHz ~ 5.25 GHz ; 5.725 GHz ~ 5.85 GHz
- **CE** 5.15 GHz ~ 5.35 GHz; 5.47 GHz ~ 5.725 GHz

Wireless Transmission Rates

- **IEEE 802.11a** 6-24 Mbps: 23 dBm
  54 Mbps: 20 dBm
- **IEEE 802.11n** HT20 - MCS0: 23 dBm
  MCS15: 19 dBm
  HT40 - MCS0: 21 dBm
  MCS15: 19 dBm
- Note: The listed value is the target power calibrated in the card. The actual power will vary depending on each country's regulation.

Dimensions

Unit: mm



Panel Cut-out Dimensions: 111 x 256 x 48 mm

Receiver Sensitivity

- **IEEE 802.11a** 6Mbps: -89 dBm
  54Mbps: -70 dBm
- **IEEE 802.11n** HT20 - MCS15: -65 dBm
  HT40 - MCS15: -62 dBm

Ordering Information

- **EKI-6331AN** IEEE 802.11 a/n Wireless AP/Client
- **EKI-6331AN-EU** IEEE 802.11 a/n Wireless AP/Client (EU)

EKI-6332GN

IEEE 802.11b/g/n Wi-Fi AP/Client

Features

- Compliant with IEEE 802.11b/g/n
- IP55-rated waterproof design
- External RP-SMA connectors for 2T2R antennas
- High output power
- MIMO 2 x 2 11n
- Passive 24 V PoE
- WPA/WPA2-Enterprise encryption for highly secure wireless networks
- WEP/WPA/WPA2/ IEEE 802.1 x authentication support
- Spanning tree and IGMP snooping protocol support

Introduction

The EKI-6332GN is a feature-rich wireless AP/client that provides reliable wireless connectivity for industrial environments. The PoE injector enhances flexibility in deployment of this AP/client, even where DC power availability may be low. As an 802.11n-compliant device, the EKI-6332GN provides data rates six times higher than legacy 802.11a devices. With support for WMM and IGMP snooping protocols, the EKI-6332GN can effectively improve the reliability of wireless connections, especially in applications that require high throughput data transmission. To secure wireless connections, the EKI-6332GN implements the latest encryption technologies including WPA2/WPA/802.1x for powerful security authentication.

Specifications

Standard Support

- **Wireless** IEEE 802.11b/g/n
- **Ethernet** IEEE 802.3u MDI / MDIX 10/100 Fast Ethernet
- **LAN** IEEE 802.11b/g wireless LAN interface
  IEEE 802.11n wireless LAN standard
  Passive 24 V PoE, max. distance: 50 meters
- **Certification** FCC 15B/C
  EN300328 V181
  EN301489 -1/-17
  Telec
  EN55022/24
  EN60950
- **Data Rates** 11b: 11M, 5.5M, 2M, 1Mbps
  11g: 54M, 48M, 36M, 24M, 18M, 12M, 9M, 6Mbps
  11n: HT20 MCS0 ~ 15 / HT40 MCS0 ~ 15

Physical Specifications

- **Power** DC 24 V / 1A; 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** Wall, Pole
- **Weight** 0.5 Kg

Environment

- **Operating Temperature** Non Heater : -20 ~ 70 °C (-4 ~ 158 °F)
- **Storage Temperature** -40 ~ 70 °C (-40 ~ 158 °F)
- **Humidity** 10% ~ 95% non-condensing

Interface Operation Modes

- Access Point (AP) / Client

Antenna

- Default external 5 dBi Omni antenna
- 2 x RP-SMA connectors (female) for RP-SMA antennae (male)

Other Features

- **Management** Telnet, FTP, SNMP, Web UI
- **Wireless** Radio on/off, WMM/Regatta Mode, Output Power Control, Fragmentation Length, Beacon Interval, RTS/CTS threshold, DTIM Interval,
- **Security** Open System , Shared Key, Lagacy 8021X, WPA, WPA2, WPA-PSK (TKIP), WPA2-PSK(AES)

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 802.11gn** HT40
  FCC: CH3 ~ CH9; ETSI: CH3 ~ CH11

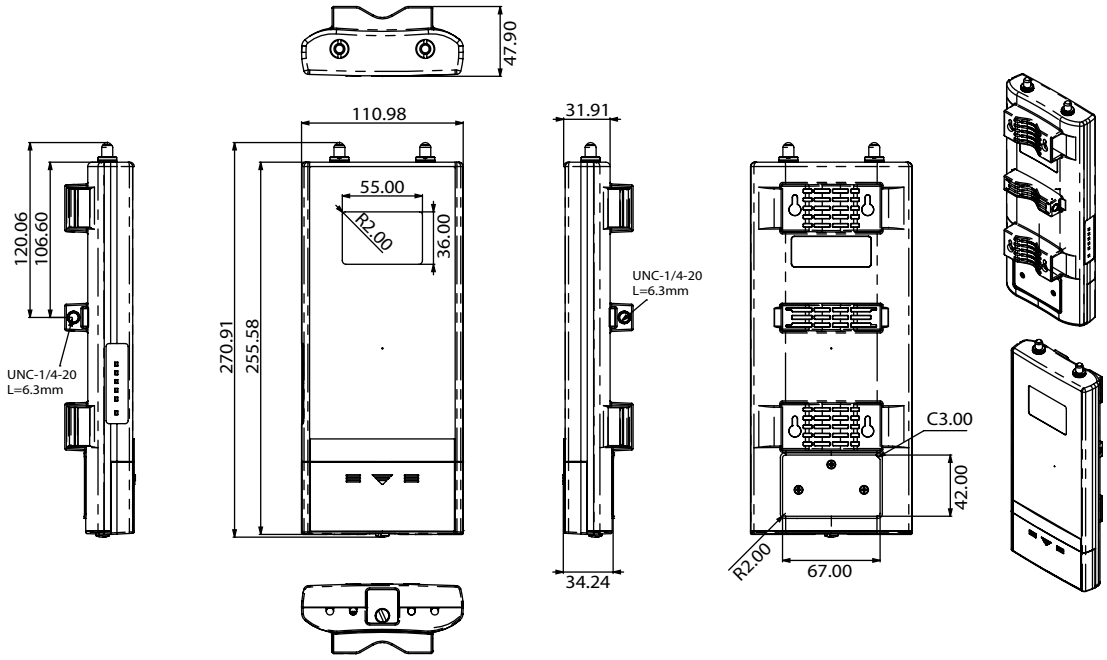
Wireless Transmission Rates

- **Transmitted Power*** 802.11b: 27 dBm
  802.11g: 25 dBm @ 6 Mbps, 23 dBm @ 54 Mbps
  802.11gn HT20: 27 dBm @ MCS0/8, 23 dBm@ MCS7/15 802.11gn HT40: 26 dBm @ MCS0/8, 22 dBm@ MCS7/15

*Note: The listed value is the target power calibrated in the card. The actual power will vary depending on each country's regulation

Dimensions

Unit: mm



Panel Cut-out Dimensions: 111 x 256 x 48 mm

Receiver Sensitivity

- **802.11b Sensitivity** -91 dBm @ 1 Mbps; -85 dBm @ 11 Mbps
- **802.11g Sensitivity** -89 dBm @ 6 Mbps; -70 dBm @ 54 Mbps
- **802.11n HT20** -83 dBm @ MCS0/8; -65 dBm @ MCS7/15
- **802.11n HT40** -80 dBm @ MCS0/8; -62 dBm @ MCS7/15

Ordering Information

- **EKI-6332GN** 802.11 b/g/n Wireless AP/Client (US)
- **EKI-6332GN-EU** 802.11 b/g/n Wireless AP/Client (EU)

EKI-1361
EKI-1362
EKI-1361-MB
EKI-1362-MB

1-Port RS-232/422/485 to 802.11a/b/g/n WLAN Serial Device Server
2-Port RS-232/422/485 to 802.11a/b/g/n WLAN Serial Device Server
1-Port RS-232/422/485 to 802.11a/b/g/n WLAN Modbus Gateway
2-Port RS-232/422/485 to 802.11a/b/g/n WLAN Modbus Gateway

NEW

Features

- Link any serial device to an IEEE 802.11a/b/g/n network
- Supports 802.11n MIMO 2T2R
- WLAN transmission rates up to 300 Mbps
- Supports secure access with WEP, WPA/WPA2-Personal, WPA/WPA2-Enterprise
- Provides COM port redirection, TCP, UDP, and pair connection modes
- Supports up to 921.6 kbps and any baud rate setting
- Provides web-based configuration and Windows utility
- Allows a maximum of five hosts to access one serial port
- Modbus TCP and Modbus RTU support
- Selective dual band 2.4 or 5 GHz

Introduction

The EKI-1361 and EKI-1362 wireless serial device servers bring RS-232/422/485 to wireless LAN. They allow nearly any device with a serial port to connect and share a wireless LAN. The EKI-1361 and EKI-1362 provide a quick, simple, and cost-effective way to bring remote management and data accessibility to thousands of devices that cannot otherwise connect to a network. With the EKI-1361 and EKI-1362, your existing serial devices can be used with the most common operating systems without the need to write special drivers. Moreover, you can make serial devices communicate directly with other devices peer-to-peer, thus eliminating the need for intermediate host PCs and software programming. This saves a considerable amount of cost and effort. Additionally, you can actively request data or issue commands from the RS-232/422/485 side or wireless LAN side with bilateral data transmission. Thus, the EKI-1361 and EKI-1362 are especially suitable for remote monitoring environments such as security systems, factory automation, SCADA, transportation, and more.

Specifications

Ethernet Communications

- **Port Type** RJ45
- **No. of Ports** 1
- **Speed** 10/100/1000 Mbps

Wireless LAN Communications

- **Compatibility** IEEE 802.11a/b/g/n
- **Speed** Up to 300Mbps
- **Network Mode** Infrastructure
- **Antenna Connector** Reverse SMA
- **No. of Antenna** 2 (supports 2T2R)
- **Free Space Range** Open space 100 m
- **Wireless Security** WEP, WPA/WPA2-Personal, WPA/WPA2-Enterprise

Serial Communications

- **Port Type** RS-232/422/485, software selectable
- **No. of Ports** EKI-1361: 1
EKI-1362: 2
- **Port Connector** DB9 male
- **Data Bits** 5, 6, 7, 8
- **Stop Bits** 1, 1.5, 2
- **Parity** None, Odd, Even, Space, Mark
- **Baud Rate** 50 bps ~ 921.6 kbps, any baud rate setting
- **Serial Signals** RS-232: TxD, RxD, CTS, RTS, DTR, DSR, DCD, RI, GND
RS-422: TxD+, TxD-, RxD+, RxD-, GND
RS-485: Data+, Data-, GND
- **Protection** 15 KV ESD for all signals

Software

- **OS Support** 32-bit/64-bit Windows XP/Vista/7/8/8.1/10, Windows Server 2003/2008/2008 R2/2012/2012 R2 and Linux
- **Utility Software** Advantech EKI Device Configuration Utility
- **Operation Modes** Access Point mode/Station mode
Pair connection without AP (peer to peer) mode
EKI-1361/2
COM port redirection mode (Virtual COM)
TCP/UDP server (polling) mode
TCP/UDP client (event handling) mode
EKI-1361/2-MB
Modbus RTU Master/Slave
Modbus ASCII Master/Slave
- **Configuration** Windows utility, Telnet console, Web Browser
- **Protocol** ARP, ICMP, IPv4, IPv6, TCP, UDP, BOOTP, DHCP Client, Auto IP, Telnet, DNS, SNMP, HTTP, SMTP, SNTP

Mechanics

- **Enclosure** Metal shell with solid mounting kits
- **Mounting** DIN-rail, Wall
- **Dimensions (W x H x D)** 28.5 x 120 x 85.3 mm (1.12" x 4.72" x 3.36")
- **Weight** 0.5 Kg

General

- **LED Indicators** System: Power, System Status
WLAN: Quality, Link/Active
LAN: Link/Active
Serial: Tx, Rx
- **Reboot Trigger** Built-in WDT (watchdog timer)

Power Requirements

- **Power Input** 12 ~ 48 V_{DC}, redundant dual inputs
- **Power Connector** Terminal block
- **Power Consumption** EKI-1361: 8W
EKI-1362: 9W

Environment

- **Operating Temperature** -30 ~ 65 °C (-22 ~ 149 °F)
- **Storage Temperature** -40 ~ 80 °C (-40 ~ 176 °F)
- **Operating Humidity** 10 ~ 95% RH

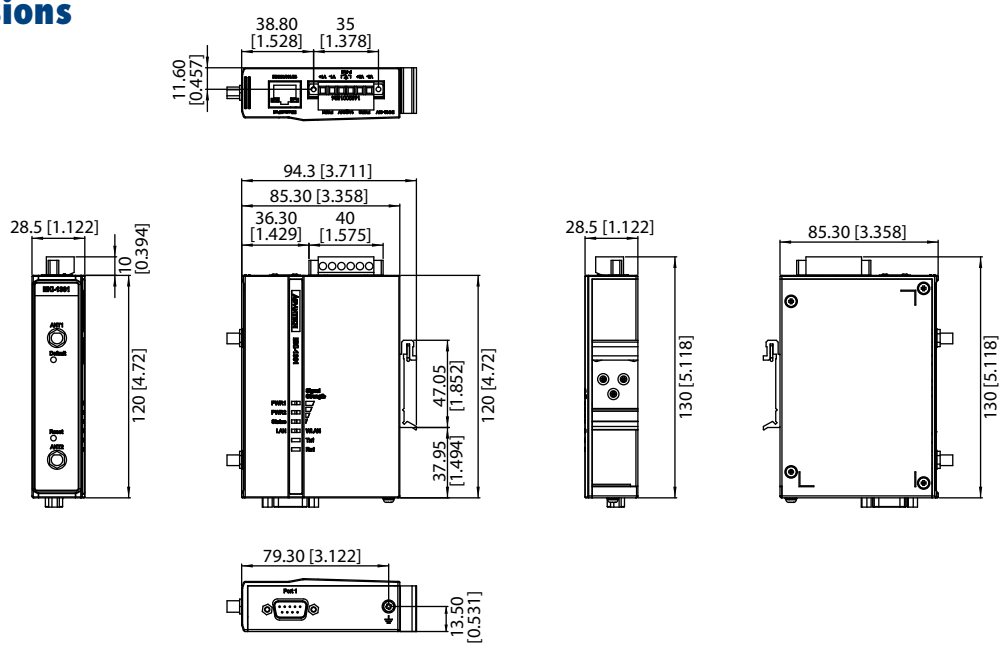
Regulatory Approvals

- **EMC** CE, FCC Part 15 Subpart B (Class B)

Dimensions

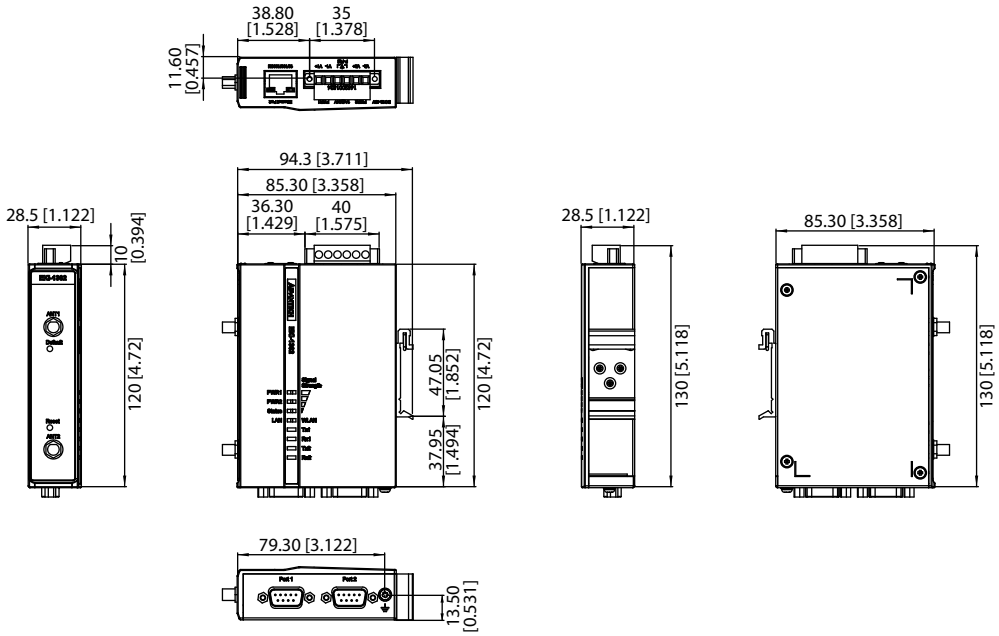
Unit: mm [inch]

EKI-1361



Panel Cut-out Dimensions: 94.3 x 120 x 28.5 mm (3.711" x 4.724" x 1.122")

EKI-1362



Panel Cut-out Dimensions: 94.3 x 120 x 28.5 mm (3.711" x 4.724" x 1.122")

Ordering Information

- **EKI-1361** 1-port 802.11a/b/g/n WLAN Serial Device Server
- **EKI-1362** 2-port 802.11a/b/g/n WLAN Serial Device Server
- **EKI-1361-MB** 1-port 802.11a/b/g/n WLAN Modbus Gateway
- **EKI-1362-MB** 2-port 802.11a/b/g/n WLAN Modbus Gateway
- **OPT1-DB9** D-Sub9 to Terminal Converter

EKI-6333AC Series

IEEE 802.11a/b/g/n/ac Wi-Fi AP

Features

- Support 802.11n MIMO 2T2R
- WLAN transmission rates up to 867 Mbps
- Supports secure access with WEP, 802.1x, WPA/WPA2-Personal, WPA/WPA2-Enterprise
- Provides web-based configuration
- Selective dual band at 2.4 or 5 GHz

Introduction

The EKI-6333AC is a feature-rich wireless access point with DIN rail-type design that provides reliable wireless connectivity for industrial environments. As an 802.11n-compliant device, the EKI-6333AC provides data rates that are six times higher than legacy 802.11g devices. With support for STP and WMM, the EKI-6333AC effectively improves the reliability of wireless connectivity, especially in applications where high-throughput data transmission is required. To secure wireless connections, the EKI-6333AC implements the latest encryption technologies including WPA2/WPA/802.1x for powerful security authentication.

Specifications

Ethernet Communications

- **Port Type** RJ45
- **No. of Ports** 1
- **Speed** 10/100/1000 Mbps

Wireless LAN Communications

- **Compatibility** IEEE 802.11a/b/g/n/ac
- **Speed** Up to 867Mbps
- **Network Mode** Infrastructure
- **Antenna Connector** Reverse SMA
- **No. of Antenna** 2 (supports 2T2R)
- **Free Space Range** Open space 100 m
- **Wireless Security** WEP, WPA/WPA2-Personal, WPA/WPA2-Enterprise

Software

- **OS Support** 32-bit/64-bit Windows XP/Vista/7/8/8.1/10, Windows Server 2003/2008/2008 R2/2012/2012 R2 and Linux
- **Utility Software** Advantech EKI Device Configuration Utility
- **Operation Modes** Access Point mode
- **Configuration** Telnet console, Web Browser
- **Protocol** ARP, ICMP, IPv4, TCP, UDP, DHCP Client, DNS, SNMP, HTTP, SNTP

Mechanics

- **Enclosure** Metal shell with solid mounting kits
- **Mounting** DIN-rail, Wall
- **Dimensions (W x H x D)** 28.5 x 120 x 85.3 mm (1.12" x 4.72" x 3.36")
- **Weight** 0.5 Kg

General

- **LED Indicators** System: Power, System Status
  WLAN: Quality, Link/Active
  LAN: Link/Active
- **Reboot Trigger** Built-in WDT (watchdog timer)

Power Requirements

- **Power Input** 12 ~ 48 V_{DC}, redundant dual inputs
- **Power Connector** Terminal block
- **Power Consumption** 8W

Environment

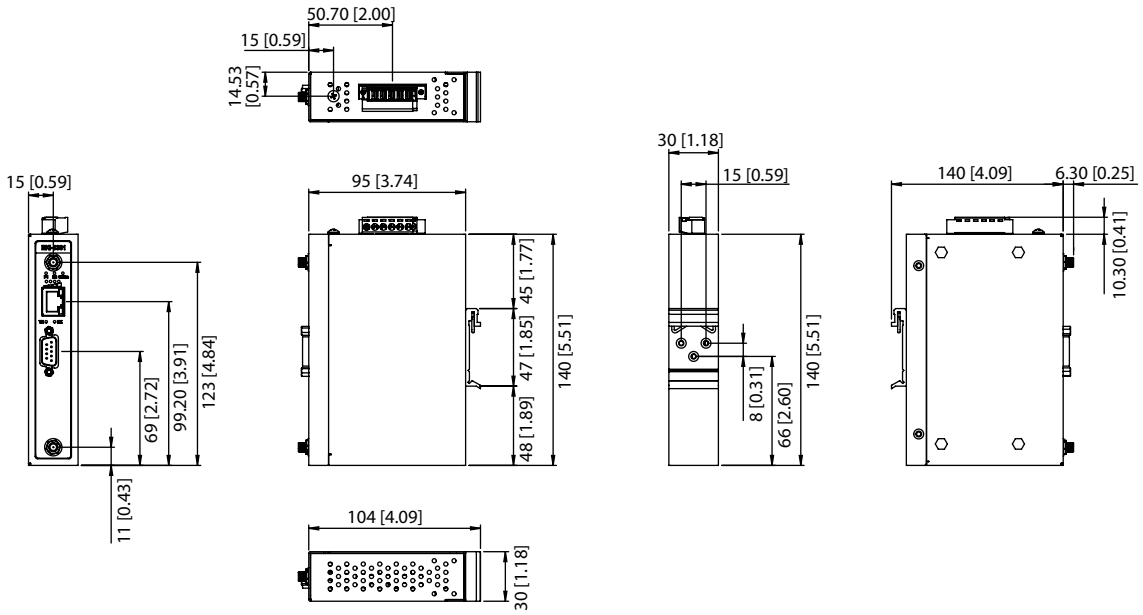
- **Operating Temperature** -40 ~ 75°C (-40 ~ 166°F)
- **Storage Temperature** -40 ~ 80°C (-40 ~ 176°F)
- **Operating Humidity** 10 ~ 95% RH

Regulatory Approvals

- **EMC** CE, FCC Part 15 Subpart B (Class B)

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 95 x 140 x 30 mm (3.74" x 5.51"x 1.18")

Ordering Information

- **EKI-6333AC** 802.11 a/b/g/n/ac Wireless AP/Client (US)
- **EKI-6333AC-EU** 802.11 a/b/g/n/ac Wireless AP/Client (EU)

EKI-1221IPNMB

Modbus TCP to PROFINET Protocol Gateway

Features

- Supports dual power input for power redundancy
- Seamlessly integrate Modbus TCP and PROFINET network communication protocols
- Modbus TCP master mode supports up to 64 connections
- Mountable via DIN rail and wall mount
- "I" models support a wide operating temperature

Introduction

The EKI-1221IPNMB industrial protocol gateway provides seamless communication between Fieldbus and Ethernet devices, supporting a range of protocols. Integrating new and existing Modbus TCP devices to PROFINET networks, this gateway can collect data and perform data exchange between Modbus TCP and PROFINET. Simple and cost-effective, the EKI-1221IPNMB brings the advantage of fast I/O data transfer between devices while delivering high performance with protocol extensibility and adaptation.

Specifications

Ethernet Communication

- **Protocols** PROFINET, Modbus TCP
- **Number of Ports** 2
- **Speed** 10/100 Mbps, Auto MDI/MDIX
- **Connector** 8-pin RJ45
- **Protection** Built-in 1.5 KV magnetic isolation

Software

- **Modbus TCP**
  - Mode: Master
  - Functions Support: 1, 2, 3, 4, 5, 6, 15, 16, 23
  - Max. Number of Connections: 64 connections
- **PROFINET**
  - Type: Slave
  - Slot: 64
  - Cyclic data exchange: 64 ms cycle time

General

- **LED Indicators** System: Power, System Status
  LAN: Speed, Link/Active
- **Reboot Trigger** Built-in WDT (watchdog timer)

Mechanics

- **Dimensions (W x H x D)** 37 x 140 x 95 mm (1.46" x 5.51" x 3.74")
- **Enclosure** Metal with solid mounting hardware
- **Mounting** DIN-rail, Wall
- **Weight** 0.592 Kg

Power Requirements

- **Power Input** 12 ~ 48 V_{DC}, redundant dual inputs
- **Power Connector** Terminal block
- **Power Consumption** 5.2 W

Environment

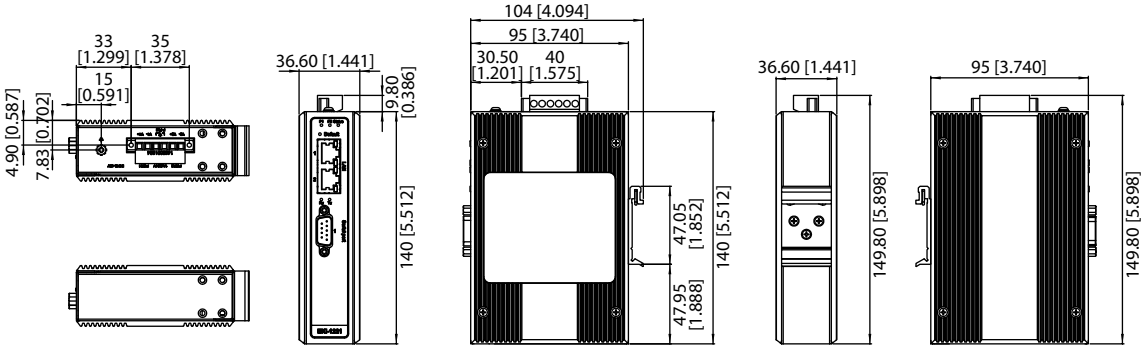
- **Operating Temperature** -40 ~ 70°C (-40 ~ 158°F)
- **Storage Temperature** -20 ~ 80°C (-4 ~ 176°F)
- **Operating Humidity** 10 ~ 95% RH

Regulatory Approvals

- **EMC** CE, FCC Part 15 Subpart B (Class A)

Dimensions

Unit: mm



Panel Cut-out Dimensions: 104 x 140 x 36.6 mm (4.094" x 5.512" x 1.441")

Ordering Information

- **EKI-1221IPNMB** Modbus TCP to PROFINET Protocol Gateway

EKI-1221IEIMB

Modbus TCP to Ethernet/IP Protocol Gateway

Features

- Supports dual power input for power redundancy
- Seamlessly integrate Modbus TCP and Ethernet/IP network communication protocols
- Modbus TCP master mode supports up to 64 connections
- Mountable via DIN rail and wall mount
- "I" models support a wide operating temperature

Introduction

The EKI-1221IEIMB industrial protocol gateway provides seamless communication between Fieldbus and Ethernet devices, supporting a range of protocols. Integrating new and existing Modbus TCP devices to PROFINET networks, this gateway can collect data and perform data exchange between Modbus TCP and PROFINET. Simple and cost-effective, the EKI-1221IEIMB brings the advantage of fast I/O data transfer between devices while delivering high performance with protocol extensibility and adaptation.

Specifications

Ethernet Communication

- **Protocols** EtherNet/IP, Modbus TCP
- **Number of Ports** 2
- **Speed** 10/100 Mbps, Auto MDI/MDIX
- **Connector** 8-pin RJ45
- **Protection** Built-in 1.5 KV magnetic isolation

Software

- **Modbus TCP**
  - Mode: Master
  - Functions Support: 1, 2, 3, 4, 5, 6, 15, 16, 23
  - Max. Number of Connections: 64 connections
- **EtherNet/IP**
  - Class: Adapter
  - Max. Number of Connections: 32 explicit messaging, 5 implicit messaging
  - Max. Total I/O Data Size: Input: 384 bytes; Output: 384 bytes

General

- **LED Indicators** System: Power, System Status; LAN: Speed, Link/Active
- **Reboot Trigger** Built-in WDT (watchdog timer)

Mechanics

- **Dimensions (W x H x D)** 37 x 140 x 95 mm (1.46" x 5.51" x 3.74")
- **Enclosure** Metal with solid mounting hardware
- **Mounting** DIN-rail, Wall
- **Weight** 0.592 Kg

Power Requirements

- **Power Input** 12 ~ 48 V_{DC}, redundant dual inputs
- **Power Connector** Terminal block
- **Power Consumption** 5.2 W

Environment

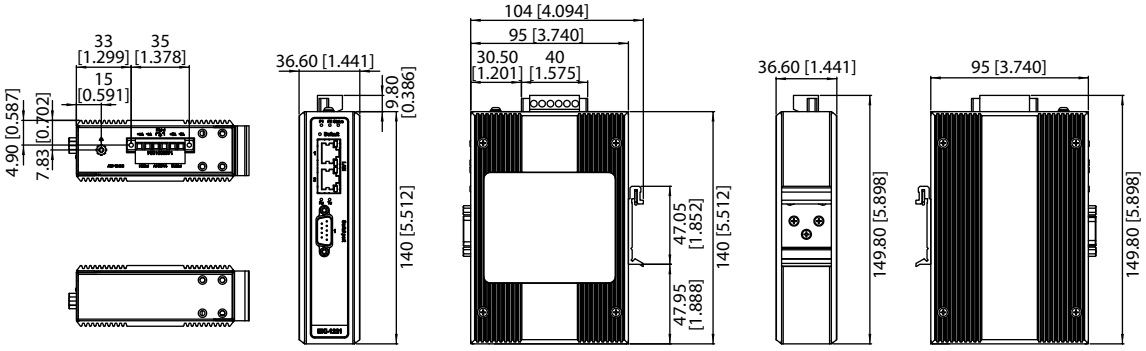
- **Operating Temperature** -40 ~ 70°C (-40 ~ 158°F)
- **Storage Temperature** -20 ~ 80°C (-4 ~ 176°F)
- **Operating Humidity** 10 ~ 95% RH

Regulatory Approvals

- **EMC** CE, FCC Part 15 Subpart B (Class A)

Dimensions

Unit: mm



Panel Cut-out Dimensions: 104 x 140 x 36.6 mm (4.094" x 5.512" x 1.441")

Ordering Information

- **EKI-1221IEIMB** Modbus TCP to EtherNet/IP Protocol Gateway

EKI-1242EIMS
EKI-1242IEIMS

Modbus RTU/TCP to Ethernet/IP Fieldbus Gateway

Features

- Supports dual power input for power redundancy
- Seamlessly integrate Modbus RTU/TCP and Ethernet/IP communication protocols
- Modbus master mode supports up to 64 connections
- Mountable via DIN rail and wall mount
- Designed for protocol extensibility and adaption
- Built-in real-time diagnostics to increase device management efficiency
- "I" models support a wide operating temperature

Introduction

The EKI-1242EIMS industrial protocol gateway provides seamless communication between Fieldbus and Ethernet devices, supporting a range of protocols. Integrating new and existing Modbus TCP devices to PROFINET networks, this gateway can collect data and perform data exchange between Modbus TCP and PROFINET. Simple and cost-effective, the EKI-1242EIMS brings the advantage of fast I/O data transfer between devices while delivering high performance with protocol extensibility and adaptation.

Specifications

Ethernet Communication

- **Protocols** EtherNet/IP, Modbus TCP
- **Number of Ports** 4
- **Speed** 10/100 Mbps, Auto MDI/MDIX
- **Connector** 8-pin RJ45
- **Protection** Built-in 1.5 kV magnetic isolation

Serial Communications

- **Port Type** RS-232/422/485, software-selectable
- **No. of Ports** 2
- **Protocol** Modbus RTU
- **Port Connector** DB9 male
- **Data Bits** 5, 6, 7, 8
- **Stop Bits** 1, 1.5, 2
- **Parity** None, odd, even, space, mark
- **Flow Control** XON/XOFF, RTS/CTS
- **Baud Rate** 50 bps ~ 921.6 kbps
- **Serial Signals** RS-232: TxD, RxD, CTS, RTS, DCD, RI, GND
  RS-422: TxD+, TxD-, RxD+, RxD-, GND
  RS-485: Data+, Data-, GND

Software

- **Modbus RTU/TCP**
  Mode: Master
  Functions Support: 1, 2, 3, 4, 5, 6, 15, 16, 23
  Max. Number of Connections: 64 connections
- **EtherNet/IP**
  Class: Adapter
  Max. Number of Connections: 32 explicit messaging, 5 implicit messaging
  Max. Total I/O Data Size: Input: 496 bytes
  Output: 496 bytes

General

- **LED Indicators** System: power, system status, protocol status
  LAN: speed, link/active, error
- **Reboot Trigger** Built-in WDT
- **MicroSD Card** Configuration backup and restore

Mechanics

- **Dimensions (W x H x D)** 42 x 140 x 95 mm (1.66" x 5.52" x 3.75")
- **Enclosure** Metal with solid mounting hardware
- **Mounting** DIN rail, wall
- **Weight** 0.592 kg

Power Requirements

- **Power Input** 12 ~ 48 V_{DC}, redundant dual inputs
- **Power Connector** Terminal block
- **Power Consumption** 5.2 W

Environment

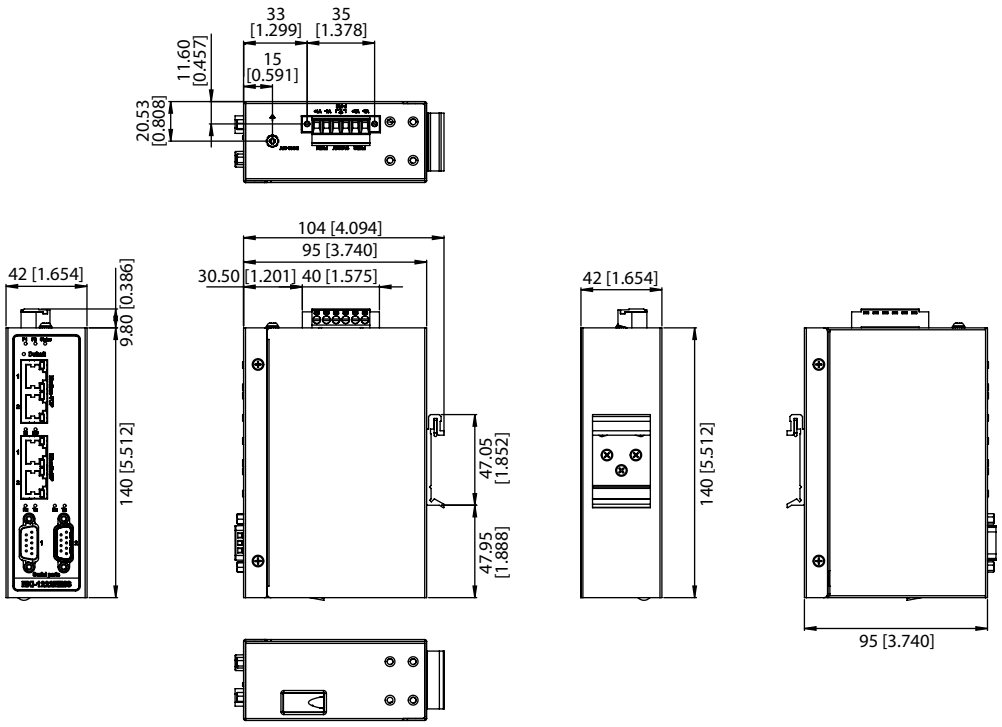
- **Operating Temperature** -10 ~ 60 °C (14 ~ 140 °F)
  "I" models: -40 ~ 75 °C (-40 ~ 167 °F)
- **Storage Temperature** -40 ~ 85 °C (-40 ~ 185 °F)
- **Operating Humidity** 10 ~ 95% RH

Regulatory Approvals

- **EMC** CE, FCC Part 15 Subpart B (Class A)

Dimensions

Unit: mm [in.]



Ordering Information

- **EKI-1242EIMS** Modbus RTU/TCP to EtherNet/IP Fieldbus Gateway
- **EKI-1242IEIMS** Modbus RTU/TCP to EtherNet/IP Fieldbus Gateway with Wide Operating Temperature

EKI-1242PNMS
EKI-1242IPNMS

Modbus RTU/TCP to PROFINET Fieldbus Gateway

Features

- Supports dual power input for power redundancy
- Seamlessly integrate Modbus RTU/TCP and PROFINET communication protocols
- Modbus master mode supports up to 64 connections
- Mountable via DIN rail and wall mount
- Designed for protocol extensibility and adaption
- Built-in real-time diagnostics to enhance device management efficiency
- "I" models support a wide operating temperature

Introduction

The EKI-1242PNMS industrial protocol gateway provides seamless communication between Fieldbus and Ethernet devices, supporting a range of protocols. Integrating new and existing Modbus TCP devices to PROFINET networks, the EKI-1242PNMS is a cost-effective and simple way to bring the advantage of fast I/O data transfer between devices while delivering high performance with protocol extensibility and adaptation.

Specifications

Ethernet Communication

- **Protocols** PROFINET, Modbus TCP
- **Number of Ports** 4
- **Speed** 10/100 Mbps, Auto MDI/MDIX
- **Connector** 8-pin RJ45
- **Protection** Built-in 1.5 KV magnetic isolation

Serial Communications

- **Port Type** RS-232/422/485, software selectable
- **No. of Ports** 2
- **Protocol** Modbus RTU
- **Port Connector** DB9 male
- **Data Bits** 5, 6, 7, 8
- **Stop Bits** 1, 1.5, 2
- **Parity** None, Odd, Even, Space, Mark
- **Flow Control** XON/XOFF, RTS/CTS
- **Baud Rate** 50 bps ~ 921.6 kbps
- **Serial Signals** RS-232: TxD, RxD, CTS, RTS, DCD, RI, GND
  RS-422: TxD+, TxD-, RxD+, RxD-, GND
  RS-485: Data+, Data-, GND

Software

- **Modbus RTU/TCP**
  Mode: Master
  Functions Support: 1, 2, 3, 4, 5, 6, 15, 16, 23
  Max. Number of Connections: 64 connections
- **PROFINET**
  Type: Slave
  Slot: 64
  Cyclic data exchange: 8 ms cycle time

General

- **LED Indicators** System: Power, System Status, Protocol status
  LAN: Speed, Link/Active, Error
- **Reboot Trigger** Built-in WDT (watchdog timer)
- **MicroSD Card** Configuration backup and restore

Mechanics

- **Dimensions (W x H x D)** 42 x 140 x 95 mm (1.66" x 5.52" x 3.75")
- **Enclosure** Metal with solid mounting hardware
- **Mounting** DIN-rail, Wall
- **Weight** 0.592 Kg

Power Requirements

- **Power Input** 12 ~ 48 V_{DC}, redundant dual inputs
- **Power Connector** Terminal block
- **Power Consumption** 5.2 W

Environment

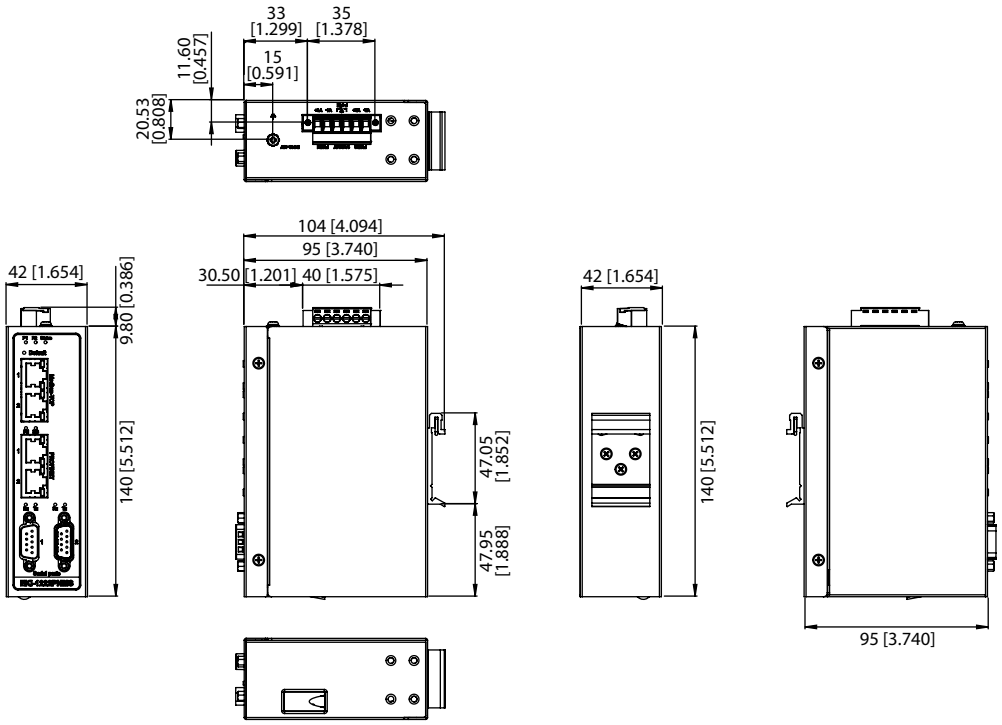
- **Operating Temperature** -10 ~ 60 °C (14 ~ 140 °F)
  ' I' models: -40 ~ 75 °C (-40 ~ 167 °F)
- **Storage Temperature** -40 ~ 85 °C (-40 ~ 185 °F)
- **Operating Humidity** 10 ~ 95% RH

Regulatory Approvals

- **EMC** CE, FCC Part 15 Subpart B (Class A)

Dimensions

Unit: mm [inch]



Ordering Information

- **EKI-1242PNMS** Modbus RTU/TCP to PROFINET Fieldbus Gateway
- **EKI-1242IPNMS** Modbus RTU/TCP to PROFINET Fieldbus Gateway with wide operating temperature

EKI-1242ECMS
EKI-1242IECMS

Modbus RTU/TCP to EtherCAT Fieldbus Gateway

Features

- Supports dual power input for power redundancy
- Seamlessly integrate Modbus RTU/TCP and PROFINET communication protocols
- Modbus master mode supports up to 64 connections
- Mountable via DIN rail and wall mount
- Designed for protocol extensibility and adaption
- Built-in real-time diagnostics to enhance device management efficiency
- "I" models support a wide operating temperature

Introduction

The EKI-1242ECMS industrial fieldbus gateway provides seamless communication between Fieldbus and Ethernet devices with its support for different protocol devices, thereby being capable of integrating new and existing Modbus RTU/TCP devices into EtherCAT networks. The EKI-1242ECMS is a simple and cost-effective way to bring the advantage of fast I/O data transfer between devices.

Specifications

Ethernet Communication

- **Protocols** EtherCAT, Modbus TCP
- **Number of Ports** 4
- **Speed** 10/100 Mbps, auto MDI/MDIX
- **Connector** 8-pin RJ45
- **Protection** Built-in 1.5 kV magnetic isolation

Serial Communications

- **Port Type** RS-232/422/485, software-selectable
- **No. of Ports** 2
- **Protocol** Modbus RTU
- **Port Connector** DB9 male
- **Data Bits** 5, 6, 7, 8
- **Stop Bits** 1, 1.5, 2
- **Parity** None, odd, even, space, mark
- **Flow Control** XON/XOFF, RTS/CTS
- **Baud Rate** 50 bps ~ 921.6 kbps
- **Serial Signals** RS-232: TxD, RxD, CTS, RTS, DCD, RI, GND
  RS-422: TxD+, TxD-, RxD+, RxD-, GND
  RS-485: Data+, Data-, GND

Software

- **Modbus RTU/TCP**
  - Mode: Master
  - Functions Support: 1, 2, 3, 4, 5, 6, 15, 16, 23
  - Max. Number of Connections: 64
- **EtherCAT**
  - Type: Slave
- **Max. Total I/O Data Size (SDO&PDO objects)**
  - Input: 512 bytes
  - Output: 512 bytes
  - FFMMU Channels: 4

General

- **LED Indicators** System: power, system status, protocol status
  LAN: speed, link/active, error
- **Reboot Trigger** Built-in WDT
- **MicroSD Card** Configuration backup and restore

Mechanics

- **Dimensions (W x H x D)** 42 x 140 x 95 mm (1.66" x 5.52" x 3.75")
- **Enclosure** Metal with solid mounting hardware
- **Mounting** DIN rail, wall
- **Weight** 0.592 kg

Power Requirements

- **Power Input** 12 ~ 48 V_{DC}, redundant dual inputs
- **Power Connector** Terminal block
- **Power Consumption** 5.2 W

Environment

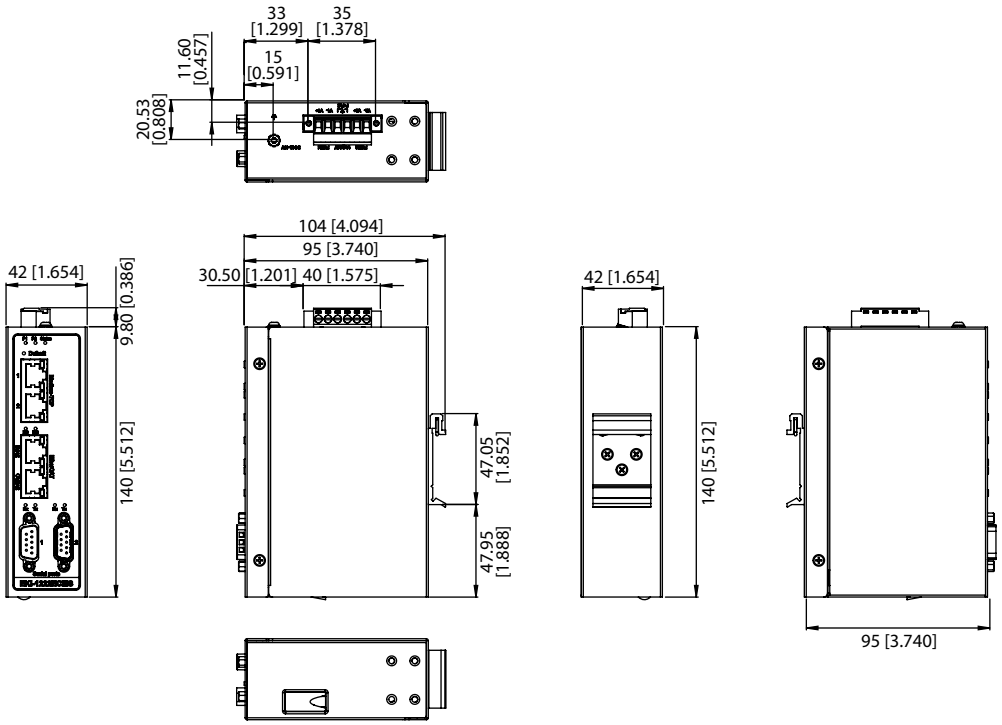
- **Operating Temperature** -10 ~ 60 °C (14 ~ 140 °F)
  "I" models: -40 ~ 75 °C (-40 ~ 167 °F)
- **Storage Temperature** -40 ~ 85 °C (-40 ~ 185 °F)
- **Operating Humidity** 10 ~ 95% RH

Regulatory Approvals

- **EMC** CE, FCC Part 15 Subpart B (Class A)

Dimensions

Unit: mm [in.]



Ordering Information

- **EKI-1242ECMS** Modbus RTU/TCP to EtherCAT Fieldbus Gateway
- **EKI-1242IECMS** Modbus RTU/TCP to EtherCAT Fieldbus Gateway with Wide Operating Temperature

EKI-1221/CI/I
EKI-1222/CI/I
EKI-1224/CI/I

1-Port Modbus Gateway
2-Port Modbus Gateway
4-Port Modbus Gateway

EKI-1221 | EKI-1222 | EKI-1224

Features

- 2 x 10/100 Mbps Ethernet ports for LAN redundancy
- Integrates Modbus TCP and Modbus RTU/ASCII networks
- Supports up to 921.6 kbps and any baud rate setting
- Supports up to 16 connections per serial port under Modbus master mode and 32 sessions under Modbus slave mode
- Software-selectable RS-232/422/485 communication
- Mountable via DIN rail and wall mount
- Built-in 15 kV ESD protection for all serial signals
- Automatic RS-485 data flow control
- Supports surge protection for DC power ports with line-to-line (2 kV) and line-to-earth (4 kV) for signal ports with 4 kV
- "I" models support a wide operating temperature
- "CI" models support isolation and a wide operating temperature

Introduction

The EKI-1200 series Modbus gateways are bi-directional gateways for integrating new and existing Modbus/RTU and Modbus/ASCII serial devices to newer TCP/IP networked-based devices. The EKI-1221/1222/1224 feature two independent Ethernet ports and MAC addresses to provide redundancy and reliability. They provide a simple and cost-effective way to bring remote management and data accessibility to thousands of devices that cannot otherwise connect to a network. The EKI-1221/1222/1224 allow users to select master or slave operation mode for each serial port. In addition to allowing an Ethernet master to control serial slaves, they also allow serial masters to control Ethernet slaves.

Specifications

Ethernet Communications

- **Compatibility** IEEE 802.3, IEEE 802.3u
- **Speed** 10/100 Mbps
- **No. of Ports** 2
- **Port Connector** 8-pin RJ45
- **Protection** Built-in 1.5 KV magnetic isolation

Serial Communications

- **Port Type** RS-232/422/485, software selectable ("CI" model supports RS-422/485)
- **No. of Ports** EKI-1221: 1
EKI-1222: 2
EKI-1224: 4
- **Port Connector** DB9 male
- **Data Bits** 5, 6, 7, 8
- **Stop Bits** 1, 2
- **Parity** None, Odd, Even, Space, Mark
- **Flow Control** XON/XOFF, RTS/CTS
- **Baud Rate** 50 bps ~ 921.6 kbps, any baud rate setting
- **Serial Signals** RS-232: TxD, RxD, CTS, RTS, DCD, RI, GND
RS-422: TxD+, TxD-, RxD+, RxD-, GND
RS-485: Data+, Data-, GND
- **Protection** 15 KV ESD for all signals
'CI' models: 2KV Isolation for RS-422/485 signals

Software

- **OS Support** 32-bit/64-bit Windows XP/Vista/7/8/8.1/10, Windows Server 2003/2008/2008 R2/2012/2012 R2
- **Utility Software** Advantech EKI Device Configuration Utility
- **Operation Modes** Modbus RTU Master/Slave mode
Modbus ASCII Master/Slave mode
- **Configuration** Windows Utility, Telnet Console, Web Browser
- **Protocols** ICMP, IP, TCP, UDP, BOOTP, DHCP, Auto IP, SNMP, HTTP, DNS, SMTP, ARP, NTP

General

- **LED Indicators** System: Power, System Status
LAN: Speed, Link/Active
Serial: Tx, Rx
- **Reboot Trigger** Built-in WDT (watchdog timer)

Mechanics

- **Dimensions (W x H x D)** EKI-1221/1222: 37 x 140 x 95 mm (1.46" x 5.51" x 3.74")
EKI-1224: 55 x 140 x 95 mm (2.17" x 5.51" x 3.74")
- **Enclosure** Metal with solid mounting hardware
- **Mounting** DIN-rail, Wall
- **Weight** EKI-1221: 0.472 Kg
EKI-1222: 0.48 Kg
EKI-1224: 0.555 Kg

Power Requirements

- **Power Input** 12 ~ 48 V_{DC}, redundant dual inputs
- **Power Connector** Terminal block
- **Power Consumption** EKI-1221: 3.2 W
EKI-1222: 3.2 W
EKI-1224: 4.1 W

Environment

- **Operating Temperature** EKI-1221/EKI-1222/EKI-1224: -10 ~ 60 °C (14 ~ 140 °F)
'CI & I' models: -40 ~ 70 °C (-40 ~ 158 °F)
- **Storage Temperature** -20 ~ 80 °C (-4 ~ 176 °F)
- **Operating Humidity** 5 ~ 95% RH

Regulatory Approvals

- **EMC** CE, FCC Part 15 Subpart B (Class A)

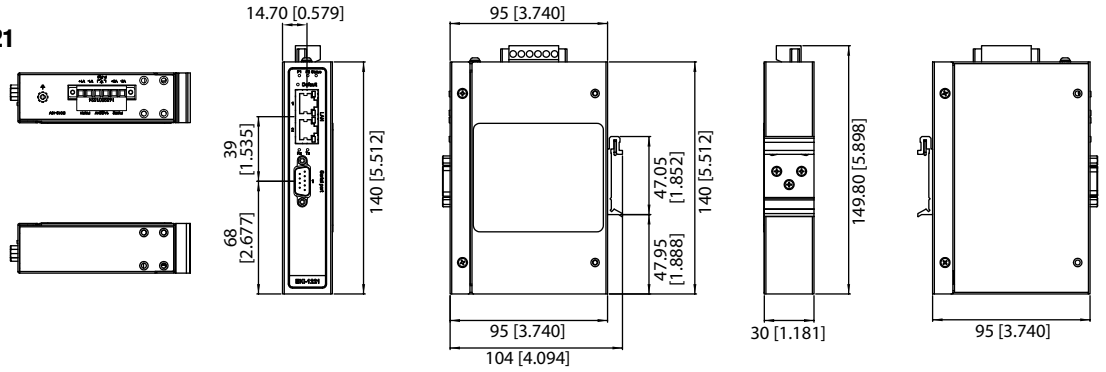
Port to Port Isolation ('CI' models)

- **Serial to Ethernet** 2 kV
- **Serial to Power** 2 kV
- **Ethernet to Power** 1.5 kV

Dimensions

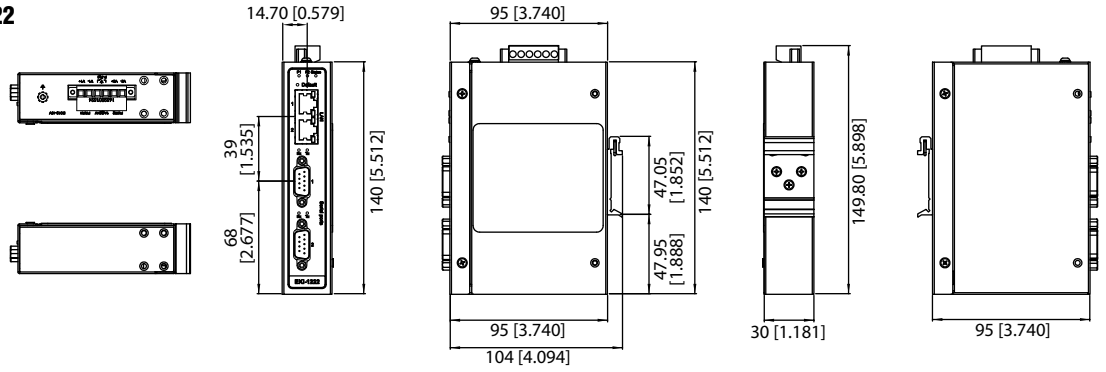
Unit: mm

EKI-1221



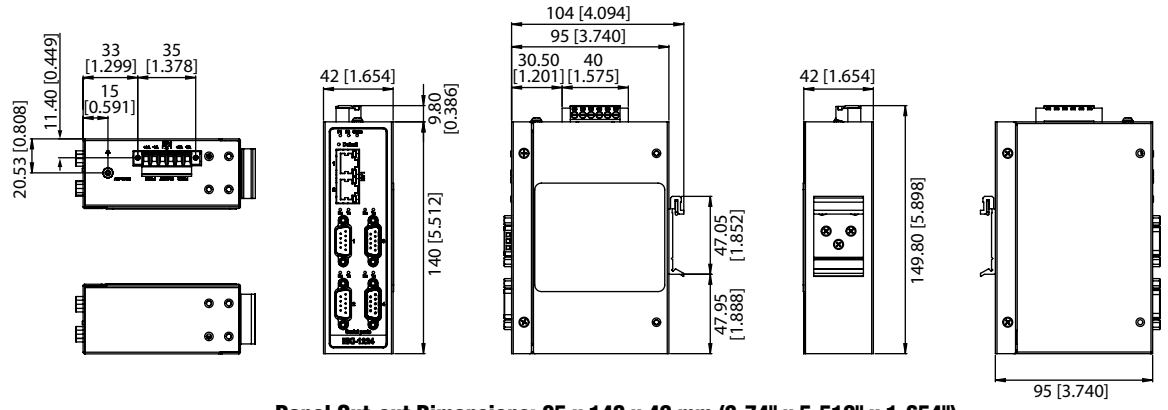
Panel Cut-out Dimensions: 95 x 140 x 30 mm (3.74" x 5.512" x 1.181")

EKI-1222



Panel Cut-out Dimensions: 95 x 140 x 30 mm (3.74" x 5.512" x 1.181")

EKI-1224



Panel Cut-out Dimensions: 95 x 140 x 42 mm (3.74" x 5.512" x 1.654")

Ordering Information

- **EKI-1221** 1-port RS-232/422/485 Modbus Gateway
- **EKI-1222** 2-port RS-232/422/485 Modbus Gateway
- **EKI-1224** 4-port RS-232/422/485 Modbus Gateway
- **EKI-1221I** 1-port RS-232/422/485 Modbus Gateway with Wide Operating Temperature
- **EKI-1222I** 2-port RS-232/422/485 Modbus Gateway with Wide Operating Temperature
- **EKI-1224I** 4-port RS-232/422/485 Modbus Gateway with Wide Operating Temperature
- **EKI-1221CI** 1-port RS-422/485 Modbus Gateway with Wide Operation Temperature and Isolation
- **EKI-1222CI** 2-port RS-422/485 Modbus Gateway with Wide Operation Temperature and Isolation
- **EKI-1224CI** 4-port RS-422/485 Modbus Gateway with Wide Operation Temperature and Isolation
- **OPT1-DB9** D-Sub9 to Terminal Converter

EKI-1521/CI/I
EKI-1522/CI/I
EKI-1524/CI/I

1-Port RS-232/422/485 Serial Device Server
2-Port RS-232/422/485 Serial Device Server
4-Port RS-232/422/485 Serial Device Server

EKI-1521 | EKI-1522 | EKI-1524

Features

- 2 x 10/100 Mbps Ethernet ports for LAN redundancy
- Provides COM port redirection (Virtual COM), TCP, and UDP operation modes
- Supports up to 921.6 kbps and any baud rate setting
- Allows a maximum of 5 hosts to access one serial port
- Allows a maximum of 16 hosts to be accessed in TCP client mode
- Built-in 15-kV ESD protection for all serial signals
- Provides rich configuration methods including Windows utility, Telnet console, and web browser
- Supports 32/64-bit Windows 2000/XP/Vista/7/8/8.1/10, Windows Server 2003/2008/2012, and Linux
- Automatic RS-485 data flow control
- Supports line-to-line (2 kV) and line-to-ground (4 kV) surge protection
- "I" models support a wide operating temperature
- "CI" models support isolation and a wide operating temperature

Introduction

The EKI-1521, EKI-1522, and EKI-1524 feature two independent Ethernet ports and MAC addresses to provide a redundant network mechanism that guarantees Ethernet network reliability. These serial device servers are designed to connect RS-232/422/485 serial devices such as PLC, meters, sensors, and barcode readers to an IP-based Ethernet LAN. They allow nearly any device with serial ports to connect and share an Ethernet network, while also providing various operations such as COM port redirection (Virtual COMport), TCP server, TCP client, and UDP mode. With COM port redirection mode, standard serial operation calls are transparently redirected to the servers, guaranteeing compatibility with legacy serial devices and enabling backward-compatibility with existing software. With TCP server, TCP client, and UDP modes, the EKI- 1521, EKI-1522, and EKI-1524 ensure compatibility in network software using a standard network API. Moreover, serial devices can be made communicate with other devices via peer-to-peer, thus eliminating the need for an intermediate host PC and software programming.

Specifications

Ethernet Communications

- **Compatibility** IEEE 802.3, IEEE 802.3u
- **Speed** 10/100 Mbps
- **No. of Ports** 2
- **Port Connector** 8-pin RJ45
- **Protection** Built-in 1.5 KV magnetic isolation

Serial Communications

- **Port Type** RS-232/422/485, software selectable ("CI" model supports RS-422/485)
- **No. of Ports** EKI-1521: 1/EKI-1522: 2/EKI-1524: 4
- **Port Connector** DB9 male
- **Data Bits** 5, 6, 7, 8
- **Stop Bits** 1, 1.5, 2
- **Parity** None, Odd, Even, Space, Mark
- **Flow Control** XON/XOFF, RTS/CTS
- **Baud Rate** 50 bps ~ 921.6 kbps, any baud rate setting
- **Serial Signals** RS-232: TxD, RxD, CTS, RTS, DCD, RI, GND
RS-422: TxD+, TxD-, RxD+, RxD-, GND
RS-485: Data+, Data-, GND
- **Protection** Built-in 15 KV ESD for all signals

Software

- **Driver Support** 32-bit/64-bit Windows 2000/XP/Vista/7/8/8.1/10, Windows Server 2003/2008/2012, and Linux
- **Operation Modes** COM port redirection mode (Virtual COM)
TCP/UDP server (polling) mode
TCP/UDP client (event handling) mode
Pair connection (peer to peer) mode
- **Configuration** Windows utility, Telnet console, Web Browser
- **Management** SNMP MIB-II
- **Protocols** ICMP, IP, TCP, UDP, BOOTP, DHCP, Auto IP, SNMP, HTTP, DNS, SMTP, ARP, NTP

Mechanics

- **Dimensions (W x H x D)** 36.6 x 140 x 95 mm (1.44" x 5.51" x 3.74")
EKI-1524: 48.6 x 140 x 95 mm (1.91" x 5.51" x 3.74")
- **Enclosure** Metal with solid mounting hardware
- **Mounting** DIN-rail, Wall
- **Weight** EKI-1521: 472g/EKI-1522: 480g/EKI-1524: 555g

General

- **LED Indicators** System: Power, System Status/LAN: Speed, Link/Active
Serial: Tx, Rx

Power Requirements

- **Input** 12 ~ 48 V_{DC}, redundant dual inputs
- **Connector** Terminal block
- **Consumption** EKI-1521: 3.2 W
EKI-1522: 3.2 W
EKI-1524: 4.1 W

Environment

- **Operating Temperature** EKI-1521/EKI-1522/EKI-1524: -10 ~ 60 °C (14 ~ 140 °F)
'CI & I' models: -40 ~ 75 °C (-40 ~ 167 °F)
- **Storage Temperature** -40 ~ 85 °C (-40 ~ 185 °F)
- **Operating Humidity** 10 ~ 95% RH

Regulatory Approvals

- **EMC** CE, FCC Part 15 Subpart B (Class A)

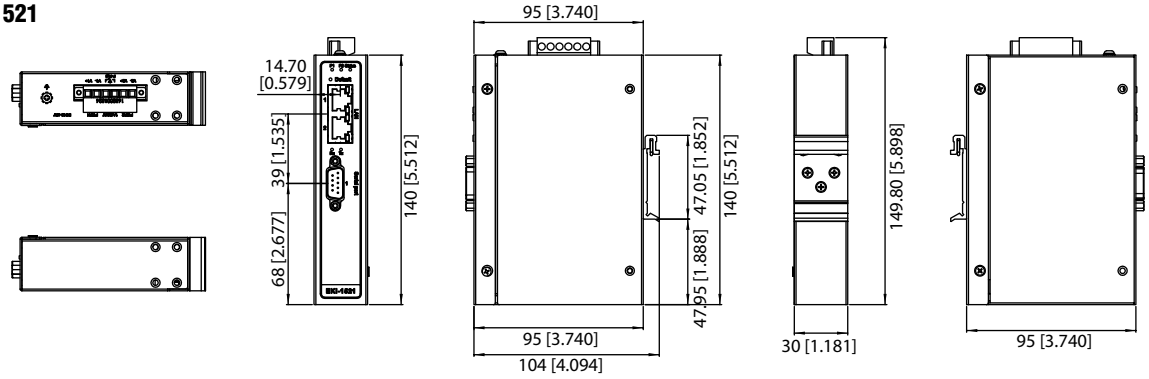
Port to Port Isolation ('CI' models)

- **Serial to Ethernet** 2 kV
- **Serial to Power** 2 kV
- **Ethernet to Power** 1.5 kV

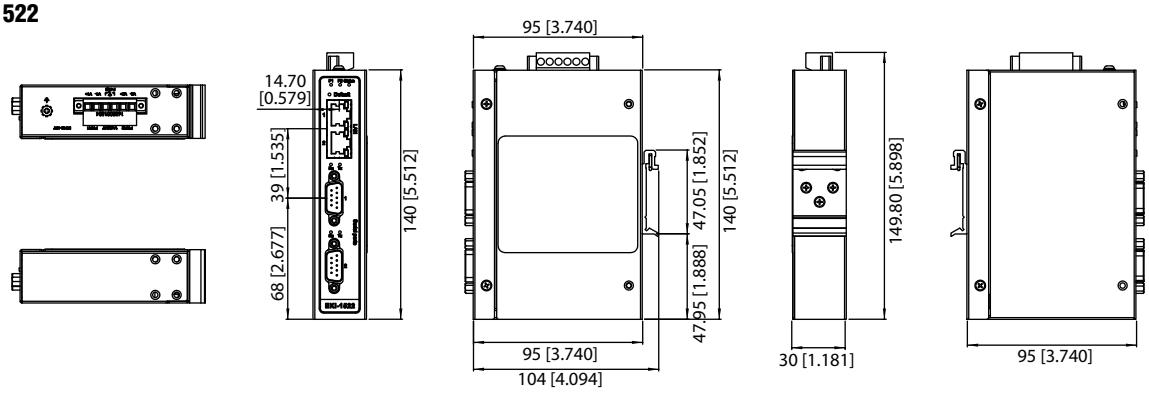
Dimensions

Unit: mm [inch]

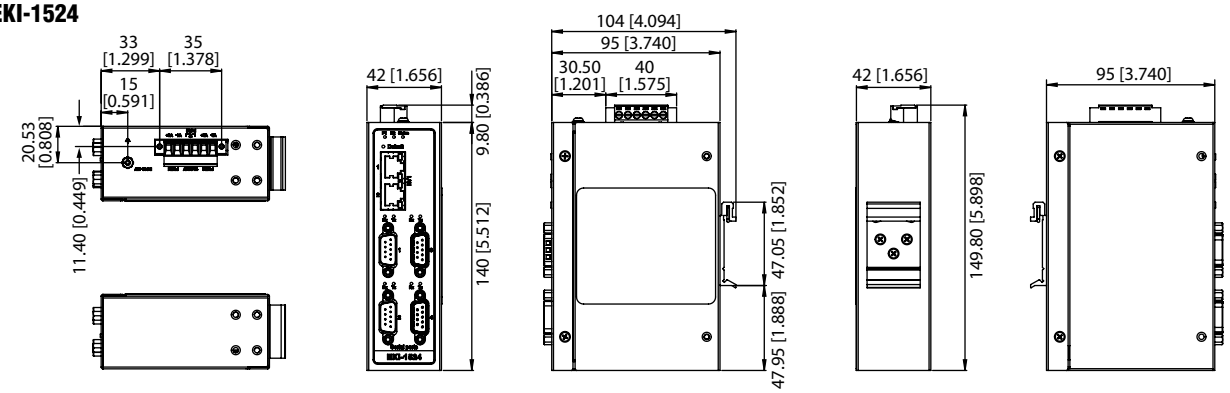
EKI-1521



EKI-1522



EKI-1524



Panel Cut-out Dimensions: 104 x 140 x 36.6 mm (4.094" x 5.512" x 1.441")

Ordering Information

- **EKI-1521** 1-port RS-232/422/485 Serial Device Server
- **EKI-1522** 2-port RS-232/422/485 Serial Device Server
- **EKI-1524** 4-port RS-232/422/485 Serial Device Server
- **EKI-1521I** 1-port RS-232/422/485 Serial Device Server with wide operating temperature
- **EKI-1522I** 2-port RS-232/422/485 Serial Device Server with wide operating temperature
- **EKI-1524I** 4-port RS-232/422/485 Serial Device Server with wide operating temperature
- **EKI-1521CI** 1-port RS-422/485 Serial Device Server with wide operation temperature and isolation
- **EKI-1522CI** 2-port RS-422/485 Serial Device Server with wide operation temperature and isolation
- **EKI-1524CI** 4-port RS-422/485 Serial Device Server with wide operation temperature and isolation
- **OPT1-DB9** D-Sub9 to Terminal Converter

EKI-1528I-DR
EKI-1528CI-DR

8-Port RS-232/422/485 Device Server

8-Port RS-422/485 Device Server

Features

- 2 x 10/100 Mbps Ethernet ports for LAN redundancy
- Provides COM port redirection (Virtual COM), TCP, and UDP operation modes
- Supports up to 921.6 kbps and any baud rate setting
- Allows a maximum of 5 hosts to access one serial port
- Allows a maximum of 16 hosts to be accessed in TCP client mode
- Built-in 15-kV ESD protection for all serial signals
- Provides rich configuration methods including Windows utility, Telnet console, and web browser
- Supports 32/64-bit Windows 2000/XP/Vista/7/8/8.1/10, Windows Server 2003/2008/2012, and Linux
- Automatic RS-485 data flow control
- Supports line-to-line (2 kV) and line-to-ground (4 kV) surge protection
- "I" models support a wide operating temperature
- "CI" models support isolation and a wide operating temperature

Introduction

The EKI-1528I and EKI-1528CI feature two independent Ethernet ports and MAC addresses to provide a redundant network mechanism that guarantees Ethernet network reliability. These serial device servers are designed to connect RS-232/422/485 serial devices such as PLC, meters, sensors, and barcode readers to an IP-based Ethernet LAN. They allow nearly any device with serial ports to connect and share an Ethernet network, while also providing various operations such as COM port redirection (Virtual COMport), TCP server, TCP client, and UDP mode. With COM port redirection mode, standard serial operation calls are transparently redirected to the servers, guaranteeing compatibility with legacy serial devices and enabling backward-compatibility with existing software. With TCP server, TCP client, and UDP modes, the EKI-1528I and EKI-1528CI ensure compatibility in network software using a standard network API. Moreover, serial devices can be made communicate with other devices via peer-to-peer, thus eliminating the need for an intermediate host PC and software programming.

Specifications

Ethernet Communications

- **Compatibility** IEEE 802.3, IEEE 802.3u
- **Speed** 10/100 Mbps
- **No. of Ports** 2
- **Port Connector** 8-pin RJ45
- **Protection** Built-in 1.5 KV magnetic isolation

Serial Communications

- **Port Type** RS-232/422/485, software selectable
- **No. of Ports** 8
- **Port Connector** DB9 male
- **Data Bits** 5, 6, 7, 8
- **Stop Bits** 1, 1.5, 2
- **Parity** None, Odd, Even, Space, Mark
- **Flow Control** XON/XOFF, RTS/CTS, DTR/DSR
- **Baud Rate** 50 bps ~ 921.6 kbps, any baud rate setting
- **Serial Signals** RS-232: TxD, RxD, CTS, RTS, DTR, DSR, DCD, RI, GND
  RS-422: TxD+, TxD-, RxD+, RxD-, GND
  RS-485: Data+, Data-, GND
- **Protection** Built-in 15 KV ESD for all signals

Software

- **Driver Support** 32-bit/64-bit Windows 2000/XP/Vista/7/8/8.1, Windows Server 2003/2008/2012, Windows CE 5.0, and Linux
- **Operation Modes** COM port redirection mode (Virtual COM)
  TCP/UDP server (polling) mode
  TCP/UDP client (event handling) mode
  Pair connection (peer to peer) mode
- **Configuration** Windows utility, Telnet console, Web Browser
- **Management** SNMP MIB-II

Mechanics

- **Dimensions (W x H x D)** 86 x 140 x 95 mm (3.38" x 5.51" x 3.74")
- **Enclosure** Metal with solid mounting hardware
- **Mounting** DIN-rail, Wall
- **Weight** EKI-1528I:900g/ EKI-1528CI:1000g

General

- **LED Indicators** System: Power, System Status/LAN: Speed, Link/Active
  Serial: Tx, Rx

Power Requirements

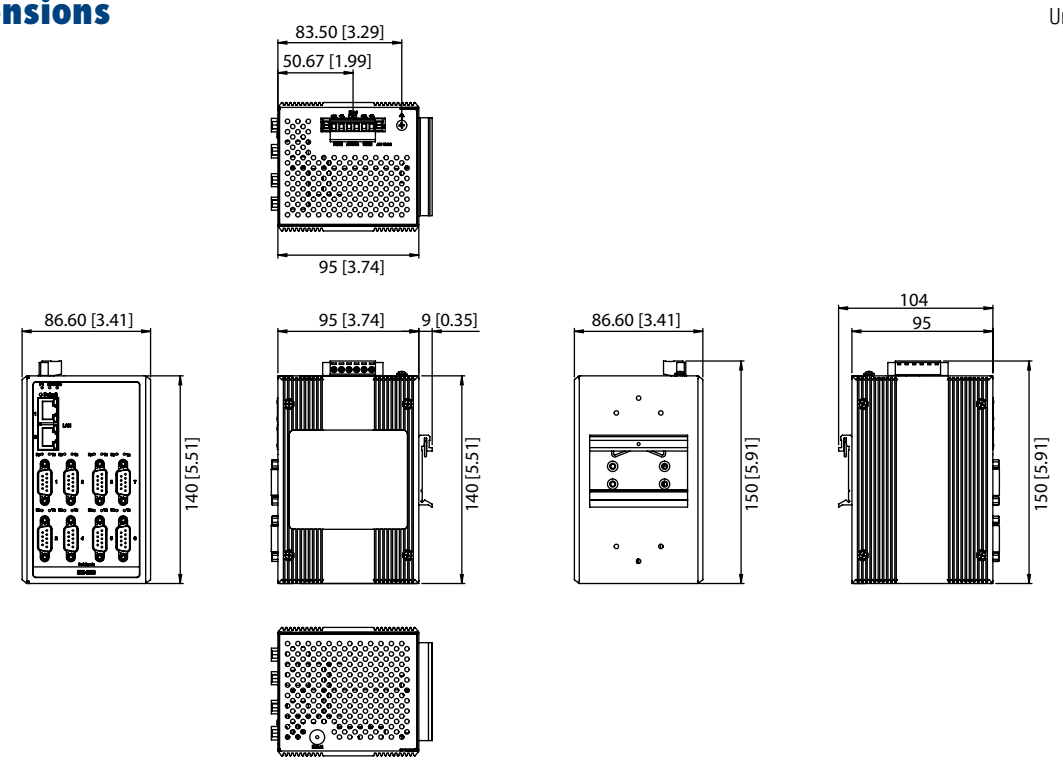
- **Input** 12 ~ 48 V_{DC}, redundant dual inputs
- **Connector** Terminal block
- **Consumption** EKI-1528I: 5W
  EKI-1528CI: 6W

Environment

- **Operating Temperature** -40 ~ 70°C (-40 ~ 158°F)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity** 10 ~ 95% RH
- **Regulatory Approvals**
- **EMC** CE, FCC Part 15 Subpart B (Class A)

Dimensions

Unit: mm [inch]



Panel Cut-out Dimensions: 86 x 140 x 95 mm (3.38" x 5.51" x 3.74")

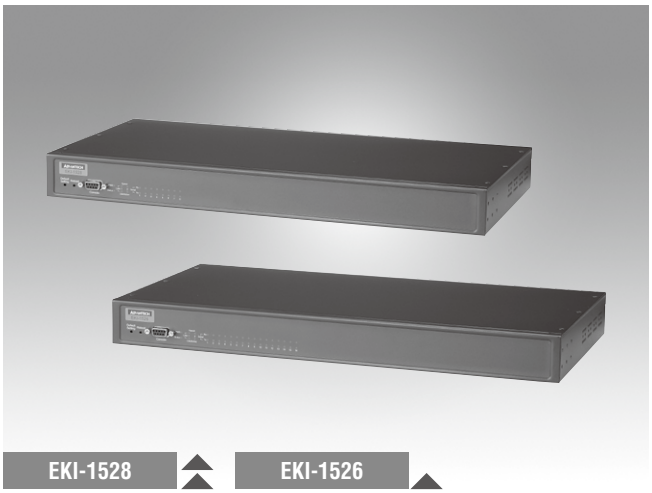
Ordering Information

- **EKI-1528I-DR** 8-port Serial Device Server with wide temp. (DR)
- **EKI-1528CI-DR** 8-port Serial Device Server with wide temp & iso

EKI-1528I/TI
EKI-1526I/TI

8-Port RS-232/422/485 Serial Device Server

16-Port RS-232/422/485 Serial Device Server



EKI-1528 EKI-1526

Features

- 8/16-port RS-232/422/485 serial communication
- 2 x 10/100 Mbps Ethernet ports for LAN redundancy
- Provides COM port redirection (Virtual COM), TCP, and UDP operation modes
- Supports up to 921.6 kbps and any baud rate setting
- Allows a maximum of 5 hosts to access one serial port
- Allows a maximum of 16 hosts to be accessed in TCP client mode
- Built-in 15-kV ESD protection for all serial signals
- SNMP MIB-II for network management
- Built-in buzzer for easy location
- Standard 1U rackmount size
- Automatic RS-485 data flow control
- Supports line-to-line (2 kV) and line-to-ground (4 kV) surge protection
- "I" models support a wide operating temperature
- "CI" models support isolation and a wide operating temperature
- Rear wiring
- Automatic RS-485 data flow control

Introduction

The EKI-1528 and EKI-1526 are industrial-grade network-based serial device servers for connecting up to 8/16 serial RS-232/422/485 devices, such as CNCs, PLCs, scales and scanners, directly to a TCP/IP network. These device serves feature two independent Ethernet ports and MAC addresses to provide a redundant network mechanism that guarantees Ethernet network reliability. They provide a simple and cost-effective way to bring the advantages of remote management and data accessibility to thousands of devices that cannot otherwise connect to an Ethernet network. The EKI-1528 and EKI-1526 offer multiple configuration options, such as by a Windows utility, web browser, serial console, or Telnet console, and these methods make it easy to manage multiple EKI-1528 and EKI-1526 servers or serial devices on your network.

Specifications

Ethernet Communications

- **Compatibility** IEEE 802.3, IEEE 802.3u, IEEE 802.3ab
- **Speed** 10/100/1000 Mbps, auto MDI/MDIX
- **No. of Ports** 2
- **Port Connector** 8-pin RJ45
- **Protection** Built-in 1.5 KV magnetic isolation

Serial Communications

- **Port Type** RS-232/422/485, software selectable
- **No. of Ports** EKI-1528I/EKI-1528TI: 8
EKI-1526I/EKI-1526TI: 16
- **Port Connector** DB9 male
- **Data Bits** 5, 6, 7, 8
- **Stop Bits** 1, 1.5, 2
- **Parity** None, Odd, Even, Space, Mark
- **Flow Control** XON/XOFF, RTS/CTS, DTR/DSR
- **Baud Rate** 50 bps ~ 976.5 kbps, any baud rate setting
16 ports up to 230.4 kbps simultaneously
- **Serial Signals** RS-232: TxD, RxD, CTS, RTS, DTR, DSR, DCD, GND, RI
RS-422: TxD+, TxD-, RxD+, RxD-, GND
RS-485: Data+, Data-, GND
- **Protection** 15 KV ESD for all signals

Software

- **Driver Support** 32-bit/64-bit Windows 2000/XP/Vista/7/ 8/8.1/10, Windows Server 2003/2008/2012, and Linux
- **Utility Software** Advantech EKI Device Configuration Utility
- **Operation Modes** COM port redirection mode (Virtual COM)
TCP/UDP server (polling) mode
TCP/UDP client (event handling) mode
Pair connection (peer to peer) mode
RFC2217 mode
- **Configuration** Windows utility, Telnet console, Web Browser, serial console
- **Protocols** ARP, ICMP, IPv4, TCP, UDP, BOOTP/DHCP Client, Auto IP, Telnet, SNMP, HTTP, DNS, SMTP, NTP
- **Management** SNMP MIB-II

Mechanics

- **Dimensions (W x H x D)** 438 x 43.6 x 259.2 mm (17.24" x 1.71" x 10.2")
- **Enclosure** SECC chassis
- **Mounting** Rack

General

- **LED Indicators** System: Power, System Status
LAN: Speed, Link/Active
Serial: Tx, Rx
- **Alert Tools** Built-in buzzer and RTC (real time clock)
- **Reboot Trigger** Built-in WDT and push button for hardware reboot

Power Requirements

- **Power Input** EKI-1528I/EKI-1526I: 100 ~ 240 V_{AC} , 47 ~ 63 Hz
EKI-1528TI/EKI-1526TI: 12 ~ 48 V_{DC}, Terminal Block
- **Power Consumption** 5.6 W

Environment

- **Operating Temperature** -40 ~ 75°C (-40 ~ 167°F)
- **Storage Temperature** -20 ~ 80°C (-4 ~ 176°F)
- **Operating Humidity** 10 ~ 95% RH

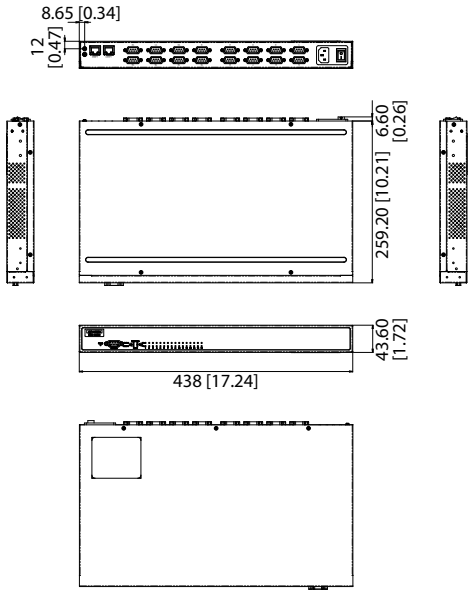
Regulatory Approvals

- **EMC** CE, FCC Part 15 Subpart B (Class A)

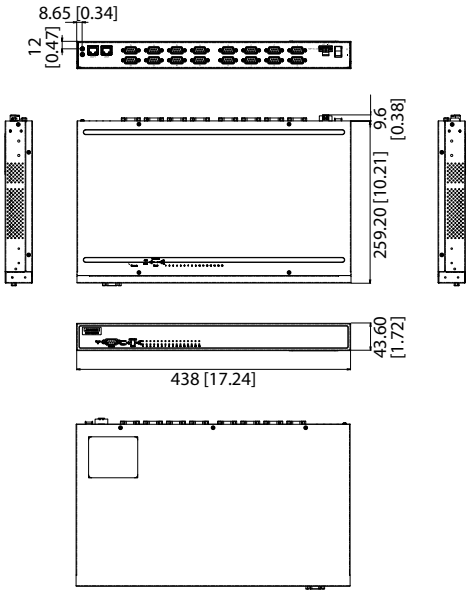
Dimensions

Unit: mm [inch]

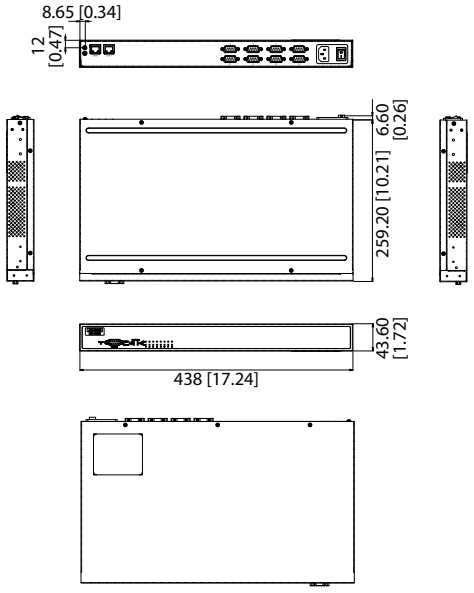
EKI-1526I



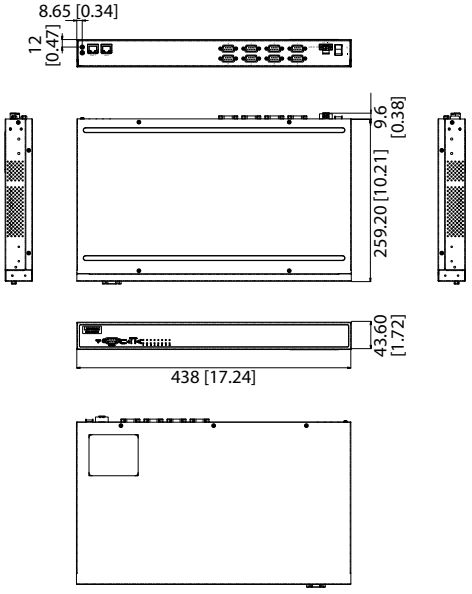
EKI-1526TI



EKI-1528I



EKI-1528TI



Ordering Information

- **EKI-1528I** 8-port RS-232/422/485 Serial Device Server
- **EKI-1526I** 16-port RS-232/422/485 Serial Device Server
- **EKI-1528TI-VDC** 8-port RS-232/422/485 Serial Device Server w/ DC Input
- **EKI-1526TI-VDC** 16-port RS-232/422/485 Serial Device Server w/ DC Input

ADAM 4571/L
ADAM-4570/L

1-port RS-232/422/485 Serial Device Server

2-port RS-232/422/485 Serial Device Server

Specifications

Ethernet Communications

- **Compatibility** IEEE 802.3, IEEE 802.3u
- **Speed** 10/100 Mbps
- **No. of Ports** 1
- **Port Connector** 8-pin RJ45
- **Protection** Built-in 1.5 KV magnetic isolation

Serial Communications

- **Port Type** ADAM-4571/4570: RS-232/422/485, software selectable
  ADAM-4571L/4570L: RS-232
- **No. of Ports** ADAM-4571/4571L: 1
  ADAM-4570/4570L: 2
- **Port Connector** ADAM-4571/4571L: DB9 male
  ADAM-4570/4570L: 10-pin RJ48
- **Data Bits** 5, 6, 7, 8
- **Stop Bits** 1, 1.5, 2
- **Parity** None, Odd, Even, Space, Mark
- **Flow Control** XON/XOFF, RTS/CTS
- **Baud Rate** 50 bps ~ 921.6 kbps, any baud rate setting
- **Serial Signals** RS-232: TxD, RxD, CTS, RTS, DTR, DSR, DCD, RI, GND
  RS-422: TxD+, TxD-, RxD+, RxD-, GND
  RS-485: Data+, Data-, GND
- **Protection** 15 KV ESD protection for all signals

Software

- **Driver Support** 32-bit/64-bit Windows 2000/XP/Vista/7, Windows Server 2003/2008, Windows CE 5.0, and Linux
- **Utility Software** Advantech Serial Device Server Configuration Utility
- **Operation Modes** COM port redirection (Virtual COM)
  TCP/UDP server (polling) mode
  TCP/UDP client (event handling) mode
  Pair Connection (peer to peer) mode
- **Configuration** Windows utility, Telnet console, Web Browser
- **Protocol** ICMP, IP, TCP, UDP, BOOTP, DHCP, Auto IP, Telnet, SNMP, HTTP, DNS, SMTP, ARP

Mechanics

- **Dimension (W x H x D)** 70 x 130 x 30 mm (2.76" x 5.12" x 1.18")
- **Enclosure** ABS+PC with solid mounting hardware
- **Mounting** Stack, Wall
- **Weight** ADAM-4571/4571L: 135 g
  ADAM-4570/4570L: 160 g

General

- **LED Indicators** System: Power, System Status
  LAN: Speed, Link/Active
  Serial: Tx, Rx
- **Reboot Trigger** Built-in WDT (watchdog timer)

Power Requirements

- **Power Input** 10 ~ 30 V_{DC}
- **Power Connector** Terminal block
- **Power Consumption** ADAM-4571/4571L: 2.5 W
  ADAM-4570/4570L: 2.5 W

Environment

- **Operating Temperatures** -10 ~ 60°C (14 ~ 140°F)
- **Storage Temperature** -20 ~ 80°C (-4 ~ 176°F)
- **Operating Humidity** 5 to 95% RH

Regulatory Approvals

- **EMC** CE, FCC Part 15 Subpart B (Class A)

Ordering Information

- **ADAM-4571** 1-port RS-232/422/485 Serial Device Server
- **ADAM-4571L** 1-port RS-232 Serial Device Server
- **ADAM-4570** 2-port RS-232/422/485 Serial Device Server
- **ADAM-4570L** 2-port RS-232 Serial Device Server

*ADAM-4570/4570L includes 2pcs OPT1A

Accessories

- **OPT1A** 1 m RJ48 to DB9 Male Cable
- **OPT1D** 30 cm RJ48 to DB9 Male Cable

Wzzard LRPv Node

Industrial LoRa Private Node

Features

- Long-range wide area IoT gateway
- Optional solar or battery power input for low power consumption
- LoRa private protocol for closed system applications
- Ethernet and I/O ports for connecting a wide range of field assets with a DIN rail or wall mounting design
- Provides connectivity to industry standard analog or digital sensors
- Rugged, IP66-rated, fiber-reinforced polyester PBT enclosure
- MQTT and JSON IoT protocol support

Introduction

The Wzzard LoRa private node intelligent sensor platform enables you to quickly and easily create a complete connectivity stack between your sensors and applications via either a network or the Internet. The platform uses intelligent edge nodes and a wireless LoRa network to transmit sensor data to the SmartSwarm 243 LoRa Gateway, which can connect to the Internet via a wired connection and communicate with application platforms using MQTT and JSON protocols. Wzzard LoRa intelligent edge nodes can accommodate virtually any industry standard external sensors. Connections can be made via conduit fittings, cable glands, or an M12 connector. These nodes provide various sensor interface options including general purpose analog inputs, digital input/output, and thermocouples.

Specifications

Power

- **Internal** — Two 3.6-V 2400-mAH lithium thionyl chloride AA batteries
- **Optional External Input** — 6 ~ 12 V_{DC} Voltage

Mechanical

- **Physical Connection** — M12
12.7-mm (1/2") conduit, sensor interface cable included; 8-wire, 26-gage, 1.8-m (6')
- **Sensor Inputs** — Analog input (0 ~ 5 V_{DC}, 0 ~ 20 mA, 4 ~ 20 mA), digital input (0 ~ 48 V_{DC})
Integrated temperature, thermocouple K-type digital output (0 ~ 30 V_{DC})
- **Optional External Antenna** — RP-SMA, omnidirectional, 1.5 dBi, 868 ~ 915 MHz; length, 170 mm (6.69")
- **Mounting** — Magnetic mounting via an internal magnet
Holding force, 2.13 kg (4.7 lbs); four mounting ears, M5 (#10)
- **Enclosure** — IP66-rated, fiber-reinforced polyester PBT
- **Weight** — 400g

Technology

- **Wireless** — LoRa private 868/915 MHz
- **LED** — Network connectivity

Environmental

- **Installation** — Indoor or outdoor
- **Operating Temperature** — -40 ~ 75 °C (-40 ~ 167 °F)
- **Storage Temperature** — -40 ~ 85 °C (-40 ~ 185 °F)
- **Operating Humidity** — 10 ~ 95% noncondensing

Digital Inputs

- **Voltage Range** — 0 ~ 48 V_{DC}
- **V_{IL}** — 0.97 V (max)
- **V_{IH}** — 1.8 V (min)
- **Pull-Up Current** — 32 µA
- **Type** — Source/Sink (PNP/NPN) software-selectable input
- **Isolation** — None

Analog Inputs

- **Input Range** — 0 ~ 5 V_{DC}, 0 ~ 20 mA, 4 ~ 20 mA
- **Resolution** — 12 bit
- **Input Load Resistance** — 100 MΩ (0 ~ 5 V_{DC}), 250 Ω, (0 ~ 20 mA)
- **Accuracy** — ±1% (Voltage) at 25 °C
±1% (Current) at 25 °C

Thermocouple Input

- **Types Supported** — K
- **Ranges Supported** — Type-K -270 ~ 1372 °C (-454 ~ 2502 °F)
- **Resolution** — 0.25 °C (34.25 °F)
- **Accuracy** — ≦ 0 °C: ±2.5 °C
> 0 °C: ±1.5 °C

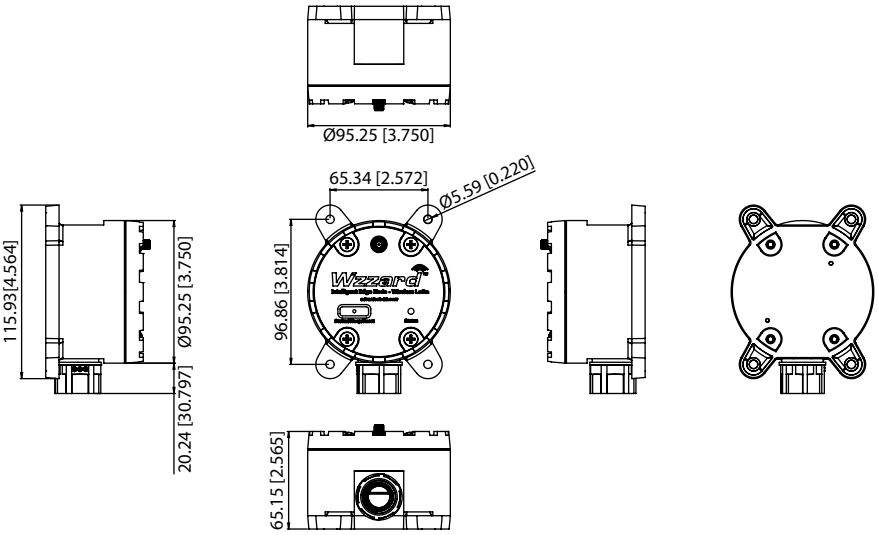
Digital Outputs

- **Voltage Range** — 0 ~ 30 V_{DC}
- **Output Type** — Open drain
- **Output Current** — 100 mA (min)
- **Protection** — Current limit protection
- **Isolation** — None

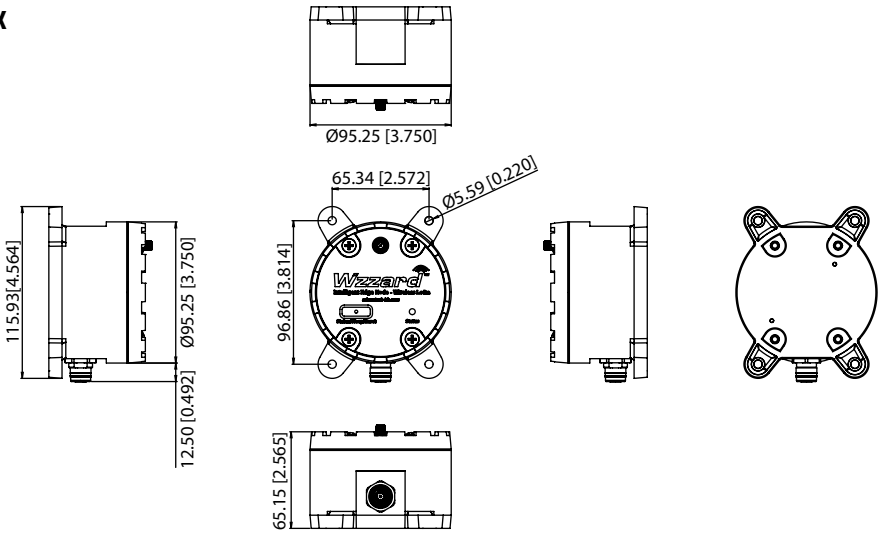
Dimensions

Unit: mm [inch]

BB-WSL2CXXXXX-X



BB-WSL2MXXXXX-X



Outline Dimension: 95.25 x 65.15 x 115.9 [3.75 x 2.56 x 4.56]

Regulatory Approvals

- **Shock** IEC60068-2-27
- **Free Fall** IEC60068-2-32
- **Vibration** IEC60068-2-6

Ordering Information

- **BB-WSL2C2112T-1** LoRa node with power monitoring, 2 x thermocouples, 2 x AI, 1 x DI, 1 x DO, conduit, external antenna (915 MHz)
- **BB-WSL2C2112T-2** LoRa node with power monitoring, 2 x thermocouples, 2 x AI, 1 x DI, 1 x DO, conduit, external antenna (868 MHz)
- **BB-WSL2C31000-1** LoRa node with power monitoring, 3 x AI, 1 x DI, conduit, external antenna (915 MHz)
- **BB-WSL2C31000-2** LoRa node with power monitoring, 3 x AI, 1 x DI, conduit, external antenna (868 MHz)
- **BB-WSL2M31000-1** LoRa node with power monitoring, 2 x AI, 1 x DI, M12, external antenna (915 MHz)
- **BB-WSL2M31000-2** LoRa node with power monitoring, 3 x AI, 1 x DI, M12, external antenna (868 MHz)

Wzzard™ Intelligent Edge Node

Wzzard Mesh Node

Features

- Ultra-low-power 802.15.4e SmartMesh IP technology
- Communicates with Spectre Network Gateway via highly scalable and reliable wireless mesh networks
- Connects to industry standard analog or digital sensors
- Wzzard app for reading/configuring nodes via an Android tablet or smartphone
- Rugged, IP66-rated, fiber reinforced polyester PBT enclosure
- MQTT and JSON IoT protocol to application platform
- Class 1 DIV 2 approved for hazardous locations

Introduction

The Wzzard intelligent wireless sensor platform creates a complete connectivity stack between your sensors and your application on your network or the Internet. The platform uses intelligent edge nodes and a wireless 802.15.4e SmartMesh IP network to transmit sensor data to the Spectre Network Gateway. These nodes accommodate virtually any industry-standard external sensor. Connections can be made via conduit fitting, cable gland, or M12 connector. In addition to containing an internal temperature sensor, the nodes provide various sensor interface options, including general purpose analog inputs, digital I/Os, thermocouples, and internal sensors such as accelerometers.

Specifications

Power

- **Internal** (2) 3.6V 2400 mAH Lithium Thionyl Chloride AA batteries
- **Battery Life** Multiyear based on 1 min sensor sampling and reporting
- **Optional External Input Voltage** 3.3 V_{DC} +/- 5%

Mechanical

- **Physical Connection** M12 Connector
  1/2" (12.7 mm) Conduit, sensor interface cable included; 8 wire, 26 gage, 6 ft. (1.8 m)
- **Sensor Inputs** Analog Input (0 ~ 5 V_{DC}, 0 ~ 20 mA, 4 ~ 20 mA)
  Digital Input (0 ~ 48 V_{DC})
  Digital Input Frequency 1-1K Hz
  (Accuracy + or – 1 Hz)
  Digital Input Counter
  Integrated Accelerometer 3 Axis
  Integrated Temperature
  Thermocouple J, K Type
  Digital Output (0 ~ 30 V_{DC})
- **Optional External Antenna** RP-SMA, Omnidirectional, 3.8 dBi, 2.4 GHz
  Dimensions 7.64 inches (194 mm)
- **Mounting** Magnetic mounting via internal magnet
  Pull force 4.7 lbs (2.13 kg)
  (4) Mounting ears, M5 (#10)
- **Enclosure** IP66-rated, fiber reinforced polyester PBT
- **Weight** 0.75 lbs (0.34 kg)

Technology

- **Wireless** 802.15.4e, SmartMesh IP
- **Protocols** MQTT-SN, MQTT, JSON
- **Bluetooth** Bluetooth 4.0 Low Energy (LE)
- **LED** Network Connectivity

Environmental

- **Installation** Indoor or outdoor
- **Operating Temperature** -40 to 80 °C (-40 to 176 °F)
- **Storage Temperature** -40 to 85 °C
- **Operating Humidity** 0 to 95% Non-condensing

Wireless Security

- **Device Authentication**
- **128 bit AES-based encryption with multiple keys**
- **Message integrity check (MIC)**
- **Synchronized key changeovers**
- **Customized key rotation**

Approvals and Certifications

CE

- **EN55022** CISPR (EN55022) Class A
- **EN 61000-6-2:2005** Generic immunity standard for (heavy) industrial environments
- **EN 61000-6-4:2006+A1:2011** Emission standard for (heavy) industrial environments
- **EN61000-4-2** ESD +/- 8kV air, +/- 4kV contact
- **EN61000-4-3** RFI
- **EN61000-4-4** EFT
- **EN61000-4-5** Surge
- **EN61000-4-6** CI
- **EN60255-21-1** Vibration, 2g, 10-500Hz 0.3mm displacement
- **EN60255-21-2** Shock, 50g, 11ms half sine wave, 18 shocks

Environmental

- **IEC 60068-2-6:2007** Vibration, 2g, 10-500 Hz,1.5mm displacement
- **IEC 60068-2-27:2008** Shock, 50g, 11ms half sine wave, 18 shocks

FCC/IC

- **FCC Part 15 Class A**
- **FCC - Part 15.247**
- **Industry Canada - RSS210**

Safety

- **UL/CSA Class 1, Division 2 Group A, B, C, D**

Regulatory Approvals

- **ROHS and WEEE Compliant**

Ordering Information

- **BB-WSD2CTJ** Wireless Mesh 802.15.4e, 2 Thermocouple J-type Inputs, 1 Digital Output; External Antenna, Conduit Connector
- **BB-WSD1CTJ** Wireless Mesh 802.15.4e, 2 Thermocouple J-type Inputs, 1 Digital Output; Internal Antenna, Conduit Connector
- **BB-WSD2CTK** Wireless Mesh 802.15.4e, 2 Thermocouple K-type Inputs, 1 Digital Output; External Antenna, Conduit Connector
- **BB-WSD1CTK** Wireless Mesh 802.15.4e, 2 Thermocouple K-type Inputs, 1 Digital Output; Internal Antenna, Conduit Connector
- **BB-WSD2XV0** Wireless Mesh 802.15.4e Integrated Accelerometer; External Antenna
- **BB-WSD1XV0** Wireless Mesh 802.15.4e Integrated Accelerometer; Internal Antenna
- **BB-WSD2MA2** Wireless Mesh 802.15.4e; 2 Analog Inputs, 1 Digital Output; External Antenna, M12 Connector
- **BB-WSD1MA2** Wireless Mesh 802.15.4e; 2 Analog Inputs, 1 Digital Output; Internal Antenna, M12 Connector
- **BB-WSD2CA2** Wireless Mesh 802.15.4e; 2 Analog Inputs, 1 Digital Output; External Antenna, Conduit Connector
- **BB-WSD1CA2** Wireless Mesh 802.15.4e; 2 Analog Inputs, 1 Digital Output; Internal Antenna, Conduit Connector
- **BB-WSD2CJA** Wireless Mesh 802.15.4e; 2 Analog Inputs, 1 Digital Output, 2 Thermocouple J-type Inputs; External Antenna, Conduit Connector
- **BB-WSD2MA3** Wireless Mesh 802.15.4e; 3 Analog Inputs; External Antenna, M12 Connector
- **BB-WSD1MA3** Wireless Mesh 802.15.4e; 3 Analog Inputs; Internal Antenna, M12 Connector
- **BB-WSD2CA3** Wireless Mesh 802.15.4e; 3 Analog Inputs; External Antenna, Conduit Connector
- **BB-WSD1CA3** Wireless Mesh 802.15.4e; 3 Analog Inputs; Internal Antenna, Conduit Connector
- **BB-WSD2MD2** Wireless Mesh 802.15.4e; 2 Digital Inputs, 2 Digital Outputs; External Antenna, M12 Connector
- **BB-WSD1MD2** Wireless Mesh 802.15.4e; 2 Digital Inputs, 2 Digital Outputs; Internal Antenna, M12 Connector
- **BB-WSD2CD2** Wireless Mesh 802.15.4e; 2 Digital Inputs, 2 Digital Outputs; External Antenna, Conduit Connector
- **BB-WSD1CD2** Wireless Mesh 802.15.4e; 2 Digital Inputs, 2 Digital Outputs; Internal Antenna, Conduit Connector

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SmartStart

Intelligent 4G LTE Router & Gateway

Features

- For industrial IoT and consumer-focused high-speed data applications
- Ethernet, serial RS-232, and I/O for connecting a wide array of field assets
- DIN rail or wall mounting options
- Low power consumption for solar and battery power applications
- Exceptionally resilient wireless and wired connection
- Enhanced memory for hosting custom software applications and a wide variety of protocols
- Easy deployment, mass maintenance, and troubleshooting with B+B SmartWorx remote management and monitoring tools
- Loaded with advanced features for data security

Introduction

The SmartStart LTE family of cellular routers and gateways are ideal for connecting RS-232 and Ethernet devices to a cellular network. Industrial M2M and IoT applications include Ethernet lottery machines, ATM stations, kiosks, gaming terminals, as well as RS-232 traffic controllers, meters, UPS systems, and PLCs. SmartStart combines best-in-class power consumption with LTE performance and is optimized for solar and battery-powered applications. Low-power mode extends battery life by dropping power consumption to 40 mW, and this can be triggered by timers, low voltage detection, or an I/O signal. SmartStart is the industry's only cellular gateway with power-consumption equivalent to a 2G device. Furthermore, it is DIN rail and panel mountable. The router supports VPN tunneling using various protocols to ensure safe communications. The router provides diagnostics functions including automatic monitoring of wireless/wired connections, automatic restart due to connection loss, and a hardware watchdog that monitors the router status.

Specifications

- **Network and Routing** DHCP Server, NAT/PAT, VRRP, Dynamic DNS client, DNS proxy, VLAN, QoS, DMVPN, NTP Client/ Server, IGMP, BGP, OSPF, RIP, SMTP, SMTPS, SNMP v1/ v2c/ v3, Backup Routers, PPP, PPPoE, SSL, Port Forwarding, Host Port Routing, Ethernet Bridging
- **Security** HTTPS, SSH, VPN tunnels, SFTP, DMZ, Firewall (IP Filtering, MAC address filtering, Inbound and outbound Port filtering)
- **VPN Tunnelling** Open VPN client and server and P2P, L2TP, PPTP, GRE, EasyVPN, IPSec with IKEv1 and IKEv2
- **Configuration** Web server, SSH, Four configuration switchable profiles, Automatic configuration update from server, Backup configuration, Restore configuration
- **Firmware Management** Automatic firmware update from server, Locally via LAN or remotely OTA (HTTP, HTTPS), Over-the-Air software updates, Over-the-Air cellular module update from FW
- **Diagnostic** One CLICK report - current configuration / factory identification/ system log / kernel log / reboot log / routing table, Remote diagnostics possible via SSH
- **Status** Network Status, DHCP Status, IPSec Status, Statistics history for last 60days
- **Log** System Log, Reboot Log, Kernel Log
- **Controlling and Diagnostic** SMS, SNMP v1/v2c/v3, Statuses
- **Event Engine** StartUp script & Up/Down script (Bash, Python), Digital Input, Network Parameters, Data Usage, Timer, Power, Device Temperature. Report Types: RAP, SMS, email, SNMP Trap, TCP (csv, xml, binary)
- **Other** Support of IPv6

Ports, LED, Antennas

- **Ethernet** RJ45, 10/100 Mbps, 1.5kV RMS
- **SIM NAM/EMEA** 1/2 Mini SIMs (2FF)
- **LED ndicators** PWR, DAT, WAN, ETH
- **2x ANT** SMA connectors
- **WiFi antenna-*optional** R-SMA connector
- **RS232** DB9 Female
- **I/O** 1x Digital Input On Voltage: 2.7V to 36V_{DC} (4-Way Molex moni-fit connector)

Mechanical

- **Plastic case with metal DIN rail** Plastic
- **Enclosure Dimensions** 87 x 30 x 127 mm (3.43 x 1.18 x 5) (150 mm including wall mount sides)
- **Weight** 187 g

Power, Consumption, Environmental, Ip Cover

- **Power Supply** 9 ~ 36 V_{DC} (4-Way Molex moni- fit connector)
- **Power Consumption with WiFi - Average/Peak/Sleep Mode** 2,7 / 5.5 W / 40 mW
- **Temperature Range with WiFi – Operating / Storage** -25 to +55 °C / -40 to +85 °C
- **Temperature Range without WiFi – Operating / Storage** -40 to +75 °C / -40 to +85 °C
- **Humidity – Operating / Storage (noncondensing)** 0 to 95 % / 0 to 95 %
- **Enclosure Rating** IP30

WI-FI

- **Antenna Connector** R-SMA – 50 Ohms
- **Supported WiFi Band** 2.4 GHz - Number of clients: 55
- **Standards** 802.11b, 802.11g, 802.11n
- **Encryption** None, WEP, TKIP, AES
- **Authentication** Open, Shared, WPA–PSK, WPA2–PSK, WPA2-Enterprise, 802.1 - RADIUS
- **2.4 GHz Supported Channels** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
- **Type of Device** Access point, Client

Industry Certifications & Approvals

- **Emissions/ Immunity** EN 55022, EN 61000-6-2, ETSI EN 301 489-1 V1.9.2, FCC part 15 class B (all pending)
- **Safety** Hazardous Locations: EN 60950 Power: EN 61131-2
- Vehicle Usage: E-Mark Environmental: RoHS, REACH, WEEE

Ordering Information

- **BB-SL30200110-SWH** LTE FDD Cat.1 AT&T, T-Mobile, Canada, UMTS without WiFi
- **BB-SL30210110-SWH** LTE FDD Cat.1 AT&T, T-Mobile, Canada, UMTS with WiFi
- **BB-SL30400110-SWH** EMEA: LTE FDD Cat.4, UMTS, GPRS,EDGE without WiFi
- **BB-SL30410110-SWH** EMEA: LTE FDD Cat.4, UMTS, GPRS,EDGE with WiFi
- **BB-SL30600110-SWH** APAC: LTE FDD Cat.4 LTE, UMTS, GPRS,EDGE, 1 x ETH, 1 x RS232, DI/DO, 2 x SIM, SmartWorx HUB
- **BB-SL30610110-SWH** APAC: LTE FDD Cat.4 LTE, UMTS, GPRS,EDGE, 1 x ETH, 1 x RS232, DI/DO, 2 x SIM, WiFi, SmartWorx HUB

SmartFlex

Flexible Modular LTE Router

Features

- Powerful CPU and enhanced memory
- Extended operational temperature range of -40 ~ 75 °C
- 10 ~ 60 V_{DC} with transient and reverse polarity voltage protection
- Flexible port options such as 3-port switch, Ethernet, and RS-232/422/485 with isolation
- GPS and GLONASS support
- MicroSD card holder
- Low-power-consumption mode for solar and battery power applications
- Optional industrial grade Wi-Fi
- PoE PD, PoE PSE, in/out, USB host
- Advanced security features

Introduction

The SmartFlex cellular router provides secure Internet connectivity for devices and LANs via a cellular network. It can be used to provide automatic wireless failover for wired networks, wireless connectivity for devices in remote locations where cable connections are impractical, and wireless connectivity for mobile assets. With upload speeds of up to 50 Mbit/s and download speeds of up to 100 Mbps, SmartFlex provides ample bandwidth, even for applications that require video.

Features

Software

- **Network and Routing** DHCP Server, , DHCP Client, NAT/PAT, VRRP, Dynamic DNS client, DNS proxy, VLAN, QoS, NTP Client/ Server, IGMP, BGP, OSPF, RIP, SMTP, SMTPS, SNMP v1/ v2c/ v3, Backup routes, PPP, PPPoE, SSL, Port Forwarding, Host Port Routing, Ethernet Bridging
- **Security** HTTPS, SSH, VPN tunnels, SFTP, Firewall (IP Filtering, MAC address filtering, Inbound and outbound Port filtering)
- **VPN tunneling** Open VPN client and server and P2P, L2TP, PPTP, GRE, EasyVPN, DMVPN, IPSec with IKEv1 and IKEv2
- **Configuration** Web server, SSH, Four configuration switchable profiles, Automatic configurationupdate from server Backup configuration, Restore configuration
- **Firmware Management** Automatic firmware update from server, Locally via LAN and USB or remotely OTA (HTTP, HTTPS), Over-the-Air software updates, Over-the-Air cellular module update from FW
- **Diagnostic** One CLICK report – current configuration / factory identification / system log / kernel log / reboot log / routing table, Remote diagnostics possible via SSH
- **Status** Network Status, DHCP Status, IPSec Status, Statistics history for last 60 days
- **Log** System Log, Reboot Log, Kernel Log
- **Controlling and diagnostic** SMS, SNMP v1/v2c/v3, Statuses, Log
- **Event Engine** StartUp script & Up/Down script (Bash), Digital Input, Network Parameters, Data Usage, Timer, Power, Device Temperature Report Types: RAP, SMS, email, SNMP Trap, TCP (csv, xml, binary)
- **Other** IPv6 support

Ports, LED, Antennas

- **Up to 5x ETH ports** RJ45, 10/100 Mbps
- **SIM** 2 Mini SIMs (2FF) (rear panel)
- **LED Indicators** PWR, DAT, WAN, ETH, SIM, USR, POE, IN0, IN1, OUT
- **3x ANT - ANT, DIV, GPS (no for LTE450 model)** SMA connectors
- **Wi-Fi Antenna-*optional** R-SMA connector
- **USB** USB Host connector 2.0
- **SD Card** 1x Micro SD Card slot (rear panel)
- **RST** RESET button (rear panel)

*Optional 3-port SWITCH 3x RJ45, 10/100 Mbps
*Optional ETH - R232 - RS485 RJ45, 4-pin terminal block, 3-pin terminal block connectors – Isolation up to 2.5 kV
*Optional RS232 - RS485 5-pin terminal block, 4-pin terminal block connectors – Isolation up to 2.5 kV
*Optional RS232 RJ45

Specifications

Power

- **Power Supply** 10 ~ 60 V_{DC} (2–Way Molex connector)
- **Power Consumption** Idle: 2.5 W
  Average: 4 W
  Peak: 11 W
  Sleep Mode: 10mW

Environmental

- **Temperature Range** Operating: -40 to +75 °C
  Storage: -40 to +85 °C
- **Humidity** Operating: 0 to 95 %
  Storage (Non-condensing): 0 to 95 %
- **Cold Start** -35 °C
- **Ingress Protection** Rating IP30

WI-FI - 802.11 A/B/G/N, AP or Client modes

- **Supported Wi-Fi band** 2.4 GHz, 5.4 GHz
- **Encryption** None, WEP, TKIP, AES
- **5 GHz supported channels** – 36, 40, 44, 48, 52, 56, 60, 64, 149, 153, 157, 161, 165
- **2.4 GHz supported channels** – 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
- **Number of clients** 10
- **Authentication** Open, Shared, WPA–PSK, WPA2–PSK

Industry Certifications & Approvals

- **Radio for general LTE** ETSI EN 301 511 v9.0.2, ETSI EN 301 908–1 v5.2.1, ETSI EN 301 908-2 v5.2.1, ETSI EN 301 908-13 v5.2.1
- **Emissions/Immunity** IEC 61000-6-2:2005, ETSI EN 301 489-1 v1.9.2, EN 55022:2010
- **Safety** EN 60950-1:06 ed.2 (not Hazardous Locations), EN 62311:2008
- **Vehicle** E8
- **Environmental** RoHS, RoHS2, REACH, WEEE

Mechanical

- **Plastic or metal case with plastic or metal DIN rail**
- **Enclosure Dimensions** 87 x 30 x 127 mm (3.43 x 1.18 x 5) (150 mm including wall month sides)
- **Weight Plastic** 170 g
- **Weight Metal** 375 g

Ordering Information

- **BB-SR30xxxx0xx** SmartFlex without optional interfaces
- **BB-SR30xxxx1xx** SmartFlex with 3xETH
- **BB-SR30xxxx1xx** SmsrtFlex with RS232, RS485
- **BB-SR30xxxx1xx** SmartFlex with RS232, RS485, ETH

SmartSwarm 243

Indsutrial LoRa Private Gateway

Features

- Long-range wide area IoT gateway
- LoRa private protocol for closed system applications
- Ethernet and I/O ports for connecting a wide range of field assets
- DIN rail and wall mounting design
- Optional solar or battery power input for low power consumption

Introduction

The SmartSwarm 243 is a high-performance LoRa gateway with reliable connectivity for industrial environments and closed system applications. With support for both MQTT and VPN tunneling, its hardware and software flexibility brings rich features and the full integrity of Advantech's industrial IoT architecture to intelligent edge systems.

Specifications

WSN Support

- **Standard** LoRa private
- **Frequency** 868/915 MHz
- **ANT Connector** SMA female connector x 1

LAN Interface

- **Ethernet** 10/100 Mbps, auto MDI/MDIX
- **Connector** RJ45 x 1
- **Protection** 1.5-kV built-in magnetic isolation protection

Digital I/O

- **Port Type** 1 x digital input on voltage: 2.7 ~ 36 V_{DC}
- **Port Connector** 4-way Molex moni-fit connector

General

- **LED Indicators** PWR, DAT, WAN, ETH
- **Reboot Trigger** Reset button

Software

- **Network and Routing** DHCP server, NAT/PAT, VRRP, dynamic DNS client, DNS proxy, VLAN, QoS, DMVPN, NTP client/server, IGMP, BGP, OSPF, RIP, SMTP, SMTPS, SNMP v1/v2c/v3, backup routers, PPP, PPPoE, SSL, port forwarding, host port routing, Ethernet bridging
- **Configuration** SSH, web browser
- **Network Security** HTTPS, SSH, VPN tunneling, SFTP, DMZ, firewall (IP, MAC address, and inbound/outbound port filtering)
- **VPN Tunneling** Open VPN client/server and P2P, L2TP, PPTP, GRE, EasyVPN, IPSec with IKEv1 and IKEv2

Mechanics

- **Dimensions (W x H x D)** 150 x 30 x 83 mm (5.9" x 1.18" x 3.27")
- **Mounting** DIN rail, wall
- **Weight** 187 g
- **Enclosure Rating** IP30

Power Requirements

- **Power Input** 9 ~ 36 V_{DC}
- **Power Connector** 4-way Molex moni-fit connector
- **Power Consumption** 2.1/4.8/40 mW (average/peak/sleep mode)

Environment

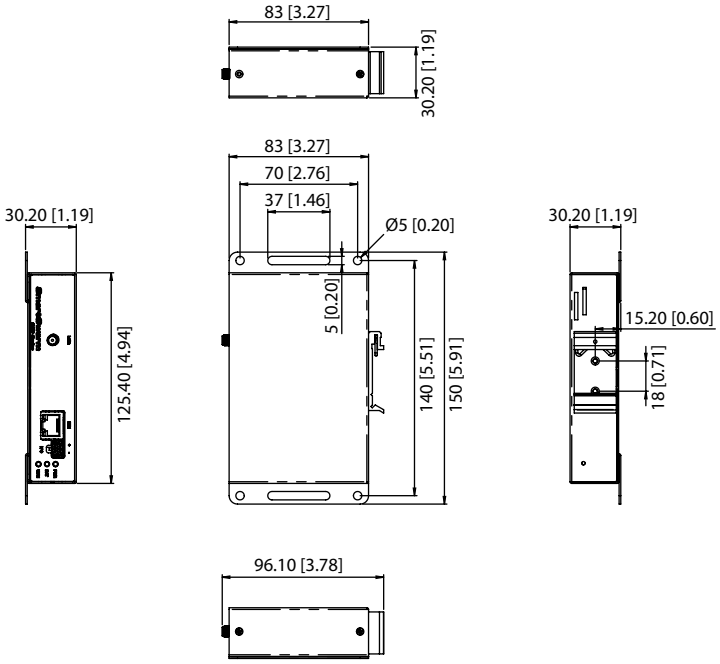
- **Operating Temperature** -40 ~ 75 °C
- **Storage Temperature** -40 ~ 85 °C
- **Operating Humidity** 10 ~ 95% RH

Regulatory Approvals

- **EMC** EN61000-4-2, Level 3
  EN61000-4-3, Level 3
  EN61000-4-4, Level 3
  EN61000-4-5, Level 3
  EN61000-4-6, Level 3
  EN61000-4-12, Level 3
  EN61000-4-11, voltage dip: 70%
- **Shock** IEC60068-2-27
- **Free Fall** IEC60068-2-32
- **Vibration** IEC60068-2-6

Dimensions

Unit: mm



Ordering Information

- **BB-SG30000115-43** LoRa Gateway

WISE-6610

Indsutrial LoRaWAN Gateway

Features

- Long-range wide area IoT gateway
- LoRaWAN protocol for closed and public system application
- Ethernet and I/O for connecting a wide array of field assets
- DIN rail and wall mounting design
- Low power consumption for solar and battery power applications
- Enhanced memory for hosting custom software applications
- Redundancy-enhanced functions for continuous data transmission

Introduction

The WISE-6610 is a high-performance LoRaWAN gateway that offers reliable connectivity for industrial environments. It supports the LoRaWAN protocol for building LoRaWAN private and public networks, as well as various protocols including MQTT. The hardware and software flexibility of the WISE-6610 provides rich features for edge intelligence systems, and its support for VPN tunneling with various protocols ensures safe communications. The WISE-6610 also provides a network server that can phase the LoRaWAN data in our device. The WISE-6610 provides the redundancy-enhanced functions to prevent connection loss.

Specifications

WSN Support

- **Standard** LoRaWAN
- **Frequency** 868/915 MHz
- **ANT Connector** RP-SMA Female connector x 1

LAN Interface

- **Ethernet** 10/100 Mbps, auto MDI/MDIX
- **Connector** 1 x RJ45
- **Protection** 1.5-kV built-in magnetic isolation protection

Digital I/O

- **Port Type** 1x Digital Input On Voltage: 2.7V to 36V_{DC}
- **Port Connector** 4-way Molex mini-fit connector

General

- **LED Indicators** PWR, DAT, WAN, ETH
- **Reboot Trigger** Reset button

Software

- **Network and Routing** DHCP server, NAT/PAT, VRRP, dynamic DNS client, DNS proxy, VLAN, QoS, DMVPN, NTP client/server, IGMP, BGP, OSPF, RIP, SMTP, SMTPS, SNMP v1/v2c/v3, backup routers, PPP, PPPoE, SSL, port forwarding, host port routing, Ethernet bridging, network server
- **Configuration** SSH, Web Browser
- **Network Security** HTTPS, SSH, VPN tunnels, SFTP, DMZ, firewall (IP filtering, MAC address filtering, inbound/outbound port filtering)
- **VPN tunnelling** Open VPN client and server and P2P, L2TP, PPTP, GRE, EasyVPN, IPSec with IKEv1 and IKEv2

Cellular Interface (WISE-6610-E100W-A/E500W-A Only)

- **LTE** Bit rate: 150 Mbps (DL), 50 Mbps (UL)
- **LTE Bands** B20 (800 MHz), B8 (900 MHz), B3 (1800 MHz), B1 (2100 MHz), B7 (2600 MHz)
- **3G** Bit rate: 42.0 Mbps (DL), 5.76 Mbps (UL)
- **3G Bands** 900, 2100 MHz
- **No. of SIM Slots** 2
- **ANT Connector** 2 x RP-SMA female connectors

Mechanics

- **Dimensions (W x H x D)** 150 x 30 x 83 mm (5.9" x 1.18" x 3.27")
- **Mounting** DIN rail, wall
- **Weight** 500g
- **Enclosure Rating** IP30

Power Requirements

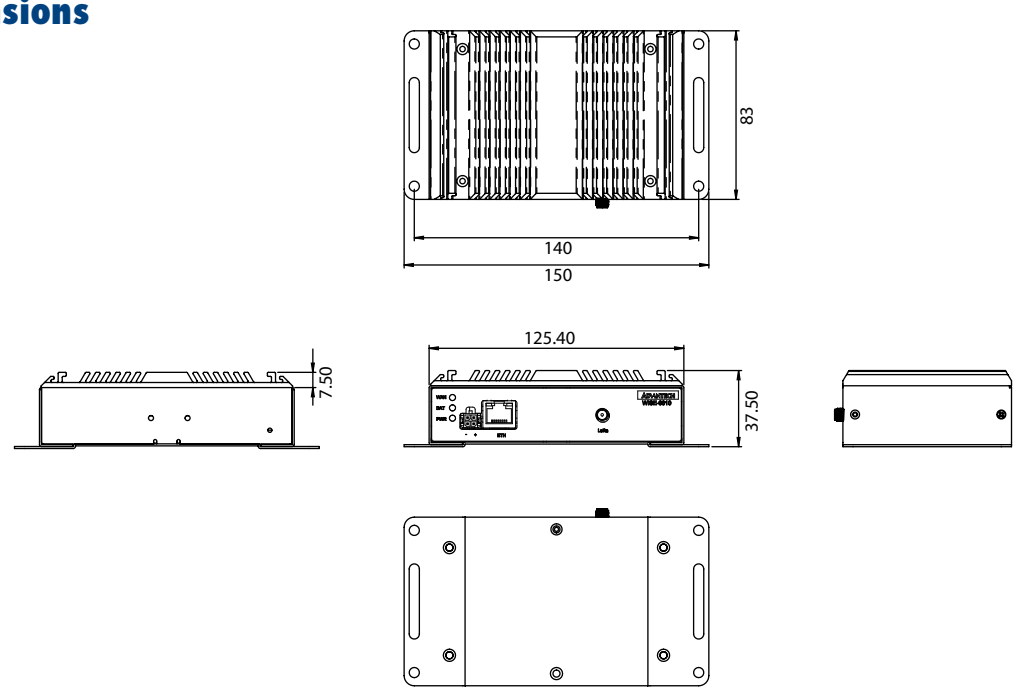
- **Power Input** 9 ~ 36 V_{DC}
- **Power Connector** 4-way Molex mini-fit connector
- **Power Consumption** 3.1/6.6/40 mW (average/peak/sleep mode)

Environment

- **Operating Temperature** -40 ~ 75°C
- **Storage Temperature** -40 ~ 85°C
- **Operating Humidity** 10 ~ 95% RH

Dimensions

Unit: mm



Regulatory Approvals

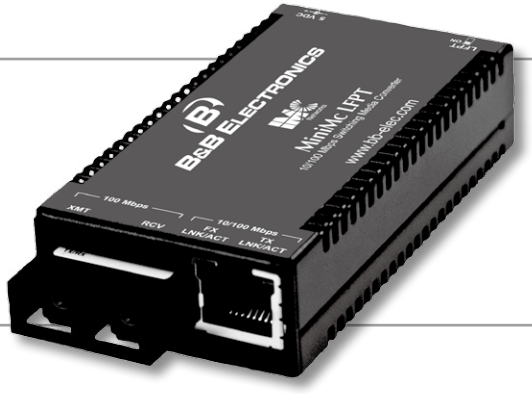
- **EMC** EN61000-4-2, Level 3
  EN61000-4-3, Level 3
  EN61000-4-4, Level 3
  EN61000-4-5, Level 3
  EN61000-4-6, Level 3
  EN61000-4-12, Level 3
  EN61000-4-11, voltage dip: 70%
- **Shock** IEC 60068-2-27
- **Free Fall** IEC 60068-2-32
- **Vibration** IEC 60068-2-6

Ordering Information

- **WISE-6610-N100-A** LoRaWAN gateway supports up to 100 nodes with 915 MHz
- **WISE-6610-E100-A** LoRaWAN gateway supports up to 100 nodes with 868 MHz
- **WISE-6610-N500-A** LoRaWAN gateway supports up to 500 nodes with 915 MHz
- **WISE-6610-E500-A** LoRaWAN gateway supports up to 500 nodes with 868 MHz
- **WISE-6610-E100W-A** LoRaWAN Cellular Gateway support up to 100 nodes with 868MHz
- **WISE-6610-E500W-A** LoRaWAN Cellular Gateway support up to 500 nodes with 868MHz

Smallest, Most Reliable Switching Media Converter

MiniMc LFPT



PRODUCT FEATURES

- One 100 Mbps FDX fiber port or 1 SFP fiber port
- One 10/100BASE-TX twisted pair port
- AutoCross automatic selection between crossover or straight-through connection
- Supports Link Fault Pass Through

ACCESSORIES

806-39105 - DIN Rail Clip
806-39628 - USB 36"/.9m Power Cable (for MiniMc only)
806-39629 - USB 12"/.3m Power Cable (for MiniMc only)
806-39638 - Double-USB Power Cable, 36"/.9m
806-39650 - 12"/.3m Barrel-Connector Power Cable
850-13086 - IE-PowerTray/18-AC (-20°C to +70°C), 18-slot AC powered chassis
895-39229 - Wall Mount Bracket

ORDERING INFORMATION

MODEL NUMBER	FIBER	FIBER PORTS	RANGE	ETHERNET PORTS	ETHERNET CONNECTOR
MiniMc LFPT SFP *					
855-11619	SFP	1	Various	1	RJ45

* SFP Fiber sold separately

ORDERING INFORMATION

MODEL NUMBER	FIBER	FIBER PORTS	RANGE	ETHERNET PORTS	ETHERNET CONNECTOR
MiniMc LFPT, TP-TX/FX					
855-11620	MM850-ST	1	2 km	1	RJ45
855-11621	MM850-SC	1	2 km	1	RJ45
855-11622	MM1300-ST	1	5 km	1	RJ45
855-11623	MM1300-SC	1	5 km	1	RJ45
855-11624	SM1310/PLUS-ST	1	40 km	1	RJ45
855-11625	SM1310/PLUS-SC	1	40 km	1	RJ45
855-11626	SM1310/LONG-ST	1	80 km	1	RJ45
855-11627	SM1310/LONG-SC	1	80 km	1	RJ45
855-11641	SM1550/LONG-SC	1	80 km	1	RJ45
SINGLE STRAND FIBER **					
855-11619		1			
855-11650	SSFX-MM1300-SC	1	2 km	1	RJ45
855-11651	SSFX-MM1550-SC	1	2 km	1	RJ45
855-11652	SSFX-SM1310-SC	1	20 km	1	RJ45
855-11653	SSFX-SM1550-SC	1	20 km	1	RJ45
855-11654	SSFX-SM1310/PLUS-SC	1	40 km	1	RJ45
855-11655	SSFX-SM1550/PLUS-SC	1	40 km	1	RJ45
855-11656	SSFX-SM1310/LONG-SC	1	60 km	1	RJ45
855-11657	SSFX-SM1550/LONG-SC	1	60 km	1	RJ45

**These products have single-strand fiber technology. Deploy in pairs or connect another compatible B+B IMC LLC single-strand fiber product.

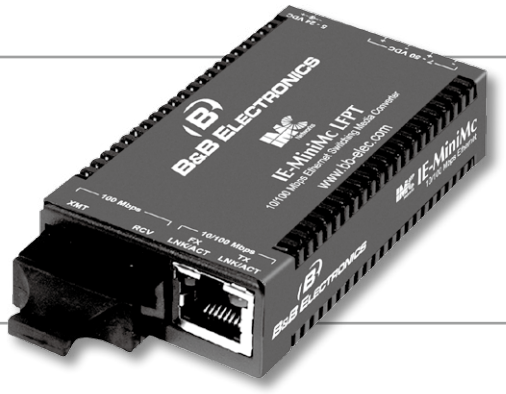
MiniMc TP-TX/FX also available in CWDM Fiber.

SPECIFICATIONS

TECHNICAL	
IEEE 802.3 10BASE-T twisted pair	
IEEE 802.3u 10BASE-TX twisted pair	
Supports jumbo packets up to 1916 bytes	
Plug-and-play operation	
RJ-45, ST or SC and SFP connectors available 50/125µm or 62.5/125µm multi-mode fiber	
9/125µm single-mode fiber	
Available with single-strand fiber support	
Country-specific, high-reliability power adapter	
Auto Negotiation, Auto-Cross for MDI/MDIX	
Layer 2 packet switching, store and forward (forwarding rate: 14,881 pps for 10 Mbps, 148,100 pps for 100 Mbps)	
Status LEDs	
Link Fault Pass Through	
MECHANICAL	
Dimensions	0.83"H x 1.80"W x 3.35"D (2.11 x 4.57 x 8.51 cm)
Shipping Weight	0.7 lbs (.317 kg)
POWER	
5 VDC, 500mA	
AC Adapter: +32° F to +122° F (0° C to +50° C)	
ENVIRONMENTAL	
Operating Temperature:	+32° F to +122° F (0° C to +50° C)
Storage Temperature:	-31° F to +167° F (-35° C to +75° C);
Operating Humidity	5% to 95% (non-condensing)
REGULATORY APPROVALS	
FCC Class B	
UL/cUL, CSA, CE	

Industrial Grade 10/100 Miniature Media Converters

IE-MiniMc/LFPT



PRODUCT FEATURES

- Extended operating temperature of -40 to +85° C
- Auto-Cross automatic selection between crossover or straight-through connections
- Status LEDs
- Link Fault Pass-Through (LFPT) capability

ACCESSORIES

806-39105 - DIN Rail Clip
806-39638 - Double-USB Power Cable, 36"/.9m
806-39650 - 12"/.3m Barrel-Connector Power Cable
850-13086 - IE-PowerTray/18-AC (-20°C to +70°C), 18-slot AC powered chassis
895-39229 - Wall Mount Bracket
806-39753 - IE-Power/5V Module, AC to DC DIN Rail Power Adapter

ORDERING INFORMATION

MODEL NUMBER	FIBER	FIBER PORTS	RANGE	ETHERNET PORTS	ETHERNET CONNECTOR
IE-MiniMc/LFPT					
855-19821	MM850-ST	1	2 km	1	1
855-19822	MM850-SC	1	2 km	1	1
855-19823	MM1300-ST	1	5 km	1	1
855-19824	MM1300-SC	1	5 km	1	1
855-19830	SM1310/PLUS-SC	1	30 km	1	1
855-19831	SM1310/LONG-ST	1	80 km	1	1
855-19832	SM1310/LONG-SC	1	80 km	1	1
855-19833	SM1550/LONG-SC	1	80 km	1	1

SPECIFICATIONS

TECHNICAL	
IEEE 802.3 10BASE-T twisted pair	
IEEE 802.3u 100BASE-TX twisted pair	
IEEE 802.3u 100BASE-FX fiber	
IEEE 802.3af Power Over Ethernet	
Supports jumbo packets up to 1916 bytes	
Plug-and-play operation	
RJ45 and ST or SC ports available	
50/125µm or 62.5/125µm multi-mode fiber	
9/125µm single-mode fiber	
Available with single-strand fiber support	
Includes terminal DC power block	
Country-specific, high-reliability power adapter	
Auto Negotiation	
Auto-Cross for MDI/MDIX	
Layer 2 packet switching, store and forward (forwarding rate: 14,881 pps for 10 Mbps, 148,100 pps for 100 Mbps)	
Status LEDs	
MECHANICAL	
Dimensions	0.83"H x 1.80"W x 3.35"D (2.11 x 4.57 x 8.51 cm)
Shipping Weight	0.7 lbs (.317 kg)
INPUT SPECIFICTAIONS	
DC Terminal (Telco): 12 to 48 VDC	
Barrel Connector: 5 to 24 VDC	
PoE: Maximum supply voltage is 50V	
ENVIRONMENTAL	
Operating Temperature: DC or PoE (PD)	-13° F to 185° F (-40° C to +85° C)
Operating Temperature: AC wall adapter	+14° F to +122° F (-10° C to +50° C)
Storage Temperature:	-13° F to 185° F (-25° C to +85° C)
Operating Humidity	5% to 95% (non-condensing)
REGULATORY APPROVALS	
FCC Class A (using DC terminal or PoE power)	
FCC Class B (using any DC jack, optional)	
UL/cUL, CSA, CE	

1000 Mbps, Compact, 3-Port Media Converter

Giga-McBasic-II

PRODUCT FEATURES

- Two 10/100/1000 Mbps copper ports
- One SFP port or fixed fiber port (available in SM or MM)
- Compact, rugged device with internal AC power supply
- Easy to install, unmanaged device
- Supports Link Fault Pass-Through
- Auto-negotiation, Auto-cross

ORDERING INFORMATION

MODEL NUMBER	FIBER TYPE	FIBER PORTS	RANGE	ETHERNET PORT
Giga-McBasic-II				
856-30600	TX/SFP (requires one IE-SFP/1250 Module)	1	Variable (SFP)	(2) RJ-45
856-30601	TX/SX-MM850-SC	1	220/550 m	(2) RJ-45
856-30602	TX/LX-MM1300-SC	1	2 km	(2) RJ-45
856-30603	TX/LX-SM1310-SC	1	10 km	(2) RJ-45
856-30604	TX/LX-SM1310/PLUS-SC	1	40 km	(2) RJ-45
856-30605	TX/LX-SM1550/LONG-SC	1	80 km	(2) RJ-45
856-30606	TX/LX-SM1550/XLONG-SC	1	100 km	(2) RJ-45
Single-Strand Fiber				
856-30620	TX/SSLX-SM1310-SC (1310xmt/1550rcv)	1	15 km	(2) RJ-45
856-30621	TX/SSLX-SM1550-SC (1550xmt/1310rcv)	1	15 km	(2) RJ-45
856-30622	TX/SSBX-SM1310-SC (1310xmt/1490rcv)	1	10 km	(2) RJ-45
856-30623	TX/SSBX-SM1490-SC (1490xmt/1310rcv)	1	10 km	(2) RJ-45
856-30624	TX/SSFX-SM1310-SC (1310xmt/1550rcv)	1	40 km	(2) RJ-45
856-30625	TX/SSFX-SM1550-SC (1550xmt/1310rcv)	1	40 km	(2) RJ-45
856-30626	TX/SSFX-SM1310/PLUS-SC (1310xmt/1550rcv)	1	30 km	(2) RJ-45
856-30627	TX/SSFX-SM1550/PLUS-SC (1550xmt/1310rcv)	1	30 km	(2) RJ-45
856-30628	TX/SSBX-SM1310/PLUS-SC (1310xmt/1490rcv)	1	70 km	(2) RJ-45
856-30629	TX/SSBX-SM1490/PLUS-SC (1490xmt/1310rcv)	1	70 km	(2) RJ-45

SPECIFICATIONS

MECHANICAL	
Connectors	RJ-45, SFP or fixed fiber
Dimensions	0.80H x 4.0W x 4.0D inches (2.032H x 10.16W x 10.16D cm)
Shipping Weight	0.7 lbs (0.3 kg)
POWER RATING	
100-240V AC, 50-60 Hz, 7W maximum working power	
ENVIRONMENTAL	
Operating Temperature	+14° to +122°F (-10° to +50° C)
Storage Temperature	-31° to +167°F (-35° to +75° C)
Operating Humidity	5 to 95% (non-condensing)
Altitude	0 to 10,000 ft.
REGULATORY APPROVALS	
FCC Class A	
UL/cUL, CSA, CE	

Smallest, Most Reliable Gigabit Switching Media Converter

Giga-MiniMc LFPT

PRODUCT FEATURES

- One 1000BASE-SX or SFP fiber port
- One 10/100/1000 Mbps twisted pair port
- AutoCross automatic selection between crossover or straight-through connection
- Status LEDs
- LFPT
- 18 connections in the 1.5U high PowerTray/18 Chassis

ACCESSORIES

806-39105 - DIN Rail Clip
806-39638 - Double-USB Power Cable, 36"/.9m
806-39650 - 12"/.3m Barrel-Connector Power Cable
850-13086 - IE-PowerTray/18-AC (-20°C to +70°C), 18-slot AC powered chassis
895-39229 - Wall Mount Bracket

ORDERING INFORMATION

MODEL NUMBER	FIBER	FIBER PORTS	RANGE	ETHERNET PORTS	ETHERNET CONNECTOR
Giga-MiniMc - with SFP/LFPT					
856-11700	SFP	1	Various	1	RJ45
Giga-MiniMc LFPT - Multi-Mode/Single-Mode					
856-11701	SX-MM850-SC	1	220/500 m	1	RJ45
856-11702	MM1300-SC	1	5 km	1	RJ45
856-11703	SM1310-SC	1	10 km	1	RJ45
856-11704	SM1310/PLUS-SC	1	40 km	1	RJ45
856-11705	SM15510/LONG-SC	1	80 km	1	RJ45
856-11706	SM1550/SLONG-SC	1	100 km	1	RJ45
Giga-MiniMc LFPT - Single-Strand					
856-11710	SSLX-SM1310-SC (1310xmt/1550rcv)	1	15 km	1	RJ45
856-11711	SSLX-SM1550-SC (1550xmt/1310-SC)	1	15 km	1	RJ45
856-11712	SSBX-SM-1310-SC (1310xmt/1490rcv)	1	10 km	1	RJ45
856-11713	SSBX-SM1490-SC (1490xmt/1310rcv)	1	10 km	1	RJ45
856-11714	SSLX-SM1310/PLUS-SC (1310xmt/1550rcv)	1	40 km	1	RJ45
856-11715	SSLX-SM1550/PLUS-SC (1550xmt-1310rcv)	1	40 km	1	RJ45
856-11742	SSBX-SM1310-SC (1310xmt/1490-SC)	1	30 km	1	RJ45
856-11743	SSBX-SM1490-SC (1490xmt/1310rcv)	1	30 km	1	RJ45
856-11744	SSLX-SM1490/LONG-SC (1490xmt/1550rcv)	1	60 km	1	RJ45
856-11745	SSLX-SM1550/LONG-SC (1550xmt/1490rcv)	1	60 km	1	RJ45

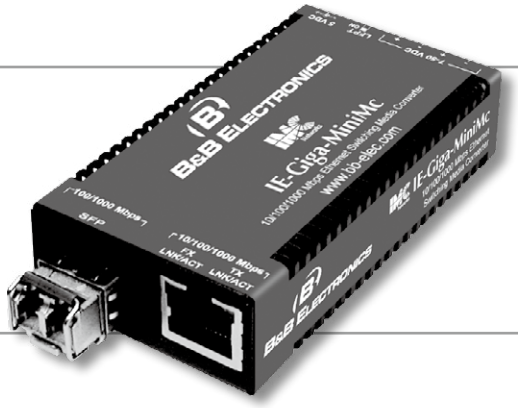
* SFP Fiber sold separately

SPECIFICATIONS

TECHNICAL	
Plug-and-play operation	
RJ45 and SC or SFP connectors	
IEEE 802.3 10BASE-T twisted pair	
IEEE 802.3u 100BASE-TX twisted pair	
IEEE 802.3ab 1000BASE-T twisted pair	
IEEE 802.3z 1000BASE-LX or SX fiber	
MTU: Supports Jumbo Frames up to 10240 bytes	
Country-specific, high-reliability power adapter	
Auto-Cross for MDI/MDIX	
Layer 2 packet switching, store and forward (forwarding rate: 1,488,096 pps for 1000 Mbps)	
Status LEDs	
MECHANICAL	
Dimensions	0.83"H x 1.80"W x 3.35"D (2.11 x 4.57 x 8.51 cm)
Shipping Weight	0.7 lbs (.317 kg)
POWER	
5 VDC, 600mA	
120 VAC, 0.1A	
ENVIRONMENTAL	
Operating Temperature:	+32° F to +122° F (0° C to +50° C)
Storage Temperature:	-31° F to +167° F (-35° C to +75° C);
Operating Humidity	5% to 95% (non-condensing)
REGULATORY APPROVALS	
FCC Class A	
UL/cUL, CSA, CE	

Industrial Grade 10/100/1000 Miniature Media Converters

IE-Giga-MiniMc (with LFPT Switch)



PRODUCT FEATURES

- Connects 10/100/1000 Mbps copper to 1000 Mbps fiber
- For use in extended temperatures
- Cascading power on DIN rail installations
- Dual USB power cable (optional)
- Link Fault Pass-Through (LFPT) capability via a DIP Switch

ACCESSORIES

806-39105 - DIN Rail Clip
806-39638 - Double-USB Power Cable, 36"/.9m
806-39650 - 12"/.3m Barrel-Connector Power Cable
850-13086 - IE-PowerTray/18-AC (-20°C to +70°C), 18-slot AC powered chassis
895-39229 - Wall Mount Bracket
806-39753 - IE-Power/5V Module, AC to DC DIN Rail Power Adapter

ORDERING INFORMATION

MODEL NUMBER	FIBER	FIBER PORTS	RANGE	ETHERNET PORTS	ETHERNET CONNECTOR
IE-Giga-MiniMc (with LFPT Switch)					
856-18929	SFP	1	Various	1	RJ45
856-18930	MM850-SC	1	220/550 m	1	RJ45
856-18931	SM1310-SC	1	15 km	1	RJ45
856-18932	SM1310/PLUS-SC	1	30 km	1	RJ45
856-18933	SM1550/LONG-SC	1	80 km	1	RJ45
856-18934	SM1550/XLONG-SC	1	100 km	1	RJ45
SINGLE STRAND FIBER *					
856-18935	SSLX-SM1310-SC	1	15 km	1	RJ45
856-18936	SSLX-SM1550-SC	1	15 km	1	RJ45
856-18925	SSBX-SM1310-SC	1	10 km	1	RJ45
856-18926	SSBX-SM1490-SC	1	10 km	1	RJ45
856-18937	SSLX-SM1310/PLUS-SC	1	40 km	1	RJ45
856-18938	SSLX-SM1550/PLUS-SC	1	40 km	1	RJ45
856-18927	SSBX-SM1310/PLUS-SC	1	30 km	1	RJ45
856-18928	SSBX-SM1490/PLUS-SC	1	30 km	1	RJ45
856-18939	SSLX-SM1490/LONG-SC	1	70 km	1	RJ45
856-18940	SSLX-SM1550/LONG-SC	1	70 km	1	RJ45
856-18941	SSLX-SM1550/XLONG-SC	1	80 km	1	RJ45
856-18942	SSLX-SM1550/XLONG-SC	1	80 km	1	RJ45

* SFP Fiber sold separately

* These products have single-strand fiber technology. Deploy in pairs or connect another compatible B+B IMC LLC single-strand fiber product.

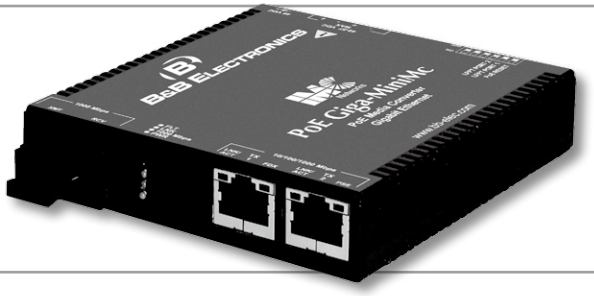
SPECIFICATIONS

TECHNICAL	
IEEE 802.3 10BASE-T twisted pair	
IEEE 802.3u 100BASE-TX twisted pair	
IEEE 802.3ab 1000BASE-T twisted pair	
IEEE 802.3z 1000BASE-LX or SX fiber	
MTU: Supports Jumbo Frames up to 10240 bytes	
Extended temperature range (DC configuration)	
Plug-and-play operation	
RJ45, SC and SFP connectors	
50/125µm or 62.5/125µm multi-mode fiber	
9/125µm single-mode fiber Single-strand fiber and CWDM models	
4-terminal DC power with a pair of input terminals and a pair of output terminals for cascading power on DIN installations	
Country-specific, high-reliability power adapter	
Auto Negotiation, Auto-Cross for MDI/MDIX	
Layer 2 packet switching, store and forward (forwarding rate: 14,881 pps for 10 Mbps, 148,810 pps for 100 Mbps, 1,488,096 pps for 1000 Mbps)	
Status LEDs	
Supports DIN Rail mounting	
MECHANICAL	
Dimensions	0.83"H x 1.80"W x 3.35"D (2.11 x 4.57 x 8.51 cm)
Shipping Weight	0.7 lbs (.317 kg)
POWER	
AC Adapter	100 to 240 ±10% VAC input, 5 VDC @ 2.0 A max
DC Input Voltage	7 to 50 VDC @ 2.5 watts, Chassis grounded to negative terminal
Power Consumption	5 DVC, 600mA
ENVIRONMENTAL	
Operating Temperature: DC terminal block	-13°F to +185°F (-25°C to +85°C)
Operating Temperature: AC Adapter	+14°F to +122°F (-10°C to +50°C)
Storage Temperature:	-31° F to +167° F (-35° C to +75° C);
Operating Humidity	5% to 95% (non-condensing)
REGULATORY APPROVALS	
FCC Class B	
UL/cUL, CSA, CE	

IE-Giga-MiniMc LFPT also available in CWDM Fiber.

PoE Switching Media Converter 10/100/1000 Mbps

PoE & PoE+ Giga-MiniMc/LFPT



PRODUCT FEATURES

- Rugged stand-alone metal enclosure with compact external power supply
- Supports Jumbo Frames (up to 10240 bytes)
- Multiple mounting options (Desktop, DIN Rail or Wall-mount)
- Features configurable PoE Reset on Fiber LOS
- Supports IEEE 802.3af PoE (15.4W) and IEEE 802.3at PoE+ (25.5W) standards
- Link Fault Pass Through

ACCESSORIES

806-39105 - DIN Rail Clip
806-39800 - PoE Power Adapter for PoE Giga-MiniMc
895-39229 - Wall Mount Bracket
806-39900 - PoE+ Power Adapter for PoE+ Giga-MiniMc
806-39910 - PoE+ Isolated Power Adapter

ORDERING INFORMATION

MODEL NUMBER	FIBER	FIBER PORTS	RANGE	ETHERNET PORTS	ETHERNET CONNECTOR
PoE Giga-MiniMc /LFPT					
857-11811	SFP *	1	Various	2	RJ45
857-11812	MM850-SC	1	220/550 m	2	RJ45
857-11813	MM1300-SC	1	2 km	2	RJ45
857-11814	SM1310-SC	1	15 km	2	RJ45
857-11815	SM1310/PLUS-SC	1	40 km	2	RJ45
857-11816	SM1550/LONG-SC	1	80 km	2	RJ45
857-11817	SM1550/XLONG-SC	1	100 km	2	RJ45
SINGLE STRAND FIBER SSLX OR SSBX **					
857-11820	SM1310-SC	1	15 km	2	RJ45
857-11821	SM1550-SC	1	15 km	2	RJ45
857-11822	SM1310-SC	1	10 km	2	RJ45
857-11823	SM1490-SC	1	10 km	2	RJ45
857-11824	SM1310/PLUS-SC	1	40 km	2	RJ45
857-11825	SM1550/PLUS-SC	1	40 km	2	RJ45
857-11826	SM1310/PLUS-SC	1	30 km	2	RJ45
857-11827	SM1490/PLUS-SC	1	30 km	2	RJ45
857-11828	SM1490/LONG-SC	1	70 km	2	RJ45
857-11829	SM1550/LONG-SC	1	70 km	2	RJ45

MODEL NUMBER	FIBER	FIBER PORTS	RANGE	ETHERNET PORTS	ETHERNET CONNECTOR
PoE+ Giga-MiniMc/LFPT					
857-11911	SFP	1	Various	2	RJ45
857-11912	MM850-SC	1	220/550 m	2	RJ45
857-11913	MM1300-SC	1	2 km	2	RJ45
857-11914	SM1310-SC	1	15 km	2	RJ45
857-11915	SM1310/PLUS-SC	1	40 km	2	RJ45
857-11916	SM1550/LONG-SC	1	80 km	2	RJ45
857-11917	SM1550/XLONG-SC	1	100 km	2	RJ45
SINGLE STRAND FIBER SSLX OR SSBX **					
857-11920	SM1310-SC	1	15 km	2	RJ45
857-11921	SM1550-SC	1	15 km	2	RJ45
857-11922	SM1310-SC	1	10 km	2	RJ45
857-11923	SM1490-SC	1	10 km	2	RJ45
857-11924	SM1310/PLUS-SC	1	40 km	2	RJ45
857-11925	SM1550/PLUS-SC	1	40 km	2	RJ45
857-11926	SM1310/PLUS-SC	1	30 km	2	RJ45
857-11927	SM1490/PLUS-SC	1	30 km	2	RJ45
857-11928	SM1490/LONG-SC	1	70 km	2	RJ45
857-11929	SM1550/LONG-SC	1	70 km	2	RJ45

* SFP Fiber sold separately

** These products have single-strand fiber technology. Deploy in pairs or connect another compatible B+B IMC LLC single-strand fiber product.

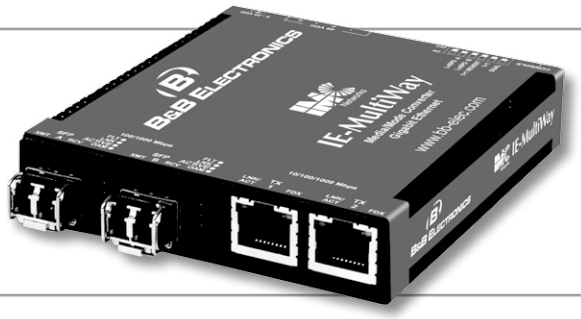
PoE and PoE+ Giga-MiniMc/LFPT also available in CWDM Fiber.

SPECIFICATIONS

TECHNICAL	
IEEE 802.3 10BASE-T twisted pair	
IEEE 802.3u 100BASE-TX twisted pair	
IEEE 802.3ab 1000BASE-T twisted pair	
IEEE 802.3z 1000BASE-LX or SX fiber	
IEEE 802.3af Power over Ethernet	
IEEE 802.3at Power over Ethernet Plus	
IEEE 802.3u Auto-Negotiation	
RFC-2474	
RFC-2475 DiffServ QoS	
Extreme temperature range (DC configuration)	
Plug-and-play operation	
Accepts RJ45, SC and SFP connectors	
50/125µm or 62.5/125µm multi-mode fiber	
9/125µm single-mode fiber	
Single-strand fiber and CWDM models	
Country-specific, high-reliability power adapter	
FX and TX Auto Negotiation	
AutoCross for MDI/MDIX	
MTU: Supports Jumbo Frames up to 10240 bytes	
Supports DIN Rail mounting (DIN clips sold separately)	
Link Fault Pass Through DIP Switch	
MECHANICAL	
Dimensions	0.80" H x 3.645" W x 3.82" D (2.032 cm x 9.258 cm x 9.7028 cm)
Shipping Weight	1.0 lbs (0.45 kg)
AC ADAPTER	
PoE Giga-MiniMc/LFPT	Input: 100 to 240 ±10% VAC, 50/60H, 0.7A * Output: 48 VDC, 0.62A
PoE+ Giga-MiniMc/LFPT	Input: 100 to 240 ±10% VAC, 50/60H, 2A * Output: 52 VDC, 2.31A
* Maximum input power in Watts is calculated by multiplying the input amps by the lowest input voltage.	
DC Input Voltage:	
PoE Giga-MiniMc/LFPT	45 to 57 VDC on DC terminal block 48 VDC on DC jack
PoE+ Giga-MiniMc/LFPT	51 to 57 VDC on DC terminal block 51 to 57 VDC on DC jack
ENVIRONMENTAL	
Operating Temperature DC Terminal Block:	+32° F to +158° F (0° C to +70° C)
Operating Temperature AC Adapter:	+32° F to +122° F (0° C to +50° C)
Storage Temperature:	-31° F to +167° F (-35° C to +75° C);
Operating Humidity	5% to 95% (non-condensing)
REGULATORY APPROVALS	
FCC Class A	
UL/cUL, CSA, CE	

10/100/1000 Mbps Optical Ethernet Demarcation Unit

IE-Multiway



PRODUCT FEATURES

- Versatile 4 port device
- SNMP Manageable
- Supports SFP fibers
- Extended Temperature
- Supports OAM, VLAN, 1+1 Revertive
- RS-232 CLI (Command Line Interface) Console Port

ACCESSORIES

806-39105 - DIN Rail Clip
806-39638 - Double-USB Power Cable, 36"/.9m
825-39951 - Serial Cable, MiniJack to DB9 (female)
895-39229 - Wall Mount Bracket

ORDERING INFORMATION

MODEL NUMBER	FIBER	FIBER PORTS	ETHERNET PORTS	ETHERNET CONNECTOR
IE-Multiway With AC to DC Power Adapter				
858-11121	*SFP	2	2	RJ45

* SFP modules are sold separately. Two (2) SFP transceivers are needed for full device functionality.

IE-SFP MODULES: 100 TO 155 MBPS

MODEL NUMBER	DESCRIPTION	FIBER TYPE	RANGE	POWER BUDGET
808-38101	MM850	LC	2 km	14.5 (db)
808-38103	SM1310	LC	15 km	13 (db)
808-38104	SM1310/PLUS	LC	40 km	31 (db)
808-38105	SM1550/LONG	LC	80 km	31 (db)

IE-SFP MODULES: 1 GBPS GIGABIT ETHERNET

MODEL NUMBER	DESCRIPTION	FIBER TYPE	RANGE	POWER BUDGET
808-38201	MM850	LC	550 m	7.5 (db)
808-38202	SM1310	LC	10 km	13 (db)
808-38203	SM1310/PLUS	LC	30 km	17 (db)
808-38204	SM1550/LONG	LC	40 km	17 (db)
808-38205	SM1550/XLONG	LC	70 km	23 (db)

SPECIFICATIONS

TECHNICAL	
Plug-and-Play Operation	
2 x RJ-45 and 2 x SFP ports (SFPs sold separately)	
IEEE 802.3i 10BASE-T over twisted pair	
IEEE 802.3u 100BASE-TX over twisted pair	
IEEE 802.3u 1000BASE-T over twisted pair	
IEEE 802.3u 100BASE-FX	
IEEE 802.3u 1000BASE-X	
Jumbo Frames support (up to 10240 bytes)	
Auto Negotiation, Auto-Cross for MDI/MDIX	
Includes diagnostic LEDs	
1+1 uplink protection (< 50 mSecs)	
Extended temperature range from -40° to +85° C	
-48 VDC terminal for Telco applications	
Compatible with all standard MSA compliant SFP transceivers	
STANDARDS COMPLIANCE	
IEEE 802.3ah	
IEEE 802.1ag	
Y.1731	
SFP-MSA SFP standard (September 14, 2000)	
SFF-8472 DDMI standard (Revision 1.0)	
MECHANICAL	
Dimensions	0.86"H x 3.66"W x 3.86"D (2.2 x 9.38 x 9.94 cm)
Enclosure	Metal
Shipping Weight	1.0 lbs (0.45 kg)
POWER	
5 to 24 VDC (Barrel)	
48 VDC Telco (Terminal	
POWER INFORMATION	
Min: 3.15W (1 optic SFP [1 Gbps], 1 Tx [100 Mbps])	
Max: 7.0W (2 Cu SFP [1 Gbps], 2 Tx [1 Gbps])	
* Power consumption is based on SFP types	
ENVIRONMENTAL	
Operating Temperature w/ Franmar AC Wall Adapter	+14° to +122° F (-10° to +50° C)
Operating Temperature w/DC Configuration	-40° to +185° F (-40° to +85° C)
Storage Temperature	-49° to +185° F (-45° to +85° C)
Operating Humidity	10 to 95% Non-condensing
REGULATORY APPROVALS	
FCC Class A (Using 48V Telco-type power)	
FCC Class B (Using all other power options)	

Small Form Pluggable Modules

IE-SFP Fiber Modules - 155 Mbps Speed

Fiber LC

PRODUCT FEATURES

- Future-proof network equipment
- Available in SM, MM fiber types
- Maximize network hardware
- Troubleshooting diagnostics
- Plug-and-play operation

SFP modules are compact transceivers that function as modular connectors. Available for all common fiber modes, wavelengths and data rates, these modules allow network operators to connect different interface types to the same network equipment via an SFP port. The cost of cable upgrades is greatly reduced preserving the networking equipment investment – all for the price of a relatively inexpensive SFP.

More and more network equipment is being designed with SFP ports to take advantage of the inherent flexibility and to eliminate the guesswork and uncertainty of expensive equipment purchases. All SFP modules from Advantech B+B SmartWorx carry a limited lifetime warranty.

ORDERING INFORMATION

NOTE: For each fiber product listed in the ordering table below, DISTANCE represents an approximate fiber distance based on industry-standard fiber attenuation specifications. Actual distances will vary for each installation. For complete power budgets and additional information on calculating specific distances, contact Advantech B+B SmartWorx Technical Support specialists at (815) 433-5100 (USA).

IE-SFP FIBER MODULES: 100 TO 155 MBPS (OC-3) 1, 2

PART NUMBER	PORT DESCRIPTION	FIBER	DISTANCE	POWER BUDGET
W/ DDMI				**(db)**
808-38101	MM850	LC	2 km	14.5
808-38102	MM1300	LC	2 km	11
808-38103	SM1310	LC	20 km	21
Single-Strand Fiber				
808-38121	SSFX-SM1310/1550	SC	20 km	20
808-38122	SSFX-SM15501310	SC	20 km	20

KEY FEATURES

Robust Industrial Performance
Extended operating temperature range
Hot swappable

Feature Friendly
Available in a wide range of fiber types, wavelengths and transmission rates to meet almost any networking need
Includes single-strand fiber versions

Standard Diagnostics
Fiber Link Length
Wavelength
Bit Rate
Date Code

DDMI/Extended Diagnostics
Powerful troubleshooting Digital Diagnostics Monitoring Interface (DDMI)
Temperature
Voltage
Bias Current
TX Power
RX Power

Standard Compliances
MSA compliant: available in dual- or single-strand, SC or LC connector
Eye Safety meets Laser Class 1 compliance with IEC 60825-1
Complies with Telecordia GR-468-CORE
RoHS compliant

Voltage/Temperature
Input Voltage: 3.3V
Operating Temperature: -40° to +85° C
Storage Temperature: -40° to +85° C

Data Rate
155 Mbps
Compliant with ITU-T G.957, G.958 and IEEE 802.3u
Applications: Fast Ethernet, OC-3/STM-1 and other optical links

Ultra Compact Ethernet Serial Servers

VESR900 Series - Fiber Models

PRODUCT FEATURES

- Ethernet enable serial devices
- Direct IP, virtual COM port, or paired mode
- Ethernet pass-through port available
- Ethernet fiber options
- Serial RS-232/RS-422/485 ports
- UL Class 1 Division 2

ACCESSORIES

MDR-40-24 - DIN rail mount power supply 24VDC, 1.7 A output power
ESR35 - DIN Rail 1 Meter 35mm Steel
DRPM25 - 35mm DIN Rail to Panel Mount Bracket
TBKT2 - Replacement Terminal Block, One 5 Position 5.08 mm
TBKT1 - Replacement Terminal Block, One 2 Position 5.08 mm

ORDERING INFORMATION

MODEL NUMBER	SERIAL PORTS	SERIAL CONNECTORS	ETHERNET MEDIA	ETHERNET CONNECTORS
VESR921-MC	1	DB9 & TB	CAT 5, Multi-mode Fiber	One RJ45, One SC
VESR921-MT	1	DB9 & TB	CAT 5, Multi-mode Fiber	One RJ45, One ST
VESR921-SC	1	DB9 & TB	CAT 5, Single Mode Fiber	One RJ45, One SC
VESR922T-MC	2	TB	CAT 5, Multi-mode Fiber	One RJ45, One SC
VESR922T-MT	2	TB	CAT 5, Multi-mode Fiber	One RJ45, One ST
VESR922T-SC	2	TB	CAT 5, Single Mode Fiber	One RJ45, One SC

+ All serial ports are software configurable for RS-232, RS-422, or RS-485.

Copper options available.

SPECIFICATIONS

FIBER OPTIC TECHNOLOGY		
	VESR9xx-Mx	**VESR9xx-Sx**
Type / Wavelength	Multi-mode / 1310 nm	Single-mode / 1310 nm
Output Power	(-) 19 to (-) 14 dBm	(-) 15 to (-) 8 dBm
Receive Sensitivity	~ (-) 32 dBm	~ (-) 32 dBm
Cable	62.5 / 125 µm	9 / 125 µm
Connector	SC or ST	SC or ST
Range	2 km (1.2 miles)	15 km (9.3 miles)
NETWORK		
Serial Memory	8 KB per port	
Network Memory	4 KB	
NETWORK COMMUNICATIONS		
LAN	10/100 Mbps Auto-detecting , 10BASE-T or 100BASE-TX	
NETWORK PHYSICAL LAYER STANDARDS		
Ethernet	IEEE 802.3 auto detecting & auto MDI/MDX, 10BASE-T and 100BASE-TX	
PROTOCOLS		
Protocols	TCP, IPv4, UDP, ARP, HTTP 1.0, ICMP/PING, DHCP/BOOTP	
IP Mode	Static, DHCP	
TCP/UDP	User definable	
OTHER		
Connection Mode	Server, Client, VCOM, Paired	
Client Connection	At power up or upon data arrival	
Search	Serial direct COM and Ethernet Auto Search or specific IP	
Diagnostics	Display PC IP, ping, test VCOM, save test config (text readable)	
Firmware Upgrade	Vlinx Manager	
ETHERNET PASS-THROUGH PORT (VESR92X)		
Standards	IEEE 802.3, 802.3u, 802.3x	
Processing Type	Store and Forward with 802.3x full duplex, non blocking flow control	
Flow Control	IEEE 802.3x flow control, back pressure flow control	
MAC Address Table	2K	
CONFIGURATION SOFTWARE		
Vlinx Manager	Windows 2000, XP (32/64 bit), 2003 Server (32/64 bit), Vista (32/64 bit), 2008 Server (32/64 bit), Win 7 (32/64 bit)	
REGULATORY / CERTIFICATIONS / SAFETY		
Compliance	FCC, CE, NEMA TS2	
	UL Listed, File E222870 UL Class 1 Division 2 Groups A, B, C, D (HAZLOC) File E245458	

Ultra Compact Ethernet Serial Servers

VESR900 Series - Copper Models

PRODUCT FEATURES

- Ethernet enable serial devices
- Direct IP, virtual COM port, or paired mode
- Ethernet pass-through port available
- Serial RS-232/RS-422/485 ports
- UL Class 1 Division 2
- NEMA TS2 (VESR901)

ACCESSORIES

MDR-40-24 - DIN rail mount power supply 24VDC, 1.7 A output power
ERS35 - 1 M 35mm DIN rail, steel
DRPM25 - 35mm DIN Rail to Panel Mount Bracket
TBKT2 - Replacement Terminal Block, One 5 Position 5.08 mm
TBKT1 - Replacement Terminal Block, One 2 Position 5.08 mm

ORDERING INFORMATION

MODEL NUMBER	SERIAL PORTS	SERIAL CONNECTORS	ETHERNET MEDIA	ETHERNET CONNECTORS
VESR901†	1	DB9 & TB	CAT 5	RJ45
VESR902D	2	DB9	CAT 5	RJ45
VESR902T	2	TB	CAT 5	RJ45
VESR921	1	DB9 & TB	CAT 5	Two RJ45
VESR922T	2	TB	CAT 5	Two RJ45

** Fiber options available.*

† *NEMA TS2*

SPECIFICATIONS

SERIAL TECHNOLOGY	
RS-232	TD, RD, RTS, CTS, DTR, DSR, DTD, GND
RS-485 2-Wire	Data A(-), Data B(+), GND
RS-422/485 4-Wire	TDA(-), TDB(+), RDA(-), RDB(+), GND
Serial Connector	DB9M or Removable Terminal Blocks
Data Rate	Up to 230.4 Kbps
POWER	
Source	External
Input Voltage	10 to 48 VDC (58 VDC Maximum)
Connector	Removable Terminal Block (12 – 28 AWG)
Power Consumption	VESR90x: 4.0 Watts Max. VESR92x: 6.0 Watts Max.
MECHANICAL	
LED Indicators	Serial Port, Ethernet Link, Ready
Switches	Reset Button
Dimensions	VESR90x: 11.94 x 8.03 x 2.96 cm (4.70 x 3.16 x 1.16 in) VESR92x: 14.86 x 10.11 x 2.96 cm (5.85 x 3.98 x 1.16 in)
Enclosure	35mm DIN mount, Plastic, IP 30
Weight	VESR90x: 149.7 g (0.33 lbs) VESR92x: 204.1 g (0.45 lbs)
ENVIRONMENTAL	
Operating Temperature	-40 to 80°C (-40 to 176°F)
Operating Humidity	10 to 95% Non-condensing
MTBF	VESR90x: ~ 132309 hours VESR92x: ~ 102593 hours
MTBF Calc Method	Parts Count Reliability Prediction
NETWORK	
Serial Memory	8 KB per port
Network Memory	4 KB
NETWORK COMMUNICATIONS	
LAN	10/100 Mbps Auto-detecting , 10BASE-T or 100BASE-TX
NETWORK PHYSICAL LAYER STANDARDS	
Ethernet	IEEE 802.3 auto detecting and auto MDI/MDX, 10BASE-T, and 100BASE-TX
PROTOCOLS	
Protocols	TCP, IPv4, UDP, ARP, HTTP 1.0, ICMP/PING, DHCP/BOOTP
IP Mode	Static, DHCP
TCP/UDP	User definable
OTHER	
Connection Mode	Server, Client, VCOM, Paired
Client Connection	At power up or upon data arrival
Search	Serial direct COM and Ethernet Auto Search or specific IP
Diagnostics	Display PC IP, ping, test VCOM, save test config (text readable)
Firmware Upgrade	Vlinx Manager
ETHERNET PASS-THROUGH PORT (VESR92X)	
Standards	IEEE 802.3, 802.3u, 802.3x
Processing Type	Store and Forward with 802.3x full duplex, non blocking flow control
Flow Control	IEEE 802.3x flow control, back pressure flow control
MAC Address Table	2K
CONFIGURATION SOFTWARE	
Vlinx Manager	Windows 2000, XP (32/64 bit), 2003 Server (32/64 bit), Vista (32/64 bit), 2008 Server (32/64 bit), Win 7 (32/64 bit)
REGULATORY / CERTIFICATIONS / SAFETY	
Compliance	FCC, CE, NEMA TS2 (VESR901)
	UL Listed, File E222870 UL Class 1 Division 2 Groups A, B, C, D (HAZLOC) File E245458

Ultra Compact Ethernet Serial Servers

VESP211 Series

PRODUCT FEATURES

- Ethernet enable serial devices
- Ultra compact design fits into the tightest spaces
- RS-232, RS-422/485, and RS-232/422/485 models
- TCP/IP interface
- Windows utility for configuration
- Industrial EMC specifications
- IP30 metal enclosure
- UL 60950 Listed

ACCESSORIES

232NM9 - Null Modem Crossover Cable for DTE to DTE connection

DRAD35 - DIN Rail Adaptor Clip (pair)

PS12VDC1A - Replacement Power Supply

SM16-12-V-ST - Replacement Power Supply with International Blade Kit

ORDERING INFORMATION

MODEL NUMBER	SERIAL PROTOCOL	SERIAL PORT	ETHERNET PORTS	ETHERNET CONNECTOR
US Power Supply				
VESP211	RS-232/422/485	DB9M	1	RJ45
VESP211-232	RS-232	DB9M	1	RJ45
VESP211-485	RS-422/485	Removable Terminal Block	1	RJ45

SPECIFICATIONS

SERIAL TECHNOLOGY	
RS-232 (DB9)	TD, RD, DTR, DSR, RTS, CTS, DCD plus Signal Ground
RS-485 2-Wire	Data A(-), Data B(+), GND
RS-422/485 4-Wire	TDA(-), TDB(+), RDA(-), RDB(+), GND
Serial Protocols & Connectors:	
VESP211:	RS-232/422/485 (DB9 male)
VESP211-232:	RS-232 (DB9 male)
VESP211-485:	RS-422/485 (removeable terminal block)
Data Rate	Up to 230.4 Kbps
POWER	
Source	Power supply included
Input Voltage	10 to 30 VDC
Power Connector Dimensions	5.5 x 2.1 mm
Power Consumption	2.5 Watts Max.
POWER SUPPLY (INCLUDED)	
Input Voltage	90 to 264 VAC
Frequency	47 to 63 Hz
Power Consumption	No load; Level VI = 0.1W; ErP Tier 1 = 0.075W
Operating Temperature	0 to +40°C
Storage Temperature	-10 to +70°C
Operating Humidity	20 to 80%
Storage Humidity	10 to 90%
Internation Blade Kit	North America, Europe, U.K., Australia, China, Japan
MECHANICAL	
LED Indicators	Serial Port, Ethernet, Ready LED's
Switches	Reset Button
Dimensions	VESP211 - 7.938 x 5.257 x 2.209 cm (3.125 x 2.070 x 0.870 in)
Enclosure	Metal, IP 30

ENVIRONMENTAL	
Operating Temperature	-40 to +80°C (-40 to +176°F)
Operating Humidity	10 to 95% Non-condensing
MTBF Calculation Method	MIL 217 F Parts Count Reliability Prediction
NETWORK	
Serial Memory	8 KB per port
Network Memory	4 KB
LAN	10/100 Mbps auto detecting, 10BASE-T, or 100BASE-TX
Ethernet	IEEE 802.3 auto detecting & auto MDI/MDI-X, 10BASE-T and 100BASE-TX
PROTOCOLS	
Protocols	TCP, IPv4, UDP, ARP, HTTP 1.0, ICMP/PING, DHCP/BOOTP
IP Mode	Static, DHCP
TCP/UDP	User definable
UDP	Unicast or Multicast
OTHER	
Connection Mode	Server, Client, VCOM, Paired
Client Connection	At power up or upon data arrival
Search	Serial direct COM and Ethernet Auto Search or specific IP
Diagnostics	Display PC IP, ping, test VCOM
Firmware Upgrade	via Vlinx™ Manager
CONFIGURATION SOFTWARE	
Vlinx™ Manager	Windows XP (32/64 bit), 2003 Server (32/64 bit), Vista (32/64 bit), 2008 Server (32/64 bit), Windows 7 (32/64 bit), Windows 8/8.1 (32/64 bit)
REGULATORY / CERTIFICATIONS / SAFETY	
Compliance	FCC Part 15 Class B
EMC	2004/108/EC, Electromagnetic Compatibility Directive 2011/65/EU, Reduction of Hazardous Substances Directive EN55022:2010+AC:2011, Information Technology Equipment - Class B RF Emissions EN55024:2010, Information Technology Equipment - Immunity (Light Industrial Environments) EN61000-4-2:2009, ESD Immunity EN61000-4-3:2006+A2:2010, Radiated Field Immunity (RFI) EN61000-4-4:2012, EFT/Burst Immunity EN61000-4-5:2006, Electrial Surges Immunity EN61000-4-6:2009, RF Conducted Immunity
UL	UL 60950 File# E353510

Industrial Modbus Ethernet to Serial Gateways

MESR900 Series - Fiber Models

PRODUCT FEATURES

- Ethernet enable Modbus RS-232/422/485
- Modbus TCP, ASCII & RTU
- Modbus flexibility – serial & Ethernet, Masters & slaves
- Modbus messaging priority control
- View messaging status in real time
- Easy configuration software

ACCESSORIES

MDR-20-24 - DIN rail mount power supply 24VDC, 1.0 A output power
MDR-40-24 - DIN rail mount power supply 24VDC, 1.7 A output power
DRPM25 - 35mm DIN Rail to Panel Mount Bracket, 25mm wide
ERS35 - DIN Rail 1 Meter 35mm Steel

ORDERING INFORMATION

MODEL NUMBER	SERIAL PORTS	SERIAL CONNECTOR	ETHERNET PORTS	ETHERNET CONNECTOR
MESR921-MC	1	DB9 or Terminal Block	Multi-mode Fiber, Copper	(1) SC, (1) RJ45
MESR921-MT	1	DB9 or Terminal Block	Multi-mode Fiber, Copper	(1) ST, (1) RJ45
MESR921-SC	1	DB9 or Terminal Block	Single-mode Fiber, Copper	(1) SC, (1) RJ45
MESR921-ST	1	DB9 or Terminal Block	Single-mode Fiber, Copper	(1) ST, (1) RJ45
MESR922T-MC	2	Terminal Block	Multi-mode Fiber, Copper	(1) SC, (1) RJ45
MESR922T-MT	2	Terminal Block	Multi-mode Fiber, Copper	(1) ST, (1) RJ45
MESR922T-SC	2	Terminal Block	Single-mode Fiber, Copper	(1) SC, (1) RJ45

+ All serial ports are software configurable for RS-232, RS-422, or RS-485.
Copper options available.

SPECIFICATIONS

SERIAL TECHNOLOGY		
RS-232	TD, RD, RTS, CTS, DTR, DSR, DTD, GND	
RS-485 2-Wire	Data A(-), Data B(+), GND	
RS-422/485 4-Wire	TDA(-), TDB(+), RDA(-), RDB(+), GND	
Serial Connector	DB9M or Removable Terminal Blocks, 12 to 28 AWG	
Data Rate	Up to 230.4 Kbps	
FIBER OPTIC TECHNOLOGY		
	MESR9xx-Mx	**MESR9xx-Sx**
Type / Wavelength	Multi-mode / 1310 nm	Single-mode / 1310 nm
Output Power	(-) 19 to (-) 14 dBm	(-) 15 to (-) 8 dBm
Receive Sensitivity	~ (-) 32 dBm	~ (-) 32 dBm
Cable	62.5 / 125 µm	9 / 125 µm
Connector	SC or ST	SC or ST
Range	2 km (1.2 miles)	15 km (9.3 miles)
POWER		
Source	External	
Input Voltage	10 to 48 VDC (58 VDC Maximum)	
Connector	Removable Terminal Block (12 – 28 AWG)	

POWER CONSUMPTION	
MESR90x	4.0 Watts
MESR92x	6.0 Watts
MECHANICAL	
LED Indicators	Serial Port, Ethernet Link, Ready
Switches	Reset Button
Dimensions	MESR92x: 14.86 x 10.11 x 2.96 cm (5.85 x 3.98 x 1.16 in)
Enclosure	35mm DIN mount, Plastic, IP 30
Weight	MESR92x: 0.45 lbs (201.4 g)
eDrawing	Available on website
ENVIRONMENTAL	
Operating Temperature	-40 to 80°C (-40 to 176°F)
Operating Humidity	0 to 95% Non-condensing
MTBF MESR90X	~ 132309 hours
MTBF MESR92X	~ 102593 hours
MTBF Calc Method	Parts Count Reliability Prediction
NETWORK	
Serial Memory	8 KB per port
Network Memory	4 KB
IP Port Addresses	5300 – Heartbeat and configuration Setting in TCP Mode (paired mode) 8899 – MESR 9xx Update
LAN	10/100 Mbps Auto-detecting
Ethernet	IEEE 802.3 auto detecting & auto MDI/MDX 10/100
PROTOCOLS	
TCP, IPv4, ARP, HTTP 1.0, ICMP/PING, DHCP/BOOTP	
IP Mode	Static, DHCP
TCP	User definable
OTHER	
Mode	Modbus RTU Master / Slave Modbus ASCII Master / Slave
Search	Serial direct COM and Ethernet Auto search or specific IP
Diagnostics	Display PC IP, ping, save test config. (text readable)
Firmware Upgrade	Vlinx Manager
ETHERNET PASS-THROUGH PORT (MESR92X)	
Standards	IEEE 802.3, 802.3u, 802.3x
Processing Type	Store and Forward with 802.3x full duplex, non blocking flow control
Flow Control	IEEE 802.3x flow control, back pressure flow control
MAC Address Table	2K
CONFIGURATION SOFTWARE	
Vlinx Manager	Windows 2000, XP (32/64 bit), 2003 Server (32/64 bit), Vista (32/64 bit), 2008 Server (32/64 bit), Win 7 (32/64 bit)
REGULATORY	
Compliance	FCC, CE, NEMA TS2
	UL Listed, File E222870 UL Class 1 Division 2 Groups A, B, C, D (HAZLOC), File E245458

Industrial Modbus Ethernet to Serial Gateways

MESR900 Series - Copper Models

PRODUCT FEATURES

- Ethernet enable Modbus RS-232/422/485
- Modbus TCP, ASCII & RTU
- Modbus flexibility – serial & Ethernet, Masters & slaves
- Modbus messaging priority control
- View messaging status in real time
- Easy configuration software
- UL Class 1 Division 2
- NEMA TS2 (MESR901)

ACCESSORIES

MDR-20-24 - DIN rail mount power supply 24VDC, 1.0 A output power
MDR-40-24 - DIN rail mount power supply 24VDC, 1.7 A output power
DRPM25 - 35mm DIN Rail to Panel Mount Bracket, 25mm wide
ERS35 - DIN Rail 1 Meter 35mm Steel

ORDERING INFORMATION

MODEL NUMBER	SERIAL PORTS	SERIAL CONNECTOR	ETHERNET PORT	ETHERNET CONNECTOR
MESR901 †	1	DB9 or Terminal Block	(1) Copper	RJ45
MESR902T	2	Terminal Block	(1) Copper	RJ45
MESR921	1	DB9 or Terminal Block	(2) Copper	(2) RJ45
MESR922T	2	Terminal Block	(2) Copper	(2) RJ45

SPECIFICATIONS

SERIAL TECHNOLOGY	
RS-232	TD, RD, RTS, CTS, DTR, DCR, DTD, GND
RS-485 2-Wire	Data A(-), Data B(+), GND
RS-422/485 4-Wire	TDA(-), TDB(+), RDA(-), RDB(+), GND
Serial Connector	DB9M or Removable Terminal Blocks; 12 to 28 AWG
Data Rate	Up to 230.4 Kbps
POWER	
Source	External
Input Voltage	10 to 48 VDC (58 VDC Maximum)
Connector	Removable Terminal Block (12 – 28 AWG)
POWER CONSUMPTION	
MESR90X	4.0 Watts
MESR92X	6.0 Watts
MECHANICAL	
LED Indicators	Serial Port, Ethernet Link, Ready
Switches	Reset Button
Dimensions	MESR90x: 11.94 x 8.03 x 2.96 cm (4.70 x 3.16 x 1.16 in) MESR92x: 14.86 x 10.11 x 2.96 cm (5.85 x 3.98 x 1.16 in)
Weight	MESR90x: 149.7 g (0.33 lbs) MESR92x: 204.1 g (0.45 lbs)

ENVIRONMENTAL	
Operating Temperature	-40 to 80°C (-40 to 176°F)
Operating Humidity	0 to 95% Non-condensing
MTBF MESR90X	~ 132309 hours
MTBF MESR92X	~ 102593 hours
MTBF Calc Method	Parts Count Reliability Prediction
NETWORK	
Serial Memory	8 KB per port
Network Memory	4 KB
LAN	10/100 Mbps Auto-detecting
Ethernet	IEEE 802.3 auto detecting & auto MDI/MDX 10/100
PROTOCOLS	
Protocols	TCP, IPv4, ARP, HTTP 1.0, ICMP/PING, DHCP/BOOTP
IP Mode	Static, DHCP
TCP	User definable
OTHER	
Mode	Modbus RTU Master / Slave Modbus ASCII Master/Slave
Search	Serial direct COM and Ethernet Auto Search or specific IP
Diagnostics	Display PC IP, ping, test VCOM, save test config. (text readable)
Firmware Upgrade	Vlinx Manager
ETHERNET PASS-THROUGH PORT (MESR92X)	
Standards	IEEE 802.3, 802.3u, 802.3x
Processing Type	Store and Forward with 802.3x full duplex, non blocking flow control
Flow Control	IEEE 802.3x flow control, back pressure flow control
MAC Address Table	2K
CONFIGURATION SOFTWARE	
Vlinx Manager	Windows 2000, XP (32/64 bit), 2003 Server (32/64 bit), Vista (32/64 bit), 2008 Server (32/64 bit), Win 7 (32/64 bit)
REGULATORY / CERTIFICATIONS / SAFETY	
Compliance	FCC, CE, NEMA TS2 (MESR901)
	UL Listed, File E222870 UL Class 1 Division 2 Groups A, B, C, D (HAZLOC), File E245458

Industrial Serial to Fiber Optic Converters

FOSTCDRI, FOSTCDRI-INV

PRODUCT FEATURES

- Data rates up to 115.2 kbps
- 10 – 48 VDC input power range
- Wide operating temperature
- 2,000V, 3-way optical isolation
- Modbus ASCII/RTU compatible
- EMI / RFI protection
- UL Class 1/Division 2
- Inverted fiber state option (Model FOSTCDRI-INV)
- TD, RD and Power LED's

ACCESSORIES

MDR-40-24 - 24 VDC, 1A, slim-line DIN rail power supply

DFMM-STST-1M - Multi-mode fiber optic cable with ST/ST connectors (62.5/125 micro-meter), 1 meter

TBKT1 - Replacement 2-position terminal block, 5.08 mm

TBKT2 - Replacement 5-position terminal block, 5.08 mm

ORDERING INFORMATION

MODEL NUMBER	SERIAL CONNECTOR	FIBER CONNECTOR	ISOLATION
FOSTCDRI	Terminal Block	Multi-mode ST	2,000 V
FOSTCDRI-INV	Terminal Block	Multi-mode ST	2,000 V

SPECIFICATIONS

SERIAL TECHNOLOGY	
Data Rate	9.6 to 115.2 kbps
RS-232	
Connector	Removable terminal block
Signals	TD, RD, GND
RS-422/485	
Connector	5-position, removable terminal block
RS-485, 2-wire	Data A(-), Data B(+), GND
RS-422/485, 4-wire	TDA(-), TDB(+), RDA(-), RDB(+), GND
Bias	Built-in, switchable, 1.2KΩ
Termination	Built-in, switchable, 120Ω
ISOLATION	
Rating	2KV RMS, 1 minute
Surge Protection	600 W peak power dissipation
Clamping Time	< 1 pico-second
Lines Protected	2-way (input, output lines)
Method	Optical
FIBER OPTIC TECHNOLOGY	
Type / Wavelength	Multi-mode / 820 nm
Output Power	-16dBm min, -12dBm typical, -9dBm maximum
Receive Sensitivity	-24dBm min, -25.4dBm maximum
Cable	62.5/125 micro-meter
Connector	ST
Data Rate	9.6 to 115.2 kbps
Maximum Distance	4 km (2.5 mi)
Idle State, FOSTCDRI	Transmitter light ON
Idle State, FOSTCDRI-INV	Transmitter light OFF

INDUSTRIAL BUS	
Modbus	ASCII/RTU
POWER	
Source	External
Input Voltage	10 to 48 VDC (56 VDC maximum)
Consumption	0.5 W (typical), 1.3W (with termination)
Connector	2-position, removable terminal block, 24 to 14 AWG
TERMINAL BLOCKS	
Wire Size Accepted	28 to 12 AWG
Pitch	5.08 mm
Insulation Resistance	≥ 500 MΩ @ 500 VDC
Maximum Torque	5 Kg / cm
LED INDICATORS	
Power	Red LED
FO Receive	Red LED
FO Transmit	Red LED
MECHANICAL	
Dimensions	12.3 x 11.3 x 3.2 cm (4.9 x 4.5 x 1.3 in)
Enclosure	IP 20 plastic, 35 mm DIN mount
Weight	199.6 g (0.44 lbs)
ENVIRONMENTAL	
Operating Temperature	-40 to +80°C (-40 to +176°F)
Storage Temperature	-40 to +85°C (-40 to +185°F)
Operating Humidity	0 to 95% non-condensing
MTBF	138904 hours
MTBF Calculation Method	Parts Count Reliability Prediction
APPROVALS / CERTIFICATIONS - FOSTCDRI	
UL Class 1 Division 2, Groups A, B, C, D File Number: E222870 (HAZLOC E245458)	
FCC Part 15, CISPR, EN 55022: 2010 + AC:2011 Class B Emissions	
CE	
EN 61000-6-1: 2007 Generic Standards for Residential, Commercial and Light-Industrial Environments	
EN 61000-4-2: 2009 Electro-Static Discharge (ESD) EN 61000-4-3: 2006 +A1 +A2 +IS1 Radiated Field Immunity (RFI) EN 61000-4-4: 2012 Electrical Fast Transients-Burst Immunity (EFT) EN 61000-4-6: 2009 Conducted Immunity	
Download complete Declaration of Conformity at www.bb-elec.com	
APPROVALS / CERTIFICATIONS - FOSTCDRI-INV	
UL 508, File Number: E222870	
FCC Part 15, CISPR, EN 55022: 2010 + AC:2011 Class A Emissions	
CE	

Industrial RS-232 to RS-422/485 Converter

485DRCi

PRODUCT FEATURES

- Data rates up to 115.2 kbps
- Three-way 2,000V optical isolation (input, output, power)
- Wide operating temperature
- UL Class 1/Division 2
- Modbus ASCII/RTU compatible
- 10–48 VDC input power range

ACCESSORIES

MDR-40-24 - DIN Rail Mount Power Supply 24VDC, 1.7 A output power
EK-CLIP-MPC - Replacement DIN Rail Clip
TBKT1 - Replacement Term Block, 2 position 5.08mm
TBKT2 - Replacement Term Block, 5 position 5.08mm

ORDERING INFORMATION

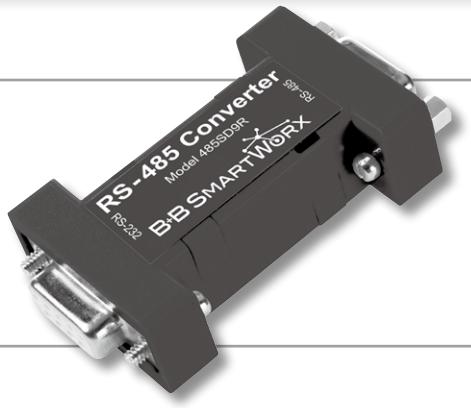
MODEL NUMBER	RS-232 CONNECTOR	RS-422/485 CONNECTOR	ISOLATION
485DRCi	DB9 Female (DCE)	Removable Terminal Block	2,000 V

SPECIFICATIONS

SERIAL TECHNOLOGY	
Data Rate	1.2 to 115.2 kbps
RS-232	
Connector	DB9 female (DCE)
Signals	TD, RD, GND
RS-422/485	
Connector	Removable terminal block, 28 to 14 AWG
RS-485, 2-wire	Data A(-), Data B (+), GND
RS-422/485, 4-wire	TDA(-), TDB(+), RDA (-), RDB(+), GND
ISOLATION	
Rating	2,000 V
Lines Protected	3-way (input, output, power lines)
Method	Optical
SURGE SUPPRESSION	
Lines Protected	Data lines
Rating	600W peak power dissipation
Clamping/Response Time	< 1 pico-second
INDUSTRIAL BUS	
Modbus	ASCII/RTU
POWER	
Connector	Removable terminal block, 28 to 14 AWG
Voltage	10-48 VDC
Consumption	960 mW
Source	External
MECHANICAL	
LED Indicators	Transmit, Receive, and Power
Dimensions	11.4 x 3.3 x 12.4 cm (4.5 x 1.3 x 4.9 in)
Enclosure	35mm DIN mount, plastic, IP30
Weight	204.12 g (0.45 lbs)
ENVIRONMENTAL	
Operating Temperature	-40 to +80°C (-40 to +176°F)
Storage Temperature	-40 to +85°C (-40 to +185°F)
Operating Humidity	0 to 95% non-condensing
MTBF	254617 hours
MTBF Calculation Method	Parts Count Reliability Prediction
CLASS 1/DIVISION 2 WIRING	
Type	Solid copper only
Size	28 to 14 AWG
Temperature	105°C (221°F) minimum
Terminal Torque	0.5 Nm (Newton-meters)
APPROVALS / CERTIFICATIONS - 485DRCI	
cUL 508, File Number: E222870 (C1 D2 E245458)	
FCC Part 15, CISPR, EN 55022: 2010 + AC:2011 Class B Emissions	
CE	
EN 61000-6-1: 2007 Generic Standards for Residential, Commercial and Light-Industrial Environments	
EN 61000-4-2: 2009 Electro-Static Discharge (ESD)	
EN 61000-4-3: 2006 +A1 +A2 +IS1 Radiated Field Immunity (RFI)	
EN 61000-4-4: 2012 Electrical Fast Transients-Burst Immunity (EFT)	
EN 61000-4-6: 2009 Conducted Immunity	
Download complete Declaration of Conformity at www.bb-elec.com	

Port-Powered RS-232/485 Converters

485SD9R, 485SD9RJ, 485SD9TB



PRODUCT FEATURES

- Extend RS-232 data signals up to 1.2 km (4,000 ft.)
- Change RS-232 TD and RD to RS-485 signals
- Automatic Send Data Control - no software drivers necessary
- Baud rates up to 115.2 kbps
- Powered from RS-232 handshake lines - no power supply required

ACCESSORIES

485PS2 - 120 VAC to 12 VDC power supply, 100 mA, tinned leads, USA

PS1EU-1000 - 220-240 VAC to 12 VDC power supply, 1A, tinned leads, Euro CEEE7/7 plug

PS1UK-1000 - 220-240 VAC to 12 VDC power supply, 1A, tinned leads, UK BS-1353 plug

9PAMF6 - DB9 male to DB9 female adapter cable, 6 ft. (1.8 m)

ORDERING INFORMATION

MODEL NUMBER	RS-232 CONNECTOR	RS-485 CONNECTOR	OUTPUT	OPTIONAL POWER SUPPLY
485SD9R	DB9 Female	DB9 Female	RS-485 2-wire	
485SD9RJ	DB9 Female	RJ11	RS-485 2-wire	
485SD9TB	DB9 Female	Terminal Block	RS-485 2-wire	✓

SPECIFICATIONS

SERIAL TECHNOLOGY	
Data Rate	115.2 kbps maximum
RS-232	
Connector	485SD9R: DB9 female 485SD9RJ: DB9 female 485SD9TB: DB9 female
RS-485	
	485SD9R: DB9 female 485SD9RJ: RJ11 485SD9TB: Terminal block
Biasing Resistors	4.7k Ohms
POWER	
Source	Port-powering: from RS-232 handshake lines. External power option, 12-16 VDC (485SD9TB only)
Power Connector	Terminal block (485SD9TB only)
Input Voltage	12 VDC (485SD9TB only)
Power Consumption	40mA maximum
MECHANICAL	
Dimensions	485SD9R: 6.0 x 3.2 x 1.6 cm (2.4 x 1.3 x 0.6 in) 485SD9RJ: 7.3 x 3.2 x 1.6 cm (2.9 x 1.3 x 0.6 in) 485SD9TB: 8.7 x 3.2 x 1.6 cm (3.4 x 1.3 x 0.6 in)
Enclosure	plastic
Weight	0.18 lbs (81.6 g)
MTBF	485SD9R: 986473 485SD9RJ: 897656 485SD9TB: 968410
MTBF Calc. Method	Parts Count Reliability Prediction
ENVIRONMENTAL	
Operating Temperature	0 to +70°C (+32 to +158°F)
Storage Temperature	-40 to +85°C (-40 to +185°F)
Operating Humidity	0 to 95% non condensing
APPROVALS / CERTIFICATIONS - 485SD9R, 485SD9RJ, 485SD9TB	
FCC Part 15, CISPR, EN 55022: 2010 + AC:2011 Class B Emissions	
CE	
EN 61000-6-1: 2007 Generic Standards for Residential, Commercial and Light-Industrial Environments	
EN 61000-4-2: 2009 Electro-Static Discharge (ESD) EN 61000-4-3: 2006 +A1 +A2 +IS1 Radiated Field Immunity (RFI) EN 61000-4-4: 2012 Electrical Fast Transients-Burst Immunity (EFT) EN 61000-4-6: 2009 Conducted Immunity	
Download complete Declaration of Conformity at www.bb-elec.com	

Industrial RS-422/485 Isolated Repeater

4850PDRI

PRODUCT FEATURES

- Supports data rates up to 115.2 Kbps
- Extends signal 1,200 m (4,000 feet)
- Wide -40 to +80°C temperature range
- 10 to 48 VDC input power range
- 2000 V, 3-way optical isolation
- UL Class 1/Division 2 Listed
- Built-in, switchable termination & bias

ACCESSORIES

MDR-20-24 - DIN rail mount power supply 24VDC, 1.0 A output power
MDR-40-24 - DIN rail mount power supply 24VDC, 1.7 A output power
DRPM25 - 35mm DIN rail to Panel Mount Bracket, 25mm wide
EK-CLIP-MPC - DIN rail clip for enclosure

ORDERING INFORMATION

MODEL NUMBER	DESCRIPTION
4850PDRI	Industrial RS-422/485 Isolated Repeater

SPECIFICATIONS

SERIAL TECHNOLOGY	
RS-422	TDA(-), TD(B+), RDA(-), RDB(+)
RS-485 4-Wire	TDA(-), TD(B+), RDA(-), RDB(+)
RS-485 2-Wire	Data A(-), Data B(+)
Serial Connector	5 Position, Removable Terminal Block
Data Rate	2.4 to 115.2 Kbps
Isolation	2KV RMS, 1 Minute
Surge Protection	600 W Peak Power Dissipation Clamping time < 1 pico-second
Industrial Bus	Modbus ASCII / RTU
Bias	Built-in, Switchable, 1.2KΩ XMT/RCV
Termination	Built-in, Switchable, 120Ω
POWER	
Source	External power required
Power Connector	2 Position, Removable Terminal Block
Input Voltage	10 to 48 VDC (56 VDC Maximum)
Power Consumption	0.5 W (typical), 1.3 W (termination on both sides)
TERMINAL BLOCKS	
Wire Size Accepted	28 to 12 AWG
Pitch	5.08 mm
Insulation Resistance	≥500 MΩ @ 500 VDC
Maximum Torque	5 Kg / cm
INDICATORS	
Power	Red LED
Data	Red LED for Each Data Port
MECHANICAL	
Dimensions	12.3 x 11.3 x 3.2 cm (4.9 x 4.5 x 1.3 in)
Enclosure	IP 20 Plastic, 35 mm DIN Mount
Weight	222 g (0.49 lbs)
MTBF	114696 Hours
MTBF Calc. Method	Parts Count Reliability Prediction
ENVIRONMENTAL	
Operating Temperature	-40 to 80°C (-40 to 176°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Humidity	0 to 95% Non-condensing
REGULATORY	
Approvals	FCC, CE, UL, UL Class 1 DIV 2, Groups A, B, C, D
UL File	E222870 (HAZLOC E245458)

Industrial RS-232 Isolated Repeater

2320PDRI

PRODUCT FEATURES

- Supports Data Rates up to 115.2 Kbps
- Wide -40 to 80°C Temperature Range
- 10 to 48 VDC Input Power Range
- 2000 V 3-Way Optical Isolation
- UL Class 1 Division 2 Listed

ACCESSORIES

MDR-20-24 - DIN rail mount power supply 24VDC, 1.0 A output power
MDR-40-24 - DIN rail mount power supply 24VDC, 1.7 A output power
DRPM25 - 35mm DIN Rail to Panel Mount Bracket, 25mm wide
EK-CLIP-MPC - DIN rail clip for enclosure

ORDERING INFORMATION

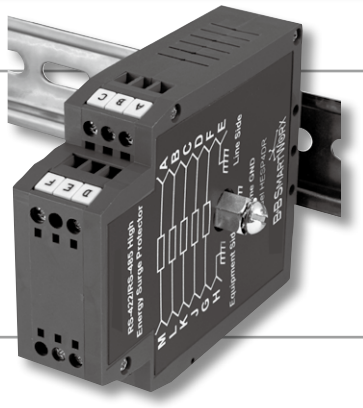
MODEL NUMBER	DESCRIPTION
2320PDRI	Industrial RS-232 Isolated Repeater

SPECIFICATIONS

SERIAL TECHNOLOGY	
Serial Connector	DB9 F (DCE), DB9 M (DTE)
Data Rate	Up to 115.2 Kbps
Isolation	2 KV RMS, 1 minute
POWER	
Source	External
Power Connector	2 Position Removable Terminal Block
Input Voltage	10 to 48 VDC (56 VDC Maximum)
Power Consumption	0.6 W typical
TERMINAL BLOCKS	
Wire Size Accepted	28 to 12 AWG, Copper wire only.
Pitch	5.08 mm
Insulation Resistance	≥500 MΩ @ 500 VDC
Maximum Torque	5 Kg / cm
INDICATORS	
Power	Red LED
TD / RD	Red LED TD, RD, CTS, RTS
MECHANICAL	
Dimensions	12.3 x 11.3 x 3.2 cm (4.9 x 4.5 x 1.3 in)
Enclosure	IP 30 Plastic, 35 mm DIN Mount
Weight	0.43 lbs (195 g)
MTBF	177250 Hours
MTBF Calc. Method	Parts Count Reliability Prediction
ENVIRONMENTAL	
Operating Temperature	-40 to 80°C (-40 to 176°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Humidity	0 to 95% Non-condensing
REGULATORY	
Approvals	FCC, CE UL C1 D2, File Number E245458 UL 508, File Number E222870

3-Stage DIN Rail Surge Protector

HESP4DR



PRODUCT FEATURES

- Three stages of protection on every data line
  1) Gas discharge tube
  2) Series resistor
  3) Transient voltage suppressor
- Protected signal ground connection
- Rugged terminal block connections
- Dedicated chassis ground lug
- Wide operating Temperature
- NEMA TS2

ACCESSORIES

CU15B - Copper Grounding Strap

ORDERING INFORMATION

MODEL NUMBER	INTERFACE	LINES PROTECTED	MOUNTING
HESP4DR	RS-422/485	(5) RS-422/485	DIN Rail Mount

SPECIFICATIONS

SERIAL TECHNOLOGY	
Connectors, line	5 position terminal blocks
Connectors, equipment	5 position terminal blocks
SURGE SUPPRESSION	
Clamping Voltage - stage 1	72 VDC, minimum 108 VDC, maximum
Series Resistance - stage 2	2.7 Ohms
Clamping Voltage - stage 3	6.45 VDC, minimum 7.14 VDC, maximum
Clamping Time	Less than 5 $x10^{-9}$ seconds
Dimensions	3.55 x 7.88 x 10.53 cm (1.4 x 3.1 x 4.2 in)
Installation	DIN rail mount
Weight	0.114 kg (4.02 oz)
ENVIRONMENTAL	
Operating Temperature	-40 to 80°C (-40 to 176°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Humidity	0 to 95% Non-condensing
APPROVALS / CERTIFICATIONS - HESP4DR	
FCC Part 15, CISPR, EN 55022: 2010 + AC:2011 Class A Emissions	
CE, NEMA TS2	
EN 61000-6-1: 2007 Generic Standards for Residential, Commercial and Light-Industrial Environments	
EN 61000-4-5: 2006 Electrical Surges	
Download complete Declaration of Conformity at www.bb-elec.com	

In-Line USB Converters

USOPTL4 & USPTL4

PRODUCT FEATURES

- 2000 V RMS optical isolation
- 15KV ESD surge protection
- Adds a COM port to your PC
- LEDs for transmit and receive lines
- USB 1.0, 1.1 and 2.0 compatible (12 Mbps)
- Automatic configuration on Windows 2000, XP, Vista. 7 (32/64 bit), 8 (32/64 bit)
- No power supply required (powered from USB bus)

ACCESSORIES

9PAMF6 - DB9 to DB9 serial cable, male to female, 6 ft. (1.8 m)

TB5P508SR-2PK - 5-position terminal block with strain relief paddle board, 2 pack

ORDERING INFORMATION

MODEL NUMBER	DESCRIPTION
USOPTL4	Isolated RS-422/485 Inline USB Converter
USOPTL4-LS	Locked Serial Number Version of USOPTL4
USPTL4	Non-isolated RS-422/485 Inline USB Converter
USPTL4-LS	Locked Serial Number Version of USPTL4

SPECIFICATIONS

SERIAL TECHNOLOGY		
RS-422/485 4-Wire	TDA(-), RDA(-), TDB(+), RDB(+), GND	
RS-485 2-Wire	DATA A(-), DATA B(+), GND	
Connector	Terminal block	
Data Rate	460.8 Kbps	
Isolation	2 kV RMS	
Surge Protection	15kV ESD	
Industrial Bus	Modbus ASCII/RTU	
Bias	4.7 KΩ on receive lines in RS-422/485 mode	
USB TECHNOLOGY		
USB Compatibility	1.1 and 2.0	
Speed	1.5, 12 Mbps	
Connector	Type B High Retention (15 N / 3.4 lbs-force withdrawal)	
Operating System	Windows 2000, XP (32/64 bit), Vista (32/64 bit), 7 (32/64 bit), 8 (32/64 bit), 2003 & 2008 Server (32/64 bit)	
POWER		
USB	Low power device (draws <100 mA)	
INDICATORS		
LEDs	Transmit data, Receive data	
MECHANICAL		
Dimensions	8.9 x 4.3 x 2.1 cm (3.5 x 1.7 x 0.8 in)	
Enclosure	IP 30, Plastic	
MTBF USOPTL4	311,327 hours	
MTBF USPTL4	1,012,584 hours	
MTBF Calc. Method	MIL 217F Parts Count Reliability	
ENVIRONMENTAL		
Operating Temperature	0 to 70°C (32 to 158°F)	
Operating Humidity	0 to 95% Non-condensing	
APPROVALS / CERTIFICATIONS		
Emissions	EN 55022: 2010 + AC:2011 Class B Emissions	
CE	EN 61000-6-1: 2007	Generic Standards for Residential, Commercial and Light-Industrial Environments
	EN 61000-4-2: 2009	Electro-Static Discharge (ESD)
	EN 61000-4-3: 2006	+A1 +A2 +IS1 Radiated Field Immunity (RFI)
	EN 61000-4-4: 2012	Electrical Fast Transients-Burst Immunity (EFT)
	EN 61000-4-6: 2009	Conducted Immunity

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USB to RS-485 Mini Converters

485USBTB-2W & 485USBTB-4W

PRODUCT FEATURES

- Connect RS-485 Devices to your USB Port
- Perfect for Field Service Applications
- Small – Fits easily into any laptop bag
- USB Port Powered
- USB 2.0 (12 Mbps) Compatible
- RS-485 Data rates up to 921.6 Kbps
- Removable Terminal Block for Easy Wiring
- High Retention USB Connector
- Supports Windows 98, ME, 2000, XP, Vista, 7 (32/64 bit), 8 (32/64 bit)

ACCESSORIES

USBAMBM-3F - 3 ft. (1 M) USB Cable (One Included)

7372 - Replacement TB (One Included)
Contact Customer Service for ordering information.

ORDERING INFORMATION

MODEL NUMBER	DESCRIPTION
485USBTB-2W	USB to RS-485 2-Wire Converter
485USBTB-4W	USB to RS-485 4-Wire Converter
485USBTB-2W-LS	USB to RS-485 2-Wire Converter (Locked Serial Number)
485USBTB-4W-LS	USB to RS-485 4-Wire Converter (Locked Serial Number)

SPECIFICATIONS

SERIAL TECHNOLOGY				
RS-485 2-Wire	Data A(-), Data B(+), Ground			
RS-485 4-Wire	TDA(-), TDB(+), RDA(-), RDB(+), Ground			
Connector	Removable Terminal Block (28 to 16 AWG)			
Data Rate	Up to 921.6 Kbps			
USB TECHNOLOGY				
Connector	USB Type B Female (High Retention)			
Standard	2.0 (Backward Compatible)			
Data Rate	12 Mbps			
POWER				
Source	USB Port			
Input Voltage	5 VDC			
Consumption	~ 0.5 W (Low power device, draws less than 100 mA)			
SOFTWARE				
Driver CD	Windows 98, ME, 2000, XP, Vista, 7 (32/64 bit), 8 (32/64 bit)			
MECHANICAL				
Dimensions	6.5 x 3.2 x 1.6 cm (2.6 x 1.3 x .6 in)			
Enclosure	In-line mounted, plastic			
Weight	0.23 lbs (104.3 g) with USB Cable			
ENVIRONMENTAL				
Operating Temp	32 to 158°F (0 to70°C)			
Storage Temp	-40 to 185°F (-40 to 85°C)			
Op Humidity	0 to 95 % (Non-condensing)			
MTBF	1869313 hours			
MTBF Method	Parts Count Reliability Prediction			
REGULATORY				
Approvals	FCC, CE			
CERTIFICATIONS				
Test	**Description**		**Test Level**	**Level**
IEC 61000-4-2	ESD	Contact Air	±8kV ±15kV	±8kV ±15kV
IEC 61000-4-3	Radiated Immunity		3 v/m	3 v/m
IEC 61000-4-4	Burst (Fast Transient)	Serial USB	±500 ±500	±500 ±500
IEC 61000-4-6	Induced (Conductive) RFI	Serial USB	3 V RMS 3 V RMS	3 V RMS 3 V RMS
EN 55022/CISPR 22	Emissions		3 meters	Class B

USB to RS-485 Mini Converters

485USB9F-2W & 485USB9F-4W

PRODUCT FEATURES

- Connect RS-485 Devices to your USB Port
- Perfect for Field Service Applications
- Small – Fits easily into any laptop bag
- USB Port Powered
- USB 2.0 (12 Mbps) Compatible
- RS-485 Data rates up to 921.6 Kbps
- Supports Windows 98, ME, 2000, XP, Vista, 7 (32/64 bit), 8 (32/64 bit)

ACCESSORIES

USBAMBM-3F - 3 ft. (1 M) USB Cable (One Included)

7372 - Replacement TB (One Included)
Contact Customer Service for ordering information.

ORDERING INFORMATION

MODEL NUMBER	DESCRIPTION
485USB9F-2W	USB to RS-485 2-Wire Converter
485USB9F-4W	USB to RS-485 4-Wire Converter
485USB9F-2W-LS	USB to RS-485 2-Wire Converter (Locked Serial Number)
485USB9F-4W-LS	USB to RS-485 4-Wire Converter (Locked Serial Number)

SPECIFICATIONS

SERIAL TECHNOLOGY		
RS-485 2-Wire	Data A(-), Data B(+), Ground	
RS-485 4-Wire	TDA(-), TDB(+), RDA(-), RDB(+), Ground	
Connector	DB9 Female	
Data Rate	Up to 921.6 Kbps	
USB TECHNOLOGY		
Connector	USB Type B Female	
Standard	2.0 (Backward Compatible)	
Data Rate	12 Mbps	
POWER		
Source	USB Port	
Input Voltage	5 VDC	
Consumption	~ 0.5 W (Low power device, draws less than 100 mA)	
SOFTWARE		
Driver CD	Windows 98, ME, 2000, XP, Vista, 7 (32/64 bit), 8 (32/64 bit)	
MECHANICAL		
Dimensions	5.8 x 3.2 x 1.6 cm (2.3 x 1.3 x .6 in)	
Enclosure	In-line mounted, plastic	
Weight	0.23 lbs (104.3 g) with USB Cable	
ENVIRONMENTAL		
Operating Temp	32 to 158°F (0 to 70°C)	
Storage Temp	-40 to 185°F (-40 to 85°C)	
Op Humidity	0 to 95 % (Non-condensing)	
MTBF 2-Wire	2130833 hours	
MTBF 4-Wrie	1869313 hours	
MTBF Method	Parts Count Reliability Prediction	
REGULATORY		
Approvals	FCC, CE	
APPROVALS / CERTIFICATIONS		
Emissions	EN 55022: 2010 + AC:2011 Class B Emissions	
CE	EN 61000-6-1:2007	Generic Standards for Residential, Commercial and Light-Industrial Environments
	EN 61000-4-2: 2009	Electro-Static Discharge (ESD)
	EN 61000-4-3: 2006	+A1 +A2 +IS1 Radiated Field Immunity (RFI)
	EN 61000-4-4: 2012	Electrical Fast Transients-Burst Immunity (EFT
	EN 61000-4-6: 2009	Conducted Immunity

4-Port Rugged USB Hubs

UHR304 & UHR204

PRODUCT FEATURES

- 4 kV Isolation (Model UHR304)
- High Retention USB Connectors
- Level 4 ESD Protection – 15kV
- Rugged Metal Case – Panel & DIN Rail Mount
- Wide Operating Temperature (-40 to 80°C)
- USB 2.0 – Full Speed (12 Mbps) Model UHR304
- USB 2.0 – High Speed (480 Mbps) Model UHR204

ACCESSORIES

PS12VLB-INT-MED - Power Supply 12VDC, Medical Grade - US, EU, UK Blades
MDR-20-24 - DIN Rail Mount Power Supply 24VDC, 1.0A
USBAMBM-15F - Type A Male to Type B Male, 15 ft. (4.6 m)
USBAMBM-3F - Type A Male to Type B Male, 3 ft. (0.9 M) (Grey)
USBAMBM-6F - Type A Male to Type B Male, 6 ft. (1.8 m) (Grey)

ORDERING INFORMATION

MODEL NUMBER	USB SPEED
UHR304	4 Port Industrial USB Hub, Isolated
UHR204	4 Port Industrial USB Hub

SPECIFICATIONS

USB INTERFACE	
Standards	USB 1.1 & 2.0
Upstream Port	(1) Type B Female – High Retention
Downstream Port	(4) Type A Female – High Retention
Speed	12 Mbps – Model UHR304 480 Mbps – Model UHR204 Multi-transaction Translator, 1 per port
Isolation	4 kV – Upstream to Downstream Model UHR304
Surge Protection	+/- 0.5 kV DC Ports, +/- 1 kV Signal Ports
ESD	15 kV Air, 8 kV Contact
High Retention	USB Ports require 15 N (3.2 lbs-force) withdrawal force using standard USB Cable
POWER	
Source	External (Required for Model UHR304) Model UHR204 may be bus powered. See Downstream power limitations
Power Connector	Terminal Block or threaded barrel jack
Input Voltage	10 to 30 VDC
Power	UHR204 – 16 Watts (External Source) UHR304 – 16 Watts (External Source)
Power TB	3 Position, 5.08 mm spacing, 28-12 AWG, Solid Wire
Barrel Jack	Locking / Threaded, 5.5 mm, Center Positive
Downstream Power	500 mA per port 100 mA per port when bus powered.

INDICATORS	
Power	Green LED (External Power) Yellow LED (Bus Power)
Port Ready	Green LED
MECHANICAL	
Dimensions	13.9 x 8.7 x 3.5 cm (5.5 x 3.5 x 1.4 in)
Enclosure	IP 30, Metal
Weight	1.4 lbs (635 g)
MTBF UHR204	211,773 Hours
MTBF UHR304	190,999 Hours
MTBF Calc. Method	MIL 217F Parts Count Reliability
ENVIRONMENTAL	
Operating Temperature	-40 to 80°C
Storage Temperature	-40 to 85°C
Operating Humidity	0 to 95% Non-condensing
APPROVALS/CERTIFICATIONS	
Emissions	FCC Class B, CISPR Class B (EN55022)
CE	EN61000-6-2:2005 (Heavy Industrial) EN61000-4-2:2008 (ESD) +/- 8kV contact, +/-15 kV air EN61000-4-3:2006 (RI) 10 V/m, 80-1000 Mhz; 3 V/m 1.3 to 2.7 GHz EN61000-4-4:2004 (EFT Burst) +/- 2kV DC ports; +/- 1 kV signal ports EN61000-4-5:2005 (Surge) +/- 2 kV com; +/- 1 kV differential EN61000-4-6:2008 (CI) 10 Vrms, 0.15 to 80 MHz EN61000-4-8:2001 (Magnetic) 10 A/m, 50 Hz & 60 Hz
Other	IEC60068-2-27 (Shock) 50G Peak, 11 ms, 3 axes IEC60068-2-6 (Vibration) 140-500 Hz, 4G, 3 axes IEC60068-2-32 (Drop) 10 total drops from sides, corner, edges
UL	Class 1 Division 2 Listed File: E245458

UL INFORMATION

UL LISTED

Suitable for use in Class 1, Division 2, Groups A, B, C and D Hazardous Locations, or Nonhazardous locations only.
WARNING - EXPLOSION HAZARD – DO NOT DISCONNECT EQUIPMENT WHILE THE CIRCUIT IS LIVE UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITABLE CONCENTRATIONS.
WARNING - EXPLOSION HAZARD - SUBSTITUTION OF ANY COMPONENT MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2
Install in accordance with control drawing number 9340R0.

Ind. Cont. Eq.
For HAZ LOC
3HTV
E245458
Class I, Div. 2, Groups A, B, C & D
Temp. Code: T4A

4-Port Industrial USB Hub

UH104

PRODUCT FEATURES

- High Retention USB Connectors
- 15 kV ESD Protection
- Rugged Panel Mount Case
- Wide Operating Temperature (-40 to 80°C)
- USB 2.0 – High Speed (480 Mbps)

ACCESSORIES

USBAMBM-3F - 0.9 m (3 ft.) USB Extension Cable

ORDERING INFORMATION

MODEL NUMBER	DESCRIPTION
UH104	4-port Industrial USB Hub

(USB cable required - sold separately.)

SPECIFICATIONS

USB INTERFACE		
Standards	USB 2.0	
Upstream Port	(1) Type B Female – High Retention	
Downstream Port	(4) Type A Female – High Retention	
Speed	480 Mbps on each port Multi-transaction Translator, 1 per port	
ESD	15 kV Air, 8 kV Contact	
High Retention	USB ports require 15 N - 3.4 lbs (1.54 kg) force withdrawal force using standard USB cable	
POWER		
Source	5 VDC from USB Bus	
Downstream Power	100 mA per port	
MECHANICAL		
Dimensions	6.1 x 4.45 x 2.79 cm (2.4 x 1.75 x 1.10 in)	
Enclosure	IP 30, Polycarbonate Plastic	
Weight	0.11 lb (49.90 g)	
MTBF	552,747 Hours	
MTBF Calc. Method	MIL 217F Parts Count Reliability	
ENVIRONMENTAL		
Operating Temperature	-40 to 80°C (-40 to 176°F)	
Storage Temperature	-40 to 85°C (-40 to 185°F)	
Operating Humidity	0 to 95% Non-condensing	
APPROVALS / CERTIFICATIONS		
CE		
EN61000-6-1	(Light Industrial)	
EN61000-4-2	(ESD)	+/- 8kV contact, +/-15 kV air
EN61000-4-3	(RI)	3 V/m
EN61000-4-4	(EFT Burst)	+/- 1 kV DC ports +/- 0.5 kV signal ports
EN61000-4-5	(Surge)	+/- 0.5 kV Power
EN61000-4-6	(CI)	3 V/m
OTHER		
IEC60068-2-32	(Drop)	10 total drops from sides, corner, edges
Emissions	FCC Class B, CISPR Class B (EN55022)	

Single-Port USB Isolators

UH401 Series

PRODUCT FEATURES

- 15 kV ESD Protection
- -40 to 80°C Operating Temperature
- High Retention USB Connectors
- Ultra-Compact
- USB Bus Powered
- USB Cable Included

ORDERING INFORMATION

MODEL NUMBER	USB SPEED	ISOLATION
UH401	Full (12 Mbps)	4 kV
UH401SL	Low (1.5 Mbps)	4 kV
UH401-2KV	Full (12 Mbps)	2 kV
UH401SL-2KV	Low (1.5 Mbps)	2 kV

SPECIFICATIONS

TECHNOLOGY	
Standards	USB 1.1, 12 Mbps (UH401 & UH401-2KV) or 1.5 Mbps (UH401SL & UH401SL-2KV) Note: These devices are transparent to the operating system, require no software drivers and will not be enumerated in device manager.
INTERFACE	
USB Ports	High Retention USB Type B (Upstream) , Type A (Downstream), Minimum withdrawal force of 15 Newtons (~3.4 lbs-force)
LED Indicators	Power from USB bus
POWER	
Input Voltage	Standard USB bus power (5VDC)
Downstream Power Provided	Up to 100mA with full power upstream connection
Isolation UH401-2KV Isolation UH401SL-2KV Isolation UH401 Isolation UH401SL	2KV 2KV, 4KV 4KV
ENVIRONMENTAL	
Operating Temperature	-40 to 80° C (-40 to 176° F)
MTBF	1,049,851 hours
MTBF Calculation	MIL 217F Parts count reliability prediction
MECHANICAL	
Enclosure	IP30 plastic case
Dimensions	4.32 x 5.08 x 2.03 cm (1.7 x 2.0 x 0.8 in)
APPROVALS/CERTIFICATIONS	
Emissions	FCC Class A, CISPR Class A (EN55022)
CE	EN61000-6-2:2005 (Heavy Industry) EN61000-4-2:2008 (ESD +/-8kV Contact, +/-15kV Air EN61000-4-3:2006 (RI) 10V/m, 80-1000MHz; 3V/m, 1.3 to 2.7 GHz EN61000-4-4:2004 (EFT Burst) +/-2kV DC ports; +/-1kV signal ports EN61000-4-5:2005 (Surge) +/-500V DC ports ; +/-1kV signal ports EN61000-4-6:2005 (CI) 10Vrms, 0.15 to 80 MHz EN61000-4-8:2001 (Magnetic) 10A/m, 50Hz & 60Hz

Spectre Network Gateway

Compatible with Wzzard Intelligent Edge Nodes

PRODUCT FEATURES

- 802.15.4e SmartMesh IP radio
- 10/100 Ethernet network interface
- EV-DO/CDMA and HSPA+/GPRS/GSM cellular network interface
- Communicates with Wzzard Intelligent Edge Nodes
- Industrial design - wide operating range (-30 to +60 C)
- 10-30 VDC power
- Class 1/Division 2 Certified

ORDERING INFORMATION

SPECTRE NETWORK GATEWAY MODEL NUMBERS	
ERT351	Ethernet Network Gateway with 2 Ethernet ports, wireless mesh 802.15.4e, AC power adapter
RT3G-350	Cellular/Ethernet Network Gateway with 1 Ethernet port, wireless mesh 802.15.4e, 3G cellular, AC power adapter
RT3G-351	Cellular/Ethernet Network Gateway with 2 Ethernet ports, wireless mesh 802.15.4e, 3G cellular, AC power adapter
RT3G-352	Cellular/Ethernet Network Gateway with 1 Ethernet port, 1 RS-232 port, wireless mesh 802.15.4e, 3G cellular, AC power adapter
RT3G-354	Cellular/Ethernet Network Gateway with 1 Ethernet port, 1 RS-485 port, wireless mesh 802.15.4e, 3G cellular, AC power adapter

USA, Canada. Check with your local distributor for availability and options.

SPECIFICATIONS

INTERFACES	
Standard	
Ethernet	10/100 Mbps
USB	USB Type A host
Binary I/O	1 input / 1 output
SIM Card	1 SIM card port
802.15.4E radio	
Expansion Port Options	
	Ethernet 10/100 Mbps RS-232 RS-422/485
ANTENNA:	
SMA – 50 Ohms	
3G: 2 dBi, penta band, right angle dipole (2 included)	
802.15.4e, 2.4 GHz, 5 dBi (1 included)	
3G CELLULAR FREQUENCY BANDS	
Quad Band UMTS (WCDMA): 850, 900,1900 and 2100 MHz	
Quad-Band GSM/GPRS/EDGE: 850, 900, 1800 and 1900 MHz	
POWER	
Source	10 – 30 VDC
Consumption	2.3W receive mode Up to 3.5 W (GPRS transmission) Up to 5.5 W (UMTS/HSDPA transmission)
MECHANICAL	
Dimensions	1.7 x 3.0 x 4.5 in (42 x 80 x 113 mm), 35mm DIN rail
Enclosure	Metal
Weight	150 g
ENVIRONMENTAL	
Operating Temperature	-30 to +60°C
Storage Temperature	-40 to +85°C

FEATURES -- SMARTMESH IP RADIO -- 802.15.4E -- 2.4 GHZ					
Parameter	Conditions	Min	Typ	Max	Units
Frequency Band		2400		2.4835	GHz
Number of Channels			15		
Channel Separation			5		MHz
Channel Clear Frequency			2405 + 5*(k-11)		MHz
Modulation	IEEE 802.15.4 Direct Sequence Spread Spectrum (DSSS)				
Raw Data Rate			250		kbps
Range	25°C, 50% RH, +2dBi Omni-Directional Antenna, Antenna 2 m	m			
	Indoor		100		m
	Outdoor		300		m
Free Space			1200		m
Receiver Sensitivity	Packet Data Error Rate (PER) = 1%			-93	dBm
Receiver Sensitivity	PER = 50%			-95	dBm
Output Power -- Delivered to a 50 Ω load					
High Calibration Setting				8	dBm
Low Calibration Setting				0	dBm

NETWORKING AND SECURITY
DHCP – automatic IP addressing in LAN network
NAT – IP address and ports translation between inside/outside network
Firewall – filtering of addresses, ports, protocols
VRRP – virtual backup router function
DynDNS client – access to the router with a dynamic IP address
QoS – quality of service
Dial-in – Communicate via CSD call
PPPoE Bridge – PPP frames encapsulation inside ETH frames
IPsec, OpenVPN, L2TP – secure encrypted tunnels
GRE tunnel – simple tunnel without security measures
CONFIGURATION AND DIAGNOSTICS
HTTP server – configuration via web server
Telnet – configuration and access to the file system
SNMP – router diagnostics, communication with I/O and M-Bus
Cellular state signalization by LED
On-line info on cellular signal status (level, cell, neighbors)
SMS info – power on, cellular connection or disconnection
SMS control – on/off cellular connection, switch SIM, I/O, etc.
Transferred data counting, one more APN as backup
Remote router group configuration change, switching among configuration profiles
SSH – encrypted configuration and access to the file system

APPROVALS / CERTIFICATIONS	
	FCC Part 15, CE Class 1/Division 2
Certifications	AT&T, Verizon, PTCRB (Contact B&B Electronics for the latest approvals.)
CE	EN 301 511, v9.0.2 EN 301 908-1&2, v3.2.1 ETSI EN 301 489-1 V1.8.1 EN 60950-1:06 ed.2 + A11:09 + A1:10
Emission	EN 55022/B
Immunity	ETS 300 342 immunity
Safety	EN 60950
Isolation	EN 60747 isolation

Wzzard™ Intelligent Edge Node

With SmartMesh IP and Bluetooth LE

PRODUCT FEATURES

- Ultra low power 802.15.4e SmartMesh IP technology
- Communicates with Spectre Network Gateway via highly scalable and reliable wireless mesh networks
- Connect to industry standard analog or digital sensors
- Wzzard app lets you read or configure the nodes using Android tablets and smart phones
- Rugged, IP66-rated, fiber reinforced polyester PBT enclosure
- MQTT and JSON IoT protocol to application platform
- Class 1 DIV 2 approved for hazardous locations

ACCESSORIES

ACH2-DBAT-DP003 - External Antenna, 2.4 GHz, 2 dBi, Dipole, RP-SMA, hinged, 3.8 dBi

ACH2-AT-DP011 - Magnetic Mount Antenna, 2.4 GHz, 3.8 dBi

WSCAC0-6 - Pigtail Cable 6 ft (1.8m)

ZXTMT - Cable Gland/Conduit Kit

ORDERING INFORMATION

MODEL NUMBER	THERMOCOUPLE INPUT
WSD2CTJ	Wireless Mesh 802.15.4e, 2 Thermocouple J-type Inputs, 1 Digital Output; External Antenna, Conduit Connector
WSD1CTJ	Wireless Mesh 802.15.4e, 2 Thermocouple J-type Inputs, 1 Digital Output; Internal Antenna, Conduit Connector
WSD2CTK	Wireless Mesh 802.15.4e, 2 Thermocouple K-type Inputs, 1 Digital Output; External Antenna, Conduit Connector
WSD1CTK	Wireless Mesh 802.15.4e, 2 Thermocouple K-type Inputs, 1 Digital Output; Internal Antenna, Conduit Connector
MODEL NUMBER	**ACCELEROMETER**
WSD2XV0	Wireless Mesh 802.15.4e Integrated Accelerometer; External Antenna
WSD1XV0	Wireless Mesh 802.15.4e Integrated Accelerometer; Internal Antenna
MODEL NUMBER	**ANALOG INPUT**
WSD2MA2	Wireless Mesh 802.15.4e; 2 Analog Inputs, 1 Digital Output; External Antenna, M12 Connector
WSD1MA2	Wireless Mesh 802.15.4e; 2 Analog Inputs, 1 Digital Output; Internal Antenna, M12 Connector
WSD2CA2	Wireless Mesh 802.15.4e; 2 Analog Inputs, 1 Digital Output; External Antenna, Conduit Connector
WSD1CA2	Wireless Mesh 802.15.4e; 2 Analog Inputs, 1 Digital Output; Internal Antenna, Conduit Connector
WSD2CJA	Wireless Mesh 802.15.4e; 2 Analog Inputs, 1 Digital Output, 2 Thermocouple J-type Inputs; External Antenna, Conduit Connector
WSD2MA3	Wireless Mesh 802.15.4e; 3 Analog Inputs; External Antenna, M12 Connector
WSD1MA3	Wireless Mesh 802.15.4e; 3 Analog Inputs; Internal Antenna, M12 Connector
WSD2CA3	Wireless Mesh 802.15.4e; 3 Analog Inputs; External Antenna, Conduit Connector
WSD1CA3	Wireless Mesh 802.15.4e; 3 Analog Inputs; Internal Antenna, Conduit Connector
MODEL NUMBER	**DIGITAL INPUT**
WSD2MD2	Wireless Mesh 802.15.4e; 2 Digital Inputs, 2 Digital Outputs; External Antenna, M12 Connector
WSD1MD2	Wireless Mesh 802.15.4e; 2 Digital Inputs, 2 Digital Outputs; Internal Antenna, M12 Connector
WSD2CD2	Wireless Mesh 802.15.4e; 2 Digital Inputs, 2 Digital Outputs; External Antenna, Conduit Connector
WSD1CD2	Wireless Mesh 802.15.4e; 2 Digital Inputs, 2 Digital Outputs; Internal Antenna, Conduit Connector

SPECIFICATIONS

POWER	
Internal	(2) 3.6V 2400 mAH Lithium Thionyl Chloride AA batteries
Battery Life	Multiyear based on 1 min sensor sampling and reporting
Optional External Input Voltage	3.3 VDC +/- 5%
MECHANICAL	
Physical Connection	M12 Connector 1/2" (12.7 mm) Conduit, sensor interface cable included; 8 wire, 26 gage, 6 ft. (1.8 m)
Sensor Inputs	Analog Input (0 - 5 VDC, 0 – 20 mA, 4 – 20 mA) Digital Input (0-48 VDC) Digital Input Frequency 1-1K Hz (Accuracy + or – 1 Hz) Digital Input Counter Integrated Accelerometer 3 Axis Integrated Temperature Thermocouple J, K Type Digital Output (0-30 VDC)
Optional External Antenna	RP-SMA, Omnidirectional, 3.8 dBi, 2.4 GHz Dimensions 7.64 inches (194 mm)
Mounting	Magnetic mounting via internal magnet Pull force 4.7 lbs (2.13 kg) (4) Mounting ears, M5 (#10)
Enclosure	IP66-rated, fiber reinforced polyester PBT
Weight	0.75 lbs (0.34 kg)
TECHNOLOGY	
Wireless	802.15.4e, SmartMesh IP
Protocols	MQTT-SN, MQTT, JSON
Bluetooth	Bluetooth 4.0 Low Energy (LE)
LED	Network Connectivity
ENVIRONMENTAL	
Installation	Indoor or outdoor
Operating Temperature	-40 to 80°C (-40 to 176°F)
Storage Temperature	-40 to 85°C
Operating Humidity	0 to 95% Non-condensing
WIRELESS SECURITY	
Device Authentication	
128 bit AES-based encryption with multiple keys	
Message integrity check (MIC)	
Synchronized key changeovers	
Customized key rotation	