IKS-6700A and IKS-6728A-8PoE Series Quick Installation Guide

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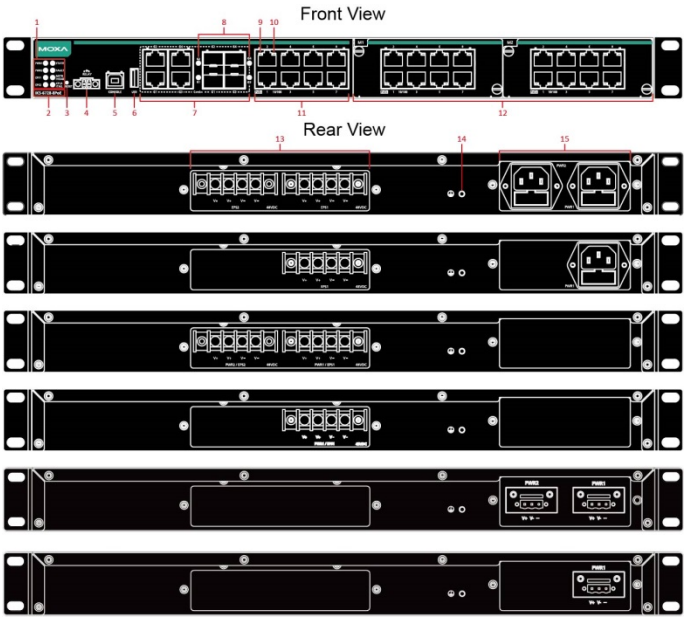
Package Checklist

The Moxa IKS-6700A/IKS-6728A-8PoE industrial rackmount switch is shipped with the following items. If any of these items are missing or damaged, please contact your customer service representative for assistance.

- IKS-6700A/IKS-6728A-8PoE switch
- USB cable (Type A male to Type B male)
- 4 protective caps for unused ports
- Power cord
- 2 rackmount ears
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card

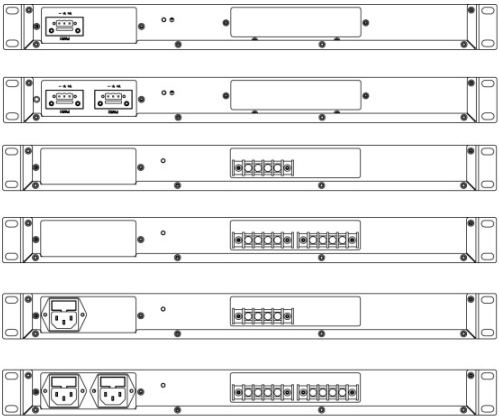
Panel Layouts

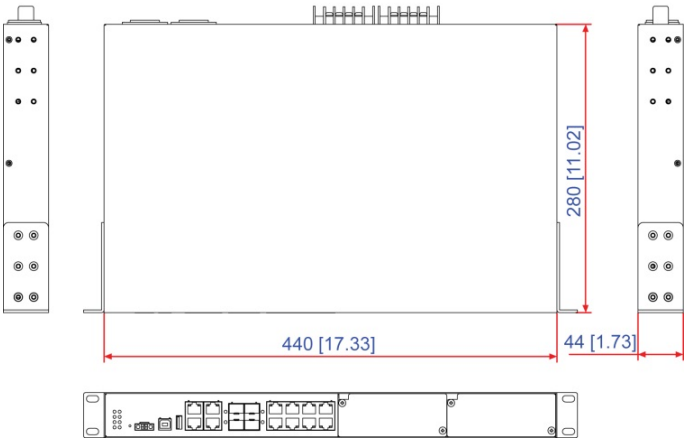


1. System status LEDs
2. Model name
3. Reset button
4. Terminal block for relay output
5. USB serial console port
6. USB storage port (ABC-02-USB-T)
7. 10/100/1000BaseT(X) or 100/1000Base SFP combo ports
8. 100/1000Base SFP port status LEDs
9. PoE+ status LEDs (IKS-6728A-8PoE series only)
10. 10/100BaseT(X) port status LEDs
11. Fast Ethernet or PoE+ interface ports
12. Fast Ethernet or PoE+ interface modules
13. Terminal blocks for DC power inputs
14. Grounding screw

15. Power sockets for AC power inputs or terminal blocks for DC power inputs

Dimensions





Unit = mm (inch)

Fast Ethernet Interface Modules (IM-6700A Series)


IM-6700A-8PoE


IM-6700A-2MSC4TX
IM-6700A-2SSC4TX


IM-6700A-2MST4TX


IM-6700A-4MSC2TX
IM-6700A-4SSC2TX


IM-6700A-4MST2TX


IM-6700A-6MST


IM-6700A-6SSC
IM-6700A-6MSC


IM-6700A-8SFP


IM-6700A-8TX

Grounding the Moxa Industrial Rackmount Switch

Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). Run the ground connection from the ground screw to the grounding surface prior to connecting devices.

NOTE Using a shielded cable achieves better electromagnetic compatibility.

Connecting the Power Inputs

The IKS-6728A-8PoE switches support 4 types of power supply.

- IKS-6728A-8PoE-4GTXSFP-HV-HV-T: Two isolated 110/220 VAC (85 to 264 VAC) power supplies for switch and two isolated 48 VDC power inputs for PoE+ ports
- IKS-6728A-8PoE-4GTXSFP-HV-T: One isolated 110/220 VAC (85 to 264 VAC) power supply for the switch and one isolated 48 VDC power input for the PoE+ ports
- IKS-6728A-8PoE-4GTXSFP-48-48-T: Two isolated 48 VDC power supplies for switch and PoE+ ports
- IKS-6728A-8PoE-4GTXSFP-48-T: One isolated 48 VDC power supply for switch and PoE+ ports

For the HV models, the 110/220 VAC power supplies provide power for switch operation. Separate 48 VDC power supplies are required to provide power to all PoE+ ports (50 to 57 VDC is recommended for IEEE 802.3at devices).

For the 48 VDC models, the 48 VDC power supplies provide power for switch operation and to all PoE+ ports (50 to 57 VDC is recommended for IEEE 802.3at devices).

The IKS-6700A switches support 3 types of power supply:

- IKS-6726A/6728A HV series: Two isolated 110/220VAC (85 to 264 VAC) power supplies for switch
- IKS-6726A/6728A 24/48VDC series: Two isolated 24 or 48VDC power supplies for switch

Wiring Requirements

WARNING

Do not disconnect modules or wires unless power has been switched off or the area is known to be non-hazardous. The device may only be connected to the supply voltage shown on the type plate. The device is designed for operation with a Safety Extra-Low Voltage (SELV) or an isolated power supply, which means that they may only be connected to the supply voltage connections and to the signal contact with a SELV or an isolated power supply in compliance with IEC 60950-1/EN 60950-1 or UL 508.

AC Power Inlets

The connection for PWR1 (power supply 1) and PWR2 (power supply 2) are located on the rear panel (shown below). Be sure to use a standard power cord with an IEC C13 connector, which is compatible with the AC power inlet.

DC Power Terminal Blocks

The connection for EPS1 (external power supply 1) / PWR1 (power supply 1) and EPS2 (external power supply 2) / PWR2 (power supply 2) are located on the rear panel (shown below).

IKS-6728A-8PoE-4GTXSFP-HV-HV-T

IKS-6728A-8PoE-4GTXSFP-HV-T

IKS-6728A-8PoE-4GTXSFP-48-48-T

IKS-6728A-8PoE-4GTXSFP-48-T

IKS-6726A-2GTXSFP/6728A-4HTXSFP-24-24-T
IKS-6726A-2GTXSFP/6728A-4HTXSFP-48-48-T

IKS-6726A-2GTXSFP/6728A-4GTXSFP-24-T
IKS-6726A-2GTXSFP/6728A-4GTXSFP-48-T

STEP 1: Insert the negative/positive DC wires into the V-/V+ terminals, respectively.

STEP 2: To keep the DC wires from pulling loose, use a screwdriver to tighten the wire-clamp screws.

Wiring the Relay Contact

Each switch has one relay output.

FAULT:
The relay contact of the 2-pin terminal block connector is used to detect user-configured events. The two wires attached to the fault contacts form an open circuit when a user-configured event is triggered. If a user-configured event does not occur, the fault circuit remains closed.

USB Connection

The switch has two USB ports, one type B USB-serial console port and one type A USB host port, located on the front panel. Use a USB cable (type A male to type B male) to connect the USB-serial console port to your PC's COM port, and install the USB driver (available in the software CD) on the PC. You may then use a console terminal program, such as Moxa's PComm Terminal Emulator, to access the console configuration utility of the switch.

Use Moxa's USB Automatic Backup Configurator ABC-02-USB to connect to the USB host port to backup and restore configuration files, auto-load configuration files, upgrade firmware, and backup system log files.


Type B


Type A

The Reset Button

Depress the Reset button for five continuous seconds to load the factory default settings. Use a pointed object, such as a straightened paper clip or toothpick, to depress the Reset button. When you do so, the STATE LED will start to blink about once per second. Continue to depress the STATE LED until it begins blinking more rapidly; this indicates that the button has been depressed for five seconds and you can release the Reset button to load factory default settings.

NOTE DO NOT power off the switch when loading default settings

LED Indicators

The front panel of the IKS switch contains several LED indicators. The function of each LED is described in the table below.

LED	Color	State	Description
System LEDs			
PWR1*	AMBER	On	Power is being supplied to the main module's power input PWR1
		Off	Power is not being supplied to the main module's power input PWR1
PWR2*	AMBER	On	Power is being supplied to the main module's power input PWR2
		Off	Power is not being supplied to the main module's power input PWR2
EPS1	AMBER	On	Power is being supplied to the PoE+ power input EPS1
		Off	Power is not being supplied to the PoE+ power input EPS1
EPS2	AMBER	On	Power is being supplied to the PoE+ power input EPS2
		Off	Power is not being supplied to the PoE+ power input EPS2
*: On the IKS-6700A/IKS-6728A-8PoE-4GTXSFP-48-48-T model, both PWR1 and PWR2 LED will be "On" with a single power input. This is because both internal power units are operating as redundant secondary power with the single input.			

LED	Color	State	Description
STATE	GREEN	On	System has passed self-diagnosis test on boot-up and is ready to run
		Blinking	1. System is undergoing the self-diagnosis test 2. Blink continuously when pressing the reset button 5 seconds to reset to factory default 3. Blink slowly when an ABC-02 automatic backup device is detected
	RED	On	System failed self-diagnosis on boot-up
FAULT	RED	On	System is in the event of failure, or is under quick inspection
		Off	System is in normal operation
MSTR/ HEAD	GREEN	On	When the IKS-6700A/IKS-6728A-8PoE is set as the Master of the Turbo Ring, or as the Head of the Turbo Chain
		Blinking	The IKS-6700A/IKS-6728A-8PoE has become the Ring Master of the Turbo Ring, or the Head of the Turbo Chain, after the Turbo Ring or the Turbo Chain is down
		Off	The IKS-6700A/IKS-6728A-8PoE is not the Master of this Turbo Ring or is set as a Member of the Turbo Chain
CPLR/ TAIL	GREEN	On	When the IKS-6700A/IKS-6728A-8PoE coupling function is enabled to form a back-up path, or when it's set as the Tail of the Turbo Chain
		Blinking	When the Turbo Chain is down
		Off	When this IKS-6700A/IKS-6728A-8PoE switch disables the coupling function
When the system is importing/exporting data from or to an ABC-02-USB automatic backup device, the FAULT, MSTR/HEAD, and CPLR/TAIL LEDs will blink in sequence.			
Port Status LEDs			
G1 to G4 (1000M TP ports, left LED on the connector)	GREEN	On	The corresponding port's 1000 Mbps link is active
		Blinking	Data is being transmitted at 1000 Mbps
		Off	The corresponding port's 1000 Mbps link is inactive
G1 to G4 (10/100M TP ports, right LED on the connector)	GREEN	On	The corresponding port's 10/100 Mbps link is active
		Blinking	Data is being transmitted at 10/100 Mbps
		Off	The corresponding port's 10/100 Mbps link is inactive
G1 to G4 (100/1000M Fiber Optic ports)	GREEN	On	Fiber optic port's 1000 Mbps link is active
		Blinking	Data is being transmitted at 1000 Mbps
		Off	Fiber Optic port's 1000 Mbps link is inactive
	AMBER	On	Fiber optic port's 100 Mbps link is active
		Blinking	Data is being transmitted at 100 Mbps
		Off	Fiber Optic port's 100 Mbps link is inactive

LED	Color	State	Description
P1 to P8 (10/100M TP ports)	GREEN	On	The corresponding port's 100 Mbps link is active
		Blinking	Data is being transmitted at 100 Mbps
		Off	The corresponding port's 100 Mbps link is inactive
	AMBER	On	The corresponding port's 10 Mbps link is active
		Blinking	Data is being transmitted at 10 Mbps
		Off	The corresponding port's 10 Mbps link is inactive
P1 to P8 (PoE+ ports)	GREEN	On	The corresponding port is connected to an IEEE 802.3at power device
		Blinking	Over current or short circuit on the power device with IEEE 802.3at standard
		Off	The corresponding port is not connected to a power device with IEEE 802.3at standard
	AMBER	On	The corresponding port is connected to a power device with IEEE 802.3af standard
		Blinking	**Once per second:** Detecting error on the power device **Twice per second:** Over current or short circuit on the power device with IEEE 802.3af standard
		Off	The corresponding port is not connected to a power device with IEEE 802.3af standard

Specifications

Technology	
Standards	IEEE 802.3af/at for Power-over-Ethernet IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3ab for 1000BaseT(X) IEEE 802.3z for 1000BaseX IEEE 802.3x for Flow Control IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1w for Rapid STP IEEE 802.1s for Multiple Spanning Tree Protocol IEEE 802.1Q for VLAN Tagging IEEE 802.1p for Class of Service IEEE 802.1X for Authentication IEEE 802.3ad for Port Trunk with LACP
Protocols	IGMP v1/v2, GMRP, GVRP, SNMPv1/v2c/v3, DHCP Server/Client, BootP, TFTP, SNTP, SMTP, RARP, RMON, HTTP, HTTPS, Telnet, SSH, Syslog, DHCP Option 66/67/82, EtherNet/IP, Modbus/TCP, PROFINET, LLDP, IEEE 1588 PTP V2, IPv6, NTP Server/Client
MIB	MIB-II, Ethernet-like MIB, P-BRIDGE MIB, Q-BRIDGE MIB, Bridge MIB, RSTP MIB, RMON MIB Group 1, 2, 3, 9
Flow Control	IEEE 802.3x flow control, back pressure flow control

Interface	
Fast Ethernet	8-port 10/100Base T(X) or PoE+ 10/100BaseT(X) 2 modular slots for any 8-, or 6-port Interface Modules with 10/100BaseT(X), 100BaseFX (SC/ST connector), 100Base SFP, or PoE+ 10/100BaseT(X)
Gigabit Ethernet	2- or 4-port 10/100/1000BaseT(X) or 100/1000Base SFP
Console Port	USB-serial console (Type B connector)
LED Indicators	PWR1, PWR2, EPS1, EPS2, STATE, FAULT, MSTR/HEAD, CPLR/TAIL
Alarm Contact	1 relay output with current carrying capacity of 2 A @ 30 VDC
Power Requirements	
Input Voltage	IKS-6700A Series: 24 VDC models: 24 VDC 48 VDC models: 48 VDC HV models: 110/220 VAC IKS-6728A-8PoE Series: 48 VDC models: 48 VDC (46 to 57 VDC) for switch and PoE system HV models: 110/220 VAC for switch system, 48 VDC for PoE system (53 to 57 VDC is recommended for PoE+ devices)
Input Current (without IM-6700 modules consumption)	IKS-6700A Series: Max. 0.36 A @ 24 VDC Max. 0.19 A @ 48 VDC Max. 0.28/0.14 A @ 110/220 VAC IKS-6728A-8PoE: HV models: PWR input current (switch system): Max. 0.33 A @ 110 VAC Max. 0.24 A @ 230 VAC EPS input current (PoE system): Max. 0.29 A @ 48 VDC (excluding power consumption of PoE devices) 48 VDC models: PWR/EPS input current (switch and PoE systems): Max. 0.53 A @ 48 VDC (excluding power consumption of PoE devices) Max. 17.81A @ 46-57 VDC (including power consumption of PoE devices in high power mode)
Inrush Current	IKS-6700A Series: Max. 46.2A @ 24VDC (0.1 - 1ms) Max. 37.4A @ 48VDC (0.1 - 1ms) Max. 13.1A @ 110VAC (0.1 - 1ms) Max. 27.5A @ 220VAC (0.1 - 1ms) IKS-6728A-8PoE Series: Max. 46.2A @ 24VDC (0.1 - 1ms) Max. 37.4A @ 48VDC (0.1 - 1ms) Max. 23.8A @ 54VDC (0.1 - 1ms) Max. 15.4A @ 110VAC (0.1 - 1ms) Max. 31.7A @ 220VAC (0.1 - 1ms)
Overload Current Protection	Present
Reverse Polarity	Present

Protection	
Physical Characteristics	
Housing	IP30 protection
Dimensions	440 x 44 x 280 mm (17.32 x 1.37 x 11.02 in)
Weight	IKS-6700A/IKS-6728A-8PoE-4GTXSFP-HV-HV-T: 4250 g IKS-6700A/IKS-6728A-8PoE-4GTXSFP-HV-T: 4150 g IKS-6700A/IKS-6728A-8PoE-4GTXSFP-48-48-T: 4250 g IKS-6700A/IKS-6728A-8PoE-4GTXSFP-48-T: 4150 g IKS-6726A/6728A series: 4100 g
Installation	19” rack mounting
Environmental Limits	
Operating Temp.	-40 to 75°C (-40 to 167°F)
Storage Temp.	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Standards and Certifications	
Safety	UL 60950-1, EN 60950-1
EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: Signal: 10 V IEC 61000-4-8
Note: For better conductive radiation immunity, STP cable is recommended.	
Maritime	DNV, GL, LR, ABS, NK (for IKS-6700A Series)
Rail Traffic	EN 50121-4
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Warranty	
Warranty Period	5 years
Details	See www.moxa.com/warranty

Rack Mounting Instructions

1. **Elevated Operating Ambient:** If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

NOTE In order to ensure reliable operations, please make sure the operating temp. of the environment does not exceed the spec. When mounting an IKS rack-mounted switch with other operating units in a cabinet without forced ventilation, it is recommended that 1U of space is reserved between each rack-mounted switch and/or device.

2. **Reduced Air Flow:** Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
3. **Mechanical Loading:** Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
4. **Circuit Overloading:** Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

5. **Reliable Grounding:** Reliable grounding of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

NOTE The rackmount ears can be equipped on the front or rear of Moxa IKS-6700A/IKS-6728-8PoE switch.

Restricted Access Locations

- This equipment is intended to be used in Restricted Access Locations, such as a computer room, with access limited to SERVICE PERSONAL or USERS who have been instructed on how to handle the metal chassis of equipment that is so hot that special protection may be needed before touching it. The location should only be accessible with a key or through a security identity system.
- External metal parts of this equipment are extremely hot!! Before touching the equipment, you must take special precautions to protect your hands and body from serious injury.

Patent http://www.moxa.com/doc/operations/Moxa_Patent_Marking.pdf

ATTENTION

1. To protect against the risk of fire, only replace the fuse with one that has the same type and rating.

2. It is recommended to incorporate a readily accessible disconnect device into the building installation wiring. Importantly, ensure the power supply is disconnected before performing any maintenance.

3. This equipment is designed to connect the earthed conductor of the D.C supply circuit to the equipment's' earthing conductor.

4. It is recommended to keep the PoE network indoors when using Information Technology Equipment.