# IKS-6728A Series

*24+4G-port Gigabit modular managed PoE+ Ethernet switches*



### Features and Benefits

- 8 built-in PoE+ ports compliant with IEEE 802.3af/at (IKS-6728A-8PoE)
- Up to 36 W output per PoE+ port (IKS-6728A-8PoE)
- 1 kV LAN surge protection for extreme outdoor environments
- PoE diagnostics for powered-device mode analysis
- 4 Gigabit combo ports for high-bandwidth communication
- -40 to 75°C operating temperature range at 720 W full loading
- Supports MXstudio for easy, visualized industrial network management
- V-ON™ ensures millisecond-level multicast data and video network recovery

### Certifications

EN 50121-4

## Introduction

The IKS-6728A Series is designed to meet the demands of mission-critical applications for business and industry. The IKS-6728A and IKS-6728A-8PoE come with up to 24 10/100BaseT(X), or PoE/PoE+, and 4 combo Gigabit Ethernet ports. The IKS-6728A-8PoE Ethernet switches provide up to 30 watts of power per PoE+ port in standard mode, and also support high-power output of up to 36 watts for heavy-duty industrial PoE devices, such as weather-proof IP surveillance cameras with wipers/heaters, high-performance wireless access points, and rugged IP phones.

IKS-6728A-8PoE Ethernet switches support two types of power input sources: 48 VDC for PoE+ ports and system power, and 110/220 VAC for system power. These Ethernet switches also support a variety of management functions, including STP/RSTP, Turbo Ring, Turbo Chain, PoE power management, PoE device auto-checking, PoE power scheduling, PoE diagnostic, IGMP, VLAN, QoS, RMON, bandwidth management, and port mirroring. The IKS-6728A-8PoE is designed especially for harsh outdoor applications with 3kV surge protection to ensure the uninterrupted reliability of PoE systems.

### Additional Features and Benefits

- Advanced PoE management functions: PoE output setting, PD failure check, PoE scheduling, and PoE diagnostics
- Command line interface (CLI) for quickly configuring major managed functions
- DHCP Option 82 for IP address assignment with different policies
- Supports EtherNet/IP, PROFINET, and Modbus TCP protocols for device management and monitoring
- Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches), and STP/RSTP/MSTP for network redundancy
- IGMP snooping and GMRP for filtering multicast traffic
- Port-based VLAN, IEEE 802.1Q VLAN, and GVRP to ease network planning
- QoS (IEEE 802.1p/1Q and TOS/DiffServ) to increase determinism
- IEEE 802.3ad, LACP for optimum bandwidth utilization
- TACACS+, IEEE 802.1X, SNMPv3, HTTPS, and SSH to enhance network security
- SNMPv1/v2c/v3 for different levels of network management
- RMON for proactive and efficient network monitoring
- Bandwidth management prevents unpredictable network status with “Lock port” to restrict access to authorized MAC addresses
- Port mirroring for online debugging
- Automatic warning by exception through email and relay output
- Automatic recovery of connected device’s IP addresses
- Line-swap fast recovery
- Configurable by web browser, Telnet/serial console, CLI, Windows utility, and ABC-02-USB automatic backup configurator

## Specifications

### Input/Output Interface

| | |
|---|---|
| Alarm Contact Channels | 1 relay output with current carrying capacity of 1 A @ 24 VDC |

### Ethernet Interface

| | |
|---|---|
| 10/100BaseT(X) Ports (RJ45 connector) | 8 |
| Combo Ports (10/100/1000BaseT(X) or 100/1000BaseSFP) | 4 |

| | |
|---|---|
| Module | 2 modular slots for any 8-port or 6-port Interface Modules with 10/100BaseT(X), 100BaseFX (SC/ST connector), 100Base PoE/PoE+, or 100Base SFP[1] |
| Standards | IEEE 802.1D-2004 for Spanning Tree Protocol<br>IEEE 802.1p for Class of Service<br>IEEE 802.1Q for VLAN Tagging<br>IEEE 802.1s for Multiple Spanning Tree Protocol<br>IEEE 802.1w for Rapid Spanning Tree Protocol<br>IEEE 802.1X for authentication<br>IEEE 802.3 for 10BaseT<br>IEEE 802.3ab for 1000BaseT(X)<br>IEEE 802.3ad for Port Trunk with LACP<br>IEEE 802.3u for 100BaseT(X) and 100BaseFX<br>IEEE 802.3x for flow control<br>IEEE 802.3z for 1000BaseSX/LX/LHX/ZX |

### Ethernet Software Features

| | |
|---|---|
| Management | Back Pressure Flow Control, BOOTP, DDM, DHCP Option 66/67/82, DHCP Server/Client, Flow control, IPv4/IPv6, LLDP, Port Mirror, RARP, RMON, SMTP, SNMP Inform, SNMPv1/v2c/v3, Syslog, Telnet, TFTP |
| Filter | 802.1Q, GMRP, GVRP, IGMP v1/v2/v3 |
| Redundancy Protocols | Link Aggregation, MSTP, RSTP, STP, Turbo Chain, Turbo Ring v1/v2, V-ON |
| Security | Access control list, Broadcast storm protection, HTTPS/SSL, MAB authentication, NTP authentication, Port Lock, RADIUS, SSH, TACACS+ |
| Time Management | NTP Server/Client, SNTP |
| Industrial Protocols | EtherNet/IP, Modbus TCP, PROFINET |
| MIB | Ethernet-like MIB, MIB-II, P-BRIDGE MIB, Q-BRIDGE MIB, RMON MIB Groups 1, 2, 3, 9, RSTP MIB |

### Switch Properties

| | |
|---|---|
| IGMP Groups | 2048 |
| Jumbo Frame Size | 9.6 KB |
| MAC Table Size | 16 K |
| Max. No. of VLANs | 64 |
| Packet Buffer Size | 12 Mbits |
| Priority Queues | 4 |
| VLAN ID Range | VID 1 to 4094 |

### USB Interface

| | |
|---|---|
| Storage Port | USB Type A |

### Serial Interface

| | |
|---|---|
| Console Port | USB-serial console (Type B connector) |

1. See the IM-6700A datasheet for Fast Ethernet module product information.

## Power Parameters

| | |
|---|---|
| Input Voltage | IKS-6728A-4GTXSFP-24-T: 24 VDC<br>IKS-6728A-4GTXSFP-24-24-T: 24 VDC (redundant dual inputs)<br>IKS-6728A-4GTXSFP-48-T: 48 VDC<br>IKS-6728A-4GTXSFP-48-48-T: 48 VDC (redundant dual inputs)<br>IKS-6728A-4GTXSFP-HV-T: 110/220 VAC<br>IKS-6728A-4GTXSFP-HV-HV-T: 110/220 VAC (redundant dual inputs)<br>IKS-6728A-8PoE-4GTXSFP-48-T: 48 VDC<br>IKS-6728A-8PoE-4GTXSFP-48-48-T: 48 VDC (redundant dual inputs)<br>IKS-6728A-8PoE-4GTXSFP-HV-T: 110/220 VAC<br>IKS-6728A-8PoE-4GTXSFP-HV-HV-T: 110/220 VAC (redundant dual inputs) |
| Operating Voltage | IKS-6728A-4GTXSFP-HV-T: 85 to 264 VAC<br>IKS-6728A-4GTXSFP-HV-HV-T: 85 to 264 VAC<br>IKS-6728A-4GTXSFP-24-T: 18 to 36 VDC<br>IKS-6728A-4GTXSFP-24-24-T: 18 to 36 VDC<br>IKS-6728A-4GTXSFP-48-T: 36 to 72 VDC<br>IKS-6728A-4GTXSFP-48-48-T: 36 to 72 VDC<br>IKS-6728A-8PoE-4GTXSFP-48-T: 36 to 72 VDC<br>IKS-6728A-8PoE-4GTXSFP-48-48-T: 36 to 72 VDC<br>IKS-6728A-8PoE-4GTXSFP-HV-T: 85 to 264 VAC<br>IKS-6728A-8PoE-4GTXSFP-HV-HV-T: 85 to 264 VAC |
| Overload Current Protection | Supported |
| Reverse Polarity Protection | Supported |
| Input Current | IKS-6728A-4GTXSFP-24-T/4GTXSFP-24-24-T: 0.36 A @ 24 VDC<br>IKS-6728A-4GTXSFP-48-T/4GTXSFP-48-48-T: 0.19 A @ 48 VDC<br>IKS-6728A-8PoE-4GTXSFP-48-T/8PoE-4GTXSFP-48-48-T: 0.53 A @ 48 VDC<br>IKS-6728A-4GTXSFP-HV-T/4GTXSFP-HV-HV-T: 0.28/0.14 A @ 110/220 VAC<br>IKS-6728A-8PoE-4GTXSFP-HV-T/8PoE-4GTXSFP-HV-HV-T: 0.33/0.24 A @ 110/220 VAC |

## Physical Characteristics

| | |
|---|---|
| IP Rating | IP30 |
| Dimensions | 440 x 44 x 280 mm (17.32 x 1.37 x 11.02 in) |
| Weight | 4100 g (9.05 lb) |
| Installation | Rack mounting |

## Environmental Limits

| | |
|---|---|
| Operating Temperature | -40 to 75°C (-40 to 167°F) |
| Storage Temperature (package included) | -40 to 85°C (-40 to 185°F) |
| Ambient Relative Humidity | 5 to 95% (non-condensing) |

## Standards and Certifications

| | |
|---|---|
| Freefall | IEC 60068-2-32 |
| EMC | EN 55032/24 |
| EMI | CISPR 32, FCC Part 15B Class A |
| EMS | IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 PFMF |
| Railway | EN 50121-4 |
| Maritime | IKS-6728A Series non-PoE models: ABS, CCS, DNV-GL, LR, NK |
| Safety | EN 60950-1, UL 60950-1 |

| | |
|---|---|
| Shock | IEC 60068-2-27 |
| Vibration | IEC 60068-2-6 |

### MTBF

| | |
|---|---|
| Time | 120,731 hrs |
| Standards | Telcordia (Bellcore), GB |

### Warranty

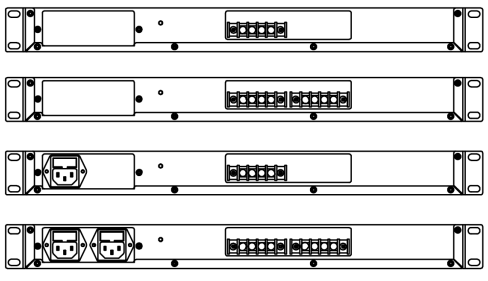
| | |
|---|---|
| Warranty Period | 5 years |
| Details | See www.moxa.com/warranty |

### Package Contents

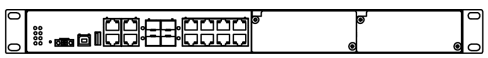
| | |
|---|---|
| Device | 1 x IKS-6728A Series switch |
| Cable | 1 x USB type A male to USB type B male |
| Installation Kit | 2 x rack-mounting ear<br>8 x cap, plastic, for SFP slot |
| Power Supply | IKS-6728A-4GTXSFP-HV-T: 1 x power cord, EU type<br>IKS-6728A-4GTXSFP-HV-HV-T: 2 x power cord, EU type<br>IKS-6728A-8PoE-4GTXSFP-HV-T: 1 x power cord, EU type<br>IKS-6728A-8PoE-4GTXSFP-HV-HV-T: 2 x power cord, EU type<br>IKS-6728A-4GTXSFP-HV-T: 1 x power cord, US type<br>IKS-6728A-4GTXSFP-HV-HV-T: 2 x power cord, US type<br>IKS-6728A-8PoE-4GTXSFP-HV-T: 1 x power cord, US type<br>IKS-6728A-8PoE-4GTXSFP-HV-HV-T: 2 x power cord, US type |
| Documentation | 1 x document and software CD<br>1 x quick installation guide<br>1 x warranty card |
| Note | 1. If you want to turn on PoE, please add a 48 V external power supply.<br>2. 48 V external power supply, SFP modules and/or modules from the IM-6700A Module Series need to be purchased separately for use with this product. |

## Dimensions

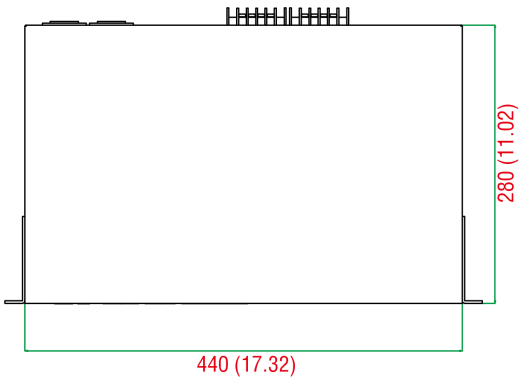
Unit: mm (inch)



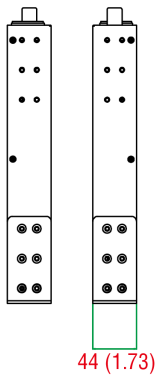
Rear View



Front View




Top View




Side View

## Ordering Information

| Model Name | Combo Ports (10/100/1000BaseT(X) or 100/1000BaseSFP) | 100BaseSFP Slots | 10/100BaseT(X) Ports RJ45 Connector | 100BaseFX Ports | Operating Temp. | Input Voltage | Redundant Dual Input | PoE Support |
|---|---|---|---|---|---|---|---|---|
| IKS-6728A-4GTXSFP-HV-T | 4 | Up to 18 | Up to 24 | Up to 12 | -40 to 75°C | 110/220 VAC power supply | – | – |
| IKS-6728A-4GTXSFP-HV-HV-T | 4 | Up to 18 | Up to 24 | Up to 12 | -40 to 75°C | 110/220 VAC power supply | ✓ | – |
| IKS-6728A-4GTXSFP-24-T | 4 | Up to 18 | Up to 24 | Up to 12 | -40 to 75°C | 24 VDC power supply | – | – |
| IKS-6728A-4GTXSFP-24-24-T | 4 | Up to 18 | Up to 24 | Up to 12 | -40 to 75°C | 24 VDC power supply | ✓ | – |
| IKS-6728A-4GTXSFP-48-T | 4 | Up to 18 | Up to 24 | Up to 12 | -40 to 75°C | 48 VDC power supply | – | – |
| IKS-6728A-4GTXSFP-48-48-T | 4 | Up to 18 | Up to 24 | Up to 12 | -40 to 75°C | 48 VDC power supply | ✓ | – |
| IKS-6728A-8PoE-4GTXSFP-HV-T | 4 | Up to 18 | Up to 24 | Up to 12 | -40 to 75°C | 110/220 VAC power supply | – | Up to 24 PoE ports |
| IKS-6728A-8PoE-4GTXSFP-HV-HV-T | 4 | Up to 18 | Up to 24 | Up to 12 | -40 to 75°C | 110/220 VAC power supply | ✓ | Up to 24 PoE ports |
| IKS-6728A-8PoE-4GTXSFP-48-T | 4 | Up to 18 | Up to 24 | Up to 12 | -40 to 75°C | 48 VDC power supply | – | Up to 24 PoE ports |
| IKS-6728A-8PoE-4GTXSFP-48-48-T | 4 | Up to 18 | Up to 24 | Up to 12 | -40 to 75°C | 48 VDC power supply | ✓ | Up to 24 PoE ports |

## Accessories (sold separately)

### IM-6700A Module Series

| | |
|---|---|
| IM-6700A-2MSC4TX | Fast Ethernet module with 2 multi-mode 100BaseFX ports with SC connectors and 4 10/100BaseT(X) ports |
| IM-6700A-2MST4TX | Fast Ethernet module with 2 multi-mode 100BaseFX ports with ST connectors and 4 10/100BaseT(X) ports |
| IM-6700A-2SSC4TX | Fast Ethernet module with 2 single-mode 100BaseFX ports with SC connectors and 4 10/100BaseT(X) ports |
| IM-6700A-4MSC2TX | Fast Ethernet module with 4 multi-mode 100BaseFX ports with SC connectors and 2 10/100BaseT(X) ports |
| IM-6700A-4MST2TX | Fast Ethernet module with 4 multi-mode 100BaseFX ports with ST connectors and 2 10/100BaseT(X) ports |
| IM-6700A-4SSC2TX | Fast Ethernet module with 4 single-mode 100BaseFX ports with SC connectors and 2 10/100BaseT(X) ports |
| IM-6700A-6MSC | Fast Ethernet module with 6 multi-mode 100BaseFX ports with SC connectors |
| IM-6700A-6MST | Fast Ethernet module with 6 multi-mode 100BaseFX ports with ST connectors |
| IM-6700A-6SSC | Fast Ethernet module with 6 single-mode 100BaseFX ports with SC connectors |
| IM-6700A-8PoE | Fast Ethernet PoE+ module with 8 100BaseT(X) PoE/PoE+ ports (for IKS-6728A-8PoE Series only) |
| IM-6700A-8SFP | Fast Ethernet module with 8 100BaseSFP slots |
| IM-6700A-8TX | Fast Ethernet module with 8 10/100T(X) ports |

### Storage Kits

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|---|---|
| ABC-02-USB | Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, 0 to 60°C operating temperature |

### SFP Modules

| | |
|---|---|
| SFP-1FELLC-T | SFP module with 1 100Base single-mode with LC connector for 80 km transmission, -40 to 85°C operating temperature |

| | |
|---|---|
| SFP-1FEMLC-T | SFP module with 1 100Base multi-mode with LC connector for 4 km transmission, -40 to 85°C operating temperature |
| SFP-1FESLC-T | SFP module with 1 100Base single-mode with LC connector for 40 km transmission, -40 to 85°C operating temperature |
| SFP-1G10ALC | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature |
| SFP-1G10ALC-T | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature |
| SFP-1G10BLC | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature |
| SFP-1G10BLC-T | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature |
| SFP-1G20ALC | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature |
| SFP-1G20ALC-T | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature |
| SFP-1G20BLC | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature |
| SFP-1G20BLC-T | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature |
| SFP-1G40ALC | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature |
| SFP-1G40ALC-T | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature |
| SFP-1G40BLC | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature |
| SFP-1G40BLC-T | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature |
| SFP-1GEZXLC | SFP module with 1 1000BaseEZX port with LC connector for 110 km transmission, 0 to 60°C operating temperature |
| SFP-1GEZXLC-120 | SFP module with 1 1000BaseEZX port with LC connector for 120 km transmission, 0 to 60°C operating temperature |
| SFP-1GLHLC | SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, 0 to 60°C operating temperature |
| SFP-1GLHLC-T | SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, -40 to 85°C operating temperature |
| SFP-1GLHXLC | SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, 0 to 60°C operating temperature |
| SFP-1GLHXLC-T | SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, -40 to 85°C operating temperature |
| SFP-1GLSXLC | SFP module with 1 1000BaseLSX port with LC connector for 500 m transmission, 0 to 60°C operating temperature |
| SFP-1GLSXLC-T | SFP module with 1 1000BaseLSX port with LC connector for 500 m transmission, -40 to 85°C operating temperature |
| SFP-1GLXLC | SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, 0 to 60°C operating temperature |
| SFP-1GLXLC-T | SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, -40 to 85°C operating temperature |
| SFP-1GSXLC | SFP module with 1 1000BaseSX port with LC connector for 300/550 m transmission, 0 to 60°C operating temperature |
| SFP-1GSXLC-T | SFP module with 1 1000BaseSX port with LC connector for 300/550 m transmission, -40 to 85°C operating temperature |
| SFP-1GZXLC | SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, 0 to 60°C operating temperature |
| SFP-1GZXLC-T | SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, -40 to 85°C operating temperature |

## Power Cords

| | |
|---|---|
| PWC-C13AU-3B-183 | Power cord with Australian (AU) plug, 1.83 m |
| PWC-C13CN-3B-183 | Power cord with three-prong China (CN) plug, 1.83 m |
| PWC-C13EU-3B-183 | Power cord with Continental Europe (EU) plug, 1.83 m |
| PWC-C13UK-3B-183 | Power cord with United Kingdom (UK) plug, 1.83 m |
| PWC-C13US-3B-183 | Power cord with United States (US) plug, 1.83 m |
| PWC-C7AU-2B-183 | Power cord with Australian (AU) plug, 2.5A/250V, 1.83 m |
| PWC-C7EU-2B-183 | Power cord with Continental Europe (EU) plug, 2.5A/250V, 1.83 m |
| PWC-C7UK-2B-183 | Power cord with United Kingdom (UK) plug, 2.5A/250V, 1.83 m |
| PWC-C7US-2B-183 | Power cord with United States (US) plug, 10A/125V, 1.83 m |

## Software

| | |
|---|---|
| MXview-50 | Industrial network management software with a license for 50 nodes (by IP address) |
| MXview-100 | Industrial network management software with a license for 100 nodes (by IP address) |
| MXview-250 | Industrial network management software with a license for 250 nodes (by IP address) |
| MXview-500 | Industrial network management software with a license for 500 nodes (by IP address) |
| MXview-1000 | Industrial network management software with a license for 1000 nodes (by IP address) |
| MXview-2000 | Industrial network management software with a license for 2000 nodes (by IP address) |
| MXview Upgrade-50 | License expansion of MXview industrial network management software by 50 nodes (by IP address) |

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