

# 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



## 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 |
| <b>Ethernet Interface</b>                            |   |
| 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 <sup>1</sup>  |
| 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) |
|--------------|---------------------------------------|

#### Power Parameters

|                   |   |
|-------------------|---|
| Input Voltage     | IKS-6728A-24 Series: 24 VDC<br>IKS-6728A-48 Series: 48 VDC<br>IKS-6728A-HV Series: 110/220 VAC<br>IKS-6728A-24-24/48-48/HV-HV Series: Redundant dual inputs |
| Operating Voltage | IKS-6728A-HV Series: 85 to 264 VAC<br>IKS-6728A-24 Series: 18 to 36 VDC   |

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

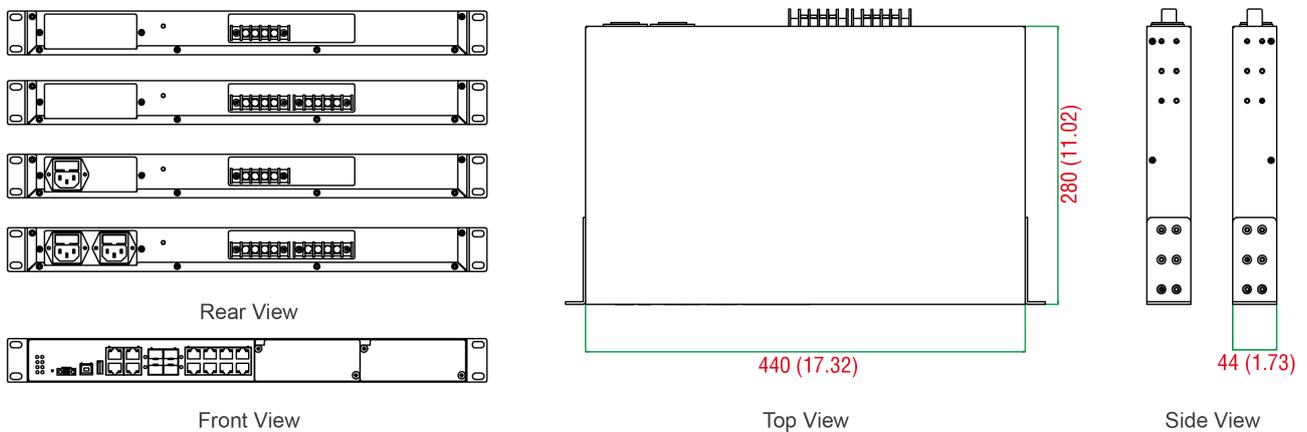
|  |   |
|--|---|
|  | IKS-6728A-48 Series: 36 to 72 VDC   |
| Overload Current Protection            | Supported   |
| Reverse Polarity Protection            | Supported   |
| Input Current                          | IKS-6728A-4GTXSFP-24-T/4GTXSFP-24-24-T: 0.36 A @ 24 VDC<br>IKS-6728A-4GTXSFP-48-T/4GTXSFP-48-48-T: 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 |
| <b>Physical Characteristics</b>        |   |
| 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   |
| <b>Environmental Limits</b>            |   |
| 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)   |
| <b>Standards and Certifications</b>    |   |
| Freefall                               | IEC 60068-2-32  |
| EMC                                    | EN 55032/24   |
| EMI                                    | CISPR 32, FCC Part 15B Class 1  |
| 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   |
| <b>MTBF</b>                            |   |
| Time                                   | 148,687 hrs   |
| Standards                              | Telcordia (Bellcore), GB  |
| <b>Warranty</b>                        |   |
| Warranty Period                        | 5 years   |
| Details                                | See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>  |

## 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     | 1 x power cord, EU and US type (IKS-6728A-HV Series)  |
| Documentation    | 1 x document and software CD<br>1 x quick installation guide<br>1 x warranty card   |
| Note             | 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)



## Ordering Information

| Model Name                     | Combo Ports (10/100/1000BaseT(X) or 100/1000BaseSFP) | 100/1000Base SFP Slots | 10/100/1000BaseT(X) Ports RJ45 Connector | 100Base FX 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         | -45 to 75°C     | 110/220 VAC power supply | -                    | -                  |
| IKS-6728A-4GTXSFP-HV-HV-T      | 4  | Up to 18               | Up to 24                                 | Up to 12         | -45 to 75°C     | 110/220 VAC power supply | ✓                    | -                  |
| IKS-6728A-4GTXSFP-24-T         | 4  | Up to 18               | Up to 24                                 | Up to 12         | -45 to 75°C     | 24 VDC power supply      | -                    | -                  |
| IKS-6728A-4GTXSFP-24-24-T      | 4  | Up to 18               | Up to 24                                 | Up to 12         | -45 to 75°C     | 24 VDC power supply      | ✓                    | -                  |
| IKS-6728A-4GTXSFP-48-T         | 4  | Up to 18               | Up to 24                                 | Up to 12         | -45 to 75°C     | 48 VDC power supply      | -                    | -                  |
| IKS-6728A-4GTXSFP-48-48-T      | 4  | Up to 18               | Up to 24                                 | Up to 12         | -45 to 75°C     | 48 VDC power supply      | ✓                    | -                  |
| IKS-6728A-8PoE-4GTXSFP-HV-T    | 4  | Up to 18               | Up to 24                                 | Up to 12         | -45 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         | -45 to 75°C     | 110/220 VAC power supply | ✓                    | Up to 24 PoE ports |

| Model Name                         | Combo Ports<br>(10/100/<br>1000BaseT(X)<br>or 100/<br>1000BaseSFP) | 100/1000Base<br>SFP Slots | 10/100/<br>1000BaseT(X)<br>Ports<br>RJ45<br>Connector | 100Base FX<br>Ports | Operating<br>Temp. | Input Voltage          | Redundant<br>Dual Input | PoE support           |
|------------------------------------|--|---------------------------|---|---------------------|--------------------|------------------------|-------------------------|-----------------------|
| IKS-6728A-8PoE-<br>4GTXSFP-48-T    | 4  | Up to 18                  | Up to 24  | Up to 12            | -45 to 75°C        | 48 VDC power<br>supply | –                       | Up to 24 PoE<br>ports |
| IKS-6728A-8PoE-<br>4GTXSFP-48-48-T | 4  | Up to 18                  | Up to 24  | Up to 12            | -45 to 75°C        | 48 VDC power<br>supply | ✓                       | Up to 24 PoE<br>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  |

### Software

|        |   |
|--------|---|
| MXview | Industrial network management software designed for converged automation networks |
|--------|---|

### Storage Kits

|            |   |
|------------|---|
| 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-1GEZXC     | SFP module with 1 1000BaseEZXC port with LC connector for 110 km transmission, 0 to 60°C operating temperature   |
| SFP-1GEZXC-120 | SFP module with 1 1000BaseEZXC 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-1GLHXC     | SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, 0 to 60°C operating temperature   |
| SFP-1GLHXC-T   | SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, -40 to 85°C operating temperature   |
| SFP-1GLSXC     | SFP module with 1 1000BaseLSX port with LC connector for 500 m transmission, 0 to 60°C operating temperature   |
| SFP-1GLSXC-T   | SFP module with 1 1000BaseLSX port with LC connector for 500 m transmission, -40 to 85°C operating temperature   |
| SFP-1GLXC      | SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, 0 to 60°C operating temperature  |
| SFP-1GLXC-T    | SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, -40 to 85°C operating temperature  |
| SFP-1GSXC      | SFP module with 1 1000BaseSX port with LC connector for 300/550 m transmission, 0 to 60°C operating temperature  |
| SFP-1GSXC-T    | SFP module with 1 1000BaseSX port with LC connector for 300/550 m transmission, -40 to 85°C operating temperature                                      |
| SFP-1GZXC      | SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, 0 to 60°C operating temperature  |
| SFP-1GZXC-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   |

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