

# IKS-6726/6728 Series

## 24+2G/24+4G-port modular managed Ethernet switches



- > 2/4 Gigabit plus 24 fast Ethernet ports for copper and fiber
- > Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches), RSTP/STP, and MSTP for network redundancy
- > TACACS+, SNMPv3, IEEE 802.1X, HTTPS, and SSH to enhance network security
- > Easy network management by web browser, CLI, Telnet/serial console, Windows utility, and ABC-01
- > Isolated redundant power inputs with universal 24/48 VDC or 110/220 VAC power supply
- > Modular design lets you choose from a variety of media combinations
- > -40 to 75°C operating temperature range



### Introduction

The IKS-6726/6728 series of industrial rackmount Ethernet switches are designed to meet the rigorous demands of mission critical applications for industry and business, such as traffic control systems and maritime applications. The IKS-6726/6728's Gigabit and fast Ethernet backbone, redundant ring, and 24/48 VDC or 110/220 VAC

dual isolated redundant power supplies increase the reliability of your communications and save on cabling and wiring costs. The modular design of the IKS-6726/6728 also makes network planning easy, and allows greater flexibility by letting you install up to 4 Gigabit ports and 24 fast Ethernet ports.

### Features and Benefits

- Command Line Interface (CLI) for quickly configuring major managed functions
- IEEE 1588 PTP V2 (Precision Time Protocol) for precise time synchronization of networks
- DHCP Option 82 for IP address assignment with different policies
- Support EtherNet/IP and Modbus/TCP protocols for device management and monitoring
- Compatible with EtherNet/IP and PROFINET protocols for transparent data transmission
- Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches), RSTP/STP, and 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 efficient network monitoring and proactive capability
- 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, 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-01 automatic backup configurator

### Specifications

#### Technology

##### Standards:

- 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

#### Modular Rackmount Ethernet Switch System, IKS-6726/6728

##### IKS-6726-2GTXSFP



##### IKS-6728-4GTXSFP



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, 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

**Switch Properties**

**Priority Queues:** 4  
**Max. Number of Available VLANs:** 64  
**VLAN ID Range:** VID 1 to 4094  
**IGMP Groups:** 256  
**MAC Table Size:** 8 K  
**Packet Buffer Size:** 2 Mbit

**Interface**

**Fast Ethernet:** 8-port 10/100Base T(X) and 2 modular slots for any 8-, or 6-port Interface Modules with 10/100BaseT(X), 100BaseFX (SC/ST connector), or 100Base SFP

*Note: See below for IM-6700 Fast Ethernet module product information.*

**Gigabit Ethernet:** 2- or 4-port 10/100/1000BaseT(X) or 100/1000Base SFP

**Console Port:** RS-232 (RJ45 connector)

**USB Storage Port:** USB 2.0

**System LED Indicators:** STATE, PWR1, PWR2, FAULT, MSTR/HEAD, CPLR/TAIL

**Alarm Contact:** 1 relay output with current carrying capacity of 3 A @ 30 VDC or 3 A @ 240 VAC

**Power Requirements**

**Input Voltage:** 24 VDC (18 to 36 VDC), 48 VDC (36 to 72 VDC), or 110/220 VAC (85 to 264 VAC)

**Input Current:** (without IM-6700 modules installed)

- Max. 0.42 A @ 24 VDC
- Max. 0.22 A @ 48 VDC
- Max. 0.32/0.16 A @ 110/220 VAC

**Overload Current Protection:** Present

**Reverse Polarity Protection:** Present

**Physical Characteristics**

**Housing:** IP30 protection

**Dimensions:** 440 x 44 x 280 mm (17.32 x 1.37 x 11.02 in)

**Weight:** 4100 g

**Installation:** 19" rack mounting

**Environmental Limits**

**Operating Temperature:** -40 to 75°C (-40 to 167°F)

**Storage Temperature:** -40 to 85°C (-40 to 185°F)

**Ambient Relative Humidity:** 5 to 95% (non-condensing)

**Standards and Certifications**

**Safety:** UL 60950-1 (pending)

**EMI:** FCC Part 15 Subpart B Class A, EN 55022 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, EN 61000-4-11

**Rail Traffic:** EN 50121-4

**Shock:** IEC 60068-2-27

**Freefall:** IEC 60068-2-32

**Vibration:** IEC 60068-2-6

*Note: Please check Moxa's website for the most up-to-date certification status.*

**MTBF** (mean time between failures)

**Time:** 643,945 hrs

**Database:** Telcordia (Bellcore), GB

**Warranty**

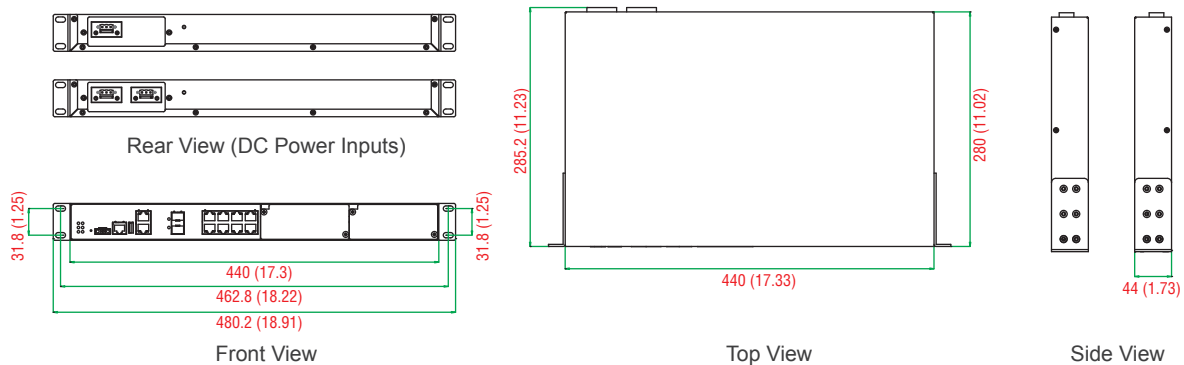
**Warranty Period:** 5 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

**Dimensions**

**IKS-6726-2GTXSFP Series**

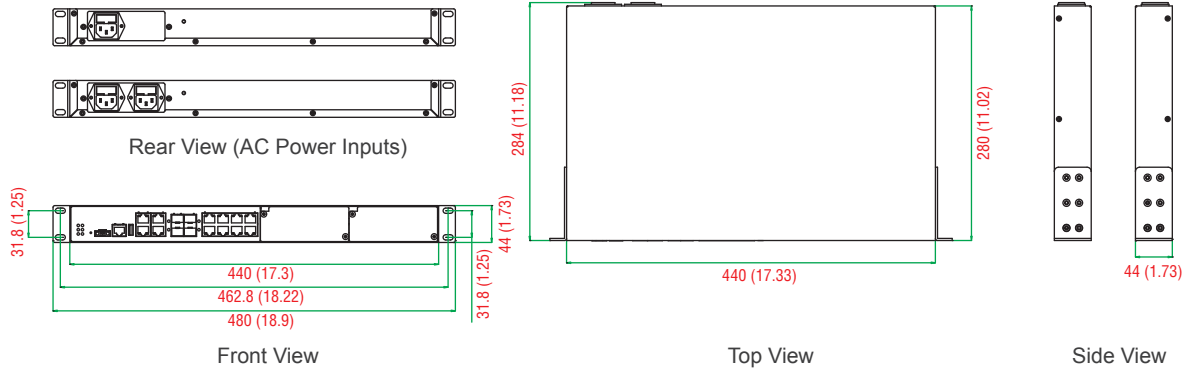
Unit: mm (inch)



## Dimensions

### IKS-6728-4GTXSFP Series

Unit: mm (inch)



## Ordering Information

Step 1: Select Ethernet switch system

Step 2: Select interface modules

IKS-6726/6728 with power supply



IM-6700 modules (Fast Ethernet)

Note: The IKS-6726/6728 Ethernet switch system is delivered without interface modules. See below to find IM-6700 interface modules suitable for your application.

### IKS-6726/6728 Modular Rackmount Ethernet Switch System

Modular managed rackmount Ethernet switch with 8 fixed 10/100BaseT(X) ports, 2 or 4 Gigabit Copper/SFP combo ports, and 2 slots for Fast Ethernet modules. Support up to 24+4G ports, -40 to 75°C operating temperature.

Available Models	Port Interface				Power Supply					
	Gigabit Ethernet	Fast Ethernet			Isolated Power Supply 1			Isolated Power Supply 2		
Front Cabling, Wide Temperature (-40 to 75 °C)	10/100/1000 BaseT(X) or 100/1000BaseSFP*	10/100BaseT(X)	100BaseFX	100BaseSFP*	HV (85 to 264 VAC)	48 VDC	24 VDC	HV (85 to 264 VAC)	48 VDC	24 VDC
<b>IKS-6726 Series</b>										
IKS-6726-2GTXSFP-HV-T	2	Up to 24	Up to 12	Up to 18	1	-	-	-	-	-
IKS-6726-2GTXSFP-HV-HV-T	2	Up to 24	Up to 12	Up to 18	1	-	-	1	-	-
IKS-6726-2GTXSFP-24-T	2	Up to 24	Up to 12	Up to 18	-	-	1	-	-	-
IKS-6726-2GTXSFP-24-24-T	2	Up to 24	Up to 12	Up to 18	-	-	1	-	-	1
IKS-6726-2GTXSFP-48-T	2	Up to 24	Up to 12	Up to 18	-	1	-	-	-	-
IKS-6726-2GTXSFP-48-48-T	2	Up to 24	Up to 12	Up to 18	-	1	-	-	1	-
<b>IKS-6728 Series</b>										
IKS-6728-4GTXSFP-HV-T	4	Up to 24	Up to 12	Up to 20	1	-	-	-	-	-
IKS-6728-4GTXSFP-HV-HV-T	4	Up to 24	Up to 12	Up to 20	1	-	-	1	-	-
IKS-6728-4GTXSFP-24-T	4	Up to 24	Up to 12	Up to 20	-	-	1	-	-	-
IKS-6728-4GTXSFP-24-24-T	4	Up to 24	Up to 12	Up to 20	-	-	1	-	-	1
IKS-6728-4GTXSFP-48-T	4	Up to 24	Up to 12	Up to 20	-	1	-	-	-	-
IKS-6728-4GTXSFP-48-48-T	4	Up to 24	Up to 12	Up to 20	-	1	-	-	1	-

Note: The IKS-6726/6728 series supports 100BaseSFP and 100/1000BaseSFP slots. See below for SFP-1G/1FE series SFP module product information.

### Optional Accessories (can be purchased separately)

**MXview:** Moxa industrial network management software with 50, 100, 250, 500, 1000, or 2000 nodes

**EDS-SNMP OPC Server Pro:** OPC server software that works with all SNMP devices

**ABC-01:** Configuration backup and restoration tool for managed Ethernet switches, 0 to 60°C operating temperature

**Power Cords:** See Appendix A for details

### Package Checklist

- IKS-6726 or IKS 6728 switch
- RJ45 to DB9 console port cable
- Protective caps for unused ports
- 2 rackmount ears
- Documentation and software CD
- Hardware installation guide (printed)
- Warranty card

# IM-6700 Series

**Fast Ethernet modules for IKS-6726-2GTXSFP/IKS-6728-4GTXSFP /IKS-6728-8PoE-4GTXSFP series switches**

## Specifications

### Fast Ethernet Interface Modules, IM-6700 series



IM-6700-8TX



IM-6700-8SFP\*



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



IM-6700-6MST



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



IM-6700-2MST4TX



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



IM-6700-4MST2TX



IM-6700-8PoE\*\*

\*See below for SFP-1FE Fast Ethernet module product information.

\*\*IM-6700-8PoE is supported by the IKS-6728-8PoE series

#### Interface

**RJ45 Ports:** 10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection

**Fiber Ports:** 100BaseFX ports (SC/ST or SFP LC connector)

**LED Indicators:** 10/100 for TP port, 100M for fiber port

**PoE Ports:** 10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection, IEEE 802.3af/at standards, Mode A

#### Power Requirements

**Power Consumption:**

IM-6700-8TX: 1.43 W

IM-6700-8PoE: 1.43 W (w/o PoE output)

IM-6700-8SFP: 9.95 W

IM-6700-6MSC, -6MST, -6SSC: 8.20 W

IM-6700-4MSC2TX, -4MST2TX: 5.72 W

IM-6700-2MSC4TX, -2MST4TX, -2SSC4TX: 3.45 W

#### Physical Characteristics

**Weight:**

IM-6700-8TX: 225 g

IM-6700-8PoE: 260 g

IM-6700-8SFP: 295 g

IM-6700-6MSC, -6MST, -6SSC: 390 g

IM-6700-4MSC2TX, -4MST2TX, -4SSC2TX: 270 g

IM-6700-2MSC4TX, -2MST4TX, -2SSC4TX: 270 g

#### Reliability

**MTBF (mean time between failures):**

IM-6700-8TX: 10,412,400 hrs

IM-6700-8SFP: 3,510,110 hrs

IM-6700-6MSC: 366,119 hrs

IM-6700-6MST: 365,741 hrs

IM-6700-6SSC: 365,741 hrs

IM-6700-4MSC2TX: 530,268 hrs

IM-6700-4MST2TX: 537,942 hrs

IM-6700-2MSC4TX: 1,031,180 hrs

IM-6700-2MST4TX: 1,031,180 hrs

IM-6700-2SSC4TX: 1,031,180 hrs

IM-6700-8PoE: 338,800 hrs

**Database:** Telcordia (Bellcore), GB

#### Warranty

**Warranty Period:** 5 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

#### Optical Fiber

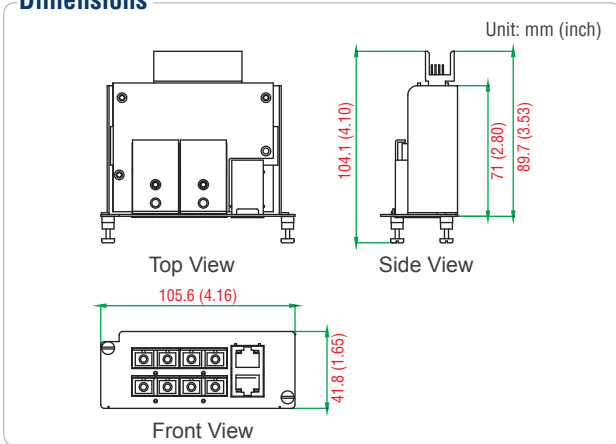
	100BaseFX	
	Multi-mode	Single-mode
Wavelength	1300 nm	1310 nm
Max. TX	-10 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm
Link Budget	12 dB	29 dB
Typical Distance	5 km <sup>a</sup> 4 km <sup>b</sup>	40 km <sup>c</sup>
Saturation	-6 dBm	-3 dBm

a. 50/125 μm, 800 MHz\*km fiber optic cable

b. 62.5/125 μm, 500 MHz\*km fiber optic cable

c. 9/125 μm single-mode fiber optic cable

### Dimensions



### Ordering Information

#### Compatible Rackmount Ethernet Switch Systems

##### Modular Rackmount Ethernet Switch System:

IKS-6726-2GTXSFP



IKS-6728-4GTXSFP



IKS-6728-8PoE



#### Fast Ethernet Modules, IM-6700 Series

Available Models	Port Interface				
	10/100BaseT(X)	100BaseFX			100BaseSFP*
		Multi-mode, SC Connector	Multi-mode, ST Connector	Single-mode, SC Connector	
IM-6700-8TX	8	–	–	–	–
IM-6700-8SFP	–	–	–	–	8
IM-6700-6MSC	–	6	–	–	–
IM-6700-6MST	–	–	6	–	–
IM-6700-6SSC	–	–	–	6	–
IM-6700-4MSC2TX	2	4	–	–	–
IM-6700-4MST2TX	2	–	4	–	–
IM-6700-4SSC2TX	2	–	–	4	–
IM-6700-2MSC4TX	4	2	–	–	–
IM-6700-2MST4TX	4	–	2	–	–
IM-6700-2SSC4TX	4	–	–	2	–
IM-6700-8PoE	8 (PoE+ ports)	–	–	–	–

##### Package Checklist

- IM-6700 series interface module
- Warranty card