

# IKS-6324 Series

## 22+2G-port Gigabit unmanaged Ethernet switches



- > Meets UL 60950-1, NEMA TS2, EN50155/EN50121-4, and DNV/ GL certifications
- > Universal power supply range, 12/24/48 VDC or 110/220 VDC/VAC
- > Redundant dual 12/24/48 VDC power inputs
- > -40 to 75°C operating temperature range

The certification logos shown here apply to some or all of the products in this section. For details, see "Regulatory Approvals" under "Specifications" below.



### Introduction

The IKS-6324 industrial rackmount Ethernet switches are designed to meet the demands of industrial application networks such as traffic control systems (NEMA TS2), and maritime applications (DNV/ GL). The IKS-6324 is a 24-port industrial 19" rackmount Ethernet switch series that provides a rugged and economical solution for your industrial Ethernet connections. Up to two fast Ethernet fiber optic ports and combo Gigabit Ethernet TP or fiber optic ports can be

chosen to make the construction of a reliable Ethernet network easy. A universal power supply range of 12/24/48 VDC or 110/220 VDC/VAC give users greater flexibility in choosing power inputs. The Ethernet switches comply with UL standards and support a wide operating temperature range of -40 to 75°C. All models undergo a 100% burn-in test to ensure that they fulfill the special needs of industrial automation control applications.

### Specifications

#### Technology

##### Standards:

- IEEE 802.3 for 10BaseT
- IEEE 802.3u for 100BaseT(X) and 100Base FX
- IEEE 802.3ab for 1000BaseT(X)
- IEEE 802.3z for 1000BaseSX/LX/LHX/ZX
- IEEE 802.3x for Flow Control

**Flow Control:** IEEE 802.3x flow control, back pressure flow control

#### Interface

- Fiber Ports:** 100BaseFX (SC/ST connector) or 1000BaseSFP slots
- RJ45 Ports:** 10/100BaseT(X) or 10/100/1000BaseT(X) auto negotiation speed, F/H duplex mode and auto MDI/MDI-X connection
- LED Indicators:** STAT, PWR1, PWR2, FAULT, LNK/ACT, FDX/HDX, SPEED

**Note:** Slot 1 is for a 2-port PM-7200 Gigabit Ethernet combo module, or 1 or 2-port PM-7200 fast Ethernet module. See page 4-31 for details.

#### Power Requirements

**Input Voltage:** 12/24/48 VDC (9 to 60 V), or 110/220 VDC/VAC (88 to 300 VDC and 85 to 264 VAC)

**Input Current:** (all ports are equipped with fiber)

- Max. 0.68 A @ 24 VDC
- Max. 0.35 A @ 48 VDC
- Max. 0.17/0.11 A @ 110/220 VDC
- Max. 0.33/0.23 A @ 110/220 VAC

**Overload Current Protection:** Present

**Connection:** 10-contact terminal block

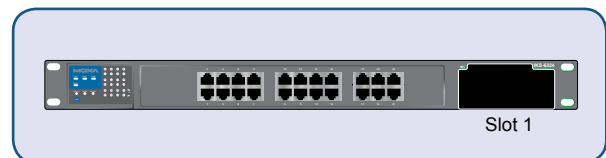
**Reverse Polarity Protection:** Present

#### Physical Characteristics

**Housing:** IP30 protection

**Dimensions:** 440 x 44 x 254 mm (17.32 x 1.73 x 10.00 in)

### Unmanaged Rackmount Ethernet Switch System, IKS-6324



**Weight:** 4300 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)

#### Regulatory Approvals

**Safety:** UL60950-1, CSA C22.2 No. 60950-1, EN60950-1 (Pending)

**EMI:** FCC Part 15, CISPR (EN55022) class A

**Maritime:** DNV (Pending), GL (Pending)

**Traffic Control:** NEMA TS2 (Pending)

**Rail Traffic:** EN50155/EN50121-4

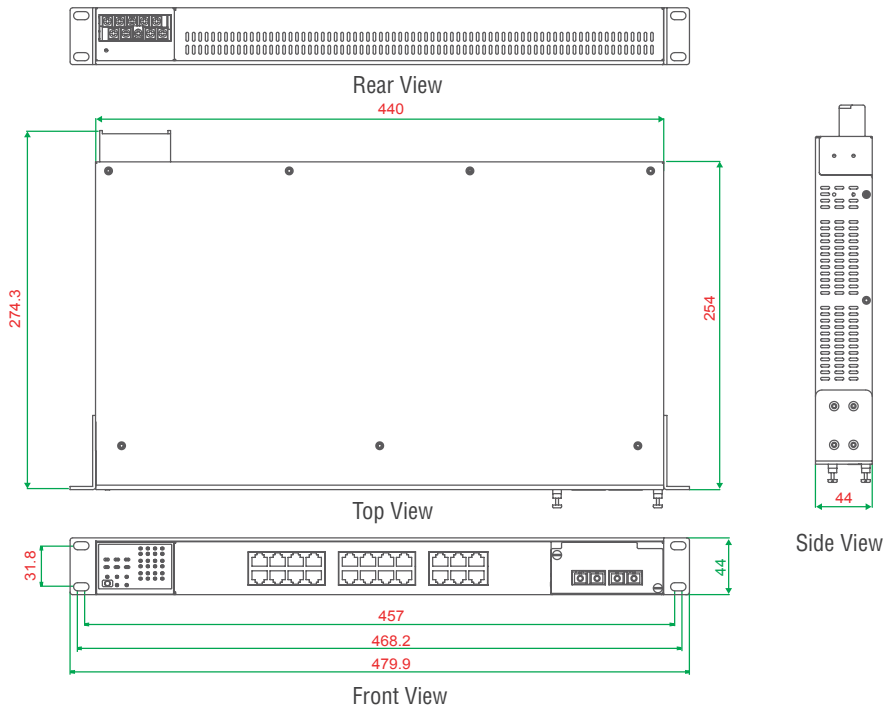
**Note:** Please check Moxa's website for the most up-to-date certification status.

#### Warranty

**Warranty Period:** 5 years

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

**Dimensions (unit = mm)**



**Ordering Information**

Step 1: Select Ethernet switch system

Step 2: Select interface modules

IKS-6324 with power supply



PM-7200 modules  
(Gigabit or fast Ethernet)

Note: The IKS-6324 Ethernet switch system is delivered without interface modules. Please see page 4-31 to determine which PM-7200 interface modules are suitable for your application.

**IKS-6324 Unmanaged Rackmount Ethernet Switch System**

The IKS-6324 switch system consists of 2 unmanaged rackmount Ethernet switch systems with 22 10/100BaseT(X) ports, and 1 slot for fast Ethernet or Gigabit Ethernet modules. A total of up to 24 or 22+2G ports can be installed, and the switch can be used in a temperature range from -40 to 75°C.

Product Model	Power Supply	
	LV: 12/24/48 VDC (9 to 60 V)	HV: 88 to 300 VDC and 85 to 264 VAC, isolated
IKS-6324-F-LV-T	1	---
IKS-6324-F-HV-T	---	1

**Gigabit/Fast Ethernet Module Compatibility Chart for the IKS-6324**

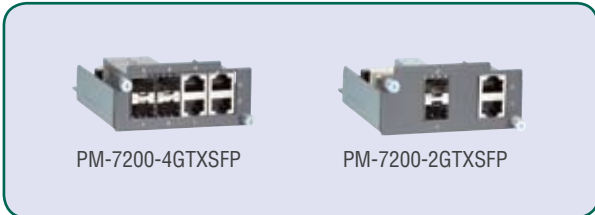
Slot 1	Interface Module						
	PM-7200-2GTXSFP	PM-7200-1MSC	PM-7200-1MST	PM-7200-1SSC	PM-7200-2MSC	PM-7200-2MST	PM-7200-2SSC
	√	√	√	√	√	√	√

# PM-7200 Series

*Gigabit and fast Ethernet modules for PT and IKS series switches*

## Specifications

### Gigabit Ethernet Interface Modules, PM-7200-2G/4G series



#### Interface

**RJ45 Ports:** 10/100/1000BaseT(X) auto negotiation speed, and auto MDI/MDI-X connection

**Fiber Ports:** 1000BaseSFP slots

**Note:** The PM-7200-2G/4G series Gigabit Ethernet combo modules support 2 or 4 SFP slots.

### Fast Ethernet Interface Modules, PM-7200 series



#### Interface

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

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

**PoE Ports:** IEEE 802.3af Power-over-Ethernet Technology, provide up to 15.4 watts per port

**M12 ports:** 10/100BaseT(X) auto negotiation speed, and auto MDI/MDI-X connection

#### Optical Fiber

	100BaseFX		
	Multi-mode	Single-mode	Single-mode, 80 km
Wavelength	1300 nm	1310 nm	1550 nm
Max. TX	-10 dBm	0 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm	-34 dBm
Link Budget	12 dB	29 dB	29 dB
Typical Distance	5 km <sup>a</sup> 4 km <sup>b</sup>	40 km <sup>c</sup>	80 km <sup>d</sup>
Saturation	-6 dBm	-3 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

d. 9/125 μm single-mode fiber optic cable (80 km)

**Ordering Information**

**Rackmount Ethernet Switch System and Interface Module Compatibility Chart**

Product Model	Interface Modules																								
	PM-7200-4GTXSFP	PM-7200-2GTXSFP	PM-7200-1MSC	PM-7200-1MST	PM-7200-2MSC	PM-7200-2MST	PM-7200-1SSC	PM-7200-2SSC	PM-7200-8TX	PM-7200-2MSC4TX	PM-7200-2MST4TX	PM-7200-2SSC4TX	PM-7200-4MSC2TX	PM-7200-4MST2TX	PM-7200-4SSC2TX	PM-7200-6MSC	PM-7200-6MST	PM-7200-6SSC	PM-7200-1MSC6TX	PM-7200-1MST6TX	PM-7200-1SSC6TX	PM-7200-1LSC6TX	PM-7200-8PoE	PM-7200-8SFP*	PM-7200-4M12
PT-7828	√	√	---	---	---	---	---	---	√	√	√	√	√	√	√	√	√	√	√	√	√	√	---	√	√
PT-7728	√	√	---	---	---	---	---	---	√	√	√	√	√	√	√	√	√	√	√	√	√	√	---	√	√
PT-7710	---	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	---	√	√
PT-7324	---	√	√	√	√	√	√	√	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
IKS-6726	---	√	---	---	---	---	---	---	√	√	√	√	√	√	√	√	√	√	√	√	√	√	---	√	√
IKS-6726-PoE	---	√	---	---	---	---	---	---	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
IKS-6324	---	√	√	√	√	√	√	√	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

\* If you are using an SFP-1FELLC module, the operating temperature is limited to -40 to 75°C (-40 to 167°F).

**Gigabit Ethernet Modules for PT and IKS Series Rackmount Ethernet Switches, PM-7200-2G/4G Series**

Available Models	Port Interface	
	Combo Port, 10/100/1000BaseT(X) or 1000BaseSFP*	
PM-7200-2GTXSFP	2	
PM-7200-4GTXSFP	4	

\*The PM-7200-2G/4G series Gigabit Ethernet combo modules support 2 or 4 SFP slots.

**Fast Ethernet Modules for PT and IKS Series Rackmount Ethernet Switches, PM-7200 Series**

Available Models	Port Interface							
	10/100BaseT(X)			100BaseFX				100BaseSFP
	TP	PoE	M12	Multi-mode, SC Connector	Multi-mode, ST Connector	Single-mode, SC Connector	Single-mode, SC Connector, 80 km	
PM-7200-8TX	8	---	---	---	---	---	---	---
PM-7200-6MSC	---	---	---	6	---	---	---	---
PM-7200-6MST	---	---	---	---	6	---	---	---
PM-7200-6SSC	---	---	---	---	---	6	---	---
PM-7200-4MSC2TX	2	---	---	4	---	---	---	---
PM-7200-4MST2TX	2	---	---	---	4	---	---	---
PM-7200-4SSC2TX	2	---	---	---	---	4	---	---
PM-7200-2MSC4TX	4	---	---	2	---	---	---	---
PM-7200-2MST4TX	4	---	---	---	2	---	---	---
PM-7200-2SSC4TX	4	---	---	---	---	2	---	---
PM-7200-1LSC6TX	6	---	---	---	---	---	1	---
PM-7200-2MSC	---	---	---	2	---	---	---	---
PM-7200-2MST	---	---	---	---	2	---	---	---
PM-7200-2SSC	---	---	---	---	---	2	---	---
PM-7200-1MSC	---	---	---	1	---	---	---	---
PM-7200-1MST	---	---	---	---	1	---	---	---
PM-7200-1SSC	---	---	---	---	---	1	---	---
PM-7200-1MSC6TX	6	---	---	1	---	---	---	---
PM-7200-1MST6TX	6	---	---	---	1	---	---	---
PM-7200-1SSC6TX	6	---	---	---	---	1	---	---
PM-7200-8PoE	---	8	---	---	---	---	---	---
PM-7200-8SFP	---	---	---	---	---	---	---	8
PM-7200-4M12	---	---	4	---	---	---	---	---

# SFP-1G Series

## 1G-port Gigabit Ethernet SFP modules



- > Compliant with IEEE 802.3z
- > Differential LVPECL inputs and outputs
- > Single 3.3 V power supply
- > TTL signal detect indicator
- > Hot pluggable
- > Class 1 laser product, complies with EN60825-1

The certification logos shown here apply to some or all of the products in this section. For details, see "Regulatory Approvals" under "Specifications" below.



## Specifications

### Interface

Ethernet Ports: 1

Connectors: Duplex LC Connector or Simplex LC Connector (WDM-type only)

Note: WDM-type SFP modules must be used in pairs (e.g., SFP-1GXXALC and SFP-1GXXBLC)

### Optical Fiber

	Gigabit Ethernet											
	SFP-SX	SFP-LSX	SFP-LX	SFP-LHX	SFP-ZX	SFP-EZX	SFP-10A	SFP-10B	SFP-20A	SFP-20B	SFP-40A	SFP-40B
Wave-length	850 nm	1310 nm	1310 nm	1310 nm	1550 nm	1550 nm	TX 1310 nm, RX 1550 nm	TX 1550 nm, RX 1310 nm	TX 1310 nm, RX 1550 nm	TX 1550 nm, RX 1310 nm	TX 1310 nm, RX 1550 nm	TX 1550 nm, RX 1310 nm
Max. TX	-4 dBm	-1 dBm	-3 dBm	1 dBm	5 dBm	5 dBm	-3 dBm		-2 dBm		2 dBm	
Min. TX	-9.5 dBm	-9 dBm	-9.5 dBm	-4 dBm	0 dBm	0 dBm	-9 dBm		-8 dBm		-3 dBm	
RX Sensitivity	-18 dBm	-19 dBm	-20 dBm	-24 dBm	-24 dBm	-30 dBm	-21 dBm		-23 dBm		-23 dBm	
Link Budget	8.5 dB	10 dB	10.5 dB	20 dB	24 dB	30 dB	12 dB		15 dB		20 dB	
Typical Distance	550 m <sup>a</sup>	2 km <sup>b</sup>	10 km <sup>c</sup>	40 km <sup>c</sup>	80 km <sup>c</sup>	110 km <sup>c</sup>	10 km <sup>c</sup>		20 km <sup>c</sup>		40 km <sup>c</sup>	
Saturation	0 dBm	-3 dBm	-3 dBm	-3 dBm	-3 dBm	-3 dBm	-1 dBm		-1 dBm		-1 dBm	

a. 50/125 μm, 400 MHz \* km or 62.5/125 μm, 500 MHz \* km @ 850 nm multi-mode fiber optic cable

b. 62.5/125 μm, 750 MHz \* km @ 1310 nm multi-mode fiber optic cable

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

### Environmental Limits

#### Operating Temperature:

Standard Models: 0 to 60°C (32 to 140°F)

Wide Operating Temp. Models: -40 to 85°C (-40 to 185°F)

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

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

### Regulatory Approvals

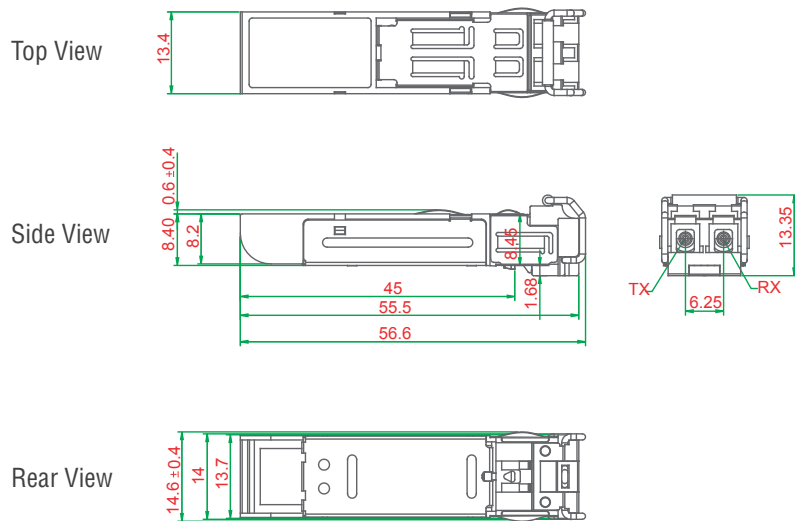
Safety: UL, TÜV

### Warranty

Warranty Period: 3 years

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

**Dimensions (unit = mm)**



**Ordering Information**

**SFP Modules**

Available Models		Port Interface					
Standard Temperature (0 to 60 °C)	Wide Temperature (-40 to 85 °C)	1000BaseSX, LC Connector, 0.5 km	1000BaseLSX, LC Connector, 2 km	1000BaseLX, LC Connector, 10 km	1000BaseLHX, LC Connector, 40 km	1000BaseZX, LC Connector, 80 km	1000BaseZX, LC Connector, 110 km
SFP-1GSXLC	SFP-1GSXLC-T*	1	---	---	---	---	---
SFP-1GLXLC	SFP-1GLXLC-T	---	1	---	---	---	---
SFP-1GLXLC	SFP-1GLXLC-T	---	---	1	---	---	---
SFP-1GLHLC	SFP-1GLHLC-T	---	---	---	1	---	---
SFP-1GZLC	SFP-1GZLC-T	---	---	---	---	1	---
SFP-1GEZLC	---	---	---	---	---	---	1

Note: SFP-1GSXLC-T: -20 to 75 °C operating temperature

**WDM-type (BiDi) SFP Modules**

Available Models		Port Interface					
Standard Temperature (0 to 60 °C)	Wide Temperature (-40 to 85 °C)	1000BaseSFP, LC Connector, 10 km		1000BaseSFP, LC Connector, 20 km		1000BaseSFP, LC Connector, 40 km	
		TX 1310 nm, RX 1550 nm	TX 1550 nm, RX 1310 nm	TX 1310 nm, RX 1550 nm	TX 1550 nm, RX 1310 nm	TX 1310 nm, RX 1550 nm	TX 1550 nm, RX 1310 nm
SFP-1G10ALC	SFP-1G10ALC-T	1	---	---	---	---	---
SFP-1G10BLC	SFP-1G10BLC-T	---	1	---	---	---	---
SFP-1G20ALC	SFP-1G20ALC-T	---	---	1	---	---	---
SFP-1G20BLC	SFP-1G20BLC-T	---	---	---	1	---	---
SFP-1G40ALC	SFP-1G40ALC-T	---	---	---	---	1	---
SFP-1G40BLC	SFP-1G40BLC-T	---	---	---	---	---	1

**The SFP-1G series modules can be used with the following products**

- EDS-728/828 series:** IM-2GSFP series Gigabit Ethernet interface modules
- EDS-G509 series:** 9G-port full Gigabit managed Ethernet switches
- EDS-518A series:** 16+2G-port Gigabit managed Ethernet switches
- EDS-510A series:** 7+3G-port Gigabit managed Ethernet switches
- EDS-P510 series:** 7+3G-port Gigabit PoE managed Ethernet switches
- PT and IKS series:** PM-7200-2G/4G series Gigabit Ethernet interface modules
- EDS-G308 series:** 8G-port full Gigabit unmanaged Ethernet switches
- IMC-101G series:** Industrial Gigabit media converters