

# IKS-6728A 系列

## 24+4G 連接埠 Gigabit 模組化網管型 PoE+ 乙太網路交換器



### 特色與優點

- 8 個內建 PoE+ 埠，與 IEEE 802.3af/at (IKS-6728A-8PoE) 相容
- 每個 PoE+ 埠輸出可達 36 W (IKS-6728A-8PoE)
- Turbo Ring 和 Turbo Chain (恢復時間 < 20 ms @ 250 台交換器)<sup>1</sup>，以及透過 STP/RSTP/MSTP 協議支援網路冗餘
- 1 kV LAN 突波保護，可用於極端室外環境
- PoE 診斷，可進行受電設備模式分析
- 4 個 Gigabit 複合連接埠可進行高頻寬通訊
- -40 到 75°C 操作溫度範圍，可提供 720 W 全負載
- 支援 MXstudio，輕鬆實現可視化的工業網路管理
- V-ON™ 可確保毫秒等級的 Multicast 資料和視訊網路復原

### 認證



### 簡介

IKS-6728A 系列旨在滿足商業和工業的關鍵任務應用的需求。IKS-6728A 和 IKS-6728A-8PoE 最多可搭配 24 個 10/100BaseT(X) 或是 PoE/PoE+，以及 4 個 Gigabit 乙太網路組合連接埠。IKS-6728A-8PoE 乙太網路交換器的每個 PoE+ 連接埠在標準模式下提供高達 30 瓦的電力，同時針對工業大功率 PoE 裝置可支援高達 36 瓦的高功率輸出，例如配備兩刷器/加熱器的防水 IP 監控攝影機、高效能無線存取點和強固型 IP 電話，可達到 36 瓦的高功率輸出。

IKS-6728A-8PoE 乙太網路交換器支援兩種類型的電源輸入來源：48 VDC 適用於 PoE+ 連接埠以及系統電源，110/220 VAC 適用於系統電源。乙太網路交換器支援各式管理功能，包括 STP/RSTP、Turbo Ring、Turbo Chain、PoE 電源管理、PoE 裝置自動檢查、PoE 電力排程、PoE 診斷、IGMP、VLAN、QoS、RMON、頻寬管理以及連接埠鏡像。IKS-6728A-8PoE 專為嚴苛的戶外應用所設計，提供的 3kV 突波保護確保 PoE 系統穩定運作不中斷。

### 附加特色與優點

- 進階的 PoE 管理功能：PoE 輸出設定、PD 故障檢查、PoE 排程和 PoE 診斷
- 命令列介面 (CLI) 快速設定主要網管功能
- DHCP Option 82 以不同原則指派 IP 位址
- 支援 EtherNet/IP、PROFINET 及 Modbus TCP 通訊協定，便於進行設備管理和監控
- Turbo Ring 和 Turbo Chain (250 台交換器，復原時間小於 20 毫秒)，以及 STP/RSTP/MSTP，以實現網路備援
- IGMP snooping 和 GMRP，用於過濾 multicast 流量
- 以連接埠為基礎的 VLAN、IEEE 802.1Q VLAN 以及 GVRP，用來簡化網路規劃
- QoS (IEEE 802.1p/1Q 和 TOS/DiffServ) 提高資料傳送穩定性
- IEEE 802.3ad、LACP 提供最佳化頻寬使用率
- 支援 TACACS+、IEEE 802.1X、SNMPv3、HTTPS 和 SSH，強化網路安全
- SNMPv1/v2c/v3，支援不同層級的網路管理
- RMON 提供主動且有效率的網路監控
- 頻寬管理可透過「鎖定連接埠」預防出現無法預測的網路狀態，以限制存取授權的 MAC 位址
- Port mirroring 可用於除錯
- 發生狀況時可透過電子郵件或是繼電器輸出自動發出告警
- 自動恢復連線設備的 IP 位址
- 線路切換快速恢復
- 可透過網頁瀏覽器、Telnet / 序列主控台、CLI、Windows 工具程式，以及 ABC-02-USB 自動備份設定程式進行設定

### 規格

#### Input/Output Interface

Alarm Contact Channels

1 relay output with current carrying capacity of 1 A @ 24 VDC

1. 如果連接埠連結速度為 1 Gigabit 或更高，則恢復時間 < 50 ms

## 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 <sup>2</sup>
Standards	IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1s for Multiple Spanning Tree Protocol IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1X for authentication IEEE 802.3 for 10BaseT IEEE 802.3ab for 1000BaseT(X) IEEE 802.3ad for Port Trunk with LACP IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for flow control 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 SCP SMTP SNMP Inform SNMPv1/v2c/v3 Syslog Telnet TFTP
Filter	802.1Q BPDU Filter BPDU Guard GMRP GVRP IGMP v1/v2/v3
Redundancy Protocols	Link Aggregation MRP 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

2. 如需快速乙太網路模組產品資訊，請參閱 IM-6700A 產品規格書。

	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
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### Serial Interface

Console Port	USB-serial console (Type B connector)
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### Power Parameters

Input Voltage	IKS-6728A-4GTXSFP-24-T: 24 VDC IKS-6728A-4GTXSFP-24-24-T: 24 VDC (redundant dual inputs) IKS-6728A-4GTXSFP-48-T: 48 VDC IKS-6728A-4GTXSFP-48-48-T: 48 VDC (redundant dual inputs) IKS-6728A-4GTXSFP-HV-T: 110/220 VAC IKS-6728A-4GTXSFP-HV-HV-T: 110/220 VAC (redundant dual inputs) IKS-6728A-8PoE-4GTXSFP-48-T: 48 VDC IKS-6728A-8PoE-4GTXSFP-48-48-T: 48 VDC (redundant dual inputs) IKS-6728A-8PoE-4GTXSFP-HV-T: 110/220 VAC IKS-6728A-8PoE-4GTXSFP-HV-HV-T: 110/220 VAC (redundant dual inputs)
Operating Voltage	IKS-6728A-4GTXSFP-HV-T: 85 to 264 VAC IKS-6728A-4GTXSFP-HV-HV-T: 85 to 264 VAC IKS-6728A-4GTXSFP-24-T: 18 to 36 VDC IKS-6728A-4GTXSFP-24-24-T: 18 to 36 VDC IKS-6728A-4GTXSFP-48-T: 36 to 72 VDC IKS-6728A-4GTXSFP-48-48-T: 36 to 72 VDC IKS-6728A-8PoE-4GTXSFP-48-T: 36 to 72 VDC IKS-6728A-8PoE-4GTXSFP-48-48-T: 36 to 72 VDC IKS-6728A-8PoE-4GTXSFP-HV-T: 85 to 264 VAC IKS-6728A-8PoE-4GTXSFP-HV-HV-T: 85 to 264 VAC
Input Current	1.1/0.6 A @ 24/48 VDC 0.46/0.31 A @ 110/220 VAC Note: These are the input current ratings for the device with the maximum number of modules installed.
Power Consumption (Max.)	26.4/28.8 W @ 24/48 VDC 29.28/31.92 W @ 110/220 VAC Note: These are the power consumption ratings for the device with the maximum number of modules installed.

Total PoE Power Budget	IKS-6728A-PoE series: Maximum 720 W @ 48 VDC
Overload Current Protection	Supported
Reverse Polarity Protection	Supported

### 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

Safety	EN 60950-1 UL 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: 10 V IEC 61000-4-8 PFMF
Railway	EN 50121-4
Maritime	IKS-6728A Series non-PoE models: ABS, CCS, DNV, LR, NK
Freefall	IEC 60068-2-32
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6

### MTBF

Time	IKS-6728A-4GTXSFP-24-24-T: 836,446 hrs IKS-6728A-4GTXSFP-24-T: 836,446 hrs IKS-6728A-4GTXSFP-48-48-T: 837,778 hrs IKS-6728A-4GTXSFP-48-T: 837,778 hrs IKS-6728A-4GTXSFP-HV-HV-T: 914,783 hrs IKS-6728A-4GTXSFP-HV-T: 927,981 hrs IKS-6728A-8PoE-4GTXSFP-48-48-T: 650,626 hrs IKS-6728A-8PoE-4GTXSFP-48-T: 650,626 hrs IKS-6728A-8PoE-4GTXSFP-HV-HV-T: 697,934 hrs IKS-6728A-8PoE-4GTXSFP-HV-T: 704,618 hrs
Standards	Telcordia (Bellcore), GB

### Warranty

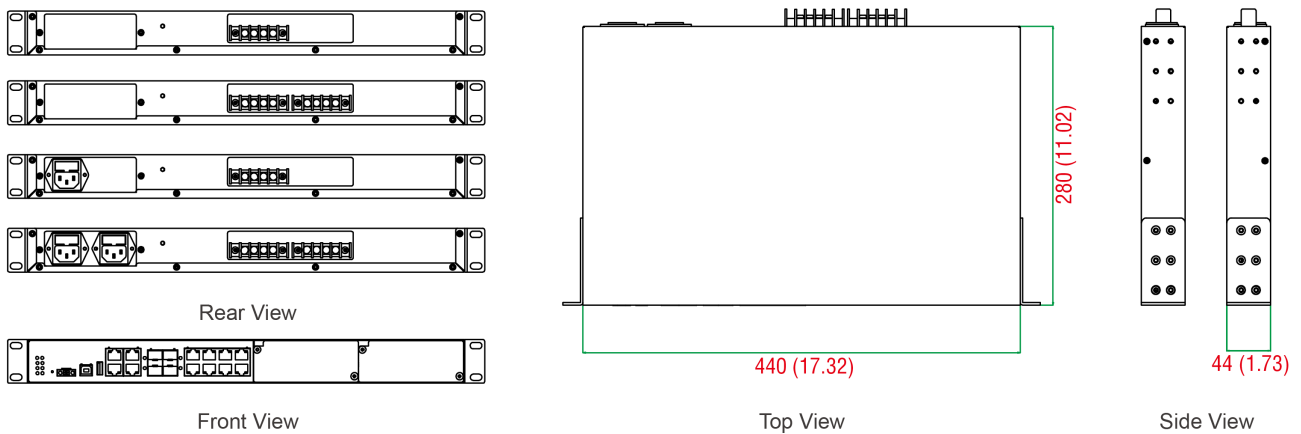
Warranty Period	5 years
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>

## 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 8 x cap, plastic, for SFP slot
Power Supply	IKS-6728A-4GTXSFP-HV-T: 1 x power cord, EU type IKS-6728A-4GTXSFP-HV-HV-T: 2 x power cord, EU type IKS-6728A-8PoE-4GTXSFP-HV-T: 1 x power cord, EU type IKS-6728A-8PoE-4GTXSFP-HV-HV-T: 2 x power cord, EU type IKS-6728A-4GTXSFP-HV-T: 1 x power cord, US type IKS-6728A-4GTXSFP-HV-HV-T: 2 x power cord, US type IKS-6728A-8PoE-4GTXSFP-HV-T: 1 x power cord, US type IKS-6728A-8PoE-4GTXSFP-HV-HV-T: 2 x power cord, US type
Documentation	1 x quick installation guide 1 x warranty card
Note	1. If you want to turn on PoE, please add a 48 V external power supply. 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.

## 尺寸

單位：公釐（英吋）



## 訂購資訊

Model Name	Combo Ports (10/100/ 1000BaseT(X) or 100/ 1000BaseSF P)	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 20	Up to 24	Up to 12	-40 to 75°C	110/220 VAC power supply	-	-
IKS-6728A-4GTXSFP-HV-HV-T	4	Up to 20	Up to 24	Up to 12	-40 to 75°C	110/220 VAC power supply	P	-
IKS-6728A-4GTXSFP-24-T	4	Up to 20	Up to 24	Up to 12	-40 to 75°C	24 VDC power supply	-	-
IKS-6728A-4GTXSFP-24-24-T	4	Up to 20	Up to 24	Up to 12	-40 to 75°C	24 VDC power supply	P	-
IKS-6728A-4GTXSFP-48-T	4	Up to 20	Up to 24	Up to 12	-40 to 75°C	48 VDC power supply	-	-
IKS-6728A-4GTXSFP-48-48-T	4	Up to 20	Up to 24	Up to 12	-40 to 75°C	48 VDC power supply	P	-

Model Name	Combo Ports (10/100/ 1000BaseT(X) or 100/ 1000BaseSF P)	100BaseSFP Slots	10/ 100BaseT(X) Ports RJ45 Connector	100BaseFX Ports	Operating Temp.	Input Voltage	Redundant Dual Input	PoE Support
IKS-6728A-8PoE-4GTXSFP-HV-T	4	Up to 20	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 20	Up to 24	Up to 12	-40 to 75°C	110/220 VAC power supply	P	Up to 24 PoE ports
IKS-6728A-8PoE-4GTXSFP-48-T	4	Up to 20	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 20	Up to 24	Up to 12	-40 to 75°C	48 VDC power supply	P	Up to 24 PoE ports

## 配件 (選購)

### IM-6700A Module Series

IM-6700A-2MSC4TX	Fast Ethernet module with 2 multi-mode 100BaseFX ports with SC connector, 4 10/100BaseT(X) ports
IM-6700A-2MST4TX	Fast Ethernet module with 2 multi-mode 100BaseFX ports with ST connectors, 4 10/100BaseT(X) ports
IM-6700A-2SSC4TX	Fast Ethernet module with 2 single-mode 100BaseFX ports with SC connector, 4 10/100BaseT(X) ports
IM-6700A-4MSC2TX	Fast Ethernet module with 4 multi-mode 100BaseFX ports with SC connector, 2 10/100BaseT(X) ports
IM-6700A-4MST2TX	Fast Ethernet module with 4 multi-mode 100BaseFX ports with ST connectors, 2 10/100BaseT(X) ports
IM-6700A-4SSC2TX	Fast Ethernet module with 4 single-mode 100BaseFX ports with SC connectors, 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

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
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### 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, LC connector for 2/4 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 1000BaseEZ port with LC connector for 110 km transmission, 0 to 60°C operating temperature
SFP-1GEZXLC-120	SFP module with 1 1000BaseEZ 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 1km/2km transmission, 0 to 60°C operating temperature
SFP-1GLSXC-T	SFP module with 1 1000BaseLSX port with LC connector for 1km/2km 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 300m/550m transmission, 0 to 60°C operating temperature
SFP-1GSXC-T	SFP module with 1 1000BaseSX port with LC connector for 300m/550m 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-C13US-3B-183	Power cord with United States (US) plug, 1.83 m
PWC-C13EU-3B-183	Power cord with Continental Europe (EU) plug, 1.83 m
PWC-C13AU-3B-183	Power cord with Australian (AU) plug, 1.83 m
PWC-C13UK-3B-183	Power cord with United Kingdom (UK) plug, 1.83 m
PWC-C7US-2B-183	Power cord with United States (US) plug, 10A/125V, 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-C13CN-3B-183	Power cord with three-prong China (CN) plug, 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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