

SICOM3024P

Modular Managed Industrial Ethernet Switch



CE, FCC, UL, RoHS, KEMA
IEC61850-3, IEC61850-8-1
IEC61850-9-1, IEC61850-9-2

Overview

SICOM3024P is an industrially strengthened, fully managed Ethernet switch specifically designed to operate stably in electrically harsh and climatically demanding utility substation and industrial environments. SICOM3024P has passed KEMA authentication. Its high-performance switch engine, solid and sealed case design, highly efficient single-rib heat dispersion shell without fans, 19" rack-mount mounting options, overcurrent, overvoltage and EMC protection at power input side, and excellent EMC protection of RJ45 port makes SICOM3024P applicable in harsh and dangerous industrial environments. The redundant function of optical fiber network, independent entire network management channel, redundant power input function, and entire network real-time management system provides multiplex guarantee for reliable operation of the system. The SICOM3024P offers 100BaseFX/1000BaseX fiber and 10/100/1000BaseTX copper port combinations. SICOM3024P highly versatile for any application and can support multiple fiber connectors (ST, FC, LC, SC) without loss of port density. SICOM3024P support Kyvision 3.0 software concentrative management.

Features

- DT-Ring, DT-Ring+, recovery time < 50ms. Support Max 24 100Base-FX fiber ports and 4 1000Base-FX fiber ports
- Support IGMP, TRUNK, Port Mirroring, QoS and VLAN
- Broadcasting storm control
- Hyper terminal (CLI), TELNET, WEB management software, SNMP-based network management,
- Support OPC supervision
- Store and forward switching mode
- Flexible combination of ring, star and tangent ring network topology
- Support system log recording and uploading
- Support system temperature detecting and alarm output
- Able to monitor the flow, status of each port (RMON (statistics, history, alarm, event))
- Complies with IEC61850-3, IEC61850-8-1, -9-1, -9-2 standard
- Uniform network management software of SICOM3000/4000/6000: Kyvision 3.0
- Operating temperature: -40 to 75°C (-40 to 167°F)
- Ribbed Aluminum housing for heat dissipation (patent), fanless
- IP40 protection class
- Rack-mounting (19' 1U)

Functions**Redundant Ring Network (DT-Ring, RSTP)**

Each Ethernet port can be set as either an ordinary one or a redundant one. Users can freely choose to build a Gigabit or 100M redundant ring network. The recovery time of DT-Ring is less than 50ms.

Multi-Ring Coupling System (DT-Ring+)

The DT-Ring+ protocol is able to realize double ring network redundant backup function and multi-chain network redundant function.

PTP (Precision Time Protocol or IEEE1588)

PTP is Precision Time Protocol and IEEE1588, within synchronous precision of the sub-microsecond range. It's used for limited network requiring the highest precision of time synchronization. No special needs for synchronous communication when distributing control tasks, making it possible to separate communication time mode from program operation time mode.

Being representative and open is another advantage of IEEE1588. Lots of controlling system suppliers have applied this standard in their products. With different devices manufacturers following the same standard, a solid synchronization is sustained among them.

Broadcasting Storm Control

When broadcasts and multicasts in the network reach a certain limitation, the network will be blocked. Our products are capable of eliminating those overfull broadcasts and multicasts.

VLAN

Based on the fact that data packets cannot be transmitted between different VLANs, one network will be divided by VLAN into multiple logical subnets to control the broadcast domain and segment flow as well as improve the reliability, security and manageability of the network. SICOM3000/4000 series supports IEEE802.1q VLAN tag. It can be divided up into 4094 VLANs based on ports, while the VLAN section can be easily realized through Console or WEB Network Management Station.

QoS Priority

IEEE802.1p is the most popular priority scheme in LAN environment. With different port operation distributed with different levels of priorities, this function can configure port-based priority.

Alarm Function

SICOM3000/4000 series offers the alarm functions for power failure, port line and network. Through management software, all the alarm functions can be configured functionally. The alarm information is shown either through alarm contact or from management interface.

Protocol Priority

SICOM3000/4000 serial Industrial Ethernet Switches accord with the standard of IEC61850 protocol. They offer Goose message transmission priority to meet the real-time and reliability requirements of the controlling system.

Various Configurations for Working Mode of Ports

SICOM3000/4000 Series is able to configure the working mode of all TP ports through management: Full/half duplex, adaptive, enforced full/half duplex, 10/100M adaptive, enforced 100M full duplex for 100M fiber ports and enforced 1000M full duplex for 1000M fiber/TP ports.

Port Rate Configuration

SICOM3000/4000 series is able to configure the rate of all ports through management as any integer multiple of 32 kbps.

RMON Network Monitor

RMON network management expands to the physical layer, making it possible to collect data of devices independently. The built-in monitor offers the limited ability to analyze the whole flow without occupying network resources (bandwidth). It supports four groups including statistics, history, alarm and event. Meanwhile, it permits the network management station to configure the grouping of multiple variables in the way of expression to enhance the effectiveness of transmitting management messages and to reduce the working load of the network management station, which will definitely satisfy your requirements of network segment monitoring function and enable you to manage a large network easily and effectively.

IGMP to Improve Network Communication Efficiency

IGMP is Internet Group Multicast Protocol. SICOM3000/4000 Series offers IGMP monitoring and querying functions. Data packets can be transmitted only to multiple host computers which need them. This can prevent overloading and therefore solve the problems of occupied bandwidth when broadcasting.

OPC Uniform Management of Network Devices

In the SCADA software of industrial automation, OPC offers a bridge between hardware manufacturers and software developers. With the OPC Server interfaces provided by communication device suppliers and hardware producers, the software developers can get the information from hardware without having to worry about the differences between them and integrate all the information by the top level software for reference of decision-makers.

Technical Specifications**Standard**

IEEE802.3Z
IEEE 802.3U
IEEE 802.3
IEEE802.3X
IEEE802.1P
IEEE802.1D/w
IEEE802.1Q

Store and forward switching mode

Network

Ring, chain, star and tangent ring network topology.

Interface

Gigabit port: Max 4 × 1000Base-L/HX (SFP)
100M fiber port: Max 24 × 100Base-FX (FC/SC/ST connector)
100M RJ45 port: Max 24 × 10/100Base-TX
CONSOLE interface: RS232, RJ45
Alarm interface: alarm node output

Performance

Store-and-Forward speed: 1488100 bps
Max. filtering speed: 1488100 bps
MAC Address Table Size: 32K
Backplane switching capacity: 12.8G

Power Requirements

Power input: 24VDC (18-36VDC) dual redundant, 110VDC, 220VDC, 220VAC
Power consumption: <35W

Physical Characteristics

Casing: IP40 protection
Ribbed Aluminum housing fanless design
Dimensions(WxHxD): 482.6x44x325mm
Weight: 4000g (8.818 pounds)
Installation: Rack mounting

Environmental Limits

Operating Temperature: -40 to 75°C (-40 to 167°F)
Storage Temperature: -45 to 85°C (-49 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)

Approvals

EMC interference immunity:
IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge
IEC61000-4-3(RS): 10V/M (80-100MHz)
IEC61000-4-4(EFT): ±4KV power line, ±4KV data line
IEC61000-4-5(Surge): ±4KV(line/earth), ±4KV (line/line)power line, ±2KV data line
IEC61000-4-6(CS): 3V(10KHZ~150KHZ), 10V(150KHZ~80KHZ)

EMC emitted immunity:

FCC CFR47 Part15: FCC CFR47 Part 15 Class A
EN55022: EN55022 Class A
UL60950, CE, FCC, ROHS, KEMA

MTBF

35 years

Warranty

5 Years

Ordering Information

Model	Description
SICOM3024P-2GX-8FM(S)-16TX	16 × 10/100Base-TX, 8 × 100Base-FX, 2 × 1000M port, dual redundant power supply
SICOM3024P-4GX-10FM(S)-12TX	12 × 10/100Base-TX, 10 × 100Base-FX, 4 × 1000M port, dual redundant power supply
SICOM3024P-4GX-12FM(S)-12TX	12 × 10/100Base-TX, 12 × 100Base-FX, 4 × 1000M port, dual redundant power supply
SICOM3024P-4GX-14FM(S)-12TX	8 × 10/100Base-TX, 14 × 100Base-FX, 4 × 1000M port, dual redundant power supply
SICOM3024P-4GX-16FM(S)-8TX	8 × 10/100Base-TX, 16 × 100Base-FX, 4 × 1000M port, dual redundant power supply
SICOM3024P-4GX-18FM(S)-4TX	4 × 10/100Base-TX, 18 × 100Base-FX, 4 × 1000M port, dual redundant power supply
SICOM3024P-4GX-20FM(S)-4TX	4 × 10/100Base-TX, 20 × 100Base-FX, 4 × 1000M port, dual redundant power supply
SICOM3024P-4GX-22FM(S)	22 × 100Base-FX, 4 × 1000M port, dual redundant power supply
SICOM3024P-4GX-24FM(S)	24 × 100Base-FX, 4 × 1000M port, dual redundant power supply
SM-SFP-RJ45	SFP interface module with 1 × 1000M port, RJ45 connector
SM-SFP-LX/LC	SFP interface module with 1 × 1000M port, LC connector 10Km supported
SM-SFP-LH/LC-40	SFP interface module with 1 × 1000M port, LC connector 40Km supported
SM-SFP-LH/LC-80	SFP interface module with 1 × 1000M port, LC connector 80Km supported