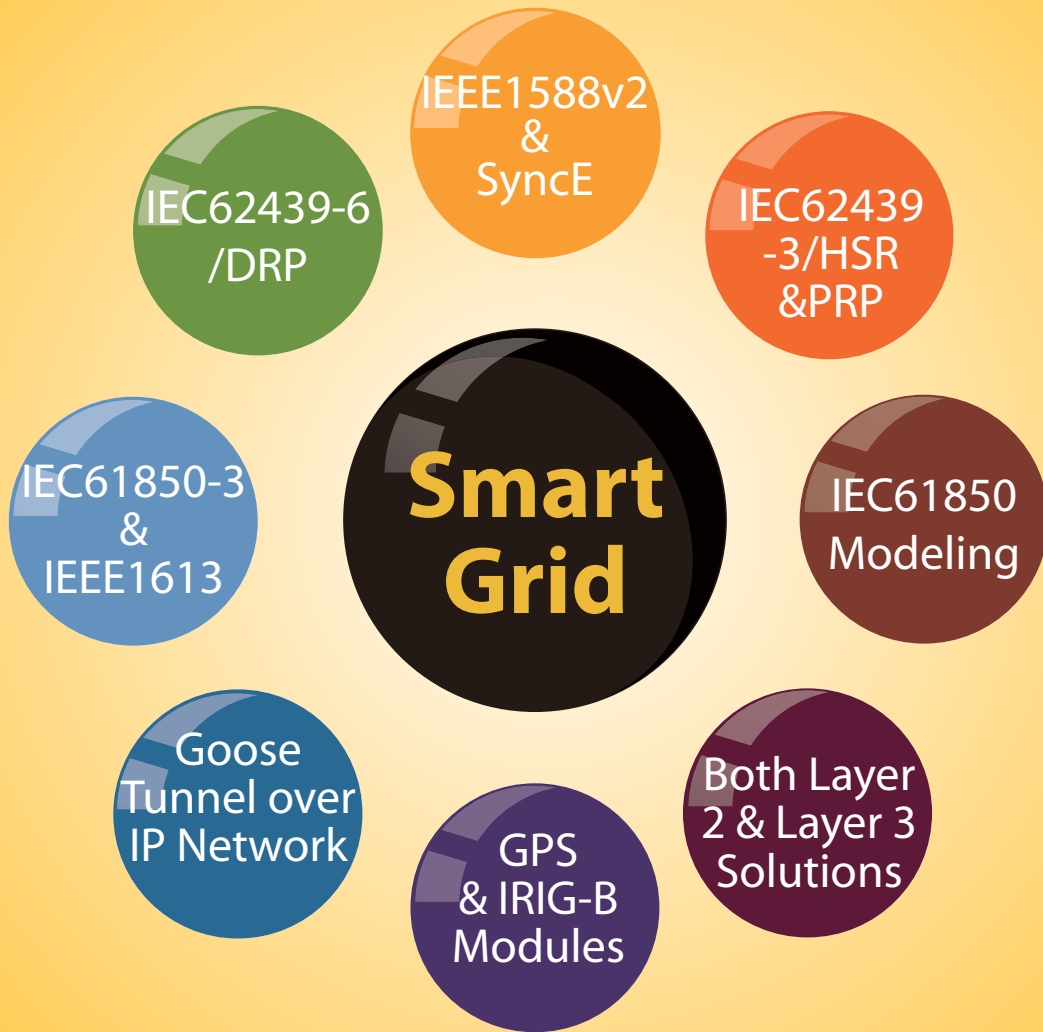


CATALOG 2013

KYLAND

©2013 Kyland Technology Co., Ltd. All Rights Reserved
201305V1.0

***Industrializing the Ethernet
Simplifying Industrial Communication***



Network Infrastructure

for your Smart Grid

ABOUT KYLAND

Kyland Technology Co., Ltd. is focusing on the development of communication technologies between machines especially in industrial hardened environments. Through combining data acquisition technologies and controlling data management technologies, Kyland provides advanced and reliable solutions for industrial information neural network platform.

Kyland has taken part in the drafting and writing of three international standards IEC61158 (Fieldbus for use in industrial control systems), IEC62439 (high-availability automation networks) and IEEE C37.238 (Standard Profile for Use of IEEE 1588 Precision Time Protocol in Power System). Being the founder of Chinese industrial communication solutions, Kyland devotes itself to create value for global customers through endless innovation.

Kyland's core competence lies in embedded functions and management software and high-reliability hardware design. To be specific, Kyland has led the industry in ring redundancy, zero-packet-loss, precision clock synchronization, wide

temperature range, and EMC technologies. We also feature sophisticated data security, physical-layer security, class-based broadcast storm control, intrinsic safety design, corrosion resistant design, and anti-vibration design technologies.

Till 2011, Kyland IEC61850 industrial Ethernet switches have been deployed in over 2000 running substations globally. Over 50 cities have used Kyland solution as backbone of their power distribution systems. More than 150 wind farms are running Kyland communication devices to manage their wind turbine controlling system. Totally 85,000+ Kyland devices are running in the field 24x7x365.

Focusing on industrial communication, Kyland keeps going toward the common goal of "Promoting industrial modernization with information technology", and tries to extend industrial communication to every corner of human being's industrial information technology.

CONTENTS

Layer 3 Backbone IEC61850 Industrial Ethernet Switches

SICOM6496	04
SICOM6524	06
SICOM6448SM	08
SICOM6424SM	10
SICOM6028GPT/SICOM6424PT	13
SICOM6028GP/SICOM6424P	17
SICOM6000	21

Layer 3 48G/96+8G Port Full Gigabit Managed Rack Mountable IEC61850 Backbone Switch
Layer 3 24G Port Full Gigabit Managed Rack Mountable IEC61850 Backbone Switch
Layer 3 48+4G Port Managed Rack Mountable IEC61850 Backbone Switch
Layer 3 24+4G Port Managed Rack Mountable IEC61850 Switch
Layer 3 28G/24+4G Port Full Gigabit Managed Rack Mountable Modular IEC61850 & IEEE1588 Switch
Layer 3 28G/24+4G Port Full Gigabit Managed Rack Mountable Modular IEC61850 Switch
Layer 3 24+4G Port Managed Din-Rail Modular IEC61850 Backbone Switch

Layer 2 IEC61850 Rack Mountable Industrial Ethernet Switches

SICOM3028GPT/SICOM3424PT	24
SICOM3028GP/SICOM3424P	28
SICOM3024P	32
SICOM3024PT	35
SICOM3024	38
SICOM3048	41
SICOM2024M	44

Layer 2 28G/24+4G Port Full Gigabit Managed Rack Mountable Modular IEC61850 & IEEE1588 Switch
Layer 2 28G/24+4G Port Full Gigabit Managed Rack Mountable Modular IEC61850 Switch
Layer 2 24+4G Port Managed Rack Mountable IEC61850 Switch
Layer 2 24+4G Port Managed Rack Mountable Modular IEC61850 & IEEE1588 Switch
Layer 2 24+4G Port Managed Rack Mountable IEC61850 Switch
Layer 2 48+4G Port Managed Rack Mountable Modular IEC61850 Switch
Layer 2 28 Port Managed Rack Mountable IEC61850 Switch

Layer 2 Din-Rail Managed IEC61850 Industrial Ethernet Switches

SICOM4000	47
SICOM3216	51
SICOM3016	54
SICOM3016B	56
SICOM3010G	58
SICOM3306PT	60
SICOM3306	62
SICOM3000	64
SICOM3009A	66
KIEN7009	68
KIEN5000/KIEN6000	70
PTC1000	72
SICOM3004/SICOM3006	74

Layer 2 24+4G Port Managed Din-Rail Modular IEC61850 Switch
Layer 2 16+2G Port Managed Din-Rail IEC61850 Switch
Layer 2 20 Port Managed Din-Rail IEC61850 Switch
Layer 2 16+4G Port Managed Din-Rail IEC61850 Switch
Layer 2 10G Port Full Gigabit Managed Din-Rail IEC61850 Switch
Layer 2 6+3G port Managed Din Rail IEEE1588v2 Industrial Ethernet Switch
Layer 2 6+3G Port Managed Din-Rail IEC61850 Switch
Layer 2 8+2G Port Managed Din-Rail IEC61850 Switch
Layer 2 9 Port Managed Din-Rail IEC61850 Switch
Layer 2 9 Port Simple Managed Din-Rail IEC61850 Switch
Layer 2 8 Port Simple Managed Din-Rail Switch
PTP (Precision Time Protocol) Clock Converter
4/6 Port 100M Managed Embedded Industrial Ethernet Switch

Unmanaged Din-Rail Industrial Ethernet Switches

KIEN3016A	76
KIEN1009	78
KIEN1008G	80
KIEN1005G	82
KIEN1005A	84
KIEN1005	86
KIEN1000/KIEN2000	88

16 Port Unmanaged Din-Rail Switch
9 Port Unmanaged Din-Rail Switch
8G Port Full Gigabit Unmanaged Din-Rail Switch
5G Port Full Gigabit Unmanaged Din-Rail Switch
5 Port Unmanaged Din-Rail Switch
5 Port Unmanaged Din-Rail Switch
8 Port Unmanaged Din-Rail Switch

EN50155 Industrial Ethernet Switches

SICOM5424R	90	24+4G Port IP40 Managed Rack Mountable EN50155 Switch
SICOM8000	92	24+4G Port IP67 Managed Panel Mounting EN50155 Switch
SICOM8010	94	8+2G Port IP67 Managed Panel Mounting EN50155 PoE Switch
SICOM5208R	96	8+2G Port IP40 Managed/Unmanaged Panel Mounting EN50155 PoE Switch
SICOM1005R	98	5 Port IP67 Unmanaged Panel Mounting EN50155 Switch

Power over Ethernet (PoE) Switches

SICOM3024SM	100	Layer 2 24+4G Port Managed Rack Mountable Modular IEC61850 PoE Switch
SICOM3307S	104	7+3G port Gigabit Managed PoE Industrial Ethernet Switch
SICOM3008S	106	8 Port Fast Ethernet Managed PoE Industrial Ethernet Switch
KIEN2204S	108	4+2G Port Gigabit Unmanaged PoE Industrial Ethernet Switch
KIEN1005S	110	5 Port Unmanaged Din-Rail PoE Switch

Traffic Ethernet Switches

SICOM3170	112	7+3G Port Managed Traffic Ethernet Switch
SICOM3171	114	5 Port Managed Traffic Serial Device Server
SICOM3172	116	EoVDSL & Serial Device Server Integrated Traffic Industrial Ethernet Switch

Intrinsic Safety Ethernet Switches

SICOM3016BA	118	Layer 2 12+4G Port Managed Panel Mounting Intrinsic Safety Switch
SICOM3000BA	122	Layer 2 6+3G Port Managed Din-Rail Intrinsic Safety Switch
SICOM3009BA	124	9 Port Managed Embedded Intrinsic Safety Switch
KIEN1008BA	126	8 Port Unmanaged Din-Rail Intrinsic Safety Switch

Serial Device Server

SICOM3005	128	6 Port Managed Din-Rail Serial Server Function Integrated Programmable Switch
KPS2204/KPS1000	130	6 Port Managed Din-Rail Serial Device Server

Media Converters & Optical Fiber Terminals

KOM300A	132	3 Port Unmanaged Din-Rail Copper to Fiber Media Converter
KOM300M	134	3 Port Managed Din-Rail Copper to Fiber Media Converter
KOM300F	136	3 Port Unmanaged Din-Rail Copper to Fiber Media Converter
KOM600	138	2 Port Unmanaged Din-Rail Copper to Fiber LFP Media Converter
KOM600G	140	2G Port Gigabit Unmanaged Din-Rail Copper to Fiber Media Converter
KOM200	142	Unmanaged Din-Rail Serial to Fiber Media Converter
KODT2200/KODT2200B	144	Managed Wall Mounting/Rack Mountable Serial to Fiber Optical Fiber Terminal

Network Management Software

Kyvision3.0	146	Network Management Software
-------------	-----	-----------------------------

Modules & Accessories

GPS Module	148	GPS Clock Synchronization Module
IRIG-B Module	149	IRIG-B PTP Clock Converter Output Module
PTP over E1/T1 Module	150	PTP over E1/T1 Precision Clock Interface Module
HSR/PRP Module	151	HSR/PRP Interface Module
Serial Device Server Module	152	4 Port Serial Device Server Interface Module
Multi Functional Application Module	153	Multi Functional Application Interface Module
SFP-1G	154	Gigabit SFP Modules
SFP-1FX	155	100M Fiber SFP Module
SFP-1G to FX	156	Gigabit to 100Base-FX SFP module

SICOM6496

Layer 3 48G/96+8G Port Full Gigabit Managed Rack Mountable IEC61850 Backbone Switch



- Layer 3 Full Gigabit Backbone Solution
- Modular design, supports maximum 48 Gigabit ports or 96 10/100Base-TX ports + 8 Gigabit SFP slots
- RIP, OSPF, BGP layer 3 routing protocols
- DT-Ring protocols, MSTP and VRRP
- Patented heat dissipation technology



Overview

SICOM6496 is a modular layer 3 managed industrial Ethernet switch with 48 10/100/1000Base-T(X) ports or 48 Gigabit SFP slots specially designed for core backbone network. It supports layer 3 data full wire-speed forwarding and full duplex or half duplex flow control. And SICOM6496 also supports DT-Ring protocols and the recovery time is less than 50ms.

Features & Benefits

- Redundancy Technology: supports DT-Ring protocols (recovery time<50ms), MSTP and VRRP
- Multicast Protocol: supports IGMP, IGMP Snooping, PIM-SM, PIM-DM, DVMRP
- Routing Protocol: supports RIPv1/v2, OSPFv2, BGPv4 and static routing protocol
- Network Partition: supports VLAN, GVRP
- Service Quality: supports QoS
- Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
- Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2, RMON, LLDP, SNTP, DHCP
- Network Security: supports ACL
- Device Management: supports FTP/TFTP upgrade, also supports Syslog upload and download
- Device Maintenance: supports port mirroring
- Alarm Output: supports port and ring alarms

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE802.3ac, IEEE 802.3ad, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP, VRRP;
IGMP, IGMP Snooping, PIM-SM, PIM-DM, DVMRP; RIPv1/v2, OSPFv2, BGPv4;
VLAN, GVRP;
Telnet, HTTP, SNMPv1/v2, RMON, LLDP, BootP, SNTP, DHCP
server/relay/client;
ACL;
FTP, TFTP, Syslog;
ARP, QoS, LACP

Switch Properties

Priority Queues: 8
Number of VLANs: 4K
VLAN ID: 1-4094
Number of Multicast Groups: 256
Routing Table: 30K
MAC Table: 16K
Packet Buffer: 512Mbit
Packet Forwarding Rate: 71.4Mpps
Switching Delay: <5μs

Interface

2 slots for power modules
2 slots for 3 types of 24-port or 52-port interface modules:
1) Interface module with 4 combo 1000Base SFP slots or 10/100/1000Base-TX ports, and 20 10/100/1000Base-TX ports
2) Interface module with 4 combo 1000Base SFP slots or 10/100/1000Base-TX ports, and 20 1000Base SFP slots
3) Interface module with 4 1000Base SFP slots and 48 10/100Base-TX ports
Console Port: RS232 (RJ45 connector)

LED

LEDs on Front Panel:
Running LED: Run
Power LED: PWR1, PWR2
Interface LED: Link/ACT (RJ45 port), Link (Fiber port), ACT (Fiber port)

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber:
850nm, 550m (1000M)
Single Mode Fiber:
1310nm, 10km/40km (1000M)
1550nm, 60km/80km (1000M)

Power Requirements

Power Input:
48DC (36-72VDC), 220AC/DC (85-264VAC/120-375VDC)
Power Terminal:
3-pin 7.62mm-spacing plug-in terminal block
Power Consumption: <150W

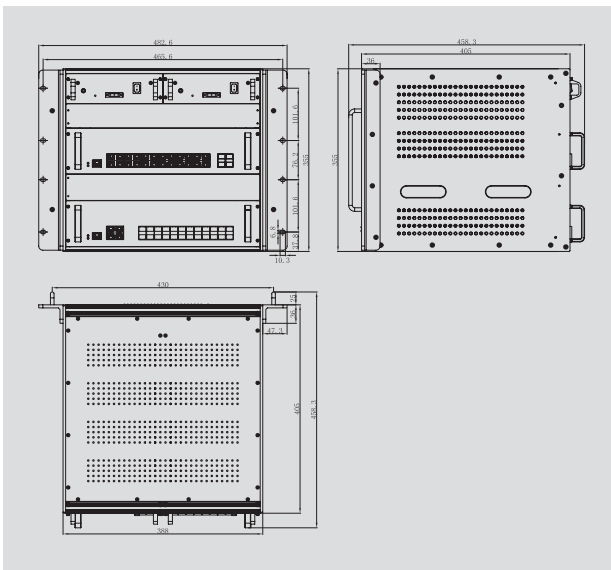
Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
Protection Class: IP30
Dimensions (WxHxD):
482.6x355x405 mm (19x13.97x16.10 in.)
Weight: 20kg (44.092 pound)
Mounting: Rack mounting

Environmental Limits

Operating Temperature: -40 to 65°C (-40 to 149°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)

Mechanical Drawing

MTBF
237,000 hrs

Warranty
5 years

Approvals
CE, FCC

Industrial Standard
EMI:
FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:
IEC61000-4-2 (ESD): $\pm 8\text{kV}$ (contact), $\pm 15\text{kV}$ (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: $\pm 4\text{kV}$; Data Port: $\pm 2\text{kV}$
IEC61000-4-5 (Surge): Power Port: $\pm 2\text{kV}/\text{DM}$, $\pm 4\text{kV}/\text{CM}$; Data Port: $\pm 2\text{kV}$
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)
IEC61000-4-9 (Pulsed magnetic field): 1000A/m
IEC61000-4-10 (Damped oscillation): 100A/m
IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:
IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2
Power: IEC61850-3, IEEE1613
Railway: EN50155, EN50121-4
Traffic Control: NEMA TS-2

Ordering Information

SICOM6496- _____ - _____ - _____ - _____
S1 S2 P1 P2

S1 and S2: Modules for Slot1 and Slot2

4Combo20GE = SM6.3-4GX/GE-20GE, interface module with 4 Gigabit RJ-45/SFP combo ports (10/100/1000 Base-TX, 1000Base-X), 20 x 10/100/1000Base-TX RJ45 ports

4Combo20GX = SM6.3-4GX/GE-20GX, interface module with 4 Gigabit RJ-45/SFP combo ports (10/100/1000 Base-TX, 1000Base-X) 20 Gigabit SFP slots

4GX48T = SM6.3-4GX-48T, interface module with 4 Gigabit SFP slots and 4 x 10/100Base-T(X) RJ45 ports

XX = None

PS1 and PS2: Power Supply 1 and 2

220AC/DC = SM6.3-Power-220AC/DC, power supply module of 220VAC/220VDC (85-264VAC/120-370VDC)

48DC = SM6.3-Power-48DC, power supply module of 48VDC (36-72VDC)
XX = No power supply (PS2 only)

Example Order Codes

SICOM6496-4Combo20GE-4Combo20GE-220AC/DC-XX

2 interface modules with 4 Gigabit RJ-45/SFP combo ports (10/100/1000 Base-TX, 1000Base-X), 20 x 10/100/1000Base-TX RJ45 ports, totally 8 Gigabit combo ports and 40 Gigabit copper ports, single 85-264VAC/120-370VDC power supply

SICOM6524

Layer 3 24G Port Full Gigabit Managed Rack Mountable IEC61850 Backbone Switch



- 24G full Gigabit fiber/RJ45 optional ports
- Supports RIP, OSPF, BGP layer 3 routing protocols
- Supports DT-Ring protocols
- Patented heat dissipation technology, fanless design
- IP40 protection class
- EMC performance reaches industrial level 4



Overview

SICOM6524 is a 24G port layer 3 core industrial Ethernet switch specifically designed to operate stably in electrically harsh and climatically demanding industrial environments. It offers up to 24 Gigabit SFP ports or 10/100/1000Base-T(X) ports. The redundant function of optical fiber network, independent entire network management channel and entire network real-time management system provide multiplex guarantee for reliable operation of the system.

Features & Benefits

- Redundancy Technology: supports DT-Ring protocols (recovery time<50ms), MSTP and VRRP
- Multicast Protocol: supports IGMP, IGMP Snooping, PIM-SM, PIM-DM, DVMRP
- Routing Protocol: supports RIPv1/v2, OSPFv2, BGPv4 and static routing protocol
- Network Partition: supports VLAN, GVRP
- Service Quality: supports QoS
- Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
- Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2, RMON, LLDP, SNTP, DHCP
- Network Security: supports ACL
- Device Management: supports FTP/TFTP upgrade, also supports Syslog upload and download
- Device Maintenance: supports port mirroring
- Alarm Output: supports port and ring alarms

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE802.3ac, IEEE 802.3ad, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP, VRRP;
IGMP, IGMP Snooping, PIM-SM, PIM-DM, DVMRP; RIPv1/v2, OSPFv2, BGPv4;
VLAN, GVRP;
Telnet, HTTP, SNMPv1/v2, RMON, LLDP, BootP, SNTP, DHCP server/relay/client;
ACL;
FTP, TFTP, Syslog;
ARP, QoS, LACP

Switch Properties

Priority Queues: 8
Number of VLANs: 4K
VLAN ID: 1-4094
Number of Multicast Groups: 256
Routing Table: 30K
MAC Table: 16K
Packet Buffer: 512Mbit
Packet Forwarding Rate: 35.7Mpps
Switching Delay: <5μs

Interface

Gigabit Ethernet Port Combinations:
1) 4 combo 1000Base SFP slots or 10/100/1000Base-TX ports, and 20 10/100/1000Base-TX ports
2) 4 combo 1000Base SFP slots or 10/100/1000Base-TX ports, and 20 1000Base SFP slots
Console Port: RS232 (RJ45 connector)

LED

LEDs on Front Panel:
Running LED: Run
Power LED: PWR1, PWR2
Interface LED: Link, ACT

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber:
850nm, 550m (1000M)
Single Mode Fiber:
1310nm, 10km/40km (1000M)
1550nm, 60km/80km (1000M)

Power Requirements

Power Input:
24DC (18-36VDC), 48DC (36-72VDC), 110DC (77-150VDC), 220AC/DC (85-265VAC/120-375VDC)
Power Terminal:
5-pin 5.08mm-spacing plug-in terminal block
Power Consumption: <58.6W

Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
Protection Class: IP40
Dimensions (WxHxD):
482.6x44x375 mm (19x1.73x14.76 in.)
Weight: 5.5kg (12.125 pound)
Mounting: 19 inch 1U Rack mounting

Environmental Limits

Operating Temperature: -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)

MTBF

342,000 hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

EMI:
FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

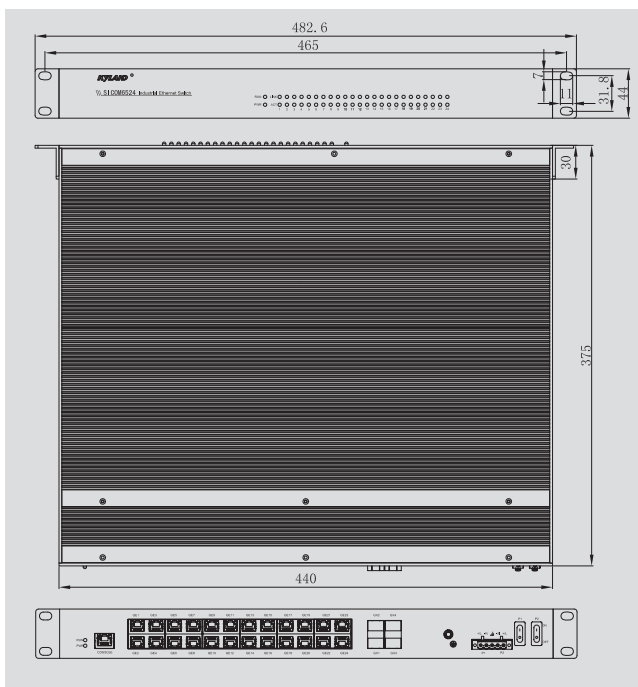
IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)
IEC61000-4-9 (Pulsed magnetic field): 1000A/m
IEC61000-4-10 (Damped oscillation): 100A/m
IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Power: IEC61850-3, IEEE1613
Railway: EN50155, EN50121-4
Traffic Control: NEMA TS-2

Mechanical Drawing**Ordering Information**

SICOM6524- _____ - _____
Ports PS

Ports: Interfaces

4GX/GE-20GE = 4GX/GE-20GE, 4 Gigabit RJ-45/SFP combo ports (10/100/1000 Base-TX, 1000Base-X), 20 10/100/1000Base-TX RJ45 ports
4GX/GE-20GX = 4GX/GE-20GX, 4 Gigabit RJ-45/SFP combo ports (10/100/1000 Base-TX, 1000Base-X), 20 Gigabit SFP ports

PS: Power supply (Only single power supply is supported)

24DC = 18-36VDC
48DC = 36-72VDC
110DC = 77-150VDC
220AC/DC = 85-265VAC/120-375VDC

Example Order Codes

SICOM6524-4GX/GE-20GE-24DC
4 Gigabit combo ports, 20 Gigabit SFP ports, 24DC(18-36VDC)power supply

SICOM6448SM

Layer 3 48+4G Port Managed Rack Mountable IEC61850 Backbone Switch



- 4 Gigabit combo ports and 48 10/100Base-TX ports
- Supports RIP, OSPF, BGP layer 3 routing protocols
- Supports DT-Ring protocols, MSTP and VRRP
- Allows front and rear panel mounting installation
- Patented heat dissipation technology
- Exceeds IEC61850 and IEEE1613
- CE, FCC certificates



Overview

SICOM6448SM Series are layer 3 managed industrial Ethernet switches with 48 10/100Base-T(X) ports and 4 combo Gigabit SFP slots or 10/100/1000Base-T(X) ports. Offering hardware wire-speed layer 3 switching, they support static and dynamic routing to optimize the network. They provide high performance and reliable solutions for industrial projects and simply are your best choice.

Features & Benefits

- Redundancy Technology: supports DT-Ring protocols (recovery time<50ms), MSTP and VRRP
- Multicast Protocol: supports IGMP, IGMP Snooping, PIM-SM, PIM-DM, DVMRP
- Routing Protocol: supports RIPv1/v2, OSPFv2, BGPv4 and static routing protocol
- Network Partition: supports VLAN, GVRP
- Service Quality: supports QoS
- Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
- Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2, RMON, LLDP, SNMP, DHCP
- Network Security: supports DT-Psec, ACL
- Device Management: supports FTP/TFTP upgrade, also supports Syslog upload and download
- Device Maintenance: supports port mirroring
- Alarm Output: supports port and ring alarms

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE802.3ac, IEEE 802.3ad, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP, VRRP;
IGMP, IGMP Snooping, PIM-SM, PIM-DM, DVMRP; RIPv1/v2, OSPFv2, BGPv4;
VLAN, GVRP;
Telnet, HTTP, SNMPv1/v2, RMON, LLDP, BootP, SNMP, DHCP
server/relay/client;
DT-Psec, ACL;
FTP, TFTP, Syslog;
ARP, QoS, LACP

Switch Properties

Priority Queues: 8
Number of VLANs: 4K
VLAN ID: 1-4094
Number of Multicast Groups: 256
Routing Table: 30K
MAC Table: 16K
Packet Buffer: 512Mbit
Packet Forwarding Rate: 13.1Mpps
Switching Delay: <5μs

Interface

Gigabit Ethernet Ports: 4 combo 1000Base SFP slots or 10/100/1000Base-TX ports
Fast Ethernet Ports: 48 10/100Base-TX RJ45 ports
Console Port: RS232 (RJ45 connector)

LED

LEDs on Front Panel:
System LED: SYS
Power LED: PWR1, PWR2
Interface LED: Link, ACT

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber:
850nm, 550m (1000M)
Single Mode Fiber:
1310nm, 10km/40km (1000M)
1550nm, 60km/80km (1000M)

Power Requirements

Power Input:
24DC (18-36VDC), 48DC (36-72VDC), 110DC (77-150VDC), 220AC/DC (85-265VAC/120-375VDC)
Power Terminal:
5-pin 5.08mm-spacing plug-in terminal block
Power Consumption: <39.5W

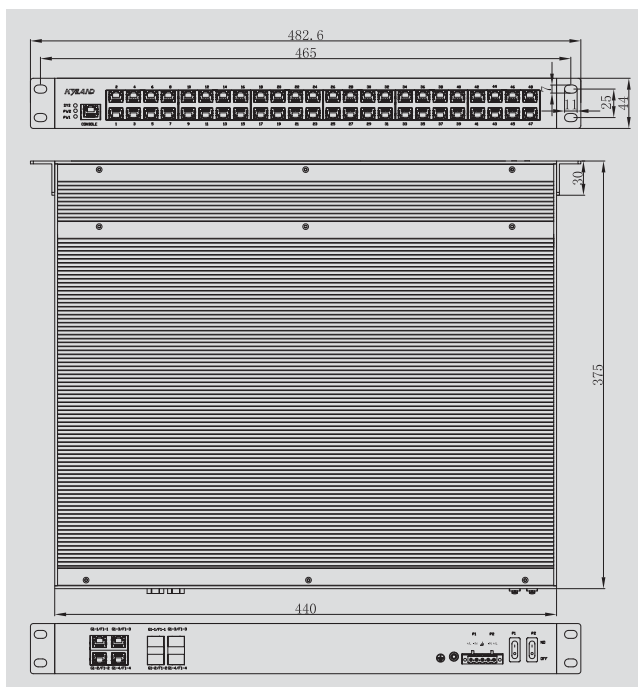
Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
Protection Class: IP40
Dimensions (WxHxD):
482.6x44x375 mm (19x1.73x14.76 in.)
Weight: 4kg (8.818 pound)
Mounting: 19 inch 1U Rack mounting

Environmental Limits

Operating Temperature: -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)

Mechanical Drawing**MTBF**

264,000 hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

EMI: FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): $\pm 8\text{kV}$ (contact), $\pm 15\text{kV}$ (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: $\pm 4\text{kV}$; Data Port: $\pm 2\text{kV}$
IEC61000-4-5 (Surge): Power Port: $\pm 2\text{kV/DM}$, $\pm 4\text{kV/CM}$; Data Port: $\pm 2\text{kV}$
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)
IEC61000-4-9 (Pulsed magnetic field): 1000A/m
IEC61000-4-10 (Damped oscillation): 100A/m
IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V(1s)

Machinery:

IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Power: IEC61850-3, IEEE1613
Railway: EN50155, EN50121-4
Traffic Control: NEMA TS-2

Ordering Information

SICOM6448SM- _____ - _____ - _____
Ports PS1 PS2

Ports: Interfaces

48T = 48 x 10/100Base-TX RJ45 ports
4GX/GE-48T = 4 Gigabit RJ-45/SFP combo ports(10/100/1000 Base-TX,1000Base-X) and 48 x 10/100/1000Base-TX RJ45 ports

PS1 and PS2: Power supply 1 and 2

24DC = 18-36VDC
48DC = 36-72VDC
110DC = 77-150VDC
220AC/DC = 85-265VAC/120-375VDC
XX = No power supply (PS2 only)

Example Order Codes

SICOM6448SM-4GX/GE-48T-24DC-24DC
4 10/100/1000Base TX RJ45 or 1000Base Gigabit SFP Combo ports, 48 10/100Base TX RJ45 ports, and dual redundant 18-36VDC power supplies

SICOM6424SM

Layer 3 24+4G Port Managed Rack Mountable IEC61850 Backbone Switch



- Internal modular design with flexible port combinations
- 4 Gigabit fiber/RJ45 optional ports, 24 Fast Ethernet fiber/RJ45 optional ports
- RIP, OSPF, BGP layer 3 routing protocols
- DT-Ring protocols, MSTP and VRRP
- Kyvision network management software, network topology auto-generation
- Exceeds IEC61850-3 & IEEE1613
- IP40 protection class



Overview

SICOM6424SM is a layer 3 managed modular industrial Ethernet switch with up to 24 100Base-FX or 10/100Base-T(X) ports, and 4 Gigabit SFP slots or 4 10/100/1000Base-T(X) ports. Offering hardware wire-speed layer 3 switching, they support static and dynamic routing to optimize the network. They provide high performance and reliable solutions for industrial projects with modular design.

Features & Benefits

- Redundancy Technology: supports DT-Ring protocols (recovery time<50ms), MSTP and VRRP
- Multicast Protocol: supports IGMP, IGMP Snooping, PIM-SM, PIM-DM, DVMRP
- Routing Protocol: supports RIPv1/v2, OSPFv2, BGPv4 and static routing protocol
- Network Partition: supports VLAN, GVRP
- Service Quality: supports QoS
- Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
- Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2, RMON, LLDP, SNTP, DHCP
- Network Security: supports DT-Psec, ACL
- Device Management: supports FTP/TFTP upgrade, also supports Syslog upload and download
- Device Maintenance: supports port mirroring
- Alarm Output: supports port, power and ring alarms

Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3u
IEEE 802.3ab
IEEE802.3ac
IEEE 802.3ad
IEEE 802.3z
IEEE 802.3x
IEEE 802.1p
IEEE 802.1Q
IEEE 802.1s

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP, VRRP;
IGMP, IGMP Snooping, PIM-SM, PIM-DM, DVMRP; RIPv1/v2, OSPFv2, BGPv4;
VLAN, GVRP;
Telnet, HTTP, SNMPv1/v2, RMON, LLDP, BootP, SNTP, DHCP
server/relay/client;
DT-Psec, ACL;
FTP, TFTP, Syslog;
ARP, QoS, LACP

Switch Properties

Priority Queues: 8
Number of VLANs: 4K
VLAN ID: 1-4094
Number of Multicast Groups: 256
Routing Table: 30K
MAC Table: 16K
Packet Buffer: 512Mbit
Packet Forwarding Rate: 9.5Mpps
Switching Delay: <5μs

Interface

Gigabit Ethernet Ports: 4 1000Base SFP slots or 4 10/100/1000Base-TX RJ45 ports

Fast Ethernet Ports: max 24 100Base-FX, SM/MM ports, FC/SC/ST connector or 24 10/100Base-TX RJ45 ports

Console Port: RS232 (RJ45 connector)

Alarm Contact: 3-pin 3.81mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

LEDs on Front Panel:

Running LED: Run

Alarm LED: Alarm

Power LED: PWR1, PWR2

Interface LED: Link/ACT (Fast Ethernet port), Speed (Fast Ethernet port), DPX (Gigabit Ethernet port), Link (Gigabit Ethernet port)

Transmission Distance

Twisted Pair:

100m (Standard CAT5, CAT5e network cable)

Multi Mode Fiber:

1310nm, 5km (100M)

850nm, 550m (1000M)

Single Mode Fiber:

1310nm, 40km/60km (100M)

1550nm, 60km/80km (100M)

1310nm, 10km/40km (1000M)

1550nm, 60km/80km (1000M)

Power Requirements

Power Input:

24DC (18-36VDC), 48DC (36-72VDC), 110DC (82-185VDC), 220AC/DC (85-265VAC/120-370VDC)

Power Terminal:

3-pin 9.5mm-spacing plug-in terminal block

Power Consumption: <35W

Overload Protection: Support

Reverse Connection Protection: Support

Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless

Protection Class: IP40

Dimensions (WxHxD):

482.6x44x420 mm (19x1.73x16.54 in.)

Weight: 5kg (11.023 pound)

Mounting: 19 inch 1U Rack mounting

Environmental Limits

Operating Temperature: -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)

MTBF

365,000 hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

EMI:

FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)

IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)

IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV

IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV

IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)

IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)

IEC61000-4-9 (Pulsed magnetic field): 1000A/m

IEC61000-4-10 (Damped oscillation): 100A/m

IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM

IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)

IEC60068-2-27 (Shock)

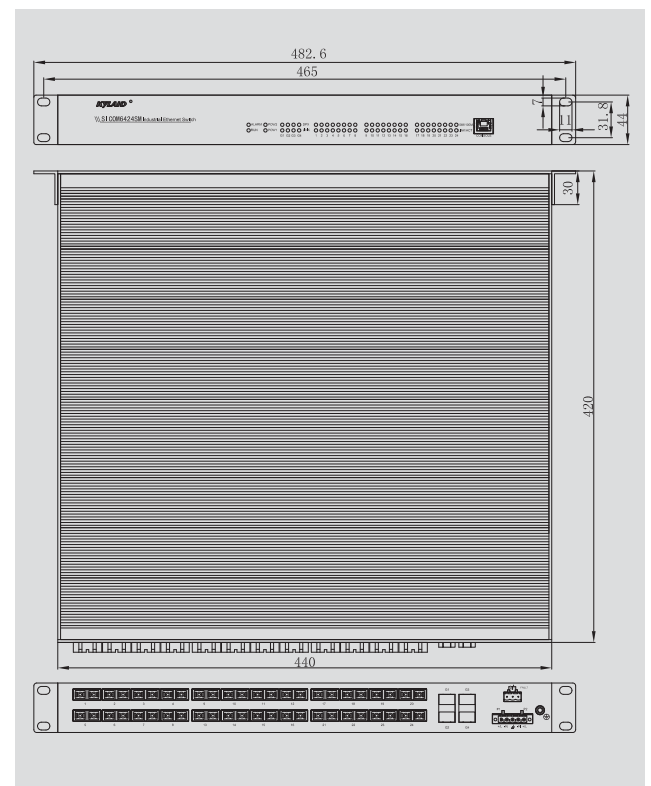
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Power: IEC61850-3, IEEE1613

Railway: EN50155, EN50121-4

Traffic Control: NEMA TS-2

Mechanical Drawing

Ordering Information

SICOM6424SM- _____ - _____ - _____ - _____ - _____ - _____
 G 100M Distance Connector PS1 PS2

G: Gigabit Ports

4GX = 4 Gigabit SFP ports

4GE = 4 10/100/1000Base-TX RJ45 ports

None = No Gigabit port

100M:100M Ports

24M = 24 100Base-FX multi mode fiber ports

24S = 24 100Base-FX single mode fiber ports

20M-4T = 20 100Base-FX multi mode fiber ports, 4 10/100Base-TX RJ45 ports

20S-4T = 20 100Base-FX single mode fiber ports, 4 10/100Base-TX RJ45 ports

16M-8T = 16 100Base-FX multi mode fiber ports, 8 10/100Base-TX RJ45 ports

16S-8T = 16 100Base-FX single mode fiber ports, 8 10/100Base-TX RJ45 ports

12M-12T = 12 100Base-FX multi mode fiber ports, 12 10/100Base-TX RJ45 ports

12S-12T = 12 100Base-FX single mode fiber ports, 12 10/100Base-TX RJ45 ports

8M-16T = 8 100Base-FX multi mode fiber ports, 16 10/100Base-TX RJ45 ports

8S-16T = 8 100Base-FX single mode fiber ports, 16 10/100Base-TX RJ45 ports

4M-20T = 4 100Base-FX multi mode fiber ports, 20 10/100Base-TX RJ45 ports

4S-20T = 4 100Base-FX single mode fiber ports, 20 10/100Base-TX RJ45 ports

24T = 24 10/100Base-TX RJ45 ports

Distance: Fiber Distance

1310-5 = 1310nm, 5km

1310-40 = 1310nm, 40km

1310-60 = 1310nm, 60km

1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC connectors

ST = ST connectors

FC = FC connectors

PS1 and PS2: Power supply 1 and 2

24DC = 18-36VDC

48DC = 36-72VDC

110DC = 82-185VDC

220AC/DC = 85-265VAC/120-370VDC

XX = No power supply (PS2 only)

Example Order Codes

SICOM6424SM-24M-1310-5-SC-24DC-24DC

24 100Base-FX multi mode fiber ports with SC connectors 1310nm 5km, 20 10/100Base TX RJ45 ports, and dual redundant 24DC(18-36VDC) power supplies.

SICOM6028GPT SICOM6424PT



Layer 3 28G/24+4G Port Full Gigabit Managed Rack Mountable Modular IEC61850 & IEEE1588 Switch

- Supports RIP, OSPF layer 3 routing protocols
- Flexible modular design for easy expansion, 1U structure
- Supports max 28 Gigabit ports or 4 Gigabit ports and 24 fast Ethernet ports
- Supports IEEE1588v2
- Supports ITU-T. G. 8261/G. 8262 (SyncE)
- Supports IEC62439-6, DT-Ring protocols, MSTP and VRRP
- Extensible GPS and IRIG-B input/output modules
- Provides Mini USB Console port, supports setting backup and recovery through USB
- Supports VCT (Virtual Cable Test)
- Exceeds IEC61850-3 and IEEE1613



Overview

SICOM6028GPT/SICOM6424PT series are members of Kyland intelligent modular platform SICOM GPT series which is an All-in-One solution integrating IEEE1588v2, SyncE, full gigabit, and both layer 2 & Layer 3 availability specifically designed to operate reliably in electrically harsh and climatically demanding utility substation and industrial environments. SICOM6028GPT/SICOM6424PT features the IEEE1588v2 & SyncE protocols with hardware time stamping allowing 10 nanoseconds time synchronization over each of 28 Gigabit/100M Ethernet ports. Its high port density in 1U chassis and fully modular design offers the maximum flexibility for easy expansion.

SICOM GPT Series is equipped with a Kyland patent IEC62439-6 ring protocol which enables less than 20ms recovery time. It also supports DT-Ring, RSTP/STP, MSTP and VRRP. Mini USB console port enables configuration easy backup and restore. SICOM GPT series has a GPS module, enabling the device to function as the clock source - offering accurate timing information obtained from GPS or Beidou GPS satellites. It also supports IRIG-B input and output modules which enable the customer to synchronize the whole system with large numbers of IRIG-B devices with accurate timing information. The new SICOM GPT series is fully compliant with IEC61850-3 and IEEE1613 standards.

Features & Benefits

- Redundancy Technology: supports IEC62439-6 (recovery time<20ms), DT-Ring protocols (recovery time<50ms), MSTP and VRRP
- Multicast Protocol: supports IGMP, IGMP Snooping, GMRP, PIM-SM, PIM-DM, DVMRP
- Routing Protocol: supports RIPv1/v2, OSPFv2, BGPv4 and static routing protocol
- Network Partition: supports VLAN, GVRP, PVLAN
- Service Quality: supports QoS
- Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
- Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, DHCP
- Synchronization Protocol: supports SNTP, IEEE1588v2, ITU-T. G. 8261/G. 8262
- Network Security: supports IEEE 802.1X, SSH, SSL, TACACS+, RADIUS, ACL
- Device Management: supports FTP/TFTP upgrade, also supports Syslog upload and download
- Device Maintenance: supports port mirroring, VCT (Virtual Cable Test)
- Alarm Output: supports IP/MAC conflicts, power, temperature, port and ring alarms
- Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE802.3ac, IEEE 802.3ad, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s, IEEE802.1X, IEEE1588v2, IEC62439-6, ITU-T. G.8261/G. 8262

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP, DRP, VRRP; IGMP, IGMP Snooping, GMRP, PIM-SM, PIM-DM, DVMRP; RIPv1/v2, OSPFv2, BGPv4; VLAN, GVRP, PVLAN; Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, BootP, DHCP Option 82, DHCP server/relay/client; SNTP, RTC, PTP; SSH, SSL, TACACS+, RADIUS, ACL; FTP, TFTP, Syslog; ARP, Modbus TCP, QoS, LACP

Switch Properties

Priority Queues: 8
Number of VLANs: 256
VLAN ID: 1-4094
Number of Multicast Groups: 256
MAC Table: 16K
Packet Buffer: 12Mbit
Packet Forwarding Rate: 41.7Mpps (SICOM6028GPT), 9.5Mpps (SICOM6424PT)
Switching Delay: <5µs

Interface

1 1U slot for 4-port Gigabit interface module (1000Base SFP or 10/100/1000Base-TX port)
6 0.5U slots for 4-port Gigabit/Fast Ethernet interface modules
Gigabit Ethernet Ports: max 28 1000Base SFP slots or 28 10/100/1000Base-TX RJ45 ports
Fast Ethernet Ports: max 24 100Base-FX, SM/MM ports, FC/SC/ST connector or 24 10/100Base-TX RJ45 ports
Console Port: Mini USB
USB Interface: USB2.0
Alarm Contact: 3-pin 5.08mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

1) LEDs on Front Panel:
Running LED: Run
Alarm LED: Alarm
Power LED: PWR1, PWR2
Interface LED: Link/ACT, Speed
Synchronization Finish LED: Lock
2) LEDs on Rear Panel:
Interface LED: Link/ACT
Port Speed LED: Speed
Data Transmitting and Receiving LED: Data (on IRIG-B interface module)
Synchronization Finish LED: SYNC (on IRIG-B and GPS interface modules)

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber:
1310nm, 5km (100M)
850nm, 550m (1000M)
Single Mode Fiber:
1310nm, 40km/60km (100M)

1550nm, 60km/80km (100M)
1310nm, 10km/40km (1000M)
1550nm, 60km/80km (1000M)

Power Requirements

Power Input:
24VDC (18-36VDC), 48VDC (36-72VDC), 220VAC/DC (85-264VAC/77-370VDC)
Power Terminal:
5-pin 5.08mm-spacing plug-in terminal block
Power Consumption:
<30W (full RJ45 ports); <44W (full fiber ports)

Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
Protection Class: IP40
Dimensions (W×H×D): 482.6×44×360 mm (19×1.73×14.17 in.)
Weight: <10kg (22.046 pound)
Mounting: 19 inch 1U Rack mounting

Environmental Limits

Operating Temperature: -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)

MTBF

371,000 hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

EMI:
FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

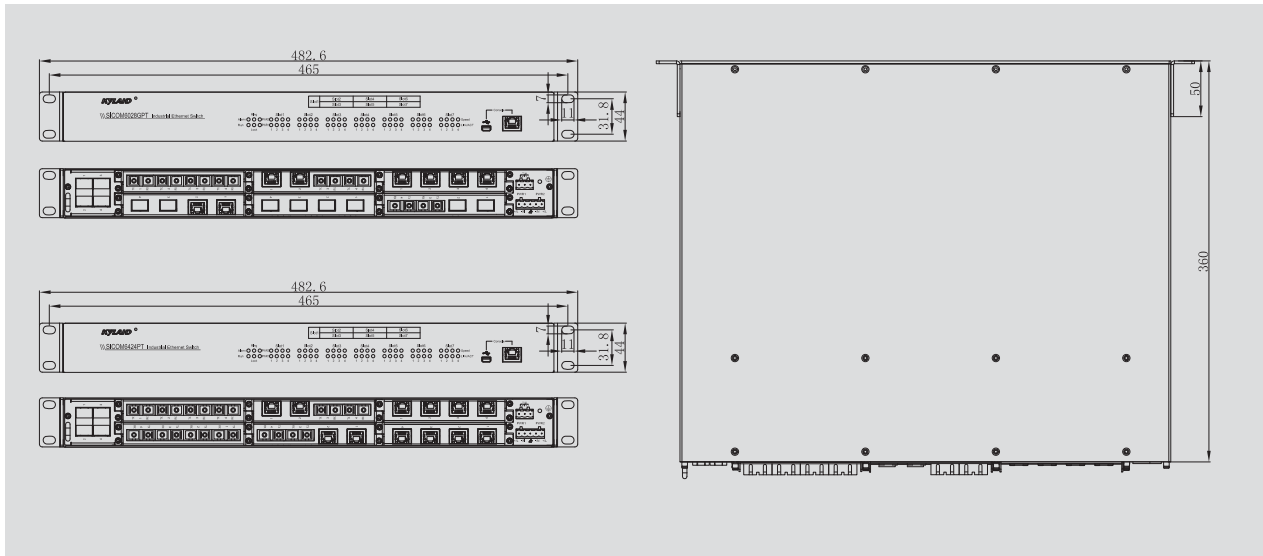
IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)
IEC61000-4-9 (Pulsed magnetic field): 1000A/m
IEC61000-4-10 (Damped oscillation): 100A/m
IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2
Power: IEC61850-3, IEEE1613
Railway: EN50155, EN50121-4
Traffic Control: NEMA TS-2

➤ Mechanical Drawing



➤ Ordering Information

Slot 1	Slot 2	Slot 4	Slot 6	PS
	Slot 3	Slot 5	Slot 7	

Model Chassis S1 S2 S3 S4 S5 S6 S7

Model Chassis: Chassis and Power Supplies

SICOM6028GPT-24-XX = SICOM6028GPT-MB-24DC-V1.0, SICOM6028GPT Chassis with 24VDC(18-36VDC) power supply

SICOM6028GPT-24-24 = SICOM6028GPT-MB-24DC-24DC-V1.0, SICOM6028GPT Chassis with dual redundant 24VDC(18-36VDC) power supplies

SICOM6028GPT-48-XX = SICOM6028GPT-MB-48DC-V1.0, SICOM6028GPT Chassis with 48VDC(36-72VDC) power supply

SICOM6028GPT-48-48 = SICOM6028GPT-MB-48DC-48DC-V1.0, SICOM6028GPT Chassis with dual redundant 48VDC(36-72VDC) power supplies

SICOM6028GPT-HI-XX = SICOM6028GPT-MB-220AC/DCW-V1.0, SICOM6028GPT Chassis with 85-264VAC/77-370VDC power supply

SICOM6028GPT-HI-HI = SICOM6028GPT-MB-220AC/DCW-220AC/DCW-V1.0, SICOM6028GPT Chassis with dual redundant 85-264VAC/77-370VDC power supplies

SICOM6424PT-24-XX = SICOM6424PT-MB-24DC-V1.0, SICOM6424PT Chassis with 24VDC(18-36VDC) power supply

SICOM6424PT-24-24 = SICOM6424PT-MB-24DC-24DC-V1.0, SICOM6424PT Chassis with dual redundant 24VDC(18-36VDC) power supplies

SICOM6424PT-48-XX = SICOM6424PT-MB-48DC-V1.0, SICOM6424PT Chassis with 48VDC(36-72VDC) power supply

SICOM6424PT-48-48 = SICOM6424PT-MB-48DC-48DC-V1.0, SICOM6424PT Chassis with dual redundant 48VDC(36-72VDC) power supplies

SICOM6424PT-HI-XX = SICOM6424PT-MB-220AC/DCW-V1.0, SICOM6424PT Chassis with 85-264VAC/77-370VDC power supply

SICOM6424PT-HI-HI = SICOM6424PT-MB-220AC/DCW-220AC/DCW-V1.0, SICOM6424PT Chassis with dual redundant 85-264VAC/77-370VDC power supplies

S1: 1U Module

XX = None

4GX1U = SM6.6-4GX-1U-V1.0, 1U Module with 4 Gigabit SFP ports

4GE1U = SM6.6-4GE-1U-V1.0, 1U Module with 4 Gigabit 10/100/1000Base-TX RJ45 ports

2GX2GE1U = SM6.6-2GX-2GE-1U-V1.0, 1U module with 2 Gigabit SFP ports and 2 10/100/1000Base-TX RJ45 ports

Model Chassis: Chassis and Power Supplies

S2-S7: 0.5U Module

XX = None

4GX = SM6.6-4GX-0.5U-V1.0, 0.5U Module with 4 Gigabit SFP ports (Only available for SICOM6028GPT)

4GE = SM6.6-4GE-0.5U-V1.0, 0.5U Module with 4 Gigabit 10/100/1000Base-TX RJ45 ports (Only available for SICOM6028GPT)

2GX2GE = SM6.6-2GX-2GE-0.5U-V1.0, 0.5U Module with

2 Gigabit 10/100/1000Base-TX RJ45 ports and 2 Gigabit SFP ports (Only available for SICOM6028GPT)

4T = SM6.6-4T-0.5U-V1.0, 0.5U Module with 4 10/100Base-TX RJ45 ports

4SSC = SM6.6-4S-SC-1310-40-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1310nm, 40km, SC connector

4SST = SM6.6-4S-ST-1310-40-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1310nm, 40km, ST connector

4SFC = SM6.6-4S-FC-1310-40-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1310nm, 40km, FC connector

4SSC60 = SM6.6-4S-SC-1310-60-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1310nm, 60km, SC connector

4SSC80 = SM6.6-4S-SC-1550-80-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1550nm, 80km, SC connector

4MSC = SM6.6-4M-SC-1310-5-0.5U-V1.0, 0.5U Module with 4 100Base-FX multimode fiber ports, 1310nm, 5km, SC connector

4MST = SM6.6-4M-ST-1310-5-0.5U-V1.0, 0.5U Module with 4 100Base-FX multimode fiber ports, 1310nm, 5km, ST connector

4MFC = SM6.6-4M-FC-1310-5-0.5U-V1.0, 0.5U Module with 4 100Base-FX multimode fiber ports, 1310nm, 5km, FC connector

2GX2SSC = SM6.6-2GX-2S-SC-1310-40-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1310nm, 40km, SC connector (Only available for SICOM6028GPT)

2GX2SST = SM6.6-2GX-2S-ST-1310-40-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1310nm, 40km, ST connector (Only available for SICOM6028GPT)

2GX2SFC = SM6.6-2GX-2S-FC-1310-40-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1310nm, 40km, FC connector (Only available for SICOM6028GPT)

2GX2SSC60 = SM6.6-2GX-2S-SC-1310-60-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1310nm, 60km, SC connector (Only available for SICOM6028GPT)

2GX2SSC80 = SM6.6-2GX-2S-SC-1550-80-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1550nm, 80km, SC connector (Only available for SICOM6028GPT)

2GX2MSC = SM6.6-2GX-2M-SC-1310-5-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX multimode fiber ports, 1310nm, 5km, SC connector (Only available for SICOM6028GPT)

2GX2MST = SM6.6-2GX-2M-ST-1310-5-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX multimode fiber ports, 1310nm, 5km, ST connector (Only available for SICOM6028GPT)

2GX2MFC = SM6.6-2GX-2M-FC-1310-5-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX multimode fiber ports, 1310nm, 5km, FC connector (Only available for SICOM6028GPT)

2SSC2T = SM6.6-2S-SC-1310-40-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1310nm, 40km, SC connector and 2 10/100Base-TX RJ45 ports

2SST2T = SM6.6-2S-ST-1310-40-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1310nm, 40km, ST connector and 2 10/100Base-TX RJ45 ports

2SFC2T = SM6.6-2S-FC-1310-40-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1310nm, 40km, FC connector and 2 10/100Base-TX RJ45 ports

2SSC602T = SM6.6-2S-SC-1310-60-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1310nm, 60km, SC connector and 2 10/100Base-TX RJ45 ports

2SSC802T = SM6.6-2S-SC-1550-80-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1550nm, 80km, SC connector and 2 10/100Base-TX RJ45 ports

2MSC2T = SM6.6-2M-SC-1310-5-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX multimode fiber ports, 1310nm, 5km, SC connector and 2 10/100Base-TX RJ45 ports

2MST2T = SM6.6-2M-ST-1310-5-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX multimode fiber ports, 1310nm, 5km, ST connector and 2 10/100Base-TX RJ45 ports

2MFC2T = SM6.6-2M-FC-1310-5-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX multimode fiber ports, 1310nm, 5km, FC connector and 2 10/100Base-TX RJ45 ports

GPS = SM6.6-GPS-OI-0.5U-V1.0, GPS Clock Synchronization Module

BO = SM6.6-PTP-BO-0.5U-V1.1, IRIG-B PTP Clock Converter Output Module

Accessories

DT-GPS-ANT-01 = GPS Antenna

DT-SP-01 = GPS Surge Protection AR21T

DT-LMR400-20-TNC-BNC = 20m coaxial cable with BNC(male) to TNC(male) adaptor

DT-LMR400-2-TNC-BNC = 2m coaxial cable with BNC(male) to TNC(male) adaptor

GPT Module Puller

DT-XL-Mini-USB-USB-2m = 2M USB Console Cable

Patch Cord Organizers (One Pair)

DT-BNC(K)-TNC(K) = BNC (female) to TNC (female) connector

SICOM6028GP SICOM6424P



Layer 3 28G/24+4G Port Full Gigabit Managed Rack Mountable Modular IEC61850 Switch

- Supports RIP, OSPF layer 3 routing protocols
- Flexible modular design for easy expansion, 1U structure
- Supports max 28 Gigabit ports or 4 Gigabit ports and 24 fast Ethernet ports
- Supports IEC62439-6, DT-Ring protocols, MSTP and VRRP
- Provides Mini USB Console port, supports setting backup and recovery through USB
- Supports VCT (Virtual Cable Test)
- Exceeds IEC61850-3 and IEEE1613



Overview

SICOM6028GP/SICOM6424P are members of Kyland intelligent modular platform SICOM GPT series which is an All-in-One solution integrating IEEE1588v2, SyncE, full gigabit, and both layer 2 & Layer 3 availability specifically designed to operate reliably in electrically harsh and climatically demanding utility substation and industrial environments. SICOM6028GP/SICOM6424P are equipped with Kyland patent IEC62439-6/DRP ring protocol which enables less than 20ms recovery time. It also supports DT-Ring, RSTP/STP and MSTP. Mini USB console port enables configuration easy backup and restore. SICOM GPT series is fully compliant with IEC61850-3 and IEEE1613 standards.

Supporting up to 28 Gigabit/100M Ethernet ports, the SICOM6028GP/SICOM6424P series has one 1U Gigabit slot for 4 Gigabit uplink ports, and 6 0.5U slots with 4 Gigabit or 100M ports on each module. With all high density ports being on rear panel, the SICOM GPT series is 1U height with only 360mm depth. Fully modular design offers the maximum flexibility for easy expansion. SICOM6028GP/SICOM6424P deliver great bandwidth, SFP expansions, network redundancy technology, management features, a fanless design, a wide operating temperature range of -40 to 85°C, and future proof protection of your industrial network.

Features & Benefits

- Redundancy Technology: supports IEC62439-6 (recovery time<20ms), DT-Ring protocols (recovery time<50ms), MSTP and VRRP
- Multicast Protocol: supports IGMP, IGMP Snooping, GMRP, PIM-SM, PIM-DM, DVMRP
- Routing Protocol: supports RIPv1/v2, OSPFv2, BGPv4 and static routing protocol
- Network Partition: supports VLAN, GVRP, PVLAN
- Service Quality: supports QoS
- Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
- Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, DHCP
- Synchronization Protocol: supports SNTP time synchronization
- Network Security: supports IEEE 802.1X, SSH, SSL, TACACS+, RADIUS, ACL
- Device Management: supports FTP/TFTP upgrade, also supports Syslog upload and download
- Device Maintenance: supports port mirroring, VCT (Virtual Cable Test)
- Alarm Output: supports IP/MAC conflicts, power, temperature, port and ring alarms
- Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE802.3ac, IEEE 802.3ad, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s, IEEE802.1X, IEC62439-6

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP, DRP, VRRP; IGMP, IGMP Snooping, GMRP, PIM-SM, PIM-DM, DVMRP; RIPv1/v2, OSPFv2, BGPv4; VLAN, GVRP, PVLAN; Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, BootP, DHCP Option 82, DHCP server/relay/client; SNMP, RTC; SSH, SSL, TACACS+, RADIUS, ACL; FTP, TFTP, Syslog; ARP, Modbus TCP, QoS, LACP

Switch Properties

Priority Queues: 8
Number of VLANs: 256
VLAN ID: 1-4094
Number of Multicast Groups: 256
MAC Table: 16K
Packet Buffer: 12Mbit
Packet Forwarding Rate: 41.7Mpps (SICOM6028GP), 9.5Mpps (SICOM6424P)
Switching Delay: <5µs

Interface

1 1U slot for 4-port Gigabit interface module (1000Base SFP or 10/100/1000Base-TX port)
6 0.5U slots for 4-port Gigabit/Fast Ethernet interface modules
Gigabit Ethernet Ports: max 28 1000Base SFP slots or 28 10/100/1000Base-TX RJ45 ports
Fast Ethernet Ports: max 24 100Base-FX, SM/MM ports, FC/SC/ST connector or 24 10/100Base-TX RJ45 ports
Console Port: Mini USB
USB Interface: USB2.0
Alarm Contact: 3-pin 5.08mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

1) LEDs on Front Panel:
Running LED: Run
Alarm LED: Alarm
Power LED: PWR1, PWR2
Interface LED: Link/ACT, Speed
2) LEDs on Rear Panel:
Interface LED: Link/ACT
Port Speed LED: Speed

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber:
1310nm, 5km (100M)
850nm, 550m (1000M)
Single Mode Fiber:
1310nm, 40km/60km (100M)
1550nm, 60km/80km (100M)
1310nm, 10km/40km (1000M)
1550nm, 60km/80km (1000M)

Power Requirements

Power Input:
24VDC (18-36VDC), 48VDC (36-72VDC),
220VAC/DC (85-264VAC/77-370VDC)
Power Terminal:
5-pin 5.08mm-spacing plug-in terminal block
Power Consumption:
<28W (full RJ45 ports); <42W (full fiber ports)

Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
Protection Class: IP40
Dimensions (W×H×D):
482.6×44×360 mm (19×1.73×14.17 in.)
Weight: <10kg (22.046 pound)
Mounting: 19 inch 1U Rack mounting

Environmental Limits

Operating Temperature: -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)

MTBF

368,000 hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

EMI:
FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)
IEC61000-4-9 (Pulsed magnetic field): 1000A/m
IEC61000-4-10 (Damped oscillation): 100A/m
IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

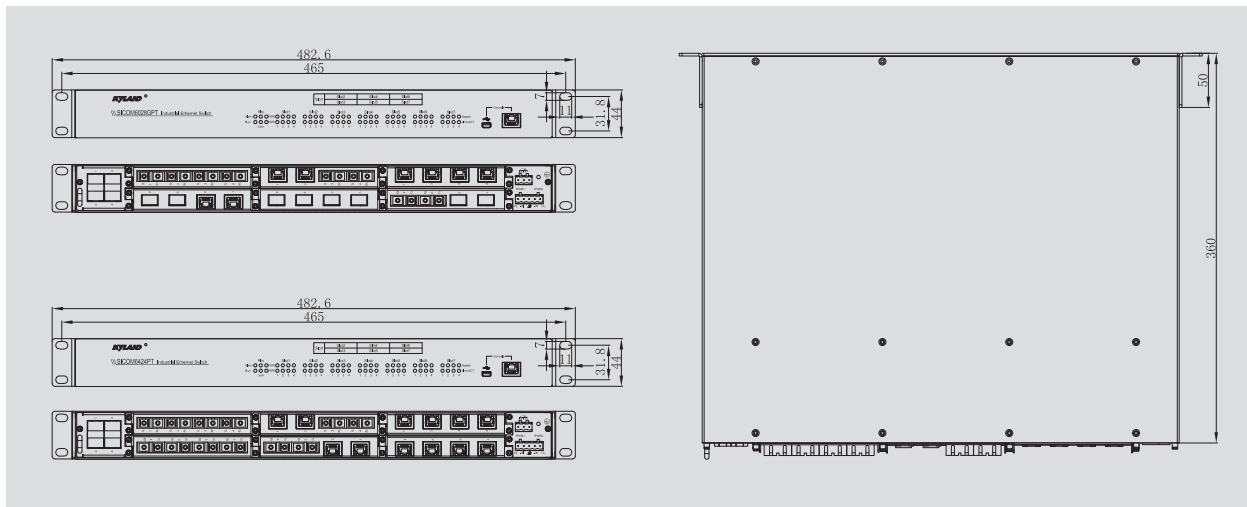
Machinery:

IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Power: IEC61850-3, IEC61850-4
Railway: EN50155, EN50121-4
Traffic Control: NEMA TS-2

» Mechanical Drawing



» Ordering Information

Slot 1	Slot 2	Slot 4	Slot 6	
	Slot 3	Slot 5	Slot 7	PS

Model Chassis S1 S2 S3 S4 S5 S6 S7

Model Chassis: Chassis and Power Supplies

SICOM6028GP-24-XX = SICOM6028GP-MB-24DC-V1.0, SICOM6028GP Chassis with 24VDC(18-36VDC) power supply

SICOM6028GP-24-24 = SICOM6028GP-MB-24DC-24DC-V1.0, SICOM6028GP Chassis with dual redundant 24VDC(18-36VDC) power supplies

SICOM6028GP-48-XX = SICOM6028GP-MB-48DC-V1.0, SICOM6028GP Chassis with 48VDC(36-72VDC) power supply

SICOM6028GP-48-48 = SICOM6028GP-MB-48DC-48DC-V1.0, SICOM6028GP Chassis with dual redundant 48VDC(36-72VDC) power supplies

SICOM6028GP-HI-XX = SICOM6028GP-MB-220AC/DCW-V1.0, SICOM6028GP Chassis with 85-264VAC/77-370VDC power supply

SICOM6028GP-HI-HI = SICOM6028GP-MB-220AC/DCW-220AC/DCW-V1.0, SICOM6028GP Chassis with dual redundant 85-264VAC/77-370VDC power supplies

SICOM6424P-24-XX = SICOM6424P-MB-24DC-V1.0, SICOM6424P Chassis with 24VDC(18-36VDC) power supply

SICOM6424P-24-24 = SICOM6424P-MB-24DC-24DC-V1.0, SICOM6424P Chassis with dual redundant 24VDC(18-36VDC) power supplies

SICOM6424P-48-XX = SICOM6424P-MB-48DC-V1.0, SICOM6424P Chassis with 48VDC(36-72VDC) power supply

SICOM6424P-48-48 = SICOM6424P-MB-48DC-48DC-V1.0, SICOM6424P Chassis with dual redundant 48VDC(36-72VDC) power supplies

SICOM6424P-HI-XX = SICOM6424P-MB-220AC/DCW-V1.0, SICOM6424P Chassis with 85-264VAC/77-370VDC power supply

SICOM6424P-HI-HI = SICOM6424P-MB-220AC/DCW-220AC/DCW-V1.0, SICOM6424P Chassis with dual redundant 85-264VAC/77-370VDC power supplies

S1: 1U Module

XX=None

4GX1U = SM6.6-4GX-1U-V1.0, 1U Module with 4 Gigabit SFP ports

4GE1U = SM6.6-4GE-1U-V1.0, 1U Module with 4 Gigabit 10/100/1000Base-TX RJ45 ports

2GX2GE1U = SM6.6-2GX-2GE-1U-V1.0, 1U module with 2 Gigabit SFP ports and 2 10/100/1000Base-TX RJ45 ports

S2-S7: 0.5U Module

XX = None

4GX = SM6.6-4GX-0.5U-V1.0, 0.5U Module with 4 Gigabit SFP ports (Only available for SICOM6028GP)

4GE = SM6.6-4GE-0.5U-V1.0, 0.5U Module with 4 Gigabit 10/100/1000Base-TX RJ45 ports (Only available for SICOM6028GP)

2GX2GE = SM6.6-2GX-2GE-0.5U-V1.0, 0.5U Module with 2 Gigabit 10/100/1000Base-TX RJ45 ports and 2 Gigabit SFP ports (Only available for SICOM6028GP)

4T = SM6.6-4T-0.5U-V1.0, 0.5U Module with 4 10/100Base-TX RJ45 ports

4SSC = SM6.6-4S-SC-1310-40-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1310nm, 40km, SC connector

4SST = SM6.6-4S-ST-1310-40-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1310nm, 40km, ST connector

4SFC = SM6.6-4S-FC-1310-40-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1310nm, 40km, FC connector

4SSC60 = SM6.6-4S-SC-1310-60-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1310nm, 60km, SC connector

4SSC80 = SM6.6-4S-SC-1550-80-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1550nm, 80km, SC connector

4MSC = SM6.6-4M-SC-1310-5-0.5U-V1.0, 0.5U Module with 4 100Base-FX multimode fiber ports, 1310nm, 5km, SC connector

4MST = SM6.6-4M-ST-1310-5-0.5U-V1.0, 0.5U Module with 4 100Base-FX multimode fiber ports, 1310nm, 5km, ST connector

4MFC = SM6.6-4M-FC-1310-5-0.5U-V1.0, 0.5U Module with 4 100Base-FX multimode fiber ports, 1310nm, 5km, FC connector

2GX2SSC = SM6.6-2GX-2S-SC-1310-40-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1310nm, 40km, SC connector (Only available for SICOM6028GP)

2GX2SST = SM6.6-2GX-2S-ST-1310-40-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1310nm, 40km, ST connector (Only available for SICOM6028GP)

2GX2SFC = SM6.6-2GX-2S-FC-1310-40-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1310nm, 40km, FC connector (Only available for SICOM6028GP)

2GX2SSC60 = SM6.6-2GX-2S-SC-1310-60-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1310nm, 60km, SC connector (Only available for SICOM6028GP)

2GX2SSC80 = SM6.6-2GX-2S-SC-1550-80-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1550nm, 80km, SC connector (Only available for SICOM6028GP)

2GX2MSC = SM6.6-2GX-2M-SC-1310-5-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX multi mode fiber ports, 1310nm, 5km, SC connector (Only available for SICOM6028GP)

2GX2MST = SM6.6-2GX-2M-ST-1310-5-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX multi mode fiber ports, 1310nm, 5km, ST connector (Only available for SICOM6028GP)

2GX2MFC = SM6.6-2GX-2M-FC-1310-5-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX multi mode fiber ports, 1310nm, 5km, FC connector (Only available for SICOM6028GP)

2SSC2T = SM6.6-2S-SC-1310-40-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1310nm, 40km, SC connector and 2 10/100Base-TX RJ45 ports

2SST2T = SM6.6-2S-ST-1310-40-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1310nm, 40km, ST connector and 2 10/100Base-TX RJ45 ports

2SFC2T = SM6.6-2S-FC-1310-40-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1310nm, 40km, FC connector and 2 10/100Base-TX RJ45 ports

2SSC602T = SM6.6-2S-SC-1310-60-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1310nm, 60km, SC connector and 2 10/100Base-TX RJ45 ports

2SSC802T = SM6.6-2S-SC-1550-80-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1550nm, 80km, SC connector and 2 10/100Base-TX RJ45 ports

2MSC2T = SM6.6-2M-SC-1310-5-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX multimode fiber ports, 1310nm, 5km, SC connector and 2 10/100Base-TX RJ45 ports

2MST2T = SM6.6-2M-ST-1310-5-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX multimode fiber ports, 1310nm, 5km, ST connector and 2 10/100Base-TX RJ45 ports

2MFC2T = SM6.6-2M-FC-1310-5-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX multimode fiber ports, 1310nm, 5km, FC connector and 2 10/100Base-TX RJ45 ports

Accessories

DT-GPS-ANT-01 = GPS Antenna

DT-SP-01 = GPS Surge Protection AR21T

DT-LMR400-20-TNC-BNC = 20m coaxial cable with BNC(male) to TNC(male) adaptor

DT-LMR400-2-TNC-BNC = 2m coaxial cable with BNC(male) to TNC(male) adaptor

GPT Module Puller

DT-XL-Mini-USB-USB-2m = 2M USB Console Cable

Patch Cord Organizers (One Pair)

DT-BNC(K)-TNC(K) = BNC (female) to TNC (female) connector

Example Order Codes

SICOM6028GP-HI-HI-4GX1U-4GX-4GX-4GX-4GX-4GX

SICOM6028GP with 28G SFP ports and dual redundant 85-264VAC/77-370VDC power supplies

SICOM6000

Layer 3 24+4G Port Managed Din-Rail Modular IEC61850 Backbone Switch



- Modular DIN-Rail design for easy expansion
- 4 Gigabit SFP slots and 24 Fast Ethernet fiber/RJ45 optional ports
- Supports multiple layer 3 routing protocols
- Embedded serial data server, and supports max 12 RS232/RS485 ports
- Supports DT-Ring protocols, MSTP and VRRP
- Patented heat dissipation technology, fanless design
- IP40 protection class



Overview

SICOM6000 is modular layer 3 managed industrial Ethernet switch for Din Rail installation. It offers 4 combo Gigabit SFP slots or 10/100/1000Base-T(X) ports, 24 100M copper/fiber ports or 12 RS232/RS485 serial ports. SICOM6000 also comes with EMC industrial level 4 design and complies with IP40 protection class. Based on Kyvision3.0, CLI, WEB interface, it offers concentrated management. The state-of-the-art OPC software enables the switch's management embedded in various industrial systems.

Features & Benefits

- Redundancy Technology: supports DT-Ring protocols (recovery time<50ms), MSTP and VRRP
- Multicast Protocol: supports IGMP, IGMP Snooping, PIM-SM, PIM-DM, DVMRP
- Routing Protocol: supports RIPv1/v2, OSPFv2, BGPv4 and static routing protocol
- Network Partition: supports VLAN, GVRP
- Service Quality: supports QoS
- Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
- Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2, RMON, SNMP, LLDP, DHCP
- Network Security: supports ACL
- Device Management: supports FTP/TFTP upgrade, also supports Syslog upload and download
- Device Maintenance: supports port mirroring
- Alarm Output: supports port, power and ring alarms

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE802.3ac, IEEE 802.3ad, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP, VRRP;
IGMP, IGMP Snooping, PIM-SM, PIM-DM, DVMRP; RIPv1/v2, OSPFv2, BGPv4;
VLAN, GVRP;
Telnet, HTTP, SNMPv1/v2, RMON, LLDP, BootP, SNMP, DHCP server/relay/client;
ACL;
FTP, TFTP, Syslog;
ARP, QoS, LACP

Switch Properties

Priority Queues: 8
Number of VLANs: 4K
VLAN ID: 1-4094
Number of Multicast Groups: 256
Routing Table: 30K
MAC Table: 16K
Packet Buffer: 512Mbit
Packet Forwarding Rate: 9.5Mpps
Switching Delay: <5μs

Interface

1 slot for master switching module
1 slot for power module
1 slot for 4-port Gigabit Combo interface module
3 slots for 8-port Fast Ethernet interface modules or 4-port serial interface modules
Gigabit Ethernet Ports: 4 combo 1000Base SFP slots or 10/100/1000Base-TX ports
Fast Ethernet Ports: max 24 100Base-FX SFP slots or 24 10/100Base-TX RJ45 ports
Serial Port: max 12 RS232/RS485 ports, 20-pin 3.81mm-spacing plug-in terminal block in each serial interface module
Console Port: RS232 (RJ45 connector)
Alarm Contact: 3-pin 3.81mm-spacing plug-in terminal block, 250VAC/350VDC Max, 2A Max, 60W Max

LED

LEDs on Front Panel:
Running LED: Run
Alarm LED: Alarm
Power LED: PWR1, PWR2
LEDs showing the connection status of interface modules: L1 to L4
Interface LED: Link/ACT, TX1-TX4 (serial port), RX1-RX4 (serial port)

Transmission Distance

Serial Cable: RS232, 15m; RS422/RS485, 1200m
Twisted Pair: 100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber:
1310nm, 2km (100M)
850nm, 550m (1000M)
Single Mode Fiber:
1310nm, 40km (100M)
1310nm, 10km/40km (1000M)
1550nm, 60km/80km (1000M)

Power Requirements

Power Input:
24DC (18-36VDC), 48DC (36-72VDC)
Power Terminal:
5-pin 5.08mm-spacing plug-in terminal block
Power Consumption: <35W

Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
Protection Class: IP40
Dimensions (WxHxD):
320x165.5x236 mm (12.60x6.52x9.29 in.)
Weight: <7kg (15.432 pound)
Mounting: DIN-Rail or panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

251,487 hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

EMI:
FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): $\pm 8\text{kV}$ (contact), $\pm 15\text{kV}$ (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: $\pm 4\text{kV}$; Data Port: $\pm 2\text{kV}$
IEC61000-4-5 (Surge): Power Port: $\pm 2\text{kV/DM}$, $\pm 4\text{kV/CM}$; Data Port: $\pm 2\text{kV}$
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

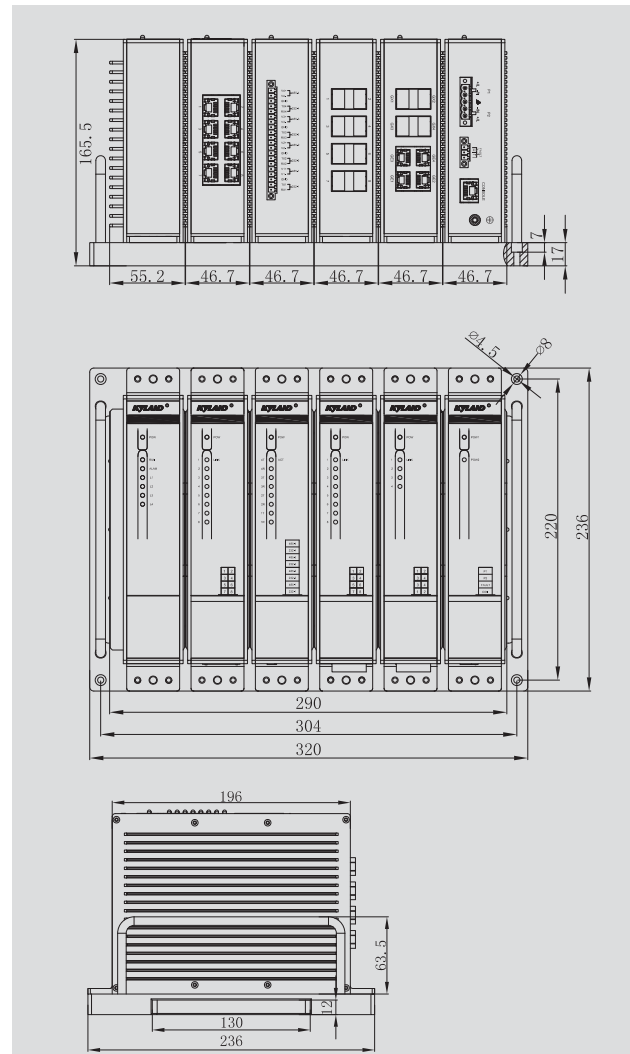
IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

Traffic Control: NEMA TS-2

Mechanical Drawing



Ordering Information

SICOM6000 - - - - -
 G S1 S2 S3 PS

G: Gigabit Ports

XX = No Gigabit port

4G = SM6.1-4GX/GE, Interface module with 4 combo Gigabit SFP slots or 10/100/1000Base-T(X) RJ45 ports

S1 to S3: Slot 1-3

XX = None

8T = SM6.1-8T, Interface module with 8 x 10/100Base-T(X) ports, RJ45 connector

8F = SM6.1-8FX-SFP, Interface module with 8 x 100Base SFP slots

4D = SM6.1-4D-232/485, Interface module with 4 x RS232/RS485 serial ports

PS: Power Supply

24DC = SM6.1-Power-24, Power supply module of 24VDC (18-36VDC), dual redundant power inputs

48DC = SM6.3-Power-48, power supply module of 48VDC (36-72VDC), dual redundant power inputs

Example Order Codes

SICOM6000-4G-8T-8T-24DC

4GX/GE combo ports, 24 10/100Base-TX RJ45 ports, 24DC(18-36VDC) power supply with dual redundant power inputs

SICOM3028GPT SICOM3424PT



Layer 2 28G/24+4G Port Full Gigabit Managed Rack Mountable Modular IEC61850 & IEEE1588 Switch

- Supports IEEE1588v2
- Supports ITU-T. G. 8261/G. 8262 (SyncE)
- 1U modular design for easy expansion, and supports max 28 Gigabit ports or 4 Gigabit ports and 24 fast Ethernet ports
- Supports IEC62439-6, DT-Ring protocols and MSTP
- Extensible GPS and IRIG-B input/output modules
- Provides Mini USB Console port, supports setting backup and recovery through USB
- Supports VCT (Virtual Cable Test)
- Exceeds IEC61850-3 and IEEE1613
- KEMA (pending), CE, FCC certificates



Overview

SICOM3028GPT/SICOM3424PT series are members of Kyland intelligent modular platform SICOM GPT series which is an All-in-One solution integrating IEEE1588v2, SyncE, full gigabit, and both layer 2 & Layer 3 availability specifically designed to operate reliably in electrically harsh and climatically demanding utility substation and industrial environments. SICOM3028GPT/SICOM3424PT features the IEEE1588v2 & SyncE protocols with hardware time stamping allowing 10 nanoseconds time synchronization over each of 28 Gigabit/100M Ethernet ports. Its high port density in 1U chassis and fully modular design offers the maximum flexibility for easy expansion.

SICOM GPT Series is equipped with a Kyland patent IEC62439-6 ring protocol which enables less than 20ms recovery time. It also supports DT-Ring, RSTP/STP, and MSTP. Mini USB console port enables configuration easy backup and restore. SICOM GPT series has a GPS module, enabling the device to function as the clock source - offering accurate timing information obtained from GPS or Beidou GPS satellites. It also supports IRIG-B input and output modules which enable the customer to synchronize the whole system with large numbers of IRIG-B devices with accurate timing information. The new SICOM GPT series is fully compliant with IEC61850-3 and IEEE1613 standards (KEMA certification in progress).

Features & Benefits

- Redundancy Technology: supports IEC62439-6 (recovery time<20ms), DT-Ring protocols (recovery time<50ms) and MSTP
- Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
- Network Partition: supports VLAN, GVRP, PVLAN
- Service Quality: supports QoS
- Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
- Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, DHCP
- Synchronization Protocol: supports SNTP, IEEE1588v2, ITU-T. G. 8261/G. 8262
- Network Security: supports MAC address binding with port, IEEE802.1X, SSH, SSL, TACACS+, RADIUS, ACL
- Device Management: supports FTP/TFTP upgrade, also supports Syslog upload and download
- Device Maintenance: supports port mirroring, VCT (Virtual Cable Test)
- Alarm Output: supports IP/MAC conflicts, power, temperature, port and ring alarms
- Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE802.3ac, IEEE 802.3ad, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s, IEEE802.1X, IEEE1588v2, IEC62439-6, ITU-T. G.8261/G. 8262

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP, DRP;
IGMP Snooping, GMRP;
VLAN, GVRP, PVLAN;
Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, Bootp, DHCP server/relay/client, DHCP Option 82;
SNTP, PTP, RTC;
SSH, SSL, TACACS+, RADIUS, ACL;
FTP, TFTP, Syslog;
ARP, Modbus TCP, QoS, LACP

Switch Properties

Priority Queues: 4
Number of VLANs: 256
VLAN ID: 1-4094
Number of Multicast Groups: 256
MAC Table: 16K
Packet Buffer: 12Mbit
Packet Forwarding Rate: 41.7Mpps (SICOM3028GPT), 9.5Mpps(SICOM3424PT)
Switching Delay: <5 μ s

Interface

1 1U slot for 4-port Gigabit interface module (1000Base SFP or 10/100/1000Base-TX port)
6 0.5U slots for 4-port Gigabit/Fast Ethernet interface modules
Gigabit Ethernet Ports: max 28 1000Base SFP slots or 28 10/100/1000Base-TX RJ45 ports
Fast Ethernet Ports: max 24 100Base-FX, SM/MM ports, FC/SC/ST connector or 24 10/100Base-TX RJ45 ports
Console Port: Mini USB
USB Interface: USB2.0
Alarm Contact: 3-pin 5.08mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

1) LEDs on Front Panel:
Running LED: Run
Alarm LED: Alarm
Power LED: PWR1, PWR2
Interface LED: Link/ACT, Speed
Synchronization Finish LED: Lock
2) LEDs on Rear Panel:
Interface LED: Link/ACT
Port Speed LED: Speed
Data Transmitting and Receiving LED: Data (on IRIG-B interface module)
Synchronization Finish LED: SYNC (on IRIG-B and GPS interface modules)

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber:
1310nm, 5km (100M)
850nm, 550m (1000M)
Single Mode Fiber:
1310nm, 40km/60km (100M)
1550nm, 60km/80km (100M)
1310nm, 10km/40km (1000M)
1550nm, 60km/80km (1000M)

Power Requirements

Power Input:
24VDC (18-36VDC), 48VDC (36-72VDC), 220VAC/DC (85-264VAC/77-370VDC)
Power Terminal:
5-pin 5.08mm-spacing plug-in terminal block
Power Consumption:
<28W (full RJ45 ports); <42W (full fiber ports)

Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
Protection Class: IP40
Dimensions (WxHxD):
482.6x44x360 mm (19x1.73x14.17 in.)
Weight: <10kg (22.046 pound)
Mounting: 19 inch 1U Rack mounting

Environmental Limits

Operating Temperature: -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)

MTBF

359,000 hrs

Warranty

5 years

Approvals

KEMA (pending), CE, FCC

Industrial Standard

EMI:
FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

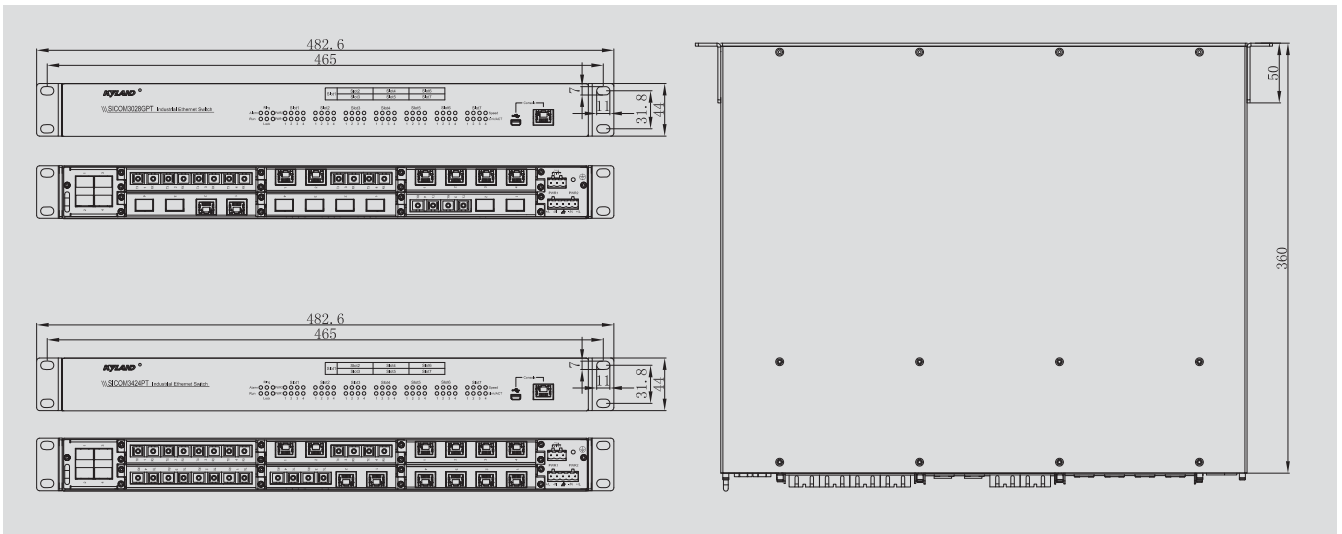
IEC61000-4-2 (ESD): ± 8 kV (contact), ± 15 kV (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: ± 4 kV; Data Port: ± 2 kV
IEC61000-4-5 (Surge): Power Port: ± 2 kV/DM, ± 4 kV/CM; Data Port: ± 2 kV
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)
IEC61000-4-9 (Pulsed magnetic field): 1000A/m
IEC61000-4-10 (Damped oscillation): 100A/m
IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2
Power: IEC61850-3, IEEE1613
Railway: EN50155, EN50121-4
Traffic Control: NEMA TS-2

➤ Mechanical Drawing



➤ Ordering Information

Slot 1	Slot2	Slot4	Slot6	
	Slot3	Slot5	Slot7	PS

Model Chassis S1 S2 S3 S4 S5 S6 S7

Model Chassis: Chassis and Power Supplies

SICOM3028GPT-24-XX = SICOM3028GPT-MB-24DC-V1.0, SICOM3028GPT Chassis with 24VDC(18-36VDC) power supply

SICOM3028GPT-24-24 = SICOM3028GPT-MB-24DC-24DC-V1.0, SICOM3028GPT Chassis with dual redundant 24VDC(18-36VDC) power supplies

SICOM3028GPT-48-XX = SICOM3028GPT-MB-48DC-V1.0, SICOM3028GPT Chassis with 48VDC(36-72VDC) power supply

SICOM3028GPT-48-48 = SICOM3028GPT-MB-48DC-48DC-V1.0, SICOM3028GPT Chassis with dual redundant 48VDC(36-72VDC) power supplies

SICOM3028GPT-HI-XX = SICOM3028GPT-MB-220AC/DCW-V1.0, SICOM3028GPT Chassis with 85-264VAC/77-370VDC power supply

SICOM3028GPT-HI-HI = SICOM3028GPT-MB-220AC/DCW-220AC/DCW-V1.0, SICOM3028GPT Chassis with dual redundant 85-264VAC/77-370VDC power supplies

SICOM3424PT-24-XX = SICOM3424PT-MB-24DC-V1.0, SICOM3424PT Chassis with 24VDC(18-36VDC) power supply

SICOM3424PT-24-24 = SICOM3424PT-MB-24DC-24DC-V1.0, SICOM3424PT Chassis with dual redundant 24VDC(18-36VDC) power supplies

SICOM3424PT-48-XX = SICOM3424PT-MB-48DC-V1.0, SICOM3424PT Chassis with 48VDC(36-72VDC) power supply

SICOM3424PT-48-48 = SICOM3424PT-MB-48DC-48DC-V1.0, SICOM3424PT Chassis with dual redundant 48VDC(36-72VDC) power supplies

SICOM3424PT-HI-XX = SICOM3424PT-MB-220AC/DCW-V1.0, SICOM3424PT Chassis with 85-264VAC/77-370VDC power supply

SICOM3424PT-HI-HI = SICOM3424PT-MB-220AC/DCW-220AC/DCW-V1.0, SICOM3424PT Chassis with dual redundant 85-264VAC/77-370VDC power supplies

S1: 1U Module

XX = None

4GX1U = SM6.6-4GX-1U-V1.0, 1U Module with 4 Gigabit SFP ports

4GE1U = SM6.6-4GE-1U-V1.0, 1U Module with 4 Gigabit 10/100/1000Base-TX RJ45 ports

2GX2GE1U = SM6.6-2GX-2GE-1U-V1.0, 1U module with 2 Gigabit SFP ports and 2 10/100/1000Base-TX RJ45 ports

S2-S7: 0.5U Module

XX = None

4GX = SM6.6-4GX-0.5U-V1.0, 0.5U Module with 4 Gigabit SFP ports (Only available for SICOM3028GPT)

4GE = SM6.6-4GE-0.5U-V1.0, 0.5U Module with 4 Gigabit 10/100/1000Base-TX RJ45 ports (Only available for SICOM3028GPT)

2GX2GE = SM6.6-2GX-2GE-0.5U-V1.0, 0.5U Module with 2 Gigabit 10/100/1000Base-TX RJ45 ports and 2 Gigabit SFP ports (Only available for SICOM3028GPT)

4T = SM6.6-4T-0.5U-V1.0, 0.5U Module with 4 10/100Base-TX RJ45 ports

4SSC = SM6.6-4S-SC-1310-40-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1310nm, 40km, SC connector

4SST = SM6.6-4S-ST-1310-40-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1310nm, 40km, ST connector

4SFC = SM6.6-4S-FC-1310-40-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1310nm, 40km, FC connector

4SSC60 = SM6.6-4S-SC-1310-60-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1310nm, 60km, SC connector

4SSC80 = SM6.6-4S-SC-1550-80-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1550nm, 80km, SC connector

4MSC = SM6.6-4M-SC-1310-5-0.5U-V1.0, 0.5U Module with 4 100Base-FX multimode fiber ports, 1310nm, 5km, SC connector

4MST = SM6.6-4M-ST-1310-5-0.5U-V1.0, 0.5U Module with 4 100Base-FX multimode fiber ports, 1310nm, 5km, ST connector

4MFC = SM6.6-4M-FC-1310-5-0.5U-V1.0, 0.5U Module with 4 100Base-FX multimode fiber ports, 1310nm, 5km, FC connector

2GX2SSC = SM6.6-2GX-2S-SC-1310-40-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1310nm, 40km, SC connector (Only available for SICOM3028GPT)

2GX2SST = SM6.6-2GX-2S-ST-1310-40-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1310nm, 40km, ST connector (Only available for SICOM3028GPT)

2GX2SFC = SM6.6-2GX-2S-FC-1310-40-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1310nm, 40km, FC connector (Only available for SICOM3028GPT)

2GX2SSC60 = SM6.6-2GX-2S-SC-1310-60-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1310nm, 60km, SC connector (Only available for SICOM3028GPT)

2GX2SSC80 = SM6.6-2GX-2S-SC-1550-80-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1550nm, 80km, SC connector (Only available for SICOM3028GPT)

2GX2MSC = SM6.6-2GX-2M-SC-1310-5-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX multi mode fiber ports, 1310nm, 5km, SC connector (Only available for SICOM3028GPT)

2GX2MST = SM6.6-2GX-2M-ST-1310-5-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX multi mode fiber ports, 1310nm, 5km, ST connector (Only available for SICOM3028GPT)

2GX2MFC = SM6.6-2GX-2M-FC-1310-5-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX multi mode fiber ports, 1310nm, 5km, FC connector (Only available for SICOM3028GPT)

2SSC2T = SM6.6-2S-SC-1310-40-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1310nm, 40km, SC connector and 2 10/100Base-TX RJ45 ports

2SST2T = SM6.6-2S-ST-1310-40-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1310nm, 40km, ST connector and 2 10/100Base-TX RJ45 ports

2SFC2T = SM6.6-2S-FC-1310-40-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1310nm, 40km, FC connector and 2 10/100Base-TX RJ45 ports

2SSC602T = SM6.6-2S-SC-1310-60-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1310nm, 60km, SC connector and 2 10/100Base-TX RJ45 ports

2SSC802T = SM6.6-2S-SC-1550-80-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1550nm, 80km, SC connector and 2 10/100Base-TX RJ45 ports

2MSC2T = SM6.6-2M-SC-1310-5-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX multimode fiber ports, 1310nm, 5km, SC connector and 2 10/100Base-TX RJ45 ports

2MST2T = SM6.6-2M-ST-1310-5-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX multimode fiber ports, 1310nm, 5km, ST connector and 2 10/100Base-TX RJ45 ports

2MFC2T = SM6.6-2M-FC-1310-5-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX multimode fiber ports, 1310nm, 5km, FC connector and 2 10/100Base-TX RJ45 ports

GPS = SM6.6-GPS-OI-0.5U-V1.0, GPS Clock Synchronization Module

BO = SM6.6-PTP-BO-0.5U-V1.1, IIRIG-B PTP Clock Converter Output Module

Accessories

DT-GPS-ANT-01 = GPS Antenna

DT-SP-01 = GPS Surge Protection AR21T

DT-LMR400-20-TNC-BNC = 20m coaxial cable with BNC(male) to TNC(male) adaptor

DT-LMR400-2-TNC-BNC = 2m coaxial cable with BNC(male) to TNC(male) adaptor
GPT Module Puller

DT-XL-Mini-USB-USB-2m = 2M USB Console Cable

Patch Cord Organizers (One Pair)

DT-BNC(K)-TNC(K) = BNC (female) to TNC (female) connector

Example Order Codes

SICOM3028GPT-HI-HI-4GX1U-4GX-4GX-4GX-4GX-4GX

SICOM3028GPT with 28G SFP ports and dual redundant 85-264VAC/77-370VDC power supplies

SICOM3028GP SICOM3424P

Layer 2 28G/24+4G Port Full Gigabit Managed Rack Mountable Modular IEC61850 Switch



- 1U modular design for easy expansion, and supports max 28 Gigabit ports or 4 Gigabit ports and 24 fast Ethernet ports
- Supports IEC62439-6, DT-Ring protocols and MSTP
- Provides Mini USB Console port, supports setting backup and recovery through USB
- Supports VCT (Virtual Cable Test)
- Exceeds IEC61850-3 and IEEE1613
- KEMA (pending), CE, FCC certificates



Overview

SICOM3028GP/SICOM3424P are members of Kyland intelligent modular platform SICOM GPT series which is an All-in-One solution integrating IEEE1588v2, SyncE, full gigabit, and both layer 2 & Layer 3 availability specifically designed to operate reliably in electrically harsh and climatically demanding utility substation and industrial environments.

SICOM3028GP/SICOM3424P are equipped with Kyland patent IEC62439-6/DRP ring protocol which enables less than 20ms recovery time. It also supports DT-Ring, RSTP/STP and MSTP. Mini USB console port enables configuration easy backup and restore. SICOM GPT series is fully compliant with IEC61850-3 and IEEE1613 standards (KEMA certification in progress).

Supporting up to 28 Gigabit/100M Ethernet ports, the SICOM3028GP/SICOM3424P series has one 1U Gigabit slot for 4 Gigabit uplink ports, and 6 0.5U slots with 4 Gigabit or 100M ports on each module. With all high density ports being on rear panel, Kyland GPT series is 1U height with only 360mm depth. Fully modular design offers the maximum flexibility for easy expansion. SICOM3028GP/SICOM3424P deliver great bandwidth, SFP expansions, network redundancy technology, management features, a fanless design, a wide operating temperature range of -40 to 85°C, and future proof protection of your industrial network.

Features & Benefits

- Redundancy Technology: supports IEC62439-6 (recovery time<20ms), DT-Ring protocols (recovery time<50ms) and MSTP
- Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
- Network Partition: supports VLAN, GVRP, PVLAN
- Service Quality: supports QoS
- Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
- Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, SNMP, DHCP
- Network Security: supports MAC address binding with port, IEEE802.1X, SSH, SSL, TACACS+, RADIUS, ACL
- Device Management: supports FTP/TFTP upgrade, also supports Syslog upload and download
- Device Maintenance: supports port mirroring, VCT (Virtual Cable Test)
- Alarm Output: supports IP/MAC conflicts, power, temperature, port and ring alarms
- Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE802.3ac, IEEE 802.3ad, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s, IEEE802.1X, IEC62439-6

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP, DRP;
IGMP Snooping, GMRP;
VLAN, GVRP, PVLAN;
Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, Bootp, DHCP server/snooping/client, DHCP Option 82;
SNTP, RTC;
SSH, SSL, TACACS+, RADIUS, ACL;
FTP, TFTP, Syslog;
ARP, Modbus TCP, QoS, LACP

Switch Properties

Priority Queues: 4
Number of VLANs: 256
VLAN ID: 1-4094
Number of Multicast Groups: 256
MAC Table: 16K
Packet Buffer: 12Mbit
Packet Forwarding Rate: 41.7Mpps (SICOM3028GP), 9.5Mpps (SICOM3424P)
Switching Delay: <5μs

Interface

1 1U slot for 4-port Gigabit interface module (1000Base SFP, 10/100/1000Base-TX)
6 0.5U slots for 4-port Gigabit/Fast Ethernet interface modules
Gigabit Ethernet Ports: max 28 1000Base SFP slots or 28 10/100/1000Base-TX RJ45 ports
Fast Ethernet Ports: max 24 100Base-FX, SM/MM ports, FC/SC/ST connector or 24 10/100Base-TX RJ45 ports
Console Port: Mini USB
USB Interface: USB2.0
Alarm Contact: 3-pin 5.08mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

1) LEDs on Front Panel:
Running LED: Run
Alarm LED: Alarm
Power LED: PWR1, PWR2
Interface LED: Link/ACT, Speed
2) LEDs on Rear Panel:
Interface LED: Link/ACT
Port Speed LED: Speed

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber:
1310nm, 5km (100M)
850nm, 550m (1000M)
Single Mode Fiber:
1310nm, 40km/60km (100M)
1550nm, 60km/80km (100M)
1310nm, 10km/40km (1000M)
1550nm, 60km/80km (1000M)

Power Requirements

Power Input:
24VDC (18-36VDC), 48VDC (36-72VDC), 220VAC/DC (85-264VAC/77-370VDC)
Power Terminal:
5-pin 5.08mm-spacing plug-in terminal block
Power Consumption:
<26W (full RJ45 ports); <40W (full fiber ports)

Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
Protection Class: IP40
Dimensions (WxHxD):
482.6x44x360 mm (19x1.73x14.17 in.)
Weight: <10kg (22.046 pound)
Mounting: 19 inch 1U Rack mounting

Environmental Limits

Operating Temperature: -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)

MTBF

359,000 hrs

Warranty

5 years

Approvals

KEMA (pending), CE, FCC

Industrial Standard

EMI:
FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

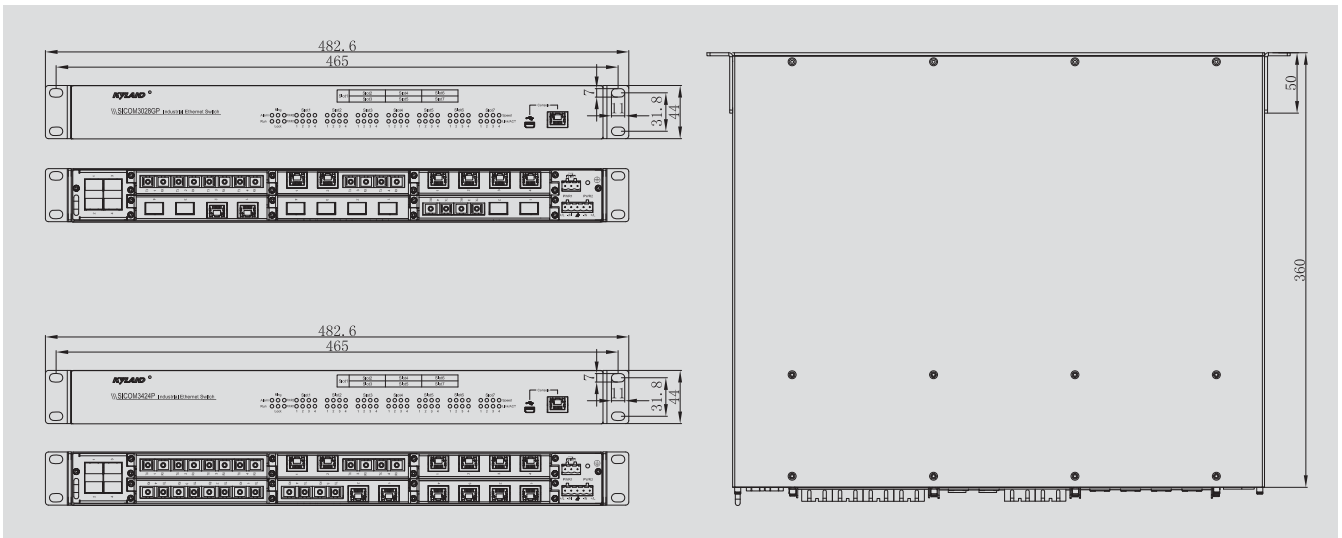
IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)
IEC61000-4-9 (Pulsed magnetic field): 1000A/m
IEC61000-4-10 (Damped oscillation): 100A/m
IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2
Power: IEC61850-3, IEEE1613
Railway: EN50155, EN50121-4
Traffic Control: NEMA TS-2

➤ Mechanical Drawing



➤ Ordering Information

Slot 1	Slot 2	Slot 4	Slot 6	PS
	Slot 3	Slot 5	Slot 7	

Model Chassis S1 S2 S3 S4 S5 S6 S7

Model Chassis: Chassis and Power Supplies

SICOM3028GP-24-XX = SICOM3028GP-MB-24DC-V1.0, SICOM3028GP Chassis with 24VDC(18-36VDC) power supply

SICOM3028GP-24-24 = SICOM3028GP-MB-24DC-24DC-V1.0, SICOM3028GP Chassis with dual redundant 24VDC(18-36VDC) power supplies

SICOM3028GP-48-XX = SICOM3028GP-MB-48DC-V1.0, SICOM3028GP Chassis with 48VDC(36-72VDC) power supply

SICOM3028GP-48-48 = SICOM3028GP-MB-48DC-48DC-V1.0, SICOM3028GP Chassis with dual redundant 48VDC(36-72VDC) power supplies

SICOM3028GP-HI-XX = SICOM3028GP-MB-220AC/DCW-V1.0, SICOM3028GP Chassis with 85-264VAC/77-370VDC power supply

SICOM3028GP-HI-HI = SICOM3028GP-MB-220AC/DCW-220AC/DCW-V1.0, SICOM3028GP Chassis with dual redundant 85-264VAC/77-370VDC power supplies

SICOM3424P-24-XX = SICOM3424P-MB-24DC-V1.0, SICOM3424P Chassis with 24VDC(18-36VDC) power supply

SICOM3424P-24-24 = SICOM3424P-MB-24DC-24DC-V1.0, SICOM3424P Chassis with dual redundant 24VDC(18-36VDC) power supplies

SICOM3424P-48-XX = SICOM3424P-MB-48DC-V1.0, SICOM3424P Chassis with 48VDC(36-72VDC) power supply

SICOM3424P-48-48 = SICOM3424P-MB-48DC-48DC-V1.0, SICOM3424P Chassis with dual redundant 48VDC(36-72VDC) power supplies

SICOM3424P-HI-XX = SICOM3424P-MB-220AC/DCW-V1.0, SICOM3424P Chassis with 85-264VAC/77-370VDC power supply

SICOM3424P-HI-HI = SICOM3424P-MB-220AC/DCW-220AC/DCW-V1.0, SICOM3424P Chassis with dual redundant 85-264VAC/77-370VDC power supplies

S1: 1U Module

XX = None

4GX1U = SM6.6-4GX-1U-V1.0, 1U Module with 4 Gigabit SFP ports

4GE1U = SM6.6-4GE-1U-V1.0, 1U Module with 4 Gigabit 10/100/1000Base-TX RJ45 ports

2GX2GE1U = SM6.6-2GX-2GE-1U-V1.0, 1U module with 2 Gigabit SFP ports and 2 10/100/1000Base-TX RJ45 ports

S2-S7: 0.5U Module

XX = None

4GX = SM6.6-4GX-0.5U-V1.0, 0.5U Module with 4 Gigabit SFP ports (Only available for SICOM3028GP)

4GE = SM6.6-4GE-0.5U-V1.0, 0.5U Module with 4 Gigabit 10/100/1000Base-TX RJ45 ports (Only available for SICOM3028GP)

2GX2GE = SM6.6-2GX-2GE-0.5U-V1.0, 0.5U Module with 2 Gigabit 10/100/1000Base-TX RJ45 ports and 2 Gigabit SFP ports (Only available for SICOM3028GP)

4T = SM6.6-4T-0.5U-V1.0, 0.5U Module with 4 10/100Base-TX RJ45 ports

4SSC = SM6.6-4S-SC-1310-40-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1310nm, 40km, SC connector

4SST = SM6.6-4S-ST-1310-40-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1310nm, 40km, ST connector

4SFC = SM6.6-4S-FC-1310-40-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1310nm, 40km, FC connector

4SSC60 = SM6.6-4S-SC-1310-60-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1310nm, 60km, SC connector

4SSC80 = SM6.6-4S-SC-1550-80-0.5U-V1.0, 0.5U Module with 4 100Base-FX single mode fiber ports, 1550nm, 80km, SC connector

4MSC = SM6.6-4M-SC-1310-5-0.5U-V1.0, 0.5U Module with 4 100Base-FX multimode fiber ports, 1310nm, 5km, SC connector

4MST = SM6.6-4M-ST-1310-5-0.5U-V1.0, 0.5U Module with 4 100Base-FX multimode fiber ports, 1310nm, 5km, ST connector

4MFC = SM6.6-4M-FC-1310-5-0.5U-V1.0, 0.5U Module with 4 100Base-FX multimode fiber ports, 1310nm, 5km, FC connector

2GX2SSC = SM6.6-2GX-2S-SC-1310-40-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1310nm, 40km, SC connector (Only available for SICOM3028GP)

2GX2SST = SM6.6-2GX-2S-ST-1310-40-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1310nm, 40km, ST connector (Only available for SICOM3028GP)

2GX2SFC = SM6.6-2GX-2S-FC-1310-40-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1310nm, 40km, FC connector (Only available for SICOM3028GP)

2GX2SSC60 = SM6.6-2GX-2S-SC-1310-60-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1310nm, 60km, SC connector (Only available for SICOM3028GP)

2GX2SSC80 = SM6.6-2GX-2S-SC-1550-80-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX single mode fiber ports, 1550nm, 80km, SC connector (Only available for SICOM3028GP)

2GX2MSC = SM6.6-2GX-2M-SC-1310-5-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX multi mode fiber ports, 1310nm, 5km, SC connector (Only available for SICOM3028GP)

2GX2MST = SM6.6-2GX-2M-ST-1310-5-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX multi mode fiber ports, 1310nm, 5km, ST connector (Only available for SICOM3028GP)

2GX2MFC = SM6.6-2GX-2M-FC-1310-5-0.5U-V1.0, 0.5U Module with 2 Gigabit SFP ports and 2 100Base-FX multi mode fiber ports, 1310nm, 5km, FC connector (Only available for SICOM3028GP)

2SSC2T = SM6.6-2S-SC-1310-40-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1310nm, 40km, SC connector and 2 10/100Base-TX RJ45 ports

2SST2T = SM6.6-2S-ST-1310-40-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1310nm, 40km, ST connector and 2 10/100Base-TX RJ45 ports

2SFC2T = SM6.6-2S-FC-1310-40-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1310nm, 40km, FC connector and 2 10/100Base-TX RJ45 ports

2SSC602T = SM6.6-2S-SC-1310-60-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1310nm, 60km, SC connector and 2 10/100Base-TX RJ45 ports

2SSC802T = SM6.6-2S-SC-1550-80-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX single mode fiber ports, 1550nm, 80km, SC connector and 2 10/100Base-TX RJ45 ports

2MSC2T = SM6.6-2M-SC-1310-5-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX multimode fiber ports, 1310nm, 5km, SC connector and 2 10/100Base-TX RJ45 ports

2MST2T = SM6.6-2M-ST-1310-5-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX multimode fiber ports, 1310nm, 5km, ST connector and 2 10/100Base-TX RJ45 ports

2MFC2T = SM6.6-2M-FC-1310-5-2T-0.5U-V1.0, 0.5U Module with 2 100Base-FX multimode fiber ports, 1310nm, 5km, FC connector and 2 10/100Base-TX RJ45 ports

Accessories

DT-GPS-ANT-01 = GPS Antenna

DT-SP-01 = GPS Surge Protection AR21T

DT-LMR400-20-TNC-BNC = 20m coaxial cable with BNC(male) to TNC(male) adaptor

DT-LMR400-2-TNC-BNC = 2m coaxial cable with BNC(male) to TNC(male) adaptor
GPT Module Puller

DT-XL-Mini-USB-USB-2m = 2M USB Console Cable

Patch Cord Organizers (One Pair)

DT-BNC(K)-TNC(K) = BNC (female) to TNC (female) connector

Example Order Codes

SICOM3028GP-HI-HI-4GX1U-4GX-4GX-4GX-4GX-4GX

SICOM3028GP with 28G SFP ports and dual redundant 85-264VAC/77-370VDC power supplies

SICOM3024P

Layer 2 24+4G Port Managed Rack Mountable IEC61850 Switch



- 4 Gigabit fiber/RJ45 optional ports and 24 Fast Ethernet fiber/RJ45 optional ports
- Internal modular design for easy expansion
- Supports DT-Ring protocols and MSTP
- Supports Syslog upload and download
- Exceeds IEC61850-3 and IEEE1613
- Supports power failure alarm
- KEMA, CE, FCC certificates



Overview

SICOM3024P is a KEMA approved IEC61850 compliant managed industrial Ethernet switch specifically designed to operate stably in electrically harsh and climatically demanding utility substation and industrial environments. It offers up to 24 100Base TP/fiber ports, 4 Gigabit SFP slots or 10/100/1000Base-T(X) ports. The redundant function of optical fiber network, independent entire network management channel, redundant power supplies function, and entire network real-time management system provide multiplex guarantee for reliable operation of the system.

SICOM3024P V3.1 is a new hardware version with internal modular design and smaller dimension on the depth. The new hardware supports optional 1 Gigabit slot and 3 100M slots. 4 Gigabit fiber/copper ports are supported on the Gigabit slot, and 8 100M fast Ethernet with flexible combination of fiber and copper ports are supported on each 100M slot. The physical dimension of the new hardware on the depth has also been shortened from 420mm to 322.5mm enabling a much bigger flexibility for field physical limitations.

Features & Benefits

- Redundancy Technology: supports DT-Ring protocols (recovery time<50ms) and MSTP
- Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
- Network Partition: supports VLAN, PVLAN
- Service Quality: supports QoS
- Bandwidth Management: supports port trunking, port speed limit, broadcast storm control

- Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3,
- RMON, LLDP, STP, DHCP, RTC
- Network Security: supports DT-Psec, SSH, SSL, ACL
- Device Management: supports FTP upgrade, also supports Syslog upload and download
- Device Maintenance: supports port mirroring
- Alarm Output: supports IP/MAC conflicts, power, temperature, port and ring alarms
- Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z, IEEE 802.3x, IEEE802.1p, IEEE 802.1Q, IEEE 802.1s

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP;
IGMP Snooping, GMRP;
VLAN, PVLAN;
Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, DHCP server; STP, RTC;
DT-Psec, SSH, SSL, ACL;
FTP, Syslog;
ARP, QoS

Switch Properties

Priority Queues: 4
 Number of VLANs: 256
 VLAN ID: 1-4094
 Number of Multicast Groups: 256
 MAC Table: 8K
 Packet Buffer: 4Mbit
 Packet Forwarding Rate: 9.5Mpps
 Switching Delay: <5 μ s

Interface

Gigabit Ethernet Ports: 4 1000Base SFP slots or 4 10/100/1000Base-TX RJ45 ports
 Fast Ethernet Ports: max 24 100Base-FX, SM/MM ports, FC/SC/ST connector or 24 10/100Base-TX RJ45 ports
 Console Port: RS232 (RJ45 connector)
 Alarm Contact: 3-pin 5.08mm spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

LEDs on Front Panel:
 -Running LED: Run
 -Alarm LED: Alarm
 -Power LED: PWR1, PWR2
 -Interface LED: Link/ACT (Fast Ethernet port), Speed (Fast Ethernet port), DPX (Gigabit port), Link (Gigabit port)
 LEDs on Rear Panel:
 -Interface LED: Link/ACT
 -Port Speed LED: Speed

Transmission Distance

Twisted Pair: 100m (Standard CAT5, CAT5e network cable)
 Multi Mode Fiber: 1310nm, 5km (100M)
 850nm, 550m (1000M)
 Single Mode Fiber: 1310nm, 40km/60km (100M)
 1550nm, 60km/80km (100M)
 1310nm, 10km/40km (1000M)
 1550nm, 60km/80km (1000M)

Power Requirements

Power Input:
 24VDC (18-36VDC), 48VDC (36-72VDC),
 220VAC/DCW (85-264VAC/77-300VDC)
 Power Terminal:
 5-pin 5.08mm spacing terminal block
 Power Consumption: <35W
 Overload Protection: Support
 Reverse Connection Protection: Support
 Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
 Protection Class: IP40
 Dimensions (WxHxD):
 482.6x44x322.5mm (19x1.73x12.69 in.)
 Weight: <4kg (8.818 pound)
 Mounting: 19 inch 1U Rack mounting

Environmental Limits

Operating Temperature: -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)

MTBF

346,889 hrs

Warranty

5 years

Approvals

KEMA, State Grid (A type), CE, FCC

Industrial Standard

EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

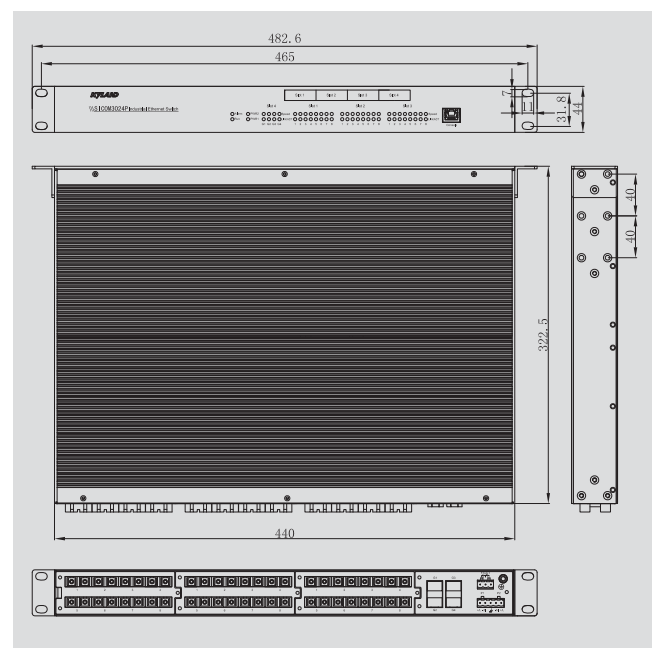
EMS:

IEC61000-4-2 (ESD): ± 8 kV (contact), ± 15 kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ± 4 kV; Data Port: ± 2 kV
 IEC61000-4-5 (Surge): Power Port: ± 2 kV/DM, ± 4 kV/CM; Data Port: ± 2 kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)
 IEC61000-4-9 (Pulsed magnetic field): 1000A/m
 IEC61000-4-10 (Damped oscillation): 100A/m
 IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2
 Power: IEC61850-3, IEEE1613
 Railway: EN50155, EN50121-4
 Traffic Control: NEMA TS-2
 Power: IEC61850-3, IEEE1613
 Railway: EN50155, EN50121-4
 Traffic Control: NEMA TS-2

Mechanical Drawing

Ordering Information

Model Chassis S4 S1 S2 S3

Model Chassis: Chassis and power supplies

SICOM3024P-24-XX = SICOM3024P Chassis with 24VDC(18-36VDC) single power supply

SICOM3024P-24-24 = SICOM3024P Chassis with 24VDC(18-36VDC) dual redundant power supplies

SICOM3024P-48-XX = SICOM3024P Chassis with 48VDC(36-72VDC) single power supply

SICOM3024P-48-48 = SICOM3024P Chassis with 48VDC(36-72VDC) dual redundant power supplies

SICOM3024P-HI-XX = SICOM3024P Chassis with 220AC/DCW(85-264VAC/77-300VDC) single power supply

SICOM3024P-HI-HI = SICOM3024P Chassis with 220AC/DCW(85-265VAC/77-300VDC) dual redundant power supplies

S4: Uplink ports

XX = No Gigabit port

4GX = 4 Gigabit SFP ports

4GE = 4 10/100/1000Base-TX RJ45 ports

4T = 4 10/100Base-TX RJ45 ports

S1-S3: Slot 1 to Slot 3

XX = No interface module (Only one of the 3 slots can be none)

8MSC = Interface module with 8 100Base-FX multimode fiber ports, 1310nm, 5km ,SC connector

8MST = Interface module with 8 100Base-FX multimode fiber ports, 1310nm, 5km ,ST connector

8MFC = Interface module with 8 100Base-FX multimode fiber ports, 1310nm, 5km ,FC connector

8SSC = Interface module with 8 100Base-FX singlemode fiber ports, 1310nm, 40km ,SC connector

8SST = Interface module with 8 100Base-FX singlemode fiber ports, 1310nm, 40km ,ST connector

8SFC = Interface module with 8 100Base-FX singlemode fiber ports, 1310nm, 40km ,FC connector

8SSC60 = Interface module with 8 100Base-FX singlemode fiber ports, 1310nm, 60km ,SC connector

8SSC80 = Interface module with 8 100Base-FX singlemode fiber ports, 1310nm, 80km ,SC connector

6MSC2T = Interface module with 6 100Base-FX multimode fiber ports, 1310nm, 5km ,SC connector, 2 10/100Base-TX RJ45 ports

6MST2T = Interface module with 6 100Base-FX multimode fiber ports, 1310nm, 5km ,ST connector, 2 10/100Base-TX RJ45 ports

6MFC2T = Interface module with 6 100Base-FX multimode fiber ports, 1310nm, 5km ,FC connector, 2 10/100Base-TX RJ45 ports

6SSC2T = Interface module with 6 100Base-FX singlemode fiber ports, 1310nm, 40km ,SC connector, 2 10/100Base-TX RJ45 ports

6SST2T = Interface module with 6 100Base-FX singlemode fiber ports, 1310nm, 40km ,ST connector, 2 10/100Base-TX RJ45 ports

6SFC2T = Interface module with 6 100Base-FX singlemode fiber ports, 1310nm, 40km ,FC connector, 2 10/100Base-TX RJ45 ports

6SSC602T = Interface module with 6 100Base-FX singlemode fiber ports, 1310nm, 60km ,SC connector, 2 10/100Base-TX RJ45 ports

6SSC802T = Interface module with 6 100Base-FX singlemode fiber ports, 1310nm, 80km ,SC connector, 2 10/100Base-TX RJ45 ports

4MSC4T = Interface module with 4 100Base-FX multimode fiber ports, 1310nm, 5km ,SC connector, 4 10/100Base-TX RJ45 ports

4MST4T = Interface module with 4 100Base-FX multimode fiber ports, 1310nm, 5km ,ST connector, 4 10/100Base-TX RJ45 ports

4MFC4T = Interface module with 4 100Base-FX multimode fiber ports, 1310nm, 5km ,FC connector, 4 10/100Base-TX RJ45 ports

4SSC4T = Interface module with 4 100Base-FX singlemode fiber ports, 1310nm, 40km ,SC connector, 4 10/100Base-TX RJ45 ports

4SST4T = Interface module with 4 100Base-FX singlemode fiber ports, 1310nm, 40km ,ST connector, 4 10/100Base-TX RJ45 ports

4SFC4T = Interface module with 4 100Base-FX singlemode fiber ports, 1310nm, 40km ,FC connector, 4 10/100Base-TX RJ45 ports

4SSC604T = Interface module with 4 100Base-FX singlemode fiber ports, 1310nm, 60km ,SC connector, 4 10/100Base-TX RJ45 ports

4SSC804T = Interface module with 4 100Base-FX singlemode fiber ports, 1310nm, 80km ,SC connector, 4 10/100Base-TX RJ45 ports

2MSC6T = Interface module with 2 100Base-FX multimode fiber ports, 1310nm, 5km ,SC connector, 6 10/100Base-TX RJ45 ports

2MST6T = Interface module with 2 100Base-FX multimode fiber ports, 1310nm, 5km ,ST connector, 6 10/100Base-TX RJ45 ports

2MFC6T = Interface module with 2 100Base-FX multimode fiber ports, 1310nm, 5km ,FC connector, 6 10/100Base-TX RJ45 ports

2SSC6T = Interface module with 2 100Base-FX singlemode fiber ports, 1310nm, 40km ,SC connector, 6 10/100Base-TX RJ45 ports

2SST6T = Interface module with 2 100Base-FX singlemode fiber ports, 1310nm, 40km ,ST connector, 6 10/100Base-TX RJ45 ports

2SFC6T = Interface module with 2 100Base-FX singlemode fiber ports, 1310nm, 40km ,FC connector, 6 10/100Base-TX RJ45 ports

2SSC606T = Interface module with 2 100Base-FX singlemode fiber ports, 1310nm, 60km ,SC connector, 6 10/100Base-TX RJ45 ports

2SSC806T = Interface module with 2 100Base-FX singlemode fiber ports, 1310nm, 80km ,SC connector, 6 10/100Base-TX RJ45 ports

8T = Interface module with 8 10/100Base-TX RJ45 ports

Example Order Codes

SICOM3024P-HI-HI-XX-8T-4MST4T-XX

4 100Base-FX multi mode fiber ports with ST connectors 1310nm 5km, 12 10/100Base TX RJ45 ports, and dual redundant 220AC/DCW(85-265VAC/77-300VDC) power supplies.

Note: The part number on the product label will still be SICOM3024P-4M-12T in order to be compliant with previous version.

SICOM3024PT

Layer 2 24+4G Port Managed Rack Mountable Modular IEC61850 & IEEE1588 Switch



- Flexible modular design for easy expansion, and supports max 4 Gigabit ports and 24 fast Ethernet ports
- Supports DT-Ring protocols and RSTP
- Supports IEEE1588v2
- Supports Syslog upload and download
- Exceeds IEC61850-3 and IEEE1613



Overview

SICOM3024PT is a precise clock synchronization solution of IEC61850 compliant managed industrial Ethernet switch specifically designed to operate stably in electrically harsh and climatically demanding utility substation and industrial environments. It offers up to 24 100Base TP/fiber ports, 4 Gigabit SFP slots or 10/100/1000Base-T(X) ports. The redundant function of optical fiber network, independent entire network management channel, dual redundant power supplies function, and entire network real-time management system provide multiplex guarantee for reliable operation of the system.

Features & Benefits

- Redundancy Technology: supports DT-Ring protocols (recovery time<50ms) and RSTP
- Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
- Network Partition: supports VLAN, PVLAN
- Service Quality: supports QoS
- Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
- Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, RTC
- Synchronization Protocol: supports SNTP, IEEE1588v2
- Network Security: supports SSH, SSL, ACL
- Device Management: supports FTP upgrade, also supports Syslog upload and download
- Device Maintenance: supports port mirroring
- Alarm Output: supports IP/MAC conflicts, power, temperature, port and ring alarms
- Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1w, IEEE1588v2

Protocols

DT-Ring, DT-Ring+, DT-VLAN, RSTP;
 IGMP Snooping, GMRP;
 VLAN, PVLAN;
 Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP; SNTP, PTP, RTC;
 SSH, SSL, ACL;
 FTP, Syslog;
 ARP, QoS

Switch Properties

Priority Queues: 4
 Number of VLANs: 256
 VLAN ID: 1-4094
 Number of Multicast Groups: 256
 MAC Table: 8K
 Packet Buffer: 4Mbit
 Packet Forwarding Rate: 9.5Mpps
 Switching Delay: <5μs

Interface

SICOM3024PT-18: 5 1U slots for 4-port or 2-port Fast Ethernet interface modules (100Base-FX, 10/100Base-TX)
 SICOM3024PT-28: 1 1U slot for 4-port Gigabit interface module (1000Base SFP, 10/100/1000Base-TX) and 6 1U slots for 4-port Fast Ethernet interface modules (100Base-FX, 10/100Base-TX)
 Gigabit Ethernet Ports: 4 1000Base SFP slots or 4 10/100/1000Base-TX RJ45 ports

Fast Ethernet Ports: max 24 100Base-FX, SM/MM ports, FC/SC/ST connector or 24 10/100Base-TX RJ45 ports
 Console Port: RS232 (RJ45 connector)
 Alarm Contact: 3-pin 3.81mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

1) LEDs on Front Panel:
 Running LED: Run
 Alarm LED: Alarm
 Power LED: PWR1, PWR2
 Interface LED: Link/ACT (Fast Ethernet port), Speed (Fast Ethernet port), DPX (Gigabit port), Link (Gigabit port)
 2) LEDs on Rear Panel:
 Interface LED: Link/ACT
 Port Speed LED: Speed

Transmission Distance

Twisted Pair:
 100m (Standard CAT5, CAT5e network cable)
 Multi Mode Fiber:
 1310nm, 5km (100M)
 850nm, 550m (1000M)
 Single Mode Fiber:
 1310nm, 40km/60km (100M)
 1550nm, 60km/80km (100M)
 1310nm, 10km/40km (1000M)
 1550nm, 60km/80km (1000M)

Power Requirements

Power Input:
 24VDC (18-36VDC), 48VDC (36-72VDC), 220VAC/DC (85-264VAC/120-370VDC)
 Power Terminal:
 5-pin 5.08mm-spacing plug-in terminal block
 Power Consumption:
 <30W (SICOM3024PT-18)
 <40W (SICOM3024PT-28)
 Overload Protection: Support
 Reverse Connection Protection: Support
 Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
 Protection Class: IP40
 Dimensions (WxHxD):
 482.6x44x328mm (19x1.73x 12.91in.) (SICOM3024PT-18)
 482.6x88x328mm (19x3.46x 12.91in.) (SICOM3024PT-28)
 Weight:
 3.5kg (7.716 pound) (SICOM3024PT-18)
 5kg (11.023 pound) (SICOM3024PT-28)
 Mounting:
 19 inch 1U Rack mounting (SICOM3024PT-18)
 19 inch 2U Rack mounting (SICOM3024PT-28)

Environmental Limits

Operating Temperature: -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)

MTBF

333,900 hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

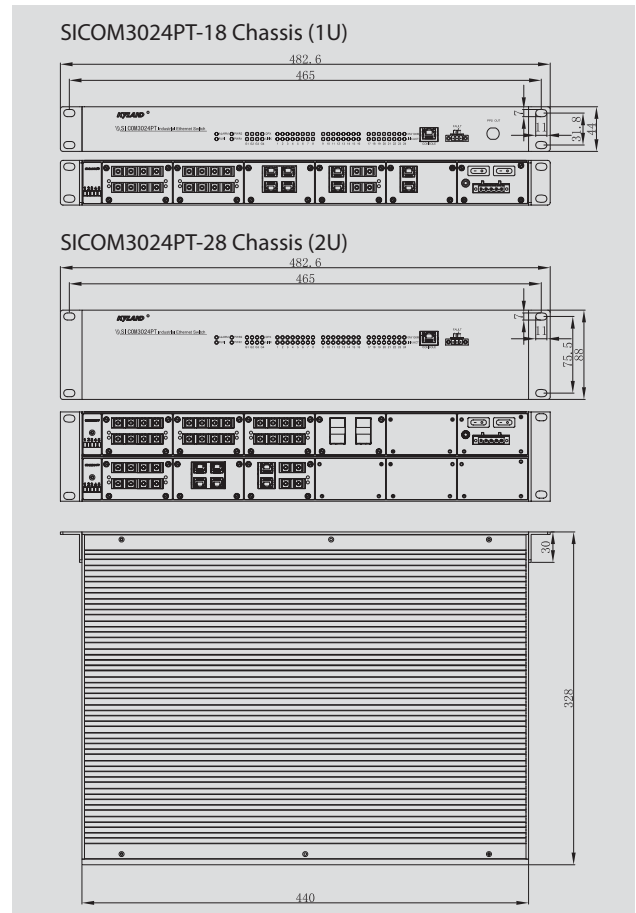
EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:
 IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)
 IEC61000-4-9 (Pulsed magnetic field): 1000A/m
 IEC61000-4-10 (Damped oscillation): 100A/m
 IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

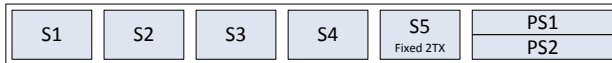
Machinery:
 IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2
 Power: IEC61850-3, IEEE1613
 Railway: EN50155, EN50121-4
 Traffic Control: NEMA TS-2

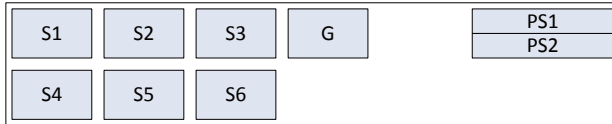
Mechanical Drawing



Ordering Information



Chassis 18



Chassis 28

SICOM3024PT - C - P1 - P2 - S1 - S2 - S3 - S4 - S5 - S6 - G

C: Chassis

18 = SICOM3024PT 1U Chassis

28 = SICOM3024PT 2U Chassis

P1 & P2: Power Supply 1 & 2

24 = 24VDC(18-36VDC)

110 = 110VDC(77-150VDC)

HI = 85-264VAC/120-370VDC

S1-S6: Slot 1 to Slot 6 100M Slots (Slot 6 is for SICOM3024PT-28 Chassis Only)

XX = None

2T = Interface module with 2 10/100Base-TX RJ45 ports (only for S5 slot in SICOM3024PT-18 Chassis)

4T = Interface module with 4 10/100Base-TX RJ45 ports

2SSC2T = Interface module with 2 single mode fiber ports, 1310nm, 40km, SC connector, 2 10/100Base-TX RJ45 ports

2SST2T = Interface module with 2 single mode fiber ports, 1310nm, 40km, ST connector, 2 10/100Base-TX RJ45 ports

2SFC2T = Interface module with 2 single mode fiber ports, 1310nm, 40km, FC connector, 2 10/100Base-TX RJ45 ports

2SSC602T = Interface module with 2 single mode fiber ports, 1310nm, 60km, SC connector, 2 10/100Base-TX RJ45 ports

2SSC802T = Interface module with 2 single mode fiber ports, 1550nm, 80km, ST connector, 2 10/100Base-TX RJ45 ports

2MSC2T = Interface module with 2 multi mode fiber ports, 1310nm, 5km, SC connector, 2 10/100Base-TX RJ45 ports

2MST2T = Interface module with 2 multi mode fiber ports, 1310nm, 5km, ST connector, 2 10/100Base-TX RJ45 ports

2MFC2T = Interface module with 2 multi mode fiber ports, 1310nm, 5km, FC connector, 2 10/100Base-TX RJ45 ports

4SSC = Interface module with 4 single mode fiber port, 1310nm, 40km, SC connector

4SST = Interface module with 4 single mode fiber port, 1310nm, 40km, ST connector

4SFC = Interface module with 4 single mode fiber port, 1310nm, 40km, FC connector

4SSC60 = Interface module with 4 single mode fiber port, 1310nm, 60km, SC connector

4SSC80 = Interface module with 4 single mode fiber port, 1550nm, 80km, SC connector

4MSC = Interface module with 4 multi mode fiber port, 1310nm, 5km, SC connector

4MST = Interface module with 4 multi mode fiber port, 1310nm, 5km, ST connector

4MFC = Interface module with 4 multi mode fiber port, 1310nm, 5km, ST connector

G: Gigabit Slot (For SICOM3024PT-28 Chassis Only)

XX = None

4GX = Interface module with 4 Gigabit SFP port

4GE = Interface module with 4 10/100/1000Base-TX, RJ45 ports

Example Order Codes

SICOM3024PT-18-HI-HI-4T-4T-4T-4T-2T-XX-XX

18 10/100Base TX RJ45 ports, and dual redundant 220AC/DC(85-264VAC/120-370VDC) power supplies.

SICOM3024PT-28-HI-HI-4T-4T-4T-4T-4T-4T-4GX

4 Gigabit SFP ports, 24 10/100Base-TX RJ45 ports, and dual redundant 220AC/DC(85-264VAC/120-370VDC) power supplies.

SICOM3024

Layer 2 24+4G Port Managed Rack Mountable IEC61850 Switch



- Supports 4 Gigabit SFP slots, 16 10/100Base-TX ports and 8 Fast Ethernet fiber/RJ45 optional ports
- Supports DT-Ring protocols and MSTP
- Supports power failure alarm
- Exceeds IEC61850-3 and IEEE1613
- CE, FCC certification



Overview

SICOM3024 is a high-performance network-managed industrial Ethernet switch specially designed by KYLAND for industrial applications. Its high-performance switch engine, solid and closed case, high-efficiency single-rib- shape case for heat dissipation without using fans, overcurrent, overvoltage and EMC protection at power input side, and excellent EMC protection of RJ45 port make SICOM3024 applicable in harsh and dangerous industrial environments. The redundant function of optical fiber network, independent entire network management channel, dual redundant power supplies function, and powerful entire network real-time management system provide multiplex guarantee for reliable operation of the system.

Features & Benefits

1. Redundancy Technology: supports DT-Ring protocols (recovery time<50ms) and MSTP
2. Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
3. Network Partition: supports VLAN, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, SNMP, DHCP
7. Network Security: supports DT-Psec, SSH, SSL, ACL
8. Device Management: supports FTP upgrade
9. Device Maintenance: supports port mirroring
10. Alarm Output: supports IP/MAC conflicts, power, port and ring alarms
11. Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP;
IGMP Snooping, GMRP;
VLAN, PVLAN;
Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, SNMP, DHCP server;
DT-Psec, SSH, SSL, ACL;
FTP;
ARP, QoS

Switch Properties

Priority Queues: 4
Number of VLANs: 256
VLAN ID: 1-4094
Number of Multicast Groups: 256
MAC Table: 8K
Packet Buffer: 2Mbit
Packet Forwarding Rate: 9.5Mpps
Switching Delay: <5 μ s

Interface

Gigabit Ethernet Ports: 4 or 2 1000Base SFP slots
Fast Ethernet Fiber Ports: max 8 100Base-FX, SM/MM ports, FC/SC/ST connector
Fast Ethernet RJ45 Ports: max 24 10/100Base-TX RJ45 ports
Console Port: RS232 (RJ45 connector)

Alarm Contact: 3-pin 3.81mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

1) LEDs on Front Panel:
Running LED: Run
Interface LED: Link/ACT (Fast Ethernet port), Speed (Fast Ethernet port), DPX (Gigabit port), Link (Gigabit port)
2) LEDs on Rear Panel:
Interface LED: Link/ACT
Port Speed LED: Speed

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber:
1310nm, 5km (100M)
850nm, 550m (1000M)
Single Mode Fiber:
1310nm, 40km/60km (100M)
1550nm, 60km/80km (100M)
1310nm, 10km/40km (1000M)
1550nm, 60km/80km (1000M)

Power Requirements

Power Input:
12VDC (9-18VDC), 24VDC (18-36VDC), 48VDC (36-72VDC), 220VAC/DCW (85-264VAC/77-300VDC)
Power Terminal:
5-pin 5.08mm-spacing plug-in terminal block
Power Consumption: <21.6W

Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
Protection Class: IP40
Dimensions (WxHxD):
482.6x44x245mm (19x1.73x9.65 in.)
Weight: 3kg (6.614 pound)
Mounting: 19 inch 1U Rack mounting

Environmental Limits

Operating Temperature: -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)

MTBF

318,296 hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

EMI:
FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): $\pm 8\text{kV}$ (contact), $\pm 15\text{kV}$ (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: $\pm 4\text{kV}$; Data Port: $\pm 2\text{kV}$
IEC61000-4-5 (Surge): Power Port: $\pm 2\text{kV/DM}$, $\pm 4\text{kV/CM}$; Data Port: $\pm 2\text{kV}$
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)
IEC61000-4-9 (Pulsed magnetic field): 1000A/m
IEC61000-4-10 (Damped oscillation): 100A/m
IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

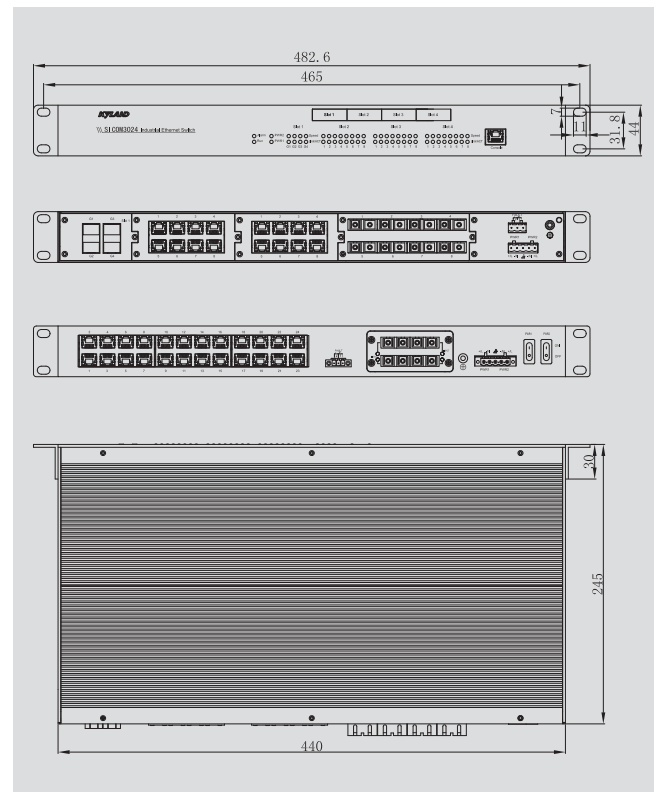
Machinery:

IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Power: IEC61850-3, IEEE1613
Railway: EN50155, EN50121-4
Traffic Control: NEMA TS-2

Mechanical Drawing



Ordering Information

SICOM3024 - _____ - _____ - _____ - _____ - _____
Ports Distance Connector PS1 PS2

Ports

4GX-24T = 4 Gigabit SFP ports, 24 10/100Base-TX RJ45 ports
2GX-24T = 2 Gigabit SFP ports, 24 10/100Base-TX RJ45 ports
2GX-2M-16T = 2 Gigabit SFP ports, 2 100Base-FX multi mode fiber ports, 16 10/100Base-TX RJ45 ports
2GX-2S-16T = 2 Gigabit SFP ports, 2 100Base-FX single mode fiber ports, 16 10/100Base-TX RJ45 ports
2GX-2M-22T = 2 Gigabit SFP ports, 2 100Base-FX multi mode fiber ports, 22 10/100Base-TX RJ45 ports
2GX-2S-22T = 2 Gigabit SFP ports, 2 100Base-FX single mode fiber ports, 22 10/100Base-TX RJ45 ports
2GX-4M-16T = 2 Gigabit SFP ports, 4 100Base-FX multi mode fiber ports, 16 10/100Base-TX RJ45 ports
2GX-4S-16T = 2 Gigabit SFP ports, 4 100Base-FX single mode fiber ports, 16 10/100Base-TX RJ45 ports
2GX-6M-16T = 2 Gigabit SFP ports, 6 100Base-FX multi mode fiber ports, 16 10/100Base-TX RJ45 ports
2GX-6S-16T = 2 Gigabit SFP ports, 6 100Base-FX single mode fiber ports, 16 10/100Base-TX RJ45 ports
2GX-8M-16T = 2 Gigabit SFP ports, 8 100Base-FX multi mode fiber ports, 16 10/100Base-TX RJ45 ports
2GX-8S-16T = 2 Gigabit SFP ports, 8 100Base-FX single mode fiber ports, 16 10/100Base-TX RJ45 ports
2M-16T = 2 100Base-FX multi mode fiber ports, 16 10/100Base-TX RJ45 ports
2S-16T = 2 100Base-FX single mode fiber ports, 16 10/100Base-TX RJ45 ports
2M-22T = 2 100Base-FX multi mode fiber ports, 22 10/100Base-TX RJ45 ports
2S-22T = 2 100Base-FX single mode fiber ports, 22 10/100Base-TX RJ45 ports
2M-24T = 2 100Base-FX multi mode fiber ports, 24 10/100Base-TX RJ45 ports
2S-24T = 2 100Base-FX single mode fiber ports, 24 10/100Base-TX RJ45 ports
4M-16T = 4 100Base-FX multi mode fiber ports, 16 10/100Base-TX RJ45 ports
4S-16T = 4 100Base-FX single mode fiber ports, 16 10/100Base-TX RJ45 ports
4M-24T = 4 100Base-FX multi mode fiber ports, 24 10/100Base-TX RJ45 ports

4S-24T = 4 100Base-FX single mode fiber ports, 24 10/100Base-TX RJ45 ports

6M-16T = 6 100Base-FX multi mode fiber ports, 16 10/100Base-TX RJ45 ports

6S-16T = 6 100Base-FX single mode fiber ports, 16 10/100Base-TX RJ45 ports

8M-16T = 8 100Base-FX multi mode fiber ports, 16 10/100Base-TX RJ45 ports

8S-16T = 8 100Base-FX single mode fiber ports, 16 10/100Base-TX RJ45 ports

24T = 24 10/100Base-TX RJ45 ports

Distance: Fiber Distance

1310-5 = 1310nm, 5km

1310-40 = 1310nm, 40km

1310-60 = 1310nm, 60km

1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector

ST = ST Connector

FC = FC Connector

PS1 & PS2: Power Supplies 1 & 2

XX = None (power supply 2 only)

12DC = 9-18VDC

24DC = 18-36VDC

48DC = 36-72VDC

220AC/DCW = 85-264VAC/77-300VDC

Example Order Codes

SICOM3024-2GX-24T-24DC-24DC

2 Gigabit SFP ports, 24 10/100Base-TX RJ45 ports, dual redundant 24DC(9-18VDC) power supplies

SICOM3048

Layer 2 48+4G Port Managed Rack Mountable Modular IEC61850 Switch



- Flexible 2U modular design for easy expansion
- Supports DT-Ring protocols and RSTP
- 24 Fast Ethernet fiber/RJ45 optional ports, and supports up to 4 Gigabit ports and 48 fast Ethernet ports
- Allows front and rear panel mounting
- Supports power failure alarm
- Compliant with IEC61850-3 and IEEE1613



Overview

SICOM3048 is a modular network-managed industrial Ethernet switch specially designed by KYLAND for industrial applications. Its high-performance switch engine, solid and closed case, high-efficiency single-rib-shape case for heat dissipation without using fans, over-current, over-voltage and EMC protection at power input side, and excellent EMC protection of RJ45 port allow SICOM3048 to work in harsh and dangerous industrial environments. The redundant function of optical fiber network, independent entire network management channel, redundant power input function, and powerful entire network real-time management system provide multiplex guarantee for reliable operation of the system.

Features & Benefits

1. Redundancy Technology: supports DT-Ring protocols (recovery time<50ms), RSTP
2. Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
3. Network Partition: supports VLAN, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, SNTP, LLDP
7. Network Security: supports SSH, SSL, ACL
8. Device Management: supports FTP upgrade
9. Device Maintenance: supports port mirroring
10. Alarm Output: supports IP/MAC conflicts, power, port and ring alarms
11. Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1w

Protocols

DT-Ring, DT-Ring+, DT-VLAN, RSTP;
IGMP Snooping, GMRP;
VLAN, PVLAN;
Telnet, HTTP, SNMPv1/v2/v3, RMON, LLDP, SNTP;
SSH, SSL, ACL;
ARP, FTP, QoS

Switch Properties

Priority Queues: 4
Number of VLANs: 256
VLAN ID: 1-4094
Number of Multicast Groups: 256
MAC Table: 8K
Packet Buffer: 4Mbit
Packet Forwarding Rate: 13.1Mpps
Switching Delay: <5μs

Interface

4 slots for 0.5U 6-port Fast Ethernet interface modules (100Base-FX, 10/100Base-TX)
Gigabit Ethernet Ports: 4 1000Base SFP slots in SICOM3048 chassis
Fast Ethernet Ports: 24 100Base-TX RJ45 ports in SICOM3048 chassis and max 24 100Base-FX, SM/MM ports, FC/SC/ST connector or 24 10/100Base-TX RJ45 ports by interface modules
Console Port: RS232 (RJ45 connector)

Alarm Contact: 3-pin 3.81mm-spacing plug-in terminal block, 250VAC/350VDC Max, 120mA Max

LED

1) LEDs on Front Panel:
Running LED: Run
Interface LED: Link/ACT (Fast Ethernet port), Speed (Fast Ethernet port), DPX (Gigabit port), Link (Gigabit port)
2) LEDs on Rear Panel:
Interface LED: Link/ACT
Port Speed LED: Speed

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber:
1310nm, 5km (100M)
850nm, 550m (1000M)
Single Mode Fiber:
1310nm, 40km/60km (100M)
1550nm, 60km/80km(100M)
1310nm, 10km/40km (1000M)
1550nm, 60km/80km (1000M)

Power Requirements

Power Input:
24DC (18-36VDC), 48DC (36-72VDC), 110DC (82-185VDC), 220AC/DC (85-264VAC/120-370VDC)
Power Terminal:
3-pin 3.81mm-spacing plug-in terminal block (24VDC, 48VDC),
3-pin 9.5mm-spacing terminal block (110VDC, 220VAC/DC),
3-phase AC electric outlet
Power Consumption: <36.2W

Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
Protection Class: IP40
Dimensions (WxHxD):
482.6x88x245 mm (19x3.46x9.65 in.)
Weight: <5kg (11.023 pound)
Mounting: 19 inch 2U Rack mounting

Environmental Limits

Operating Temperature: -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)

MTBF

371,000 hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

EMI:
FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)
IEC61000-4-9 (Pulsed magnetic field): 1000A/m
IEC61000-4-10 (Damped oscillation): 100A/m
IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

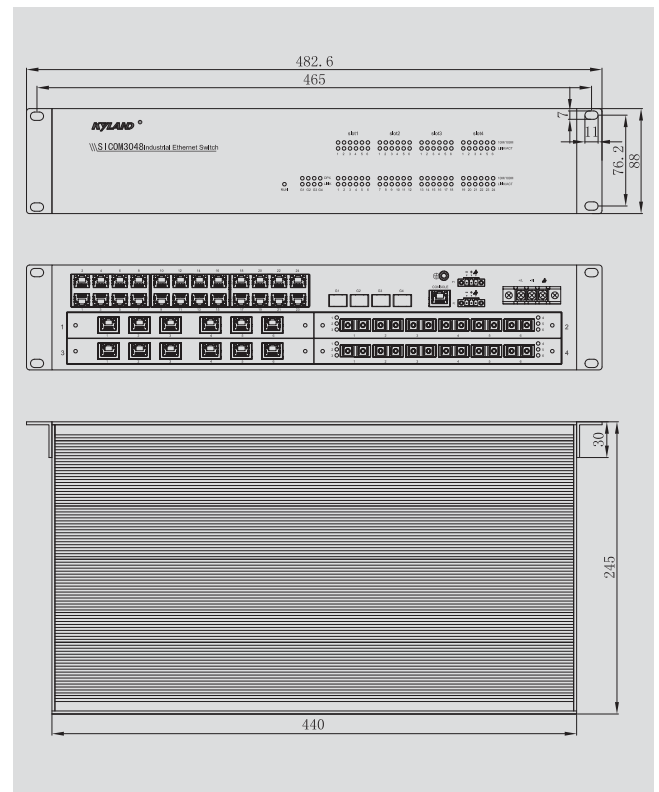
Industry: IEC61000-6-2

Power: IEC61850-3, IEEE1613

Railway: EN50155, EN50121-4

Traffic Control: NEMA TS-2

Mechanical Drawing



Ordering Information

Fixed 24T	Gigabit Ports	Power Supply
Slot 1	Slot 2	
Slot 3	Slot 4	

SICOM3048 - - - - -
 C S1 S2 S3 S4

C: Chassis (Gigabit ports and power supply)

4GX-24T-24DC = SICOM3048-4GX-24T-MB-24DC-3x9.5-V1.1, SICOM3048 Chassis with 4 Gigabit SFP ports, fixed 24 10/100Base-TX RJ45 ports, 24VDC (18-36VDC) power supply

4GX-24T-48DC = SICOM3048-4GX-24T-MB-48DC-3x9.5-V1.1, SICOM3048 Chassis with 4 Gigabit SFP ports, fixed 24 10/100Base-TX RJ45 ports, 48VDC (36-72VDC) power supply

4GX-24T-110VDC = SICOM3048-4GX-24T-MB-110DC-3x9.5-V1.1, SICOM3048 Chassis with 4 Gigabit SFP ports, fixed 24 10/100Base-TX RJ45 ports, 110VDC (82-185VDC) power supply

4GX-24T-220AC/DC = SICOM3048-4GX-24T-MB-220AC/DC-3x9.5-V1.1, SICOM3048 Chassis with 4 Gigabit SFP ports, fixed 24 10/100Base-TX RJ45 ports, 220VAC/DC (85-264VAC/120-300VDC) 50/60Hz power supply

24T-24DC = SICOM3048-24T-MB-24DC-3x9.5-V1.1, SICOM3048 Chassis with fixed 24 10/100Base-TX RJ45 ports, 24VDC (18-36VDC) power supply

24T-48DC = SICOM3048-24T-MB-48DC-3x9.5-V1.1, SICOM3048 Chassis with fixed 24 10/100Base-TX RJ45 ports, 48VDC (36-72VDC) power supply

24T-110DC = SICOM3048-24T-MB-110DC-3x9.5-V1.1, SICOM3048 Chassis with fixed 24 10/100Base-TX RJ45 ports, 110VDC (82-185VDC) power supply

24T-220AC/DC = SICOM3048-24T-MB-220AC/DC-3x9.5-V1.1, SICOM3048 Chassis with fixed 24 10/100Base-TX RJ45 ports, 220VAC/DC (85-264VAC/120-300VDC) 50/60Hz power supply

Note: SICOM3048 only supports single power supply.

S1-S4: 100M Slots

XX = None

6SSC = SM3.2-6S-SC-1310-40-V2.0, Interface module with 6 100Base-FX single mode fiber ports, 1310nm, 40km, SC connector

6SST = SM3.2-6S-ST-1310-40-V2.0, Interface module with 6 100Base-FX single mode fiber ports, 1310nm, 40km, ST connector

6SFC = SM3.2-6S-FC-1310-40-V2.0, Interface module with 6 100Base-FX single mode fiber ports, 1310nm, 40km, FC connector

6SSC60 = SM3.2-6S-SC-1310-60-V2.0, Interface module with 6 100Base-FX single mode fiber ports, 1310nm, 60km, SC connector

6SSC80 = SM3.2-6S-SC-1550-80-V2.0, Interface module with 6 100Base-FX single mode fiber ports, 1550nm, 80km, SC connector

6MSC = SM3.2-6M-SC-1310-5-V2.0, Interface module with 6 100Base-FX multi mode fiber ports, 1310nm, 5km, SC connector

6MST = SM3.2-6M-ST-1310-5-V2.0, Interface module with 6 100Base-FX multi mode fiber ports, 1310nm, 5km, ST connector

6MFC = SM3.2-6M-FC-1310-5-V2.0, Interface module with 6 100Base-FX multi mode fiber ports, 1310nm, 5km, FC connector

4SSC2T = SM3.2-4S-SC-1310-40-2T-V2.0, Interface module with 4 100Base-FX single mode fiber ports, 1310nm, 40km, SC connector, 2 10/100Base-TX RJ45 ports

4SST2T = SM3.2-4S-ST-1310-40-2T-V2.0, Interface module with 4 100Base-FX single mode fiber ports, 1310nm, 40km, ST connector, 2 10/100Base-TX RJ45 ports

4SFC2T = SM3.2-4S-FC-1310-40-2T-V2.0, Interface module with 4 100Base-FX single mode fiber ports, 1310nm, 40km, FC connector, 2 10/100Base-TX RJ45 ports

4SSC602T = SM3.2-4S-SC-1310-60-2T-V2.0, Interface module with 4 100Base-FX single mode fiber ports, 1310nm, 60km, SC connector, 2 10/100Base-TX RJ45 ports

4SSC802T = SM3.2-4S-SC-1550-80-2T-V2.0, Interface module with 4 100Base-FX single mode fiber ports, 1550nm, 80km, SC connector, 2 10/100Base-TX RJ45 ports

4MSC2T = SM3.2-4M-SC-1310-5-2T-V2.0, Interface module with 4 100Base-FX multi mode fiber ports, 1310nm, 5km, SC connector, 2 10/100Base-TX RJ45 ports

4MST2T = SM3.2-4M-ST-1310-5-2T-V2.0, Interface module with 4 100Base-FX multi mode fiber ports, 1310nm, 5km, ST connector, 2 10/100Base-TX RJ45 ports

4MFC2T = SM3.2-4M-FC-1310-5-2T-V2.0, Interface module with 4 100Base-FX multi mode fiber ports, 1310nm, 5km, FC connector, 2 10/100Base-TX RJ45 ports

2SSC4T = SM3.2-2S-SC-1310-40-4T-V2.0, Interface module with 2 100Base-FX single mode fiber ports, 1310nm, 40km, SC connector, 4 10/100Base-TX RJ45 ports

2SST4T = SM3.2-2S-ST-1310-40-4T-V2.0, Interface module with 2 100Base-FX single mode fiber ports, 1310nm, 40km, ST connector, 4 10/100Base-TX RJ45 ports

2SFC4T = SM3.2-2S-FC-1310-40-4T-V2.0, Interface module with 2 100Base-FX single mode fiber ports, 1310nm, 40km, FC connector, 4 10/100Base-TX RJ45 ports

2SSC604T = SM3.2-2S-SC-1310-60-4T-V2.0, Interface module with 2 100Base-FX single mode fiber ports, 1310nm, 60km, SC connector, 4 10/100Base-TX RJ45 ports

2SSC804T = SM3.2-2S-SC-1550-80-4T-V2.0, Interface module with 2 100Base-FX single mode fiber ports, 1550nm, 80km, SC connector, 4 10/100Base-TX RJ45 ports

2MSC4T = SM3.2-2M-SC-1310-5-4T-V2.0, Interface module with 2 100Base-FX multi mode fiber ports, 1310nm, 5km, SC connector, 4 10/100Base-TX RJ45 ports

2MST4T = SM3.2-2M-ST-1310-5-4T-V2.0, Interface module with 2 100Base-FX multi mode fiber ports, 1310nm, 5km, ST connector, 4 10/100Base-TX RJ45 ports

2MFC4T = SM3.2-2M-FC-1310-5-4T-V2.0, Interface module with 2 100Base-FX multi mode fiber ports, 1310nm, 5km, FC connector, 4 10/100Base-TX RJ45 ports

6T = SM3.2-6T-V2.0, Interface module with 6 10/100Base-TX RJ45 ports

Example Order Codes

SICOM3048-4GX-24T-6T-6T-6MSC-4MSC2T-220AC/DC-XX

SICOM3048-4GX-24T Chassis, 2 x SM3.2-6T, 1 SM3.2-6M-SC-1310-5-V2.0, 1 SM3.2-4M-SC-1310-5-2T-V2.0, single power supply 85-264VAC/120-300VDC

SICOM2024M

Layer 2 28 Port Managed Rack Mountable IEC61850 Switch



- 24 10/100Base-TX RJ45 ports, 4 100Base-FX SM/MM ports
- Supports RSTP
- Supports power failure alarm
- Allows front and rear panel mounting
- Exceeds IEC61850-3 and IEEE1613



Overview

SICOM2024M is an entry-level managed industrial Ethernet switch specially designed by KYLAND for industrial applications. It supports up to 24 10/100Base-T(X) and 4 100Base-FX ports, and it also supports Kyvision 3.0 management software. Its high-performance switch engine, solid and closed case, high-efficiency single-rib-shape case for heat dissipation without using fans, overcurrent, overvoltage and EMC protection and excellent EMC protection of RJ45 port make SICOM2024M applicable in harsh and dangerous industrial environments.

Features & Benefits

1. Redundancy Technology: supports RSTP
2. Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
3. Network Partition: supports VLAN, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, SNMP, DHCP
7. Network Security: supports DT-Psec, SSH, SSL, ACL
8. Device Management: supports FTP upgrade
9. Device Maintenance: supports port mirroring
10. Alarm Output: supports IP/MAC conflicts, power and port alarms

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s

Protocols

RSTP;
IGMP Snooping, GMRP;
VLAN, PVLAN;
Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, SNMP, DHCP server;
DT-Psec, SSH, SSL, ACL;
FTP;
ARP, QoS

Switch Properties

Priority Queues: 4
Number of VLANs: 256
VLAN ID: 1-4094
Number of Multicast Groups: 256
MAC Table: 8K
Packet Buffer: 4Mbit
Packet Forwarding Rate: 4.2Mpps
Switching Delay: <5μs

Interface

Fast Ethernet Fiber Ports: max 4 100Base-FX, SM/MM ports, FC/SC/ST connector
Fast Ethernet RJ45 Ports: 24 10/100Base-TX RJ45 ports
Console Port: RS232 (RJ45 connector)
Alarm Contact: 3-pin 3.81mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

1) LEDs on Front Panel:
Running LED: Run
Interface LED: Link/ACT (Fast Ethernet port), Speed (Fast Ethernet port), DPX (Gigabit port), Link (Gigabit port)
2) LEDs on Rear Panel:
Interface LED: Link/ACT
Port Speed LED: Speed

Transmission Distance

1) LEDs on Front Panel:
Running LED: Run
Alarm LED: Alarm
Power LED: PWR1, PWR2
Interface LED: Link/ACT (Fast Ethernet port), Speed (Fast Ethernet port)
2) LEDs on Rear Panel:
Interface LED: Link/ACT
Port Speed LED: Speed

Power Requirements

24DC (18-36VDC), 48DC (36-72VDC), 220AC/DCW (85-264VAC/77-300VDC)
Power Terminal:
5-pin 5.08mm-spacing plug-in terminal block
Power Consumption: <16.8W
Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
Protection Class: IP40
Dimensions (WxHxD):
482.6x44x245mm (19x1.73x9.65 in.)
Weight: 2.5kg (5.512 pound)
Mounting: 19 inch 1U Rack mounting

Environmental Limits

Operating Temperature: -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)

MTBF

338,566 hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

EMI:
FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV

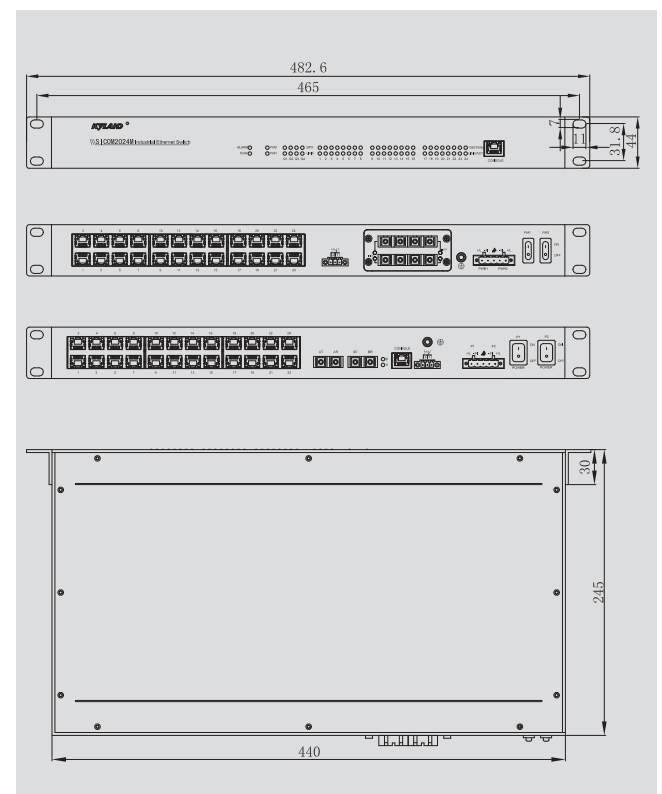
IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)
IEC61000-4-9 (Pulsed magnetic field): 1000A/m
IEC61000-4-10 (Damped oscillation): 100A/m
IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Power: IEC61850-3, IEEE1613
Railway: EN50155, EN50121-4
Traffic Control: NEMA TS-2

Mechanical Drawing

Ordering Information

SICOM2024M - _____ - _____ - _____ - _____ - _____
Ports Distance Connector PS1 PS2

Ports

4M-24T = 4 100Base-FX multi mode fiber ports, 24 10/100Base-TX RJ45 ports

4S-24T = 4 100Base-FX single mode fiber ports, 24 10/100Base-TX RJ45 ports

2M-24T = 2 100Base-FX multi mode fiber ports, 24 10/100Base-TX RJ45 ports

2S-24T = 2 100Base-FX single mode fiber ports, 24 10/100Base-TX RJ45 ports

2M-16T = 2 100Base-FX multi mode fiber ports, 16 10/100Base-TX RJ45 ports

2S-16T = 2 100Base-FX single mode fiber ports, 16 10/100Base-TX RJ45 ports

24T = 24 10/100Base-TX RJ45 ports

16T = 16 10/100Base-TX RJ45 ports

Distance: Fiber Distance

1310-5 = 1310nm, 5km

1310-40 = 1310nm, 40km

1310-60 = 1310nm, 60km

1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector

ST = ST Connector

FC = FC Connector

PS1 & PS2: Power Supplies 1 & 2

XX = None (power supply 2 only)

24DC = 18-36VDC

48DC = 36-72VDC

220AC/DCW = 85-264VAC/77-300VDC

Example Order Codes

SICOM2024M-4M-24T-1310-5-SC-24DC-24DC

4 single mode fiber ports with SC connectors, 1310nm 5km, 24 10/100Base TX RJ45 ports, and dual redundant 24DC(18-36VDC) power supplies

SICOM4000

Layer 2 24+4G Port Managed Din-Rail Modular IEC61850 Switch



- Flexible modular DIN-Rail design for easy expansion
- 4 Gigabit SFP slots, 24 Fast Ethernet fiber/RJ45 optional ports or 24 RS232/RS485 serial ports
- Supports DT-Ring protocols and RSTP
- Embedded serial data server
- Patented heat dissipation technology, fanless design
- IP40 protection class



Overview

SICOM4000 is a DIN-Rail modular managed industrial Ethernet switch supporting up to 4 Gigabit SFP slots, 24 100M copper/fiber ports or 24 RS232/RS485 serial ports. It also comes with EMC industrial level 4 design and complies with IP40 protection class. Based on Kyvision3.0, CLI, WEB interface, it offers concentrated management. The state-of-the-art OPC software enables the switch's management embedded in various industrial systems.

Features & Benefits

1. Redundancy Technology: supports DT-Ring protocols (recovery time<50ms), RSTP
2. Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
3. Network Partition: supports VLAN, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, SNTP, LLDP
7. Network Security: supports SSH, SSL, ACL
8. Device Management: supports FTP upgrade
9. Device Maintenance: supports port mirroring
10. Alarm Output: supports IP/MAC conflicts, power, port and ring alarms
11. Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3u
IEEE 802.3ab
IEEE 802.3z
IEEE 802.3x
IEEE 802.1p
IEEE 802.1Q
IEEE 802.1w

Protocols

DT-Ring, DT-Ring+, DT-VLAN, RSTP;
IGMP Snooping, GMRP;
VLAN, PVLAN;
Telnet, HTTP, SNMPv1/v2/v3, RMON, LLDP, SNTP;
SSH, SSL, ACL;
ARP, FTP, QoS

Switch Properties

Priority Queues: 4
Number of VLANs: 256
VLAN ID: 1-4094
Number of Multicast Groups: 256
MAC Table: 8K
Packet Buffer: 4Mbit
Packet Forwarding Rate: 9.5Mpps
Switching Delay: <5μs

Interface

1 slot for CPU module
1 slot for switching module
1 slot for power module
1 slot for 4-port Gigabit interface module
6 slots for 4-port Fast Ethernet interface modules or 4-port serial interface modules
Gigabit Ethernet Ports: 4 1000Base SFP slots
Fast Ethernet Ports: max 24 100Base-FX, SM/MM ports, FC/SC/ST connector or 24 10/100Base-TX RJ45 ports
Serial Port: max 24 RS232/RS485 ports
Console Port: RS232 (RJ45 connector)
Alarm Contact: 2-pin 3.81mm-spacing plug-in terminal block, 250VAC/350VDC Max, 120mA Max

LED

1) LEDs on Front Panel:
Running LED: Run
Alarm LED: Alarm
Power LED: PWR1, PWR2
Interface LED: Link/ACT, Speed (RJ45 port)
2) LEDs on Rear Panel:
Interface LED: Link/ACT
Port Speed LED: Speed

Transmission Distance

Serial Cable:
RS232, 15m; RS422/RS485, 1200m
Twisted Pair:
100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber:
1310nm, 5km (100M)
850nm, 550m (1000M)
Single Mode Fiber:
1310nm, 40km/60km (100M)
1550nm, 60km/80km (100M)
1310nm, 10km/40km (1000M)
1550nm, 60km/80km (1000M)

Power Requirements

Power Input:
24DC (18-36VDC), 48DC (36-72VDC)
Power Terminal:
3-pin 3.81mm-spacing plug-in terminal block
Power Consumption:
<24W (full Ethernet ports)
<36W (full serial ports)

Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
Protection Class: IP40
Dimensions (WxHxD):
416x170x158 mm (16.38x6.69x6.22 in.)
Weight: 8kg (17.637 pound)
Mounting: DIN-Rail or panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

282,000 hrs

Warranty

5 years

Approvals

CE, FCC

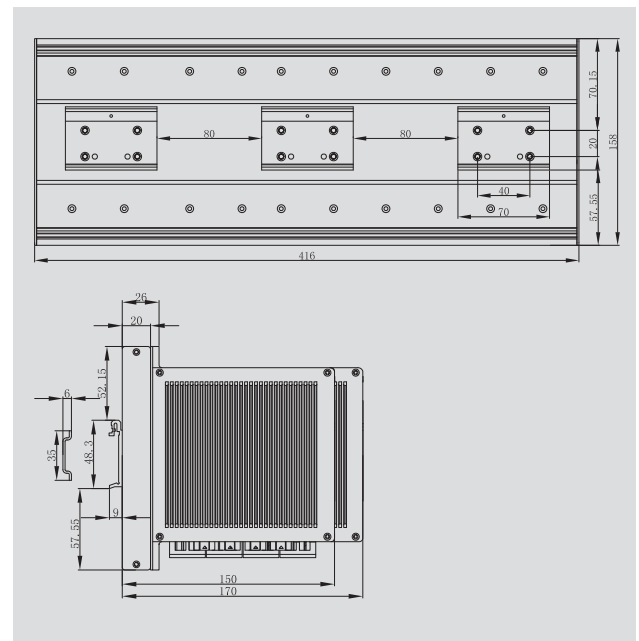
Industrial Standard

EMI:
FCC CFR47 Part 15, EN55022/CISPR22, Class A
EMS:
IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:
IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2
Railway: EN50155, EN50121-4
Traffic Control: NEMA TS-2

➤ Mechanical Drawing



Ordering Information

SICOM4000 - - - - - - - - - -
 C P G S1 S2 S3 S4 S5 S6

C:Chassis

MB24 = SICOM4000-MB-24VDC, SICOM4000 Chassis 24VDC Version

MB48 = SICOM4000-MB-48VDC, SICOM4000 Chassis 48VDC Version

P:Power Supply Module

24 = SM4.1-Power-24VDC, 24VDC(18-36VDC) power supply module

48 = SM4.1-Power-48VDC, 48VDC(36-72VDC) power supply module

G:Gigabit Module

XX = None

4GX24 = SM4.1-4GX-24VDC, interface module with 4 Gigabit SFP ports 24VDC version

4GX48 = SM4.1-4GX-48VDC, interface module with 4 Gigabit SFP ports 48VDC version

4GE24 = SM4.1-4GE-24VDC, interface module with 4 10/100/1000Base-TX RJ45 ports 24VDC version

4GE48 = SM4.1-4GE-48VDC, interface module with 4 10/100/1000Base-TX RJ45 ports 48VDC version

S1-S6:Slot 1-Slot 6 100M Modules

XX = None

4T24 = SM4.1-4T-24VDC, interface module with 4 10/100Base-TX RJ45 ports, 24VDC version

4T48 = SM4.1-4T-48VDC, interface module with 4 10/100Base-TX RJ45 ports, 48VDC version

4D24 = SM4.1-4D-232/485-24VDC, interface module with 4 RS232/485 serial ports, 24VDC version

4D48 = SM4.1-4D-232/485-48VDC, interface module with 4 RS232/485 serial ports, 48VDC version

4SSC24 = SM4.1-4S-SC-1310-40-24VDC, interface module with 4 100Base-FX single mode fiber ports, 1310nm 40km, SC connector, 24VDC version

4SST24 = SM4.1-4S-ST-1310-40-24VDC, interface module with 4 100Base-FX single mode fiber ports, 1310nm 40km, ST connector, 24VDC version

4SFC24 = SM4.1-4S-FC-1310-40-24VDC, interface module with 4 100Base-FX single mode fiber ports, 1310nm 40km, FC connector, 24VDC version

4SSC6024 = SM4.1-4S-SC-1310-60-24VDC, interface module with 4 100Base-FX single mode fiber ports, 1310nm 60km, SC connector, 24VDC version

4SSC8024 = SM4.1-4S-SC-1550-80-24VDC, interface module with 4 100Base-FX single mode fiber ports, 1550nm 80km, SC connector, 24VDC version

4MSC24 = SM4.1-4M-SC-1310-5-24VDC, interface module with 4 100Base-FX multi mode fiber ports, 1310nm 5km, SC connector, 24VDC version

4MST24 = SM4.1-4M-ST-1310-5-24VDC, interface module with 4 100Base-FX multi mode fiber ports, 1310nm 5km, ST connector, 24VDC version

4MFC24 = SM4.1-4M-FC-1310-5-24VDC, interface module with 4 100Base-FX multi mode fiber ports, 1310nm 5km, FC connector, 24VDC version

4SSC48 = SM4.1-4S-SC-1310-40-48VDC, interface module with 4 100Base-FX single mode fiber ports, 1310nm 40km, SC connector, 48VDC version

4SST48 = SM4.1-4S-ST-1310-40-48VDC, interface module with 4 100Base-FX single mode fiber ports, 1310nm 40km, ST connector, 48VDC version

4SFC48 = SM4.1-4S-FC-1310-40-48VDC, interface module with 4 100Base-FX single mode fiber ports, 1310nm 40km, FC connector, 48VDC version

4SSC6048 = SM4.1-4S-SC-1310-60-48VDC, interface module with 4 100Base-FX single mode fiber ports, 1310nm 60km, SC connector, 48VDC version

4SSC8048 = SM4.1-4S-SC-1550-80-48VDC, interface module with 4 100Base-FX single mode fiber ports, 1550nm 80km, SC connector, 48VDC version

4MSC48 = SM4.1-4M-SC-1310-5-48VDC, interface module with 4 100Base-FX multi mode fiber ports, 1310nm 5km, SC connector, 48VDC version

4MST48 = SM4.1-4M-ST-1310-5-48VDC, interface module with 4 100Base-FX multi mode fiber ports, 1310nm 5km, ST connector, 48VDC version

4MFC48 = SM4.1-4M-FC-1310-5-48VDC, interface module with 4 100Base-FX multi mode fiber ports, 1310nm 5km, FC connector, 48VDC version

2SSC2T24 = SM4.1-2S-SC-1310-40-2T-24VDC, interface module with 2 100Base-FX single mode fiber ports, 1310nm 40km, SC connector, and 2 10/100Base-TX RJ45 ports, 24VDC version

2SST2T24 = SM4.1-2S-ST-1310-40-2T-24VDC, interface module with 2 100Base-FX single mode fiber ports, 1310nm 40km, ST connector, and 2 10/100Base-TX RJ45 ports, 24VDC version

2SFC2T24 = SM4.1-2S-FC-1310-40-2T-24VDC, interface module with 2 100Base-FX single mode fiber ports, 1310nm 40km, FC connector, and 2 10/100Base-TX RJ45 ports, 24VDC version

2SSC602T24 = SM4.1-2S-SC-1310-60-2T-24VDC, interface module with 2 100Base-FX single mode fiber ports, 1310nm 60km, SC connector, and 2 10/100Base-TX RJ45 ports, 24VDC version

2SSC802T24 = SM4.1-2S-SC-1310-80-2T-24VDC, interface module with 2 100Base-FX single mode fiber ports, 1310nm 80km, SC connector, and 2 10/100Base-TX RJ45 ports, 24VDC version

2MSC2T24 = SM4.1-2M-SC-1310-5-2T-24VDC, interface module with 2 100Base-FX multi mode fiber ports, 1310nm 5km, SC connector, and 2 10/100Base-TX RJ45 ports, 24VDC version

2MST2T24 = SM4.1-2M-ST-1310-5-2T-24VDC, interface module with 2 100Base-FX multi mode fiber ports, 1310nm 5km, ST connector, and 2 10/100Base-TX RJ45 ports, 24VDC version

SMFC2T24 = SM4.1-2M-FC-1310-5-2T-24VDC, interface module with 2 100Base-FX multi mode fiber ports, 1310nm 5km, FC connector, and 2 10/100Base-TX RJ45 ports, 24VDC version

2SSC2T48 = SM4.1-2S-SC-1310-40-2T-48VDC, interface module with 2 100Base-FX single mode fiber ports, 1310nm 40km, SC connector, and 2 10/100Base-TX RJ45 ports, 48VDC version

2SST2T48 = SM4.1-2S-ST-1310-40-2T-48VDC, interface module with 2 100Base-FX single mode fiber ports, 1310nm 40km, ST connector, and 2 10/100Base-TX RJ45 ports, 48VDC version

2SFC2T48 = SM4.1-2S-FC-1310-40-2T-48VDC, interface module with 2 100Base-FX single mode fiber ports, 1310nm 40km, FC connector, and 2 10/100Base-TX RJ45 ports, 48VDC version

2SSC602T48 = SM4.1-2S-SC-1310-60-2T-48VDC, interface module with 2 100Base-FX single mode fiber ports, 1310nm 60km, SC connector, and 2 10/100Base-TX RJ45 ports, 48VDC version

2SSC802T48 = SM4.1-2S-SC-1310-80-2T-48VDC, interface module with 2 100Base-FX single mode fiber ports, 1310nm 80km, SC connector, and 2 10/100Base-TX RJ45 ports, 48VDC version

2MSC2T48 = SM4.1-2M-SC-1310-5-2T-48VDC, interface module with 2 100Base-FX multi mode fiber ports, 1310nm 5km, SC connector, and 2 10/100Base-TX RJ45 ports, 48VDC version

2MST2T48 = SM4.1-2M-ST-1310-5-2T-48VDC, interface module with 2 100Base-FX multi mode fiber ports, 1310nm 5km, ST connector, and 2 10/100Base-TX RJ45 ports, 48VDC version

SMFC2T48 = SM4.1-2M-FC-1310-5-2T-48VDC, interface module with 2 100Base-FX multi mode fiber ports, 1310nm 5km, FC connector, and 2 10/100Base-TX RJ45 ports, 48VDC version

Example Order Codes

SICOM4000-MB24-24-XX-4T24-4T24-4T24-4T24-4T24

24 10/100Base-TX RJ45 ports, 24DC(18-36VDC) power supplypower supplies.

SICOM3216

Layer 2 16+2G Port Managed Din-Rail IEC61850 Switch



- Green Ethernet solution with ultra low power consumption design
- As low as 8 watts full load power consumption
- 2 Gigabit Combo ports, 14 10/100Base-TX ports and 2 Fast Ethernet fiber/RJ45 optional ports
- Supports IEC62439-6, DT-Ring protocols and MSTP
- Supports one-key recovery
- Provides Mini USB Console port, supports setting backup and recovery through USB
- Supports VCT (Virtual Cable Test)
- UL508 (pending), Class 1 Div 2 (pending), CE, FCC certificates



Overview

SICOM3216 is one of Kyland green low power consumption industrial Ethernet switch series which supports max 18 ports including 2 Gigabit combo ports, 14 10/100Base-TX ports and 2 Fast Ethernet fiber/RJ45 optional ports. It is specially designed for harsh environments with wide temperature range, EMC level 4, IP40 protection class, and can be deployed in wind power, distribution network automation, transportation, oil & gas and many other industrial applications. SICOM3216 series supports Kyland latest IEC62439-6/DRP ring protocol as well as DT-Ring/+ and MSTP.

Features & Benefits

1. Redundancy Technology: supports IEC62439-6 (recovery time<20ms), DT-Ring protocols (recovery time<50ms) and MSTP
2. Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
3. Network Partition: supports VLAN, GVRP, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, SNTP, DHCP
7. Network Security: supports MAC address binding with port, IEEE802.1X, SSH, SSL, TACACS+, ACL
8. Device Management: supports FTP/TFTP upgrade, also supports Syslog upload and download
9. Device Maintenance: supports port mirroring, VCT (Virtual Cable Test)
10. Alarm Output: supports IP/MAC conflicts, power, port and ring alarms
11. Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE802.3ac, IEEE 802.3ad, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s, IEEE 802.1X

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP, DRP;
 IGMP Snooping, GMRP;
 VLAN, GVRP, PVLAN;
 Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, SNTP, BootP, DHCP server/relay/client, DHCP Option 82; SSH, SSL, TACACS+, ACL;
 Syslog, FTP, TFTP;
 LACP, ARP, QoS, Modbus TCP

Switch Properties

Priority Queues: 4
 Number of VLANs: 256
 VLAN ID: 1-4094
 Number of Multicast Groups: 256
 MAC Table: 8K
 Packet Buffer: 2Mbit
 Packet Forwarding Rate: 5.4Mpps
 Switching Delay: <5μs

Interface

Gigabit Ethernet Ports: 2 combo 1000Base SFP slots or 10/100/1000Base-TX ports
 Fast Ethernet Fiber Ports: max 2 100Base-FX, SM/MM ports, FC/SC/ST connector
 Fast Ethernet RJ45 Ports: max 16 10/100Base-TX RJ45 ports
 Console Port: Mini USB
 Alarm Contact: 3-pin 5.08mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

LEDs on Front Panel:
Running LED: Run
Alarm LED: Alarm
Power LED: PWR1, PWR2
Ring LED: Ring
Interface LED: Link/ACT, Speed (RJ45 port)

Reset Button

Reboot and restore default configuration

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber:
1310nm, 5km (100M)
850nm, 550m (1000M)
Single Mode Fiber:
1310nm, 40km/60km (100M)
1550nm, 60km/80km (100M)
1310nm, 10km/40km (1000M)
1550nm, 60km/80km (1000M)

Power Requirements

Power Input:
24DCW (18-72VDC)
Power Terminal:
5-pin 5.08mm-spacing plug-in terminal block
Power Consumption:
SICOM3216-16T: 8.0W
SICOM3216-2S/M-14T: 8.6W
SICOM3216-2GX/GE-16T: 10.5W
SICOM3216-2GX/GE-2S/M-14T: 11.1W
Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
Protection Class: IP40
Dimensions (WxHxD):
88x135x137mm (3.46x5.31x5.39 in.)
Weight: 1.25kg (2.756 pound)
Mounting: DIN-Rail or panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

465,000 hrs

Warranty

5 years

Approvals

UL508 (pending), Class 1 Div 2 (pending), CE, FCC

Industrial Standard

EMI:
FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

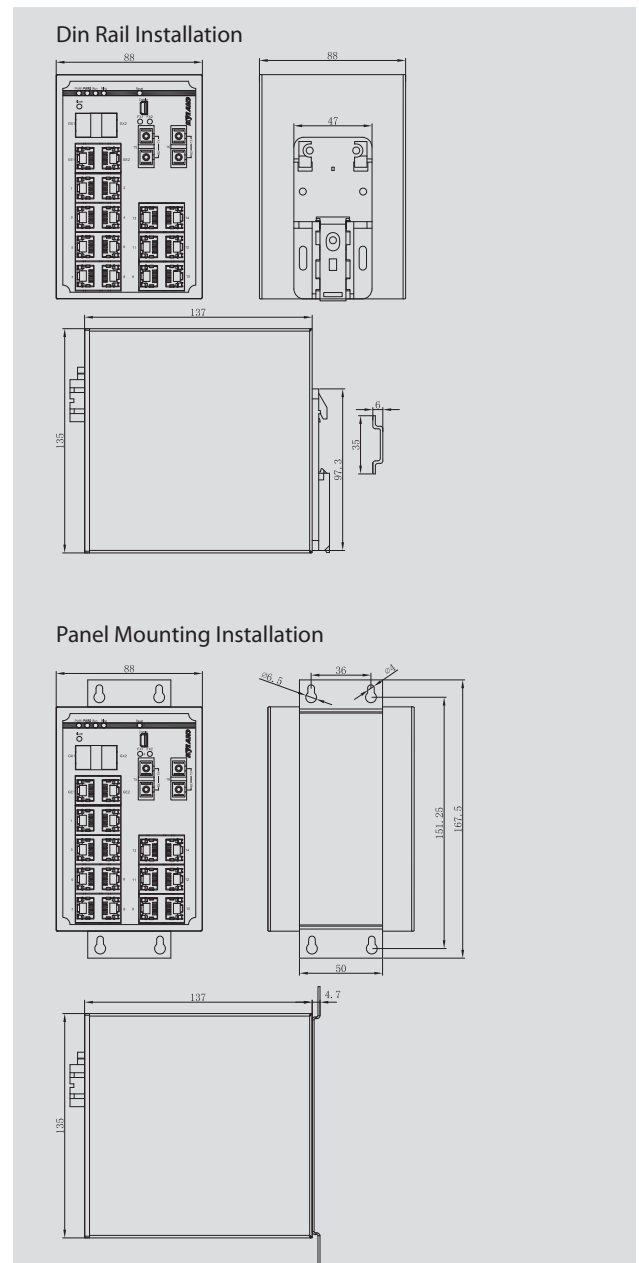
IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

Traffic Control: NEMA TS-2

Mechanical Drawing



Ordering Information

SICOM3216 - _____ - _____ - _____ - _____
 Ports Distance Connector PS

Ports

2GX/GE-16T = 2 Gigabit combo ports, 16 10/100Base-TX RJ45 ports
2GX/GE-2M-14T = 2 Gigabit combo ports, 2 100Base-FX multi mode fiber ports, 14 10/100Base-TX RJ45 ports
2GX/GE-2S-14T = 2 Gigabit combo ports, 2 100Base-FX single mode fiber ports, 14 10/100Base-TX RJ45 ports
16T = 16 10/100Base-TX RJ45 ports
2M-14T = 2 100Base-FX multi mode ports, 14 10/100Base-TX RJ45 ports
2S-14T = 2 100Base-FX single mode ports, 14 10/100Base-TX RJ45 ports

Distance: Fiber Distance

1310-5 = 1310nm, 5km
1310-40 = 1310nm, 40km
1310-60 = 1310nm, 60km
1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector
ST = ST Connector
FC = FC Connector

PS: Power Supply

24DCW = 18-72VDC, dual redundant power inputs

Example Order Codes

SICOM3216-2GX/GE-2M-14T-1310-5-SC-24DCW

2 Gigabit combo ports, 2 100Base-FX multi mode fiber ports, 14 10/100Base-TX RJ45 ports, 1310nm, 5km, SC connectors, 18-72VDC, dual redundant power inputs

SICOM3016

Layer 2 20 Port Managed Din-Rail IEC61850 Switch



- 4 100Base-FX SM/MM ports, 16 10/100Base-TX ports
- Supports DT-Ring protocols
- SNMPv3, HTTPS, SSH security features
- EMC performance reaches industrial level 4
- Supports 110DC, 220AC/DCW power input
- CE, FCC certificates



Overview

SICOM3016 is a high-performance network-managed industrial Ethernet switch specially designed by KYLAND for industrial applications. It's DIN-Rail installation and supports max 4 100Base-FX and 16 10/100Base-T(X) ports. Its high-performance switch engine, solid and closed case, high-efficient single-rib-shape case for heat dissipation without using fans, overcurrent, overvoltage and EMC protection at power input side, and excellent EMC protection of RJ45 port allow SICOM3016 to work in harsh and dangerous industrial environments. The redundant function of optical fiber network, independent entire network management channel, dual redundant power inputs function, and powerful entire network real-time management system provide multiplex guarantee for reliable operation of the system.

Features & Benefits

1. Redundancy Technology: supports DT-Ring protocols (recovery time<50ms) and MSTP
2. Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
3. Network Partition: supports VLAN, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, SNTP, DHCP
7. Network Security: supports DT-Psec, SSH, SSL, ACL
8. Device Management: supports FTP upgrade
9. Device Maintenance: supports port mirroring
10. Alarm Output: supports IP/MAC conflicts, power, port and ring alarms
11. Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3u
IEEE 802.3x
IEEE 802.1p
IEEE 802.1Q
IEEE 802.1s

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP;
IGMP Snooping, GMRP;
VLAN, PVLAN;
Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, SNTP, DHCP server;
DT-Psec, SSH, SSL, ACL;
FTP;
ARP, QoS

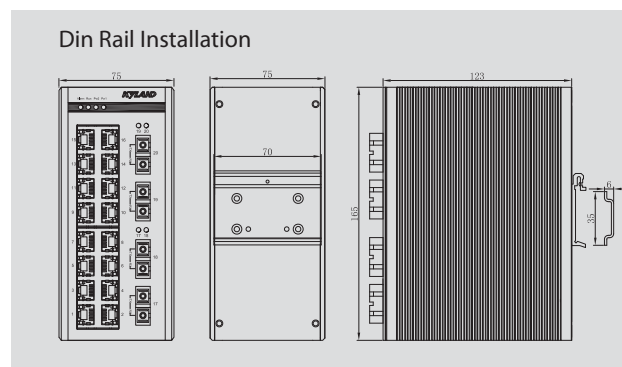
Switch Properties

Priority Queues: 4
Number of VLANs: 256
VLAN ID: 1-4094
Number of Multicast Groups: 256
MAC Table: 8K
Packet Buffer: 2Mbit
Packet Forwarding Rate: 3.0Mpps
Switching Delay: <5μs

Interface

Fast Ethernet Fiber Ports: max 4 100Base-FX SM/MM ports, FC/SC/ST connector
Fast Ethernet RJ45 Ports: 16 10/100Base-TX RJ45 ports
Console Port: RS232 (RJ45 connector)
Alarm Contact: 2-pin 3.81mm-spacing plug-in terminal block, 250VAC/350VDC Max, 120mA Max

Mechanical Drawing



Ordering Information

SICOM3016 - _____ - _____ - _____ - _____
 Ports Distance Connector PS

Ports

4M-16T = 4 100Base-FX multi mode ports, 16 10/100Base-TX ports
 4S-16T = 4 100Base-FX single mode ports, 16 10/100Base-TX ports
 2M-16T = 2 100Base-FX multi mode ports, 16 10/100Base-TX ports
 2S-16T = 2 100Base-FX single mode ports, 16 10/100Base-TX ports
 4M-8T = 4 100Base-FX multi mode ports, 8 10/100Base-TX ports
 4S-8T = 4 100Base-FX single mode ports, 8 10/100Base-TX ports
 2M-8T = 2 100Base-FX multi mode ports, 8 10/100Base-TX ports
 2S-8T = 2 100Base-FX single mode ports, 8 10/100Base-TX ports

Distance: Fiber Distance

1310-5 = 1310nm, 5km
 1310-40 = 1310nm, 40km
 1310-60 = 1310nm, 60km
 1550-80 = 1550nm, 80km

Connector: Fiber Connector

None = No fiber port
 SC = SC Connector
 ST = ST Connector
 FC = FC Connector

PS: Power Supply

24DC = 18-36VDC, dual redundant power inputs
 48DC = 36-72VDC, dual redundant power inputs
 110DC = 66-154VDC, single power input
 220AC/DC = 132-300VAC/176-400VDC, single power input

Example Order Codes

SICOM3016-4M-16T-1310-5-SC-24DC

4 100M multi mode 1310nm 5km fiber ports with SC connector, 16 10/100Base-TX RJ45 ports, 24DC dual power inputs.

LED

LEDs on Front Panel:
 Running LED: Run
 Alarm LED: Alarm
 Power LED: PWR1, PWR2
 Interface LED: Link/ACT, Speed (RJ45 port)

Transmission Distance

Twisted Pair:
 100m (Standard CAT5, CAT5e network cable)
 Multi Mode Fiber:
 1310nm, 5km (100M)
 Single Mode Fiber:
 1310nm, 40km/60km (100M)
 1550nm, 60km/80km (100M)

Power Requirements

Power Input: 24DC (18-36VDC), 48DC (36-72VDC), 110DC (66-154VDC), 220AC/DCW (132-300VAC/176-400VDC)
 Power Terminal:
 3-pin 3.81mm-spacing plug-in terminal block (24DC, 48DC)
 3-pin 7.62mm-spacing plug-in terminal block (110DC, 220AC/DCW)
 Power Consumption: <9.7W
 Overload Protection: Support
 Reverse Connection Protection: Support
 Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
 Protection Class: IP40
 Dimensions (WxHxD): 75x165x123mm (2.95x6.50x4.84 in.)
 Weight: 1.2kg (2.646 pound)
 Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

333,775 hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

EMI: FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V(1s)

Machinery:

IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4
 Traffic Control: NEMA TS-2

SICOM3016B

Layer 2 16+4G Port Managed Din-Rail IEC61850 Switch



- 4 Gigabit ports and 16 10/100Base-TX ports
- Supports DT-Ring protocols and MSTP
- Compact DIN-Rail product
- Intelligent network management
- Advanced security features
- Provides power failure alarm
- EMC performance reaches industrial level 4
- CE, FCC certificates



Overview

SICOM3016B is a high-performance network-managed industrial Ethernet switch specially designed by KYLAND for industrial applications. It's DIN-Rail installation and supports max 4 combo Gigabit SFP slots or 10/100/1000Base-T(X) ports and 16 10/100Base-T(X) ports. Its high-performance switch engine, solid and closed case, high-efficient single-rib- shape case for heat dissipation without using fans, overcurrent, overvoltage and EMC protection at power input side, and excellent EMC protection of RJ45 port allow SICOM3016B to work in harsh and dangerous industrial environments. The redundant function of optical fiber network, independent entire network management channel, dual redundant power inputs function, and powerful entire network real-time management system provide multiplex guarantee for reliable operation of the system.

Features & Benefits

1. Redundancy Technology: supports DT-Ring protocols (recovery time<50ms) and MSTP
2. Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
3. Network Partition: supports VLAN, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, SNMP, DHCP
7. Network Security: supports DT-Psec, SSH, SSL, ACL
8. Device Management: supports FTP upgrade
9. Device Maintenance: supports port mirroring
10. Alarm Output: supports IP/MAC conflicts, port and ring alarms
11. Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP;
 IGMP Snooping, GMRP;
 VLAN, PVLAN;
 Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, SNMP, DHCP server;
 DT-Psec, SSH, SSL, ACL;
 FTP;
 ARP, QoS

Switch Properties

Priority Queues: 4
 Number of VLANs: 256
 VLAN ID: 1-4094
 Number of Multicast Groups: 256
 MAC Table: 8K
 Packet Buffer: 4Mbit
 Packet Forwarding Rate: 8.3Mpps
 Switching Delay: <5μs

Interface

Gigabit Ethernet Port Combinations:
 1) 4 combo 1000Base SFP slots or 10/100/1000Base-TX ports
 2) 2 combo 1000Base SFP slots or 10/100/1000Base-TX ports and 2 10/100/1000Base-TX ports
 Fast Ethernet Ports: 16 10/100Base-TX RJ45 ports
 Console Port: RS232 (RJ45 connector)
 Alarm Contact: 3-pin 3.81mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

LEDs on Front Panel:
 Running LED: Run
 Alarm LED: Alarm
 Power LED: PWR1, PWR2
 Interface LED: Link/ACT, Speed (RJ45 port)

Transmission Distance

Twisted Pair:
 100m (Standard CAT5, CAT5e network cable)
 Multi Mode Fiber:
 850nm, 550m (1000M)
 Single Mode Fiber:
 1310nm, 10km/40km (1000M)
 1550nm, 60km/80km (1000M)

Power Requirements

Power Input:
 24DC (18-36VDC), 48DC (36-72VDC), 220AC/DC (120-300VDC/85-264VAC)
 Power Terminal:
 5-pin 5.08mm-spacing plug-in terminal block
 Power Consumption: <13.3W

Overload Protection: Support
 Reverse Connection Protection: Support
 Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
 Protection Class: IP40
 Dimensions (WxHxD):
 75x165x123mm (2.95x6.50x4.84 in.)
 Weight: 1.2kg (2.646 pound)
 Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

334,038 hrs

Warranty

5 years

Approvals

CE, FCC

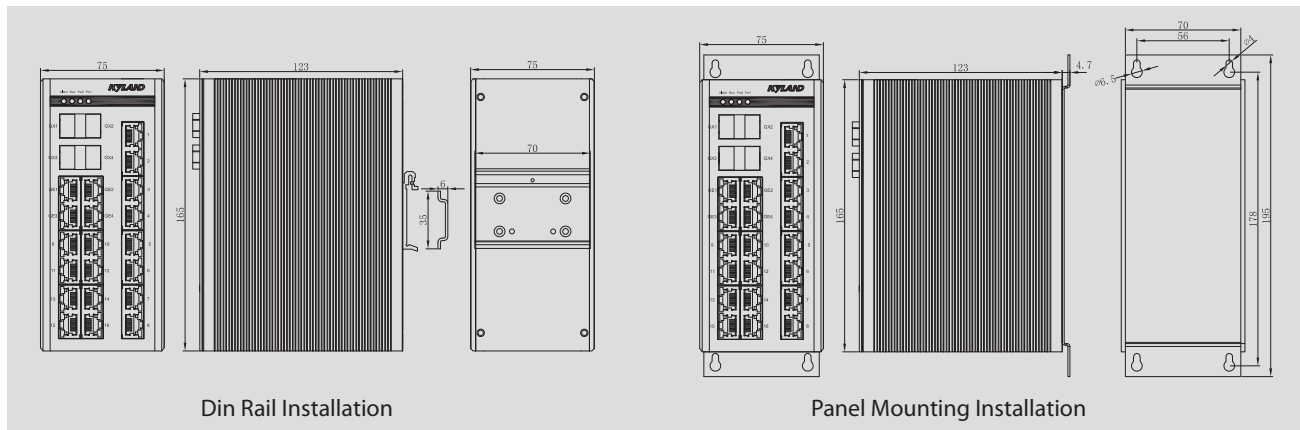
Industrial Standard

EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:
 IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:
 IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2
 Railway: EN50155, EN50121-4
 Traffic Control: NEMA TS-2

Mechanical Drawing**Ordering Information**

SICOM3016B - _____ - _____
 Ports PS

Ports

4GX/GE-16T = 4 Gigabit combo ports, 16 10/100Base-TX RJ45 ports
 2GX/GE-2GE-16T = 2 Gigabit combo ports, 2 10/100/1000Base-TX RJ45 ports, 16 10/100Base-TX RJ45 ports

PS: Power Supply

24DC = 18-36VDC, dual redundant power inputs
 48DC = 36-72VDC, dual redundant power inputs
 220AC/DCW = 77-300VDC/85-264VAC, single power input

Example Order Codes

SICOM3016B-4GX/GE-16T-24DC
 4 Gigabit combo ports, 16 10/100Base-TX RJ45 ports, 24DC (18-36VDC)
 dual redundant power inputs

SICOM3010G



Layer 2 10G Port Full Gigabit Managed Din-Rail IEC61850 Switch

- Green Ethernet solution with ultra low power consumption design
- As low as 9.5 watts full load power consumption
- 2 Gigabit Combo ports, 2 Gigabit SFP slots and 6 10/100/1000Base-TX ports
- Supports IEC62439-6, DT-Ring protocols and MSTP
- Supports one-key recovery
- Provides Mini USB Console port, supports setting backup and recovery through USB
- Supports VCT (Virtual Cable Test)
- IP40 protection class
- UL508 (pending), Class 1 Div 2 (pending), CE, FCC certificates



Overview

SICOM3010G is equipped with 10 Gigabit Ethernet ports and up to 4 fiber optic ports, making it ideal for Gigabit backbone network which requires a higher performance bandwidth for transferring large amounts of video, voice, and data across a network quickly. Redundant Ethernet IEC62439-6/DRP ring protocol, DT-Ring/+ and MSTP increase system reliability and the availability of your network backbone. The SICOM3010G series is designed especially for communication demanding applications, such as video and process monitoring, shipbuilding, ITS, and DCS systems, all of which can benefit from a scalable backbone construction.

Features & Benefits

1. Redundancy Technology: supports IEC62439-6 (recovery time<20ms), DT-Ring protocols (recovery time<50ms) and MSTP
2. Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
3. Network Partition: supports VLAN, GVRP, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, SNMP, DHCP
7. Network Security: supports MAC address binding with port, IEEE802.1X, SSH, SSL, TACACS+, ACL
8. Device Management: supports FTP/TFTP upgrade, also supports Syslog upload and download
9. Device Maintenance: supports port mirroring, VCT (Virtual Cable Test)
10. Alarm Output: supports IP/MAC conflicts, power, port and ring alarms
11. Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE802.3ac, IEEE 802.3ad, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s, IEEE 802.1X

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP, DRP;
 IGMP Snooping, GMRP;
 VLAN, GVRP, PVLAN;
 Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, SNMP, BootP, DHCP server/relay/client, DHCP Option 82; SSH, SSL, TACACS+, ACL;
 Syslog, FTP, TFTP;
 LACP, ARP, QoS, Modbus TCP

Switch Properties

Priority Queues: 4
 Number of VLANs: 256
 VLAN ID: 1-4094
 Number of Multicast Groups: 256
 MAC Table: 8K
 Packet Buffer: 1Mbit
 Packet Forwarding Rate: 14.9Mpps
 Switching Delay: <5μs

Interface

Gigabit SFP Slots: 2 1000Base SFP slots
 Gigabit RJ45 Ports: 6 10/100/1000Base-TX RJ45 ports
 Gigabit Combo Ports: 2 combo 1000Base SFP slots or 10/100/1000Base-TX ports
 Console Port: Mini USB
 Alarm Contact: 3-pin 5.08mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

LEDs on Front Panel:
 Running LED: Run
 Alarm LED: Alarm
 Power LED: PWR1, PWR2
 Ring LED: Ring
 Interface LED: Link/ACT, Speed (RJ45 port)

Reset Button

Reboot and restore default configuration

Transmission Distance

Twisted Pair:
 100m (Standard CAT5, CAT5e network cable)
 Multi Mode Fiber: 850nm, 550m (1000M)
 Single Mode Fiber:
 1310nm, 10km/40km (1000M)
 1550nm, 60km/80km (1000M)

Power Requirements

Power Input: 24DCW (18-72VDC)
 Power Terminal: 5-pin 5.08mm-spacing plug-in terminal block
 Power Consumption: 9.5W

Overload Protection: Support
 Reverse Connection Protection: Support
 Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
 Protection Class: IP40
 Dimensions (WxHxD):
 88x135x137mm (3.46x5.31x5.39 in.)
 Weight: 1.25kg (2.756 pound)
 Mounting: DIN-Rail or panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

345,000 hrs

Warranty

5 years

Approvals

UL508 (pending), Class 1 Div 2 (pending), CE, FCC

Industrial Standard

EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

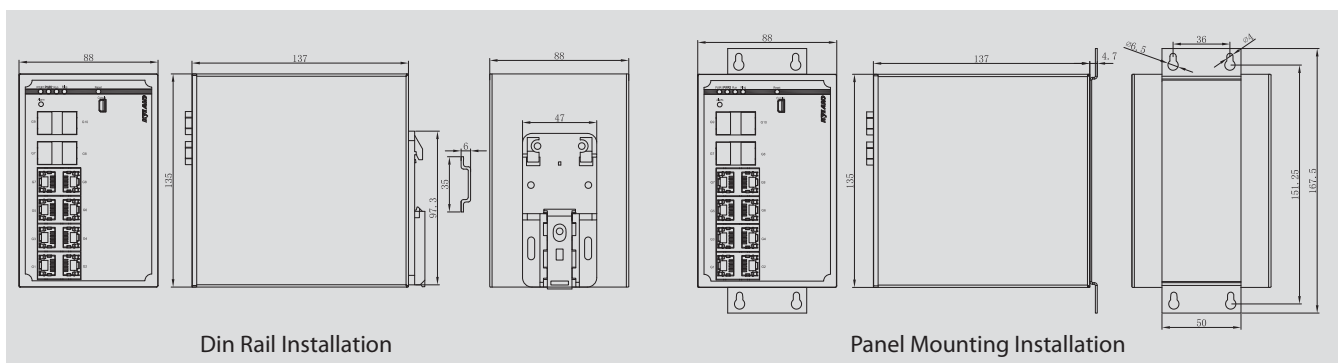
EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2
 Railway: EN50155, EN50121-4
 Traffic Control: NEMA TS-2

Mechanical Drawing**Ordering Information**

SICOM3010G - _____ - _____
 Ports PS

Ports

2GX/GE-6GE = 2 Gigabit combo ports, 6 10/100/1000Base-TX RJ45 ports
 2GX/GE-2GX-6GE = 2 Gigabit combo ports, 2 1000Base-X SFP ports, 6
 10/100/1000Base-TX RJ45 ports

PS: Power Supply

24DCW = 18-72VDC, dual redundant power inputs

Example Order Codes

SICOM3010G-2GX/GE-6GE-24DCW

2 Gigabit combo ports, 2 1000Base-SFP ports, 6 10/100/1000Base-TX ports,
 24DCW(18-72VDC) dual redundant power inputs

SICOM3306PT



Layer 2 6+3G port Managed Din Rail IEEE1588v2 Industrial Ethernet Switch

- 3 100/1000Base-X SFP ports, 6 10/100Base-TX RJ45 ports
- Support IEEE1588v2
- Support SyncE (ITU-T.G.8261/G.8262)
- Support IEC62439-6/DRP, DT-Ring, RSTP and MSTP ring protocols
- Support reset button for fast reboot or loading default settings
- Provides Mini USB Console port, supports setting backup and recovery through USB
- Supports VCT (Virtual Cable Test)
- IP40 protection class
- Exceeds IEC61850-3 & IEEE1613
- CE, FCC certifications



Overview

SICOM3306PT Series is Kyland Din Rail IEEE1588v2 industrial Ethernet switch implementing IEEE1588v2 clock synchronization with hardware time stamping over each of the 3 Gigabit SFP ports and 6 10/100Base-TX ports. Combining IEEE1588v2 and SyncE (ITU-T.G.8261/G.8262), the synchronization precision accuracy can reach 10 nanoseconds which exceeds all the highest level of requirements for clock synchronization solution in smart grid and power utilities. SICOM3306PT is equipped with IEC62439-6/DRP ring protocol which enables less than 20ms recovery time. It also supports DT-Ring, RSTP/STP, MSTP and VRRP. Mini USB console port enables configuration easy backup and restore. Exceeding IEC61850-3 and IEEE1613 standards, SICOM3306 Series is specifically designed to operate reliably in electrically harsh and climatically demanding utility substation and industrial environments.

Features & Benefits

1. Redundancy Technology: supports IEC62439-6 (recovery time<20ms), DT-Ring and MSTP
2. Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
3. Network Partition: supports VLAN, GVRP, PVLAN, Service Quality: supports QoS
4. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
5. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP
6. Clock Synchronization: Support SNTP, IEEE1588v2, SyncE(ITU-T.G.8261/G.8262)
7. Network Security: supports MAC address binding with port, IEEE802.1X, SSH, SSL, TACACS+, ACL
8. Device Management: supports FTP/TFTP upgrade, also supports Syslog upload and download

9. Device Maintenance: supports port mirroring, VCT (Virtual Cable Test)
10. Alarm Output: supports IP/MAC conflicts, power, port and ring alarms
11. Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE802.3i, IEEE802.3u, IEEE802.3ab, IEEE802.3ac, IEEE802.3ad, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s, IEEE802.1X, IEEE1588-2008 IEC62439-6, SyncE (ITU-T.G.8261/G.8262)

Protocols

DT-Ring,DT-Ring+,DT-VLAN,MSTP,DRP;
IGMPsnooping,GMRP;VLAN,GVRP,PVLAN;
Telnet,HTTP,HTTPS,SNMPv1/v2/v3,RMON,LLDP,Bootp,DHCP
server/relay/client,DHCP Option 82;
SNTP,PTP,RTC;
SSH,SSL,TACACS+,RADIUS,ACL;
FTP,TFTP,Syslog;
ARP,Modbus TCP,QoS,LACP

Switch Properties

Priority Queues: 4
Number of VLANs: 256
VLAN ID: 1-4094
Number of Multicast Groups: 256
MAC Table: 8K
Packet Buffer: 1Mbit
Packet Forwarding Rate: 5.5Mpps
Switching Delay: <5μs

Interface

Gigabit Ethernet Ports: 3 100/1000Base-X SFP ports
Fast Ethernet RJ45 Ports: 6 10/100Base-TX RJ45 ports
Console Port: Mini USB
Alarm Contact: 3-pin 5.08mm-spacing plug-in terminal block,
250VAC/220VDC Max, 2A Max, 60W Max

LED

LEDs on Front Panel:
 Running LED: Run
 Alarm LED: Alarm
 Power LED: PWR1, PWR2
 Ring LED: Ring
 Clock Sync LED: LOCK
 Interface LED: Link/ACT, Speed (RJ45 port)

Reset Button

Reboot and restore default configuration

Transmission Distance

Twisted Pair: 100m (Standard CAT5, CAT5e network cable)
 Multi Mode Fiber: 850nm, 550m (1000M)
 Single Mode Fiber:
 1310nm, 10km/40km (1000M)
 1550nm, 60km/80km (1000M)

Power Requirements

Power Input: 24DCW (18-72VDC), 220AC/DCW(85-264VAC/77-300VDC)
 Power Terminal: 5-pin 5.08mm-spacing plug-in terminal block
 Power Consumption: 16W
 Overload Protection: Support
 Reverse Connection Protection: Support
 Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
 Protection Class: IP40
 Dimensions (WxHxD): 88x135x137mm (3.46x5.31x5.39 in.)
 Weight: 2.25kg (4.96 pound)
 Mounting: DIN-Rail or panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

345,000 hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

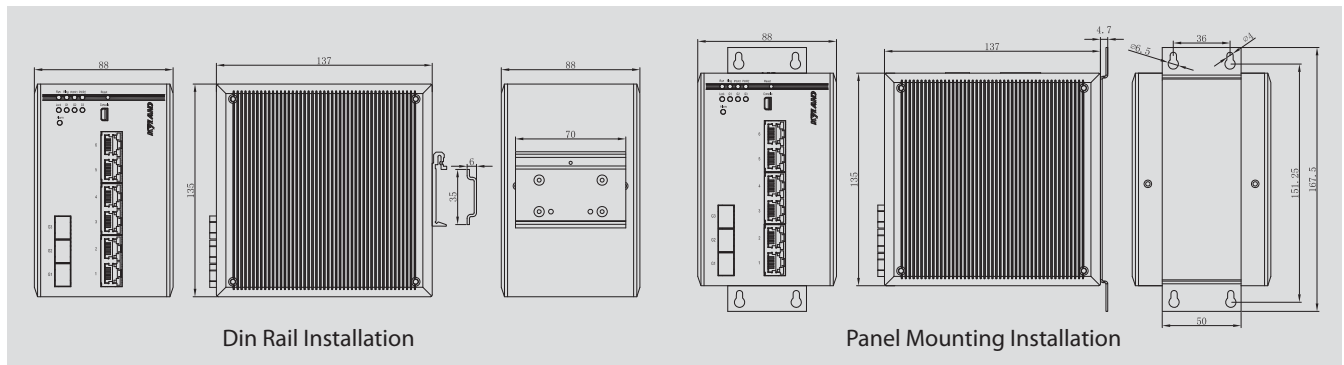
Machinery:

IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

Traffic Control: NEMA TS-2

►► Mechanical Drawing**►► Ordering Information**

SICOM3306PT - -
 Ports PS

Ports

3GX-6T = 3 Gigabit SFP ports, 6 10/100Base-TX ports
 2GX-6T = 2 Gigabit SFP ports, 6 10/100Base-TX ports

PS: Power Supply

24DCW = 18-72VDC, dual redundant power inputs
 220AC/DCW = 85-264VAC/77-300VDC, single power input

Example Order Codes

SICOM3306PT-3GX-6T-24DCW

3 Gigabit SFP ports, 6 10/100Base-TX RJ45 ports, 18-72VDC, dual redundant power inputs

SICOM3306



Layer 2 6+3G Port Managed Din-Rail IEC61850 Switch

- Green Ethernet solution with ultra low power consumption design
- As low as 6 watts full load power consumption
- 3 Gigabit ports, 6 10/100Base-TX ports
- Supports IEC62439-6, DT-Ring protocols and MSTP
- Supports one-key recovery
- Provides Mini USB Console port, supports setting backup and recovery through USB
- Supports VCT (Virtual Cable Test)
- IP40 protection class
- UL508 (pending), Class 1 Div 2 (pending), CE, FCC certificates



Overview

SICOM3306 is one of Kyland green low power consumption industrial Ethernet switch series. It is equipped with 3 Gigabit SFP ports and 6 10/100Base-TX ports, making it ideal for building a Gigabit optic ring and leaving a spare Gigabit port for uplink use. Redundant Ethernet IEC62439-6/DRP ring protocol, DT-Ring/+ and MSTP increase system reliability and the availability of your network backbone. The SICOM3306 series is designed especially for harsh environments with -40 to 85°C wide temperature range, EMC level 4, IP40 protection class, and can be deployed in wind power, distribution network automation, transportation, oil & gas and many other industrial applications.

Features & Benefits

1. Redundancy Technology: supports IEC62439-6 (recovery time<20ms), DT-Ring protocols (recovery time<50ms) and MSTP
2. Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
3. Network Partition: supports VLAN, GVRP, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, SNMP, DHCP
7. Network Security: supports MAC address binding with port, IEEE802.1X, SSH, SSL, TACACS+, ACL
8. Device Management: supports FTP/TFTP upgrade, also supports Syslog upload and download
9. Device Maintenance: supports port mirroring, VCT (Virtual Cable Test)
10. Alarm Output: supports IP/MAC conflicts, power, port and ring alarms
11. Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ac, IEEE802.3ad, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s, IEEE 802.1X

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP, DRP;
 IGMP Snooping, GMRP;
 VLAN, GVRP, PVLAN;
 Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, SNMP, BootP, DHCP server/relay/client, DHCP Option 82; SSH, SSL, TACACS+, ACL;
 Syslog, FTP, TFTP;
 LACP, ARP, QoS, Modbus TCP

Switch Properties

Priority Queues: 4
 Number of VLANs: 256
 VLAN ID: 1-4094
 Number of Multicast Groups: 256
 MAC Table: 8K
 Packet Buffer: 1Mbit
 Packet Forwarding Rate: 5.3Mpps
 Switching Delay: <5μs

Interface

Gigabit Ethernet port combinations:
 1) 1, 2 or 3 1000Base SFP slots
 2) 1 combo 1000Base SFP slot or 10/100/1000Base-TX port
 3) 6 10/100/1000Base-TX RJ45 ports
 Fast Ethernet Fiber Ports: max 2 100Base-FX, SM/MM ports, FC/SC/ST connector
 Fast Ethernet RJ45 Ports: max 8 10/100Base-TX RJ45 ports
 Console Port: Mini USB
 Alarm Contact: 3-pin 5.08mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

LEDs on Front Panel:
 Running LED: Run
 Alarm LED: Alarm
 Power LED: PWR1, PWR2
 Ring LED: Ring
 Interface LED: Link/ACT, Speed (RJ45 port), Link/ACT(G1-G3)

Reset Button

Reboot and restore default configuration

Transmission Distance

Twisted Pair: 100m (Standard CAT5, CAT5e network cable)
 Multi Mode Fiber: 1310nm, 5km (100M), 850nm, 550m (1000M)
 Single Mode Fiber:
 1310nm, 40km/60km (100M), 1550nm, 60km/80km (100M)
 1310nm, 10km/40km (1000M), 1550nm, 60km/80km (1000M)

Power Requirements

Power Input: 24DCW (18-72VDC)
 Power Terminal: 5-pin 5.08mm-spacing plug-in terminal block
 Power Consumption:
 SICOM3306-2GX-6T: 6.5W, SICOM3306-3GX-6T: 7.0W
 SICOM3306-1GX-8T: 6.0W, SICOM3306-1GX-2S/M-6T: 7.1W
 SICOM3306-1GX/GE-2GE-6T: 6.8W, SICOM3306-3GE-6T: 6.6W
 Overload Protection: Support
 Reverse Connection Protection: Support
 Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
 Protection Class: IP40
 Dimensions (WxHxD): 53.6x135x106.5mm (2.11x5.31x4.19 in.)
 Weight: 0.76kg (1.676 pound)
 Mounting: DIN-Rail or panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

410,000 hrs

Warranty

5 years

Approvals

UL508 (pending), Class 1 Div 2 (pending), CE, FCC

Industrial Standard

EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

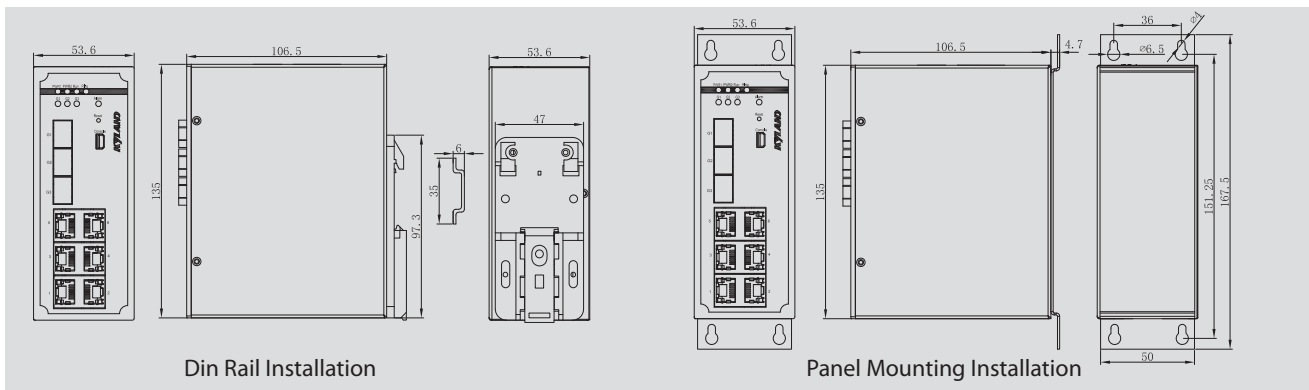
IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4
 Traffic Control: NEMA TS-2

Mechanical Drawing**Ordering Information**

SICOM3306 - _____ - _____ - _____ - _____
 Ports Distance Connector PS

Ports

3GX-6T = 3 Gigabit SFP ports, 6 10/100Base-TX ports
 2GX-6T = 2 Gigabit SFP ports, 6 10/100Base-TX ports
 1GX-8T = 1 Gigabit SFP port, 8 10/100Base-TX ports
 1GX-2M-6T = 1 Gigabit SFP port, 2 100Base-FX multi mode fiber ports, 6 10/100Base-TX ports
 1GX-2S-6T = 1 Gigabit SFP port, 2 100Base-FX single mode fiber ports, 6 10/100Base-TX ports

Distance: Fiber Distance

1310-5 = 1310nm, 5km
 1310-40 = 1310nm, 40km
 1310-60 = 1310nm, 60km
 1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector
 ST = ST Connector
 FC = FC Connector

PS: Power Supply

24DCW = 18-72VDC, dual redundant power inputs

SICOM3000

Layer 2 8+2G Port Managed Din-Rail IEC61850 Switch



- 2 Gigabit SFP slots, 6 10/100Base-TX ports and 2 Fast Ethernet fiber/RJ45 optional ports
- Supports DT-Ring protocols and MSTP
- Supports GMRP, DHCP, SNMP, QoS
- SNMPv3, HTTPS, SSH, DT-Psec enhance network security
- UL508, CE, FCC certificates



Overview

The SICOM3000 series, Gigabit managed DIN-Rail industrial Ethernet switch, was developed by Kyland for industrial information layers in transport, power and mining applications. It offers 2 Gigabit SFP slots, 2 100M copper/fiber ports and 6 10/100Base-T(X) ports. Its fanless ribbed casing design and ability to handle a wide range of temperatures ensure high reliability in extreme industrial environments. Based on Kyvision3.0, CLI, WEB interface, it offers concentrative management. The state-of-the-art OPC software enables the switch's management embedded in various industrial systems.

Features & Benefits

1. Redundancy Technology: supports DT-Ring protocols (recovery time<50ms) and MSTP
2. Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
3. Network Partition: supports VLAN, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, SNTP, DHCP
7. Network Security: supports DT-Psec, SSH, SSL, ACL
8. Device Management: supports FTP upgrade
9. Device Maintenance: supports port mirroring
10. Alarm Output: supports IP/MAC conflicts, power, port and ring alarms
11. Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP;
 IGMP Snooping, GMRP;
 VLAN, PVLAN;
 Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, SNTP, DHCP server;
 DT-Psec, SSH, SSL, ACL;
 FTP;
 ARP, QoS

Switch Properties

Priority Queues: 4
 Number of VLANs: 256
 VLAN ID: 1-4094
 Number of Multicast Groups: 256
 MAC Table: 8K
 Packet Buffer: 2Mbit
 Packet Forwarding Rate: 4.2Mpps
 Switching Delay: <5μs

Interface

Gigabit Ethernet Ports: max 2 1000Base SFP slots
 Fast Ethernet Fiber Ports: max 2 100Base-FX SM/MM ports, FC/SC/ST connector
 Fast Ethernet RJ45 Ports: max 8 10/100Base-TX RJ45 ports
 Console Port: RS232 (RJ45 connector)
 Alarm Contact: 3-pin 5.08mm-spacing plug-in terminal block, 250VAC/350VDC Max, 120mA Max

LED

LEDs on Front Panel:
 Running LED: Run1, Run2
 Power LED: PWR1, PWR2
 Interface LED: Link/ACT, Speed (RJ45 port)

Transmission Distance

Twisted Pair: 100m (Standard CAT5, CAT5e network cable)
 Multi Mode Fiber: 1310nm, 5km (100M), 850nm, 550m (1000M)
 Single Mode Fiber:
 1310nm, 40km/60km (100M), 1550nm, 60km/80km (100M)
 1310nm, 10km/40km (1000M), 1550nm, 60km/80km (1000M)

Power Requirements

Power Input:
 24DC (18-36VDC), 48DC (36-72VDC), 110DC (66-154VDC), 220AC/DC(132-300VAC/176-400VDC)
 Power Terminal:
 5-pin 5.08mm-spacing plug-in terminal block (24DC, 48DC)
 3-pin 7.62mm-spacing plug-in terminal block (110DC, 220AC/DCW)
 Power Consumption: <10.6W

Overload Protection: Support
 Reverse Connection Protection: Support
 Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
 Protection Class: IP40
 Dimensions (WxHxD):
 75x140x123mm (2.95x5.51x4.84 in.)
 Weight: 1.0kg (2.205 pound)
 Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

323,350 hrs

Warranty

5 years

Approvals

UL508, CE, FCC

Industrial Standard

EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

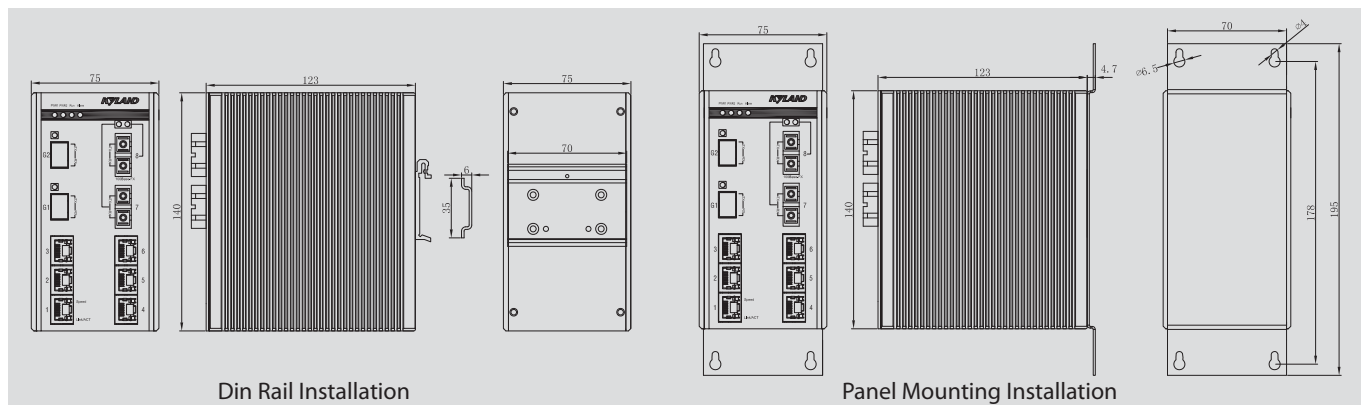
EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2
 Railway: EN50155, EN50121-4
 Traffic Control: NEMA TS-2

Mechanical Drawing**Ordering Information**

SICOM3000 - _____ - _____ - _____ - _____
 Ports Distance Connector PS

Ports

2GX-2M-6T = 2 Gigabit SFP port, 2 100Base-FX multi mode fiber ports, 6 10/100Base-TX ports
 2GX-2S-6T = 2 Gigabit SFP port, 2 100Base-FX single mode fiber ports, 6 10/100Base-TX ports
 2GX-8T = 2 Gigabit SFP port, 8 10/100Base-TX ports
 2M-6T = 2 100Base-FX multi mode fiber ports, 6 10/100Base-TX ports
 2S-6T = 2 100Base-FX single mode fiber ports, 6 10/100Base-TX ports
 8T = 8 10/100Base-TX RJ45 ports

Distance: Fiber Distance

1310-5 = 1310nm, 5km
 1310-40 = 1310nm, 40km
 1310-60 = 1310nm, 60km
 1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector
 ST = ST Connector
 FC = FC Connector

PS: Power Supply

24DC = 18-36VDC, dual redundant power inputs
 48DC = 36-72VDC, dual redundant power inputs
 110DC = 66-154VDC, single power input
 220AC/DC = 132-300VAC/176-400VDC, single power input

SICOM3009A

Layer 2 9 Port Managed Din-Rail IEC61850 Switch



- Green Ethernet solution with ultra low power consumption design
- As low as 5 watts full load power consumption
- 6 10/100Base-TX ports and 3 Fast Ethernet fiber/RJ45 optional ports
- Supports IEC62439-6, DT-Ring protocols and MSTP
- Supports one-key recovery
- Provides Mini USB Console port, supports setting backup and recovery through USB
- Supports VCT (Virtual Cable Test)
- UL508 (pending), Class 1 Div 2 (pending), CE, FCC certificates



Overview

SICOM3009A is one of Kyland green low power consumption industrial Ethernet switch series. It is equipped with 3 100Base-FX optic ports and 6 10/100Base-TX copper ports, making it ideal for building a fast Ethernet fiber optic ring and leaving a spare fiber port for uplink use. Redundant Ethernet IEC62439-6/DRP ring protocol, DT-Ring/+ and MSTP increase system reliability and the availability of your network backbone. The SICOM3009A series is designed especially for harsh environments with -40 to 85°C wide temperature range, EMC level 4, IP40 protection class, and can be deployed in wind power, distribution network automation, transportation, oil & gas and many other industrial applications.

Features & Benefits

1. Redundancy Technology: supports IEC62439-6 (recovery time<20ms), DT-Ring protocols (recovery time<50ms) and MSTP
2. Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
3. Network Partition: supports VLAN, GVRP, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, SNMP, DHCP
7. Network Security: supports MAC address binding with port, IEEE802.1X, SSH, SSL, TACACS+, ACL
8. Device Management: supports FTP/TFTP upgrade, also supports Syslog upload and download
9. Device Maintenance: supports port mirroring, VCT (Virtual Cable Test)
10. Alarm Output: supports IP/MAC conflicts, power, port and ring alarms
11. Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE802.3ac, IEEE 802.3ad, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s, IEEE 802.1X

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP, DRP;
 IGMP Snooping, GMRP;
 VLAN, GVRP, PVLAN;
 Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, SNMP, BootP, DHCP server/relay/client, DHCP Option 82; SSH, SSL, TACACS+, ACL;
 Syslog, FTP, TFTP;
 LACP, ARP, QoS, Modbus TCP

Switch Properties

Priority Queues: 4
 Number of VLANs: 256
 VLAN ID: 1-4094
 Number of Multicast Groups: 256
 MAC Table: 8K
 Packet Buffer: 1Mbit
 Packet Forwarding Rate: 1.4Mpps
 Switching Delay: <5μs

Interface

Fast Ethernet Fiber Ports: max 3 100Base-FX, SM/MM ports, FC/SC/ST connector
 Fast Ethernet RJ45 Ports: max 8 10/100Base-TX RJ45 ports
 Console Port: Mini USB
 Alarm Contact: 3-pin 5.08mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

LEDs on Front Panel:
 Running LED: Run
 Alarm LED: Alarm
 Power LED: PWR1, PWR2
 Ring LED: Ring
 Interface LED: Link/ACT, Speed (RJ45 port)

Reset Button

Reboot and restore default configuration

Transmission Distance

Twisted Pair: 100m (Standard CAT5, CAT5e network cable)
 Multi Mode Fiber: 1310nm, 5km (100M)
 Single Mode Fiber: 1310nm, 40km/60km (100M), 1550nm, 60km/80km (100M)

Power Requirements

Power Input: 24DCW (18-72VDC)
 Power Terminal: 5-pin 5.08mm-spacing plug-in terminal block
 Power Consumption:
 SICOM3009A-8T: 5W, SICOM3009A-1S/M-7T: 5.3W
 SICOM3009A-2S/M-6T: 5.6W, SICOM3009A-3S/M-6T: 5.9W

Overload Protection: Support
 Reverse Connection Protection: Support
 Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
 Protection Class: IP40
 Dimensions (WxHxD): 53.6x135x106.5mm (2.11x5.31x4.19 in.)
 Weight: 0.76kg (1.676 pound)
 Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

350,877 hrs

Warranty

5 years

Approvals

UL508 (pending), Class 1 Div 2 (pending), CE, FCC

Industrial Standard

EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

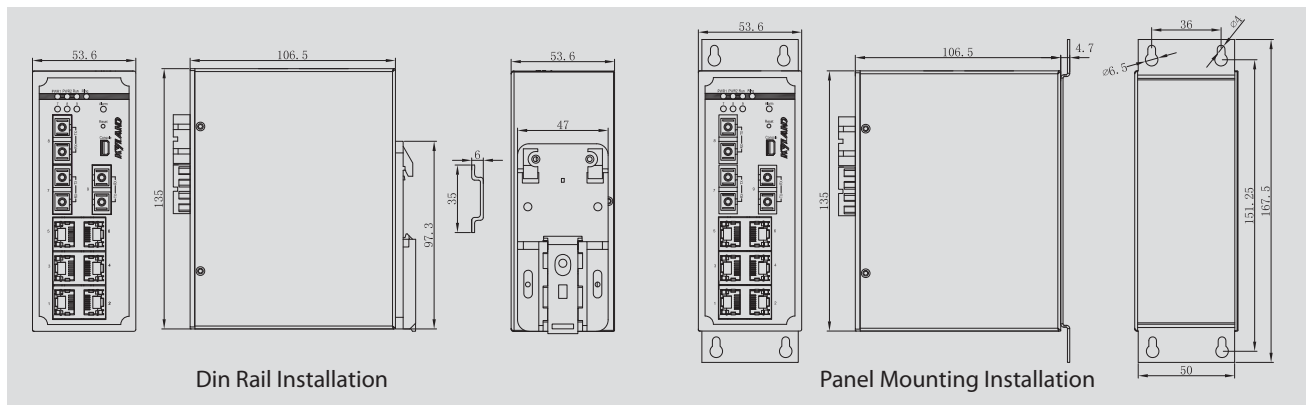
Machinery:

IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

Traffic Control: NEMA TS-2

Mechanical Drawing**Ordering Information**

SICOM3009A - _____ - _____ - _____ - _____
 Ports Distance Connector PS

Ports

3M-6T = 3 100Base-FX multi mode ports, 6 10/100Base-TX ports
 3S-6T = 3 100Base-FX single mode ports, 6 10/100Base-TX ports
 2M-6T = 2 100Base-FX multi mode ports, 6 10/100Base-TX ports
 2S-6T = 2 100Base-FX single mode ports, 6 10/100Base-TX ports
 1M-7T = 1 100Base-FX multi mode ports, 7 10/100Base-TX ports
 1S-7T = 1 100Base-FX single mode ports, 7 10/100Base-TX ports
 8T = 8 10/100Base-TX ports

Distance: Fiber Distance

1310-5 = 1310nm, 5km
 1310-40 = 1310nm, 40km
 1310-60 = 1310nm, 60km
 1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector
 ST = ST Connector
 FC = FC Connector

PS: Power Supply

24DCW = 18-72VDC, dual redundant power inputs

KIEN7009

Layer 2 9 Port Simple Managed Din-Rail IEC61850 Switch



- Green Ethernet solution with ultra low power consumption design
- As low as 5.5 watts full load power consumption
- Supports 6 10/100Base-TX ports and 3 Fast Ethernet fiber/RJ45 optional ports
- Supports IEC62439-6 and DT-Ring protocols
- Supports one-key recovery
- Supports VCT (Virtual Cable Test)
- Provides Mini USB Console port, supports setting backup and recovery through USB
- UL508 (pending), Class 1 Div 2 (pending), CE, FCC certificates



Overview

KIEN7009 is one of Kyland green low power consumption industrial Ethernet switch series. It is equipped with 3 100Base-FX optic ports and 6 10/100Base-TX copper ports, making it ideal for building a fast Ethernet fiber optic ring and leaving a spare fiber port for uplink use. Redundant Ethernet IEC62439-6/DRP ring protocol and DT-Ring/+ increase system reliability and the availability of your network backbone. The KIEN7009 series is a light managed device which is designed especially for harsh environments with -40 to 85°C wide temperature range, EMC level 4, IP40 protection class, and can be deployed in wind power, distribution network automation, transportation, oil & gas and many other industrial applications.

Features & Benefits

1. Redundancy Technology: supports IEC62439-6 (recovery time<20ms), DT-Ring protocols (recovery time<50ms)
2. Network Partition: supports VLAN
3. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
4. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP
5. Device Management: supports FTP/TFTP upgrade, also supports Syslog upload and download
6. Device Maintenance: supports VCT (Virtual Cable Test)
7. Alarm Output: supports IP/MAC conflicts, power, port and ring alarms

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE802.3x, IEEE802.1Q, IEC62439-6

Protocols

DT-Ring, DT-VLAN;
VLAN;
Telnet, HTTP, SNMPv1/v2/v3, RMON, LLDP, Syslog, FTP, TFTP;
Modbus TCP

Switch Properties

Number of VLANs: 256
VLAN ID: 1-4094
MAC Table: 8K
Packet Buffer: 1Mbit
Packet Forwarding Rate: 1.4Mpps
Switching Delay: <5μs

Interface

Fast Ethernet Fiber Ports: max 3 100Base-FX, SM/MM ports, FC/SC/ST connector
Fast Ethernet RJ45 Ports: max 8 10/100Base-TX RJ45 ports
Console Port: Mini USB
Alarm Contact: 3-pin 5.08mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

LEDs on Front Panel:
Running LED: Run
Alarm LED: Alarm
Power LED: PWR1, PWR2
Ring LED: Ring
Interface LED: Link/ACT, Speed (RJ45 port)

Reset Button

Reboot and restore default configuration

Transmission Distance

Twisted Pair:

100m (Standard CAT5, CAT5e network cable)

Multi Mode Fiber:

1310nm, 5km (100M)

Single Mode Fiber:

1310nm, 40km/60km (100M)

1550nm, 60km/80km (100M)

Power Requirements

Power Input:

24DCW (18-72VDC)

Power Terminal:

5-pin 5.08mm-spacing plug-in terminal block

Power Consumption:

KIEN7009-8T: 5.5W

KIEN7009-2S/M-6T: 6.1W

KIEN7009-3S/M-6T: 6.9W

Overload Protection: Support

Reverse Connection Protection: Support

Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless

Protection Class: IP40

Dimensions (WxHxD):

53.6x135x106.5mm (2.11x5.31x4.19 in.)

Weight: 0.76kg (1.676 pound)

Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

385,000 hrs

Warranty

5 years

Approvals

UL508 (pending), Class 1 Div 2 (pending), CE, FCC

Industrial Standard

EMI:

FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)

IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)

IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV

IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV

IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)

IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)

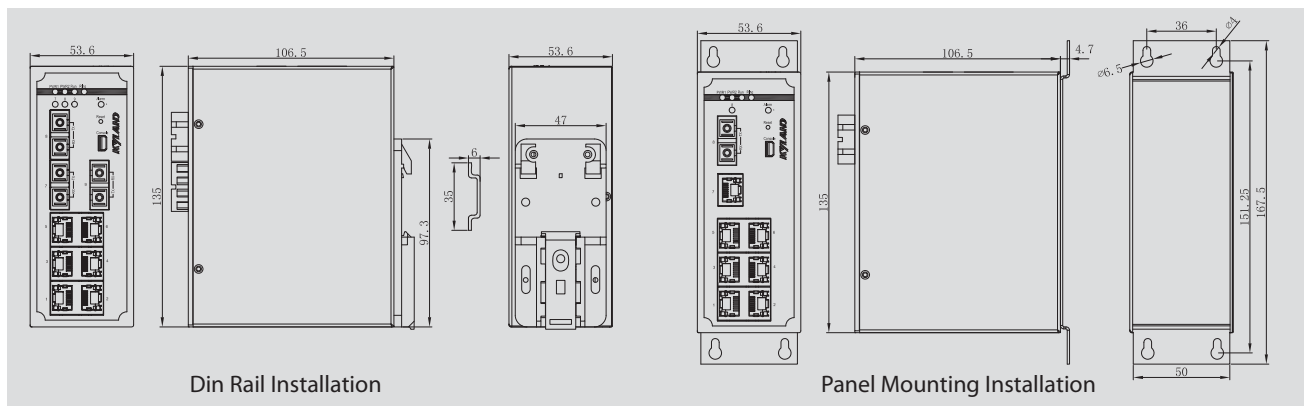
IEC60068-2-27 (Shock)

IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

Traffic Control: NEMA TS-2

Mechanical Drawing**Ordering Information**

KIEN7009 - _____ - _____ - _____ - _____
Ports Distance Connector PS

Ports

3M-6T = 3 100Base-FX multi mode ports, 6 10/100Base-TX ports

3S-6T = 3 100Base-FX single mode ports, 6 10/100Base-TX ports

2M-6T = 2 100Base-FX multi mode ports, 6 10/100Base-TX ports

2S-6T = 2 100Base-FX single mode ports, 6 10/100Base-TX ports

1M-7T = 1 100Base-FX multi mode ports, 7 10/100Base-TX ports

1S-7T = 1 100Base-FX single mode ports, 7 10/100Base-TX ports

8T = 8 10/100Base-TX ports

Distance: Fiber Distance

1310-5 = 1310nm, 5km

1310-40 = 1310nm, 40km

1310-60 = 1310nm, 60km

1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector

ST = ST Connector

FC = FC Connector

PS: Power Supply

24DCW = 18-72VDC, dual redundant power inputs

KIEN5000 KIEN6000

Layer 2 8 Port Simple Managed Din-Rail Switch



- Simple managed industrial Ethernet switches
- 8 10/100Base-TX ports (KIEN5000)
- 6 10/100Base-TX ports, 2 100M fiber ports (KIEN6000)
- Supports DT-Ring protocol and STP
- EMC performance reaches industrial level 4
- IP40 protection class
- CE, FCC certificates
- High voltage AC/DC power supplies supported



Overview

KIEN5000/KIEN6000, 8-port managed DIN-Rail industrial Ethernet switches, comes with DT-Ring technology which is developed by Kyland and used to set up a redundant Ethernet ring network. KIEN5000/KIEN6000 support not only 12VDC, 24VDC and 48VDC with dual redundant power inputs, but also support high voltage AC/DC power supplies. With a web-based configuration interface, KIEN5000/KIEN6000 ensure an easy installation and management of the switches.

Features & Benefits

1. Redundancy Technology: supports DT-Ring protocol (recovery time < 100ms) and STP
2. Multicast Protocol: supports IGMP Snooping and static multicast
3. Network Partition: supports VLAN, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, LLDP
7. Network Security: supports MAC address binding with port
8. Device Management: supports FTP upgrade
9. Device Maintenance: supports port mirroring
10. Alarm Output: supports power, port alarms
11. Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE802.3i, IEEE802.3u, IEEE802.3x, IEEE802.1p, IEEE802.1Q, IEEE802.1d

Protocols

DT-Ring, DT-VLAN, STP;
VLAN, PVLAN;
IGMP Snooping;
FTP, HTTP, LLDP, QoS, SNMPv1/v2/v3, Telnet

Switch Properties

Priority Queues: 4
Number of VLANs: 256
VLAN ID: 1-4094
Number of Multicast Groups: 256
Packet Buffer: 2Mbit
Packet Forwarding Rate: 1.2Mpps
Switching Delay: < 5μs

Interface

Fast Ethernet Ports: 8 10/100Base-TX RJ45 ports (KIEN5000), 6 10/100Base-TX RJ45 ports and 2 100M fiber ports (KIEN6000)
Console Port: RS232 (RJ45 connector)
Alarm Contact: 2-pin 3.81mm-spacing plug-in terminal block, 250VAC/350VDC Max, 120mA Max

LED

LEDs on Front Panel:
Running LED: Run1, Run2
Power LED: PWR1, PWR2
Interface LED: Link/ACT, Speed (RJ45 port)

Transmission Distance

Twisted Pair: 100m (Standard CAT5, CAT5e network cable)
 Multi Mode Fiber: 1310nm, 5km (100M)
 Single Mode Fiber: 1310nm, 40km/60km (100M), 1550nm, 60km/80km (100M)

Power Requirements

Power Input: 12DC (9-18VDC), 24DC (18-36VDC), 48DC (36-72VDC), 110DC (77-150VDC), 220DC(120-375VDC), 220AC(85-265VAC)
 Power Terminal: 3-pin 3.81mm-spacing plug-in terminal block
 Power Consumption: <6.7W
 Overload Protection: Support
 Reverse Connection Protection: Support
 Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
 Protection Class: IP40
 Dimensions (WxHxD): 55.4x139x119.5mm (2.18x5.47x4.70 in.)
 Weight: 0.6kg (1.323 pound)
 Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

364,067 hrs

Warranty

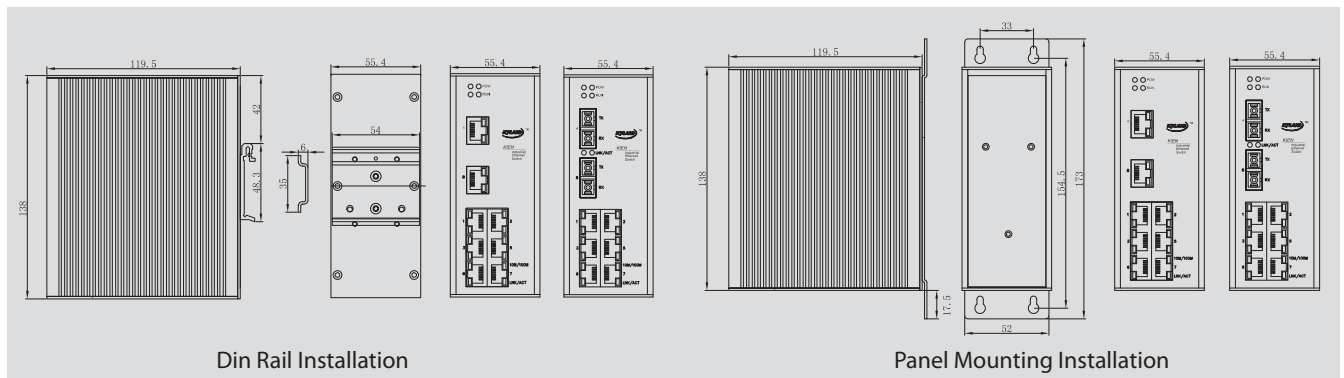
5 years

Approvals

CE, FCC

Industrial Standard

EMI: FCC CFR47 Part 15, EN55022/CISPR22, Class A
 EMS:
 IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V(1s)
 Machinery:
 IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)
 Industry: IEC61000-6-2
 Railway: EN50155, EN50121-4

Mechanical Drawing**Ordering Information**

Model & Ports - Distance - Connector - PS

Model & Ports

KIEN5000-8T = 8 10/100Base-TX RJ45 ports
 KIEN6000-2M-6T = 2 100Base-FX multi mode ports, 6 10/100Base-TX ports
 KIEN6000-2S-6T = 2 100Base-FX single mode ports, 6 10/100Base-TX ports

Distance: Fiber Distance

1310-5 = 1310nm, 5km
 1310-40 = 1310nm, 40km
 1310-60 = 1310nm, 60km
 1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector
 ST = ST Connector
 FC = FC Connector

PS: Power Supply

12DC = 9-18VDC, dual redundant power inputs
 24DC = 18-36VDC, dual redundant power inputs
 48DC = 36-72VDC, dual redundant power inputs
 110DC = 77-150VDC, dual redundant power inputs
 220DC = 120-375VDC, dual redundant power inputs
 220AC = 85-265VAC, single power input

Example Order Codes

KIEN5000-8T-12VDC
 8 10/100Base-TX RJ45 ports, 12VDC(9-18VDC) dual redundant power inputs

PTC1000



PTP (Precision Time Protocol) Clock Converter

- Support IEEE1588v2, the synchronization accuracy reaches $\pm 100\text{ns}$
- Support ITU-T.G.8261/G.8262 SyncE, the synchronization accuracy can reach $\pm 50\text{ns}$ with SyncE enabled
- Support 1 100Base-FX SC/ST/FC or 1 10/100Base-TX RJ45 input
- Support 1 PPS output, 2 IRIG-B TTL outputs, 2 IRIG-B AM modulation outputs and 1 IRIG-B RS422 output
- Support both vertical and horizontal Din-Rail installation
- Exceeds IEC61850-3 & IEEE1613
- CE, FCC certificates



Overview

PTC1000 Clock Converter realizes the conversion from PTP to IRIG-B and PPS (Pulse Per Second). This allows the industrial devices that are equipped with IRIG-B clock interfaces and PPS interface to conveniently access PTP network. This achieves the normalization of network clocks and reaches high precision synchronization in the industrial control system. The PTC1000 supports Din-Rail installation. It provides one 100M fiber/copper optional port, one PPS port, two IRIG-B (DC) ports and two IRIG-B (AC) ports in the front panel.

Features & Benefits

1. Network Management and Monitoring: supports CLI, Telnet, WEB management, Kyvision centralized management, SNMPv1/v2, LLDP
2. Synchronization Protocol: supports IEEE1588v2, ITU-G.8261/G.8262 SyncE
3. Device Management: supports FTP upgrade

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3x, IEEE1588v2, ITU-G.8261/G.8262

Protocols

Telnet, HTTP, SNMPv1/v2, LLDP;
PTP, RTC;
FTP

Interface

Fast Ethernet Port: 1 100Base-FX, SM/MM port, FC/SC/ST connector or 1 10/100Base-TX RJ45 port
Console Port: RS232 (RJ45 connector)
Alarm Contact: 3-pin 5.08mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max
Clock Interface: BNC interface, 2-pin 5.08 mm-spacing pluggable terminal blocks, 4-pin 5.08mm-spacing pluggable terminal block

Clock Signal

PPS: TTL level +5V, 50 Ω , Rising edge based, pulse width 20ms-200ms, stepped by 20ms (adjustable in software)
IRIG-B DC: TTL level +5V, 600 Ω , Rising edge based, Mark-Space Ratio 50%
IRIG-B AM: Vp-p, 2V-10V (adjustable in software, default Vp-p: 4.5V), 600 Ω , Modulation Ratio 3:1, 4:1, 5:1, 6:1 (optional, default modulation ratio is 3:1)

LED

LEDs on Front Panel
Running LED: Run
Alarm LED: Alarm
Power LED: PWR1, PWR2
Interface LED: Link/ACT, Speed
PTP Sync LED: Sync

Reset Button

Reboot and restore default configuration

Transmission Distance

Twisted Pair: 100m (Standard CAT5, CAT5e network cable)

Multi Mode Fiber: 1310nm, 5km (100M)

Single Mode Fiber:

1310nm, 40km/60km (100M)

1550nm, 80km (100M)

Power Requirements

Power Input: 24DC (18-36VDC), 220AC/DCW(85-264VAC/77-300VDC)

Power Terminal: 5-pin 5.08mm-spacing plug-in terminal block

Power Consumption: <4W

Overload Protection: Support

Reverse Connection Protection: Support

Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless

Protection Class: IP40

Dimensions (WxHxD): 62.4x139x119.5 mm (2.45x5.47x4.70 in.)

Weight: <0.75kg (1.653 pound)

Mounting: Vertical or Horizontal Din-Rail

Environmental Limits

Operating Temperature: -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)

MTBF

332,600hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

EMI:

FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)

IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)

IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV

IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV

IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)

IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)

IEC61000-4-9 (Pulsed magnetic field): 1000A/m

IEC61000-4-10 (Damped oscillation): 100A/m

IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM

IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)

IEC60068-2-27 (Shock)

IEC60068-2-32 (Free Fall)

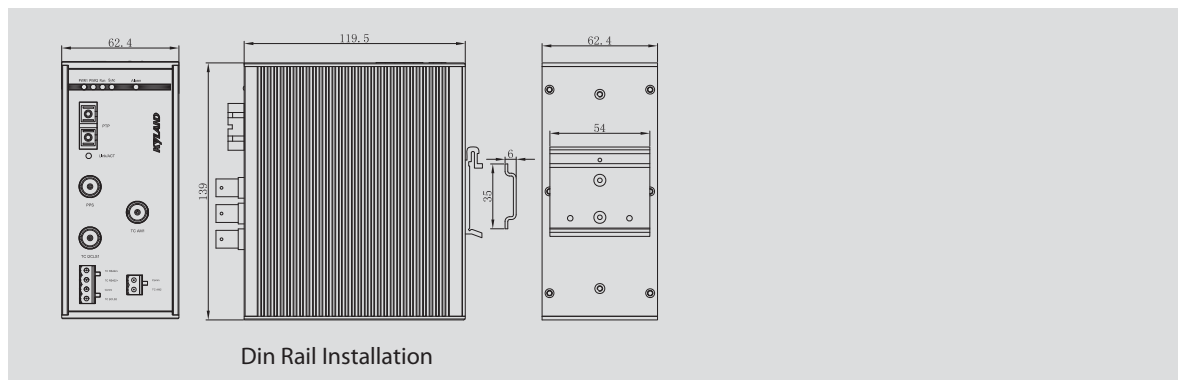
Industry: IEC61000-6-2

Power: IEC61850-3, IEEE1613

Railway: EN50155, EN50121-4

Traffic: NEMA TS-2

➤ Mechanical Drawing



➤ Ordering Information

PTC1000 - _____ - _____ - _____ - _____
 Ports Distance Connector PS

Ports

T = 1 10/100Base-TX RJ45 port

M = 1 100Base-FX multi mode port

S = 1 100Base-FX single mode port

Distance: Fiber Distance

1310-5 = 1310nm, 5km

1310-40 = 1310nm, 40km

1310-60 = 1310nm, 60km

1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector

ST = ST Connector

FC = FC Connector

PS: Power Supply

24DC = 18-36VDC, dual redundant power inputs

220AC/DCW = 85-264VAC/77-300VDC, single power input

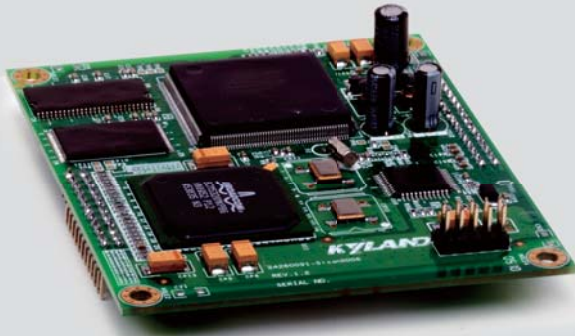
Example Order Codes

PTC1000-M-1310-5-SC-220AC/DCW

1 multi mode 1310nm 5km fiber ports with SC connector, 85-264VAC/77-300VDC power supply

SICOM3004/ SICOM3006

4/6 Port 100M Managed Embedded Industrial Ethernet Switch



- 2 10/100Base-TX ports and 2/4 Fast Ethernet fiber/RJ45 optional ports
- Embedded mounting and small design simplify integration
- Supports DT-Ring protocols and MSTP



Overview

SICOM3004/3006 is embedded managed industrial Ethernet switch specially designed by KYLAND for industrial applications. It supports 2 10/100Base-T(X) ports, 2 or 4 100M copper/fiber ports. It run well in a wide range of temperature (-40 to 85°C). Based on Kyvision3.0, CLI, WEB interface, it offers concentrative management. The state-of-the-art OPC software enables the switch's management embedded in various industrial systems.

Features & Benefits

1. Redundancy Technology: supports DT-Ring protocols (recovery time<50ms) and MSTP
2. Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
3. Network Partition: supports VLAN, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, SNMP, DHCP
7. Network Security: supports DT-Psec, SSH, SSL, ACL
8. Device Management: supports FTP upgrade
9. Device Maintenance: supports port mirroring
10. Alarm Output: supports IP/MAC conflicts, power, port and ring alarms
11. Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP;
IGMP Snooping, GMRP;
VLAN, PVLAN;
Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, SNMP, DHCP server;
DT-Psec, SSH, SSL, ACL;
FTP; ARP, QoS

Switch Properties

Priority Queues: 4
Number of VLANs: 256
VLAN ID: 1-4094
Number of Multicast Groups: 256
MAC Table: 8K
Packet Buffer: 2Mbit
Packet Forwarding Rate: 0.9Mpps
Switching Delay: <5μ

Interface

Fast Ethernet Fiber Ports: 3 100Base-FX, SM/MM ports, FC/SC/ST connector
Fast Ethernet RJ45 Ports: 6 10/100Base-TX RJ45 ports
Console Port: RS232 (RJ45 connector)
Alarm Output Contact: 6-pin 5.08mm-spacing plug-in terminal block, 250VAC/350VDC Max, 120mA Max, 60W Max
Alarm Input Contact: 6-pin 5.08mm-spacing plug-in terminal block, TTL level, offering alarm input for external power switching
LED Output Interface: 2×13 pins

Reset Button

System reset

Power Requirements

Power Input: 3.3DC (3-5.5VDC)
 Power Terminal: Samtec's board stacker
 Power Consumption: <10W

Overload Protection: Support
 Reverse Connection Protection: Support

Physical Characteristics

Dimensions (WxHxD):
 95x25x80 mm (3.74x0.98x3.15 in.) (SICOM3006)
 80x25x80 mm (3.15x0.98x3.15 in.) (SICOM3004)
 Weight: 0.1kg (0.220 pound)
 Mounting: Embedded mounting

Environmental Limits

Operating Temperature: -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)

MTBF

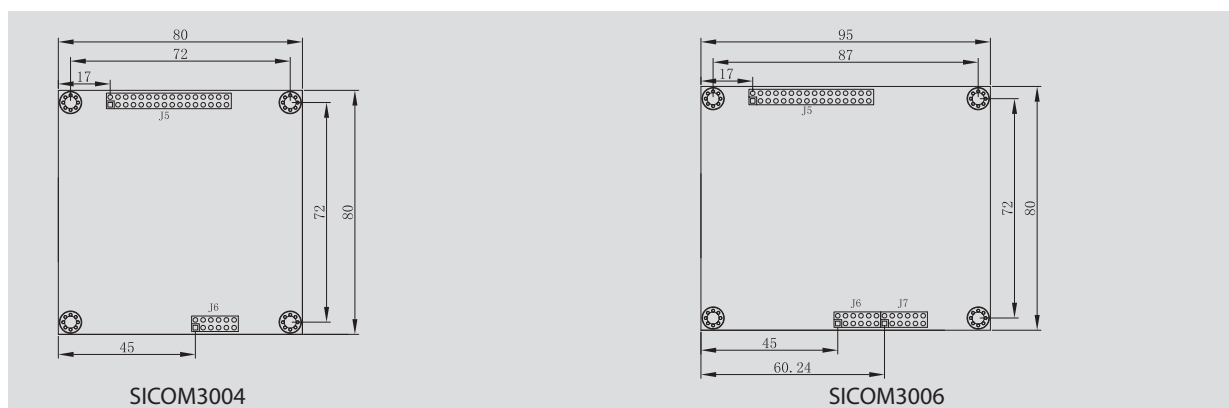
469,065 hrs

Warranty

5 years

Approvals

CE, FCC

Mechanical Drawing**Ordering Information****Model & Ports PS**

SICOM3004-4T = Embedded board with 4 10/100Base-TX interfaces
 SICOM3004-2M-2T = Embedded board with 2 100Base-FX multi mode fiber interfaces and 2 10/100Base-TX interfaces
 SICOM3004-2S-2T = Embedded board with 2 100Base-FX single mode fiber interfaces and 2 10/100Base-TX interfaces
 SICOM3006-6T = Embedded board with 6 10/100Base-TX interfaces
 SICOM3006-2M-4T = Embedded board with 2 100Base-FX multi mode fiber interfaces and 4 10/100Base-TX interfaces
 SICOM3006-2S-4T = Embedded board with 2 100Base-FX single mode fiber interfaces and 4 10/100Base-TX interfaces
 SICOM3006-4M-2T = Embedded board with 4 100Base-FX multi mode fiber interfaces and 2 10/100Base-TX interfaces
 SICOM3006-4S-2T = Embedded board with 4 100Base-FX single mode fiber interfaces and 2 10/100Base-TX interfaces

PS: Power Supply

3.3DC = 3.3VDC (3-5.5VDC)

Accessories: Test Board with port connectors

SICOM3004-Test-4T
 SICOM3004-Test-2M-2T
 SICOM3004-Test-2S-2T
 SICOM3006-Test-6T
 SICOM3006-Test-2M-4T
 SICOM3006-Test-2S-4T
 SICOM3006-Test-4M-2T
 SICOM3006-Test-4S-2T

KIEN3016A

16 Port Unmanaged Din-Rail Switch



- Green Ethernet solution with ultra low power consumption design
- As low as 6.1 watts full load power consumption
- 14 10/100Base-TX ports and 2 Fast Ethernet fiber/RJ45 optional ports
- Compact DIN-Rail product
- Redundant AC/DC power inputs with wide voltage range
- EMC performance reaches industrial level 4
- IP40 protection class
- UL508 (pending), Class 1 Div 2 (pending), CE, FCC certificates



Overview

The KIEN3016A series are Kyland new ultra low power consumption Green Ethernet solution. Its full load power consumption is as low as 6.1 watts. The KIEN3016A switches are with a wide operating temperature range from -40 to 85°C. All models are with IP40 protection class and meet EMC industrial level 4 requirements.

KIEN3016A series support IEEE 802.3i, IEEE802.3u and IEEE802.3x with 10/100M full/half-duplex, MDI/MDI-X auto-sensing. The KIEN3016A switches provide 24DCW (18-72VDC). These switches are specially designed for harsh industrial environments certified by UL508 and UL Class 1 Div 2 certifications.

Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3u
IEEE802.3x

Switch Properties

MAC Table: 8K
Packet Buffer: 2Mbit
Packet Forwarding Rate: 2.4Mpps
Switching Delay: <5μs

Interface

Fast Ethernet Fiber Ports: max 2 100Base-FX, SM/MM ports, FC/SC/ST connector

Fast Ethernet RJ45 Ports: max 16 10/100Base-TX RJ45 ports

Alarm Contact: 3-pin 5.08mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

LEDs on Front Panel:

Power LED: PWR1, PWR2

Interface LED: Link/ACT, Speed (RJ45 port)

Transmission Distance

Twisted Pair:

100m (Standard CAT5, CAT5e network cable)

Multi Mode Fiber:

1310nm, 5km (100M)

Single Mode Fiber:

1310nm, 40km/60km (100M)

1550nm, 60km/80km (100M)

Power Requirements

Power Input:

24DCW (18-72VDC)

Power Terminal:

5-pin 5.08mm-spacing plug-in terminal block

Power Consumption:

KIEN3016A-16T: 6.1W

KIEN3016A-2S/M-14T: 6.6W

Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
Protection Class: IP40
Dimensions (W×H×D):
88×135×137 mm (3.46×5.31×5.39 in.)
Weight: 1.2kg (2.646 pound)
Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

361,000 hrs

Warranty

5 years

Approvals

UL508 (pending), Class 1 Div 2 (pending), CE, FCC

Industrial Standard

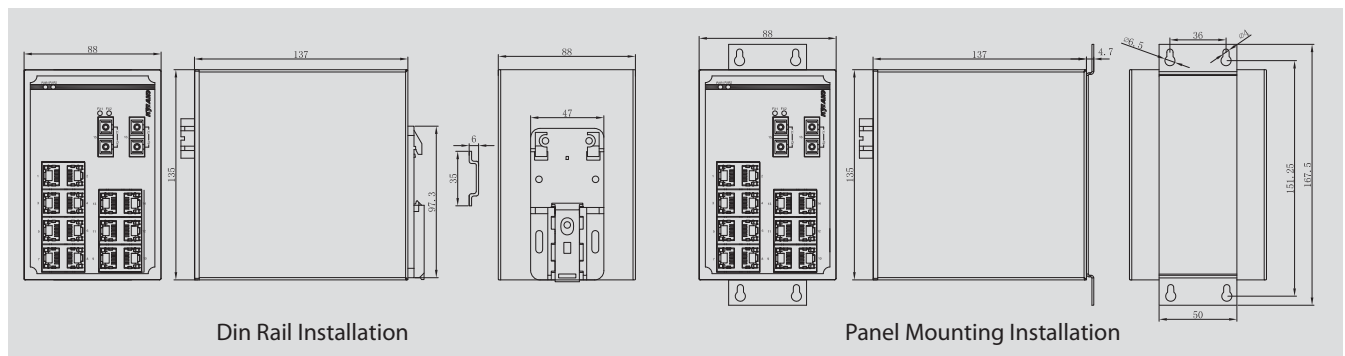
EMI:
FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:
IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:
IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2
Railway: EN50155, EN50121-4
Industry: IEC61000-6-2
Railway: EN50155, EN50121-4
Traffic Control: NEMA TS-2

Mechanical Drawing



Ordering Information

KIEN3016A - _____ - _____ - _____ - _____
Ports Distance Connector PS

Ports

2M-14 = 3 100Base-FX multi mode ports, 6 10/100Base-TX ports
2S-14 = 3 100Base-FX single mode ports, 6 10/100Base-TX ports
16T = 2 100Base-FX multi mode ports, 6 10/100Base-TX ports

Distance: Fiber Distance

1310-5 = 1310nm, 5km
1310-40 = 1310nm, 40km
1310-60 = 1310nm, 60km
1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector
ST = ST Connector
FC = FC Connector

PS: Power Supply

24DCW = 18-72VDC, dual redundant power inputs

Example Order Codes

KIEN3016A-2M-16T-1310-5-SC-24DCW
2 100Base-FX multi mode fiber ports, 1310nm, 5km, SC connectors, and 14 10/100Base-TX copper ports, 18-72VDC, dual redundant power inputs

KIEN1009

9 Port Unmanaged Din-Rail Switch



- Green Ethernet solution with ultra low power consumption design
- As low as 3.5 watts full load power consumption
- 1 Gigabit SFP slot, 6 10/100Base-TX ports and 3 Fast Ethernet fiber/RJ45 optional ports
- Redundant AC/DC power inputs with wide voltage range
- Both standard and wide operating temperature
- EMC performance reaches industrial level 4
- IP40 protection class
- UL508 (pending), Class 1 Div 2 (pending), CE, FCC certificates



» Overview

The KIEN1009 series are Kyland new ultra low power consumption Green Ethernet solution. Its full load power consumption is as low as 3.5 watts. The KIEN1009 switches are available with a standard operating temperature range from 0 to 60°C, or with a wide operating temperature range from -40 to 85°C. All models are with IP40 protection class and meet EMC industrial level 4 requirements.

KIEN1009 series support IEEE 802.3i, IEEE802.3u and IEEE802.3x with 10/100M full/half-duplex, MDI/MDI-X auto-sensing. The KIEN1009 switches provide 24DC(18-36VDC)(KIEN1009-E-8T), 24DCW (18-72VDC) (others). These switches are specially designed for harsh industrial environments certified by UL508 and UL Class 1 Div 2 certifications.

» Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3u
IEEE802.3x

Switch Properties

MAC Table: 8K
Packet Buffer: 1Mbit
Packet Forwarding Rate: 1.4Mpps
Switching Delay: <5µs

Interface

Fast Ethernet Fiber Ports: max 3 100Base-FX, SM/MM ports, FC/SC/ST connector
Fast Ethernet RJ45 Ports: max 8 10/100Base-TX RJ45 ports

LED

LEDs on Front Panel:
Power LED: PWR (KIEN1009-E-8T)
PWR1, PWR2 (other models)
Interface LED: Link/ACT, Speed (RJ45 port)

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber: 1310nm, 5km (100M), 850nm, 550m (1000M)
Single Mode Fiber: 1310nm, 40km/60km (100M), 1550nm, 60km/80km (100M)

Power Requirements

Power Input:
24DC(18-36VDC) (KIEN1009-E-8T); 24DCW(18-72VDC) (other models)
Power Terminal:
3-pin 5.08mm-spacing plug-in terminal block (KIEN1009-E-8T);
5-pin 5.08mm-spacing plug-in terminal block (other models)
Power Consumption:
KIEN1009-8T: 3.5W
KIEN1009-E-8T: 3.5W
KIEN1009-1S/M-7T: 3.8W
KIEN1009-2S/M-6T: 4.1W
KIEN1009-3S/M-6T: 4.4W
Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
Protection Class: IP40
Dimensions (WxHxD): 53.6x135x106.5 mm (2.11x5.31x4.19 in.)
Weight: 0.76kg (1.676 pound)
Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature:
 0 to 60°C (32 to 140°F) (KIEN1009-E-8T)
 -40 to 85°C (-40 to 185°F) (other models)
 Storage Temperature: -40 to 85°C (-40 to 185°F)
 Ambient Relative Humidity: 5 to 95% (non-condensing)

MTBF

397,000 hrs

Warranty

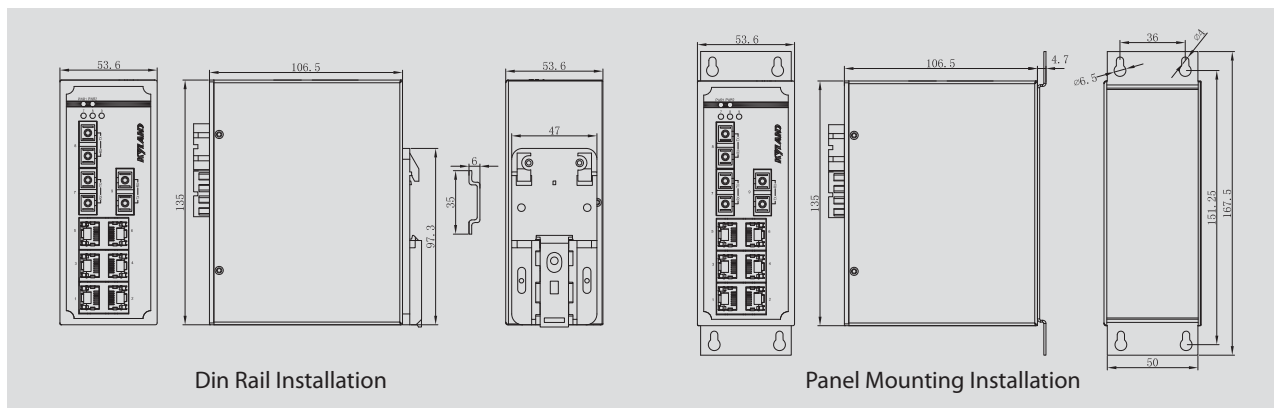
5 years

Approvals

UL508 (pending), Class 1 Div 2 (pending), CE, FCC

Industrial Standard

EMI: FCC CFR47 Part 15, EN55022/CISPR22, Class A
 EMS:
 IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)
 Machinery:
 IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)
 Industry: IEC61000-6-2
 Railway: EN50155, EN50121-4
 Traffic Control: NEMA TS-2

Mechanical Drawing**Ordering Information**

KIEN1009 - _____ - _____ - _____ - _____
 Ports Distance Connector PS

Ports

E-8T = 8 10/100Base-TX RJ45 ports, 0 to 60°C operating temperature
 8T = 8 10/100Base-TX RJ45 ports, -40 to 85°C operating temperature
 1M-7T = 1 100Base-FX multi mode fiber port, 7 10/100Base-TX RJ45 ports,
 -40 to 85°C operating temperature
 1S-7T = 1 100Base-FX single mode fiber port, 7 10/100Base-TX RJ45 ports,
 -40 to 85°C operating temperature
 2M-6T = 2 100Base-FX multi mode fiber ports, 6 10/100Base-TX RJ45 ports,
 -40 to 85°C operating temperature
 2S-6T = 2 100Base-FX single mode fiber ports, 6 10/100Base-TX RJ45 ports,
 -40 to 85°C operating temperature
 3M-6T = 3 100Base-FX multi mode fiber ports, 6 10/100Base-TX RJ45 ports,
 -40 to 85°C operating temperature
 3S-6T = 3 100Base-FX single mode fiber ports, 6 10/100Base-TX RJ45 ports,
 -40 to 85°C operating temperature

Distance: Fiber Distance

1310-5 = 1310nm, 5km
 1310-40 = 1310nm, 40km
 1310-60 = 1310nm, 60km
 1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector
 ST = ST Connector
 FC = FC Connector

PS: Power Supply

24DCW = 18-72VDC, dual redundant power inputs

Example Order Codes

KIEN1009-2M-6T-1310-5-SC-24DCW
 2 100Base-FX multi mode fiber ports, 1310nm, 5km, SC connectors, and 6
 10/100Base-TX copper ports, 18-72VDC, dual redundant power inputs

KIEN1008G

8G Port Full Gigabit Unmanaged Din-Rail Switch



- Green Ethernet solution with ultra low power consumption design
- As low as 7.5 watts full load power consumption
- 8 10/100/1000Base-TX ports or 2 Gigabit combo ports and 6 10/100/1000Base-TX ports
- Redundant DC power inputs with wide voltage range
- EMC performance reaches industrial level 4
- IP40 protection class
- UL508 (pending), Class 1 Div 2 (pending), CE, FCC certificates



Overview

KIEN1008G series are equipped with 8 Gigabit Ethernet ports and up to 2 fiber optic ports, making them ideal for applications that demand high bandwidth. KIEN1008G series are one of Kyland new ultra low power consumption Green Ethernet solutions. Its full load power consumption is 7.5W which enables not only power electricity saving, but also a longer life span for the devices. KIEN1008G full Gigabit unmanaged switches are powered with 24DCW (18-72VDC) power supply, and its operation temperature ranges from -40 to 85°C (-40 to 185°F). They are specially designed for harsh industrial environments and their EMC performance reaches industrial level 4. KIEN1008G series can be installed easily on a DIN-Rail or panel mounting distribution boxes.

Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3u
IEEE 802.3ab
IEEE802.3z

Switch Properties

MAC Table: 8K
Packet Buffer: 1Mbit
Packet Forwarding Rate: 11.9Mpps
Switching Delay: <5μs

Interface

Gigabit Ethernet Port Combinations:

- 1) 2 combo 1000Base SFP slots or 10/100/1000Base-TX ports, and 6 10/100/1000Base-TX RJ45 ports
- 2) 8 10/100/1000Base-TX RJ45 ports

LED

LEDs on Front Panel:

Power LED: PWR1, PWR2

Interface LED: Link/ACT, Speed (RJ45 port)

Transmission Distance

Twisted Pair:

100m (Standard CAT5, CAT5e network cable)

Multi Mode Fiber:

850nm, 550m (1000M)

Single Mode Fiber:

1310nm, 10km/40km (1000M)

1550nm, 60km/80km (1000M)

Power Requirements

Power Input:

24DCW (18-72VDC)

Power Terminal:

5-pin 5.08mm-spacing plug-in terminal block

Power Consumption:

KIEN1008G-2GX/GE-6GE: 8.5W (full load)

KIEN1008G-8GE: 7.5W (full load)

Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
Protection Class: IP40
Dimensions (W×H×D):
88×135×137 mm (3.46×5.31×5.39 in.)
Weight: 0.76kg (1.676 pound)
Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

357,000 hrs

Warranty

5 years

Approvals

UL508 (pending), Class 1 Div 2 (pending), CE, FCC

Industrial Standard

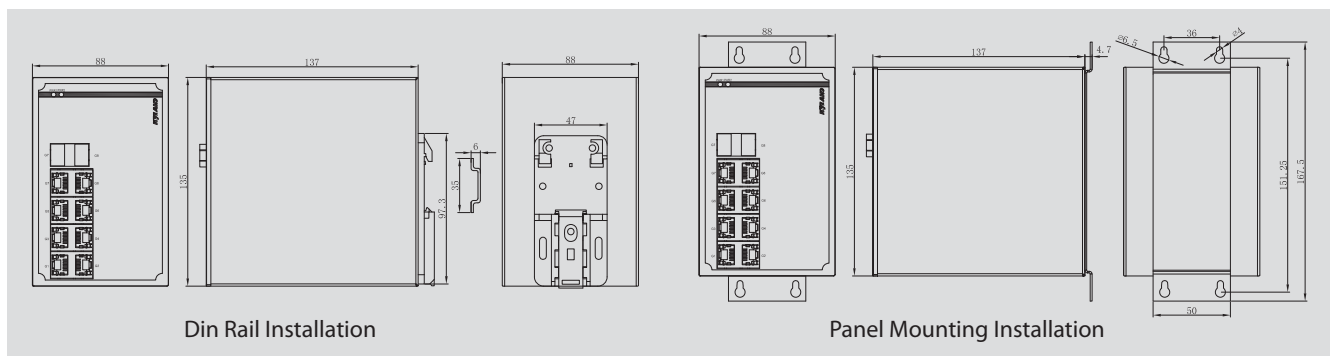
EMI:
FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:
IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:
IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2
Railway: EN50155, EN50121-4

Mechanical Drawing



Ordering Information

KIEN1008G - _____ - _____
Ports PS

Ports

2GX/GE-6GE = 2 Gigabit combo ports, 6 10/100/1000Base-TX RJ45 ports
8GE = 8 10/100/1000Base-TX RJ45 ports

PS: Power Supply

24DCW = 18-72VDC, dual redundant power inputs

Example Order Codes

KIEN1008G-2GX/GE-6GE-24DCW

2 Gigabit combo ports, 6 10/100/1000Base-TX RJ45 ports, 18-72VDC dual redundant power inputs

KIEN1005G

5G Port Full Gigabit Unmanaged Din-Rail Switch



- Green Ethernet solution with ultra low power consumption design
- As low as 3.4 watts full load power consumption
- 5 10/100/1000Base-TX ports
- Redundant AC/DC power inputs with wide voltage range
- EMC performance reaches industrial level 4
- IP40 protection class
- UL508 , Class 1 Div 2, CE, FCC certificates



Overview

The KIEN1005G is Kyland new full Gigabit unmanaged industrial Ethernet switch. It is also a new member of ultra low power consumption Green Ethernet series, its full load power consumption is as low as 3.4 watts. The KIEN1005G supports a wide operating temperature range from -40 to 85°C. It provides IP40 protection class and meets EMC industrial level 4 requirements.

The KIEN1005G switch provides 24DCW (18-72VDC) redundant power inputs. This switch is specially designed for harsh industrial environments certified by UL508 and UL Class 1 Div 2 certifications and it is your best option for economical industrial Gigabit Ethernet solution.

Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3u
IEEE 802.3ab
IEEE802.3z

Switch Properties

MAC Table: 1K
Packet Buffer: 1Mbit
Packet Forwarding Rate: 7.4Mpps
Switching Delay: <5µs

Interface

Gigabit Ethernet Ports: 5 10/100/1000Base-TX RJ45 ports

LED

LEDs on Front Panel:
Power LED: PWR1, PWR2
Interface LED: Link/ACT, Speed (RJ45 port)

Transmission Distance

Twisted Pair: 100m (Standard CAT5, CAT5e network cable)

Power Requirements

Power Input:
24DCW (18-72VDC)
Power Terminal:
5-pin 5.08mm-spacing plug-in terminal block
Power Consumption: 3.4W (full load)

Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
Protection Class: IP40
Dimensions (WxHxD):
30x115x91.5 mm (1.18x4.53x3.60 in.)
Weight: 0.76kg (1.676 pound)
Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

357,000 hrs

Warranty

5 years

Approvals

UL508 Class 1 Div 2 CE, FCC

Industrial Standard

EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

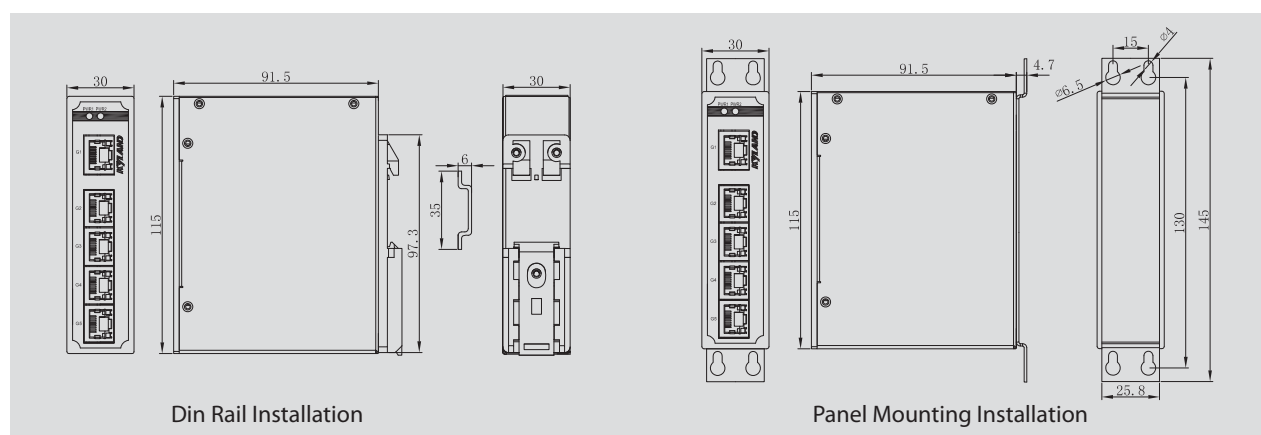
Machinery:

IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

➤ Mechanical Drawing



➤ Ordering Information

KIEN1005G - _____ - _____
 Ports PS

Ports

5GE = 5 10/100/1000Base-TX RJ45 ports

PS: Power Supply

24DCW = 18-72VDC, dual redundant power inputs

Example Order Codes

KIEN1005G-5GE-24DCW
 5 10/100/1000Base-TX RJ45 ports, 18-72VDC, dual redundant power inputs

KIEN1005A

5 Port Unmanaged Din-Rail Industrial Ethernet Switch



- Green Ethernet solution with ultra low power consumption design
- As low as 2.16 watts full load power consumption
- 4 10/100Base-TX ports and 1 Fast Ethernet fiber/RJ45 optional port
- Both standard and wide operating temperature
- EMC performance reaches industrial level 4
- IP40 protection class
- UL508 , Class 1 Div 2 , CE, FCC certificates



» Overview

The KIEN1005A series are Kyland new ultra low power consumption Green Ethernet series, its full load power consumption is as low as 2.16 watts. The KIEN1005A switches are available with a standard operating temperature range from 0 to 60°C, or with a wide operating temperature range from -40 to 85°C. All models are with IP40 protection class and meet EMC industrial level 4 requirements.

KIEN1005A series support IEEE 802.3i and IEEE802.3u with 10/100M full/half-duplex, MDI/MDI-X auto-sensing. The KIEN1005A switches provide 24DC(18-36VDC) (KIEN1005A-5T-E) single power inputs, 224DCW (18-72VDC) and 220AC/DCW(85-264VAC/77-300VDC). These switches are specially designed for harsh industrial environments certified by UL508 and UL Class 1 Div 2 certifications.

KIEN1005A-SMS-EM, a newly added version of KIEN1005A, is a "green", embedded industrial Ethernet module with low-power consumption (1.2 watts full load power consumption). It is applicable to wind power, subway PIS, power SCADA, sewage treatment, metallurgy, intelligent transportation, rail transit, and many other industries. KIEN1005A-SMS-EM Embedded Ethernet Switching Module can be directly installed in the target device. KIEN1005A-SMS-EM provides five 10/100Base-T(X) ports.

» Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3u
IEEE802.3x

Switch Properties

MAC Table: 2K
Packet Buffer: 1Mbit
Packet Forwarding Rate: 0.8Mpps
Switching Delay: <5μs

Interface

Fast Ethernet Fiber Ports: max 1 100Base-FX, SM/MM port, FC/SC/ST connector
Fast Ethernet RJ45 Ports: max 5 10/100Base-TX RJ45 ports

LED

LEDs on Front Panel:
Power LED: PWR (KIEN1005A-E-5T)
PWR1, PWR2 (other models)
Interface LED: Link/ACT, Speed (RJ45 port)

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber:
1310nm, 5km (100M)
Single Mode Fiber:
1310nm, 40km/60km (100M)
1550nm, 60km/80km (100M)

Power Requirements

Power Input:

KIEN1005A-E-5T: 24DC(18-36VDC)

KIEN1005A-SMS-EM-5T: Internal power supply 5DC(4.5-5.5VDC), External power supply 7DC(6.5-7.5VDC)

KIEN1005A other models: 24DCW(18-72VDC), 220AC/DCW (85-264VAC/77-300VDC), single power input

Power Terminal:

KIEN1005A-E-5T: 3-pin 5.08mm-spacing plug-in terminal block;

KIEN1005A-SMS-EM-5T: J.S.T XH-Connector-pitch 2.5mm (internal power), Phoenix MSTB 2.5/2-GF-5.08-(connector 7v power supply) (external power)

KIEN1005A other models: 5-pin 5.08mm-spacing plug-in terminal block

Power Consumption:

KIEN1005A-1S/M-4T: 2.64W (full load)

KIEN1005A-5T: 2.16W (full load)

KIEN1005A-SMS-EM-5T: 1.2W (full load)

Overload Protection: Support

Reverse Connection Protection: Support

Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless

Protection Class: IP40

KIEN1005A-SMS-EM-5T Dimensions (LxWxH):

120x70x15 mm (4.72x2.76x0.59 inch)

KIEN1005A Dimensions (WxHxD):

30x115x91.5 mm (1.18x4.53x3.60 in.)

Weight:

KIEN1005A-SMS-EM-5T: 0.075kg (0.165 pound)

KIEN1005A: 0.46kg (1.014 pound)

Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature:

0 to 60°C (32 to 140°F) (KIEN1005A-E-5T)

0 to 60°C (32 to 140°F) (KIEN1005A-SMS-EM-5T)

-40 to 85°C (-40 to 185°F) (other models)

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

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

MTBF

454,730 hrs

Warranty

5 years

Approvals

UL508 , Class 1 Div 2 , CE, FCC

Industrial Standard

EMI:

FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)

IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)

IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV

IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV

IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)

IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

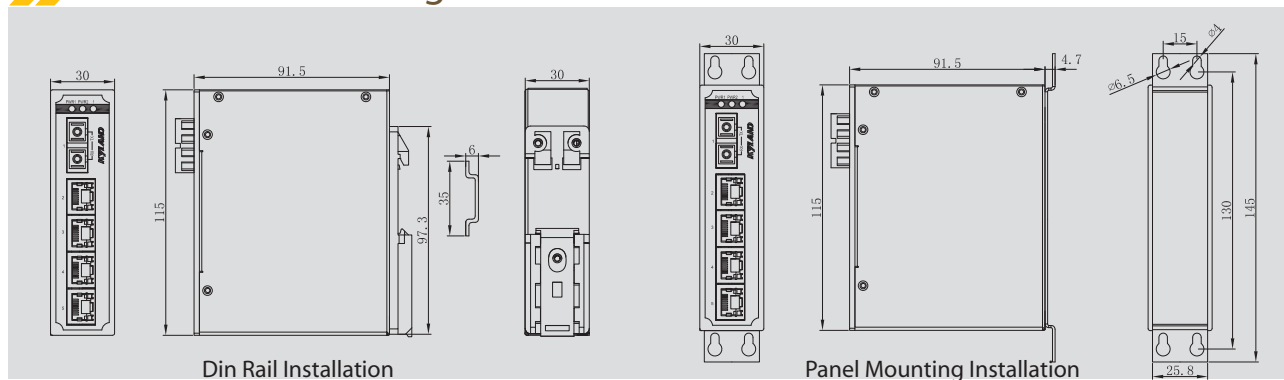
IEC60068-2-6 (Vibration)

IEC60068-2-27 (Shock)

IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

Mechanical Drawing**Ordering Information**

KIEN1005A - _____ - _____ - _____ - _____
Ports Distance Connector PS

Ports

E-5T = 5 10/100Base-TX RJ45 ports, 0 to 60°C operating temperature

5T = 5 10/100Base-TX RJ45 ports, -40 to 85°C operating temperature

1M-4T = 1 100Base-FX multi mode fiber port, 4 10/100Base-TX RJ45 ports, -40 to 85°C operating temperature

1S-4T = 1 100Base-FX single mode fiber port, 4 10/100Base-TX RJ45 ports, -40 to 85°C operating temperature

SMS-EM-5T = Embedded board with 5 10/100Base-TX RJ45 ports, 0 to 60°C operating temperature

Distance: Fiber Distance

1310-5 = 1310nm, 5km

1310-40 = 1310nm, 40km

1310-60 = 1310nm, 60km

1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector

ST = ST Connector

FC = FC Connector

PS: Power Supply

24DC = 18-36VDC, single power input (Only for KIEN1005A-E-5T)

5DC-7DC = Internal power supply 5DC(4.5-5.5VDC), External power supply 7DC(6.5-7.5VDC) (Only for KIEN1005A-SMS-EM-5T)

24DCW = 18-72VDC, dual redundant power inputs

220AC/DCW = 85-264VAC/77-300VDC, single power input

KIEN1005

5 Port Unmanaged Din-Rail Switch



- 4 10/100Base-TX ports and 1 Fast Ethernet fiber/RJ45 optional port
- Uplink port supports broadcast storm control and QoS functions
- EMC performance reaches industrial level 4
- IP40 protection class
- CE, FCC, DNV certificates



Overview

The KIEN1005 series of industrial Ethernet switches are entry-level industrial 5 port Ethernet switches that support IEEE 802.3/802.3u/802.3x with 10/100M, full/half-duplex, MDI/MDIX auto-sensing RJ45 ports. The KIEN1005 switches are rated to operate at temperatures ranging from -40 to 85°C, and are rugged enough for any harsh industrial environment. The switches can support not only 9-36VDC power supply but also 85-264VAC power supply eliminating extra external power supplies. KIEN1005 can be easily installed on a DIN-Rail as well as in panel mounting distribution boxes. The DIN-Rail mounting capability, wide operating temperature, and the IP40 housing with LED indicators make the plug-and-play KIEN1005 switches easy to use and reliable.

Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3u
IEEE802.3x

Switch Properties

MAC Table: 1K
Packet Buffer: 512Kbit
Packet Forwarding Rate: 0.8Mpps
Switching Delay: <5µs

Interface

Fast Ethernet Fiber Ports: max 1 100Base-FX, SM/MM port, FC/SC/ST connector

Fast Ethernet RJ45 Ports: max 5 10/100Base-TX RJ45 ports

LED

LEDs on Front Panel:

Power LED: PWR

Interface LED: Link/ACT, Speed (RJ45 port)

Transmission Distance

Twisted Pair:

100m (Standard CAT5, CAT5e network cable)

Multi Mode Fiber:

1310nm, 5km (100M)

Single Mode Fiber:

1310nm, 40km/60km (100M)

1550nm, 60km/80km (100M)

Power Requirements

Power Input:

12DCW (9-36VDC), 220AC (85-265VAC)

Power Terminal:

3-pin 3.81mm-spacing plug-in

Overload Protection: Support

Reverse Connection Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
 Protection Class: IP40
 Dimensions (WxHxD):
 36.5x120x90 mm (1.44x4.72x3.54 in.)
 Weight: 0.3kg (0.661 pound)
 Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

454,730 hrs

Warranty

5 years

Approvals

CE, FCC, DNV

Industrial Standard

EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

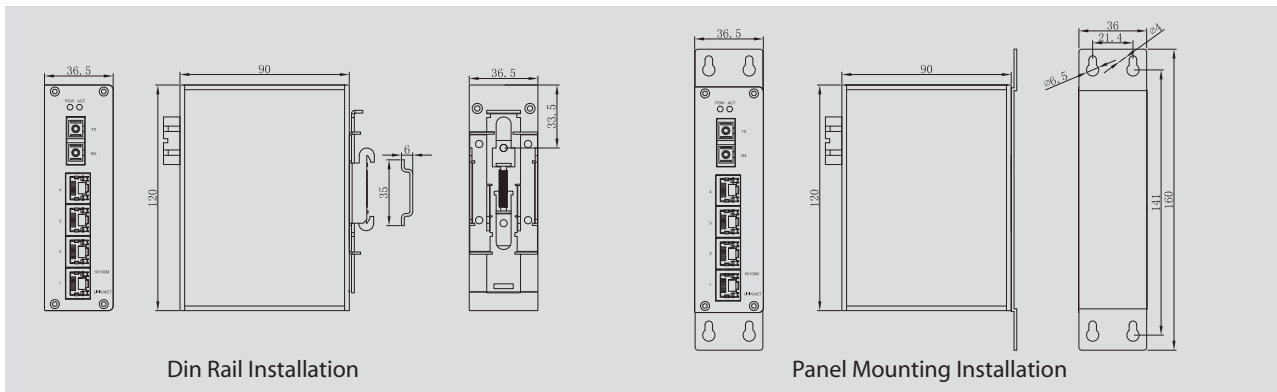
Machinery:

IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

Marine: DNV

Mechanical Drawing**Ordering Information**

KIEN1005 - _____ - _____ - _____ - _____
 Ports Distance Connector PS

Ports

5T = 5 10/100Base-TX RJ45 ports
 1M-4T = 1 100Base-FX multi mode fiber port, 4 10/100Base-TX RJ45 ports
 1S-4T = 1 100Base-FX single mode fiber port, 4 10/100Base-TX RJ45 ports

Distance: Fiber Distance

1310-5 = 1310nm, 5km
 1310-40 = 1310nm, 40km
 1310-60 = 1310nm, 60km
 1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector
 ST = ST Connector
 FC = FC Connector

PS: Power Supply

12DCW = 9-36VDC, dual redundant power inputs
 220AC = 85-265VAC, single power input

KIEN1000 KIEN2000

8 Port Unmanaged Din-Rail Switch



- Supports DT-Ring Protocols (KIEN1000, KIEN2000 only)
- 8 10/100Base-TX ports (KIEN1000, KIEN1000B), 2 100Base-FX fiber ports and 6 10/100Base-TX RJ45 ports (KIEN2000, KIEN2000B)
- EMC performance reaches industrial level 4
- IP40 protection class
- UL, CE, FCC certificates



Overview

The KIEN1000/KIEN2000 series of industrial Ethernet switches are entry-level industrial 8 port Ethernet switches that support IEEE 802.3/802.3u/802.3x with 10/100M, full/half-duplex, MDI/MDIX auto-sensing RJ45 ports. These industrial Ethernet switches are rated to operate at temperatures ranging from -40 to 85°C, and are rugged enough for any harsh industrial environment.

KIEN1000, with 8 port 10/100Base-TX RJ45 ports, supports DT-Ring protocol which enables a fast recovery redundant ring topology. KIEN1000B, with 8 port 10/100Base-TX RJ45 ports, is entry level version without the support with ring topology. KIEN2000, with 2 100Base-FX fiber ports and 6 10/100Base-TX RJ45 ports, supports DT-Ring protocol which enables a fast recovery redundant ring topology. KIEN2000B, with 2 100Base-FX fiber ports and 6 10/100Base-TX RJ45 ports, is entry level version without the support with ring topology.

The switches can support not only 12VDC/24VDC/48VDC power supply but also 110VDC/220VDC/110VAC/220VAC power supply eliminating extra external power supplies. KIEN1000/KIEN2000 series can be easily installed on a DIN-Rail as well as in panel mounting distribution boxes. The DIN-Rail mounting capability, wide operating temperature, and the IP40 housing with LED indicators make the plug-and-play KIEN1000/KIEN2000 switches easy to use and reliable.

Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3u
IEEE802.3x

Switch Properties

MAC Table: 1K
Packet Buffer: 512Kbit
Packet Forwarding Rate: 1.2Mpps
Switching Delay: <5μs

Interface

KIEN1000/KIEN1000B
Fast Ethernet Ports: 8 10/100Base-TX RJ45 ports

KIEN2000/KIEN2000B

Fast Ethernet Fiber Ports: 2 100Base-FX, SM/MM ports, FC/SC/ST connector
Fast Ethernet RJ45 Ports: 6 10/100Base-TX RJ45 ports

Alarm Contact: 2-pin 3.81mm-spacing terminal block, 1A@30VDC, 0.5A@125VAC

LED

LEDs on Front Panel:
Redundant Mode LED: Run1, Run2
Power LED: PWR1, PWR2
Interface LED: Link/ACT, Speed (RJ45 port)

Transmission Distance

Twisted Pair: 100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber: 1310nm, 5km (100M)
Single Mode Fiber: 1310nm, 40km/60km (100M), 1550nm, 60km/80km (100M)

Power Requirements

Power Input: 12DC(9-18VDC),24DC (18-36VDC), 48DC (36-72VDC), 110DC (72-140VDC), 220DC(154-300VDC),220AC(110-264VAC)

Power Terminal: 3-pin 3.81mm-spacing plug-in terminal block

Power Consumption: <6W

Overload Protection: Support

Reverse Connection Protection: Support

Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless

Protection Class: IP40

Dimensions (WxHxD): 55.4x139x119.5 mm (2.18x5.47x4.70 in.)

Weight: 0.6kg (1.323 pound)

Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

414,430 hrs

Warranty

5 years

Approvals

UL, CE, FCC

Industrial Standard

EMI:

FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)

IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)

IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV

IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV

IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)

IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)

IEC61000-4-9 (Pulsed magnetic field): 1000A/m

IEC61000-4-10 (Damped oscillation): 100A/m

IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM

IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

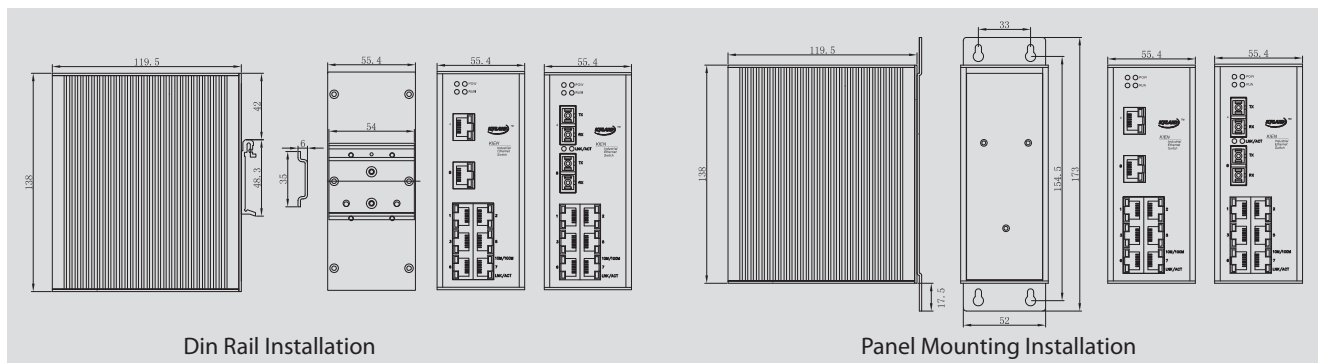
IEC60068-2-6 (Vibration)

IEC60068-2-27 (Shock)

IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

Mechanical Drawing**Ordering Information**

Model & Ports - Distance - Connector - PS

Model & Ports

KIEN1000B-8T = 8 10/100Base-TX RJ45 ports

KIEN1000-8T = 8 10/100Base-TX RJ45 ports, support DT-Ring

KIEN2000B-1M-6T = 1 100Base-FX multi mode fiber ports, 6 10/100Base-TX RJ45 ports

KIEN2000B-1S-6T = 1 100Base-FX single mode fiber ports, 6 10/100Base-TX RJ45 ports

KIEN2000B-2M-6T = 2 100Base-FX multi mode fiber ports, 6 10/100Base-TX RJ45 ports

KIEN2000B-2S-6T = 2 100Base-FX single mode fiber ports, 6 10/100Base-TX RJ45 ports

KIEN2000-2M-6T = 2 100Base-FX multi mode fiber ports, 6 10/100Base-TX RJ45 ports, support DT-Ring

KIEN2000-2S-6T = 2 100Base-FX single mode fiber ports, 6 10/100Base-TX RJ45 ports, support DT-Ring

Distance: Fiber Distance

1310-5 = 1310nm, 5km

1310-40 = 1310nm, 40km

1310-60 = 1310nm, 60km

1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector

ST = ST Connector

FC = FC Connector

PS: Power Supply

12DC = 9-18VDC, dual redundant power inputs

24DC = 18-36VDC, dual redundant power inputs

48DC = 36-72VDC, dual redundant power inputs

110DC = 77-150VDC, dual redundant power inputs

220DC = 120-375VDC, dual redundant power inputs

220AC = 85-265VAC, single power input

Example Order Codes

KIEN1000-8T-220AC

8 10/100Base-TX copper ports, 110-264VAC power supply

SICOM5424R

24+4G Port IP40 Managed Rack Mountable EN50155 Switch



- Support 4 10/100/1000Base-TX M12 ports and maximum 24 10/100Base-TX M12 ports
- Support DT-Ring and MSTP ring protocols
- Support power failure alarm
- Exceeds EN50155/EN50121-4
- CE, FCC certification



Overview

The SICOM5424R series EN50155 rack mountable managed Ethernet switches, which are equipped with 4 10/100/1000Base-TX M12 ports and 24 10/100Base-TX M12 ports, are designed especially for on track applications. The M12 connectors on Ethernet ports and M16 connectors on power supply contacts ensure tight, robust connections, and guarantee reliable operation against environmental disturbances, such as vibration and shock. The SICOM5424R series provide wide power input range of 24DC, 48DC and 220AC/DCW, and support -40 to 85°C wide temperature range. The SICOM5424R series Ethernet switches are compliant with EN50155/50121-4 requirements, making the switches suitable for a variety of industrial applications.

Features & Benefits

1. Redundancy Technology: supports DT-Ring protocols (recovery time<50ms) and MSTP
2. Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
3. Network Partition: supports VLAN, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, STMP, DHCP, RTC
7. Network Security: supports DT-Psec, SSH, SSL, ACL
8. Device Management: supports FTP upgrade, also supports Syslog upload and download
9. Device Maintenance: supports port mirroring
10. Alarm Output: supports IP/MAC conflicts, power, temperature, port and ring alarms
11. Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s

Protocols

DT-Ring, DT-Ring+, DT-VLAN, MSTP; IGMP Snooping, GMRP; VLAN, PVLAN; Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, DHCP server; STMP, RTC; DT-Psec, SSH, SSL, ACL; FTP, Syslog; ARP, QoS

Switch Properties

Priority Queues: 4
 Number of VLANs: 256
 VLAN ID: 1-4094
 Number of Multicast Groups: 256
 MAC Table: 8K
 Packet Buffer: 2Mbit
 Packet Forwarding Rate: 9.5Mpps
 Switching Delay: <5μs

Interface

Gigabit Ethernet Ports: 4 10/100/1000Base-TX M12 ports
 Fast Ethernet Ports: max 24 10/100Base-TX M12 ports
 Console Port: RS232 (M12 connector)
 Alarm Contact: M12, 250VAC/220VDC Max, 2A Max, 60W Max

LED

LEDs on Front Panel:
 Running LED: Run
 Alarm LED: Alarm
 Power LED: PWR1, PWR2
 Interface LED: Link/ACT, Speed

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)

Power Requirements

Power Input: 24DC (18-36VDC), 48DC (36-72VDC), 220AC/DCW (85-264VAC/77-300VDC)
Power Terminal: 5-pin M12
Power Consumption: <21.6W
Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
Protection Class: IP40
Dimensions (W×H×D):
482.6×132.5×245mm (19×5.22×9.65 in.)
Weight: <4.6kg (10.14 pound)
Mounting: 19 inch 3U Rack mounting

Environmental Limits

Operating Temperature: -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)

MTBF

318,296 hrs

Warranty

5 years

Approvals

CE, FCC (Pending)

Industrial Standard

EMI:
FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)
IEC61000-4-9 (Pulsed magnetic field): 1000A/m
IEC61000-4-10 (Damped oscillation): 100A/m
IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Power: IEC61850-3, IEEE1613

Railway: EN50155, EN50121-4

Traffic Control: NEMA TS-2

Ordering Information

SICOM5424R - _____ - _____ - _____
Ports PS1 PS2

Ports

4GE-M12-24T-M12 = 4 10/100/1000Base-TX M12 ports, 24 10/100Base-TX M12 ports
4GE-M12-16T-M12 = 4 10/100/1000Base-TX M12 ports, 16 10/100Base-TX M12 ports
2GE-M12-24T-M12 = 2 10/100/1000Base-TX M12 ports, 24 10/100Base-TX M12 ports
2GE-M12-16T-M12 = 2 10/100/1000Base-TX M12 ports, 16 10/100Base-TX M12 ports
24T-M12 = 24 10/100Base-TX M12 ports
16T-M12 = 16 10/100Base-TX M12 ports

PS1 & PS2: Power Supplies

XX = No power supply (PS2 only)

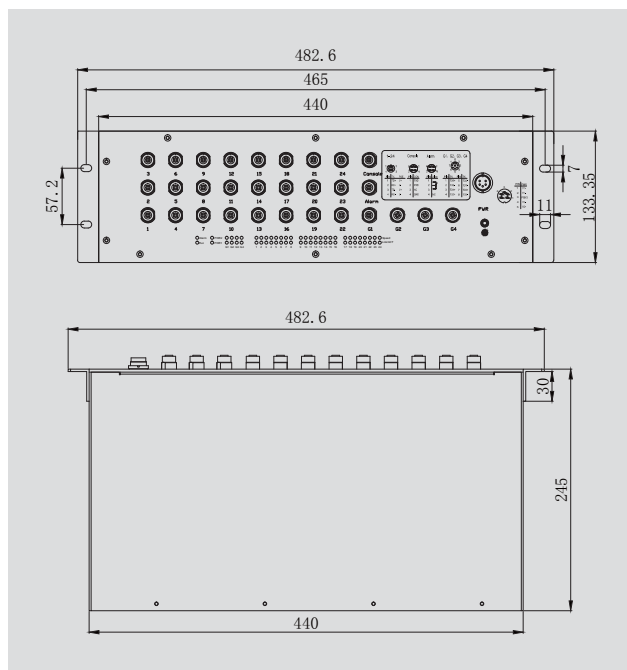
24DC = 18-36VDC

48DC = 36-72VDC

220AC/DCW = 85-264VAC/77-300VDC

Example Order Codes

SICOM5424R-4GE-M12-24T-M12-220AC/DCW-220AC/DCW
4 10/100/1000Base-TX M12 ports, 24 10/100Base-TX M12 ports, and dual redundant 220AC/DCW(85-265VAC/77-300VDC) power supplies.

Mechanical Drawing

SICOM8000



24+4G Port IP67 Managed Panel Mounting EN50155 Switch

- 4 Gigabit ports with YMF15-LC connector, 24 10/100Base-TX ports with M12 connector
- Supports DT-Ring protocols and RSTP
- EMC performance reaches industrial level 4
- IP67 protection class
- CE, FCC certificates



» Overview

SICOM8000 IP67 managed industrial Ethernet switch supports 24 10/100Base-T(X) ports with M12 connectors and 4 1000Base-LX/LH ports with YMF15-LC connectors. As a member of Kyland SICOM series, it supports DT-Ring protocol and Kyvision management software. It is specially designed for the harshest environments which require high protection class.

» Features & Benefits

- Redundancy Technology: supports DT-Ring protocols (recovery time<50ms) and MSTP
- Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
- Network Partition: supports VLAN, PVLAN
- Service Quality: supports QoS
- Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
- Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, SNMP, DHCP
- Network Security: supports DT-Psec, SSH, SSL, ACL
- Device Management: supports FTP upgrade
- Device Maintenance: supports port mirroring
- Alarm Output: supports IP/MAC conflicts, power, port and ring alarms
- Special Function: supports Link Check and Loop Status Check

» Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s

Protocol

DT-Ring, DT-Ring+, DT-VLAN, MSTP;
IGMP Snooping, GMRP;
VLAN, PVLAN;
Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, SNMP, DHCP server;
DT-Psec, SSH, SSL, ACL;
FTP; ARP, QoS

Switch Properties

Priority Queues: 4
Number of VLANs: 256
VLAN ID: 1-4094
Number of Multicast Groups: 256
MAC Table: 8K
Packet Buffer: 4Mbit
Packet Forwarding Rate: 9.5Mpps
Switching Delay: <5μs

Interface

Gigabit Ethernet Ports: max 4 1000Base-LX/LH fiber ports with YMF15-LC connector
Fast Ethernet Ports: 24 10/100Base-TX ports with M12 connector
Console Port: RS232 (M12 connector)
Alarm Contact: M12, 250VAC/350VDC Max, 120mA Max

LED

LEDs on Front Panel:
 Running LED: Run
 Power LED: PWR
 Interface LED: Link/ACT, Speed (RJ45 port)

Transmission Distance

Twisted Pair:
 100m (Standard CAT5, CAT5e network cable)
 Multi Mode Fiber:
 850nm, 550m (1000M)
 Single Mode Fiber:
 1310nm, 40km/60km (1000M)
 1550nm, 60km/80km (1000M)

Power Requirements

Power Input:
 24DC (18-36VDC), 48DC (36-72VDC)
 Power Terminal: M16
 Power Consumption: <20W

Overload Protection: Support
 Reverse Connection Protection: Support
 Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
 Protection Class: IP67
 Dimensions (WxHxD):
 189x76x340 mm (7.44x2.99x13.39 in.)
 Weight: 2.5kg (5.512 pound)
 Mounting: Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

385,000 hrs

Warranty

5 years

Approvals

CE, FCC

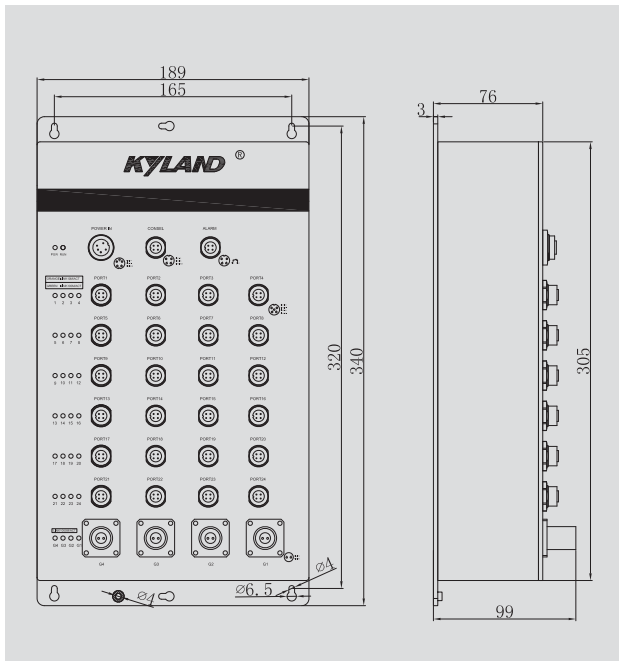
Industrial Standard

EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:
 IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont), 300V (1s)

Machinery:
 IEC61373 (Vibration and shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2
 Railway: EN50155, EN50121-4
 Traffic Control: NEMA TS-2

➤ Mechanical Drawing**➤ Ordering Information**

SICOM8000 - _____ - _____
 Ports PS

Ports

24T-M12 = 24 10/100Base-TX M12 ports
 4GX-YMF15-24T-M12 = 4 1000Base-LX/LH ports with YMF15-LC connectors, 24 10/100Base-TX M12 ports

PS: Power Supply

24DC = 18-36VDC, 18-36VDC, single power input
 48DC = 36-72VDC, 36-72VDC, single power input

Example Order Code

SICOM8000-4GX-YMF15-24T-M12-24DC
 4 Gigabit combo ports, 20 Gigabit SFP ports, 24DC(18-36VDC) power supply

SICOM8010



8+2G Port IP67 Managed Panel Mounting EN50155 PoE Switch

- 2 10/100/1000Base-TX ports with M12 connector and 8 10/100Base-TX ports with M12 connector
- Supports 802.3af PoE function with up to 25W power output per port
- Supports DT-Ring protocols and RSTP
- EMC performance reaches industrial level 4
- IP67 protection class
- CE, FCC certificates



Overview

The SICOM8010 series IP67 M12 managed POE industrial Ethernet switches are designed for industrial applications in harsh environments. The M12 connectors ensure tight, robust connections, and guarantee reliable operation, even for applications that are subject to high vibration and shock. The SICOM8010 series Ethernet switches provide 8 fast Ethernet M12 ports with 8 IEEE 802.3af compliant PoE (Power-over-Ethernet) ports and 2 Gigabit copper uplink ports. The switches are classified as power source equipment (PSE) and provide both standard IEEE802.3af 48VDC PoE with up to 15.4 watts of power per port and 24VDC PoE with up to 25 watts of power per port.

The SICOM8010 switches can be used to power IEEE 802.3af compliant powered devices (PDs), eliminating the need for additional wiring. The switches support IP67 protection class with an operating temperature range of -40 to 85°C. The SICOM8010 switches are compliant with EN50155, EN55022 Class A&B and FCC CFR47 Part 15, making them suitable for a variety of industrial applications.

As one member of Kyland SICOM series, it supports DT-Ring protocol and Kyvision management software. And the centralized management function is also optional.

Features & Benefits

- Redundancy Technology: supports DT-Ring protocols (recovery time<50ms) and RSTP
- Multicast Protocol: supports IGMP Snooping and static multicast
- Network Partition: supports VLAN, GVRP, PVLAN
- Service Quality: supports QoS
- Bandwidth Management: supports port trunking, port speed limit, broadcast storm control

- Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, SNMP, DHCP
- Network Security: supports MAC address binding with port, IEEE802.1X, SSH, SSL, TACACS+
- Device Management: supports FTP upgrade
- Device Maintenance: supports port mirroring
- Alarm Output: supports power, port and ring alarms
- Special Function: supports Link Check and Loop Status Check, POE

Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3ab
IEEE802.3af
IEEE 802.3u
IEEE 802.3z
IEEE 802.3x
IEEE 802.1p
IEEE 802.1Q
IEEE 802.1w
IEEE 802.1X

Protocol

DT-Ring, DT-VLAN, DT-Ring+, RSTP;
IGMP Snooping;
VLAN, GVRP, PVLAN;
Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, SNMP, DHCP server;
SSH, SSL, TACACS+;
FTP, QoS, ARP, PoE

Switch Properties

Priority Queues: 4
 Number of VLANs: 256
 VLAN ID: 1-4094
 Number of Multicast Groups: 256
 MAC Table: 8K
 Packet Buffer: 1Mbit
 Packet Forwarding Rate: 4.2Mpps
 Switching Delay: <5µs

Interface

Gigabit Ethernet Ports: 2 10/100/1000Base-TX ports with M12 connector
 Fast Ethernet Ports: max 8 10/100Base-TX ports with M12 connector and POE function
 Console Port: RS232 (M12 connector)
 Alarm Contact: M12, 250VAC/350VDC Max, 120mA Max

LED

LEDs on Front Panel:
 Running LED: Run
 Alarm LED: Alarm
 Power LED: PWR1, PWR2
 PoE LED: PoE
 Interface LED: Link/ACT (Fast Ethernet port), Link (Gigabit port), ACT (Gigabit port)

Transmission Distance

Twisted Pair:
 100m (Standard CAT5, CAT5e network cable)

Power Requirements

Power Input: 24DC(18-36VDC),48DC (36-72VDC), 110DC(77-154VDC),24POE(22-36VDC),48POE(36-57VDC)
 Power Terminal: M16
 Power Consumption: <7W (no PD)

Overload Protection: Support
 Reverse Connection Protection: Support
 Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
 Protection Class: IP67
 Dimensions (WxHxD):
 130x279x55 mm (5.12x10.98x2.17 in.)
 Weight: 1.8kg (3.968 pound)
 Mounting: Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

393,000 hrs

Warranty

5 years

Approvals

CE, FCC, China Academy of Railway Sciences certificate

Industrial Standard

EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

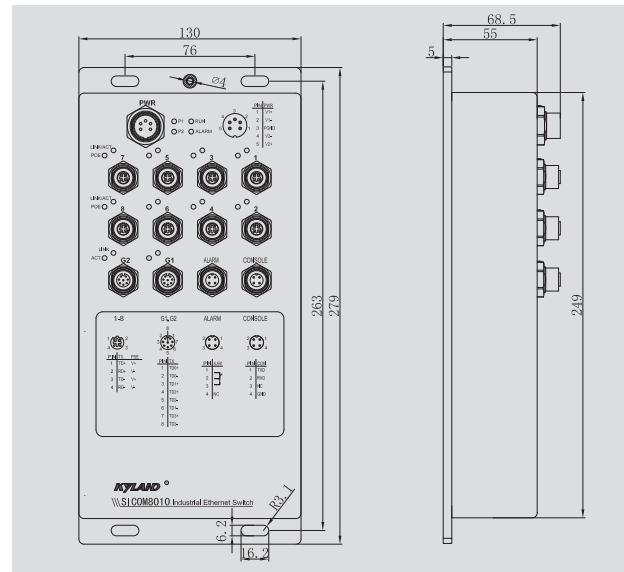
Machinery:

IEC61373 (Vibration and shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

Traffic Control: NEMA TS-2

Mechanical Drawing**Ordering Information**

SI COM8010 - -
 Ports PS

Ports

2GE-M12-8T-M12 = 2 10/100/1000Base-TX M12 ports, 8 10/100Base-TX M12 ports, non-PoE
 2GE-M12-8T-4P-M12 = 2 10/100/1000Base-TX M12 ports, 8 10/100Base-TX M12 ports including 4 802.3af PoE ports
 2GE-M12-8T-8P-M12 = 2 10/100/1000Base-TX M12 ports, 8 10/100Base-TX M12 ports including 8 802.3af PoE ports
 8T-M12 = 8 10/100Base-TX M12 ports, non-PoE
 8T-4P-M12 = 8 10/100Base-TX M12 ports including 4 802.3af PoE ports
 8T-8P-M12 = 8 10/100Base-TX M12 ports including 8 802.3af PoE ports

PS: Power Supply

24DC = 18-36VDC, dual redundant power inputs in M16 connector (only for non-POE models)
 48DC = 36-72VDC, dual redundant power inputs in M16 connector (only for non-POE models)
 110DC = 77-154VDC, dual redundant power inputs in M16 connector (only for non-POE models)
 24POE = 22-36VDC, dual redundant power inputs in M16 connector (only for POE models)
 48POE = 36-57VDC, dual redundant power inputs in M16 connector (only for POE models)

SICOM5208R



8+2G Port IP40 Managed/ Unmanaged Panel Mounting EN50155 PoE Switch

- Supports max 2 10/100/1000Base-TX ports with M12 connector and 8 10/100Base-TX ports with M12 connector
- Provides the models supporting 802.3af POE function
- Supports managed and unmanaged models
- Managed models support DT-Ring protocols and RSTP
- Compliant with EN50155, M12 connector, specially designed for rail transit projects
- EMC performance reaches industrial level 4
- IP40 protection class



» Overview

The SICOM5208R series IP40 M12 managed POE industrial Ethernet switches are a light version of SICOM8010. They are designed for industrial applications in harsh environments especially for EN50155 & EN50121-4 on-train applications. The M12 connectors ensure tight, robust connections, and guarantee reliable operation, even for applications that are subject to high vibration and shock. The SICOM5208R series Ethernet switches provide 8 fast Ethernet M12 ports with 8 IEEE 802.3af compliant PoE (Power-over-Ethernet) ports and 2 Gigabit copper uplink ports. The switches are classified as power source equipment (PSE) and provide both standard IEEE802.3af 48VDC PoE with up to 15.4 watts of power per port and 24VDC PoE with up to 25 watts of power per port.

The SICOM5208R switches provide both managed and unmanaged versions, and support IP40 protection class with an operating temperature range of -40 to 85°C. The SICOM5208R switches are compliant with EN50155, EN55022 Class A&B and FCC CFR47 Part 15, making them suitable for a variety of industrial applications.

As one member of Kyland SICOM series, it supports DT-Ring protocol and Kyvision management software. And the centralized management function is also optional.

» Features & Benefits

1. Redundancy Technology: supports DT-Ring protocols (recovery time<50ms) and RSTP
2. Multicast Protocol: supports IGMP Snooping and static multicast
3. Network Partition: supports VLAN, GVRP, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit,

broadcast storm control

6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, STNP, DHCP

7. Network Security: supports MAC address binding with port, IEEE802.1X, SSH, SSL, TACACS+

8. Device Management: supports FTP upgrade

9. Device Maintenance: supports port mirroring

10. Alarm Output: supports power, port and ring alarms

11. Special Function: supports Link Check and Loop Status Check, POE

» Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3ab
IEEE802.3af
IEEE 802.3u
IEEE 802.3z
IEEE 802.3x
IEEE 802.1p
IEEE 802.1Q
IEEE 802.1w
IEEE 802.1X

Protocols

DT-Ring, DT-VLAN, DT-Ring+, RSTP;
IGMP Snooping; VLAN, GVRP, PVLAN;
Telnet, HTTP, HTTPS;
SNMPv1/v2/v3, RMON, LLDP, STNP, DHCP server;
SSH, SSL, TACACS+;
FTP, QoS, ARP, PoE

Switch Properties

Priority Queues: 4
 Number of VLANs: 256
 VLAN ID: 1-4094
 Number of Multicast Groups: 256
 MAC Table: 8K
 Packet Buffer: 1Mbit
 Packet Forwarding Rate: 4.2Mpps
 Switching Delay: <5µs

Interface

Gigabit Ethernet Ports: max 2 10/100/1000Base-TX ports with M12 connector
 Fast Ethernet Ports: max 8 10/100Base-TX ports with M12 connector and POE function
 Console Port: RS232 (M12 connector)
 Alarm Contact: M12, 250VAC/350VDC Max, 120mA Max

LED

LEDs on Front Panel:
 Running LED: Run
 Alarm LED: Alarm (Managed models)
 Power LED: PWR1, PWR2
 PoE LED: PoE (PoE models)
 Interface LED: Link/ACT (Fast Ethernet port), Link (Gigabit port), ACT (Gigabit port)

Transmission Distance

Twisted Pair: 100m (Standard CAT5, CAT5e network cable)

Power Requirements

Power Input:
 Non-PoE: 24DC(18-36VDC), 48DC(36-72VDC), 110DC(77-154VDC)
 PoE: 24POE(22-36VDC), 48POE(36-57VDC)
 Power Terminal: M16
 Power Consumption: <7W (no PD)

Overload Protection: Support
 Reverse Connection Protection: Support
 Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
 Protection Class: IP40
 Dimensions (WxHxD):
 Panel Mounting, 130mmx279mmx51.2mm (5.12x10.98x2.02 in.)
 Din Rail, 130mmx249mmx51.2mm (5.12x9.80x2.02 in.)
 Weight: 1.5kg (3.307 pound)
 Mounting: Panel mounting, Din Rail

Environmental Limits

Operating Temperature: -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)

MTBF

393,000 hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

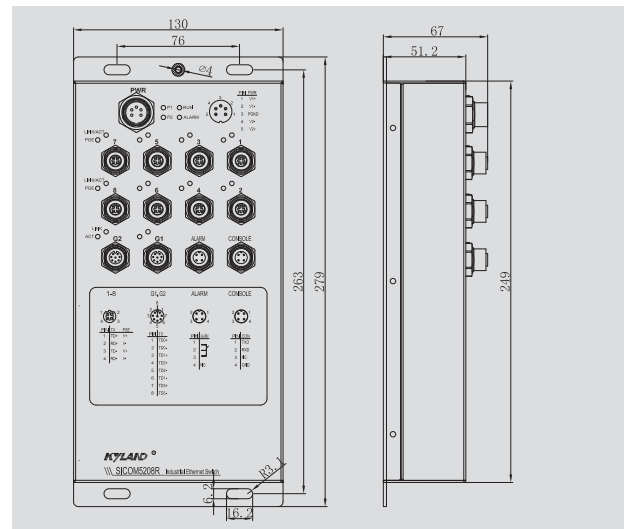
Machinery:

IEC61373 (Vibration and shock),
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

Traffic Control: NEMA TS-2

Mechanical Drawing**Ordering Information**

SICOM5208R - _____ - _____
 Ports PS

Ports

2GE-M12-8T-M12 = Managed, 2 10/100/1000Base-TX M12 ports, 8 10/100Base-TX M12 ports, non-PoE
8T-M12 = Managed, 8 10/100Base-TX M12 ports, non-PoE
UM-8T-M12 = Unmanaged, 8 10/100Base-TX M12 ports, non-PoE
2GE-M12-8T-4P-M12 = Managed, 2 10/100/1000Base-TX M12 ports, 8 10/100Base-TX M12 ports including 4 803.3af PoE ports
2GE-M12-8T-8P-M12 = Managed, 2 10/100/1000Base-TX M12 ports, 8 10/100Base-TX M12 ports including 8 803.3af PoE ports
8T-4P-M12 = Managed, 8 10/100Base-TX M12 ports including 4 803.3af PoE ports
8T-8P-M12 = Managed, 8 10/100Base-TX M12 ports including 8 803.3af PoE ports
UM-8T-4P-M12 = Unmanaged, 8 10/100Base-TX M12 ports including 4 803.3af PoE ports

PS: Power supply

24DC = 18-36VDC, dual redundant power inputs in M16 connector (only for non-POE models)
48DC = 36-72VDC, dual redundant power inputs in M16 connector (only for non-POE models)
110DC = 77-154VDC, dual redundant power inputs in M16 connector (only for non-POE models)
24POE = 22-36VDC, dual redundant power inputs in M16 connector (only for POE models)
48POE = 36-57VDC, dual redundant power inputs in M16 connector (only for POE models)

SICOM1005R

5 Port IP67 Unmanaged Panel Mounting EN50155 Switch



- 5 10/100Base-TX ports with M12 connector
- IP67 protection class
- Supports broadcast storm control
- Full range power supplies including 24VDC, 48VDC, 110VDC and 220VAC/DC



Overview

The SICOM1005R series Ethernet switches are IP67 rated for the toughest industrial applications. The rugged housing and connectors guard the connection against dust, water and oil. By using M12 connectors, it is assured that Ethernet cables will connect tightly to the switch, and will be robust enough to protect your applications from external disturbances, such as the vibration and shock encountered in the transportation industry. This unmanaged industrial Ethernet switch is specially designed for moving vehicles, rail transportation, and tunnels which circumstances have special requirements on anti vibration, corruption and humidity. It offers 5 10/100Base-T(X) ports with M12 connectors and the operating temperature ranges from -40 to 85°C. SICOM1005R industrial Ethernet switches can be powered with 24VDC, 48VDC, 110VDC and 220VAC/DC full range power supplies. With a space-saving housing dimension, it can be mounted virtually anywhere in your applications.

Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3u
IEEE802.3x

Switch Properties

MAC Table: 1K
Packet Buffer: 64Kbit
Packet Forwarding Rate: 0.8Mpps
Switching Delay: <5μs

Interface

Fast Ethernet Ports: 5 10/100Base-TX ports with M12 connector

LED

LEDs on Front Panel:
Power LED: PWR
Interface LED: Link/ACT

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)

Power Requirements

Power Input:
24DC (18-36VDC), 48DC(36-72VDC), 110DC (77-154VDC), 220AC/DC (85-264VAC/120-300VDC)
Power Terminal: M12
Power Consumption: <2W

Overload Protection: Support
Reverse Connection Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
Protection Class: IP67
Dimensions (WxHxD):
62x56x120 mm (2.44x2.20x4.72 in.)
Weight: 05kg (1.102 pound)
Mounting: Panel mounting

Environmental Limits

Operating Temperature: -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)

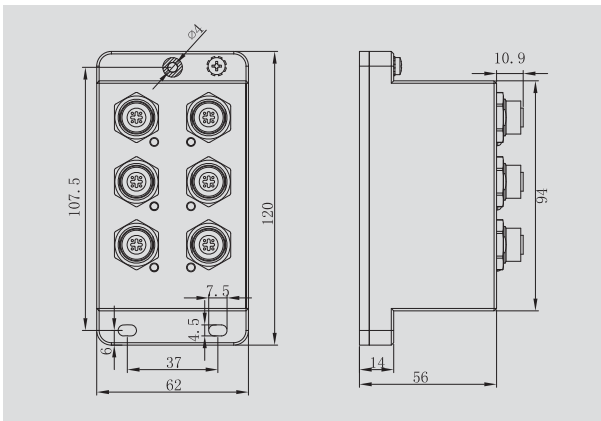
MTBF

461,171 hrs

Warranty

5 years

➤ Mechanical Drawing



Approvals

CE, FCC

Industrial Standard

EMI:
FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:
IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC61373 (Vibration and shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

➤ Ordering Information

SICOM1005R - _____ - _____
Ports PS

Ports: Interfaces

5T-M12 = 5 10/100Base-TX M12 ports

B-5T-M12 = 5 10/100Base-TX M12 ports, featured with broadcast storm control

PS: Power supply

24DC = 18-36VDC

48DC = 36-72VDC

110DC = 77-154VDC

220AC/DC = 120-300VDC/85-264VAC, 50/60Hz

Accessories

M12-4Pin-99-3729-810-04 = 4 pin M12 connector of 10/100Base-TX port

M12-4Pin-99-1430-812-04 = 4 pin M12 connector of power supply

DT-XL-TX-M12-RJ45-1m = 100M copper port adaptor, M12 to RJ45, 1m length

Example Order Codes

SICOM1005R-5T-M12-24DC

5 10/100Base-TX M12 ports, 18-36VDC power supply

SICOM3024SM

Layer 2 24+4G Port Managed Rack Mountable Modular IEC61850 PoE Switch



- Flexible 2U modular design for easy expansion
- Supports DT-Ring protocols and RSTP
- Max 24 802.3af POE ports
- Compliant with IEC61850-3 and IEEE1613
- Allows front and rear panel mounting
- Supports power failure alarm



Overview

SICOM3024SM is a Gigabit modular managed industrial Ethernet switch which supports up to 24 high-power POE feeding ports. It supports DT-Ring and DT-Ring+ with recovery time less than 50ms. Its powerful network management system supports CLI, Telnet, WEB, SNMP, OPC and network topology auto-generation. The reliable short lagging function, the function of zero packet loss in long-time full load running and in Goose message real-time transmission make SICOM3024SM quite suitable for digital substations and other fields.

Features & Benefits

1. Redundancy Technology: supports DT-Ring protocols (recovery time<50ms) and RSTP
2. Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
3. Network Partition: supports VLAN, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, SNTP, LLDP
7. Network Security: supports SSH, SSL, ACL
8. Device Management: supports FTP upgrade
9. Device Maintenance: supports port mirroring
10. Alarm Output: supports IP/MAC conflicts, port and ring alarms
11. Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3af, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1w

Protocols

DT-Ring, DT-Ring+, DT-VLAN, RSTP;
IGMP Snooping, GMRP;
VLAN, PVLAN;
Telnet, HTTP, SNMPv1/v2/v3, RMON, LLDP, SNTP;
SSH, SSL, ACL;
ARP, FTP, QoS

Switch Properties

Priority Queues: 4
Number of VLANs: 256
VLAN ID: 1-4094
Number of Multicast Groups: 256
MAC Table: 8K
Packet Buffer: 4Mbit
Packet Forwarding Rate: 9.5Mpps
Switching Delay: <5μs

Interface

4 0.5U slots for 6-port Fast Ethernet interface modules (100Base-FX, 10/100Base-TX)
Gigabit Ethernet Ports: 4 1000Base SFP slots
Fast Ethernet Ports: max 24 100Base-FX, SM/MM ports, FC/SC/ST connector or 24 10/100Base-TX RJ45 ports
Console Port: RS232 (RJ45 connector)

LED

- 1) LEDs on Front Panel:
 Running LED: Run
 Interface LED: Link/ACT (Fast Ethernet port), Speed (Fast Ethernet port), DPX (Gigabit port), Link (Gigabit port)
 2) LEDs on Rear Panel:
 Interface LED: Link/ACT
 Port Speed LED: Speed

Transmission Distance

- Twisted Pair:
 100m (Standard CAT5, CAT5e network cable)
 Multi Mode Fiber:
 1310nm, 5km (100M)
 850nm, 550m (1000M)
 Single Mode Fiber:
 1310nm, 40km/60km (100M)
 1550nm, 60km/80km (100M)
 1310nm, 10km/40km (1000M)
 1550nm, 60km/80km (1000M)

Power Requirements

- Power Input:
 24DC (18-36VDC), 48DC (36-72VDC), 220AC/DC (85-265VAC/120-375VDC)
 Power Terminal: 3-phase AC electric outlet
 Power Consumption: <25W

- Overload Protection: Support
 Reverse Connection Protection: Support
 Redundancy Protection: Support

Physical Characteristics

- Housing: Aluminum, fanless
 Protection Class: IP40
 Dimensions (WxHxD):
 482.6x88x245mm (19x3.46x9.65 in.)
 Weight: <5kg (11.023 pound)
 Mounting: 19 inch 2U Rack mounting

Environmental Limits

- Operating Temperature: -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)

MTBF

361,290 hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

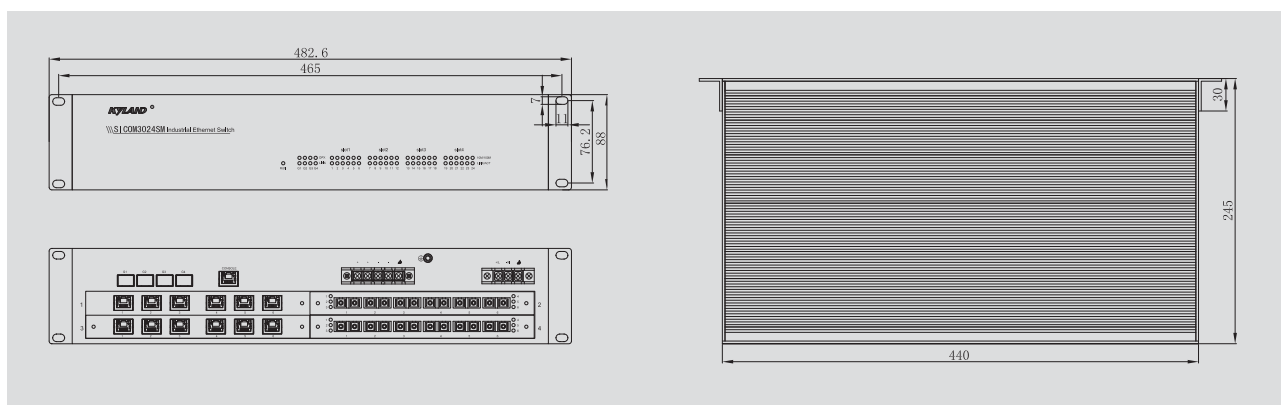
EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

- EMS:
 IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)
 IEC61000-4-9 (Pulsed magnetic field): 1000A/m
 IEC61000-4-10 (Damped oscillation): 100A/m
 IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

- Machinery:
 IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

- Industry: IEC61000-6-2
 Power: IEC61850-3, IEEE1613
 Railway: EN50155, EN50121-4
 Traffic Control: NEMA TS-2

➤ Mechanical Drawing



Ordering Information

Gigabit Ports	POE Power Supply	Power Supply
Slot1	Slot2	
Slot3	Slot4	

SICOM3024SM - - - - -
 C S1 S2 S3 S4

C: Chassis (Gigabit ports and power supply)

4GX-24DC = SICOM3024SM Chassis with 4 Gigabit SFP ports, 18-36VDC power supply, no PoE power supply

4GX-48DC = SICOM3024SM Chassis with 4 Gigabit SFP ports, 36-72VDC power supply, no PoE power supply

4GX-220AC/DC = SICOM3024SM Chassis with 4 Gigabit SFP ports, 120-375VDC/85-265VAC power supply, no PoE power supply

24DC = SICOM3024SM Chassis, 18-36VDC power supply, no PoE power supply

48DC = SICOM3024SM Chassis, 36-72VDC power supply, no PoE power supply

220AC/DC = SICOM3024SM Chassis, 120-375VDC/85-265VAC power supply, no PoE power supply

POE-4GX-24DC = SICOM3024SM Chassis with 4 Gigabit SFP ports, 18-36VDC power supply, 22-36VDC PoE power supply

POE-4GX-48DC = SICOM3024SM Chassis with 4 Gigabit SFP ports, 36-72VDC power supply, 36-57VDC PoE power supply

POE-24DC = SICOM3024SM Chassis, 18-36VDC power supply, 22-36VDC PoE power supply

POE-48DC = SICOM3024SM Chassis, 36-72VDC power supply, 36-57VDC PoE power supply

S1-S4: 100M Slots

XX = None

6SSC = SM3.2-6S-SC-1310-40-V2.0, Interface module with 6 100Base-FX single mode fiber ports, 1310nm, 40km, SC connector

6SST = SM3.2-6S-ST-1310-40-V2.0, Interface module with 6 100Base-FX single mode fiber ports, 1310nm, 40km, ST connector

6SFC = SM3.2-6S-FC-1310-40-V2.0, Interface module with 6 100Base-FX single mode fiber ports, 1310nm, 40km, FC connector

6SSC60 = SM3.2-6S-SC-1310-60-V2.0, Interface module with 6 100Base-FX single mode fiber ports, 1310nm, 60km, SC connector

6SSC80 = SM3.2-6S-SC-1550-80-V2.0, Interface module with 6 100Base-FX single mode fiber ports, 1550nm, 80km, SC connector

6MSC = SM3.2-6M-SC-1310-5-V2.0, Interface module with 6 100Base-FX multi mode fiber ports, 1310nm, 5km, SC connector

6MST = SM3.2-6M-ST-1310-5-V2.0, Interface module with 6 100Base-FX multi mode fiber ports, 1310nm, 5km, ST connector

6MFC = SM3.2-6M-FC-1310-5-V2.0, Interface module with 6 100Base-FX multi mode fiber ports, 1310nm, 5km, FC connector

4SSC2T = SM3.2-4S-SC-1310-40-2T-V2.0, Interface module with 4 100Base-FX single mode fiber ports, 1310nm, 40km, SC connector, 2 10/100Base-TX RJ45 ports

4SST2T = SM3.2-4S-ST-1310-40-2T-V2.0, Interface module with 4 100Base-FX single mode fiber ports, 1310nm, 40km, ST connector, 2 10/100Base-TX RJ45 ports

4SFC2T = SM3.2-4S-FC-1310-40-2T-V2.0, Interface module with 4 100Base-FX single mode fiber ports, 1310nm, 40km, FC connector, 2 10/100Base-TX RJ45 ports

4SSC602T = SM3.2-4S-SC-1310-60-2T-V2.0, Interface module with 4 100Base-FX single mode fiber ports, 1310nm, 60km, SC connector, 2 10/100Base-TX RJ45 ports

4SSC802T = SM3.2-4S-SC-1550-80-2T-V2.0, Interface module with 4 100Base-FX single mode fiber ports, 1550nm, 80km, SC connector, 2 10/100Base-TX RJ45 ports

4MSC2T = SM3.2-4M-SC-1310-5-2T-V2.0, Interface module with 4 100Base-FX multi mode fiber ports, 1310nm, 5km, SC connector, 2 10/100Base-TX RJ45 ports

4MST2T = SM3.2-4M-ST-1310-5-2T-V2.0, Interface module with 4 100Base-FX multi mode fiber ports, 1310nm, 5km, ST connector, 2 10/100Base-TX RJ45 ports

4MFC2T = SM3.2-4M-FC-1310-5-2T-V2.0, Interface module with 4 100Base-FX multi mode fiber ports, 1310nm, 5km, FC connector, 2 10/100Base-TX RJ45 ports

2SSC4T = SM3.2-2S-SC-1310-40-4T-V2.0, Interface module with 2 100Base-FX single mode fiber ports, 1310nm, 40km, SC connector, 4 10/100Base-TX RJ45 ports

2SST4T = SM3.2-2S-ST-1310-40-4T-V2.0, Interface module with 2 100Base-FX single mode fiber ports, 1310nm, 40km, ST connector, 4 10/100Base-TX RJ45 ports

2SFC4T = SM3.2-2S-FC-1310-40-4T-V2.0, Interface module with 2 100Base-FX single mode fiber ports, 1310nm, 40km, FC connector, 4 10/100Base-TX RJ45 ports

2SSC604T = SM3.2-2S-SC-1310-60-4T-V2.0, Interface module with 2 100Base-FX single mode fiber ports, 1310nm, 60km, SC connector, 4 10/100Base-TX RJ45 ports

2SSC804T = SM3.2-2S-SC-1550-80-4T-V2.0, Interface module with 2 100Base-FX single mode fiber ports, 1550nm, 80km, SC connector, 4 10/100Base-TX RJ45 ports

2MSC4T = SM3.2-2M-SC-1310-5-4T-V2.0, Interface module with 2 100Base-FX multi mode fiber ports, 1310nm, 5km, SC connector, 4 10/100Base-TX RJ45 ports

2MST4T = SM3.2-2M-ST-1310-5-4T-V2.0, Interface module with 2 100Base-FX multi mode fiber ports, 1310nm, 5km, ST connector, 4 10/100Base-TX RJ45 ports

2MFC4T = SM3.2-2M-FC-1310-5-4T-V2.0, Interface module with 2 100Base-FX multi mode fiber ports, 1310nm, 5km, FC connector, 4 10/100Base-TX RJ45 ports

6T = SM3.2-6T-V2.0, Interface module with 6 10/100Base-TX RJ45 ports

Example Order Codes

SICOM3024SM-4GX-24DC-6T-6T-6MSC-4MSC2T

SICOM3024SM-4GX-24DC Chassis, 2 x SM3.2-6T, 1 SM3.2-6M-SC-1310-5-V2.0, 1 SM3.2-4M-SC-1310-5-2T-V2.0

SICOM3307S



7+3G port Gigabit Managed PoE Industrial Ethernet Switch

- 3 Gigabit Combo ports, 7 PoE Ethernet electrical ports comply with 802.3at
- Each PoE port provides max 30W 48VDC feed power
- Intelligent power consumption detection, PD power supply state detection and PoE scheduling functions
- Support IEC62439-6/DRP, DT-Ring, RSTP and MSTP ring protocols
- Support reset button for fast reboot or loading default settings
- Provides Mini USB Console port, supports setting backup and recovery through USB
- Supports VCT (Cable Fault Test)



Overview

SICOM3307S is Kyland Din Rail Managed PoE industrial Ethernet switch supporting 3 100/1000M SFP or 10/100/1000Base-TX RJ45 combo ports and implementing IEEE802.3at PoE Plus over each of the 7 10/100Base-TX ports. Each of the 10/100Base-TX ports can support max 30 watts feed power. SICOM3307S is equipped with IEC62439-6/DRP ring protocol which enables less than 20ms recovery time. It also supports DT-Ring, RSTP/STP, MSTP and VRRP. Mini USB console port enables configuration easy backup and restore. Exceeding EN50155, EN50121-4 and NEMA TS-2, SICOM3307S Series is specifically designed to operate reliably in a variety of industrial applications such as utility substation, transportation and traffic video surveillance systems.

Features & Benefits

- Redundancy Technology: supports IEC62439-6 (recovery time<20ms), DT-Ring protocol suite (recovery time<50ms) & MSTP
- Multicast Protocol: support IGMP Snooping, GMRP and static multicast
- Network Partition: supports VLAN,GVRP,PVLAN
- Service Qualit: supports QoS
- Bandwidth Management: supports Ports Trucking,port speed limit,broadcast storm control
- Network Management Monitoring: supports CLI,Telnet,WEB management, Kyvision centralized management, SNMP v1/v2/v3, RMON, LLDP, SNTP, DHCP CLI,Telnet, WEB management, Kyvision
- Network Security: supports MAC address binding with port, IEEE802.1X,SSH/SSL,TACACS+,ACL,DT-Psec
- Device Management: supports FTP/TFTP upgrade, also supports Syslog upload and download
- Device Maintenance: supports port mirroring, VCT (Cable Fault Test)

- Alarm Output: supports IP/MAC conflicts, power, port and ring alarms
- Special Function: supports Link Check and Loop Status Check
- PoE management: supports PoE port setting , PD detection and PoE scheduling

Technical Specifications

Standard

IEEE 802.3i,IEEE 802.3u,IEEE 802.3ab,IEEE802.3ac,IEEE 802.3ad,IEEE 802.3z,IEEE 802.3x,IEEE 802.1p,IEEE 802.1Q, IEEE 802.1s, IEEE 802.1X,IEEE 802.3at

Protocol

DT-Ring, DT-VLAN, DT-Ring+, MSTP; IGMP snooping, GMRP; VLAN, GVRP, PVLAN; Telnet, HTTP,HTTPS, SNMP v1/v2/v3, RMON, LLDP, SNTP, BootP, DHCP server/relay/client, DHCP Option 82; SSH, SSL,TACACS+,ACL,DT-Psec; Syslog, FTP, TFTP; LACP, QoS; ARP; Modbus TCP, ARP, PoE

Switch Properties

Priority Queues: 4
 Number of VLANs: 256
 VLAN ID: 1-4094
 Number of Multicast Groups: 256
 MAC Table: 8K
 Packet Buffer: 1Mbit
 Packet Forwarding Rate: 5.6Mpps
 Switching Delay: <5μs

Interface

Gigabit Ethernet Ports:
 1000Base-X , 0/100/1000 Base -(X) Combo ports
 Fast Ethernet Ports: 10/100Base-TX RJ45 ports
 Console Port: Mini USB

Alarm Contact:
3-pin 5.08mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

LEDs on Front Panel:
Running LED: Run
Alarm LED: Alarm
Power LED: PWR1, PWR2
Ring LED: Ring
Interface LED:
Link/ACT, Speed (Electrical Port), Link/ACT (GX1-GX3)
PoE LED: 1-7

Reset Button

Reset: Reboot and restore default configuration

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber:
850nm,550m(Gigabit)
Single Mode Fiber:
1310nm, 10km/40km (Gigabit)
1550nm, 60km/80km (Gigabit)

Power Requirements

Power Input:
48DC (44-57VDC),
Power Terminal:
5-pin 5.08mm-spacing plug-in terminal block
Power Consumption: <11W(no PD),<250W(Full PD)
Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum cooling surface, fanless
Protection Class: IP40
Dimensions (WxHxD): 88x135x137mm (3.46x5.31x5.39 in.)
Weight:1.25kg (2.76 pound)
Mounting: DIN-Rail or panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

323,350 hrs

Warranty

5 years

Approvals

CE, FCC (pending)

Industrial Standard

EMI:
FCC Part 15(Class A), EN55022/CISPR22, Class A

EMS:

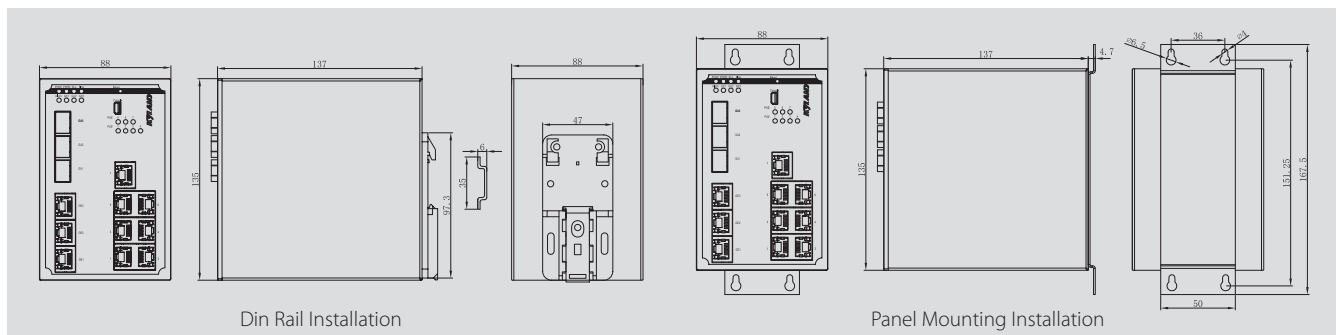
IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2
Railway: EN50155, EN50121-4
Traffic Control: NEMA TS-2

Mechanical Drawing



Ordering Information

SICOM3307S-3GX/GE-7T-7P-48DC

3 100/1000M SFP or 10/100/1000Base-TX RJ45 combo ports, 7 10/100Base-TX RJ45 ports, each of them support IEEE802.2af/at PoE plus with max 30 watts feed power per port, 48VDC(44-57VDC) power supply

SICOM3008S



8 Port Fast Ethernet Managed PoE Industrial Ethernet Switch

- 8 PoE Ethernet copper ports comply with 802.3at
- Each PoE port provides max 30W 48VDC feed power
- Intelligent power consumption detection, PD power supply state detection and PoE scheduling functions
- Support IEC62439-6, DT-Ring, RSTP and MSTP ring protocols
- Support reset button for fast reboot or loading default settings
- Provides Mini USB Console port, supports setting backup and recovery through USB
- Supports VCT (Cable Fault Test)



Overview

SICOM3008S is Kyland Din Rail Managed PoE industrial Ethernet switch implementing IEEE802.3af/at PoE Plus over each of the 8 10/100Base-TX ports. Each of the 10/100Base-TX ports can support max 30 watts feed power. SICOM3008S is equipped with IEC62439-6/DRP ring protocol which enables less than 20ms recovery time. It also supports DT-Ring, RSTP/STP, MSTP and VRRP. Mini USB console port enables configuration easy backup and restore. Exceeding EN50155, EN50121-4 and NEMA TS-2, SICOM3008S Series is specifically designed to operate reliably in a variety of industrial applications such as utility substation, transportation and traffic video surveillance systems.

Features & Benefits

- Redundancy Technology: supports IEC62439-6 (recovery time<20ms), DT-Ring protocol suite (recovery time<50ms) & MSTP
- Multicast Protocol: support IGMP Snooping, GMRP and static multicast
- Network Partition: supports VLAN,GVRP,PVLAN
- Service Quality: supports QoS
- Bandwidth Management: supports Ports Trucking,port speed limit,broadcast storm control
- Network Management Monitoring: supports CLI,Telnet,WEB management, Kyvision centralized management, SNMP v1/v2/v3, RMON, LLDP, SNTP, DHCP
- Network Security: supports MAC address binding with port, IEEE802.1X,SSH/SSL,TACACS+,ACL,DT-Psec
- Device Management: supports FTP/TFTP upgrade, also supports Syslog upload and download
- Device Maintenance: supports port mirroring, VCT (Cable Fault Test)

- Alarm Output: supports IP/MAC conflicts, power, port and ring alarms
- Special Function: supports Link Check and Loop Status Check
- PoE management: supports PoE port setting, PD detection and PoE scheduling

Technical Specifications

Standard

IEEE 802.3i,IEEE 802.3u,IEEE 802.3ab,IEEE802.3ac,IEEE 802.3ad,IEEE 802.3z,IEEE 802.3x,IEEE 802.1p,IEEE 802.1Q, IEEE 802.1s, IEEE 802.1X,IEEE 802.3at

Protocol

DT-Ring, DT-VLAN, DT-Ring+, MSTP; IGMP snooping, GMRP; VLAN, GVRP, PVLAN; Telnet, HTTP,HTTPS, SNMP v1/v2/v3, RMON, LLDP, SNTP, BootP, DHCP server/relay/client, DHCP Option 82; SSH, SSL,TACACS+,ACL,DT-Psec; Syslog, FTP, TFTP; LACP, QoS; ARP; Modbus TCP, ARP, PoE

Switch Properties

Priority Queues: 4
 Number of VLANs: 256
 VLAN ID: 1-4094
 Number of Multicast Groups: 256
 MAC Table: 8K
 Packet Buffer: 1Mbit
 Packet Forwarding Rate: 5.6Mpps
 Switching Delay: <5μs

Interface

Fast Ethernet Ports:
 8 x 10/100Base-T (X) auto-sensing Ethernet RJ45 interface
 Console Port: Mini USB

Alarm Contact:

3-pin 5.08mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

LEDs on Front Panel:

Running LED: Run

Alarm LED: Alarm

Power LED: PWR1, PWR2

Ring LED: Ring

Interface LED: Link/ACT, Speed

PoE LED: 1-8

Transmission Distance

Twisted Pair:

100m (Standard CAT5, CAT5e network cable)

Reset Button

Reboot and restore default configuration

Power Requirements

Power Input: 48DC(44-57VDC)

Power Terminal:

5-pin 5.08mm-spacing plug-in terminal block

Power Consumption: <11W(no PD),<250W(Full load PD)

Overload Protection: Support

Reverse Connection Protection: Support

Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum cooling surface, fanless

Protection Class: IP40

Dimensions (W×H×D): 88×135×137mm (3.46×5.31×5.39 in.)

Weight:1.25kg (2.76 pound)

Mounting: DIN-Rail or panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

325,120 hrs

Warranty

5 years

Approvals

CE, FCC (pending)

Industrial Standard

EMI:

FCC Part 15(Class A), EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)

IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)

IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV

IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV

IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)

IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)

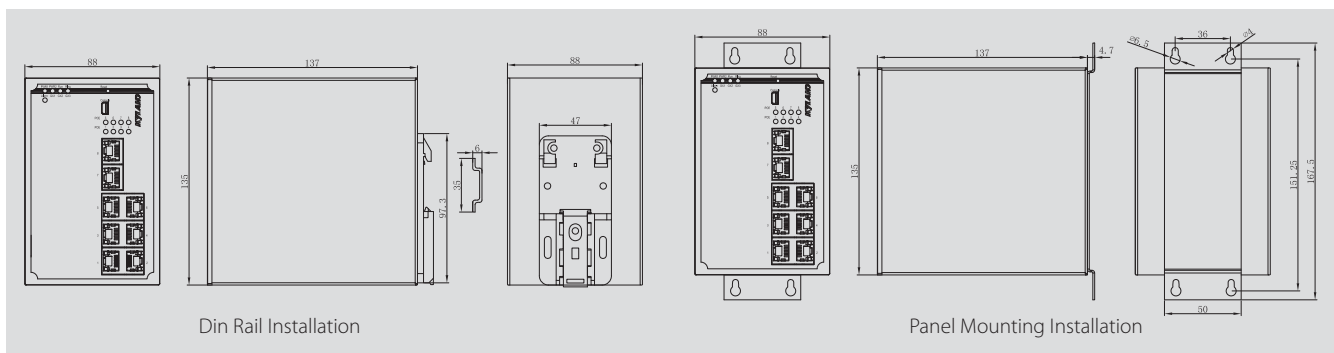
IEC60068-2-27 (Shock)

IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

Traffic Control: NEMA TS-2

Mechanical Drawing**Ordering Information**

SICOM3008S-8T-8P-48DC

8 10/100Base-TX RJ45 802.3at PoE ports,each of them support IEEE802.2af/at PoE plus with max 30 watts feed power per port, 44-57VDC power supply

KIEN2204S



4+2G Port Gigabit Unmanaged PoE Industrial Ethernet Switch

- 2 Gigabit Combo Port, 4 PoE+ Ethernet copper ports comply with 802.3at
- Each PoE port provides max 30W 48VDC feed power
- Intelligent power consumption detection, PD power supply state detection and PoE scheduling functions
- Supports wide operating temperature: -40 to 85°C
- Meet EMC industrial level 4 requirements
- IP40 protection class



Overview

KIEN2204S is Kyland Din Rail Unmanaged PoE industrial Ethernet switch supporting 2 100/1000M SFP or 10/100/1000Base-TX RJ45 combo ports and implementing IEEE802.3at PoE Plus over each of the 4 10/100Base-TX ports. Each of the 10/100Base-TX ports can support max 30 watts feed power. KIEN2204S is equipped with Mini USB console port enables configuration easy backup and restore. Exceeding EN50155, EN50121-4 and NEMA TS-2, KIEN2204S Series is specifically designed to operate reliably in a variety of industrial applications such as utility substation, transportation and traffic video surveillance systems.

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z, IEEE 802.3at

Switch Properties

MAC Table: 2K
 Packet Buffer: 1Mbit
 Packet Forwarding Rate: 4.5Mpps
 Switching Delay: <5μs

Interface

Gigabit Ethernet Ports:
 2 x 1000Base-X or 10/100/1000 Base-T(X) Combo ports
 4 x Fast Ethernet Ports: 10/100Base-T(X) RJ45 ports

LED

LEDs on Front Panel:
 Alarm LED: Alarm
 Power LED: PWR1, PWR2
 Interface LED:
 Link/ACT, Speed (Electrical Port), Link/ACT (GX1-GX2)
 PoE LED: 1-4

Transmission Distance

Twisted Pair:
 100m (Standard CAT5, CAT5e network cable)
 Multi Mode Fiber:
 850nm, 550m (Gigabit)
 Single Mode Fiber:
 1310nm, 10km/40km (Gigabit)
 1550nm, 60km/80km (Gigabit)

Power Requirements

Power Input: 48DC (44-57VDC)

Power Terminal:

5-pin 5.08mm-spacing plug-in terminal block

Power Consumption: <6W(no PD), <126W(Full load PD)

Overload Protection: Support

Reverse Connection Protection: Support

Physical Characteristics

Housing: Aluminum cooling surface, fanless

Protection Class: IP40

Dimensions (WxHxD): 88x135x137mm (3.46x5.31x5.39 in.)

Weight: 1.25kg (2.76 pound)

Mounting: DIN-Rail or panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

326,200 hrs

Warranty

5 years

Approvals

CE, FCC (pending)

Industrial Standard

EMI:

FCC Part 15(Class A), EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)

IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)

IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV

IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV

IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)

IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)

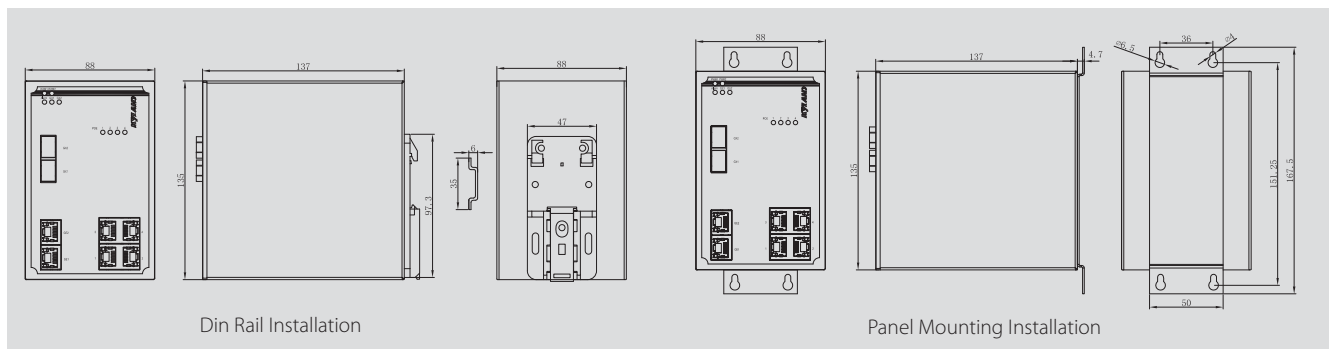
IEC60068-2-27 (Shock)

IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

Traffic Control: NEMA TS-2

Mechanical Drawing**Ordering Information**

KIEN2204S-2GX/GE-4T-4P-48DC

2 100/1000M SFP or 10/100/1000Base-TX RJ45 combo ports, 4 10/100Base-TX RJ45 ports, each of them support IEEE802.2af/at PoE plus with max 30 watts feed power per port, 48VDC(44-57VDC)

KIEN1005S

5 Port Unmanaged Din-Rail PoE Switch



- 1 Fast Ethernet fiber/RJ45 optional port and 4 10/100Base-TX POE ports compliant with IEEE802.3af
- The output power per POE port is 15.4W
- Operating temperature is -40°C to 85°C
- EMC performance reaches industrial level 4
- IP40 protection class



Overview

The KIEN1005S industrial Ethernet switches are unmanaged 5-port PoE (Power-over-Ethernet) switches provided by Kyland. The switches support 1 fast Ethernet fiber/RJ45 optional port and 4 10/100Base-TX PoE ports compliant with IEEE802.3af. The output power per port can reach 15.4 watts at 44-57VDC. KIEN1005S can be used to power IEEE802.3af compliant powered devices (PD), eliminating the need for additional wiring, and support IEEE 802.3/802.3u with 10/100M, full/half-duplex, MDI/MDI-X auto-sensing to provide an economical solution for your industrial Ethernet network.

Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3u
IEEE 802.3af

Switch Properties

MAC Table: 2K
Packet Buffer: 1Mbit
Packet Forwarding Rate: 0.8Mpps
Switching Delay: <5μs

Interface

Fast Ethernet Fiber Ports: max 1 100Base-FX, SM/MM port, FC/SC/ST connector
Fast Ethernet RJ45 Ports: max 5 10/100Base-TX RJ45 ports

LED

LEDs on Front Panel:
Power LED: PWR1, PWR2
Interface LED: Link/ACT
POE LED: POE

Transmission Distance

Twisted Pair: 100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber: 1310nm, 5km (100M)
Single Mode Fiber: 1310nm, 40km/60km (100M);
1550nm, 60km/80km (100M)

Power Requirements

Power Input:
48DC(44-57VDC)
Power Terminal:
5-pin 5.08mm-spacing plug-in terminal block
Power Consumption:
<3W (no PD), <70W (full load PD)

Overload Protection: Support
Reverse Connection Protection: Support

Physical Characteristics

Housing: Metal, fanless
Protection Class: IP40
Dimensions (W×H×D): 53.6×135×106.5 mm (2.11×5.31×4.19 in.)
Weight: 0.5kg (1.102 pound)
Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

353,350 hrs

Warranty

5 years

Approvals

CE, FCC

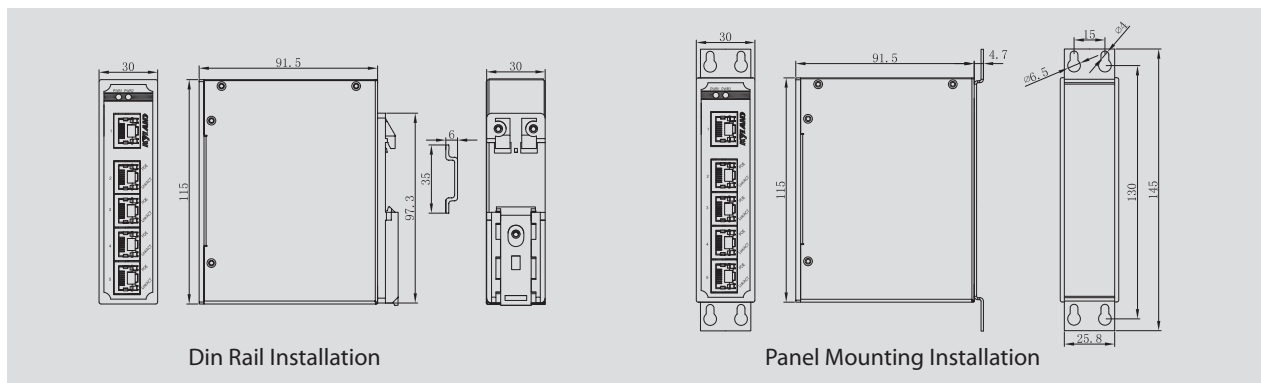
Industrial Standard

EMI:
FCC Part 15 (Class A), EN55022/CISPR22, Class A

EMS:
IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:
IEC60068-2-6 (Vibration),
IEC60068-2-27 (Shock),
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2
Railway: EN50155, EN50121-4
Traffic Control: NEMA TS-2

Mechanical Drawing**Ordering Information**

KIEN1005S - _____ - _____ - _____ - _____
Ports Distance Connector PS

Ports:Interface

5T-4P = 1 10/100Base-TX RJ45 port, 4 10/100Base-TX RJ45 802.3af PoE ports

1M-4T-4P = 1 100Base-FX multi mode port, 4 10/100Base-TX RJ45 802.3af PoE ports

1S-4T-4P = 1 100Base-FX single mode port, 4 10/100Base-TX RJ45 802.3af PoE ports

Distance: Fiber Distance

1310-5 = 1310nm, 5km

1310-40 = 1310nm, 40km

1310-60 = 1310nm, 60km

1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector

ST = ST Connector

FC = FC Connector

PS: Power Supply

48DC = 44-57VDC

Example Order Codes

KIEN1005S-5T-4P-48DC

5 10/100Base-TX RJ45 ports, 4 of them support 802.3af PoE output, the switch support 44-57VDC power supply

SICOM3170



7+3G Port Managed Traffic Ethernet Switch

- 2 Gigabit SFP slots, 1 10/100/1000Base-TX port and 7 10/100Base-TX ports
- Supports DT-Ring protocols and RSTP
- Supports auto-generation of network topology
- Rear panel provides PCB Golden Finger for power connection
- EMC performance reaches industrial level 4
- CE, FCC, NEMA TS-2



» Overview

SICOM3170 is an ultra low power consumption (less than 8 Watts), Managed Industrial Ethernet switch. This dual slot Ethernet switch is designed to slide into an open Detector Chassis Slot of any Signal cabinet. This Managed Industrial Ethernet Switch is widely deployed in SCADA and OSS networks around world. This proven ultra low power consumption switch (Green Product - RoHS) features 2 SFP Gigabit ports, Seven 10/100 RJ45 Ports and One 10/100/1000 RJ45 Port. The SICOM3170 Industrial Signal Control switch is the first of a series of Traffic Ethernet Switches Series from Kyland and a continuation of our "Green Ethernet" product line.

The "SICOM 3170" Industrial Ethernet switch offers a significant increase in the application and bandwidth capabilities of the highly configurable Kyland SICOM line of Managed Industrial Ethernet switches. This is the perfect switch for the deployment of bandwidth-intensive applications such as internal and external video surveillance at traffic intersections, local and regional control systems. This network switch can be easily installed into any traffic cabinet with an open dual slot in a detector input chassis. Clean, filtered 12VDC or 24VDC power is provided directly from the back-plane of the detector chassis and eliminates adding to the mess of additional power supplies and power cables within the traffic cabinet. The SICOM 3170 is the easiest and fastest to deploy Industrial Ethernet network switch. Requiring less than 8 Watts of power to operate it is also a "Green Ethernet" Industrial Ethernet switch, and fully RoHS compliant.

» Features & Benefits

1. Redundancy Technology: supports DT-Ring protocols (recovery time<50ms) and RSTP
2. Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
3. Network Partition: supports VLAN, GVRP, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, SNTP, DHCP
7. Network Security: supports MAC address binding with port, IEEE802.1X, TACACS+, SSH, SSL
8. Device Management: supports FTP upgrade
9. Device Maintenance: supports port mirroring
10. Alarm Output: supports power, port and ring alarms
11. Special Function: supports Link Check and Loop Status Check

» Technical Specifications

Standard

IEEE802.1p, IEEE802.1Q, IEEE802.1w, IEEE802.1X, IEEE802.3i, IEEE802.3ab, IEEE802.3af, IEEE802.3u, IEEE802.3x, IEEE802.3z

Protocol

DT-Ring, DT-Ring+, DT-VLAN, RSTP;
 VLAN, GVRP, PVLAN;
 IGMP Snooping, GMRP;
 Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, SNTP, DHCP server;
 SSH, SSL, TACACS+;
 FTP, ARP, QoS

Switch Properties

Priority Queues: 4
 Number of VLANs: 256
 VLAN ID: 1-4094
 Number of Multicast Groups: 256
 MAC Table: 8K
 Packet Buffer: 4Mbit
 Packet Forwarding Rate: 5.5Mpps
 Switching Delay: <math><5\mu\text{s}</math>

Interface

Gigabit Ethernet Ports: 2 1000Base SFP slots and 1 10/100/1000Base-TX RJ45 port
 Fast Ethernet Ports: 7 10/100Base-TX RJ45 ports
 Console Port: RS232 (RJ45 connector)

LED

LEDs on Front Panel:
 Running LED: Run
 Power LED: PWR
 Interface LED: Link/ACT (Fast Ethernet Port), Speed (Fast Ethernet port), Act (Gigabit Ethernet port), Link (Gigabit Ethernet port)

Transmission Distance

Twisted Pair: 100m (Standard CAT5, CAT5e network cable)
 Multi Mode Fiber: 850nm, 550m (1000M)
 Single Mode Fiber: 1310nm, 10km/40km (1000M), 1550nm, 60km/80km (1000M)

Power Requirements

Power Input: 12DCW(9-36VDC)
 Power Connector: PCB Golden Finger
 Power Consumption: <math><8\text{W}</math>
 Overload Protection: Support
 Reverse Connection Protection: Support

Physical Characteristics

Housing: Metal, fanless
 Protection Class: IP40
 Dimensions (W×H×D): 58×114×205mm (2.28×4.49×8.07 in.)
 Weight: 0.8kg (1.764 pound)
 Mounting: Inserted into a rack through rail slots

Ordering Information**SICOM3170-2GX-1GE-7T-12DCW**

2 Gigabit SFP ports, 1 10/100/1000Base-TX RJ45 ports, 7 10/100Base-TX RJ45 ports, 12DCW(9-36VDC)

Environmental Limits

Operating Temperature: -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)

MTBF

370,000 hrs

Warranty

5 years

Approvals

CE, FCC, RoHS

Industrial Standard

EMI: FCC CFR47 Part 15, EN55022, Class A&B

EMS:

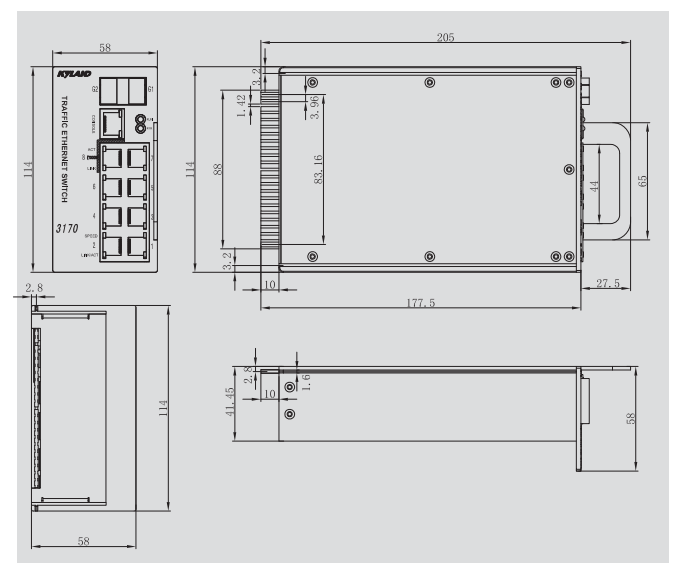
IEC61000-4-2 (ESD): $\pm 8\text{kV}$ (contact), $\pm 15\text{kV}$ (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-1GHz)
 IEC61000-4-4 (EFT): Power Port: $\pm 4\text{kV}$; Data Port: $\pm 2\text{kV}$
 IEC61000-4-5 (Surge): Power Port: $\pm 2\text{kV}/\text{DM}$, $\pm 4\text{kV}/\text{CM}$; Data Port: $\pm 2\text{kV}$
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)
 IEC61000-4-9 (Pulsed magnetic field): 1000A/m
 IEC61000-4-10 (Damped oscillation): 30A/m
 IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Power: IEC61850-3, IEEE1613
 Railway: EN50121-4
 Traffic Control: NEMA TS-2

Mechanical Drawing

SICOM3171



5 Port Managed Traffic Serial Device Server

- 1 10/100Base-TX port, 4 RS232/422/485 serial ports
- Green Ethernet solution with low power consumption design
- IP40 protection class



» Overview

SICOM3171 is an ultra low power consumption (less than 3.5Watts), Managed Traffic Ethernet Serial Device Server. This single slot serial server is designed to slide into an open Detector Chassis Slot of any signal cabinet. This Traffic Serial Server is widely deployed in SCADA and OSS networks around world. This proven ultra low power consumption serial server(Green Product-RoHS) features one 10/100Base-TX Ethernet port, and four serial ports being selectable for RS232, RS422 and RS485 serial connectivity. The SICOM3171 Managed Traffic Ethernet Serial Server is the second of a series of Traffic Ethernet Switches Series form Kyland and a continuation of our "Green Ethernet" product line.

The SICOM3171 Traffic Ethernet Serial Server has COM, TTY or GUI port control and management function, offers monitoring and diagnostic utility. It enables data security via SSHv2 and SSL/TLS, and variety of IP addressing methods DHCP, RARP, ARP-PING for remote installation. It's the ideal for network enabling and remotely managing variable message signs, loop detectors, ramp meters or any RS-232/422/485 serial device. This serial sever can be easily installed into any traffic cabinet with an open single slot in a detector input chassis. Clean, filtered 12VDC or 24VDC power is provided directly from the back-plane of the detector chassis and eliminates adding to the mess of additional power supplies and power cables within the traffic cabinet.

» Features & Benefits

1. Transmission Protocol: supports TCP and UDP protocols
2. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, SNMPv1/v2
3. Network Security: supports SSH, SSL
4. Device Management: supports FTP upgrade
5. Device Maintenance: supports port mirroring

» Technical Specifications

Standard

IEEE802.3i
IEEE802.3u
IEEE802.3x

Protocol

TCP, UDP;
FTP;
Telnet, SNMPv1/v2;
HTTP, HTTPS, SSH, SSL;
ARP, RARP

Interface

Fast Ethernet Port: 1 10/100Base-TX RJ45 ports
Serial Ports: 4 RS232/RS485/RS422 serial ports

LED

LEDs on Front Panel:
Running LED: Run
Power LED: PWR
Interface LED: Link (Fast Ethernet port), ACT (Fast Ethernet port)

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)

Power Requirements

Power Input: 12DCW(9-36VDC)
Power Connector: PCB Golden Finger
Power Consumption: <3.5W

Overload Protection: Support
Reverse Connection Protection: Support

Physical Characteristics

Housing: Metal
Protection Class: IP40
Dimensions (WxHxD):
30x114x205mm (1.18x4.49x8.07 in.)
Weight: 350g (0.772 pound)
Mounting: Inserted into a rack through a rail slot

Environmental Limits

Operating Temperature: -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)

MTBF

306,600 hrs

Warranty

5 years

Approvals

CE, FCC, RoHS

Industrial Standard

EMI: FCC Part 15, Class A&B

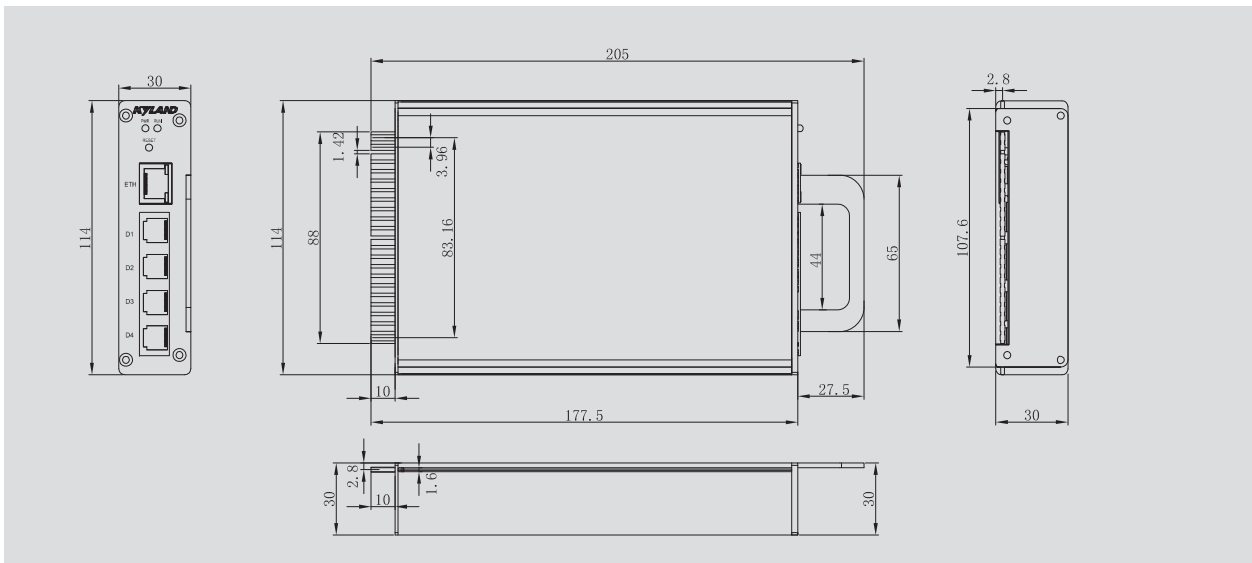
EMS:

IEC61000-4-2 (ESD): $\pm 8\text{kV}$ (contact), $\pm 15\text{kV}$ (air)
IEC61000-4-3 (RS): 10V/m (80MHz-1GHz)
IEC61000-4-4 (EFT): Power Port: $\pm 4\text{kV}$; Data Port: $\pm 2\text{kV}$
IEC61000-4-5 (Surge): Power Port: $\pm 2\text{kV/DM}$, $\pm 4\text{kV/CM}$; Data Port: $\pm 2\text{kV}$
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)
IEC61000-4-9 (Pulsed magnetic field): 1000A/m
IEC61000-4-10 (Damped oscillation): 30A/m
IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Traffic Control: NEMA TS-2

Mechanical Drawing**Ordering Information**

SICOM3170-2GX-1GE-7T-12DCW

2 Gigabit SFP ports, 1 10/100/1000Base-TX RJ45 ports, 7 10/100Base-TX RJ45 ports, 12DCW(9-36VDC)

SICOM3172



EoVDSL & Serial Device Server Integrated Traffic Industrial Ethernet Switch

- 2 EoVDSL ports, 4 10/100Base-TX RJ45 ports and 2 RS232/RS485 serial ports
- Support DT-Ring and RSTP protocol.
- Serial ports support TCP Server/Client, UDP mode
- Industrial level 4 EMC performance



» Overview

SICOM3172 is an ultra low power consumption (less than 10 Watts), managed EoVDSL & serial device server integrated traffic industrial Ethernet switch. This dual slot Ethernet switch is designed to slide into an open Detector Chassis Slot of any signal cabinet. This Traffic Ethernet Switch is widely deployed in SCADA and OSS networks around world. This proven ultra low power consumption device features two EoVDSL ports with RJ11 connector, four 10/100Base-TX Ethernet port, and two serial ports being selectable for RS232, RS422 and RS485 serial connectivity. The SICOM3172 Managed Traffic Ethernet Serial Server is the third of a series of Traffic Ethernet Switches Series form Kyland and a continuation of our green energy efficiency product line.

The SICOM3172 Traffic Ethernet Switch provides reliable, long distance Ethernet communications over telephone grade cable with speeds up to 100Mbps over up to 2km distances. These two EoVDSL uplinks cut implementation time and cost by utilizing exiting phone lines for high speed data communications. This EoVDSL & Serial Device Server Integrated Traffic Industrial Ethernet Switch can be easily installed into any traffic cabinet with an open dual slot in a detector input chassis. Clean, filtered 24VDC power is provided directly from the back-plane of the detector chassis and eliminates adding to the mess of additional power supplies and power cables within the traffic cabinet.

» Features & Benefits

1. Redundancy Technology: supports DT-Ring protocols (recovery time<50ms), RSTP
2. Multicast Protocol: supports IGMP Snooping and static multicast protocol
3. Network Partition: supports VLAN, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, SNTP
7. Network Security: supports SSH, TACACS+, AAA
8. Device Management: supports FTP upgrade, configuration upload/download
10. Device Maintenance: supports port mirroring, LLDP, link check
11. Alarm Output: supports port and ring alarms

» Technical Specifications

Standards

IEEE 802.3i, IEEE 802.3u, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s

Protocols

DT-Ring, DT-Ring+, RSTP; IGMP snooping;
VLAN, PVLAN; Telnet, HTTP, SNMPv1/v2/v3, RMON; SNTP;
LLDP; SSH, TACACS+, AAA; FTP; ARP, QoS

Switch Properties

Priority: 4
 VLAN: 256
 VLAN ID: 1-4093
 Number of Multicast Groups: 256
 MAC address Table: 8K
 Packet Buffer: 1Mbit
 Packet Forwarding Rate: 0.9Mpps
 Switching Delay: <5us

Interface

EoVDSL ports: 2 ports with RJ11 connector, rate:
 2/3/5/15/20/25/55/100Mbps
 Copper ports: 4 ports with RJ45 connector, 10/100Base-TX
 Serial ports: 2 RS232/RS485 serial ports with RJ45 connector
 Console port: RS232, RJ45

LED

LED on front panel
 Running LED: Run
 Power LED: PWR
 Ring LED: Ring
 EoVDSL port data receiving/sending LED: V1, V2
 EoVDSL port role LED: CO1, CO2
 Interface LED: Link/ACT (Fast Ethernet Port)

Transmission Distance

EoVDSL	No.	Rate(Mbps)	Distance(m)
	1	100	200
	2	55	500
	3	25	800
	4	20	1000
	5	15	1200
	6	5	1500
	7	3	1800
	8	2	2000

Serial ports: RS232 15m, RS422/RS485 1200m.
 Copper ports: 100m (Standard CAT5, CAT5e cable)

Power Requirements

Power Input: 24DC (18-36VDC)
 Power Connector: PCB Golden Finger
 Power Consumption: <10W

Physical Characteristics

Housing: Metal, fanless
 Protection Class: IP30
 Dimensions (WxHxD): 41.45x114x167.50mm (1.63x4.49x6.59 in.)
 Weight: 0.8kg (1.76 pound)
 Mounting: Inserted into a rack through rail slots

Environmental Limits

Operating Temperature: -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)

MTBF

307,699 hours

Warranty

5 years

Approvals

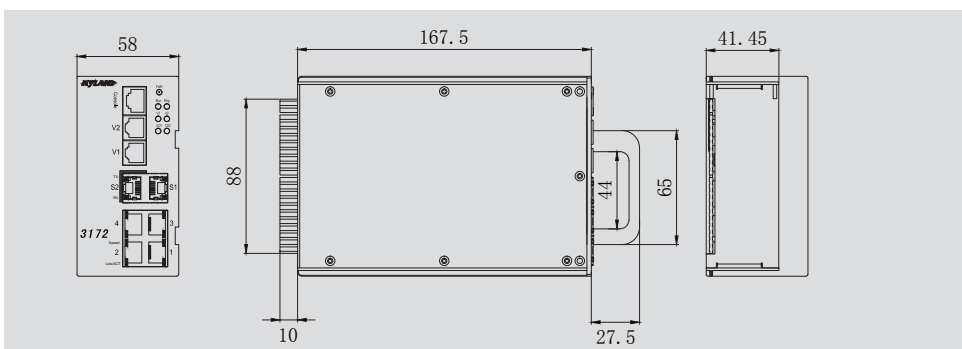
CE, FCC

Industrial Standard

EML: FCC Part 15 Class A&B
 EMS:
 IEC61000-4-2(ESD) ±8kV(contact),±15kV(air)
 IEC61000-4-3(RS) 10V/m(80MHz-2GHz)
 IEC61000-4-4(EFT) Power Port:±4kV;Data Port:±2kV
 IEC61000-4-5(Surge) Power Port:±2kV/DM,±4kV/CM;Data Port:±2kV
 IEC61000-4-6(CS) 10V(150kHz-80MHz)
 IEC61000-4-16(Common mode conduction) 30V(cont.),300V(1s)

Machinery:
 IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2
 Traffic Control: NEMA TS-2

Mechanical Drawing**Ordering Information**

SICOM3172-1EoVDSL-4T-24DC = 1 EoVDSL port, 4 10/100Base-TX RJ45 ports, 24DC (18-36VDC) power supply

SICOM3172-1EoVDSL-4T-2D-24DC = 1 EoVDSL port, 4 10/100Base-TX RJ45 ports, 2 RS232/RS485 ports, 24DC (18-36VDC) power supply

SICOM3172-2EoVDSL-4T-24DC = 2 EoVDSL port, 4 10/100Base-TX RJ45 ports, 24DC (18-36VDC) power supply

SICOM3172-2EoVDSL-4T-2D-24DC = 2 EoVDSL port, 4 10/100Base-TX RJ45 ports, 2 RS232/RS485 ports, 24DC (18-36VDC) power supply

SICOM3016BA



Layer 2 12+4G Port Managed Panel Mounting Intrinsic Safety Switch

- Green Ethernet solution
- Low power consumption design to meet the intrinsic safety requirements of coal mining
- 4 Gigabit SFP slots, 6 100Base-FX SM/MM ports, 6 Fast Ethernet fiber/RJ45 optional ports
- Supports DT-Ring protocols and MSTP
- Supports auto-generation of network topology
- PCB coating is available
- Embedded model provides pins for LED output and power failure alarm input



» Overview

SICOM3016BA series of industrial Ethernet switches are one of Kyland latest members of intrinsic safety and Green Ethernet industrial Ethernet switches specially designed for coal mining industry which requires a significant low power consumption and intrinsic safety for the devices. SICOM3016BA is equipped with a high switching engine, 4 Gigabit SFP ports and maximum 12 100Base-FX ports. This kind of full fiber ports configuration including Gigabit uplinks obviously meets the increasing requirements for full fiber ports solutions and high bandwidth uplinks in coal mining industries. Its full load power consumption is as low as 10 watts. Over current and over voltage protection, EMC-protection power supply, outstanding EMC protection on RJ45 ports, redundant power inputs and PCB coating guarantee the reliable operation of the devices.

Integrated device with housing and bare board (embedded Ethernet switch) are both available on SICOM3016BA. The bare board can be installed in customer's existing devices easily and enrich the Ethernet communication functions. SICOM3016BA provides powerful network management functions. The device can be managed through CLI, Telnet, Web and SNMP-based network management software. SICOM3016BA supports 5VDC and 12VDC power supplies which are the main power options for coal mining industries.

» Features & Benefits

1. Redundancy Technology: supports DT-Ring protocols (recovery time<50ms) and MSTP
2. Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
3. Network Partition: supports VLAN, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2, RMON, LLDP, STP, DHCP
7. Network Security: supports SSH, SSL, ACL
8. Device Management: supports FTP upgrade
9. Device Maintenance: supports port mirroring
10. Alarm Output: supports IP/MAC conflicts, power, port and ring alarms
11. Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i
 IEEE 802.3u
 IEEE 802.3ab
 IEEE 802.3z
 IEEE 802.3x
 IEEE 802.1p
 IEEE 802.1Q
 IEEE 802.1s

Protocol

DT-Ring, DT-Ring+, DT-VLAN, MSTP;
 IGMP Snooping, GMRP;
 VLAN, PVLAN;
 Telnet, HTTP, HTTPS, SNMPv1/v2, RMON, LLDP, SNTP, DHCP server;
 SSH, SSL, ACL;
 FTP; ARP, QoS

Switch Properties

Priority Queues: 4
 Number of VLANs: 256
 VLAN ID: 1-4094
 Number of Multicast Groups: 256
 MAC Table: 8K
 Packet Buffer: 2Mbit
 Packet Forwarding Rate: 7.7Mpps
 Switching Delay: <5 μ s

Interface

Gigabit Ethernet Ports: 4 1000Base SFP slots
 Fast Ethernet Fiber Ports: max 12 100Base-FX, SM/MM ports, FC/SC/ST connector
 Fast Ethernet RJ45 Ports: max 6 10/100Base-TX RJ45 ports
 Console Port: RS232 (RJ45 connector)
 Alarm Contact: 6-pin 3.81mm-spacing plug-in terminal block

LED

LEDs on Front Panel:
 Running LED: Run
 Alarm LED: Alarm
 Power LED: PWR1, PWR2
 Interface LED: Link/ACT, Speed (RJ45 port), Link/ACT (100M fiber ports)
 Pins for LED output (Embedded)

Transmission Distance

Twisted Pair:
 100m (Standard CAT5, CAT5e network cable)
 Multi Mode Fiber:
 1310nm, 5km (100M)
 850nm, 550m (1000M)
 Single Mode Fiber:
 1310nm, 40km/60km (100M)
 1550nm, 60km/80km (100M)
 1310nm, 10km/40km (1000M)
 1550nm, 60km/80km (1000M)

Power Requirements

Power Input:
 5VDC (4.5-5.5VDC), 12VDC (9-18VDC)
 Power Terminal:
 6-pin 3.81mm-spacing plug-in terminal block
 Power Consumption:
 SICOM3016BA-4GX-12S/M<10W

Overload Protection: Support
 Reverse Connection Protection: Support
 Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
 Protection Class: IP40
 Dimensions (WxHxD):
 Integrated device 284x44x141mm (11.18x1.73x5.55 in.)
 Embedded board 235x30x130mm (9.25x1.18x5.12 in.)
 Weight:
 Integrated device 1.5kg (3.307 pound),
 Embedded board 0.5kg (1.102 pound)
 Mounting: Panel mounting or Embedded mounting

Environmental Limits

Operating Temperature: -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)

MTBF

329,032 hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ± 8 kV (contact), ± 15 kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ± 4 kV; Data Port: ± 2 kV
 IEC61000-4-5 (Surge): Power Port: ± 2 kV/DM, ± 4 kV/CM; Data Port: ± 2 kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

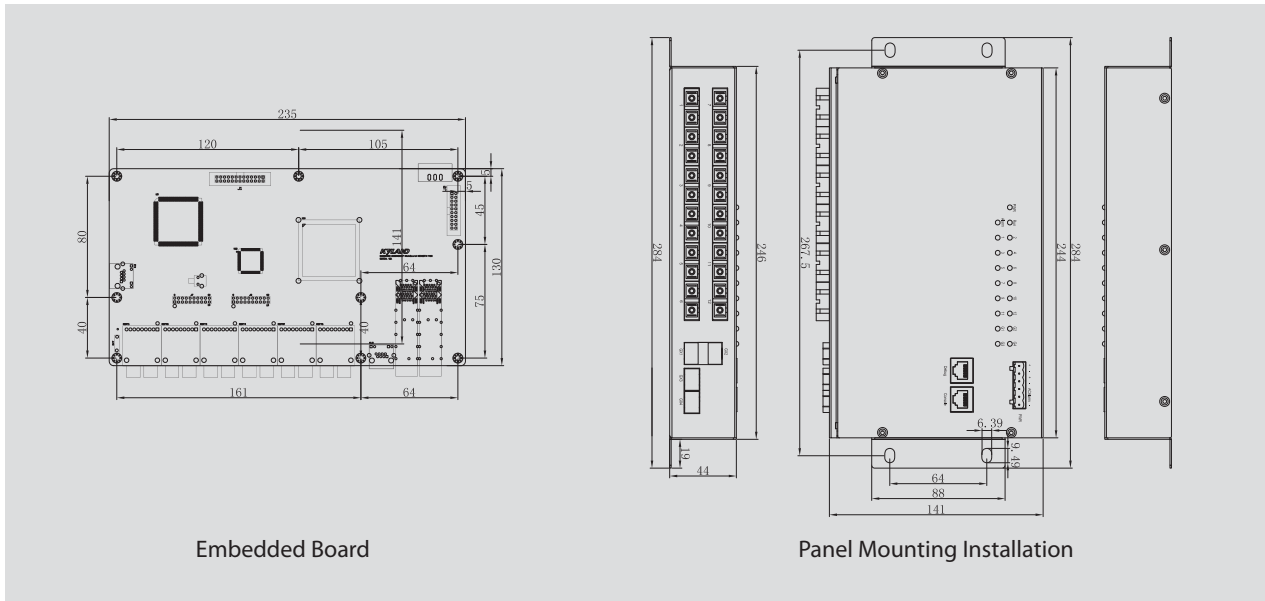
IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Traffic Control: NEMA TS-2

Coal Mining: GB/T3836.1, GB/T3836.2, GB/T3836.3, GB/T3836.4

➤ Mechanical Drawing



Embedded Board

Panel Mounting Installation

➤ Ordering Information

SICOM3016BA - _____ - _____ - _____ - _____
 Ports Distance Connector PS

Ports

C-4GX-12S = 4 Gigabit SFP port, 12 100Base-FX single mode fiber ports, PCB coating

C-4GX-12M = 4 Gigabit SFP port, 12 100Base-FX multi mode fiber ports, PCB coating

C-4GX-6S-6T = 4 Gigabit SFP port, 6 100Base-FX single mode fiber ports, 6 10/100Base-TX ports, PCB coating

C-4GX-6M-6T = 4 Gigabit SFP port, 6 100Base-FX multi mode fiber ports, 6 10/100Base-TX ports, PCB coating

C-3GX-12S = 3 Gigabit SFP port, 12 100Base-FX single mode fiber ports, PCB coating

C-3GX-12M = 3 Gigabit SFP port, 12 100Base-FX multi mode fiber ports, PCB coating

3GX-6S-6T = 3 Gigabit SFP port, 6 100Base-FX single mode fiber ports, 6 10/100Base-TX ports, PCB coating

3GX-6M-6T = 3 Gigabit SFP port, 6 100Base-FX multi mode fiber ports, 6 10/100Base-TX ports, PCB coating

EM-C-4GX-12S = Embedded board, 4 Gigabit SFP port, 12 100Base-FX single mode fiber ports, PCB coating

EM-C-4GX-12M = Embedded board, 4 Gigabit SFP port, 12 100Base-FX multi mode fiber ports, PCB coating

EM-C-4GX-6S-6T = Embedded board, 4 Gigabit SFP port, 6 100Base-FX single mode fiber ports, 6 10/100Base-TX ports, PCB coating

EM-C-4GX-6M-6T = Embedded board, 4 Gigabit SFP port, 6 100Base-FX multi mode fiber ports, 6 10/100Base-TX ports, PCB coating

EM-C-3GX-12S = Embedded board, 3 Gigabit SFP port, 12 100Base-FX single mode fiber ports, PCB coating

EM-C-3GX-12M = Embedded board, 3 Gigabit SFP port, 12 100Base-FX multi mode fiber ports, PCB coating

EM-C-3GX-6S-6T = Embedded board, 3 Gigabit SFP port, 6 100Base-FX single mode fiber ports, 6 10/100Base-TX ports, PCB coating

EM-C-3GX-6M-6T = Embedded board, 3 Gigabit SFP port, 6 100Base-FX multi mode fiber ports, 6 10/100Base-TX ports, PCB coating

Distance: Fiber Distance

1310-5 = 1310nm, 5km

1310-40 = 1310nm, 40km

Connector: Fiber Connector

SC = SC Connector

PS: Power Supply

5DC = 4.5-5.5VDC, dual redundant power inputs

12DC = 9-18VDC, dual redundant power inputs

Example Order Codes

SICOM3016BA-C-4GX-12S-1310-40-SC-5DC

4 Gigabit SFP port, 12 100Base-FX single mode fiber ports, 1310nm 40km, PCB coating, 4.5-5.5VDC dual redundant power inputs

SICOM3000BA



Layer 2 6+3G Port Managed Din-Rail Intrinsic Safety Switch

- Green Ethernet solution with ultra low full load power consumption of 5.2 watts
- 3 Gigabit SFP slots and 6 10/100Base-TX ports
- Supports DT-Ring protocols and RSTP
- Intrinsic safety design, meeting intrinsic safety requirements
- Ethernet ports can withstand 1500VAC power frequency voltage
- CE, FCC, coal mining safety certificates
- PCB coating is available



» Overview

The SICOM3000BA series, intrinsically safe low power consumption Gigabit managed DIN-Rail industrial Ethernet switch, was developed by Kyland for industrial information layers in transport, power and mining applications. It offers 3 Gigabit SFP slots and 6 10/100Base-T(X) ports. Its fanless ribbed casing design and ability to handle a wide range of temperatures ensure high reliability in extreme industrial environments. Its full load power consumption is less than 5.2W, and it has passed Mine Safety Certification. Based on Kyvision3.0, CLI, WEB interface, it offers concentrative management. The state-of-the-art OPC software enables the switch's management embedded in various industrial systems.

» Features & Benefits

1. Redundancy Technology: supports DT-Ring protocols (recovery time<50ms) and RSTP
2. Multicast Protocol: supports IGMP Snooping and static multicast
3. Network Partition: supports VLAN, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, SNTP, DHCP
7. Network Security: supports MAC address binding with port, SSH, SSL, TACACS+
8. Device Management: supports FTP upgrade
9. Device Maintenance: supports port mirroring
10. Alarm Output: supports power, port and ring alarms
11. Special Function: supports Link Check and Loop Status Check

» Technical Specifications

Standard

- IEEE 802.3i
- IEEE 802.3u
- IEEE 802.3z
- IEEE 802.3x
- IEEE 802.1p
- IEEE 802.1Q
- IEEE 802.1w

Protocol

- DT-Ring, DT-Ring+, DT-VLAN, RSTP;
- IGMP Snooping;
- VLAN, PVLAN;
- Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, SNTP, DHCP server;
- SSH, SSL, TACACS+;
- FTP; ARP, QoS

Switch Properties

- Priority Queues: 4
- Number of VLANs: 256
- VLAN ID: 1-4094
- Number of Multicast Groups: 256
- MAC Table: 8K
- Packet Buffer: 1Mbit
- Packet Forwarding Rate: 5.4Mpps
- Switching Delay: <5μs

Interface

- Gigabit Ethernet Ports: 3 1000Base SFP slots
- Fast Ethernet Ports: 6 10/100Base-TX RJ45 ports
- Console Port: RS232 (RJ45 connector)
- Alarm Output Contact: 3-pin 5.08mm-spacing plug-in terminal block, 250VAC/350VDC Max, 120mA Max

LED

LEDs on Front Panel:
 Running LED: Run1
 Ring Redundant LED: Run2
 Power LED: PWR1, PWR2
 Interface LED: Link/ACT, Speed (RJ45 port); Link/ACT(GX1-GX3)

Reset Button

Reboot and load default configuration

Transmission Distance

Twisted Pair: 100m (Standard CAT5, CAT5e network cable)
 Multi Mode Fiber: 850nm, 550m (1000M)
 Single Mode Fiber:
 1310nm, 10km/40km (1000M)
 1550nm, 60km/80km (1000M)

Power Requirements

Power Input: 12DCW(9-36VDC)
 Power Terminal:
 6-pin 5.08mm-spacing plug-in terminal block (3.3VDC, 12VDC)
 3-pin 3.81mm-spacing plug-in terminal block (24VDC, 48VDC)
 Power Consumption: <5.2W (full load)

Overload Protection: Support
 Reverse Connection Protection: Support
 Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
 Protection Class: IP40
 Dimensions (WxHxD):
 Integrated device, 75x140x123 mm (2.95x5.51x4.84 in.)
 Embedded board, 61.3x130.5x101 mm (2.41x5.14x3.98 in.)
 Weight: Integrated device, 1.0kg (2.205 pound)
 Embedded board, 0.3kg (0.661 pound)
 Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

384,273 hrs

Warranty

5 years

Approvals

CE, FCC, Coal mining safety certificate

Industrial Standard

EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

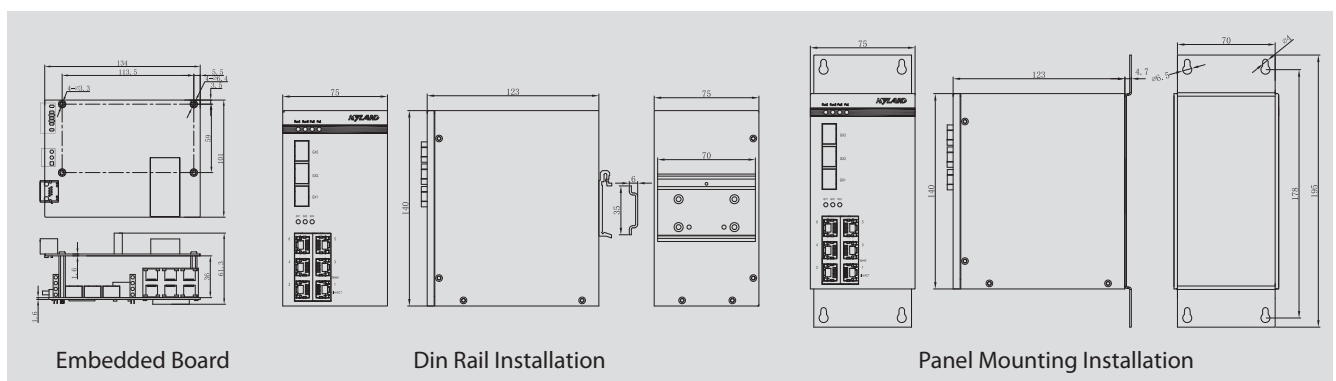
IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry:

IEC61000-6-2
 Railway: EN50155, EN50121-4
 Traffic Control: NEMA TS-2
 Coal Mining: GB/T3836.1, GB/T3836.2, GB/T3836.3, GB/T3836.4

Mechanical Drawing**Ordering Information**

SICOM3000BA - _____ - _____
 Ports PS

Ports

3GX-6T = 3 Gigabit SFP port, 6 10/100Base-TX RJ45 ports
 2GX-6T = 2 Gigabit SFP port, 6 10/100Base-TX RJ45 ports
 C-3GX-6T = 3 Gigabit SFP port, 6 10/100Base-TX RJ45 ports, PCB coating
 EM-C-3GX-6T = Embedded board, 3 Gigabit SFP port, 6 10/100Base-TX RJ45 ports, PCB coating

PS: Power Supply

12DCW = 9-36VDC, dual redundant power inputs

Example Order Codes

SICOM3000BA-EM-C-3GX-6T-12DCW
 Embedded board with 3 Gigabit SFP ports and 6 10/100Base-TX RJ45 ports,
 PCB coating, 9-36VDC dual redundant power inputs

SICOM3009BA



9 Port Managed Embedded Intrinsic Safety Switch

- Green Ethernet solution with ultra low full load power consumption of 3.9 watts
- Intrinsic safety design, meeting intrinsic safety requirements
- Embedded mounting simplifies integration
- Supports DT-Ring protocols and RSTP
- Supports one-key recovery
- Supports auto-generation of network topology
- Provides pins for LED output and system power alarm input
- PCB coating is available
- Ethernet ports can withstand 1500VAC power frequency voltage



» Overview

The SICOM3009BA series, embedded intrinsically safe low power consumption managed industrial Ethernet switch, was developed by Kyland for industrial applications. It offers 3 100Base-FX ports and 6 10/100Base-T(X) ports. Its full load power consumption is less than 3.9W and it has passed mine safety certification. Based on Kyvision3.0, CLI, WEB interface, it offers concentrative management. The state-of-the-art OPC software enables the switch's management embedded in various industrial systems.

» Features & Benefits

1. Redundancy Technology: supports DT-Ring protocols (recovery time<50ms) and RSTP
2. Multicast Protocol: supports IGMP Snooping and static multicast
3. Network Partition: supports VLAN, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2/v3, RMON, LLDP, SNTP, DHCP
7. Network Security: supports MAC address binding with port, SSH, SSL, TACACS+
8. Device Management: supports FTP upgrade
9. Device Maintenance: supports port mirroring
10. Alarm Output: supports power, port and ring alarms
11. Special Function: supports Link Check and Loop Status Check

» Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3u
IEEE 802.3x
IEEE 802.1p
IEEE 802.1Q
IEEE 802.1w

Protocol

DT-Ring, DT-Ring+, DT-VLAN, RSTP;
IGMP Snooping;
VLAN, PVLAN;
Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, SNTP, DHCP server;
SSH, SSL, TACACS+;
FTP; ARP, QoS

Switch Properties

Priority Queues: 4
Number of VLANs: 256
VLAN ID: 1-4094
Number of Multicast Groups: 256
MAC Table: 8K
Packet Buffer: 1Mbit
Packet Forwarding Rate: 1.4Mpps
Switching Delay: <5μs

Interface

Fast Ethernet Fiber Ports: 3 100Base-FX, SM/MM ports, FC/SC/ST connector
 Fast Ethernet RJ45 Ports: 6 10/100Base-TX RJ45 ports
 Console Port: RS232 (RJ45 connector)
 Alarm Output Contact: 6-pin 5.08mm-spacing plug-in terminal block, 250VAC/350VDC Max, 120mA Max, 60W Max
 Alarm Input Contact: 6-pin 5.08mm-spacing plug-in terminal block, TTL level, offering alarm input for external power switching
 LED Output Interface: 2x13 pins

LED

LEDs on Front Panel:
 Running LED: Run
 Alarm LED: Alarm
 LED showing AC/DC power switching: AC/DC
 Interface LED: Link/ACT, Speed (RJ45 port), Link/ACT (fiber ports)

Reset Button

Reboot and load default configuration

Transmission Distance

Twisted Pair:
 100m (Standard CAT5, CAT5e network cable)
 Multi Mode Fiber:
 1310nm, 5km (100M)
 Single Mode Fiber:
 1310nm, 40km/60km (100M)
 1550nm, 60m/80km (100M)

Ordering Information

SICOM3009BA - _____ - _____ - _____ - _____
 Ports Distance Connector PS

Ports

EM-C-3S-6T = Embedded board, 3 100M single mode fiber ports, 6 10/100Base-TX RJ45 ports, PCB coating
 EM-C-3M-6T = Embedded board, 3 100M multi mode fiber ports, 6 10/100Base-TX RJ45 ports, PCB coating
 EM-C-2S-6T = Embedded board, 2 100M single mode fiber ports, 6 10/100Base-TX RJ45 ports, PCB coating
 EM-C-2M-6T = Embedded board, 2 100M multi mode fiber ports, 6 10/100Base-TX RJ45 ports, PCB coating

Distance: Fiber Distance

1310-5 = 1310nm, 5km
 1310-40 = 1310nm, 40km
 1310-60 = 1310nm, 60km
 1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector
 ST = ST Connector
 FC = FC Connector

PS: Power Supply

3.3DCW = 3-5.5VDC

Example Order Codes

SICOM3009BA-EM-C-3M-6T-1310-5-SC-3.3DCW
 Embedded board with 3 100M multi mode fiber ports with 1310nm, 5km, SC connector, and 6 10/100Base-TX RJ45 ports, PCB coating, 3-5.5VDC power supply

Power Requirements

Power Input:
 3.3DCW (3-5.5VDC)
 Power Terminal:
 6-pin 5.08mm-spacing plug-in terminal block
 Power Consumption: <3.9W (full load)

Overload Protection: Support
 Reverse Connection Protection: Support
 Redundancy Protection: Support

Physical Characteristics

Dimensions (W×H×D):
 130×35×107 mm (5.12×1.38×4.21 in.)
 Weight: 0.3kg (0.661 pound)
 Mounting: Embedded mounting

Environmental Limits

Operating Temperature: -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)

MTBF

376,919 hrs

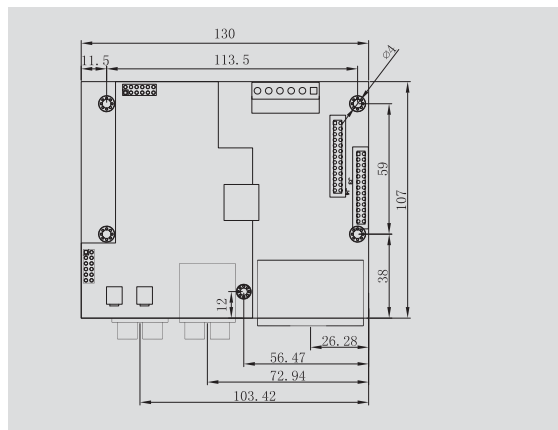
Warranty

5 years

Approvals

CE, FCC

Mechanical Drawing



KIEN1008BA



8 Port Unmanaged Din-Rail Intrinsic Safety Switch

- 8 Fast Ethernet fiber/RJ45 optional ports, supports full fiber port configuration
- Meet the requirements of coal mining safety standard
- Ethernet port can withstand 1500VAC power frequency voltage
- EMC performance reaches industrial level 4
- IP40 protection class



» Overview

KIEN1008BA series industrial Ethernet switches are Kyland latest entry level of intrinsic safety and Green Ethernet solutions specially designed for coal mining industry which requires significant low power consumption and intrinsic safety features. KIEN1008BA is an unmanaged switch equipped with maximum 8 100M fiber ports or 10/100M copper ports which consumes as low as 5.5 watts under full load. Over current and over voltage protection, EMC-protection power supply, outstanding EMC protection on RJ45 ports, PCB coating process guarantee the reliable operation of the devices.

Integrated device with housing and bare board (embedded Ethernet switch) are both available on KIEN1008BA. The bare board can be installed in customer's existing devices easily and enrich the Ethernet communication functions. KIEN1008BA supports 3.3VDC and 12VDC power supplies which are the main power options for coal mining industries.

» Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3u

Switch Properties

MAC Table: 8K
Packet Buffer: 1Mbit
Packet Forwarding Rate: 1.2Mpps
Switching Delay: <5μs

Interface

Fast Ethernet Fiber Ports: max 8 100Base-FX, SM/MM ports, FC/SC/ST connector

Fast Ethernet RJ45 Port: max 4 10/100Base-TX RJ45 ports

Alarm Contact: 3-pin 5.08mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

LEDs on Front Panel:

Running LED: Run

Power LED: PWR1, PWR2

Interface LED: Link/ACT (100M fiber ports)

Transmission Distance

Twisted Pair:

100m (Standard CAT5, CAT5e network cable)

Multi Mode Fiber:

1310nm, 5km (100M)

Single Mode Fiber:

1310nm, 40km/60km (100M)

1550nm, 60m/80km (100M)

Power Requirements

Power Input:

3.3DCW (3-5.5VDC), 12DC (9-18VDC)

Power Terminal:

5-pin 5.08mm-spacing plug-in terminal block

Power Consumption: <5.5W

Overload Protection: Support

Reverse Connection Protection: Support

Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
 Protection Class: IP40
 Dimensions (W×H×D):
 53.6×135×106.5 mm (2.11×5.31×4.19 in.)
 Weight: 0.76kg (1.676 pound)
 Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

385,000 hrs

Warranty

5 years

Approvals

CE, FCC, Coal mining safety certificate

Industrial Standard

EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

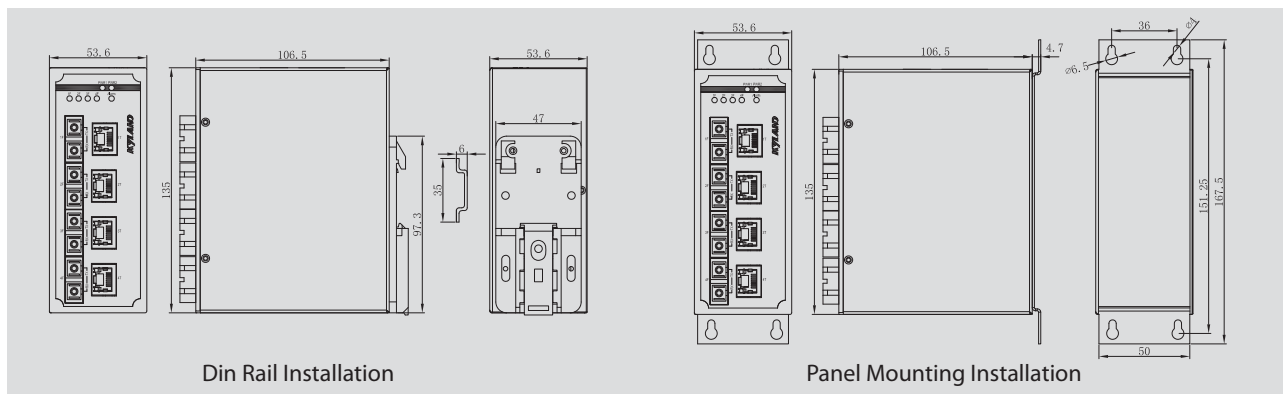
Machinery:

IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

Coal Mining: GB/T3836.1, GB/T3836.2, GB/T3836.3, GB/T3836.4

Mechanical Drawing**Ordering Information**

KIEN1008BA - _____ - _____ - _____ - _____
 Ports Distance Connector PS

Ports

4M-4T = 4 100M multi mode fiber ports, 4 10/100Base-TX RJ45 ports
 4S-4T = 4 100M single mode fiber ports, 4 10/100Base-TX RJ45 ports
 EM-C-4M-4T = Embedded board, 4 100M multi mode fiber ports, 4 10/100Base-TX RJ45 ports, PCB coating
 EM-C-4S-4T = Embedded board, 4 100M single mode fiber ports, 4 10/100Base-TX RJ45 ports, PCB coating
 6M-2T = 6 100M multi mode fiber ports, 2 10/100Base-TX RJ45 ports
 6S-2T = 6 100M single mode fiber ports, 2 10/100Base-TX RJ45 ports
 EM-C-6M-2T = Embedded board, 6 100M multi mode fiber ports, 2 10/100Base-TX RJ45 ports, PCB coating
 EM-C-6S-2T = Embedded board, 6 100M single mode fiber ports, 2 10/100Base-TX RJ45 ports, PCB coating
 8M = 8 100M multi mode fiber ports
 8S = 8 100M single mode fiber ports
 EM-C-8M = Embedded board, 8 100M multi mode fiber ports, PCB coating
 EM-C-8S = Embedded board, 8 100M single mode fiber ports, PCB coating

Distance: Fiber Distance

1310-5 = 1310nm, 5km
 1310-40 = 1310nm, 40km
 1310-60 = 1310nm, 60km
 1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector
 ST = ST Connector
 FC = FC Connector

PS: Power Supply

3.3DCW = 3-5.5VDC
 12DC = 9-18VDC

Example Order Codes

KIEN1008BA-EM-C-4M-4T-1310-5-SC-3.3DCW
 Embedded board with 4 100M multi mode fiber ports with 1310nm, 5km, SC connector, and 4 10/100Base-TX RJ45 ports, PCB coating, 3-5.5VDC power supply

SICOM3005



6 Port Managed Din-Rail Serial Server Function Integrated Programmable Switch

- Supports DT-Ring protocols and MSTP
- Integrates industrial Ethernet switch with serial server, supports 4 RS232/RS485 ports
- Serial ports support TCP Server/Client, UTP working mode, supports one-key recovery
- EMC performance reaches industrial level 4
- IP40 protection class
- CE, FCC certificates



Overview

SICOM3005 is a serial server function integrated programmable industrial Ethernet switch. It is developed under Linux platform supporting redevelopment. It supports 4 serial ports, 2 100M copper/fiber ports and 3 10/100Base-T(X) ports. Its fanless ribbed casing design and ability to handle a wide range of temperatures ensure high reliability in extreme industrial environments. Based on Kyvision3.0, CLI, WEB interface, it offers concentrative management. The state-of-the-art OPC software enables the switch's management embedded in various industrial systems.

Features & Benefits

- Redundancy Technology: supports DT-Ring protocols (recovery time < 50ms) and MSTP
- Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
- Network Partition: supports VLAN, PVLAN
- Service Quality: supports QoS
- Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
- Network Management and Monitoring: supports CLI, Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2, RMON, LLDP, SNTP, DHCP
- Network Security: supports SSH, SSL, ACL
- Device Management: supports FTP upgrade
- Device Maintenance: supports port mirroring
- Alarm Output: supports IP/MAC conflicts, power, port and ring alarms
- Special Function: supports Link Check and Loop Status Check

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s

Protocol

DT-Ring, DT-Ring+, DT-VLAN, MSTP;
 IGMP Snooping, GMRP;
 VLAN, PVLAN;
 Telnet, HTTP, HTTPS, SNMPv1/v2, RMON, LLDP, SNTP, DHCP server;
 SSH, SSL, ACL;
 FTP;
 ARP, QoS

Switch Properties

Priority Queues: 4
 Number of VLANs: 256
 VLAN ID: 1-4094
 Number of Multicast Groups: 256
 MAC Table: 8K
 Packet Buffer: 2Mbit
 Packet Forwarding Rate: 0.9Mpps
 Switching Delay: < 5μs

Interface

Fast Ethernet Fiber Ports: max 2 100Base-FX SM/MM ports, FC/SC/ST connector
 Fast Ethernet RJ45 Ports: max 6 10/100Base-TX RJ45 ports
 Serial Ports: max 4 RS232/RS485 ports, 20-pin 3.81mm-spacing terminal block
 Console Port: RS232 (RJ45 connector)
 Alarm Contact: 3-pin 3.81mm-spacing plug-in terminal block, 250VAC/220VDC Max, 2A Max, 60W Max

LED

LEDs on Front Panel:
 Running LED: Run1
 Serial Server Running LED: Run2
 Power LED: PWR1, PWR2
 Transmitting and Receiving LEDs of Serial Ports: T1-T4, R1-R4
 Interface LED: Link/ACT, Speed (RJ45 port), Link/ACT (100M fiber ports)

Reset Button

Reboot and load default configuration

Transmission Distance

Serial Cable: RS232: 15m; RS485: 1200m
 Twisted Pair: 100m (Standard CAT5, CAT5e network cable)
 Multi Mode Fiber: 1310nm, 5km (100M)
 Single Mode Fiber: 1310nm, 40km/60km (100M)
 1550nm, 60km/80km (100M)

Power Requirements

Power Input: 12DC (9-18VDC), 24DC (18-36VDC), 48DC (36-72VDC)
 Power Terminal: 5-pin 5.08mm-spacing plug-in terminal block
 Power Consumption: <10W
 Overload Protection: Support
 Reverse Connection Protection: Support
 Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
 Protection Class: IP40
 Dimensions (WxHxD): 55.4x139x119.5 mm
 (2.18x5.47x4.70 in.)
 Weight: 0.6kg (1.323 pound)
 Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

307,699 hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

EMI: FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

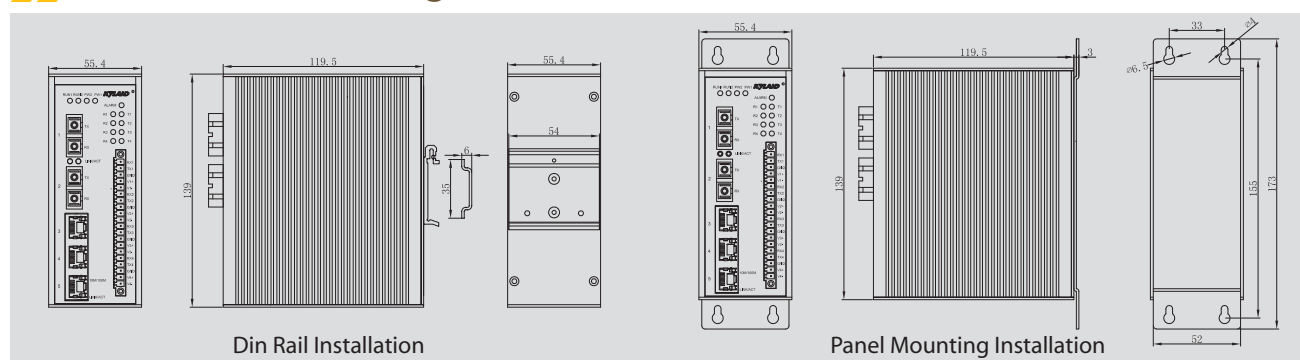
IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4
 Traffic Control: NEMA TS-2

Mechanical Drawing**Ordering Information**

SICOM3005 - - - -
 Ports Distance Connector PS

Ports

2M-3T-4D = 2 100Base-FX multi mode ports, 3 10/100Base-TX RJ45 ports, 4 RS232/485 serial ports
 2S-3T-4D = 2 100Base-FX single mode ports, 3 10/100Base-TX RJ45 ports, 4 RS232/485 serial ports
 5T-4D = 5 10/100Base-TX RJ45 ports, 4 RS232/485 serial ports
 2M-4T = 2 100Base-FX multi mode ports, 4 10/100Base-TX RJ45 ports
 2S-4T = 2 100Base-FX single mode ports, 4 10/100Base-TX RJ45 ports
 6T = 6 10/100Base-TX RJ45 port

Distance: Fiber Distance

1310-5 = 1310nm, 5km
 1310-40 = 1310nm, 40km
 1310-60 = 1310nm, 60km
 1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC connectors
 ST = ST connectors
 FC = FC connectors

PS: Power Supply

12DC = 9-18VDC, dual redundant power inputs
 24DC = 18-36VDC, dual redundant power inputs
 48DC = 36-72VDC, dual redundant power inputs

KPS2204 KPS1000



6 Port Managed Din-Rail Serial Device Server

- 2 10/100Base-TX RJ45 ports and 4 RS232/422/485 serial ports
- Supports Reset button
- Serial ports have 15KV ESD protection circuit
- Supports secondary development on Linux system
- Interfaces and power cable offer surge protection
- EMC performance reaches industrial level 4
- IP40 protection class



Overview

KPS2204 is a programmable serial server developed for the network applications of serial devices. KPS2204 combines Ethernet and serial data communication, and offers protocol transition between Ethernet and serial protocol. KPS2204 is specially designed for harsh and dangerous industrial environments. It has solid and closed enclosure, fanless design with single rib heat dissipation surface, EMC protection properties for power supply over current or over voltage, EMC protection properties for RJ45 and RS232/422/485 data ports. Dual power inputs also ensure the reliability of device.

KPS2204 supports 2 10/100Base-TX RJ45 ports and 4 DB9 serial ports which can be RS232, RS422 or RS485. It is a managed device which supports TELNET, WEB and SNMP based management software. The serial device server inside the KPS2204 is based on ARM embedded platform.

KPS1000 is the embedded board of serial device server which is the part of KPS2204. This embedded serial device server card can be installed in other devices enriching the serial server functionalities.

Features & Benefits

- Transmission Protocol: supports TCP and UDP protocols
- Network Management and Monitoring: supports Telnet, WEB management methods, SNMPv1/v2, DHCP
- Network Security: supports SSH, SSL
- Device Management: supports FTP/TFTP upgrade

Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE802.3x

Protocol

TCP, UDP; FTP, TFTP;
Telnet, HTTP, SNMPv1/v2, DHCP;
SSL, SSH; ARP, TCP/IP, ICMP

Interface

Fast Ethernet RJ45 Ports: 2 10/100Base-TX RJ45 ports
Serial Ports: 4 RS232/RS422/RS485 ports with DB9 connector
Bit error rate of data transmission: 0
Electrical characteristic: compliant with 3-wire RS232, 4-wire RS422 and 2-wire RS485 standards
Data bits: 5, 6, 7, 8 (Default: 8)
Stop bits: 1, 1.5, 2 (Default: 1)
Parity bit: None, Even, Odd, Space, Mark (Default: None)
Flow control: XON/XOFF (Default: XOFF)
Baud rate: 50bps-1000Kbps (Default: 9600)

LED

LEDs on Front Panel:
Running LED: Run
Power LED: PWR1, PWR2
Interface LED: Link, ACT, copper ports; T1-T4, R1-R4 serial ports

Reset Button

Reboot and load default configuration

Transmission Distance

Serial Cable: RS232: 15m; RS422/485: 1200m
Twisted Pair: 100m (Standard CAT5, CAT5e network cable)

Power Requirements

Power Input:
KPS2204: 24DC (18-36VDC), 48DC (36-72VDC)
KPS1000: 3.3DC (3.15-3.45VDC)
Power Terminal: 5-pin 5.08mm-spacing plug-in terminal block
Power Consumption: 3W

Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Aluminum, fanless
Protection Class: IP40
Dimensions (WxHxD): 55.4x139x119.5 mm (2.18x5.47x4.70 in.)
Weight:
KPS2204: 0.5kg (1.102 pound)
KPS1000: 0.05kg (0.11 pound)
Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

333,755 hrs

Warranty

5 years

Approvals

CE, FCC

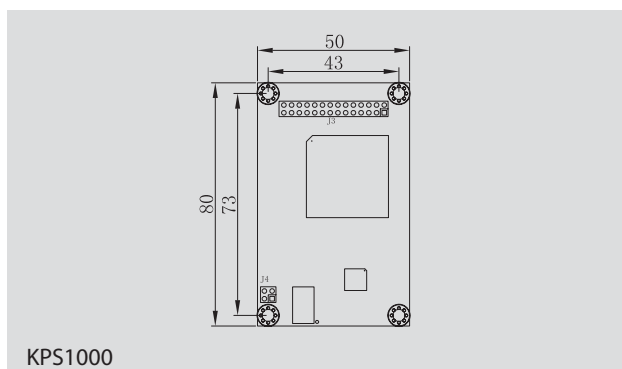
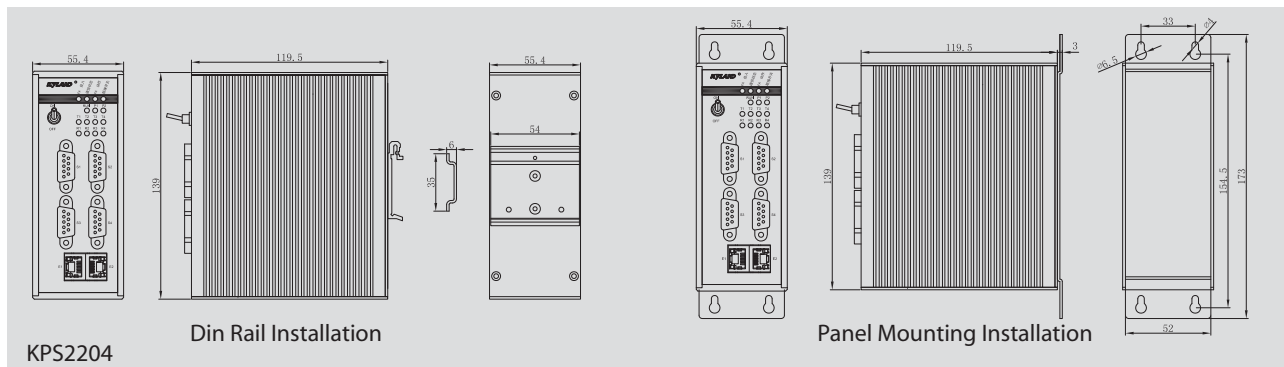
Industrial Standard

EMI:
FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:
IEC61000-4-2 (ESD): $\pm 8\text{kV}$ (contact), $\pm 15\text{kV}$ (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: $\pm 4\text{kV}$; Data Port: $\pm 2\text{kV}$
IEC61000-4-5 (Surge): Power Port: $\pm 2\text{kV}/\text{DM}$, $\pm 4\text{kV}/\text{CM}$; Data Port: $\pm 2\text{kV}$
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:
IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2
Power: IEC61850-3, IEE1613
Railway: EN50155, EN50121-4
Traffic Control: NEMA TS-2

Mechanical Drawing**Ordering Information**

KPS2204-2T-4D-232/422/485-24DC = 2 10/100Base-TX RJ45 ports, 4 RS232/433/485 serial ports, 18-36VDC power supply

KPS2204-2T-4D-232/422/485-48DC = 2 10/100Base-TX RJ45 ports, 4 RS232/433/485 serial ports, 36-72VDC power supply

KPS1000-EM-C-1T-4D-232/485-3.3DC = Embedded serial device server, 1 10/100Base-TX RJ45 ports, 4 RS232/485 serial ports, 3.15-3.45VDC power supply, PCB coating

KOM300A



3 Port Unmanaged Din-Rail Copper to Fiber Media Converter

- Green Ethernet solution with ultra low power consumption design
- As low as 2.2 watts full load power consumption
- 2 10/100Base-TX ports and 1 100Base-FX port
- Redundant AC/DC power inputs with wide voltage range
- EMC performance reaches industrial level 4
- IP40 protection class
- UL508 ,Class 1 Div 2 ,CE, FCC certificates



Overview

The KOM300A is a new member of Kyland ultra low power consumption Green Ethernet series, its full load power consumption is as low as 3.1 watts. The KOM300A industrial media convertor has 1 100Base-FX fiber port and 2 10/100Base-TX copper ports. It supports Telnet, WEB, Kyvision management and works in wide operating temperature range from -40 to 85°C.

The KOM300A series provide 24DCW(18-72VDC) and 220AC/DCW (85-264VAC/77-300VDC) power supply. It supports IP40 protection class and EMC industrial level 4 requirements. These media convertors are specially designed for harsh industrial environments certified by UL508 and UL Class I Div 2 certifications.

Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3u

Switch Properties

MAC Table: 2K
Packet Buffer: 1Mbit
Packet Forwarding Rate: 0.8Mpps
Switching Delay: <5μs

Interface

Fast Ethernet Fiber Ports: 1 100Base-FX, SM/MM port, FC/SC/ST connector
Fast Ethernet RJ45 Ports: 2 10/100Base-TX RJ45 ports

LED

LEDs on Front Panel:
Power LED: PWR1, PWR2
Interface LED: Link/ACT, Speed (RJ45 port)

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber:
1310nm, 5km (100M)
Single Mode Fiber:
1310nm, 40km/60km (100M)
1550nm, 60km/80km (100M)

Power Requirements

Power Input:
24DCW (18-72VDC), 220AC/DCW (85-264VAC/77-300VDC)
Power Terminal:
5-pin 5.08mm-spacing plug-in terminal block
Power Consumption: 2.2W (full load)

Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
Protection Class: IP40
Dimensions (WxHxD):
30x115x91.5mm (1.18x4.53x3.60 in.)
Weight: 0.3kg (0.661 pound)
Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

462,741 hrs

Warranty

5 years

Approvals

UL508, Class 1 Div 2, CE, FCC

Industrial Standard

EMI:
FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

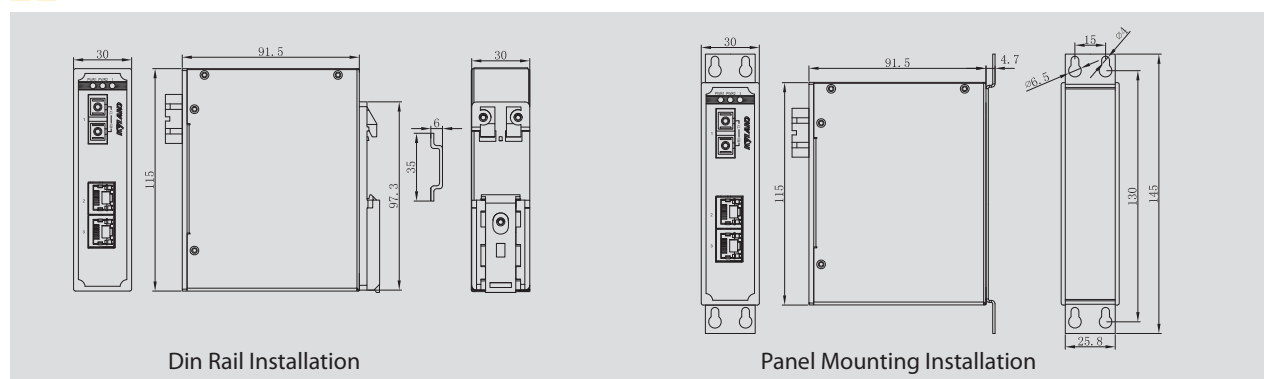
IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

Mechanical Drawing**Ordering Information**

KOM300A - _____ - _____ - _____ - _____
Ports Distance Connector PS

Ports

1M-2T = 1 100Base-FX multi mode ports, 2 10/100Base-TX ports
1S-2T = 1 100Base-FX single mode ports, 2 10/100Base-TX ports

Distance: Fiber Distance

1310-5 = 1310nm, 5km
1310-40 = 1310nm, 40km
1310-60 = 1310nm, 60km
1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector
ST = ST Connector
FC = FC Connector

PS: Power Supply

24DCW = 18-72VDC, dual redundant power inputs
220AC/DCW = 220AC/DCW (85-264VAC/77-300VDC), single power input

Example Order Codes

KOM300A-1M-2T-1310-5-SC-24DCW

1 100Base-FX multi mode fiber ports, 1310nm, 5km, SC connectors, and 2 10/100Base-TX copper ports, 18-72VDC, dual redundant power inputs

KOM300M



3 Port Managed Din-Rail Copper to Fiber Media Converter

- Green Ethernet solution with ultra low power consumption design
- As low as 2.7 watts full load power consumption
- 2 10/100Base-TX ports and 1 100Base-FX port
- Supports remote monitoring of device status
- Redundant AC/DC power inputs with wide voltage range
- EMC performance reaches industrial level 4
- IP40 protection class
- UL508 ,Class 1 Div 2 ,CE, FCC certificates



Overview

The KOM300M is a new member of Kyland ultra low power consumption Green Ethernet series, its full load power consumption is as low as 2.2 watts. The KOM300M industrial media convertor has 1 100Base-FX fiber port and 2 10/100Base-TX copper ports. It supports Telnet, WEB, Kyvision management and works in wide operating temperature range from -40 to 85°C.

The KOM300M series provide 24DCW(18-72VDC) redundant power inputs and support IP40 protection class and EMC industrial level 4 requirements. These media converters are specially designed for harsh industrial environments certified by UL508 and UL Class I Div 2 certifications.

Features & Benefits

1. Network Management and Monitoring: supports Telnet, WEB management methods, Kyvision centralized management, SNMPv1/v2, LLDP
2. Device Management: supports FTP/TFTP upgrade

Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3u

Protocol

Telnet, SNMPv1/v2, LLDP, HTTP, Modbus TCP, FTP, TFTP

Switch Properties

MAC Table: 2K
Packet Buffer: 1Mbit
Packet Forwarding Rate: 0.8Mpps
Switching Delay: <5μs

Interface

Fast Ethernet Fiber Ports: 1 100Base-FX, SM/MM port, FC/SC/ST connector
Fast Ethernet RJ45 Ports: 2 10/100Base-TX RJ45 ports

LED

LEDs on Front Panel:
Running LED: Run
Power LED: PWR1, PWR2
Interface LED: Link/ACT, Speed (RJ45 port)

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber:
1310nm, 5km (100M)
Single Mode Fiber:
1310nm, 40km/60km (100M)
1550nm, 60km/80km (100M)

Power Requirements

Power Input:
24DCW (18-72VDC)
Power Terminal:
5-pin 5.08mm-spacing plug-in terminal block
Power Consumption: 2.7W (full load)

Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
Protection Class: IP40
Dimensions (WxHxD):
30x115x91.5mm (1.18x4.53x3.60 in.)
Weight: 0.3kg (0.661 pound)
Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

462,741 hrs

Warranty

5 years

Approvals

UL508 , Class 1 Div 2 , CE, FCC

Industrial Standard

EMI:
FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

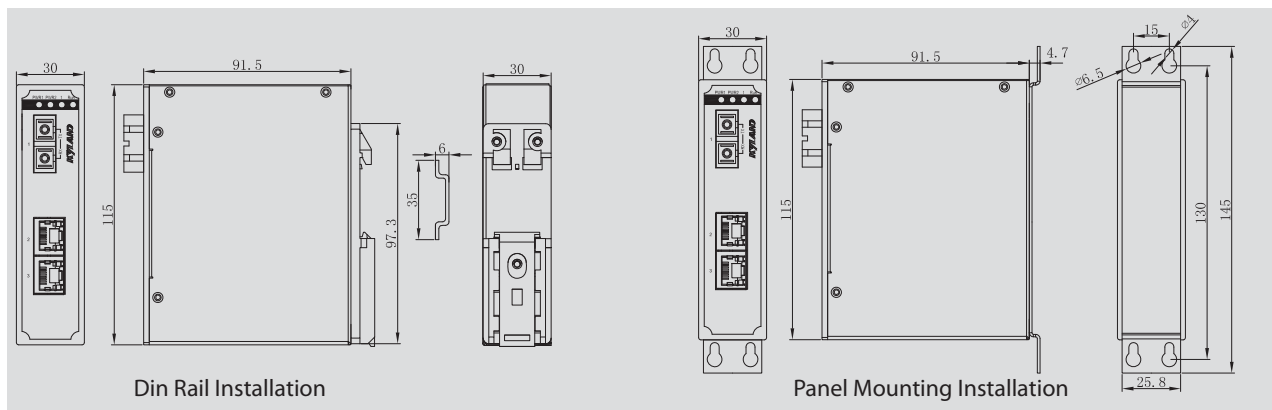
IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
IEC60068-2-27 (Shock)
IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

Mechanical Drawing**Ordering Information**

KOM300M - _____ - _____ - _____ - _____
Ports Distance Connector PS

Ports

1M-2T = 1 100Base-FX multi mode ports, 2 10/100Base-TX ports
1S-2T = 1 100Base-FX single mode ports, 2 10/100Base-TX ports

Distance: Fiber Distance

1310-5 = 1310nm, 5km
1310-40 = 1310nm, 40km
1310-60 = 1310nm, 60km
1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector
ST = ST Connector
FC = FC Connector

PS: Power Supply

24DCW = 18-72VDC, dual redundant power inputs

Example Order Codes

KOM300M-1M-2T-1310-5-SC-24DCW
1 100Base-FX multi mode fiber ports, 1310nm, 5km, SC connectors, and 2 10/100Base-TX copper ports, 18-72VDC, dual redundant power inputs

KOM300F

3 Port Unmanaged Din-Rail Copper to Fiber Media Converter



- 2 10/100Base-TX ports and 1 100Base-FX port
- EMC performance reaches industrial level 4
- IP30 protection class
- CE, FCC certificates



Overview

KOM300F is an industrial fiber optic converter which can work in harsh electromagnetic environment and wide range of temperature. KOM300F supports not only 12VDC, 24VDC, 48VDC, but also support high voltage 110VDC and 220VAC/DC.

Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3u

Switch Properties

MAC Table: 2K
Packet Buffer: 1Mbit
Packet Forwarding Rate: 0.8Mpps
Switching Delay: <5μs

Interface

Fast Ethernet Fiber Ports: 1 100Base-FX, SM/MM port, FC/SC/ST connector
Fast Ethernet RJ45 Ports: 2 10/100Base-TX RJ45 ports

LED

LEDs on Front Panel:
Running LED: Run
Power LED: PWR1, PWR2
Interface LED: Link/ACT, Speed (RJ45 port)

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber:
1310nm, 5km (100M)
Single Mode Fiber:
1310nm, 40km/60km (100M)
1550nm, 60km/80km (100M)

Power Requirements

Power Input:
Power Input: 12DCW(9-36VDC),48DC(36-72VDC),110DC(70-140VDC),
220AC/DC(85-264VAC/120-370VDC)
Power Terminal:
3-pin 3.81mm-spacing plug-in terminal block
Power Consumption: <4.1W

Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
Protection Class: IP30
Dimensions (WxHxD):
36x100x75mm (1.42x3.94x2.95 in.)
Weight: 0.3kg (0.661 pound)
Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

462,741 hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

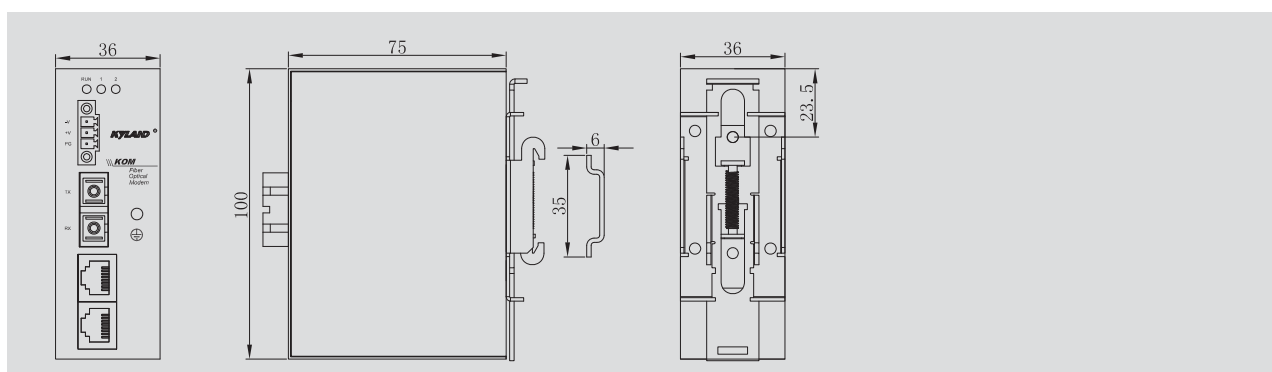
Machinery:

IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

▶▶ Mechanical Drawing



▶▶ Ordering Information

KOM300F - _____ - _____ - _____ - _____
 Ports Distance Connectors PS

Ports

1M-2T = 1 100Base-FX multi mode ports, 2 10/100Base-TX ports
 1S-2T = 1 100Base-FX single mode ports, 2 10/100Base-TX ports

Distance: Fiber Distance

1310-5 = 1310nm, 5km
 1310-40 = 1310nm, 40km
 1310-60 = 1310nm, 60km
 1550-80 = 1550nm, 80km

Example Order Codes

KOM300F-1M-2T-1310-5-SC-220AC/DC

1 100Base-FX multi mode fiber ports, 1310nm, 5km, SC connectors, and 2 10/100Base

Connector: Fiber Connector

SC = SC Connector
 ST = ST Connector
 FC = FC Connector

PS: Power Supply

12DCW = 9-36VDC, single power input
 48DC = 36-72VDC, single power input
 110DC = 70-140VDC, single power input
 220AC/DC = 120-370VDC/85-264VAC, single power inputpower input

KOM600



2 Port Unmanaged Din-Rail Copper to Fiber LFP Media Converter

- Green Ethernet solution with ultra low power consumption design
- As low as 2 watts full load power consumption
- 1 10/100Base-TX port, 1 100Base-FX port
- Supports LFP (Link Fault Pass-Through)
- Redundant AC/DC power inputs with wide voltage range
- EMC performance reaches industrial level 4
- IP40 protection class
- UL508 , Class 1 Div 2 , CE, FCC certificates



Overview

The KOM600 is a new member of Kyland ultra low power consumption Green Ethernet series, its full load power consumption is as low as 2 watts. The KOM600 industrial media convertor has 1 100Base-FX fiber port and 1 10/100Base-TX copper port. It supports wide operating temperature range from -40 to 85°C.

The KOM600 series provide 24DCW (18-72VDC) redundant power inputs and support IP40 protection class and EMC industrial level 4 requirements. These media convertors are specially designed for harsh industrial environments certified by UL508 and UL Class I Div 2 certifications.

Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3u
IEEE 802.3ab
IEEE802.3z

Interface

Fast Ethernet Fiber Port: 1 100Base-FX, SM/MM port, FC/SC/ST connector
Fast Ethernet RJ45 Port: 1 10/100Base-TX RJ45 port

LED

LEDs on Front Panel:
Power LED: PWR1, PWR2
Interface LED: Link/ACT, Speed (RJ45 port)

Transmission Distance

Twisted Pair:
100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber:
1310nm, 5km (100M)
Single Mode Fiber:
1310nm, 40km/60km (100M)
1550nm, 60km/80km (100M)

Power Requirements

Power Input:
24DCW (18-72VDC)
Power Terminal:
5-pin 5.08mm-spacing plug-in terminal block
Power Consumption: 2W (full load)

Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
Protection Class: IP40
Dimensions (W×H×D):
30×115×91.5 mm (1.18×4.53×3.60 in.)
Weight: 0.46kg (1.014 pound)
Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

546,000 hrs

Warranty

5 years

Approvals

UL508 , Class 1 Div 2 , CE, FCC

Industrial Standard

EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

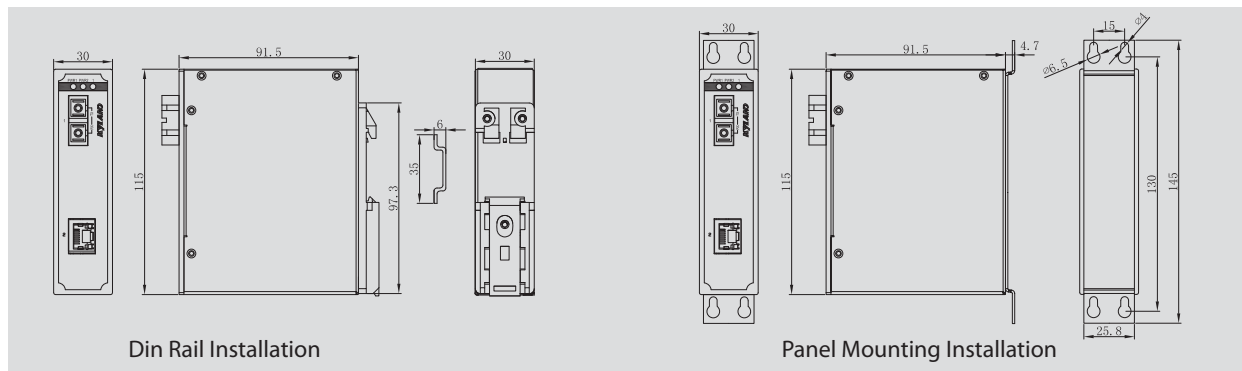
Machinery:

IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

Traffic: NEMA TS-2

Mechanical Drawing**Ordering Information**

KOM600 - _____ - _____ - _____ - _____
 Ports Distance Connector PS

Ports

1M-1T = 1 100Base-FX multi mode ports, 1 10/100Base-TX ports
 1S-1T = 1 100Base-FX single mode ports, 1 10/100Base-TX ports

Distance: Fiber Distance

1310-5 = 1310nm, 5km
 1310-40 = 1310nm, 40km
 1310-60 = 1310nm, 60km
 1550-80 = 1550nm, 80km

Connector: Fiber Connector

SC = SC Connector
 ST = ST Connector
 FC = FC Connector

PS: Power Supply

24DCW = 18-72VDC, dual redundant power inputs

Example Order Codes

KOM600-1M-1T-1310-5-SC-24DCW

1 100Base-FX multi mode fiber ports, 1310nm, 5km, SC connectors, and 1 10/100Base-TX copper ports, 18-72VDC, dual redundant power inputs

KOM600G

2G Port Gigabit Unmanaged Din-Rail Copper to Fiber Media Converter



- Green Ethernet solution with ultra low power consumption design
- As low as 4.5 watts full load power consumption
- 1 10/100/1000Base-TX port, 1 Gigabit SFF port
- Supports LFP (Link Fault Pass-Through)
- Redundant AC/DC power inputs with wide voltage range
- EMC performance reaches industrial level 4
- IP40 protection class
- CE, FCC certificates



Overview

The KOM600G industrial Gigabit media converters are designed to provide reliable and stable 10/100/1000BaseT(X) to 1000Base-FX SFP media conversion in harsh industrial environments. KOM600G supports 24DCW (18-72VDC) redundant power inputs, IP40 protection class and meets EMC industrial level 4 requirements. Its operating temperature ranges from -40 to 85°C. Belonging to Kyland Green Ethernet switches series, KOM600G's full load power consumption is as low as 4.5 watts.

Technical Specifications

Standard

IEEE 802.3i
IEEE 802.3u
IEEE 802.3ab
IEEE802.3z

Switch Properties

MAC Table: 8K
Packet Buffer: 1Mbit
Packet Forwarding Rate: 1.2Mpps
Switching Delay: <5µs

Interface

Gigabit SFF Port: 1 1000Base SFF port
Gigabit RJ45 Port: 1 10/100/1000Base-TX RJ45 port

LED

LEDs on Front Panel:
Power LED: PWR1, PWR2
Interface LED: Link/ACT, Speed (RJ45 port)

Transmission Distance

Twisted Pair: 100m (Standard CAT5, CAT5e network cable)
Multi Mode Fiber: 850nm, 550m (1000M)
Single Mode Fiber: 1310nm, 10km/40km (1000M); 1550nm, 60km/80km (1000M)

Power Requirements

Power Input:
24DCW (18-72VDC)
Power Terminal:
5-pin 5.08mm-spacing plug-in terminal block
Power Consumption: 4.5W (full load)

Overload Protection: Support
Reverse Connection Protection: Support
Redundancy Protection: Support

Physical Characteristics

Housing: Metal, fanless
Protection Class: IP40
Dimensions (W×H×D):
30×115×91.5 mm (1.18×4.53×3.60 in.)
Weight: 0.46kg (1.014 pound)
Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

546,000 hrs

Warranty

5 years

Approvals

UL508 , Class 1 Div 2 , CE, FCC

Industrial Standard

EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

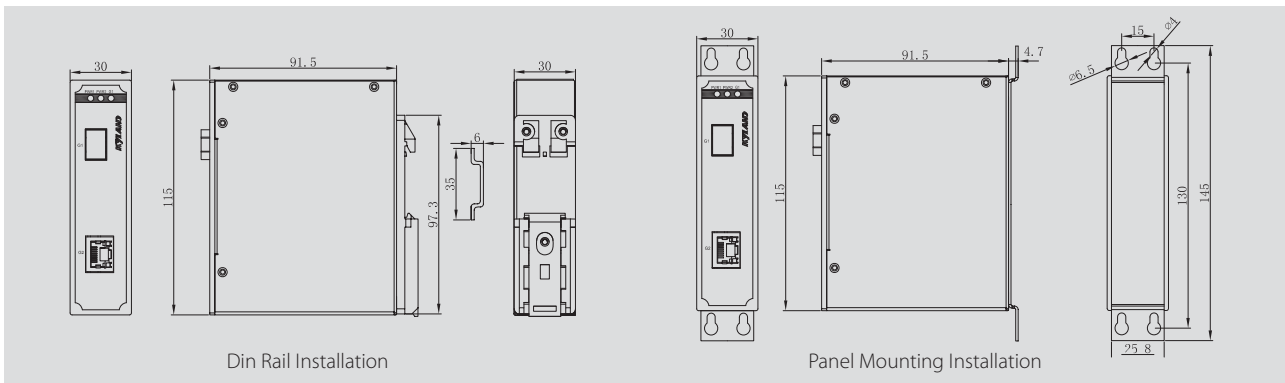
IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-2GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

Mechanical Drawing

Din Rail Installation

Panel Mounting Installation

Ordering Information

KOM600G - _____ - _____
 Ports PS

Ports

1GX-1GE = 1 Gigabit SFP port, 1 10/100/1000Base-TX RJ45 port

PS: Power Supply

24DCW = 18-72VDC, dual redundant power inputs

Example Order Codes

KOM600G-1GX-1GE-24DCW

1 Gigabit SFP port, 1 10/100/1000Base-TX RJ45 port, 18-72VDC, dual redundant power inputs

KOM200

Unmanaged Din-Rail Serial to Fiber Media Converter



- One fiber port, three types of serial ports (RS232/RS422/RS485)
- Transparent communication without the need of debugging, plug and play
- Serial ports have 15KV ESD protection circuit
- Serial ports support hot plugging
- Abundant power supply options
- EMC performance reaches industrial level 4



Overview

KOM200 provides serial to fiber switching for the low-rate signals of RS232, RS485 and RS422. It is specially designed for harsh industrial environment that has special requirements on electromagnetic immunity.

Technical Specifications

Standard

RS232
RS422
RS485

Interface

Fiber Ports: one SM/MM fiber port, FC/SC/ST connector
Serial Ports: 3 serial ports (RS232/RS422/RS485), 8-pin 3.81mm-spacing terminal block,
RS485 interface can be connected to 32-128 nodes

LED

LEDs on Front Panel:
Running LED: Run
Interface LED: Link/ACT, Data (1, 2)

Transmission Distance

Serial Cable:
RS232: 15m; RS422/RS485: 1200m
Multi Mode Fiber:
1310nm, 5km (100M)
Single Mode Fiber:
1310nm, 40km/60km (100M)
1550nm, 60km/80km (100M)

Power Requirements

Power Input:
12DCW(9-36VDC),48VDC (36-72VDC), 110DC
(70-140VDC), 220AC/DC (85-264VAC/120-370VDC)
Power Terminal: 3-pin 3.81mm-spacing plug-in terminal block
Power Consumption: <3W

Overload Protection: Support
Reverse Connection Protection: Support

Physical Characteristics

Housing: Metal, fanless
Protection Class: IP30
Dimensions (WxHxD):
36x100x75mm (1.42x3.94x2.95 in.)
Weight: 0.3kg (0.661 pound)
Mounting: DIN-Rail or Panel mounting

Environmental Limits

Operating Temperature: -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)

MTBF

1,162,867 hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

EMI:
 FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

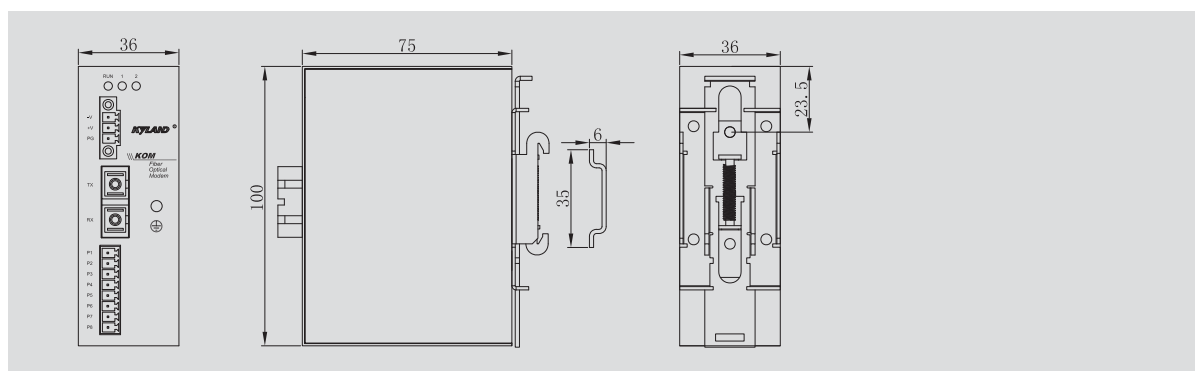
IEC61000-4-2 (ESD): ±8kV (contact), ±15kV (air)
 IEC61000-4-3 (RS): 10V/m (80MHz-1GHz)
 IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV
 IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV
 IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)
 IEC61000-4-8 (Power frequency magnetic field): 100A/m (cont.), 1000A/m (1s-3s)
 IEC61000-4-9 (Pulsed magnetic field): 1000A/m
 IEC61000-4-10 (Damped oscillation): 30A/m
 IEC61000-4-12 (Oscillatory wave): 2.5kV/CM, 1kV/DM
 IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)
 IEC60068-2-27 (Shock)
 IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

Mechanical Drawing**Ordering Information**

KOM200 - _____ - _____ - _____ - _____
 Ports Distance Connectors PS

Ports

1M-232/422 = 1 100Base-FX multi mode ports, 1 RS232 serial port, 1 RS422 serial port

1S-232/422 = 1 100Base-FX single mode ports, 1 RS232 serial port, 1 RS422 serial port

1M-485/232 = 1 100Base-FX multi mode ports, 2 RS232 serial ports, 1 RS485 serial port

1S-485/232 = 1 100Base-FX single mode ports, 2 RS232 serial ports, 1 RS485 serial port

1M-485/232A = 1 100Base-FX multi mode ports, 2 RS232 serial ports, 1 RS485 serial port (The 2nd channel of RS232 and the 3rd channel of RS485 are multiplexing)

1S-485/232A = 1 100Base-FX single mode ports, 2 RS232 serial ports, 1 RS485 serial port (The 2nd channel of RS232 and the 3rd channel of RS485 are multiplexing)

Distance: Fiber Distance

1310-5 = 1310nm, 5km

1310-40 = 1310nm, 40km

Connector: Fiber Connector

SC = SC Connector

ST = ST Connector

FC = FC Connector

PS: Power Supply

12DCW = 9-36VDC, single power input

48DC = 36-72VDC, single power input

110DC = 70-140VDC, single power input

220AC/DC = 120-370VDC/85-264VAC, single power input

KODT2200 KODT2200B



Managed Wall Mounting/Rack Mountable Serial to Fiber Optical Fiber Terminal

- Flexible networking: ring, chain, tangent ring
- Dual fiber redundant technology (<20ms)
- Three types of serial ports: RS232/RS422/RS485
- Serial ports have 15KV ESD protection circuit
- Alarm output for the failure of fiber ports
- Dual master stations backup function
- 8 full duplex channels, 8 × 8 data cross-connection
- Level conversion function of data interface
- Abundant power supply options



Overview

The KODT series is specially designed for industrial application by KYLAND. It comes as the combination of serial data transmission, Ethernet and optical technology and communication for industrial process control.

Technical Specifications

Standard

RS232
RS422
RS485

Interface

Fiber Ports: 2 SM/MM fiber ports, FC/SC/ST connector (KODT2200)
4 SM/MM fiber ports, FC/SC/ST connector (KODT2200B)
Serial Ports: Bit Error Rate: 10
Asynchronous rate: 0-115.2Kbps (Adaptive)
Electrical characteristic: compliant with RS232/RS422/RS485 standards
Physical interface: DB25-hole
Quantity of serial ports: 6 (KODT2200), 12 (KODT2200B)
Console Port: RS232 (RJ11 connector)

LED

LEDs on Front Panel:
Running LED: Run
Interface LED: ORDA, ORDB, RXD1-RXD (KODT2200)
ORDA-ORDD, TX1-TX8, RX1-RX8 (KODT2200B)

Transmission Distance

Serial Cable: RS232: 15m; RS422/RS485: 1200m
Multi Mode Fiber: 1310nm, 5km (100M)
Single Mode Fiber: 1310nm, 40km/60km (100M)
1550nm, 60km/80km (100M)

Power Requirements

Power Input: 12DC (9-18VDC), 24DC (18-36VDC), 48DC (36-72VDC), 110DC (66-154VDC), 220AC/DC (85-264VAC/120-370VDC)
Power Terminal: 3-pin 3.81 mm-spacing plug-in terminal block, 3-phase AC electric outlet
Power Consumption: <2.7W (KODT2200), <3.3W (KODT2200B)
Overload Protection: Support
Reverse Connection Protection: Support

Physical Characteristics

Housing: Metal, fanless
Protection Class: IP30
Dimensions (W×H×D):
129×28×158 mm (5.08×1.10×6.22 in.) (KODT2200)
482.6×44×139.7 mm (19×1.73×5.5 in.) (KODT2200B)
Weight: 0.6kg (1.323 pound) (KODT2200)
1.5kg (3.307 pound) (KODT2200B)
Mounting: Panel mounting (KODT2200),
19 inch 1 U Rack mounting (KODT2200B)

Environmental Limits

Operating Temperature: -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)

MTBF

318,653 hrs

Warranty

5 years

Approvals

CE, FCC

Industrial Standard

EMI:

FCC CFR47 Part 15, EN55022/CISPR22, Class A

EMS:

IEC61000-4-2 (ESD): $\pm 6\text{kV}$ (contact), $\pm 8\text{kV}$ (air)

IEC61000-4-3 (RS): 10V/m (80MHz-1GHz)

IEC61000-4-4 (EFT): Power Port: $\pm 2\text{kV}$; Data Port: $\pm 1\text{kV}$ IEC61000-4-5 (Surge): Power Port: $\pm 1\text{kV/DM}$, $\pm 2\text{kV/CM}$; Data Port: $\pm 1\text{kV}$

IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)

IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Machinery:

IEC60068-2-6 (Vibration)

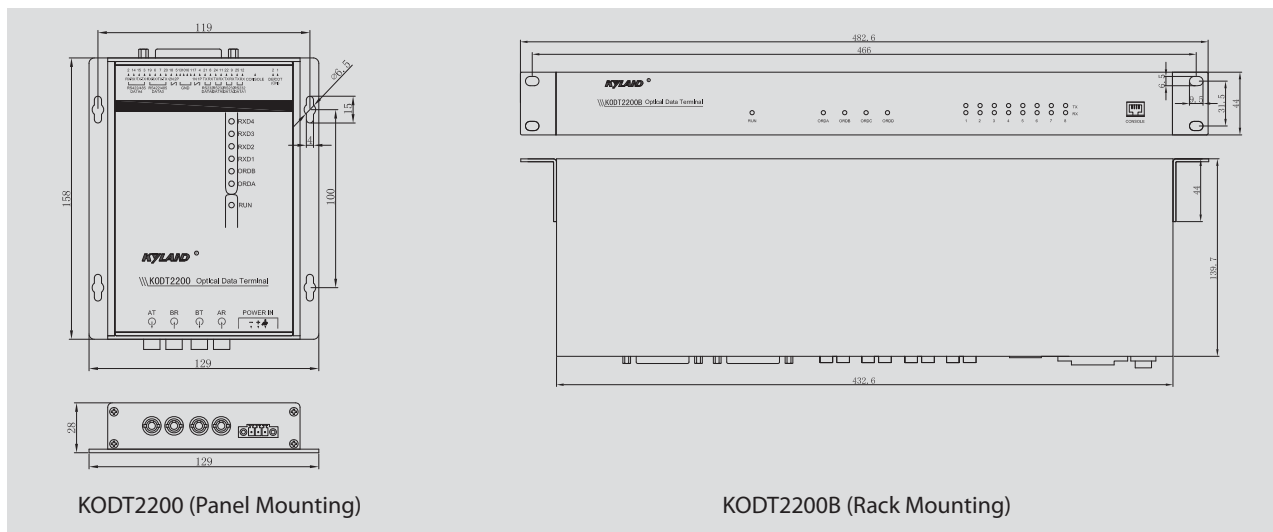
IEC60068-2-27 (Shock)

IEC60068-2-32 (Free Fall)

Industry: IEC61000-6-2

Railway: EN50155, EN50121-4

Traffic Control: NEMA TS-2

Mechanical Drawing

KODT2200 (Panel Mounting)

KODT2200B (Rack Mounting)

Ordering Information

Model & Ports Distance Connector PS

Model & Ports

KODT2200-2M = Wall mounting chassis, 2 100Base-FX multi mode fiber ports

KODT2200-2S = Wall mounting chassis, 2 100Base-FX single mode fiber ports

KODT2200B-2M = Rack mounting chassis, 2 100Base-FX multi mode fiber ports

KODT2200B-2S = Rack mounting chassis, 2 100Base-FX single mode fiber ports

KODT2200B-4M = Rack mounting chassis, 4 100Base-FX multi mode fiber ports

KODT2200B-4S = Rack mounting chassis, 4 100Base-FX single mode fiber ports

Distance: Fiber Distance

1310-5 = 1310nm, 5km

1310-40 = 1310nm, 40km

Connector: Fiber Connector

SC = SC Connector

ST = ST Connector

FC = FC Connector

PS: Power Supply

12DC = 9-18VDC, single power input

24DC = 18-36VDC, single power input

48DC = 36-72VDC, single power input

110DC = 70-140VDC, single power input

220AC/DC = 120-370VDC/85-264VAC, single power input

Example Order Codes

KODT2200-2M-1310-5-SC-220AC/DC

Wall mounting chassis, 2 100Base-FX multi mode fiber ports, 1310nm 5km, SC connector, 120-370VDC/85-264VAC single power supply

Kyvision 3.0

Network Management Software



- High performance network management software, supports 10 users at the same time and can monitor up to 1000 devices
- Auto-detection of devices, and real-time event alerts to user
- Auto-generation of network topology with circular or square layout
- Supports record and query of operation and system logs
- Provides Socket and OPC interfaces for user secondary development
- Batch upload and download of configuration files, along with
- multiple simultaneous software upgrades by built-in FTP server

» Overview

Kyvision is the network management software designed by Kyland for monitoring, configuring and maintaining industrial Ethernet switches like SICOM series and KIEN series in industrial communication network as well as other RFC1213-compliant devices.

Designed according to TMN regulations, its management functions include facility management, alarm management, right management, topology management and configuration management. Meanwhile, Kyvision provides maintenance functions to cope with different access networks such as topology interface, topology connecting display, topology alarm association display, operation diary record and so on, making it more convenient and efficient for users to maintain and update networks.

Employed JAVA and C/S, Kyvision is suitable to work on multiple operation platforms such as Windows, Solaris and Linux.

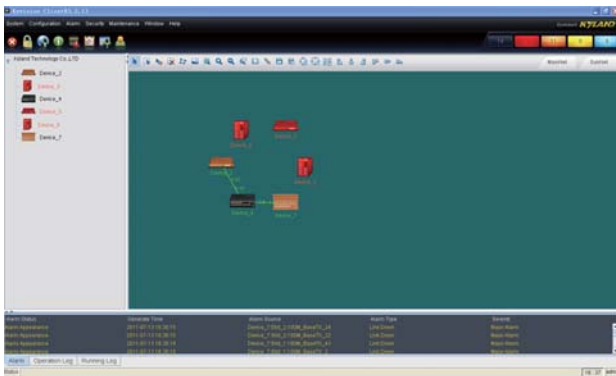
» Features & Benefits

1. Supports multi-clients end, at most 10 users at the same time (can be expanded according to customer's requirements)
2. Supports two kinds of topology methods: network segment topology and appointed IP topology, auto-detection of devices and auto-generation of topology connection between devices
3. Powerful network management software, able to manage up to 1,000pcs of devices (can be expanded according to customer's requirements)
4. Able to work on Windows, Solaris and Linux operation platform
5. Alarm ring notification and alarm confirmation mechanism supported
6. Supports configuration interface display, dynamically showing device status
7. Supports alarm history query, able to query alarm history according to subnets, devices and time period; supports alarm data output
8. Supports operation diary records, able to examine the maintenance and operation diary of the system
9. Supports user management, right class management and subnet right management, able to configure management domains according to users' requirements
10. Display in English or Chinese
11. Humanized interface configuration function, including subnet topology display, facility navigation bar display, network management incident display, facility alarm association display and so on
12. Provides network management of Socket and OPC interfaces, making it possible for users' further development

Device Management

- Create new subnet and device
- Delete device
- Device's configurations and information
- Configure SNMP
- PING device
- Manage via Telnet and web browser
- Alarm all
- Configure device properties

Topology Management

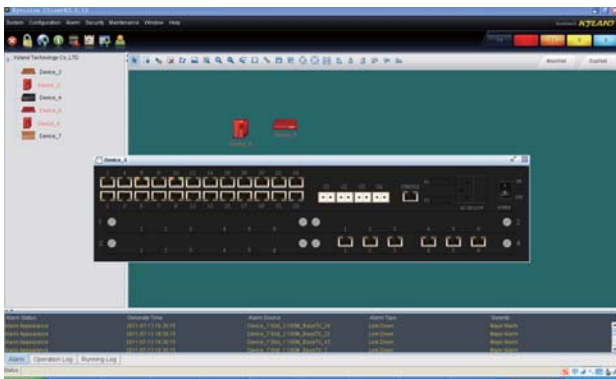


Two-dimensional display of device topology in the home topology interface and alarm association display of communication problems (the color of corresponding alarm icons will also be changed).

Topology connection display between devices and port alarm association display (If there is an alarm, the color of the connection line will be changed).

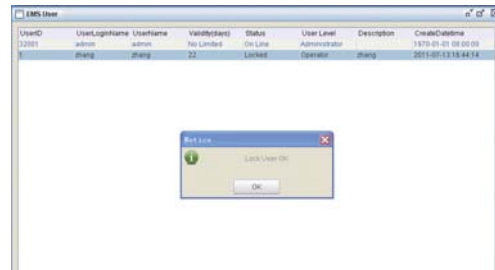
Fast auto-topology and connection, supports manually set connections

Configuration Management



There are two ways to view device configuration picture: double click the device in network topology area or click the device with the right key and choose "view device configuration". The configuration diagram dynamically showing the port status of the devices

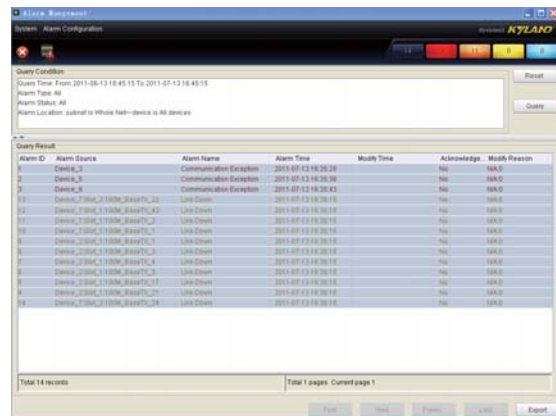
Authority Management



User authorities include creating administrator, deleting users and modifying user properties. Subnet right is to assign manageable subnets to existing users.

This software provides three kinds of management rights: Administrator, Operator and Monitor. Administrator has all the rights, including device management, alarm management, user management, subnet right management and function monitoring; Operator has all the rights of Administrator except user management; Monitor only has the monitoring right.

Alarm Management



The alarm management modular continuously checks all the devices and the alarm of switch communication problems. Through TRAP message sent from corresponding switches and alarm information of switch status, it monitors switch status alarm and records the alarms into the database. In the home topology diagram, the color of device pictures and topology links, the alarm display bar, the device color in tree-shape navigation together reflects the device alarm status. It provides current alarm and alarm history checking and data output of alarm history according to subnets, devices, time period, alarm type and so on. Alarm informing is sent by bell ringing, email and short message and can be shielded separately.

Personalized Configurations

Kyvison provides device picture changing, topology background color or picture changing, alarm bell sets changing functions, which is able to offer different visual and sound effects

System Requirements

- CPU: Pentium 4, 1.6GHz
- Memory: 1.0G
- Disk Space: 2.0G
- Screen: 1024x768

GPS Clock Synchronization Module



- 14 channels GPS C/A coding receiver
- High precision stable crystal oscillator with excellent time keeping performance
- One GPS signal input with BNC connector
- One PPS +5V TTL level output with BNC connector
- Interface module for SICOM6028GPT, SICOM6424PT, SICOM3028GPT, SICOM3424PT

Overview

GPS clock synchronization module is specifically designed for switches including SICOM6028GPT, SICOM6424PT, SICOM3028GPT, and SICOM3424PT, which support PTP protocol. The GPS receiver and precise clock included in the module can provide an extremely precise GPS signal for host switches. GPS clock synchronization module provides one GPS signal input port and one PPS output port.

Technical Specifications

Interface

GPS Input: 5VDC, BNC connector
PPS Output: +5V, 50Ω, adjustable pulse width, BNC connector

LED

LEDs on front panel
Fix: Satellite positioning LED
Lock: System clock lock LED

Precision Parameters

Model name: SM6.6-GPS-OI-0.5U
Short term stability (t=1s): 1×10^{-9}
PPS precision: $\pm 100\text{ns}$
1 day free run precision: $\pm 2 \times 10^{-8}$
1 year free run precision: $\pm 4 \times 10^{-7}$
GPS clock synchronization precision: $\pm 1 \times 10^{-11}$
Clock accuracy for 1 hour free run: $\pm 6\mu\text{s}$
Clock accuracy for 1 day free run: $\pm 865\mu\text{s}$
Clock accuracy for 1 year free run: $\pm 6.3\text{s}$
Time drifts with temperature changes while free run: $\pm 2 \times 10^{-7}$ (0-50°C)
Lock time: <20min (Cold boot, typical value)

Physical Characteristics

Housing: Metal, fanless
Protection Class: IP40
Dimension (WxHxD): 122.6x20.3x106.8mm (4.83x0.80x4.20 in.)
Weight: 0.3Kg (0.661 pound)

Signal Receiving Sensitivity

Receiver: 14 channels GPS C/A coding receiver
Tracking Sensitivity: -160 dBm
Acquisition Sensitivity: -155 dBm
Operating frequency: $1575.42\text{MHz} \pm 1.023\text{MHz}$

Power Requirements

Power input: 3.3VDC
Power terminal: A type interface (powered by backplane)
Power consumption: <4.5W (booting), 3W (operating)

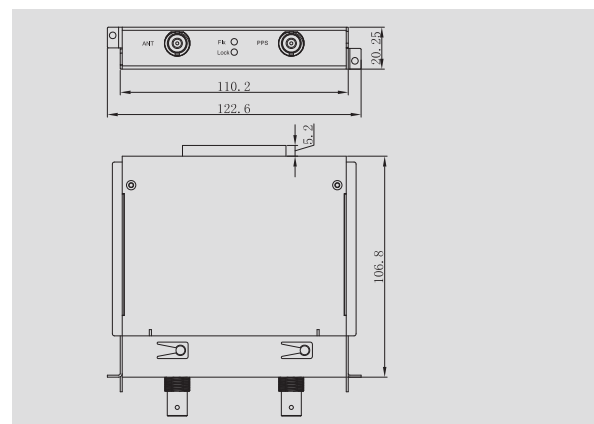
Environmental Limits

Operating Temperature: 0 to 50°C (32 to 122°F)
Storage Temperature: -20 to 70°C (-4 to 158°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)

Warranty

5 years

Mechanical Drawing



Ordering Information

SM6.6-GPS-OI-0.5U = GPS Clock Synchronization Module

IRIG-B PTP Clock Converter Output Module



- PTP to IRIG-B high precision clock converting
- 2 IRIG-B(DC), 2 IRIB-B(AC), and 1 PPS outputs
- Supports IRIB-B000, B002, B003, B123 output
- Interface module for SICOM6028GPT, SICOM6424PT, SICOM3028GPT, SICOM3424PT

Overview

IRIB-B PTP clock converter output module is specifically designed for SICOM6028GPT, SICOM6424PT, SICOM3028GPT and SICOM3424PT which support PTP protocol. It realizes the conversion from PTP to IRIG-B clock and PPS (Pulse Per Second). This allows the IRIG-B format industrial devices to receive PTP high precision clock through our switches conveniently. This enables a high precision synchronization in the whole industrial network. The module provides two IRIG-B (DC) outputs, two IRIB-B (AC) outputs and one PPS output.

Technical Specifications

Interface

IRIB-B (DC): TTL, +5V level, 600Ω, trigger by rising edge, port load: 40mA, BNC connector or 2-Pin 5.08mm-spacing plug-in terminal block socket
 IRIB-B (AC): Vp-p software adjustable, 600Ω, modulation ratio software adjustable, BNC connector or 2-Pin 5.08mm-spacing plug-in terminal block socket
 PPS: TTL, +5V level, 50Ω, trigger by rising edge, pulse width 20ms-200ms, software adjustable with step of 1ms.

LED

LED on front panel
 Run: Module on/off status

Physical Characteristics

Housing: Metal, fanless
 Protection Class: IP40
 Dimension (WxHxD): 122.6x20.3x106.8mm (4.83x0.80x4.20 in.)
 Weight: 0.3Kg (0.661 pound)

Power Requirements

Power input: 3.3VDC
 Power terminal: A type interface (powered by backplane)
 Power consumption: <1W

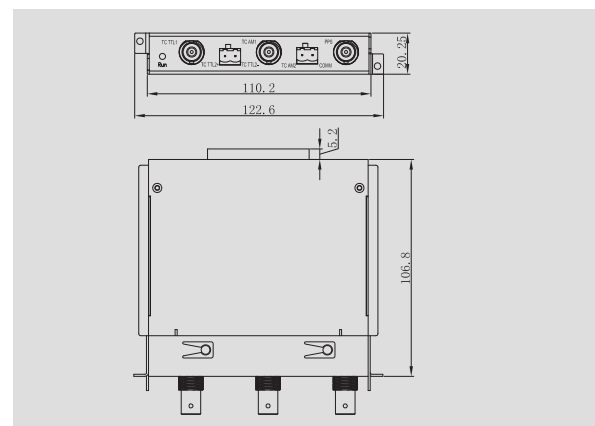
Environmental Limits

Operating Temperature: -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)

Warranty

5 years

Mechanical Drawing



Ordering Information

SM6.6-PTP-BO-0.5U-V1.1 = IRIG-B PTP Clock Converter Output Module

PTP over E1/T1 Module



- Plug-in interface module for time sync over SDH network
- ITU-T compliant E1/T1 interface with balanced or unbalance connection
- Less than 1µs synchronization accuracy
- Interface module for SICOM6028GPT, SICOM6424PT, SICOM3028GPT, SICOM3424PT

Overview

PTP over E1/T1 precision clock interface module is specifically designed for Kyland GPT series including SICOM6028GPT, SICOM6424PT, SICOM3028GPT, and SICOM3424PT which support PTP protocol. It realizes precise transmission of Ethernet based clock messages over traditional SDH network with an accuracy of less than 1µs.

Environmental Limits

Operating Temperature: -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)

Warranty

5 years

Technical Specifications

Interface

E1/T1 Interface
 Speed: 2.048Mbps(E1), 1.544Mbps(T1)
 Resistor: Unbalanced 75Ω, Balanced 120Ω
 Connector: Unbalanced BNC, Balanced RJ45
 Electrical: ITU-T G.703, G.704
 Standard: ITU-T G.823

LED

LEDs on front panel
 Operation status: RUN
 Ethernet status: Ethernet
 E1 Status: Link, Loss

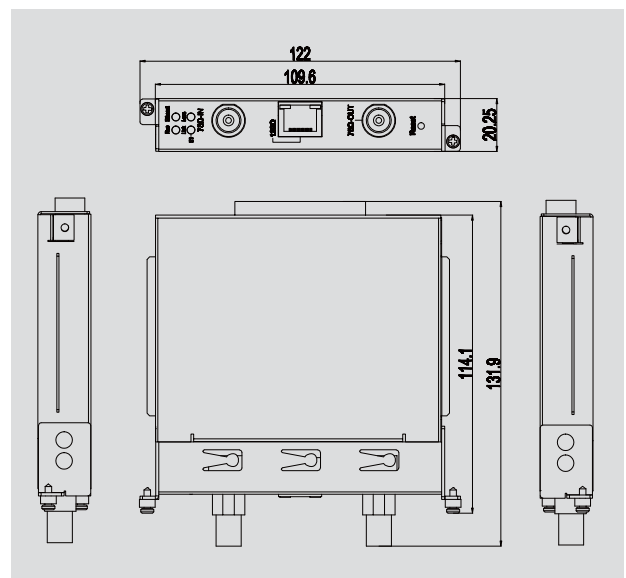
Physical Characteristics

Housing: Metal, fanless
 Protection Class: IP40
 Dimension (WxHxD): 122mmx20.3mmx114.1mm(WxHxD) (4.83x0.80x4.49 in.)
 Weight: 0.3Kg (0.661 pound)

Power Requirements

Power input: 3.3VDC
 Power terminal: A type interface (powered by backplane)
 Power consumption: <3W

Mechanical Drawing



Ordering Information

SM6.6-PTP-OVER-E1/T1 = PTP time sync module over E1/T1

HSR/PRP Module



- Plug-in Redbox module for reliable industrial networking in GPT series
- Full FPGA hardware solution with low switching latency
- Compliant implementation of HSR (IEC62439-3-5) and PRP (IEC62439-3-4)

Overview

SM6.6-HSR/PRP interface module is a plug-in Redbox module specially designed for GPT series realizing both IEC62439-3-5/HSR (High-availability Seamless Redundancy) and IEC62439-3-4/PRP (Parallel Redundancy Protocol). The selection of HSR and PRP is configurable in the software. This plug-in Redbox module, which supports two 10/100/1000Base-TX RJ45 ports, is a full FPGA hardware solution with low switching latency and high communication efficiency. Enriched with this HSR/PRP module, a reliable redundancy network with Zero Recovery Time and Zero Packet Loss can be established with the deployment of Kyland GPT series. SM6.6-HSR/PRP supports two versions: Standard version and Professional version, which are defined for different network load.

Technical Specifications

Interface

Port-A: 10/100/1000Base-T(X) ,RJ45
 Port-B: 10/100/1000Base-T(X) ,RJ45
 Backplane: 1000Base-T(X)

Switching

Protocol: HSR, PRP(pending)
 Switching latency < 3us
 Table size: Standard, 512; Professional, 8K
 Ring Node: Standard, 30; Professional, 200

LED

Interface Speed,Link/ACT

Physical Characteristics

Housing: Metal, fanless
 Protection Class: IP40
 Dimension (WxHxD): 122mmx20.3mmx114.1mm(WxHxD) (4.83x0.80x4.49 in.)
 Weight: 0.22Kg (0.485 pound)

Power Requirements

Power input: 3.3VDC
 Power terminal: A type interface (powered by backplane)
 Power consumption: Standard<5W; Professional<8W

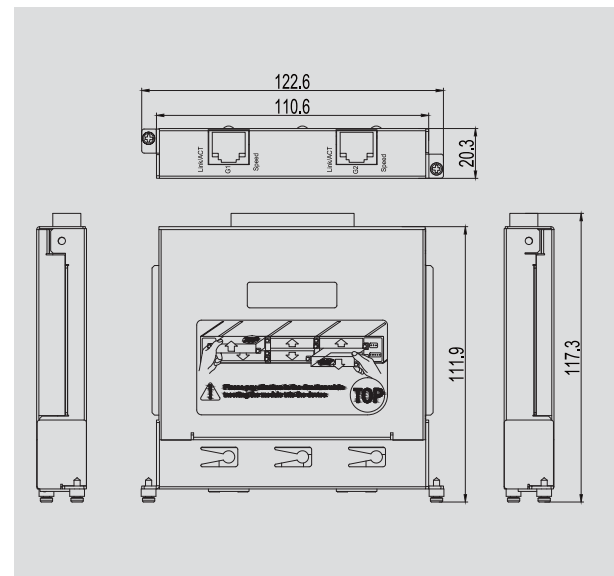
Environmental Limits

Operating Temperature: -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)

Warranty

5 years

Mechanical Drawing



Ordering Information

SM6.6-HSR/PRP = Standard Plug-in HSR/PRP Redbox with 2 10/100/1000Base-TX RJ45 ports

SM6.6-HSR/PRP-Pro = Professional Plug-in HSR/PRP Redbox with 2 10/100/1000Base-TX RJ45 ports

Serial Device Server Module



- 4 RS232/422/485 serial ports, one 100M interface (backplane)
- Reset button for easy module reset without need to reboot the device
- $\pm 15\text{kV}$ ESD protection circuit for each serial port
- Compliant with EMC industrial level 4

» Overview

SM6.6-4D-RJ50 is a plug-in serial device server interface module specially designed for Kyland GPT series supporting 4 selectable RS232 RS422 and RS485 serial ports in 10 pin RJ50 connector, isolated IP address and management. This serial module is fully compliant with EMC level 4 with each serial port integrated with $\pm 15\text{kV}$ ESD protection circuit. It enriches GPT series with standard serial device server functionalities for utility applications.

» Technical Specifications

Standard

IEEE 802.3i, IEEE 802.3u, IEEE 802.3x

Protocol

TCP, UDP; FTP, TFTP; Telnet, HTTP, HTTPS; SSL, SSH; ARP, TCP/IP, ICMP;

Interface

4 RS232/422/485 serial ports, 10 pin RJ50 connector
 Bit error rate: 0
 Electrical characteristic: 3 wire RS232, 4 wire RS422, 2 wire RS485
 Data bits: 5,6,7,8, default is 8
 Stop bits: 1, 1.5, 2, default is 1
 Parity bits: None, Even, Odd, Space, Mark, default is None
 Flow control: XON/XOFF, default is XOFF
 Baud Rate: 50bps-1000Kbps, default is 9600

LED

LED on front panel
 RUN LED: RUN
 Serial port LED: TX, RX

Reset Button

Reset Button for easy module reboot without rebooting the device

Transmission Distance

Serial: RS232, 15m; RS422/485: 1200m

Power Requirements

Power input: 3.3VDC
 Power terminal: A type interface (powered by backplane)
 Power consumption: 2.5W

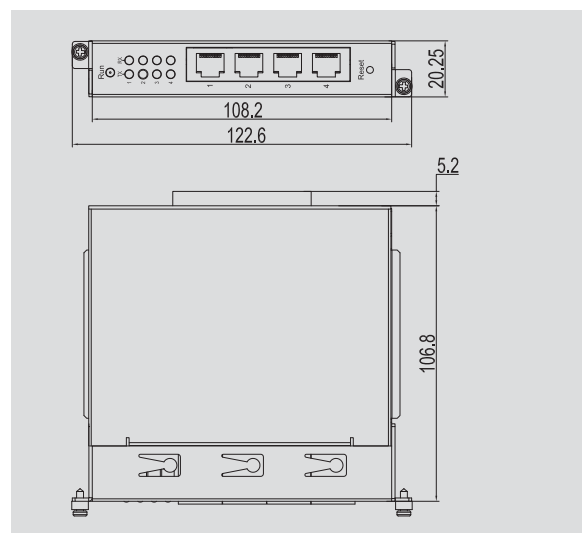
Environmental Limits

Operating Temperature: -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)

Warranty

5 years

» Mechanical Drawing



» Ordering Information

SM6.6-4D-RJ50 = Serial device server interface module with 4 RS232/422/485 serial ports in RJ50 connectors

Multi Functional Application Module



- Plug-in module for GPT series
- Industrial grade computing platform
- Applications of security, control and monitor designed for power utilities

Overview

SM6.6-MFA module is a plug-in computing platform with Linux OS specially designed for GPT series. This industrial grade module is compliant with IEC61850-3 and IEEE1613. Multiple application software packages can be loaded within the platform to enhance the service performance and functionality. Security, time sync management and multiple gateway protocols enable customer an economic way of deploying extensive application using computing power of the module.

Technical Specifications

Hardware

CPU: PowerPC 400MHz
 DRAM: 256MB/64bit
 Flash: 128MB
 Watchdog: Built-in, 15s time out
 Interface: 1000Base-X, 10/100/1000Base-T(X) Combo (Faceplane),
 1000Base-X (Backplane)
 LED Indicator: Link, ACT

OS

Linux 2.6 with Real-Time extension

Apps: Data Processing Package

Standard: Realtime data collection, process and forwarding, including IEC60870-5-101 and IEC60870-5-104 protocol
 Additional: DNP or Modbus or Profibus or IEC61850 Server or IEC61850 Client

Apps: Time Sync Package Timing Management System

Apps: Security Package Firewall, NAT

Physical Characteristics

Housing: Metal, fanless
 Protection Class: IP40
 Dimension (WxHxD):
 122mmx20.3mmx114.1mm (WxHxD) (4.83x0.80x4.49 in.)
 Weight: 0.22Kg (0.485 pound)

Power Requirements

Power input: 3.3VDC
 Power terminal: A type interface (powered by backplane)
 Power consumption: 2.5W

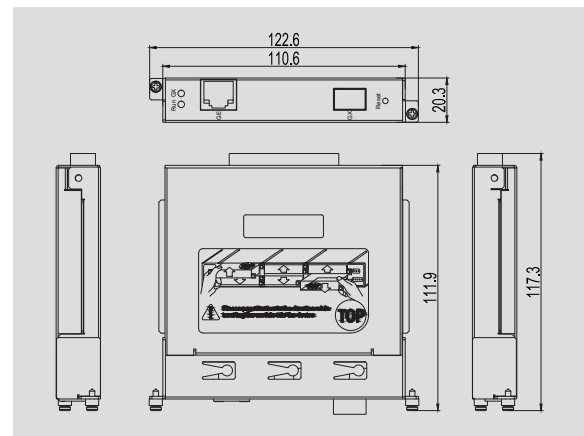
Environmental Limits

Operating Temperature: -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)

Warranty

5 years

Mechanical Drawing



Ordering Information

Hardware

SM6.6-MFA = Plug-in Multifunction functional application platform with 1GX/GE combo port

Software License

DP-S1 = Standard Data processing package : Real time data collection, process and forwarding, including IEC60870-5-101 and IEC60870-5-104 protocol

DP-A1 = Additional data processing application: DNP

DP-A2 = Additional data processing application: Modbus

DP-A3 = Additional data processing application: Profibus

DP-A4 = Additional data processing application: IEC61850 Server

DP-A5 = Additional data processing application: IEC61850 Client

TP-S1 = Standard Time sync application: TMS

SP-S1 = Standard Security application

SFP-1G

Gigabit SFP Modules



- Transmission rate is up to 1.25Gb/s
- Working voltage is 3.3V
- Differential signal LVPECL input and output
- TTL signal detection
- Hot-swappable LC duplex connector
- UL, TÜV certificates

Technical Specifications

Standard

SFP MSA (INF-8074i), IEEE802.3z, ITU-T G.695, FC-PI v2.0

Interface

LC Connector

Physical Characteristics

Protection Class: IP20

Dimensions (WxHxD): 13.7x8.5x57.2 mm (0.54x0.33x2.25 in.)

Weight: 40g (0.088 pound)

Environmental Limits

Operating Temperature: -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)

Warranty

3 years

Approvals

UL, TÜV, RoHS

Industrial Standard

EMI:

CISPR22 ITE Class B, FCC Class B, CENELEC EN55022, VCCI Class1

EMS:

IEC61000-4-2 Class 2 (>4.0KV)

IEC61000-4-3 Class 2

MIL-STD-883E Method 3015.7 Class 1 (>1.5KV)

1000Base SFP (1.25Gbit/s) Parameter Table

Property		SX	LX	LH	ZX	ZX
Type		Multi Mode (M)	Single Mode (S)	Single Mode (S)	Single Mode (S)	Single Mode (S)
Center Wavelength (nm)		850	1310	1310	1550	1550
Transmission Distance (km)		0.55	10	40	60	80
Application Range of Transmission Distance (km)		0-0.55	0-10	12-40	24-60	27-80
Transmitting Optical Power	Mini. (dBm)	-11	-10	-4	-3	-2
	Max. (dBm)	-2	-3	3	4	5
Receiving Sensitivity (dBm)		-18	-21	-23	-22	-25
Overload Optical Power (dBm)		0	-3	-3	-3	-3

Ordering Information

IGSFP-M-SX-LC-850-0.55 = Gigabit SFP module, Multi mode, 850nm, 0.55km, LC connector, -40 to 85°C operating temperature

IGSFP-S-LX-LC-1310-10 = Gigabit SFP module, Single mode, 1310nm, 10km, LC connector, -40 to 85°C operating temperature

IGSFP-S-LH-LC-1310-40 = Gigabit SFP module, Single mode, 1310nm, 40km, LC connector, -40 to 85°C operating temperature

IGSFP-S-ZX-LC-1550-60 = Gigabit SFP module, Single mode, 1550nm, 60km, LC connector, -40 to 85°C operating temperature

IGSFP-S-ZX-LC-1550-80 = Gigabit SFP module, Single mode, 1550nm, 80km, LC connector, -40 to 85°C operating temperature

SFP-1FX

100M Fiber SFP Modules



- Transmission rate is up to 155Mb/s
- Working voltage is 3.3V
- PECL input and output
- TTL signal detection
- Hot-swappable LC duplex connector
- UL, TÜV certificates

Technical Specifications

Standard

SFP MSA (INF-8074i), IEEE802.3ah

Interface

LC Connector

Physical Characteristics

Protection Class: IP20

Dimensions (WxHxD): 13.7x8.5x57.2 mm (0.54x0.33x2.25 in.)

Weight: 40g (0.088 pound)

Environmental Limits

Operating Temperature: -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)

Warranty

3 years

Approvals

UL, TÜV, RoHS

Industrial Standard

EMI:

CISPR22 ITE Class B, FCC Class B, CENELEC EN55022, VCCI Class1

EMS:

IEC61000-4-2 Class 2 (>4.0KV)

IEC61000-4-3 Class 2

MIL-STD-883E Method 3015.7 Class 1 (>1.5KV)

100Base SFP (155Mbit/s) Parameter Table

Property		LX	LH
Type		Multi Mode (M)	Single Mode (S)
Center Wavelength (nm)		1310	1310
Transmission Distance (km)		2	40
Application Range of Transmission Distance (km)		0-2	20-40
Transmitting Optical Power	Mini. (dBm)	-21	-6
	Max. (dBm)	-15	0
Receiving Sensitivity (dBm)		-30	-34
Overload Optical Power (dBm)		-10	-10

Ordering Information

IFSFP-M-LX-LC-1310-2 = 100M SFP module, Multi mode, 1310nm, 2km, LC connector, -40 to 85°C operating temperature

IFSFP-S-LH-LC-1310-40 = 100M SFP module, Single mode, 1310nm, 40km, LC connector, -40 to 85°C operating temperature

IFSFP-S-LH-LC-1550-80 = 100M SFP module, Single mode, 1310nm, 80km, LC connector, -40 to 85°C operating temperature

SFP-1G to FX

Gigabit to 100Base-FX SFP module



- Transmission rate is up to 125Mb/s
- Built-in SGMII physical layer interface
- Working voltage is 3.3V
- Hot-swappable LC duplex connector
- Compliant with RoHS standard

Technical Specifications

Standard

SFP MSA (INF-8074i), IEEE802.3ah

Interface

LC Connector

Physical Characteristics

Protection Class: IP20
 Dimensions (WxHxD): 13.7x8.5x57.2 mm (0.54x0.33x2.25 in.)
 Weight: 40g (0.088 pound)

Environmental Limits

Operating Temperature: -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)

Warranty

3 years

Approvals

RoHS

Industrial Standard

EMI:
 FCC Part 15 Class B EN55022 Class B (CISPR 22B), VCCI Class B

EMS:

IEC61000-4-2 GR-1089-CORE
 IEC61000-4-3
 MIL-STD-883E Method 3015.7 Class 1 (>1.5KV)
 FDA 21CFR 1040.10 and 1040.11 EN60950, EN(IEC)60825-1, 2

1000Base to 100Base SFP (125Mbit/s) Parameter Table

Property		LX	LX
Type		Multi Mode (M)	Single Mode (S)
Center Wavelength (nm)		1310	1310
Transmission Distance (km)		2	10
Application Range of Transmission Distance (km)		0-2	0-10
Transmitting Optical Power	Mini. (dBm)	-20	-15
	Max. (dBm)	-14	-8
Receiving Sensitivity (dBm)		-31	-28
Overload Optical Power (dBm)		-8	-8

Ordering Information

IG-FSFP-M-LX-LC-1310-0.55 = Gigabit to 100M SFP module, Multi mode, 1310nm, 0.55km, LC connector, -40 to 85°C operating temperature
 IG-FSFP-S-LX-LC-1310-10 = Gigabit to 100M SFP module, Single mode, 1310nm, 10km, LC connector, -40 to 85°C operating temperature

Industrializing

the Ethernet

Simplifying

Industrial

Communication



www.kyland.com

KYLAND

KYLAND HEADQUARTERS

Building No.2,Shixing Avenue 30# Shijingshan District,
Beijing,China 100144

Tel | +86-10-88798888

Fax | +86-10-88796678

Email | sales@kyland.com