

KIEN2032

Overview

KIEN2032 managed industrial Ethernet rail switch is based on networking topology and designed for such industrial data communication applications as electric power networking automation, industrial/factory automation, SCADA etc. This switch has integrated Ethernet Interface and Serial Data Transfer technology to acts as switch as well as serial interface server. KIEN2032 is developed on the basis of fast-Ethernet communication technology and Real Time Operation System (RTOS). KIEN2032 offers the optimized solution for industrial environment requiring electromagnetic immunity.



Features

High-performance Industrial Ethernet Switch

- 1.10/100Base-T/TX Ethernet ports, adaptive, full/half duplex, Auto MDI/MDI-X connection
- 2.100Base-FX fiber ports, single mode/multimode, full duplex
- 3.High-speed redundant optical fiber ring (recovery time < 300ms)
- 4.VLAN to take control of broadcast domain and segment flow
- 5.Broadcast storm control

Powerful Management Function

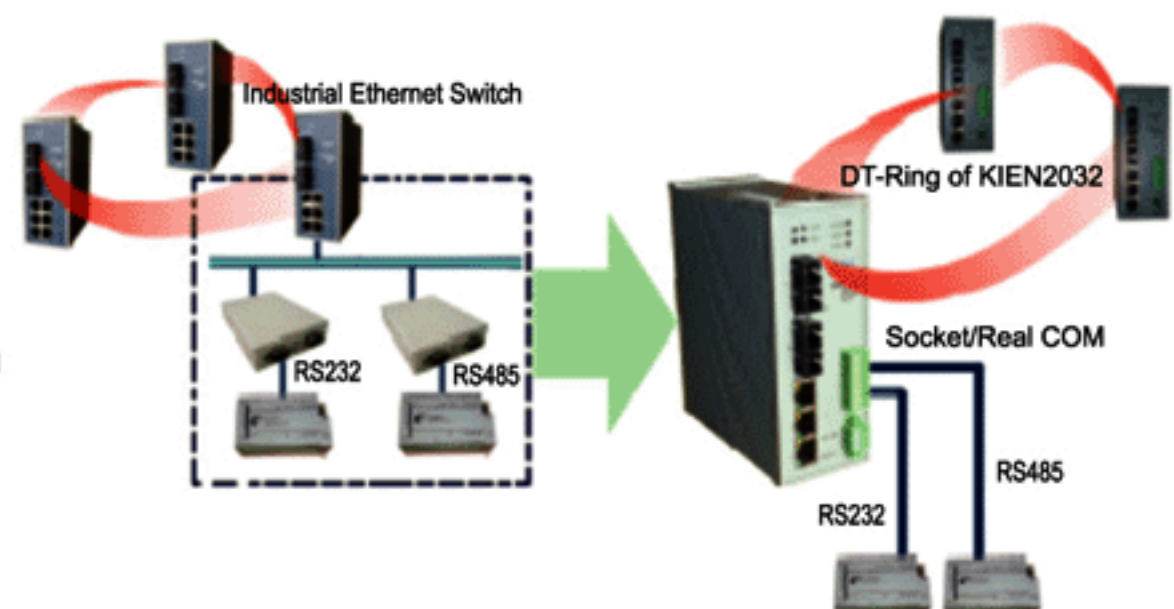
- 1.Integral management platform for the entire network based on RS232 standard. The management system is immune against the attack of virus or hacker since the management channel is independent to service channel.
- 2.Special-designed management software for upper PC realizes the auto-configuration of IP address for networking devices and auto-scan/generation of network topology.
- 3.Individual naming for each devices in the network.
- 4.Setting and query for VLAN.
- 5.Setting and query for alarm of power and ports.
- 6.Setting and query for port working mode, prioritization, and rate

Industrial Power

- 1.Industrial power input of DC24V (DC18V ~ 36V) .
- 2.Reliable protection for EMC and against over-current/over-voltag

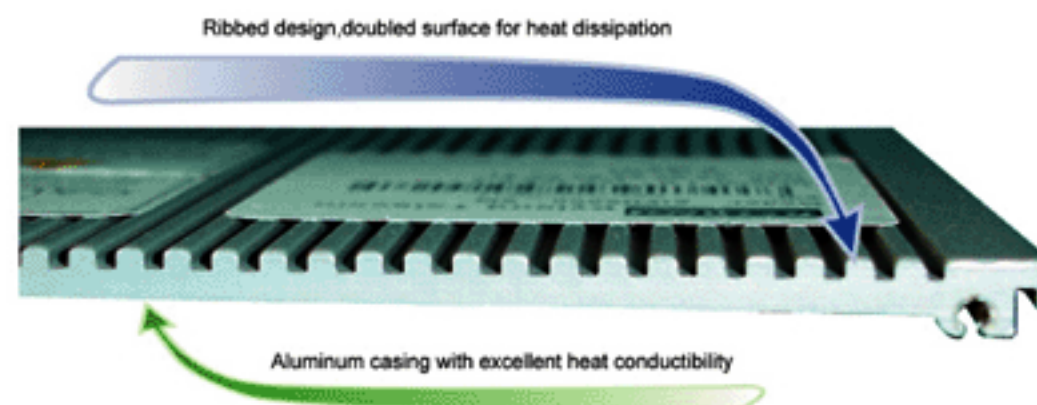
Multiple Serial Data Transmission

- 1.2 x RS232, 2 x RS485 or 1 x RS232 and 1 x RS485.
- 2.Supports TCP and UDP and distribute the data from IP level according to TCP and UDP user-targeted ports.
- 3.Open SOCKET mode for store data.
- 4.Point-to-point or multipoint-to-multipoint.



Rugged Design

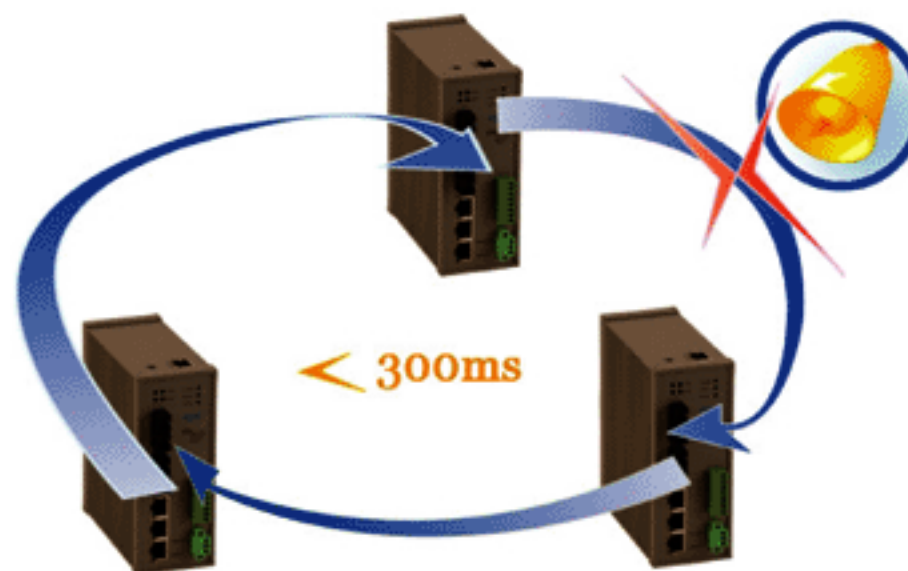
1. Ribbed heat-removal design (fanless); operation at -35°C to $+75^{\circ}\text{C}$
2. Solid IP40 housing
3. Easy DIN-Rail mounting or optional wall-mounting



Main Functions

100Mbit/s Optical Fiber Redundancy

It is critical for network to re-configure immediately once disconnection occurs in the industrial fields. Accordingly, K1EN2032 comes with DT-Ring, which is developed by KYLAND, and offers 2 redundant fiber ports to realize the redundant ring network. The system will be able to re-configure within 300ms after connection fault.



Configuration and Management

At K1EN2032, the settings, queries and management can be realized for the whole switch or network system through CONSOLE interface.

LED Indicator

The LEDs indicate the port status correctly including transmission rate, link status and system status.

VLAN

The network can be divided into several VLANs according to ports, through which the users in one VLAN can communicate each other. The VLAN of K1EN2032 conforms to IEEE802.1Q and can realize the communication within one VLAN of different switches. K1EN2032 supports up to sixteen VLANs based on IEEE802.1Q.

802.1p Prioritization

K1EN2032 conforms to 802.1p, which is used the most widely in LAN environment. The end-users of K1EN2032 can make use of this function to configure the port-based prioritization when 802.1p is not supported at user's end and different priority is necessary for different ports' services. Only the data package without Prioritization in the Packet in the ports can be affected by this function. Each port of K1EN2032 supports 2 levels (high, low) prioritization.

Layer-2 Switching

Switches work in two ways: Cut-Through and Store-and-Forward. In Cut-Through, a data packet is immediately relayed further after detecting the target address; in Store-and-Forward, a data packet is first read-in completely and checked for errors before the switch relays the same. KIEN2032 employs Store-and-Forward that is a switching mode widely used.

Broadcast Storm Control

Broadcast storm is the ceaseless transfer of broadcast frame or multicast frame in bridge, which is caused by loop and will waste much bandwidth. The purpose of broadcast storm control is to optimize the performance of switch network. KIEN2032 supports the broadcast storm based on percentage. With the control percentage, the broadcast flow of KIEN2032 will be monitored and controlled effectively. The switch will filter out the over flow and ensure the flow percentage is normal once the bandwidth of broadcast flow exceed the limit.

Alarming Function

KIEN2032 offers the alarming functions for port link and network. Through management software, all the alarming functions can be configured functionally. The alarming information is shown on management interface.

Setting for Working Mode of Port

KIEN2032 is able to set the working mode of all ports through management: full/half duplex, auto-sensing, enforced full/half duplex, enforced 10M/100M etc.

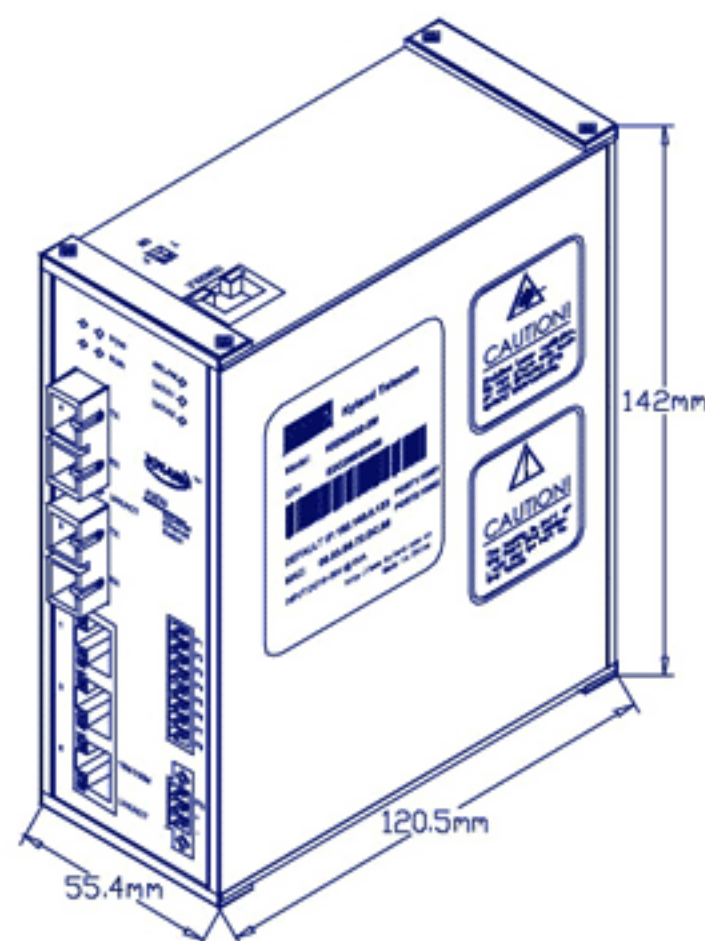
Connection of Serial Data

In KIEN2032, a serial port server is embedded to make serial data into Ethernet packets and realize Ethernet switching and transmitting for serial data.

Independent Management of Serial Port Server

The built-in serial port server of KIEN2032 owns its independent IP address, and the relevant parameters of server and its ports can be managed, queried, and set through remote Telnet, WEB and serial port mode.

Dimensions: 55.4mm x 142mm x 120.5mm (W x H x D)



Parameters

Product Description

Model: KIEN2032

Description: Managed Industrial Ethernet Rail Switch, networking topology based, store and forward switching mode, Ethernet (10 Mbit/s) and Fast-Ethernet (100 Mbit/s)

Port Type and Quantity:

2 x 100Mbit/s, optical fiber, single/multimode, full duplex, redundant,

3 x 10 /100Base-T/TX, TP cable, RJ45 Socket (shielded), auto-negotiation, auto-polarity

2 x RS232, or 2 x RS485, or 1xRS232/1xRS485

More Interface

Power Terminal: 1 x DC power terminal, 3-core

RS232 interface: 1 x RJ45 socket

Network size – length of cable

Twisted pair (TP): 100m

Multimode fiber: Distance: 2–5km, Wavelength: 1310nm, Optical power: >–20dbm

Singlemode fiber: Distance: 40km(60km, 80km for special requirement)

Wavelength: 1310/1550nm Optical power: >–13dbm

Network size – cascadiability

Line / star topology: Any

Ring structure (DT-Ring): 50 switches (recovery time < 300ms)

Power requirements

Power input: 18V–36V DC power input

Power consumption: <6W

Performance

Transfer Rate: 148810pps

MAC Address Table Size: 8K

Service

Diagnostics: LEDs(power, link status, port rate, management status)

Configuration: KyvisionV2.0

Other services: Prioritization (IEEE 802.1D/p), VLAN, broadcastlimiter, flow control (IEEE802.3x)

Redundancy

Redundancy functions: DT-Ring (ring structure)

Ambient conditions

Operating temperature: –35°C to +75°C

Storage/transport temperature: –45°C to +85°C

Relative humidity (non-condensing): 10% to 95%

MTBF: 10years

Mechanical construction

Dimensions (W x H x D): 55.4mm x 142mm x 120.5mm

Mounting: Din-rail or Wall-mounting

Protection class: IP40

EMC interference immunity

EN 61000–4–2 electrostatic discharge (ESD): ±4 kV contact discharge, ±8 kV air discharge

EN 61000–4–3 electromagnetic field: 10 V/m (80 – 1000 MHz)

EN 61000–4–4 fast transients (burst): ±2 KV power line, ±1 kV data line

EN 61000–4–5 surge voltage: Power line: ±2 kV (line/earth), ±1 kV (line/line), ±1 kV data line

EN 61000–4–6 conducted immunity: 3 V (10 kHz – 150 kHz), 10 V (150 kHz – 80 MHz)

EMC emitted immunity

FCC CFR47 Part 15: FCC CFR47 Part 15 Class A

EN 55022 EN 55022: Class A

Approvals

Certificates: FCC, CE

Order Information

Model	Description
KIEN2032–2S–SC	Single mode, redundant fiber port; 2 x RS232 or 2 x RS485 or 1 x RS232 / 1x RS485
KIEN2032–2M–SC	Multi mode, redundant fiber port; 2 x RS232 or 2 x RS485 or 1 x RS232 / 1x RS485