

# KIEN6000

## Overview

KIEN6000 is an 8-port Web-Managed Industrial Rail Switch comes with a DT-Ring technology, which is developed by Kyland and used to set up a redundant Ethernet ring network. KIEN6000 also has 24V redundant power inputs. KIEN6000 offers two optical fiber ports, and six TP ports. With a web-based configuration interface, KIEN6000 ensures an easy installation and management of your switches.



## Features

### High-performance Industrial Ethernet Switch

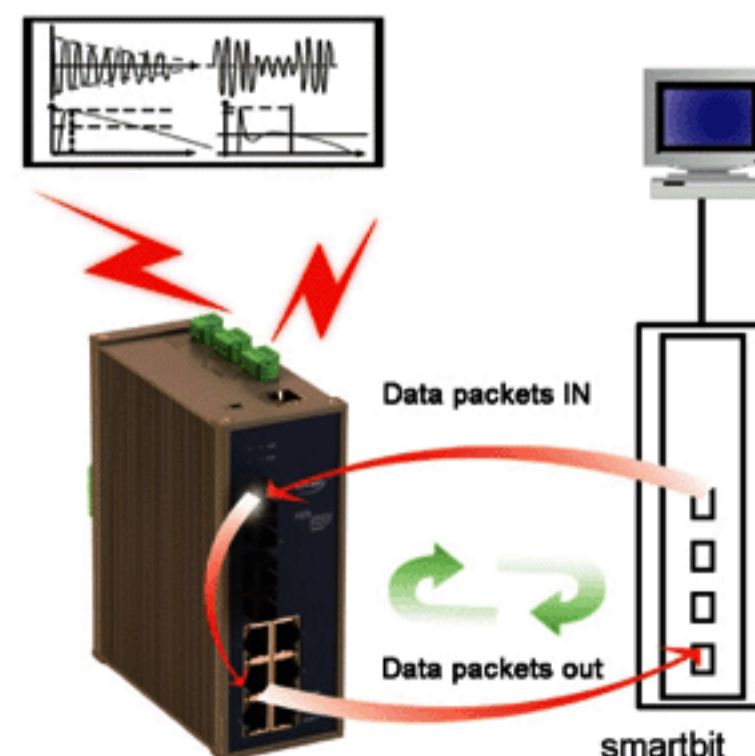
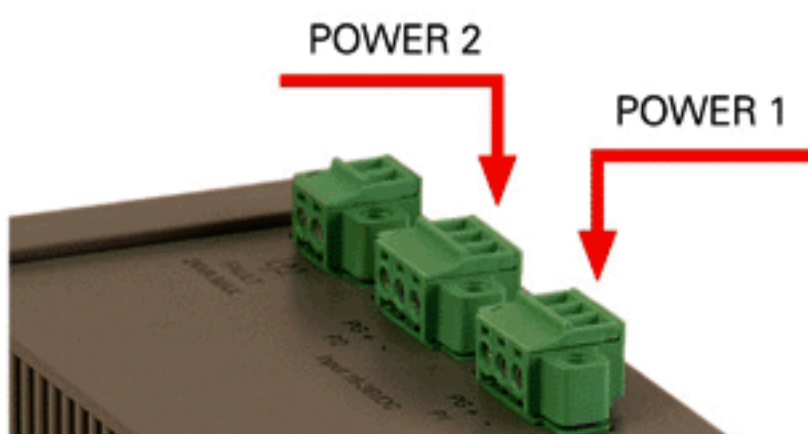
- 1.10/100Base-T/TX Ethernet ports, adaptive, full/half duplex
- 2.100Base-FX fiber ports, single mode/multimode, full duplex
- 3.High speed redundant ring with recovery time < 300ms
- 4.Supports VLAN to control broadcast domain and segment flow, port trunking, port mirroring, prioritization and IGMP.
- 5.Alarm relay output power supply and port link.
- 6.Broadcast storm control

### Powerful Management Function

- 1.You can log in the management system through the IP address in the WEB browser.
- 2.The management of control station can be logged in by Telnet or super end.
- 3.Through management, you can make queries and settings for VLAN, port trunking, port mirroring, prioritization and IGMP.

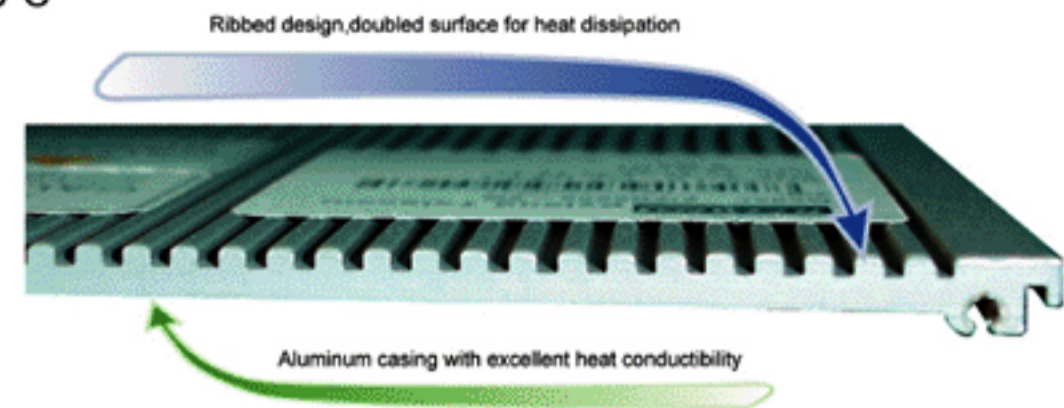
### Industrial Power

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



## Rugged Design

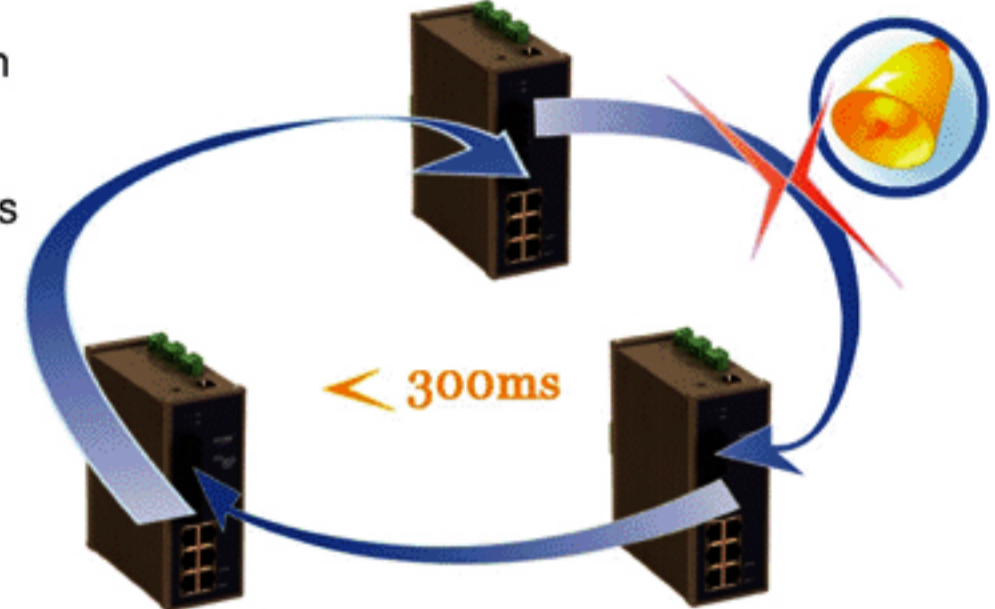
1. Ribbed heat-removal design (fanless); operation at  $-35^{\circ}\text{C}$  to  $+75^{\circ}\text{C}$
2. Solid IP40 housing
3. Easy DIN-Rail mounting or optional wall-mounting



## ➤ Main Functions

### 100Mbit/s Optical Fiber Redundancy

It is critical for network to re-configure immediately once disconnection occurs in the industrial fields. Accordingly, KIEN6000 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 cable fault.



### 100Mbit/s TP Cable Redundancy

KIEN6000 offers 2 redundant Ethernet ports to be connected into redundant ring network through TP cable. The system will be able to re-configure within 300ms once disconnection occurs.

## Configuration and Management

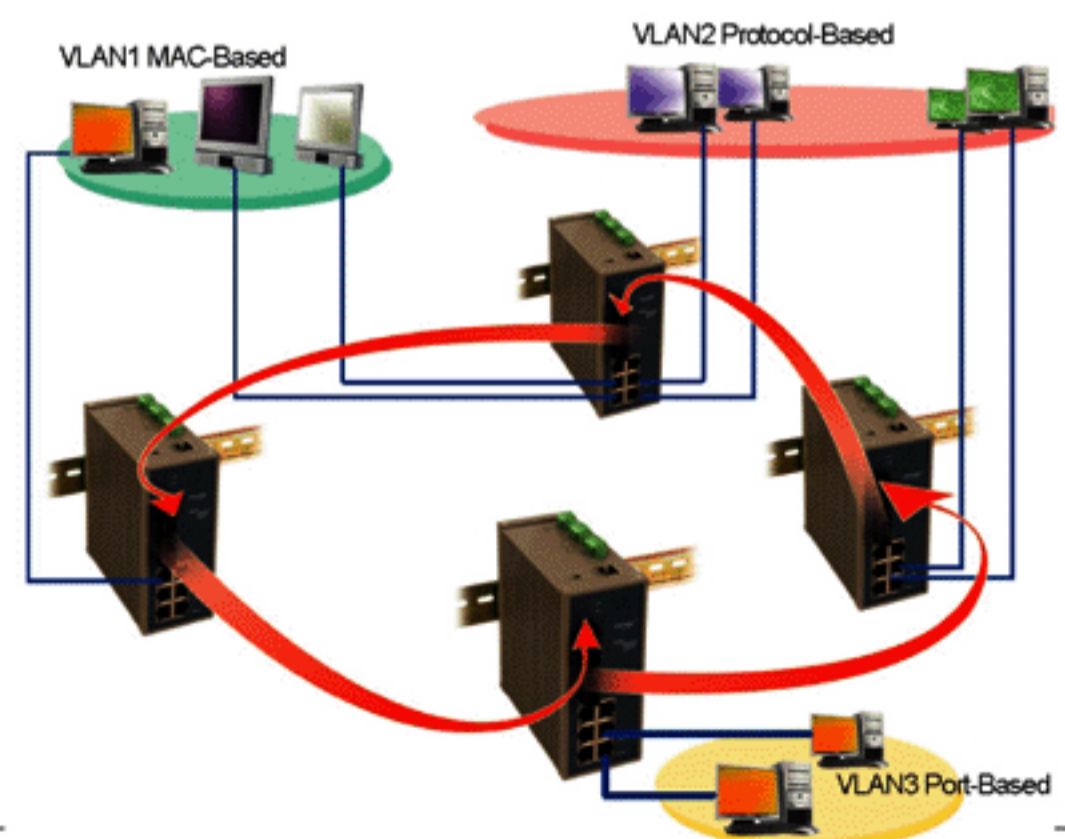
KIEN6000 offers 3 options of login way for users to make configuration, control and management including RS232 serial port (CONSOLE), Telnet and WEB browser.

## LED Indicator

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

## VLAN

VLAN will divide one network into multiple logical subnets. Data packets can not be transmitted between different VLANs so as to control the broadcast domain and segment flow and improve the reliability, security and manageability. KIEN6000 supports IEEE802.1q. It can be divided into up to 4094 VLANs based on ports. The VLAN division can be finished by control station or WEB station easily.



## 802.1p Prioritization

KIEN6000 conforms to 802.1p, which is used the most widely in LAN environment. The end-users of KIEN6000 can make use

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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 KIEN6000 supports 2 levels (high, low) prioritization.

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### 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. KIEN6000 employs Store-and-Forward that is a switching mode widely used.

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### Multicasting ( IGMP )

IGMP is Internet Group Multicast Protocol. KIEN6000 offers IGMP monitor and query functions. Data packets can be transmitted to multi host computers to prevent overloading. This solves the problems of bandwidth occupied when multicasting.

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### Port Trunking

KIEN6000 provides port trunking functions to aggregate multi ports into one logical port with the same transmission rate, duplex mode and VLAN ID. Up to 6 ports trunking can finished in one single switch. Thus, network flow congestion is relieved and tolerance ability is improved.

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### Port Mirroring

This function enables the copying of data at one port to another port in order to monitor the transmitted data real time.

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### Setting for Working Mode of Port

KIEN6000 is able to configure the working mode of all ports through management: full/half duplex, auto-sensing, enforced full/half duplex, enforced 10M/100M etc.

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### STP ( Spanning Tree Protocol )

KIEN6000 supports Spanning Tree Protocol of IEEE802.1d. STP enables the switch of double paths to make use of the paths without circulation. It determines the optimum path and blocks others in order to prevent circulation of data packets.

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### Broadcast Storm Control

When over broadcast data packets are sent in the network and occupy much space, the time of transmission will be prolonged; this is the so-called network storm. KIEN6000 supports broadcast data packets, multicast data packets and broadcast storm control. The data packets out of the limited time will be abandoned.

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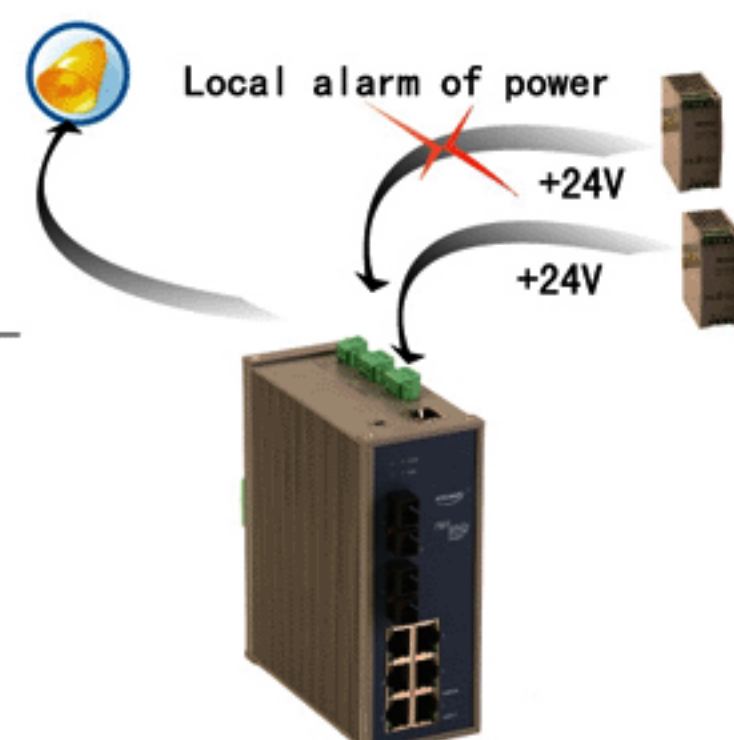
### Static MAC Address Binding

In KIEN6000, ports and static MAC address can be bind. When the end devices' MAC address is not accordant with bind address, the switch will close the port in order to prevent the unallowed visit from the end.

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### Alarming

KIEN6000 comes with alarm functions for power supply and port link. Any power of KIEN6000 fails, alarm signal will be sent out by alarm terminal. The alarm of port link can be set through management. The terminal is open when there is no alarm and is closed when alarm occurs.



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

## Parameters

### Product Description

**Model:** KIEN6000

**Description:** Managed Industrial ETHERNET Rail Switch, 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, redundant

2x100Mbit/s, TP cable, redundant

4 x 10/100Base-T/TX, TP cable, RJ45 Socket (shielded), Auto-Negotiation

### More Interface

**Power Terminal:** 2 x DC power terminal, 3-core

**Alarm Terminal:** 1 x alarm output terminal, 2-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 redundant DC power input

**Power consumption:** <8W

### Performance

**Transfer Rate:** 148810pps

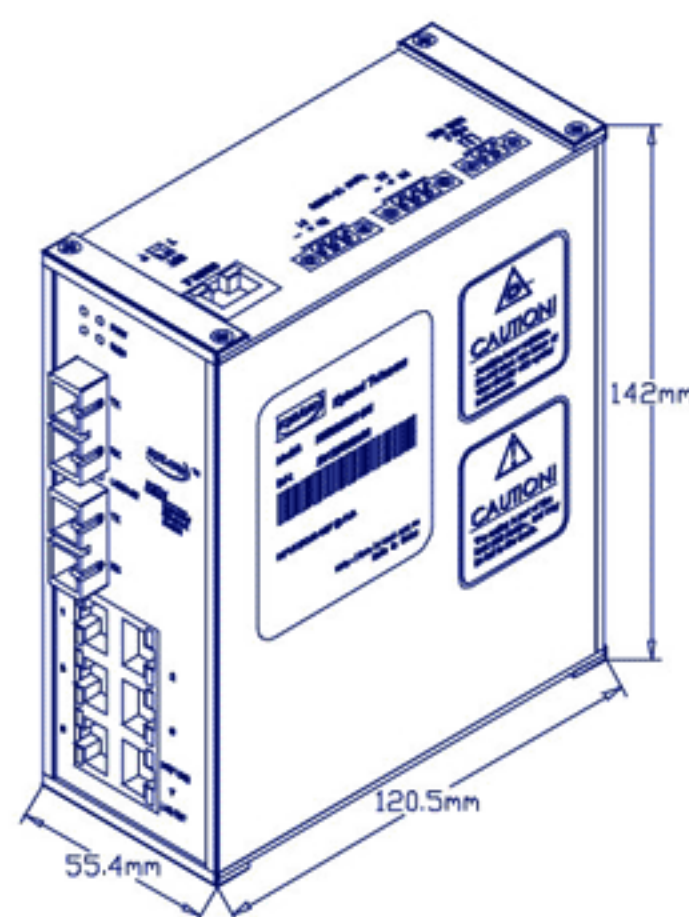
**MAC Address Table Size:** 8K

### Service

**Diagnostics:** LEDs (power, link status, port rate, management status), fault relais(24VDC/1A)

**Configuration:** Web page, Telnet, Console

**Security:** Port security (MAC based and IP based), SNMPv3



**Other services:** Prioritization (IEEE 802.1D/p), VLAN (802.1Q), multicast (IGMP snooping/querier, GMRP), broadcastlimiter, flow control (IEEE802.3x)

### Redundancy

**Redundancy functions:** DT-Ring (ring structure), STP (spanning tree protocol), dual redundant power supply

### 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:** 10 years

### 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

**Certificate:** FCC, CE

## Order Information

Model	Description
KIEN6000-2S	2 x 100Base-FX, single mode, redundant
KIEN6000-2M	2 x 100Base-FX, multimode, redundant