

# JetNet 4506-M12

## Industrial 6-Port Managed M12/IP68 Ethernet Switch



- Environmentally sealed by IP68 grade protection and ultra rugged enclosure for toughest industrial usages
- Six 10/100 TX auto-negotiation ports with IP68 grade M12 connectors
- Rugged power interface by robust M12 connector
- Patented Rapid Super Ring technology (RSR) with failover time less than 5ms and seamless restoration (restoration time is zero)
- Port-based VLAN, IGMP snooping v1/v2/v3, QoS, and DHCP with option 82
- Security by authorized IP address, SSL and SSH
- Managed by “Cisco-Like” CLI, JetView, Web, SNMP v1/v2c/v3 and RMON
- Event notification by SNMP Trap, Syslog, Fault relay, E-mail
- Built-in hardware watchdog timer for system auto-reset

### Overview

The JetNet 4506-M12 10/100 Base-TX Ethernet switch, is specifically designed for the toughest industrial environments. In combination with its IP68 design and the superb management functionality, the JetNet 4506-M12 extends your managing boundaries where no other industrial Ethernet switch can go!

JetNet 4506-M12 is constructed of a rugged weather tight aluminum case and designed with six IP68 rated M12 Ethernet ports, which provide a waterproof, and dust-tight connection.

For maximum performance, each switch includes the next generation of redundancy protocol, Rapid Super Ring. This feature allows for the configuration of any

two ports for extra protection against link failure and data loss due to constant vibration and heavy shock.

The JetNet 4506-M12 also includes other management features, such as port-based VLAN, QoS, IGMP snooping, SNMP and DHCP, for traffic isolation, deterministic transmission and network management.

The JetNet 4506-M12 can be easily adopted in almost all kinds of applications and provides the most rugged solutions for managing your network in outdoor, offshore, railway, moving vehicles, factory automation, coal mines, petrochemical factories, food/beverage industries and plant floors.

- Industrial PoE Switch
- IP67/68 Ethernet Switch**
- Rackmount Managed Switch
- Gigabit Switch
- Redundant Switch
- Entry-Level Switch
- Networking Computer
- Communication Computer
- Ethernet I/O Server
- Serial Device Server
- Media Converter
- Multiport Serial Card
- SFP Module
- Din Rail Power Supply

## Ultra Rugged, Ultra Long-life Enclosure

JetNet 4506-M12 is designed ultra rugged for the toughest industrial usage. The enclosure is made of strong, corrosion resistant, and noncombustible aluminum case. Each enclosure is designed with a thick 50mm top face plate, which makes JetNet 4506-M12 able to survive from constant shock and heavy impact. The aluminum case protects JetNet 4506-M12 against corrosion in environments such

as, offshore, coal mines, and petrochemical factories. The noncombustible property of the case also ensures that the JetNet 4506-M12 will not emit toxic fumes when exposed to extreme high temperatures. This is the most suitable device for applications where hygiene requirements are a real concern, such as food processing, beverage bottling or pharmaceutical manufacturing.

## Rugged M12 Robust Connection with IP68 Protection

Commercial RJ45 connectors are not designed for harsh environment and usually experienced to link failure and data loss under heavy industrial usages. JetNet 4506-M12 replaces the commercial RJ45 connectors with rugged IP68 grade M12 connectors for greater protection against water and dust to eliminate link lost or data failure from constant wash down, vibration and shock. The connector can be assembled with a STP (Shield Twisted Pair) cable to protect data transmission from EMI disturbances. With this robust enhancement, the JetNet 4506-M12 guarantees a reliable connection and data integrity for harsh environment usages.



IP68 Rated M12 Connector

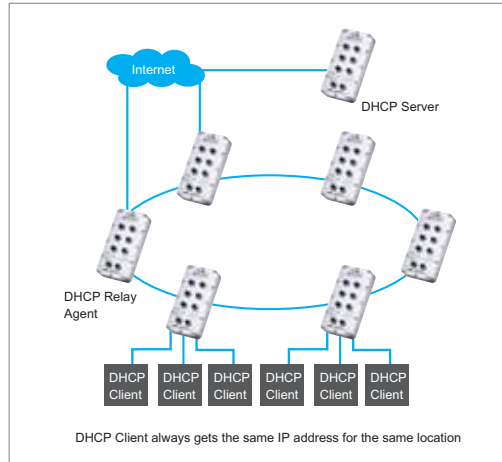
## Superb Management Features & Versatile Management Interfaces

JetNet 4506-M12 provides many management features, such as, port-based VLAN for network isolation, IGMP Query and snooping to prevent multicast traffic from flooding the network, QoS that guarantees timing critical packets are sent at the highest priority, DHCP which manages IP addresses automatically to reduce the maintenance effort and cost, as well as Korenix's patented Rapid Super Ring technology to assure a constant link and eliminate data loss. Along with the superb management features, JetNet 4506-M12 provides versatile and user-friendly

management interfaces including, Web browser, SNMP, and "Cisco-Like" CLI and a discovery utility called, JetView. This utility helps discover switches, assign IP addresses, upgrade firmware, backup and restore settings in a batch manner. Also, real-time status can be monitored by RMON. Failure and warning events can be reported by fault relay, SNMP trap, email, system log. To prevent from hostile attacks, JetNet 4506-M12 uses IP security to restrict the access right to authorized IP addresses and provides encrypted communication by means of SSH/SSL.

## DHCP Option 82

For management and maintenance, industrial Ethernet devices do not use dynamic address pools as common DHCP do, instead require specific IP addresses which map to unique MAC addresses. The DHCP Option 82 guarantees that any end node receives the same IP address every time it boots. JetNet 4506-M12 acts as a DHCP relay agent, which adds the location information to the client's request and forwards to the DHCP server. Therefore, the DHCP server can then assign a specific IP address to the client.



## Non-Stop Transmission by RSR (Rapid Super Ring) and RDH™ (Rapid Dual Homing)

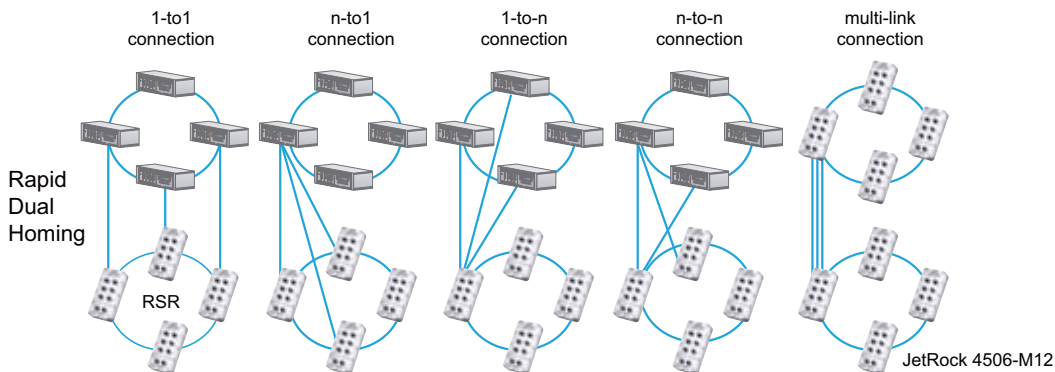
Reliability is mission critical for industrial usages. In addition to robust connection, each switch includes the next generation of redundancy protocol, Rapid Super Ring. This feature allows for the configuration of any two ports for extra protection against link failure and data loss due to constant vibration and heavy shock.

The Rapid Super Ring has failover time faster than 5ms. This restoration time is ZERO without resulting in any looping problem, topology change, or packet

loss when recovering a failed ring to its redundancy-proved state.

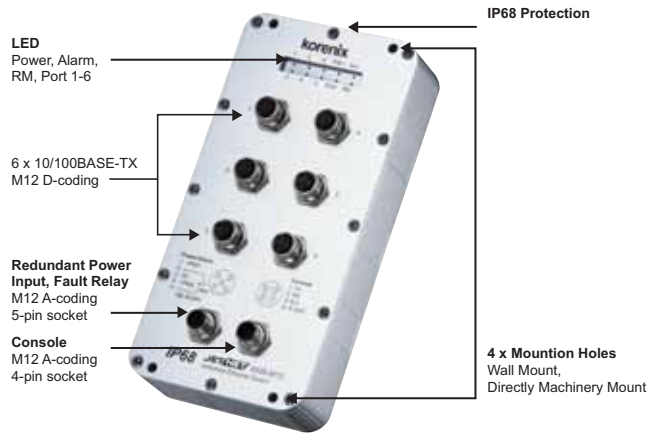
While RSR protects the ring topology, Rapid Dual Homing enables multiple redundancies to be coupled or interconnected to other network topologies. Its failover time for link failure is less than 50 ms and the restoration time is ZERO.

These advanced technologies can eliminate the impact caused by link failure or node failure to minimum.

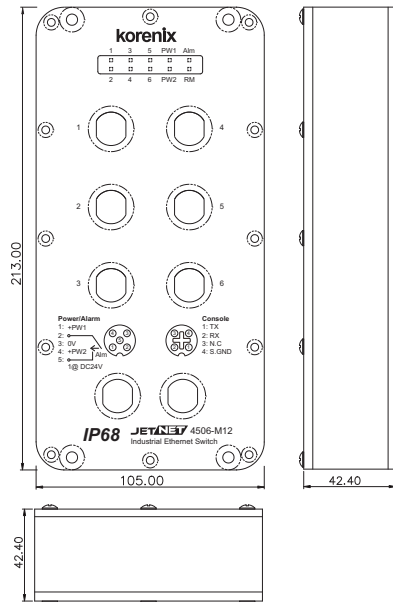


- Industrial PoE Switch
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## JetNet 4506-M12 Appearance



## Dimensions (Unit –mm)



# IP67/IP68 Industrial Ethernet Switch

## Specification

### Technology

#### Standard:

IEEE 802.3 10Base-T  
IEEE 802.3u 100Base-TX  
IEEE 802.1p Class of Service  
IEEE 802.3x Flow Control and Back-pressure  
IEEE 802.1D Spanning Tree  
IEEE 802.1w Rapid Spanning Tree

### Performance

#### Switch Technology:

Store and Forward Technology with 3.2Gbps wire-speed non-blocking Switch Fabric

**System Throughput:** 1.785Mpps

**MAC Address:** 2000

**Packet Buffer:** Embedded 1Mbits shared buffer

**Transfer performance:** 14,880pps for Ethernet and 148,810pps for Fast Ethernet

**Transfer packet size:** from 64 to 1536Bytes

**Relay Alarm:** Dry Relay output with 1A @ 24V

### Management

**Management interface:** SNMP v1, v2c and v3, Web browser, JetView and CLI Management

**Management Security:** 4 entries for web, telnet, SNMP management security

**SNMP Trap:** Provides Cold start, Warm start, Port event, Power event, Authentication failure, and Korenix private trap for proprietary functions

**SNMP MIB:** RFC 1213 MIBII, RFC 1493 Bridge MIB, RFC 1757 RMON MIB, RFC 2674 VLAN MIB, RFC 1643 Ethernet like MIB, RFC1215 Trap MIB, Korenix Private MIB

**Firmware upgrade:** TFTP, Local file and JetView

**System Log:** 1000 system entries for system or remote log server

**Event Alarm Relay:** 1A @24V Dry Relay Contact output for Super Ring failure, port link down, System power events.

**Quality of Service:** Quality of Service determined by port, Tag or IPv4 Type of Service

**Class of Service:** IEEE802.1p class of service, with 4 priority queues

**DHCP:** Supports DHCP Client, DHCP Agent with Option 82, DHCP Server specified IP exclusion and MAC binding function

**Timer:** Supports Network Time Protocol (NTP) to synchronize time from NTP Server

**VLAN:** Port based VLAN

**IGMP Snooping:** Supports IGMP Snooping v1/v2/v3 and IGMP Query v1/v2

**Network Redundancy:** Supports Rapid Super Ring function for network redundancy with 5ms network recovery time. To inter-operate with other higher level switches, JetNet 4506-M12 provides Rapid Dual Homing technology. JetNet 4506-M12 also conforms with IEEE802.1D 2004

edition for RSTP and STP standard protocols

**IP Security:** IP security to prevent unauthorized access

### Interface

#### Number of Ports:

6 x 10/100Base-TX ports  
1 x RS-232 Console  
1 x Redundant Power with Relay Alarm

#### Connectors:

10/100TX: M12 D-coding 4-pin socket  
RS-232 Console: M12 A-coding 4-pin socket  
Power: M12 A-coding 5-pin socket

#### Cable:

10/100 Base-TX: 2-pair cable

#### Diagnostic LED:

PW1/PW2: Power on (Green)  
Fast Ethernet: Link (Green) / Activity (Green blinking),  
Alm: Relay Alarm for Super Ring failure port link down or power failure occurred (Red)  
RM: Ring Manager (Green)

### Power Requirements

#### Power Consumption:

**Operating Voltage:** 12 to 48V DC

**Power consumption:** max 10 Watts @ 48V

### Mechanical

#### Protection Class: IP68

**Installation:** Wall mount

**Case:** Aluminum metal case

**Dimension:** 213.6 mm (H) x 106.0 mm (W) x 56.5 mm (D)

**Weight:** 1110 g without package

### Environmental

**Operating Temperature:** -25 ~ 70°C

**Storage Temperature:** -40 ~ 85°C

### Regulatory Approvals

**DNV:** pending

**EN 50155 Railway:** compliance

**Safety:** CE/EN60950

#### EMI:

FCC Class A; CE/EN55022:2003 Class A;  
CE/EN61000-3-2:2001 Harmonic Test;  
CE/EN61000-3-3:1995 Flicker test

#### EMS:

EN61000-4-2:1998, ESD  
EN61000-4-3:1998, RS  
EN61000-4-4:1995, EFT  
EN61000-4-5:1995, Surge  
EN61000-4-6:1996, CS  
EN61000-4-8:PFM

**Shock:** IEC60068-2-27

**Vibration:** IEC60068-2-6

**Free Fall:** IEC60068-2-32

**Warranty:** 5 years

Industrial

PoE Switch

IP67/68

Ethernet Switch

Rackmount

Managed

Switch

Gigabit Switch

Redundant

Switch

Entry-Level

Switch

Networking

Computer

Communication

Computer

Ethernet

I/O Server

Serial Device

Server

Media

Converter

Multiport

Serial Card

SFP Module

Din Rail

Power Supply



## Ordering Information

### **JetNet 4506-M12 Industrial 6-port Managed M12/IP68 Ethernet Switch**

Includes:

- JetNet 4506-M12
- M12 4-pin on Sub-D 9-pin shielded console cable x 1
- M12 D-coding 4-pin to RJ45 STP patchcord x 1
- Field assembleable M12 A-coding 5-pin connector x 1
- Cap of M12 D-coding 4-pin socket x 6
- Cap of M12 A-coding 5-pin connector x 1
- Cap of M12 A-coding 4-pin socket x 1
- Mounting Screws x 4
- Quick Installation Guide
- CD User Manual