

JETROCK

IP67 / IP68 Industrial Ethernet Switch



**Extreme Environment
Is Never A Problem**



JetNet 4506-RJ



JetNet 4506-M12



JetNet 3006-RJ



JetNet 3006-M12



JetNet 3706-RJ

IP67 / IP68 Industrial Managed / Unmanaged / PoE Switch

- Waterproof, dust-tight against harshest environment
- Robust connection anti vibration, shock
- RSR, VLAN, QoS, IGMP, SNMP and JetView management
- 4 port IEEE 802.3af PoE
- Operating temperature -25~ 70 °C
- DNV, EN50155 certificate applying

JetRock Series Industrial Ethernet Switch

JetRock series is designed to provide ultra rugged and long-life protection against the roughest industrial usage without the need of additional shelters. The totally sealed enclosure achieves the highest level of protection, IP67 and IP68. The JetRock Series is equipped with rugged RJ45 and M12 connectors for a secured, robust connection under the most brutal environments.

Challenges for Industrial Ethernet in Extreme Harsh Environments

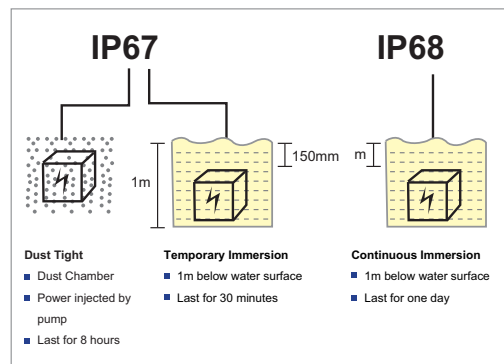
It is a trend that industrial Ethernet is increasingly adopted in locations with extreme harsh conditions, such as outdoor, offshore, marine, railways and moving vehicles. Industrial Ethernet is also moving from the management and control level to the front end, and field level. These environments expose Ethernet devices

to severe weather, moisture, oil, dust, corrosive or flammable vapor and gases. The devices are also subjected to severe Electric Magnetic Interference (EMI), constant vibration and heavy shock or impact. JetRock series overcomes the challenges of these extreme environments.

IP67/IP68 Degree of Protection

IP code, known as International Protection or Ingress Protection, is defined in the international standard IEC 60529, "Degrees of protection provided by the enclosure". The level of protection is presented by two characteristics numerals. The first one indicates the protection against ingress of solid foreign objects, such as hands or fingers, and even sand and dust. The lowest level is 0 and the highest is 6. The highest level is dust tight which means that dust can be insulated by the enclosure completely. The second one represents the protection against ingress of water, rated from non-protected (0), to continuous immersion (8).

JetRock series are IP67 and IP68, which are guaranteed against dust and are immersion-proof for the highest level of protection without additional shelters.



- 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, Long-Life Enclosure

While IP67/IP68 represents highest level of protection against ingress of water, oil and dust, it does not mean ruggedness and robustness. Cases made of plastic, for example, can be easily molded to meet a high IP rating. However, the plastic case is prone to crack or distort in shape, which can lead to IP level degradation when subjected to heavy shock and impacts. The poor thermal conductivity can also makes it less suitable for fan less system operation within high temperature environments.

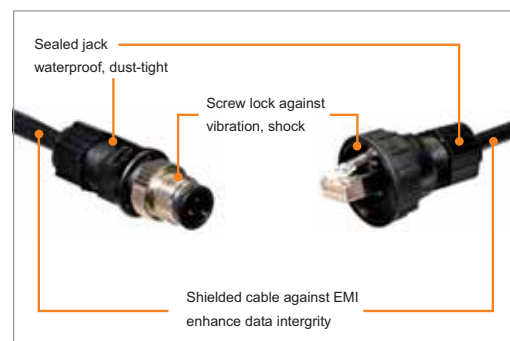
The JetRock series enclosure provides the strongest construction suitable to withstand the toughest workplaces. The case is constructed with high grade aluminum, for the protection against impact and shock without any shape distortion. The case allows for heat dissipation for a fan less and sealed design. And the noncombustible material ensures the release of any toxic fumes when exposed to high temperatures.

Comparison of Aluminum, Molded Plastic and Steel			
Property	Aluminum	Molded Plastic	Steel
Strength to Weight Ratio	Very Good	Low-good	Good
Corrosion Resistance	Excellent	Excellent	Poor; requires coating for corrosion consideration
Thermal Conductivity	Excellent	Poor	Poor
Combustibility	Noncombustible	Combustible; may emit toxic fumes when exposed to high temperatures	Noncombustible

Robust Connection

While commercial RJ45 connectors are widely used for their ease of use, they're not designed to withstand regular or severe vibration and shock which often occurs within industrial environments. Furthermore, they are neither waterproof nor dust-tight.

JetRock series is designed with IP67 rated RJ45 and IP68 rated M12 connectors, which provides the most rugged connection for harsh industrial applications. The screw cam design compresses and seals the jack, which guarantees protection against water and dust. The screw cam connector also produces a strong ridge connection to eliminate link loss as a result of extreme vibration and shock. In combination with STP cable, the overall link is protected against EMI to ensure data integrity.



IP67/IP68 Industrial Ethernet Switch

Total Solutions for Rugged Usage

JetRock series provides total solutions for rugged industrial usage. Managed and unmanaged switches, or PoE-enabled, there's a switch for various applications.

The managed models of JetRock support ring redundancy, traffic isolation, traffic shaping, and traffic prioritization to meet requirement of network management and deterministic real-time transmission, while the unmanaged versions provide the plug-and-play usages. The unmanaged PoE-enabled JetRock can deliver power safely to areas where traditional power is inaccessible.

	IP67	IP68
Managed	JetNet 4506-RJ	JetNet 4506-M12
Unmanaged	JetNet 3006-RJ	JetNet 3006-M12
PoE	JetNet 3706-RJ	

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- Din Rail Power Supply

Various Locations & Critical Applications

With the highest grade of protection, the JetRock series can be used in various locations and applications. From automation and plant floor, to

offshore and pharmaceutical, the JetRock is the perfect fit many tough industrial needs.

Example locations of JetRock are:

- Outdoors
- Ship, offshore
- Railways, moving vehicles
- Hazardous location, such as oil drilling, gas stations, coal mines
- Food, beverage industry
- Drug manufacturing
- Plant floor and field level

And the applications could be:

- Outdoor IP surveillance
- Outdoor WiMax, WLAN
- Roadside traffic monitor and control
- Weather monitor
- Dam monitor and control
- Display boards
- Process control
- Factory automation and so on



Korenix Industrial Product Selection Guide - IP67 / IP68 Industrial Ethernet Switch



JetNet 4506-M12



JetNet 4506-RJ
(Preliminary)



JetNet 3006-M12



JetNet 3006-RJ
(Preliminary)



JetNet 3706-RJ
(Preliminary)

Modular Managed Switch

Unmanaged Ethernet Switch

PoE Switch

Interface

	JetNet 4506-M12	JetNet 4506-RJ (Preliminary)	JetNet 3006-M12	JetNet 3006-RJ (Preliminary)	JetNet 3706-RJ (Preliminary)
Number of Ports: 10/100Base-TX	6	6	6	6	6
Number of Ports: PoE Injector					4
PoE Wring					4,5,7,8
PoE Power					15.4W x 4
Power Connector	DC24V x 2 (12~48)	DC24V x 2 (12~48)	DC24V x 2 (12~48)	DC24V x 2 (12~48)	DC44~57V x 2
Fault Relay Output	•	•			
1200VAC HIPOT	•	•	•	•	•

Mechanical

Ultra Rigid Aluminum Case	•	•	•	•	•
Case Protection	IP68	IP67	IP68	IP67	IP67
Dimensions (mm)	213.6(H) x 106.0(W) x 56.5(D)	213.6(H) x 106.0(W) x 56.5(D)	213.6(H) x 106.0(W) x 56.5(D)	213.6(H) x 106.0(W) x 56.5(D)	213.6(H) x 106.0(W) x 56.5(D)
Operating Temperature	-25~70°C	-25~70°C	-25~70°C	-25~70°C	-40~70°C
Wall Mounting	•	•	•	•	•

Protocols

Web-based Configuration	•	•			
JetView	•	•			
Secured HTTPS, SSH	•	•			
MSR, RSTP	•	•			
Couple Ring, Dual Homing	•	•			
IGMP Snooping & IGMP Query	•	•			
Port-Based VLAN	•	•			
Quality of Service	•	•			
DHCP with Option 82	•	•			
IEEE 1588	•	•			
SNMP v1/v2c/v3	•	•			
RMON1	•	•			
SMTP (email warning)	•	•			
Syslog	•	•			

Certifications

Regulatory Approvals: CE/FCC/UL	•	•	•	•	•
RoHS/WEEE	•	•	•	•	•
DNV	Applying	Applying	Applying	Applying	
EN50155 Railway	Applying	Applying	Applying	Applying	

JetNet 4506-RJ (Preliminary)

Industrial 6-Port Managed RJ45/IP67 Ethernet Switch



- Environmentally sealed by IP67 grade protection and ultra rugged enclosure for toughest industrial usages
- Six 10/100 TX auto-negotiation ports with IP67 grade RJ45 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-RJ 10/100 Base-T Ethernet switch, is specifically designed for the toughest industrial environments. In combination with its IP67 design and the superb management functionality, the JetNet 4506-RJ extends your managing boundaries where no other industrial Ethernet switch can go!

JetNet 4506-RJ is constructed of a rugged weather tight aluminum case and designed with six IP67 rated RJ45 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-RJ 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-RJ 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, coal mines, petrochemical factories, food/beverage industries and plant floors.

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Ultra Rugged, Ultra Longlife Enclosure

JetNet 4506-RJ 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-RJ able to survive from constant shock and heavy impact. The aluminum case protects JetNet 4506-RJ against corrosion in environments such as,

offshore, coal mines, and petrochemical factories. The noncombustible property of the case also ensures that the JetNet 4506-RJ 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 RJ45 Robust Connection with IP67 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-RJ replaces the commercial RJ45 connectors with rugged IP67 grade RJ45 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-RJ guarantees a reliable connection and data integrity for harsh environment usages.



IP67 Rated Rugged RJ45 Connector

Superb Management Features & Versatile Management Interfaces

JetNet 4506-RJ 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-RJ provides versatile and user-friendly

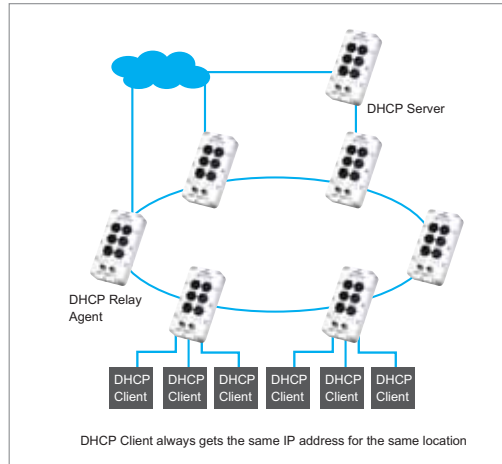
management interfaces including, Web browser, SNMP, and "Cisco-Like" CLI and a discovery utility called, JetView. This utility helps discover switches, assign IP addresses, upgrade firmware, backup and restore settings in a batch manner.

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-RJ 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-RJ 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)

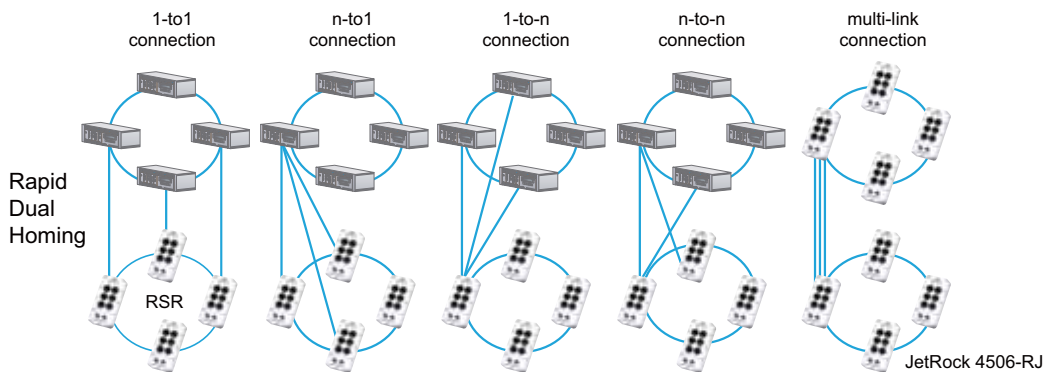
Reliability is mission critical for industrial usages. In addition to robust connection, each switch includes the next generation of redundancy protocol, Rapid Super Ring. This feature allows for the configuration of any two ports for extra protection against link failure and data loss due to constant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

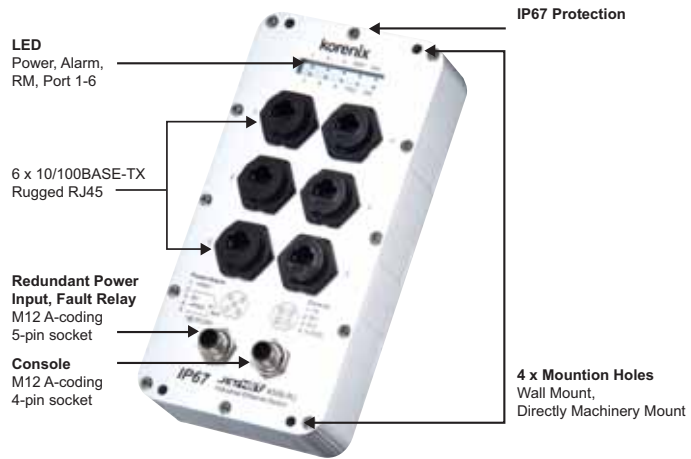
While RSR protects the ring topology, Rapid Dual Homing enables multiple redundancies to be coupled or interconnected to other network topologies. Its failover time for link failure is less than 50 ms and the restoration time is ZERO.

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

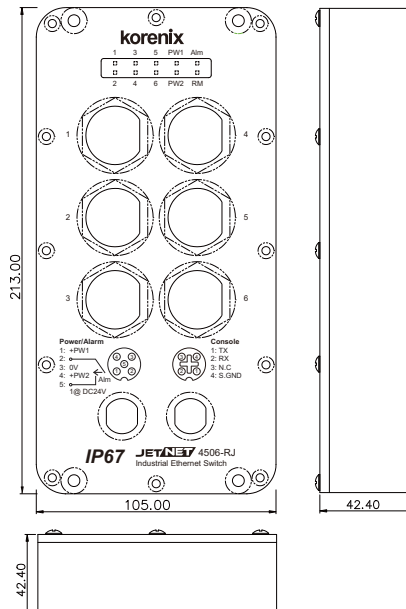


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- SFP Module
- Din Rail Power Supply

JetNet 4506-RJ Appearance



Dimensions



IP67/IP68 Industrial Ethernet Switch

Specification

Technology

Standard:

IEEE 802.3 10Base-T
IEEE 802.3u 100Base-T
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:** 11A @24V Dry Relay Contact output for port Super Ring failure 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-RJ provides Rapid Dual Homing technology. JetNet 4506-RJ also conforms to 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: Rugged RJ45

RS-232 Console: M12 A-coding 4-ping socket

Power: M12 A-coding 5-pin socket

Cable:

10Base-T: 4-pair UTP/STP Cat. 4, 5 cable,
100Base-TX: 4-pair UTP/STP Cat.5, Cat.5E/Cat.6 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 6 Watts @ 48V

Mechanical

Protection class: IP67**Installation:** Wall mount**Case:** Aluminum metal case**Dimension:** 213.6 mm (H) x 106.0 mm (W) x 56.5 mm (D)**Weight:** 1090 g without package

Environmental

Operating Temperature: -25 ~ 70°C**Storage Temperature:** -40 ~ 85°C

Regulatory Approvals

Safety: CE/EN60950

DNV: pending

EN 50155 Railway: pending

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

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-RJ Industrial 6-port Managed RJ45/IP67 Ethernet Switch

Includes:

- JetNet 4506-RJ
- M12 4-pin on Sub-D 9-pin shielded console cable x 1
- Field assembleable Rugged RJ45 Connector x 6
- Field assembleable M12 A-coding 5-pin connector x 1
- Cap of Rugged RJ45 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

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
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Overview

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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.

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

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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

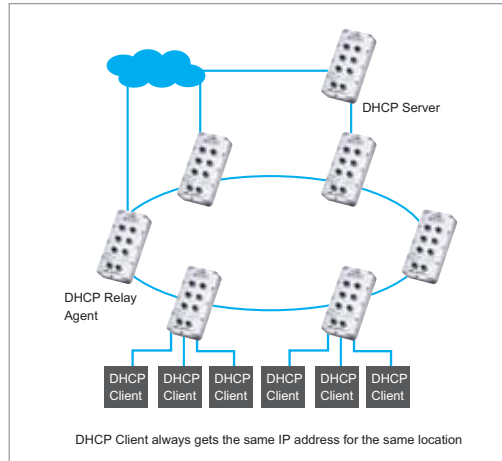
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DHCP Option 82

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)

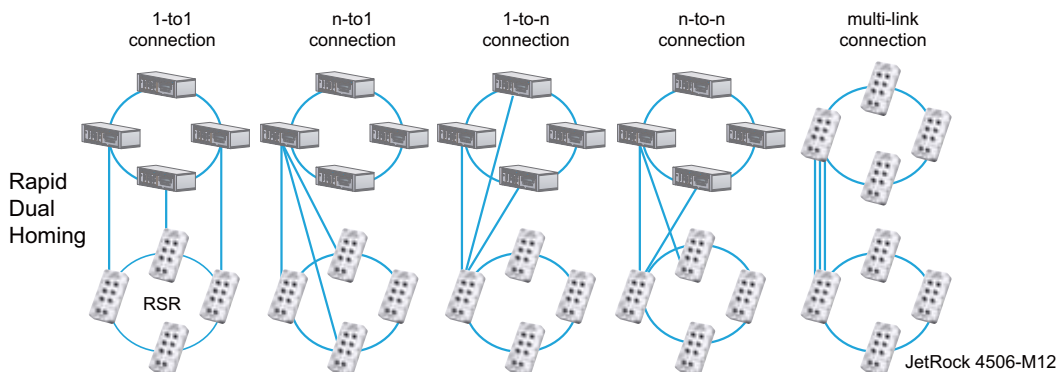
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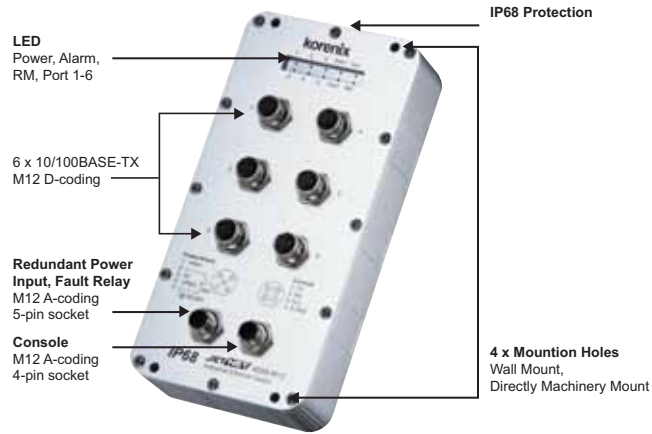
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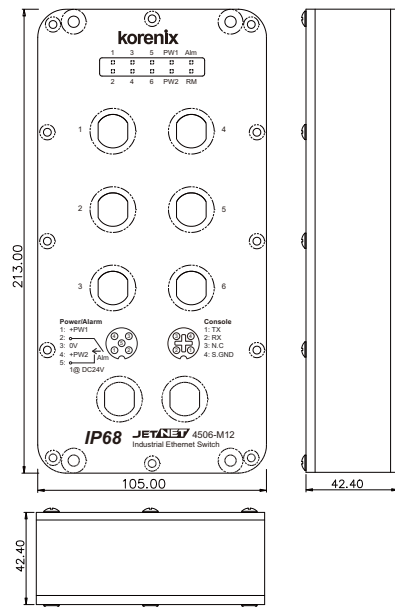


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JetNet 4506-M12 Appearance



Dimensions



IP67/IP68 Industrial Ethernet Switch

Specification

Technology

Standard:

IEEE 802.3 10Base-T
IEEE 802.3u 100Base-T
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: 11A @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-ping 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 6 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

Safety: CE/EN60950

DNV: pending

EN 50155 Railway: pending

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

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

JetNet 3006-RJ (Preliminary)

Industrial 6-Port Unmanaged RJ45/IP67 Ethernet Switch



- Environmentally sealed by IP67 grade protection and ultra rugged enclosure for toughest industrial usages
- Six 10/100 TX auto-negotiation ports with IP67 grade robust RJ45 connectors
- Rugged power interface by M12 connector



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

Overview

The JetNet 3006-RJ 10/100 Base-T Ethernet switch, is specifically designed for the toughest industrial environments. JetNet 3006-RJ is constructed of a rugged weather tight aluminum case and designed with six IP67 rated RJ45 Ethernet ports, which provide a waterproof, and dust-tight connection.

The JetNet 3006-RJ can be easily adopted in almost all kinds of applications and provides the most rugged solutions for your network in outdoor, offshore, railway, moving vehicles, factory automation, coal mines, petrochemical factories, food/beverage industries and plant floors.

Ultra Rugged, Ultra Long-life Enclosure

JetNet 3006-RJ 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 3006-RJ able to survive from constant shock and heavy impact. The aluminum case protects JetNet 3006-RJ against corrosion in environments such as,

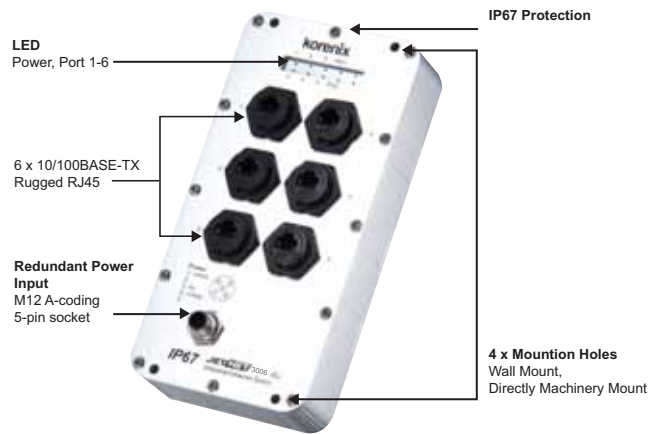
offshore, coal mines, and petrochemical factories. The noncombustible property of the case also ensures that the JetNet 3006-RJ will not emit toxic fumes when exposed to extreme high temperatures. This is the most suitable device for applications where hygiene requirements are a real concern, such as food processing, beverage bottling or pharmaceutical manufacturing.

Rugged RJ45 Robust Connection with IP67 Protection

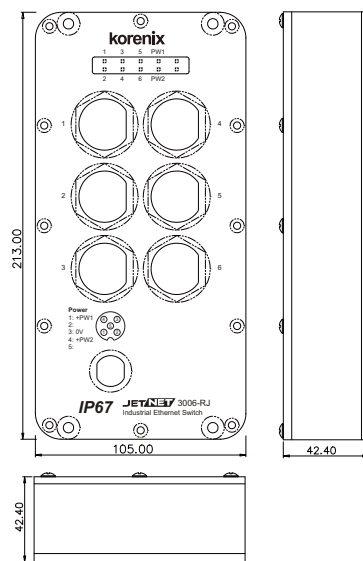
Commercial RJ45 connectors are not designed for harsh environment and usually experienced to link failure and data loss under heavy industrial usages. JetNet 3006-RJ replaces the commercial RJ45 connectors with rugged IP67 grade RJ45 connectors for greater protection against water and dust to eliminate 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 3006-RJ guarantees a reliable connection and data integrity for harsh environment usages.

JetNet 3006-RJ Appearance



Dimensions



IP67/IP68 Industrial Ethernet Switch

Specification

Technology

Standard:

IEEE 802.3 10Base-T
IEEE 802.3u 100Base-T
IEEE 802.3x Flow Control and Back-pressure
Broadcast storm control

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

Interface

Number of Ports:

6 x 10/100Base-TX ports

Connectors:

10/100TX: Rugged RJ45

Power: M12 A-coding 5-pin connector

Cable:

10Base-T: 4-pair UTP/STP Cat. 4, 5 cable,
100Base-TX: 4-pair UTP/STP Cat.5, Cat.5E/Cat.6 cable,

Diagnostic LED:

Power: Power On (Green)

Fast Ethernet: Link (Green) / Activity (Green blinking),

Power Requirements

Power Consumption:

Operating Voltage: 12 to 48V DC

Power consumption: max 6 Watts @ 48V

Mechanical

Protection class: IP67

Installation: Wall mount

Case: Aluminum metal case

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

Weight:

1075 g with package

Environmental

Operating Temperature: -25 ~ 70°C

Storage Temperature: -40 ~ 85°C

Regulatory Approvals

Safety: CE/EN60950

DNV: pending

EN 50155 Railway: pending

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

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 3006-RJ Industrial 6-port Unmanaged RJ45/IP67 Ethernet Switch

Includes:

- JetNet 3006-RJ
- Field assembleable Rugged RJ45 connector x 6
- Field assembleable M12 A-coding 5-pin connector x 1
- Cap of Rugged RJ45 x 6
- Cap of M12 A-coding 5-pin connector x 1
- Mounting Screws x 4
- Quick Installation Guide
- CD User Manual

JetNet 3006-M12

Industrial 6-Port Unmanaged 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 D-coded connectors
- Rugged power interface by M12 connector



Overview

The JetNet 3006-M12 10/100 Base-T Ethernet switch, is specifically designed for the toughest industrial environments. JetNet 3006-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.

The JetNet 3006-M12 can be easily adopted in almost all kinds of applications and provides the most rugged solutions for your network in outdoor, offshore, railway, moving vehicles, factory automation, coal mines, petrochemical factories, food/beverage industries and plant floors.

Ultra-Rugged, Ultra Long-life Enclosure

JetNet 3006-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 3006-M12 able to survive from constant shock and heavy impact. The aluminum case protects JetNet 3006-M12 against corrosion in environments such

as, offshore, coal mines, and petrochemical factories. The noncombustible property of the case also ensures that the JetNet 3006-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.

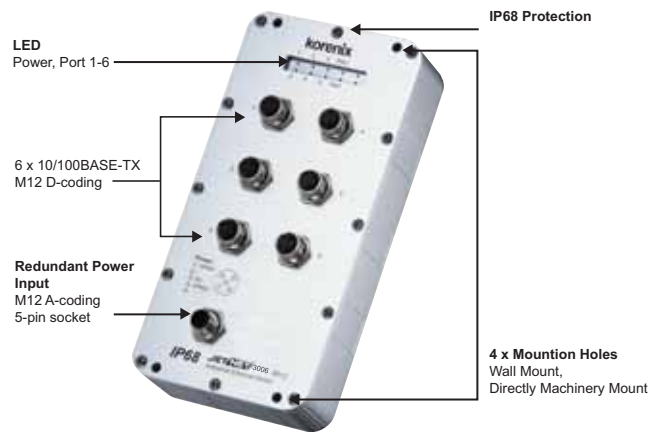
IP67/IP68 Industrial Ethernet Switch

Rugged M12 Robust Connection with IP68 Protection

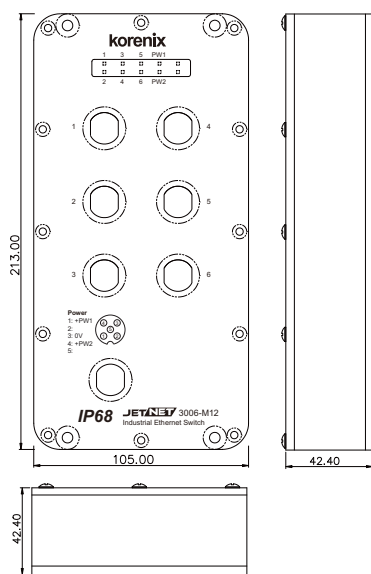
Commercial RJ45 connectors are not designed for harsh environment and usually experienced to link failure and data loss under heavy industrial usages. JetNet 3006-M12 replaces the commercial RJ45 connectors with rugged IP68 grade M12 connectors for greater protection against water and dust to eliminate 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 3006-M12 guarantees a reliable connection and data integrity for harsh environment usages.

JetNet 3006-M12 Appearance



Dimensions



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

Specification

Technology

Standard:

IEEE 802.3 10Base-T
IEEE 802.3u 100Base-T
IEEE 802.3x Flow Control and Back-pressure
Broadcast storm control

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

Interface

Number of Ports:

6 x 10/100Base-TX ports

Connectors:

10/100TX: M12 D-coding 4-pin socket

Power: M12 A-coding 5-pin connector

Cable:

10/100 Base-TX: 2-pair cable

Diagnostic LED:

Power LED: Power 1/Power 2 (Green)

Fast Ethernet Port 1~6: Link (Green)/Activity (Green
blinking).

Power Requirements

Power Consumption:

Operating Voltage: 12 to 48V DC

Power consumption: max 6 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:** 1095 g without package

Environmental

Operating Temperature: -25 ~ 70°C**Storage Temperature:** -40 ~ 85°C

Regulatory Approvals

Safety: CE/EN60950

DNV: pending

EN 50155 Railway: pending

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

Shock: IEC60068-2-27**Vibration:** IEC60068-2-6**Free Fall:** IEC60068-2-32**Warranty:** 5 years

Ordering Information

JetNet 3006--M12 Industrial 6-port Unmanaged M12/IP68 Ethernet Switch

Includes:

- JetNet 3006-M12
- M12 D-coding 4-pin to RJ45 STP cable 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
- Mounting Screws x 4
- Quick Installation Guide
- CD User Manual

JetNet 3706-RJ45 (Preliminary)

Industrial 6-Port Unmanaged RJ45/IP67 PoE Switch



- Environmentally sealed by IP67 grade protection and ultra rugged enclosure for toughest industrial usages
- Six 10/100 TX auto-negotiation ports with IP67 grade robust RJ45 connectors
- Four out of the six ports support IEEE802.3af PoE standard
- Rugged power interface by M12 connector

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

Overview

The JetNet 3706-RJ, an IP67 industrial PoE switch, is specifically designed for the toughest industrial environments. JetNet 3706-RJ is constructed of a rugged weather tight aluminum case and equipped with six IP67 rated RJ45 Ethernet ports, which provide a waterproof, and dust-tight connection. Four of the six Ethernet ports are PoE capable. JetNet 3706-RJ extends your power deployment to the most

inaccessible areas.

The JetNet 3706-RJ can be easily adopted in almost all kinds of applications and provides the most rugged solutions for data transmission and power delivering in outdoor, offshore, railway, moving vehicles, factory automation, coal mines, petrochemical factories, food/beverage industries and plant floors.

Ultra-Rugged Enclosure

JetNet 3706-RJ 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 3706-RJ able to survive from constant shock and heavy impact. The aluminum case protects JetNet 3706-RJ against corrosion in environments such as,

offshore, coal mines, and petrochemical factories. The noncombustible property of the case also ensures that the JetNet 3706-RJ 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.

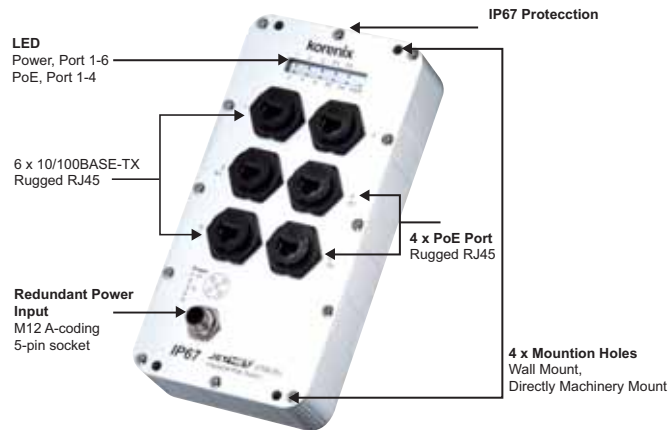
Rugged RJ45 Connector with IP67 Protection for Reliability and Safety consideration

Link reliability is mission critical for PoE technology which relies on a single Ethernet cable to transfer both data and power. However, commercial RJ45 connectors are not designed for harsh environment and usually experienced to link failure and data loss under heavy industrial usages. JetNet 3706-RJ uses rugged IP67 grade RJ45 connectors for greater

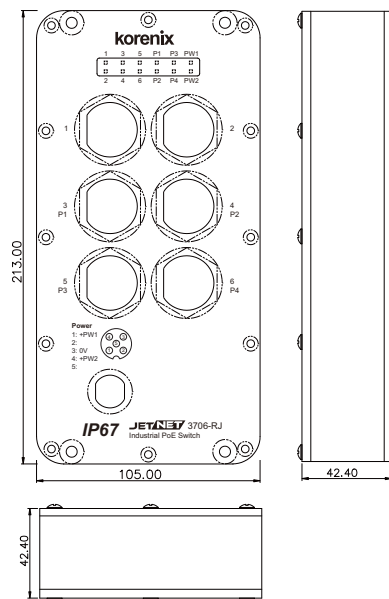
protection against water and dust to eliminate link lost or data failure from constant wash down, vibration and shock. Its sealed design also provides a safe way for delivering power in hazardous locations.

For harsh environments and where traditional power is inaccessible, JetNet 3706-RJ guarantees both a reliable connection and a secured power link.

JetNet 3706-RJ45 Appearance



Dimensions



IP67/IP68 Industrial Ethernet Switch

Specification

Technology

Standard:

IEEE 802.3 10Base-T
IEEE 802.3u 100Base-T
IEEE 802.3af Power Over Ethernet (PoE)
IEEE802.3x Flow control and back pressure
Broadcast storm control

Performance

Switch Technology: Store and Forward with 2.0Gbps switch fabric

System Throughput: 1.785Mpps

MAC Address: 2000

Packet Buffer: 448kbits Embedded packet buffer

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

Transfer packet size: from 64 to 1536 Bytes

PoE Technology: End-Span wiring architecture with AC disconnection behavior

Provides PD classification detection, class ID 0~3 follow IEEE802.3af standard

Pin assignment: V+ (Pin 4, 5), V- (Pin 7, 8), TX (Pin 1, 2), RX (Pin 3, 6)

Interface

Number of Ports:

4 x 10/100Base-TX Ports auto negotiation speed, F/H duplex mode, and auto MDI/MDIX connection with PoE injector

2 x 10/100Base-TX Ports auto negotiation speed, F/H duplex mode, and auto MDI/MDIX connection

Connectors:

10/100TX: Rugged RJ45 with IP67 grade protection
Redundant Power: M12 A-coded male 5 pin connector, Pin assignment (Pin1: V1+, Pin3: V-, Pin4: V2+)

LED Indicators: Power, 10/100M, Link/Acts

Power: Power 1 / Power 2 (Green)

Fast Ethernet: Link (Green) / Activity (Green blinking),

PoE: Power on (Blue)

Cable:

10Base-T: 4-pair UTP/STP Cat. 4, 5 cable,
100Base-TX: 4-pair UTP/STP Cat.5, Cat.5E/Cat.6 cable,

Power Requirements

Power Consumption:

Operating voltage: DC 44~57V
8Watts @ 48V (Maximum) without PD loading

Mechanical

Protection class: IP67

Installation: Wall mount

Case: Aluminum metal case

Dimension: 213.6 mm (H) x 106.0 mm (W) x 56.5.0 mm (D)

Weight: 1025 g without package

Environmental

Operating Temperature: -40 ~ 70°C

Storage Temperature: -40 ~ 85°C

Regulatory Approvals

Safety: CE/EN60950

EMI:

FCC Class A; CE/EN55022:2003 Class A

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

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 3706-RJ Industrial 6-port Unmanaged RJ45/IP67 PoE Switch

Includes:

- JetNet 3706-RJ
- Field assembleable Rugged RJ45 connector x 6
- Field assembleable M12 A-coding 5-pin connector x 1
- Cap of Rugged RJ45 x 6
- Cap of M12 A-coding 5-pin connector x 1
- Quick Installation Guide
- CD User Manual