

Real-time Redundant Ring Switch

RS-405/ RS-408 & RSM-405/ RSM-408 Series

Real-time Redundant Ring Switches

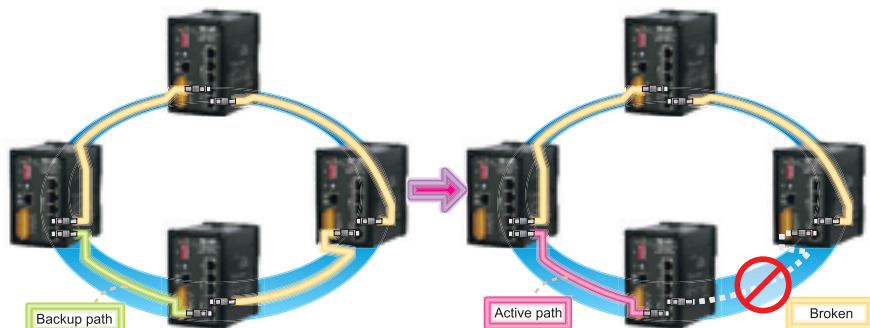


Features

- Plug and Play
- Provide redundant path to Ethernet LAN
- Real-time network recovery
- Multiple rings coupling
- Support Modbus/RTU and Modbus/TCP protocol of status monitoring
- Redundant dual DC power inputs
- LED Indicators for Power, Faults, 10/100M
- DIN-Rail, Wall Mounting
- IP30 protection for metal case

Introduction

The Real-time Redundant Ring Switch offers fault-tolerant industrial Ethernet with ring network topology. The built-in ICP DAS proprietary Cyber-Ring technology detects and recovers from a fiber or copper link failure within approximately 300ms – for the majority of applications a seamless process. Modbus/TCP, Modbus/RTU and OPC supported, SCADA application can monitor status of Ethernet and fiber port with Modbus or OPC protocol. And, the relay output facility can deliver warning signal while dual power or network link failure.



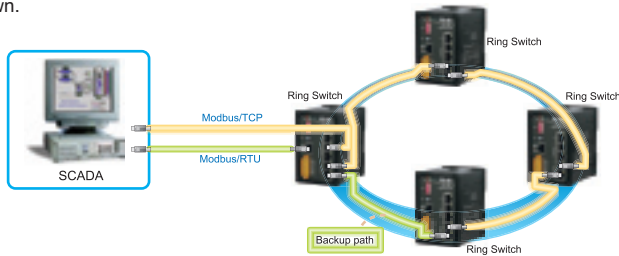
Real-time Redundant Ring Switch

Cyber-Ring Ethernet Self-healing Technology

ICP DAS's proprietary Cyber-Ring self-healing Ethernet technology can establish industrial Ethernet with high reliability and fault-tolerant capability. It can employ a ring topology network of either copper or fiber optic cable. While standard STP typically requires 20s to 30s to reconfigure network structure following a link failure, Cyber-Ring technology reduces this downtime to within half a second. Average experience indicates a typical fault recovery time is 300ms for Cyber-Ring fault-tolerant network.

Getting Port Status by Modbus Protocol

The Real-time Redundant Ring Switch supports Modbus/TCP & Modbus/RTU protocol, provides a solution to read port status. Through it, the port statuses, switch status, relay output status...etc can easily be known.



For most HMI/SCADA software tools, the availability of Modbus/TCP protocol from Ring Switch help them to monitor the status of the Ethernet LAN.

Selection Guide

Model	Speed	Port	Operation temperature	Isolation Voltage	Redundant Power	Casing
RS-405	10/100M	5	-30 ~ 75°C	1KV	DC+ 10~30V	Plastic
RS-408	10/100M	8	-30 ~ 75°C	1KV	DC+ 10~30V	Plastic
RSM-405	10/100M	5	-30 ~ 75°C	1KV	DC+ 10~30V	Metal
RSM-408	10/100M	8	-30 ~ 75°C	1KV	DC+ 10~30V	Metal

Fiber Switch Selection Guide

Model	Fiber Optics				Ethernet		Redundant Power	Casing
	Mode	Connector	Speed	Port	Speed	Port		
RS-405FT	Multi-mode	ST	100M	2	10/100M	3	DC+ 10~30V	Plastic
RS-405FC	Multi-mode	SC	100M	2	10/100M	3	DC+ 10~30V	Plastic
RS-405FCS	Single-mode	SC	100M	2	10/100M	3	DC+ 10~30V	Plastic
RSM-405FT	Multi-mode	ST	100M	2	10/100M	3	DC+ 10~30V	Metal
RSM-405FC	Multi-mode	SC	100M	2	10/100M	3	DC+ 10~30V	Metal
RSM-405FCS	Single-mode	SC	100M	2	10/100M	3	DC+ 10~30V	Metal

Industrial Ethernet Switch

Available soon

NS-305/NS-308 & NSM-305/NSM-308 Series

Industrial 8- or 5-Port Unmanaged Ethernet Switches



Features

- Redundant dual DC power inputs
- Relay output warning for power failure and port break alarm
- Store-and-forward architecture
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- DIP Switch for Power failure and Port break alarm mask
- LED Indicators for Power, Faults, 10/100M
- DIN-Rail, Wall Mounting
- IP30 protection for metal case

Introduction

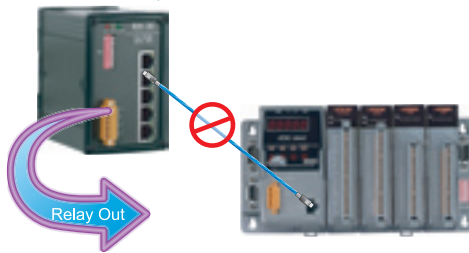
The NS-305/308 series Ethernet switches offers a variety of 8- or 5-port to choose from, and provides a low-cost solution for your industrial Ethernet connection. With the built-in relay warning feature, it will alert you whenever there is a power failure or port break occurring, therefore provides easy maintenance and enhances real-time management. These switches are specially designed for harsh industrial environments, support wide operating temperature range from -30 to 75°C.

Redundant Power Inputs

NS-305/308 provides reliable redundant power inputs for your critical applications. It includes dual power inputs that can be connected to DC power sources at the same time. If one power input fails, the other backup power input will seamlessly take over to prevent the loss of power.

Relay Output Alarm for Port Breaks, Power Failure

NS-308/305 protects your critical applications from damage and downtime via relay contact outputs. When the power fails or a port link breaks, it will automatically warn the maintenance technicians to take immediately actions, therefore is able to deal with the emergency situation rapidly and efficiently.



Selection Guide

Model	Speed	Port	Operation temperature	Isolation Voltage	Power Input	Casing
NS-305	10/100M	5	-30 ~ 75°C	1KV	DC+ 10~30V	Plastic
NS-308	10/100M	8	-30 ~ 75°C	1KV	DC+ 10~30V	Plastic
NSM-305	10/100M	5	-30 ~ 75°C	1KV	DC+ 10~30V	Metal
NSM-308	10/100M	8	-30 ~ 75°C	1KV	DC+ 10~30V	Metal

Industrial Ethernet Switch

NS-205/NS-208/NS-208G & NSM-108/NSM-208G Series

Industrial 8- or 5-Port Unmanaged Ethernet Switches

Features

- Automatic MDI / MDI-X crossover for plug-and-play
- Each port supports both 10/100 and 1000 Mbps speed auto negotiation
- Store-and-forward architecture
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- 16 Gbps high performance memory bandwidth.
- 8K MAC Address Table Size
- Frame buffer memory :1 Mbit
- Provides LEDs for network and power monitoring
- Power Inputs +10 ~ +30V DC
- DIN rail mount for industrial usage



Introduction

The NS-205/NS-208/NSM-108 series of industrial Ethernet switches are entry-level industrial 8/5-port Ethernet switches that support IEEE802.3/802.3u/802.3x with 10/100M, full/half-duplex, MDI/MDIX auto-sensing RJ45 ports.

NS-208G/NSM-208G series are 8-port unmanaged gigabit switches. That is an ideal solution for bandwidth-hungry applications (such as high resolution digital image transmission, video/audio file streaming/downloading, and server farm connectivity).

NS-205-IP67 Ethernet Switches are designed for use in industrial waterproof/harsh environments. The rugged packaging and IP67 connectors guarantee a total protection that can withstand a variety of extreme conditions such as high temperatures, extreme shocks & vibrations, dust particles or even liquid immersion. They can be directly mounted to any machine or convenient flat surface. Even with all its rugged features, the switch still provides a high level of functionality, including the ability to support full-duplex communication and 10Mbps/100Mbps transmission speeds. With 1.4Gbps of total bandwidth, the switch can simultaneously handle full wire speed communication on each port. A dedicated uplink port enables a connection to other switches without use of a crossover cable. No programming is necessary, as the switch auto-learns network addresses. 10 to 30VDC isolated power input keeps spikes and surges on the power line from damaging the power supply. They are completely plug and play and ready to go right out of the box.



Selection Guide

Model	Speed	Port	Operation temperature	PoE	Casing
NS-205G	10/100/1000M	5	-30 ~ 70°C	No	Plastic
NS-205PSE	10/100M	5	-30 ~ 75°C	Yes	Plastic
NS-205	10/100M	5	-30 ~ 75°C	No	Plastic
NS-208	10/100M	8	-30 ~ 75°C	No	Metal
NS-208G	10/100/1000M	8	-30 ~ 70°C	No	Plastic
NSM-108	10/100M	8	-30 ~ 75°C	No	Metal
NSM-208G	10/100/1000M	8	-30 ~ 70°C	No	Metal
NS-205-IP67	10/100M	5	-10 ~ 60°C	No	Plastic with IP67

Industrial Media Converters



Features

- Automatic MDI / MDI-X crossover for plug-and-play
- Store-and-forward architecture
- 1.4Gbps high performance memory bandwidth
- Supports operating temperatures from 0 ~ +70°C
- DIN rail mount for industrial usage

Specifications

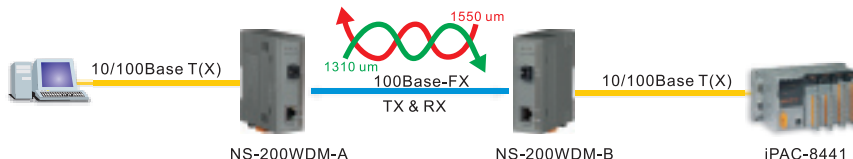
Compatibility	IEEE 802.3, IEEE802.3u, IEEE802.3x
Single mode fiber cables	8.3/125, 8.7/125, 9/125 or 10/125 μm
Distance	15km, 1300 or 1310nm (9/125 μm) for full duplex.
Min. TX Output	-15 dBm
Max. TX Output	-8 dBm
Sensitivity	-36 to -31 dBm

Introduction

The NS-200Fx is a Ethernet(10/100Base-TX) to Fiber Optics(100Base-FX) converter. The Ethernet supports 10/100M auto-negotiation feature and auto MDI/MDIX function. The NS-200WDM Series of Single-Strand Fiber Converters supports Wavelength Division Multiplexing (WDM) technology that allows two independent data communication channels to transmit and receive over one standard, single mode, and fiber optic line. This not only doubles your existing bandwidth, but also effectively reduces the cost of creating a new fiber optic infrastructure.

Single-Strand Fiber Converter Solution

Wavelength Division Multiplexing (WDM) supports bi-directional data transmission and receiving using dual wavelengths (1310/1550 nm) over a single strand, of single-mode optical fiber.



50% Cost Saving for Fiber Optic Infrastructures

With a pair of NS-200WDM series products (NS-200WDM-A and NS-200WDM-B), you can double the utilization of your

Selection Guide

Model	Fiber Optics				Ethernet		Power Input	Casing
	Mode	Connector	Speed	Port	Speed	Port		
NS-200FT	Multi-mode	ST	100M	1	10/100M	1	DC+ 10~30V	Plastic
NS-200FC	Multi-mode	SC	100M	1	10/100M	1	DC+ 10~30V	Plastic
NS-200FCS	Single-mode	SC	100M	1	10/100M	1	DC+ 10~30V	Plastic
NS-200WDM-A	Single-mode	SC	100M	1	10/100M	1	DC+ 10~30V	Plastic
NS-200WDM-B	Single-mode	SC	100M	1	10/100M	1	DC+ 10~30V	Plastic

Important Note : You must purchase both NS-200WDM-A and NS-200WDM-B since these products work as a pair.

Industrial Ethernet with Fiber Switch

Industrial 10/100 Base-T(X) with 100 Base-FX Switches



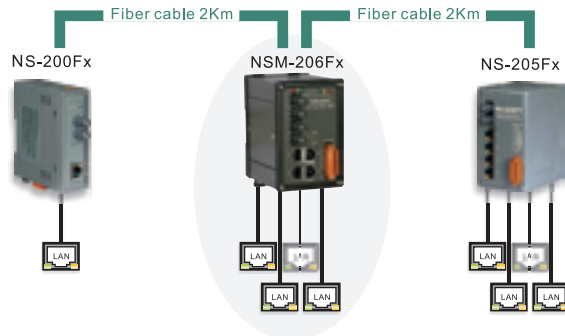
Features

- Automatic MDI / MDI-X crossover for plug-and-play
- Store-and-forward architecture
- 3.2Gbps high performance memory bandwidth
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- Frame buffer memory: 256 Kbit
- Integrated look-up engine with dedicated 1 K unicast MAC addresses.
- Supports operating temperatures from 0 ~ +70°C
- DIN-Rail

Introduction

NS-205Fx/NS-206Fx are Industrial 10/100 Base-T(X) with 100 Base-FX Switch that secures data transmission by using fiber optic transmission to provide immunity from EMI/RFI interference. It is used Ethernet for transmitting a signal up to 2 Km (6,600 ft), and is the perfect solution for applications where transmission must be protected from electrical exposure, surges, lightning or chemical corrosion.

The NS-206F series can extend your LAN in a daisy chain configuration.



Selection Guide

Model	Fiber Optics				Ethernet		Power Input	Casing
	Mode	Connector	Speed	Port	Speed	Port		
NS-205FT	Multi-mode	ST	100M	1	10/100M	4	DC+ 10~30V	Plastic
NS-205FC	Multi-mode	SC	100M	1	10/100M	4	DC+ 10~30V	Plastic
NS-205FCS	Single-mode	SC	100M	1	10/100M	4	DC+ 10~30V	Plastic
NS-206ET	Multi-mode	ST	100M	2	10/100M	4	DC+ 10~30V	Plastic
NS-206FC	Multi-mode	SC	100M	2	10/100M	4	DC+ 10~30V	Plastic
NS-206FCS	Single-mode	SC	100M	2	10/100M	4	DC+ 10~30V	Plastic
NSM-205FT	Multi-mode	ST	100M	1	10/100M	4	DC+ 10~30V	Metal
NSM-205FC	Multi-mode	SC	100M	1	10/100M	4	DC+ 10~30V	Metal
NSM-205FCS	Single-mode	SC	100M	1	10/100M	4	DC+ 10~30V	Metal
NSM-206FT	Multi-mode	ST	100M	2	10/100M	4	DC+ 10~30V	Metal
NSM-206FC	Multi-mode	SC	100M	2	10/100M	4	DC+ 10~30V	Metal
NSM-206FCS	Single-mode	SC	100M	2	10/100M	4	DC+ 10~30V	Metal