

Media Converters





NS-200F Series

Industrial 10/100 Base-TX to 100 Base-FX Media Converter

Highlight Information >>>>



NS-200FC/FCS Series





Introduction

The NS-200F series is a Ethernet (10/100 Base-TX) to Media (100 Base-FX) converter. The Ethernet supports 10/100M auto negotilation feature and auto MDI/MDI-X function.

The NS-200F series operates at either half or full duplex mode.

It contains "soft start" function with overload protection, high-low voltage protection.

The width of the NS-200F series is just 33 mm, so it can be used where space is important.

• Features

- Automatic MDI/MDI-X crossover for plug-and-play
- Supports both 10/100 Mbps speed auto negotiation
- Store-and-forward architecture
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- 1.4 Gbps high performance memory bandwidth
- Frame buffer memory: 256 Kbit

- Integrated look-up engine with dedicated 1024 unicast MAC addresses
- Supports +10 V_{DC} ~ +30 V_{DC} Reverse Polarity Protection
- Supports operating temperatures from 0 °C ~ +70 °C
- DIN-Rail mount for industrial usage

4

Specifications

Technology	
Standards	IEEE 802.3, 802.3u, 802.3x
Processing Type	Store & forward, wire speed switching
MAC Addresses	1024
Memory Bandwidth	1.4 Gbps
Frame Buffer Memory	256 Kbit
Flow Control	IEEE 802.3x flow control, back pressure flow control
Interface	
RJ-45 Port	10/100 Base-TX auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection
Fiber Port	100 Base-FX
LED Indicators	10/100M, Link/Act, Full duplex/Half duplex (Fiber Port)
Ethernet Isolation	1500 Vms 1 minute
Frame Ground for EMS Protection	Yes
	Multi Mode Fiber Cables: 50/125, 62.5/125 or 100/140 µm
	Distance: 2 km, (62.5/125 µm recommended) for full duplex
Multi Mada	Wavelength: 1300 or 1310 nm
Multi Mode	Min. TX Output: -20 dBm
	Max. TX Output: -14 dBm
	RX Sensitivity: -34 ~ -31 dBm
	Single Mode Fiber Cables: 8.3/125, 8.7/125, 9/125 or 10/125 µm
	Distance: 15 km, (9/125 µm recommended) for full duplex
Circula Mada	Wavelength: 1300 or 1310 nm
Single Mode	Min. TX Output: -15 dBm
	Max. TX Output: -8 dBm
	RX Sensitivity: -36 ~ -31 dBm
	Ethernet: 2-pair UTP/STP Cat.3, 4, 5, EIA/TIA-568 100 Ω
Ethernet Transmission Distance	Fast Ethernet: 2-pair UTP/STP Cat. 5, EIA/TIA-568 100 Ω
Power	
Input Voltage Range	+10 $V_{DC} \sim$ +30 V_{DC} (Non-isolation)
Power Consumption	0.12 A @ 24 V_{DC} , +/-5% arrowed with 100M Full duplex
LED Indicator	Yes
Protection	Power reverse polarity protection
Frame Ground for EMS Protection	Yes
Mechanical	
Casing	Plastic (Flammability UL 94V-0)
Dimensions (W x L x H)	33 mm x 85 mm x 107 mm
Installation	DIN-Rail
Environmental	
Operating Temperature	0 °C ~ +70 °C
Storage Temperature	-20 °C ~ +85 °C
Ambient Relative Humidity	10% ~ 90% RH, non-condensing



×.

LED Functions



LED Indicator Functions		
LED	Color	Description
PWR	Red	Power is On
	Off	Power is Off
Fiber Optic	Yellow_On	Full Duplex Mode
	Yellow_Off	Half Duplex Mode
	Green_On	Link/Act
	Green_Off	Not Networking
Ethernet	Yellow	Link to 10 Mbps
	Green	Link to 100 Mbps
	Off	Not Networking

RJ-45 Pin-Out		
Pin#	Signal Name	Function
1	TD+	Transmit Data
2	TD-	Transmit Data
3	RD+	Receive Data
4	NC	No Connection
5	NC	No Connection
6	RD-	Receive Data
7	NC	No Connection
8	NC	No Connection



• Pin Function for Terminal Block

External power supply is connected using the removable terminal block:

+Vs : Power input +10 V_{DC} ~ +30 V_{DC}

GND: Ground

F.G. : F.G. stands for Frame Ground (protective ground). It is optional. If you use this pin, it can reduce EMI radiation; improve EMI performance and ESD protection.

Appearance



High Reliability Industrial Ethernet Switch for Rugged Environment

• Dimensions (Unit: mm)



• Ordering Information

A: Power Input	NS-200 A F +12 Vpc ~ +48 Vpc	- 4 0 - Single Mode Distance 40: 40 km Standard Models: 15 km
	Fiber Port Connector	Operating Temperature
Ordering Code Definition	T: Multi Mode ST Connector C: Multi Mode SC Connector CS: Single Mode SC Connector	T: Operating Temp: -40 °C ~ +75 °C Standard Models: 0 °C ~ +70 °C
Models	NS-200FT NS-200FC NS-200FCS NS-200AFT NS-200AFC NS-200AFCS	NS-200AFT-T NS-200AFC-T NS-200AFCS-T NS-200AFCS-40T

• Accessories

GPSU06-6	24V/0.25A, 6 W Power Supply
KWM020-1824F	24V/0.75A, 18 W Power Supply
DIN-KA52F	24V/1.04A, 25 W Power Supply with DIN-Rail Mounting





Industrial 1000 Base-T to 1000 Base-SX/LX Media Converters



Introduction

The NS-200G series provides one RJ-45 auto sensing 10/100/1000 Base-T port and one 1000 Base-SX/LX SFP port. The RJ-45 port is full/half duplex capable.

The NS-200G auto-negotiates the speed and flow control capabilities of the copper port connection, and configures itself automatically. The 1000 Base-SX/LX fiber optic port utilizes industry standard SFP transceivers with LC style connectors and is configured for full duplex operation. Both multi-mode and single-mode fiber models are available.

The width of the NS-200G series is just 33 mm, so it can be used where space is important.

Features

- Automatic MDI/MDI-X crossover for plug-and-play
- Store-and-forward architecture
- Full duplex IEEE 802.3x
- Supports +12 V_{DC} ~ +48 V_{DC}
- **Reverse Polarity Protection**
- Supports operating temperatures from 0 °C ~ +70 °C
- DIN-Rail mount

Specifications

Technology	
Standards	IEEE 802.3, 802.3u, 802.3x, 802.3ab, 802.3z
Processing Type	Store & forward, wire speed switching
MAC Addresses	1024
Interface	
RJ-45 Port	1000 Base-T auto MDI/MDI-X connection
Fiber Port	1000 Base-SX/LX
LED Indicators	10/100/1000M, Link/Act
Ethernet Isolation	1500 Vrms 1 minute
Frame Ground for EMS Protection	Yes
Power	
Input Voltage Range	+12 Vpc ~ +48 Vpc (Non-isolation)
Power Consumption	0.15 A @ 24 V _{DC} , +/-5% arrowed
LED Indicator	Yes
Protection	Power reverse polarity protection
Frame Ground for EMS Protection	Yes
Mechanical	
Casing	Plastic (Flammability UL 94V-0)
Dimensions (W x L x H)	33 mm x 85 mm x 107 mm
Installation	DIN-Rail
Environmental	
Operating Temperature	0 °C ~ +70 °C
Storage Temperature	-20 °C ~ +85 °C
Ambient Relative Humidity	10% ~ 90% non-condensing

• Ordering Information

NS-200G CR	1000 Base-T to 1000 Base-SX/LX Media Converter Without SPF Module (RoHS)
NS-200GSX CR	1000 Base-T to 1000 Base-SX Multi Mode Media Converter (RoHS)
NS-200GLX CR	1000 Base-T to 1000 Base-LX Single Mode Media Converter (RoHS)

• Accessories

GPSU06-6	24V/0.25A, 6 W Power Supply
KWM020-1824F	24V/0.75A, 18 W Power Supply
DIN-KA52F	24V/1.04A, 25 W Power Supply with DIN-Rail Mounting



4

NS-200WDM Series

Industrial Single-Strand 10/100 Base-TX to 100 Base-FX Media Converter

Highlight Information >>>>

NS-200WDM-A

NS-200WDM-B





Introduction

Using the fiber optic medium for ethernet applications has become more popular due to fiber optic's excellent physical features, especially for long distance networks. However, fiber optic cable is very expensive, so if we can apply a solution that uses only 1 cable instead of 2, the infrastructure cost can be cut in half. The NS-200WDM Series provides a solution that reduces your expense by 50%!

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, fiber optic line. This not only doubles your existing bandwidth, but also effectively reduces the cost of creating a new fiber optic infrastructure.

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 existing, costly fiber optic cable, and save 50% of the cost of a newly installed fiber optic application.

It contains "soft start" function with overload protection, high-low voltage protection.

The width of the NS-200WDM is just 33 mm, so it can be used where space is important.

Features

- Automatic MDI/MDI-X crossover for plug-and-play
- Supports both 10/100 Mbps speed auto negotiation
- Store-and-forward architecture
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- 1.4 Gbps high performance memory bandwidth
- Integrated look-up engine with dedicated 1024 unicast MAC addresses
- Supports +12 V_{DC} ~ +48 V_{DC} Reverse Polarity Protection
- Supports operating temperatures from 0 °C ~ +70 °C
- DIN-Rail

Specifications

Technology	
Standards	IEEE 802.3, 802.3u, 802.3x
Processing Type	Store & forward, wire speed switching
MAC Addresses	1024
Memory Bandwidth	1.4 Gbps
Frame Buffer Memory	256 Kbit
Flow Control	IEEE 802.3x flow control, back pressure flow control
Interface	
RJ-45 Port	10/100 Base-TX auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection
Fiber Port	100 Base-FX (Single Mode; SC Connector)
LED Indicators	10/100M, Link/Act, Full duplex/Half duplex (Fiber Port)
Ethernet Isolation	1500 V _{rms} 1 minute
Frame Ground for EMS Protection	Yes
	Single Mode Fiber Cables: 8.3/125, 8.7/125, 9/125 or 10/125 μm
	Distance: 15 km, (9/125 µm recommended) for full duplex
	Wavelength:
Single Mode	TX: 1310, RX: 1550 nm for NS-200WDM-A
	TX: 1550, RX: 1310 nm for NS-200WDM-B
	Min. TX Output: -14 dBm
	Max. TX Output: -8 dBm
	RX Sensitivity: -31 dBm
Ethernet Transmission	Ethernet: 2-pair UTP/STP Cat.3, 4, 5, EIA/TIA-568 100 Ω
Distance	Fast Ethernet: 2-pair UTP/STP Cat. 5, EIA/TIA-568 100 Ω
Power	
Input Voltage Range	+12 V _{DC} ~ +48 V _{DC} (Non-isolation)
Power Consumption	0.12 A @ 24 V $_{\text{DC}}$ +/-5% arrowed with 100M Full duplex
LED Indicator	Yes
Protection	Power reverse polarity protection
Frame Ground for EMS Protection	Yes
Connection	3-Pin Removable Terminal Block
Mechanical	
Casing	Plastic
Flammability	UL 94V-0
Dimensions (W x L x H)	33 mm x 85 mm x 107 mm
Installation	DIN-Rail
Environmental	
Operating Temperature	0 °C ~ +70 °C
Storage Temperature	-20 °C ~ +85 °C
Ambient Relative Humidity	10% ~ 90% RH, non-condensing







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.



Ordering Information

NS-200WDM-A CR	10/100 Base-TX to 100 Base-FX Single-Strand Media Converter,
	TX 1310 nm, RX 1550 nm, SC (RoHS)
NS-200WDM-B CR	10/100 Base-TX to 100 Base-FX Single-Strand Media Converter,
	TX 1550 nm, RX 1310 nm, SC (RoHS)
Important Note: You must purchase both NS-200WDM-A and NS-200WDM-B since these products work as a pair.	

Accessories

GPSU06-6	24V/0.25A, 6 W Power Supply
KWM020-1824F	24V/0.75A, 18 W Power Supply
DIN-KA52F	24V/1.04A, 25 W Power Supply with DIN-Rail Mounting