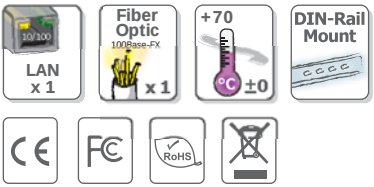
Media Converters

4

NS-200F Series

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

Highlight Information



NS-200FC/FCS Series

NS-200FT 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 negotiation 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.

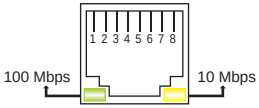
Features

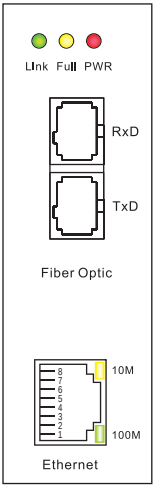
- Automatic MDI/MDI-X crossover for plug-and-play
- Supports both 10/100 Mbps speed auto negotiation
- Store-and-forward architecture
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- 1.4 Gbps high performance memory bandwidth
- Frame buffer memory: 256 Kbit
- Integrated look-up engine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

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 V_{rms} 1 minute
Frame Ground for EMS Protection	Yes
Multi Mode	Multi Mode Fiber Cables: 50/125, 62.5/125 or 100/140 µm
	Distance: 2 km, (62.5/125 µm recommended) for full duplex
	Wavelength: 1300 or 1310 nm
	Min. TX Output: -20 dBm
	Max. TX Output: -14 dBm
	RX Sensitivity: -34 ~ -31 dBm
Single Mode	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: 1300 or 1310 nm
	Min. TX Output: -15 dBm
	Max. TX Output: -8 dBm
	RX Sensitivity: -36 ~ -31 dBm
Ethernet Transmission Distance	Ethernet: 2-pair UTP/STP Cat.3, 4, 5, EIA/TIA-568 100 Ω
	Fast Ethernet: 2-pair UTP/STP Cat. 5, EIA/TIA-568 100 Ω
Power	
Input Voltage Range	+10 V_{DC} ~ +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

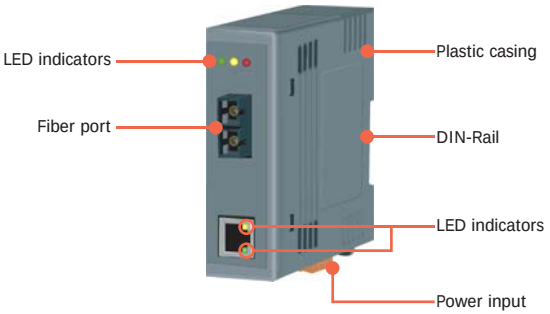
RJ-45 Pin-Out

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

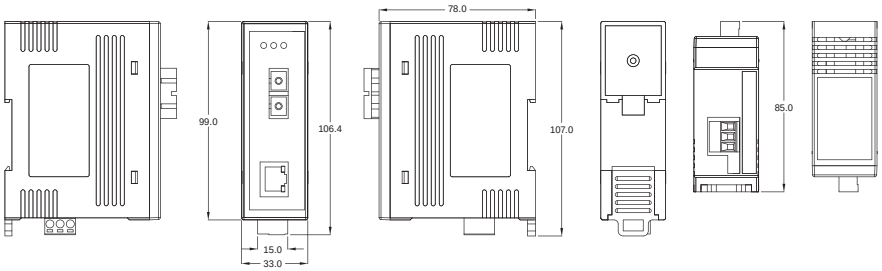
Pin Function for Terminal Block

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



Dimensions (Unit: mm)



Left Side View | Front View | Right Side View | Back View | Bottom View | Top View

Ordering Information

NS-200 A F □□ - 4 0 - □

A: Power Input +12 V_{DC} ~ +48 V_{DC}

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

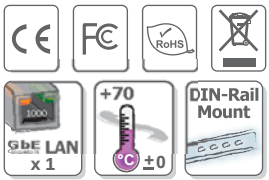
NS-200G Series

Available Soon

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

Highlight Information

NS-200G Series



For NS-200GSX

For NS-200GLX

NS-200GSX/LX NS-200G

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 V_{rms} 1 minute
Frame Ground for EMS Protection	Yes
Power	
Input Voltage Range	+12 V_{DC} ~ +48 V_{DC} (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

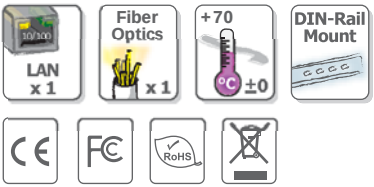
GPSU06-6	24V/0.25A, 6 W Power Supply
KWM020-1824F	24V/0.75A, 18 W Power Supply
DIN-KA52F	24V/1.04A, 25 W Power Supply with DIN-Rail Mounting

NS-200WDM Series

NEW

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

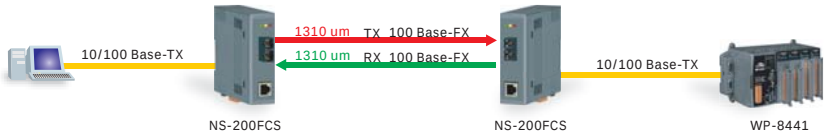
Specifications

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	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: 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 Distance	Ethernet: 2-pair UTP/STP Cat.3, 4, 5, EIA/TIA-568 100 Ω
	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_{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

Applications

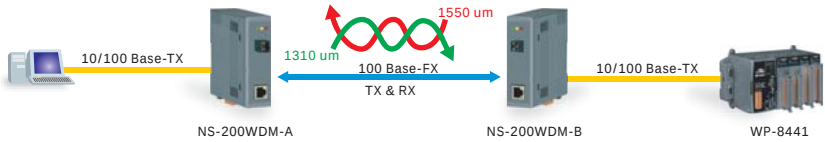
General Media Converter Solution

A general media converter requires a pair of fiber optic cables for data transmission and receiving.

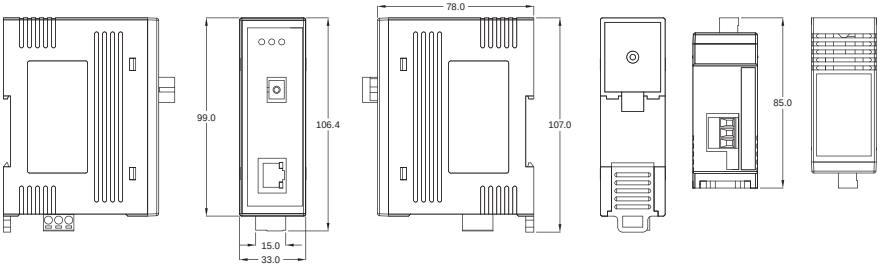


Single-Strand Fiber Converter Solution

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.



Dimensions (Unit: mm)



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