

FIBERROAD

Industrial Media Converter

Product Data Sheet



Unmanaged Industrial Media Converter

The industrial media converters are designed with a compact housing, so they provide a secure way to connect Ethernet networks over long distances using all types of fiber through the integrated optical fiber port(s). As far as specification is concerned, Fibre connectivity is determined by a separate SFP/1x9 device selection, allowing application and site flexibility. The models are available in both non-PoE and PoE versions, and can power the latest high-powered PoE devices over a wide industrial operating temperature range. The media converter has dual redundant power inputs and an alarm relay that guarantees maximum operation reliability.

Main Features

- All-aluminum Case, Compact and Fanless Design
- 10/100Mbps or 10/100/1000Mbps Full/Half Duplex, Auto-Negotiation and Auto-MDI/MDIX
- ❖ Optionally support IEEE 802.3af/at/bt PoE Standard, without damaging not-PoE devices.
- ❖ Operating Temperature from -40 to 75°C
- ❖ Dual Redundant DC9~56V power input
- ❖ Support power input polarity protection; no worries about the reverse connection
- ❖ Aluminium shell, fanless design
- ❖ Free fall, shock-proof and vibration-proof for industries
- ❖ Plug and play; no software configuration is needed
- ❖ Either DIN rail or Wall Mount installation



The industrial converter is equipped with rugged IP40 metal enclosure to ensure industrial operation in harsh environments where extreme low or high temperatures can be experienced. It is specially designed for outdoor and industrial applications such as city surveillance systems, smart manufacturing, etc. It is ideal for miniaturization and rapid deployment, provides users a cost-effective and highly reliable option.

Product Specifications

Ethernet Interface				
Model	FR-7N1101/P/BT	FR-7N3101/P/BT	FR-7N1102/P/BT	FR-7N3102/P/BT
RJ45 Port	1x10/100Base-TX	1x10/100/1000Base-TX	2x10/100Base-TX	2x10/100/1000Base-TX RJ45
Optical Port	1x100Base-X SFP/1x9	1x1000Base-X SFP/1x9	1x100Base-X SFP/1x9	1x1000Base-X SFP/1x9
Port Mode(Tx)	Auto Negotiation Speed Full/Half Duplex Mode Auto MDI/MDI-X Connection			
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3z for 100BaseSX/LX/LHX/ZX IEEE 802.3x for flow control		IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3ab for 1000BaseT(X) IEEE 802.3z for 1000BaseSX/LX/LHX/ZX IEEE 802.3x for flow control	
Maximum Packet Length	Up to 10K			
Forward Filter Rate	14,880pps(10Mbps) 148,800pps(100Mbps) 1,488,000pps(1000Mbps)			
Transmission Distance	SFP Port: Depends on optical module(0-160km) RJ45 Port Transmission Distance: 100m (using standard CAT5/CAT5e cable)			

PoE & Power Supply				
Model	FR-7N1101P/3101P	FR-7N1101BT/3101BT	FR-7N1102P/3102P	FR-7N1102BT/310BT
PoE Ports	IEEE802.3af/at @PoE+	IEEE802.3af/at/bt @PoE++	Port 1 to 2 IEEE802.3af/at @PoE+	Port 1 to 2 IEEE802.3af/at/bt @PoE++
Power Supply Pin	Default: 1/2(+), 3/6(-)	Default: 1/2(+), 3/6(-) or 4/5(+), 7/8(-)	Default: 1/2(+), 3/6(-)	Default: 1/2(+), 3/6(-) or 4/5(+), 7/8(-)
Max Power Per Port	30W	90W	30W	90W
Total PWR /Input Voltage	30W(DC48-56V) (Model dependent)	90W(DC52-56V) (Model dependent)	60W(DC48-56V) (Model dependent)	180W(DC52-56V) (Model dependent)
PSE Modes	Mode A	Mode A, Mode B	Mode A	Mode A, Mode B
Power Consumption	Single Channel: 2 Watts Max(without PoE load) Dual Channel: 4 watts Max(without PoE load)			
Power Inputs	2			
Input Voltage	9-56VDC,Redundant dual inputs			
Operating Voltage	Non-PoE Mode: 9-56VDC 30W PoE Mode: 48-56VDC 90W PoE Mode: 52-56VDC(IEEE802.3bt model)			
Connector	1 removable 6-contact terminal blocks Pin 1/2 for Power 1, Pin 3/4 for Power 2, Pin 5/6 for fault alarm			
Protection	Overload Current Protection, Reverse Polarity Protection			

Product Specifications

LED	State	Description
PWR (P1&P2)	ON	Power is being supplied
	OFF	Power is not being Supplied.
Link/ACT (1-3)	ON	Port connection is active
	Blinking	Data transmitted
	OFF	Port connection is not active.

Physical Characteristics

Housing	Aluminum case
IP Rating	IP40
Dimensions	120mm*90mm*35mm
Installation Mode	DIN Rail or Wall Mount
Weight	350g

Environmental

Operating Temperature	-40°C~75°C (-40 to 167 °F)
Operating Humidity	5%~90% (non-condensing)
Storage Temperature	-40°C~85°C (-40 to 185 °F)
MTBF	2,573,692 Hours (Non-PoE Models) 2,332,497 Hours (PoE Models) Standard: Telcordia SR-332 GF 30°C
Heat Dissipation	7 BTU/h (1Ch Non-PoE) 14 BTU/h (2Ch Non-PoE) 109 BTU/h (1Ch 30W PoE) 218 BTU/h (2Ch 30W PoE) 314 BTU/h (1Ch 90W PoE) 628 BTU/h (2Ch 90W PoE)

Certification Standard

EMC/EMI/EMS	FCC Part15 Class A CE-EMC/LVD RoHS EN61000-4-2 (ESD):LEVEL 4 IEC 6100-4-2 (EFT):LEVEL 4 IEC 6100-4-2 (Surge): LEVEL 4 IEC 6100-4-2 (CS): LEVEL 3 IEC 61000-4-2(PFMP) : LEVEL 5 EN61000-4-3 (RS):LEVEL 4
Shock	IEC60068-2-27
Vibration	IEC60068-2-6
Freefall	IEC60068-2-31
Safety	EN 60950-1, UL 60950-1, CSA C22.2 No.60950-1, UL 508

Product Specifications

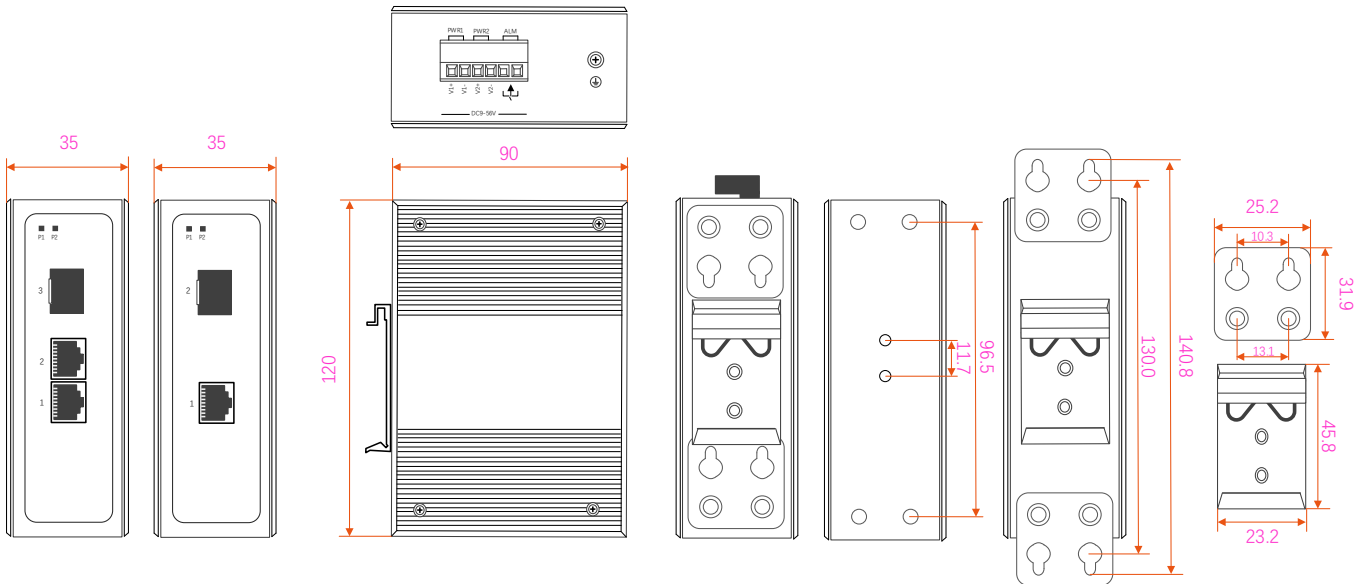
Package Contents

Device	1x Industrial Ethernet Switch
Installation Kit	1x DIN-Rail Clip 2x Wall-Mount Kits
Documentation	1 x Quick installation guide 1 x Warranty card 1x Product notice

Warranty

Defects Liability Period	5 years warranty, lifetime technical support
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Dimensions Unit: mm



Accessories(Sold Separately)

Power Supply	
FR-I-60-24	DIN-rail 24 VDC power supply with 60W/0.6A, 85 to 264 VAC, or 120 to 370 VDC input, -20 to 70°C operating temperature
FR-I-120-48	DIN-rail 48-58V VDC power supply with 120W/1.2A, , 85 to 264 VAC, or 120 to 370 VDC input, -20 to 70°C operating temperature
FR-I-240W-48	DIN-rail 48-55V VDC power supply with 240W/2A, , 85 to 264 VAC, or 120 to 370 VDC input, -20 to 70°C operating temperature
FR-I-480W-48	DIN-rail 48-55V VDC power supply with 480W/4A, , 85 to 264 VAC, or 120 to 370 VDC input, -20 to 70°C operating temperature

SFP Optical Transceiver	
FRSX-1L311C-I	1.25Gb/s 1310nm 10km SFP, wide operation temperature range of -40°C-85°C (-40°F - 185°F)
FRSX-1L341C-I	1.25Gb/s 1310nm 40km SFP, wide operation temperature range of -40°C-85°C (-40°F - 185°F)
FRSX-1L5X1C-I	1.25Gb/s 1550nm 80/100km SFP, wide operation temperature range of -40°C-85°C (-40°F - 185°F)
FRSX-1L3523/5323C-I	1.25Gb/s 1310nm/1550nm 20km BiDi SFP, wide operation temperature range of -40°C-85°C (-40°F - 185°F)

Armored Fiber Patch Cable / LAN Cable	
FRPC-A-LC	Armored LSZH LC UPC to LC UPC Duplex OS2 single mode 7.0mm for Ourdoor Application , 1-50m
FRLC-A-CAT6	Armored Cat6 Snagless shielded(SFTP) Ethernet Network Patch Cable, 26AWG, 1000Base-T, 0.5m – 3m

Precautions

To avoid damage to the equipment and personal injury caused by improper use, please observe the following precautions:

- ❖ Keep the power off during installation, wear an anti-static wrist, and ensure that the anti-static wrist is in good contact with the skin to avoid potential safety hazards.
- ❖ The switch can work normally under the correct power supply. Please confirm that the power supply voltage matches the voltage indicated by the switch.
- ❖ Before powering on the switch, please make sure that the power circuit is not overloaded, so as not to affect the normal operation of the switch and even cause unnecessary damage.
- ❖ To avoid the risk of electric shock, do not open the case while the switch is working, even if it is not charged, do not open it yourself.
- ❖ Before cleaning the switch, pull out the power plug of the switch. Do not wipe with a wet cloth. Do not use liquid to clean it.
- ❖ The equipment installed in the rack is generally from bottom to top to avoid overload installation.
- ❖ Avoid placing other heavy objects on the surface of the switch to avoid accidents.

Order Information

Model Number	10/100Base-T(X), RJ45	10/100/1000Base-T(X), RJ45	100Base-X Port	1000Base-X Port	Optical Port Connector Option	PoE Standard	Input Voltage	Operating Temp.
FR-7N1101	1	—	1	—	LC/SC/ST/FC	—	DC9-56V	-40 to +75°C
FR-7N1101P	1	—	1	—	LC/SC/ST/FC	IEEE802.3af/at	DC9-56V	-40 to +75°C
FR-7N1101BT	1	—	1	—	LC/SC/ST/FC	IEEE802.3af/at/bt	DC9-56V	-40 to +75°C
FR-7N3101	—	1	—	1	LC/SC/ST/FC	—	DC9-56V	-40 to +75°C
FR-7N3101P	—	1	—	1	LC/SC/ST/FC	IEEE802.3af/at	DC9-56V	-40 to +75°C
FR-7N3101BT	—	1	—	1	LC/SC/ST/FC	IEEE802.3af/at/bt	DC9-56V	-40 to +75°C
FR-7N1102	2	—	1	—	LC/SC/ST/FC	—	DC9-56V	-40 to +75°C
FR-7N1102P	2	—	1	—	LC/SC/ST/FC	IEEE802.3af/at	DC9-56V	-40 to +75°C
FR-7N1102BT	2	—	1	—	LC/SC/ST/FC	IEEE802.3af/at/bt	DC9-56V	-40 to +75°C
FR-7N3102	—	2	—	1	LC/SC/ST/FC	—	DC9-56V	-40 to +75°C
FR-7N3102P	—	2	—	1	LC/SC/ST/FC	IEEE802.3af/at	DC9-56V	-40 to +75°C
FR-7N3102BT	—	2	—	1	LC/SC/ST/FC	IEEE802.3af/at/bt	DC9-56V	-40 to +75°C

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