FIBERROAD®

Web Smart

Industrial Fiber Media Converter

Product Data Sheet

Web Smart Industrial Media Converter is an IEEE 802.3ah compliant copper to fiber Gigabit Ethernet solution designed to make conversion between 10/100/1000Base-T and 100/1000Base-X with SFP modules. With SNMP and Web-based management in the standalone type or play as remote unit communicate with FR6016 Platform to realize centralized management. The administrator can monitor, configure and control the activity of each unit and remotely connected OAM compliant converter. Converter settings include bandwidth control, duplex, and speed configuration, VLAN tagging and SFP DDMI. When used as stand-alone converters, the FR-6101I can be managed by a friendly Web Smart user interface via any web browser.

Main Features

- 1x10/100/1000Base-T to 1000Base-X SFP/1x9 Optical Fiber Module
- Auto-Cross over for MDI/MDIX in TP port
- Auto-Negotiation or manual mode in TP port
- Industrial Grade Standard, -40 to +75℃ operating temperature, IP40 Rating
- Supports flow control Enable or Disable
- Supports Jumbo Frame up to 9K Packet
- Ingress/Egress bandwidth control
- Supports in-band IEEE802.3ah management
- Firmware upgrade via Web Interface
- Dying gasp(Remote power failure detection on standalone)
- Supports Link Fault Pass-Through(LFPT)Function
- Support Auto Laser Shutdown(ALS) Function
- Support SNMP, Web Management

Product Specifications

Hardware Specifications			
Product	FR-6101I	FR-6101IP	FR-6101IBT
Copper Port	1x10/100/1000Base-T		
Fiber Port	1x1000BASE-X SFP Slot, 1x9 (SC/ST/FC) Optical Module Optional		
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 802.3ab for 1000BaseT(X) IEEE 802.3z for 1000BaseSX/LX/LHX/ZX IEEE 802.3x for flow control		
Maximum Packet Length	Up to 9K		
Forward Filter Rate	14,880pps(10Mbps) 148,800pps(100Mbps) 1,488,000pps(1000Mbps)		
Transmission Mode	Store and Forward (full/half duplex mode)		
Reset Button	＜5 sec: System Reboot; ＞10 sec: Factory Default		
Enclosure	IP40 aluminum case		
Installation	DIN-rail and Wall-mount		
Dimension	120x90x35mm		
Transmission Distance			
SFP Port	Depends on optical module(0-120km)		
RJ45 Transmission Distance	100m (standard CAT5/CAT5e cable)		
Power Supply and PoE			
Power Input	1		
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		
Alarm	One relay output for power failure, Alarm relay current carry ability: 1A@24V DC(On Demand)		
Input Voltage	DC9-56V	DC48-56V	DC52-56V
Power Consumption	4 Watts Max (Without PoE Load)		
PoE Power Budget	\	35W maximum (Depending on power input)	95W maximum (Depending on power input)
Environmental			
Operating Temperature	-40℃~75℃ (-40 to 167 ℉)		
Storage Temperature	-40℃~85℃ (-40 to 185 ℉)		
Operating Humidity	5%~95% (non-condensing)		
MTBF	＞500,000 hours @MIL-HDBK-217F GF 25℃		
Heat Dissipation	7 BTU/h (Non-PoE), 218 BTU/h (with 30W PoE load), 314 BTU/h (with 90W PoE load)		
Cooling	Passive Cooling		
Surge Protection	±6kV DC, ±4kV RJ45	±6kV DC, ±6kV RJ45	
LED Indicators			
P1 & P2	ON: Power is being supplied ,OFF: Power is not being supplied		
Fiber Port	ON: Port connection is active, Blinking: Data transmitted, OFF: Port connection is not active		
RJ45 Port Amber LEDs	ON: Port connection is active, Blinking: Data transmitted, OFF: Port connection is not active		
RJ45 Port Green LEDs	ON: Port is operating at 1000 Mb/s, OFF: Port is operating at 10/100 Mb/s		

DIP Switch	State	Description
#1	ON	LFPT Enable
	OFF	LFPT Disable
#2	ON	Set as remote Unit
	OFF	Set as standalone unit
#3	ON	Setting 1: #3 OFF and #4 OFF, RJ45 Data Rate as Auto Mode Setting 2: #3 OFF and #4 ON, RJ45 Data Rate as 1000M Setting 3: #3 ON and #4 OFF, RJ45 Data Rate as 100M Setting 4: #3 ON and #4 ON, RJ45 Data Rate as 10M
	OFF	
#4	ON	
	OFF	

Software Specifications	
Management	Port 1 and Port 2 Ingress/Egress bandwidth control
	Firmware upgrade via Web Interface
	Support 802.1Q tag VLAN, MAC Constraint, Static MAC, Green Ethernet/EEE
Configuration	IP Configuration, Password Setting, Local and Remote Converter Configuration, Port Configuration(Speed/Duplex), Port Isolation
	QoS (Priority Selection, DSCP Remapping, Priority To Queue, Queue Weight)
Diagnostic & Monitor	Link Fault Pass-through(LFPT) Function, Auto Laser Shutdown, Broadcast/Multicast/Unicast Storm Filter, Power Loss and Port Link Up/down, Loop Prevention and Protection, Port Statistics, Cable Diagnostic
OAM	IEEE 802.3 ah

Regulatory & Warranty	
ISO	Manufactured in ISO-9001facility
Safety	IEC62368-1:2020+A11:2020
EMI	FCC Part 15B Class A, IEC 61000-3-2
EMS	IEC61000-4-2 ESD: Contact:±8kV, Air:±15kV IEC61000-4-5 Surge: Power: ±6kV; RJ45:±4kV/±6kV(PoE)
Shock	IEC 60068-2-27
Free Fall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Environmental	RoHS 2011/65/EU Annex II(EU)
Warranty	5 Years, Details See: https://fiberroad.com/warranty

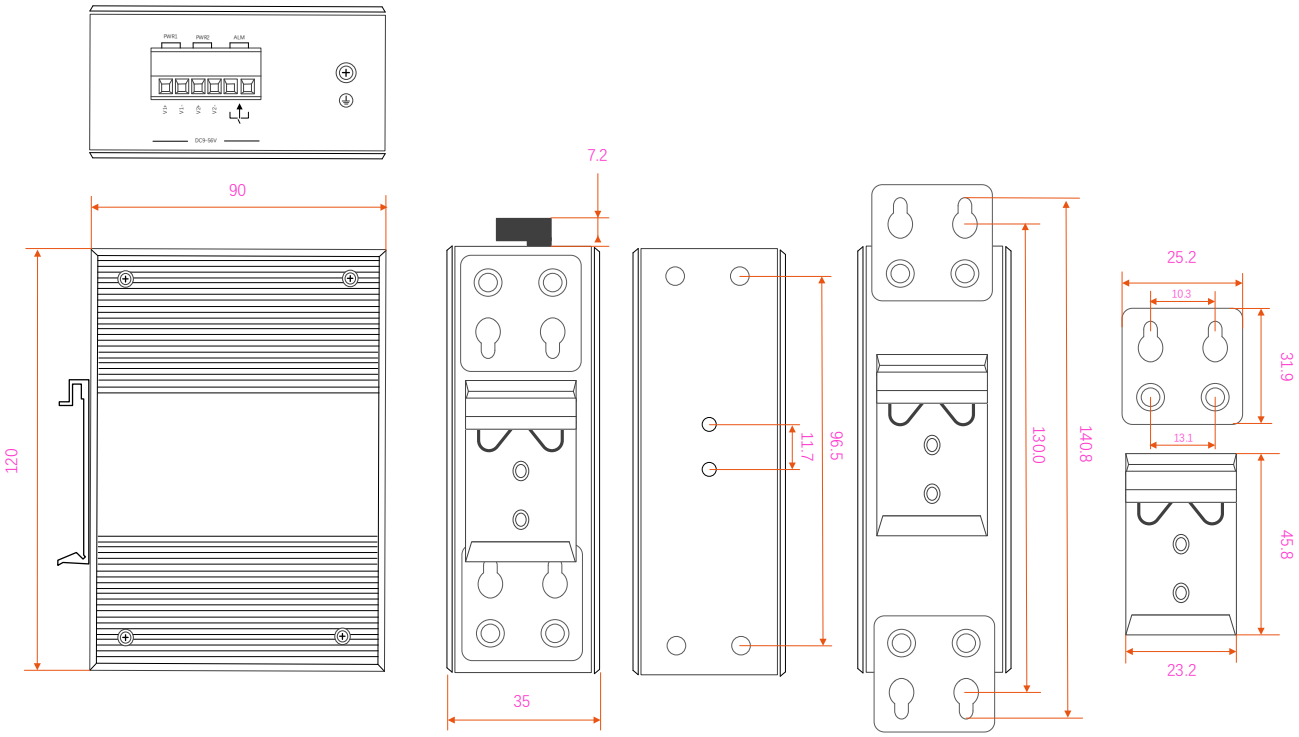
Package Contents	
Device	1 x Industrial Media Converter
Cable	1 x DB9 female to RJ45
Installation Kit	1 x DIN-Rail Clip 2 x Wall-Mount Kits
Documentation	1 x Quick installation guide 1 x Warranty card 1 x Product notice

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, operation temperature range of -40℃-85℃(-40℉ - 185℉)
FRSX-1L341C-I	1.25Gb/s 1310nm 40km SFP， operation temperature range of -40℃-85℃(-40℉ - 185℉)
FRSX-1L5X1C-I	1.25Gb/s 1550nm 80/100km SFP, operation temperature range of -40℃-85℃(-40℉ - 185℉)
FRSX-1L3523/5323C-I	1.25Gb/s 1310nm/1550nm 20km BiDi SFP, operation temperature range of -40℃-85℃ (-40℉ - 185℉)

Dimensions **Unit: mm**



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	10/100/1000Base-T RJ45	1000Base-X SFP	Optical Port Connector Option	PoE Standard	Input Voltage	Operating Temp.
FR-6101I	1	1	LC/SC/ST/FC	—	DC9-56V	-40 to +75℃
FR-6101IP	1	1	LC/SC/ST/FC	IEEE802.3af/at	DC9-56V	-40 to +75℃
FR-6101IBT	1	1	LC/SC/ST/FC	IEEE802.3af/at/bt	DC9-56V	-40 to +75℃

Shipping

Model No.	FR-6101I	FR-6101IP	FR-6101IBT
Classification Codes	HS Code: 851762		
	HTS: 8517.62.00		
NDAA Compliant	Yes		
Individual Gross Weight	470g	480g	
Individual Package Dimension	175x153x43mm		
Package Quantity	50 Units		
Package Gross Weight	24kg	24.5kg	
Package Dimension	540x315x430mm		

The information in this document is subject to change without notice. Fiberroad has made all effects to ensure the accuracy of the information, but all information in this document does not constitute any kind of warranty. Visit our website for the most up-to-date product information

For more information

For more information about Fiberroad Smart Industrial Ethernet series products,
Visit https://www.fiberroad.com or contact your local account representative.