Quick Start Guide

Industrial RS-232/422/485 to fiber Media Converter

Model	Description
MI00010	Industrial RS-232/422/485 to Multimode Converter, 2km
MI00020	Industrial RS-232/422/485 to Singlemode Converter, 30km

Unpack the Media and check contents

- Media Converter with one DB9 RS232 port, one 4 pin terminal block for RS422/485 and one SC fiber port
- DIN-Rail mount kit (attached to media converter)
- Wall mount kit (8 screws included)
- DC Barrel Jack wire
- Documentation - *Quick Start Guide* (this document) and *Warranty Card*

Note: Other documentation can be obtained from **www.signamax.com**

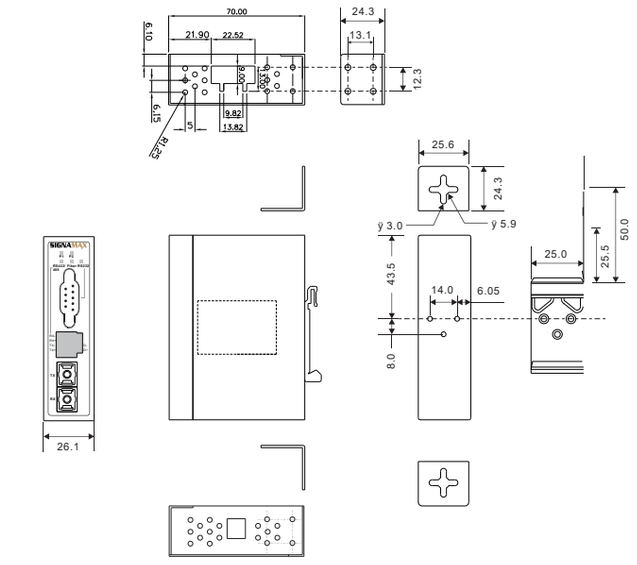
Warning and Cautionary Messages

Warning: This product product does not contain any serviceable user parts.
Warning: Installation and removal of the unit must be carried out by qualified personnel only.
Warning: This Media Converter uses lasers to transmit signals over fiber optic cable. The lasers are compliant with the requirements of a Class 1 Laser Product and are inherently eye safe in normal operation. However, you should never look directly at a transmit port when it is powered on.
Caution: Wear an anti-static wrist strap or take other suitable measures to prevent electrostatic discharge when handling this equipment.
Caution: Do not plug a phone jack connector in the RJ-45 port. This may damage this device
Caution: Use only twisted-pair cables with RJ-45 connectors that conform to FCC standards.
Caution: If installed in a closed cabinet, the operating ambient temperature of the cabinet may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum operating temperature specified.

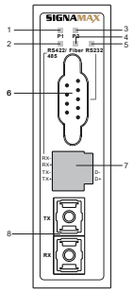
Caution: Installation of the equipment should be such that the amount of air flow required for safe operation of the equipment is not comprimised.
Caution: Mounting of the equipment in the DIN-Rail should be such that a hazerdous condition is not achieved due to uneven mechanical loading
Caution: Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring.

Dimensions and Panel layouts

Dimension Unit=mm (Tolerance ±0.5mm)

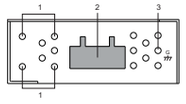


Front Panel



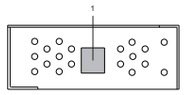
1. LED for PWR-1 module
2. LED for RS-422/RS-485 port
3. LED for PWR-2 module
4. LED for Fiber port
5. LED for RS-232 port
6. RS-232 DB9 port
7. 4-pin terminal block for RS-422/485 signal transmission
8. Optical fiber port

Top Panel



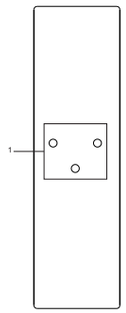
1. Wall-mount screw holes
2. Power Input Terminal Block
3. Frame Ground Screw

Bottom Panel



1. DIP Switches

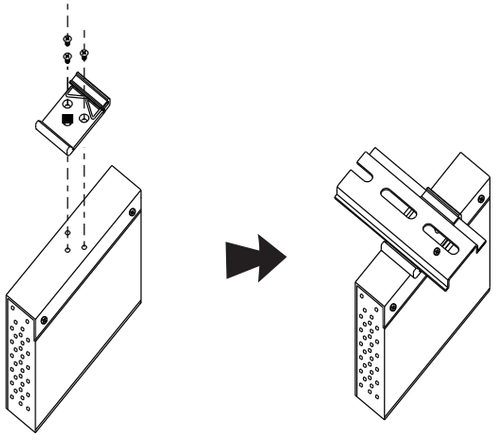
Rear Panel



1. DIN-Rail mount screw holes

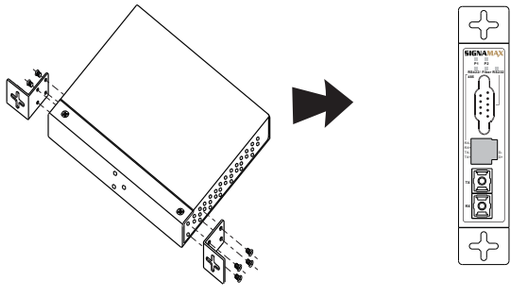
Mount the Media Converter

DIN-Rail Mounting



1. The media converter arrives with the DIN-Rail mount kit attached to the rear panel but if it has been removed, screw it onto the back of the switch using the 3 mount screw holes.
2. Insert the top of the DIN-Rail bracket to the DIN-Rail track.
3. Pull down the DIN-Rail bracket to the DIN-Rail track and check if it is mounted tightly on the DIN-Rail track.

Wall Mounting

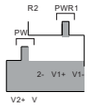


1. Screw the two pieces of wall-mount plates provided onto both sides of the media converter using the 8 screws provided.
2. Use the switch with the wall mount plates attached as a guide to mark the correct locations to drill holes if needed.
3. Insert screws through the large part of the keyhole-shaped apertures and then slide the Media Converter downwards.
4. Tighten the screws for added stability.

Ground the Media Converter

1. This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.
2. Attach a lug (not provided) to a #18 AWG minimum grounding wire (not provided) and connect it to the grounding point on the top of the switch near the terminal block then connect the other end of the wire to ground.

Connect Power



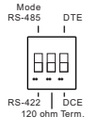
Power using an Industrial DC Power Supply

1. The Media Converter can be powered from any 12-48VDC power source such as the Signamax AP10010. Make sure the power supply is not connected to an AC power source before making any contact.
2. Insert the positive and negative wires (not provided) from the power supply into the PWR-1 (+,-) and/or PWR-2 (+,-) on the 4-contact terminal block connector.
3. Tighten the screws to prevent the wires from loosening.
4. Connect the power supply to the AC power source.

Power using the DC Barrel Jack

1. The provided DC Barrel Jack can be used to connect a power supply with a 5.5x2.5mm DC Barrel Plug such as the Signamax AC-1100 power adapter has.
2. Insert the red wire on the DC Barrel Jack to PWR-1(+) and the black wire to PWR-1(-).
3. Tighten the screws to prevent the wires from loosening.
4. Connect the DC Barrel Jack to the DC Barrel Plug.

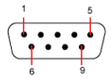
DIP Switch Settings



SW No.	Description
#1	RS-422 / RS-485 mode selection
#2	Enable / Disable 120 ohm terminal resistor
#3	RS-232 DTE / DCE switch

1. DIP Switches #1 and #2 are not relevant for RS-232 application.
2. DIP Switch #3 is not relevant for RS-422/485 application.
3. 120 ohm terminal resistor can be used to decrease signal reflection in long distance RS-422/485 transmission.

Connecting to the Serial Port



RS-232

The Media Converter utilizes a DB9 connector for the RS-232 port. The media converter can work in Terminal (DTE) or Circuit (DCE) mode to correspond with the equipment it is connected to and cable type. Please refer to the following table for pin assignment:

Pin	Assignment	Description
#1	DCD	Data Carrier Detect
#2	RXD	Receive Data
#3	TXD	Transmit Data
#4	DTR	Data Terminal Relay
#5	SG	Signal Ground
#6	DSR	Data Set Relay
#7	RTS	Request Set Relay
#8	CTS	Clear to Send
#9	RI	Ring Indicator

RS-422/485

The Media Converter utilizes a 4-pin terminall block for the RS-422/485 port. Press the release button for each pin, Insert AWG 16-28 wire into the hole and release the button. Please refer to the following table for pin assignment:

Pin	Assignment	Description
#1	Tx+/D+	Transmission line, positive
#2	Tx-/D-	Transmission line, negative
#3	Rx+	Receiver line, positive
#4	Rx-	Receiver line, negative

LED Status Table

LED	Status	Description
P1	ON	PWR-1 DC power module activated
	OFF	No DC power connected to PWR-1
P2	ON	PWR-2 DC power module activated
	OFF	No DC power connected to PWR-2
RS-232 RS422/485	ON	Fiber port has link and Serial communication is ready to transmit
	BLINKING	Receiving data from fiber port and transmitting to Serial port
	OFF	Fiber link is down
Fiber	GREEN	Fiber port has valid link
	RED	Fiber link is down
	OFF	The media converter has no power input

Specification

	MI00010	MI00020
Fiber Port		
Fiber Mode	Multimode	Singlemode
Connectors	SC	
Typical Distance	2 km	30 km
Wavelength	1310nm	1310nm
TX Output	> -23.5 dbm	> 15 dbm
RX Sensitivity	-31 dbm	-34 dbm
Point-to-Point Transmission	Full Duplex	
Serial Port		
Connector	DB9 (male), 4-pin Terminal Block	
Operation Mode	RS-232 / RS-422 / 4(2)-Wire RS-485	
Baud Rate	50 bps to 921.6 kbps	
Data bit	5, 6, 7, 8	
Parity	None, Even, Odd, Space, Mark	
Stop Bit	1, 1.5, 2	
Power		
Input Power	Dual DC Inputs 12 ~48 VDC	
Power Consumption (Typical)	1.8W	
Overload current Protection	Present	
Physical Characteristic		
Enclosure	IP30	
Dimensions (W x D x H)	26.1 x 70 x 95mm (1.03 x 2.76 x 3.74in)	
Weight	192 g (0.42 lb)	
Environmental		
Storage Temperature	-40 to 85°C (-40 to 185°F)	
Operating Temperature	-40 to 75°C (-40 to 167°F)	
Operating Humidity	5% to 95% non condensing	
Warranty	5 years	