

Trademarks

CTS is a registered trademark of Connection Technology Systems Inc.. Contents subject to revision without prior notice. All other trademarks remain the property of their owners.

Copyright Statement

Copyright © Connection Technology Systems Inc.
This publication may not be reproduced as a whole or in part, in any way whatsoever unless prior consent has been obtained from Connection Technology Systems Inc..

FCC Warning

WPC/MPC-2112 Series Media Converters have been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These standards are designed to provide reasonable protection against harmful interference when these devices are operated in a commercial environment. These devices generate, use, and can radiate radio frequency energy and may cause harmful interference to radio communications unless installed in accordance with this User's Guide. Operation of these devices in a residential area is likely to cause harmful interference which will make the user responsible for the appropriate remedial action at his / her own expense.

CE Mark Warning

These are Class A products. In a domestic environment these products may cause radio interference in which case the user will need to consider adequate preventative methods.

1. Checklist

The package should contain the following items:

- WPC/MPC-2112 Media Converter
- CD (User's Manual and MIB file)
- Power Adaptor (Optional)*
- User's Guide and Installation Guide

*For detailed information, please refer to Section 9.

Please notify your sales representative immediately if any item is missing or damaged.

2. Overview

WPC/MPC-2112 Series Media Converters support IEEE802.3at PoE feature and are specifically designed to supply power to PoE-enabled devices such as WiFi AP or surveillance cameras. They are power supply equipments (PSE) that can transmit data and supply power at the same time to the powered devices (PD). The maximum cable distance that can reach the powered devices from WPC/MPC-2112 is up to 100M, allowing your powered devices to be installed in a place where power is not easily accessible.

Besides, WPC/MPC-2112 Series Media Converters aim at industrial applications that demand wide range of operating temperature and require redundant power supplies to create a reliable and stable networking environment in the event of power failure. They can also be mounted on the wall or onto 35mm DIN rail using DIN rail clip on the media converters. The installation and operation procedures are simple and straightforward. operation status can be locally monitored through a set of diagnostic LED indicators located on the front panel.

Major Features:

- Auto-Negotiation in TP port
- Store and Forward Switching Mechanism
- Support MDI/MDIX Auto-Crossover
- Support Flow Control
- Support Link Alarm
- Support alarms for power and port failure
- Support 1K MAC address
- Support 9K bytes Jumbo Frame
- Support redundant AC and DC power supply
- Support wide range of operating temperature (-20°C ~60°C)
- Support DIN Rail and Wall Mounting

3. Network Installation

- Attach fiber cable from the converter to the fiber network.
- Attach a UTP cable from the 10/100Base-TX network to the RJ-45 port on the converter.
- Connect the power adaptor to the converter and check that the Power LED lights up. The TP Link/ACT and F/O Link/ACT LED will light up when all the cable connections are satisfactory.

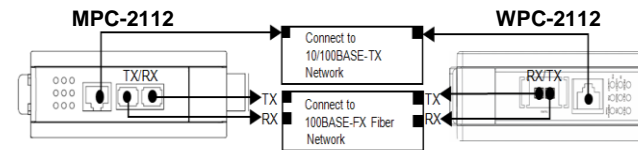


Figure 1. Basic Network Connection for BTFX models

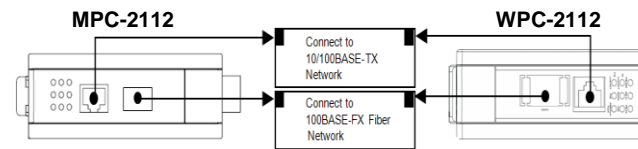


Figure 2. Basic Network Connection for WDM/SFP models

4. DIP SWITCH Setting

WPC-2112 Series Media Converters provide users with a DIP Switch to configure switching functions. The DIP Switch is located at the bottom of the media converter and the default setting of all pins is OFF.

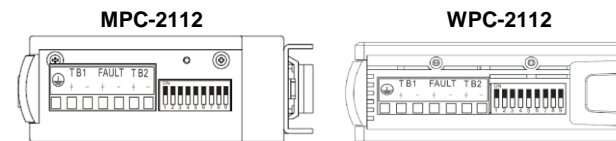


Figure 3. Terminal Block and DIP Switch (Bottom Panel)

Pin NO.	Function	OFF	ON
1	Speed 1	Auto-Negotiation (Pin 2 OFF)	10M (Pin 2 OFF)
2	Speed 2	-	100 M
3	Flow Control	Disable	Enable
4	Reserved	Always OFF	
5	Reserved	Always OFF	
6	Link Alarm	Disable	Enable
7	TP Configuration	From S/W	From DIP
8	F/O Fault Alarm	Disable	Enable
9	TP Fault Alarm	Disable	Enable

NOTE: 1. Pin 1 and 2 must be set together to configure the speed.
2. Please perform Power On reset after modifying the DIP Switch setting.

5. Terminal Block

TB1 and TB2 Power Supply: There are two pairs of contacts (TB1 and TB2) on the terminal block connector for power redundancy purpose. You can use both pairs of power supply for redundancy purpose or use either one pair of power supply on the terminal block and AC external power supply to create redundant setup. The redundant power supply will take over seamlessly when one power source is down to protect your device or network from the loss of power. When you use only one power supply (no redundant power is available), the LED Power/Port Status will flash in orange to alert the user.

Port Fault Alarm: One pair of port fault connection on the terminal block is used to connect alarm devices such as speakers or LED to alert users when TP or F/O port link is disconnected. To make this function work, you must first set pin 8 and 9 on the DIP Switch to ON position (Enable).

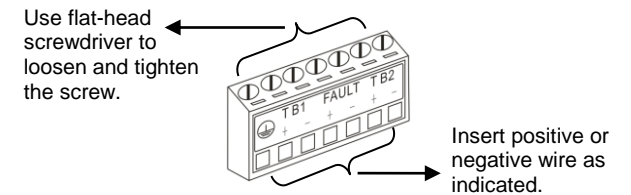


Figure 4. Terminal Block Front and Top View

6. Link Alarm

Link Alarm allows users to easily identify and diagnose the linking status. If Link Alarm DIP switch is set to Enable, TP and F/O can link up only when both linking conditions are good. In addition, if the TP or F/O port link is down during operation, the other port will also be turned down to alert the user. Setting Link Alarm DIP switch to Enable gives the user a transparent link indication between two network devices interconnected by WPC-2112.

If Link Alarm is disabled, the TP and F/O will link up based on their individual linking condition. Furthermore, if either port link (TP or F/O) is down during operation, it will not turn down the other port link.

7. LED Description

LED	Color	Function
PW ADC	Green	AC or DC power is available.
PW T1	Green	Terminal Block 1 powers up.
PW T2	Green	Terminal Block 2 powers up.
TP Link/ACT	Green	TP link is up.
	Blinking Green	TP is receiving and transmitting data.
Speed	Off	Link is down or TP works in 10M.
	Green	TP works in 100M.
FDX	Off	TP port works in half duplex mode.
	Green	TP port works in full duplex mode.
F/O Link/ACT	Green	F/O link is up.
	Blinking Green	F/O is receiving and transmitting data.
PWR/Port Status	Orange	TP or F/O link is down. (This indication only works when DIP 8 and 9 are set to Enable.)
	Blinking Orange	Redundancy system is abnormal (only one power source is available).
PoE	Green	The device provides power and works normally.
	Blinking Green	The device does not provide power.
	Fast Blinking Green	The device's PoE function is working abnormally.

8. Technical Specifications

Standards	IEEE 802.3, 802.3u, 802.3x, 802.3at
Interface	1 X 10/100 RJ-45 connector 1 X 100 SC/ST F/O port or SFP slot
LED	PW ADC, PW T1, PW T2, TP Link/ACT, Speed, FDX, F/O Link/ACT, PWR/Port Status, PoE
Power	DC Input Voltage: 48VDC DC Power Jack x 1; DC Terminal Block x 2
Shipping Weight	WPC-2112: 0.295KG ; MPC-2112: 0.5KG
Dimensions	WPC-2112: 105mm(W)X93mm(D)X35mm(H) MPC-2112: 121mm(W)X99mm(D)X35mm(H)
Temperature	Operating: -20°C ~60°C; Storage: -20°C ~70°C
Humidity	5%~90% RH non-condensing
EMC Safety	FCC Part 15 Class A, CE
Media	TP: EIA/TIA-568 CAT 5e Fiber: 50/125, 62.5/125um multi-mode fiber 9/125, 10/125um single-mode fiber

*Please contact us for further reports and updates.

9. Optional Accessory

Power Adapters:

MODEL	Connector Type	Volt/Watt	PSE Power Feeding Function
WAP-POWER-12J18	DC Jack	12V/18W	X
WAP-POWER-48J90	DC Jack	48V/90W	O
WAP-POWER-48D75	Terminal Block	48V/75W	O
WAP-POWER-48D240	Terminal Block	48V/240W	O

Fiber Transceiver Information

100M

Multi-Mode

TYPE	BTFC	BTFT
Connector Type	SC	ST
Wavelength	1310nm	1310nm
Typical Distance	2Km	2Km
Min TX PWR	-20.0dBm	-20.0dBm
Max TX PWR	-14.0dBm	-14.0dBm
Sensitivity	-31.0dBm	-31.0dBm
Link Budget	11.0dB	11.0dB

Single-Mode

TYPE	BTFC(SM-30)	BTFC(SM-50)
Connector Type	SC	SC
Wavelength	1310nm	1310nm
Typical Distance	30Km	50Km
Min TX PWR	-15.0dBm	-7.0dBm
Max TX PWR	-8.0dBm	0dBm
Sensitivity	-34.0dBm	-32.0dBm
Link Budget	19.0dB	25.0dB

Wave-Length WDM

TYPE	W2A(SM-20)	W2B(SM-20)	W2A(SM-40)	W2B(SM-40)
Connector Type	SC	SC	SC	SC
TX Wavelength	1310nm	1550nm	1310nm	1550nm
RX Wavelength	1550nm	1310nm	1550nm	1310nm
Typical Distance	20 Km	20 Km	40 Km	40 Km
Min TX PWR	-15.0dBm	-15.0dBm	-9.0dBm	-9.0dBm
Max TX PWR	-3.0dBm	-3.0dBm	0dBm	0dBm
Sensitivity	-31.0dBm	-31.0dBm	-32.0dBm	-32.0dBm
Link Budget	16.0 dB	16.0 dB	23.0 dB	23.0 dB

NOTE: Specifications may change without prior notice.

Contact Information

Connection Technology Systems INC (CTS)
18F-6, No.79, Sec.1, Xintai 5th Rd., Xizhi Dist.,
New Taipei City 221, TAIWAN, R.O.C.
TEL: +886 2 26989661 FAX: +886 2 26989662
E-Mail: info@ctsystem.com



WPC-2112/MPC-2112 SERIES

**10/100Base-TX to
100Base-FX Fast Ethernet
Managed Media Converter
with Built-in IEEE802.3at
PoE/PSE Feature and
Extended Operating
Temperature**

User's Guide

Version 1.5