PT-7710 Series
Quick Installation Guide

Moxa PowerTrans Switch

Version 7.1, January 2021

Technical Support Contact Information
www.moxa.com/support

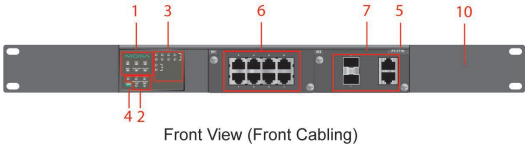
P/N: 1802077100016

Package Checklist

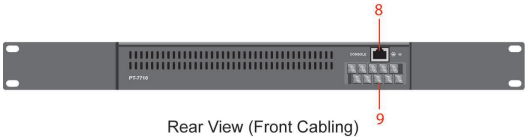
The Moxa PowerTrans switch is shipped with the following items. If any of these items are missing or damaged, please contact your customer service representative for assistance.

- 1 Moxa PowerTrans Switch
- RJ45 to DB9 console port cable
- 2 rack-mount ears or wall-mount ears
- Quick installation guide (printed)
- Warranty card

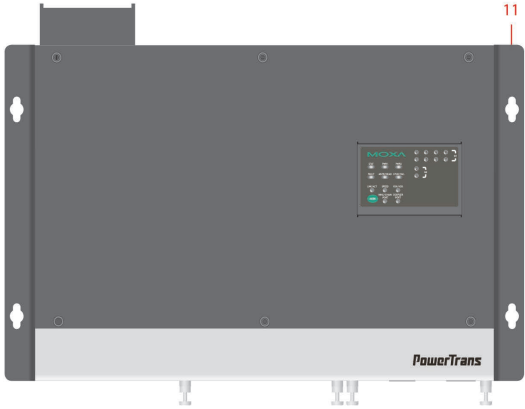
Panel Layout



Front View (Front Cabling)



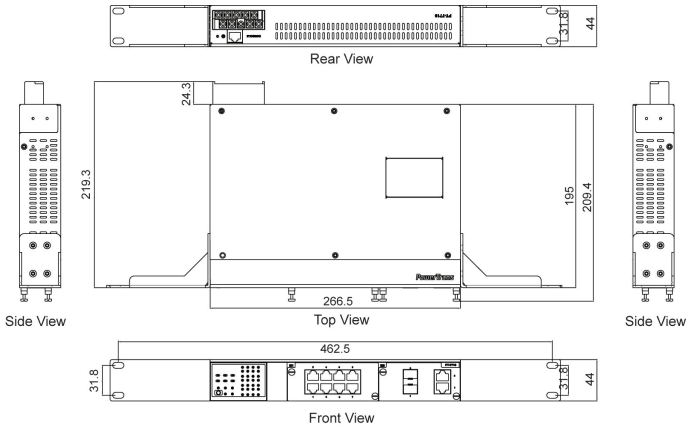
Rear View (Front Cabling)



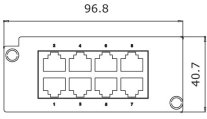
Top View (Down Cabling)

1. System status LEDs
2. Interface module mode LEDs
3. Interface module port LEDs
4. Push-button switch to select mode for Interface Module
5. Model name
6. Fast Ethernet interface modules
7. Gigabit Ethernet interface modules
8. Serial console port
9. 10-pin terminal block for power inputs, and relay output
10. Rack mounting kit
11. Wall mounting kit

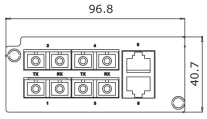
Dimensions (unit = mm)



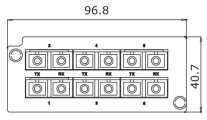
Fast Ethernet Interface Modules (slot 1)



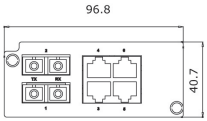
PM-7200-8TX



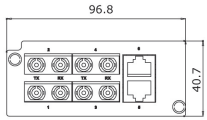
PM-7200-4MSC2TX/PM-7200-4SSC2TX



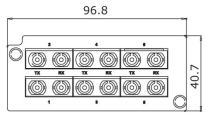
PM-7200-6MSC/PM-7200-6SSC



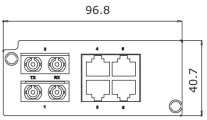
PM-7200-2MSC4TX/PM-7200-2SSC4TX



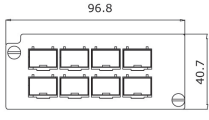
PM-7200-4MST2TX



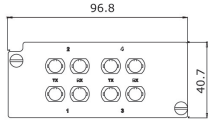
PM-7200-6MST



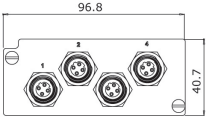
PM-7200-2MST4TX



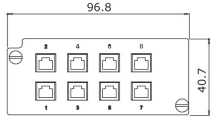
PM-7200-8SFP



PM-7200-4MST-FL

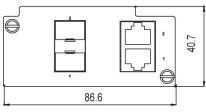


PM-7200-4M12

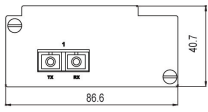


PM-7200-8MTRJ

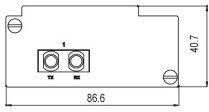
Gigabit / Fast Ethernet Interface Modules (slot 2)



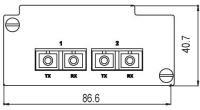
PM-7200-2GTXSFP



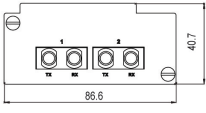
PM-7200-1MSC



PM-7200-1MST



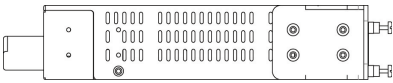
PM-7200-2MSC/PM-7200-2SSC

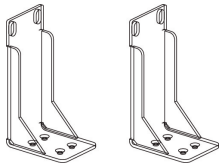


PM-7200-2MST

Rack Mounting

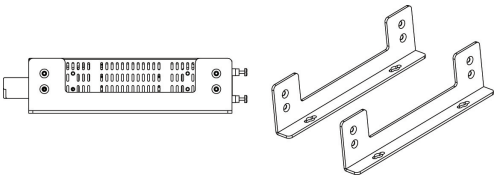
Use four screws to attach the PT switch to a standard rack.





Wall Mounting

Use four screws to attach the PT switch to a Moxa wall mounting kit.



Wiring Requirements

WARNING

Safety First!

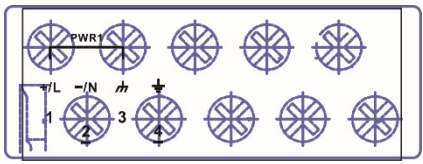
- Be sure to disconnect the power cord before installing and/or wiring your Moxa PowerTrans Switch.
- Calculate the maximum possible current in each power wire and common wire. Observe all electrical codes dictating the maximum current allowable for each wire size.
- If the current goes above the maximum ratings, the wiring could overheat, causing serious damage to your equipment.

Grounding the Moxa PowerTrans Switch

Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). Run the ground connection from the ground screw to the grounding surface prior to connecting devices.

Wiring the Power Input (110/220 VDC/VAC models)

The PT-7710 (110/220 VDC/VAC models) has one power supply and one set of power inputs, referred to as power input 1. The front view of the terminal block connector is shown here.

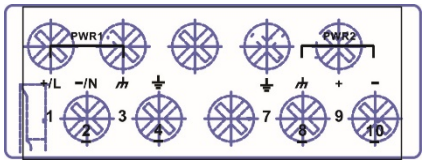


STEP 1: Insert the L/N AC wires into the PWR1 terminals (L → pin 1, N → pin 2).

STEP 2: To keep the AC wires from pulling loose, use a screwdriver to tighten the wire-clamp screws on the front of the terminal block.

Wiring the Redundant Power Inputs (12/24/48 VDC models)

The PT-7710 (12/24/48 VDC models) has one power supply and two sets of power inputs, referred to as power input 1 and power input 2. The front view of the terminal block connector is shown here.

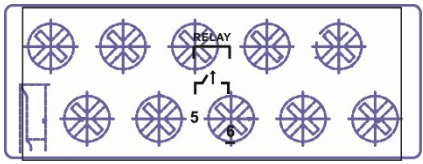


STEP 1: Insert the dual set positive/negative DC wires into PWR1 and PWR2 terminals (+ → pins 1, 9; - → pins 2, 10).

STEP 2: To keep the DC wires from pulling loose, use a screwdriver to tighten the wire-clamp screws on the front of the terminal block.

Wiring the Relay Contact

Each PT switch has one relay output. Refer to the next section for detailed instructions on how to connect the wires to the terminal block connector, and how to attach the terminal block connector to the terminal block receptor.



FAULT: The RELAY contacts of the 10-pin terminal block connector are used to detect user-configured events. The two wires attached to the RELAY contacts form an open circuit when a user-configured event is triggered. If a user-configured event does not occur, the RELAY circuit will be closed.

LED Indicators

The front panel of the PT switch contains several LED indicators. The function of each LED is described in the table below.

LED	Color	State	Description
System LEDs			
STAT	GREEN	On	System has passed self-diagnosis test on boot-up and is ready to run.
		Blinking	System is undergoing the self-diagnosis test.
	RED	On	System failed self-diagnosis on boot-up.
PWR1	AMBER	On	Power is being supplied to the main module's power input PWR1.
		Off	Power is not being supplied to the main module's power input PWR1.
PWR2	AMBER	On	Power is being supplied to the main module's power input PWR2.
		Off	Power is not being supplied to the main module's power input PWR2.
FAULT	RED	On	The corresponding PORT alarm is enabled and a user-configured event has been triggered.
		Off	The corresponding PORT alarm is enabled and a user-configured event has not been triggered, or the corresponding PORT alarm is disabled.
MSTR/HEAD	GREEN	On	This PT switch is set as the Master of the Turbo Ring, or as the Head of the Turbo Chain.
		Blinking	The PT switch has become the Ring Master of the Turbo Ring, or the Head of the Turbo Chain, after the Turbo Ring or the Turbo Chain went down.
		Off	The PT switch is not the Master of this Turbo Ring or is set as a Member of the Turbo Chain.
CPLR/TAIL	GREEN	On	When this PT switch is enabled to form a back-up path, or it is set as the Tail of the Turbo Chain.
		Blinking	Turbo Chain is down.
		Off	This PT switch disabled the coupling function, or is set as a Member of the Turbo Chain.

LED	Color	State	Description
Mode LEDs			
LNK/ACT	GREEN	On	The corresponding module port's link is active.
		Blinking	The corresponding module port's data is being transmitted.
		Off	The corresponding module port's link is inactive.
SPEED	GREEN	Off	The corresponding module port's data is being transmitted at 10 Mbps.
		On	The corresponding module port's data is being transmitted at 100 Mbps.
		Blinking	The corresponding module port's data is being transmitted at 1000 Mbps.
FDX/HDX	GREEN	On	The corresponding module port's data is being transmitted in full duplex mode.
		Off	The corresponding module port's data is being transmitted in half duplex mode.
RING/CHAIN PORT	GREEN	On	The corresponding module's port is the ring or chain port of this PT switch.
		Off	The corresponding module's port is not the ring or chain port of this PT switch.
COUPLER PORT	GREEN	On	The corresponding module's port is the coupler port of this PT switch.
		Off	The corresponding module's port is not the coupler port of this PT switch.

*Slot 2 (M2) is mainly used for Gigabit modules. If 100BaseFX modules are used in Slot 2 (M2), the modules will not support "Far End Fault". The Link/ACT LED indicator will stay at "Green (ON)" status when Fiber TX cable is unplugged.

Specifications

Technology	
Standards	IEEE 802.3, 802.3u, 802.3ab, 802.3z, 802.3x, 802.1D, 802.1W, 802.1Q, 802.1p, 802.1X, 802.3ad
Flow control	IEEE 802.3x flow control, back pressure flow control
Interface	
Fast Ethernet	Slot 1 (M1) for any combination of 4-,6-, 7-, or 8-port PM-7200 fast Ethernet modules with 10/100BaseT(X) (TP/M12 interface) or 100BaseFX (SC/ST connector), or 100BaseSFP; Slot 2 (M2) for a 1- or 2-port interface modules with 100BaseFX (SC/ST connector)
Gigabit Ethernet	Slot 2 (M2) for 2-port PM-7200 Gigabit Ethernet combo module with 100/1000BaseT(X) or 1000BaseSFP slots (Slot 2 does not support 10M FDX/HDX)

Console	RS-232 (RJ45)
System LED Indicators	STAT, PWR1, PWR2, FAULT, MSTR/HEAD, CPLR/TAIL
Mode LED Indicators	LNK/ACT, FDX/HDX, RING/CHAIN PORT, COUPLER PORT, SPEED
Alarm Contact	One relay output with current carrying capacity of 3A @ 30 VDC or 3A @ 240 VAC
Optical Fiber (100BaseFX)	
Distance	Multi-mode: 0 to 5 km, 1300 nm (50/125 µm, 800 MHz*km) 0 to 4 km, 1300 nm (62.5/125 µm, 500 MHz*km) Single-mode: 0 to 40 km, 1310 nm (9/125 µm, 3.5 PS/(nm*km))
Min. TX Output	Multi-mode: -20 dBm; single-mode: -5 dbm
Max. TX Output	Multi-mode: -10 dBm; single-mode: 0 dbm
RX Sensitivity	Multi-mode: -32 dBm; single-mode: -34 dbm
Power	
Input Voltage	12/24/48 VDC (9 to 60 V), or 110/220 VDC/VAC (88 to 300 VDC and 85 to 264 VAC)
Input Current	Max. 0.81 A @ 24 VDC Max. 0.42 A @ 48 VDC Max. 0.17/0.10 A @ 110/220 VDC Max. 0.38/0.20 A @ 110/220 VAC
Physical Characteristics	
Housing	IP30 protection, metal case
Dimensions (W x H x D)	266.7 x 44 x 195 mm (10.5 x 1.73 x 7.68 in.)
Weight	2200 g
Environmental Limits	
Operating Temp.	-40 to 85°C (-40 to 185°F) Cold start of min. 100 VAC at -40°C
Storage Temp.	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity.	5 to 95% (non-condensing)
Regulatory Approvals	
Safety	EN 60950-1, CSA C22.2 No. 60950-1, EN 60950-1
Power Automation	IEC 61850-3, IEEE 1613
Road Traffic	NEMA TS2
Rail Traffic	EN 50121-4, EN 50155 (complies with a portion of EN 50155 specifications)
EMI	FCC Part 15, CISPR (EN 55032) class A
Warranty	
Warranty Period	5 years
Details	See www.moxa.com/warranty