

# PT-7728-PTP

## Quick Installation Guide

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**Moxa PowerTrans Switch**

**Edition 6.0, April 2017**

### **Technical Support Contact Information** **[www.moxa.com/support](http://www.moxa.com/support)**

Moxa Americas:

Toll-free: 1-888-669-2872

Tel: 1-714-528-6777

Fax: 1-714-528-6778

Moxa China (Shanghai office):

Toll-free: 800-820-5036

Tel: +86-21-5258-9955

Fax: +86-21-5258-5505

Moxa Europe:

Tel: +49-89-3 70 03 99-0

Fax: +49-89-3 70 03 99-99

Moxa Asia-Pacific:

Tel: +886-2-8919-1230

Fax: +886-2-8919-1231

Moxa India:

Tel: +91-80-4172-9088

Fax: +91-80-4132-1045

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**P/N: 1802072000011**

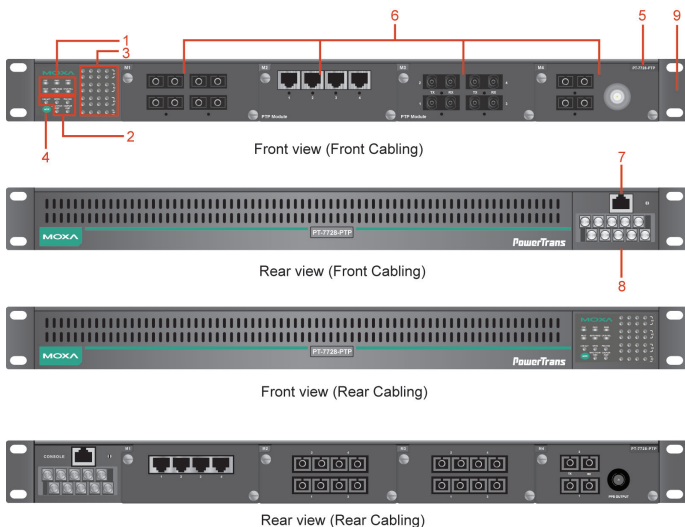


## Package Checklist

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.

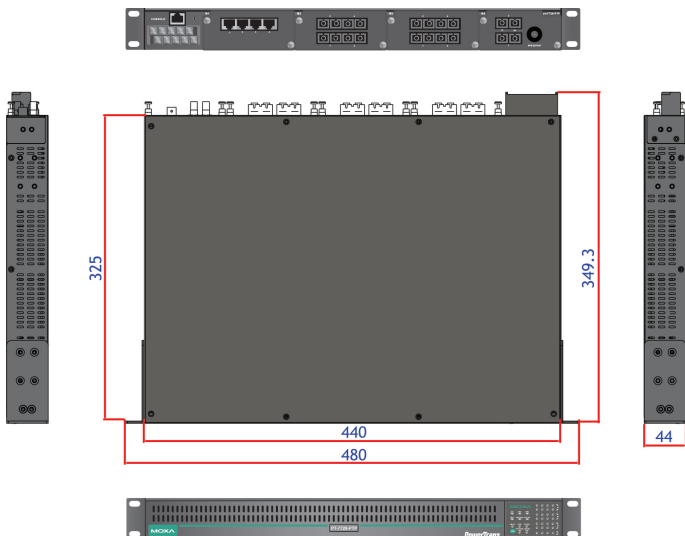
- 1 Moxa PowerTrans Switch
- RJ45 to DB9 console port cable
- Protective caps for unused ports
- 2 rackmount ears
- CD-ROM with User's Manual and SNMP MIB file
- Quick installation guide (printed)
- Warranty card

## Panel Layout

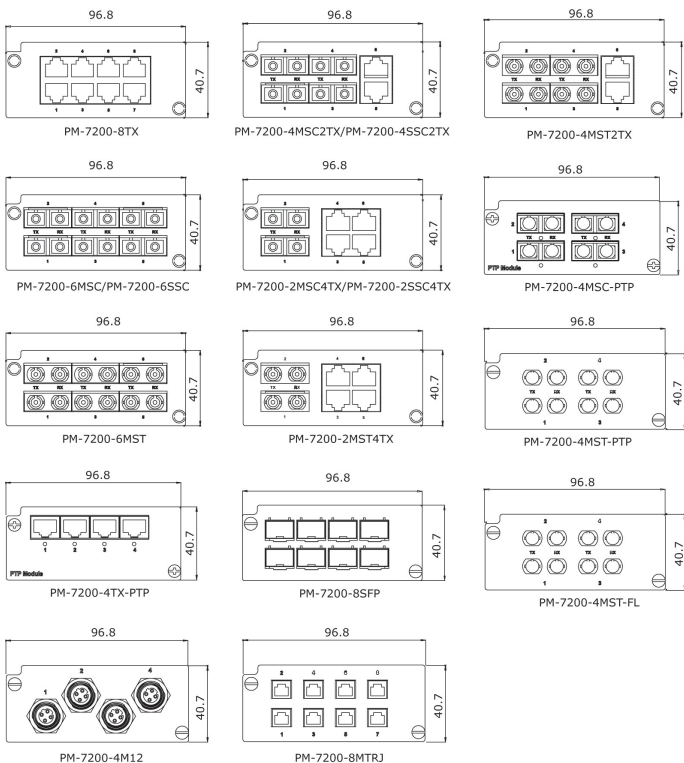


1. System status LEDs
2. Interface Module mode LEDs
3. Interface Module port LEDs
4. Push-button switch to select mode for Interface Module
5. Model Name
6. Fast Ethernet Interface Modules with PPS (pulse per second) output signal
7. Serial Console port
8. 10-pin terminal block for power inputs and relay output
9. Rackmounting kit

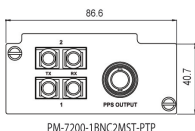
## Dimensions (unit = mm)



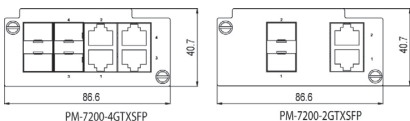
## Fast Ethernet Interface Modules (slots 1, 2, and 3)



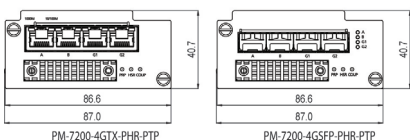
## Fast Ethernet Interface Modules (slot 4)



## Gigabit Ethernet Interface Modules (slot 4)

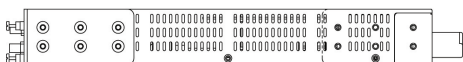
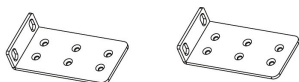


## Gigabit PRP/HSR Interface Modules (slot 4)



## Rack Mounting

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



**NOTE** Two additional rackmount ears can be ordered as an option. Use them to secure the rear of the chassis in high-vibration environments.

## 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 allowed for each wire size.

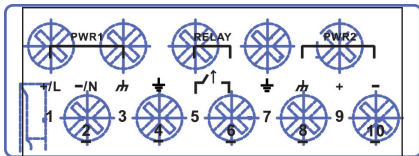
If the current goes above the allowed maximum, the wiring could overheat, causing serious damage to your equipment.

## Grounding 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 before connecting devices.

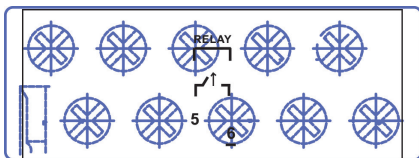
### Wiring the Power Inputs

The PT series of switches supports dual redundant power supplies: "Power Supply 1 (PWR1)" and "Power Supply 2 (PWR2)." The connections for PWR1, PWR2 and the RELAY are located on the terminal block. The front view of the terminal block connectors are shown below.



### Wiring the Relay Contact

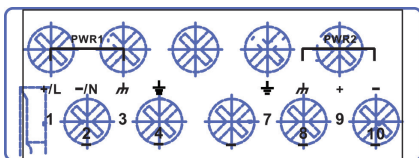
Each PT switch has one relay output. Refer to the next section for detailed instructions on how to connect the wires to the terminal block connector and how to attach the terminal block connector to the terminal block receptor.



**FAULT:** The relay contact of the 10-pin terminal block connector is 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.

### Wiring the Redundant Power Inputs

Each PT switch has two sets of power inputs: power input 1 and power input 2.



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

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

**NOTE** For dielectric strength (HIPOT) test, users must remove the metal jumper located on terminals 3, 4, and 7, 8 of the terminal block to avoid damage.

## LED Indicators

LED	Color	State	Description
<b>System LEDs</b>			
<b>STAT</b>	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.
<b>PWR1</b>	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.
<b>PWR2</b>	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.
<b>FAULT</b>	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.
<b>MSTR/ HEAD</b>	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.
<b>CPLR/ TAIL</b>	GREEN	On	The PT switch coupling function is enabled to form a backup 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
<b>Mode LEDs</b>			
<b>LNK/ACT</b>	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.
<b>SPEED</b>	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.
<b>FDX/HDX</b>	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.
<b>RING/CHAIN PORT</b>	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.
<b>COUPLER PORT</b>	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.

## Specifications

<b>Technology</b>	
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, backpressure flow control
<b>Interface</b>	
Fast Ethernet	10/100BaseT(X) or 100BaseFX (SC/ST connector or SFP slot)
Gigabit Ethernet	10/100/1000BaseT(X), 1000BaseSX/LX/LHX/ZX (SFP slot, LC connector)
System LED Indicators	STAT, PWR1, PWR2, FAULT, MSTR/HEAD, CPLR/TAIL
Module LED Indicators	LNK/ACT, FDX/HDX, SPEED, RING /CHAIN PORT, COUPLER PORT
Alarm Contact	One relay output with current-carrying capacity of 3 A @ 30 VDC or 3 A @ 240 VAC

<b>Optical Fiber (100BaseFX)</b>	
Distance	Multimode: 0 to 5 km, 1300 nm (50/125 $\mu$ m, 800 MHz*km) 0 to 4 km, 1300 nm (62.5/125 $\mu$ m, 500 MHz*km) Single-mode: 0 to 40 km, 1310 nm (9/125 $\mu$ m, 3.5 PS/(nm*km)) 0 to 80 km, 1550 nm (9/125 $\mu$ m, 19 PS/(nm*km))
Min. TX Output	Multimode: -20 dBm; Single-mode: -5 dbm Single-mode 80 km: -5 dBm
Max. TX Output	Multimode: -10 dBm; Single-mode: 0 dbm Single-mode 80 km: 0 dBm
RX Sensitivity	Multimode: -32 dBm; Single-mode: -34 dbm Single-mode 80 km: -34 dBm
<b>Power</b>	
Input Voltage	24 VDC (18 to 36V) or 48 VDC (36 to 72V) or 110/220 VDC/VAC (88 to 300 VDC and 85 to 264 VAC)
Input Current	Max. 2.38 A @ 24 VDC Max. 1.12 A @ 48 VDC Max. 0.59/0.30 A @ 110/220 VDC Max. 0.49/0.26 A @ 110/220 VAC
<b>Physical Characteristics</b>	
Housing	IP 30 protection, metal case
Dimensions (W x H x D)	440 x 44 x 325 mm (17.32 x 1.73 x 12.76 in.)
Weight	5900 g
Installation	19" rack mounting
<b>Regulatory Approvals</b>	
Safety	UL60950-1, CSA C22.2 No. 60950-1, EN60950-1
Power Automaton	IEC 61850-3, IEEE 1613
EMI	FCC Part 15, CISPR (EN 55032) class A
<b>Environmental Limits</b>	
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)
<b>WARRANTY</b>	5 years