PT-7728/7828
Hardware Installation Guide

Moxa PowerTrans Switch

Seventh Edition, January 2014

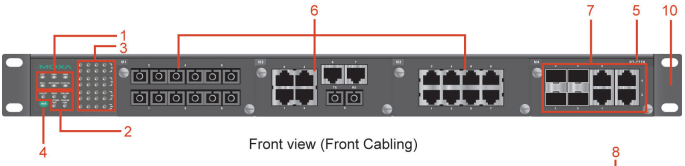
P/N: 1802077280015

Package Checklist

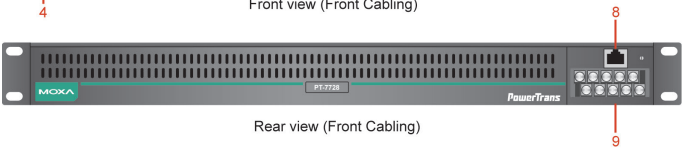
The Moxa PowerTrans switch is shipped with the following items. If any of these items are missing or damaged, please contact your customer service representative for assistance.

- 1 Moxa PowerTrans Switch
- Hardware Installation Guide
- CD-ROM with User's Manual and SNMP MIB file
- Moxa Product Warranty Statement
- RJ45 to DB9 console port cable
- Protective caps for unused ports
- 2 rack-mount ears

Panel Layout



Front view (Front Cabling)



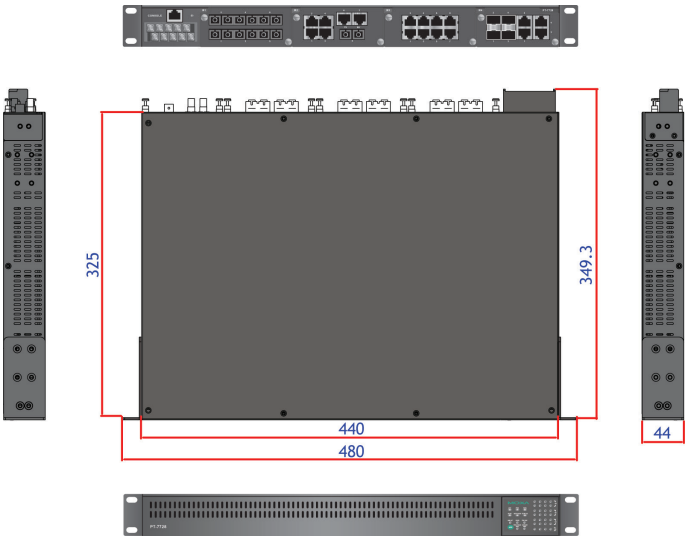
Rear view (Front Cabling)

Front view (Rear Cabling)

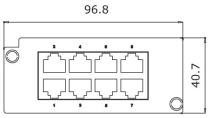
Rear view (Rear Cabling)

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

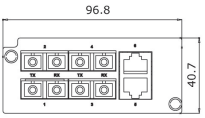
Dimensions (unit = mm)



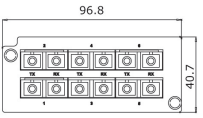
Fast Ethernet Interface Modules (slots 1, 2, and 3)



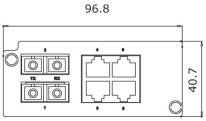
PM-7200-8TX



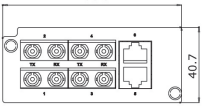
PM-7200-4MSC2TX/PM-7200-4SSC2TX



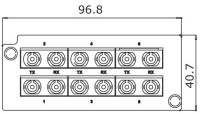
PM-7200-6MSC/PM-7200-6SSC



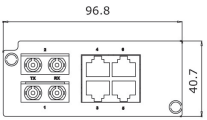
PM-7200-2MSC4TX/PM-7200-2SSC4TX



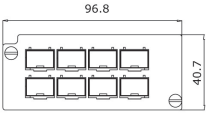
PM-7200-4MST2TX



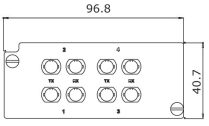
PM-7200-6MST



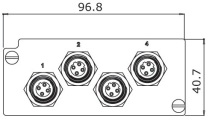
PM-7200-2MST4TX



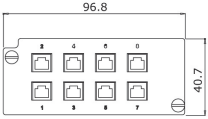
PM-7200-8SFP



PM-7200-4MST-FL

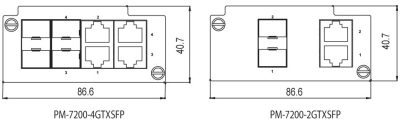


PM-7200-4M12



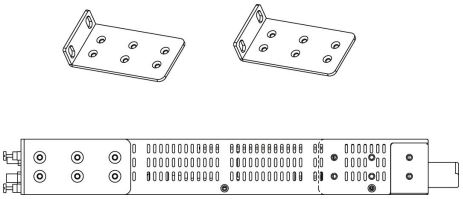
PM-7200-8MTRJ

Gigabit Ethernet Interface Modules (for slot 4)



Rack Mounting

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



NOTE Two additional rack-mount 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 allowable for each wire size.

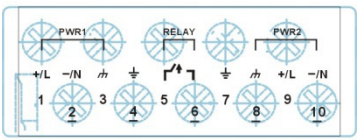
If the current goes above the maximum ratings, the wiring could overheat, causing serious damage to your equipment.

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 prior to connecting devices.

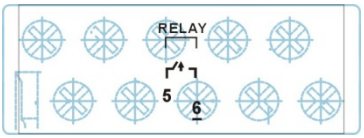
Wiring the Power Inputs

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

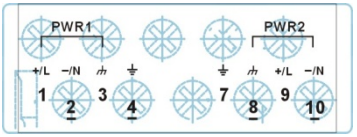
Each PT switch has one relay output. Refer to the next section for detailed instructions on how to connect the wires to the terminal block connector, and how to attach the terminal block connector to the terminal block receptor.



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

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 → pin 1, 9; N → pin 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 1: The PT switch with dual power supplies uses PWR2 as the first priority power input by default.

Note 2: 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

System LEDs			
LED	**Color**	**State**	**Description**
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	The PT switch coupling function 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.

Mode LEDs			
LED	**Color**	**State**	**Description**
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.

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	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 3A @ 30 VDC or 3A @ 240 VAC

Optical Fiber (100BaseFX)	
Distance	Multi-mode 0 to 5 km, 1300 nm (50/125µm, 800 MHz*km) 0 to 4 km, 1300 nm (62.5/125µm, 500 MHz*km)
	Single-mode 0 to 40 km, 1310 nm (9/125µm, 3.5 PS/(nm*km)) 0 to 80 km, 1550 nm (9/125um, 19 PS/(nm*km))
Min. TX Output	Multi-mode: -20 dBm; Single-mode: -5 dbm Single-mode 80 km: -5 dBm
Max. TX Output	Multi-mode: -10 dBm; Single-mode: 0 dbm Single-mode 80 km: 0 dBm
RX Sensitivity	Multi-mode: -32 dBm; Single-mode: -34 dbm Single-mode 80 km: -34 dBm
Power	
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. 2.58A @ 24VDC Max. 1.21A @ 48VDC Max. 0.64/0.33A @ 110/220VDC Max. 0.53/0.28A @ 110/220VAC
Physical Characteristics	
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
Regulatory Approvals	
Safety	UL60950-1, CSA C22.2 No. 60950-1, EN60950-1
Power Automaton	IEC61850-3, IEEE 1613
Road Traffic	NEMA TS2
Rail Traffic	EN50121-4, EN50155
EMI	FCC Part 15, CISPR (EN55022) class A
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)
WARRANTY	5 years

Technical Support Contact Information
www.moxa.com/support

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