

# **Moxa PowerTrans Switch**

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## **PT-G7509 Series Hardware Installation Guide**

**Fourth Edition, June 2010**



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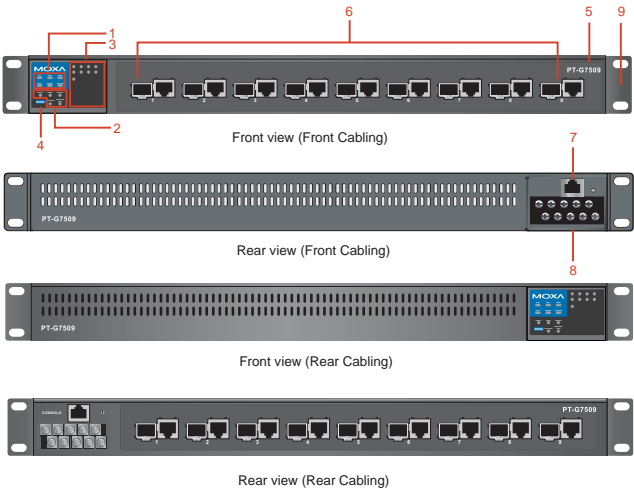
**P/N: 1802075090013**

# 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.

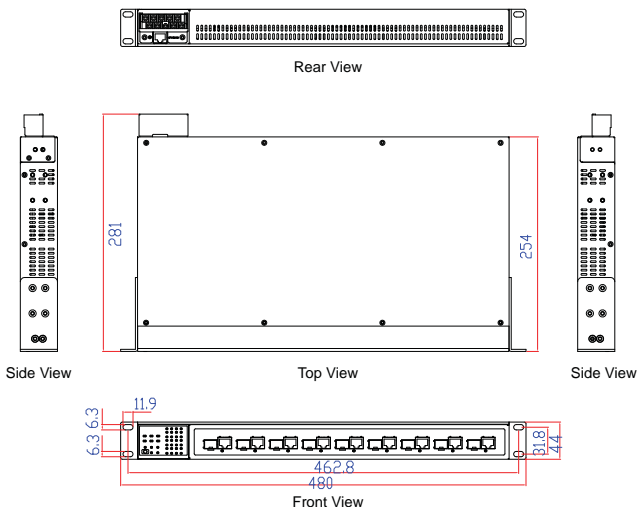
- 1 Moxa PowerTrans Switch
- Hardware Installation Guide
- CD-ROM with User's Manual and SNMP MIB file
- Moxa Product Warranty Statement
- RJ45 to DB9 console port cable
- Protective caps for unused ports
- 2 rack-mount ears

## Panel Layout



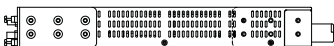
1. System status LEDs
2. Interface Module mode LEDs
3. 9 Gigabit Combo port LEDs
4. Push-button switch to select mode for Interface Module
5. Model Name
6. 9 Gigabit Combo ports
7. Serial Console port
8. 10-pin terminal block for power inputs, and relay output
9. Rack Mounting Kit

## Dimensions (unit = mm)



## 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.

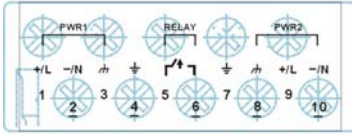
If the current goes above the maximum ratings, the wiring could overheat, causing serious damage to your equipment.

## 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.

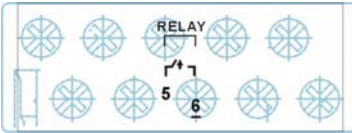
# Wiring the Power Inputs

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

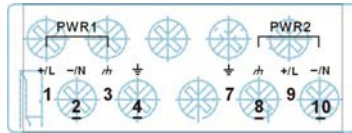
Each PT switch has one relay output. Refer to the next section for detailed instructions on how to connect the wires to the terminal block connector, and how to attach the terminal block connector to the terminal block receptor.



**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

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
<b>System LEDs</b>			
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	This 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	This 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 enables the coupling function to form a back-up path.
		Blinking	Turbo Chain is down.
		Off	When this PT switch disables the coupling function, or is set as a Member of the Turbo Chain.
<b>Mode LEDs</b>			
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.
<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 chainport of this PT switch.
		Off	The corresponding module's port is not the ring or chainport 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

### 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

Fiber Ports 100/1000BaseSFP slot

RJ45 Ports 10/100/1000BaseT(X) auto negotiation speed

System LED STAT, PWR1, PWR2, FAULT, MSTR/HEAD, CPLR/TAIL

Module LED LNK/ACT, FDX/HDX, SPEED, RING PORT, COUPLER PORT

Alarm Contact One relay output with current carrying capacity of 3A @ 30 VDC or 3A @ 240 VAC

### 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. 1.17A @ 24VDC  
Max. 0.59A @ 48VDC  
Max. 0.27/0.16A @ 110/220VDC  
Max. 0.61/0.35A @ 110/220VAC

### Physical Characteristics

Housing IP 30 protection, metal case

Dimensions (W x H x D) 440 x 44 x 254 mm (17.32 x 1.73 x 10.00 in.)

Weight 3800 g  
Installation 19" rack mounting

**Regulatory Approvals**

Safety EN60950-1  
Power Automaton IEC61850-3, IEEE 1613  
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](http://www.moxa.com/support)**

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