PT-7710 Series

IEC 61850-3 8+2G-port Gigabit modular managed Ethernet switches

> IEC 61850-3, IEEE 1613 (power substations), NEMA TS2 (traffic control systems), and EN50121-4 (railway applications) compliant
> Turbo Ring and RSTP/STP for Ethernet redundancy
> Universal power supply range, 24/48 VDC or 110/220 VDC/VAC
> Modular design lets you choose from a variety of media combinations
> -40 to 85°C operating temperature range

IEC 61850-3   IEEE 1613   NEMA TS2   CE   FC

Introduction

The PowerTrans PT-7710 is designed to meet the demands of power substation automation systems (IEC 61850-3, IEEE 1613), traffic control systems (NEMA TS2), and railway applications (EN50121-4). The PT-7710's Gigabit and fast Ethernet backbone, redundant ring, and 24/48 VDC dual redundant power supplies or 110/220 VDC/VAC

power supplies increase the reliability of the communications and reduce cabling and wiring costs. The modular design of the PT-7710 makes network planning easy, and allows greater flexibility by letting you install up to 2 Gigabit ports and 8 fast Ethernet ports, or 10 fast Ethernet ports.

Features and Benefits

- Turbo Ring and RSTP/STP (IEEE 802.1w/D)
- IGMP Snooping and GMRP for filtering multicast traffic from industrial Ethernet protocols
- Port-based VLAN, IEEE 802.1Q VLAN, and GVRP protocol to ease network planning
- QoS-IEEE 802.1p/1Q and TOS/DiffServ to increase determinism
- 802.3ad, LACP for optimum bandwidth utilization
- IEEE 802.1X, HTTPS, and SSH to enhance network security
- SNMPv1/v2c/v3 for different levels of network management

- RMON for efficient network monitoring and proactive capability
- ABC-01 for system configuration backup
- Bandwidth management prevents unpredictable network status
- Lock port for only authorized MAC address access
- Port mirroring for online debugging
- Automatic warning by exception through email, relay output
- Automatic recovery of connected device's IP addresses
- Line-swap fast recovery
- Configurable by web browser, Telnet/serial console, Windows utility, and ABC-01

Specifications

Modular Rackmount Ethernet Switch System, PT-7710

Slot 1   Slot 2

Technology

Standards: IEEE 802.3 for 10BaseT,
IEEE 802.3u for 100BaseT(X) and 100BaseFX,
IEEE 802.3ab for 1000BaseT(X),
IEEE 802.3z for 1000BaseSX/LX/LHX/ZX,
IEEE 802.3x for Flow Control,
IEEE 802.1D for Spanning Tree Protocol,
IEEE 802.1w for Rapid STP,
IEEE 802.1Q for VLAN Tagging,
IEEE 802.1p for Class of Service,
IEEE 802.1X for Authentication,
IEEE 802.3ad for Port Trunk with LACP
Protocols: IGMP v1/v2 device, GMRP, GVRP, SNMPv1/v2c/v3, DHCP Server/Client, DHCP Option 82, BootP, TFTP, SNTP, SMTP, RARP, RMON, HTTP, HTTPS, Telnet, SSH, Syslog
MIB: MIB-II, Ethernet-like MIB, P-BRIDGE MIB, Q-BRIDGE MIB, Bridge MIB, RSTP MIB, RMON MIB Group 1, 2, 3, 9
Flow Control: IEEE 802.3x flow control, back pressure flow control

Switch Properties

Priority Queues: 4
Max. Number of Available VLANs: 64
VLAN ID Range: VID 1 to 4094
IGMP Groups: 256

Interface

Fast Ethernet: Slot 1 for any combination of 6, 7, or 8-port PM-7200 fast Ethernet modules with 10/100BaseT(X) or 100BaseFX (SC/ST connector), and Slot 2 for 1 or 2-port interface modules with 100BaseFX (SC/ST connector)

Gigabit Ethernet: Slot 2 for 2-port PM-7200 Gigabit Ethernet combo module with 10/100/1000BaseT(X) or 1000BaseSFP slots

Console: RS-232 (RJ45)

System LED Indicators: STAT, PWR1, PWR2, FAULT, MASTER, COUPLER

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

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

Power Requirements

Input Voltage: 24/48 VDC (9 to 60 V), or 110/220 VDC/VAC (88 to 300 VDC and 85 to 264 VAC)

Input Current: (all ports are equipped with Fiber)
Max. 0.81A @ 24 VDC
Max. 0.42A @ 48 VDC
Max. 0.17/0.10 @ 110/220 VDC,
Max. 0.20/0.12 @ 110/220 VAC

Connection: 10-pin terminal block

Overload Current Protection: Present
Reverse Polarity Protection: Present

Physical Characteristics

Casing: IP30 protection
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
Installation: 19" rack mounting, wall mounting

Environmental Limits

Operating Temperature: -40 to 85°C (-40 to 185°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)

Regulatory Approvals

Safety: EN60950-1 (Pending)
Power Automation: IEC 61850-3, IEEE 1613
Road Traffic: NEMA TS2
Rail Traffic: EN50121-4 (Pending)
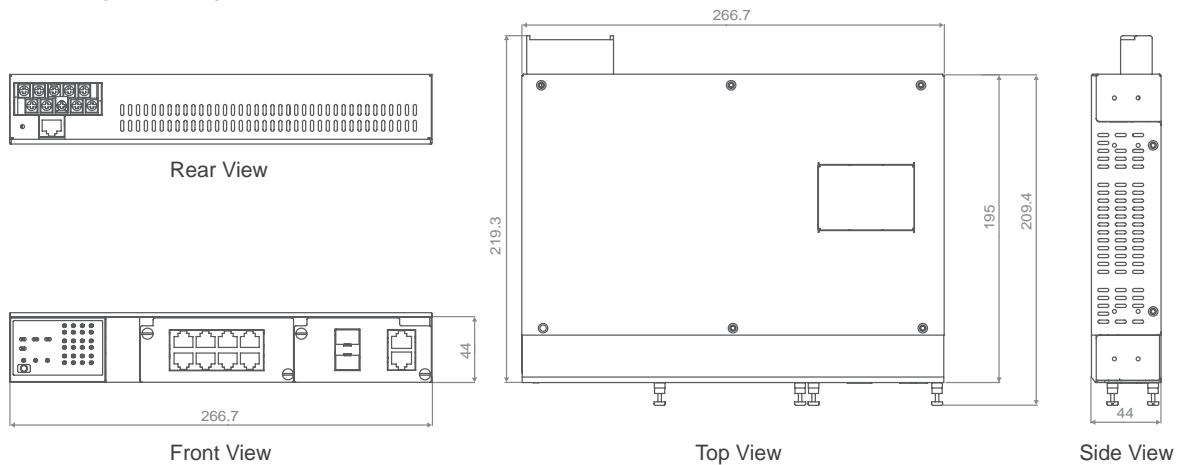**Maritime:** DNV (Pending), GL (Pending)
EMI: FCC Part 15, CISPR (EN55022) class A
*Please check Moxa's website for the most up-to-date certification status

Warranty

5 years (see www.moxa.com/warranty for details)

Dimensions (unit = mm)

Rear View

Front View

Top View

Side View

: Ordering Information

Step 1: Select Ethernet switch system

Step 2: Select interface modules

PT-7710 with power supply

PM-7200 series
(Gigabit or fast Ethernet)

*The PT-7710 Ethernet switch system is delivered without interface module. Please refer to page 4-23 to choose PM-7200 interface modules.

Modular Rackmount Ethernet Switch System, PT-7710

Modular managed rackmount Ethernet switch system with 1 slot for fast Ethernet modules, and 1 slot for fast Ethernet or Gigabit Ethernet modules, for a total of up to 10- or 8+2G- ports, -40 to 85°C

Product Model		Power Supply	
Rackmounting, Front Cabling, Front Display	Wall mounting, Down Cabling, Front Display	LV: 24/48 VDC (9 to 60 V) (Dual power inputs)	HV: 88 to 300 VDC and 85 to 264 VAC, isolated
PT-7710-F-LV	PT-7710-D-LV	1	
PT-7710-F-HV	PT-7710-D-HV		1

* The PT-7710 Ethernet switch systems provide 1 slot for Gigabit Ethernet interface modules and 1 slot for fast Ethernet interface modules. Please refer to page 4-23 to select the PM-7200 Gigabit Ethernet and fast Ethernet interface modules that you need for your own application.

Rackmount Ethernet Switches   PT-7710

PT-7710-F series
(Rackmounting, Front Cabling, Front Display)

PT-7710-D series
(Wall mounting, Down Cabling, Front Display)

Gigabit/Fast Ethernet Modules for the PT-7710

Interface Module																	
	PM-7200-2GTXSFP	PM-7200-1MSC	PM-7200-1MST	PM-7200-1SSC	PM-7200-2MSC	PM-7200-2MST	PM-7200-2SSC	PM-7200-8TX	PM-7200-2MSC4TX	PM-7200-2MSC4TX	PM-7200-2SSC4TX	PM-7200-4MSC2TX	PM-7200-4MST2TX	PM-7200-4SSC2TX	PM-7200-6MSC	PM-7200-6MST	PM-7200-6SSC	PM-7200-1LSC6TX
Slot 1								√	√	√	√	√	√	√	√	√	√	√
Slot 2	√	√	√	√	√	√	√											

Optional Accessories

- **ABC-01:** Industrial RS-232, RJ45-based, automatic backup configurator
- **EDS-SNMP OPC Server Pro:** CD with EDS-SNMP OPC server software and manual