

PT-G7828 Series

IEC 61850-3 28-port Layer 3 full gigabit modular managed Ethernet switches



Features and Benefits

- IEC 61850-3 Edition 2 Class 2 compliant for EMC
- Hot-swappable interface and power modules for continuous operation
- Built-in MMS server based on IEC 61850-90-4 switch data modeling for power SCADA
- IEEE 1588 hardware time stamp supported

Certifications



Introduction

The PT-G7828 modular switches provide up to 28 Gigabit ports, including 4 fixed ports, 6 interface module slots, and 2 power module slots to ensure sufficient flexibility for a variety of applications. The PT-G7828 Series is designed to meet evolving network requirements, including a hot-swappable module design that enables you to change or add devices without shutting down your device.

The multiple Ethernet modules (RJ45, SFP, and PoE¹) and power units (24/48 VDC, 110/220 VAC/VDC) provide even greater flexibility as well as suitability for different operating conditions. The switches support a full Gigabit platform that provides enough bandwidth to set up an Ethernet backbone. Certifications include IEC 61850 Edition 2 Class 2 to ensure high availability and wide usage.

Specifications

Ethernet Interface

10/100/1000BaseT(X) Ports (RJ45 connector)	2
100/1000BaseSFP Ports	2
Module	6
Slot Combination	See the LM-7000H datasheet for Gigabit Ethernet module and PoE+ (available by request) module information
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3ab for 1000BaseT(X) IEEE 802.3z for 1000BaseX IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1X for authentication IEEE 802.3ad for Port Trunk with LACP IEEE 802.3x for flow control

1. available upon request

Ethernet Software Features

Management	IPv4/IPv6 SNMP Inform SNMPv1/v2c/v3 DHCP Server/Client DHCP Option 66/67/82 BOOTP TFTP LLDP RARP HTTP HTTPS Telnet Flow control Back Pressure Flow Control Port Mirroring Fiber check Dying Gasp SMTP Syslog
MIB	MIB-II Ethernet-like-MIB Bridge-MIB P-BRIDGE MIB Q-BRIDGE-MIB RSTP MIB RMON MIB Groups 1, 2, 3, 9
Filter	802.1Q GMRP GVRP IGMP v1/v2/v3 QinQ VLAN
Redundancy Protocols	Link Aggregation MSTP RSTP STP Turbo Chain Turbo Ring v1/v2 V-ON MRP
Security	RADIUS TACACS+ SSH Port Lock Broadcast storm protection MAB authentication Sticky MAC Access control list
Time Management	NTP Server/Client SNTP IEEE 1588v2 PTP (hardware-based)
Power Substation	IEC 61850 QoS GOOSE Check
Industrial Protocols	EtherNet/IP Modbus TCP
Unicast Routing	Static Route RIPV1/V2 OSPF
Multicast Routing	DVMRP PIM-DM
Routing Redundancy	VRRP

Switch Properties

Priority Queues	8
Max. No. of VLANs	256
VLAN ID Range	VID 1 to 4094
IGMP Groups	4096
MAC Table Size	16 K
Packet Buffer Size	12 Mbits
Jumbo Frame Size	9.6 KB

Serial Interface

Console Port	RS-232 (RJ45)
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USB Interface

Storage Port	USB Type A
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Power Parameters

<p>Input Voltage</p>	<p>With PWR-HV-P48 installed: 110/220 VDC/VAC for the switch system 48 VDC for PoE system (53 to 57 VDC is recommended for PoE+ devices)</p> <p>With PWR-LV-P48 installed: 24/48 VDC for the switch system 48 VDC for PoE system (53 to 57 VDC is recommended for PoE+ devices)</p> <p>With PWR-HV-NP installed: 110/220 VDC/VAC for the switch system</p> <p>With PWR-LV-NP installed: 24/48 VDC for the switch system</p>
<p>Operating Voltage</p>	<p>With PWR-HV-P48 installed: 88 to 300 VDC, 90 to 264 VAC for the switch system 46 to 57 VDC for PoE systems</p> <p>With PWR-LV-P48 installed: 18 to 72 VDC for the switch system 46 to 57 VDC for PoE systems</p> <p>With PWR-HV-NP installed: 88 to 300 VDC, 90 to 264 VAC for the switch system</p> <p>With PWR-LV-NP installed: 18 to 72 VDC for the switch system</p>
<p>Input Current</p>	<p>With PWR-HV-P48 installed: PWR input current (switch system) Max. 0.11 A @ 110 VDC Max. 0.06 A @ 220 VDC Max. 0.29 A @ 110 VAC Max. 0.18 A @ 220 VAC EPS input current (PoE system) Max. 0.53 A @ 48 VDC (excluding power consumption of PoE devices)</p> <p>With PWR-LV-P48 installed: PWR input current (switch system) Max. 0.53 A @ 24 VDC Max. 0.28 A @ 48 VDC EPS input current (PoE system) Max. 0.53 A @ 48 VDC (excluding power consumption of PoE devices)</p> <p>With PWR-HV-NP installed: PWR input current (switch system) Max. 0.11 A @ 110 VDC Max. 0.06 A @ 220 VDC Max. 0.29 A @ 110 VAC Max. 0.18 A @ 220 VAC</p> <p>With PWR-LV-NP installed: PWR input current (switch system) Max. 0.53 A @ 24 VDC Max. 0.28 A @ 48 VDC</p>

Physical Characteristics

<p>IP Rating</p>	<p>IP30</p>
<p>Dimensions</p>	<p>443 x 44 x 280 mm (17.44 x 1.73 x 11.02 in)</p>
<p>Weight</p>	<p>3080 g (6.8 lb)</p>
<p>Installation</p>	<p>19-inch rack mounting</p>

Environmental Limits

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

Standards and Certifications

EMC	EN 55032/35
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Power Substation	IEC 61850-3 Edition 2 Class 2 (EMC) IEEE 1613
Railway	EN 50121-4
Safety	UL 62368-1 IEC 62368-1

MTBF

Time	583,604 hrs
Standards	Telcordia (Bellcore), GB

Warranty

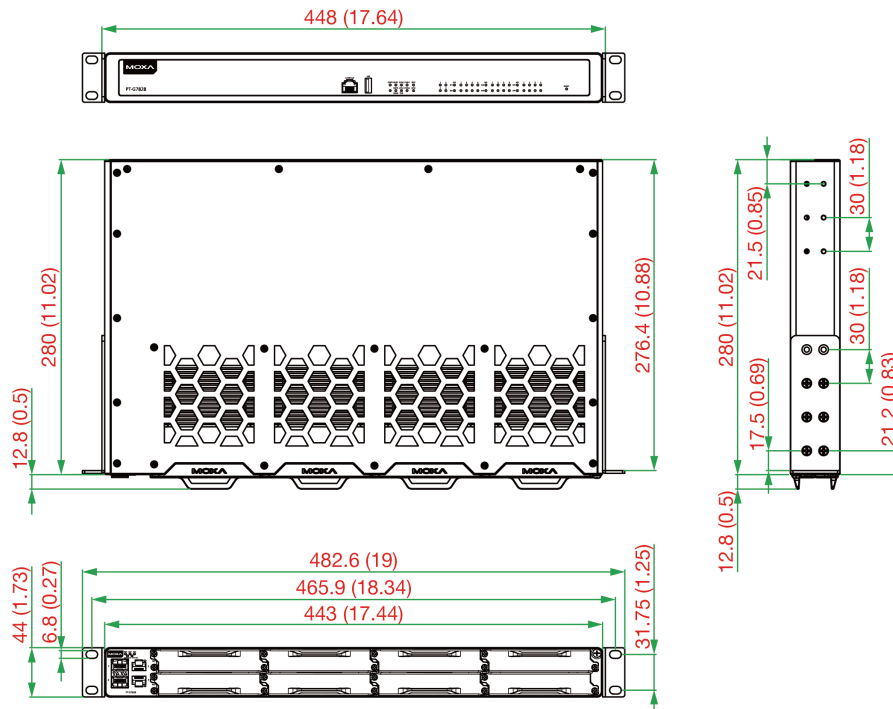
Warranty Period	5 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x PT-G7828 Series switch
Cable	USB cable (Type A male to Micro USB type B)
Installation Kit	2 x cap, for Micro-B USB port 1 x cap, metal, for ABC-02 USB storage port 2 x rack-mounting ear 2 x cap, plastic, for SFP slot
Documentation	1 x quick installation guide 1 x warranty card 1 x substance disclosure table 1 x product certificates of quality inspection, Simplified Chinese 1 x product notice, Simplified Chinese
Note	1. SFP modules, modules from the LM-7000H Module Series, and/or modules from the PWR Power Module Series need to be purchased separately for use with this product. 2. LM-7000H PoE modules that comply with PT-G7728 and PT-G7828 are available upon request.

Dimensions

Unit: mm (inch)



Ordering Information

Model Name	Layer	100/1000Base SFP Slots	10/100/1000BaseT(X) Ports RJ45 Connector	PoE Ports, 10/100/1000Base T(X) RJ45 Connector Note: Available upon request	Operating Temp.
PT-G7828	3	2 to 26	2 to 26	0 to 24	-40 to 85°C

Accessories (sold separately)

Storage Kits

ABC-02-USB	Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, 0 to 60°C operating temperature
ABC-02-USB-T	Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, -40 to 75°C operating temperature

Power Supplies

PWR-HV-P48	Power supply module (110/220 VAC/VDC) with system power input, relay, PoE power input
PWR-LV-P48	Power supply module (24/48 VDC) with system power input, relay, PoE power input
PWR-HV-NP	Power supply module (110/220 VAC/VDC) with system power input, relay
PWR-LV-NP	Power supply module (24/48 VDC) with system power input, relay

LM-7000H Module Series

LM-7000H-4GTX	Gigabit Ethernet module with 4 10/100/1000BaseT(X) ports
LM-7000H-4GSFP	Gigabit Ethernet module with 4 100/1000BaseSFP slots
LM-7000H-4TX	Fast Ethernet module with 4 10/100BaseT(X) ports

SFP Modules

SFP-1FELLC-T	SFP module with 1 100Base single-mode with LC connector for 80 km transmission, -40 to 85°C operating temperature
SFP-1FEMLC-T	SFP module with 1 100Base multi-mode, LC connector for 2/4 km transmission, -40 to 85°C operating temperature

LIC-MXviewOne-ADD-POWER-MR	MXview One add-on license to enable MXview Power module functionality
LIC-MXviewOne-NEW-XN-SR	MXview One node license with customizable node quantity (minimum 1 node)

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