

PT-G510シリーズ

IEC 61850-3準拠10ポートレイヤ2フルギガビットPRP/HSRマネージドイーサネットスイッチ



機能とメリット

- IEC 61850-3 Edition 2 Class 2準拠
- IEC 62439-3 Clause 4 (PRP) およびClause 5 (HSR) 準拠
- IEEE 1588ハードウェアタイムスタンプ対応
- IEEE C37.238およびIEC 61850-9-3電力プロファイルをサポート
- 簡単なトラブルシューティングのためのGOOSEチェック
- 電力SCADA用のIEC 61850-90-4スイッチデータモデリングに基づく内蔵MMSサーバー
- 動作温度範囲-40～75°C

認証



EN 50121-4



製品紹介

PT-G510シリーズは、ゼロ復旧時間の冗長性を必要とするデジタル変電所のミッションクリティカルなアプリケーションにおいて、最高レベルのシステム可用性とデータ完全性を提供するように設計されています。PT-G510シリーズはPRP/HSRをサポートし、変電所およびプロセス自動化システムのシームレスな冗長性を実現します。タイムクリティカルなアプリケーション向けに、ハードウェアベースのIEEE 1588v2 PTPもサポートされています。PT-G510シリーズは、耐久性に優れた設計を特徴とし、変電所アプリケーションの厳しい要件を満たすIEC 61850-3 Edition 2 Class 2認証を取得しています。

PT-G510シリーズは、8つの100/1000BaseT(X)イーサネットポート、または2つの専用100/1000BaseSFP PRP/HSRポートを備えた100/1000BaseSFPスロットを備えており、さらにPRP、HSR、MRP、STP、MSTP、RSTPを含む完全な冗長プロトコルスイートをサポートすることで、最大のネットワーク信頼性を実現します。さらに、PT-G510シリーズは、GOOSEパケットを効率的に監視するGOOSEチェックをサポートし、電力SCADAシステム向けのIEC 61850-90-4スイッチデータモデリングに基づく内蔵MMSサーバーを備えています。

仕様

Ethernet Interface

100/1000BaseT(X) Ports (RJ45 connector)	PT-G510-8GTX-PHR models: 8 PT-G510-4GTX4GSFP-PHR models: 4
100/1000BaseSFP Ports	PT-G510-8GSFP-PHR models: 10 PT-G510-4GTX4GSFP-PHR models: 6
Standards	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

Ethernet Software Features

Management	HTTPS Back Pressure Flow Control DHCP Option 66/67/82 Fiber check Flow control LLDP Port Mirroring SNMP Inform BOOTP DHCP Server/Client HTTP IPv4/IPv6 RARP SMTP SNMPv1/v2c/v3 Syslog Telnet TFTP
MIB	MIB-II Ethernet-like-MIB Bridge-MIB P-BRIDGE MIB Q-BRIDGE-MIB RSTP MIB RMON MIB Groups 1, 2, 3, 9
Filter	IGMP v1/v2/v3 GMRP GVRP 802.1Q QinQ VLAN
Redundancy Protocols	Link Aggregation MSTP RSTP STP Turbo Chain Turbo Ring MRP HSR PRP Coupling RSTP grouping
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	GOOSE Check IEC 61850 QoS MMS

Switch Properties

Priority Queues	8
Max. No. of VLANs	256
VLAN ID Range	1 to 4094
RSTP Grouping ID Range	1 to 4094

IGMP Groups	4096
MAC Table Size	16 K
Packet Buffer Size	12 Mbits

Serial Interface

Console Port	RS-232 (RJ45)
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USB Interface

Storage Port	USB Type A
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Power Parameters

Input Voltage	-HV models: 110-220 VAC, 110-220 VDC (88 to 300 VDC, 85 to 264 VAC) -WV models: 24-48 VDC (18 to 72 VDC) Note: Both -HV and -WV models support dual power inputs with a single power module.
Input Current	-HV models: 0.5 A @ 110-220 VAC 0.3 A @ 110-220 VDC -WV models: 1.1 A @ 24-48 VDC
Alarm Contact Channels	Resistive load: 1 A @ 24 VDC
Overload Current Protection	Supported
Reverse Polarity Protection	Supported

Physical Characteristics

IP Rating	IP30
Dimensions (without ears)	74 x 148 x 120 mm (2.91 x 5.83 x 4.72 in)
Weight	1476 g (3.25 lb)
Installation	DIN-rail mounting

Environmental Limits

Operating Temperature	-40 to 75°C (-40 to 167°F) -40 to 85°C (-40 to 185°F) for 16 hrs (tested in accordance with IEC 60068-2-2)
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: 10 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 EN 61000-4-11

Power Substation	IEC 61850-3 Edition 2.0 Class 2 IEEE 1613
Railway	EN 50121-4
Maritime	-WV models: IEC 60945
Safety	IEC 62368-1 UL 62368-1

MTBF

Time	688,584 hrs
Standards	Telcordia (Bellcore) Standard TR/SR

Warranty

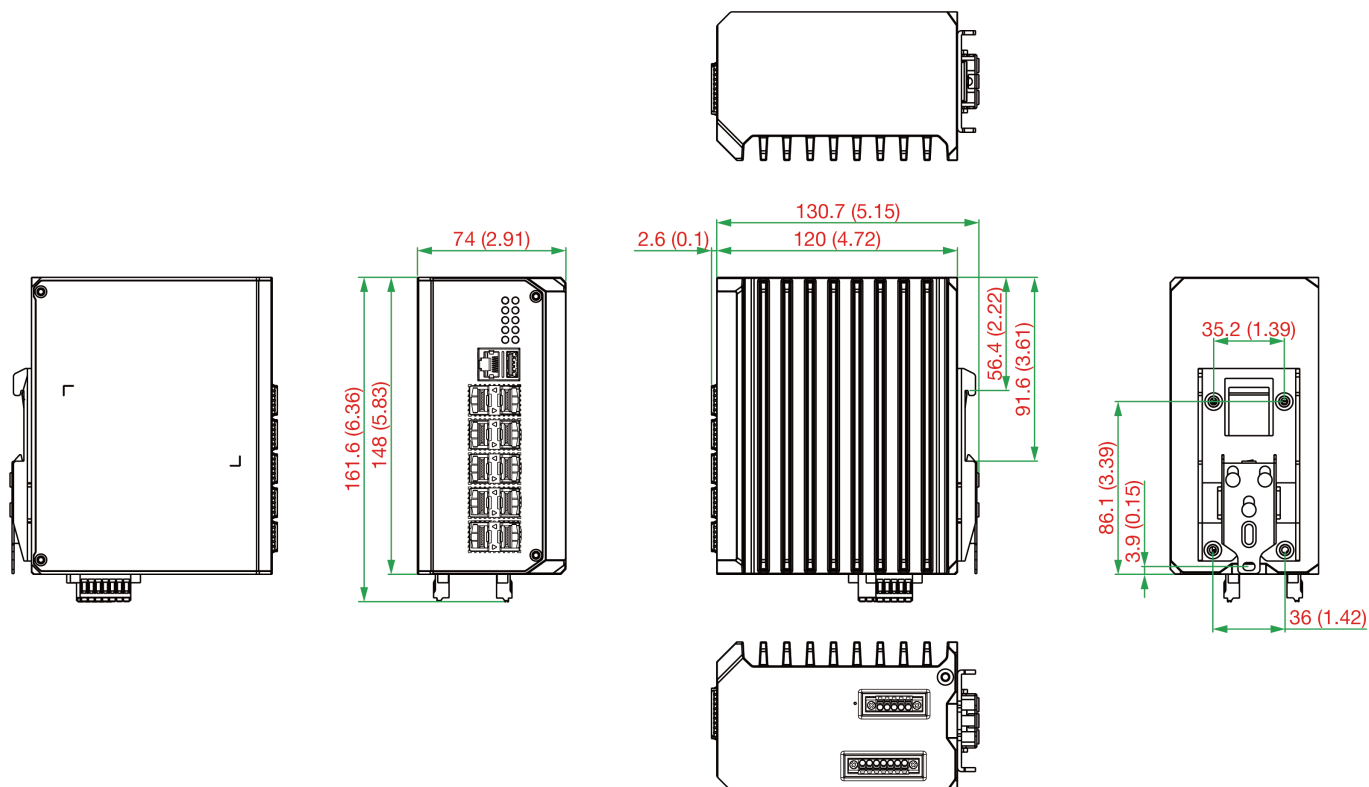
Warranty Period	5 years
Details	See www.moxa.com/jp/warranty

Package Contents

Device	1 x PT-G510 Series switch
Cable	1 x RJ45-to-DB9 console cable
Installation Kit	1 x DIN-rail kit 1 x cap, for type A USB port 6 or 10 x cap, plastic, for SFP port
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	SFP modules need to be purchased separately for use with this product.

寸法

単位：mm（インチ）



注文情報

Model Name	100/1000BaseT(X) Ports (RJ45 Connector)	100/ 1000BaseBaseSFP Slots	Operating Voltage	Conformal Coating	Operating Temp.
PT-G510-8GSFP-PHR-HV	–	10	110-220 VDC/VAC	–	-40 to 75°C
PT-G510-8GSFP-PHR-WV	–	10	24-48 VDC	–	-40 to 75°C
PT-G510-8GTX-PHR-HV	8	2	110-220 VDC/VAC	–	-40 to 75°C
PT-G510-8GTX-PHR-WV	8	2	24-48 VDC	–	-40 to 75°C
PT-G510-4GTX4GSFP-PHR-HV	4	6	110-220 VDC/VAC	–	-40 to 75°C
PT-G510-4GTX4GSFP-PHR-WV	4	6	24-48 VDC	–	-40 to 75°C
PT-G510-8GSFP-PHR-HV-CT	–	10	110-220 VDC/VAC	P	-40 to 75°C
PT-G510-8GSFP-PHR-WV-CT	–	10	24-48 VDC	P	-40 to 75°C
PT-G510-8GTX-PHR-HV-CT	8	2	110-220 VDC/VAC	P	-40 to 75°C
PT-G510-8GTX-PHR-WV-CT	8	2	24-48 VDC	P	-40 to 75°C
PT-G510-4GTX4GSFP-PHR-HV-CT	4	6	110-220 VDC/VAC	P	-40 to 75°C
PT-G510-4GTX4GSFP-PHR-WV-CT	4	6	24-48 VDC	P	-40 to 75°C

アクセサリ（別売）

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
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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
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SFP Modules

SFP-1GTXRJ45-T	SFP module with 1 1000BaseT port with RJ45 connector for 100 m transmission, -40 to 75°C operating temperature
SFP-1FELLCT	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
SFP-1FESLC-T	SFP module with 1 100Base single-mode with LC connector for 40 km transmission, -40 to 85°C operating temperature
SFP-1G10ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature
SFP-1G10ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature
SFP-1G10BLC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature
SFP-1G10BLC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature
SFP-1G20ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature
SFP-1G20ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature
SFP-1G20BLC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature
SFP-1G20BLC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature
SFP-1G40ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature
SFP-1G40ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature
SFP-1G40BLC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature
SFP-1G40BLC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature
SFP-1GEZXLC	SFP module with 1 1000BaseEZ port with LC connector for 110 km transmission, 0 to 60°C operating temperature
SFP-1GEZXLC-120	SFP module with 1 1000BaseEZ port with LC connector for 120 km transmission, 0 to 60°C operating temperature
SFP-1GLHLC	SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, 0 to 60°C operating temperature
SFP-1GLHLC-T	SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, -40 to 85°C operating temperature
SFP-1GLHXLCT	SFP module with 1 1000BaseLH port with LC connector for 40 km transmission, 0 to 60°C operating temperature
SFP-1GLHXLCT-T	SFP module with 1 1000BaseLH port with LC connector for 40 km transmission, -40 to 85°C operating temperature
SFP-1GLSXLCT	SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, 0 to 60°C operating temperature
SFP-1GLSXLCT-T	SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, -40 to 85°C operating temperature
SFP-1GLXLCT	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, 0 to 60°C operating temperature
SFP-1GLXLCT-T	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, -40 to 85°C operating temperature

SFP-1GSXLC	SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, 0 to 60°C operating temperature
SFP-1GSXLC-T	SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, -40 to 85°C operating temperature
SFP-1GZXLC	SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, 0 to 60°C operating temperature
SFP-1GZXLC-T	SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, -40 to 85°C operating temperature

Software

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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