

PT-G503 系列

IEC 61850-3/62439-3 3 連接埠完整 Gigabit 網管型備援盒



特色與優點

- 符合 IEC 61850-3、IEEE 1613 (變電站)
- 符合 IEC 62439-3 第 4 條 (PRP) 和第 5 條 (HSR)
- 支援 PRP/HSR Coupling 和 QuadBox 功能
- 為本機存取保留的乙太網路主控台
- 內建 MMS Server，採用 IEC 61850-90-4 交換器資料模型，適用於 Power SCADA
- 支援硬體型 IEEE 1588v2 PTP
- NERC CIP 相容系統開發適用的設計
- 隔離式備援電源輸入，具有通用 24 VDC、48 VDC 或 110/220 VDC/VAC 電源供應範圍
- -40°C 至 85°C 操作溫度範圍

認證



EN 50121-4



簡介

PT-G503-PHR-PTP 系列備援盒 (RedBoxes) 符合工業自動化網路的最新標準化備援通訊協定：IEC 62439-3 第 4 條 (並行備援通訊協定，PRP) 和 IEC 62439-3 第 5 條 (高可用性無縫備援，HSR)。PRP/HSR 可確保變電站和/或製程自動化系統中需要零復原時間備援的任務關鍵型應用達到最高系統可用性和資料完整性。另外也支援備援通訊協定 Coupling 和 QuadBox。藉由 Coupling 和 QuadBox 可以連接 HSR 環，因此備援網路更加通用。PT-G503-PHR-PTP 系列具備三個 10/100/1000BaseT (X) 和 100/1000BaseSFP 插槽複合連接埠。

一個插槽 (INTERLINK 連接埠) 為內部鏈路專用，用於連接 SAN (單連接節點)。另外兩個連接埠 (LAN A 和 LAN B 連接埠) 為 PRP/HSR 備援通訊協定通訊專用。透過這種完整 Gigabit 乙太網路埠設計，PT-G503-PHR-PTP 系列可為 PRP/HSR 系統提供高效能。

PT-G503-PHR-PTP 系列也在端對端一步透明時鐘模式中提供 IEEE 1588v2 PTP，適用於時間關鍵型應用以及 24/48 VDC 或 110/220 VDC/VAC 電源的隔離備援電源輸入，充分提高電源的可靠性。

附加特色與優點

- PRP (並行備援通訊協定)：在零復原時間網路上同時向/從不同區域網路傳送或接收兩條獨立的活動路徑
- HSR (高可用性無縫備援)：每個訊框都會被複製，然後朝 HSR 環的兩個方向傳輸，藉以實現零切換時間
- PRP/HSR Coupling：支援從 HSR 環節點耦合到備援 PRP LAN (最多 7 個 PRP LAN)
- QuadBox 功能：透過互連兩個獨立 RedBox 上的兩個 INTERLINK 連接埠，支援環的對等耦合
- Fiber Check™ 對 SFP 光纖連接埠提供狀態監視及診斷功能
- 硬體型 IEEE 1588v2 PTP (精確時間通訊協定) 端對端一步透明時鐘，用於網路的精確時間同步
- 發生狀況時可透過電子郵件或是繼電器輸出自動發出告警
- 可透過網路瀏覽器、CLI、Windows 工具程式 and ABC-02 自動備份設定程式進行配置

規格

Ethernet Interface

Combo Ports (10/100/1000BaseT(X) or 100/1000BaseSFP+)	3
Console Port	Ethernet console (10/100/1000Mbps RJ45)
Standards	IEEE 802.3 for 10BaseT IEEE 802.3ab for 1000BaseT(X) IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3z for 1000BaseSX/LX/LHX/ZX

Ethernet Software Features

Filter	Static Multicast
Management	Back Pressure Flow Control, BOOTP, DHCP Client, Fiber check, Flow control, HTTP, IPv4/IPv6, LLDP, Port Mirror, RARP, RMON, SMTP, SNMP Inform, SNMPv1/v2c/v3, Syslog, Telnet
Power Substation	MMS
Redundancy Protocols	HSR, PRP, RSTP grouping
Security	HTTPS/SSL, TACACS+, RADIUS, SSH, Trust access control
Time Management	NTP Server/Client, SNTP, IEEE 1588v2 PTP (hardware-based)
MIB	IEC 62439-3 MIB

USB Interface

Storage Port	USB Type A
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Serial Interface

Console Port	USB-serial console (Type B connector)
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Input/Output Interface

Alarm Contact Channels	Resistive load: 1 A @ 24 VDC
Digital Inputs	+13 to +30 V for state 1 -30 to +3 V for state 0 Max. input current: 8 mA

Power Parameters

Input Voltage	PT-G503-PHR-PTP-HV: Redundant dual inputs 110/220 VAC/VDC (85 to 264 VAC, 88 to 300 VDC) PT-G503-PHR-PTP-WV: Redundant dual inputs 24/48 VDC (18 to 72 VDC)
Overload Current Protection	Supported
Reverse Polarity Protection	Supported
Input Current	PT-G503-PHR-PTP-HV: 0.260/0.170 A @ 110/220 VAC PT-G503-PHR-PTP-HV: 0.150/0.080 A @ 110/220 VDC PT-G503-PHR-PTP-WV: 0.660/0.360 A @ 24/48 VDC
Power Connector	1 removable 5-contact terminal block(s)

Physical Characteristics

Housing	Aluminum
IP Rating	IP40
Dimensions (without ears)	80 x 160 x 110 mm (3.15 x 6.30 x 4.33 in)
Weight	1210 g (2.69 lb)
Installation	DIN-rail mounting

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

Safety	UL 508
EMI	EN 55032 Class A, 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: 35 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 IEC 61000-4-11 DIPs
Power Substation	IEC 61850-3, IEEE 1613
Railway	EN 50121-4

MTBF

Time	PT-G503-PHR-PTP-HV: 566,844 hrs PT-G503-PHR-PTP-WV: 440,857 hrs
Standards	Telcordia (Bellcore) Standard TR/SR

Warranty

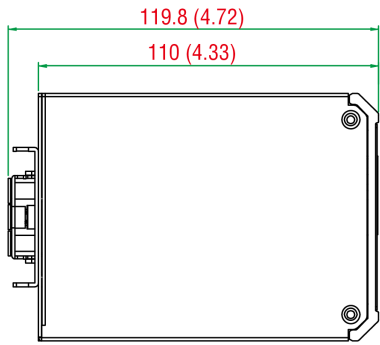
Warranty Period	5 years
Details	See www.moxa.com/tw/warranty

Package Contents

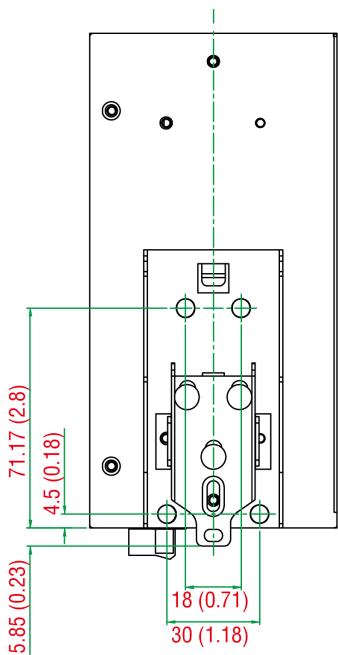
Device	1 x PT-G503 Series switch
Cable	1 x USB type A male to USB type B male
Installation Kit	1 x DIN-rail kit 1 x cap, for type A USB port 4 x cap, plastic, for RJ45 port 1 x cap, plastic, for console port 3 x cap, plastic, for SFP slot
Documentation	1 x document and software CD 1 x quick installation guide 1 x warranty card 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.

尺寸

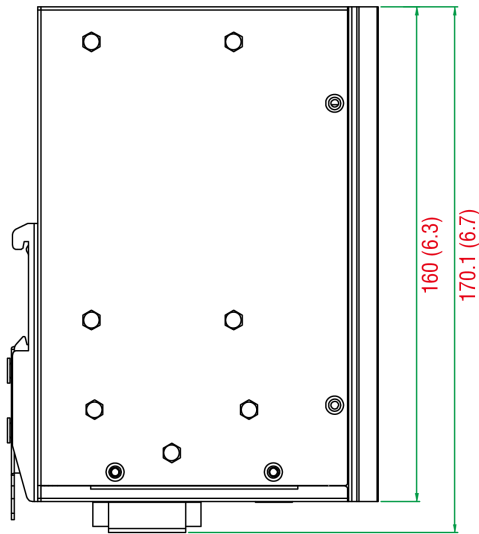
Unit: mm (inch)



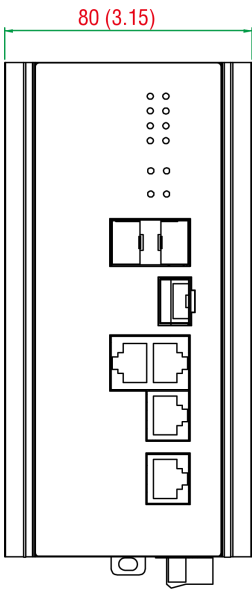
Top View



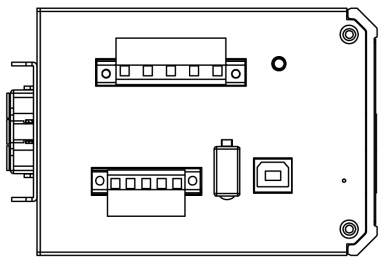
Rear View



Side View



Front View



Bottom View

訂購資訊

Model Name	Max. No. of Ports	Max. No. of Gigabit Ports	Combo Ports 10/100/1000BaseT(X) or 100/1000BaseSFP	Input Voltage	Operating Temp.
PT-G503-PHR-PTP-WV	3	3	3	24/48 VDC	-45 to 85°C
PT-G503-PHR-PTP-HV	3	3	3	110/220 VDC/VAC	-45 to 85°C

配件 (選購)

Software

MXview-50	Industrial network management software with a license for 50 nodes (by IP address)
MXview-100	Industrial network management software with a license for 100 nodes (by IP address)
MXview-250	Industrial network management software with a license for 250 nodes (by IP address)
MXview-500	Industrial network management software with a license for 500 nodes (by IP address)
MXview-1000	Industrial network management software with a license for 1000 nodes (by IP address)
MXview-2000	Industrial network management software with a license for 2000 nodes (by IP address)
MXview Upgrade-50	License expansion of MXview industrial network management software by 50 nodes (by IP address)

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

SFP Modules

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 with LC connector for 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-1GLHXC	SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, 0 to 60°C operating temperature
SFP-1GLHXC-T	SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, -40 to 85°C operating temperature
SFP-1GLSXC	SFP module with 1 1000BaseLSX port with LC connector for 500 m transmission, 0 to 60°C operating temperature
SFP-1GLSXC-T	SFP module with 1 1000BaseLSX port with LC connector for 500 m transmission, -40 to 85°C operating temperature
SFP-1GLXC	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, 0 to 60°C operating temperature
SFP-1GLXC-T	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, -40 to 85°C operating temperature
SFP-1GSXC	SFP module with 1 1000BaseSX port with LC connector for 300/550 m transmission, 0 to 60°C operating temperature
SFP-1GSXC-T	SFP module with 1 1000BaseSX port with LC connector for 300/550 m transmission, -40 to 85°C operating temperature
SFP-1GZXC	SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, 0 to 60°C operating temperature
SFP-1GZXC-T	SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, -40 to 85°C operating temperature

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