NEW

IPS-G803SM

IEC 61850-3 8x10/100/1000Base-T+ 3x100/1000Base-X SFP

此IPS-G803SM 管理型千兆乙太網交換器系列是為滿足變電站系統的需求所設計,並通過IEC 61850-3和IEEE 1613認證。本交換器具備許多備援功能,能增加您通訊系統的可靠性,包括備援及獨立電源供應器(24/48 VDC和110/220 VDC/VAC)、STP/RSTP/MSTP/ITU-T G.8032環形和多重u-環形的備援佈線、第2層乙太網IGMP、VLAN、QoS、Security、IPv6、bandwidth control、 port mirroring、Cable diagnostic 和節能乙太網。此交換器具備堅固機體及DIN軌道式或壁掛式安裝,專為變電站網路等嚴苛環境所設計。本系列產品可使用CTC Union的SmartView™ 管理系統以方便進行集中式的管理。

功能特色

- 8 個 10/100/1000Base-T RJ-45 和 3x 100/1000Base-X SFP Fiber
- 通過 UL60950-1、CE、FCC、EN50121-4 認證
- 通過變電站 IEC 61850-3、IEEE1613 認證
- 具雙電源冗餘備援輸入,可供選擇輸入電壓有,低電壓的 isolated 24/48VDC,或高電壓的 isolated AC/DC(110/220 VAC/VDC) 電源
- 寬溫工作範圍 -40 ~ 85℃
- Din Rail 軌道式安裝或壁掛式
- IP30 金屬外殼、無風扇
- 支援 Cable diagnostic,可以診斷網路線故障點,定位線纜的故障點距離
- 支援 IEEE1588 PTP V2 精密時間同步,每個端口都可以選擇以下模式操作 : Master, Boundary, Slave mode
- 支援綠色節能乙太網 IEEE802.3az EEE (Energy Efficient Ethernet) Management,優化電源消耗
- STP, RSTP, MSTP, ITU-T G.8032 Ethernet Ring Protection Switching(ERPS), and u-Ring 可用於網路佈線備援
- 每台設備可支援 u-Ring,u-Chain 或 Sub-Ring 型態的環網 (圖 4),最多可設 5 個環網 (圖 2)
- u-Ring 冗餘乙太網環網,在最多 250 個裝置時,恢復時間 <10ms

- QoS、Traffic classification QoS、CoS、bandwidth control for Ingress and Egress、Storm Control、DiffServ
- IEEE802.1Q VLAN、MAC based VLAN、IP subnet based VLAN、Protocol based VLAN、VLAN translation、GVRP、MVR
- Dynamic IEEE 802.3ad LACP Link Aggregation、Static Link Aggregation
- IGMP snooping V1/V2/V3、IGMP Filtering/ Throttling、IGMP query、IGMP proxy reporting、MLD snooping V1/V2
- Security: Port based 和 MAC based IEEE802.1X、RADIUS、ACL、 TACACS+、HTTP/HTTPS、SSL/SSH v2
- 支援透過 TFTP 和 HTTP 進行軟體升級,韌體冗餘備份防止升級失敗
- 支援 RMON、MIB II、Private MIB、Port mirroring、Event syslog、DNS、NTP/SNTP、IEEE802.1ab LLDP
- 支援 IPv6 Telnet server/ICMP v6
- 支 援 CLI、Web based management、SNMP v1/v2c/v3、Telnet server 管理方式
- 支援 SmartConfig™,提供快速且便利的設定工具,以方便於設定大量的設備
- 支援 SmartView™ 集中式的管理系統

產品規格

符合標準	
	IEEE 802.3 10Base-T 10Mbit/s Ethernet
	IEEE 802.3u 100Base-TX, 100Base-FX, Fast Ethernet
	IEEE 802.3ab 1000Base-T Gbit/s Ethernet over twisted pair
	IEEE 802.3z 1000Base-X Gbit/s Ethernet over Fiber-Optic
	IEEE 802.1d STP (Spanning Tree Protocol)
	IEEE 802.1w RSTP (Rapid Spanning Tree Protocol)
	IEEE 802.1s MSTP (Multiple Spanning Tree Protocol)
	IEEE 802.1Q for VLAN Tagging
	IEEE 802.1X Port based and MAC based Network Access Control, Authentication
	IEEE 802.3ad Link aggregation for parallel links with LACP(Link Aggregation Control Protocol)
	IEEE802.3x Flow Control and Back Pressure
	ITU-T G.8032/ Y.1344 ERPS (Ethernet Ring Protection Switching)
	IEEE 802.1ad Stacked VLANs, Q-in-Q
	IEEE 802.1p LAN Layer 2 QoS/CoS Protocol for Traffic Prioritization
	IEEE 802.1ab Link Layer Discovery Protocol (LLDP)
	IEEE 802.3az EEE (Energy Efficient Ethernet)
交換架構	Back-plane (Switching Fabric): 22 Gbps
Data Processing	Store and Forward
Flow Control	IEEE 802.3x flow control, back pressure flow control
Jumbo Frame	9.6KB
MAC Address Table	8K
Memory Buffer	256K Bytes for packet buffer

網路連接器	
	8個10/100/1000Base-T RJ-45 auto negotiation speed
	自動 MDI/MDI-X 功能, 全/半雙工
	3個 100/1000Base-X 雙速 mode SFP slot, with DDMI
Console	RS-232 (RJ-45)
網路線規格	UTP/STP above Cat. 5e cable
	EIA/TIA-568 100-ohm (100m)
通訊協議	CSMA/CD
LED指示燈	Power 1 (綠), Power 2 (綠), Fault (琥珀色),(-LL model)
	Power 1 (綠), Power 2 (綠), Power 3 (綠), Fault (琥珀色), (-HL model)
	每RJ-45端口: 10/100 Link/Act(綠), 1000 Link/Act(琥珀色)
	每SFP Fiber 端口: Link/Act(綠)
電壓極性保護	提供,用以保護電源輸入
電流過載保護	提供
CPU Watch Dog	提供
電源輸入	配備2個isolated低電壓DC輸入冗餘備援電源 (-LL model) 配備2個isolated低電壓DC輸入冗餘備援電源及1個高電壓 AC/DC輸入電源 (-HL model)
	Isolated低電壓DC:Isolated24/48V (18~72VDC), 可拔插式配接器 高電壓 AC/DC : Isolated110/220VAC (88VAC~264VAC) 或 110/220VDC (85~300VDC), 可拔插式配接器

耗電量	輸入電壓	IPS-G803SM
	110VAC	9.3 W
	220VAC	9.2 W
	24VDC	9.6 W
	48VDC	11.1 W

告警繼電器規格	Relay outputs with current carrying capacity of 1 A @24VDC

可插拔式配接器	配備2個低電壓備援輸入電源 , 一個告警繼電器(6Pin) (-LL model) 配備2個低電壓備援輸入電源 , 一個告警繼電器(6Pin)及一個 高電壓輸入電源(2 Pin) (-HL model)
工作溫度	-40°C~85°C
工作濕度	5% to 95%(無冷凝)
儲存溫度	-40°C~85°C
外殼	金屬外殼、IP30防護、無風扇
尺寸	106x82x152mm (D x W x H)
Weight	0.885公斤　(IPS-G803SM-LL) 1.085公斤　(IPS-G803SM-HL)
安裝方式	Din Rail 軌道式安裝或壁掛式
產品保固	5年
認證	
EMC/EMS	CE, FCC

EMI	FCC Part 15 Subpart B Class A
	EN 55022 Class A
EMS 抗電磁干擾等級	EN61000-4-2 (ESD) Level 4, Criteria B
	EN61000-4-3 (RS) Level 4, Criteria A
	EN61000-4-4 (EFT) Level 4, Criteria A
	EN61000-4-5 (Surge) Level 4, Criteria B
	EN61000-4-6 (CS) Level 4, Criteria A
	EN61000-4-8 (Magnetic Field) Level 5, Criteria A
Safety	UL60950-1
變電站	IEC 61850-3, IEEE 1613
軌道交通	EN50121-4
防撞擊	IEC 60068-2-27
防摔	IEC 60068-2-32
防震	IEC 60068-2-6

軟體規格

Topology

VLAN	IEEE 802.1q VLAN,up to 4094 ID
	IEEE 802.1q VLAN,up to 4094 Groups
	IEEE 802.1ad Q-in-Q
	MAC-based VLAN,up to 256 entries
	IP Subnet-based VLAN, up to 128 entries
	Protocol-based VLAN (Ethernt, SNAP, LLC), up to 128 entries
	VLAN Translation, up to 256 entries
	MVR (Multiple VLAN Registration)
	GVRP (GARP VLAN Registration Protocol)
Link Aggregation (Port Trunk)	Static (Hash with SA, DA, IP, TCP/UDP port), up to 5 trunk group
	Dynamic (IEEE 802.3ad LACP), up to 5 trunk group
Spanning Tree	IEEE802.1d STP
	IEEE802.1w RSTP
	IEEE802.1s MSTP
Multiple u-Ring	up to 5 instances that each supports u-Ring, u-Chain or Sub-Ring type for flexible uses, and maximum up to 5 Rings (參見圖2 ,圖4) 恢復時間 <10ms 每個環最多可達250個設備
Loop Protection	Present
ITU-T G.8032 / Y.1344 ERPS (Ethernet Ring Protection)	恢復時間 <50ms
	Single Ring, Sub-Ring, Multiple ring topology network

QoS 特色

Class of Service	IEEE802.1p 8 active priorities queues for per port
Traffic Classification QoS	IEEE802.1p based CoS
	IP Precedence based CoS
	IP DSCP based CoS
	QCL(QoS Control List): Frame Type, Source/ Destination MAC, VLAN ID, PCP, DEI
	QCE(QoS Control Entry): Protocol, Source IP, IP Fragment, DSCP, TCP/UDP port number
Bandwidth Control for Ingress	Rate in steps : 1 kbps / Mbps / fps / kfps
	Range : 100 kbps to 1Gbps / 1fps to 3300kfps
	Rate Unit : bit or frame
Bandwidth Control for Egress	Rate in steps : 1 kbps / Mbps
	Range : 100 kbps to 1Gbps
	Rate Unit : bit
	Per queue / Per port shaper
DiffServ (RF 2474)	Remarking
Storm Control	for Unicast, Broadcast, Multicast

IP Multicasting Feature

IGMP / MLD Snooping	IGMP Snooping v1, v2, v3 / MLD Snooping v1, v2
	support 1022 IGMP groups
	Port Filtering Profile
	Throttling
	Fast Leave
	Maximum Multicast Group : up to 1022 entries Query / Static Router Port

Security Features

IEEE 802.1X	Port-Based
	MAC-Based

ACL	Number of rules : up to 256 entries
	for L2 / L3 / L4
RADIUS authentication & accounting	
TACACS+ authentication & accounting, TACACS+ 3.0	
HTTPS, HTTP	
SSL / SSH v2	
User Name Password Authentication	Local Authentication
	Remote Authentication (via RADIUS/ TACACS+)
Management Interface Access Filtering	Web, Telnet / SSH , CLI RS-232 console

Management Features

CLI	Cisco® like CLI
Web Based Management	
Telnet	Server
SNMP	V1, V2c, V3
SW & Configuration Upgrade	TFTP, HTTP
	有備援韌體以防止程式升級失敗
RMON	RMON I (1, 2, 3, 9 group), RMON II
MIB	MIB II RFC1213, Private MIB
DHCP	Client
	Relay
	Snooping
	Snooping option 82
	Relay option 82
IP Source Guard	
Port Mirroring	
Event Syslog	Syslog server (RFC3164) (Support 1 server)
Warning Message	System Syslog, SMTP/ e-mail event message, alarm relay
DNS	Client, Proxy
IEEE1588 PTP V2	Master ,Boundary, Slave Operating mode Operating in each port of these switch
NTP /SNTP	
LLDP (IEEE 802.1ab)	Link Layer Discovery Protocol
	LLDP-MED

IPv6 Features

IPv6 Management	Telnet Server/ICMP v6
SNMP over IPv6	
HTTP over IPv6	
SSH over IPv6	
IPv6 Telnet Support	
IPv6 NTP / SNTP Support	
IPv6 TFTP Support	
IPv6 QoS	
IPv6 ACL	Number of rules: up to 256 entries
	L2 / L3 / L4

其他特色

Green Ethernet	支援 IEEE802.3az EEE (Energy Efficient Ethernet)優 化電源消耗
	依照網路線長短 , 自動調節功耗,以節省短線時的耗電
	網路埠無連接時 , 自動降低輸出功耗
	LED 功率管理: 調節LED強度
Cable Diagnostic	偵測網路線的故障點距離

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

IPS-G803SM

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應用圖
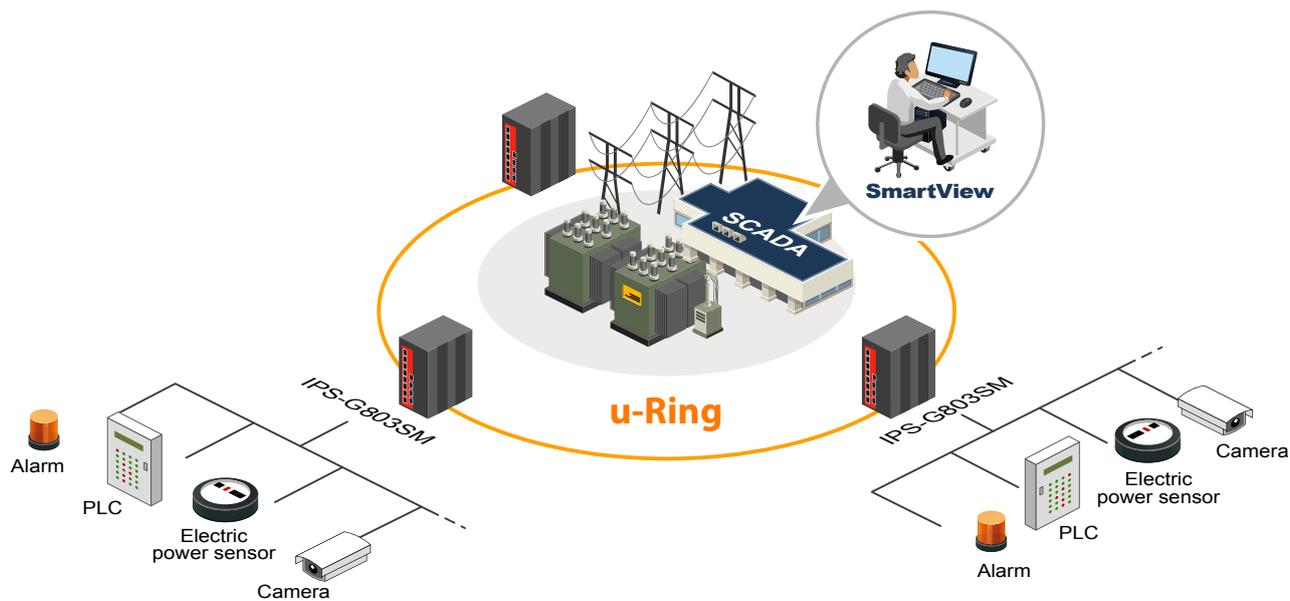
圖1：IPS Series in Power Substation Application

Ring 5 4 3 2 1

Multiple Rings

Master

・最多可達5 個環
・每個環最多可達250個
　設備

圖2： Multiple Rings

圖3： 方便又容易設定的 u-Ring 功能設定Web 畫面

IPS-G803SM

圖4： u-Ring 類型

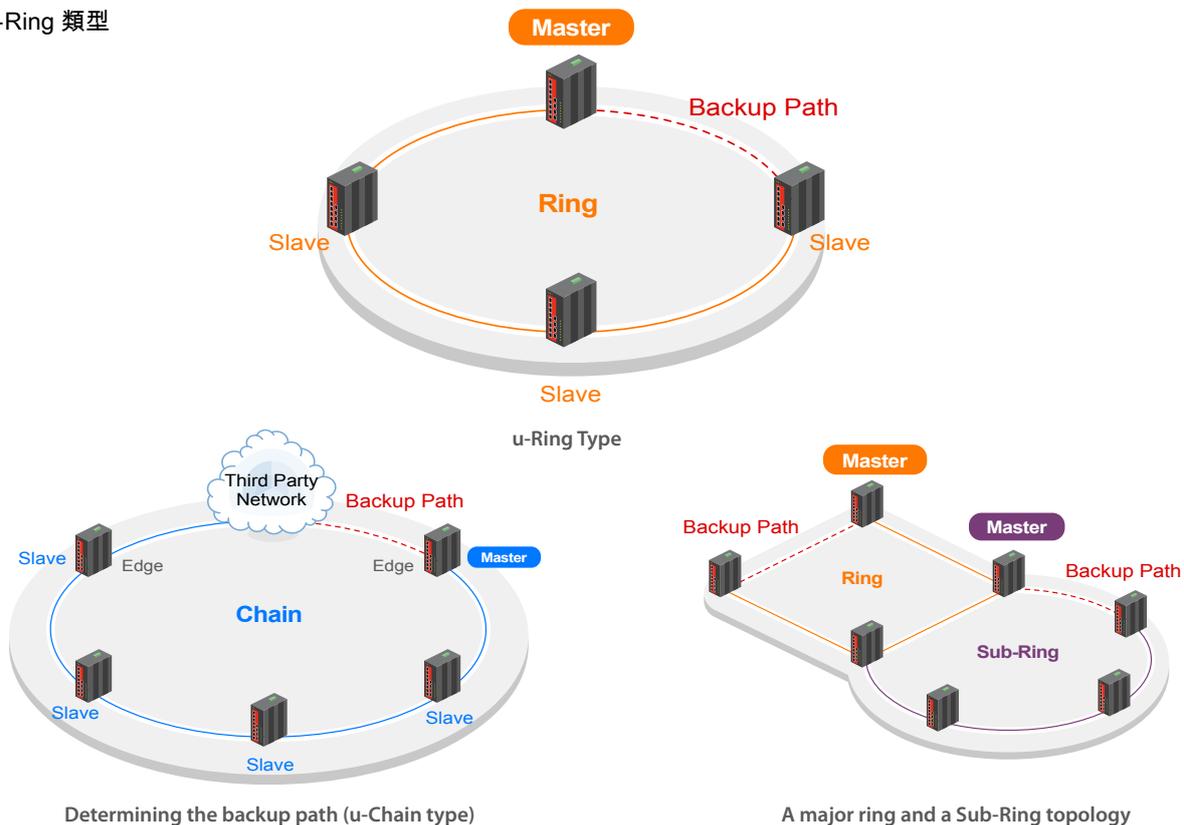u-Ring Type

Determining the backup path (u-Chain type)

A major ring and a Sub-Ring topology

圖5： Ring 配置範例

● u-Ring
■ Sub-Ring

Ring Configuration Type

Combination of a ring and two Sub-Ring

Combination of a ring and four Sub-Ring

Cable Redundancy

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機構尺寸

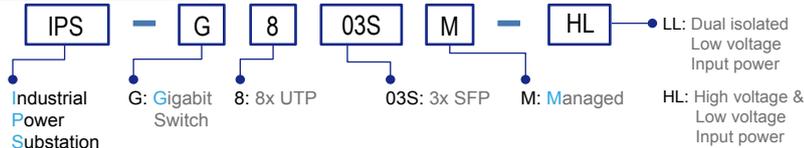| 側邊 | 前面 | 後面 | 導軌卡扣 | 壁掛配件 |
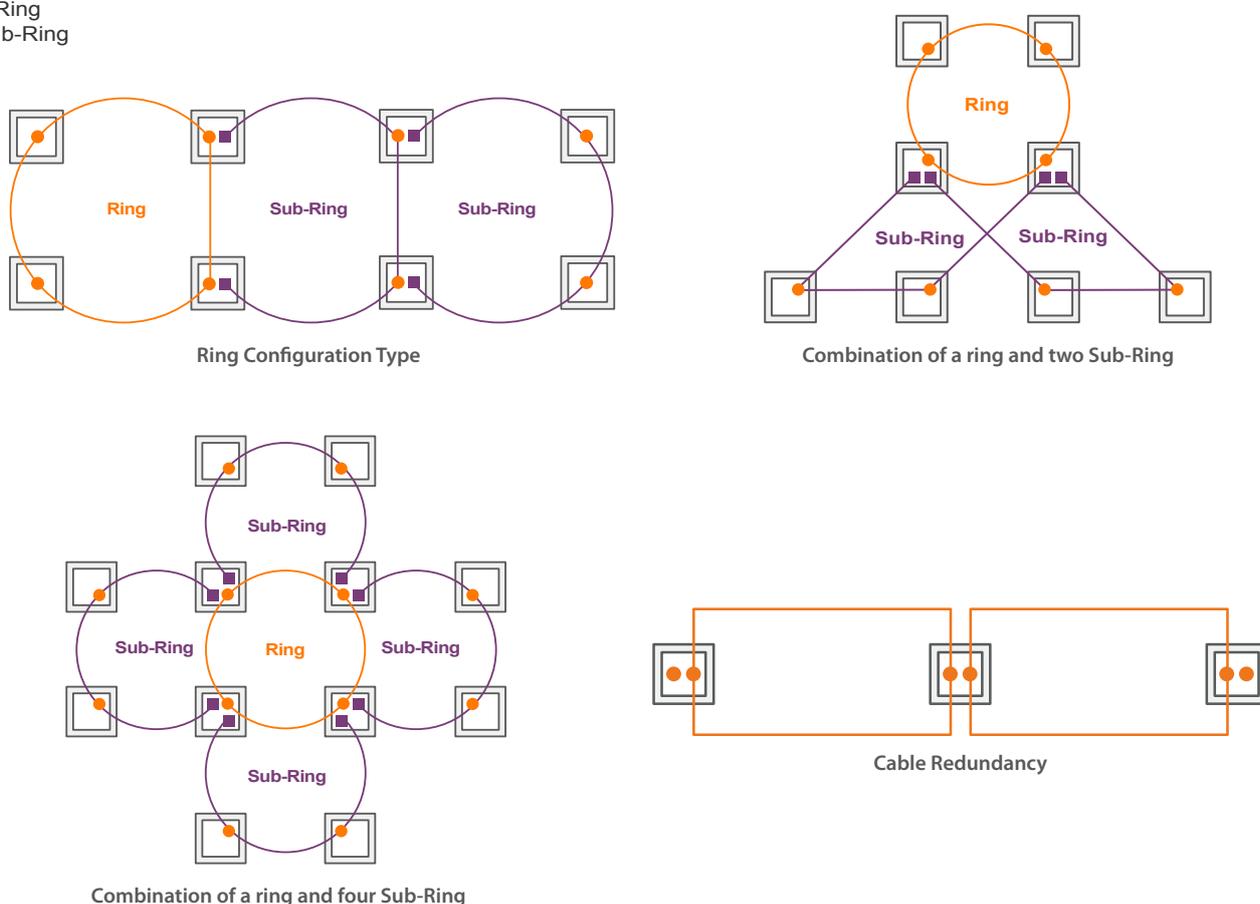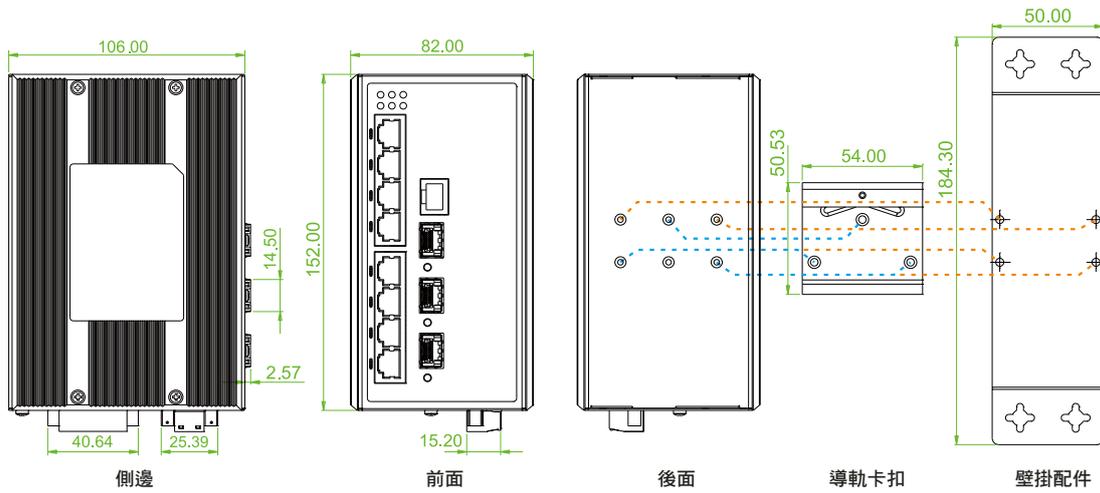
訂購資訊

型號	管理	總埠數	UTP Port	光纖	輸入電壓		認證			
			10/100/1000 Base-T	100/1000 Base-X	Low Voltage isolated 24/48 VDC	High Voltage 110/220V DC/AC	變電站 IEC61850-3	鐵道交通 EN50121-4	安全 UL60950-1	CE, FCC
IPS-G803SM-LL	V	11	8	3 SFP	2	—	V	V	V	V
IPS-G803SM-HL	V	11	8	3 SFP	2	1	V	V	V	V

型號命名規則

| IPS | — | G | 8 | 03S | M | — | HL |

- **LL:** Dual isolated Low voltage Input power
- **HL:** High voltage & Low voltage Input power

Industrial **P**ower **S**ubstation

G: **G**igabit Switch

8: 8x UTP

03S: 3x SFP

M: **M**anaged

選購配件

DR-4524	Industrial Power, Input 85 ~ 264VAC, Output 24VDC, 48W, -10 ~ +50℃
MDR-40-24	Industrial Power, Input 85 ~ 264VAC, Output 24VDC, 40W, -20 ~ +70℃
MDR-60-24	Industrial Power, Input 85 ~ 264VAC, Output 24VDC, 60W, -20 ~ +70℃
SFP 收發器	Compatible, Reliable, 5-year Warranty

SFP命名規則

| ISFP | — | M | 7 | 040 | — | 31 | — | E |

- **E:** -40~85℃
- 空白: 0~70 ℃

波長

工業級SFP 收發器

M: Multi Mode
S: Single Mode
T: Copper

7: GbE
5: FE

距離
002(2km)
020(20km),040(40km)