

# EDS-G512E 系列

12 埠 ( 有 8 個 PoE+ 連接埠選項 ) 全 Gigabit 網管型乙太網路交換器



## 特色與優點

- 8 個 IEEE 802.3af 和 IEEE 802.3at PoE+ 標準連接埠
- 每 PoE+ 連接埠 36 瓦輸出 ( 在高功率模式下 )
- 支援 Turbo Ring 和 Turbo Chain ( 復原時間 <50 毫秒 @ 250 台交換器 )，以及透過 RSTP/STP 和 MSTP 協議支援網路備援
- RADIUS、TACACS+、MAB Authentication、SNMPv3、IEEE 802.1X、MAC ACL、HTTPS、SSH 和綁訂 MAC 位址可提高網路安全
- 基於 IEC 62443 的資安防護功能
- 支援 EtherNet/IP、PROFINET 和 Modbus TCP 通訊協定以進行裝置管理與監控
- 支援 Mxstudio 以進行輕鬆、虛擬化的工業網路管理
- V-ON™ 可確保毫秒等級的多播資料和視訊網路復原

## 認證



## 簡介

EDS-G512E 系列配備有 12 個 Gigabit 乙太網路連接埠以及最多 4 個光纖連接埠，使其非常適合用於將現有網路升級至 Gigabit 速度，或是建立新的全 Gigabit 骨幹。它同時隨附有 8 個 10/100/1000BaseT(X)、802.3af (PoE) 以及 802.3at (PoE+) 相容的乙太網路連接埠選項，可連接高頻寬 PoE 裝置。Gigabit 傳輸可增加頻寬以提供更高效能，並且透過三合一服務快速地在網路間傳輸大量資料。

備援乙太網路技術 ( 例如 Turbo Ring、Turbo Chain、RSTP/STP 和 MSTP ) 可增加系統的可靠性，並且改善網路骨幹的可用性。EDS-G512E 系列是專門為通訊需求的應用所設計 ( 例如視訊與流程監控、ITS 和 DCS 系統 )，所有應用都可從可擴充的骨幹結構中獲益。

## 附加特色與優點

- 命令列介面 (CLI) 快速設定主要網管功能
- 進階 PoE 管理功能 ( PoE 連接埠設定、PD 故障檢查以及 PoE 排程 )
- DHCP Option 82 依據不同的政策配置 IP 位置
- 支援 EtherNet/IP、PROFINET 和 Modbus TCP 通訊協定以進行裝置管理與監控
- IGMP 和 GMRP，用於篩選多播流量
- 以連接埠為基礎的 VLAN、IEEE 802.1Q VLAN 以及 GVRP，用來簡化網路規劃
- 支援 ABC-02-USB ( 自動備份配置器 ) 以進行系統配置備份/還原與韌體升級
- 可用連線埠鏡像進行線上除錯
- QoS ( IEEE 802.1p/1Q 和 TOS/DiffServ ) 以提高確定性
- 連接埠聚合可提供最佳頻寬使用率
- RADIUS、TACACS+、MAB Authentication、SNMPv3、IEEE 802.1X、MAC ACL、HTTPS、SSH 和綁訂 MAC 位址可提高網路安全
- SNMPv1/v2c/v3，適用不同層級的網路管理
- RMON 提供主動且有效率的網路監控
- 頻寬管理可預防無法預測的網路狀態
- 鎖定連接埠功能可根據 MAC 位址封鎖未經授權的存取
- 發生狀況時，可自動透過 Email 和繼電器輸出告警

## 規格

### Input/Output Interface

|                        |                                                                |
|------------------------|----------------------------------------------------------------|
| Alarm Contact Channels | 1, Relay output with current carrying capacity of 1 A @ 24 VDC |
| Buttons                | Reset button                                                   |

|                        |                                                                                 |
|------------------------|---------------------------------------------------------------------------------|
| Digital Input Channels | 1                                                                               |
| Digital Inputs         | +13 to +30 V for state 1<br>-30 to +3 V for state 0<br>Max. input current: 8 mA |

### Ethernet Interface

|                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10/100/1000BaseT(X) Ports (RJ45 connector)      | EDS-G512E-4GSFP: 8<br>Auto negotiation speed<br>Full/Half duplex mode<br>Auto MDI/MDI-X connection                                                                                                                                                                                                                                                                                                                                                                            |
| PoE Ports (10/100/1000BaseT(X), RJ45 connector) | EDS-G512E-8PoE-4GSFP: 8                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 100/1000BaseSFP Slots                           | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Standards                                       | IEEE 802.3 for 10BaseT<br>IEEE 802.3u for 100BaseT(X) and 100BaseFX<br>IEEE 802.3ab for 1000BaseT(X)<br>IEEE 802.3z for 1000BaseSX/LX/LHX/ZX<br>IEEE 802.3x for flow control<br>IEEE 802.1D-2004 for Spanning Tree Protocol<br>IEEE 802.1w for Rapid Spanning Tree Protocol<br>IEEE 802.1s for Multiple Spanning Tree Protocol<br>IEEE 802.1p for Class of Service<br>IEEE 802.1Q for VLAN Tagging<br>IEEE 802.1X for authentication<br>IEEE 802.3ad for Port Trunk with LACP |

### Ethernet Software Features

|                      |                                                                                                                                                                                                          |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Filter               | 802.1Q VLAN, Port-based VLAN, GVRP, IGMP v1/v2/v3, GMRP                                                                                                                                                  |
| Industrial Protocols | EtherNet/IP, Modbus TCP, PROFINET IO Device                                                                                                                                                              |
| Management           | LLDP, Back Pressure Flow Control, BOOTP, Port Mirror, DHCP Option 66/67/82, DHCP Server/Client, Fiber check, Flow control, IPv4/IPv6, RARP, RMON, SMTP, SNMP Inform, SNMPv1/v2c/v3, Syslog, Telnet, TFTP |
| MIB                  | Ethernet-like MIB, MIB-II, Bridge MIB, P-BRIDGE MIB, Q-BRIDGE MIB, RMON MIB Groups 1, 2, 3, 9, RSTP MIB                                                                                                  |
| Redundancy Protocols | Link Aggregation, MSTP, RSTP, STP, Turbo Chain, Turbo Ring v1/v2                                                                                                                                         |
| Security             | Broadcast storm protection, HTTPS/SSL, TACACS+, SNMPv3, MAB authentication, Sticky MAC, NTP authentication, MAC ACL, Port Lock, RADIUS, SSH, SMTP with TLS                                               |
| Time Management      | NTP Server/Client, SNTP                                                                                                                                                                                  |

### Switch Properties

|                    |               |
|--------------------|---------------|
| IGMP Groups        | 2048          |
| Jumbo Frame Size   | 9.6 KB        |
| MAC Table Size     | 8 K           |
| Max. No. of VLANs  | 256           |
| Packet Buffer Size | 4 Mbits       |
| Priority Queues    | 4             |
| VLAN ID Range      | VID 1 to 4094 |

### USB Interface

|              |            |
|--------------|------------|
| Storage Port | USB Type A |
|--------------|------------|

## LED Interface

|                |                                                                                                                                                            |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LED Indicators | PWR1, PWR2, STATE, FAULT, 10/100M (TP port), 1000M (TP port), 100/1000M (SFP port), MSTR/HEAD, CPLR/TAIL, smart PoE LED (EDS-G512E-8PoE-4GSFP Series only) |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Serial Interface

|              |                                       |
|--------------|---------------------------------------|
| Console Port | USB-serial console (Type B connector) |
|--------------|---------------------------------------|

## DIP Switch Configuration

|              |                                      |
|--------------|--------------------------------------|
| DIP Switches | Turbo Ring, Master, Coupler, Reserve |
|--------------|--------------------------------------|

## Power Parameters

|                             |                                                                                                                                                  |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Connection                  | 2 removable 4-contact terminal block(s)                                                                                                          |
| Input Current               | EDS-G512E-4GSFP Series: 0.34 A @ 24 VDC<br>EDS-G512E-8PoE-4GSFP Series: 5.30 A @ 48 VDC                                                          |
| Input Voltage               | EDS-G512E-4GSFP Series: 12/24/48/-48 VDC<br>EDS-G512E-8PoE-4GSFP Series: 48 VDC<br>(Both series have redundant dual input)                       |
| Operating Voltage           | EDS-G512E-4GSFP Series: 9.6 to 60 VDC<br>EDS-G512E-8PoE-4GSFP Series: 44 to 57 VDC (> 50 VDC for PoE+ output recommended)                        |
| Overload Current Protection | Supported                                                                                                                                        |
| Reverse Polarity Protection | Supported                                                                                                                                        |
| Power Budget                | EDS-G512E-8PoE-4GSFP: Max. 240 W for total PD consumption<br>EDS-G512E-8PoE-4GSFP: Max. 36 W for each PoE port                                   |
| Power Consumption (Max.)    | EDS-G512E-8PoE-4GSFP: Max. 14.36 W full loading without PDs' consumption<br>Note: When selecting a power supply, check the PD power consumption. |

## Physical Characteristics

|              |                                                                               |
|--------------|-------------------------------------------------------------------------------|
| Housing      | Metal                                                                         |
| IP Rating    | IP30                                                                          |
| Dimensions   | 79.2 x 135 x 137 mm (3.1 x 5.3 x 5.4 in)                                      |
| Weight       | EDS-G512E-4GSFP: 1,440 g (3.18 lb)<br>EDS-G512E-8PoE-4GSFP: 1,540 g (3.40 lb) |
| Installation | DIN-rail mounting, Wall mounting (with optional kit)                          |

## Environmental Limits

|                                        |                                                                                             |
|----------------------------------------|---------------------------------------------------------------------------------------------|
| Operating Temperature                  | Standard Models: -10 to 60°C (14 to 140°F)<br>Wide Temp. Models: -40 to 75°C (-40 to 167°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 | EDS-G512E-4GSFP/EDS-G512E-8PoE-4GSFP Series: UL 508<br>EDS-G512E-8PoE-4GSFP Series: EN 60950-1 (LVD)                        |
| EMC    | EN 61000-6-2/-6-4                                                                                                           |
| EMI    | CISPR 32, FCC Part 15B Class A                                                                                              |
| EMS    | EDS-G512E-4GSFP: IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV<br>EDS-G512E-4GSFP: IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m |

|                     |                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | EDS-G512E-8PoE-4GSFP: IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m<br>EDS-G512E-4GSFP: IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV<br>EDS-G512E-8PoE-4GSFP: IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV<br>EDS-G512E-4GSFP: IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV<br>EDS-G512E-8PoE-4GSFP: IEC 61000-4-5 Surge: Power: 2 kV; Signal: 4 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 PFMF |
| Hazardous Locations | EDS-G512E-4GSFP Series: ATEX, Class I Division 2                                                                                                                                                                                                                                                                                                                                                  |
| Maritime            | EDS-G512E-4GSFP: DNV-GL, EDS-G512E-4GSFP: LR, EDS-G512E-4GSFP: ABS, EDS-G512E-4GSFP: NK                                                                                                                                                                                                                                                                                                           |
| Power Substation    | IEC 61850-3, IEEE 1613                                                                                                                                                                                                                                                                                                                                                                            |
| Railway             | EN 50121-4                                                                                                                                                                                                                                                                                                                                                                                        |
| Traffic Control     | EDS-G512E-4GSFP: NEMA TS2                                                                                                                                                                                                                                                                                                                                                                         |
| Shock               | IEC 60068-2-27                                                                                                                                                                                                                                                                                                                                                                                    |
| Freefall            | IEC 60068-2-32                                                                                                                                                                                                                                                                                                                                                                                    |
| Vibration           | IEC 60068-2-6                                                                                                                                                                                                                                                                                                                                                                                     |

#### MTBF

|           |                                                                                 |
|-----------|---------------------------------------------------------------------------------|
| Time      | EDS-G512E-4GSFP Series: 816,823 hrs<br>EDS-G512E-8PoE-4GSFP Series: 361,368 hrs |
| Standards | Telcordia (Bellcore), GB                                                        |

#### Warranty

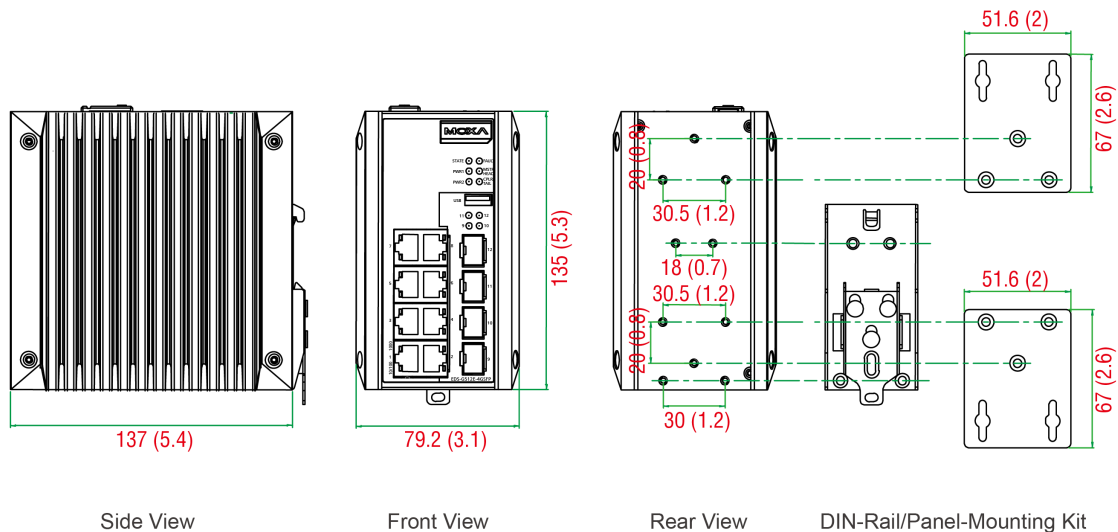
|                 |                                                                            |
|-----------------|----------------------------------------------------------------------------|
| Warranty Period | 5 years                                                                    |
| Details         | See <a href="http://www.moxa.com/tw/warranty">www.moxa.com/tw/warranty</a> |

#### Package Contents

|                  |                                                                                                                                                                   |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device           | 1 x EDS-G512E Series switch                                                                                                                                       |
| Cable            | 1 x USB type A male to USB type B male                                                                                                                            |
| Installation Kit | 4 x cap, plastic, for RJ45 port                                                                                                                                   |
| Documentation    | 1 x quick installation guide<br>1 x warranty card<br>1 x product certificates of quality inspection, Simplified Chinese<br>1 x product notice, Simplified Chinese |
| Note             | SFP modules need to be purchased separately for use with this product.                                                                                            |

尺寸

單位：公釐（英吋）



訂購資訊

| Model Name             | 10/100/1000BaseT(X) Ports, RJ45 Connector | PoE Ports, 10/100/1000BaseT(X), RJ45 Connector | IEEE 802.3af/at for PoE/PoE+ Output | 100/1000Base SFP Slots | Operating Temp. |
|------------------------|-------------------------------------------|------------------------------------------------|-------------------------------------|------------------------|-----------------|
| EDS-G512E-4GSFP        | 8                                         | –                                              | –                                   | 4                      | -10 to 60°C     |
| EDS-G512E-4GSFP-T      | 8                                         | –                                              | –                                   | 4                      | -40 to 75°C     |
| EDS-G512E-8PoE-4GSFP   | –                                         | 8                                              | P                                   | 4                      | -10 to 60°C     |
| EDS-G512E-8PoE-4GSFP-T | –                                         | 8                                              | P                                   | 4                      | -40 to 75°C     |

配件（選購）

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-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 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-1GLHXL      | SFP module with 1 1000BaseLH port with LC connector for 40 km transmission, 0 to 60°C operating temperature                                            |
| SFP-1GLHXL-T    | SFP module with 1 1000BaseLH port with LC connector for 40 km transmission, -40 to 85°C operating temperature                                          |
| SFP-1GLSXL      | SFP module with 1 1000BaseLS port with LC connector for 500 m transmission, 0 to 60°C operating temperature                                            |
| SFP-1GLSXL-T    | SFP module with 1 1000BaseLS port with LC connector for 500 m transmission, -40 to 85°C operating temperature                                          |
| SFP-1GLXL       | SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, 0 to 60°C operating temperature                                            |
| SFP-1GLXL-T     | SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, -40 to 85°C operating temperature                                          |
| SFP-1GSXL       | SFP module with 1 1000BaseSX port with LC connector for 300/550 m transmission, 0 to 60°C operating temperature                                        |
| SFP-1GSXL-T     | SFP module with 1 1000BaseSX port with LC connector for 300/550 m 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                                          |
| SFP-1GTXRJ45-T  | SFP module with 1 1000BaseT port with RJ45 connector for 100 m transmission, -40 to 75°C operating temperature                                         |

### Wall-Mounting Kits

|          |                                                         |
|----------|---------------------------------------------------------|
| WK-51-01 | Wall-mounting kit, 2 plates, 6 screws, 51.6 x 67 x 2 mm |
|----------|---------------------------------------------------------|

### Rack-Mounting Kits

|       |                           |
|-------|---------------------------|
| RK-4U | 19-inch rack-mounting kit |
|-------|---------------------------|

### 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) |

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