

NPort IA5000-G2 系列

適用於工業自動化的 1、2 與 4 埠 DIN 導軌串列裝置伺服器



特色與優點

- 使用 DSU-G2 可以在 30 秒內完成經典 Real COM 模式設定
- 2 個乙太網路連接埠，配備相同的 IP 位址或雙 IP 位址，可實現網路備援
- 串聯乙太網路連接埠，便於佈線
- 可精準支援非標準的鮑率
- 以安全的 Real COM、TCP Server、TCP Client、Pair Connection、Terminal 和 Reverse Terminal 作業模式進行資料加密
- 一鍵式診斷，使故障排除更輕鬆
- 嵌入式流量監控，用於進階資料分析
- 10/100BaseTX (RJ45) 或 100BaseFX (單模或多模光纖，配備 SC/ST 接頭)，及 100Base SFP
- 符合 DNV、CID2、ATEX Zone 2 及 IECEx 規範¹

認證



簡介

NPort® IA5000-G2 裝置伺服器專為連接工業自動化串列裝置所設計，例如 PLC、感測器、儀表、馬達、驅動器、條碼讀碼器和操作員顯示器。這些裝置伺服器構造堅固，採用金屬外殼和螺絲型連接埠，並提供完整的突波保護。NPort® IA5000-G2 裝置伺服器極易使用，使得簡單且可靠的串列轉乙太網路解決方案成為可能。

串聯乙太網路連接埠使佈線更輕鬆

每一台 NPort® IA5000-G2 裝置伺服器都具有兩個乙太網路連接埠，可做為乙太網路交換器連接埠使用。一個連接埠直接連接到網路或伺服器，而另一個連接埠可以連接到另一部 NPort IA 裝置伺服器或其他乙太網路裝置。雙乙太網路連接埠有助於降低佈線成本，因為無需將每部裝置都連接到獨立的乙太網路交換器。

用於乙太網路通訊的光纖

NPort® IA5000-G2 系列包含 100BaseFX 光纖型號，其中多模型號支援最遠 4 公里的傳輸距離，單模型號則支援最遠 40 公里的傳輸距離。這些型號還配備了內建的 100BaseTX 銅線連接埠，使設定變得前所未有的輕鬆。該系列中的其中一款型號支援 SFP 模組，為乙太網路連接埠選項提供了額外的彈性。

光纖非常適合工業應用，因為它不受電磁雜訊和干擾的影響。對於會出現高接地迴路電壓的環境，光纖提供了最佳的隔離保護；而且由於沒有產生火花的危險，光纖在危險環境中比銅線更安全。

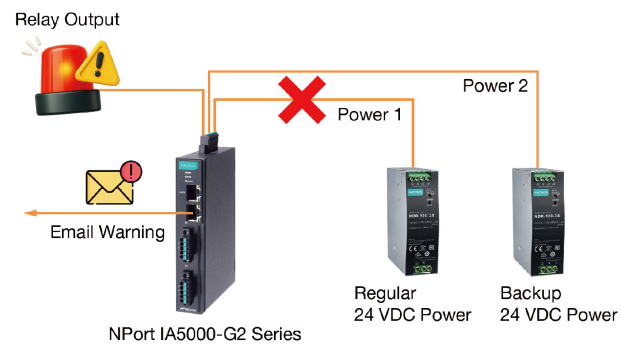
一鍵式記錄收集，使故障排除更輕鬆

在維運階段，若發生系統錯誤，您可能需要尋求協助。裝置廠商在排除故障時可能需要很長時間，因為他們需要收集資訊，然後與技術支援團隊進行討論。NPort® IA5000-G2 具備一鍵式記錄收集功能，可以啟用資料記錄，進而提供技術支援團隊快速排除系統問題所需的所有資料。

1. 批准等待中。請查看 Moxa 網站，以取得最新的認證狀態。

繼電器輸出警告與電子郵件警示

內建的繼電器輸出可用於在網路中斷、電源故障發生時，或 DCD 或 DSR 串列訊號發生變化時，向管理員發出警示。當偵測到異常情況時，也可以發出電子郵件警告。這些功能是寶貴的工具，使維護工程師能夠迅速應對緊急情況。



串列、乙太網路和電源的突波保護

Moxa 領先業界的突波防護解決方案，應用於 NPort® IA5000-G2 的串列連接埠、電源和乙太網路線路，經測試證明符合 IEC 61000-4-5 標準。這種先進的突波保護功能提供了一個穩固的串列轉乙太網路解決方案，能夠保護電子裝置免受電壓尖峰的影響並抵抗電氣干擾，例如在石油、天然氣和電力自動化應用中。

工業級認證

為確保在工業環境中操作的安全性和可靠性，NPort® IA5000-G2 裝置伺服器已獲得多項工業認證，包括 IP30 機械保護等級以及針對工業控制設備的 UL 62368-1 安全認證。此外，ATEX、Class I Division 2 和 IECEx 等用於危險場所的合規性認證正在等待批准中。

規格

Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	NPort IA5150-S-SC-G2/M-SC-G2/M-ST-G2 models: 1 NPort IA5000-G2 models: 2 Auto MDI/MDI-X connection				
Magnetic Isolation Protection	1.5 kV (built-in)				
Optical Fiber			100BaseFX		
			Multi-Mode		
	Single-Mode				
			Fiber Cable Type		
	OM1	50/125 μm		G.652	
		800 MHz x km			
	Typical Distance		4 km	5 km	40 km
	Wavelength	Typical (nm)		1300	1310
		TX Range (nm)		1260 to 1360	1280 to 1340
		RX Range (nm)		1100 to 1600	1100 to 1600
	Optical Power	TX Range (dBm)		-10 to -20	0 to -5
		RX Range (dBm)		-3 to -32	-3 to -34
		Link Budget (dB)		12	29
		Dispersion Penalty (dB)		3	1
	Note: When connecting a single-mode fiber transceiver, we recommend using an attenuator to prevent damage caused by excessive optical power. Note: Compute the “typical distance” of a specific fiber transceiver as follows: Link budget (dB) > dispersion penalty (dB) + total link loss (dB).				

Ethernet Software Features

Configuration Options	Web Console (HTTP/HTTPS) Device Search Utility (DSU) MCC Tool Serial Console
Management	ARP, DHCP Client, DNS, HTTPS, ICMP, IPv4, MDNS, LLDP, SMTP, SMTPS, SNMPv1/v2c/v3, TCP/IP, UDP, SNTP, WINS
Windows Real COM Drivers	Windows 11, 10, 8.1, 8, 7, Vista, XP, ME, 98, and 95 Windows Server 2022, 2019, 2016, 2012 R2, 2012, 2008 R2, 2008, 2003, 2000, and NT
Linux Real TTY Drivers	Kernel versions: 6.x, 5.x, and 4.x
Fixed TTY Drivers	macOS versions: 14, 13, 12, and 11
Arm®-based Platform Support	Windows 11 Linux kernels 6.x, 5.x, and 4.x macOS 14, 13, 12, and 11
Virtual Machine	VMWare ESXi (Windows 11/10/8.1/8/7 & Linux 6.x, 5.x, and 4.x) VMware Fusion (Windows on macOS 14, 13, 12, and 11) Parallels Desktop (Windows on macOS 14, 13, 12, and 11)
Android API	Android 3.1.x and later
Time Management	SNTP Client
Filter	IGMP v1/v2
MIB	RFC1213, RFC1317 Private MIB

Security Functions

Root of Trust	Secure Boot True Random Number Generator (TRNG)
Authentication	Local database
Encryption	HTTPS: ECC-256, ECC-384, ECC-521, RSA-1024, RSA-2048, RSA-3072, RSA-4096, AES-128, AES-256, SHA-256, SHA-384, HMAC SSH: ECC-256, ECC-384, ECC-521, RSA-2048, AES-128, AES-256, SHA-256, SHA-384, HMAC SNMPv3: AES-128, SHA-256, SHA-384 Secure OP mode: HTTPS: ECC-256, ECC-384, ECC-521, RSA-1024, RSA-2048, RSA-3072, RSA-4096, AES-128, AES-256, SHA-256, SHA-384, HMAC Config file import/export: AES-256, SHA-256, HMAC
Security Protocols	HTTPS (TLS 1.2) SNMPv3 SSHv2

Serial Interface

No. of Ports	NPort IA5150-G2 models: 1 NPort IA5250-G2 models: 2 NPort IA5450-G2 models: 4
Connector	NPort IA5150-G2 models: 1 x DB9 male NPort IA5250-G2 models: 2 x DB9 male NPort IA5250-TB-G2 models: 2 x 5-pin terminal block NPort IA5450-G2 models: 4 x DB9 male NPort IA5450-TB-G2 models: 4 x 5-pin terminal block
Serial Standards	RS-232/422/485 (software-selectable)
Standard Operation Modes	Real COM, TCP Server, TCP Client, UDP, Reverse Terminal, RFC2217, Pair Connection, Disabled

Secure Operation Modes	Secure Real COM, Secure TCP Server, Secure TCP Client, Reverse SSH, Secure Pair Connection
Baudrate	50 bps to 921.6 kbps (supports non-standard baudrates)
Data Bits	5, 6, 7, 8
Stop Bits	1, 1.5, 2
Parity	None, Even, Odd, Space, Mark
Flow Control	None, RTS/CTS, DTR/DSR, RTS Toggle, XON/XOFF
RS-485 Data Direction Control	ADDC (automatic data direction control)
Pull High/Low Resistor for RS-485	1 kilo-ohm, 150 kilo-ohms (software-configurable)
Terminator for RS-485	120 ohms (software-configurable)
Isolation	I models: 2 kV

Serial Signals

RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND

Power Parameters

Input Voltage	12 to 48 VDC
Input Current	NPort IA5150-G2/IA5250-G2 models: 270 mA (max.) NPort IA5250I-G2 models: 330 mA (max.) NPort IA5450-G2/IA5150-SFP-G2/IA5150I-SFP-G2 models: 377 mA (max.)
Power Connector	8-pin terminal block (V1+, V1-, NO, NC, GND, V2+, V2-, SG)

Relays

Contact Current Rating	Resistive load: 1 A @ 30 VAC
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Physical Characteristics

Housing	Metal
IP Rating	IP30
Dimensions	NPort IA5150-G2/IA5250-G2 models: 25 x 89 x 129 mm (0.98 x 3.5 x 5.07 in) NPort IA5450-G2 models: 42 x 89 x 129 mm (1.65 x 3.5 x 5.07 in)
Weight	NPort IA5150-G2 models: 384 g (0.85 lb) NPort IA5250-G2 models: 394 g (0.87 lb) NPort IA5450-G2 models: 512 g (1.13 lb)

Environmental Limits

Operating Temperature	Standard models: -10 to 60°C (14 to 140°F) Wide temp. models: -40 to 75°C (-40 to 167°F)
Storage Temperature	-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: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 2 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m; Signal: 10 V/m IEC 61000-4-8 PFMF IEC 61000-4-11
Hazardous Locations	ATEX*, Class I Division 2*, IECEx* *Approval pending
Maritime	DNV* *Approval pending
Safety	IEC 62368-1 UL 62368-1 EN 62368-1
Vibration	IEC 60068-2-6 IEC 60068-2-64
Freefall	IEC 60068-2-6 IEC 60068-2-32 IEC 60068-2-34

Declaration

Green Product	RoHS, CRoHS, WEEE
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MTBF

Time	NPort IA5150-G2(-T): 3,238,923 hrs NPort IA5150I-G2(-T): 3,156,944 hrs NPort IA5150-SFP-G2(-T): 3,109,327 hrs NPort IA5250-TB-G2(-T): 2,943,248 hrs NPort IA5250-G2(-T): 2,931,934 hrs NPort IA5150-S/M-SC-G2(-T): 2,889,487 hrs NPort IA5250I-TB-G2(-T): 2,809,979 hrs NPort IA5250I-G2(-T): 2,799,662 hrs NPort IA5450-TB-G2(-T): 2,377,791 hrs NPort IA5450-G2(-T): 2,363,042 hrs NPort IA5450I-TB-G2(-T): 2,208,607 hrs NPort IA5450I-G2(-T): 2,195,874 hrs
Standards	Telcordia Standard SR-332

Warranty

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

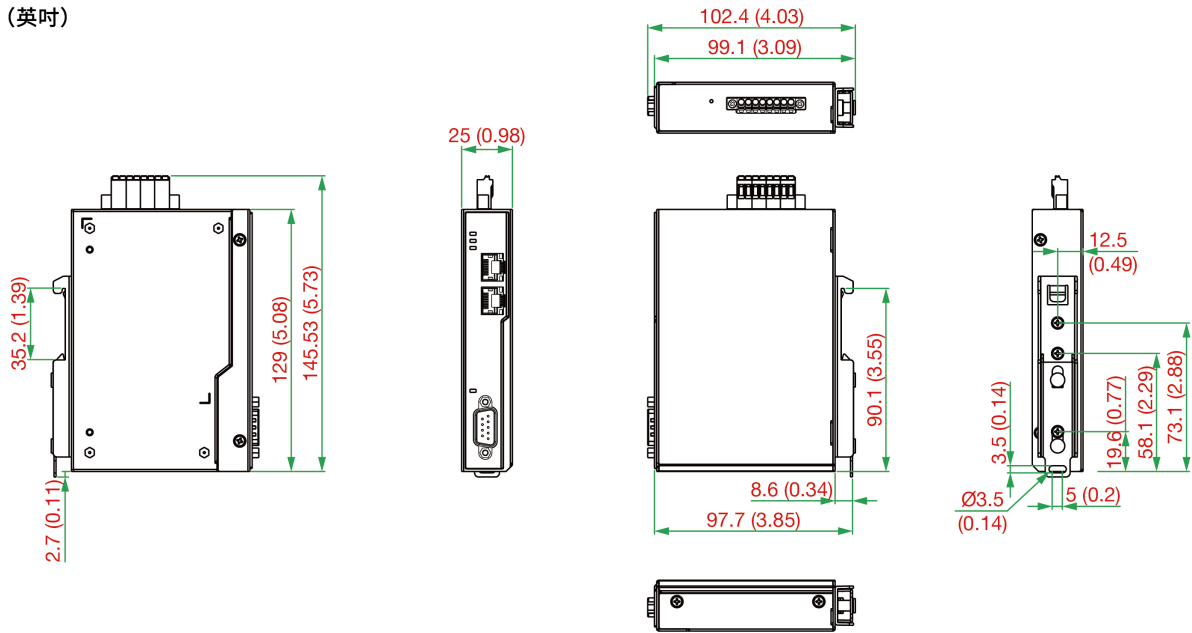
Package Contents

Device	1 x NPort IA5000-G2 Series device server
Documentation	1 x quick installation guide

尺寸

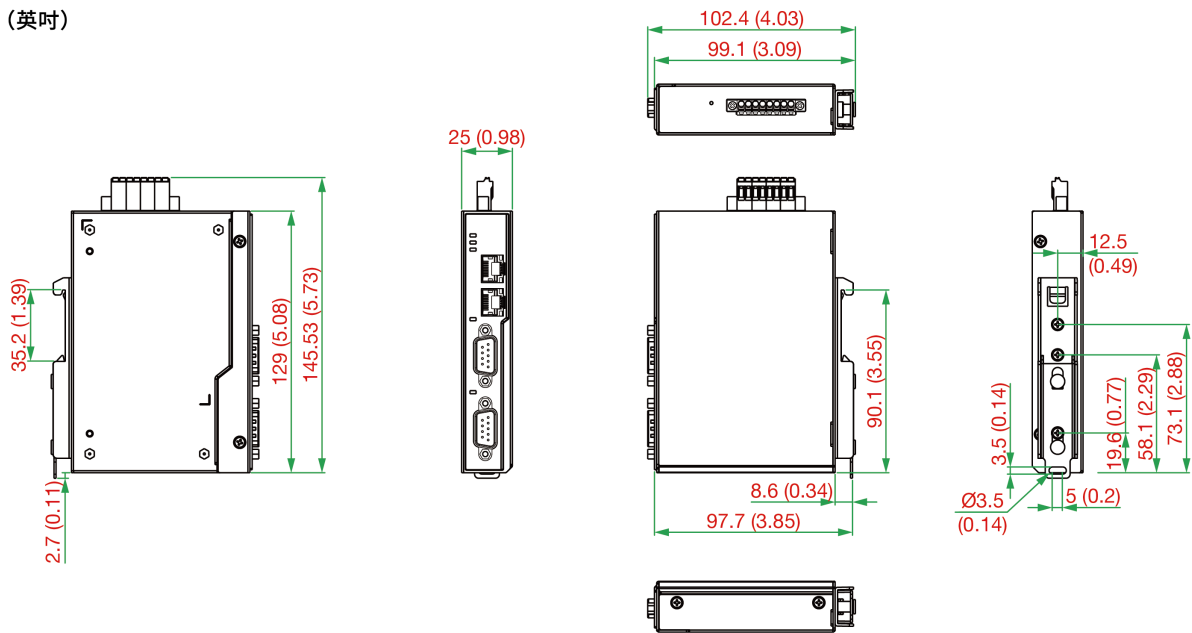
NPort IA5150-G2 型號

單位：公釐（英吋）



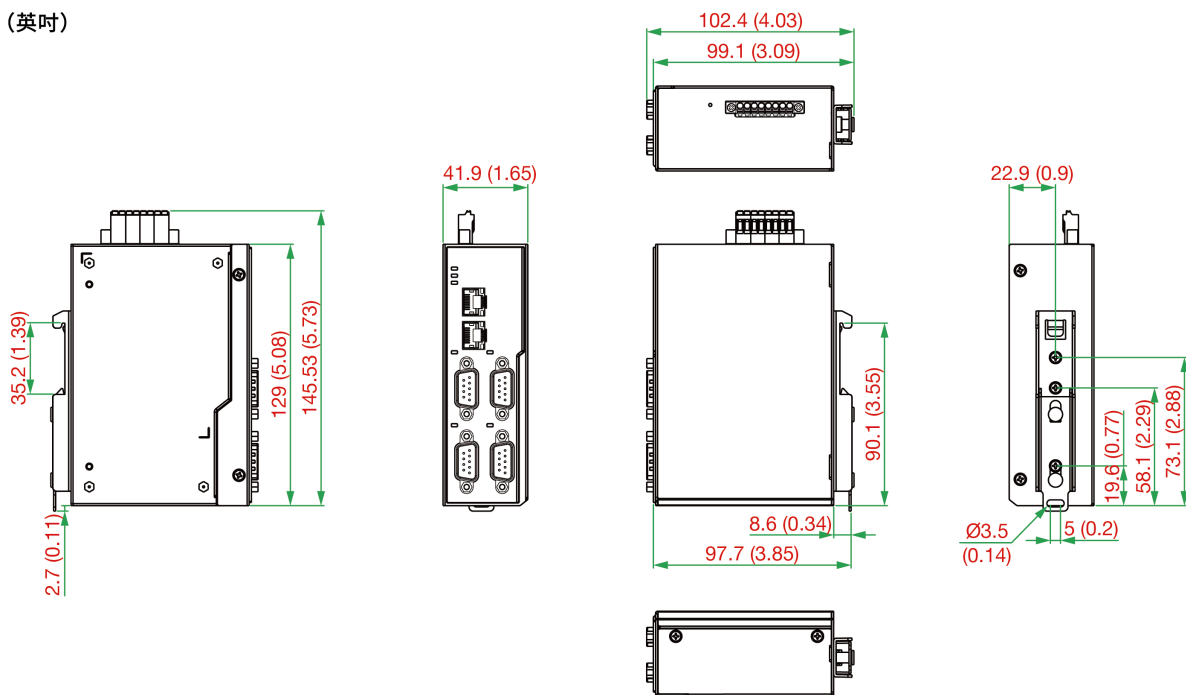
NPort IA5250-G2 型號

單位：公釐（英吋）



Nport IA5450-G2 型號

單位：公釐（英吋）



訂購資訊

Model Name	Ethernet Interface	No. of Serial Ports	Serial Standards	Serial Isolation	Operating Temperature
NPort IA5150-G2	2 x RJ45	1	RS-232/422/485	–	-10 to 60°C
NPort IA5150-G2-T	2 x RJ45	1	RS-232/422/485	–	-40 to 75°C
NPort IA5150I-G2	2 x RJ45	1	RS-232/422/485	2 kV	-10 to 60°C
NPort IA5150I-G2-T	2 x RJ45	1	RS-232/422/485	2 kV	-40 to 75°C
NPort IA5150-M-SC-G2	1 x Multi-SC, 1 x RJ45	1	RS-232/422/485	–	-10 to 60°C
NPort IA5150-M-SC-G2-T	1 x Multi-SC, 1 x RJ45	1	RS-232/422/485	–	-40 to 75°C
NPort IA5150-S-SC-G2	1 x Single-SC, 1 x RJ45	1	RS-232/422/485	–	-10 to 60°C
NPort IA5150-S-SC-G2-T	1 x Single-SC, 1 x RJ45	1	RS-232/422/485	–	-40 to 75°C
NPort IA5150-SFP-G2	1 x SFP, 1 x RJ45	1	RS-232/422/485	–	-10 to 60°C
NPort IA5150-SFP-G2-T	1 x SFP, 1 x RJ45	1	RS-232/422/485	–	-40 to 75°C
NPort IA5250-G2	2 x RJ45	2	RS-232/422/485	–	-10 to 60°C
NPort IA5250-G2-T	2 x RJ45	2	RS-232/422/485	–	-40 to 75°C
NPort IA5250I-G2	2 x RJ45	2	RS-232/422/485	2 kV	-10 to 60°C
NPort IA5250I-G2-T	2 x RJ45	2	RS-232/422/485	2 kV	-40 to 75°C
NPort IA5250-TB-G2	2 x RJ45	2 x 5-pin TB	RS-232/422/485	–	-10 to 60°C
NPort IA5250-TB-G2-T	2 x RJ45	2 x 5-pin TB	RS-232/422/485	–	-40 to 75°C
NPort IA5250I-TB-G2	2 x RJ45	2 x 5-pin TB	RS-232/422/485	2 kV	-10 to 60°C
NPort IA5250I-TB-G2-T	2 x RJ45	2 x 5-pin TB	RS-232/422/485	2 kV	-40 to 75°C
NPort IA5450-G2	2 x RJ45	4	RS-232/422/485	–	-10 to 60°C
NPort IA5450-G2-T	2 x RJ45	4	RS-232/422/485	–	-40 to 75°C
NPort IA5450I-G2	2 x RJ45	4	RS-232/422/485	2 kV	-10 to 60°C

Model Name	Ethernet Interface	No. of Serial Ports	Serial Standards	Serial Isolation	Operating Temperature
NPort IA5450I-G2-T	2 x RJ45	4	RS-232/422/485	2 kV	-40 to 75°C
NPort IA5450-TB-G2	2 x RJ45	4 x 5-pin TB	RS-232/422/485	–	-10 to 60°C
NPort IA5450-TB-G2-T	2 x RJ45	4 x 5-pin TB	RS-232/422/485	–	-40 to 75°C
NPort IA5450I-TB-G2	2 x RJ45	4 x 5-pin TB	RS-232/422/485	2 kV	-10 to 60°C
NPort IA5450I-TB-G2-T	2 x RJ45	4 x 5-pin TB	RS-232/422/485	2 kV	-40 to 75°C

配件（選購）

Cables

CBL-F9M9-150	DB9 female to DB9 male serial cable, 1.5 m
CBL-F9M9-20	DB9 female to DB9 male serial cable, 20 cm

Connectors

ADP-RJ458P-DB9F	DB9 female to RJ45 connector
Mini DB9F-to-TB	DB9 female to terminal block connector
LB-DB9F-G-01	Serial loopback DB9 adaptor

Power Cords

CBL-PJTB-10	Non-locking barrel plug to bare-wire cable
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DIN-Rail Mounting Kits

DK-89-01	DIN-rail mounting kit with 1 plate (89 x 19 x 9 mm), 3 M3 x 5 mm screws
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Wall-Mounting Kits

WK-178-01	Wall-mounting kit with 1 plate (178 x 25 x 1.5 mm), 3 M3 x 5 mm screws
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