

# AIG-101 系列

## 2 埠 Modbus RTU/ASCII/TCP 轉 MQTT/Azure/AWS cloud-ready 閘道器



### 特色與優點

- 支援通用 MQTT 用戶端
- 支援 Azure/AWS cloud 使用內建裝置 SDK 的 MQTT 連接
- 支援 Modbus RTU/ASCII/TCP 主控裝置/用戶端
- 支援 Modbus TCP 伺服器
- 內建網路流量監控和診斷工具，便於故障排除
- 支援利用存儲和轉發的數據緩衝以及資料記錄器
- 使用 Moxa ioLogik /UPort 裝置完全整合，輕鬆擴充 I/O 和串列介面
- 內置資料處理功能，省去編程作業
- -40°C 至 70°C 操作溫度範圍
- 適用 LTE Cat.1 美國、歐盟和亞太地區型號

### 認證



### 簡介

AIG-101 系列閘道器為入門級 IIoT 閘道器，可將 Modbus RTU/ASCII/TCP 裝置連接至雲端平台與應用程序，如 Azure、AWS 和 MQTT。作為 Modbus 主控裝置的 AIG-101 可整合現有的 Modbus 裝置與雲端平台，輕鬆收集資料並傳輸到 Azure 和 AWS 雲端。此外，閘道器還支持 Modbus TCP 主從模式，可將資料同時傳輸至雲端平台和本地 SCADA 系統。

### 輕鬆擴充 I/O 和串列介面

隨著現場站點量的增加，需要額外的 I/O 或串列介面來連接感測器、計量器和逆變器等裝置，以收集和處理生成的大量資料。典型方法是以安裝遠端 I/O 和裝置伺服器來擴充介面，但所需的配置設定對於多數用戶來說可能是一場噩夢。為提供極易的介面擴充配置過程，AIG-101 閘道器具有較好的整合，並配備了一個直觀嚮導，只需點擊幾下即可配置 Moxa ioLogiks 和 UPorts。

### 內建即用資料預處理功能，無需編碼

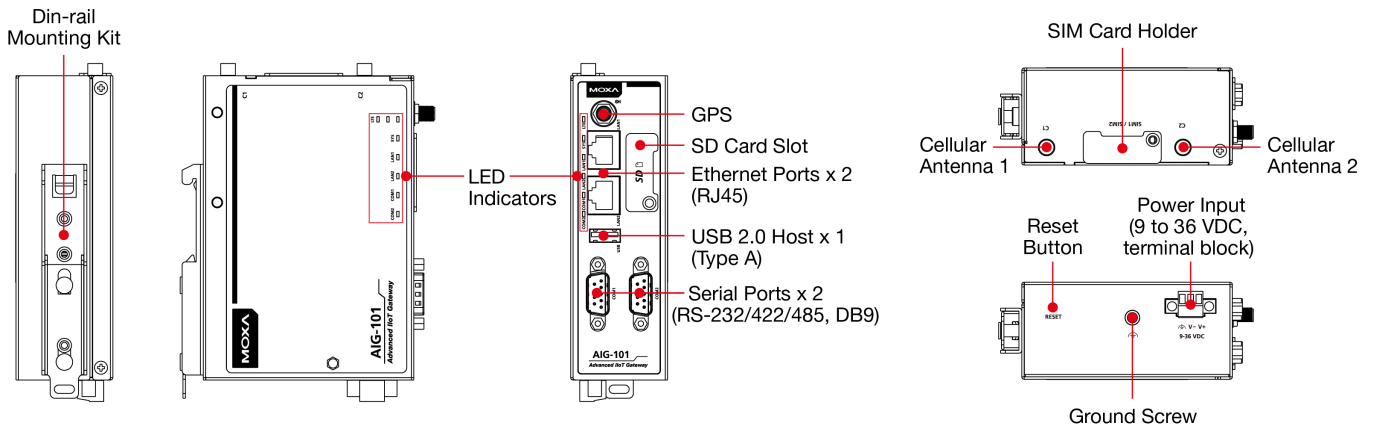
能源管理系統主以採集平均發電量、能源效率等能源資料。這些資料隨後用於顯示現場狀況、觀察能源趨勢並優化能源使用。多數邊緣系統需要額外編程以處理能源管理系統所需的資料。AIG-101 可預處理邊緣資料並將具意義的資料直接傳送到能源管理系統。直觀 UI 可輕鬆配置 IIoT 閘道器設置以收集和處理資料。

### 安全遠端存取降低維護成本

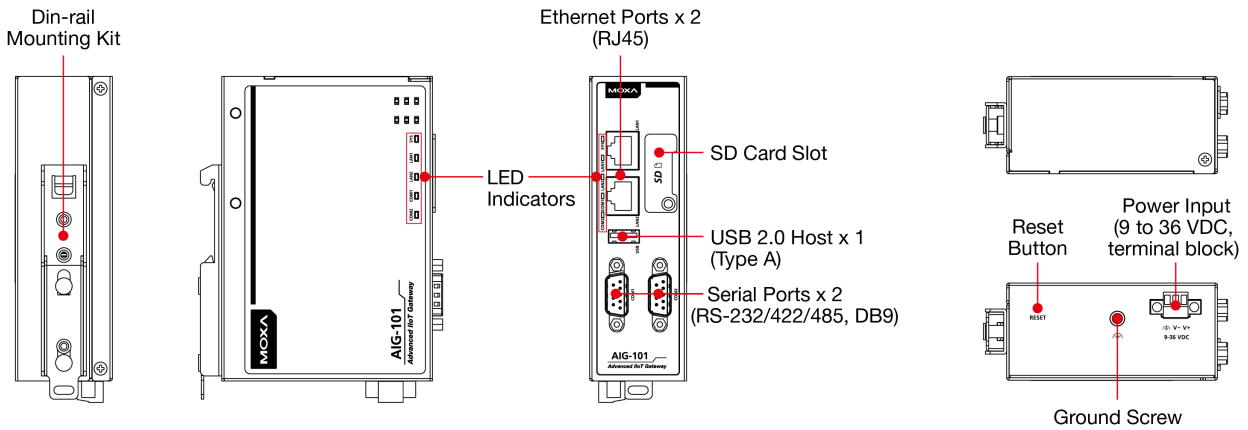
AIG-101 配備強大的故障排除工具，可診斷通訊協定狀態問題並捕獲和分析流量資料包，使工程師能遠端確認根本問題並迅速恢復正常操作。這些工具還提供對 AIG-101 的安全遠端存取，使維護工程師可直接存取，進而節省大量時間和精力，減少能源管理系統的系統停機時間。

## 外觀

### AIG-101-T-AP/EU/US



### AIG-101-T



## 規格

### Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	2, Auto MDI/MDI-X connection
Magnetic Isolation Protection	1.5 kV (built-in)

### Ethernet Software Features

Industrial Protocols	Modbus TCP Client (Master) / Server (Slave) Generic MQTT Azure IoT Device AWS IoT Core
Configuration Options	Web Console (HTTP/HTTPS)
Time Management	NTP Client GPS

### Serial Interface

No. of Ports	2
Connector	DB9 male
Serial Standards	RS-232/422/485
Baudrate	300 bps to 921.6 kbps

Data Bits	7, 8
Parity	None, Even, Odd, Space, Mark
Stop Bits	1, 2
Flow Control	RTS/CTS

### Serial Signals

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

### Cellular Interface

Cellular Standards	LTE Cat. 1
Cellular Antenna Connectors	SMA x 2
SIM Format	Nano SIM
No. of SIMs	2
GPS Antenna Connectors	SMA x 1
Band Options	<p>US Model:            LTE Bands: Band 2 (1900 MHz) / Band 4 (1700 MHz) / Band 5 (850 MHz) / Band 12 (700 MHz) / Band 13 (700 MHz) / Band 14 (700 MHz) / Band 66 (1700 MHz) / Band 71 (600 MHz)            UMTS Bands: 2 (1900 MHz) / Band 4 (1700 MHz) / Band 5 (850 MHz)            Carrier Approval: Verizon, AT&amp;T</p> <p>EU Model:            LTE Bands: Band 1 (2100 MHz) / Band 3 (1800 MHz) / Band 7 (2600 MHz) / Band 8 (900 MHz) / Band 20 (800 MHz) / Band 28 (700 MHz)            UMTS Bands: Band 1 (2100 MHz) / Band 3 (1800 MHz) / Band 8 (900 MHz)</p> <p>AP Model:            LTE Bands: Band 1 (2100 MHz) / Band 3 (1800 MHz) / Band 5 (850 MHz) / Band 8 (900 MHz) / Band 28 (700 MHz)            UMTS Bands: Band 1 (2100 MHz) / Band 5 (850 MHz) / Band 8 (900 MHz)</p>

### Serial Software Features

Industrial Protocols	Modbus RTU/ASCII Master
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### Modbus RTU/ASCII

Mode	Master
Functions Supported	1, 2, 3, 4, 5, 6, 15, 16, 23
Max. No. of Commands	256 per port

### Modbus TCP

Mode	Server (Slave) Client (Master)
Functions Supported	1, 2, 3, 4, 5, 6, 15, 16, 23
Max. No. of Client Connections	4

Max. No. of Server Connections	64
Max. No. of Commands	1500
<b>Generic MQTT Client</b>	
Versions Supported	v3.1.1 v3.1
QoS Levels	0, 1, 2
Authentication Methods	Username and password
Secure Transmission	TLS 1.0 TLS 1.1 TLS 1.2
Native Capabilities	Keep Alive Retain Message Clean Session Will and Testament
Moxa Functions	Store and Forward Custom Payload Remote API Invocation
<b>Azure IoT Device</b>	
Connection Protocols Supported	MQTT MQTT over WebSockets AMQP AMQP over WebSockets
Authentication Methods	Symmetric Key X.509 Certificate
Azure Direct Methods	Reboot Software Upgrade Remote API Invocation
Moxa Functions	Store and Forward Custom Payload
<b>AWS IoT Core</b>	
QoS Levels	0,1
Authentication Methods	X.509 Certificate Private Key Trusted Root CA
Native Capabilities	Keep Alive
Moxa Functions	Store and Forward Custom Payload
Commands Invokable Via Jobs	Reboot Software Upgrade Remote API Invocation
<b>Memory</b>	
microSD Slot	Up to 32 GB (SD 2.0 compatible) Max. No. of Tags Supported: 1500

## Power Parameters

Input Voltage	9 to 36 VDC
Power Connector	Screw-fastened Euroblock terminal
Power Consumption	8 W (max.)

## Physical Characteristics

Dimensions	128.5 x 89.1 x 41 mm (5.06 x 3.51 x 1.61 in)
Housing	Metal
Installation	DIN-rail mounting Wall mounting (with optional kit)
Weight	AIG-101-T: 492 g (1.08 lb) AIG-101-T-AP/EU/US: 512 g (1.13 lb)

## Environmental Limits

Ambient Relative Humidity	5 to 95% (non-condensing)
Operating Temperature	-40 to 70°C (-40 to 158°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)

## Standards and Certifications

EMC	EN 55032/35
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 1 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Safety	IEC 62368-1 UL 62368-1 EN 62368-1
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-64 5 Grms @ 5 to 500 Hz, random wave, 1 hr per axis (without USB devices attached)
Cellular Standards	EN 303 413 (GPS) EN 301 908-1 (WCDMA/LTE) EN 301 908-2/-13 (WCDMA/LTE) EN 301 489-1/-19 EN 301 489-1/-52 EN 62311
Radio Frequency	FCC PTCRB RCM
Carrier Approvals	Verizon AT&T
Green Product	RoHS, CRoHS, WEEE

## MTBF

Time	566,458 hrs
Standards	Telcordia SR332

## Warranty

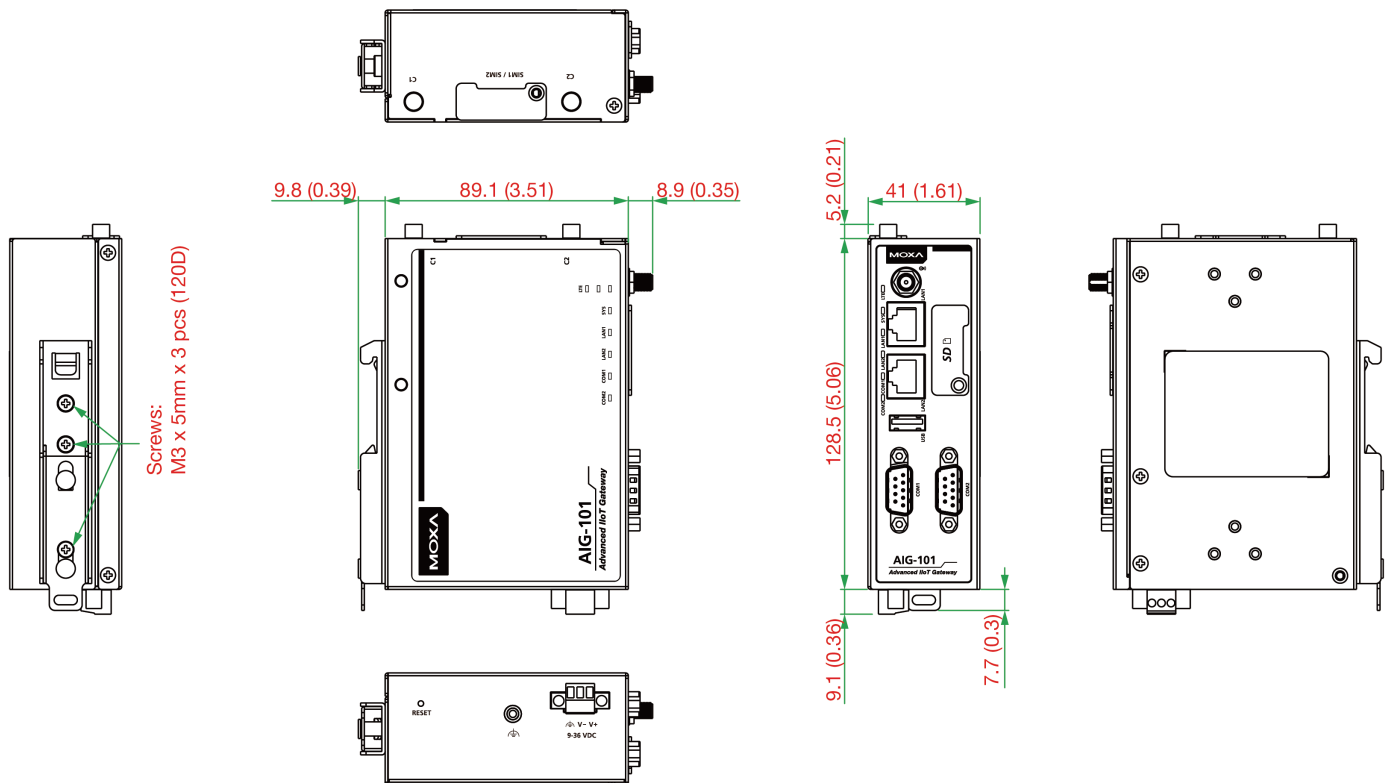
Warranty Period	5 years
Details	See <a href="http://www.moxa.com/tw/warranty">www.moxa.com/tw/warranty</a>

## Package Contents

Device	1 x AIG-101 Series gateway
Cable	1 x terminal block to power jack converter
Installation Kit	1 x DIN-rail kit
Documentation	1 x quick installation guide 1 x warranty card

## 尺寸

單位：公釐 (英吋)



## 訂購資訊

Model Name	LTE	Band
AIG-101-T	-	-
AIG-101-T-AP	Cat. 1	AP
AIG-101-T-EU	Cat. 1	EU
AIG-101-T-US	Cat. 1	US

## 配件 (選購)

### Power Adapters

PWR-12150-AU-SA-T	Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, AU plug, -40 to 75°C operating temperature
PWR-12150-CN-SA-T	Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, CN plug, -40 to 75°C operating temperature

PWR-12150-EU-SA-T	Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, EU plug, -40 to 75°C operating temperature
PWR-12150-UK-SA-T	Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, UK plug, -40 to 75°C operating temperature
PWR-12150-USJP-SA-T	Locking barrel plug, 12 VDC 1.5 A, 100 to 240 VAC, US/JP plug, -40 to 75°C operating temperature

#### Antennas

ANT-LTE-ASM-02	GPRS/EDGE/UMTS/HSPA/LTE, 2 dBi, omnidirectional rubber-duck antenna
ANT-LTEUS-ASM-01	GSM/GPRS/EDGE/UMTS/HSPA/LTE, 1 dBi, omnidirectional rubber-duck antenna

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