

Industrial 5G NR Cellular Gateway with 4-Port 10/100/1000T PoE+



Upgrade Industrial Networks with a 5G NR PoE Cellular Gateway

The PLANET **ICG-2515P-NR** is an industrial-grade 802.3at PoE+ cellular gateway designed for Industrial IoT, Machine-to-Machine (M2M), and remote communication applications. Powered by the latest 5G NR technology, it delivers ultra-fast, low-latency, and reliable wireless connectivity for mission-critical industrial environments.

Featuring **four 802.3at PoE+ Gigabit LAN ports, one Gigabit WAN port, RS485, DI/DO, SD-WAN, and advanced VPN** support, the ICG-2515P-NR enables secure, resilient networking while seamlessly connecting Ethernet and serial devices over high-speed 5G networks.

With built-in Hardware **TRNG for secure cryptographic key generation and PQC TLS (Post-Quantum Cryptography TLS)** readiness, it enhances long-term cybersecurity against emerging quantum computing threats. Combined with a **12~54V DC power input**, built-in **Power Boost** technology, and a rugged fanless design operating from **-40 to 75°C**, it is ideal for industrial automation, smart manufacturing, smart infrastructure, and remote monitoring.



Highlights

- Global 5G NR (NSA/SA)/4G LTE network with dual SIM design for cellular network redundancy
- Automatic failover between 5G NR and Gigabit WAN
- 2 x DI/DO and 1 serial port (RS485) for Modbus applications
- SSL VPN and robust hybrid VPN (IPSec/PPTP/L2TP over IPSec)
- Stateful packet inspection (SPI) firewall and content filtering
- Blocks DoS/DDOS attack, port range forwarding
- High Availability, AP Controller, Captive Portal and RADIUS
- Compliant with the IEEE 802.3at PoE+ with PD alive check/schedule management
- Supports PLANET NMS and CloudNMS for centralized deployment and device management
- -40 to 75 degrees C operating temperature; DIN-rail and fanless designs

Hardware

- **4 x 10/100/1000BASE-T** RJ45 LAN ports with IEEE 802.3at PoE+ injector function
- **1 x 10/100/1000BASE-T** RJ45 WAN port, auto-negotiation, auto MDI/MDI-X
- **4 x 5G NR** antennas
- **2 x** SIM card slots
- **1 x** serial console port (RS485)
- **1 x** reset button

Cellular Interface

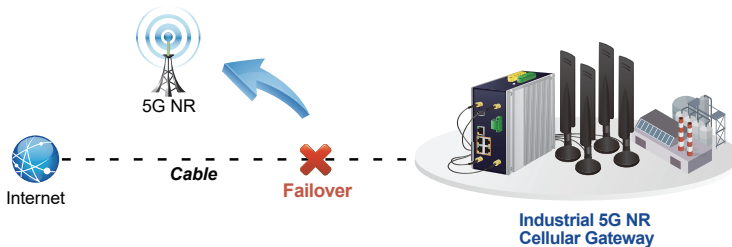
- Supports multi-band connectivity with 5G NR (NSA/SA), LTE-FDD, LTE-TDD, and WCDMA
- Built-in SIM and broadband backup for network redundancy
- Four detachable antennas for 5G NR connection
- LED indicators for signal strength and connection status

Power over Ethernet

- Complies with IEEE 802.3at Power over Ethernet Plus, end-span PSE
- Backward compatible with IEEE 802.3af Power over Ethernet
- Up to 4 ports of IEEE 802.3af / 802.3at devices powered
- Supports PoE power up to 36 watts for each PoE port
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- PoE management
- Total PoE power budget control

Automatic Failover between 5G NR and Gigabit WAN

Designed with 5G NR and Gigabit Ethernet WAN interfaces, the ICG-2515P-NR ensures Internet connectivity by featuring failover functionality between 5G NR and GbE WAN. The ICG-2515P-NR provides flexibility to set priority for 5G NR or GbE WAN connection. When the main WAN interface fails, the secondary WAN interface will automatically back up the connection to ensure always-on connectivity.

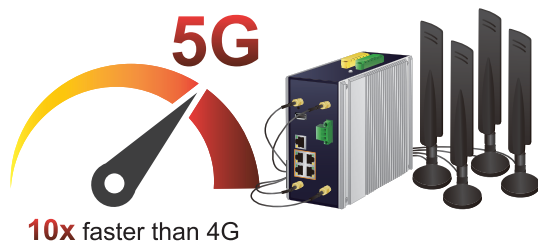


Ultra-Fast Speed 4G/5G Network*

The ICG-2515P-NR supports 5G NR DL speeds higher than 2.4 Gbps and 4G LTE DL speeds of up to 1 Gbps. The wide spectrum bandwidth accelerates internet speeds and reduces network latency for premium and time-sensitive connectivity services. The ICG-2515P-NR also supports multi-band connectivity including LTE FDD/TDD and WCDMA for a wide range of applications.

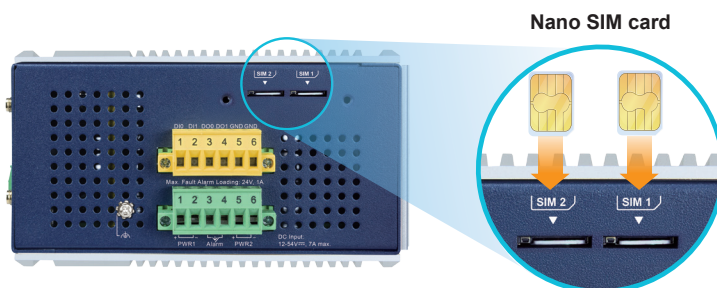
*The real 5G NR/4G LTE data rate is dependent on local service provider.

Up to download speed **2.4 Gbps**



Dual SIM Design

To enhance reliability, the ICG-2515P-NR is equipped with dual SIM slots that support failover and roaming over to ensure uninterrupted connectivity for mission-critical cellular communications. Besides, the ICG-2515P-NR supports load balance function to improve network efficiency. It provides a more flexible and easier way for users to create an instant network sharing service via 5G-NR in public places like transportations, outdoor events, etc.



- Per port PoE function enable/disable
- PoE port power feeding priority
- Per PoE port power limitation
- PD classification detection
- PD alive check

IP Routing Feature

- Static Route
- Dynamic Route
- OSPF

Firewall Security

- Cybersecurity
- Stateful Packet Inspection (SPI) firewall
- Blocks DoS/DDoS attack
- Content Filtering
- MAC Filtering and IP Filtering
- NAT ALGs (Application Layer Gateway)
- Blocks SYN/ICMP Flooding

VPN Features

- IPSec/Remote Server (Net-to-Net, Host-to-Net), GRE, PPTP Server, L2TP Server, SSL Server/Client (Open VPN), WireGuard client/server
- Max. Connection VPN Tunnel: 200 SSL VPN
- Encryption methods: DES, 3DES, AES, AES-128/192/256
- Authentication methods: MD5, SHA-1, SHA-256, SHA-384, SHA-512
- PQC TLS (Post-Quantum Cryptography TLS) readiness for future-proof encryption

Networking

- Outbound load balancing
- Failover for dual-WAN
- High Availability
- Captive Portal
- RADIUS Server/Client
- Static IP/PPPoE/DHCP client for WAN
- DHCP server/NTP client for LAN
- Protocols: TCP/IP, UDP, ARP, IPv4, IPv6
- Port forwarding, QoS, DMZ, IGMP, UPnP, SNMPv1,v2c, v3
- MAC address clone
- DDNS: PLANET DDNS, Easy DDNS, DynDNS and No-IP

Others

- Setup wizard
- Dashboard for real-time system overview
- SD-WAN
- Supported access by HTTP or HTTPS
- Auto reboot
- PLANET Smart Discovery Utility for deployment management
- PLANET NMS and CloudNMS for deployment management

GPS Included

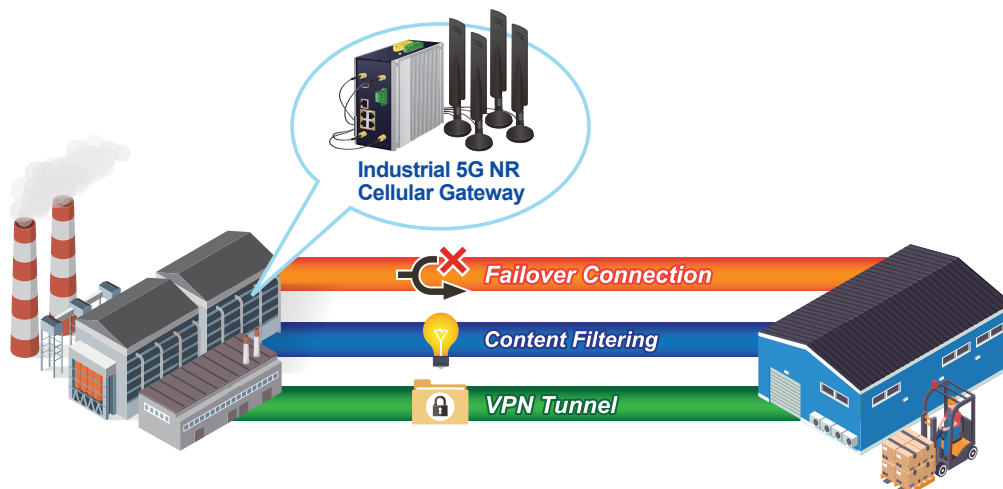
The ICG-2515P-NR is equipped with (global positioning system) feature. It adapts 5G-NR technology to incorporate multiple global navigation systems (GPS/GLONASS/BeiDou/Galileo/QZSS). It helps to position location of cellular gateway based on a network of satellites that continuously transmits necessary data. More signals transmitted from more satellites can triangulate its location on the ground, meaning any location can be easily tracked.

GNSS Positioning



Ideal High-Availability VPN Security Router Solution for Industrial Environment

The ICG-2515P-NR provides complete data security and privacy for accessing and exchanging the most sensitive data, built-in IPSec VPN function with DES/3DES/AES encryption and MD5/SHA-1/SHA-256/SHA-384/SHA-512 authentication, and GRE, SSL, PPTP and L2TP server mechanism. The full VPN capability in the ICG-2515P-NR makes the connection secure, more flexible, and more capable.



Wi-Fi Deployments and Authentication with Simplified Management

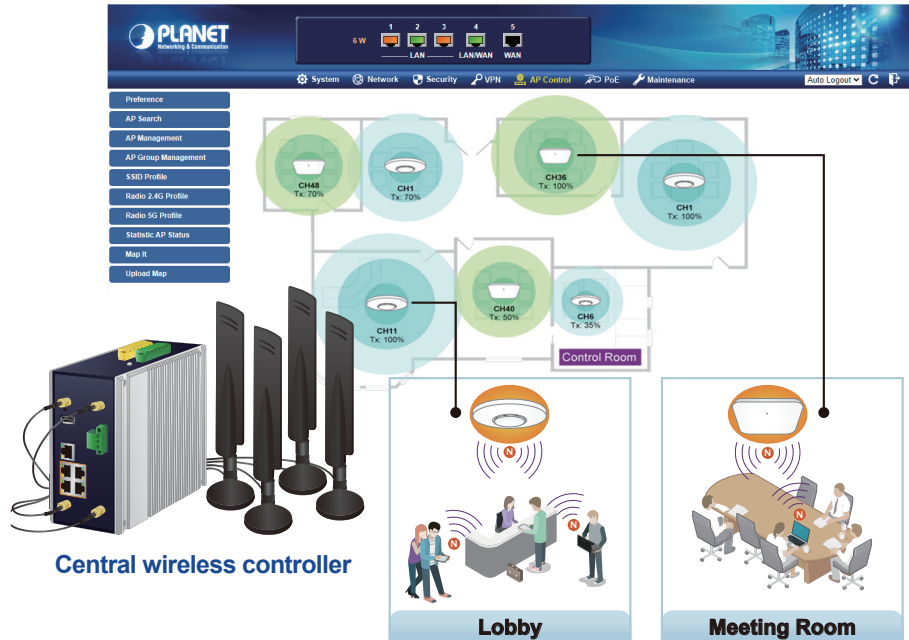
The ICG-2515P-NR also provides a built-in AP Controller, Captive Portal, RADIUS and a DHCP server to facilitate small and medium businesses to deploy secure employee and guest access services without any additional server. The ICG-2515P-NR can offer a secure Wi-Fi network with easy installation for your business.

Captive Portal



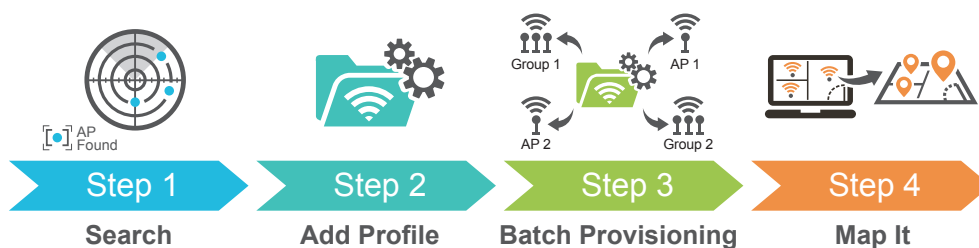
Centralized Remote Control of Managed APs

The ICG-2515P-NR provides centralized management of PLANET Smart AP series via a user-friendly Web GUI. It's easy to configure AP for the wireless SSID, radio band and security settings. With a four-step configuration process, wireless profiles for different purposes can be simultaneously delivered to multiple APs or AP groups to minimize deployment time, effort and cost.



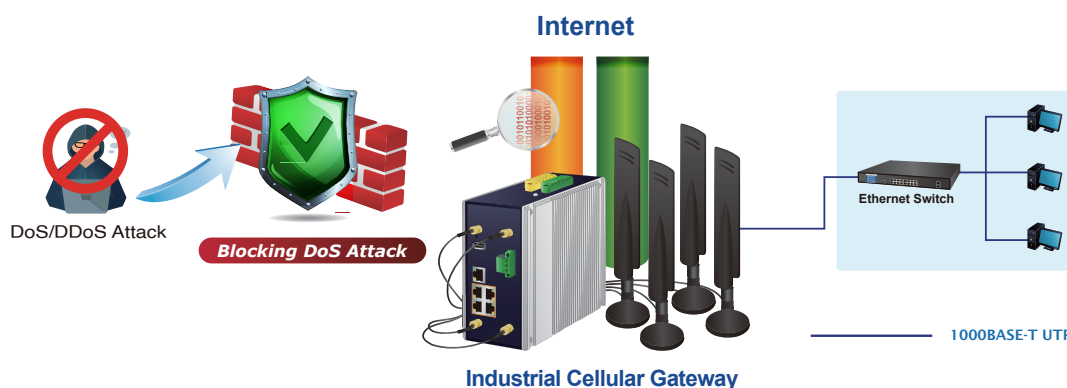
For example, to configure multiple Smart APs of the same model, the ICG-2515P-NR allows clustering them to a managed group for unified management. According to requirements, wireless APs can be flexibly expanded or removed from a wireless AP group at any time. The AP cluster benefits bulk provision and bulk firmware upgrade through single entry point instead of having to configure settings in each of them separately.

Simplified Cluster Management with 4 Steps



Excellent Ability in Threat Defense

The ICG-2515P-NR has built-in SPI (stateful packet inspection) firewall and DoS/DDoS attack mitigation functions to provide high efficiency and extensive protection for your network. Thus, virtual server and DMZ functions can let you set up servers in the Intranet and still provide services to the Internet users.



Cybersecurity Network Solution to Minimize Security Risks

The cybersecurity feature included to protect the switch management in a mission-critical network virtually needs no effort and cost to install. For efficient management, the ICG-2515P-NR is equipped with HTTPS web and SNMP management interfaces. With the built-in web-based management interface, the ICG-2515P-NR offers an easy-to-use, platform independent management and configuration facility. The ICG-2515P-NR supports SNMP and it can be managed via any management software based on the standard SNMP protocol.

Cybersecurity Solution for Secure Network Management

The built-in cybersecurity features protect network management in mission-critical environments with minimal effort and no additional deployment cost. The ICG-2515P-NR supports HTTPS-based web management and SNMP for efficient and secure device management through standard interfaces. Its web-based management platform provides an intuitive, platform-independent configuration tool.

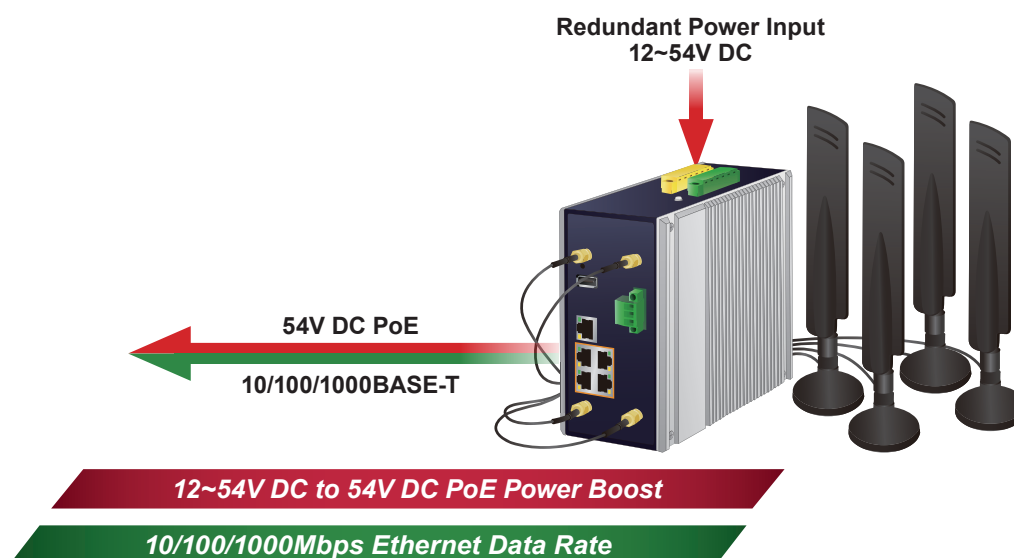
With Secure Boot, built-in Hardware TRNG for secure key generation, and PQC TLS readiness, the ICG-2515P-NR delivers long-term cybersecurity protection against emerging threats, including quantum-era attacks.

Maximizing Work Efficiency with PLANET SD-WAN Gateway

PLANET ICG-2515P-NR incorporated in SD-WAN (software-defined wide area network) function can greatly increase WAN optimization for multiple WAN links to be managed. With SD-WAN, users can connect any application across all available network connections at every site. It improves application performance and provides a high-quality user experience for increasing business productivity and reducing IT costs.

Stable PoE Power Boost for Vehicle Environments

To facilitate the 802.3at PoE usage with commonly-used 12~54V DC power input for transportation and industrial-level applications, the ICG-2515P-NR adopts the 12~54V DC to 54V power boost technology to solve power source issue but does not require special power supplies. Its wide-ranging voltages design is suitable for worldwide operability with high availability applications requiring dual or backup power inputs.



Built-in Unique PoE Functions for Powered Devices Management

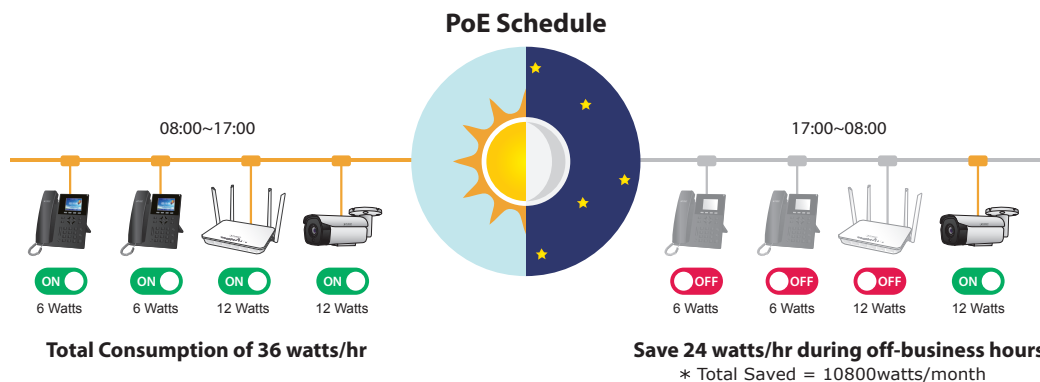
The ICG-2515P-NR is capable of having a maximum of up to 120 watts of power output and can deliver up to 36W for each port. It also features the following special PoE management functions:

PoE Usage Monitoring

With PoE usage monitoring, it can show the PoE loading of each port, total PoE power usage and system status, such as overload, low voltage, over voltage and high temperature. User can obtain detailed information about the real-time PoE working condition of the ICG-2515P-NR directly.

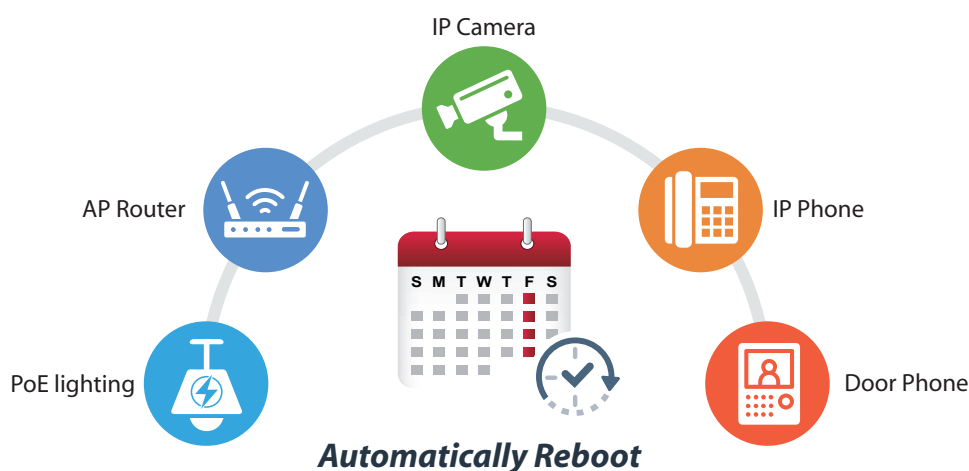
PoE Schedule

Under the trend of energy saving worldwide and contributing to environmental protection, the ICG-2515P-NR can effectively control the power supply besides its capability of giving high watts power. The "PoE schedule" function helps you to enable or disable PoE power feeding for each PoE port during specified time intervals and it is a powerful function to help SMBs or enterprises save power and budget. It also increases security by powering off PDs that should not be in use during non-business hours.



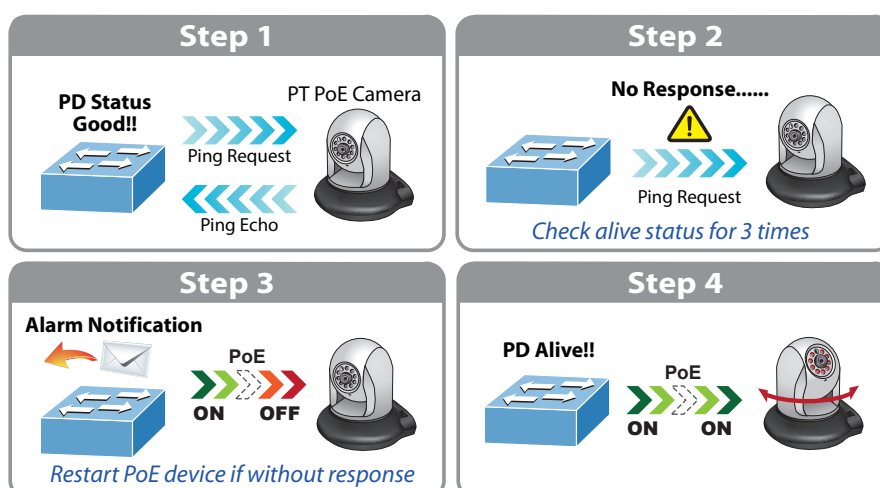
Scheduled Power Recycling

The ICG-2515P-NR allows each of the connected PoE IP cameras or PoE wireless access points to reboot at a specified time each week. Therefore, it will reduce the chance of IP camera or AP crash resulting from buffer overflow.



PD Alive Check

The ICG-2515P-NR can be configured to monitor connected PD status in real time via ping action. Once the PD stops working and responding, the ICG-2515P-NR will resume the PoE port power and bring the PD back to work. It will greatly enhance the network reliability through the PoE port resetting the PD's power source and reducing administrator management burden.



Effective Alarm Alert for Better Protection

The ICG-2515P-NR supports a Fault Alarm feature which can alert the users when there is something wrong with the switches. With this ideal feature, the users would not have to waste time finding where the problem is. It will help to save time and human resource.

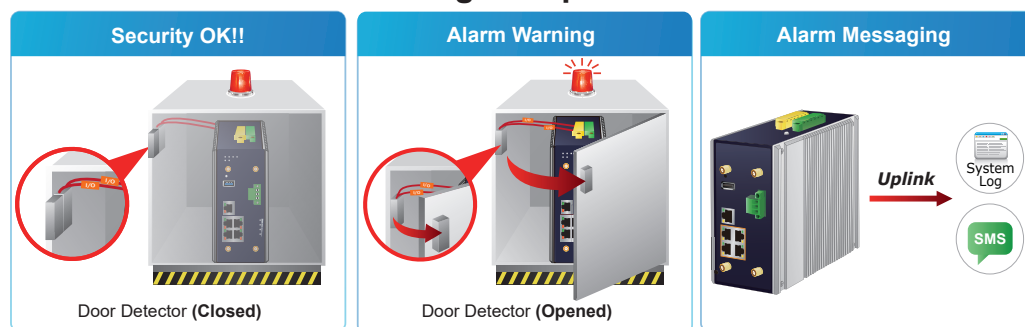
Fault Alarm Feature



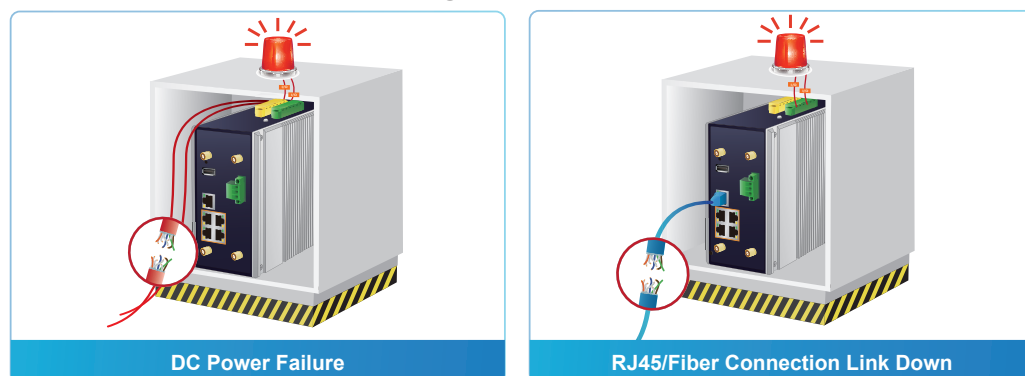
Digital Input and Digital Output for External Alarm

The ICG-2515P-NR supports Digital Input and Digital Output on its front panel. This external alarm enables users to use Digital Input to detect and log external device status (such as door intrusion detector), and send event alarm to the administrators. The Digital Output could be used to alarm the administrators if the ICG-2515P-NR port shows link down, link up or power failure.

Digital Input



Digital Output



PLANET CloudNMS – Cloud-Based Universal Network Management

PLANET's **CloudNMS** platform and mobile app empower IT staff to remotely manage all network devices and Powered Devices (PDs) in real time. Designed for enterprises and industries, CloudNMS minimizes the need for on-site troubleshooting by providing centralized monitoring, fault detection, and instant alerts.

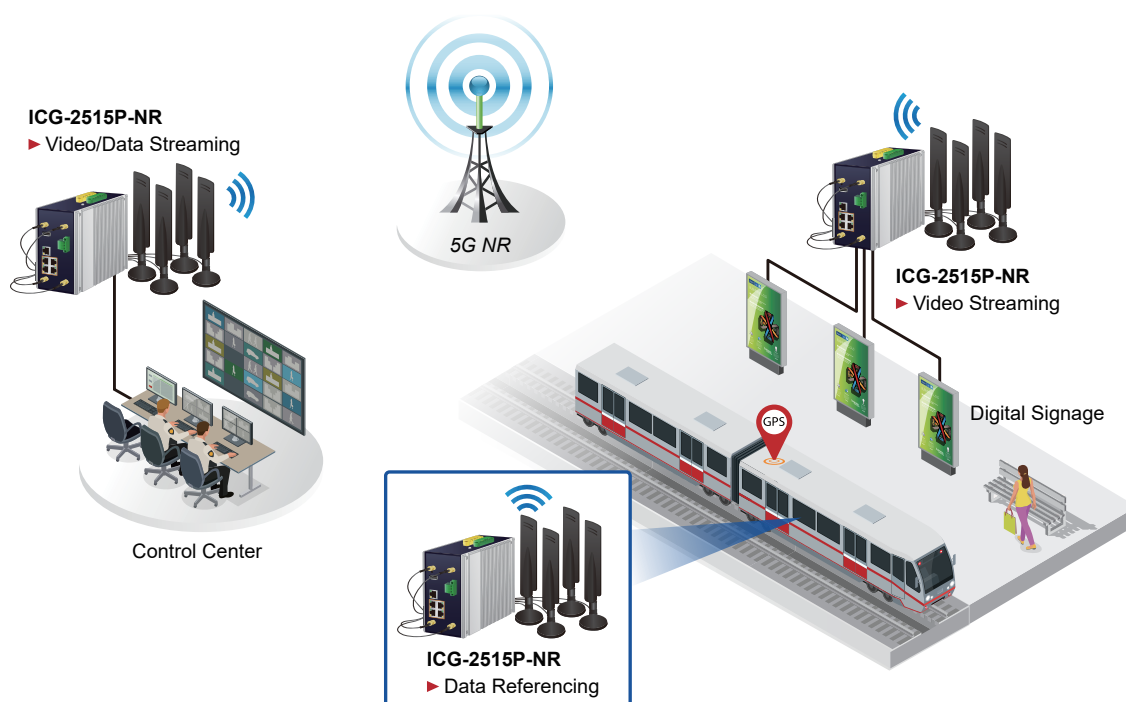
The ICG-2515P-NR also supports **CloudNMS**, enabling businesses to manage diverse network deployments more **efficiently, securely, and intelligently**—all from a single cloud-based platform.



Applications

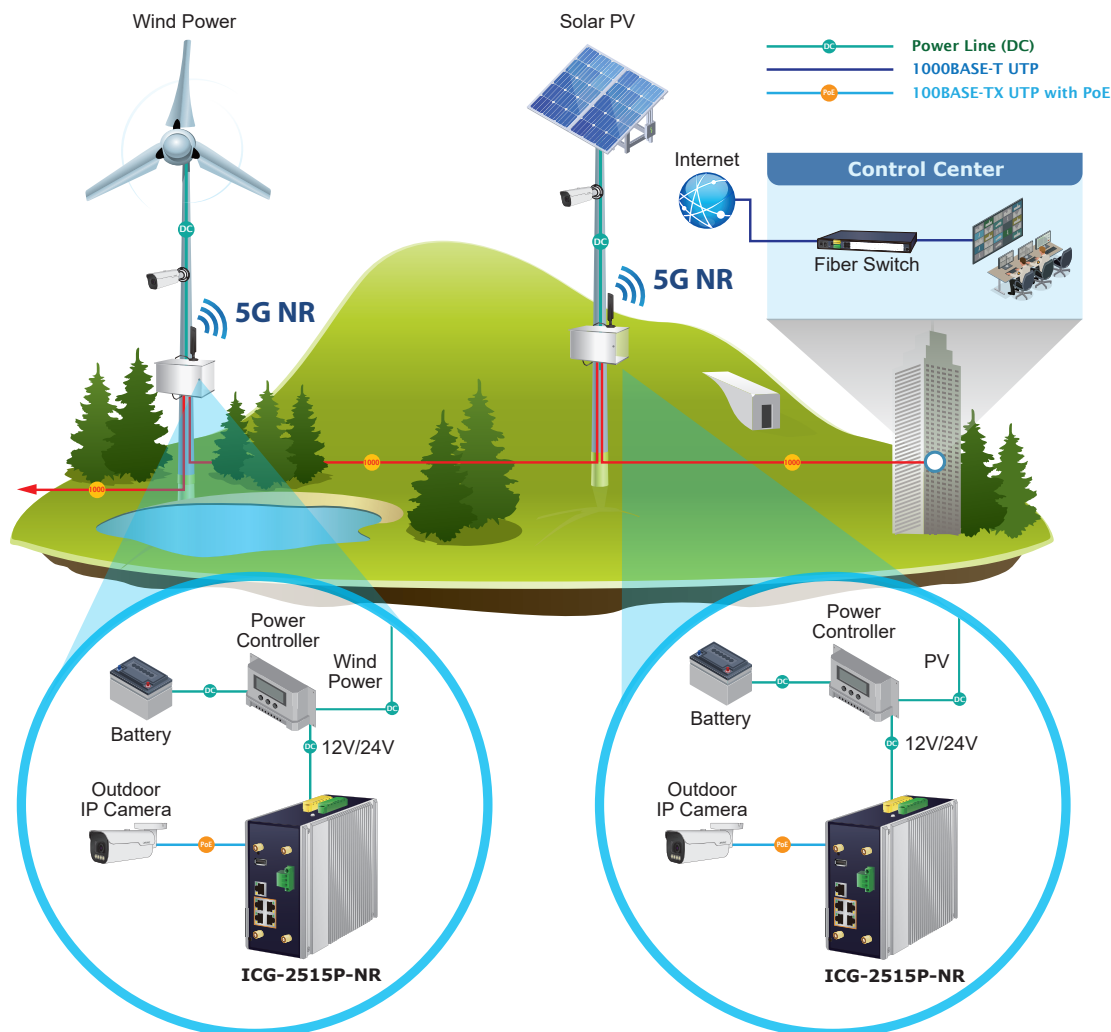
5G NR PoE Cellular Communication Solution

PLANET ICG-2515P-NR adopts 5G NR cellular technology and thus breaks the 100m limitation of RJ45 transmission. Equipped with four IEEE 802.3at PoE+ LAN ports, it can provide both power and data connectivity to IP cameras, wireless APs, and industrial IoT devices. To avoid data loss caused by an unexpected ISP connection failure, the ICG-2515P-NR provides dual SIM card slots, failover and load balancing functions, as well as advanced features such as VLAN, VPN, Modbus, and network management for a wide range of industrial applications.



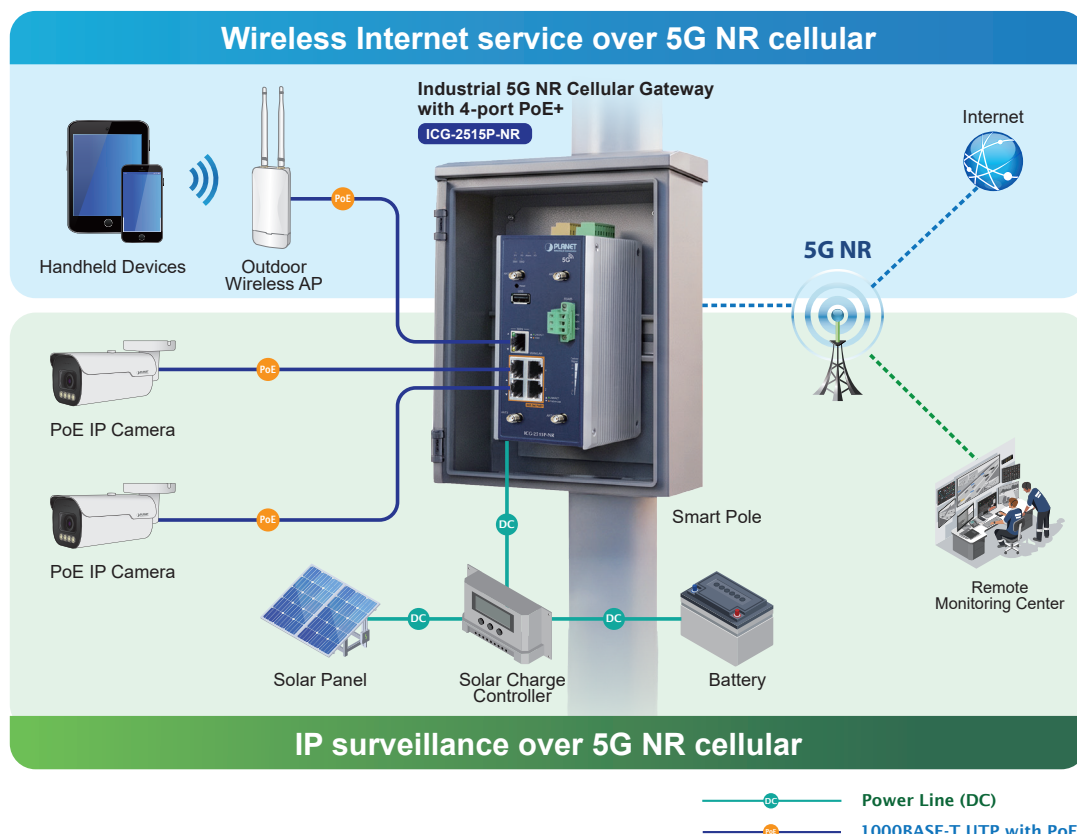
Renewable Energy and Remote Monitoring Applications

With its wide-range DC 12~54V power input, the ICG-2515P-NR is well-suited for deployment in solar-powered, battery-backed, and other renewable energy environments where stable DC power sources are available. Combined with 5G NR cellular connectivity and dual SIM failover, it ensures reliable data transmission even in remote or off-grid locations without fixed network infrastructure. The integrated 802.3at PoE+ ports further simplify field deployment by directly powering IP cameras, sensors, and industrial IoT devices, making it an ideal solution for smart agriculture, environmental monitoring, and remote infrastructure management applications.



Empowering Next-Generation Smart Poles

The ICG-2515P-NR combines 5G NR connectivity, 120W PoE+ power, VPN security, and industrial control interfaces in a single compact platform. It enables smart poles to support IP cameras, Wi-Fi access points, environmental sensors, and intelligent lighting systems without requiring additional networking equipment. By simplifying deployment and reducing infrastructure costs, the ICG-2515P-NR helps accelerate the development of reliable and scalable smart city services.



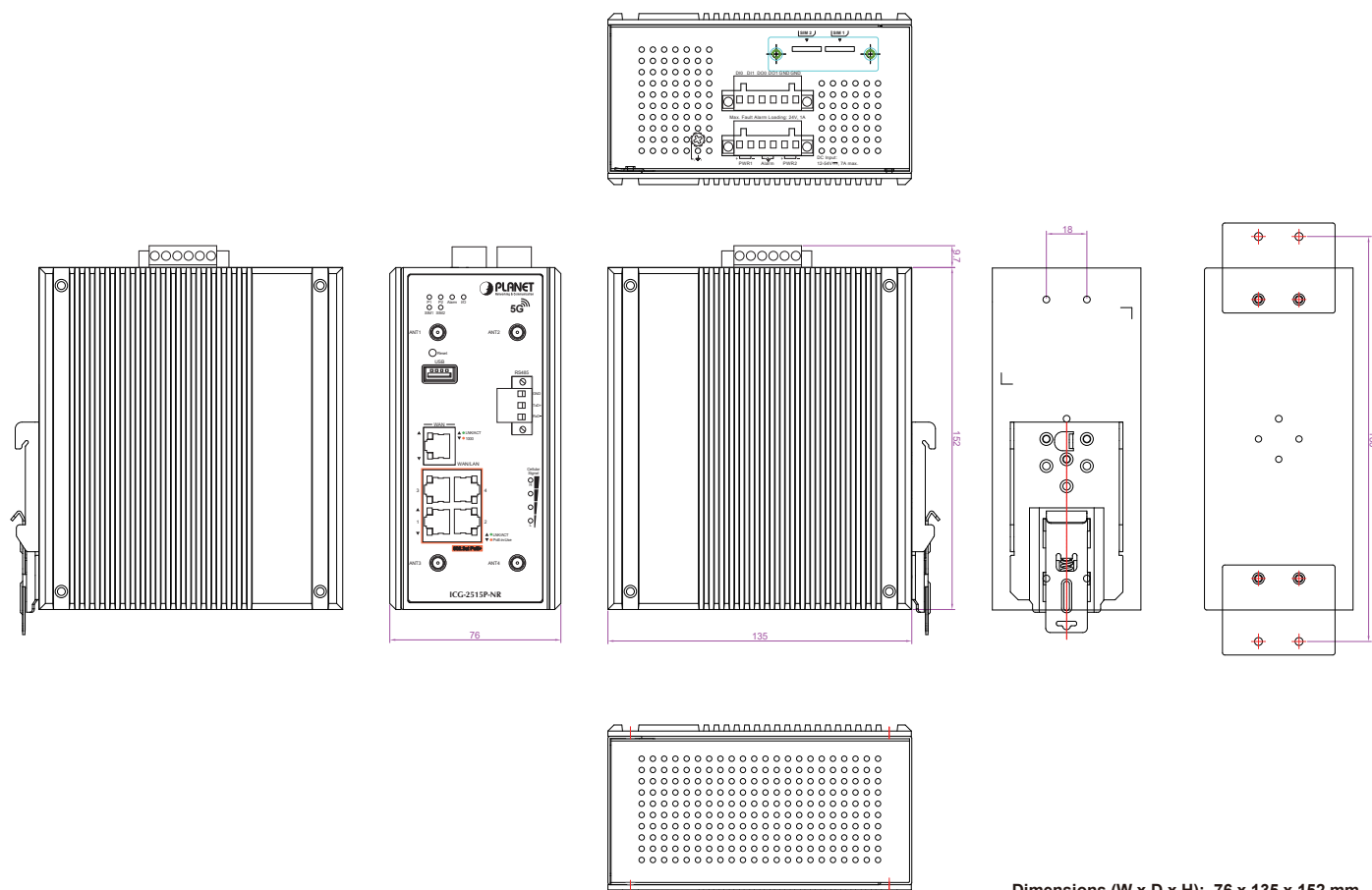
Specifications

Product	ICG-2515P-NR
Hardware Specifications	
Copper Ports	5 10/100/1000BASE-T RJ45 Ethernet ports including - 4 x RJ45 LAN ports with IEEE 802.3at PoE+ injector function(Ports 1 to 4) - 1 LAN/WAN port (Port 4) - 1 WAN port (Port 5)
Serial Interface	1 x 3-pin terminal block for RS-485
SIM Interface	2 SIM card slots with nano SIM card tray
Cellular Antenna	5 dBi external antennas with SMA connectors for 5G-NR
DI & DO Interfaces	2 Digital Input (DI): Level 0: -24V~2.1V ($\pm 0.1V$) Level 1: 2.1V~24V ($\pm 0.1V$) Input Load to 24V DC, 10mA max. 2 Digital Output (DO): Open collector to 24V DC, 100mA max.
Connector	Removable 6-pin terminal block for power input Pin 1/2 for Power 1, Pin 3/4 for fault alarm, Pin 5/6 for Power 2
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
Enclosure	IP30 metal case
Installation	DIN rail, desktop, wall-mounting

LED Indicators	System: P1, P2 (Green) Alarm, I/O (Red) Per 10/100/1000Mbps RJ45 Port (Port 1 to 4): 10/100/1000 LNK/ACT (Green) PoE-In-use (Amber) Per 10/100/1000Mbps RJ45 port (Port 5) 10/100/1000 LNK/ACT (Green) 1000 LNK (Amber) Cellular SIM: SIM1 and SIM2 (Green) Cellular signal: 4 levels (Green)
Dimensions (W x D x H)	76 x 135 x 152 mm
Weight	1306g
Power Requirements	DC 12~54V, 7A
Power Consumption	Max. 8.1 watts/27.6BTU (Power on without any connection) Max.132 watts/450.1BTU (Full loading with PoE function)
Multi Band Supports	
5G NR	n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48/n66/n71/n77/n78/n79
LTE-FDD	B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B46/B66/B71
LTE TDD	B34/B38/B39/B40/B41/B42/B43/B48
WCDMA	B1/B2/B3/B4/B5/B8
GNSS	GPS L1+L5 dual bands/GLONASS/BeiDou/Galileo/QZSS
Data Transmission Throughput	2.4Gbps (DL)/500Mbps (UL) for NR 1Gbps (DL)/200Mbps (UL) for LTE 42Mbps (DL)/5.76Mbps (UL) for HSPA+
Power over Ethernet	
PoE Standard	IEEE 802.3at Power over Ethernet Plus/PSE Backward compatible with 802.3af Power over Ethernet
PoE Power Supply Type	End-span
PoE Power Output	IEEE 802.3at Standard Per port 52V~54V DC, max. 36 watts
Power Pin Assignment	1/2(+), 3/6(-)
PoE Power Budget	60W maximum (DC 12V power input) 120W maximum (DC 24V ~ 54V power input)
Max. Number of Class 4 PDs	4
PoE Management	PD Alive Check Scheduled Power Recycling PoE Schedule PoE Usage Monitoring
Advanced Functions	
VPN Function	IPSec (Net-to-Net, Host-to-Net) IPSec Remote Server GRE PPTP Server L2TP Server SSL VPN Server SSL VPN Client (Open VPN, Surfshark, NordVPN, PureVPN) WireGuard VPN Server/Client VPN Connection SD-WAN
VPN Tunnels	IPSec: 16 GRE: 5 PPTP: 100 SSL VPN: 200
VPN Throughput	L2TP (1Gbps): 398~458Mbps L2TP/IPsec (1Gbps): 217~236Mbps IPsec/AES128 (1Gbps): 398~458Mbps IPsec/AES256 (1Gbps): 394~451Mbps WireGuard (1Gbps): 482~489Mbps

Encryption Methods	DES, 3DES, AES or AES-128/192/256 encryption PQC TLS (Post-Quantum Cryptography TLS) ready Supports Hybrid Post-Quantum TLS key exchange using ML-KEM (Kyber)
Authentication Methods	MD5/SHA-1/SHA-256/SHA-384/SHA-512 authentication algorithm
Management	
Basic Management Interfaces	Web browser SNMP v1, v2c PLANET Smart Discovery Utility PLANET NMS and CloudNMS (MQTT Protocol)
Secure Management Interfaces	SSHv2, TLSv1.3, SNMP v3
System Log	System Event Log
Others	Setup wizard Dashboard System status/service Statistics Connection status Auto reboot Diagnostics
Standards Conformance	
Regulatory Compliance	CE, FCC
Environment	
Operating	Temperature: -40 ~ 75 degrees C Relative humidity: 5 ~ 90% (non-condensing)
Storage	Temperature: -40 ~ 85 degrees C Relative humidity: 5 ~ 90% (non-condensing)

Dimensions



Ordering Information

ICG-2515P-NR	Industrial 5G NR Cellular Gateway with 4-Port 10/100/1000T PoE+
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Related Products

ICG-2515-NR	Industrial 5G NR Cellular Gateway with 5-Port 10/100/1000T
ICG-2515W-NR	Industrial 5G NR Cellular Wireless Gateway with 5-Port 10/100/1000T
ICG-2515FW-NR	Industrial 5G NR Cellular Wireless Gateway with 1-Port 1000X SFP
LCG-300-NR	Industrial LoRaWAN + 5G NR Cellular Gateway with 5-Port 10/100/1000T
ICG-2210W-NR	Industrial 5G NR Compact Cellular Wireless Gateway with 2-Port 10/100/1000T
FWA-2100-NR	Industrial 5G NR Outdoor Unit (ODU) with 1-port Gigabit PoE PD
VCG-2406WP-NR	Industrial/Vehicle 5G NR Cellular Wireless Gateway with M12 PoE+
ICG-2510WG-LTE	Industrial 4G LTE Cellular Wireless Gateway with 5-Port 10/100/1000T
VCG-1500WG-LTE	Vehicle 4G LTE Cellular Wireless Gateway with 5-Port 10/100TX

Related Power Supply

PWR-40-24 (MEAN WELL -- MDR-40-24)	40W 24V DC Single Output Industrial DIN-rail Power Supply (-20 ~ 70 degrees C)
PWR-60-24 (MEAN WELL -- MDR-60-24)	60W 24V DC Single Output Industrial DIN-rail Power Supply (-20 ~ 70 degrees C)
PWR-75-24 (MEAN WELL -- XDR-75E-24)	75W 24V DC Single Output Industrial DIN-rail Power Supply (-40 ~ 70 degrees C)
PWR-75-48 (MEAN WELL -- XDR-75E-48)	75W 48V DC Single Output Industrial DIN-rail Power Supply (-40 ~ 70 degrees C)
PWR-120-48 (MEAN WELL -- XDR-120E-48)	120W 48V DC Single Output Industrial DIN-rail Power Supply (-40 ~ 70 degrees C)
PWR-240-48 (MEAN WELL -- XDR-240E-48)	240W 48V DC Single Output Industrial DIN-rail Power Supply (-40 ~ 70 degrees C)

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