# Industrial L2+ 8-Port 10/100/1000T 802.3at PoE+ M12 + 2/4-Port 10/100/1000T M12 Managed Ethernet Switch

## Suitable for Transportation Networking Applications

PLANET ITS-5216 Series, an Industrial Layer 2+ Managed Ethernet Switch, comes with an IP50-rated industrial case, **8-port 10/100/1000T 802.3at PoE+** and **2/4-port 10/100/1000T M12 interfaces**, providing a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curb-side traffic control cabinets. The ITS-5216 Series can be easily mounted on a wall taking up less space. Each of the eight Gigabit PoE+ ports provides 36 watts of power, which means a total power budget of up to **100 watts** can be utilized simultaneously without considering the different types of PoE applications being employed. It also provides a quick, safe and cost-effective Power over Ethernet network solution to IP security surveillance for small businesses and enterprises.

## Vibration-proof and Dustproof M12 Ethernet Connector

The ITS-5216 Series is equipped with 10/12-port 10/100/1000BASE-T auto-negotiation dustproof M12 connector. The M12 connector provides tight and strong connection, and guarantees stable Ethernet operation performance under high vibration and shock environment. It comes with the industrial protection rating of IP50 capable of withstanding humidity, dirt, dust, shock, vibrations, heat and cold. The ITS-5216 Series is able to operate under the temperature range from **-40 to 70 degrees C**. All these features ensure the highest level of reliability for mission-critical applications in any difficult environment.

## Bypass Relay Prevents Link Failure During Power Loss

Bypass relay is set to bypass the failed switch to the next normal switch to prevent the network from power loss. The ITS-5216-8P2TB-WV supports the bypass relay function on the one pair of Gigabit ports. When the switch is operating normally, the Gigabit ports operate in the same way as the other ports, processing and forwarding Ethernet packets. Bypass relay ports allow network traffic to continue to flow in the event of a power outage. It also can go back to the normal mode when power is back and the switch is completely booting up to avoid another network loss.

## Physical Port

- ***ITS-5216-8P2TB-WV***
  - **10-port 10/100/1000BASE-T vibration-proof** and **dustproof** M12 X-coded female connectors with 8-port IEEE 802.3at Power over Ethernet Plus Injector function
  - One M12 A-coded 5-pin male connector for USB data to RS232 console interface for basic management and setup
  - One M12 A-coded 5-pin male connector with alarm, digital input and digital output functions
  - One M12 K-coded 5-pin male connector with **input voltage range of 24 to 110 VDC (Operating voltage: 16.8 to 137.5 VDC)**
- ***ITS-5216-8P4T-WV***
  - **12-port 10/100/1000BASE-T vibration-proof** and **dustproof** M12 X-coded female connectors with 8-port IEEE 802.3at Power over Ethernet Plus Injector function
  - One M12 A-coded 5-pin male connector for USB data to RS232 console interface for basic management and setup
  - One M12 A-coded 5-pin male connector with alarm, digital input and digital output functions
  - One M12 K-coded 5-pin male connector with **input voltage range of 24 to 110 VDC (Operating voltage: 16.8 to 137.5 VDC)**

## Industrial Case and Installation

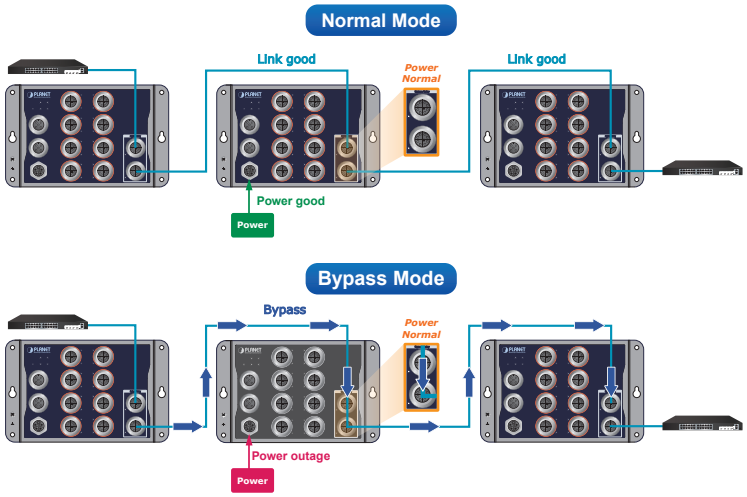
- IP50-rated metal case
- wall-mount design
- 24~110V DC, redundant power with reverse polarity protection
- Supports 6KV DC Ethernet ESD protection
- -40 to 70 degrees C operating temperature
- Dual power input design
  - 24V~110V DC wide power input with reverse polarity protection

## Power over Ethernet

- Complies with IEEE 802.3at Power over Ethernet Plus, end-span PSE
- Up to 8 IEEE 802.3af/802.3at devices powered
- Supports PoE power up to 36 watts for each PoE port
- Up to 100-watt PoE budget
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports

### Dual Power Input for High Availability Network System

The ITS-5216 Series features a strong dual power input system (**Dual 24V~110V DC**) incorporated into customer's automation network to enhance system reliability and uptime. For example, when DC Power 1 fails to work, the hardware failover




function will be activated automatically to keep powering the ITS-5216 Series via DC Power 2 alternatively without any loss of operation.

### Redundant Ring, Fast Recovery for Critical Network Applications

The ITS-5216 Series supports redundant ring technology and features strong, rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates advanced **ITU-T G.8032 ERPS (Ethernet Ring Protection Switching)** technology, Spanning Tree Protocol (802.1s MSTP), and **redundant power** input system into customer's industrial automation network to enhance system reliability and uptime in harsh factory environments. In a simple Ring network, the recovery time of data link can be as fast as 500ms.

### nvenient and Smart ONVIF Devices with Detection Feature

PLANET has newly developed an awesome feature -- ONVIF Support -- which is specifically designed for co-operating with video IP surveillances. From the ITS-

5216 series GUI, clients just need one click to search and show all of the ONVIF devices via network application. In addition, clients can upload floor images to the switch series, making the deployments of surveillance and other devices easy for planning and inspection purposes. Moreover, clients can get real-time surveillance's information and online/offline status; the PoE reboot can be controlled from the GUI.

### Centralized Power Management for Gigabit Ethernet PoE+ Networking

To fulfill the needs of higher power required PoE+ network applications with

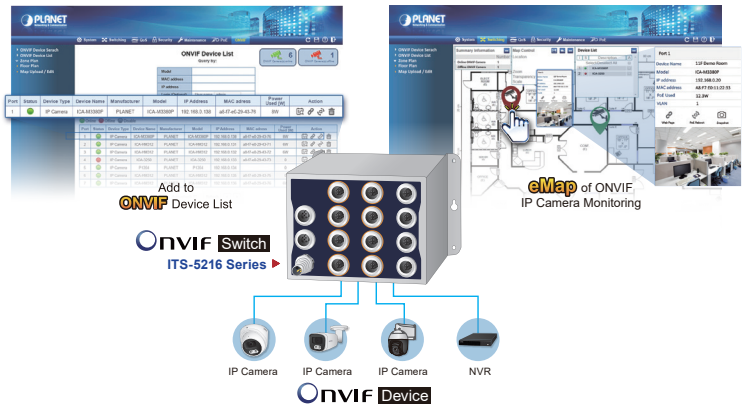
- Remote power feeding up to 100 meters in standard mode and 250m in extend mode
- PoE management features
  - PoE admin-mode control
  - PoE management mode selection
  - PoE Legacy mode selection
  - Total PoE Budget setup option
  - Per port PoE function enable/disable
  - PoE port power feeding priority
  - Per PoE port power limit
  - PoE Port Status monitoring
  - PD classification detection
- Intelligent PoE features
  - PD alive check
  - PoE extension
  - PoE schedule
  - PoE PD scheduled reboot

## Layer 2 Features

- High performance of Store-and-Forward architecture, and runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Storm Control support
  - Broadcast/Multicast/Unicast
- Supports **VLAN**
  - IEEE 802.1Q tagged VLAN
  - Provider bridging (VLAN Q-in-Q, IEEE 802.1ad) support
  - Protocol VLAN
  - Voice VLAN
  - Private VLAN (Protected port)
  - Management VLAN
  - GVRP
- Supports **Spanning Tree Protocol**
  - IEEE 802.1D Spanning Tree Protocol (STP)
  - IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
  - IEEE 802.1s Multiple Spanning Tree Protocol (MSTP), spanning tree by VLAN
  - BPDU Filtering/BPDU Guard
- Supports **Link Aggregation**
  - IEEE 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (static trunk)
- Provides port mirror (many-to-1)
- Port mirroring to monitor the incoming or outgoing traffic on a particular port
- Loop protection to avoid broadcast loops
- Supports ERPS (Ethernet Ring Protection Switching)
- Link Layer Discovery Protocol (LLDP)

## Quality of Service

- Ingress/Egress Rate Limit per port bandwidth control




Gigabit speed transmission, the ITS-5216 Series features high-performance Gigabit IEEE 802.3at PoE+ (up to 36 watts) on PoE+ ports. It perfectly meets the power requirements of PoE VoIP phone, PoE Wireless AP and all kinds of PoE IP cameras such as IR, PTZ, speed dome cameras and even box type IP cameras with a built-in fan and heater for high power consumption. The ITS-5216 Series PoE capabilities also help to reduce deployment costs for network devices as a result of freeing from restrictions of power outlet locations. Power and data switching are integrated into one unit, delivered over a single cable and managed centrally. It thus eliminates cost for additional AC wiring and reduces installation time.

### Built-in Unique PoE Functions for Surveillance Management

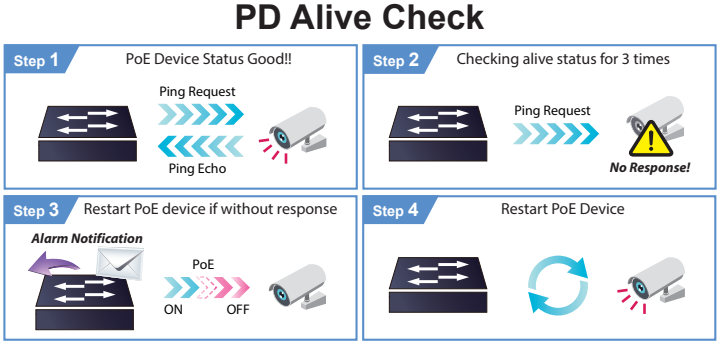
As an Industrial managed PoE Switch for surveillance network, the ITS-5216 Series features the following intelligent PoE management functions:

- **PD Alive Check**
- **PoE Schedule**
- **Scheduled Power Recycling**

### Intelligent Alive Check for Powered Device

The ITS-5216 Series can be configured to monitor connected PD's status in real time via ping action. Once the PD stops working and responding, the ITS-5216 Series will recycle the PoE port power and bring the PD back to work. It also greatly enhances the reliability in that the PoE port will reset the PD power, thus reducing administrator's management burden.

### PoE Schedule for Energy Saving




- Traffic classification
  - IEEE 802.1p CoS
  - DSCP
  - IP precedence of IPv4/IPv6 packets
- Strict priority and Weighted Round Robin (WRR) CoS policies
- Port-based DSCP remarking
- Voice VLAN

## Multicast

- Supports IPv4 IGMP snooping v1, v2 and v3
- Supports IPv6 MLD snooping v1 and v2
- IGMP Querier mode support
- IPv4 IGMP snooping port filtering
- IPv6 MLD snooping port filtering

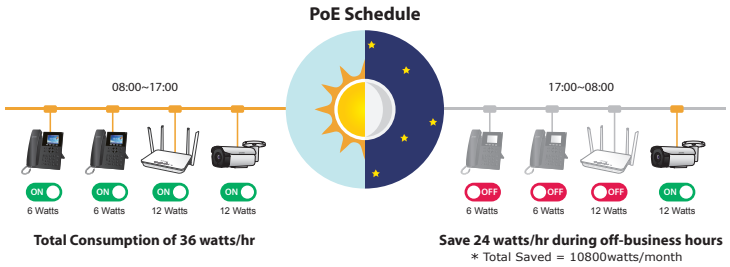
## Security

- Authentication
  - IEEE 802.1x port-based network access authentication
  - Built-in RADIUS client to co-operate with the RADIUS servers
  - RADIUS/TACACS+ users access authentication
- Access Control List
  - IPv4/IPv6 IP-based Access Control List (ACL)
  - MAC-based Access Control List
- MAC Security
  - Static MAC
  - MAC filtering
- DHCP Snooping to filter un-trusted DHCP messages
- Dynamic ARP Inspection discards ARP packets with invalid MAC address to IP address binding
- IP Source Guard prevents IP spoofing attacks
- IP address access management to prevent unauthorized intruder
- DoS attack prevention

## Management

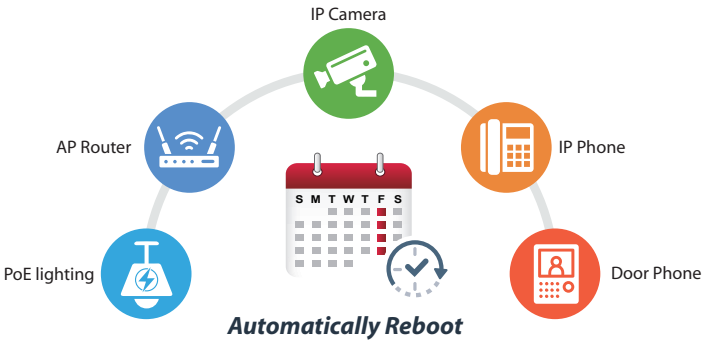
- IPv4 and IPv6 dual stack management
- Switch Management Interfaces
  - Web switch management
  - Console and Telnet Command Line Interface
  - SNMP v1 and v2c switch management
  - SSHv2, TLSv1.3 and SNMP v3 secure access
- SNMP Management
  - SNMP trap for interface Link Up and Link Down notification
  - Four RMON groups (history, statistics, alarms and events)
- User privilege levels control
- Built-in Trivial File Transfer Protocol (TFTP) client
- Static and DHCP for IP address assignment

Besides being used for IP surveillance, the ITS-5216 Series is certainly applicable to build any PoE network including VoIP and wireless LAN. Under the trend of energy saving worldwide and contributing to the environmental protection on the Earth, the ITS-5216 Series 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 and enterprises save energy and budget.




## Scheduled Power Recycling

The ITS-5216 Series allows each of the connected PoE IP cameras or PoE wireless access points to reboot at a specific time each week. Therefore, it will reduce the chance of IP camera or AP crash resulting from buffer overflow.



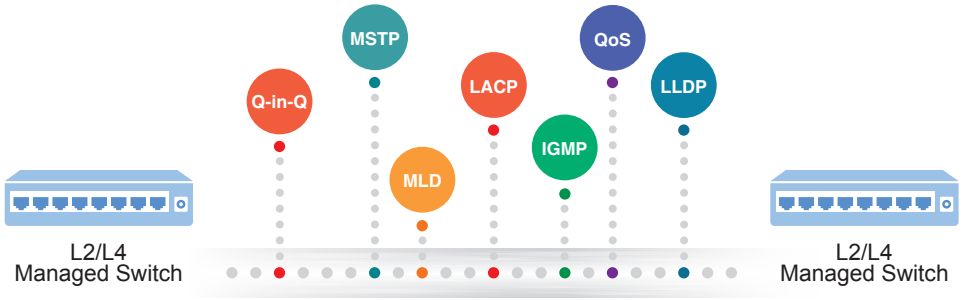

- System Maintenance
  - Firmware upload/download via HTTP/TFTP
  - Configuration upload/download through HTTP/TFTP
  - Dual images
- DHCP Functions:
  - DHCP Relay
  - DHCP Option82
- User Privilege levels control
- SNTP Network Time Protocol
- Link Layer Discovery Protocol (LLDP) and LLDP-MED
- Network Diagnostic
  - ICMPv6/ICMPv4 Remote Ping
  - Cable Diagnostic technology provides the mechanism to detect and report potential cabling issues
- Syslog remote alarm
- System Log
- PLANET Smart Discovery Utility for deployment management
- PLANET NMS system and CloudNMS for deployment management

## Cybersecurity Network Solution to Minimize Security Risks

The ITS-5216 Series supports SSHv2 and TLSv1.3 protocols to provide strong protection against advanced threats. It includes a range of cybersecurity features such as **DHCP Snooping**, **IP Source Guard**, **ARP Inspection** Protection and **802.1x port-based** network access control, **RADIUS** and **TACACS+** user accounts management, **SNMPv3** authentication, and so on to complement it as an all-security solution.

## Robust Layer 2 Features

The ITS-5216 Series can be programmed for advanced switch management functions such as dynamic port link aggregation, private VLAN, Multiple Spanning Tree Protocol (MSTP), Layer 2 to Layer 4 QoS, bandwidth control and IGMP/MLD Snooping. Via the link aggregation of supporting ports, the ITS-5216 Series allows the operation of a high-speed trunk to combine with multiple fiber ports and supports fail-over as well.



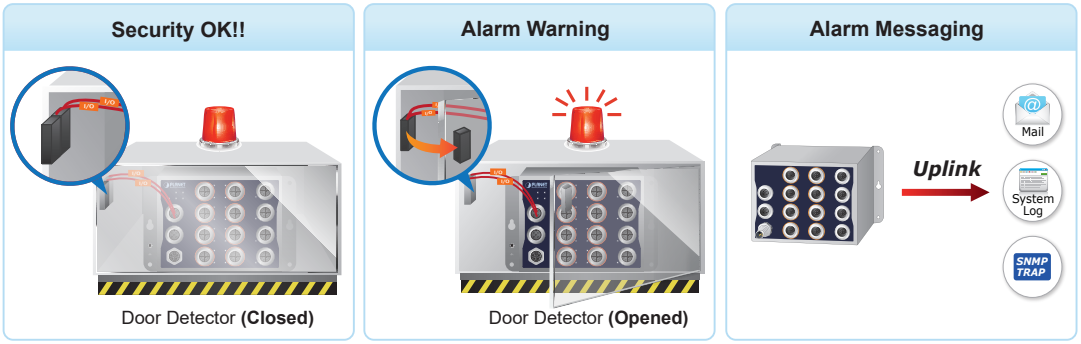

## Excellent Traffic Control

The ITS-5216 Series is loaded with powerful traffic management and QoS features to enhance connection services by telecoms and ISPs. The QoS features include wire-speed Layer 4 traffic classifiers and bandwidth limit that are particularly useful for multi-tenant units, multi-business units, Telco and network service providers' applications. It also empowers the industrial environment to take full advantage of the limited network resources and guarantees the best performance in VoIP and video conferencing transmission.

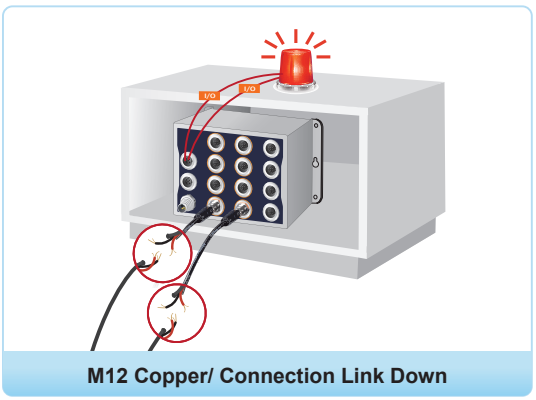
## Digital Input and Digital Output for External Alarm

This external alarm system enables users to utilize a Digital Input to monitor and log the status of external devices, such as door intrusion detectors, and send event alarms to administrators. The Digital Output can be used to alarm administrators of any changes in link status, whether the link is down or up, on the ITS-5216 series port.

### Digital Input



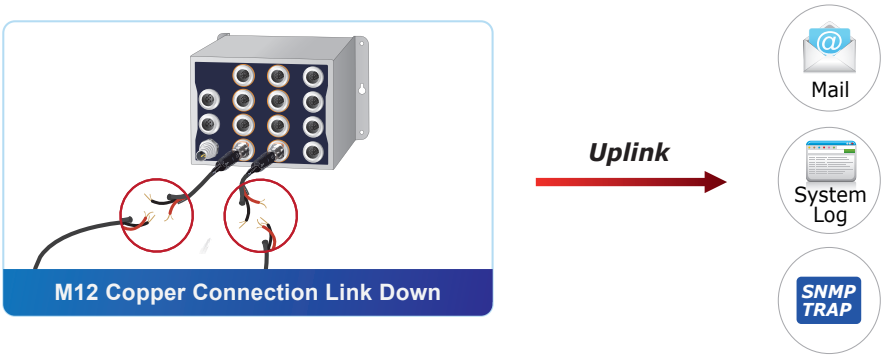

### Digital Output



### Effective Alarm Alert for Better Protection

The ITS-5216 series includes a Fault Alarm feature that promptly alerts users to any issues with the switches. This valuable functionality eliminates the need for users to spend time identifying the problem, resulting in significant savings in both time and human resources.

## Fault Alarm Feature

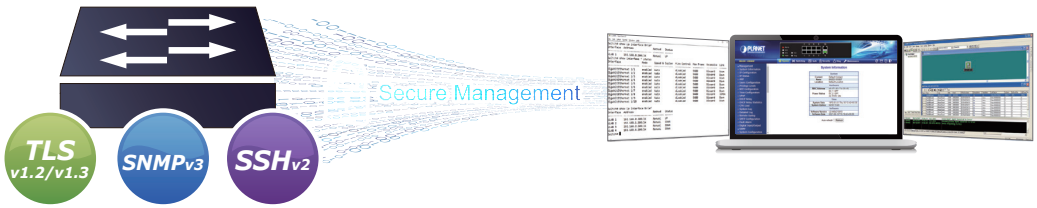



### Friendly and Secure Management

For efficient management, the ITS-5216 Series is equipped with Command line, Web and SNMP management interfaces.

- With the built-in Web-based management interface, the ITS-5216 Series offers an easy-to-use, platform-independent management and configuration facility.
- For text-based management, it can be accessed via Telnet and the console port.
- By supporting the standard SNMP protocol, the switch can be managed via any SNMP-based management software.

Moreover, the ITS-5216 Series offers secure remote management by supporting SSHv2, TLSv1.3 and SNMP v3 connections which encrypt the packet content at each session.



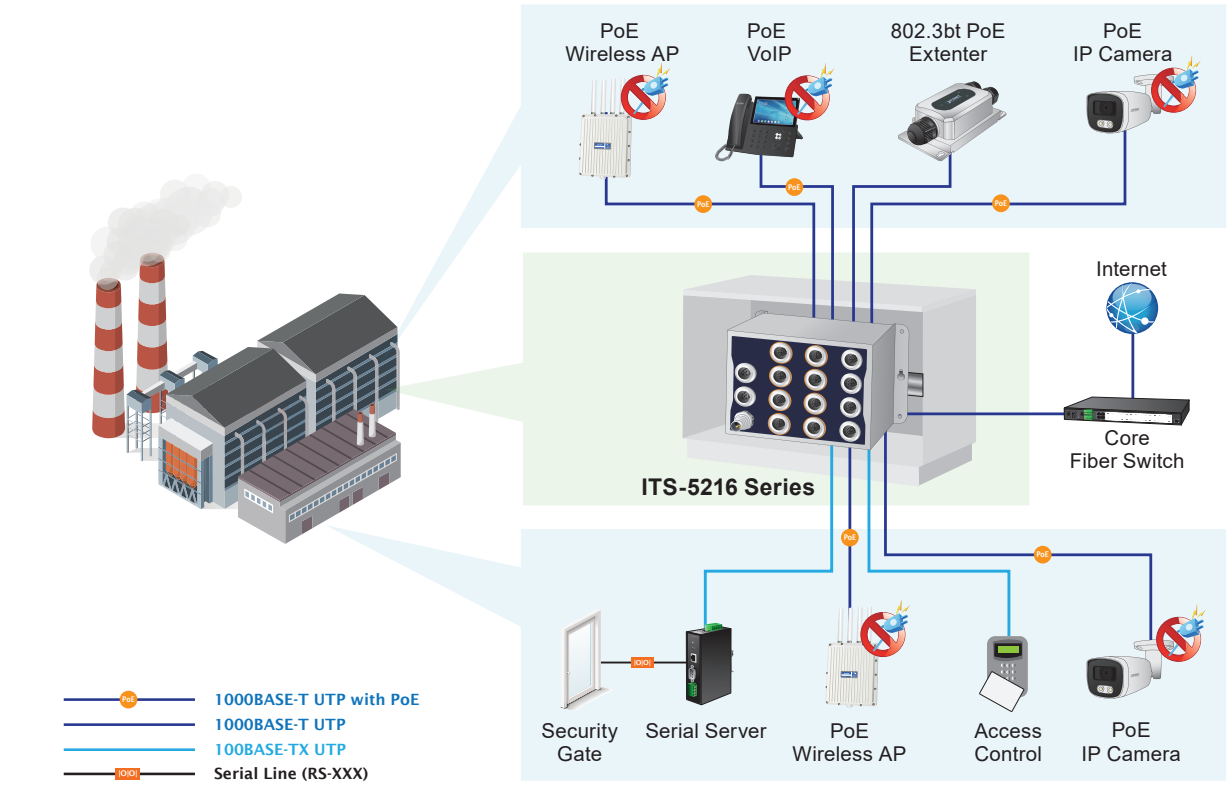

### Remotely Manage Solution

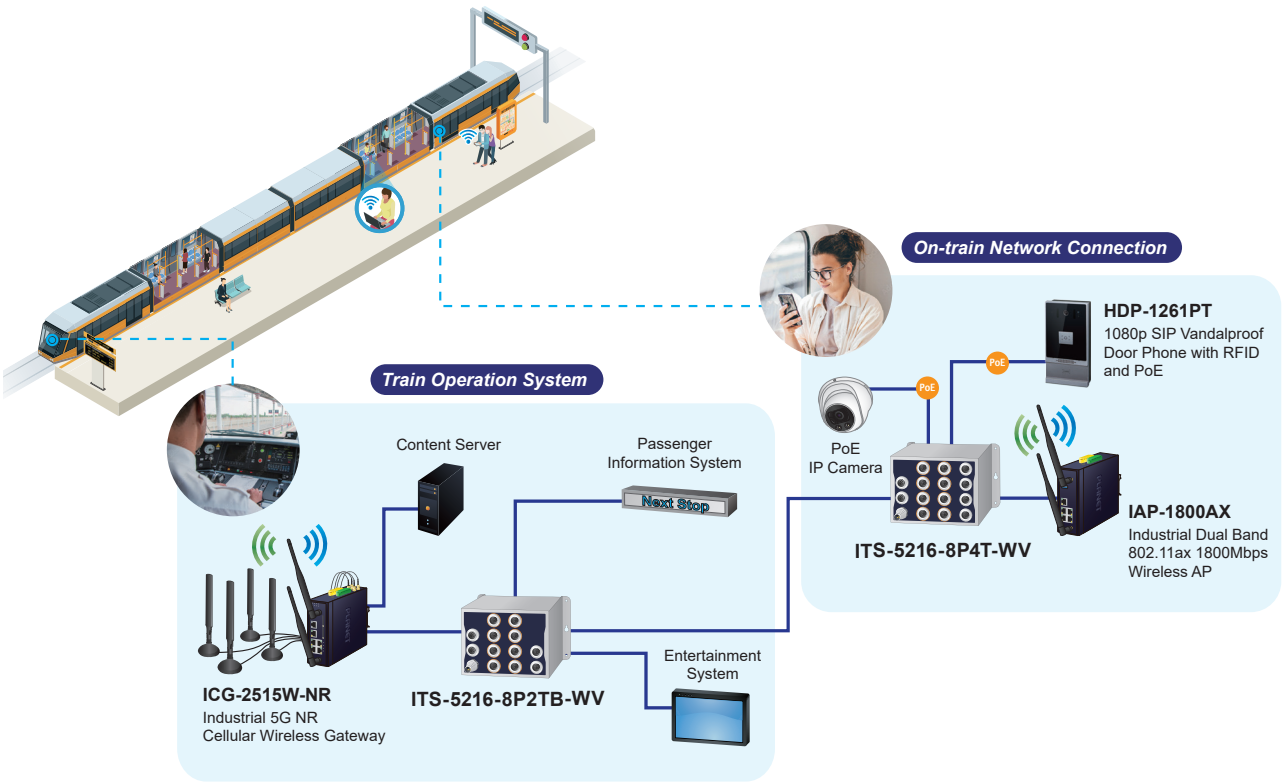
PLANET's Universal Network Management System (UNI-NMS) and CloudNMS App support IT staff to remotely manage all network devices and monitor the PDs' operation statuses. Thus, they're designed for both the enterprises and industries where deployments of PDs can be as remote as possible, without having to go to the actual location once a bug or faulty condition is found. With the UNI-NMS or CloudNMS App, all kinds of businesses can now be speedily and efficiently managed from one platform.

# Applications

## High Availability Networking Solution for Intelligent Transportation System

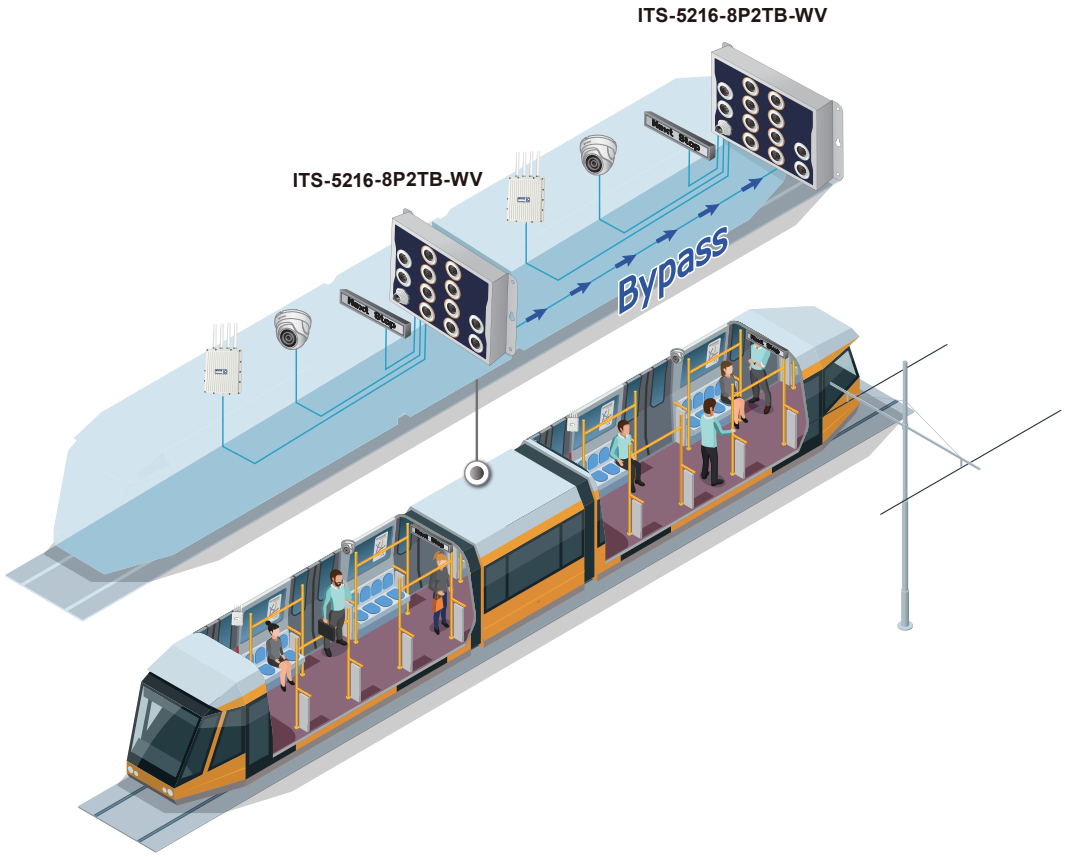
The ITS-5216 Series strong, rapid, self-recovery capability helps to prevent network interruptions and external intrusions. Customer's automation network is integrated with ITU-T G.8032 ERPS (Ethernet Ring Protection Switching) so as to enhance system reliability and uptime. The ITS-5216 Series is the ideal solution for surveillance system to build redundant connection and establish high bandwidth for the public and railway transmission system.



### Bypass Relay Solution for Daisy Chain Topology

In a daisy chain topology, if there is one failed node, it will cause the failed links of other switches. For railway communication systems with interconnected networks, the failed upstream link in one train car will impact on the downstream link in other train cars. To prevent such a failure, the ITS-5216-8P2TB-WV offers two ports with a bypass relay function. If one of the switches has power loss, the other ports of the switch will bypass the failed relay circuit, enabling the network traffic to continue to flow smoothly to assure continuous system operation.




## Specifications

| Product | ITS-5216-8P2TB-WV | ITS-5216-8P4T-WV |
|---|---|---|
| Hardware Specifications | | |
| Copper Ports | 10 x M12, 8-pin X-coded female connector,<br>10/100/1000BASE-T auto-MDI/MDI-X ports | 12 x M12, 8-pin X-coded female connector,<br>10/100/1000BASE-T auto-MDI/MDI-X ports |
| PoE Inject Ports | 8 x M12, 8-pin X-coded female connector, 10/100/1000BASE-T auto-MDI/MDI-X ports (Port-1 to Port-8) | |
| Bypass Function (Pair) | 1-pair, Port-9 and Port-10 | - |
| Console | USB Data to RS232 serial port (115200, 8, N, 1)<br>1 x M12 A-coded 5-pin female connector | |
| Reset Button | < 5 sec.: System reboot<br>> 5 sec.: Factory default | |
| Alarm & DI & DO Ports | 1 x M12 A-coded 5-pin female connector for DI/DO and alarm interface<br>Pin 1 for DI and Pin 2 for DO<br>Pin 3/4 for Alarm<br>Pin 5 for GND | |
| Alarm | One relay output for port breakdown and power failure.<br>Alarm relay current carry ability: 1A @ 24V DC | |
| Digital Input (DI) | One digital input (DI)<br>Level 0: -24V~2.1V (±0.1V)<br>Level 1: 2.1V~24V (±0.1V)<br>Input load to 24V DC, 10mA max. | |
| Digital Output (DO) | One digital output (DO)<br>Open collector to 24V DC, 100mA max. | |
| Power Connector | 1 x M12, 5-pin K-coded male connector | |
| Power Requirements | Dual 24~110V DC | |

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| Power Consumption | Max. 17.3 watts/59.06BTU (Power on without any connection)<br>Max. 120.8 watts/412.14BTU (Full loading) | |
| Dimensions (W x D x H) | 176 x 107 x 110 mm | |
| Weight | 2227g | 2234g |
| Enclosure | IP50 metal case | |
| Installation | Wall-mount | |
| ESD Protection | Air: 8KV<br>Contact: 6KV DC | |
| Surge Protection | 6KV DC | |
| LED | System:<br>PWR1 (Green), PWR2 (Green), Alarm (Red)<br>Ring (Green), R.O. (Green)<br>10/100/1000T RJ45 Interfaces :<br>1000 LNK/ACT (Green); 10/100 LNK/ACT (Amber)<br>PoE-in-Use (Amber) (Port-1 to Port-8) | |
| **Switching Specifications** | | |
| Switch Architecture | Store-and-Forward | |
| Switch Fabric | 20Gbps/non-blocking | 24Gbps/non-blocking |
| Throughput | 14.88Mpps @64 bytes | 17.68Mpps @64 bytes |
| MAC Address Table | 32K entries | |
| Shared Data Buffer | 12 megabits | |
| Flow Control | IEEE 802.3x pause frame for full duplex<br>Back pressure for half duplex | |
| Jumbo Frame | 12Kbytes | |
| **Power over Ethernet** | | |
| PoE Standard | IEEE 802.3at Power over Ethernet Plus, Power source equipment<br>Backward compatible with IEEE 802.3af Power over Ethernet | |
| PoE Power Supply Type | End-span | |
| Power Pin Assignment | 1/2(+), 3/6(-) | |
| PoE Power Output | Per port 54V DC, max. 36 watts (IEEE 802.3at) | |
| PoE Power Budget | 80W, DC input <= 36V DC<br>100W, DC input > 36V DC | |
| **PoE Management Functions** | | |
| PoE Management | PD Alive Check<br>Scheduled Power Recycling<br>PoE Schedule<br>PoE Usage Monitoring<br>PoE Extension | |
| Enhanced PoE Mode | Standard/Legacy/Force | |
| Active PoE Device Live Detection | Yes | |
| PoE Power Recycling | Yes, daily or predefined schedule | |
| PoE Schedule | 4 schedule profiles | |
| PoE Extend Mode | Yes, max. up to 250 meters | |
| **Layer 2 Management Functions** | | |
| Port Configuration | Port disable/enable<br>Auto-negotiation 10/100/1000Mbps full and half duplex mode selection<br>Flow control disable/enable | |
| Port Status | Display each port's speed duplex mode, link status, flow control status, auto negotiation status, trunk status | |
| Port Mirroring | TX/RX/Both<br>Many-to-1 monitor<br>Up to 4 sessions | |
| VLAN | IEEE 802.1Q tagged-based VLAN<br>Up to 256 VLAN groups, out of 4094 VLAN IDs<br>IEEE 802.1ad Q-in-Q tunneling (VLAN stacking)<br>Voice VLAN<br>Protocol VLAN<br>Private VLAN (Protected port)<br>GVRP<br>Management VLAN | |
| Link Aggregation | IEEE 802.3ad LACP and static trunk<br>Supports 8 groups with 8 ports per trunk | |

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| Spanning Tree Protocol | IEEE 802.1D Spanning Tree Protocol (STP)<br>IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)<br>IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)<br>STP BPDU guard, BPDU filtering and BPDU forwarding |
| IGMP Snooping | IPv4 IGMP (v1/v2/v3) snooping<br>IPv4 IGMP querier mode support<br>Up to 255 multicast groups |
| MLD Snooping | IPv6 MLD (v1/v2) snooping<br>Up to 255 multicast groups |
| QoS | 8 mapping IDs to 8 level priority queues<br>- Port Number<br>- 802.1p priority<br>- DSCP/IP precedence of IPv4/IPv6 packets<br>Traffic classification based, strict priority and WRR |
| Bandwidth Control | Per port bandwidth control<br>Ingress: 16-1,000,000Kbps<br>Egress: 16-1,000,000Kbps |
| Storm Control | Per port storm control<br>- Broadcast<br>- Unknown Multicast<br>- Unknown Unicast<br>Rate 16-1,000,000Kbps |
| Ring | Supports ERPS, and complies with ITU-T G.8032<br>Recovery time < 450ms |
| Layer 3 Functions | |
| IP Interfaces | Max. 64 VLAN interfaces |
| Routing Table | Max. 32 routing entries |
| Routing Protocols | IPv4/IPv6 hardware static routing |
| Layer 3 Functions | |
| IP Interfaces | Max. 64 VLAN interfaces |
| Routing Table | Max. 32 routing entries |
| Routing Protocols | IPv4/IPv6 hardware static routing |
| Security Functions | |
| Access Control List | IPv4/IPv6 IP-based ACL/MAC-based ACL<br>IPv4/IPv6 IP-based ACE/MAC-based ACE<br>Max. 256 ACL entries |
| Port Security | IEEE 802.1X – Port-based authentication<br>Built-in RADIUS client to co-operate with RADIUS server<br>RADIUS/TACACS+ user access authentication |
| MAC Security | IP-MAC port binding<br>MAC filter<br>Static MAC address, Max. 256 static MAC entries |
| Enhanced Security | DHCP Snooping and DHCP Option82<br>STP BPDU guard, BPDU filtering and BPDU forwarding<br>DoS attack prevention<br>ARP inspection<br>IP source guard |
| Management | |
| Basic Management Interfaces | USB to M12 RS232 Console<br>Web browser<br>Telnet<br>SNMP v1, v2c |
| Secure Management Interfaces | SSHv2, TLSv1.3, SNMP v3 |
| System Management | Firmware upgrade by HTTP/TFTP protocol through Ethernet network<br>Configuration upload/download through HTTP/TFTP<br>LLDP protocol<br>SNTP<br>PLANET Smart Discovery Utility<br>PLANET NMS System/CloudNMS |
| Event Management | Remote/Local Syslog<br>System log<br>SMTP remote alarm |

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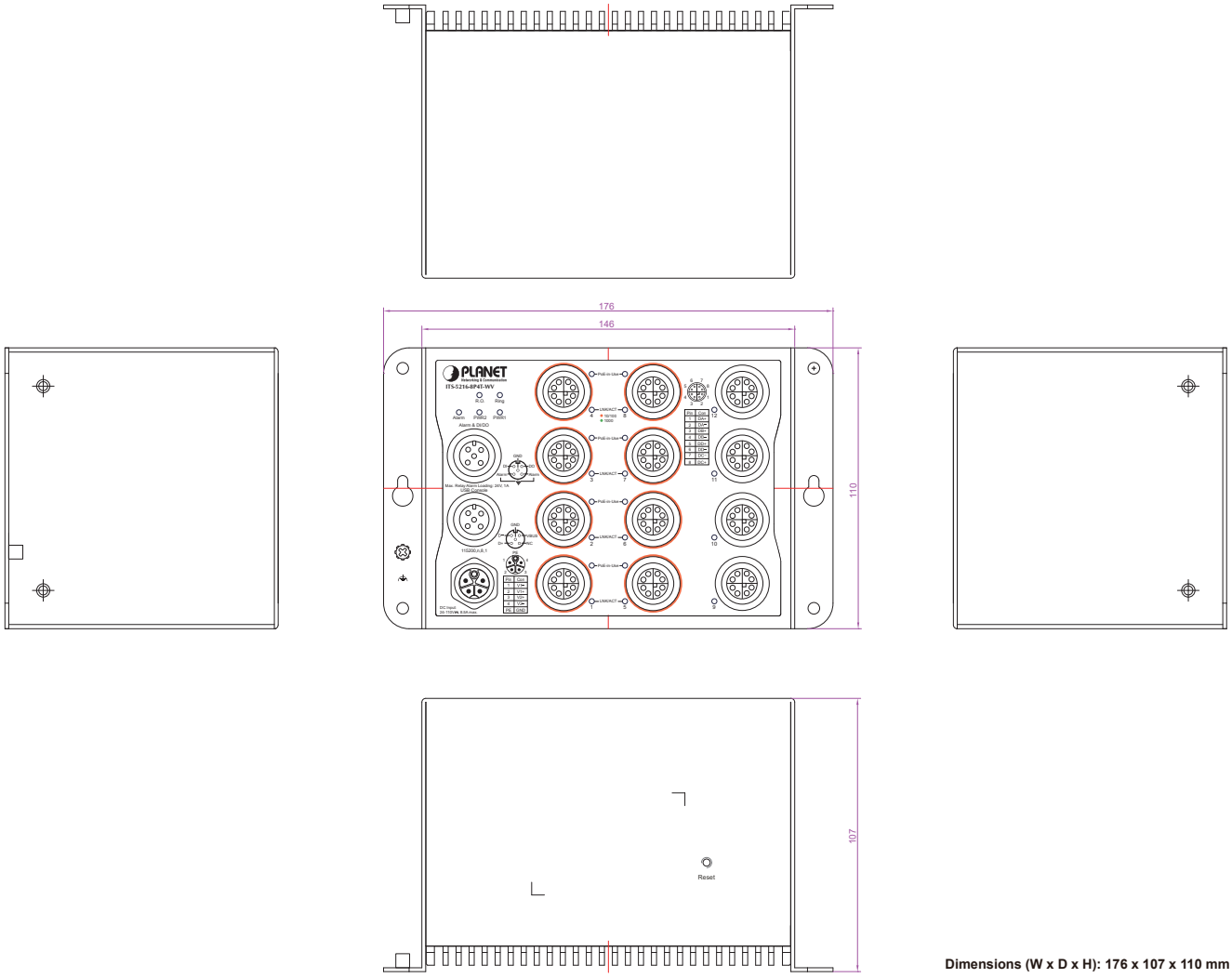
|---|---|
| SNMP MIBs | RFC 1213 MIB-II<br>RFC 1215 Generic Traps<br>RFC 1493 Bridge MIB<br>RFC 2674 Bridge MIB Extensions<br>RFC 2737 Entity MIB (Version 2)<br>RFC 2819 RMON (1, 2, 3, 9)<br>RFC 2863 Interface Group MIB<br>RFC 3635 Ethernet-like MIB<br>RFC 3621 Power Ethernet MIB<br>LLDP MIB<br>PLANET-Aggr-MIB<br>PLANET-DDMI-MIB<br>PLANET-Firmware-MIB<br>PLANET-GVRP-MIB<br>PLANET-LACP-MIB<br>PLANET-SYSUTIL-MIB |
| Standards Conformance | |
| Regulatory Compliance | FCC Part 15 Class A<br>CE:<br>EN55032<br>EN55035 |
| Stability Testing | IEC 60068-2-32 (free fall)<br>IEC 60068-2-27 (shock)<br>IEC 60068-2-6 (vibration) |
| Standards Compliance | IEEE 802.3 10BASE-T<br>IEEE 802.3u 100BASE-TX<br>IEEE 802.3ab Gigabit 1000T<br>IEEE 802.3x flow control and back pressure<br>IEEE 802.3ad port trunk with LACP<br>IEEE 802.1D Spanning Tree Protocol<br>IEEE 802.1w Rapid Spanning Tree Protocol<br>IEEE 802.1s Multiple Spanning Tree Protocol<br>IEEE 802.1p Class of Service<br>IEEE 802.1Q VLAN tagging<br>IEEE 802.1ad Q-in-Q VLAN stacking<br>IEEE 802.1X Port Authentication Network Control<br>IEEE 802.1ab LLDP<br>IEEE 802.3af Power over Ethernet<br>IEEE 802.3at Power over Ethernet Plus<br>IEEE 802.3az Energy Efficient Ethernet (EEE)<br>RFC 768 UDP<br>RFC 793 TFTP<br>RFC 791 IP<br>RFC 792 ICMP<br>RFC 2068 HTTP<br>RFC 1112 IGMP v1<br>RFC 2236 IGMP v2<br>RFC 3376 IGMP version 3<br>RFC 2710 MLD version 1<br>RFC 3810 MLD version 2<br>ITU-T G.8032 ERPS Ring |
| Environment | |
| Operating | Temperature: -40 ~ 70 degrees C<br>Relative Humidity: 5 ~ 95% (non-condensing) |
| Storage | Temperature: -40 ~ 85 degrees C<br>Relative Humidity: 5 ~ 95% (non-condensing) |

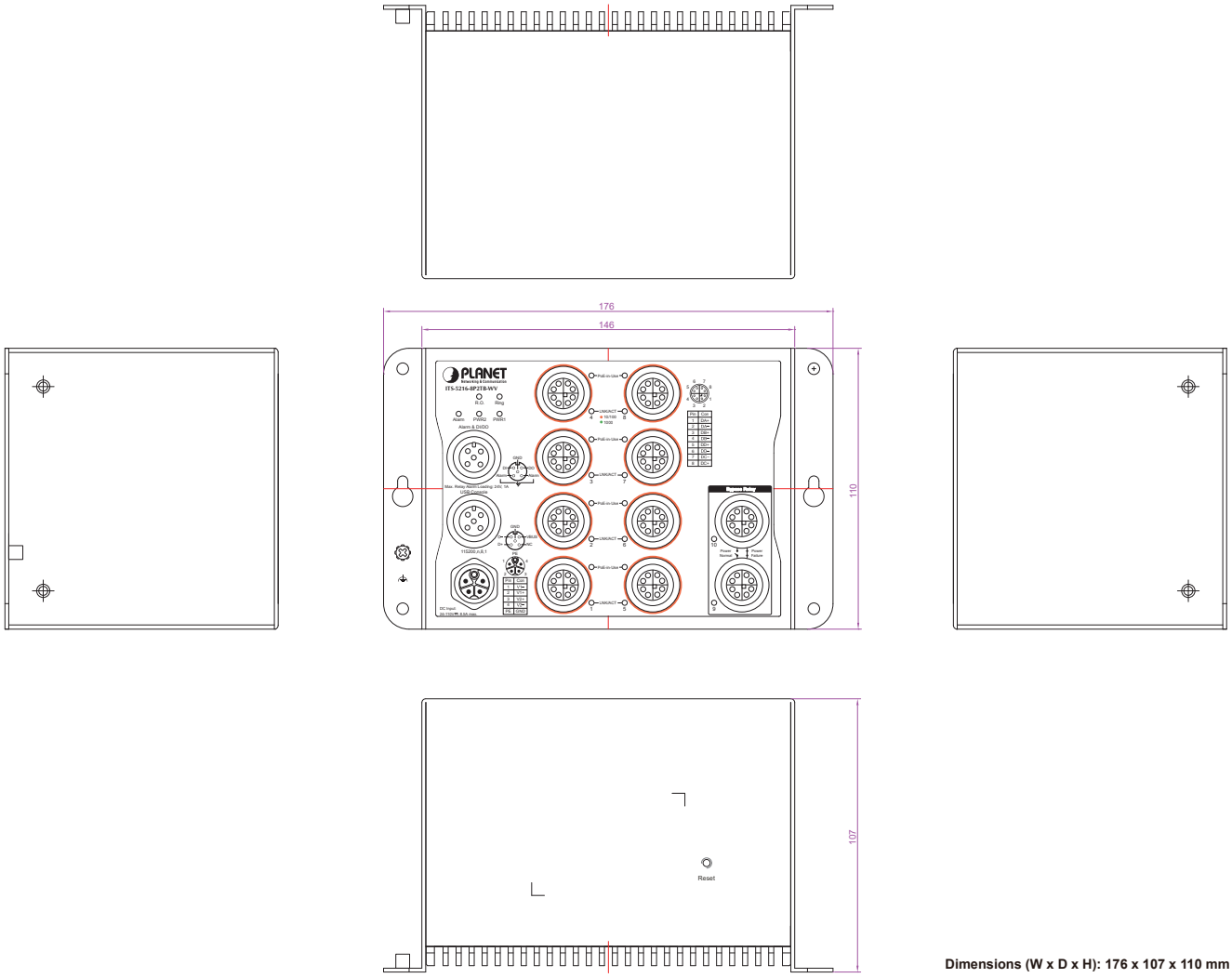
# Dimensions

■ ITS-5216-8P4T-WV




**Dimensions (W x D x H): 176 x 107 x 110 mm**

■ ITS-5216-8P2TB-WV




**Dimensions (W x D x H): 176 x 107 x 110 mm**

## Related Products

| | |
|---|---|
| ITS-5216-8P4T-WV | Industrial L2+ 8-Port 10/100/1000T 802.3at PoE M12 + 4-Port 10/100/1000T M12 Managed Ethernet Switch (-40~70 degrees C) |
| ITS-5216-8P2TB-WV | Industrial L2+ 8-Port 10/100/1000T 802.3at PoE M12 + 2-Port 10/100/1000T M12 Bypass Managed Ethernet Switch (-40~70 degrees C) |

## Accessories

| | |
|---|---|
| CB-M12X8MRJ-200 | 8-pin X-coded M12 Male to RJ45 Ethernet Cable (2 meters) |
| CB-M12A5MUSB-100 | 5 Pin A-Coded M12 Male to USB Type-A Cable, 1 meters |
| CB-M12A5MF-120 | 5-Pin A-Coded M12 Male to bare end power or I/O cable, 1.2 meters |
| CB-M12K5FF-120 | 5-Pin K-coded M12 Female to bare end power cable, 1.2 meters |

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