

# Industrial L2+ 8-Port 10/100/1000T M12 Wall-mount Managed Switch



## Easily-deployed and Expanded Network

PLANET WGS-5225-8MT managed switch offers eight 10/100/1000BASE-T M12 ports and is housed in an IP40-rated enclosure with redundant 9-48 VDC power inputs. Designed to be deployed in the industrial environments, the WGS-5225-8MT offers wire-speed throughput, shock and vibration proofing, and a wide -40° to 75°C operating temperature range.

The WGS-5225-8MT offers IPv6/IPv4 dual stack management, **intelligent Layer 2 management functions**, and **user-friendly interface**. The WGS-5225-8MT is able to operate reliably, stably and quietly in railway and other industrial applications subject to shock, vibration and other extreme conditions without affecting its performance. Besides, the WGS-5225-8MT with bypass relay ports ensure non-stop data flow even in the event of a power outage.



## 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 WGS-5225-8MT 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

- **8-port 10/100/1000BASE-T, vibration-proof and dustproof** M12 X-coded female connectors

## Industrial Hardened Design

- **1 pair** of bypass protection
- IP40-rated metal case
- Redundant power design
  - **9 to 48V DC**, redundant power with reverse polarity protection
  - Active-active redundant power failure protection
  - Backup of catastrophic power failure on one supply
  - Fault tolerance and resilience
- DIN-rail and wall-mount designs
- Supports 6000V DC Ethernet ESD protection
- -40 to 75 degrees C operating temperature

## Industrial Protocol

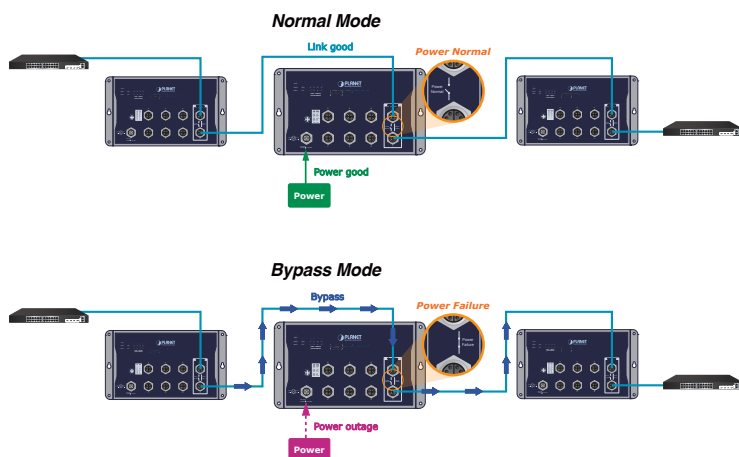
- **Modbus TCP** for real-time monitoring in SCADA system
- **IEEE 1588v2 PTP (Precision Time Protocol)**

## Layer 3 IP Routing Features

- Supports maximum 32 static routes and route summarization

## Layer 2 Features

- High performance of Store-and-Forward architecture, and runt/CRC filtering that eliminates erroneous packets to optimize the network bandwidth
- Storm control support
  - Broadcast/Multicast/Unicast
- Supports **VLAN**
  - IEEE 802.1Q tagged VLAN
  - Provides Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
  - Private VLAN Edge (PVE)
  - Protocol-based VLAN
  - MAC-based VLAN
  - IP subnet-based VLAN
  - Voice VLAN
  - GVRP (GARP VLAN Registration Protocol)
- 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),



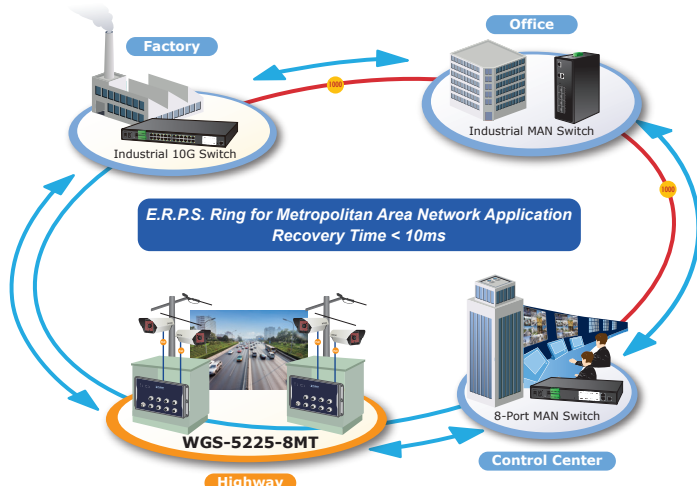
### Vibrationproof and Dustproof M12 Ethernet Connector

The WGS-5225-8MT is equipped with 8-port 10/100/1000BASE-T, auto-negotiation, vibration-proof, waterproof and dustproof M12 connector. The M12 connector provides tight and strong connection, and guarantees stable Ethernet operating performance in a high vibration and shock environment. It comes with the industrial protection rating of IP67 capable of withstanding humidity, dirt, dust, shock, vibrations, heat and cold.



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

The WGS-5225-8MT 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 certain simple Ring network, the recovery time of data link can be as fast as 10ms.



spanning tree by VLAN

– BPDU Guard

• Supports **Link Aggregation**

– 802.3ad Link Aggregation Control Protocol (LACP)

– Cisco ether-channel (static trunk)

– Maximum 4 trunk groups, with 8 ports for each trunk

– Up to 16Gbps bandwidth (full duplex mode)

• Provides port mirror (many-to-1)

• Port mirroring monitors the incoming or outgoing traffic on a particular port

• Loop protection to avoid broadcast loops

• Supports ITU-T G.8032 ERPS (Ethernet Ring Protection Switching)

• Compatible with Cisco **Uni-directional link detection (UDLD)** that monitors a link between two switches and blocks the ports on both ends of the link if the link fails at any point between the two devices

• Link Layer Discovery Protocol (LLDP)

### Quality of Service

• Ingress shaper and egress rate limit per port bandwidth control

• 8 priority queues on all switch ports

• Traffic classification

– IEEE 802.1p CoS

– ToS/DSCP/IP precedence of IPv4/IPv6 packets

– IP TCP/UDP port number

– Typical network application

• Strict priority and Weighted Round Robin (WRR) CoS policies

• Traffic-policing on the switch port

• DSCP remarking

### Multicast

• Supports IPv4 IGMP snooping v1, v2 and v3

• Supports IPv6 MLD snooping v1 and v2

• Querier mode support

• IPv4 IGMP snooping port filtering

• IPv6 MLD snooping port filtering

• MVR (Multicast VLAN Registration)

### Security

• Authentication

– IEEE 802.1x port-based/MAC-based network access authentication

– IEEE 802.1x authentication with guest VLAN

### Network with Cybersecurity Helps Minimize Security Risks

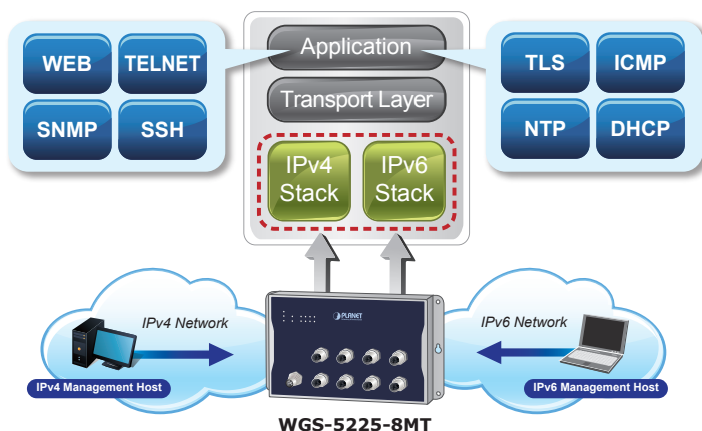
The WGS-5225-8MT comes with enhanced cybersecurity to fend off cyberthreats and cyberattacks. It supports SSHv2 and TLSv1.2 protocols to provide strong protection against advanced threats. Served as a key point to transmit data to customer's critical equipment in a business network, the cybersecurity feature of the WGS-5225-8MT protects the switch management and enhances the security of the mission-critical network without any extra deployment cost and effort.

### Layer 3 IPv4 and IPv6 Software VLAN Routing for Secure and Flexible Management

To help customers stay on top of their businesses, the WGS-5225-8MT not only provides high transmission performance and excellent Layer 2 technologies, but also IPv4/IPv6 software VLAN routing feature which allows to cross over different VLANs and different IP addresses for the purpose of having a highly-secure, flexible management and simpler networking application.

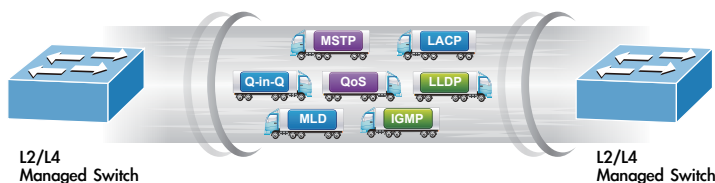
### IPv6/IPv4 Dual Stack Management

Supporting both IPv6 and IPv4 protocols, the WGS-5225-8MT helps the SMBs to step in the IPv6 era with the lowest investment as its network facilities need not be replaced or overhauled if the IPv6 edge network is set up.



### Robust Layer 2 Features

The WGS-5225-8MT can be programmed for advanced switch management functions such as dynamic port link aggregation, 802.1Q VLAN, **Q-in-Q VLAN**, **Multiple Spanning Tree Protocol (MSTP)**, Loop and **BPDU Guard**, **IGMP Snooping**, and MLD Snooping. Via the link aggregation, the WGS-5225-8MT allows the operation of a high-speed trunk to combine with multiple ports such as a 4Gbps fat pipe, and supports fail-over as well. Also, the **Link Layer Discovery Protocol (LLDP)** is the Layer 2 protocol included to help discover basic information about neighboring devices on the local broadcast domain.



- Built-in RADIUS client to cooperate with the RADIUS servers
- RADIUS/TACACS+ users access authentication
- Access Control List
  - IP-based Access Control List (ACL)
  - MAC-based Access Control List (ACL)
- Source MAC/IP address binding
- DHCP Snooping to filter distrusted 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

### Management

- IPv4 and IPv6 dual stack management
- Switch Management Interfaces
  - Telnet command line interface
  - Web switch management
  - SNMP v1, v2c, and v3 switch management
  - SSHv2 and TLSv1.2 secure access
- SNMP Management
  - Four RMON groups (history, statistics, alarms, and events)
  - SNMP trap for interface Link Up and Link Down notification
- **IPv6** address/NTP management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- System Maintenance
  - Firmware upload/download via HTTP/TFTP
  - Reset button for system reboot or reset to factory default
  - Dual images
- DHCP relay and option 82
- DHCP server
- User privilege levels control
- NTP (Network Time Protocol)
- Link Layer Discovery Protocol (LLDP) and LLDP-MED
- Network diagnostic
  - Cable diagnostic technology provides the mechanism to detect and report potential cabling issues
  - ICMPv6/ICMPv4 remote ping
- SMTP, Syslog and SNMP trap remote alarm
- System Log
- PLANET UNI-NMS (Universal Network Management) and Smart Discovery Utility for deployment management