Industrial L2+ 8-Port 10/100/1000T + 2-Port 100/1000X SFP Wall-mount Managed Switch with LCD Touch Screen
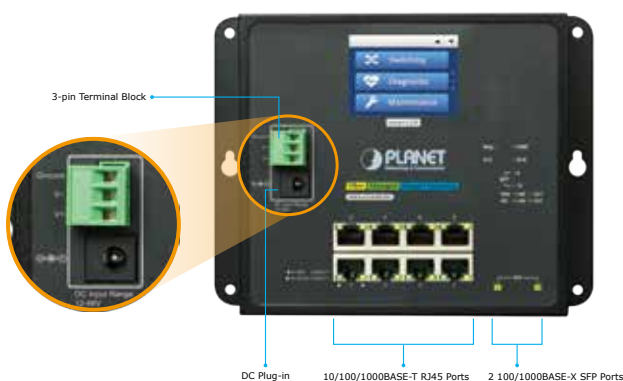
TAIWAN EXCELLENCE 2019

Wall-mount Managed Switch with Advanced L2+/L4 Switching and Security

Designed to be installed in a wall enclosure or simply mounted on a wall at any convenient location, PLANET WGS-5225-8T2SV, an innovative, **Industrial 8-port 10/100/1000T + 2-port 100/1000X SFP Wall-mount Managed Switch** with **LCD Touch Screen**, offers **IPv6/IPv4** dual stack management, intelligent **Layer 2 and Layer 4** management functions, and user-friendly interface. The WGS-5225-8T2SV is able to operate reliably, stably and quietly in any environment without affecting its performance. Featuring ultra networking speed and operating temperature ranging from **-20 to 70 degrees C** in a compact but rugged IP30 metal housing, the WGS-5225-8T2SV is an ideal solution to meet the demand for the following network applications:

■ Building/Home automation network

■ Internet of things (IoT)

■ IP surveillance

■ Wireless LAN

Flat-type Switch with Unique Touch LCD Management

3-pin Terminal Block

DC Plug-in   10/100/1000BASE-T RJ45 Ports   2 100/1000BASE-X SFP Ports

Physical Port

- **8 10/100/1000BASE-T** Gigabit Ethernet RJ45 ports
- **2 100/1000BASE-X mini-GBIC/SFP** slots for SFP type auto detection

Industrial Case and Installation

- Compact size with fixed wall-mounted, magnetic wall-mounted or DIN-rail design
- IP30 metal case
- Supports **-20 to 70** degrees C operating temperature
- Supports ESD 6KV DC Ethernet protection
- Redundant power input design
  - 12V~48V DC wide power input with polarity reverse protect function
  - 3-pin terminal block or DC jack connector

Layer 2 Features

- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- 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
  - Up to 255 VLANs groups, out of 4094 VLAN IDs
  - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
  - Private VLAN Edge (PVE)
  - Protocol-based VLAN
  - MAC-based VLAN
  - Voice VLAN
- 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 Guard
- Supports Link Aggregation
  - 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (static trunk)
  - Maximum 5 trunk groups with 2 ports per trunk group
  - Up to 2Gbps bandwidth (duplex mode)

Intuitive LCD Control

The WGS-5225-8T2SV comes with an intuitive touch panel on its front panel to facilitate the Ethernet management to greatly promote management efficiency in large-scale networks, such as enterprises, hotels, shopping malls, government buildings, and other public areas. It also features the following special management and status functions:

■ IP address, VLAN and QoS configuration

■ Port management and status, and SFP information

■ Troubleshooting: cable diagnostic and remote IP ping

■ Maintenance: reboot, factory default and save configuration

Redundant Ring, Fast Recovery for Critical Network Applications

The WGS-5225-8T2SV 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.
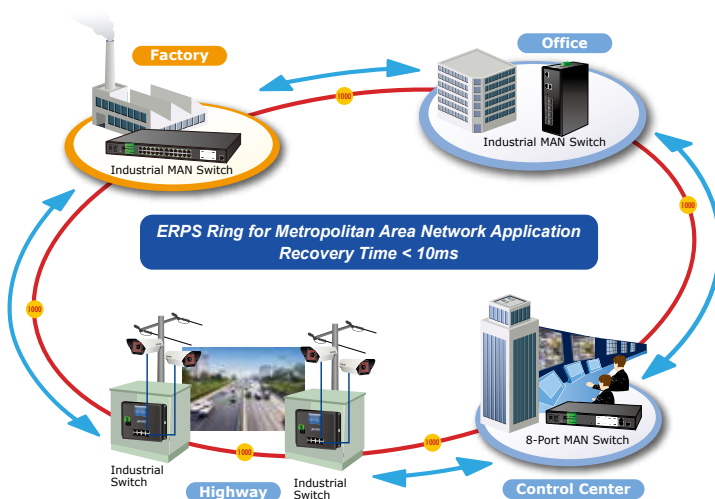
- Provides port mirror (1-to-1)
- Port mirroring to monitor the incoming or outgoing traffic on a particular port
- Loop protection to avoid broadcast loops
- Supports ERPS (Ethernet Ring Protection Switching)

Layer 3 IP Routing Features

- Supports maximum 32 static routes and route summarization

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
    - IP TOS/DSCP/IP precedence
    - IP TCP/UDP port number
    - Typical network application
- Strict priority and Weighted Round Robin (WRR) CoS policies
- Supports QoS and In/Out bandwidth control on each port
- Traffic-policing on the switch port
- DSCP remarking

Multicast

- Supports IGMP snooping v1, v2 and v3
- Supports MLD snooping v1 and v2
- Querier mode support
- IGMP snooping port filtering
- MLD snooping port filtering
- MVR (Multicast VLAN Registration)

Security

- IEEE 802.1x Port-based/MAC-based network access authentication
- Built-in RADIUS client to cooperate with the RADIUS servers
- TACACS+ login users access authentication
- RADIUS/TACACS+ users access authentication
- IP-based Access Control List (ACL)
- MAC-based Access Control List
- 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

Innovative Wall-mount Installation

The WGS-5225-8T2SV is specially designed to be installed in a narrow environment, such as wall enclosure or electric weak box. The compact, flat and wall-mounted design fits easily in any space-limited location. It adopts the user-friendly **"Front Access"** design, making the installing, cable wiring, LED monitoring and maintenance of the WGS-5225-8T2SV placed in an enclosure very convenient for technicians. The WGS-5225-8T2SV can be installed by **fixed wall mounting, magnetic wall mounting or DIN rail**, thereby making its usability more flexible.


SMTP/SNMP Trap Event Alert

The WGS-5225-8T2SV provides event alert function to help to diagnose the abnormal device owing to whether or not there is a break of the network connection, or the rebooting response.

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

To help customers stay on top of their businesses, the WGS-5225-8T2SV not only provides ultra 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.

Robust Layer 2 Features

The WGS-5225-8T2SV can be programmed for advanced switch management functions such as dynamic port link aggregation, Q-in-Q VLAN, private VLAN, Rapid Spanning Tree Protocol, Layer 2 to Layer 4 QoS, bandwidth control and IGMP snooping. The WGS-5225-8T2SV provides 802.1Q tagged VLAN, and the VLAN groups allowed will be maximally up to 255. Via aggregation of supporting ports, the WGS-5225-8T2SV allows the operation of a high-speed trunk combining multiple ports. It enables a maximum of up to 5 trunk groups with 2 ports per trunk group, and supports fail-over as well.

L2/L4
Managed Switch

L2/L4
Managed Switch
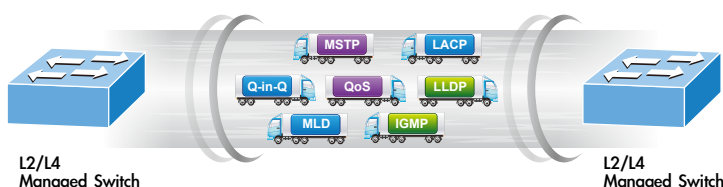
Management

- Switch Management Interfaces
  - Telnet Command Line Interface
  - Web switch management
  - SNMP v1 and v2c switch management
  - SSH/SSL and SNMP v3 secure access
  - 2.4-inch color LCD touch screen
- Four RMON groups (history, statistics, alarms, and events)
- IPv6 IP address/NTP/DNS management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- Firmware upload/download via HTTP/TFTP
- DHCP Relay and DHCP Option 82
- User Privilege levels control
- Network Time Protocol (NTP)
- Link Layer Discovery Protocol (LLDP)
- SFP-DDM (Digital Diagnostic Monitor)
- Cable diagnostic technology provides the mechanism to detect and report potential cabling issues
- Reset button for system reboot or reset to factory default
- PLANET Smart Discovery Utility for deployment management

Efficient Management

For efficient management, the WGS-5225-8T2SV is equipped with console, Web and SNMP management interfaces. With the built-in Web-based management interface, the WGS-5225-8T2SV offers an easy-to-use, platform-independent management and configuration facility. For text-based management, the WGS-5225-8T2SV can be accessed via Telnet and the console port. Moreover, it also offers secure remote management via any standard-based management software by supporting SNMPv3 connection which encrypts the packet content at each session.

Computer

SSL   SNMPv3   SSH

Powerful Security

The WGS-5225-8T2SV offers a comprehensive Layer 2 to Layer 4 Access Control List (ACL) for enforcing security to the edge. It can be used to restrict network access by denying packets based on source and destination IP address, TCP/UDP ports or defined typical network applications. Its protection mechanism also comprises 802.1x Port-based and MAC-based user and device authentication. With the private VLAN function, communication between edge ports can be prevented to ensure user privacy. The network administrators can now construct highly-secure corporate networks with considerably less time and effort than before.

Modbus TCP provides Flexible Network Connectivity for Factory Automation

With the supported **Modbus TCP/IP** protocol, the WGS-5225-8T2SV can easily integrate with **SCADA** systems, **HMI** systems and other data acquisition systems in factory floors. It enables administrators to remotely monitor the industrial Ethernet switch's **operating information**, **port information** and **communication status**, thus easily achieving enhanced monitoring and maintenance of the entire factory.

Flexibility and Extension Solution

The additional two mini-GBIC slots built in the WGS-5225-8T2SV support dual speed, 100BASE-FX and 1000BASE-SX/LX SFP (Small Form-factor Pluggable) fiber-optic modules, meaning the administrator now can flexibly choose the suitable SFP transceiver according to not only the transmission distance but also the transmission speed required. The distance can be extended from 550 meters (multi-mode fiber) to 10/50/70/120 kilometers (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.

Intelligent SFP Diagnosis Mechanism

The WGS-5225-8T2SV supports SFP-**DDM** (Digital Diagnostic Monitor) function that greatly helps network administrator to easily monitor real-time parameters of the SFP, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

Digital Diagnostic Monitor *(DDM)*

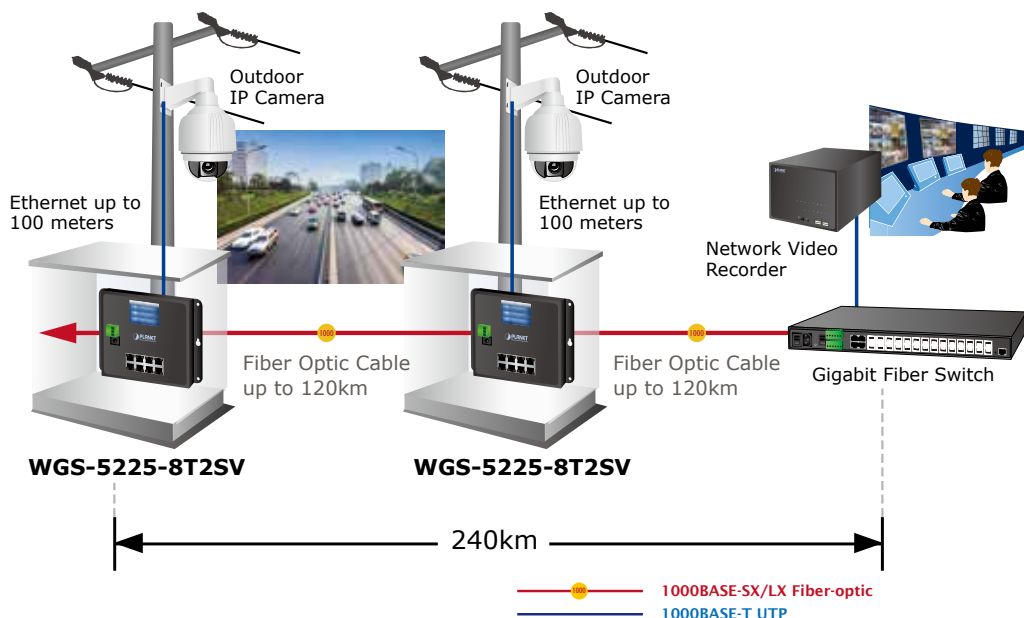*1588 Time Protocol for Industrial Computing Networks*

The WGS-5225-8T2SV is ideal for telecom and Carrier Ethernet applications, supporting MEF service delivery and timing over packet solutions for IEEE 1588 and synchronous Ethernet.

Applications

Model that Withstands Harsh Operation and Extends distance

The WGS-5225-8T2SV is made to withstand any harsh operation in such environments as traffic control cabinets, factory floors, and indoor and outdoor locations where temperatures are extremely high or low. With a non-blocking design and compact size, the installation of the WGS-5225-8T2SV is easy and helpful to build a Gigabit high-bandwidth switched network quickly.
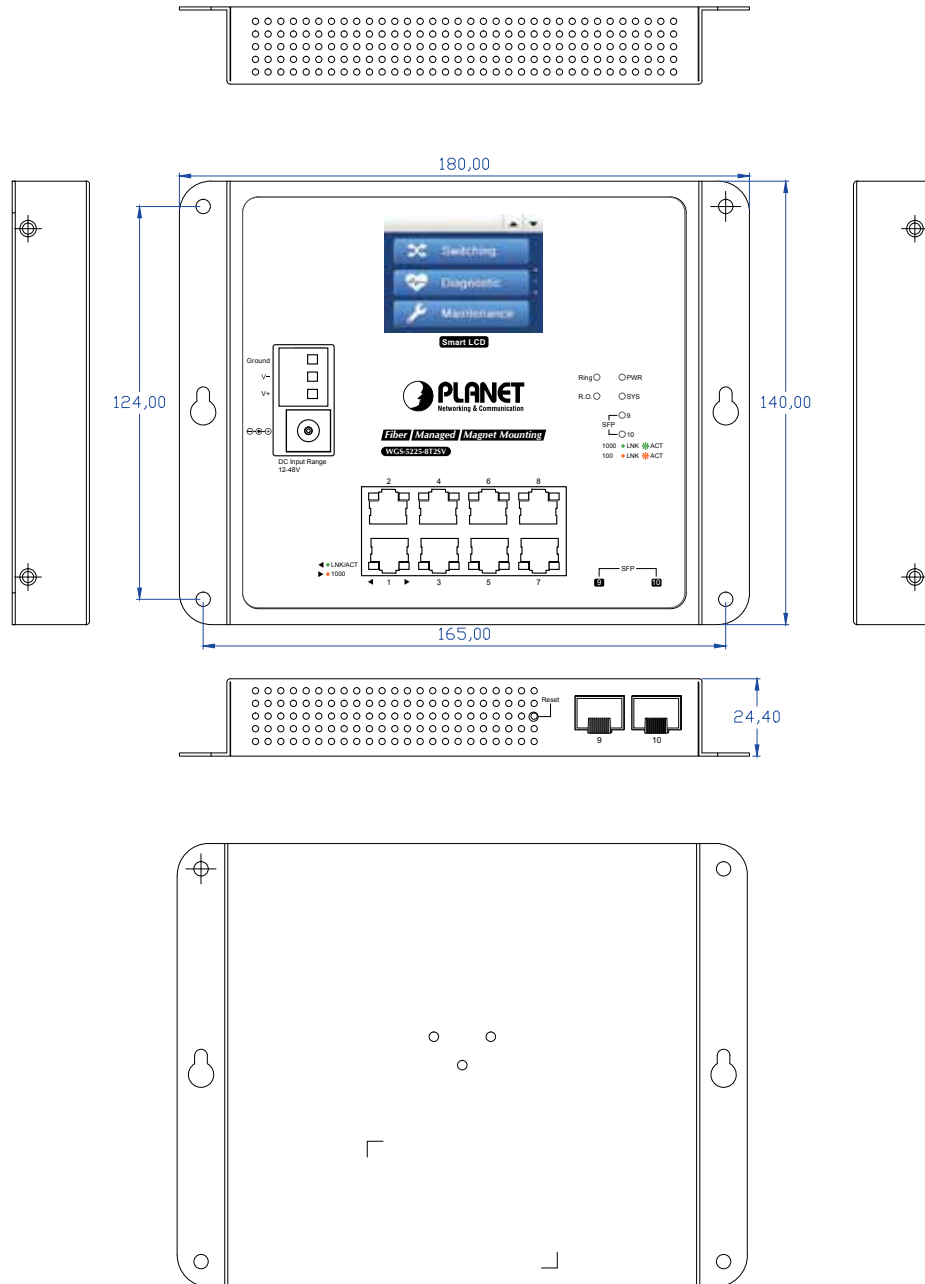
Extending Ethernet Distance

Specifications

Product	WGS-5225-8T2SV
Hardware Specifications	
Copper Ports	8 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports
SFP/mini-GBIC Slots	2 1000BASE-SX/LX/BX SFP interfaces (Port-9 to Port-10) Compatible with 100BASE-FX SFP
Switch Architecture	Store-and-Forward
Switch Fabric	20Gbps/non-blocking
Throughput (packet per second)	14.88Mpps@ 64 bytes packet
Address Table	8K entries, automatic source address learning and aging
Shared Data Buffer	4Mbits
Flow Control	IEEE 802.3x pause frame for full duplex Back pressure for half duplex
Jumbo Frame	9Kbytes
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
ESD Protection	6KV DC
Enclosure	IP30 metal case
Installation	DIN rail kit and wall-mount
Connector	Removable 3-pin terminal block for power input - Pin 1/2 for Power (Pin 1: V+ / Pin 2: V-) - Pin 3 for earth ground DC power jack with 2.0mm central pole

LED Indicator	System:
	  PWR(Green)
	  Ring (Green)
	  Ring Owner (Green)
	Per 10/100/1000T RJ45 Ports:
	  10/100 LNK/ACT (Green)
	  1000 LNK/ACT (Orange)
	 Per SFP Interface:
	  100 LNK/ACT (Orange)
	  1000 LNK/ACT (Green)

Dimensions (W x D x H)	180 x 24.4 x 140 mm
Weight	686g
Power Requirements	Dual 12~48V DC
Power Consumption	Max. 4.5 watts/15.4BTU (Power on without any connection) Max. 8.5 watts/29.1BTU (Full loading with Ethernet)
Layer 2 Function	
Basic Management Interfaces	Telnet; Web browser; SNMP v1, v2c
Secure Management Interfaces	SSH, SSL, SNMP v3
Port Configuration	Port disable/enable Auto-negotiation 10/100/1000Mbps full and half duplex mode selection Flow control disable/enable Power saving mode control
Port Status	Display each port's speed duplex mode, link status, flow control status, auto negotiation status, trunk status
Port Mirroring	TX/RX/both 1 to 1 monitor
VLAN	802.1Q tag-based VLAN, up to 255 VLAN groups Q-in-Q tunneling Private VLAN Edge MAC-based VLAN Protocol-based VLAN Voice VLAN MVR (Multicast VLAN Registration) Up to 255 VLAN groups, out of 4094 VLAN IDs
Link Aggregation	IEEE 802.3ad LACP/static trunk Supports 5 trunk groups with 2 ports per trunk group
QoS	Traffic classification based, strict priority and WRR 8-level priority for switching - Port number - 802.1p priority - 802.1Q VLAN tag - DSCP/TOS field in IP packet
IGMP Snooping	IGMP (v1/v2/v3) snooping, up to 255 multicast groups IGMP querier mode support
MLD Snooping	MLD (v1/v2) snooping, up to 255 multicast groups MLD querier mode support
Access Control List	IP-based ACL/MAC-based ACL Up to 256 entries

Bandwidth Control	Per port bandwidth control Ingress: 500Kb~1000Mbps Egress: 500Kb~1000Mbps
SNMP MIBs	RFC 1213 MIB-II IF-MIB RFC 1493 Bridge MIB RFC 1643 Ethernet MIB RFC 2863 Interface MIB RFC 2665 Ether-Like MIB RFC 2819 RMON MIB (Groups 1, 2, 3 and 9) RFC 2737 Entity MIB RFC 2618 RADIUS Client MIB RFC 2933 IGMP-STD-MIB RFC 3411 SNMP-Frameworks-MIB IEEE 802.1X PAE LLDP MAU-MIB

Layer 3 Function

IP Interfaces	Max. 8 VLAN interfaces
Routing Table	Max. 32 routing entries
Routing Protocols	IPv4 software static routing IPv6 software static routing

Standards Conformance

Regulatory Compliance	FCC Part 15 Class A, CE
Stability Testing	IEC60068-2-32 (free fall) IEC60068-2-27 (shock) IEC60068-2-6 (vibration)
Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX/100BASE-FX IEEE 802.3z Gigabit SX/LX IEEE 802.3ab Gigabit 1000T IEEE 802.3x flow control and back pressure IEEE 802.3ad port trunk with LACP IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol IEEE 802.1p Class of Service IEEE 802.1Q VLAN tagging IEEE 802.1X Port Authentication Network Control IEEE 802.1ab LLDP ITU-T G.8032 Ethernet Ring Protection Switching RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP v1 RFC 2236 IGMP v2

Environment

Operating Temperature	-20 ~ 70 degrees C
Storage Temperature	-20 ~ 70 degrees C
Humidity	5 ~ 95% (non-condensing)

Drawing

Dimensions (unit = mm)

Ordering Information

WGS-5225-8T2SV	Industrial L2+ 8-Port 10/100/1000T + 2-Port 100/1000X SFP Wall-mount Managed Switch with LCD Touch Screen

Related Products

WGS-5225-8P2SV	Industrial L2+ 8-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Wall-mount Managed Switch with LCD Touch Screen
WGS-5225-8P2S	Industrial L2+ 8-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Wall-mount Managed Switch

WGS-5225-8T2SV