

T(P)GS-5008T

8 10/100/1000T X-coded EN50155 L2+ (8 PoE at/af) Managed
EthernetSwitch w/ Enhanced G.8032 Ring; 24VI/ 24TVI/ WVI input



OVERVIEW

Lantech T(P)GS-5008T (IP54/IP67) is a high performance L2+ All Gigabit Ethernet switch with 8 10/100/1000T (w/8 PoE at/af ports up to 30W@ at M12 X-coded) providing L2 wire speed and advanced security function for network aggregation deployment. It houses in an IP54/IP67 aluminum compact enclosure that is waterproof and will prevent moisture ingress due to temperature fluctuations. It delivers ITU G.8032 enhanced ring recovery less than 20ms in single ring while also supports train ring, enhanced mode, multiple VLAN mode with easy configuration. The comprehensive QoS, QoS by VLAN, advanced security including INGRESS/EGRESS ACL L2/L3, TACACS+**, SSH v2/SSL, Mac based DHCP server, DHCP Option 82, DHCP server, IGMPv1/v2/v3/router port, QinQ are supported and also required in large network. It also supports 10K Jumbo frame.

Selection of dual WVI (16.8V~137.5VDC) input or 24VI (9V~36VDC) or 24TVI (16.8V~56VDC); Inrush current protection

WVI model w/ Ethernet and PoE galvanic isolation accepts 16.8~137.5VDC dual input and can feed 54V output with max 80W PoE budget. 24VI model w/ Ethernet and PoE galvanic isolation accept 9~36VDC dual input for PoE feeding with max 80W budget. 24TVI model w/ Ethernet and PoE galvanic isolation accept 9~36VDC dual input for PoE feeding with max 80W budget. (PoE model) The inrush current on initial power up can be limited lower than 10 x nominal current.

PoE +, Advanced PoE management (PoE model)

Lantech TPGS-5008T (IP54/IP67) supports IEEE802.3at/af standard which can feed power up to 30W at each PoE port for big power consumption devices like PTZ IP camera, wireless AP etc. The advanced PoE management includes PoE detection and scheduling besides the regular PoE per port status. PoE detection can detect if the connected PD is hang up then restart the PD; PoE scheduling is to allow pre-set power feeding schedule upon routine time table. Per port PoE status can remotely On/Off the power and display information of voltage, current, watt and PoE temperature.

Enhanced G.8032 ring, 16 MSTI MSTP; MRP ring

Lantech T(P)GS-5008T (IP54/IP67) features enhanced G.8032 ring which can be self-healed in less than 20ms for single ring topology protection covering Multicast packets. It also supports various ring topologies that covers double ring, multi-chain (under enhanced ring), train ring, basic ring, multiple-VLAN ring and auto-ring by easy setup than others. The innovative auto-Ring configurator (auto mode) can calculate owner and neighbor in one step. It supports MSTP that allows RSTP over VLAN for redundant links with 16 MSTI.

MRP (Media Redundancy Protocol) can be supported for industrial automation networks.

Node failure protection, Miss-wiring alert, Loop protection

The T(P)GS-5008T (IP54/IP67) also embedded several features for stronger and reliable network protection in an easy and intuitive way. When the pre-set ring configuration failed or looped by miss-wiring, Lantech T(P)GS-5008T (IP54/IP67) is able to alert with the LED indicator and disable ring automatically. Node failure protection ensures the switches in a ring to survive after power breakout is back. The status can be shown in NMS when each switch is back. This feature prevents the broken ring and keep ring alive without any re-configuration needed. Loop protection is also available to prevent the generation of broadcast storm when a dumb switch is inserted in a closed loop connection.

QoS by VLAN for legacy device

QoS by VLAN can allow switch to tag QoS by VLAN regardless the devices acknowledge QoS or not in which greatly enhance the bandwidth management in a network.

QinQ, QoS and GVRP supported

It supports the QinQ, QoS and GVRP for large VLAN segmentation.

IGMPv3, GMRP, router port, MLD Snooping, static multicast forwarding and multicast Ring protection

The unique multicast protection under enhanced G.8032 ring can offer immediate self-recovery instead of waiting for IGMP table timeout. It also supports IGMPv3, GMRP, router port, MLD snooping and static multicast forwarding binding by ports for video surveillance application.

802.1X security by MAC address

MAC-based port authentication is an alternative approach to 802.1x for authenticating hosts connected to a port. By authenticating based on the host's source MAC address, the host is not required to run a user for the 802.1x protocol. The RADIUS server that performs the authentication will inform the switch if this MAC can be registered in the MAC address table of switch.

Built-in IEC 61375-3-4 ECN (Ethernet Consist Network) to work with IEC61375-2-5 TBN

Lantech OS1 Ethernet switches comply with IEC 61375-3-4 (ECN) standard. The support of Ethernet Consist Network allows interconnection between end devices located in single consist of train and interoperability with IEC61375-2-5 (TBN).

DHCP option 82 & Port based, Mac based DHCP, Option66, DHCP Snooping, IPv6 DHCP server

DHCP server can assign dedicated IP address by MAC or by port (Port based for single switch), it also can assign IP address by port for multiple switches with single DHCP option82 server. DHCP Snooping is supported. For the ending device which need to download file from TFTP server, DHCP Option66 server can offer IP address of TFTP server to DHCP client. Basic IPv6 DHCP service can be supported.

Auto-provisioning for firmware/configuration update

The switch supports auto-provisioning for switch to auto-check the latest software image and configuration through TFTP server.

User friendly GUI, Auto topology drawing

The user friendly UI, innovative auto topology drawing and topology demo makes T(P)GS-5008T (IP54/IP67) much easier to get hands-on. The complete CLI enables professional engineer to configure setting by command line.

Optional N-key auto backup, exported text file

The configuration file of Lantech T(P)GS-5008T (IP54/IP67) can be exported in text file so that it can be edited and configured back to switch with ease for mass deployment. The optional N-key configurator offers firmware upgrade, auto backup/ editable configuration restore without computer by adjusting the DIP switch. The built-in watchdog design can automatically reboot the switch when CPU is found dead.

Event log & message; 2DI + 2DO

In case of event, the T(P)GS-5008T (IP54/IP67) is able to send an email** to pre-defined addresses as well as SNMP Traps out immediately. It provides 4DI and 3DO when disconnection of the specific port was detected; DO will activate the signal LED to alarm. DI can integrate the sensors for events and DO will trigger the alarm while sending alert information to IP network with email and traps.

Environmental monitoring for inside switch info

The built-in environmental monitoring can detect switch overall temperature, real input voltage, current and total PoE load (PoE model) where can send the SNMP traps and email** when abnormal.

High ESD protection, Inrush current protection

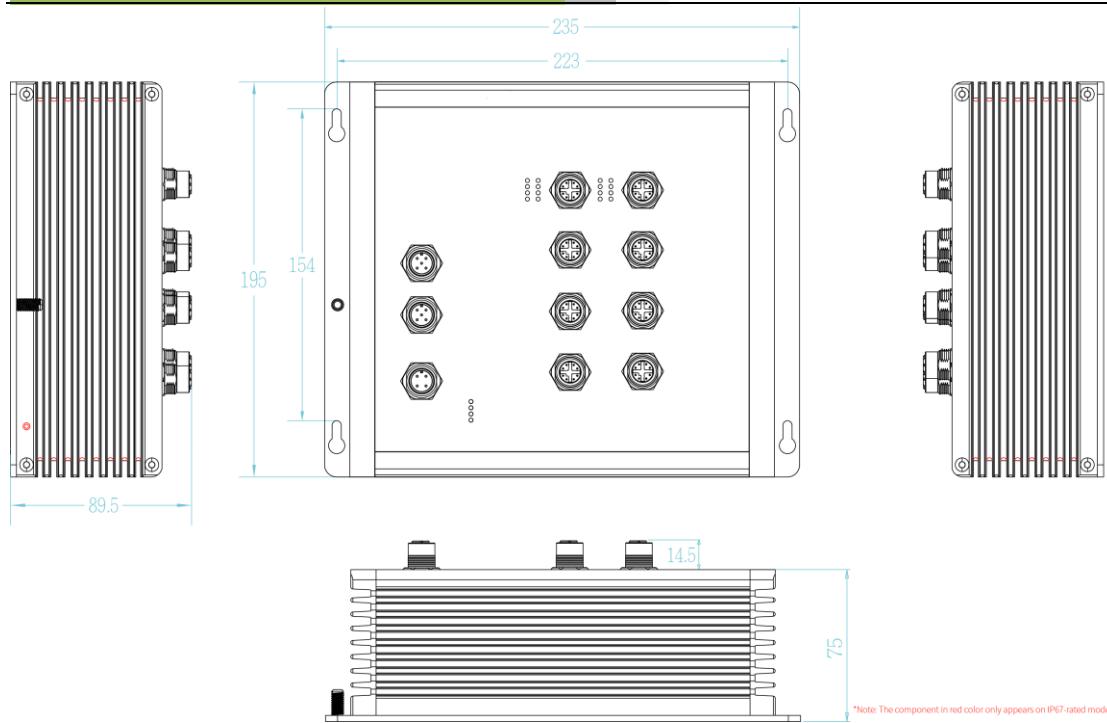
IPGS-5008T (IP54/IP67) provides $\pm 2000V$ EFT and $\pm 6000V$ ESD protection, which can reduce unstable situation caused by power line and Ethernet.

The inrush current on initial power up can be limited lower than $10 \times$ nominal current and for less than 1ms.

EN50155, EN45545-2, EN50121-3-2, EN61373 verification

The T(P)GS-5008T (IP54/IP67) passed serious tests under extensive Industrial EMI and Safety standards. With EN45545-2 Fire & Smoke, and EN50155 verification, the T(P)GS-5008T (IP54/IP67) is best for railway in train/track side, vehicle and mining applications. For more usage flexibilities, T(P)GS-5008T (IP54/IP67) supports wide operating temperature from -40°C to 75°C .

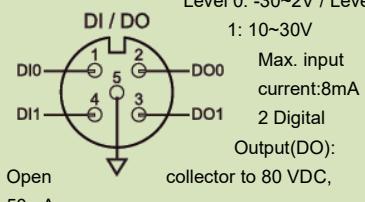
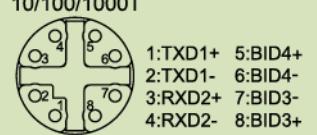
DIMENSIONS (unit=mm)



SPECIFICATION

Hardware Specification

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|---------------------|--|---|
| Standards | IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX IEEE802.3ab 1000Base-T IEEE802.3x Flow Control and Back Pressure IEEE802.3ad Port trunk with LACP IEEE802.1d Spanning Tree IEEE802.1w Rapid Spanning Tree IEEE802.1s Multiple Spanning Tree IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.1AB Link Layer Discovery Protocol (LLDP) IEEE 802.1X User Authentication (Radius) IEEE802.1p Class of Service IEEE802.1Q VLAN Tag IEEE802.3at/af Power over Ethernet | Transfer Rate 14,880pps for Ethernet port 148,800pps for Fast Ethernet port 1,488,000pps for Gigabit Ethernet port |
| Mac Address | 16K MAC address table | |
| Jumbo frame | 10KB | |
| Connectors | 10/100/1000T: 8 x ports M12 8-pole X-coded with Auto MDI/MDI-X function RS-232/Reset connector: 1 x M12 5-pole A-coded DI/DO: 1 x M12 5-pole A-coded Power Input connector : 1x M12 4-pole A-coded Male | |
| Switch Architecture | Back-plane (Switching Fabric): 16Gbps | |
| Network Cable | 10Base-T: 2-pair STP Cat. 3, 4, 5/ 5E/ 6 cable | |

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|--------------------------------|--|-------------------------------|---|--|
| | EIA/TIA-568 100-ohm (100m) 100Base-TX: 2-pair UTP/STP Cat. 5/ 5E/ 6 cable EIA/TIA-568 100-ohm (100m) 1000Base-TX: 2-pair UTP/STP Cat. 5/ 5E/ 6 cable EIA/TIA-568 100-ohm (100m) | Verifications & report | EN50155//EN50121-3-2/EN50121-4 verification EN45545-2 R13/R22/R23/R24/R25 (EN ISO 4589-2, EN ISO 5659-2, NF X70-100-1 & 2) Fire & Smoke verification | |
| LED | Per unit: Power 1 (Green), Power 2 (Green), FAULT (Red), RM (Green) Ethernet port: Link/Active (Green) PoE: Link/Active (Green, PoE model) | MTBF | 622,324 hrs (standards: IEC 62380) | |
| Warranty | 5 years | Software Specification | | |
| DI/DO | 2 Digital Input (DI) :  Open collector to 80 VDC, 50mA | Management | SNMP v1 v2c, v3/ Web/Telnet/CLI | |
| Operating Humidity | 5% ~ 95% (Non-condensing) | SNMP MIB | MIB MIBII SNMP MIB Bridge MIB IF MIB RMON MIB Private MIB | |
| Operating Temperature | -40°C~75°C / -40°F~167°F | ITU G.8032 | Support ITU G.8032 v2/2012 for Ring protection in less than 20ms for self-heal recovery (single ring) Support various ring/chain topologies Includes train ring, auto ring, basic single ring, enhanced ring, multiple-VLAN ring Enhanced G.8032 ring configuration with ease Multi-VLAN mode | |
| Storage Temperature | -40°C~85°C / -40°F~185°F | PoE Management (PoE model) | <ul style="list-style-type: none"> ■ PoE Detection to check if PD is hang up then restart the PD ■ PoE Scheduling to On/OFF PD upon routine time table ■ On/ Off, voltage, current, watts, temperature | |
| Power Supply | 16.8~137.5VDC on WVI model w/ galvanic isolation 9~36VDC on 24VI model w/ galvanic isolation 16.8~56VDC on 24TVI model w/ galvanic isolation (PoE galvanic isolation for PoE models; Ethernet galvanic isolation for all models) | User friendly UI | <ul style="list-style-type: none"> ■ Auto topology drawing ■ Topology demo ■ Auto configuration for G.8032 (auto mode) for single ring ■ Complete CLI for professional setting | |
| Power Consumption | Without PoE: Max. 12W With PoE: Max. 13.7W | Port Trunk with LACP | LACP Port Trunk: 8 Trunk groups | |
| PoE Budget (PoE model) | Total 80W @ 24 VDC and above Higher PoE budget can be applied upon request. ** | LLDP | Supports LLDP to allow switch to advise its identification and capability on the LAN | |
| PoE pin assignment (PoE model) | M12: port # 1~ # 8 support IEEE 802.3at/af End-point. Per port provides up to 30W  | CDP | Cisco Discovery Protocol for topology mapping | |
| Dimensions | 235mm(W)x195mm(H)x89.5mm(D) | Environmental Monitoring | System status for input voltage, current, ambient temperature and total PoE load to be shown in GUI and sent alerting if any abnormal status | |
| Weight | 980gs (IP54/IP67) | VLAN | Port Based VLAN IEEE 802.1Q Tag VLAN (256 entries)/ VLAN ID (Up to 4K, VLAN ID can be assigned from 1 to 4096.) GVRP, QinQ, Protocol based VLAN; IPv4 Subnet based VLAN | |
| Installation | Wall Mount Design | Spanning Tree | Supports IEEE802.1d Spanning Tree and IEEE802.1w Rapid Spanning Tree, IEEE802.1s Multiple Spanning Tree 16MSTI | |
| EMI & EMS | FCC Part 15 Class A ,CE EN55022, CE EN55024 , CE EN61000-4-11 CE EN61000-4-2 (ESD) Level 3 CE EN61000-4-3 (RS) Level 3 CE EN61000-4-4 (EFT) Level 3 CE EN61000-4-5 ED3 (Surge) Level 3 CE EN61000-4-6 (CS) Level 3 CE EN61000-4-8 (Magnetic field) Level 3 | Quality of Service | The quality of service determined by port / CoS / ToS / VLAN / 61375-3-4 | |
| Stability Testing | EN61373 (Shock and Vibration) | Class of Service | Support IEEE802.1p class of service, per port provides 8 priority queues | |
| | | Login Security | Supports IEEE802.1X Authentication/RADIUS | |

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|-----------------------------------|---|-----------------------------------|---|
| Port Mirror | Support 3 mirroring types: "RX, TX and Both packet" | Protection | <ul style="list-style-type: none"> ■ Miss-wiring avoidance ■ Node failure protection ■ Loop protection |
| Network Security | <p>Support 10 IP addresses that have permission to access the switch management and to prevent unauthorized intruder.</p> <p>802.1X access control for port based and MAC based authentication/MAC-Port binding</p> <p>Ingress/Egress ACL L2/L3</p> <p>SSL/ SSH v2 for Management</p> <p>HTTPS for secure access to the web interface</p> <p>TACACS+** for Authentication</p> | SNMP Trap | <p>Up to 10 trap stations; trap types including:</p> <ul style="list-style-type: none"> ● Device cold start ● Authorization failure ● Port link up/link down ● DI/DO open/close ● Topology change(ITU ring) ● Power failure ● Environmental abnormal |
| IGMP | Support IGMP snooping v1,v2,v3 ; 1024 multicast groups; IGMP router port ; IGMP query; GMRP | DHCP | Provide DHCP Client/ DHCP Server/DHCP Option 82/Port based DHCP; DHCP Snooping; DHCP Option 66; Basic IPv6 DHCP server |
| Static multicast forwarding (MVR) | Static multicast forwarding forward reversed IGMP flow (MVR) with multicast packets binding with ports for IP surveillance application | Mac based DHCP Server | Assign IP address by Mac |
| Bandwidth Control | <p>Support ingress packet filter and egress packet limit.</p> <p>The egress rate control supports all of packet type.</p> <p>Ingress filter packet type combination rules are Broadcast/Multicast/Flooded Unicast packet, Broadcast/Multicast packet, Broadcast packet only and all types of packet.</p> <p>The packet filter rate can be set an accurate value through the pull-down menu for the ingress packet filter and the egress packet limit.</p> | DNS | Provide DNS client feature |
| Flow Control | Supports Flow Control for Full-duplex and Back Pressure for Half-duplex | ECN | Complies with IEC 61375-3-4 (ECN) standard. The support of Ethernet Consist Network allows interconnection between end devices located in single consist of train and interoperability with IEC61375-2-5 (TBN). |
| System Log | Supports System log record and remote system log server | SNTP | Supports SNTP to synchronize system clock in Internet |
| MLD Snooping | Support IPv6 Multicast stream | Diagnostic | Support Ping and DDM information |
| | | Firmware Update | Supports TFTP firmware update, TFTP backup and restore; HTTP firmware upgrade |
| | | N-Key Configurator** | RJ45 dongle for firmware upgrade, auto backup / editable restoration |
| | | Configuration upload and download | <p>Supports text configuration file for system quick installation</p> <p>Support factory reset button to restore all settings back to factory default</p> |
| | | Auto Provision | To verify switch firmware with the latest or certain version |

*Future release

**Optional

ORDERING INFORMATION

All model packages include M12 caps and wall mount bracket. All standard models are non-coating, optional coating models are available with -C model name.

- **TPGS-5008T-54-WVI.....P/N: 8361-4249**
8 10/100/1000T X-coded EN50155 M12 IP54 L2+ PoE Managed Gigabit Ethernet Switch; 16.8V~137.5VDC dual input w/ PoE galvanic isolation; PoE max 80W budget ; -40°C to 75°C
- **TPGS-5008T-54-WVI-C.....P/N: 8361-42491**
8 10/100/1000T X-coded EN50155 M12 IP54 L2+ PoE Managed Gigabit Ethernet Switch; 16.8V~137.5VDC dual input w/ PoE galvanic isolation; PoE max 80W budget ; -40°C to 75°C; w/conformal coating
- **TGS-5008T-54-WVI.....P/N: 8361-42535**
8 10/100/1000T X-coded EN50155 M12 IP54 L2+ Managed Gigabit Ethernet Switch; 16.8V~137.5VDC dual input w/ galvanic isolation; -40°C to 75°C
- **TGS-5008T-54-WVI-C.....P/N: 8361-42531**
8 10/100/1000T X-coded EN50155 M12 IP54 L2+ Managed Gigabit Ethernet Switch; 16.8V~137.5VDC dual input w/ galvanic isolation; -40°C to 75°C; w/conformal coating
- **TPGS-5008T-67-WVI.....P/N: 8361-42492**
8 10/100/1000T X-coded EN50155 M12 IP67 L2+ PoE Managed Gigabit Ethernet Switch; 16.8V~137.5VDC dual input w/ PoE galvanic isolation; PoE max 80W budget ; -40°C to 75°C
- **TGS-5008T-67-WVI.....P/N: 8361-42493**

8 10/100/1000T X-coded EN50155 M12 IP67 L2+ Managed Gigabit Ethernet Switch; 16.8V~137.5VDC dual input w/ galvanic isolation; -40°C to 75°C

■ **TPGS-5008T-54-24VI.....P/N: 8361-42494**

8 10/100/1000T X-coded EN50155 M12 IP54 L2+ PoE Managed Gigabit Ethernet Switch; 9V~36VDC dual input w/ PoE galvanic isolation; PoE max 80W budget ; -40°C to 75°C

■ **TGS-5008T-54-24VI.....P/N: 8361-42532**

8 10/100/1000T X-coded EN50155 M12 IP54 L2+ Managed Gigabit Ethernet Switch; 9V~36VDC dual input w/ galvanic isolation; -40°C to 75°C

■ **TPGS-5008T-67-24VI.....P/N: 8361-42495**

8 10/100/1000T X-coded EN50155 M12 IP67 L2+ PoE Managed Gigabit Ethernet Switch; 9V~36VDC dual input w/ PoE galvanic isolation; PoE max 80W budget ; -40°C to 75°C

■ **TGS-5008T-67-24VI.....P/N: 8361-42496**

8 10/100/1000T X-coded EN50155 M12 IP67 L2+ Managed Gigabit Ethernet Switch; 9V~36VDC dual input w/ galvanic isolation; -40°C to 75°C

■ **TPGS-5008T-54-24TVI.....P/N: 8361-42533**

8 10/100/1000T X-coded EN50155 M12 IP54 L2+ PoE Managed Gigabit Ethernet Switch; 16.8V~56VDC dual input w/ PoE galvanic isolation; PoE max 80W budget ; -40°C to 75°C

■ **TGS-5008T-54-24TVI.....P/N: 8361-42534**

8 10/100/1000T X-coded EN50155 M12 IP54 L2+ Managed Gigabit Ethernet Switch; 16.8V~56VDC dual input w/ galvanic isolation; -40°C to 75°C

■ **TPGS-5008T-67-24TVI.....P/N: 8361-42497**

8 10/100/1000T X-coded EN50155 M12 IP67 L2+ PoE Managed Gigabit Ethernet Switch; 16.8V~56VDC dual input w/ PoE galvanic isolation; PoE max 80W budget ; -40°C to 75°C

■ **TGS-5008T-67-24TVI.....P/N: 8361-42498**

8 10/100/1000T X-coded EN50155 M12 IP67 L2+ Managed Gigabit Ethernet Switch; 16.8V~56VDC dual input w/ galvanic isolation; -40°C to 75°C

■ **N-key Configurator.....P/N: 8850-100**

RJ45 connector dongle for firmware upgrade, auto/editable configuration backup and restoration; -20°C to 60°

OPTIONAL ACCESSORIES

M12 Connector & Cable

Connector

■ **ECONM12-04A(F)-C-180**

4 pin M12 (Female) A-coded 180 degree crimp type connector for power supply

■ **ECONM12-05A(M)-C-180**

5 pin M12 (Male) A-coded 180 degree crimp type connector for DI/DO

■ **ECONM12-08X(M)-SPEEDCON**

8 pin M12 (Male) X-coded 180 degree crimp type connector for data, Ethernet CAT6A (10G), shielded, SPEEDCON

Cable

■ **ECONM12-4P(F)1.5M CABLE**

4 pin M12 (Female) A-coded 90 degree cable for power supply, 150cm

■ **ECABM12X83MSTP**

8 pin M12 (Male) X-coded 180 degree RJ45 STP cable for data, shielded, 300cm

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