

IPGS-5008T (IP67/IP54)

8 10/100/1000T X-coded EN50155 L2+ 8 PoE at/af Managed Ethernet

Switch w/ Enhanced G.8032 Ring

- EN50155/61373/45545-2 verification; 16.8~137.5V input
- IEEE802.3at/af up to 30W per port; PoE budget up to 80W
- PoE management incl. detection and scheduling
- Galvanic isolation between input, PoE and output as well as case(WVI model)
- Enhanced G.8032 ring protection < 20ms for single ring. Supports auto mode, enhanced mode, train mode, multi-VLAN and basic mode; Enhanced G.8032 ring covers multicast packets; MSTP 16MSTI /RSTP ; support MRP ring**
- IP67 / IP54 Aluminum housing for best heat dissipation and preventing moist ingress
- Environmental Monitoring for temp., input voltage, current and total PoE load
- Miss-wiring avoidance & node failure protection
- Inrush current protection
- User friendly UI, including auto topology drawing; Complete CLI
- Support LACP link aggregation, IGMP v3/router port, DHCP server & DHCP Option82; Port based DHCP distribution, Mac based DHCP server, QoS by VLAN, SSH/SSL, HTTPS, INGRESS/EGRESS ACL L2/L3, TACACS+, QinQ, SMS**
- Protocol based VLAN** ; IPv4/IPv6 Subnet based VLAN**
- N-key configurator** for upgrading, auto back up /editable restoration without computer
- Optional bypass in case of power failure, watchdog loss (IP67 Only)



IP67 model



IP54 model



OVERVIEW

Lantech IPGS-5008T (IP67/IP54) is a high performance L2+ All Gigabit Ethernet switch with 8 10/100/1000T w/8 PoE at/af injectors up to 30W @ at M12 X-coded providing L2 wire speed and advanced security function for network aggregation deployment. It houses in a IP67/IP54 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/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.

Dual WVI (16.8V~137.5VDC) input, high PoE budget

WVI model w/ PoE isolation accepts 16.8~137.5VDC dual input and can feed 54V output with max 80W PoE budget. (WV

model w/system isolation and also feed max 80W PoE budget.)

PoE +, Advanced PoE management

Lantech IPGS-5008T (IP67/IP54) 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; Optional MRP ring

Lantech IPGS-5008T (IP67/IP54) 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. Optional MRP (Media Redundancy Protocol) can be supported for industrial automation networks.

Re-powered ring restoration, Miss-wiring alert, Loop protection

The IPGS-5008T (IP67/IP54) 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 IPGS-5008T (IP67/IP54) is able to alert with the LED indicator and disable ring automatically. Repowered auto ring restore function (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 and GVRP supported

It supports the QinQ, GVRP for large VLAN segmentation.

IGMPv3, GMRP, router port, 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 and static multicast forwarding binding by ports for video surveillance application.

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

DHCP server can assign dedicated IP address by MAC or by

Environmental monitoring for inside switch info

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

Relay alarm, High ESD protection, Inrush current protection

Featured with relay contact alarm function, the IPGS-5008T (IP67/IP54) is able to connect with alarm system in case of power failure or port disconnection events. The IPGS-5008T (IP67/IP54) also provides ±2000V EFT and ±6000V ESD

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

User friendly GUI, Auto topology drawing

The user friendly UI, innovative auto topology drawing and topology demo makes IPGS-5008T (IP67/IP54) 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 IPGS-5008T (IP67/IP54) 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 IPGS-5008T (IP67/IP54) is able to send an email** & SMS** text message 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.

Optional smart bypass protection (IP67 only)

The optional bypass relay is set to bypass the switch to the next one when power is off in order to protect the network from crashing. Lantech bypass caters to remain in bypass mode until the switch is completely booting up when power is back to avoid another network lost. The optional smart bypass can be activated when switch encounters power failure or watch dog hang.

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 x nominal current and for less than 1ms.

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

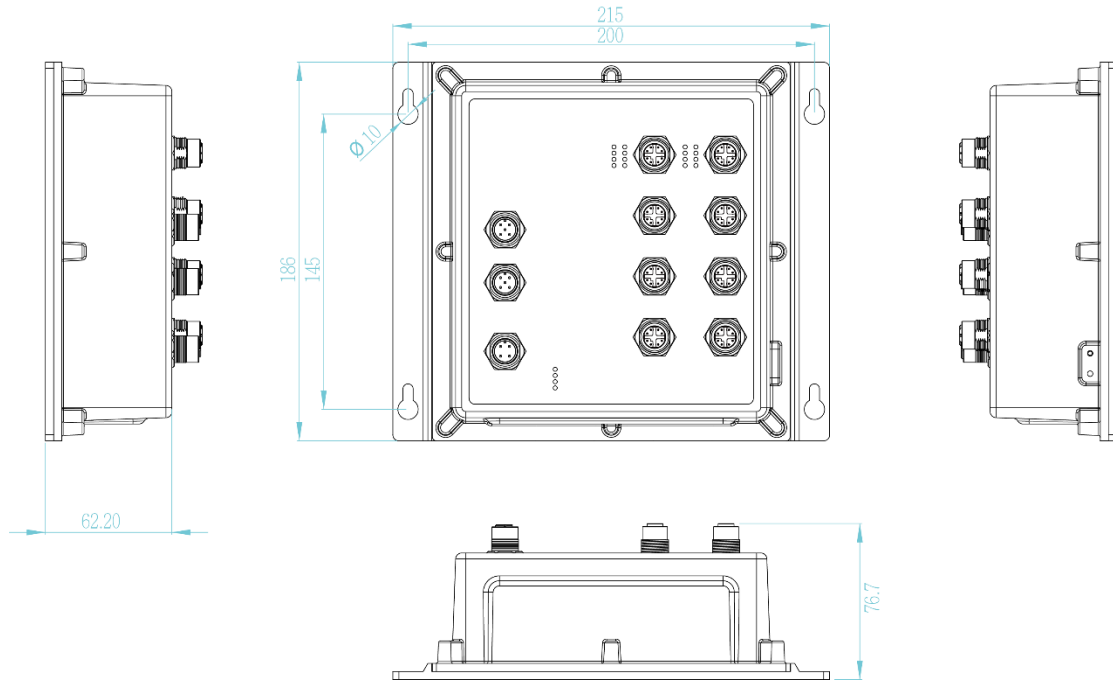
The IPGS-5008T (IP67/IP54) passed serious tests under extensive Industrial EMI and Safety standards. With EN45545-2 Fire & Smoke, and EN50155 verification, the IPGS-5008T (IP67/IP54) is best for railway in train/track side, vehicle and mining applications. For more usage flexibilities, IPGS-5008T (IP67/IP54)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

FEATURES & BENEFITS

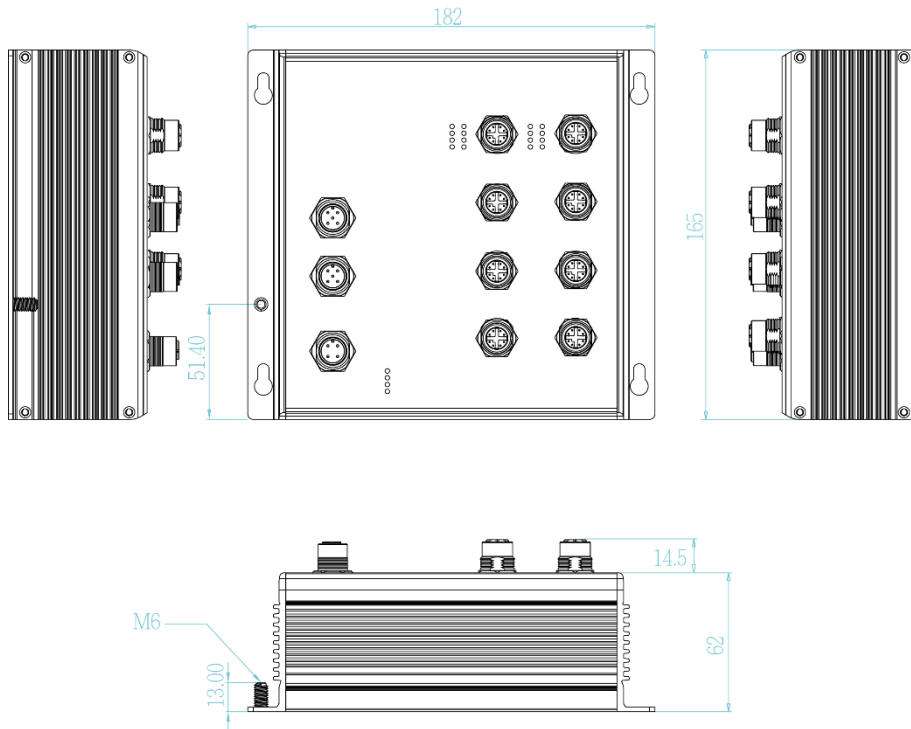
- **8 10/100/1000T X-coded EN50155 PoE IP67/IP54 M12 Managed Ethernet Switch w/8x 802.3at/af PoE injectors (Total 8 Ports Gigabit Switch)/ 30W@each port**
- **EN45545-2 Fire & Smoke, EN50155 and EN61373 shock/vibration verification**
- **WVI model w/ PoE galvanic isolation accepts dual 16.8~137.5VDC power input and feed 54V for PoE at/af at max 80W budget**
- **Back-plane (Switching Fabric): 16Gbps**
- **16K MAC address table**
- **10KB Jumbo frame**
- **User friendly UI, auto topology drawing, topology demo, complete CLI for professional setting**
- **Enhanced G.8032 Ring protection in 20ms < 256 switches**
 - *Support various ring/chain topologies, including train ring, enhanced ring, basic ring, auto ring & multiple VLAN ring (with 3rd party G.8032 switch)*
 - *Auto ring configuration(auto mode) for single ring*
 - *Multi-VLAN mode*
- **IEEE 802.1d STP, IEEE 802.1w RSTP, 802.1s MSTP VLAN redundancy with 16 MSTI**
- **Provides EFT protection ±2000 VDC for power line.**
- **Supports ±4000 VDC (Contact) and ±8000 VDC (Air) Ethernet ESD protection**
- **Supports IEEE 802.1p Class of Service, per port provides 8 priority queues Port base, Tag Base and Type of Service Priority**
- **4K 802.1Q VLAN, Port based VLAN, GVRP, QinQ**
- **QoS by VLAN tag to prioritize all devices in network**
- **Supports IEEE 802.1ab LLDP, Cisco CDP; LLDP info can be viewed via Web/ Console**
- **DHCP server / client / DHCP Option 82 relay / DHCP Option 82 server; Port based DHCP server; DHCP Option 66; IPv6 address resolution for DHCP server****
- **Mac based DHCP server to assign IP address that includes dumb switches in DHCP network**
- **Bandwidth Control**
 - *Ingress packet filter and egress rate limit*
 - *Broadcast/multicast packet filter control*
- **Relay alarm output system events**
- **Miss-wiring avoidance**
 - *LED indicator*
- **Node failure protection**
 - *Ensure the switches in a ring to survive after power breakout is back*
 - *The status can be shown in NMS when each switch is back*
- **Inrush current protection**
- **TFTP/SFTP**/HTTP firmware upgrade**
- **System Event Log, SMTP Email** alert, SMS** mobile (text) and SNMP Trap for alarm support; 32 RMON counters**
- **Security**
 - *SSL/SSH/INGRESS/EGRESS ACL L2/L3*
 - *MAC address table: MAC address entries/Filter/static MAC-Port binding*
 - *IP Security: IP address security management to prevent unauthorized intruder.*
 - *TACACS+*
 - *Login Security: IEEE802.1X/RADIUS*
 - *HTTPS for secure access to the web interface*
- **Static multicast forwarding forward reversed IGMP flow with multicast packets binding with ports for IP surveillance application**
- **IGMP router port to assign query in ring for reversed multicast video flow**
- **IGMPv1,v2,v3 with Query mode for multimedia**
- **Watchdog design to auto reboot switch CPU is found dead**
- **Built-in environmental monitoring for system input voltage, current, ambient temperature & total PoE load**
- **Supports 4 DI + 3DO (Digital Input/Digital Output)**
- **IP67/IP54 aluminum housing with wall mount design**
- **Environmental monitoring for system real input voltage, current, ambient temperature and total PoE load**
- **Configuration backup and restoration**
 - *Supports editable configuration file for system quick installation*
- **Wide operation temperature: -40C~75C/-40F~167F**
- **EN45545-2 Fire & Smoke, EN50155 and EN61373 shock/vibration verification**
- **Bypass protection** - Bypass failed switch caused by power / CPU failure or watch dog hang of switch to protect network from disconnection (IP67 only)**

DIMENSIONS (unit=mm)

IP67 model



IP54 model



SPECIFICATION

Hardware Specification	
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 IEEE802.3z Gigabit fiber
Switch Architecture	Back-plane (Switching Fabric): 16Gbps
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 connector: 1 x M12 5-pole A-coded Power Input connector : 1x M12 4-pole A-coded Male Relay contact : 1 x M12 5-pole A-coded
Network Cable	10Base-T: 2-pair UTP/STP Cat. 3, 4, 5/ 5E/ 6 cable 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)
LED	Per unit: Power 1 (Green), Power 2 (Green), FAULT (Red), RM(Green) Ethernet port: Link/Active(Green) PoE : Link/Active(Green)
DI/DO	4 Digital Input (DI) : Level 0: -30~2V / Level 1: 10~30V Max. input current:8mA 3 Digital Output(DO): Open collector to 40 VDC, 200mA
Operating Humidity	5% ~ 95% (Non-condensing)
Operating	-40°C~75°C / -40°F~167°F
Temperature	
Storage Temperature	-40°C~85°C / -40°F~185°F
Power Supply	16.8~137.5VDC
Power Consumption	Without PoE: Max. 12W With PoE: Max. 13.7W
PoE Budget	80W
PoE pin assignment	M12: port # 1~ # 8 support IEEE 802.3at/af End-point. Per port provides up to 30W 10/100/1000T 1:TXD1+ 5:V+ (BID4+) 2:TXD1- 6:V- (BID4-) 3:RXD2+ 7:V+ (BID3+) 4:RXD2- 8:V- (BID3-)
Dimensions	IP67 model: Aluminum case 215mm(W)x186mm(H)x76.7mm(D) IP54 model: Aluminum case 182mm(W)x165mm(H)x76.5mm(D)
Weight	1.4kgs(IP67); 980gs (IP54)
Installation	IP67 model: DIN Rail** and Wall Mount Design IP54 model: Wall Mount Design
EMI & EMS	FCC Part 15 Class A, IEC/EN61000-6-2 CE EN55032 Class A CE EN55024: 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 N61000-4-8 (Magnetic field) Level 3
Stability Testing	EN61373 (Shock and Vibration)
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
MTBF	24V: 591,686.1 (Hrs) WV: 934,308 (Hrs) (standards: IEC 62830)
Warranty	5 years
Software Specification	
Management	SNMP v1 v2c, v3/ Web/Telnet/CLI
SNMP MIB	RFC 1215 Traps MIB*, RFC 1213 MIBII RFC 1158 MIBII RFC 1157 SNMP MIB, RFC 1493 Bridge MIB* RFC 1573 IF MIB RFC 2674 VLAN MIB*, Partial RFC 1757 RMON, RFC 2674 Q-Bridge MIB*; Bridge MIB, LLDP MIB RSTP MIB* Private MIB
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		interface TACACS+ for Authentication
PoE Management	<ol 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 	IGMP	Support IGMP snooping v1,v2,v3 ; 1024 multicast groups; IGMP router port ; IGMP query; GMRP
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 	Static multicast forwarding (MVR)	Static multicast forwarding forward reversed IGMP flow (MVR) with multicast packets binding with ports for IP surveillance application
Port Trunk with LACP	LACP Port Trunk: 8 Trunk groups	Bandwidth Control	Support ingress packet filter and egress packet limit. The egress rate control supports all of packet type. Ingress filter packet type combination rules are Broadcast/Multicast/Flooded Unicast packet, Broadcast/Multicast packet, Broadcast packet only and all types of packet. 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.
LLDP	Supports LLDP to allow switch to advise its identification and capability on the LAN	Flow Control	Supports Flow Control for Full-duplex and Back Pressure for Half-duplex
CDP	Cisco Discovery Protocol for topology mapping	System Log	Supports System log record and remote system log server
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	SMTP**/Text SMS**	Supports SMTP Server and 8 e-mail accounts for receiving event alert; can send SMS** text alert via mobile
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/IPv6 Subnet based VLAN**	Relay Alarm	Provides one relay output for port breakdown, power fail and alarm. Alarm Relay current carry ability: 1A @ DC24V
IPv6/4	Present	Protection	<ul style="list-style-type: none"> Miss-wiring avoidance Repowered auto ring restore Loop protection
Spanning Tree	Supports IEEE802.1d Spanning Tree and IEEE802.1w Rapid Spanning Tree, IEEE802.1s Multiple Spanning Tree 16MSTI	SNMP Trap	Up to 10 trap stations; trap types including: <ul style="list-style-type: none"> Device cold start Authorization failure Port link up/link down DI/DO open/close Typology change(ITU ring) Power failure Environmental abnormal
Quality of Service	The quality of service determined by port, Tag and IPv4 Type of service, IPv4 Differentiated Services Code Points - DSCP	DHCP	Provide DHCP Client/ DHCP Server/DHCP Option 82 (Client & Server)/Port based DHCP; DHCP Option 66; IPv6 address resolution for DHCP server**
Class of Service	Support IEEE802.1p class of service, per port provides 8 priority queues	Mac based DHCP Server	Assign IP address by Mac that can include dumb switch in DHCP network
QoS by VLAN	QoS by VLAN tag for all devices in the network	DNS	Provide DNS client feature and support Primary and Secondary DNS server
IP Security	Supports 10 IP addresses that have permission to access the switch management and to prevent unauthorized intruder	SNTP	Supports SNTP to synchronize system clock in Internet
Login Security	Supports IEEE802.1X Authentication/RADIUS	Firmware Update	Supports TFTP/SFTP** firmware update, TFTP backup and restore; HTTP firmware upgrade
Port Mirror	Support 3 mirroring types: "RX, TX and Both packet"	N-Key Configurator**	RJ45 dongle for firmware upgrade, auto backup / editable restoration
Network Security	Support 10 IP addresses that have permission to access the switch management and to prevent unauthorized intruder. 802.1X access control for port based and MAC based authentication/MAC-Port binding Ingress/Egress ACL L2/L3 SSL/ SSH for Management HTTPS for secure access to the web	Configuration upload and	Supports text configuration file for system quick installation

download	Support factory reset button to restore all settings back to factory default
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*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. Optional bypass models are available with -B/BB model name. (only on IP67 version)

- **IPGS-5008T-67-WVI.....P/N: 8361-4248**
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
- **IPGS-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
- **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

- | | |
|----------------------------------|---|
| ■ ECONM12-05A(F)-C-180 | M12 5Pin (Female) A-coded 180 Degree Crimp Type Connector |
| ■ ECONM12-5P(F)70CM CABLE | 5 pin M12 power cable 90 degree angle, 70cm |
| ■ ECONM12-5P(M)-W-180 | M12 5P(Male) 180 Degree Wire Type Connector (DI/DO) |
| ■ ECONM12-04D(M)-C-180 | Connector,4-pin (Male),M12 D-coded Crimp Type 180 degree |
| ■ ECONM12-05A(F)-C-180 | M12 5Pin (Female) A-coded 180 Degree Crimp Type Connector |
| ■ ECAB124030MJS | 4 Pin M12 RJ45 Male 3 Meters; STP Cable |
| ■ ECABM12X83MSTP | 8 Pin M12 X-coded RJ45 Male 3 METER, STP CABLE w/ Shielding |

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