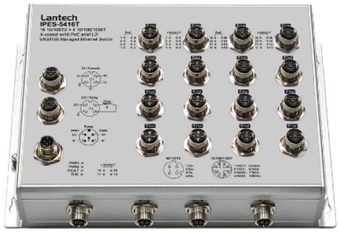
I(P)ES-5416T (IP67/IP54)

16 FE + 4 GE X-coded L2+ (8/16 PoE at/af) EN50155 Managed Ethernet Switch w/ enhanced G.8032 Ring ; 24VI/ 24TVI/ WVI model

IP67 model



IP54 model

- *EN50155/EN61373/EN45545-2 verification*
- *PoE model: IEEE802.3at/af up to 30W per port; PoE management incl. detection and scheduling*
- *PoE model: WVI dual input steps down to 54V output PoE max.80W; optional 24VI/24TVI input can boost to 54V output PoE max 80W*
- *PoE galvanic isolation (PoE models); Ethernet isolation (All models)*
- *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*
- *Miss-wiring avoidance & node failure protection*
- *Support LACP link aggregation, IGMP v3/router port, MLD snooping, DHCP server & DHCP Option82; DHCP Snooping, Port based DHCP distribution, Mac based DHCP server, QoS by VLAN, SSH v2/SSL, HTTPS, INGRESS/EGRESS ACL L2/L3, QinQ, TACACS+***
- *Protocol based VLAN ; IPv4 Subnet based VLAN*
- *Environmental Monitoring for temp., voltage, current and total PoE load (PoE model)*
- *Optional bypass in case of power failure, CPU loss (IP67 Only)*
- *IP67/IP54 housing; User friendly UI, including auto topology drawing; Complete CLI*
- *N-key configurator** for upgrading, auto/editable configuration back up and restoration without computer*

OVERVIEW

Lantech I(P)ES-5416T (IP67/IP54) is a high performance L2+ (Gigabit uplink) switch with 16 10/100TX (D-coded) + 4 10/100/1000T (X-coded) (w/8/16 PoE 802.3af/at ports by M12) provides L2 wire speed and advanced security function for network aggregation deployment. 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, SSH v2/SSL, TACACS+**, 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 Cisco Discovery Protocol (CDP) for Ciscoworks to detect the switch info and show on L2 map topology.

Up to 8/16 PoE ports with advanced PoE management (PoE model)

Lantech IPES-5416T (IP67/IP54) supports IEEE802.3at/af standard which can feed HI-power up to 30W at each PoE port for big power consumption devices like PTZ IP camera, High power 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 hangs 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.

Wide selection of input range models (24VI/ 24TVI/ WVI) w/maximum PoE budget

The Lantech I(P)ES-5416T is designed with various dual power input to feed 54V PoE. The WVI model accepts 16.8V~137.5V wide range input and yields PoE budget max 80W (PoE model). Featured with relay contact alarm function, the I(P)ES-

5416T (IP67/IP54) is able to connect with alarm system in case of power failure or port disconnection events.
The 24VI model accepts 9V~36V input and 24TVI model accepts 16.8V~56V input with PoE budget max.80W (PoE model) (A-code power connector). The switch supports Ethernet and PoE galvanic isolation.

Miss-wiring avoidance, Loop protection, Node failure protection
The I(P)ES-5416T (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 I(P)ES-5416T (IP67/IP54) 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. Loop protection is also available to prevent the generation of broadcast storm when a dumb switch is inserted in a closed loop connection.

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.

Editable configuration file; Optional N-key auto backup, exported text file
The configuration file of Lantech I(P)ES-5416T (IP67/IP54) can be exported and edited with word processor for the other switches configuration with ease. The built-in watchdog design can automatically reboot the switch when CPU is found dead. The optional N-key configurator offers firmware upgrade, auto/editable configuration back up and restoration without computer by adjusting the DIP 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).

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 I(P)ES-5416T (IP67/IP54) much easier to get hands-on. The complete CLI enables professional engineer to configure setting by command line.

Enhanced G.8032 ring, 16 MSTI MSTP; MRP ring
Lantech I(P)ES-5416T (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 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.

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.

Event log & message; 1 DI + 1DO
In case of event, the I(P)ES-5416T (IP67/IP54) is able to send an email** to pre-defined addresses as well as SNMP Traps out immediately. It provides 1DI and 1DO 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 switch inside information
The environmental monitoring can detect switch overall temperature, total PoE load (PoE model), voltage and current where can send the SNMP traps and email** when abnormal.

EN50155, EN45545-2, EN61373 verification; High ESD protection
Lantech I(P)ES-5416T (IP67/IP54) features high reliability and

robustness coping with extensive EMI/RFI phenomenon, environmental vibration and shocks usually found in factory, substation, steel automation, aviation, mining and process control. It is the best solution for Automation, transportation, surveillance, Wireless backhaul, Semi-conductor factory and assembly lines.

The I(P)ES-5416T (IP67/IP54) is designed to meet with critical network environment with IP67/IP54 aluminum enclosure and M12 connectors for water proof. With EN45545-2 Fire & Smoke, and EN50155 & EN61373 verification, the I(P)ES-5416T (IP67/IP54) is the best for railway in train/track side, vehicle and mining applications. For more usage flexibilities, I(P)ES-5416T (IP67/IP54) supports wide operating temperature from -40°C to 75°C.

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. (-BT/-BBT model)

FEATURES & BENEFITS

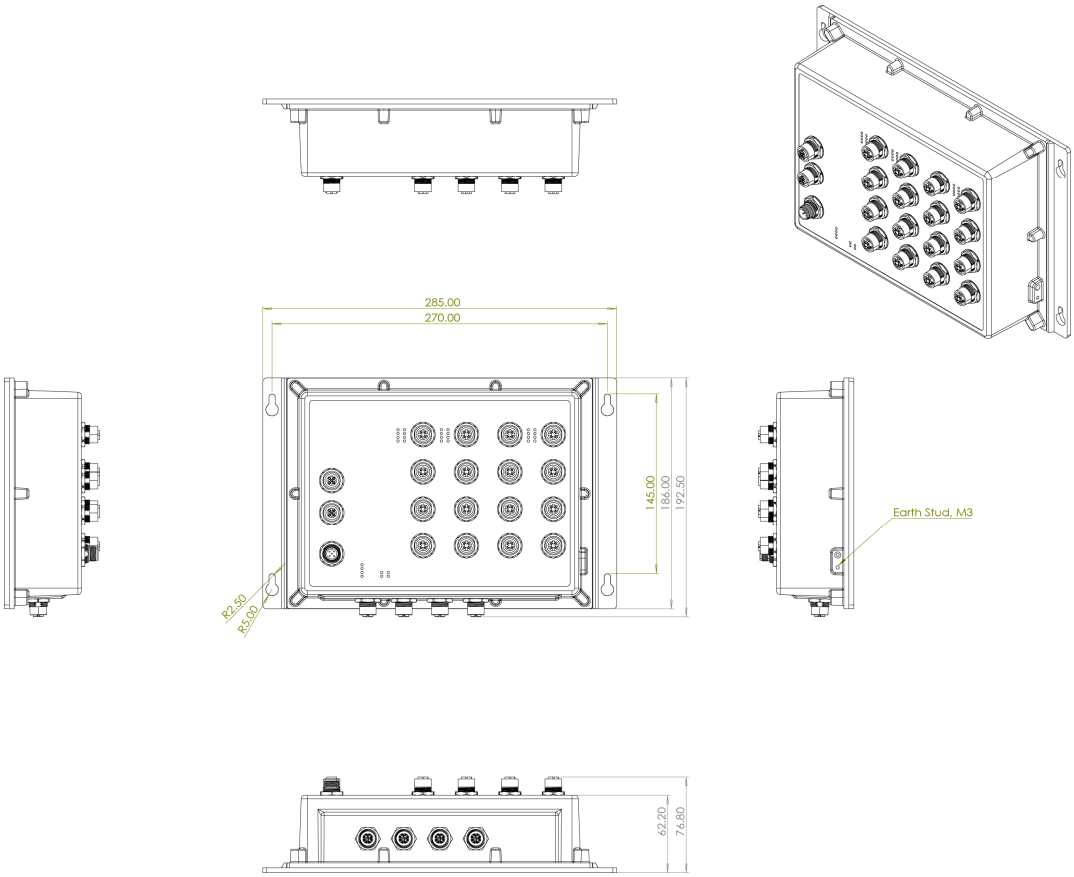
- **16 10/100TX (D-coded) + 4 10/100/1000T (X-coded) (w/8/16 POE 802.3af/at ports) EN50155 IP67/IP54 M12 Managed Ethernet Switch (Total 20 Ports Switch)**
- **EN45545-2 Fire & Smoke, EN50155 and EN61373 shock/vibration verification**
- **PoE model: PoE management including PoE detection and scheduling for PD (power devices)**
- **PoE galvanic isolation; Galvanic isolation from power input/Ethernet ports to system 1.5KV**
- **PoE 24VI model accepts dual power input ranges from 9~36V and can boost up to 54V for PoE 802.3at/af max. 80W budget**
- **PoE 24TVI model accepts dual power input ranges from 16.8~56V and can boost up to 54V for PoE 802.3at/af max. 80W budget**
- **PoE WVI model accepts dual 16.8~137.5V input and feed 54V for PoE at/af at max 80W budget**
- **Back-plane (Switching Fabric): 11.2Gbps**
- **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 for single ring**
  - *Support various ring/chain topologies, including train ring, enhanced ring, basic ring, auto ring & multiple VLAN ring*
  - *Enhanced G.8032 ring configuration with ease*
  - *Auto ring configuration(auto mode) for single ring*
  - *Cover multicast and data packets protection*
- **Supports IEEE 802.1p Class of Service, per port provides 8 priority queues Port base, Tag Base and Type of Service Priority**
- **IEEE 802.1d STP, IEEE 802.1w RSTP,802.1s MSTP VLAN redundancy with 16 MSTI**
- **4K 802.1Q VLAN, Port based VLAN, GVRP, QinQ, QoS**
- **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 Snooping; DHCP Option 66; basic IPv6 DHCP server**
- **Mac based DHCP server to assign IP address**
- **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*
- **TFTP/HTTP firmware upgrade**
- **System Event Log and SNMP Trap for alarm support; 32 RMON counters**
- **MLD Snooping for IPv6 Multicast stream**
- **Security**
  - *SSL/SSH v2/INGRESS/EGRESS ACL L2/L3*
  - *MAC address table: MAC address entries/Filter/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

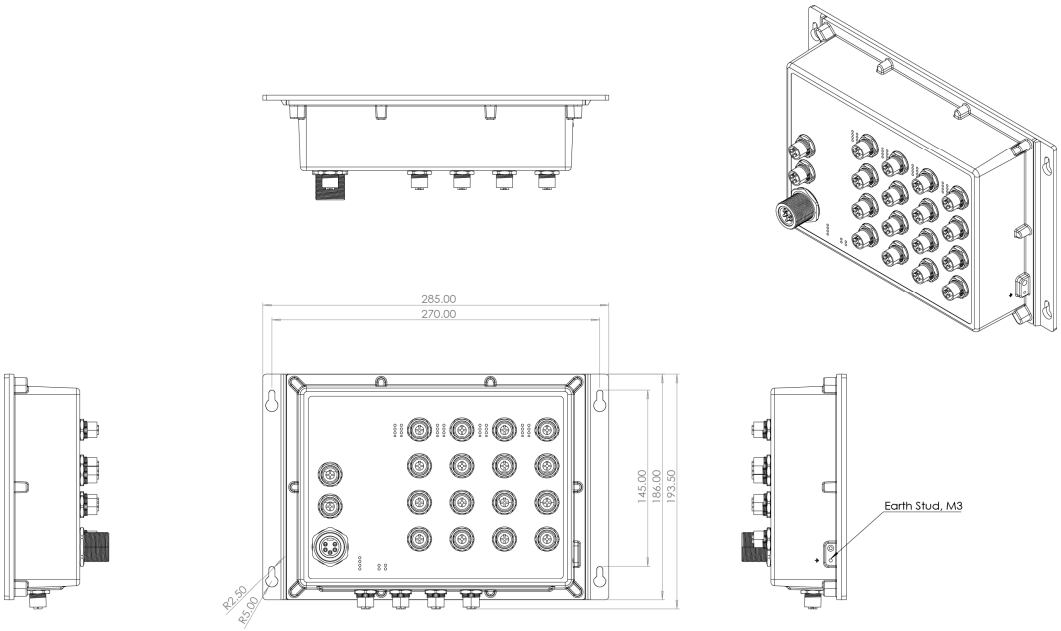
- IGMP router port to assign query in ring for reversed multicast video flow
- IGMPv1,v2,v3 with Query mode for multimedia; GMRP
- Diagnostic including Ping / DDM information
- Watchdog design to auto reboot switch CPU is found dead
- Built-in environmental monitoring for system input voltage, current, ambient temperature and total PoE load (PoE model)
- Built-in IEC 61375-3-4 ECN (Ethernet Consist Network) to work with IEC61375-2-5 TBN
- Configuration backup and restoration
  - *Supports editable configuration file for system quick installation*
  - *N-key** for mass configuration auto-backup, editable restoration and auto firmware upgrade*
- Supports 1DI + 1DO (Digital Input/Digital Output)
- IP67 aluminum housing with wall mount and DIN rail** design; IP54 aluminum housing with wall mount design
- Bypass protection** - Bypass failed switch caused by power failure of switch to protect network from disconnection (-BT/-BBT model)
- Auto Provision to verify switch firmware with the latest or certain version

DIMENSIONS (unit=mm)

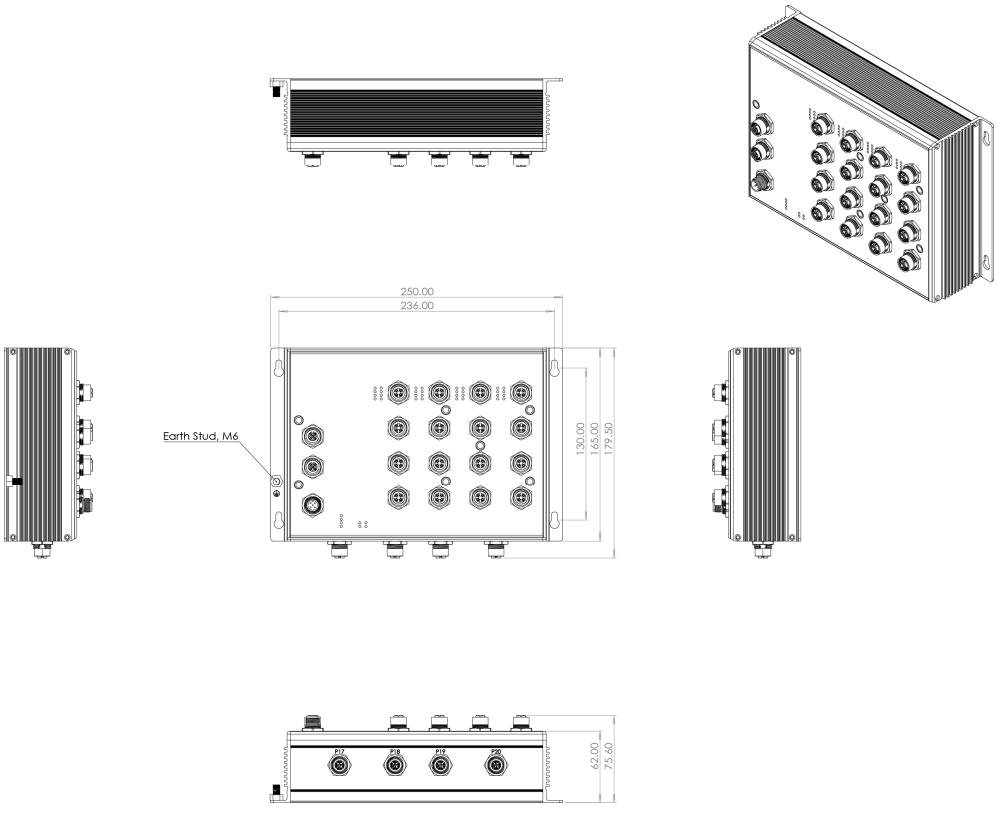
IP67 M12 PWR model



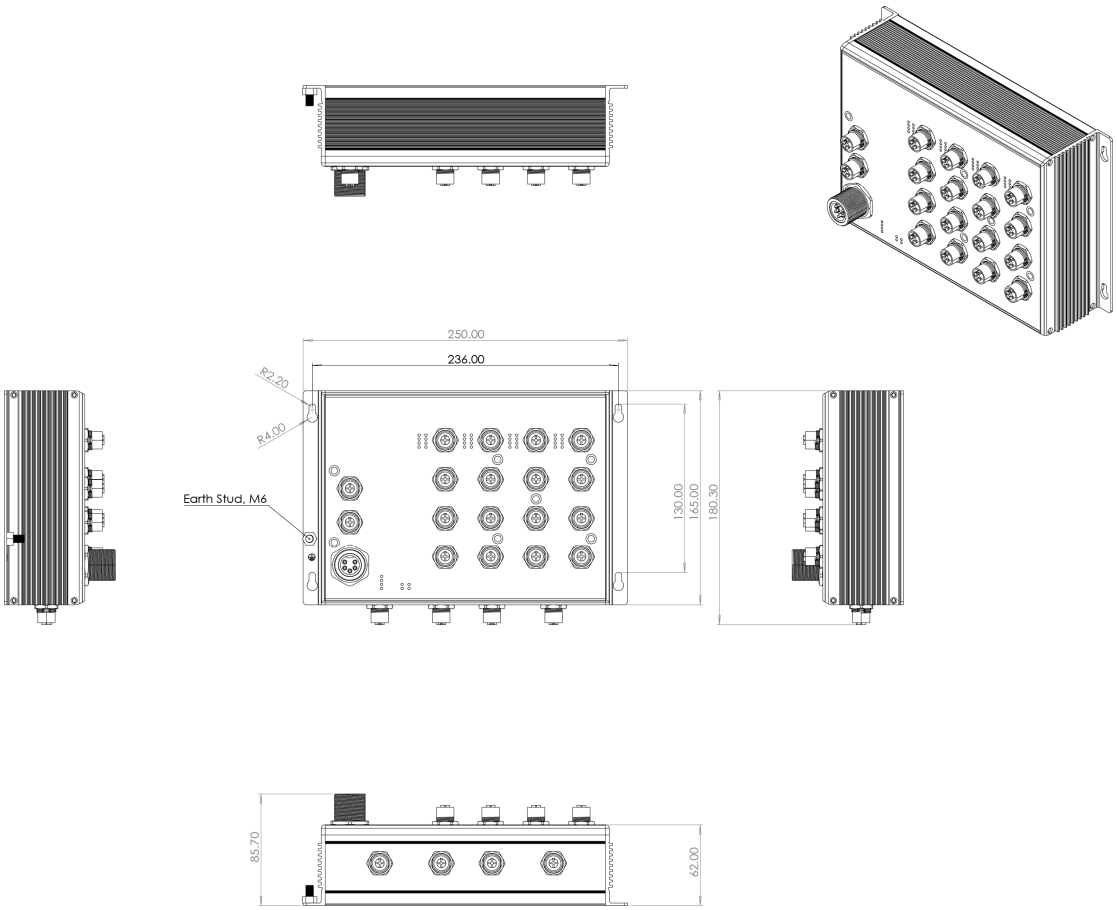
IP67 M23 PWR model



IP54 M12 PWR model

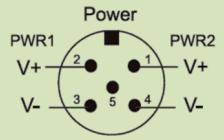
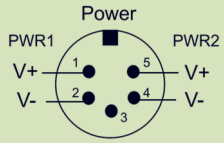


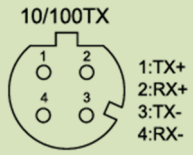
IP54 M23 PWR model



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
Switch Architecture	Back-plane (Switching Fabric): 11.2Gbps
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	10/100TX: 16 x ports M12 4-pole D-coded with Auto MDI/MDI-X function 10/100/1000T: 4 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 : 1 x M12(M23) 5-pole A-coded Male (WV)
	 1 x M23 5-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) Ethernet port: Link/Activity (Green), Speed (Green); R.M. indicator (Green) PoE (Green, PoE model)
DI/DO	1 Digital Input (DI) : Level 0: -30~2V / Level 1: 10~30V Max. input current:8mA 1 Digital Output(DO): Open collector to 80 VDC,

	50mA
Operating Humidity	5% ~ 95% (Non-condensing)
Operating Temperature	-40°C~75°C / -40°F~167°F
Storage Temperature	-40°C~85°C / -40°F~185°F
Power Supply	Dual 9~36VDC (24VI) Dual 16.8~56VDC (24TVI) Dual 16.8~137.5VDC (WVI) (PoE galvanic isolation for PoE models; Ethernet galvanic isolation for all models)
PoE Budget (PoE model)	Total 80W @ 24 VDC and above Higher PoE budget can be applied upon request. **
PoE pin assignment (PoE model)	M12 port # 1~ # 16 support IEEE 802.3at/af End-point. Per port provides up to 30W 
Power Consumption	Max. 16W
Dimensions	IP67 model: Aluminum case 285mm(W)x192.5mm(H)x76.8mm(D) IP54 model: Aluminum case 250mm(W)x179.5mm(H)x75.6mm(D)
Weight	2.1kgs(IP67) ; 1.8kgs(IP54)
Installation	IP67 model: DIN Rail** and Wall Mount Design IP54 model: Wall Mount Design
EMI & EMS	FCC Class A, CE EN55032, CE EN55024, CE EN61000-6-2, CE EN61000-4-2, CE EN61000-4-3, CE EN61000-4-4, CE EN61000-4-5, CE EN61000-4-6, CE EN61000-4-8
Stability Testing	EN61373 (Shock and Vibration)
MTBF	550,217 hrs. (standards: IEC 62380)
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
bypass protection**	Built-in bypass module on uplink ports to pass to next switch in case of power failure (two pairs)

Software Specification

Management	SNMP v1 v2c, v3/ Web/Telnet/CLI
SNMP MIB	MIB MIBII SNMP MIB Bridge MIB IF MIB RMON 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 enhanced mode) 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 Cover multicast & data packets protection
PoE Management (PoE model)	1. PoE Detection to check if PD hangs then restart the PD 2. PoE Scheduling to On/OFF PD upon routine time table 3. On/ Off, voltage, current, watts, temperature
User friendly UI	■ Auto topology drawing ■ Topology demo ■ Auto configuration for G.8032 (auto mode) for single ring ■ Complete CLI for professional setting
Port Trunk with	■ LACP Port Trunk: 8 Trunk groups
LACP	
LLDP	Supports LLDP to allow switch to advise its identification and capability on the LAN
CDP	Cisco Discovery Protocol for topology mapping
Environmental Monitoring	System status for input voltage, current and ambient temperature to be shown in GUI and sent alerting if any abnormal status
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
Spanning Tree	Supports IEEE802.1d Spanning Tree and IEEE802.1w Rapid Spanning Tree, IEEE802.1s Multiple Spanning Tree 16MSTI
Quality of Service	The quality of service determined by port / CoS / ToS / VLAN / 61375-3-4
Class of Service	Support IEEE802.1p class of service, per port provides 8 priority queues
Login Security	Supports IEEE802.1X Authentication/RADIUS
Port Mirror	Support 3 mirroring types: "RX, TX and Both packet"
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 Management access control with priority Ingress/Egress ACL L2/L3 SSL/ SSH v2 for Management HTTPS for secure access to the web interface TACACS+** for Authentication
IGMP	Support IGMP snooping v1,v2,v3 ; 1024 multicast groups; IGMP router port ; IGMP query; GMRP
Static MAC-Port bridge	Static multicast forwarding forward reversed IGMP flow with multicast packets binding with ports for IP surveillance application
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.
Flow Control	Supports Flow Control for Full-duplex and Back Pressure for Half-duplex
System Log	Supports System log record and remote system log server
Relay Alarm	Provides one relay output for port breakdown, power fail and alarm Alarm Relay current carry ability: 1A @ DC24V
Protection	■ Miss-wiring avoidance ■ Node failure protection ■ Loop protection
SNMP Trap	Up to 10 trap stations; trap types including: ● Device cold start ● Authorization failure ● Port link up/link down ● DI/DO open/close ● Typology change(ITU ring) ● Power failure ● Environmental abnormal
DHCP	Provide DHCP Client/ DHCP Server/DHCP Option 82/Port based DHCP; DHCP Snooping; DHCP Option 66; Basic IPv6 DHCP server
Mac based DHCP Server	Assign IP address by Mac that can include dumb switch in DHCP network
Diagnostic	Support Ping and DDM information
MLD Snooping	Support IPv6 Multicast stream
DNS	Provide DNS client feature
SNTP	Supports SNTP to synchronize system clock in Internet
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).
Firmware Update	Supports TFTP firmware update, TFTP backup and restore; HTTP firmware upgrade
N-Key Configurator**	RJ45 dongle for firmware upgrade, auto / editable configuration backup/restoration
Configuration	Supports editable configuration file for system quick

upload and download	installation
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. Optional bypass models are available with –BT/BBT model name. (only on IP67 version)

- **IPES-5416T-8-67-24VI……..P/N: 8360-61894**
  16 10/100TX + 4 10/100/1000T X-coded w/8 PoE at/af up to 30W EN50155 M12 IP67 L2+ Managed Ethernet Switch w/ M12 A code power connector; PoE 9V~36V dual input w/ PoE galvanic isolation; 80W PoE budget, -40°C to 75°C
- **IPES-5416T-8-54-24VI……..P/N: 8360-61897**
  16 10/100TX + 4 10/100/1000T X-coded w/8 PoE at/af up to 30W EN50155 M12 IP54 L2+ Managed Ethernet Switch w/ M12 A code power connector; PoE 9V~36V dual input w/ PoE galvanic isolation; 80W PoE budget, -40°C to 75°C
- **IPES-5416T-8-67-24TVI……..P/N: 8360-61895**
  16 10/100TX + 4 10/100/1000T X-coded w/8 PoE at/af up to 30W EN50155 M12 IP67 L2+ Managed Ethernet Switch w/ M12 A code power connector; PoE 16.8V~56V dual input w/ PoE galvanic isolation; 80W PoE budget, -40°C to 75°C
- **IPES-5416T-8-54-24TVI……..P/N: 8360-61898**
  16 10/100TX + 4 10/100/1000T X-coded w/8 PoE at/af up to 30W EN50155 M12 IP54 L2+ Managed Ethernet Switch w/ M12 A code power connector; PoE 16.8V~56V dual input w/ PoE galvanic isolation; 80W PoE budget, -40°C to 75°C
- **IPES-5416T-8-67-WVI……..P/N: 8360-73725**
  16 10/100TX + 4 10/100/1000T X-coded w/8 PoE at/af up to 30W EN50155 M12 IP67 L2+ Managed Ethernet Switch; 16.8~137.5V dual input w/ PoE galvanic isolation; 80W PoE budget; -40°C to 75°C
- **IPES-5416T-8-54-WVI……..P/N: 8360-73726**
  16 10/100TX + 4 10/100/1000T X-coded w/8 PoE at/af up to 30W EN50155 M12 IP54 L2+ Managed Ethernet Switch; 16.8~137.5V dual input w/ PoE galvanic isolation; 80W PoE budget; -40°C to 75°C
- **IPES-5416T-16-67-24VI……..P/N: 8360-8016**
  16 10/100TX + 4 GigaT X-coded w/16 PoE at/af up to 30W EN50155 M12 IP67 L2+ Managed Ethernet Switch w/ M12 A code power connector; PoE 9V~36V dual input w/ PoE galvanic isolation; 80W PoE budget, -40°C to 75°C
- **IPES-5416T-16-54-24VI……..P/N: 8360-8017**
  16 10/100TX + 4 GigaT X-coded w/16 PoE at/af up to 30W EN50155 M12 IP54 L2+ Managed Ethernet Switch w/ M12 A code power connector; PoE 9V~36V dual input w/ PoE galvanic isolation; 80W PoE budget, -40°C to 75°C
- **IPES-5416T-16-67-24TVI……..P/N: 8360-8018**
  16 10/100TX + 4 GigaT X-coded w/16 PoE at/af up to 30W EN50155 M12 IP67 L2+ Managed Ethernet Switch w/ M12 A code power connector; PoE 16.8V~56V dual input w/ PoE galvanic isolation; 80W PoE budget, -40°C to 75°C
- **IPES-5416T-16-54-24TVI……..P/N: 8360-8019**
  16 10/100TX + 4 GigaT X-coded w/16 PoE at/af up to 30W EN50155 M12 IP54 L2+ Managed Ethernet Switch w/ M12 A code power connector; PoE 16.8V~56V dual input w/ PoE galvanic isolation; 80W PoE budget, -40°C to 75°C
- **IPES-5416T-16-67-WVI……..P/N: 8360-8032**
  16 10/100TX + 4 GigaT X-coded w/16 PoE at/af up to 30W EN50155 M12 IP67 L2+ Managed Ethernet Switch; 16.8~137.5V dual input w/ PoE galvanic isolation; 80W PoE budget; -40°C to 75°C
- **IPES-5416T-16-54-WVI……..P/N: 8360-8033**
  16 10/100TX + 4 GigaT X-coded w/16 PoE at/af up to 30W EN50155 M12 IP54 L2+ Managed Ethernet Switch; 16.8~137.5V dual input w/ PoE galvanic isolation; 80W PoE budget; -40°C to 75°C
- **IES-5416T-67-24VI……..P/N: 8360-6126**
  16 10/100TX + 4 Giga T X-coded EN50155 L2+ M12 IP67 Managed Ethernet Switch; -40°C to 75°C; 9~36VDC dual input w/galvanic isolation
- **IES-5416T-54-24VI……..P/N: 8360-6127**
  16 10/100TX + 4 Giga T X-coded EN50155 L2+ M12 IP54 Managed Ethernet Switch; -40°C to 75°C; 9~36VDC dual input w/galvanic isolation
- **IES-5416T-67-24TVI……..P/N: 8360-6128**
  16 10/100TX + 4 Giga T X-coded EN50155 L2+ M12 IP67 Managed Ethernet Switch; -40°C to 75°C; 16.8~56VDC dual input w/galvanic isolation
- **IES-5416T-54-24TVI……..P/N: 8360-6129**
  16 10/100TX + 4 Giga T X-coded EN50155 L2+ M12 IP54 Managed Ethernet Switch; -40°C to 75°C; 16.8~56VDC dual input w/galvanic isolation
- **IES-5416T-67-WVI……..P/N: 8360-7368**
  16 10/100TX + 4 Giga T X-coded EN50155 L2+ M12 IP67 Managed Ethernet Switch; -40°C to 75°C; 16.8~137.5VDC dual input w/galvanic isolation
- **IES-5416T-54-WVI……..P/N: 8360-7369**
  16 10/100TX + 4 Giga T X-coded EN50155 L2+ M12 IP54 Managed Ethernet Switch; -40°C to 75°C; 16.8~137.5VDC dual input w/galvanic isolation
- **IPES-5416T-8-67-WVI……..P/N: 8360-73725-CAF**

16 10/100TX + 4 10/100/1000 T A-coded w/8 PoE at/af up to 30W EN50155 M12 IP67 L2+ Managed Ethernet Switch; 16.8~137.5VDC dual input w/PoE & Ethernet galvanic isolation 80W PoE budget; -40°C to 75°C; w/M23 Power

- **IPES-5416T-8-54-WVI……..……..……..P/N: 8360-73733**
  16 10/100TX + 4 10/100/1000 T A-coded w/8 PoE at/af up to 30W EN50155 M12 IP54 L2+ Managed Ethernet Switch; 16.8~137.5VDC dual input w/PoE & Ethernet galvanic isolation 80W PoE budget; -40°C to 75°C; w/M23 Power
- **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

ECONM12-08X(M)-SPEEDCON	8 pin M12 (Male) X-coded 180 degree crimp type connector for data, Ethernet CAT6A (10G), shielded, SPEEDCON
ECONM12-05A(M)-C-180	5 pin M12 (Male) A-coded 180 degree crimp type connector for DI/DO
ECONM12-04D(M)-C-180	4 pin M12 (Male) D-coded 180 degree crimp type connector for data

Cable

ECONM12-5P(F)70CM CABLE	5 pin M12 (Female) A-coded 90 degree cable for power supply, 70cm
ECABM12X83MSTP	8 pin M12 (Male) X-coded 180 degree RJ45 STP cable for data, shielded, 300cm
ECAB124030MJS	4 pin M12 (Male) D-coded 180 degree RJ45 STP cable for data, 300cm

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