

ITP-802GSM-8PH24

EN50155 Managed PoE Switch

IP67, 8x FE M12 + 2x 100/1000Base-X SFP with 8x PoE 180W, 24/48VDC

- » EN50155, EN50121-4, EN45545-2, EN61000-6-2, EN61000-6-4, CE and FCC Certified
- » 24/48VDC Redundant Dual Power Input
- » Regulated PoE Output Voltage
- » Auto Checking and Auto Reset when PoE PD Fail



The EN50155 certified managed PoE switch ITP-802GSM-8PH24, that provides 8x 10/100Base-TX M12 D-code Ethernet ports and 2x 100/1000Base-X SFP slots. Supports a variety of PoE operation functions, including automatic detection of PoE device power, automatic reset, PoE scheduling, etc. Designed for heavy industrial, vehicle and rolling stock applications, utilizing M12 connectors to ensure secure connections and reliable operation, withstand environmental disturbances such as vibration and shock. with IP67 rating to protect against dust and water submersion, 24VDC power input design compatible with vehicle battery power supply, realizes PoE function through voltage boosting. EN50155 certification covers operating temperature, mains input voltage, surge, ESD, vibration and shock, making the switch suitable for vehicle, rolling stock applications.

Features

- M12 and M23 connector against vibration and shock
- 24/48VDC redundant dual input power, and built-in power booster design up to 50VDC for PoE output
- Regulated PoE output voltage (50VDC) to stabilize PoE device, and guarantee delivery PoE power distance to 100meters
- Advanced PoE Management, management, PoE PD failure, auto checking and auto reset, PoE configuration for power planning, weekly scheduling
- Cable diagnostics, identifies opens/shorts distance
- Provides up to 5 instances that each supports μ-Ring, μ-Chain or Sub-Ring type for flexible uses.
(Please see CTC Union's μ-Ring white paper for more details)
- Supports TTDP for train application
- Supports IEEE 1588 PTP V2 for precise time synchronization to operate in Ordinary-Boundary, Peer to Peer Transparent Clock, End to End Transparent Clock, Master, Slave mode by each port
- Supports EMS Management

Specifications

| Standard | | |
|-----------------------|--|---|
| IEEE 802.3 | | 10Base-T 10Mbit/s Ethernet |
| IEEE 802.3u | | 100Base-TX, 100Base-FX, Fast Ethernet |
| IEEE 802.3ab | | 1000Base-T Gbit/s Ethernet over twisted pair |
| IEEE 802.3z | | 1000Base-X Gbit/s Ethernet over Fiber-Optic |
| IEEE 802.1d | | STP (Spanning Tree Protocol) |
| IEEE 802.1w | | RSTP (Rapid Spanning Tree Protocol) |
| IEEE 802.1s | | MSTP (Multiple Spanning Tree Protocol) |
| ITU-T G.8032 / Y.1344 | | ERPS (Ethernet Ring Protection Switching) |
| ITU-T G.8031 / Y.1342 | | EPS (Ethernet Protection Switching) |
| IEEE 802.1Q | | Virtual LANs (VLAN) |
| IEEE 802.1X | | Port based and MAC based Network Access Control, Authentication |
| IEEE 802.3ac | | Max frame size extended to 1522Bytes |
| IEEE 802.3ad | | Link aggregation for parallel links with LACP (Link Aggregation Control Protocol) |
| IEEE 802.3x | | Flow control for Full Duplex |

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|------------------------------------|--|---|--------------------------|------------|------------------|
| Standard | IEEE 802.3af | PoE (Power over Ethernet) | | | |
| | IEEE 802.3at | PoE+ (Power over Ethernet ehancements) | | | |
| | IEEE 802.1ad | Stacked VLANs, Q-in-Q | | | |
| | IEEE 802.1p | LAN Layer 2 QoS/CoS Protocol for Traffic Prioritization | | | |
| | IEEE 802.1ab | Link Layer Discovery Protocol (LLDP) | | | |
| | IEEE 802.3az | EEE (Energy Efficient Ethernet) | | | |
| VLAN ID | 4094 IEEE802.1Q VLAN ID | | | | |
| Switch Architecture | Back-plane (Switching Fabric): 5.6Gbps (Full wire-speed) | | | | |
| Data Processing | Store and Forward | | | | |
| Flow Control | IEEE 802.3x for full duplex mode Back pressure for half duplex mode | | | | |
| PoE Port | 8x M12 (4-Pin D-code Female) ports support IEEE 802.3af / IEEE 802.3at End-Span, Alternative A mode. | | | | |
| Network Connector | 8x M12 (4-Pin, Female,D-Code) 10/100Base-TX UTP + 2x 100/1000Base-X SFP | | | | |
| | UTP port provides Auto negotiation speed, Auto MDI/MDI-X, Full/Half duplex function | | | | |
| | 2x Water-proof cable connector 2x 100/1000Base-X SFP slot, support DDMI | | | | |
| Console | RS-232 (5-pin A-Code M12 male) | | | | |
| Network Cable | UTP/STP Cat. 5e cable or above | | | | |
| | EIA/TIA-568 100-ohm (100meter) | | | | |
| Protocols | CSMA/CD | | | | |
| Reverse Polarity Protection | Supported | | | | |
| Overload Current Protection | Supported | | | | |
| CPU Watch Dog | Supported | | | | |
| LED | System: Power 1 (Green), Power 2 (Green), Fault (Amber), CPU Act (Green), Ring Master (Amber) | | | | |
| | UTP: 10/100 Link/Active (Green) | | | | |
| | SFP Slot: Link/Active (Green) | | | | |
| | PoE: ON (Green) | | | | |
| Jumbo Frame | 9.6KB | | | | |
| MAC Address Table | 8K | | | | |
| Memory Buffer | 512K Bytes for packet buffer | | | | |
| Device Memory | 16M Bytes Flash ROM, 128M Bytes RAM | | | | |
| PoE Standard | IEEE 802.3af, IEEE 802.3at | | | | |
| PoE Power Output | Maximum PoE output power budget 180W (30W/port) Regulated PoE output voltage at 50VDC | | | | |
| Power Supply | Provides 1x M23 (5-Pin, male) for redundant dual DC 24/48V (20~57VDC) input power | | | | |
| | Built-in very high efficiency booster(94~97%) to rise up 50VDC for PoE output | | | | |
| | Regulated PoE output voltage (50VDC) to stabilize PoE device, and guarantee delivery PoE power distance to 100 meter | | | | |
| Power Consumption | Input Voltage | Total Power Consumption | Device Power Consumption | PoE Budget | Boost Efficiency |
| | 24 VDC | 196.4W | 8.1W | 180W | 95.50% |
| | 48 VDC | 197.8W | 9.6W | 180W | 95.60% |
| Warning Message | System Syslog, SMTP/ e-mail event message, alarm relay | | | | |
| Alarm Relay Contact | 5-pin A-code M12 male, Relay outputs with current carrying capacity of 1A @24VDC | | | | |
| Operating Temperature | -40 ~ 75°C | | | | |
| Operating Humidity | 5% to 95% (Non-condensing) | | | | |
| Storage Temperature | -40 ~ 85°C | | | | |
| Housing | Rugged Metal, Fanless, IP67 grade housing for against water, dust, and oil | | | | |
| Dimensions | 69 x 240 x 168mm (D x W x H) | | | | |
| Weight | 2.170kg | | | | |
| Installation Mounting | Wall mounting or DIN Rail mounting (Optional) | | | | |
| MTBF | 371,961 Hours (MIL-HDBK-217) | | | | |
| | | | | | |
| Certification | | | | | |
| EMC | CE | | | | |
| EMI (Electromagnetic Interference) | FCC Part 15 Subpart B Class A, CE | | | | |
| Railway Traffic | EN50155, EN50121-4 | | | | |

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|--|---|
| Fire protection of railway vehicles | EN45545-2 |
| Immunity for Heavy Industrial Environment | EN61000-6-2 |
| Emission for Heavy Industrial Environment | EN61000-6-4 |
| EMS (Electromagnetic Susceptibility) Protection Level | EN61000-4-2 (ESD) Level 3, Criteria B |
| | EN61000-4-3 (RS) Level 3, Criteria A |
| | EN61000-4-4 (Burst) Level 3, Criteria A |
| | EN61000-4-5 (Surge) Level 3, Criteria B |
| | EN61000-4-6 (CS) Level 3, Criteria A |
| | EN61000-4-8 (PFMF, Magnetic Field) Field Strength: 300A/m, Criteria A |
| Shock | IEC-61373 |
| Freefall | IEC 60068-2-32 |
| Vibration | IEC-61373 |

Software Specifications

Topology

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|--|--|
| VLAN | IEEE 802.1q VLAN, up to 4094 802.1Q VLAN ID IEEE 802.1q VLAN, up to 4094 Groups IEEE 802.1ad Q-in-Q MAC-based VLAN, up to 256 entries IP Subnet-based VLAN, up to 128 entries Protocol-based VLAN (Ethernet, SNAP, LLC), up to 128 entries VLAN Translation, up to 256 entries Private VLAN for port isolation GVRP (GARP VLAN Registration Protocol) MVR (Multicast VLAN Registration) Voice VLAN |
| Link Aggregation (Port Trunk) | Static (Hash with SA, DA, IP, TCP/UDP port), up to 5 trunk group Dynamic (IEEE 802.3ad LACP), up to 5 trunk group |
| Spanning Tree | IEEE802.1d STP, IEEE802.1w RSTP, IEEE802.1s MSTP |
| Multiple μ-Ring | Up to 5 instances that each supports u-Ring, u-Chain or Sub-Ring type for flexible uses, and maximum up to 5 Rings. Recovery time <10ms The maximum number of device is allowed 250 nodes in a Ring. |
| Loop Protection | Supported |
| ITU-T G.8032 / Y.1344 ERPS (Ethernet Ring Protection) | Recovery time <50ms Single Ring, Sub-Ring, Multiple ring topology network |
| ITU-T G.8031 / Y.1342 EPS (Ethernet Protection Switching) | Supported |

QoS Features

| | |
|--------------------------------------|--|
| Class of Service | IEEE802.1p 8 active priorities queues per port |
| Traffic Classification QoS | IEEE802.1p based CoS |
| | IP Precedence based CoS |
| | IP DSCP based CoS |
| | QCL (QoS Control List): Frame Type, Source/Destination MAC, VLAN ID, PCP, DEI, Protocol, Source IP, IP Fragment, DSCP, TCP/UDP port number |
| Bandwidth Control for Ingress | 100~1,000,000 when the "Unit" is "kbps" and 1~1,000 when the "Unit" is "Mbps" |
| Bandwidth Control for Egress | 100~1,000,000 when the "Unit" is "kbps" and 1~1,000 when the "Unit" is "Mbps" |
| | Rate Unit : bit Per queue / Port shaper |
| DiffServ (RF 2474) Remarking | |
| Storm Control | For Unicast, Broadcast and Multicast |

IP Multicasting Features

| | |
|----------------------------|--|
| IGMP / MLD Snooping | IGMP Snooping v1, v2, v3 / MLD Snooping v1, v2 |
| | Port Filtering Profile, Throttling |
| | Fast Leave |
| | Maximum Multicast Group : up to 1022 entries |
| | Query / Static Router Port |

Security Features

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|--|--|
| IEEE 802.1X | Port-Based, MAC-Based |
| ACL | Number of rules : up to 256 entries for L2 / L3 / L4 L2: Mac address SA/DA/VLAN L3: IP address SA/DA, Subnet L4: TCP/UDP |
| RADIUS | Authentication & Accounting |
| TACACS+ | Authentication |
| HTTPS, HTTP | Supported |
| SSL / SSH v2 | Supported |
| User Name Password Authentication | Local Authentication |
| | Remote Authentication (via RADIUS / TACACS+) |
| Management Interface Access Filtering | Web, Telnet / SSH, CLI RS-232 console |

Management Features

| | |
|---------------------------------------|---|
| CLI | Cisco® like CLI |
| Web UI | Supported |
| Telnet | Server |
| SNMP | V1, V2c, V3 |
| sFlow | Supported |
| Modbus/TCP | Supports for management and monitoring |
| SW & Configuration Upgrade | TFTP, HTTP Redundant firmware in case of upgrade failure |
| FTP client | Supports for upload/download configuration |
| RMON | RMON I (1, 2, 3, 9 group), RMON II |
| MIB II | RFC 1213 |
| UPnP | Supported |
| BOOTP | Supported |
| DHCP | Server, Client, Relay, Relay option 82, Snooping |
| RARP | Supported |
| TTDP | Supported (Train Topology Discovery Protocol) |

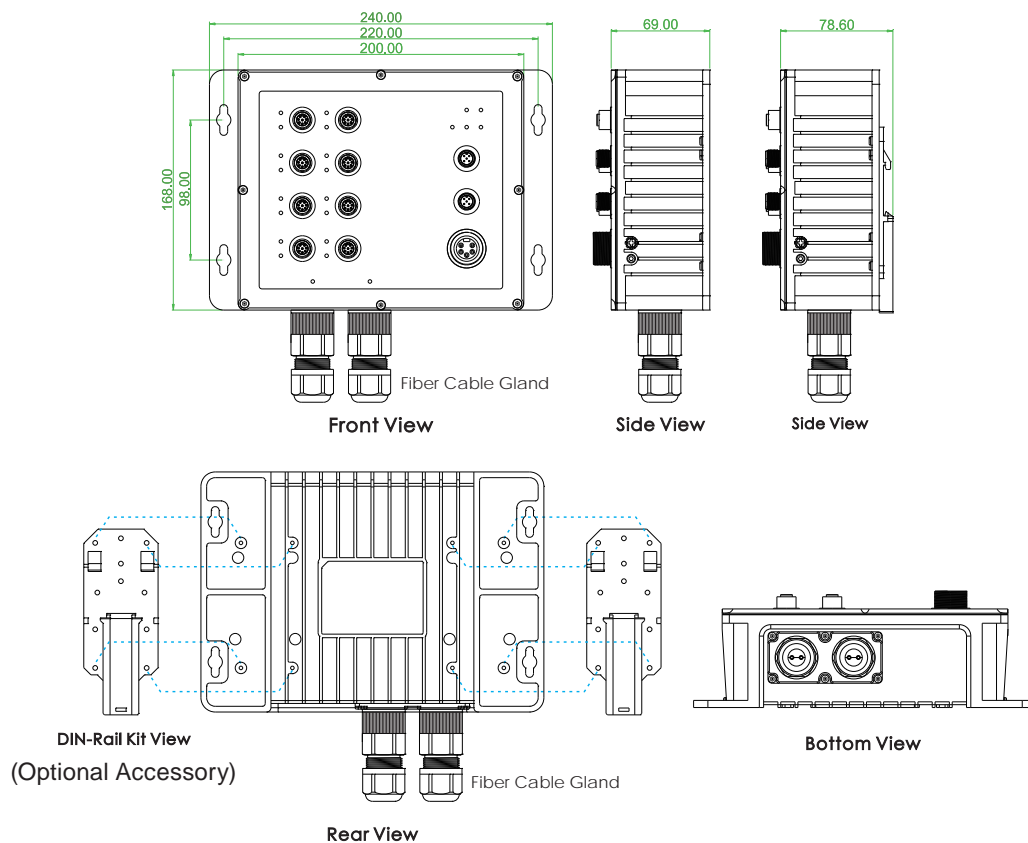
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|----------------------------|---|
| IP Source Guard | Supported |
| Port Mirroring | Supported |
| | Syslog server (RFC3164) |
| Warning Message | System syslog, e-mail, alarm relay |
| DNS | Client, Proxy |
| IEEE1588 PTP V2 | Supports 5 operating mode in each port : Ordinary-Boundary, Peer to Peer Transparent Clock, End to End Transparent Clock, Master and Slave |
| NTP, SNTP | Client |
| LLDP (IEEE 802.1ab) | Link Layer Discovery Protocol |
| | LLDP-MED |

IPv6 Features

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|------------------------|-----------------------|
| IPv6 Management | Telnet Server/ICMP v6 |
| SNMP over IPv6 | Supported |
| HTTP over IPv6 | Supported |
| SSH over IPv6 | Supported |
| IPv6 Telnet | Supported |
| IPv6 NTP, SNTP | Client |

| | |
|-------------------------|---|
| IPv6 TFTP | Supported |
| IPv6 QoS | Supported |
| IPv6 ACL | Number of rules: up to 256 entries for L2 / L3 / L4 L2: Mac address SA/DA/VLAN L3: IP address SIP, Subnet (32bit) L4: TCP/UDP |
| Others Features | |
| Green Ethernet | Supports IEEE802.3az EEE (Energy Efficient Ethernet) Management to optimize the power consumption Determine the cable length and lowering the power for ports with short cables Lower the power for a port when there is no link LED Power Management: Adjustment LEDs intensity |
| Cable Diagnostic | Measuring UTP cable OK or broken point distance |
| Advanced PoE Management | PoE PD Failure Auto Checking, and Auto reset when PD fail PoE Scheduling (On/Off schedule weekly) PoE Configuration PoE Enable/Disable Power limit by classification Power limit by management Total PoE Power budge (maximum 180W) limitation Power feeding priority |

Dimensions



Ordering Information

| Model Name | Managed | IP67 | Total Port | UTP M12 | SFP | PoE | PoE Total Power Budget | Power Input | Certification | | | | Operating Temperature |
|-------------------|---------|------|------------|----------------|-----------------|--------------|------------------------|-------------|----------------------|-----------|----------------------------|-----------|-----------------------|
| | | | | 10/100 Base-TX | 100/1000 Base-X | IEEE 802.3at | | Redundant | EN50155 EN50121-4 | EN45545-2 | EN61000-6-2 EN61000-6-4 | CE FCC | |
| ITP-802GSM-8PHE24 | V | V | 10 | 8 | 2 | 8 | 180W | 24/48VDC | V | V | V | V | -40~75°C |

Optional Accessories

■ Industrial SFP Transceiver

The ISFP series of industrial grade SFP modules have been fully tested with all CTC Union industrial grade Ethernet switches for guaranteed compatibility and performance. Best performance can be guaranteed, even in mission-critical applications. (Please see CTC Union's Industrial SFP datasheets for more items and detailed information.)

| | |
|--------------------|---|
| ISFP-M7000-85-D(E) | Industrial SFP GbE 1000Base-SX, M/M, 500 meter, wave length 850nm, 7.5dB, LC, DDMI, -10~70°C (-40~85°C) |
| ISFP-S7020-31-D(E) | Industrial SFP 1000Base-LX, S/M, 20km, wave length 1310nm, 15dB, LC, DDMI, -10~70°C (-40~85°C) |
| ISFP-M5002-31-D(E) | Industrial SFP 155M 100Base-FX, MM, 2km, wave length 1310nm, 12dB, LC, DDMI, -10~70°C (-40~85°C) |
| ISFP-S5030-31-D(E) | Industrial SFP 155M 100Base-FX, SM, 30km, 1310nm, 19dB, LC, DDMI, -10~70°C (-40~85°C) |

■ Optional Cable/Connector & Din-Rail Kit

P/N: CAB-M12AM8-RJ45

M12 A-code Male (8-Pin) to RJ-45, AWG 24, IP67, 1 meter



For GbE UTP (A-code model)

P/N: CAB-M12DM4-RJ45

M12 D-code Male (4-Pin) to RJ-45, AWG 24, IP67, 1 meter



For FE UTP

P/N: CAB-M12AF5-OPEN

M12 A-code Female (5-Pin) to open wire, AWG 22, IP67, 1 meter



For Alarm

P/N: CAB-M23F5-OPEN

M23 Female (5-Pin) to open wire, (AWG 16), IP67, 1 meter



For Power

P/N: M12A-M8

M12 A-code Male (8-Pin) connector, IP67



For GbE UTP (A-code model)

P/N: M12A-M8

M12 A-code Male (8-Pin) connector, IP67



For GbE UTP (A-code model)

P/N: M12D-M4

M12 D-code Male (4-Pin) connector, IP67



For FE UTP

P/N: M12A-F5

M12 A-code Female (5-Pin) connector, IP67



For Alarm

P/N: IND-DNK04

Din Rail Kit



(130 X52mm / 4 Screws) (2pcs/set)