ITP-802GSM-8PH24

EN50155 IP67 Managed 8x 10/100Base-TX + 2x100/1000Base-X SFP with 8 High Power PoE Switch (Total 180W, 24V Booster)

ITP-802GTM-8PH24

EN50155 IP67 Managed 8x 10/100Base-TX + 2x10/100/1000Base-T with 8 High Power PoE Switch (Total 180W, 24V Booster)

ITP-800M-8PH24

EN50155 IP67 Managed 8x 10/100Base-TX with 8 High Power PoE Switch (Total 180W, 24V Booster)

ITP-802GSM-8PH24 series are managed industrial grade Ethernet PoE (Power over Ethernet) switches with 8x 10/100Base-TX PoE ports and/or 2 SFP Gigabit/Fast Ethernet ports that provide stable and reliable Ethernet transmission. ITP-802GSM-8PH24 series equipped with PoE feature enable power and data to be transferred via a single cable, hereby considerably reducing cabling expense. ITP-802GSM-8PH24 series also provide a variety of functions to manage PoE operation including PoE device auto-checking, auto reset, PoE power weekly scheduling. Other L2 management functions supported include STP/RSTP/MSTP/ ITU-T G.8032 Ring and multiple u-Ring for redundant cabling, layer 2 Ethernet IGMP, VLAN, QoS ,Security, IPv6, bandwidth control, port mirroring, cable diagnostic and Green Ethernet.
Housed in rugged DIN rail or wall mountable enclosures, these switches are designed for the harshest environments. Especially, ITP-802GSM-8PH24 series switches use M12 connectors to ensure tight, robust connections and to guarantee reliable and anti environmental disturbances operation, such as vibration and shock. ITP-802GSM-8PH24 series are compliant with EN 50155, covering power input voltage, surge, EFT, ESD, vibration, shock, thus making the switches suitable for industrial applications, such as vehicle, rolling stock, ship, vessel.
ITP-802GSM-8PH24 series are IP67 rated to protect against dust and water submersion. They are particularly used in environments with extreme temperature, high humidity, oil, dust and in outdoor environments requiring water-proof applications such as IP surveillance, city security. ITP-802GSM-8PH24 series can also work with CTC Management platform SmartView to provide convenient, real-time and centralized network management.

Features

- 8x 10/100Base-TX M12 and 2x 100/1000Base-X SFP Fiber (Total 10 Port) (ITP-802GSM-8PH24)
- 8x 10/100Base-TX M12 and 2x 10/100/1000Base-T(X) (Total 10 Port) (ITP-802GTM-8PH24)
- 8x 10/100Base-TX M12 (ITP-800M-8PH24)
- M12 and M23 connector against vibration and shock
- IP67 water proof design against dust and water
- 24/48VDC redundant dual input power, and built-in power booster design upto 55 VDC for PoE/PoE+ output
- Constant and regulated PoE output voltage at 55VDC
- Provides 8-port IEEE802.3af / 802.3at PoE output (30W per Port)
- Maximum PoE output power budget 180W
- Advanced PoE Management, PoE PD Failure Auto Checking and auto reset, PoE configuration for power planning, weekly scheduling
- UL60950-1, CE, FCC, Rail Traffic EN50155,EN50121-4 certified
- Industrial Grade EMS, EMI, EN61000-6-2, EN61000-6-4 certified
- Cable diagnostic, Measuring cable OK or broken point distance
- Supports Green Ethernet IEEE802.3az EEE (Energy Efficient Ethernet) management to optimize the power consumption
- STP, RSTP, MSTP, ITU-T G.8032 Ethernet Protection Ring (EPR) for redundant cabling
- Provide up to 5 instances that each supports u-Ring, u-Chain or Sub-Ring type for flexible uses
- u-Ring for Redundant Cabling, recovery time<10ms in 250 maximum devices
- DHCP client/Relay/Snooping/Snooping option 82/Relay option 82
- QoS, Traffic classification QoS, CoS, bandwidth control for Ingress and Egress, Storm Control, DiffServ
- IEEE802.1q VLAN, MAC based VLAN, IP subnet based VLAN, Protocol based VLAN, VLAN translation, MVR
- Dynamic IEEE 802.3ad LACP Link Aggregation, Static Link Aggregation
- IGMP snooping V1/V2/V3, IGMP Filtering/ Throttling, IGMP query, IGMP proxy reporting, MLD snooping V1/V2
- Security : Port based and MAC based IEEE802.1X, RADIUS, ACL, TACACS+, HTTP/HTTPS, SSL/SSH v2
- Software upgrade via TFTP and HTTP, redundant firmware to avoid in case of upgrade failure
- RMON, MIB II, Port mirroring, Event syslog, DNS, NTP/SNTP, IEEE802.1ab LLDP
- Supports IPv6 Telnet server /ICMP v6
- CLI, Web based management, SNMP v1/v2c/v3, Telnet server for management
- Support **SmartView** for Centralized 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)
	IEEE 802.1Q	Virtual LANs (VLAN)
	IEEE 802.1X	Port based and MAC based Network Access Control, Authentication
	IEEE 802.3ad	Link aggregation for parallel links with LACP(Link Aggregation Control Protocol)
	IEEE 802.3x	Flow control for Full Duplex
	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 VID
Switch Architecture	Back-plane (Switching Fabric): 5.6 Gbps (ITP-802GSM-8PH24, ITP-802GTM-8PH24) 1.6 Gbps (ITP-800M-8PH24)
Data Processing	Store and Forward
Flow Control	IEEE 802.3x for full duplex mode Back pressure for half duplex mode
PoE RJ-45 Pin Assignment	8x M12 (4-Pin A-code Female) ports support IEEE 802.3af / IEEE 802.3at End-Span, Alternative A mode.
	Positive (V+) : M12 pin 2,4 Negative (V-) : M12 pin 1,3. Data (1,2,3,4)
Network Connector	8xM12 (4-Pin, Female,A-Code) 10/100Base-TX , Auto negotiation speed, Auto MDI/MDI-X function, Full/Half duplex, and 2xM12 (8-Pin, Female,A-Code) 10/100/1000Base-T (ITP-802GTM-8PH24) Water proof Fiber Cable Gland support for 2 X 100/1000 Base-X dual speed mode SFP slot, with DDMI (for ITP-802GSM-8PH24)
Console	RS-232 (5-pin A-Code M12 male)
Network Cable	UTP/STP above Cat. 5e cable
	EIA/TIA-568 100-ohm (100m)
Protocols	CSMA/CD
Reverse Polarity Protection	Present

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

Overload Current Protection	Present
CPU Watch Dog	Present
LED	Per unit: Power 1 (Green), Power 2 (Green), Fault (Amber), CPU Act (Green), Ring Master (Yellow)
	Per UTP port: 10/100 Link/Active (Green)
	SFP Fiber Per port: Link/Active (Green)
	PoE Port LED 1 LED /per Port : • PoE Output Power On : ON (Green) • PoE Fault (Over Load, Short Circuit, Port failed at Startup) : Flash 1times /sec (Green) • PoE Output Power Off : Off (Green)
Jumbo Frame	9.6KB
MAC Address Table	8K
PoE Standard	IEEE802.3af, IEEE802.3at
PoE Power Output	Maximum PoE output power budget 180W (30W/per port) Regulated PoE output voltage at 55VDC
Power Supply	Redundant Dual DC 24/48V (20~57VDC) Input power Built-in power booster design up to 55 VDC for PoE/PoE+ output
Power Consumption	TBD
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 1 A @24VDC
Operating Temperature	-10 ~ 60°C (ITP-802GSM-8PH24, ITP-802GTM-8PH24, ITP-800M-8PH24) -40 ~ 75°C (ITP-802GSM-8PHE24, ITP-802GTM-8PHE24, ITP-800M-8PHE24)
Operating Humidity	5% to 95% (Non-condensing)
Storage Temperature	-40 ~ 85°C

Housing	Rugged Metal, IP67 water proof protection, Fan-less
Dimensions	168x240x70 mm (D x W x H)
Weight	TBD
Installation Mounting	DIN Rail mounting or wall mounting
Certification	
EMC	CE
EMI (Electromagnetic Interference)	FCC Part 15 Subpart B Class A,CE EN55022 Class A
Railway Traffic	EN50155, EN50121-4
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
Safety	UL60950-1 (Pending)
Shock	IEC-61373
Freefall	IEC 60068-2-32
Vibration	IEC-61373
MTBF	TBD (MIL-HDBK-217)
Warranty	5 years

Software Specifications

Topology	
VLAN	IEEE 802.1q VLAN,up to 4094 802.1Q VLAN VID
	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(Ethernt, SNAP, LLC), up to 128 entries
	VLAN Translation, up to 256 entries
	MVR (Multicast VLAN Registration)
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 u-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 devices allowed in a Ring supported ring is 250.
Loop Protection	Present
ITU-T G.8032 / Y.1344 ERPS (Ethernet Ring Protection)	Recovery time <50ms
	Single Ring, Sub-Ring, Multiple ring topology network
QoS Feature	
Class of Service	IEEE802.1p 8 active priorities queues for 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
	QCE(QoS Control Entry): Protocol, Source IP, IP Fragment, DSCP, TCP/UDP port number
Bandwidth Control for Ingress	Rate in steps :1 kbps / Mbps / fps / kfps
	Range : 100 kbps to 1Gbps / 1fps to 3300kfps
	Rate Unit : bit or frame
Bandwidth Control for Egress	Rate in steps : 1 kbps / Mbps
	Range : 100 kbps to 1Gbps
	Rate Unit : bit
	Per queue / Per port shaper
DiffServ (RF 2474) Remarking	
Storm Control	for Unicast, Broadcast, Multicast
IP Multicasting Feature	
IGMP / MLD Snooping	IGMP Snooping v1, v2, v3 / MLD Snooping v1, v2
	Port Filtering Profile
	Throttling

IGMP / MLD Snooping	Fast Leave
	Maximum Multicast Group : up to 1022 entries
	Query / Static Router Port
Security Features	
IEEE 802.1X	Port-Based
	MAC-Based
ACL	Number of rules : up to 256 entries
	for L2 / L3 / L4
RADIUS authentication & accounting	
TACACS+ authentication & accounting, TACACS+ 3.0	
HTTPS, HTTP	
SSL / SSH v2	
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	
Web Based Management	
Telnet	Server
SNMP	V1, V2c, V3
SW & Configuration Upgrade	TFTP, HTTP
	Redundant firmware in case of upgrade failure
RMON	RMON I (1, 2, 3, 9 group), RMON II
MIB II	RFC 1213
DHCP	Client
	Relay
	Snooping
	Snooping option 82
	Relay option 82
IP Source Guard	
Port Mirroring	
Event Syslog	Syslog server (RFC3164) (Support 1 server)
Warning Message	System syslog, e-mail, alarm relay
DNS	Client, Proxy
NTP / SNTP	
LLDP (IEEE 802.1ab)	Link Layer Discovery Protocol
	LLDP-MED
IPv6 Features	
IPv6 Management	Telnet Server/ICMP v6
SNMP over IPv6	
HTTP over IPv6	
SSH over IPv6	

IPv6 Telnet Support	
IPv6 NTP / SNTP Support	
IPv6 TFTP Support	
IPv6 QoS	
IPv6 ACL	Number of rules: up to 256 entries
	L2 / L3 / L4
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

Green Ethernet	Lower the power for a port when there is no link
	LED Power Management :Adjustment LEDs intensity
Cable Diagnostic	Measuring 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

Application

Figure 1: ITP Series in Onboard Train Application

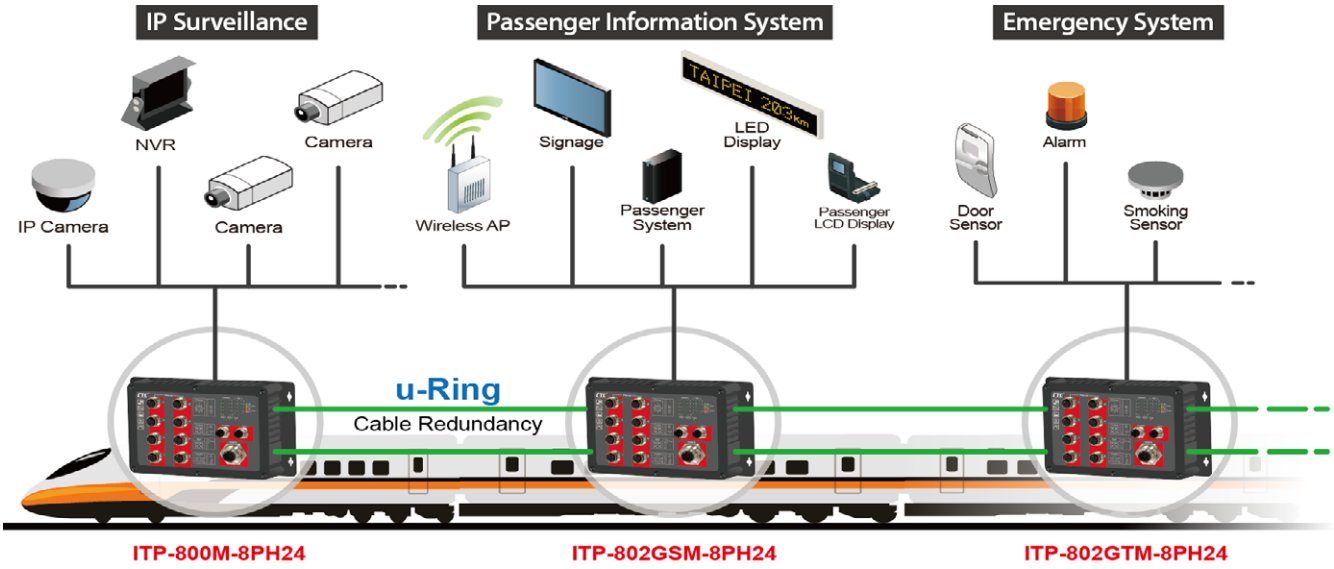


Figure 2: PoE Core Technology

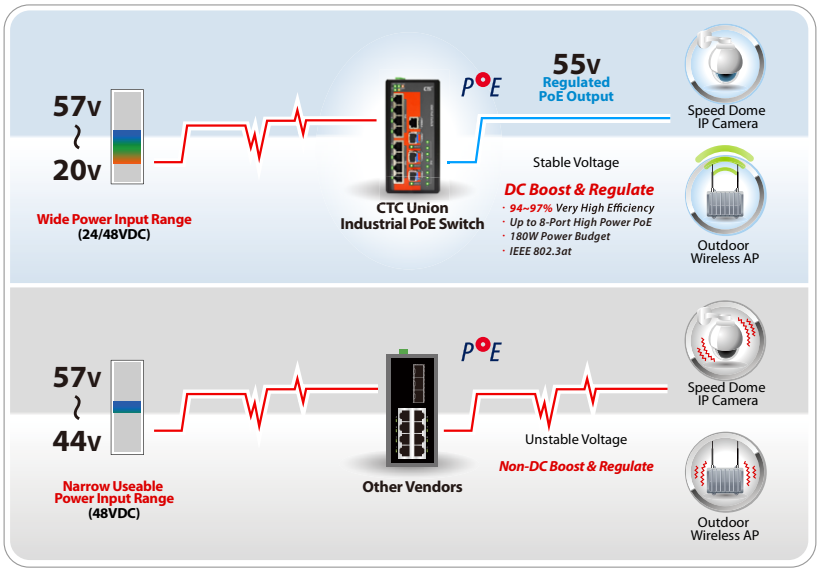


Figure 3: ITP Series for Industrial Automation

Figure 4: An illustration of u-Ring instances configured in Web interface

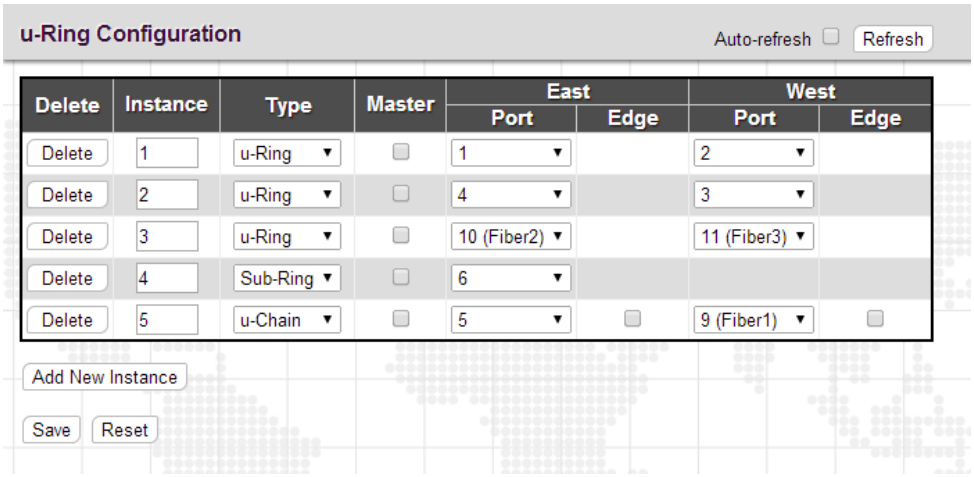
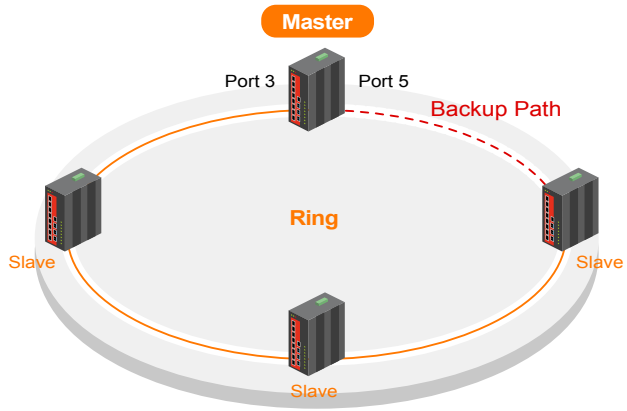
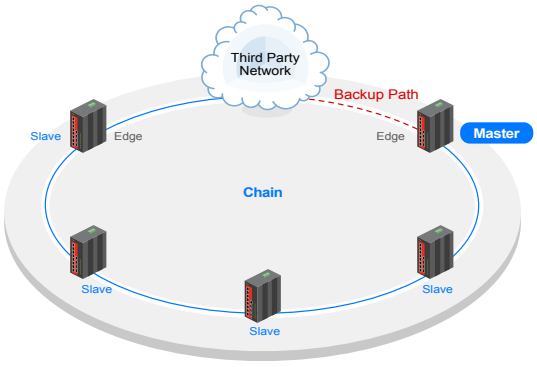


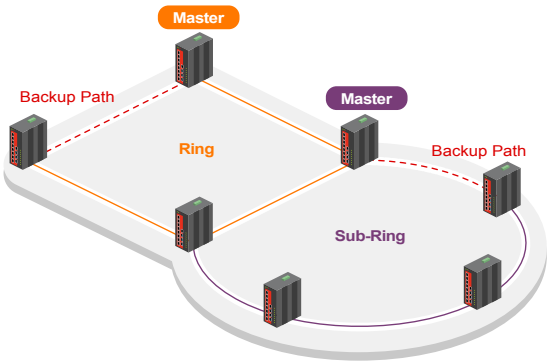
Figure 5: u-Ring Type



u-Ring Type

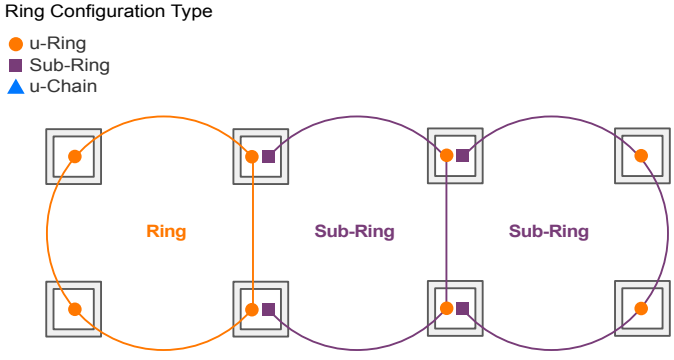


Determining the backup path (u-Chain type)

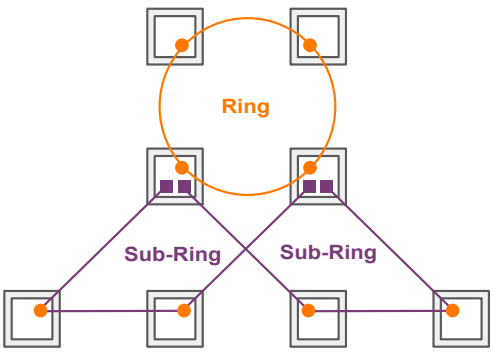


A major ring and a Sub-Ring topology

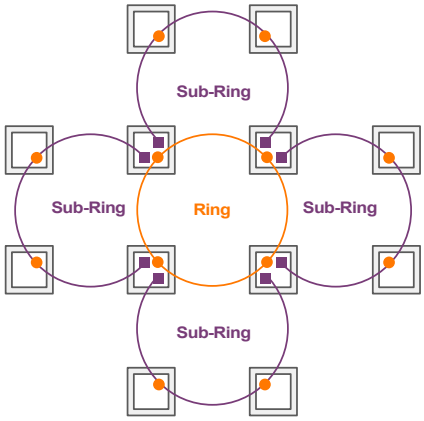
Figure 6: Ring Configuration Example



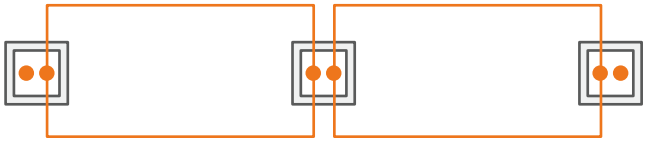
Ring Configuration Type



Combination of a ring and two Sub-Ring



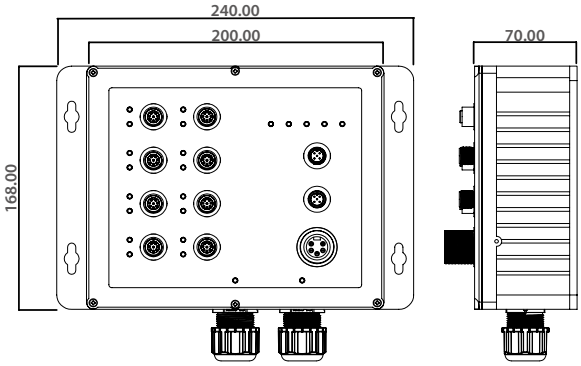
Combination of a ring and four Sub-Ring



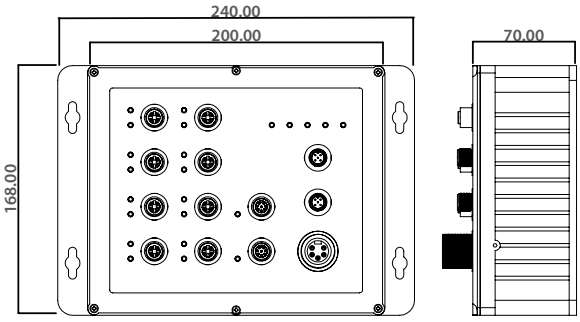
Cable Redundancy

Dimensions

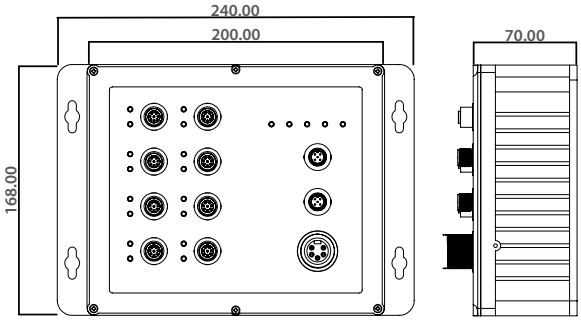
ITP-802GSM-8PH24



ITP-802GTM-8PH24



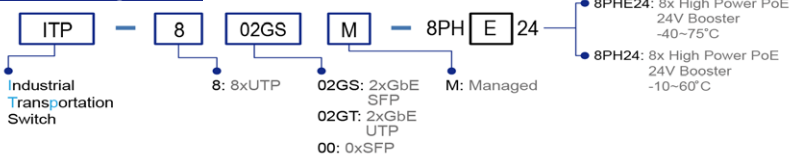
ITP-800M-8PH24



Ordering Information

Model Name	Managed	IP67	Total Port	UTP Port M12 10/100 Base-TX	Gigabit Port	PoE Port IEEE802.3at	PoE Total Power Budge	Input Voltage 24/48 VDC (20~57 VDC)	Certification EN50155 EN50121-4	Certification UL60950-1	Certification EN61000-6-2 EN61000-6-4	Certification CE, FCC	Shock Vibration IEC61373	Operating Temperture
ITP-802GSM-8PH24	V	V	10	8	2 SFP	8	180W	V	V	Plan	V	V	V	-10~60°C
ITP-802GSM-8PHE24	V	V	10	8	2 SFP	8	180W	V	V	Plan	V	V	V	-40~75°C
ITP-802GTM-8PH24	V	V	10	8	2 UTP	8	180W	V	V	Plan	V	V	V	-10~60°C
ITP-802GTM-8PHE24	V	V	10	8	2 UTP	8	180W	V	V	Plan	V	V	V	-40~75°C
ITP-800M-8PH24	V	V	8	8	—	8	180W	V	V	Plan	V	V	V	-10~60°C
ITP-800M-8PHE24	V	V	8	8	—	8	180W	V	V	Plan	V	V	V	-40~75°C

Model Naming Rule



Accessories

DRP-240-48	Industrial Power, Input 85 ~ 264VAC, Output 48VDC, 240W, -10 ~ +70°C
SFP Transceiver	Compatible, Reliable, 5-year Warranty

SFP Naming Rule