

Industrial 10/100TX Fast Ethernet Switch



Multi Fast Ethernet TP/SFP Interfaces Solution for Hardened Environment

PLANET ISW Industrial 10/100TX Fast Ethernet Switch Series is tailored for industrial applications, featuring multi-fast Ethernet TP/SFP interfaces, rugged yet compact case, and a versatile redundant power system. The ISW Series comes with an operating **temperature range of -40 to 75 degrees Celsius**.

In response to the growing demand for IIoT (Industrial Internet of Things) infrastructure, the ISW Series is designed for easy deployment of industrial networks with its Plug and Play capability. Furthermore, it ensures stable and reliable fast data and power transmission. The ISW Series also supports PROFINET traffic pass-through with QoS, making it an ideal choice for integrating with industrial automation systems and enhancing communication between devices in a factory setting.

Models	10/100 Copper Ports	IEEE 802.3at PoE+ Ports	100FX SFP Slot	Switch Capacity	Enclosure	Switch Capacity
ISW-500T	RJ45 x 5	8	--	1Gbps	IP30 metal case	12~48V DC & 24V AC
ISW-800T	RJ45 x 8	--	--	1.6Gbps		
ISW-501T	RJ45 x 5	--	--	1Gbps		
ISW-801T	RJ45 x 8	4	--	1.6Gbps		
ISW-504PT	RJ45 x 5	--	--	1Gbps	IP40 metal case	12~54V DC
ISW-514PTF	RJ45 x 4	--	1	1Gbps		
ISW-808PTM12	M12 x 8	--	--	1.6Gbps	IP67 aluminum case	
ISW-808PTM12A	M12 x 8	--	--	1.6Gbps	IP50 metal case	

PROFINET Traffic Pass-through with QoS

The ISW Series features a brand-new function that enhances support for recognizing the PROFINET traffic for higher delivery priority. Once it receives the

Physical Port

- 5-/8-port 10/100BASE-TX RJ45 with auto-MDI/MDI-X function (ISW-500T/ISW-800T/ISW-501T/ISW-801T)
- **4** 10/100BASE-TX Fast Ethernet **IEEE 802.3at PoE+** RJ45 copper ports (Ports 1 to 4)/1 10/100BASE-TX Fast Ethernet non-PoE RJ45 copper port (ISW-504PT)
- **4** 10/100BASE-TX Fast Ethernet **IEEE 802.3at PoE+** RJ45 copper ports (Ports 1 to 4)/1 100BASE-FX SFP interface (ISW-514PTF)
- 8-port 10/100BASE-TX with dustproof M12 connectors and IEEE 802.3at PoE+ injector function (ISW-808PT-M12A)
- 8-port 10/100BASE-TX with waterproof/dustproof M12 connectors and IEEE 802.3at PoE+ injector function (ISW-808PT-M12)

Power over Ethernet (ISW-504PT/ISW-514PTF/ISW-808PT-M12/ISW-808PT-M12A)

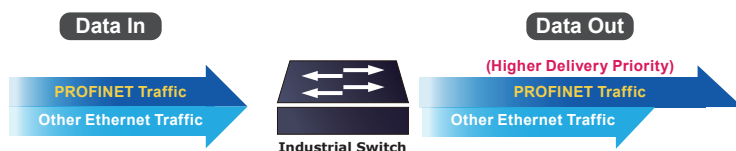
- Its end-span PSE complies with IEEE 802.3at Power over Ethernet Plus.
- Backward compatible with IEEE 802.3af Power over Ethernet
- Up to 4/8 ports of IEEE 802.3af/802.3at devices powered
- 120-/180-watt PoE budget (**ISW-504PT_ISW-514PTF/ISW-808PT-M12_ISW-808PT-M12A**)
- Supports PoE power up to 36 watts for each PoE port
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100 meters

Layer 2 Features

- Supports auto-negotiation and 10/100Mbps half/full duplex mode
- High-performance Store and Forward architecture; runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- PROFINET traffic pass-through with QoS
- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- Backplane (switching fabric): 1Gbps/1.6Gbps
- Integrated address look-up engine, supporting 1K/2K absolute MAC addresses

PROFINET traffic, it will prioritize forwarding the PROFINET traffic first before handling other Ethernet traffic. With this enhanced function, the ISW Series will become the ideal Industrial Unmanaged Switch for handling faster PROFINET traffic.

PLANET PROFINET Protocol Pass-through Industrial Switch



Robust Protection

The ISW Series provides contact discharge and air discharge for Ethernet ESD protection. It also supports surge immunity to improve product stability and protects users' networks from devastating ESD attacks, making sure the flow of operation does not fluctuate.

High Switch Performance

The ISW Series offers a high-performance switch architecture. With the 5/8 10/100Mbps Fast Ethernet ports providing non-blocking switch fabric and wire-speed throughput and the MAC address table, the ISW Series can perform wire-speed packet transfer without the risk of packet loss. The flow control function enables it to provide fast and reliable data transfer.

Plug and Play

All of the RJ45 copper interfaces in the ISW Series support 10/100Mbps auto negotiation for optimal speed detection through RJ45 Category 5, 5e, 6, 6a or 7 cables. The standard auto-MDI/MDI-X support can detect the type of connection to any Ethernet device without requiring special straight-through or crossover cables.

Flexible and Easy Installation with Limited Space

The compact-sized ISW Series is specially designed to be installed in a narrow environment, such as wall enclosure. It can be installed by fixed wall mounting or DIN rail, thereby making its usability more flexible and easier in any space-limited location.

- Automatic address learning and address aging
- CSMA/CD Protocol

Industrial Case and Installation

- IP30/IP40/IP50/IP67 metal/aluminum case
- Waterproof and dustproof, and fanless designs
- DIN-rail and wall-mount installation
- Redundant power design
 - 12 to 48/54V DC, redundant power with reverse polarity protection
 - Active-active redundant power failure protection
 - Backup of catastrophic power failure on one supply
 - Fault tolerance and resilience
- Supports 6KV DC Ethernet ESD protection
- Supports 6KV surge protection
- -40 to 75 degrees C operating temperature

Optional installation method



DIN-rail Mounting



Wall Mounting



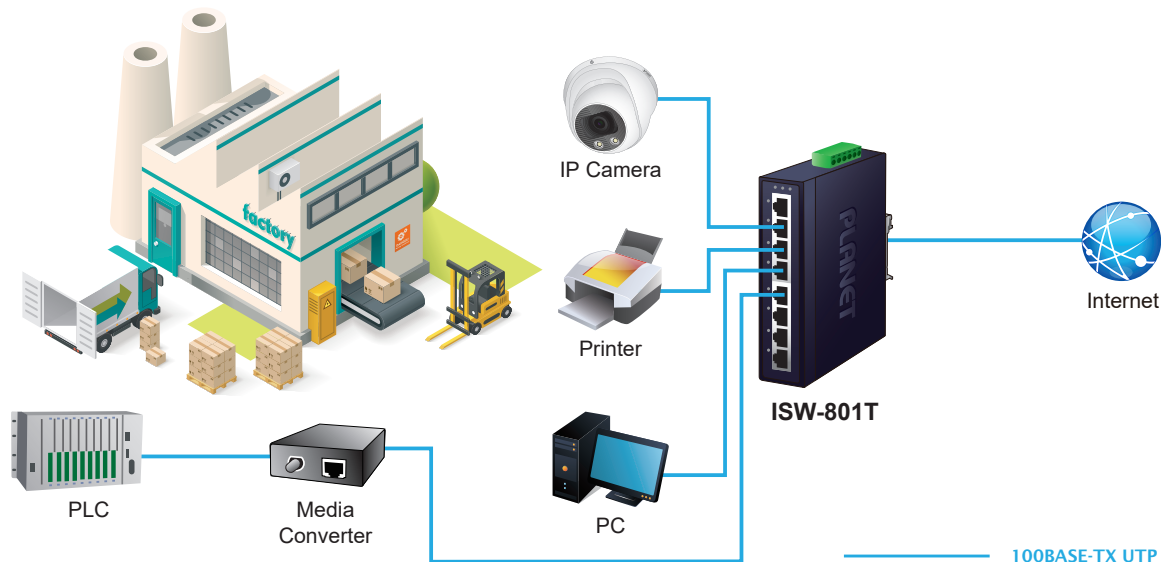
Side Wall Mounting (Space saving)

* The above pictures are for illustration only.

Applications

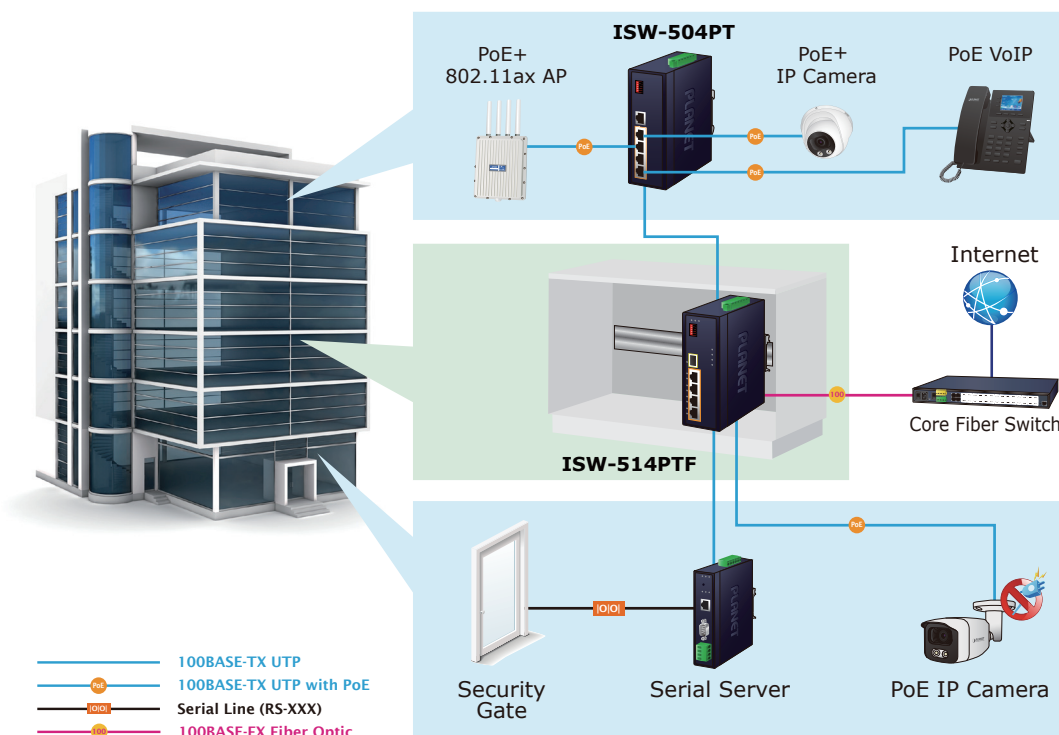
Designed for Heavy Industries

The ISW Series case is particularly designed for heavy industries, such as factories, harbors, warehouses, and more. When installed at these establishments, it can enhance the work performance of these establishments by speedily transferring incoming and outgoing data.



Industrial-grade PoE+ Switch for Building Automation and Security

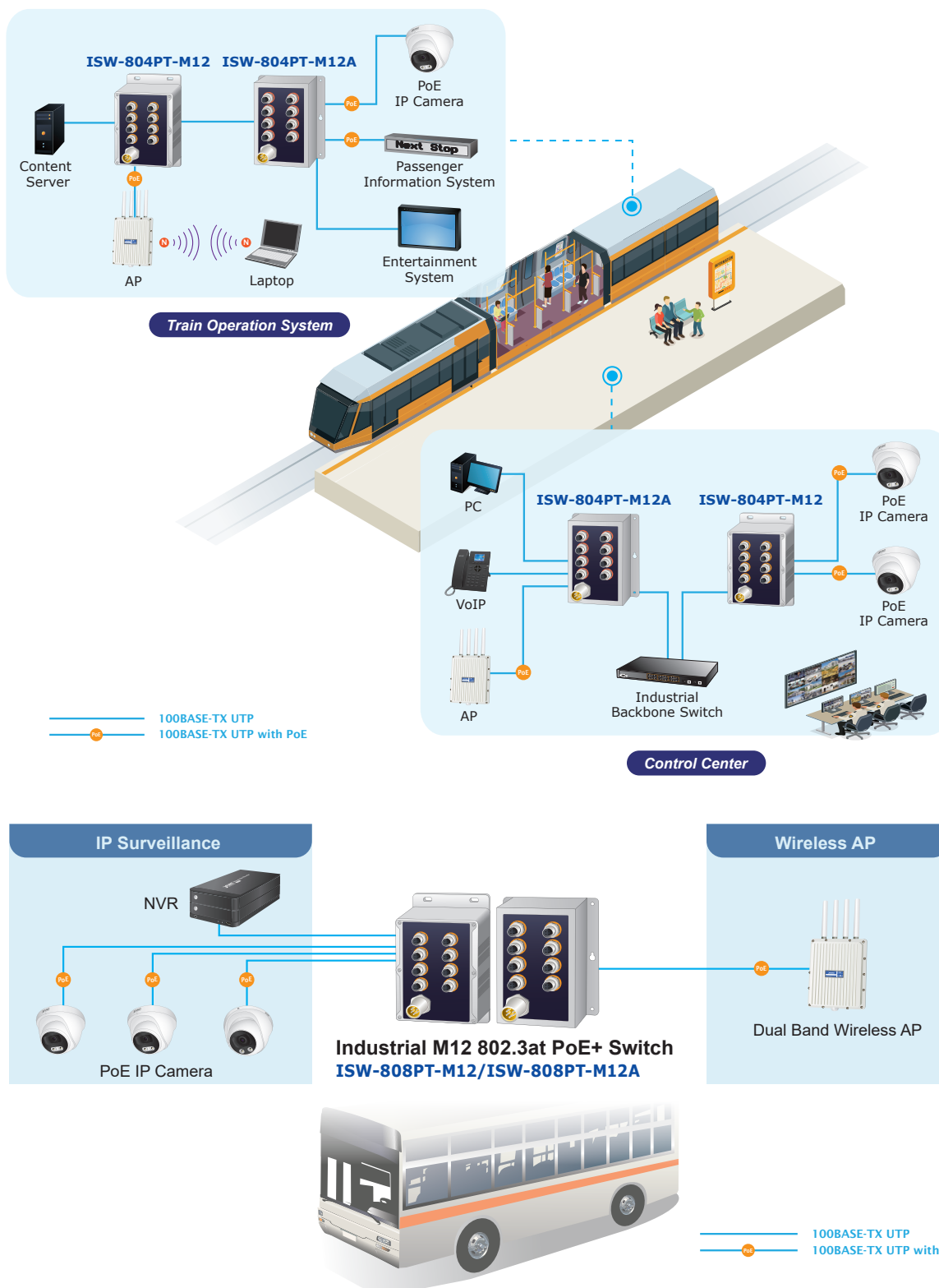
Suitable for buildings where security is strictly enforced, the ISW-504PT and ISW-514PTF, with four Fast Ethernet 802.3at PoE+ in-line power interfaces, can easily build a power centrally controlled for an IP phone system, IP surveillance system, and wireless AP group in the harsh Industrial environment. For instance, 4 PoE IP cameras or PoE wireless APs can be easily installed for surveillance demands or a wireless roaming environment in the industrial area can be built. Without the power-socket limitation, the ISW-504PT and ISW-514PTF makes the installation of IP cameras or wireless APs easier and more efficient.



ITS Industrial Ethernet PoE Solution

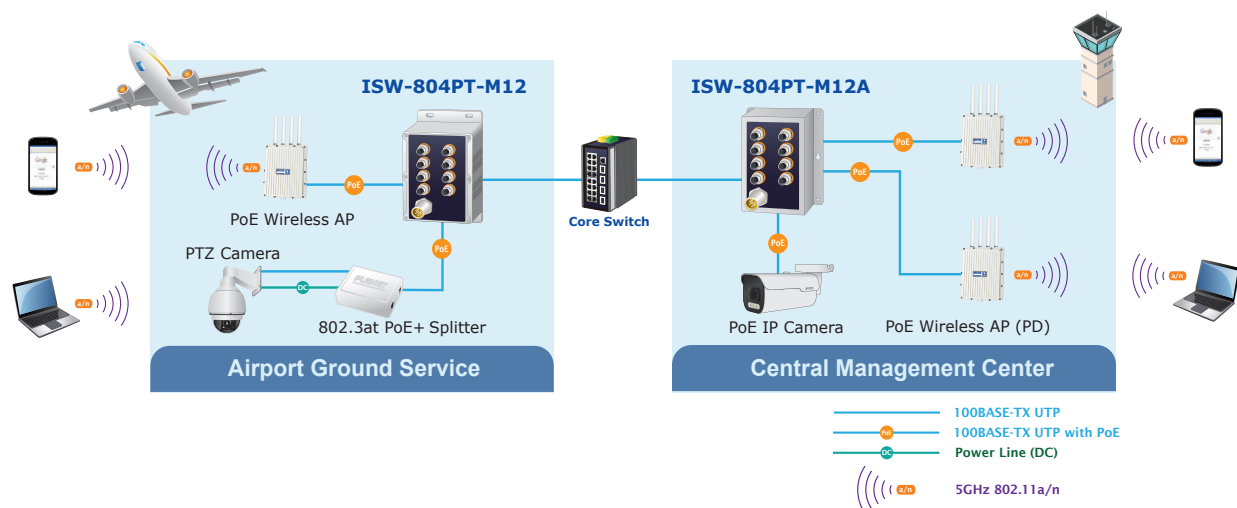
The ISW-808PT-M12's and ISW-808PT-M12A's vibration-proof and shockproof features guarantee stable operation, even in moving vehicles, trains and other public transportation systems, making it an ideal solution for intelligent transportation systems. To facilitate the 802.3at PoE usage with commonly-used 12~54V DC power input for transportation and industrial-level applications, the ISW-808PT-M12 and ISW-808PT-M12A adopt the 12~54V DC to 54V power boost technology to solve power source issue but do not require special power supplies. It certainly meets the transmission needs of power and data for surveillance system, video transmission and wireless service on the bus, shuttle and other vehicles.

Railway Transmission System



Public Construction for Data Collection and Forwarding

Providing up to 8 PoE+, in-line power interfaces, the ISW-808PT-M12 and ISW-808PT-M12A can easily build a power centrally controlled by IP phone system, IP camera system, or wireless AP group for Industrial network. For instance, 8 PoE IP cameras or wireless access points can be easily installed around the corner in the industrial environment for surveillance demands or for a wireless roaming network. Without the power-socket limitation, the ISW-808PT-M12 and ISW-808PT-M12A make the installation of IP cameras or wireless AP easier and more efficient.



Specifications

Model	ISW-500T	ISW-800T
Hardware Specifications		
Hardware Version	2	
Copper Ports	5 x 10/100BASE-TX RJ45 TP auto-MDI/MDI-X, auto negotiation	8 x 10/100BASE-TX RJ45 TP auto-MDI/MDI-X, auto negotiation
SFP Ports	Removable 6-pin terminal block Pin 1/2 for Power 1; Pin 3/4 for fault alarm; Pin 5/6 for Power 2	
Alarm	Provides one relay output for power failure Alarm relay current carry ability: 1A@DC 24V	
LED	3 x LED for system and power: ■ Green: DC Power 1 ■ Green: DC Power 2 ■ Red: Power Alarm 1 x LED for each copper port: ■ Green: 10/100Mbps LNK/ACT	
ESD Protection	6KV	
EFT Protection	6KV	
Power Requirements	12~48V DC, redundant power with reverse polarity protection, 24V AC power support	
Power Consumption/ Dissipation	Maximum 476 watts/1624.02 BTU (full loading)	Maximum 775 watts/2645.9 BTU (full loading)
Power Consumption / Dissipation	Max. 1.1 watts/3.77BTU (Power on without any connection) Max. 2 watts/6.86BTU (Ethernet full loading)	Max. 1.1 watts/3.77BTU (Power on without any connection) Max. 2.5 watts/8.57BTU (Ethernet full loading)
Installation	DIN-rail kit and wall-mount ear	
Enclosure	IP30 metal case	
Dimensions (W x D x H)	30 x 70 x 104 mm	41 x 70 x 115 mm
Weight	255g	300g
Switch Specifications		
Switch Processing Scheme	Store-and-Forward	
Address Table	1K entries	
Shared Data Buffer	448K bits	
Flow Control	Back pressure for half duplex IEEE 802.3x pause frame for full duplex	
Switch Fabric	1Gbps	1.6Gbps
Throughput (packet per second)	0.74Mpps@64bytes	1.19Mpps@ 64 bytes

Network Cables	10/100BASE-TX Cat. 3, 4, 5, 5e, 6 UTP cable (max. 100 meters) EIA/TIA-568 100-ohm STP (max. 100 meters)
Standards Conformance	
Standards Compliance	IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet IEEE 802.3x Full-Duplex Flow Control IEEE 802.3az Energy Efficient Ethernet IEEE 802.1p Class of Service PROFINET Traffic Passthrough with QoS
Regulatory Compliance	FCC Part 15 Class A, CE
Stability Testing	IEC 60068-2-32 (free fall) IEC 60068-2-27 (shock) IEC 60068-2-6 (vibration)
Environment	
Temperature	Operating: -40~75 degrees C Storage: -40~75 degrees C
Humidity	Operating: 5~95%, Storage: 5~95% (non-condensing)

Model	ISW-501T	ISW-801T
Hardware Specifications		
Hardware Version	3	
Copper Ports	5 x 10/100BASE-TX RJ45 TP auto-MDI/MDI-X, auto negotiation	8 x 10/100BASE-TX RJ45 TP auto-MDI/MDI-X, auto negotiation
SFP Ports	Removable 6-pin terminal block Pin 1/2 for Power 1; Pin 3/4 for fault alarm; Pin 5/6 for Power 2	
Alarm	Provides one relay output for power failure; Alarm relay current carry ability: 1A @ DC 24V	
LED	3 x LED for system and power: ■ Green: DC Power 1 ■ Green: DC Power 2 ■ Red: Power Alarm 1 x LED for each copper port: ■ Green: 10/100Mbps LNK/ACT	
ESD Protection	6KV	
EFT Protection	6KV	
Power Requirements	12~48V DC, redundant power with polarity reverse protection, 24V AC power support	
Power Consumption/ Dissipation	Max. 0.9 watts/3.07BTU (Power on without any connection) Max. 1.6 watts/5.45BTU (Ethernet full loading)	Max. 0.9 watts/3.07BTU (Power on without any connection) Max. 2.1 watts/7.16BTU (Ethernet full loading)
Installation	DIN-rail kit and wall-mount ear	
Enclosure	IP30-rated metal case	
Dimensions (W x D x H)	32 x 87 x 135mm	
Weight	400g	428g
Switch Specifications		
Switch Processing Scheme	Store-and-Forward	
Address Table	1K	
Shared Data Buffer	448K bits	
Flow Control	Back pressure for half duplex, IEEE 802.3x pause frame for full duplex	
Switch Fabric	1Gbps	1.6Gbps
Throughput (packet per second)	0.74Mpps	1.19Mpps
Network Cables	10/100BASE-TX Cat. 3, 4, 5, 5e, 6 UTP cable (max. 100 meters) EIA/TIA-568 100-ohm STP (max. 100 meters)	

Standards Conformance

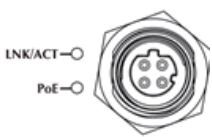
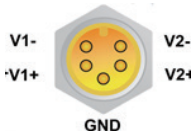
Standards Compliance	IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet IEEE 802.3x Full Duplex Flow Control IEEE 802.3az Energy Efficient Ethernet PROFINET Traffic Pass-through with QoS
Regulatory Compliance	FCC Part 15 Class A, CE
Stability Testing	IEC60068-2-32 (free fall) IEC60068-2-27 (shock) IEC60068-2-6 (vibration)

Environment

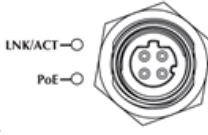
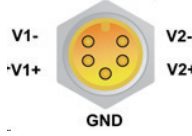
Temperature	Operating: -40~75 degrees C Storage: -40~75 degrees C
Humidity	Operating: 5% to 95%, Storage: 5% to 95% (non-condensing)

Model	ISW-504PT		ISW-514PTF
Hardware Specifications			
Copper Ports	5 x 10/100BASE-TX RJ45 TP		8 x 10/100BASE-TX RJ45 TP
Copper Ports	5		4
SFP Port	NA		One port 100BASE-FX SFP port
PoE Injector Ports	Four ports with 802.3af/at PoE+ injector function (Ports 1 to 4)		
Connector	Removable 6-pin terminal block ■ Pin 1/2 for Power 1 ■ Pin 3/4 for power fault alarm ■ Pin 5/6 for Power 2		
DIP Switch (Ports 1 to 4)	Standard mode: 30-watt PoE transmission distance of 100m at speed of 10/100Mbps VLAN mode: "Port-based VLAN Protection" where ports can be isolated from each other via one DIP switch. Only Port-5 can visit other ports. Extend mode: 25-watt PoE transmission distance of 250m at speed of 10Mbps		
Power Requirements	12~54V DC, 7A (max.)		
Power Consumption	Max. 6.48 watts/22BTU@54V DC input (System) Max. 133 watts/453BTU@54V DC input (Ethernet + PoE Full Loading)	Max. 7 watts/23.8BTU@54V DC input (System) Max. 133 watts/453BTU@54V DC input (Ethernet + PoE Full Loading)	
Alarm	One relay output for power failure. Alarm relay current carry ability: 1A @ 24V AC		
Dimensions (W x D x H)	50 x 87 x 135 mm		
Weight	613g		
Enclosure	IP40 metal case		
Installation	DIN-rail/ wall-mount		
ESD Protection	5KV		
LED Indicators	3 x LED for System and Power: ■ Green: DC Power 1 ■ Green: DC Power 2 ■ Red: Power Fault Alarm 2 x LED for PoE +Copper Port (Ports 1 to 4): ■ Green: LNK/ACT (10/100Mbps) ■ Amber: PoE-in-Use 1 x LED for Copper Port (Port 5): ISW-504PT ■ Green: LNK/ACT (10/100Mbps) 1 x LED for 100BASE-FX Port (Port 5): ISW-514PTF ■ Greenn: LNK/ACT (100Mbps) 4 x LED for PoE Usage(W) (Low to high): ■ Amber: 30W, 60W, 90W and 120W		
Switch Specifications			
Switch Architecture	Store-and-Forward		
Switch Fabric	1Gbps/non-blocking		

Throughput (packet per second)	0.74Mpps @64 bytes
Address Table	1K entries
Jumbo Frame	1536 bytes
Flow Control	Back pressure for half duplex IEEE 802.3x pause frame for full duplex
Power over Ethernet	
PoE Standard	IEEE 802.3at Power over Ethernet Plus/PSE
PoE Power Supply Type	End-span
Power Pin Assignment	1/2 (+), 3/6 (-)
PoE Power Output	Per port 54V DC, Max. 36 watts
PoE Power Budget (max.)	120W maximum @54V DC 90W maximum@24V DC 60W maximum@12V DC
Max. Number of Class 2 PDs	4
Max. Number of Class 3 PDs	4
Max. Number of Class 4 PDs	4
Standards Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE
Stability Testing	IEC 60068-2-32 (free fall) IEC 60068-2-27 (shock) IEC 60068-2-6 (vibration)
Standards Compliance	IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet IEEE 802.3x Flow Control and Back Pressure IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus PROFINET Traffic Pass-through with QoS
Environment	
Temperature	Operating: -40~75 degrees C Storage: -40~85 degrees C
Humidity	Operating: 5~90% (non-condensing) Storage: 5~90% (non-condensing)

Model	ISW-808PT-M12A
Hardware Specifications	
Copper Ports	8 x M12, 4-pin D-coded female connector 10/100BASE-TX auto-MDI/MDI-X 
IEEE 802.3at PoE+ Ports	8, port 1 to port 8
Power Connector	1 x M23, 5-pin A-coded male connector 
Enclosure	IP50 metal case
Dimensions (W x D x H)	132 x 75 x 160mm
Weight	952g
Installation	Wall-mount and DIN-rail kit
Power requirements	Dual 12~54V DC
Power Consumption	DC 12V:75.6 watts/257BTU DC 24V:129.3 watts/441 BTU DC 48V:190.1 watts/648 BTU DC 54V:191.7 watts/654 BTU
ESD Protection	6KV DC
Surge Protection	6KV DC

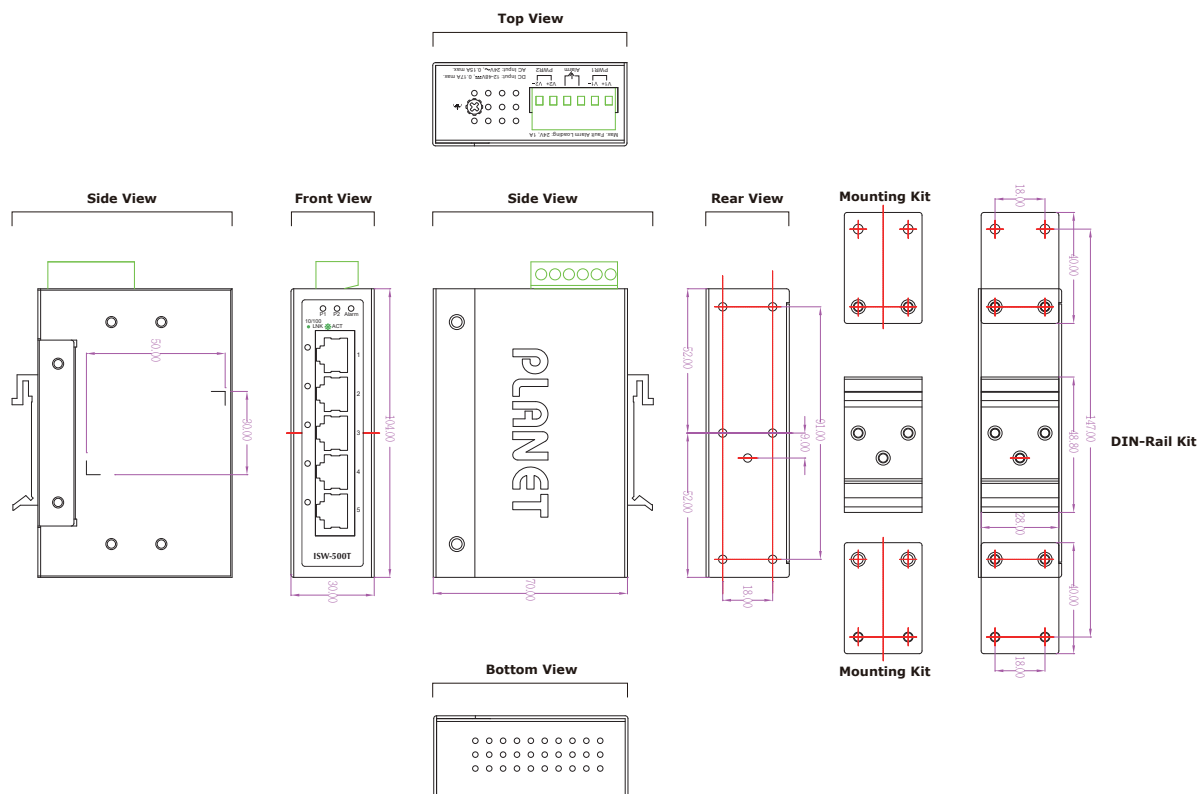
Switch Specifications	
Switch Processing Scheme	Store-and-Forward
Address Table	2K entries
Flow Control	Back pressure for half duplex IEEE 802.3x pause frame for full duplex
Switch Fabric	1.6Gbps
Throughput (packet per second)	1.19Mpps
Maximum Transmit Unit	1536 bytes
Network Cables	10BASE-T: 2-pair UTP Cat.3,4,5 up to 100m (328ft) 100BASE-TX: 2-pair UTP Cat.5, 5e, 6 up to 100m (328ft) EIA/TIA-568 100-ohm STP (100m, max.)
Power over Ethernet	
PoE Standard	IEEE 802.3at Power over Ethernet Plus / PSE
PoE Power Supply Type	End-span
PoE Power Output	54V DC per port with maximum of 36 watts
Power Pin Assignment	1/2(+), 3/6(-)
PoE Budget	180 watts@48-56V DC input 120 watts@24~48V DC input 60 watts@12~23V DC input
Standards Conformance	
Regulatory Compliance	FCC Part 15 Class A CE
Standards Compliance	IEEE 802.3 10BASE-T Ethernet IEEE 802.3u 100BASE-TX Fast Ethernet IEEE 802.3x Full-Duplex Flow Control IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet plus PROFINET Traffic Pass-through with QoS
Stability Testing	IEC60068-2-32 (free fall) IEC60068-2-27 (shock) IEC60068-2-6 (vibration)
Railway Traffic	EN50155
Environments	
Operating	Temperature: -40 ~ 75 degrees C Relative Humidity: 5 ~ 95% (non-condensing)
Storage	Temperature: -40 ~ 75 degrees C Relative Humidity: 5 ~ 95% (non-condensing)

Model	ISW-808PT-M12
Hardware Specifications	
Copper Ports	8 x M12, 4-pin D-coded female connector 10/100BASE-TX auto-MDI/MDI-X 
IEEE 802.3at PoE+ Ports	8, port 1 to port 8
Power Connector	1 x M23, 5-pin A-coded male connector 
Enclosure	IP67 aluminum case
Dimensions (W x D x H)	124 x 53 x 204mm
Weight	1.75kg
Installation	Wall-mount and DIN-rail kit
Power requirements	Dual 12~54V DC

Power Consumption	DC 12V:75.6 watts/257BTU DC 24V:129.3 watts/441 BTU DC 48V:190.1 watts/648 BTU DC 54V:191.7 watts/654 BTU
ESD Protection	6KV DC
Surge Protection	6KV DC
Switch Specifications	
Switch Processing Scheme	Store-and-Forward
Address Table	2K entries
Flow Control	Back pressure for half duplex IEEE 802.3x pause frame for full duplex
Switch Fabric	1.6Gbps
Throughput (packet per second)	1.19Mpps
Maximum Transmit Unit	1536 bytes
Network Cables	10BASE-T: 2-pair UTP Cat.3,4,5 up to 100m (328ft) 100BASE-TX: 2-pair UTP Cat.5, 5e, 6 up to 100m (328ft) EIA/TIA-568 100-ohm STP (100m, max.)
Power over Ethernet	
PoE Standard	IEEE 802.3at Power over Ethernet Plus / PSE
PoE Power Supply Type	End-span
PoE Power Output	54V DC per port with maximum of 36 watts
Power Pin Assignment	1/2(+), 3/6(-)
PoE Budget	180 watts@48-56V DC input 120 watts@24~48V DC input 60 watts@12~23V DC input
Standards Conformance	
Regulatory Compliance	FCC Part 15 Class A CE
Standards Compliance	IEEE 802.3 10BASE-T Ethernet IEEE 802.3u 100BASE-TX Fast Ethernet IEEE 802.3x Full-Duplex Flow Control IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet plus PROFINET Traffic Pass-through with QoS
Stability Testing	IEC60068-2-32 (free fall) IEC60068-2-27 (shock) IEC60068-2-6 (vibration)
Railway Traffic	EN50155
Environments	
Operating	Temperature: -40 ~ 75 degrees C Relative Humidity: 5 ~ 95% (non-condensing)
Storage	Temperature: -40 ~ 75 degrees C Relative Humidity: 5 ~ 95% (non-condensing)

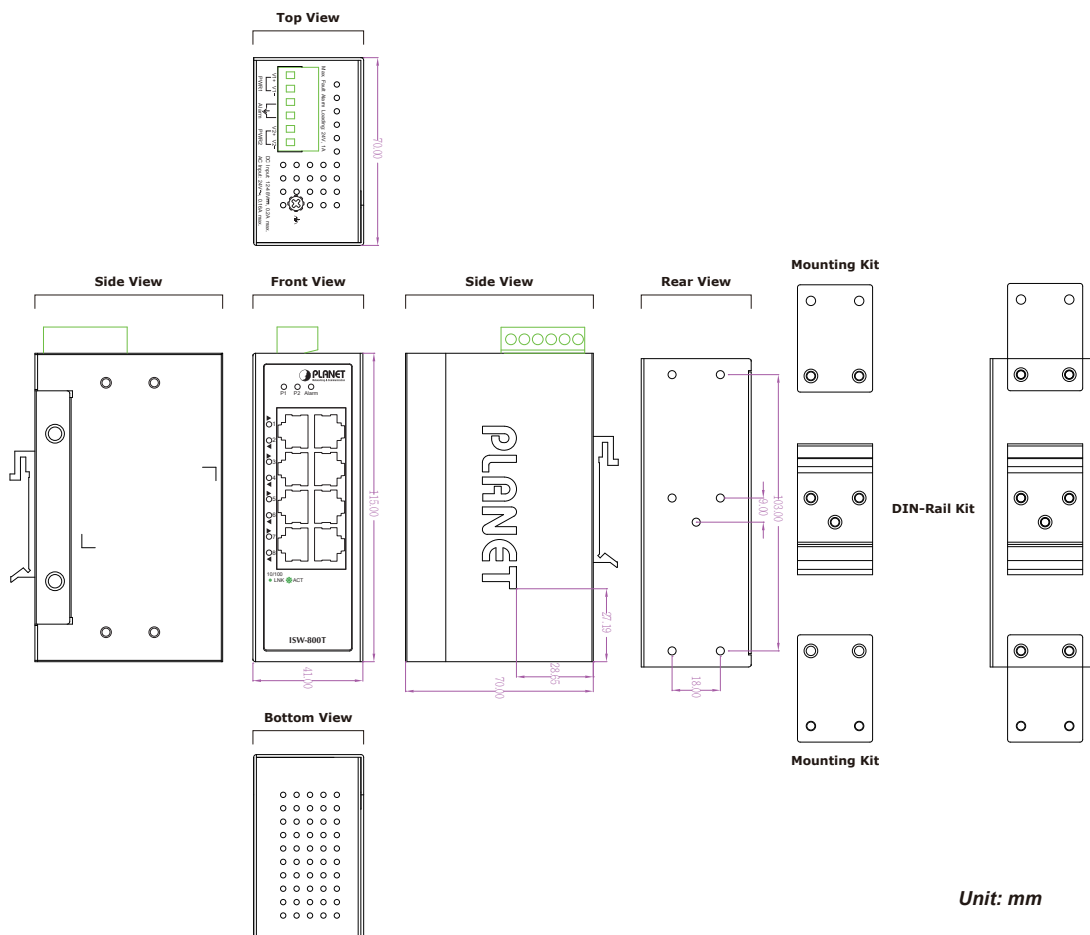
Dimensions

■ ISW-500T



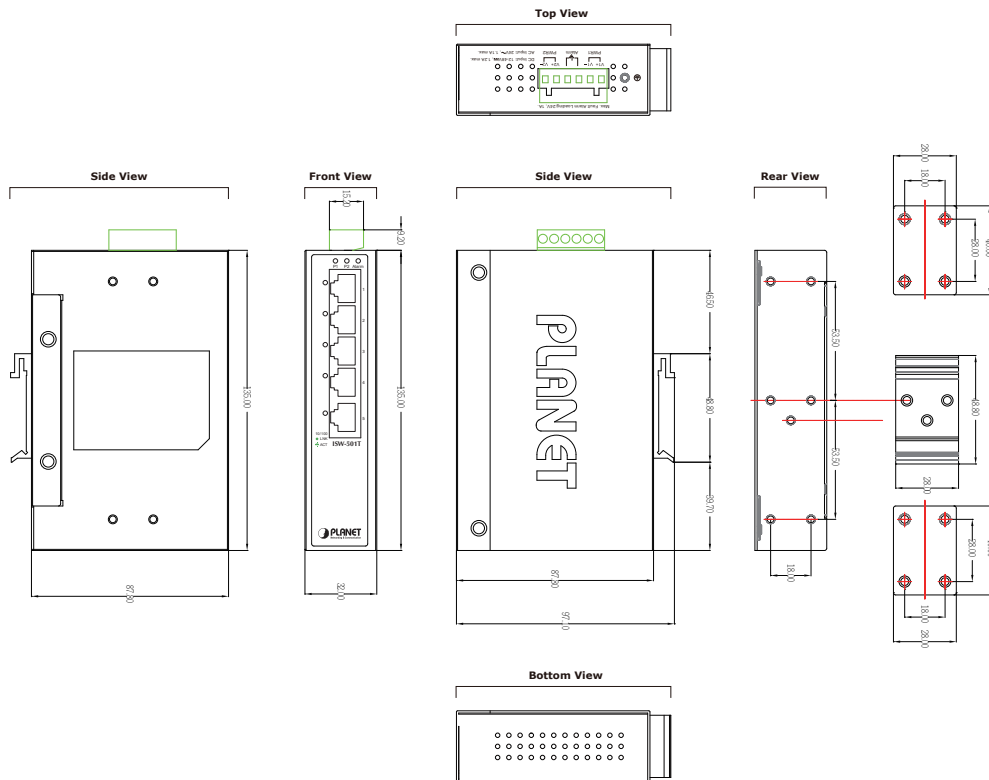
Unit: mm

■ ISW-800T



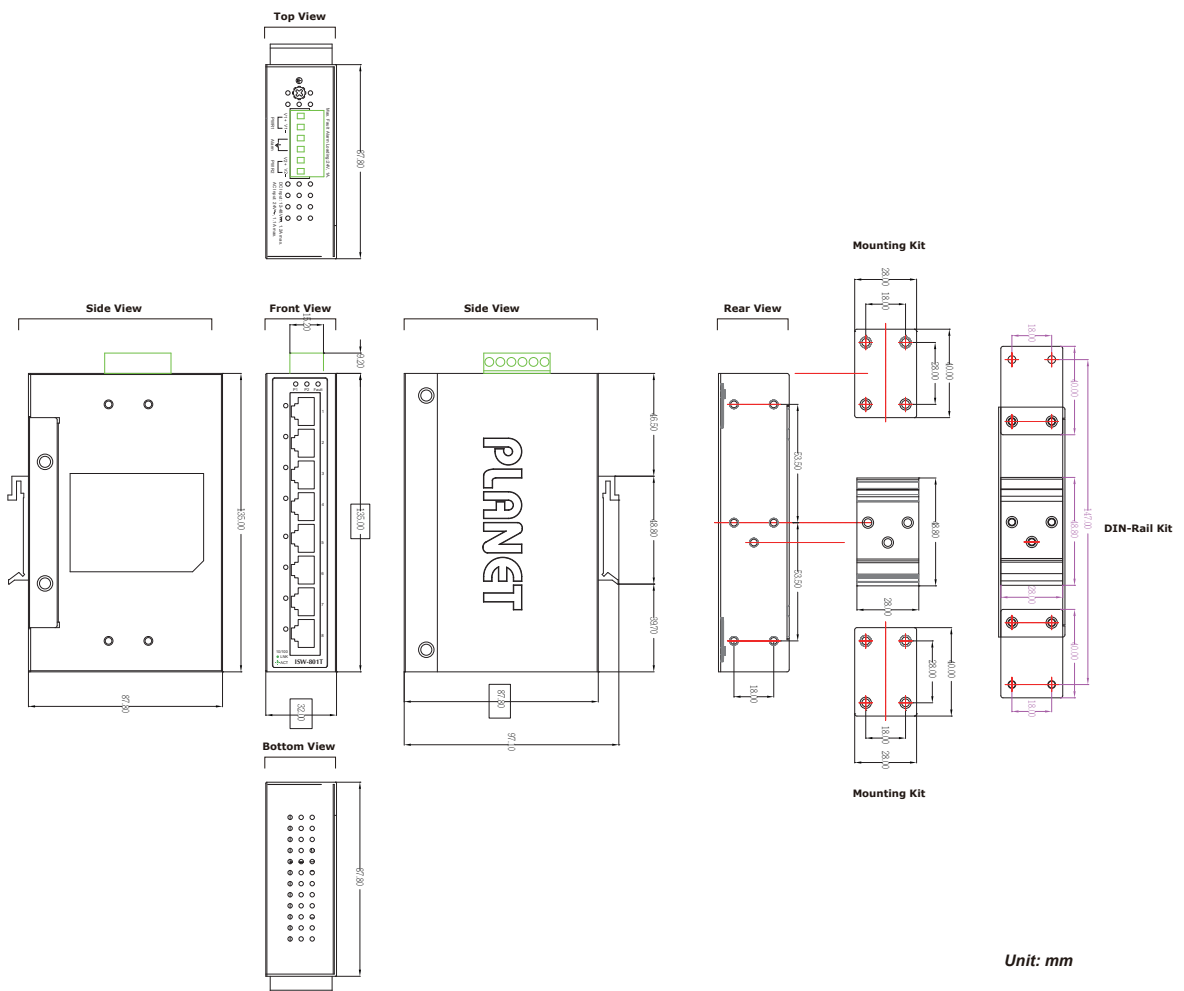
Unit: mm

■ ISW-501T



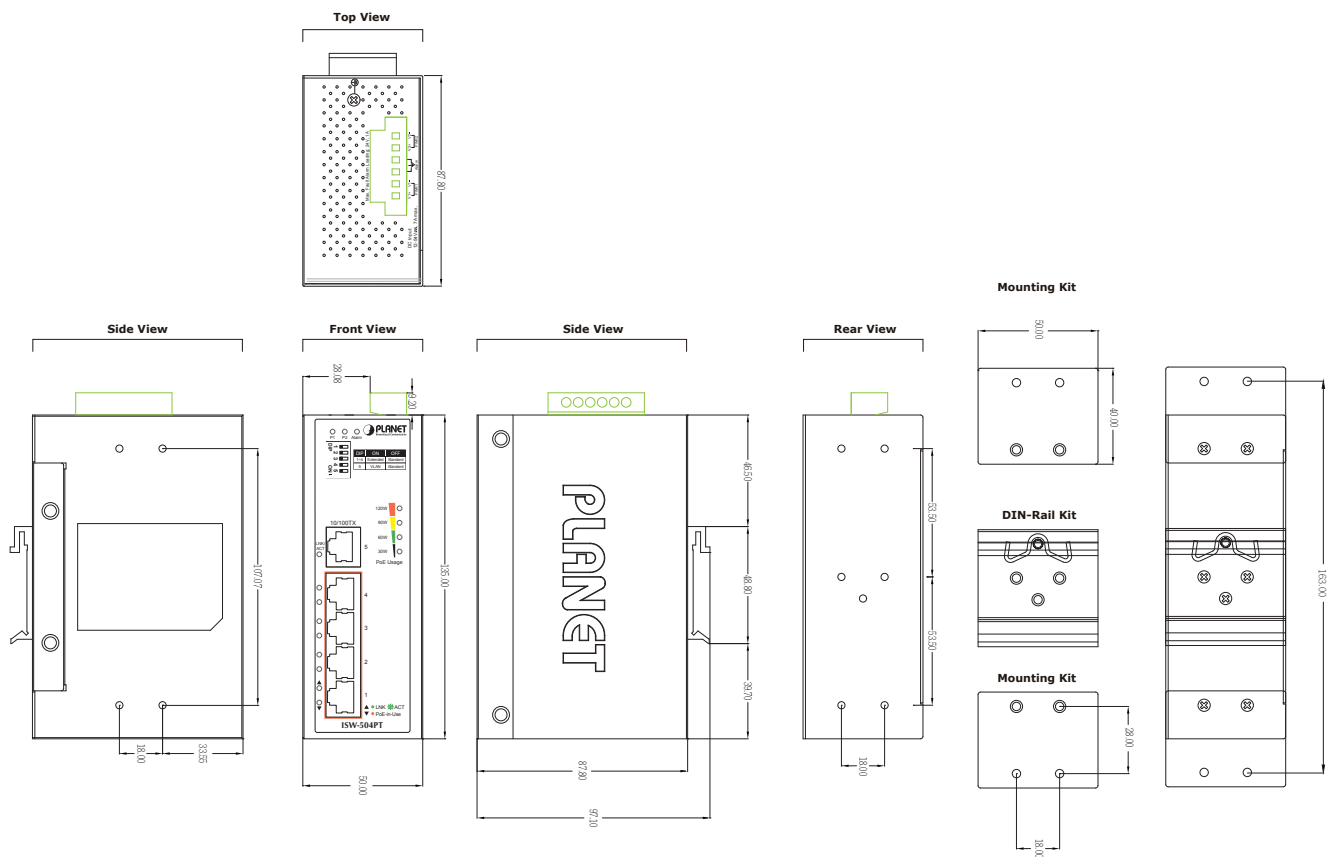
Unit: mm

■ ISW-801T



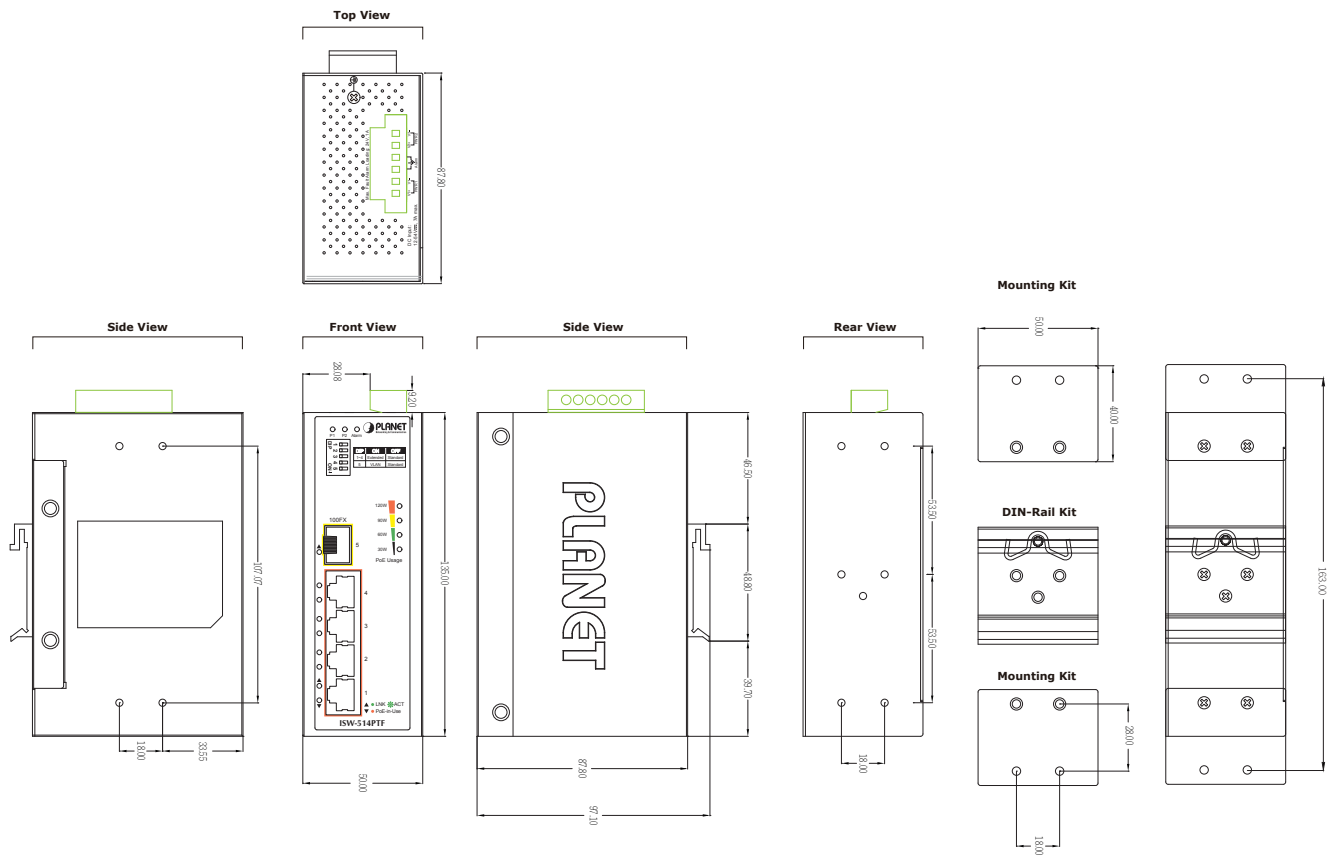
Unit: mm

■ ISW-504PT



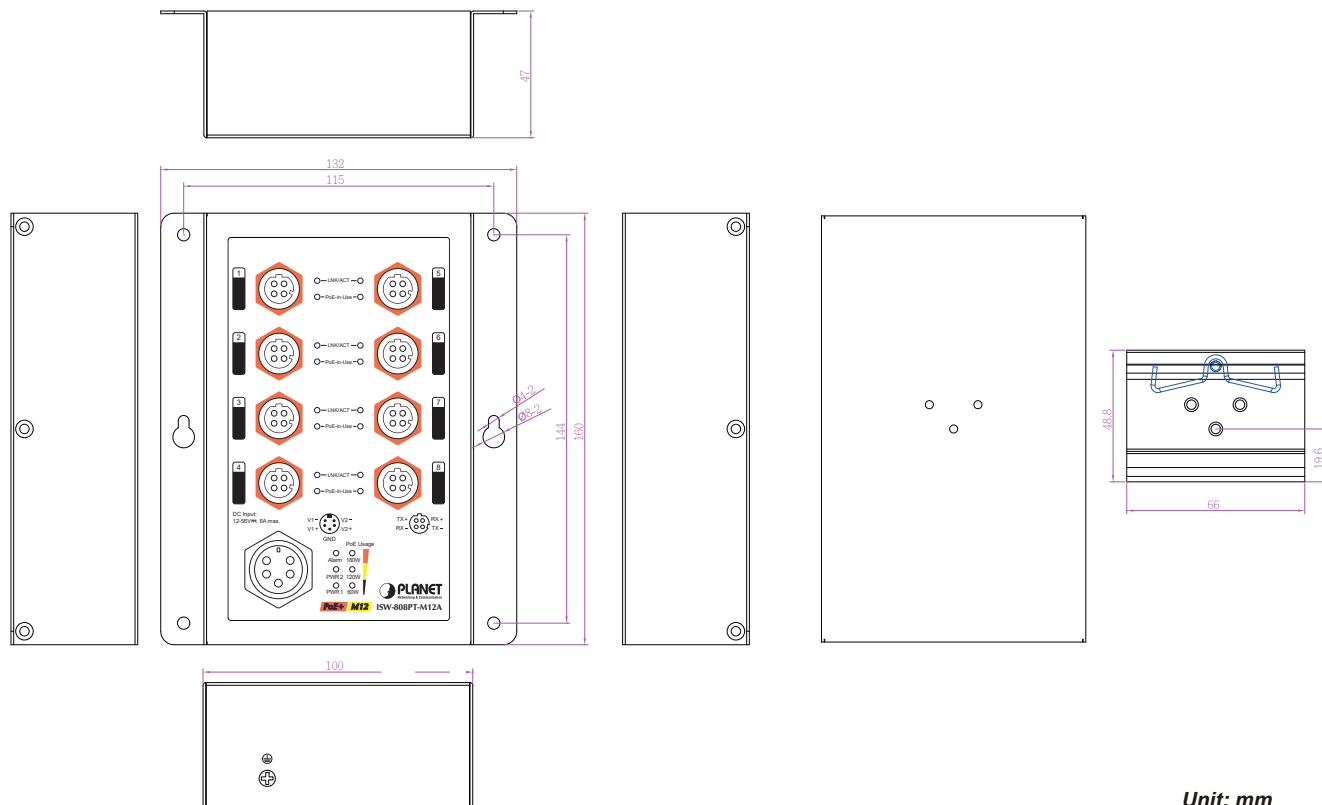
Unit: mm

■ ISW-514PTF



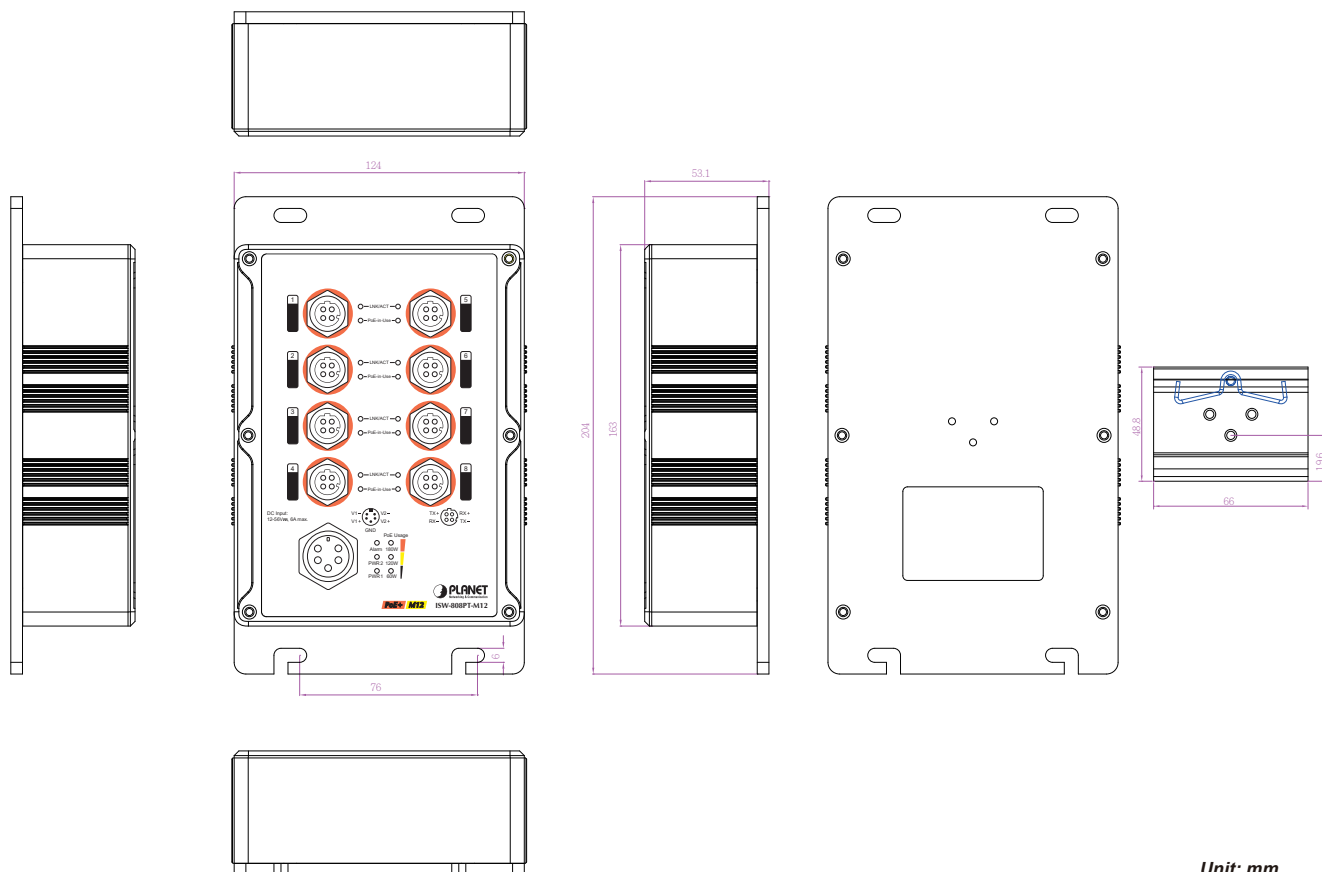
Unit: mm

■ ISW-808PT-M12A



Unit: mm

■ ISW-808PT-M12



Unit: mm

Related Products

ISW-500T	Industrial 5-Port 10/100TX Compact Ethernet Switch (-40~75 degrees C operating temperature)
ISW-800T	Compact Industrial 8-Port 10/100TX Ethernet Switch (-40~75 degrees C operating temperature)
ISW-501T	5-Port 10/100TX Industrial Fast Ethernet Switch (-40~75 degrees C operating temperature)
ISW-801T	8-Port 10/100TX Industrial Fast Ethernet Switch (-40~75 degrees C operating temperature)
ISW-504PT	Industrial 5-Port 10/100TX Ethernet Switch with 4-Port 802.3at PoE+ (-40~75 degrees C)
ISW-514PTF	Industrial 4-Port 10/100TX 802.3at PoE+ plus 1-Port 100FX Ethernet Switch (-40~75 degrees C)
ISW-808PT-M12	Industrial IP67 8-Port 10/100TX M12 802.3at PoE+ Switch (-40~75 degrees C)
ISW-808PT-M12A	Industrial 8-Port 10/100TX M12 802.3at PoE+ Switch (-40~75 degrees C)

Accessories for ISW-808PT-M12/ISW-808PT-M12A

CB-M23F5F-120	5-pin M23 Female to Bare End Power Cable (1.2 meters)
CB-M12D4MRJ-120	4-pin D-coded M12 Male to RJ45 Ethernet Cable (1.2 meters)
CB-M12D4MRJ-1000	4-pin D-coded M12 Male to RJ45 Ethernet Cable (10 meters)
CB-M12D4MD4F-1000	4-pin D-coded M12 Male to D-coded M12 Female Ethernet Cable (10 meters)

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ISW Series