

Industrial 4-port 10/100TX 802.3at PoE+ plus 1-Port 100FX Ethernet Switch



Cost-effective Full PoE+ Power Solution Ideal for Hardened Environment

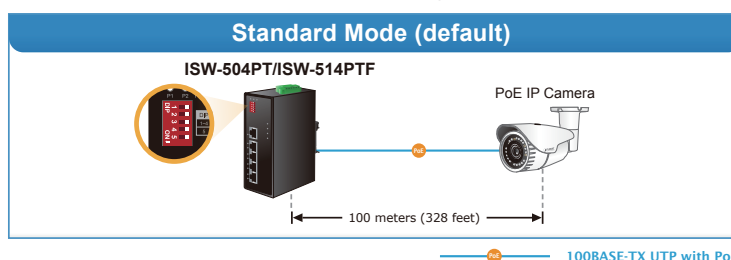
Featuring Plug and Play designed to be installed in heavy industrial demanding environments, the ISW-514PTF is a PLANET Industrial-grade, DIN-rail type Unmanaged Fast Ethernet PoE+ Switch with **4 10/100BASE-TX** ports featuring **IEEE 802.3at PoE+**, and **1 100BASE-FX fiber optic interface** for video uplink.

The ISW-514PTF is designed with **redundant power** system and is able to operate reliably, stably and quietly in any hardened environment without affecting its performance. It comes with a total power budget of up to **120 watts** for different kinds of PoE applications and operating temperature ranging from **-40 to 75 degrees C** in a rugged **IP40** metal housing.



Extension of Ethernet Data Transmission Distance

The ISW-514PTF has a built-in solid DIP switch providing "Standard", "VLAN" and "Extend" operation modes. By default, the ISW-514PTF operates as a normal IEEE 802.3af/at PoE+ Switch in the "Standard" operation mode.



Interface

- 4 10/100BASE-TX Fast Ethernet RJ45 copper ports with IEEE 802.3at PoE+ Injector (Port-1 to Port-4)
- 1 100BASE-FX SFP interface
- One terminal block for master and slave power input (Power Range: 12 ~ 48V DC redundant power)
- Hardware-based DIP switch for Standard, VLAN and Extend mode selection; the Extend mode features 25-watt PoE transmission distance of 250m at speed of 10Mbps (Only for Port-1 to Port-4)

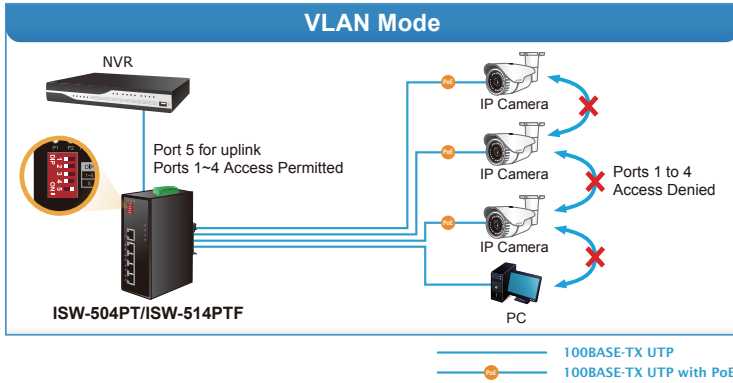
Power over Ethernet

- Complies with IEEE 802.3at Power over Ethernet Plus, end-span PSE
- Backward compatible with IEEE 802.3af Power over Ethernet
- Up to 4 ports of IEEE 802.3af/at devices powered
- Up to 120-watt PoE budget
- Supports PoE power up to 36 watts for each PoE port
- Each port supports 54V DC power to PoE powered device
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100m in standard mode with 250m in extend mode

Switching

- Hardware-based 10/100Mbps (half/full duplex), auto-negotiation and auto MDI/MDI-X
- Features Store-and-Forward mode with wire-speed filtering and forwarding rates
- IEEE 802.3x flow control for full duplex operation and back pressure for half duplex operation
- 2K MAC address table size
- 10K jumbo frame
- IEEE 802.1Q VLAN transparency
- Automatic address learning and address aging
- Supports CSMA/CD protocol

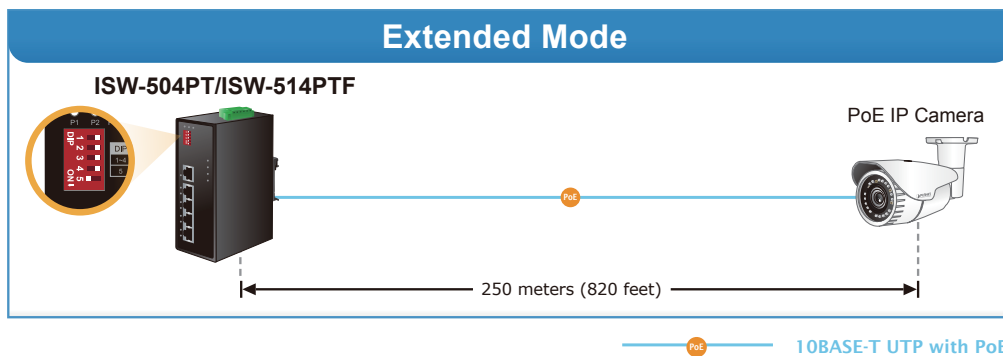
The "VLAN" operation mode features port-based VLAN function that helps to prevent the IP camera's multicast or broadcast storm from influencing each other.



Industrial Case and Installation

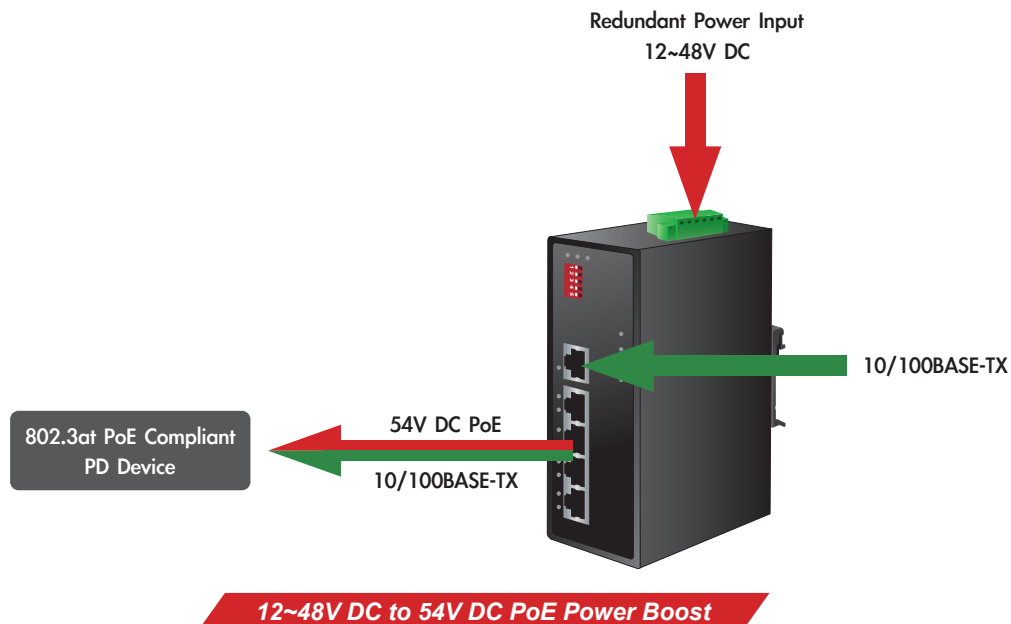
- IP40 metal case
- DIN-rail , wall-mount design or side wall-mount design
- 12~48V DC redundant power with polarity reverse protect function
- Fault alarm for power input failed
- Supports 5KV DC Ethernet ESD protection
- -40 to 75 degrees C operating temperature
- 4 real-time PoE power usage indicators

In the "Extend" operation mode, the ISW-514PTF operates on a per-port basis at 10Mbps full duplex operation and can support 25-watt PoE power output over a distance of up to **250 meters**, overcoming the 100-meter limit on Ethernet UTP cable.



Convenient and Reliable Power System

To facilitate the 802.3at PoE+ usage with commonly used 12~48V DC power input for transportation and industrial-level applications, the ISW-514PTF adopts 12~48V DC to 54V power boost technology to solve power source issue but does not require special power supplies. The ISW-514PTF provides an integrated power solution with a wide range of voltages (12~48V DC) for worldwide operability. It also provides dual-redundant, reversible polarity 12~48V DC power supply inputs for high availability applications.



Fiber Optic Link Capability for Flexible Distance Extension

The ISW-514PTF is equipped with one 100BASE-FX port, meaning the administrator now can flexibly choose the suitable SFP transceiver according to not only the transmission distance but also the transmission speed required. The distance can be extended from 2 kilometers (multi-mode fiber) to 20/40/60 kilometers (single-mode fiber or WDM fiber). They are suitable for transportation, manufacturing, security and surveillance for long-distance extension without any limitation.

Environmentally Hardened Design

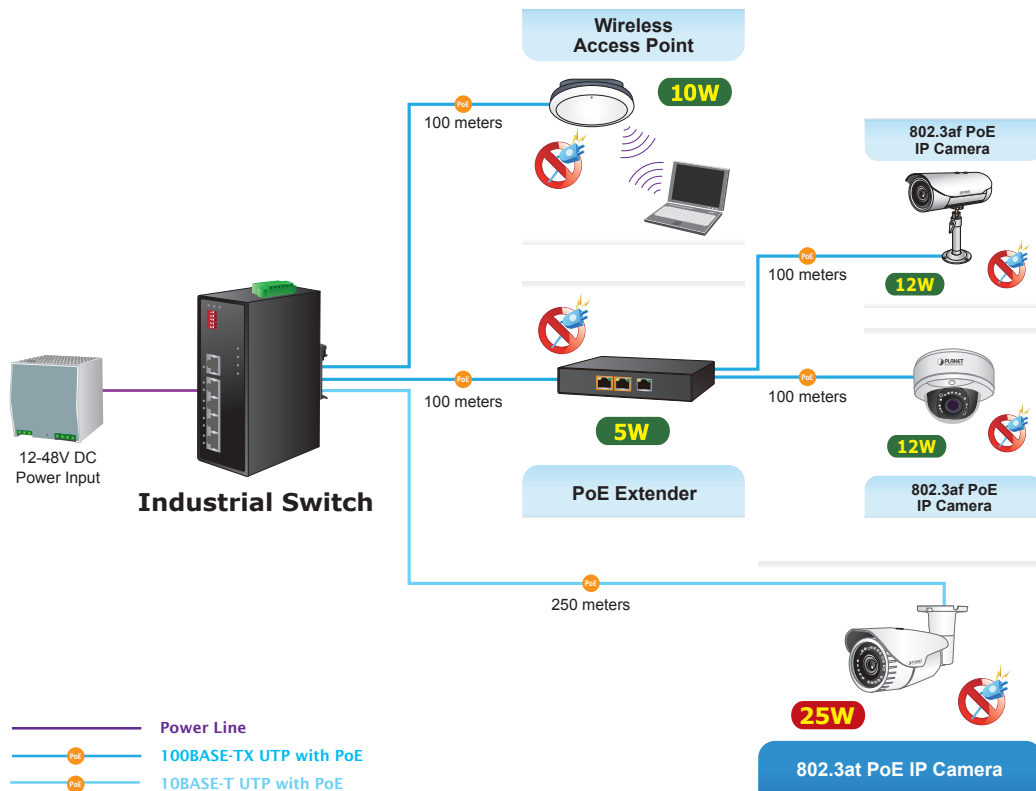
With the IP40 metal industrial case, the ISW-514PTF provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curb-side traffic control cabinets without air conditioning. It features a ventilated construction in which a cooling fan is not necessary, thereby making its operation noiseless. Being able to operate under the temperature range from -40 to 75 degrees C, the ISW-514PTF can be placed in almost any difficult environment.

Robust Protection

The ISW-514PTF provides contact discharge of ±5KV DC and air discharge of ±5KV DC for Ethernet ESD protection. It also supports ±5KV surge immunity to improve product stability and protects users' networks from devastating ESD attacks, making sure the flow of operation does not fluctuate.

Safe and Easy PoE Network Deployment

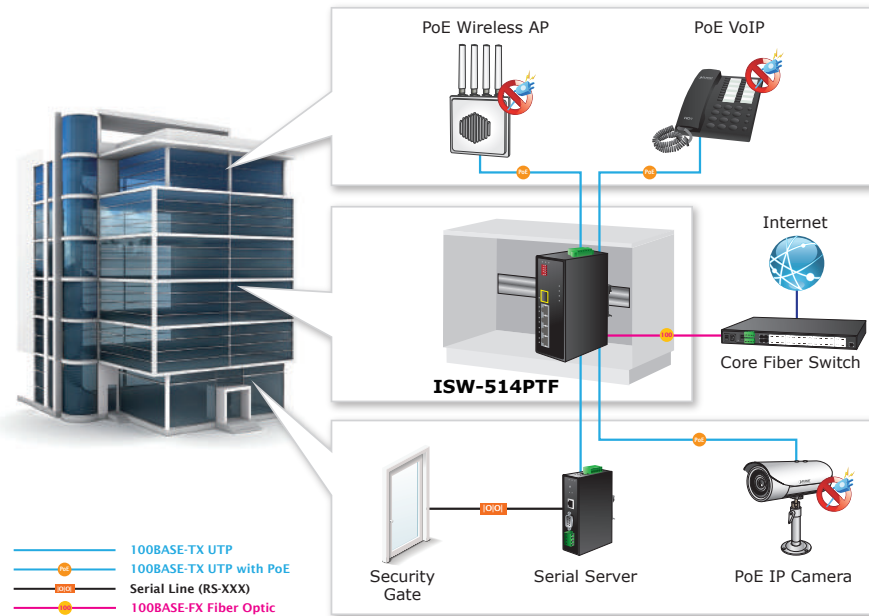
Carrying both Ethernet data and power simultaneously, the ISW-514PTF reduces cabling requirements and eliminates the need for dedicated electrical outlets on the wall, ceiling or any unreachable place. It helps users to utilize just one Ethernet cable to install and deploy IP camera, wireless AP or VoIP phone more efficiently and cost-effectively.



Applications

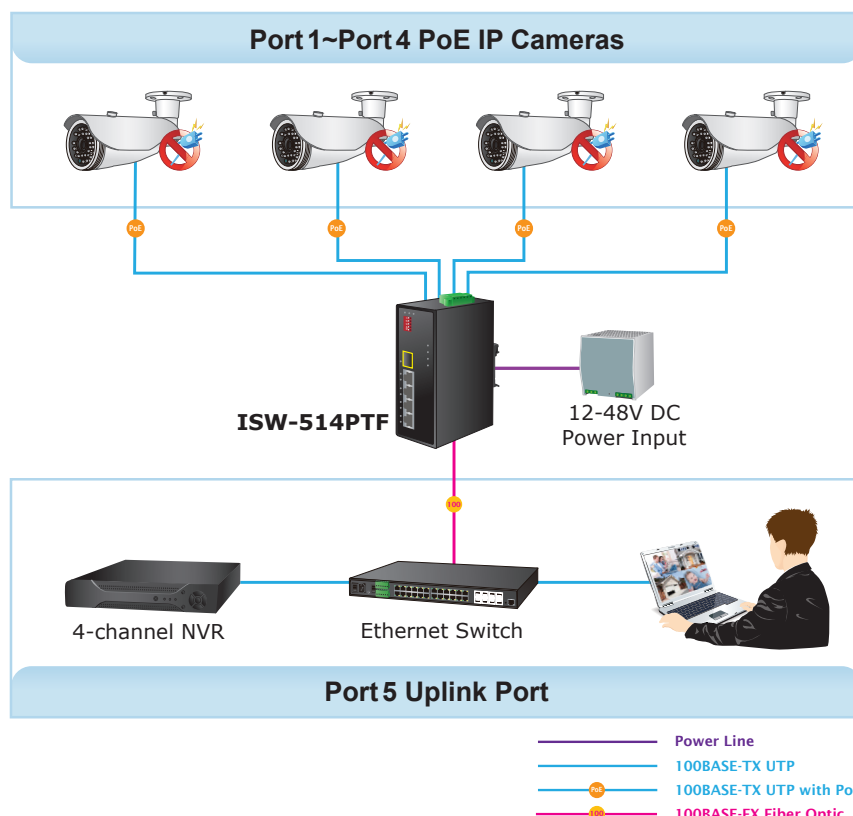
Industrial-grade PoE+ Switch for Building Automation and Security

Suitable for buildings where security is strictly enforced, the ISW-514PTF, with four Fast Ethernet 802.3at PoE+, in-line power interfaces, can easily build a power that can centrally control 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-514PTF makes the installation of IP cameras or wireless APs easier and more efficient.



Perfect Integration Solution for IP PoE Camera and NVR System

The ISW-514PTF provides four 10/100BASE-TX 802.3at PoE+ ports which can offer sufficient PoE power to 4 PoE IP cameras at the same time. In addition, with the 100BASE-FX interfaces, the ISW-514PTF can connect to a core fiber switch and send video streams to an NVR and monitoring center. Through the high-performance switch architecture, the ISW-514PTF facilitates the recorded video files from the 4 PoE+ IP cameras to be saved in the NVR systems. Furthermore, the NVR systems can be controlled and monitored in both the local LAN and the remote site via Internet. The ISW-514PTF undoubtedly brings an ideal secure surveillance system at a lower total cost.



Specifications

Product	ISW-514PTF
Hardware Specifications	
Fast Ethernet Copper Ports	Four 10/100BASE-TX RJ45 auto-MDI/MDI-X ports
PoE Injector Port	Four ports with 802.3af/at PoE+ injector function (Port-1 to Port-4)
SFP Port	One port 100BASE-FX SFP port
Switch Architecture	Store-and-Forward
Switch Fabric	1Gbps/non-blocking
Switch Throughput@64 bytes	0.74Mpps @64 bytes
MAC Address Table	2K entries
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex
Jumbo Frame	10 Kbytes
DIP Switch (Port-1 to Port-4)	Standard mode: 30-watt PoE transmit 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 transmit distance of 250m at speed of 10Mbps
LED Indicators	3 x LED for System and Power: <ul style="list-style-type: none"> ■ Green: DC Power 1 ■ Green: DC Power 2 ■ Red: Power Fault Alarm 2 x LED for PoE Copper Port (Port-1~Port-4): <ul style="list-style-type: none"> ■ Green: LNK/ACT (10/100Mbps) ■ Orange: PoE-in-Use 1 x LED for 10/100TX Copper Port (Port-5): <ul style="list-style-type: none"> ■ Green: LNK/ACT 4 x LED for PoE Usage <ul style="list-style-type: none"> ■ Orange
Connector	Removable 6-pin terminal block <ul style="list-style-type: none"> ■ Pin 1/2 for Power 1 ■ Pin 3/4 for power fault alarm ■ Pin 5/6 for Power 2
Alarm	One relay output for power failure. Alarm relay current carry ability: 1A @ 24V AC
Power Requirements	12~48V DC, 7A (max.)
Power Consumption/Dissipation	4.3 watts, 14.6 BTU (Standby without PoE function) at DC 12V power input 72.5 watts, 247.4 BTU (Full loading with PoE function) at DC 12V power input 5 watts, 17 BTU (Standby without PoE function) at DC 24V power input 103.9 watts, 354.5 BTU (Full loading with PoE function) at DC 24V power input 5.3 watts, 18.1 BTU (Standby without PoE function) at DC 48V power input 135.8 watts, 463.4 BTU (Full loading with PoE function) at DC 48V power input
Dimensions (W x D x H)	50 x 85.1 x 135 mm
Weight	598g
ESD Protection	5KV DC
Enclosure	IP40 metal case
Installation	DIN-rail kit and wall-mount kit
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.)	60W @12V DC input 90W @24V DC input 120W @48V DC input
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 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3x Flow Control and Back Pressure IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus
Environment	
Operating Temperature	-40 ~ 75 degrees C
Storage Temperature	-40 ~ 85 degrees C
Humidity	5 ~ 95% (non-condensing)
Standard Accessories	
Package Contents	ISW-514PTF User's manual Wall-mount kit Dust cap

Ordering Information

ISW-514PTF	Industrial 4-Port 10/100TX 802.3at PoE+ plus 1-Port 100FX Ethernet Switch (-40~75 degrees C)
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Related Products

ISW-504PT	Industrial 5-Port 10/100TX Ethernet Switch with 4-Port 802.3at PoE
IPOE-E202	Industrial 1-Port 802.3at PoE+ to 2-Port 802.3af PoE Extender
POE-E101	IEEE 802.3af Power over Ethernet Extender
POE-E201	IEEE 802.3at Power over Gigabit Ethernet Extender
POE-E202	Industrial 1-Port 802.3at PoE+ to 2-Port 802.3af PoE Extender
IPOE-162S	Industrial IEEE 802.3at High Power over Ethernet Splitter (12V & 24V)
POE-161S	IEEE 802.3at High Power over Ethernet Splitter
POE-162S	IEEE 802.3at High Power over Ethernet Splitter (12V & 24V)
ICA-E3550V	5 Mega-pixel Bullet IR PoE IP Camera with Extended Support
VIP-2140PT	High Definition Color PoE IP Phone with Dual Display

Accessories

PWR-240-48	240W 48V DC Single Output Industrial DIN-rail Power Supply (-20 ~ 70 degrees C)
PWR-480-48	480W 48V DC Single Output Industrial DIN-rail Power Supply (-20 ~ 70 degrees C)

Available 100BASE-FX SFP Modules for ISW-514PTF

MFB-FX	SFP-Port 100Base-FX Transceiver (1310nm) - 2km
MFB-F20	SFP-Port 100Base-FX Transceiver (1310nm) - 20km
MFB-FA20	SFP-Port 100Base-BX Transceiver (WDM,TX:1310nm) - 20km
MFB-FB20	SFP-Port 100Base-BX Transceiver (WDM,TX:1550nm) - 20km
MFB-F40	SFP-Port 100Base-FX Transceiver (1310nm) - 40KM
MFB-F60	SFP-Port 100Base-FX Transceiver (1310nm) - 60KM
MFB-TFX	SFP-Port 100Base-FX Transceiver (1310nm) - 2km (-40~75°C)
MFB-TF20	SFP-Port 100Base-FX Transceiver (1310nm) - 20km (-40~75°C)
MFB-TFA20	SFP-Port 100Base-BX (WDM, TX:1310nm) mini-GBIC module - 20km (-40~75°C)
MFB-TFB20	SFP-Port 100Base-BX (WDM, TX:1550nm) mini-GBIC module - 20km (-40~75°C)
MFB-TFA40	SFP-Port 100Base-BX (WDM, TX:1310nm) mini-GBIC module - 40km (-40~75°C)
MFB-TFB40	SFP-Port 100Base-BX (WDM, TX:1550nm) mini-GBIC module - 40km (-40~75°C)
MFB-TSA	SFP-Port 100BASE-BX Transceiver (Multi-mode/WDM,TX:1310nm RX:1550nm / DDM) - 2km (-40~75°C)
MFB-TSB	SFP-Port 100BASE-BX Transceiver (Multi-mode/WDM,TX:1550nm RX:1310nm / DDM) - 2km (-40~75°C)