# Industrial 8-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Ethernet Switch (-40~75 degrees C)

## Cost-effective Full PoE+ Power and Gigabit Extension Solution Ideal for Hardened Environment

Featuring Plug and Play designed to be installed in heavy industrial demanding environments, PLANET IGS-1020PTF is an Industrial-grade, DIN-rail type Unmanaged Gigabit Ethernet PoE+ Switch with **eight 10/100/1000BASE-T** ports featuring **IEEE 802.3at PoE+** and **two 100/1000BASE-X fiber** optic interfaces for uplink connection.


The IGS-1020PTF 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 **240 watts** for different kinds of PoE applications and operating temperature ranging from **-40 to 75 degrees C** in a rugged IP30 metal housing.

## Dual Power Input for High Availability Network System

The IGS-1020PTF features a strong dual power input system with wide-ranging voltage (48~54V DC) incorporated into customer's automation network to enhance system reliability and uptime. When power supply 1 fails to work, the hardware failover function will be activated automatically to keep powering the IGS-1020PTF via power supply 2 alternatively without any loss of operation.

## Physical Port

- **Eight 10/100/1000BASE-T** Gigabit Ethernet RJ45 ports with **IEEE 802.3af/at PoE+** Injector (Ports 1 to 8)
- **Two 100/1000BASE-X SFP** slots for SFP transceiver type auto detection (Ports 9 to 10)

## Power over Ethernet

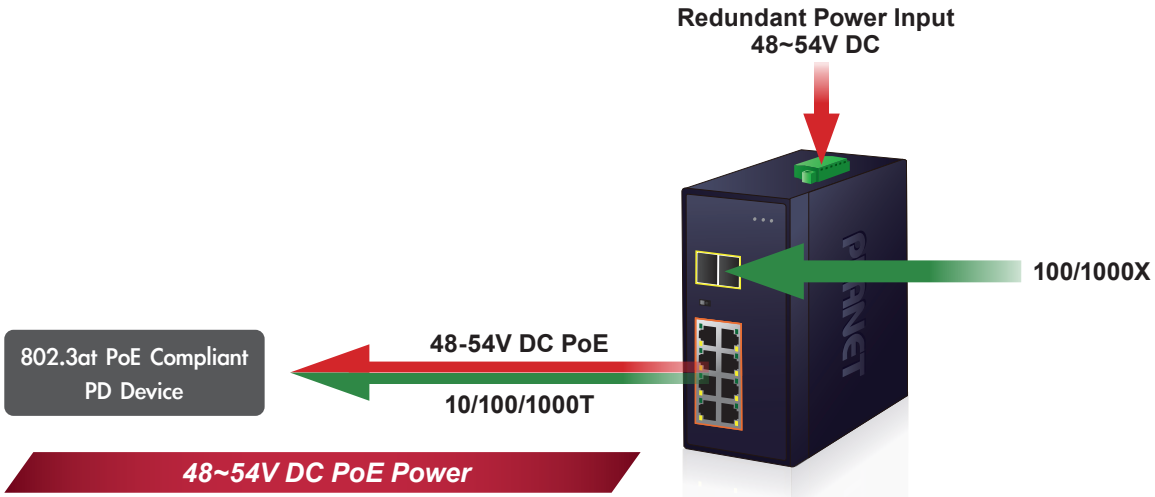
- Complies with IEEE 802.3at Power over Ethernet Plus, end-span PSE
- Backward compatible with IEEE 802.3af Power over Ethernet
- Up to 8 ports of IEEE 802.3af/802.3at devices powered
- 240-watt PoE budget
- Supports PoE power up to 30 watts for each PoE port
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100 meters

## Industrial Case and Installation

- IP30 metal case
- DIN-rail and wall-mount designs
- 48~54V DC redundant power with reverse polarity protection
- Supports 6KV DC Ethernet ESD protection
- -40 to 75 degrees C operating temperature

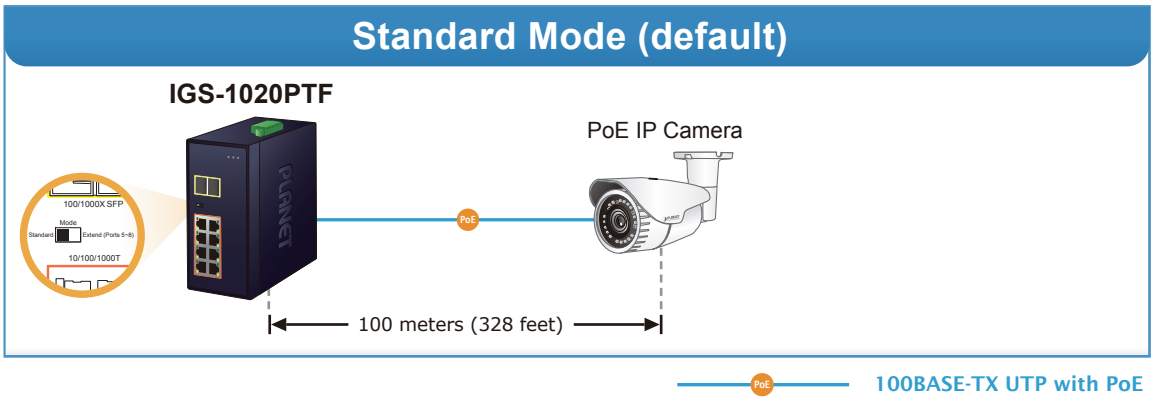
## Switching

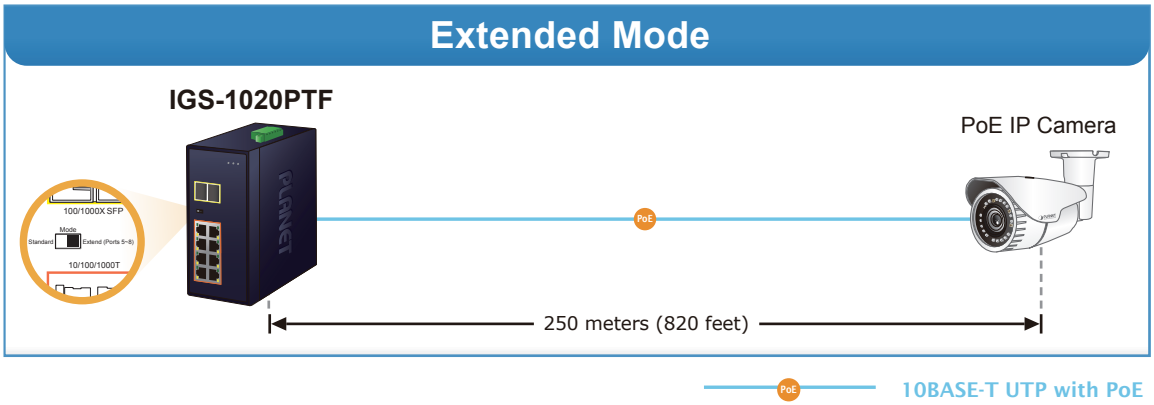
- Hardware-based 10/100Mbps (half/full duplex), 1000Mbps (full duplex), auto-negotiation and auto MDI/MDI-X
- Features Store-and-Forward mode with wire-speed filtering and forwarding rates
- IEEE 802.3x flow control for full duplex operation and back pressure for half duplex operation
- 8K MAC address table size
- 20Gbps switch fabric
- 9K jumbo frame
- Hardware-based DIP switch for "Standard" and "Extend" mode selection; the "Extend" mode features 30-watt PoE transmission distance of 250m at speed of 10Mbps
- Automatic address learning and address aging




802.3at PoE+ Power and Ethernet Data Transmission Extension

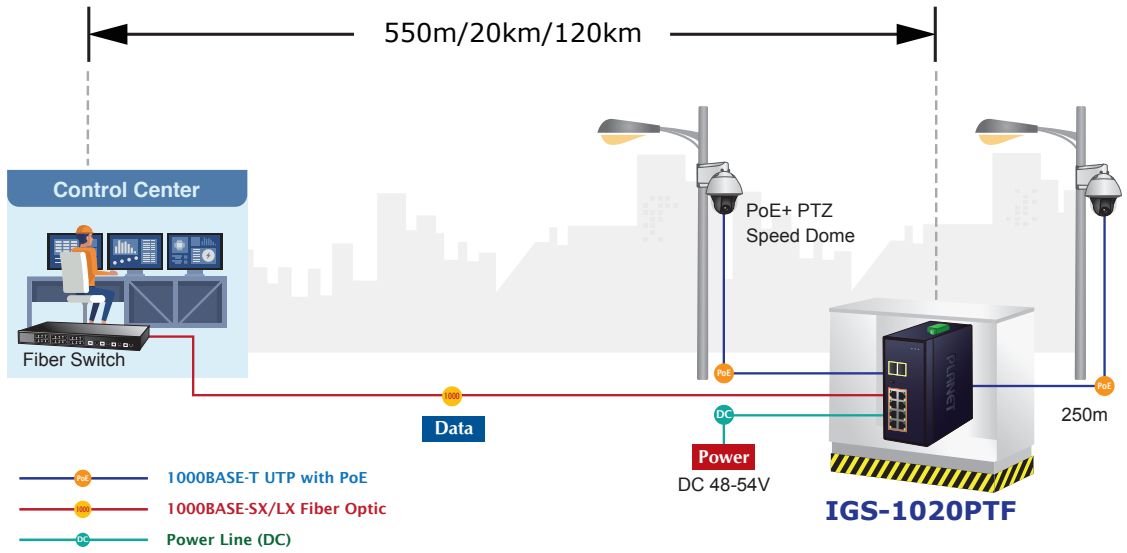
The IGS-1020PTF has a built-in solid DIP switch providing **"Standard"** and **"Extend"** operation modes. The IGS-1020PTF operates as a normal IEEE 802.3at PoE+ Switch in the **"Standard"** operation mode. In the **"Extend"** operation mode, the IGS-1020PTF operates on a per-port basis at 10Mbps full duplex operation and can support 20~25-watt PoE power output over a distance of up to **250 meters**, overcoming the 100-meter limit on Ethernet UTP cable.



## Fiber Optic Link Capability for Flexible Distance Extension

The additional two mini-GBIC slots built in the IGS-1020PTF supports SFP auto-detection and dual speed as it features **100BASE-FX** and **1000BASE-SX/LX SFP** (small form-factor pluggable) fiber-optic modules, meaning the administrator now can flexibly choose the suitable SFP transceiver according to the transmission distance or the transmission speed required to extend the network efficiently. The distance can be extended from 550 meters to 2 kilometers (multi-mode fiber) and to 10/20/40/60/80/120 kilometers (single-mode fiber or WDM fiber). They are well suited for applications to uplink to backbone switch and monitoring center in long distance.




## Environmentally-hardened Design

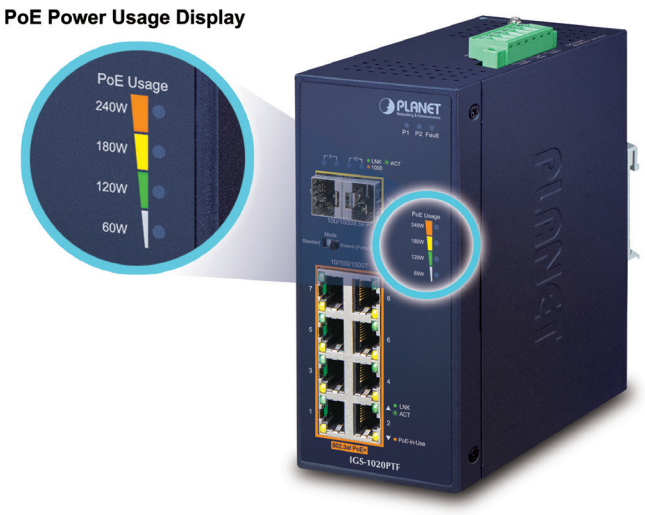
With the IP30 metal industrial case, the IGS-1020PTF provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curb-side traffic control cabinets without air conditioning. It features a ventilated construction in which 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 IGS-1020PTF can be placed in almost any difficult environment.

## Robust Protection

The IGS-1020PTF provides contact discharge of ±6KV DC and air discharge of ±6KV DC for Ethernet ESD protection. It also supports ±6KV surge immunity to improve product stability and protects users' networks from devastating ESD attacks, making sure the flow of operation does not fluctuate.

## Intelligent LED Indicator for Real-time PoE Usage

The IGS-1020PTF helps users to monitor the current status of PoE power usage easily and efficiently by its advanced LED indication. Called **"PoE Power Usage"**, the front panel of the Industrial Gigabit PoE+ Switch has four orange LEDs indicating 60W, 120W, 180W and 240W of PoE power usage.



### Flexible and Easy Installation with Limited Space

The IGS-1020PTF is designed to be installed in different environments, such as wall enclosure. It can be installed by fixed wall mounting, DIN rail or side wall mounting, thereby making its usability more flexible and easier in any space-limited location.

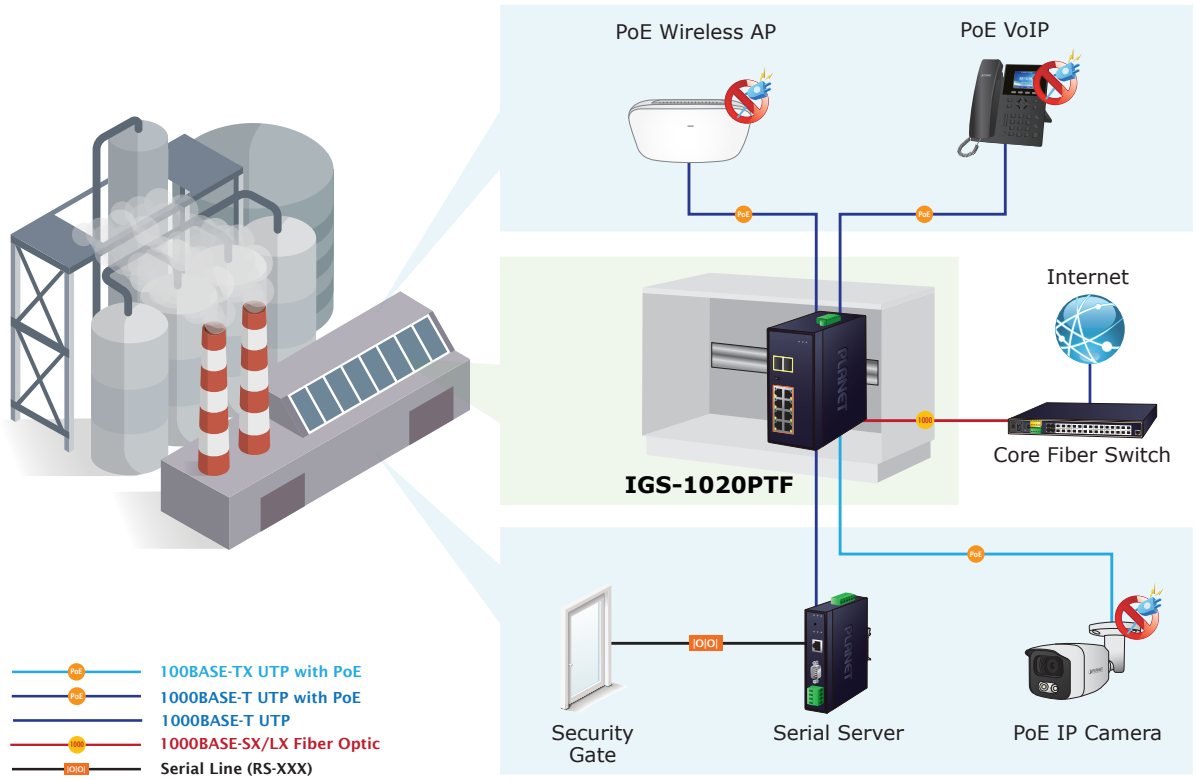
## Optional installation method


* The above pictures are for illustration only.

# Applications

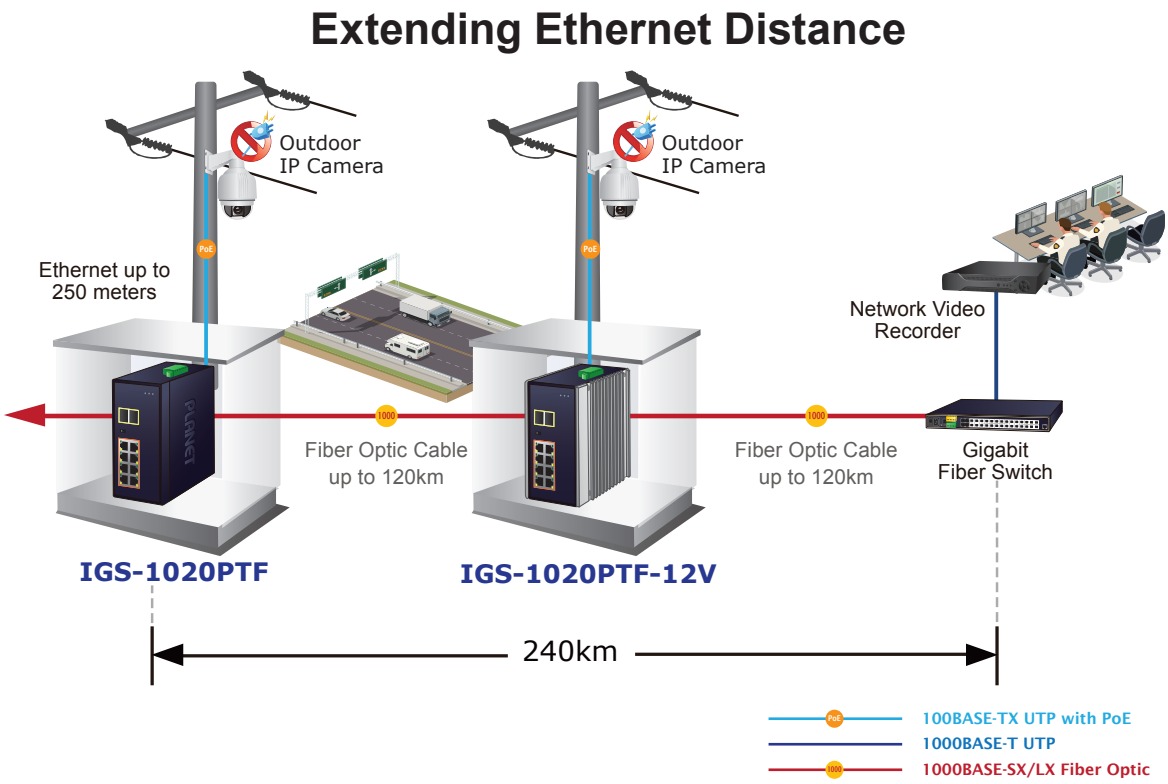
*Industrial-grade PoE+ Switch for Building Automation and Security*

Suitable for buildings where security is strictly enforced, the IGS-1020PTF, with eight Gigabit 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, 8 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 IGS-1020PTF makes the installation of IP cameras or wireless APs easier and more efficient.



*Perfect Integration Solution for IP PoE Camera and NVR System*

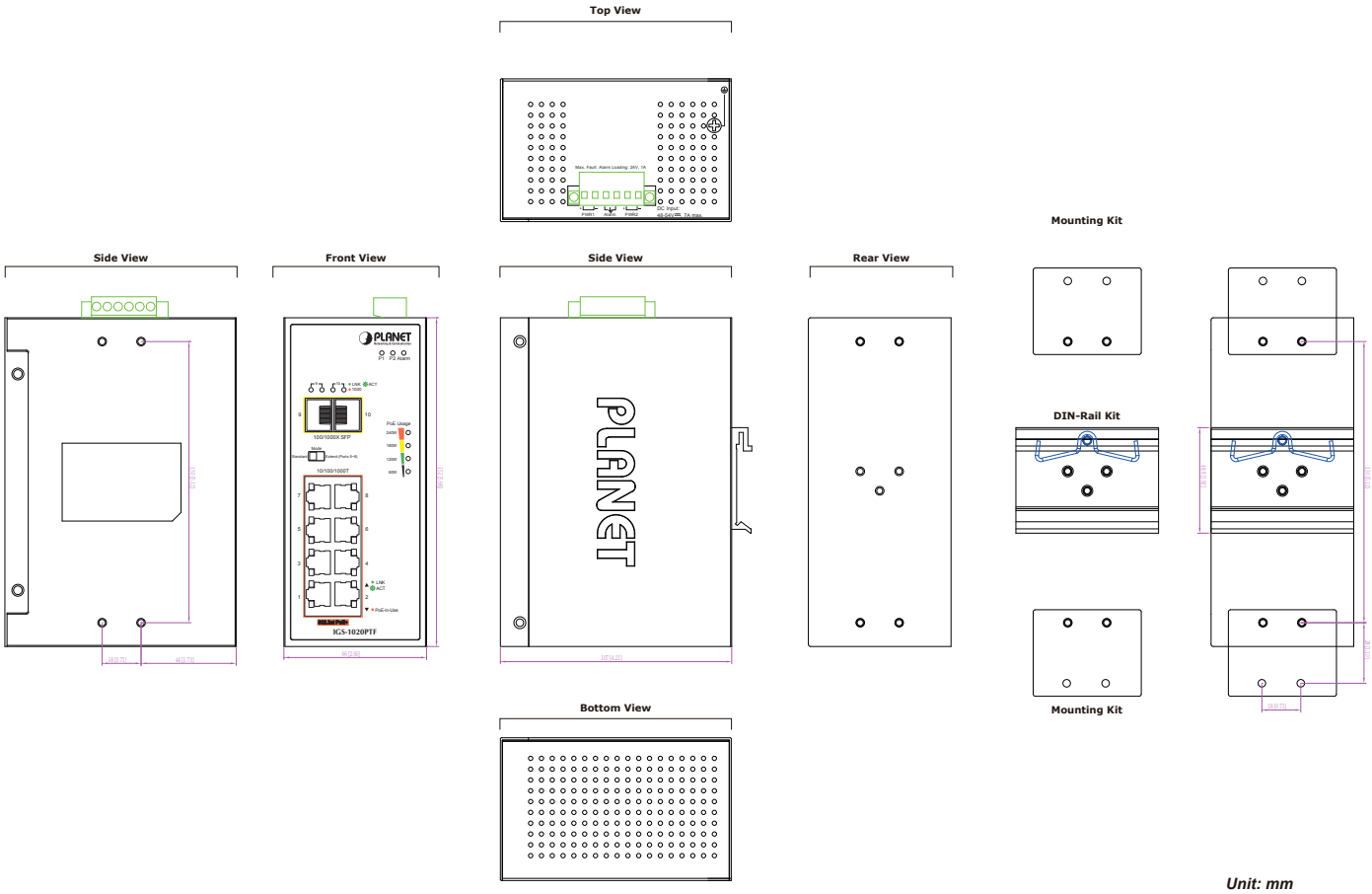
The IGS-1020PTF provides eight 10/100/1000BASE-T 802.3at PoE+ ports which can offer sufficient PoE power to 8 PoE IP cameras at the same time. In addition, with the two 100/1000BASE-X SFP interfaces, the IGS-1020PTF can connect to a core fiber switch and send video streams to an NVR and monitoring center. Through the high-performance switch architecture, the IGS-1020PTF facilitates the recorded video files from the 8 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 IGS-1020PTF undoubtedly brings an ideal secure surveillance system at a lower total cost.



# Specifications

| Model | IGS-1020PTF |
|---|---|
| **Hardware Specifications** | |
| Copper Ports | 8 10/100/1000BASET RJ45 auto-MDI/MDI-X ports |
| PoE Injector Ports | 8 ports with 802.3at PoE+ injector function (Ports 1 to 8) |
| SFP Slots | 2 1000BASE-SX/LX/BX SFP interfaces (Ports 9 to 10)<br>Compatible with 100BASE-FX SFP |
| Connector | Removable 6-pin terminal block<br>Pin 1/2 for Power 1; Pin 3/4 for fault alarm; Pin 5/6 for Power 2 |
| DIP Switch | Standard/Extend mode (Extend mode for Ports 5 to 8 only) |
| Power Requirements | 48~54V DC, 7A (max.) |
| Power Consumption | Max. 5.6 watts/19BTU@54V DC input (System)<br>Max. 7.28 watts/24BTU@54V DC input (Ethernet Full Loading)<br>Max. 265.1 watts/904BTU@54V DC input (Ethernet + PoE Full Loading) |
| Dimensions (W x D x H) | 66 x 106 x 152 mm |
| Weight | 837g |
| Enclosure | IP30 metal case |
| Installation | DIN-rail/ wall-mount/side wall-mount |
| ESD Protection | 6KV |
| LED Indicators | 3 x LED for System and Power:<br>■ Green: DC Power 1<br>■ Green: DC Power 2<br>■ Red: Power Fault Alarm<br>8 x LED for PoE Copper Port (Ports 1 to 8):<br>■ Green: LNK/ACT (10/100/1000Mbps)<br>■ Amber: PoE-in-Use<br>2 x LED for 100/1000X Fiber Port (Ports 9 to 10):<br>■ Green: LNK/ACT (100/1000Mbps)<br>■ Amber: 1000Mbps<br>4 x LED for PoE Usage<br>■ Amber: 60W, 120W, 180W and 240W |
| **Switch Specifications** | |
| Switch Architecture | Store-and-Forward |
| Switch Fabric | 20Gbps |
| Throughput (packet per second) | 14.8Mpps@64bytes |
| Address Table | 8K entries |
| Buffer Memory | 4M bits on-chip buffer memory |
| Jumbo Frame | 9Kbytes |
| Flow Control | Back pressure for half duplex<br>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 48~54V DC. Max. 30 watts |
| PoE Power Budget (max.) | 240W maximum |
| Max. Number of Class 3 PDs@25W | 8 |
| **Standards Conformance** | |
| Regulatory Compliance | FCC Part 15 Class A, CE |
| Stability Testing | IEC 60068-2-32 (free fall)<br>IEC 60068-2-27 (shock)<br>IEC 60068-2-6 (vibration) |
| Standards Compliance | IEEE 802.3 Ethernet<br>IEEE 802.3u Fast Ethernet<br>IEEE 802.3ab Gigabit Ethernet<br>IEEE 802.3z Gigabit Ethernet over Fiber Optic<br>IEEE 802.3az Energy Efficient Ethernet (EEE)<br>IEEE 802.3at Power over Ethernet Plus<br>IEEE 802.3af Power over Ethernet |
| **Environment** | |
| Temperature | Operating: -40~75 degrees C<br>Storage: -40~85 degrees C |
| Humidity | Operating: 5~95% (non-condensing)<br>Storage: 5~95% (non-condensing) |

# IGS-1020PTF Multi View Drawing




*Unit: mm*

# Ordering Information

| | |
|---|---|
| IGS-1020PTF | Industrial 8-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Ethernet Switch (-40~75 degrees C) |

# Available 100Mbps Modules

Fast Ethernet Transceiver (100BASE-X SFP)

| Model | Speed (Mbps) | Connector Interface | Fiber Mode | Distance | Wavelength (nm) | Operating Temp. |
|---|---|---|---|---|---|---|
| MFB-TFX | 100 | LC | Multi-mode | 2km | 1310nm | -40 ~ 75 degrees C |
| MFB-TF20 | 100 | LC | Single Mode | 20km | 1310nm | -40 ~ 75 degrees C |

Fast Ethernet Transceiver (100BASE-BX, Single Fiber Bi-directional SFP)

| Model | Speed (Mbps) | Connector Interface | Fiber Mode | Distance | Wavelength (TX) | Wavelength (RX) | Operating Temp. |
|---|---|---|---|---|---|---|---|
| MFB-TSA | 100 | WDM(LC) | Multi-Mode | 2km | 1310nm | 1550nm | -40 ~ 75 degrees C |
| MFB-TSB | 100 | WDM(LC) | Multi-Mode | 2km | 1550nm | 1310nm | -40 ~ 75 degrees C |
| MFB-TFA20 | 100 | WDM(LC) | Single Mode | 20km | 1310nm | 1550nm | -40 ~ 75 degrees C |
| MFB-TFB20 | 100 | WDM(LC) | Single Mode | 20km | 1550nm | 1310nm | -40 ~ 75 degrees C |
| MFB-TFA40 | 100 | WDM(LC) | Single Mode | 40km | 1310nm | 1550nm | -40 ~ 75 degrees C |
| MFB-TFB40 | 100 | WDM(LC) | Single Mode | 40km | 1550nm | 1310nm | -40 ~ 75 degrees C |

# Available 1000Mbps Modules

Gigabit Ethernet Transceiver (1000BASE-X SFP)

| Model | DDM | Speed (Mbps) | Connector Interface | Fiber Mode | Distance | Wavelength (nm) | Operating Temp. |
|---|---|---|---|---|---|---|---|
| MGB-TGT | -- | 1000 | Copper | -- | 100m | -- | -40 ~ 75 degrees C |
| MGB-TSX | YES | 1000 | LC | Multi-mode | 550m | 850nm | -40 ~ 75 degrees C |
| MGB-TSX2 | YES | 1000 | LC | Multi-mode | 2km | 1310nm | -40 ~ 75 degrees C |
| MGB-TLX | YES | 1000 | LC | Single Mode | 20km | 1310nm | -40 ~ 75 degrees C |
| MGB-TL40 | YES | 1000 | LC | Single Mode | 40km | 1310nm | -40 ~ 75 degrees C |
| MGB-TL80 | YES | 1000 | LC | Single Mode | 80km | 1550nm | -40 ~ 75 degrees C |

Gigabit Ethernet Transceiver (1000BASE-BX, Single Fiber Bi-directional SFP)

| Model | DDM | Speed (Mbps) | Connector Interface | Fiber Mode | Distance | Wavelength (TX) | Wavelength (RX) | Operating Temp. |
|---|---|---|---|---|---|---|---|---|
| MGB-TSA<br>MGB-TSB | YES | 1000 | WDM(LC) | Multi-mode | 2km | 1310nm | 1550nm | -40 ~ 75 degrees C |
| | | 1000 | WDM(LC) | Multi-mode | 2km | 1550nm | 1310nm | -40 ~ 75 degrees C |
| MGB-TLA10<br>MGB-TLB10 | YES | 1000 | WDM(LC) | Single Mode | 10km | 1310nm | 1550nm | -40 ~ 75 degrees C |
| | | 1000 | WDM(LC) | Single Mode | 10km | 1550nm | 1310nm | -40 ~ 75 degrees C |
| MGB-TLA20<br>MGB-TLB20 | YES | 1000 | WDM(LC) | Single Mode | 20km | 1310nm | 1550nm | -40 ~ 75 degrees C |
| | | 1000 | WDM(LC) | Single Mode | 20km | 1550nm | 1310nm | -40 ~ 75 degrees C |
| MGB-TLA40<br>MGB-TLB40 | YES | 1000 | WDM(LC) | Single Mode | 40km | 1310nm | 1550nm | -40 ~ 75 degrees C |
| | | 1000 | WDM(LC) | Single Mode | 40km | 1550nm | 1310nm | -40 ~ 75 degrees C |
| MGB-TLA80<br>MGB-TLB80 | YES | 1000 | WDM(LC) | Single Mode | 80km | 1490nm | 1550nm | -40 ~ 75 degrees C |
| | | 1000 | WDM(LC) | Single Mode | 80km | 1550nm | 1490nm | -40 ~ 75 degrees C |
| MGB-TLA120<br>MGB-TLB120 | YES | 1000 | WDM(LC) | Single Mode | 120km | 1490nm | 1550nm | -40 ~ 75 degrees C |
| | | 1000 | WDM(LC) | Single Mode | 120km | 1550nm | 1490nm | -40 ~ 75 degrees C |

# Accessories

| | |
|---|---|
| PWR-240-48 | 48V, 240W DIN-rail Power Supply (NDR-480-48, adjustable 48-56V DC Output) |
| PWR-480-48 | 48V, 480W DIN-rail Power Supply (NDR-480-48, adjustable 48-56V DC Output) |

**PLANET Technology Corporation**

11F., No.96, Minquan Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)

Tel: 886-2-2219-9518 Fax: 886-2-2219-9528

Email: sales@planet.com.tw www.planet.com.tw