

## Industrial 8-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Ethernet Switch w/ 12V Booster (-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-12V is an Industrial-grade, DIN-rail type Unmanaged Gigabit Ethernet PoE+ Switch with **eight 10/100/1000BASE-T** ports featuring **IEEE 802.3af PoE+** and **two 100/1000BASE-X** fiber optic interfaces for uplink connection.



The IGS-1020PTF-12V 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 aluminum housing.

### Convenient and Reliable Power System

To facilitate the 802.3at PoE+ usage with the commonly-used 12~54V DC power input for transportation and industrial-level applications, the IGS-1020PTF-12V adopts **12~54V DC to 54V DC power boost technology** to solve power source issue but does not require special power supplies. Its wide-ranging voltages design is suitable for worldwide operability with high availability applications requiring dual or backup power inputs.

### 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

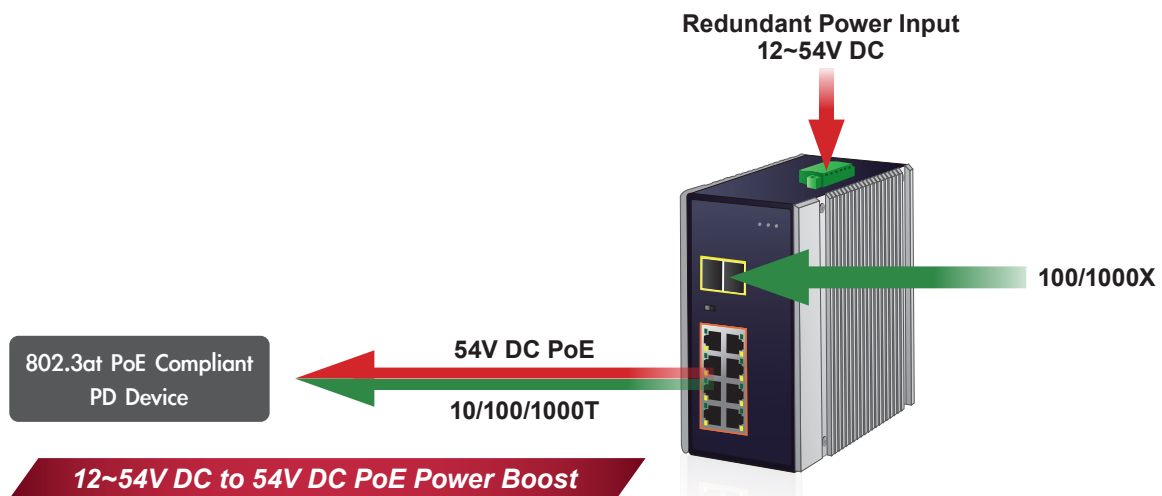
- Complies with IEEE 802.3at Power over Ethernet Plus, end-span PSE
- Backward compatible with IEEE 802.3af Power over Ethernet
- Up to 8 ports of IEEE 802.3af/802.3at devices powered
- 240-watt PoE budget
- Supports PoE power up to 30 watts for each PoE port
- Auto detects powered device (PD)
- Circuit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

### Industrial Case and Installation

- IP30 aluminum case
- DIN-rail and wall-mount designs
- 12~54V redundant power with reverse polarity protection
- Supports 6KV DC Ethernet ESD protection
- -40 to 75 degrees C operating temperature

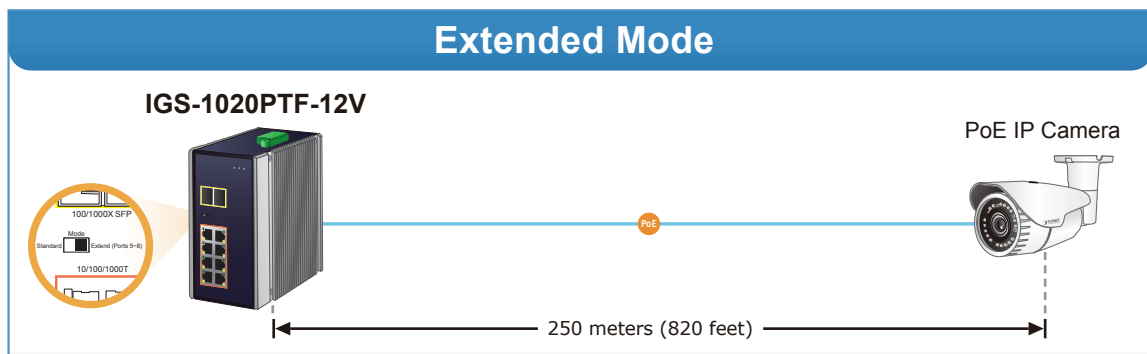
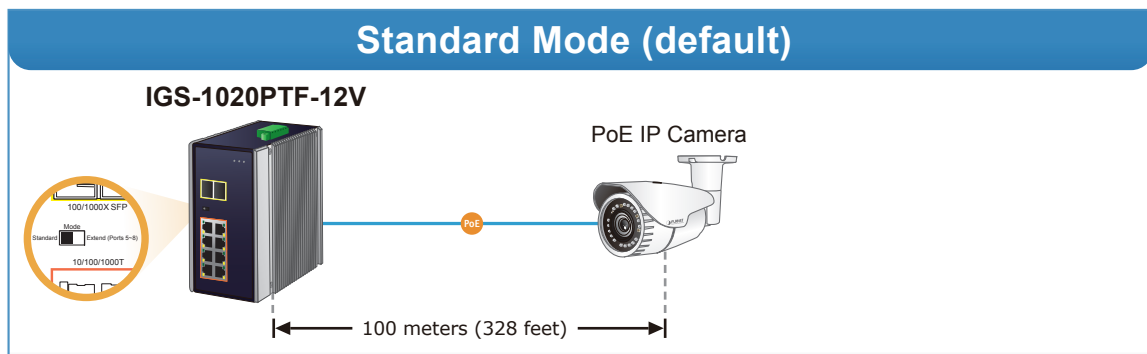
### Switching

- 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



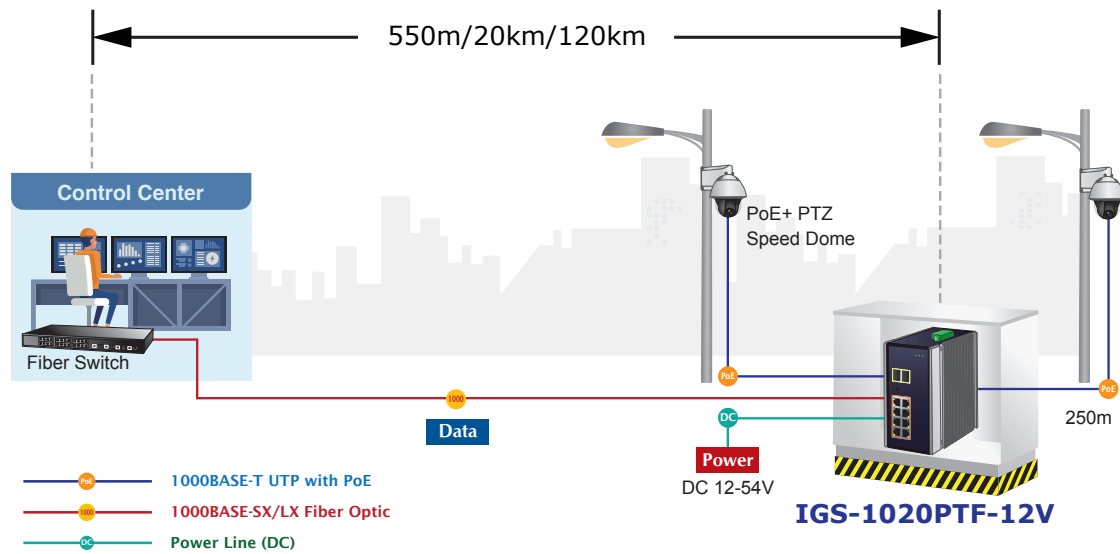
802.3at PoE+ Power and Ethernet Data Transmission Extension

The IGS-1020PTF-12V has a built-in solid DIP switch providing "Standard" and "Extend" operation modes. The IGS-1020PTF-12V operates as a normal IEEE 802.3at PoE+ Switch in the "Standard" operation mode. In the "Extend" operation mode, the IGS-1020PTF-12V 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-12V 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 aluminum industrial case, the IGS-1020PTF-12V 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-12V can be placed in almost any difficult environment.

### Robust Protection

The IGS-1020PTF-12V provides contact discharge of  $\pm 6\text{KV}$  DC and air discharge of  $\pm 6\text{KV}$  DC for Ethernet ESD protection. It also supports  $\pm 6\text{KV}$  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-12V 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.

### PoE Power Usage Display



**Flexible and Easy Installation with Limited Space**

The IGS-1020PTF-12V is designed to be installed in different environments, such as wall enclosure. It can be installed by fixed wall mounting or DIN rail mounting, thereby making its usability more flexible and easier in any space-limited location.

**Optional installation method**

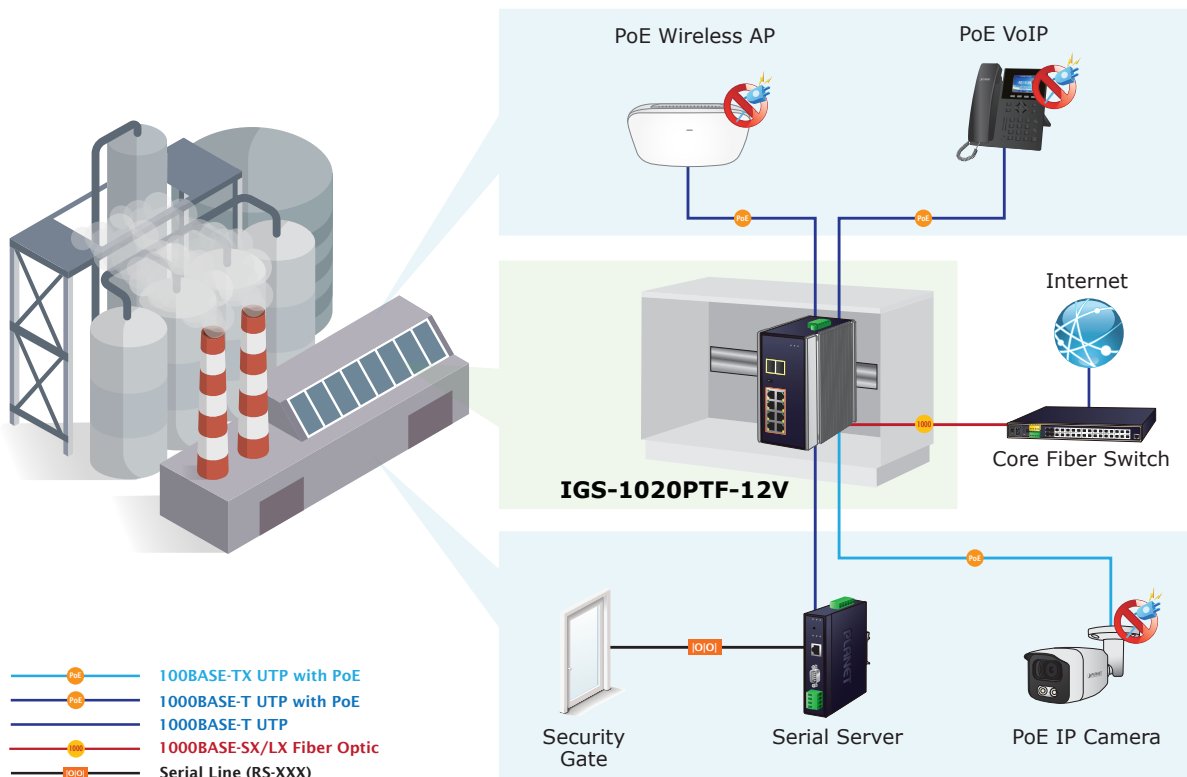


\* The above pictures are for illustration only.

**Applications**

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

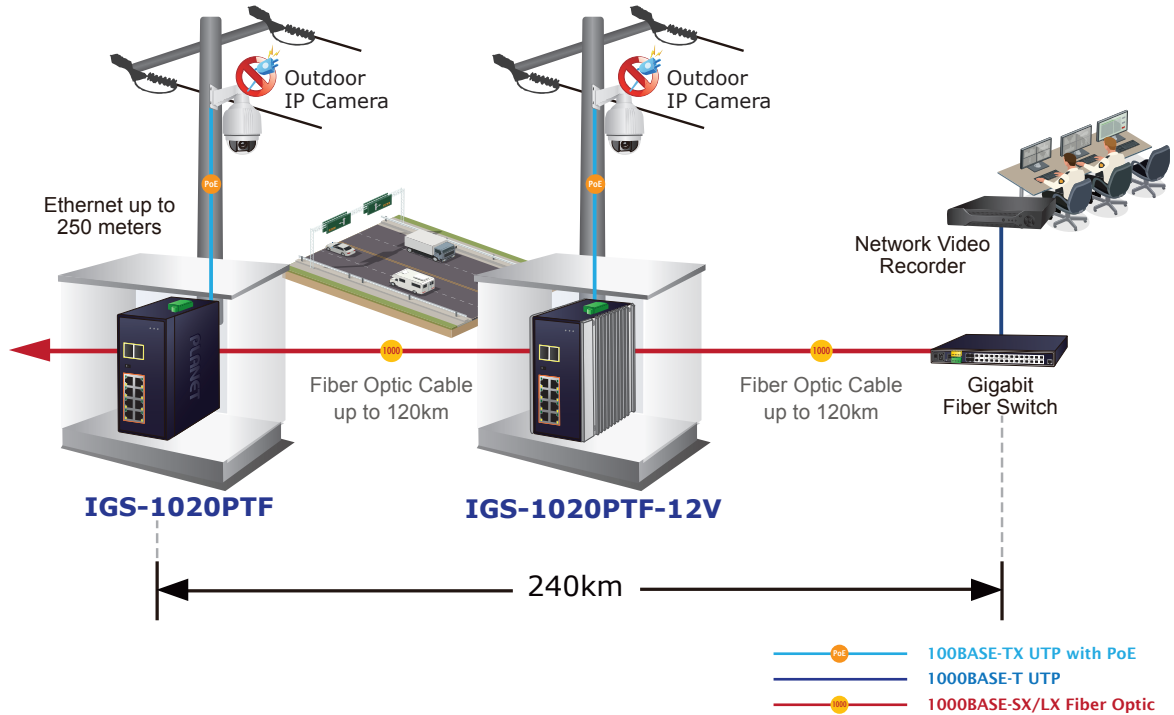
Suitable for buildings where security is strictly enforced, the IGS-1020PTF-12V, with eight Gigabit Ethernet 802.3at PoE+ in-line power interfaces, can easily build a power centrally controlled for an IP phone system, IP surveillance system, and wireless AP group in the harsh Industrial environment. 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-12V 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-12V 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-12V 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-12V 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-12V undoubtedly brings an ideal secure surveillance system at a lower total cost.

## Extending Ethernet Distance

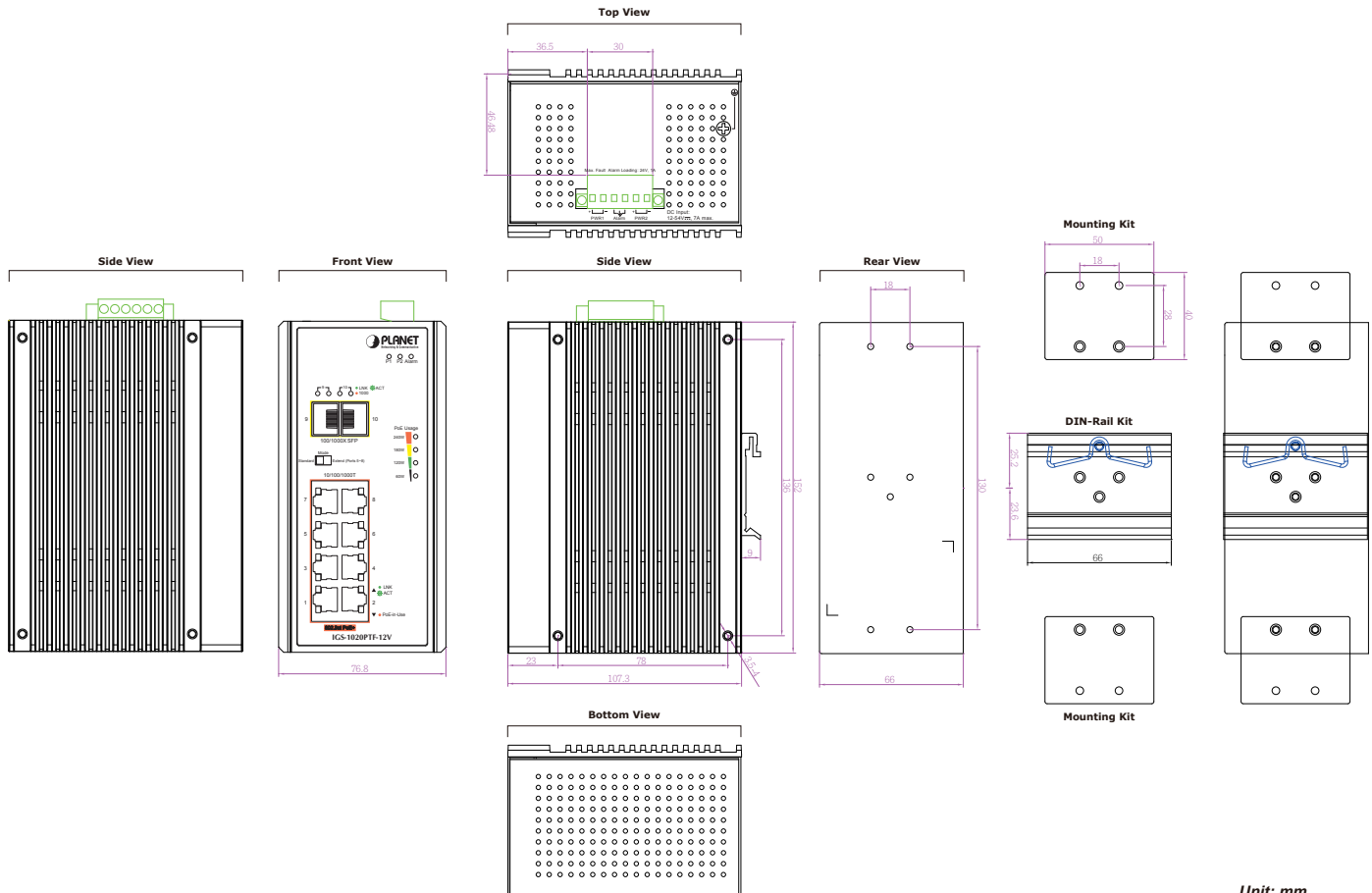


## Specifications

Model	IGS-1020PTF-12V
<b>Hardware Specifications</b>	
Copper Ports	8 10/100/1000BASE-T 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) Compatible with 100BASE-FX SFP
Connector	Removable 6-pin terminal block 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	12~54V DC, 7A (max.)
Power Consumption	Max. 5.6 watts/19BTU@54V DC input (System) Max. 8.4 watts/29BTU@54V DC input (Ethernet Full Loading) Max. 265.1 watts/904BTU@54V DC input (Ethernet + PoE Full Loading)
Dimensions (W x D x H)	77 x 106 x 152mm
Weight	1133g
Enclosure	IP30 aluminum case
Installation	DIN-rail/ wall-mount
ESD Protection	6KV
LED Indicators	3 x LED for System and Power: <ul style="list-style-type: none"> <li>■ Green: DC Power 1</li> <li>■ Green: DC Power 2</li> <li>■ Red: Power Fault Alarm</li> </ul> 8 x LED for PoE Copper Port (Ports 1 to 8): <ul style="list-style-type: none"> <li>■ Green: LNK/ACT (10/100/1000Mbps)</li> <li>■ Amber: PoE-in-Use</li> </ul> 2 x LED for 100/1000X Fiber Port (Ports 9 to 10): <ul style="list-style-type: none"> <li>■ Green: LNK/ACT (100/1000Mbps)</li> <li>■ Amber: 1000Mbps</li> </ul> 4 x LED for PoE Usage <ul style="list-style-type: none"> <li>■ Amber: 60W, 120W, 180W and 240W</li> </ul>
<b>Switch Specifications</b>	
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 IEEE 802.3x pause frame for full duplex
<b>Power over Ethernet</b>	
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. 30 watts
PoE Power Budget (max.)	240W maximum @54V DC 120W maximum@24V DC 60W maximum@12V DC
Max. Number of Class 3 PDs@25W	8
<b>Standards Conformance</b>	
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 802.3ab Gigabit Ethernet IEEE 802.3z Gigabit Ethernet over Fiber Optic IEEE 802.3az Energy Efficient Ethernet (EEE) IEEE 802.3at Power over Ethernet Plus IEEE 802.3af Power over Ethernet

<b>Environment</b>	
Temperature	Operating: -40~75 degrees C Storage: -40~85 degrees C
Humidity	Operating: 5~90% (non-condensing) Storage: 5~90% (non-condensing)

## IGS-1020PTF-12V Multi View Drawing



Unit: mm

## Ordering Information

IGS-1020PTF-12V	Industrial 8-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Ethernet Switch w/ 12V Booster (-40~75 degrees C)
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## 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	YES	1000	WDM(LC)	Multi-mode	2km	1310nm	1550nm	-40 ~ 75 degrees C
MGB-TSB		1000	WDM(LC)	Multi-mode	2km	1550nm	1310nm	-40 ~ 75 degrees C
MGB-TLA10	YES	1000	WDM(LC)	Single Mode	10km	1310nm	1550nm	-40 ~ 75 degrees C
MGB-TLB10		1000	WDM(LC)	Single Mode	10km	1550nm	1310nm	-40 ~ 75 degrees C
MGB-TLA20	YES	1000	WDM(LC)	Single Mode	20km	1310nm	1550nm	-40 ~ 75 degrees C
MGB-TLB20		1000	WDM(LC)	Single Mode	20km	1550nm	1310nm	-40 ~ 75 degrees C
MGB-TLA40	YES	1000	WDM(LC)	Single Mode	40km	1310nm	1550nm	-40 ~ 75 degrees C
MGB-TLB40		1000	WDM(LC)	Single Mode	40km	1550nm	1310nm	-40 ~ 75 degrees C
MGB-TLA80	YES	1000	WDM(LC)	Single Mode	80km	1490nm	1550nm	-40 ~ 75 degrees C
MGB-TLB80		1000	WDM(LC)	Single Mode	80km	1550nm	1490nm	-40 ~ 75 degrees C
MGB-TLA120	YES	1000	WDM(LC)	Single Mode	120km	1490nm	1550nm	-40 ~ 75 degrees C
MGB-TLB120		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)