Product Specifications

Industrial 4-Port 10/100TX + 2-Port 1000X SFP Ring Ethernet Switch

IFGS-620TF

Version 1.0

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Change History:

Revision:	Date:	Author:	Change List
Version 1.0	2024/9/5	Marc Liao	Initial Release

Author:	Marc Liao	**Editor:**	Mark Kao
Reviewed By:	Reyo Wu	**Approved By:**	Kent Kang

1. PRODUCT DESCRIPTION

Slim Type for More Practicability and Convenience

PLANET IFGS-620TF is the first Unmanaged industrial-grade Ring Ethernet Switch to feature **four 10/100BASE-TX** copper ports and **two 1000BASE-X SFP fiber ports**. It is packed in an IP30-rated rugged but compact-size case. Being able to operate under the temperature ranging from **-40** to **75 degrees C** and a wide-ranging redundant power system (**9~48V DC** or **24V AC**), the IFGS-620TF provides a reliable, stable and continuous long-range data transmission and can be installed in any harsh environment without taking space into consideration.

In response to the growing demand for IIoT (Industrial Internet of Things) infrastructure, the IFGS-620TF 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 IFGS-620TF 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.

Fast Recovery for Industrial Ethernet Transmission Applications

The IFGS-620TF supports the super-fast, fault-tolerant ring redundancy technology and features strong rapid self-recovery capability to prevent interruptions and external intrusions. Its **Dual SFP Ports** incorporate advanced **ring data recovery through DIP switch** technology and **redundant power** input system into customer's industrial automation network to enhance system reliability and uptime in harsh environments. In certain simple Ring network with **8 units**, the recovery time of data link can be **as fast as 1ms**.

Due to differences in design between the IFGS-620TF One Key Ring and the ERPS Ring functions available on PLANET Industrial Managed Switch devices, the two functions are not compatible with each other. The IFGS-620TF One Key Ring function offers easier and faster deployment with DIP switch adjustments. Also to fill the PoE demand with one Key Ring function, the IFGS-624PTF will be available in the near future.

PROFINET Traffic with Higher Delivery Priority

The IFGS-620TF features a brand-new function that enhances support for recognizing the PROFINET traffic for higher delivery priority. Once the IFGS-620TF receives the PROFINET traffic, it will forward the PROFINET traffic first, and then handle other Ethernet traffic. With this enhanced function, the IFGS-620TF will become the ideal Industrial Unmanaged Switch for the faster PROFINET traffic.

Fiber Optic Link Capability Enables Extension of Network Deployment

The IFGS-620TF's two SFP ports are compatible with **1000BASE-X** SFP (small form factor pluggable) fiber-optic transceivers. The fiber optic uplink capability guarantees the throughput to all nodes hooked into the network and the Gigabit Ethernet distance can be extended from 550 meters (Multi-mode fiber cable) to 120 kilometers (Single-mode fiber cable). They are well suited for applications within the factory data centers and distributions.

Thus, building a network solution of FTTH (Fiber to the Home), FTTC (Fiber to the Curb) for ISPs or FTTB (Fiber to the Building) for enterprises becomes so easy to users when long-distance deployment is employed. The IFGS-620TF can handle extremely large amounts of data in a secure topology linking to a metro switch, backbone or high-capacity server.

Dual Power Input for High Availability Network System

The IFGS-620TF features a strong dual power input system with wide-ranging voltages (9V~48V DC or 24V AC) incorporated into customer's automation network to enhance system reliability and uptime. In the example below, when power supply 1 fails to work, the hardware failover function will be activated automatically to keep powering the IFGS-620TF via power supply 2 alternatively without any loss of operation.

Low Power Consumption for Green Networking to implement ESG

The IFGS-620TF, adopting the advanced green networking technology, provides cable length power saving, and link-up and link-down power saving. These features make the IFGS-620TF consume very low power in full load operation mode, which helps conserve energy effectively but maintains high performance efficiently.

With the **IEEE 802.3az Energy Efficient Ethernet (EEE)** Protocol, the IFGS-620TF can automatically detect cable link status and network traffic, and thus is able to adjust power consumption accordingly. It enables the switch to consume less power when it is less active.

Robust Protection

The IFGS-620TF provides a 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.

Flexible and Easy Installation with Limited Space

The compact-sized IFGS-620TF 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.

2. PRODUCT FEATURES

Physical Port

- Four 10/100BASE-TX RJ45 ports with auto MDI/MDI-X function
- Two SFP interfaces, supporting 1000BASE-X transceiver type auto detection

One Key Ring Feature

- In certain simple Ring network with **8 units**, the recovery time of data link can be as fast as 1ms.

Layer 2 Features

- Complies with IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX, IEEE 802.3z 1000BASE-X Ethernet standard
- Supports auto-negotiation and 10/100Mbps half/full duplex mode
- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- High-performance Store and Forward architecture, broadcast storm control and runt/CRC filtering eliminate erroneous packets to optimize the network bandwidth
- Backplane (switching fabric): 4.8Gbps
- Integrated address look-up engine, supporting 4K absolute MAC addresses
- 16K jumbo packet size
- Automatic address learning and address aging
- IEEE 802.1p Class of Service (Works under Ring function disable)
- IEEE 802.1Q VLAN transparency
- CSMA/CD Protocol

Industrial Case and Installation

- Slim IP30 metal case
- DIN-rail, wall-mount or side wall-mount design for redundant power design
  - 9 to 48V DC, redundant power with reverse polarity protection
  - AC 24V power adapter acceptable
- Supports 6000 VDC Ethernet ESD protection
- -40 to 75 degrees C operating temperature
- Free fall, shock-proof and vibration-proof for industries

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENT

Switch ASIC: IC Plus IP1811LRHI x 1

3.2 FUNCTION SPECIFICATIONS

<table>
<tr><td>Model</td><td>IFGS-620TF</td></tr>
<tr><td colspan="2">Hardware Specifications</td></tr>
<tr><td>Copper Ports</td><td>4 x 10/100BASE-TX RJ45 TP
Auto-MDI/MDI-X, auto-negotiation</td></tr>
<tr><td>SFP Slots</td><td>2 x 1000BASE-X SFP interfaces</td></tr>
<tr><td>DIP Switch</td><td>
<table>
<tr><th>DIP Switch</th><th>Position</th><th>Function</th></tr>
<tr><td rowspan="2">DIP-1</td><td>OFF (default)</td><td>Ring</td></tr>
<tr><td>ON (default)</td><td>Switch Mode</td></tr>
</table>
Note :
1. Power off the IFGS-620TF before adjusting the DIP switch and then power it on.
2. The Ring function can reach simple Ring network with 8 units, the recovery time of data link can be as fast as 1ms.
3. Ring performance may vary depending on the length of the fiber optic and UTP cables.
</td></tr>
<tr><td>Connector</td><td>Removable 6-pin terminal block
Pin 1/2 for Power 1; Pin 3/4 for fault alarm; Pin 5/6 for Power 2</td></tr>
<tr><td>Alarm</td><td>Provides one relay output for power failure
Alarm Relay current carry ability: 1A @ DC 24V</td></tr>
<tr><td>ESD Protection</td><td>±6KV air gap discharge
±6KV contact discharge</td></tr>
<tr><td>Surge Immunity</td><td>6KV DC</td></tr>
<tr><td>Enclosure</td><td>IP30 type metal case</td></tr>
<tr><td>Installation</td><td>DIN-rail kit and wall-mount ear</td></tr>
<tr><td>Dimensions (W x D x H)</td><td>32 x 87.8 x 135mm</td></tr>
<tr><td>Weight</td><td>430g</td></tr>
<tr><td>Power Requirements</td><td>DC 9~48V or AC 24V
Redundant power with reverse polarity protection</td></tr>
<tr><td>Power Consumption / Dissipation</td><td>3.4watts/11.6BTU</td></tr>
<tr><td>LED</td><td>3 x LED for System and Power:
■ Green: DC Power 1</td></tr>
</table>

	■ Green: DC Power 2 ■ Red: Alarm 1x LED for Per Copper Port (Port-1~Port-4): ■ Green: 10/100 LNK/ACT 1 x LED for Per SFP interface (Port-5~Port-6) ■ Green: 1G LNK/ACT
Switch Specifications	
Switch Processing Scheme	Store-and-Forward
Switch Fabric	4.8Gbps
Throughput (packet per second)	3.57Mpps@64bytes
Address Table	4K entries
Jumbo Frame	16K bytes
Flow Control	Back pressure for half duplex IEEE 802.3x pause frame for full duplex
Standards Conformance	
Standards Compliance	IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet IEEE 802.3ab Gigabit Ethernet IEEE 802.3z Gigabit Ethernet 1000BASE-SX/LX IEEE 802.3x Full-Duplex Flow Control IEEE 802.1p Class of Service (Works under Ring function disable) 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: 5~95% (Non-condensing) Storage: 5~95% (Non-condensing)

3.3 PHYSICAL SPECIFICATIONS:

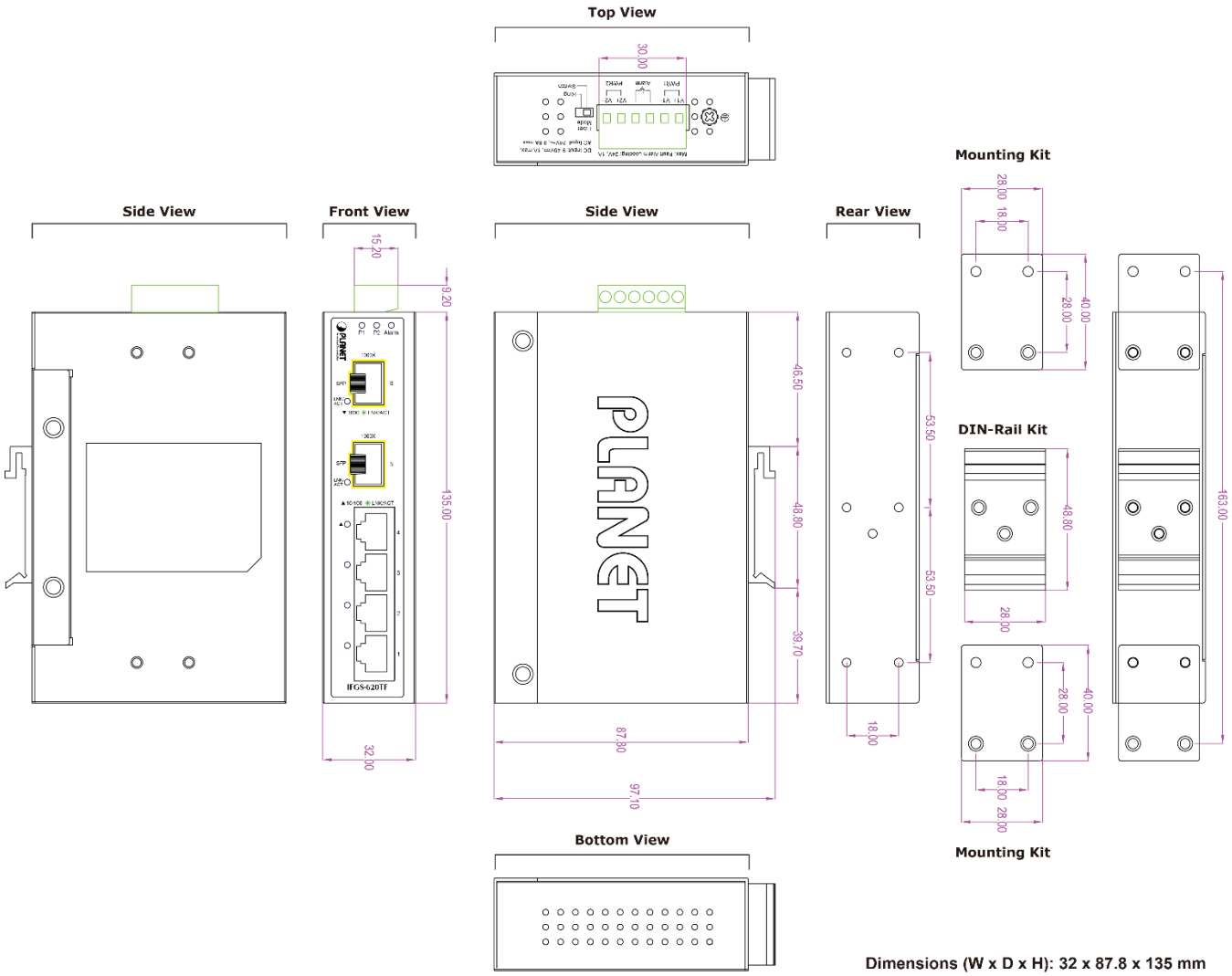
- **Dimensions (W x D x H):**

  32 x 87.8 x 135 mm

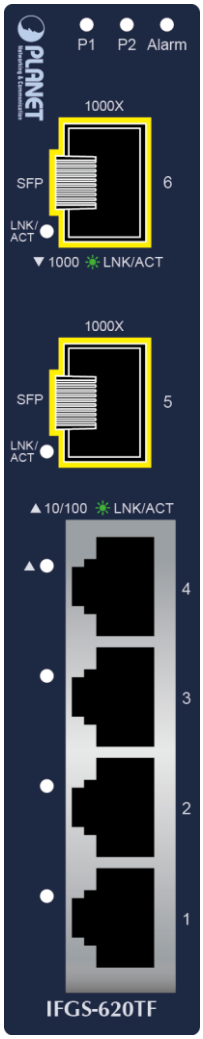
- **Weight:**

  430g

- **Diagram**



■ Front Panel:



■ LED Definition

▶ System

LED	Color	Function
P1	Green	**Lights** to indicate power 1 has power.
P2	Green	**Lights** to indicate power 2 has power.
Alarm	Red	**Lights** to indicate either power 1 or power 2 has no power.

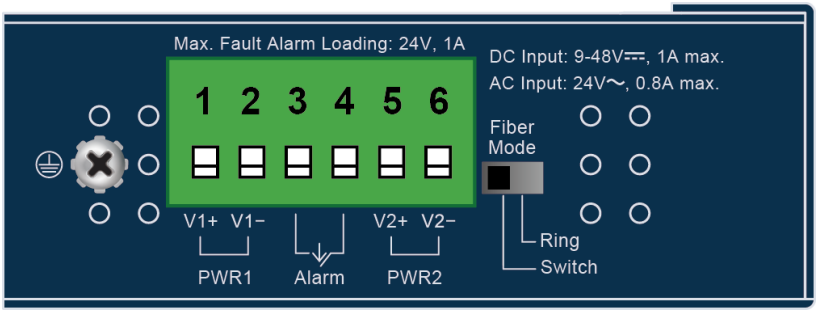
▶ Per 10/100BASE-TX Interface (Port 1 to Port 4)

LED	Color	Function
10/100 LNK/ACT	Green	**Lights** to indicate the link through that port is successfully established at 10/100Mbps.
		Blinks to indicate that the switch is actively sending or receiving data over that port.

▶ **Per 1000BASE-X SFP Slot (Port 5 to Port 6)**

LED	Color	Function
1000 LNK/ACT	**Green**	**Lights** to indicate the port is successfully established at 1000Mbps.
		Blinks to indicate that the Switch is actively sending or receiving data over that port.

■ **Top View**



CAUTION: **Power off the IFGS-620TF before adjusting the DIP switch and then power it on.**

3.4 ENVIRONMENTAL SPECIFICATIONS

Operating:

Temperature: -40°C ~ 75 degrees C

Relative Humidity: 5% ~ 90% (non-condensing)

Storage:

Temperature: -40°C ~ 75 degrees C

Relative Humidity: 5% ~ 90% (non-condensing)

3.5 ELECTRICAL SPECIFICATION

LOADING / INPUT	System on without any devices attached	Port-1~Port-6 Link Up with Data Full Loading
DC 9V	1.4 watts/4.7BTU	3.3 watts/11.2BTU
DC 24V	1.4 watts/4.7BTU	3.3 watts/11.2BTU
DC 48V	1.6 watts/5.4BTU	3.4 watts/11.6BTU

3.6 REGULATORY COMPLIANCE

FCC Part 15 Class A, CE

3.7 RELIABILITY

MTBF > 100,000Hrs @ 25 degrees C

3.8 BASIC PACKAGING

☑ The IFGS-620TF	x 1
☑ QR Code Sheet	x 1
☑ DIN-rail Kit	x 1
☑ Wall Mounting Kit	x 1
☑ RJ45 Dust Cap	x 4
☑ SFP Dust Cap	x 2

3.9 PACKING INFORMATION

Box Dimensions (W x D x H)	205 x 144 x 46 mm
Weight	0.6 Kg
Carton Dimensions (W x D x H)	445 x 320 x 280 mm
Carton Weight	12.36 Kg
Quantity	20pcs in one carton