# Industrial 4-Port 10/100/1000T + 2-Port 100/1000X SFP Ethernet Switch
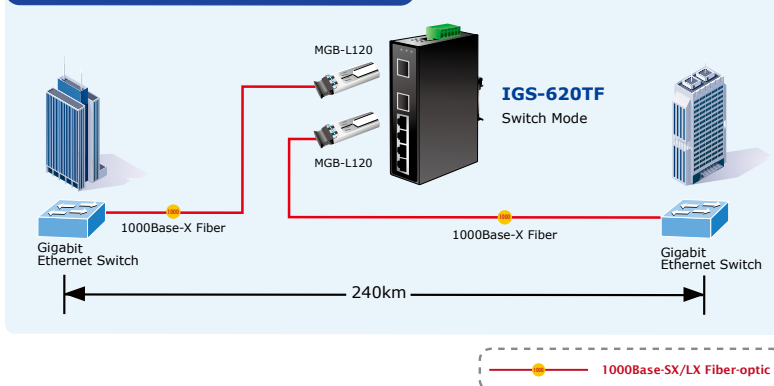
### Flexible, Reliable and Industrial-grade Network Distance Extension Solution

PLANET IGS-620TF is an Industrial 6-port full Gigabit Ethernet Switch providing non-blocking wire-speed performance and great flexibility for Gigabit Ethernet extension in harsh industrial environment. It provides 4-port 10/100/1000Base-T RJ-45 copper and 2 extra 100/1000Base-X SFP fiber optic interfaces delivered in an IP30 rugged strong case with redundant power system. The IGS-620TF is well suited for applications in deploying surveillance system, and securing control and wireless service in climatically demanding environments with wide temperature range from -40 to 75 degrees C.

### Fiber-Optical Link Capability Enables Extension of Network Deployment

The two SFP slots are compatible with 100Base-FX or 1000Base-SX / LX / WDM through SFP (Small Form Factor Pluggable) fiber-optic transceivers. The fiber optical 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) up to 10/20/30/40/50/70/120 kilometers (Single-Mode fiber cable), also the Fast Ethernet distance can be extended from 2km (Multi-Mode fiber cable) up to 20/40/60 kilometers (Single-Mode fiber cable). They are well suited for applications within the factory data centers and distributions.

## Physical Port

- 4-port 10/100/1000Base-T RJ-45 with auto MDI / MDI-X function
- 2-port SFP slot interface, SFP supports 1000Base-X and 100Base-FX transceiver via DIP switch configured
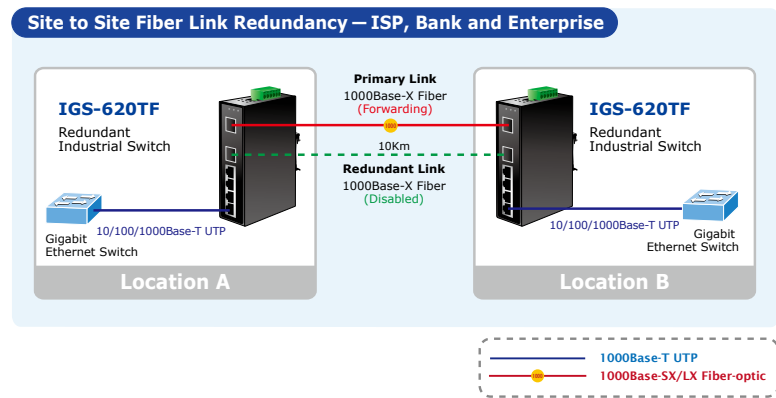
## Fiber Port Redundancy

- Link status auto-detect and redundant on Dual ports with the same connector type
- Only Primary-Port is active at a time, the Backup-Port is blocked
- When Primary-Port link failure occurs, the traffic will swap to Backup-Port automatically.
- Once the Primary-Port status is back to link-up, the traffic will swap from Backup-Port to Primary-Port.

## Layer 2 Features

- Supports Auto-negotiation and 10/100Mbps half / full duplex and 1000Mbps full duplex mode
- High performance Store and Forward architecture, runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Prevents packet loss with back pressure (Half-Duplex) and IEEE 802.3x PAUSE frame flow control (Full-Duplex)
- 9K Jumbo Frame Size support
- Backplane (Switching Fabric): 12Gbps
- Integrated address look-up engine, support 1K absolute MAC addresses
- Automatic address learning and address aging
- CSMA/CD Protocol

**Fiber Switch Mode — Distance Extension**



MGB-L120

MGB-L120

**IGS-620TF**
Switch Mode

1000Base-X Fiber

1000Base-X Fiber

Gigabit Ethernet Switch

Gigabit Ethernet Switch

240km

1000Base-SX/LX Fiber-optic

## Adjustable 6-Port Switch Mode or 4 + 2 Fiber Redundant Mode

The two SFP slots allow to change the operation mode with its built-in DIP switch. Via the built-in DIP switch, the IGS-620TF can be configured as 6-port Ethernet switch or 4+2 fiber redundant mode. With the 6-port switch mode, the IGS-620TF can operate in Store-and-Forward mechanism with high performance; on the other hand, when in the 4+2 fiber redundant mode, it provides rapid fiber redundancy of link for highly critical Ethernet applications. The redundant mode also supports auto-recovering function. If the destination port of a packet is link-down, it will forward the packet to the other port of the backup pair.

### Industrial Case / Installation

- Slim IP30 metal case protection
- DIN Rail and Wall Mount Design
- Redundant Power Design
    - 12 to 48V DC, redundant power with polarity reverse protect function
    - AC 24V power adapter acceptable
- Supports EFT protection 6000 VDC for power line
- Supports 6000 VDC Ethernet ESD protection
- -40 to 75 degrees C operating temperature



**Site to Site Fiber Link Redundancy — ISP, Bank and Enterprise**

## Environmentally Hardened Design

The IGS-620TF is equipped with the slim-type IP30 metal case for easy deployment in heavy Industrial demanding environments. With IP30 industrial case protection, the IGS-620TF 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. Being able to operate under the temperature range from -40 to 75 degrees C, the IGS-620TF can be placed in almost any difficult environment. The IGS-620TF also allows either DIN rail or wall mounting for efficient use of cabinet space.

## Convenient and Reliable Power System

To enhance the operation reliability and flexibility, the IGS-620TF is equipped with two DC power input connectors for redundant power supply installation. It also possesses an integrated power supply source with wide-ranging voltages (12 to 48V DC or 24V AC) for worldwide high availability applications requiring dual or backup power inputs.
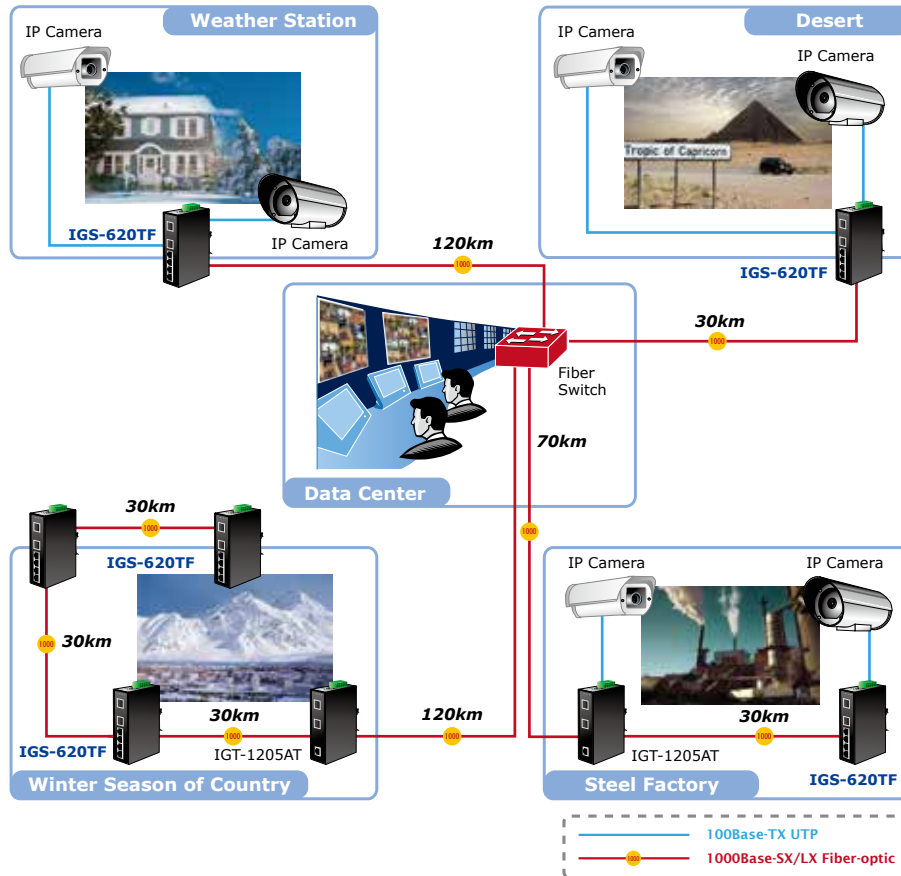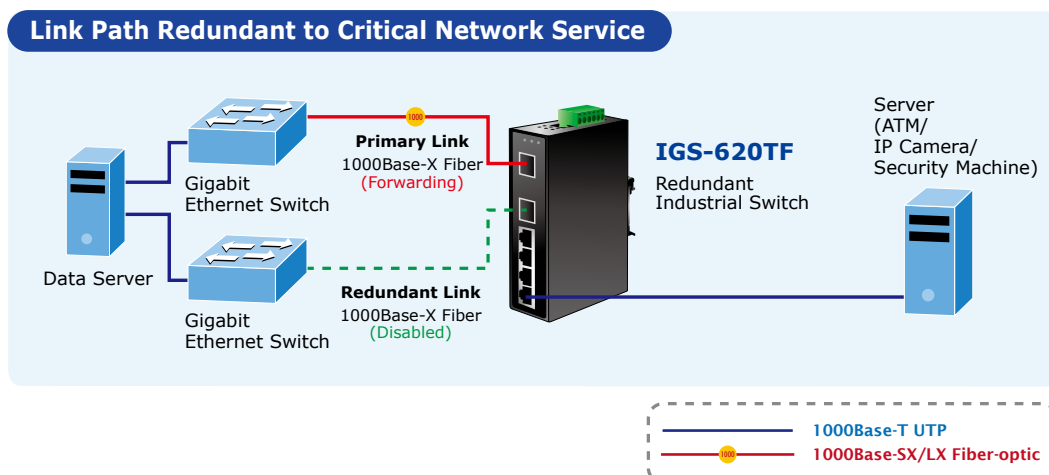
# Application

*Hardened Environment Application*

The IGS-620TF Industrial Gigabit Ethernet Switch offers full port Gigabit speed. It provides very high reliability and security features to make sure the continuous operation in harsh environments such as control cabinet of transportation, factory, outdoors and places where extreme low or high temperatures can be experienced. Moreover, the IGS-620TF is also compatible with 100Mbps and 1000Mbps SFP transceivers to provide a strong, stable and long-distance connection and flexible industrial networking deployment.



*Redundancy Application*

The IGS-620TF Industrial Gigabit Ethernet Switch provides rapid fiber redundancy of link for highly critical Ethernet applications. The redundant-mode supports auto-recover function. If the destination port of a packet is link-down, it forwards the packet to the other port of the backup pair.

# Specifications

| Model | IGS-620TF |
|---|---|
| **Hardware Specifications** | |
| Copper Ports | 4 x 10/100/1000Base-T RJ-45 TP<br>Auto-MDI/MDI-X, Auto-Negotiation |
| SFP / mini-GBIC Slots | 2 1000Base-SX/LX/BX SFP interfaces (Port-5 and Port-6)<br>Compatible with 100Base-FX SFP |
| DIP Switch | ▪ DIP-1: SFP Port 5 1000Base-X (default) / 100Base-FX<br>▪ DIP-2: SFP Port 6 1000Base-X (default)/ 100Base-FX<br>▪ DIP-3: Switch mode / Fiber Redundant mode |
| 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 |
| Alarm | Provides one relay output for power failure<br>Alarm Relay current carry ability: 1A @ DC 24V |
| LED | 3 x LED for System and Power:<br>▪ Green: DC Power 1<br>▪ Green: DC Power 2<br>▪ Green: Power Fault<br>2 x LED for Per Copper Port (Port-1~Port-4):<br>▪ Green: 1000 LNK/ACT<br>▪ Orange:100 LNK/ACT<br>1 x LED for Per mini-GBIC interface (Port-5 and Port-6)<br>▪ Green: LNK/ACT |
| ESD Protection | 6KV DC |
| EFT Protection | 6KV DC |
| Enclosure | IP30 type metal case |
| Installation | DIN rail kit and wall mount ear |
| Dimensions (W x D x H) | 135 x 87 x 32mm |
| Weight | 503g |
| Power Requirements | DC 12~48V or AC 24V<br>Redundant power with polarity reverses protection function |
| Power Consumption / Dissipation | 7.2watts / 24BTU |
| Cable | Twisted-Pair | 10Base-T: 2-Pair UTP CAT. 3, 4, 5, up to 100 meters<br>100Base-TX: 2-Pair UTP CAT. 5, 5e up to 100 meters<br>1000Base-T: 4-Pair UTP CAT. 5e, 6 up to 100 meters |
| | Fiber-Optic Cable | ▪ 1000Base-SX :<br>  50/125μm or 62.5/125μm multi-mode fiber optic cable, up to 550m<br>▪ 1000Base-LX :<br>  9/125μm single-mode fiber optic cable, up to 10/20/30/40/50/70/120 kilometers (vary on SFP module)<br>▪ 100Base-FX :<br>  50/125μm or 62.5/125μm multi-mode fiber optic cable, up to 2 kilometers<br>  9/125μm single-mode fiber optic cable, up to 20/40/60 kilometers (vary on SFP module) |
| **Switch Specification** | |
| Switch Processing Scheme | Store-and-Forward |
| Address Table | 1K entries |
| Flow Control | Back pressure for half duplex |
| Switch fabric | IEEE 802.3x Pause Frame for full duplex |
| Throughput (packet per second) | 8.93Mpps@64bytes |
| Maximum Transmit Unit | 9216 bytes |
| Speed | SX/LX: 2000Mbps (full-duplex)<br>FX: 200Mbps (full-duplex)<br>TP: 10/20Mbps, 100/200Mbps, 2000Mbps |
| **Standards Conformance** | |
| Standards Compliance | IEEE 802.3 Ethernet / 10Base-T<br>IEEE 802.3u Fast Ethernet / 100Base-TX<br>IEEE 802.3ab Gigabit Ethernet / 1000Base-T<br>IEEE 802.3z Gigabit Ethernet / 1000Base-SX/LX<br>IEEE 802.3x Full-Duplex Flow Control |

| Regulation 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) |

# Dimensions
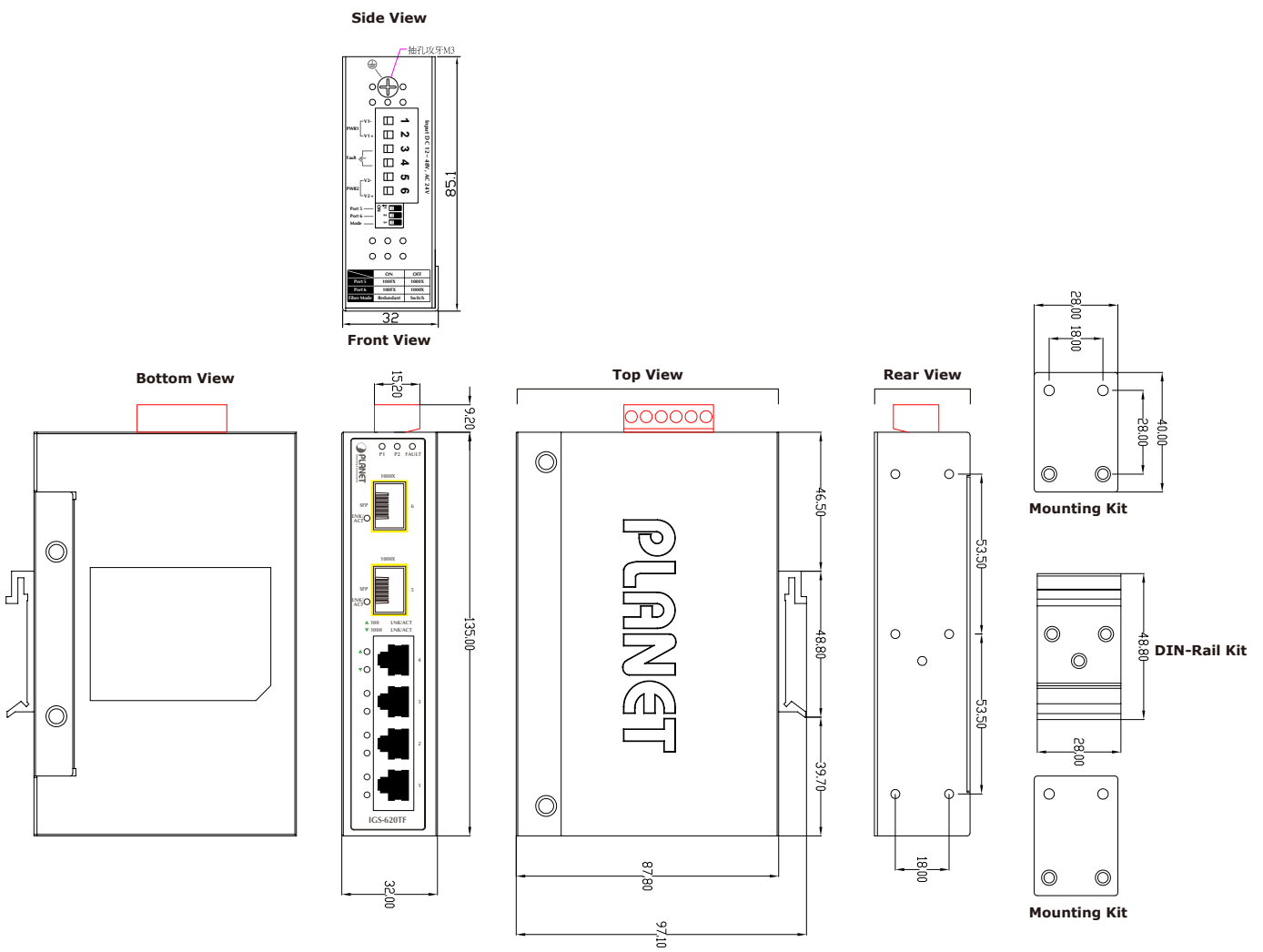


*Dimensions ( unit = mm )*

# Ordering Information

| IGS-620TF | Industrial 4-Port 10/100/1000T + 2-Port 100/1000X SFP Ethernet Switch |
|---|---|

# Related  SFP Transceivers

### Fast Ethernet Transceiver (100Base-X SFP)

| Model | Speed (Mbps) | Connector Interface | Fiber Mode | Distance | Wavelength (nm) | Operating Temp. |
|---|---|---|---|---|---|---|
| MFB-FX | 100 | LC | Multi Mode | 2km | 1310nm | 0 ~ 60$^{\circ}$C |
| MFB-F20 | 100 | LC | Single Mode | 20km | 1310nm | 0 ~ 60$^{\circ}$C |
| MFB-F40 | 100 | LC | Single Mode | 40km | 1310nm | 0 ~ 60$^{\circ}$C |
| MFB-F60 | 100 | LC | Single Mode | 60km | 1310nm | 0 ~ 60$^{\circ}$C |
| MFB-F120 | 100 | LC | Single Mode | 120km | 1550nm | 0 ~ 60$^{\circ}$C |
| MFB-TFX | 100 | LC | Multi Mode | 2km | 1310nm | -40 ~ 75$^{\circ}$C |
| MFB-TF20 | 100 | LC | Single Mode | 20km | 1550nm | -40 ~ 75$^{\circ}$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-FA20 | 100 | WDM(LC) | Single Mode | 20km | 1310nm | 1550nm | 0 ~ 60$^{\circ}$C |
| MFB-FB20 | 100 | WDM(LC) | Single Mode | 20km | 1550nm | 1310nm | 0 ~ 60$^{\circ}$C |
| MFB-TFA20 | 100 | WDM(LC) | Single Mode | 20km | 1310nm | 1550nm | -40 ~ 75$^{\circ}$C |
| MFB-TFB20 | 100 | WDM(LC) | Single Mode | 20km | 1550nm | 1310nm | -40 ~ 75$^{\circ}$C |
| MFB-TFA40 | 100 | WDM(LC) | Single Mode | 40km | 1310nm | 1550nm | -40 ~ 75$^{\circ}$C |
| MFB-TFB40 | 100 | WDM(LC) | Single Mode | 40km | 1550nm | 1550nm | -40 ~ 75$^{\circ}$C |

### Gigabit Ethernet Transceiver (1000Base-X SFP)

| Model | Speed (Mbps) | Connector Interface | Fiber Mode | Distance | Wavelength (nm) | Wavelength |
|---|---|---|---|---|---|---|
| MGB-GT | 1000 | Copper | -- | 100m | -- | 0 ~ 60$^{\circ}$C |
| MGB-SX | 1000 | LC | Multi Mode | 550m | 850nm | 0 ~ 60$^{\circ}$C |
| MGB-SX2 | 1000 | LC | Multi Mode | 2km | 1310nm | 0 ~ 60$^{\circ}$C |
| MGB-LX | 1000 | LC | Single Mode | 10km | 1310nm | 0 ~ 60$^{\circ}$C |
| MGB-L30 | 1000 | LC | Single Mode | 30km | 1310nm | 0 ~ 60$^{\circ}$C |
| MGB-L40 | 1000 | LC | Single Mode | 40km | 1550nm | 0 ~ 60$^{\circ}$C |
| MGB-L50 | 1000 | LC | Single Mode | 50km | 1550nm | 0 ~ 60$^{\circ}$C |
| MGB-L70 | 1000 | LC | Single Mode | 70km | 1550nm | 0 ~ 60$^{\circ}$C |
| MGB-L120 | 1000 | LC | Single Mode | 120km | 1550nm | 0 ~ 60$^{\circ}$C |
| MGB-TSX | 1000 | LC | Multi Mode | 550m | 850nm | -40 ~ 75$^{\circ}$C |
| MGB-TLX | 1000 | LC | Single Mode | 10km | 1310nm | -40 ~ 75$^{\circ}$C |
| MGB-TL30 | 1000 | LC | Single Mode | 30km | 1310nm | -40 ~ 75$^{\circ}$C |
| MGB-TL50 | 1000 | LC | Single Mode | 50km | 1550nm | -40 ~ 75$^{\circ}$C |

### *Gigabit Ethernet Transceiver (1000Base-BX, Single Fiber Bi-Directional SFP)*

| Model | Speed (Mbps) | Connector Interface | Fiber Mode | Distance | Wavelength (TX) | Wavelength (RX) | Operating Temp. |
|---|---|---|---|---|---|---|---|
| MGB-LA10 | 1000 | WDM(LC) | Single Mode | 10km | 1310nm | 1550nm | 0 ~ 60$^{\circ}$C |
| MGB-LB10 | 1000 | WDM(LC) | Single Mode | 10km | 1550nm | 1310nm | 0 ~ 60$^{\circ}$C |
| MGB-LA20 | 1000 | WDM(LC) | Single Mode | 20km | 1310nm | 1550nm | 0 ~ 60$^{\circ}$C |
| MGB-LB20 | 1000 | WDM(LC) | Single Mode | 20km | 1550nm | 1310nm | 0 ~ 60$^{\circ}$C |
| MGB-LA40 | 1000 | WDM(LC) | Single Mode | 40km | 1310nm | 1550nm | 0 ~ 60$^{\circ}$C |
| MGB-LB40 | 1000 | WDM(LC) | Single Mode | 40km | 1550nm | 1310nm | 0 ~ 60$^{\circ}$C |
| MGB-LA60 | 1000 | WDM(LC) | Single Mode | 60km | 1310nm | 1550nm | 0 ~ 60$^{\circ}$C |
| MGB-LB60 | 1000 | WDM(LC) | Single Mode | 60km | 1550nm | 1310nm | 0 ~ 60$^{\circ}$C |
| MGB-TLA10 | 1000 | WDM(LC) | Single Mode | 10km | 1310nm | 1550nm | 0 ~ 60$^{\circ}$C |
| MGB-TLB10 | 1000 | WDM(LC) | Single Mode | 10km | 1550nm | 1310nm | -40 ~ 75$^{\circ}$C |
| MGB-TLA20 | 1000 | WDM(LC) | Single Mode | 20km | 1310nm | 1550nm | -40 ~ 75$^{\circ}$C |
| MGB-TLB20 | 1000 | WDM(LC) | Single Mode | 20km | 1550nm | 1310nm | -40 ~ 75$^{\circ}$C |
| MGB-TLA40 | 1000 | WDM(LC) | Single Mode | 40km | 1310nm | 1550nm | -40 ~ 75$^{\circ}$C |
| MGB-TLB40 | 1000 | WDM(LC) | Single Mode | 40km | 1550nm | 1310nm | -40 ~ 75$^{\circ}$C |
| MGB-TLA60 | 1000 | WDM(LC) | Single Mode | 60km | 1310nm | 1550nm | -40 ~ 75$^{\circ}$C |
| MGB-TLB60 | 1000 | WDM(LC) | Single Mode | 60km | 1550nm | 1310nm | -40 ~ 75$^{\circ}$C |

**IGS-620TF**