Industrial 8-Port 10/100/1000T + 2 100/1000X SFP Managed Switch

PLANET IGS-10020MT is an **Industrial 10-Port Full Gigabit Managed Ethernet Switch** specially designed to build a full Gigabit backbone to transmit reliable but high speed data in heavy industrial demanding environments and forward data to remote network through fiber optic. It provides **8-port 10/100/1000Base-T copper** and **2 extra 100/1000Base-X SFP fiber optic interfaces** delivered in an IP30 rugged strong case with redundant power system. Besides support for 20Gbps switch fabric to handle extremely large amounts of video, voice and important data in a secure topology, the IGS-10020MT provides user-friendly but advanced **IPv6 / IPv4 management** interfaces and abundant L2 / L4 switching functions. It is the best investment for industrial business expanding or upgrading its network infrastructure.

IPv6 / IPv4 Full-functioned Secure Switch for Building Automation Networking

The IGS-10020MT is the ideal solution to fulfilling the demand of IPv6 management Gigabit Ethernet Switch, especially in the Industrial hardened environment. It supports both IPv4 and IPv6 management functions and can work with original network structure. It provides advanced Layer 2 to Layer 4 data switching and redundancy, Quality of Service traffic control, network access control and authentication, and Secure Management features to protect customer's industrial and building automation network connectivity with reliable switching recovery capability that is suitable for implementing fault tolerant and mesh network architectures.

Physical Port

- **8-Port 10/100/1000Base-T** RJ-45 copper
- **2 100/1000Base-X mini-GBIC/SFP** slots, SFP type auto detection

Industrial Case / Installation

- IP30 aluminum 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

Layer 2 Features

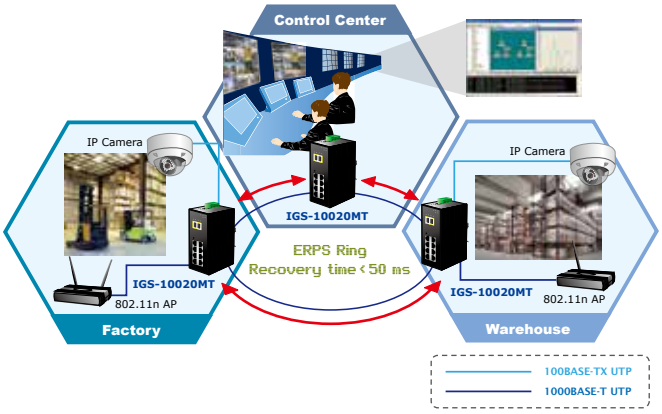
- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- High performance of Store-and-Forward architecture and runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Storm Control support
  - Multicast / Unknown-Unicast
- Supports **VLAN**
  - IEEE 802.1Q Tagged VLAN
  - Up to 255 VLANs groups, out of 4095 VLAN IDs
  - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
  - Private VLAN Edge (PVE)
  - Protocol-based VLAN
  - MAC-based VLAN
  - Voice VLAN
- Supports Spanning Tree Protocol
  - STP, IEEE 802.1D Spanning Tree Protocol
  - RSTP, IEEE 802.1w Rapid Spanning Tree Protocol
  - MSTP, IEEE 802.1s Multiple Spanning Tree Protocol, spanning tree by VLAN
  - BPDU Guard
- Supports **Link Aggregation**
  - 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (Static Trunk)
  - Maximum 5 trunk groups, up to 10 ports per trunk group
  - Up to 20Gbps bandwidth (duplex mode)
- Provides Port Mirror (many-to-1)
- Port Mirroring of the incoming or outgoing traffic on a particular port
- Supports E.R.P.S. **(Ethernet Ring Protection Switching)**

Quality of Service

- Ingress Shaper and Egress Rate Limit per port bandwidth control
- 8 priority queues on all switch ports

Redundant Ring, Fast Recovery for Surveillance System

The IGS-10020MT supports redundant ring technology and features strong rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates advanced **ITU-T G.8032 ERPS (Ethernet Ring Protection Switching)** technology, Spanning Tree Protocol (802.1s MSTP), and **redundant power** input system into customer's industrial automation network to enhance system reliability and uptime in harsh factory environments. In certain simple Ring network, the recovery time of data link can be as fast as 20 ms.



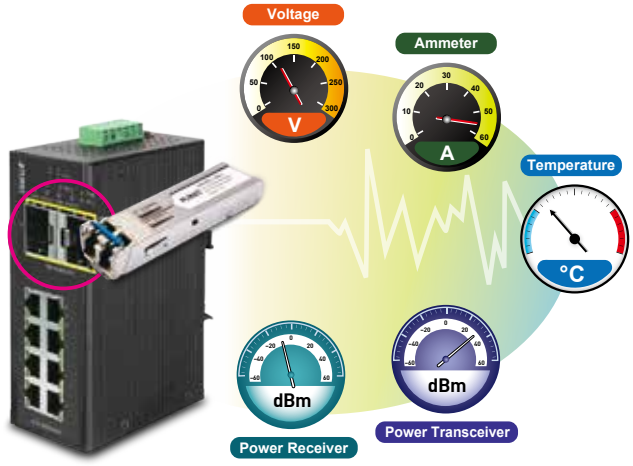
Environmentally Hardened Design

With IP30 aluminum industrial case protection, the IGS-10020MT 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. It also possesses an integrated power supply source with wide range of voltages (12 to 48V DC or 24V AC) for worldwide high availability applications requiring dual or backup power inputs. Being able to operate under the temperature range from -40 to 75 degrees C, the IGS-10020MT can be placed in almost any difficult environment.

Flexible and Extendable Solution

The 2 mini-GBIC slots built in the IGS-10020MT support dual-speed, 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 IGS-10020MT supports SFP-DDM (Digital Diagnostic Monitor) function that can easily monitor real-time parameters of the SFP for network administrator, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

*Digital Diagnostic Monitor **(DDM)***



- Traffic classification
  - IEEE 802.1p CoS
  - IP TOS / DSCP / IP Precedence
  - IP TCP/UDP port number
  - Typical network application
- Strict priority and Weighted Round Robin (WRR) CoS policies
- Supports QoS and In/Out bandwidth control on each port
- Traffic-policing policies on the switch port
- DSCP remarking

Multicast

- Supports IGMP Snooping v1, v2 and v3
- Supports MLD Snooping v1 and v2
- Querier mode support
- IGMP Snooping port filtering
- MLD Snooping port filtering
- MVR (Multicast VLAN Registration)

Security

- IEEE 802.1x Port-based / MAC-based network access authentication
- Built-in RADIUS client to co-operate with the RADIUS servers
- TACACS+ login users access authentication
- RADIUS / TACACS+ users access authentication
- IP-based Access Control List (ACL)
- MAC-based Access Control List
- Source MAC / IP address binding
- DHCP Snooping to filter untrusted DHCP messages
- Dynamic ARP Inspection discards ARP packets with invalid MAC address to IP address binding
- IP Source Guard prevents IP spoofing attacks
- Auto DoS rule to defend DoS attack
- IP address access management to prevent unauthorized intruder

Management

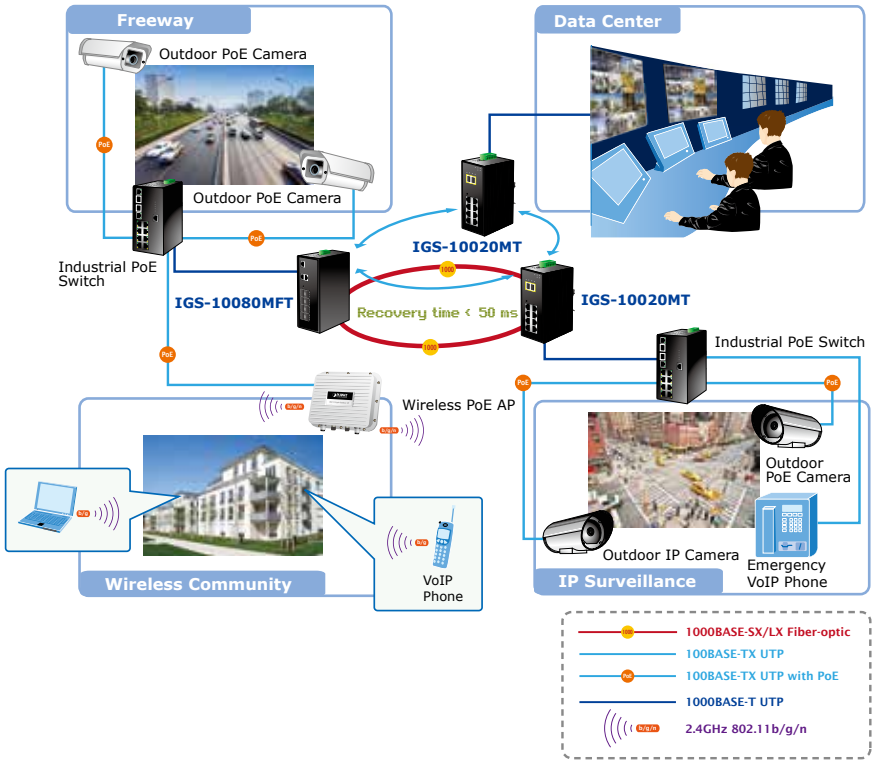
- Switch Management Interfaces
  - Web switch management
  - Remote Telnet management
  - SNMP v1, v2c, and v3 switch management
  - SSH / SSL secure access
- Four RMON groups (history, statistics, alarms, and events)
- **IPv6** IP Address / NTP / DNS management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- Firmware upload/download via HTTP / TFTP
- DHCP Relay
- DHCP Option 82
- User Privilege levels control
- NTP (Network Time Protocol)
- System Log
- Link Layer Discovery Protocol (LLDP) Protocol
- Cable Diagnostic technology provides the mechanism to detect and report potential cabling issues
- Reset button for system reboot or reset to factory default
- PLANET Smart Discovery Utility for deploy management

Applications

Industrial Area Manageable Switch for Data Collection and Forwarding

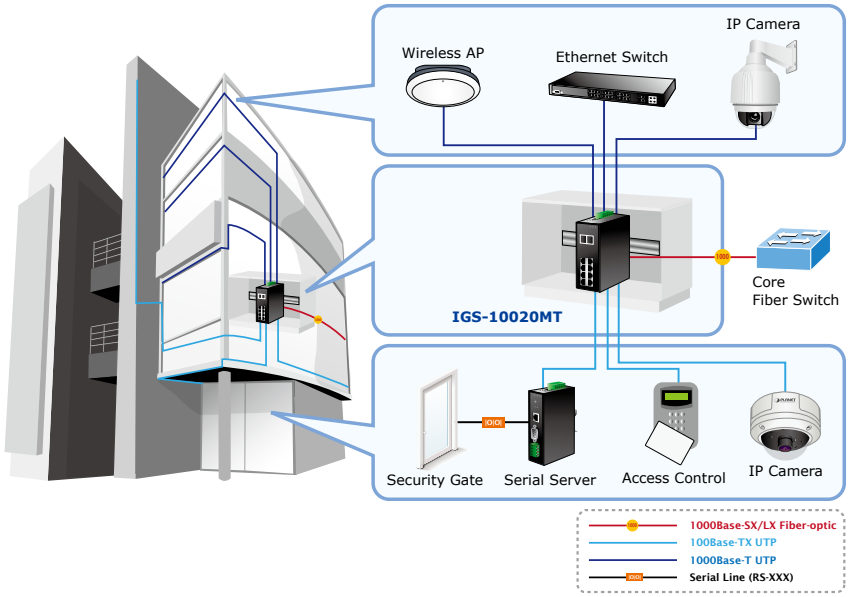
The IGS-10020MT offers **high performance and high reliability** to make sure the continuous industrial operation in harsh environments such as control cabinet of transportation, factory floors, outdoor, and the places where are in extremely low or high temperatures. With a non-blocking design and desktop size, the installation of the IGS-10020MT is easy and helpful to build a Gigabit high-bandwidth switched network quickly.

To further expand the current network, the IGS-10020MT provides advanced WEB and SNMP management interface to fulfill this kind of demand. With its built-in web-based management function, the IGS-10020MT offers an easy-to-use, platform-independent management and configuration facility. It supports standard Simple Network Management Protocol (SNMP) that makes the managed switch able to be monitored via any standard-based management software. By adopting the IGS-10020MT which complies with all the requirements of industrial applications, customers may enjoy high reliability, fast recovery capability, and safe Ethernet network operation.



Security Building Automation Switch

The IGS-10020MT offers comprehensive Layer 2 to Layer 4 Access Control List (ACL) for enforcing security to the edge. It can be used to restrict network access by denying packets based on source and destination IP address, TCP/UDP ports or defined typical network applications. The network administrators can now construct highly secured corporate networks with considerably less time and effort than before.

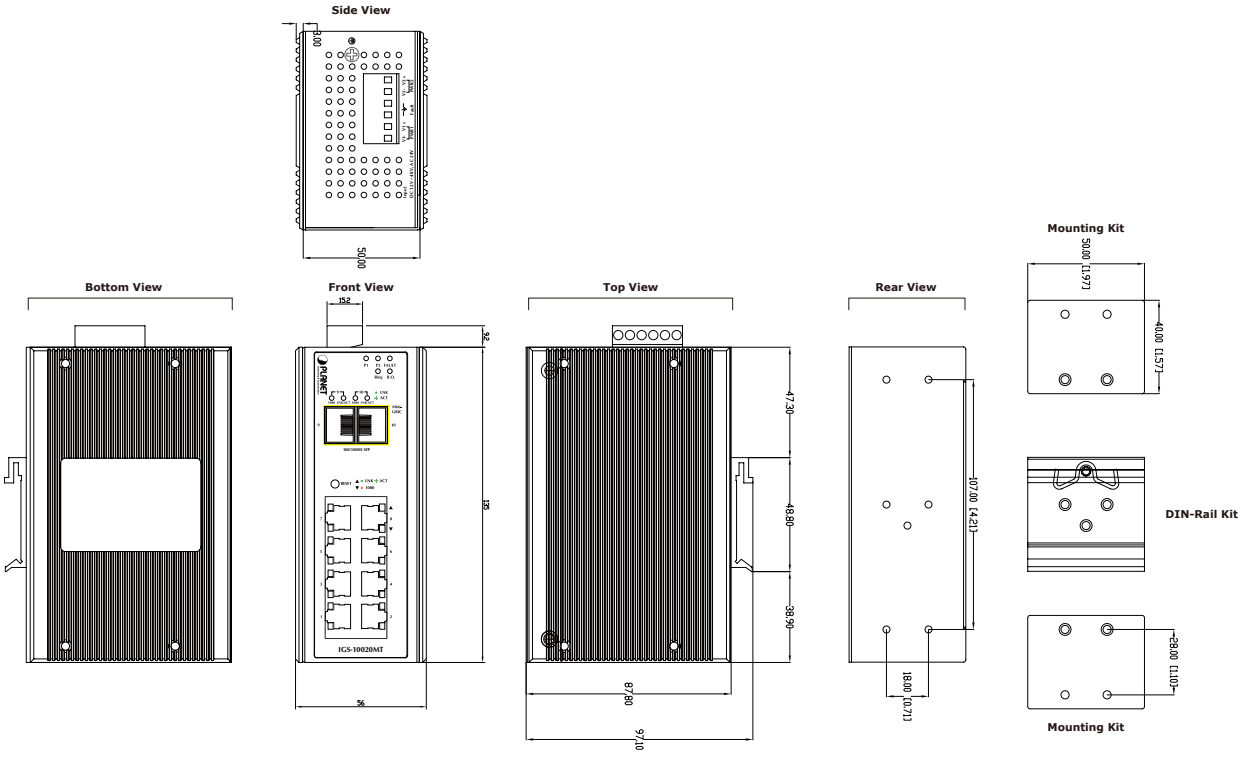


Specifications

Model	IGS-10020MT	
Hardware Specifications		
Copper Ports	8 10/ 100/1000Base-T RJ-45 Auto-MDI/MDI-X ports	
SFP/mini-GBIC Slots	2 1000Base-SX/LX/BX SFP interfaces (Port-9 and Port-10) Compatible with 100Base-FX SFP	
Switch Architecture	Store-and-Forward	
Switch Fabric	20Gbps / non-blocking	
Throughput (packet per second)	14.8Mpps	
Address Table	8K entries, automatic source address learning and ageing	
Share data Buffer	512 kilobytes	
Flow Control	IEEE 802.3x pause frame for full-duplex. Back pressure for half-duplex	
Jumbo Frame	9Kbytes	
Reset Button	< 5 sec: System reboot > 5 sec: Factory Default	
ESD Protection	6KV DC	
EFT Protection	6KV DC	
Enclosure	IP30 aluminum metal case	
Installation	DIN rail kit and wall mount kit	
Alarm	One relay output for power failure. Alarm relay current carry ability: 1A @ DC 24V	
LED Indicator	System: Power 1 (Green) Power 2 (Green) Fault Alarm (Green) Ring (Green) R.O. (Green)	Per 10/100/1000T RJ-45 Ports: LNK/ACT (Green) 1000 (Orange) Per SFP Interface: LNK/ACT (Green) 1000 (Orange)
Dimensions (W x D x H)	87.8 x 135 x 56 mm	
Weight	720g	
Power Requirements	DC 12 to 48V. AC 24V power adapter	
Power Consumption	10 watts / 34BTU (full loading)	
Layer 2 function		
Basic Management Interfaces	Web Browser, Remote Telnet, SNMP v1, v2c	
Secure Management Interface	SSH, SSL, SNMP v3	
Port configuration	Port disable/enable Auto-negotiation 10/100/1000Mbps full and half duplex mode selection Flow Control disable / enable Power saving mode control	
Port Status	Display each port's speed duplex mode, link status, flow control status. Auto negotiation status, trunk status.	
Port Mirroring	TX / RX / Both Many to 1 monitor	
VLAN	802.1Q Tagged based VLAN ,up to 255 VLAN groups Q-in-Q tunneling Private VLAN Edge (PVE) MAC-based VLAN Protocol-based VLAN Voice VLAN MVR (Multicast VLAN Registration) Up to 255 VLAN groups, out of 4095 VLAN IDs	
Link Aggregation	IEEE 802.3ad LACP / Static Trunk Support 5 groups of 10-Port trunk support	
QoS	Traffic classification based, Strict priority and WRR 8-level priority for switching - Port Number - 802.1p priority - 802.1Q VLAN tag - DSCP/TOS field in IP Packet	
IGMP Snooping	IGMP (v1/v2/V3) Snooping, up to 255 multicast Groups IGMP Querier mode support	
MLD Snooping	MLD (v1/v2) Snooping, up to 255 multicast Groups MLD Querier mode support	

Access Control List	IP-Based ACL / MAC-Based ACL Up to 123 entries	
Bandwidth Control	Per port bandwidth control Ingress: 500Kb~80Mbps Egress: 64Kb~80Mbps	
SNMP MIBs	RFC-1213 MIB-II IF-MIB RFC-1493 Bridge MIB RFC-1643 Ethernet MIB RFC-2863 Interface MIB RFC-2665 Ether-Like MIB RFC-2819 RMON MIB (Group 1, 2, 3 and 9)	RFC-2737 Entity MIB RFC-2618 RADIUS Client MIB RFC-2933 IGMP-STD-MIB RFC3411 SNMP-Frameworks-MIB IEEE 802.1X PAE LLDP MAU-MIB
Standards Conformance		
Regulation Compliance	FCC Part 15 Class A, CE	
Stability Testing	IEC60068-2-32 (Free fall) IEC60068-2-27 (Shock) IEC60068-2-6 (Vibration)	
Standards Compliance	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX / 100Base-FX IEEE 802.3z Gigabit SX/LX IEEE 802.3ab Gigabit 1000T IEEE 802.3x Flow Control and Back pressure IEEE 802.3ad Port trunk with LACP IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol IEEE 802.1p Class of service IEEE 802.1Q VLAN Tagging IEEE 802.1x Port Authentication Network Control	IEEE 802.1ab LLDP RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP version 1 RFC 2236 IGMP version 2 RFC 3376 IGMP version 3 RFC 2710 MLD version 1 FRC 3810 MLD version 2
Environment		
Operating	Temperature: -40 ~ 75 degrees C Relative Humidity: 5 ~ 95% (Non-condensing)	
Storage	Temperature: -40 ~ 75 degrees C Relative Humidity: 5 ~ 95% (non-condensing)	

Dimensions



Dimensions (unit = mm)

Ordering Information

IGS-10020MT	Industrial 8-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch (-40~75 degrees C)

Related Products

IGS-10020PT	Industrial 8-Port 10/100/1000T 802.3af PoE + 2-Port 100/1000X SFP Managed Switch (-40~75 degrees C)
IGS-10020HPT	Industrial 8-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Managed Switch (-40~75 degrees C)
IGS-801M	8-Port 10/100/1000Mbps Managed Industrial Ethernet Switch
IGS-10080MFT	Industrial 8 100/1000X SFP + 2-Port 10/100/1000T Managed Switch (-40 ~ 75 degree C)

Available Modules for IGS-10020MT

• 1000Mbps SFP transceiver modules

MGB-GT	SFP-Port 1000Base-T Module
MGB-SX	SFP-Port 1000Base-SX mini-GBIC module - 550m
MGB-SX2	SFP-Port 1000Base-SX mini-GBIC module - 2km
MGB-LX	SFP-Port 1000Base-LX mini-GBIC module - 10km
MGB-L30	SFP-Port 1000Base-LX mini-GBIC module - 30km
MGB-L50	SFP-Port 1000Base-LX mini-GBIC module - 50km
MGB-L70	SFP-Port 1000Base-LX mini-GBIC module - 70km
MGB-L120	SFP-Port 1000Base-LX mini-GBIC module - 120km
MGB-LA10	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module - 10km
MGB-LB10	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module - 10km
MGB-LA20	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module - 20km
MGB-LB20	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module - 20km
MGB-LA40	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module - 40km
MGB-LB40	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module - 40km
MGB-TSX	SFP-Port 1000Base-SX mini-GBIC module - 550m (-40 ~ 75 Degree C)
MGB-TLX	SFP-Port 1000Base-LX mini-GBIC module - 10km (-40 ~ 75 Degree C)
MGB-TL30	SFP-Port 1000Base-LX mini-GBIC module - 30km (-40 ~ 75 Degree C)
MGB-TL70	SFP-Port 1000Base-LX mini-GBIC module - 70km (-40 ~ 75 Degree C)

• 100Mbps SFP transceiver modules

MFB-FX	SFP-Port 100Base-FX Transceiver (1310nm) - 2km
MFB-F20	SFP-Port 100Base-FX Transceiver (1310nm) - 20km
MFB-F40	SFP-Port 100Base-FX Transceiver (1310nm) - 40km
MFB-F60	SFP-Port 100Base-FX Transceiver (1310nm) - 60km
MFB-FA20	SFP-Port 100Base-BX Transceiver (WDM,TX:1310nm) - 20km
MFB-FB20	SFP-Port 100Base-BX Transceiver (WDM,TX:1550nm) - 20km
MFB-TFX	SFP-Port 100Base-FX Transceiver (1310nm) - 2km (-40 ~ 75 Degree C)
MFB-TF20	SFP-Port 100Base-FX Transceiver (1310nm) - 20km (-40 ~ 75 Degree C)

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