



## EG5-2004-SFP Series

20-Port Industrial Gigabit Managed Ethernet Switch

-16\*10/100/1000Base-T(X) + 4\*100/1000Base-(F)X SFP Slots



- 16-port 10/100/1000Base-T(X) Ethernet
- 4-port dual rate 100/1000Base-(F)X SFP slots
- Multiusers account for security
- Configuration: http, https, CLI Command, Telnet, SNMP, SSH
- Network redundancy support: G.8032 ERPS v2/ STP/ RSTP/ MSTP
- Supports Static routes for routing function
- Supports RADIUS, TACACS+ authentication protocol
- Supports QoS, LACP bandwidth control
- Supports VLAN, SNMP v1/v2c/v3, ACL, IP source guard for Ethernet security
- Redundant power inputs design
- Operating temperature range  
- STD: -10°C ~ 65°C, EOT: -40°C ~ 75°C



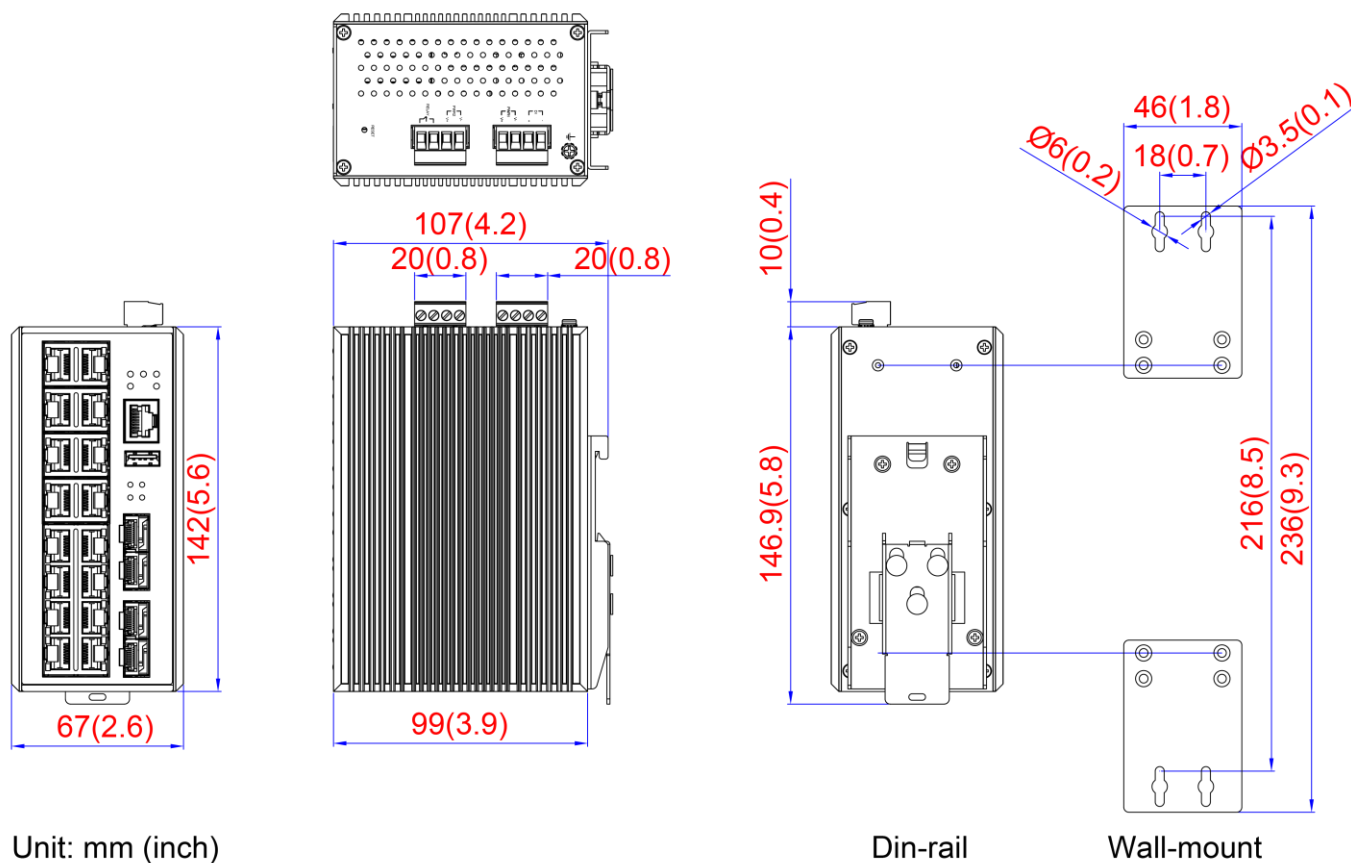
### Introduction

Leonton's EG5-2004-SFP Series is a 20-port managed Gigabit Ethernet switch, which provides 16\*10/100/1000 Base-T(X), and 4\*100/1000 Fiber Slot. EG5-2004-SFP Series is full manageable Layer-2 Ethernet switch series, and supports power inputs redundancy. EG5-2004-SFP Series offers standardized network redundancy ITU-T G.8032 ERPS v2 (Ethernet Ring Protection Switch) protocol, providing <50ms recovery time to the network, to give user the chance to choose your Ethernet switch but not tied up with particular brand's product.

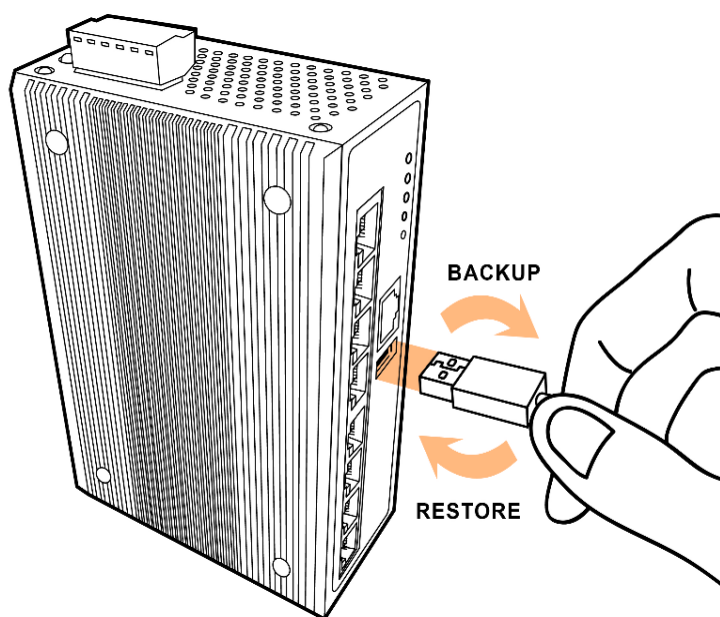
EG5-2004-SFP Series provides comprehensive network security and management capability by supporting Multiusers account, IGMP, GVRP, VLAN, QoS, SNMP, RADIUS, TACACS+, Aggregation(Static, LACP), SSH, SSL, IP source guard to create a highly-secured network environment.

EG5-2004-SFP Series as an industrial Ethernet switch product line is designed to withstand harsh and extreme environment conditions. With fan less design, EG5-2004-SFP Series still manage to be applied in extremely polarized temperature, from -40°C to 75°C, making it the best choice in various industrial applications.

## Dimension



## USB Backup/Restore Function



Leonton's Managed Ethernet switch series supports USB 2.0 flash drive, which allows user to backup and restore the device configuration to meet the need of quick device swap. And USB port on Managed Ethernet switch series is applicable to the most common USB flash drives, hugely elevating convenience for user.

## Specification

| Technology                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standards                 | IEEE 802.3 10Base-T Ethernet<br>IEEE 802.3u 100Base-TX Fast Ethernet<br>IEEE 802.3ab 1000Base-T Gigabit Ethernet<br>IEEE 802.3z 1000Base-X Gigabit Fiber<br>IEEE 802.3x Flow Control<br>IEEE 802.1d STP (Spanning Tree Protocol)<br>IEEE 802.1w RSTP (Rapid Spanning Tree Protocol)<br>IEEE 802.1s MSTP (Multiple Spanning Tree Protocol)<br>ITU-T G.8032 / Y.1344 ERPS v1/v2(Ethernet Ring Protection Switch)<br>IEEE 802.1Q Virtual Local Area Network (VLAN)<br>IEEE 802.1p QoS/CoS Protocol for Traffic Prioritization<br>IEEE 802.1X Network Authentication<br>IEEE 802.1AB Link Layer Discovery Protocol (LLDP)<br>IEEE 802.3ad Link Aggregation (LACP) |
| Processing Type           | Store and Forward                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Flow Control              | IEEE 802.3x flow control, back pressure flow control                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Network Management        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Management                | IPv4/IPv6, SNMP v1/v2c/v3, LLDP, LLDP-MED, HTTP, HTTPS, SSHv2 telnet, DHCP client, DHCPv6 client, DHCP server, Port Mirror, DNS client/proxy, IP based Access Filter, ICMPv6, syslog, Time Zone /Daylight Saving, NTP client, RMON, sFlow, Loop detection, Console Port, USB configuration backup/restore, Power lost warning, relay trigger                                                                                                                                                                                                                                                                                                                  |
| Security                  | Port-based/Single/Multi 802.1X, ACL(Port/Rate Limiters/ACE), MAC-based Authentication, VLAN assignment, QoS Assignment, Private VLAN, Guest VLAN, RADIUS accounting, TACACS+, IP MAC binding, WEB/CLI authentication, Authorization (15 levels), Port Security Limit Control, ACLs for filtering/policing/port copy, IP source guard, ARP Inspection                                                                                                                                                                                                                                                                                                          |
| L2 Switching              | Port/MAC/Protocol/IP Subnet-based VLAN, GARP/GVRP, Loop Guard, Link Aggregation static/LACP, BPDU guard, Error disable recovery, IGMP snooping v2/v3, MLD snooping v1/v2, IGMP filtering, IPMC throttling / filtering leave proxy, DHCP snooping, G.8032 v1/v2                                                                                                                                                                                                                                                                                                                                                                                                |
| L3 Switching              | DHCP option82, static routes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| QoS                       | 802.1p Queueing, Input priority mapping, Storm control for Unicast/Multicast/Broadcast, Port/Queue/ACL policer, Port egress shaper, Queue egress shaper, DiffServ (DSCP), Tag remarking, Scheduler mode                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Power Saving              | ActiPHY, PerfectReach, IEEE 802.3az EEE power management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Network Redundancy        | STP/RSTP/MSTP, port trunk with LACP, ERPS v1/v2 (<50ms)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Configuration             | Http, Https, Telnet, SSH, CLI, TFTP, SNMP v3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| System / Diagnostics      | Dual Image Protection, PING, PING6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| SNMP MIBs & RFC Standards | RFC 2674 VLAN MIB<br>IEEE-802.1Q bridge MIB 2008<br>RFC 2819 RMON (group 1, 2, 3, and 9)<br>RFC 1213 MIB II<br>RFC 1215 TRAPS<br>RFC 4188 bridge<br>RFC 4292 IP forwarding table<br>RFC 4293 management information base for the Internet Protocol (IP)<br>RFC 5519 multicast group membership discovery<br>RFC 4668 RADIUS auth. client<br>RFC 4670 RADIUS accounting<br>RFC 3635 Ethernet-like<br>RFC 2863 interface group MIB using SMI v2<br>RFC 3636 802.3 MAU<br>RFC 4133 entity MIB v3<br>RFC 3411 SNMP management frameworks<br>RFC 3414 user-based security model for SNMPv3<br>RFC 3415 view-based access control model for SNMP                    |

RFC 2613 SMON – PortCopy  
IEEE 802.1 MSTP  
IEEE 802.1AB LLDP-MIB (LLDP MIB included in a clause of the STD)  
IEEE 802.3ad (LACP MIB included in a clause of the STD)  
IEEE 802.1X (PAE MIB included in a clause of the STD)  
TIA 1057 LLDP-MED (MIB is part of the STD)

#### Switch Properties

|                               |                                                                                                            |
|-------------------------------|------------------------------------------------------------------------------------------------------------|
| Switching Fabric (Back-Plane) | 40Gbps                                                                                                     |
| Priority Queues               | 8                                                                                                          |
| Max. Number of VLANs          | 4095                                                                                                       |
| VLAN ID Range                 | VID 1 to 4095                                                                                              |
| Memory Buffer                 | 4Mbits                                                                                                     |
| Jumbo Frame                   | 9.6Kbytes                                                                                                  |
| MAC Table Size                | 8K                                                                                                         |
| IGMP Group                    | 1024                                                                                                       |
| Transfer Rate                 | 14,880pps for Ethernet port<br>148,800pps for Fast Ethernet port<br>1,488,000pps for Gigabit Ethernet port |

#### Interface

|                      |                                                                                                                                                                                                                        |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RJ45 Ports           | 16*10/100/1000 Base-T(X)<br>Auto-Negotiation, Full/Half Duplex, Auto-MDI/MDI-X                                                                                                                                         |
| Fiber Port           | 4*100/1000Base-(F)X SFP slots                                                                                                                                                                                          |
| Wavelength           | Depends on SFP modules                                                                                                                                                                                                 |
| LED Indicators       | System: Power 1, Power 2, Master, Ring, Status<br>Ethernet ports: Speed/Link/Active<br>SFP: Link/Active                                                                                                                |
| RS232 Serial Console | 1*RS232 in RJ45 connector with console cable, baud rate 115,200bps,8,N,1                                                                                                                                               |
| Configuration Backup | 1*USB 2.0 host (type-A) for configuration backup/restore                                                                                                                                                               |
| Relay Contact        | 24 VDC, 1A resistive                                                                                                                                                                                                   |
| DI                   | 1* Digital Input (DI): State 0: -30~8VDC / State 1: 10~30VDC, Max. input current: 8mA                                                                                                                                  |
| Network Cable        | 10Base-T: 2-pair UTP/STP Cat. 3, 4, 5 cable EIA/TIA-568 100-ohm (100m)<br>100Base-TX: 2-pair UTP/STP Cat. 5 cable EIA/TIA-568 100-ohm (100m)<br>1000Base-TX: 4-pair UTP/STP Cat.5/5E cable; EIA/TIA-568 100-ohm (100m) |
| Optical Cable        | Multi-mode cable - 50/125um or 62.5/125um,<br>Single-mode cable - 9/125um or 10/125um                                                                                                                                  |

#### Power Requirements

|                             |                                      |
|-----------------------------|--------------------------------------|
| Input Voltage               | Dual 12-48VDC redundant power inputs |
| Power Connection            | 2*removable 4-contact terminal block |
| Overload Current Protection | Present (Slow-Blow Fuse)             |
| Reverse Polarity Protection | Present                              |
| System Power Consumption    | Max. 18.4W full loading              |

#### Mechanical Characteristics

|                        |                                                                |
|------------------------|----------------------------------------------------------------|
| Housing                | Metal, IP30 protection                                         |
| Dimensions (W x H x D) | 67 x 142 x 99 mm (2.64 x 5.59 x 3.90 inch)                     |
| Weight                 | Unit weight: 1.2kg (2.76 lb), Shipping weight: 1.4kg (3.31 lb) |
| Mounting               | DIN-Rail Mounting, Wall Mounting                               |

#### Environmental Limits

|                           |                                                                       |
|---------------------------|-----------------------------------------------------------------------|
| Operating Temperature     | STD: -10°C ~ 65°C (14°F ~ 149°F)<br>EOT: -40°C ~ 75°C (-40°F ~ 167°F) |
| Storage Temperature       | -40°C ~ 85°C (-40°F ~ 185°F)                                          |
| Ambient Relative Humidity | 5 to 95%, (non-condensing)                                            |

#### Regulatory Approvals

|     |                                                                  |
|-----|------------------------------------------------------------------|
| EMI | FCC Part 15 Subpart B Class A,<br>CE EN55032/EN61000-6-4 Class A |
| EMS | CE EN55035/EN61000-6-2                                           |

|                                                                                                                      |                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                      | IEC61000-4-2 (ESD), IEC61000-4-3 (RS), IEC61000-4-4 (EFT),<br>IEC61000-4-5 (Surge), IEC61000-4-6 (CS),<br>IEC61000-4-8 (Magnetic Field) |
| Free Fall                                                                                                            | IEC60068-2-32                                                                                                                           |
| Shock                                                                                                                | IEC60068-2-27                                                                                                                           |
| Vibration                                                                                                            | IEC60068-2-6                                                                                                                            |
| Green                                                                                                                | RoHS Compliant                                                                                                                          |
| Safety                                                                                                               | UL61010-1, UL61010-2-201                                                                                                                |
| Compliance                                                                                                           | NEMA TS2 (ITS)                                                                                                                          |
| Substation                                                                                                           | IEC 61850-3 Edition 2.0                                                                                                                 |
| MTBF (Telcordia SR-332,<br>Issue 3, GB, 25°C)                                                                        | 628,281 hrs.                                                                                                                            |
| Warranty                                                                                                             | 5 Years                                                                                                                                 |
| <b>NOTE: Due to continuous improvement, all product specifications are subject to change without further notice.</b> |                                                                                                                                         |

| Packet Contents                                          | pcs |
|----------------------------------------------------------|-----|
| EG5-2004-SFP(-T) Ethernet switch                         | 1   |
| RJ45 (Male) to DB-9 RS-232 (Female) serial console cable | 1   |
| Wall-mount installation kits                             | 2   |
| Quick installation guide (printed)                       | 1   |

| Comparison Table |                 |                  |              |                       |
|------------------|-----------------|------------------|--------------|-----------------------|
| Model Name       | 10/100/1000T(X) | 100/1000(F)X SFP | Power Inputs | Operating Temperature |
| EG5-2004-SFP     | 16              | 4                | 12-48VDC     | -10°C ~ 65°C          |
| EG5-2004-SFP -T  | 16              | 4                | 12-48VDC     | -40°C ~ 75°C          |

| Ordering Information |                                                                                                                        |
|----------------------|------------------------------------------------------------------------------------------------------------------------|
| EG5-2004-SFP         | 20-Port Industrial Gigabit Managed Ethernet Switch<br>- 16*10/100/1000Tx + 4*100/1000 SFP Slot, 12-48VDC, -10°C ~ 65°C |
| EG5-2004-SFP -T      | 20-Port Industrial Gigabit Managed Ethernet Switch<br>- 16*10/100/1000Tx + 4*100/1000 SFP Slot, 12-48VDC, -40°C ~ 75°C |

| Optional Accessories - Power Supply Series |                                                                                                                     |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| 30W Power Supply Series                    |                                                                                                                     |
| HDR-30-24                                  | 36W Industrial DIN-Rail Power Supply, 24VDC/1.5A, Universal 85-264VAC/120-370VDC power input, Plastic, -30°C ~ 70°C |
| 60W Power Supply Series                    |                                                                                                                     |
| HDR-60-24                                  | 60W Industrial DIN-Rail Power Supply, 24VDC/2.5A, Universal 88-264VAC/124-370VDC power input, Plastic, -30°C ~ 70°C |
| MDR-60-24                                  | 60W Industrial DIN-Rail Power Supply, 24VDC/2.5A, Universal 85-264VAC/120-370VDC power input, Plastic, -20°C ~ 70°C |
| 75W Power Supply Series                    |                                                                                                                     |
| EDR-75-48                                  | 75W Industrial DIN-Rail Power Supply, 48VDC/1.6A, Universal 90-264VAC/127-370VDC power input, Metal, -20°C ~ 60°C   |
| NDR-75-48                                  | 75W Industrial DIN-Rail Power Supply, 48VDC/1.6A, Universal 90-264VAC/127-370VDC power input, Metal, -20°C ~ 70°C   |
| 120W Power Supply Series                   |                                                                                                                     |
| EDR-120-48                                 | 120W Industrial DIN-Rail Power Supply, 48VDC/2.5A, Universal 90-264VAC/127-370VDC power input, Metal, -20°C ~ 60°C  |

|                                 |                                                                                                                          |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| NDR-120-24                      | 120W Industrial DIN-Rail Power Supply, 24VDC/5A, Universal 90-264VAC/127-370VDC power input, Metal, -20°C ~ 70°C         |
| NDR-120-48                      | 120W Industrial DIN-Rail Power Supply, 48VDC/2.5A, Universal 90-264VAC/127-370VDC power input, Metal, -20°C ~ 70°C       |
| <b>240W Power Supply Series</b> |                                                                                                                          |
| NDR-240-48                      | 240W Industrial DIN-Rail Power Supply w/ PFC, 48VDC/5A, Universal 90-264VAC/127-370VDC power input, Metal, -20°C ~ 70°C  |
| SDR-240-24                      | 240W Industrial DIN-Rail Power Supply w/ PFC, 24VDC/10A, Universal 88-264VAC/124-370VDC power input, Metal, -25°C ~ 70°C |
| <b>480W Power Supply Series</b> |                                                                                                                          |
| NDR-480-48                      | 480W Industrial DIN-Rail Power Supply w/ PFC, 48VDC/10A, Universal 90-264VAC/127-370VDC power input, Metal, -20°C ~ 70°C |

## OPTIONAL ACCESSORIES - SFP Transceiver Series

|                                                           |                                                                                 |
|-----------------------------------------------------------|---------------------------------------------------------------------------------|
| <b>100Mbps Multi-mode SFP Transceiver Modules Series</b>  |                                                                                 |
| SFP-TM02                                                  | 100Mbps SFP Transceiver/LC, MMF, 2KM, 1310nm, 0°C ~ 70°C                        |
| SFP-TM02-T                                                | 100Mbps SFP Transceiver/LC, MMF, 2KM, 1310nm, -40°C ~ 85°C                      |
| <b>100Mbps Single-mode SFP Transceiver Modules Series</b> |                                                                                 |
| SFP-TS20-WA                                               | 100Mbps BiDi SFP Transceiver/LC, SMF, 20KM, TX: 1310nm/RX: 1550nm, 0°C ~ 70°C   |
| SFP-TS20-WA-T                                             | 100Mbps BiDi SFP Transceiver/LC, SMF, 20KM, TX: 1310nm/RX: 1550nm, -40°C ~ 85°C |
| SFP-TS20-WB                                               | 100Mbps BiDi SFP Transceiver/LC, SMF, 20KM, TX: 1550nm/RX: 1310nm, 0°C ~ 70°C   |
| SFP-TS20-WB-T                                             | 100Mbps BiDi SFP Transceiver/LC, SMF, 20KM, TX: 1550nm/RX: 1310nm, -40°C ~ 85°C |
| SFP-TS30                                                  | 100Mbps SFP Transceiver/LC, SMF, 30KM, 1310nm, 0°C ~ 70°C                       |
| SFP-TS30-T                                                | 100Mbps SFP Transceiver/LC, SMF, 30KM, 1310nm, -40°C ~ 85°C                     |
| <b>1Gbps Multi-mode SFP Transceiver Modules Series</b>    |                                                                                 |
| SFP-GM00                                                  | 1Gbps SFP Transceiver/LC, MMF, 550M, 850nm, 0°C ~ 70°C                          |
| SFP-GM00-T                                                | 1Gbps SFP Transceiver/LC, MMF, 550M, 850nm, -40°C ~ 85°C                        |
| SFP-GM02                                                  | 1Gbps SFP Transceiver/LC, MMF, 2KM, 1310nm, 0°C ~ 70°C                          |
| SFP-GM02-T                                                | 1Gbps SFP Transceiver/LC, MMF, 2KM, 1310nm, -40°C ~ 85°C                        |
| <b>1Gbps Single-mode SFP Transceiver Modules Series</b>   |                                                                                 |
| SFP-GS10                                                  | 1Gbps SFP Transceiver/LC, SMF, 10KM, 1310nm, 0°C ~ 70°C                         |
| SFP-GS10-T                                                | 1Gbps SFP Transceiver/LC, SMF, 10KM, 1310nm, -40°C ~ 85°C                       |
| SFP-GS10-WA                                               | 1Gbps BiDi SFP Transceiver/LC, SMF, 10KM, TX: 1310nm/RX: 1550nm, 0°C ~ 70°C     |
| SFP-GS10-WA-T                                             | 1Gbps BiDi SFP Transceiver/LC, SMF, 10KM, TX: 1310nm/RX: 1550nm, -40°C ~ 85°C   |
| SFP-GS10-WB                                               | 1Gbps BiDi SFP Transceiver/LC, SMF, 10KM, TX: 1550nm/RX: 1310nm, 0°C ~ 70°C     |
| SFP-GS10-WB-T                                             | 1Gbps BiDi SFP Transceiver/LC, SMF, 10KM, TX: 1550nm/RX: 1310nm, -40°C ~ 85°C   |
| SFP-GS20                                                  | 1Gbps SFP Transceiver/LC, SMF, 20KM, 1310nm, 0°C ~ 70°C                         |
| SFP-GS20-T                                                | 1Gbps SFP Transceiver/LC, SMF, 20KM, 1310nm, -40°C ~ 85°C                       |
| SFP-GS40                                                  | 1Gbps SFP Transceiver/LC, SMF, 40KM, 1310nm, 0°C ~ 70°C                         |
| SFP-GS40-T                                                | 1Gbps SFP Transceiver/LC, SMF, 40KM, 1310nm, -40°C ~ 85°C                       |
| SFP-GS40-WA                                               | 1Gbps BiDi SFP Transceiver/LC, SMF, 40KM, TX: 1310nm/RX: 1550nm, 0°C ~ 70°C     |
| SFP-GS40-WB                                               | 1Gbps BiDi SFP Transceiver/LC, SMF, 40KM, TX: 1550nm/RX: 1310nm, 0°C ~ 70°C     |
| SFP-GS60                                                  | 1Gbps SFP Transceiver/LC, SMF, 60KM, 1550nm, 0°C ~ 70°C                         |
| SFP-GS60-T                                                | 1Gbps SFP Transceiver/LC, SMF, 60KM, 1550nm, -40°C ~ 85°C                       |
| SFP-GS60-WA                                               | 1Gbps BiDi SFP Transceiver/LC, SMF, 60KM, TX: 1310nm/RX: 1550nm, 0°C ~ 70°C     |
| SFP-GS60-WB                                               | 1Gbps BiDi SFP Transceiver/LC, SMF, 60KM, TX: 1550nm/RX: 1310nm, 0°C ~ 70°C     |
| SFP-GS80                                                  | 1Gbps SFP Transceiver/LC, SMF, 80KM, 1550nm, 0°C ~ 70°C                         |
| SFP-GS80-T                                                | 1Gbps SFP Transceiver/LC, SMF, 80KM, 1550nm, -40°C ~ 85°C                       |
| SFP-GSH2                                                  | 1Gbps SFP Transceiver/LC, SMF, 120KM, 1550nm, 0°C ~ 70°C                        |
| SFP-GSH2-T                                                | 1Gbps SFP Transceiver/LC, SMF, 120KM, 1550nm, -40°C ~ 85°C                      |
| <b>Copper SFP Transceiver Modules Series</b>              |                                                                                 |
| SFP-GC00-SG                                               | SFP to 10/100/1000Base-T(X) copper Module, 0°C ~ 70°C                           |
| SFP-GC00-SE                                               | SFP to 1000Base-T copper Module, 0°C ~ 70°C                                     |