



Designed for Rugged Excellence

Member of ICP Group

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About ORing

ORing Industrial Networking Corp. was established in 2005 by a group of software and hardware engineers, who have many years' experience in industrial wired and wireless communication technologies and industrial networking applications. Since its establishment, ORing has been devoted to the research and development of technologies and applications regarding industrial Ethernet switch, router, access point, device server, media converter, networking management software ... etc.

ORing Industrial Networking Corp. was originally named SUPERCOM Technologies at the beginning of its establishment, and has changed its name to ORing Industrial Networking Corp. in 2008 when the company officially became a member of ICP Group. Joining the ICP Group enables ORing to enjoy the best resources to produce reliable and cost effective products, it has integrated the qualified and strict quality control production process of ICP with its own expertise in industrial networking software, Ethernet protocols and technologies, to enhance the Company's competitiveness in the highly competitive Industrial Ethernet market.

Product Range and Quality Assurance

ORing offers full range of industrial networking products and solutions, including industrial Ethernet switch, PoE switch, industrial wireless access point, industrial VPN router, industrial device server, industrial media converter, and networking management utility. ORing's products have a wide range of application areas, covering IP surveillance, transportation, power and utilities, maritime, process automation, manufacturing automation, ATM, POS, Kiosk, medical, healthcare ... etc.

Comprehensive quality assurance tests are performed on all ORing products throughout the product development cycle. Quality assurance tests throughout the product development cycle ensure that all ORing products are able to provide stable performance in the harsh industrial environments. ORing products offer after-sales guarantee up to five years.

At present, ORing has more than 100 products used in a wide variety of applications and environments worldwide. In order to develop time-to-market products that comply with safety, EMC certification, IPv6, UL508, EN50155, harsh certification and environmental directives across the globe, ICP group has many certification-compliant labs including an EMI/RF chamber, EMI chamber, and IP-67 certification lab. In addition, ORing is also doing its best to create and maintain a safe and clean environment for our earth. All of ORings products are qualified with RoHS directives.

In order to offer best after-sales service to customers around the globe, ORing keeps expanding its overseas operation bases. At present, ORing has sales offices or distributors in North America, Poland, Switzerland, Germany, UK & Ireland, France, Norway, Romania, Finland, Pakistan, Egypt, South Africa, China, Singapore, Malaysia, Thailand, Hong Kong, Australia ...etc. ORing provides OCE (ORing Certification Engineer) training and certification. OCE program enables ORing and its distributors to provide professional service and support for customers.



Company Mission

Goal of ORing is to apply the most advanced communication technology to industrial networking applications, enables the industrial networks to be more stable, faster, real redundancy and cost effective.

The competitive edges of ORing products are open architecture and user-friendly. There are different kinds of proprietary protocols and architectures from various industrial networking vendors. ORing uses Open-Ring technology and standard protocol to break through the monopoly situation and provide many powerful, user-friendly management utility to make hard product more friendly. Due to strong R&D resource and ability, ORing can provide rapid and high quality software and hardware customized service.

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Core Technologies

Redundant Technologies

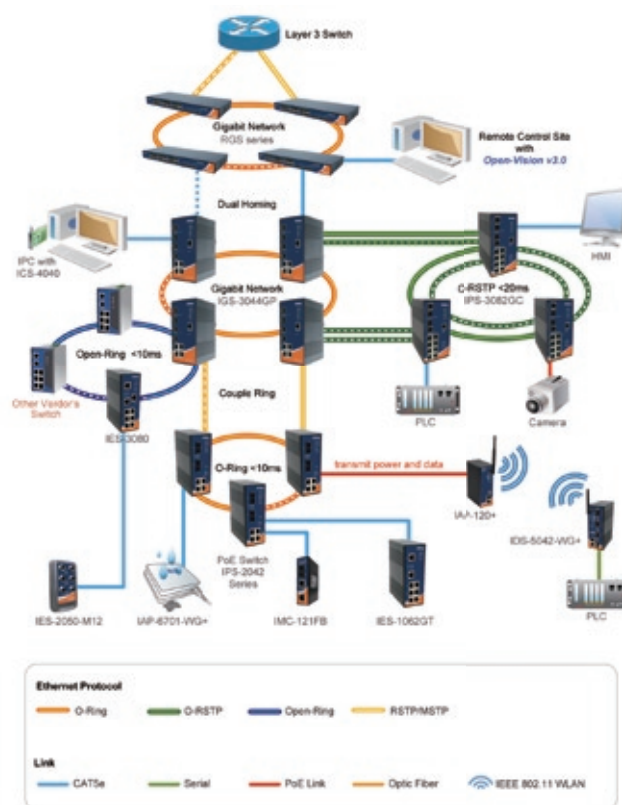
Many Ethernet protocols defined by IEEE, such as STP, RSTP, MSTP, are developed to recover from network disconnections. However, the recovery time is much more critical in industrial applications than commercial ones. Due to these needs, industrial networking devices often utilize proprietary redundant ring technologies to minimize the downtime. ORing develops a variety of proprietary redundant technologies including O-Ring, O-RSTP, and Open-Ring, etc. These ORing's proprietary redundant technologies not only meet the demands of different networking topologies, but also assure the reliability of the network.

Support for IEEE Standard Redundant Technologies

- IEEE802.1D – STP (Spanning Tree Protocol)
- IEEE802.1w – RSTP (Rapid Spanning Tree Protocol)
- IEEE802.1s – MSTP (Multiple Spanning Tree Protocol)

Support for ORing's Proprietary Redundant Technologies

- O-RSTP (Optimized RSTP)
- Open-Ring (Open Architecture Technology)
- O-Ring (ORing's Proprietary Redundant Ring)



Recovery Technology	STP	RSTP	MSTP	O-RSTP	Open-Ring	O-Ring
Recovery Time	10 ~ 50 Seconds	3 ~ 5 Seconds	3 ~ 5 Seconds	< 20ms	< 50ms	< 10ms
Maximum Nodes	Maximum Nodes 40	9 Nodes Recover Time is Unpredictable Maximum Nodes 20	>9 Nodes Recover Time is Unpredictable Maximum Nodes 20	Maximum Nodes 40	Maximum Nodes 250	Maximum Nodes 250
Per VLAN STP	NO	NO	YES	NO	NO	NO

Comparison Table of Redundant Technologies

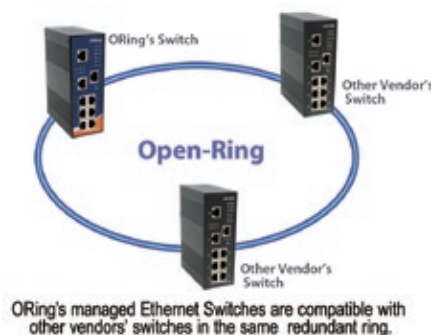
Open-Ring Technology

Welcome to the Open World!

Open-Ring is a revolutionary networking technology that can integrate other vendors' switches in a networking redundant ring.

- Integrate other brand's switches without restriction
- Reliable industrial network performance
- Best alternative solution for industrial networking
- Easy to upgrade and maintain your existing redundant ring
- Enjoy better quality and service, higher performance with lower cost
- Secure network connectivity

Open-Ring is an open architecture redundancy technology. ORing develops this technology to allow the end users using switches provided by different vendors in the same networking environment to meet particular network requirements. Thanks to Open-Ring technology, the end users don't have to be restricted to unsatisfied vendors any more!



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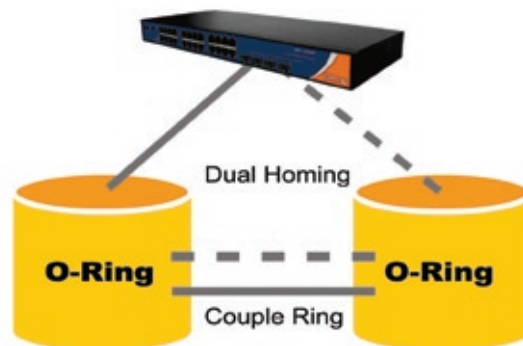
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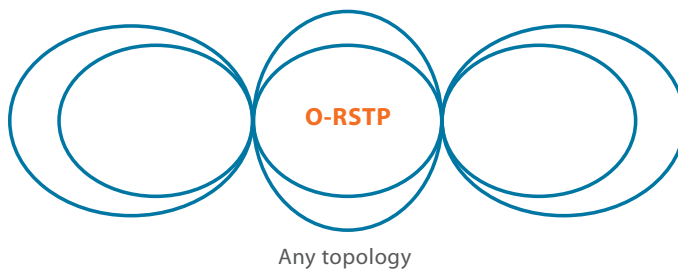
Benefits of ORing's Redundant Ring Technologies :

O-Ring: O-Ring is ORing's proprietary redundant ring technology, with recovery time of less than 10 milliseconds and up to 250 nodes. The O-Ring redundant ring technology can protect mission critical applications from network interruptions or temporary malfunction with its fast recover technology.



O-RSTP: O-RSTP supports more complex topologies and can be applied to more application, while still maintaining a recover time of less than 20 milliseconds. O-RSTP is an enhanced version of RSTP that supports applications with complex topologies. Different from the RSTP standard as defined by IEEE 802.1w, O-RSTP provides faster recover time and allows up to 40 nodes to operate in any topologies. The two main advantages are as the followings:

- (1) Improves recover time to less than 20 milliseconds
- (2) Can be applied to the same complex topologies like RSTP.



Supporting Models: All ORing's industrial managed and lite-managed Ethernet switch products support Open-Ring, O-Ring and O-RSTP redundancy technology.

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Introduction of Product Lines

Industrial Ethernet Switch



ORing provides a comprehensive line of managed, lite-managed, and unmanaged industrial Ethernet switches with industrial-grade ruggedness and network reliability. Choose from industrial Gigabit Ethernet switches (1 Gbps for all ports), plus other sub-categories of rack-mount, fast, PoE, IP-67, and EN50155 Ethernet switches. For best performance,

ORing offers flagship Thunder Series (Thunder Rail, Thunder Rack, & Thunder POE) in this product line (1 Gbps for all ports, 9K Jumbo Frame support, and many security features).

Rack-Mount Ethernet Switch



ORing's industrial managed and unmanaged rack-mount Ethernet Switches feature full gigabit network speed and up to 28 Ethernet ports on the 19-inch rack-mount chassis.

PoE Switch



ORing's ruggedized Industrial PoE (Power over Ethernet) Switches facilitate power management and handily power distributed industrial equipment via P.S.E. ports (30W per port for the flagship Thunder POE models) with "Alive Checking" and "Power Scheduling" for powered devices.

Industrial Media Converter



ORing offers Serial to Serial, USB to Serial, Ethernet to Fiber, and Gigabit Ethernet to Fiber media converters – allowing effortless device communication

across different serial interfaces and offering convenient, intelligent features.

Industrial Device Server



ORing's serial-to-Ethernet device servers offer up to 8 serial ports along with different interfaces of copper, optic fiber, or wireless LAN, plus support for various operation modes: TCP server, TCP client, UDP, and Virtual COM. All device server models include free-bundled management utility, plus DS-Tool with Virtual COM drivers.

Industrial Wireless Access Point



ORing's industrial wireless, wireless IP-67, and wireless EN50155 Access Points feature long communication range, support for IEEE 802.11 standard, and AP/bridge/repeater/AP-client/client operation modes. Some of these Access Points are even waterproof

and dust-tight (the IP-67 models) – perfect for outdoor use.

Industrial Cellular VPN Router



ORing's wired, wireless, and wireless EN50155 Industrial Cellular VPN Routers are reliable and cost-effective routers for redirecting wired or wireless network connections to wired or wireless 3.5G modems – very useful for mobile internet connection.

Network Management Utility



Open-Vision v3.0 is an outstanding suite of 3 humanized network management tools – ORing Commander, ORing Topology View (with integrated ORing Map), and ORing Host Monitoring – for facilitated and user-friendly network administration.

Accessories



ORing has all the industrial networking components for all the small but indispensable industrial networking needs: antennas, cables, fiber patch cords and adapters, connectors, power supplies and adapters, surge protectors, PoE accessories, optical bypass switches, plus Ethernet SFP and BIDI-SFP modules.

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2011 Product Focus

Industrial Full Gigabit Ethernet Switch

Industrial 12-port managed Gigabit Ethernet switch with 8xGigabit combo ports and 4x1000Base-X, SFP socket

Thunder/Rail IGS-7084GCP



- Supports O-Ring/MSTP/RSTP/STP Ethernet redundant technology
- Supports ACL function and 9K Bytes jumbo frame
- Supports IP-based bandwidth management which can limit each IP device maximum bandwidth
- Supports application-based QoS and DOS/DDOS auto prevention function
- Supports SNMP v1/v2c/v3, IGMP v2/v3, VLAN, QoS (COS/TOS), GVRP, 802.1x and LLDP standard Ethernet protocol
- Provides Web-based, Telnet, Console (CLI) and powerful windows utility ~ Open-Vision v3.0 multi-configuration

Industrial 8-port slim type unmanaged Gigabit Ethernet switch with 8x10/100/1000Base-T(X)

IGS-1080A



- Supports Jumbo Frame up to 9K Bytes
- Relay output to carry capacity of 1A at 24 VDC
- Hardware DIP-switch to enable/disable warning function
- Supports auto-negotiation and auto-MDI/MDI-X
- Supports store-and-forward transmission

Industrial PoE Ethernet Switch

Industrial 12-port managed Gigabit PoE Ethernet switch with 8x10/100/1000Base-T(X) P.S.E. and 4x1000Base-X, SFP socket

Thunder/POE IGPS-7084GP



- Supports world's fastest O-Ring Ethernet redundant technology and standard MSTP/RSTP/STP Ethernet redundancy
- Supports ACL function and 9K Bytes jumbo frame
- Supports IP based bandwidth management which can limit each IP device maximum bandwidth
- Supports application based QoS and DOS/DDOS auto prevention function
- 8 ports of P.S.E. based on IEEE 802.3at standard for up to 30 Watts per port, plus support for power consumption and scheduled management

Industrial 8-port slim type unmanaged Gigabit PoE Ethernet switch with 8x10/100/1000Base-T(X) P.S.E.

IGPS-1080A



- Supports Jumbo Frame up to 9K Bytes
- Wide operating temperature range of -40° to 70°C for harsh environments
- 50~57VDC redundant power input and relay output
- 8 ports of P.S.E. based on IEEE 802.3at standard for up to 30 Watts per port
- Supports auto-negotiation and auto-MDI/MDI-X
- Supports store-and-forward transmission
- Supports flow control

Industrial Rack-Mount Ethernet Switch

Industrial 24-port rack-mount managed Gigabit Ethernet switch with 16xGigabit combo ports and 8x1000Base-X, SFP socket

RGS-7168GCP/7168GCP-E Thunder/Rack



- Supports up to 24 full Gigabits SFP ports
- Supports O-Ring/MSTP/RSTP/STP Ethernet redundant technology
- Supports ACL function and 9K Bytes jumbo frame
- Supports IP-based bandwidth management which can limit each IP device maximum bandwidth
- Supports application-based QoS and DOS/DDOS auto prevention function
- Supports SNMP/RMON/VLAN/GVRP/QoS/IGMP/LACP/802.1x/DHCP/LLDP standard IEEE protocol
- Supports 100~240VAC power input and dual 36~72VDC power inputs (-E model)
- Supports Web-based ,Open-Vision v3.0, Telnet, Console (CLI) configuration

Industrial 28-port rack-mount managed Gigabit Ethernet switch with 24x10/100/1000Base-T(X) and 4x1000Base-X, SFP socket

RGS-7244GP/7244GP-E Thunder/Rack



- Supports O-Ring/Open-Ring/MSTP/RSTP/STP Ethernet redundant technology
- Supports SNMP/RMON/VLAN/GVRP/QoS/IGMP/LACP/802.1x/DHCP/LLDP standard IEEE protocol
- Supports IP-based bandwidth management which can limit each IP device maximum bandwidth
- Supports application-based QoS and DOS/DDOS auto-prevention function
- Supports 100~240VAC power input and dual 36~72VDC power inputs (-E model)
- Supports Web-based ,Open-Vision v3.0, Telnet, Console (CLI) configuration
- Supports Jumbo frame up to 9K Bytes

Industrial 28-port rack-mount managed Gigabit PoE Ethernet switch with 24x10/100/1000Base-T(X) P.S.E. and 4x1000 Base-X

RGPS-7244GP/7244GP-P Thunder/POE



- Supports O-Ring/MSTP/RSTP/STP Ethernet redundant technology
- Supports SNMP/RMON/VLAN/GVRP/QoS/IGMP/LACP/802.1x/DHCP/LLDP standard IEEE protocol
- Supports IP base bandwidth management which can limit each IP device maximum bandwidth
- Supports application-based QoS and DOS/DDOS auto-prevention function
- Supports Web-based ,Open-Vision v3.0, Telnet, Console (CLI) configuration
- 24 ports of P.S.E. based on IEEE 802.3at standard for up to 30 Watts per port, plus support for power consumption and scheduled management

Industrial 12-port rack-mount managed Gigabit PoE Ethernet switch with 8x10/100/1000Base-T(X) P.S.E. and 4x1000Base-X, SFP socket, power supply included

RGPS-7084GP Thunder/POE



- Supports O-Ring (recovery time < 20ms over 250 units of connection) for Ethernet Redundancy
- Supports Jumbo frame up to 9K Bytes
- Supports IP-based bandwidth and application-based QoS management
- Supports IP police security function and DOS/DDOS auto prevention
- 8 ports of P.S.E. fully compliant with IEEE802.3at standard; provides up to 30Watts per port

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2011 Product Focus

Industrial Fast Ethernet Switch

Industrial 24-port managed Ethernet switch with 24x10/100Base-T(X)



IES-3240

- Supports O-Ring/Open-Ring/O-RSTP/MSTP/RSTP/STP Ethernet redundant technology
- Supports SNMP/RMON/VLAN/GVRP/QoS/IGMP/LACP/802.1x/PTP Client/DHCP/LLDP standard IEEE protocol
- Supports redundant dual 12 ~ 48VDC power inputs
- Event notification through Syslog, Email, SNMP trap, and Relay Output
- Web-based, Telnet, Console (CLI), and Windows utility (Open-Vision) configuration

Industrial 18-port managed Ethernet switch with 16x10/100Base-T(X) and 2xGigabit combo ports, SFP socket



IES-3162GC

- Supports O-Ring/Open-Ring/O-RSTP/MSTP/RSTP/STP Ethernet redundant technology
- Supports SNMP/RMON/VLAN/GVRP/QoS/IGMP/LACP/802.1x/PTP Client/DHCP/LLDP standard IEEE protocol
- Supports redundant dual 12 ~ 48VDC power inputs
- Event notification through Syslog, Email, SNMP trap, and Relay Output
- Web-based, Telnet, Console (CLI), and Windows utility (Open-Vision) configuration

Industrial 24-port unmanaged Ethernet switch with 24x10/100Base-T(X)



IES-1240

- RJ-45 ports support Auto MDI/MDI-X switching function
- Provides store-and-forward switching architecture
- Provides 4.8Gbps Back-plane (Switching Fabric)
- Warning system by relay output
- Rigid IP-30 housing design

Industrial 18-port unmanaged Ethernet switch with 16x10/100Base-T(X) and 2xGigabit combo ports, SFP socket



IES-1162GC

- Provides 16x10/100Base-T(X) and 2xGigabit Combo ports
- RJ-45 ports support Auto MDI/MDI-X switching function
- SFP supports 1000Base-X Mode
- Provides store-and-forward switching architecture
- Provides 7.2Gbps Back-plane (Switching Fabric)
- Supports 1M bits packet buffer

Industrial Slim Type Ethernet Switch

Industrial slim type lite-managed Ethernet switch



IES-2042PA / IES-2050A

- Supports O-Ring/Open-Ring/RSTP/STP Ethernet redundant technology
- Supports SNMP/VLAN/DHCP/LLDP standard IEEE protocol
- Supports dual 12 ~ 48VDC redundant power inputs
- Web-based and Windows utility (Open-Vision) configuration
- Provides hardware DIP-Switch to set ring function

Industrial Mini Type Ethernet Switch

Industrial 5-port mini type unmanaged Ethernet switch with 5x10/100Base-T(X)



IES-150B

- Supports auto-negotiation and auto-MDI/MDI-X
- Supports store-and-forward transmission
- Supports flow control
- Supports dual 12 ~ 48VDC redundant power inputs
- Mini size for easy installation

EN50155 Railway Ethernet Switch

EN50155 8-port managed Ethernet switch with 8x10/100Base-T(X), M12 connector



TES-3080-M12

- Leading EN50155-compliant Ethernet switch for rolling stock application
- Supports O-Ring / Open-Ring / O-RSTP multi Ethernet redundancy technology
- Supports PTP Client (Precision Time Protocol) clock synchronization
- Windows utility (Open-Vision) support centralized management and configurable by Web-based, Telnet, Console, CLI
- M12 connectors to guarantee reliable operation against environmental disturbances

Optical Fiber Bypass Protection

Industrial 2-port optical bypass switch for fiber optical network with 4xLC duplex



IBS-102FX

- Supports 100M/1G/10G optical bypass function of 2 port duplex or 4 port simplex fiber connection
- Bypass switching time < 10ms and Low insertions loss
- Throughput not affected and no extra delay
- Dual Wide range power inputs: 12~48VDC
- Relay output for power failure warning

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2011 Product Focus

Industrial Rack-Mount Media Converter

Industrial Rack mount Ethernet to fiber media converter Chassis with 18 slots

RMC-1000

- Supports 18 slots for media converter
- Each slot supports RMC-111PB/111FB/121FB series with 10/100Base-T(X) auto-negotiation and auto-MDI/MDI-X
- Dual-power supply design for power redundancy
- Hot-swappable for Media Converters and power supplies
- 19-inch rack-mount enabled



Industrial Rack mount card type Ethernet to fiber media converter with 1x10/100Base-T(X) to 1x100Base-FX

RMC-111PB RMC-111FB-MM/SS

- Supports LFP (Link Fault Pass-through) function
- Supports full/half duplex operation and store-and-forward transmission
- Provided DIP-Switch to setting function
- Hot-swappable, High reliability and easy installation
- Up to 18 slot high density installation in RMC-1000 chassis on the 19-inch rack



Industrial Rack mount card type Ethernet to fiber media converter with 2x10/100Base-T(X) and 1x100Base-FX

RMC-121FB-MM/SS

- Supports 2 ports 10/100Base-T(X) auto-negotiation and auto-MDI/MDI-X
- Supports Ethernet to fiber port conversion for long distance communication
- Supports store-and-forward transmission
- Hot-swappable, high reliability and easy installation
- Up to 18 slot high density installation in RMC-1000 chassis on the 19-inch rack



Industrial Media Converter

Industrial mini type Ethernet to fiber media converter with 1 x 10/100Base-T(X) and 1 x 100Base-FX

IMC-111PB IMC-111FB-MM/SS

- Supports 1 port 10/100Base-T(X) auto-negotiation and auto-MDI/MDI-X
- Supports LFP (Link Fault Pass-through) function
- Supports full/half duplex flow control and supports store-and-forward transmission
- Provided DIP-switch to setting and provide RJ-45 convert to SFP interface
- Very wide operating temperature range from -40 ~ 70°C and rigid IP-30 design for harsh operating environments



Industrial Media Converter

Industrial mini type Ethernet to fiber media converter with 2x10/100Base-T(X) and 1x100Base-FX

IMC-121FB-MM/SS

- Supports 2 ports 10/100Base-T(X) auto-negotiation and auto-MDI/MDI-X
- 2x10/100 Base-T(X) ports to extend copper ports
- High reliability and rigid IP-30 housing
- Supports dual 12 ~ 48VDC redundant power inputs
- Mini size for easy installation
- Very wide operating temperature range from -40 ~ 70°C and rigid IP-30 design for harsh operating environments



Industrial 1-port USB to 4-port/8-port RS-232 serial media converter

ISC-4110U / 8110U

- Fully compliant with USB specification 2.0
- RS-232 supporting RTS/CTS, DSR/DTR handshake signals
- Baud rate up to 921.6Kbps
- Dual redundant external DC power inputs on terminal block and power jack
- USB bus powered with Ultra low power consumption
- Highly space-saving for installation



Industrial PoE Injector and Splitter

Industrial 2-port Gigabit High Power PoE Injector with 2x10/100/1000Base-T(X)

INJ-102GT

- Supports 2x10/100/1000Base-T(X) for power and data Output
- Fully compliant with IEEE802.3at/802.3af
- Auto protection for Over Voltage Power Input and over current output
- Supports Power Output up to 30Watts at 50VDC input
- IP-30 Rugged Case Design



Industrial Gigabit PoE Splitter with 1x10/100/1000Base-T(X)

SPL-101GT-AF/AT

- Fully compliant with IEEE802.3at/af standard
- Supports 10/100/1000Base-T(X) for PoE In and Data Out
- Power Isolation and Short Circuit Protection for Power Output
- Auto protection for Over Voltage Power Input
- Supports Power Outputs up to 30Watts (SPL-101GT-AT)
- IP-30 Rugged Case Design



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Industrial Device Server

Industrial 4-port /8-port slim type secure serial to Ethernet device server with 4 or 8xRS-232 and 1x10/100Base-T(X)



IDS-141A / 181A

- Versatile Modes : Virtual Com, Serial Tunnel, TCP Server, TCP Client, UDP
- NAT-pass through : user can manage IDS-141A/181A through NAT router
- Security : secured management by HTTPS and SSH access, IP Black List
- Event Warning by Syslog, Email, SNMP trap and relay output
- Configurable by Web-based and Windows utility (DS-Tool)

Industrial Wireless Cellular VPN Router

Industrial IEEE 802.11 Cellular VPN router

IAR-120 / 120+ IAR-320 / 320+

- Highly Security Capability: WEP/WPA/WPA-PSK (TKIP,AES)/ WPA2/WPA2-PSK (TKIP,AES)/802.1X Authentication supported
- USB interface supports 3.5G HSDPA USB Modem dial-up
 - Supports HTTPs/STP/PPPoE/VPN/NAT/DHCP/SNMP Trap function
 - 1KV isolation for PoE P.D. port of IAR-320+



Industrial Wireless Access Point

Industrial wireless access point with 2x10/100Base-T(X)



IAP-120 / 120+ IAP-320 / 320+

- Highly Security Capability: WEP/WPA/WPA-PSK (TKIP,AES)/ WPA2/WPA2-PSK(TKIP,AES)/802.1X Authentication supported
- Supports AP/Bridge/Repeater/AP-Client Mode
- Supports X-Roaming < 100 ms
- Supports wireless load balance
- Fully Compliant with IEEE802.3af (Power Device at ETH2, IAP-120+/320+)

Industrial Cellular VPN Router

Industrial Cellular VPN router with 1x10/100Base-T(X) and 1xUSB 2.0 host

IR-711UB

- Provides 1 x 10/100Base-T(X) port and 1 x USB 2.0 port
- USB interface supports 3.5G HSDPA USB Modem dial-up
- Secured Management by HTTPS
- IP table to prevent access from unauthorized IP address
- Supports VPN Setting (Open VPN, PPTP VPN)



Industrial outdoor wireless access point with 1x10/100BaseT(X) PoE P.D., IP-67 grade, N-type antenna connector



IAP-6701N-WG+ / WA+

- Supports IEEE802.3 b/g or a wireless LAN and specifically designed for the toughest industrial environments
- Supports IP-67 outdoor waterproof and full compliant with IEEE802.3af PoE P.D. function
- Various kinds of operation modes supported : AP/Bridge/Repeater/AP-Client/Client mode
- Supports X-Roaming and wireless load balance for mobile communication
- Supports external N-Type antenna connection
- Event warning by Syslog, E-mail and SNMP trap

EN50155 Railway Access point and Router

EN50155 Transportation dual-RF IEEE 802.11 a/b/g and b/g wireless access point with 2x10/100Base-T(X), M12 connector

TAP-3120-M12

- Leading EN50155-compliant wireless access point for rolling stock application
- Provides dual RF which support IEEE 802.11 a/b/g and 802.11 b/g dual band for wireless communication
- Use M-series connectors to ensure tight, robust connections
- Dual redundant Ethernet ports support Ethernet redundant mode
- Dual Power Inputs on M23 connector



Industrial outdoor IEEE 802.11 a/n wireless access point with 1x10/100Base-T(X), IP-67 grade



IAP-W510 / W512

- Supports AP/Bridge/Repeater/AP-Client/Client Mode
- High power output of 500mW
- Wide-range Power Inputs :12~68VDC
- Rigid IP-67 housing design
- Far Distance Air Connectivity up to 10 km
- WLAN interface supports up to 300Mbps link speed

EN50155 Transportation IEEE 802.11 b/g cellular VPN router with 2x10/100Base-T(X) , M12 connector

TAR-120-M12

- Leading EN50155-compliant wireless access point for rolling stock application
- Dual Power Inputs on M23 connector
- Use M-series connectors to ensure tight, robust connections
- 3.5G HSDPA Modem dial up included
- Dual redundant Ethernet ports support Ethernet redundant mode
- 3 modes of routing function: Dynamic/Static IP route, PPPoE authentication, and Cellular modem dial-up



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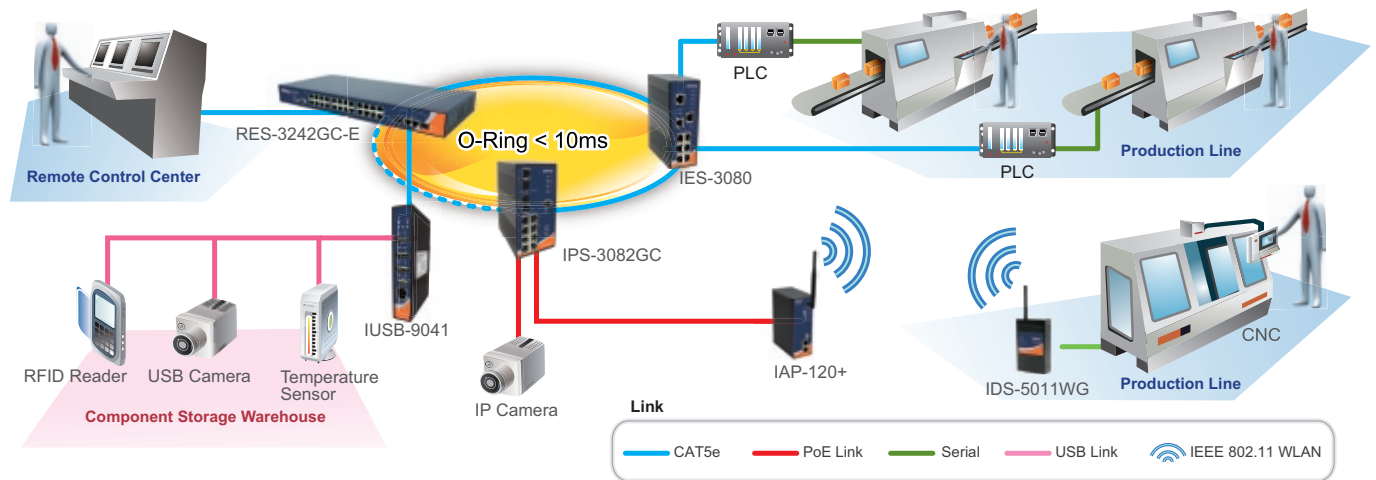
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Applications

Factory Automation

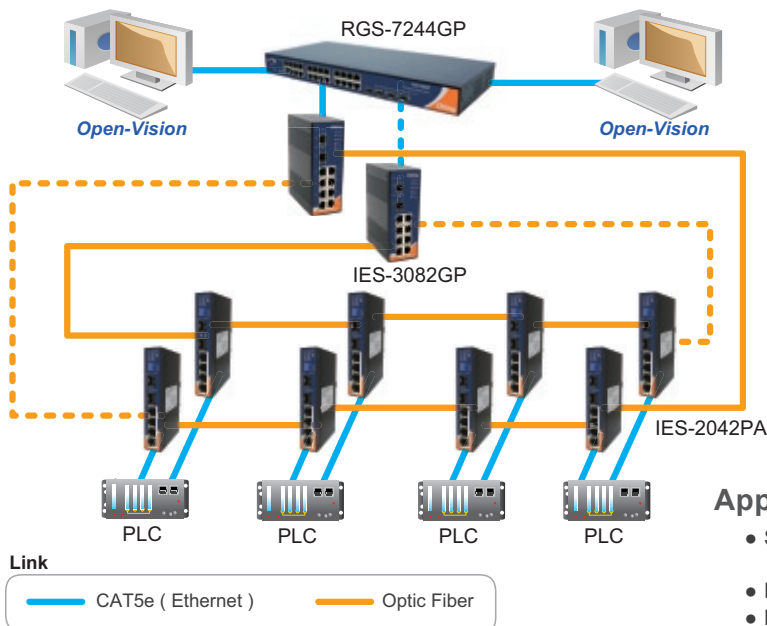


Application Requirements

- Reliable redundant ring features the fastest recovery time.
- Real-time Video over IP Surveillance System.
- PoE links from P.S.E. switches to P.D. equipments.
- Connecting serial devices to an IP-based Ethernet network with wireless connection.
- Powerful and convenient utility to manage all products.



Water Treatment Plant



Application Requirements

- SFP is more flexible for different distance of optical fiber connection
- Reliable redundant ring features the fastest recovery time.
- Powerful and convenient utility to manage all products.

PLC Fiber Networking for Water Treatment Plants

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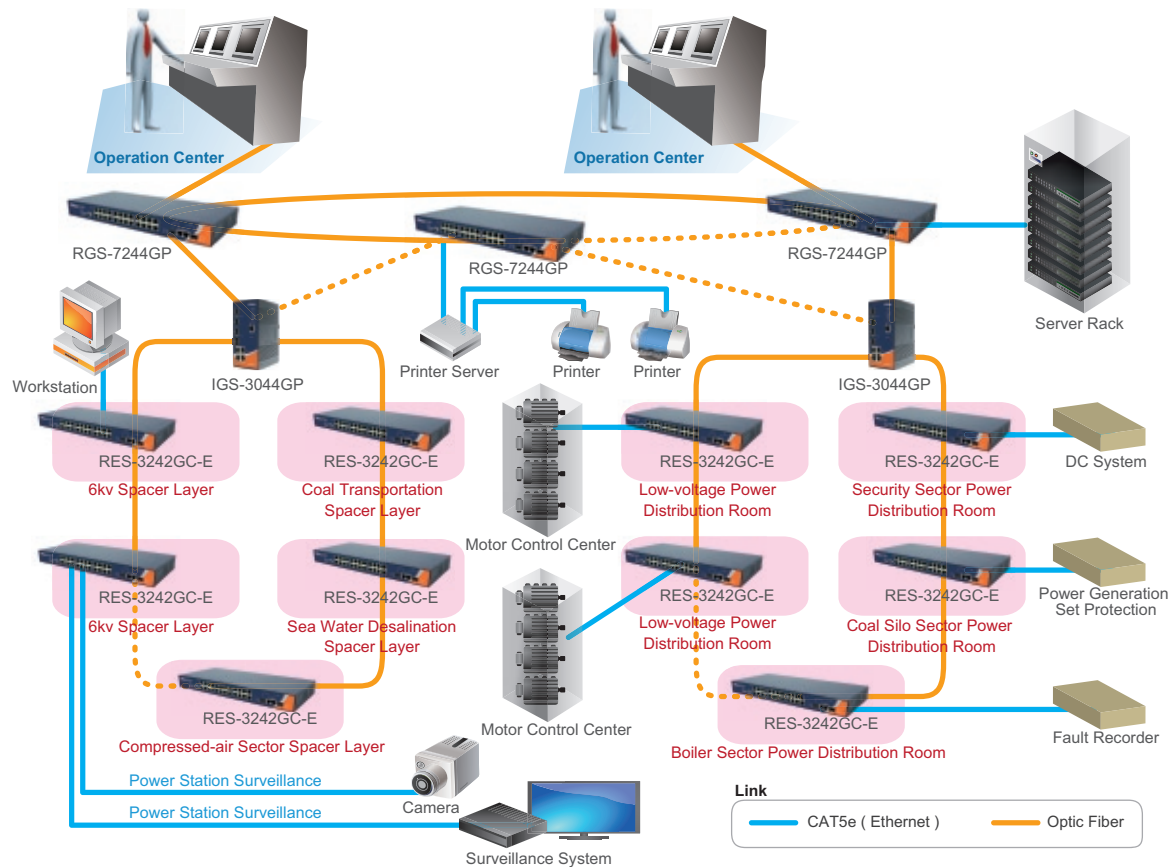
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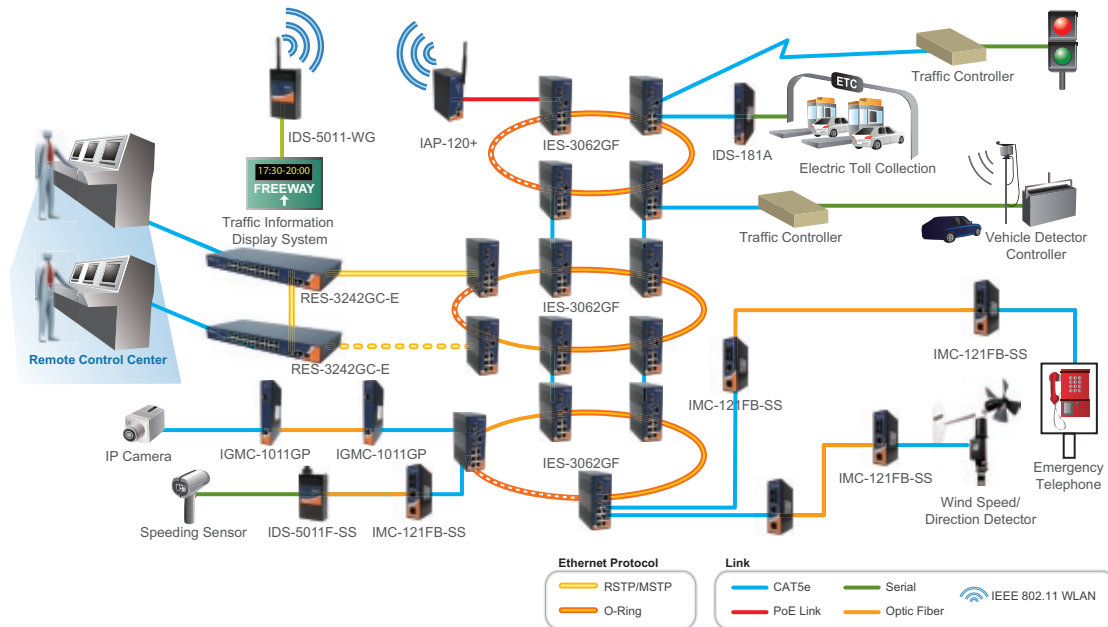
Power Supply/Peripherals

Thermal Power Plant



Network system architecture of the thermal power plant using ORing's RES-3242GC-E and IGS-3044GP industrial Ethernet switch products

Intelligent Transportation System



Multi-layer Ethernet network architecture for Intelligent Transportation System (ITS)

Application Requirements

- Optical fiber cabling supports long distance connection.
- Industrial design is required to sustain harsh outdoor environments.
- Redundancy that keeps the system with a non-stop operation.
- Real-time video over IP surveillance system.
- PoE links from P.S.E. switches to P.D. equipment.
- Connecting serial devices to an IP-based Ethernet LAN with wireless connection.

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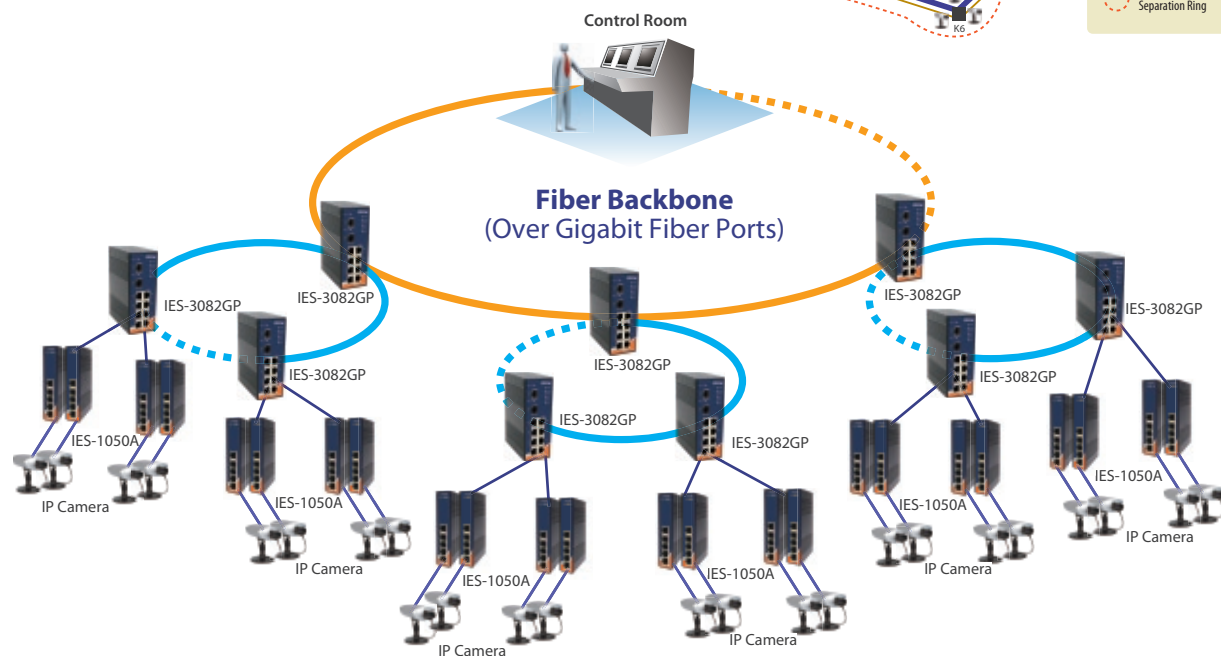
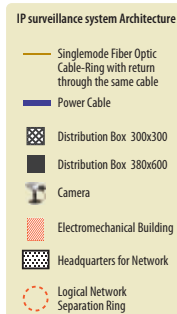
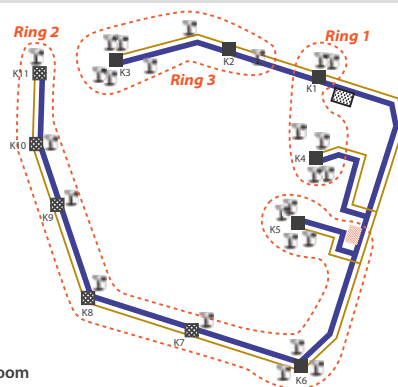
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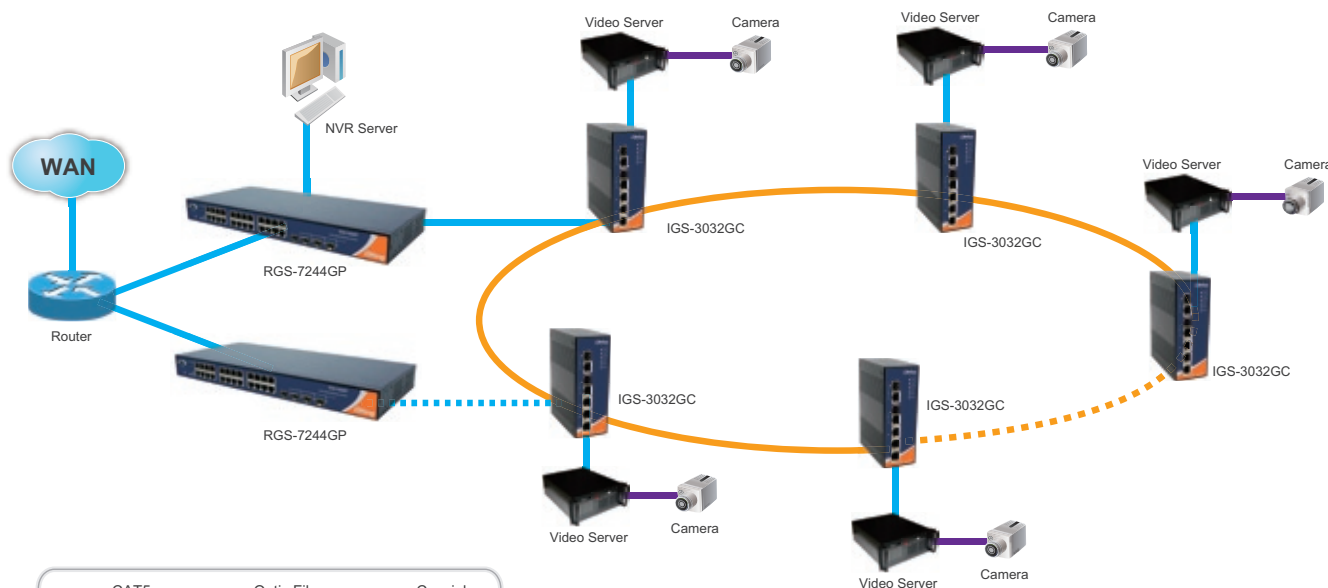
Power Supply/Peripherals

Oil Field



Oil Field Surveillance Solution

IP Surveillance System



IP Surveillance Network Architecture

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Product Selection Guide

Industrial Rack-Mount Gigabit/PoE/Fast Ethernet Switch

Managed Switch

Industrial Ethernet Switch



RGS-7244GP /
7244GP-E

RGS-7168GCP /
7168GCP-E

RGPS-7244GP /
7244GP-P

RGPS-7084GP-P

RES-3242GC /
3242GC-E

Port Number										
Number of ports	28		24		28		12		26	
10/100Base-T(X) RJ45 Ports	-		-		-		-		24	
10/100/1000Base-T(X) Ports	24		-		24 (P.S.E)		8 (P.S.E)		-	
100Base-FX Fiber Ports	-		-		-		-		-	
1000Base-X Fiber Ports			-		-		-		-	
100Base-FX SFP Ports	-		-		-		-		-	
1000Base-X SFP Ports	4		8		4		4		-	
Gigabit Combo Ports	-		16		-		-		2	
Power Redundancy										
DC Terminal Block	-	2	-	2	1	-	-	-	-	2
DC Power Jack	-		-		-		-		-	
AC Power Cord	1	1	1	1	-	1	1	1	1	1
Installation										
DIN-Rail Mounting	-		-		-		-		-	
Wall Mounting	-		-		-		-		-	
Rack Mounting	●		●		●		●		●	
Physical Characteristics										
Casing Protection	IP-20		IP-20		IP-20		IP-20		IP-20	
Dimensions (mm)	444(W) x 200(D) x 44(H)	431(W) x 342(D) x 44(H)	431(W) x 342(D) x 44(H)		431(W) x 342(D) x 44(H)		279(W) x 300(D) x 44(H)		444(W) x 200(D) x 44(H)	
Operating Temperature										
-10 to 60°C	-		-		-		-		●	-
-40 to 70°C	●		●		●		●		-	●
Network Redundancy										
O-Ring	●		●		●		●		●	
Open-Ring	-		-		-		-		●	
O-RSTP	-		-		-		-		●	
STP/RSTP	●		●		●		●		●	
MSTP	●		●		●		●		●	
Management and Control										
802.1X	●		●		●		●		●	
Rate Limit	●		●		●		●		●	
Port Mirror	●		●		●		●		●	
Port Security	●		●		●		●		●	
IGMP v2/v3	●		●		●		●		●	
QoS Port Base/COS/TOS	●		●		●		●		●	
Port Trunk Static/LACP	●		●		●		●		●	
LLDP	●		●		●		●		●	
System Alarm	SYSLOG / SNMP Trap	SYSLOG / SNMP Trap / Relay	SYSLOG / SNMP Trap	SYSLOG / SNMP Trap / Relay	SYSLOG / SNMP Trap		SYSLOG / SNMP Trap		SYSLOG / SNMP Trap	SYSLOG / SNMP Trap / Relay
DHCP	Server / Client		Server / Client		Server / Client		Server / Client		Server / Client	
VLAN	802.1Q		802.1Q		802.1Q		802.1Q		Port-Based / 802.1Q / Q-in-Q / GVRP	
Management / Configuration	WEB / Windows Utility / SNMP v1,v2c,v3 /Telnet /Console(CLI)		WEB / Windows Utility / SNMP v1,v2c,v3 /Telnet /Console(CLI)		WEB / Windows Utility / SNMP v1,v2c,v3 /Telnet /Console(CLI)		WEB / Windows Utility / SNMP v1,v2c,v3 /Telnet /Console(CLI)		WEB / Windows Utility / SNMP v1,v2c,v3 /Telnet /Console(CLI)	
Warranty	5 years									

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Product Selection Guide

Industrial Ethernet Switch

Industrial Gigabit Ethernet Switch

Managed Switch

Unmanaged Switch



IGS-7084GCP


IGS-3044GP /
IGS-3044GC


IGS-3032GC



IGS-1080A


IGS-1041GPA /
1050A

Port Number					
Number of ports	12	8	5	8	5
10/100Base-T(X) RJ45 Ports	-	-	-	-	-
10/100/1000Base-T(X) Ports	-	4	3	8	4 5
100Base-FX Fiber Ports	-	-	-	-	-
1000Base-X Fiber Ports	-	-	-	-	-
100Base-FX SFP Ports	-	-	-	-	-
1000Base-X SFP Ports	4	4	-	-	1
Gigabit Combo Ports	8	-	4	-	-
Power Redundancy					
DC Terminal Block	2	2	2	2	2
DC Power Jack	-	-	1	-	-
AC Power Cord	-	-	-	-	-
Installation					
DIN-Rail Mounting	•	•	•	•	•
Wall Mounting	•	•	•	•	•
Rack Mounting	-	-	-	-	-
Physical Characteristics					
Casing Protection	IP-30	IP-30	IP-30	IP-30	IP-30
Dimensions (mm)	96.4(W) x 108.5(D) x 154(H)	74.3(W) x 109.2(D) x 153.6(H)	54.2(W) x 106.1(D) x 145.4(H)	26.1(W) x 94.9(D) x 144.3(H)	26.1(W) x 94.9(D) x 144.3(H)
Operating Temperature					
-10 to 60°C	-	-	-	-	-
-40 to 70°C	•	•	•	•	•
Network Redundancy					
O-Ring	•	•	•	-	-
Open-Ring	-	•	•	-	-
O-RSTP	-	•	•	-	-
STP/RSTP	•	•	•	-	-
MSTP	•	•	•	-	-
Management and Control					
802.1X	•	•	•	-	-
Rate Limit	•	•	•	-	-
Port Mirror	•	•	•	-	-
Port Security	•	•	•	-	-
SNMP v1/v2/v3	•	•	•	-	-
IGMP v2/v3	•	•	•	-	-
QoS Port Base/COS/TOS	•	•	•	-	-
Port Trunk Static/LACP	•	•	•	-	-
LLDP	•	•	•	-	-
System Alarm	SYSLOG/ SNMP Trap / Relay	SYSLOG/ SMTP / SNMP Trap / Relay	SYSLOG/ SMTP / SNMP Trap / Relay	Relay	Relay
DHCP	Server / Client	Server / Client	Server / Client	-	-
VLAN	802.1Q	Port-Based / 802.1Q / Q-in-Q / GVRP	Port-Based / 802.1Q / Q-in-Q / GVRP	-	-
Management / Configuration	WEB / Windows Utility / SNMP v1,v2c,v3 /Telnet /Console(CLI)	WEB / Windows Utility / SNMP v1,v2c,v3 /Telnet /Console(CLI)	WEB / Windows Utility / SNMP v1,v2c,v3 /Telnet /Console(CLI)	-	-
Warranty	5 years				

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Product Selection Guide

Industrial Ethernet Switch

Industrial Fast Ethernet Switch

Managed Switch



IES-3240



IES-3162GC



IES-3160



IES-3073GC



IES-3082GP

IES-3062 Series /
IES-3080

Port Number						
Number of ports	24	18	16	10	10	8
10/100Base-T(X) RJ45 Ports	24	16	16	7	8	6 8
10/100/1000Base-T(X) Ports	-	-	-	-	-	2 -
100Base-FX Fiber Ports	-	-	-	-	-	2 (Multi/Single-Mode) -
1000Base-X Fiber Ports	-	-	-	-	-	2 (Multi/Single-Mode) -
100Base-FX SFP Ports	-	-	-	-	-	-
1000Base-X SFP Ports	-	-	-	-	2	-
Gigabit Combo Ports	-	2	-	3	-	-
Power Redundancy						
DC Terminal Block	2	2	2	2	2	2
DC Power Jack	-	-	-	-	1	1
AC Power Cord	-	-	-	-	-	-
Installation						
DIN-Rail Mounting	•	•	•	•	•	•
Wall Mounting	•	•	•	•	•	•
Rack Mounting	-	-	-	-	-	-
Physical Characteristics						
Casing Protection	IP-30	IP-30	IP-30	IP-30	IP-30	IP-30
Dimensions (mm)	96.4(W) x 108.5(D) x 154(H)	96.4(W) x 108.5(D) x 154(H)	74.3(W) x 109.2(D) x 153.6(H)	74.3(W) x 109.2(D) x 153.6(H)	52(W) x 106.1(D) x 144.3(H)	52(W) x 106.1(D) x 144.3(H)
Operating Temperature						
-10 to 60°C	-	-	-	-	-	-
-40 to 70°C	•	•	•	•	•	•
Network Redundancy						
O-Ring	•	•	•	•	•	•
Open-Ring	•	•	•	•	•	•
O-RSTP	•	•	•	•	•	•
STP/RSTP	•	•	•	•	•	•
MSTP	•	•	•	•	•	•
Management and Control						
802.1X	•	•	•	•	•	•
Rate Limit	•	•	•	•	•	•
Port Mirror	•	•	•	•	•	•
Port Security	•	•	•	•	•	•
IGMP v2/v3	•	•	•	•	•	•
QoS Port Base/COS/TOS	•	•	•	•	•	•
Port Trunk Static/LACP	•	•	•	•	•	•
LLDP	•	•	•	•	•	•
System Alarm	SYSLOG / SMTP / SNMP Trap / Relay	SYSLOG / SMTP / SNMP Trap / Relay	SYSLOG / SMTP / SNMP Trap / Relay	SYSLOG / SMTP / SNMP Trap / Relay	SYSLOG / SMTP / SNMP Trap / Relay	SYSLOG / SMTP / SNMP Trap / Relay
DHCP	Server / Client	Server / Client	Server / Client	Server / Client	Server / Client	Server / Client
VLAN	Port-Based / 802.1Q / Q-in-Q / GVRP	Port-Based / 802.1Q / Q-in-Q / GVRP	Port-Based / 802.1Q / Q-in-Q / GVRP	Port-Based / 802.1Q / Q-in-Q / GVRP	Port-Based / 802.1Q / Q-in-Q / GVRP	Port-Based / 802.1Q / Q-in-Q / GVRP
Management / Configuration	WEB / Windows Utility / SNMP v1,v2c,v3 / Telnet / Console(CLI)	WEB / Windows Utility / SNMP v1,v2c,v3 / Telnet / Console(CLI)	WEB / Windows Utility / SNMP v1,v2c,v3 / Telnet / Console(CLI)	WEB / Windows Utility / SNMP v1,v2c,v3 / Telnet / Console(CLI)	WEB / Windows Utility / SNMP v1,v2c,v3 / Telnet / Console(CLI)	WEB / Windows Utility / SNMP v1,v2c,v3 / Telnet / Console(CLI)
Warranty	5 years					

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Product Selection Guide

Industrial Ethernet Switch

Industrial Fast Ethernet Switch

Lite-Managed Switch

Unmanaged Switch



IES-2060 / 2042FX



IES-2042PA



IES-2050A



IES-1240



IES-1162GC



IES-1160

Port Number						
Number of ports	6			24		
10/100Base-T(X) RJ45 Ports	6	4	4	24	16	16
10/100/1000Base-T(X) Ports	-	-	-	-	-	-
100Base-FX Fiber Ports	-	2 (Multi/Single-Mode)	-	-	-	-
1000Base-X Fiber Ports	-	-	-	-	-	-
100Base-FX SFP Ports	-	2	-	-	-	-
1000Base-X SFP Ports	-	-	-	-	-	-
Gigabit Combo Ports	-	-	-	-	2	-
Power Redundancy						
DC Terminal Block	2	2	2	2	2	2
DC Power Jack	1	-	-	-	-	-
AC Power Cord	-	-	-	-	-	-
Installation						
DIN-Rail Mounting	•	•	•	•	•	•
Wall Mounting	•	•	•	•	•	•
Rack Mounting	-	-	-	-	-	-
Physical Characteristics						
Casing Protection	IP-30	IP-30	IP-30	IP-30	IP-30	IP-30
Dimensions (mm)	52(W) x 106.1(D) x 144.3(H)	26.1(W) x 94.9(D) x 144.3(H)	26.1(W) x 94.9(D) x 144.3(H)	96.4(W) x 108.5(D) x 154(H)	96.4(W) x 108.5(D) x 154(H)	74.3(W) x 109.2(D) x 153.6(H)
Operating Temperature						
-10 to 60°C	-	-	-	-	-	-
-40 to 70°C	•	•	•	•	•	•
Network Redundancy						
O-Ring	•	•	•	-	-	-
Open-Ring	•	•	•	-	-	-
O-RSTP	-	-	-	-	-	-
STP/RSTP/MSTP	•	•	•	-	-	-
MSTP	-	-	-	-	-	-
Management and Control						
802.1X	-	-	-	-	-	-
Rate Limit	-	-	-	-	-	-
Port Mirror	-	-	-	-	-	-
Port Security	-	-	-	-	-	-
IGMP v2/v3	-	-	-	-	-	-
QoS Port Base/COS/TOS	-	-	-	-	-	-
Port Trunk Static/LACP	-	-	-	-	-	-
LLDP	•	•	•	-	-	-
System Alarm	SYSLOG / SMTP / SNMP Trap / Relay	SYSLOG / SMTP / SNMP Trap / Relay	SYSLOG / SMTP / SNMP Trap / Relay	Relay	Relay	Relay
DHCP	Client	Client	Client	-	-	-
VLAN	Port-Based	Port-Based	Port-Based	-	-	-
Management / Configuration	WEB / Windows Utility / SNMP v1,v2c,v3 /Telnet	WEB / Windows Utility / SNMP v1,v2c,v3 /Telnet	WEB / Windows Utility / SNMP v1,v2c,v3 /Telnet	-	-	-
Warranty	5 years					

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Industrial Fast Ethernet Switch

Unmanaged Switch

Industrial Ethernet Switch



IES-1082GP

IES-1062 Series /
IES-1080

IES-1050A / 1080A



IES-1041FX / 1042FX



IES-150B

Port Number	IES-1000							
Number of ports	10	8		5	8	5	6	5
10/100Base-T(X) RJ45 Ports	8	6	8	5	8	4		5
10/100/1000Base-T(X) Ports	-	2	-	-		-		-
100Base-FX Fiber Ports	-	2 (Multi/Single-Mode)	-	-		1 (Multi/Single-Mode)	2 (Multi/Single-Mode)	-
1000Base-X Fiber Ports	-	2 (Multi/Single-Mode)	-	-		-		-
100Base-FX SFP Ports	-	-		-		-		-
1000Base-X SFP Ports	2	-		-		-		-
Gigabit Combo Ports	-	-		-		-		-
Power Redundancy								
DC Terminal Block	2	2		2		2		2
DC Power Jack	1	1		-		-		-
AC Power Cord	-	-		-		-		-
Installation								
DIN-Rail Mounting	•	•		•		•		•
Wall Mounting	•	•		•		•		•
Rack Mounting	-	-		-		-		-
Physical Characteristics								
Casing Protection	IP-30	IP-30		IP-30		IP-30		IP-30
Dimensions (mm)	52(W) x 106.1(D) x 144.3(H)	52(W) x 106.1(D) x 144.3(H)		26.1(W) x 94.9(D) x 144.3(H)		26.1(W) x 94.9(D) x 144.3(H)		26.1(W) x 70(D) x 95(H)
Operating Temperature								
-10 to 60°C	-	-		-		-		-
-40 to 70°C	•	•		•		•		•
Network Redundancy								
O-Ring	-	-		-		-		-
Open-Ring	-	-		-		-		-
O-RSTP	-	-		-		-		-
STP/RSTP	-	-		-		-		-
MSTP	-	-		-		-		-
Management and Control								
802.1X	-	-		-		-		-
Rate Limit	-	-		-		-		-
Port Mirror	-	-		-		-		-
Port Security	-	-		-		-		-
IGMP v2/v3	-	-		-		-		-
QoS Port Base/COS/TOS	-	-		-		-		-
Port Trunk Static/LACP	-	-		-		-		-
LLDP	-	-		-		-		-
System Alarm	Relay	Relay		Relay		Relay		-
DHCP	-	-		-		-		-
VLAN	-	-		-		-		-
Management / Configuration	-	-		-		-		-
Warranty	5 years							

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Product Selection Guide

Industrial PoE Ethernet Switch				
Managed Switch		Lite-Managed Switch		Unmanaged Switch

Industrial Ethernet Switch



IGPS-7084GP

IPS-3082GC

IPS-2042P

IPS-2042TX / 2042FX

IGPS-1080A

Port Number					
Number of ports	12	10	6	6	8
10/100Base-T(X) RJ45 Ports	-	8 (P.S.E.)	4 (P.S.E.)	2+4 (P.S.E.) 4 (P.S.E.)	-
10/100/1000Base-T(X) Ports	8 (P.S.E.)	-	-	-	8 (P.S.E.)
100Base-FX Fiber Ports	-	-	-	- 2 (Multi/Single-Mode)	-
100Base-FX SFP Ports	-	-	2	-	-
1000Base-X SFP Ports	4	-	-	-	-
Gigabit Combo Ports	-	2	-	-	-
Power Redundancy					
DC Terminal Block	2	2	2	2	2
DC Power Jack	-	-	1	1	-
Installation					
DIN-Rail Mounting	•	•	•	•	•
Wall Mounting	•	•	•	•	•
Physical Characteristics					
Casing Protection	IP-30	IP-30	IP-30	IP-30	IP-30
Dimensions (mm)	96.4(W) x 108.5(D) x 154(H)	74.3(W) x 109.2(D) x 153.6(H)	54.2(W) x 106.1(D) x 145.4(H)	52(W) x 106.1(D) x 144.3(H)	26.1(W) x 94.9(D) x 144.3(H)
Operating Temperature					
-10 to 60°C	-	-	-	-	-
-40 to 70°C	•	•	•	•	•
Network Redundancy					
O-Ring	•	•	•	•	-
Open-Ring	-	•	•	•	-
O-RSTP	-	•	-	-	-
STP/RSTP	•	•	•	•	-
MSTP	•	•	-	-	-
Management and Control					
802.1X	•	•	-	-	-
Rate Limit	•	•	-	-	-
Port Mirror	•	•	-	-	-
Port Security	•	•	-	-	-
IGMP v2/v3	•	•	-	-	-
QoS Port Base/COS/TOS	•	•	-	-	-
Port Trunk Static/LACP	•	•	-	-	-
LLDP	•	•	•	•	-
System Alarm	SYSLOG / SNMP Trap / Relay	SYSLOG / SMTP / SNMP Trap / Relay	SYSLOG / SMTP / SNMP Trap / Relay	SYSLOG / SMTP / SNMP Trap / Relay	Relay
DHCP	Server / Client	Server / Client	Client	Client	-
VLAN	802.1Q	Port-Based/802.1Q/ Q-in-Q/GVRP	Port-Based	Port-Based	-
Management / Configuration	WEB / Windows Utility / SNMP v1,v2c,v3 / Telnet /Console(CLI)	WEB / Windows Utility / SNMP v1,v2c,v3 / Telnet /Console(CLI)	WEB / Windows Utility / SNMP v1,v2c,v3 / Telnet	WEB / Windows Utility / SNMP v1,v2c,v3 / Telnet	-
Warranty	5 years				

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Power Supply/ Peripherals

Product Selection Guide

Industrial IP-67 Switch	Industrial Card-type Switch	EN50155 Switch Managed Switch
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Industrial Ethernet Switch


IES-2050-M12
ICS-4040
TES-3080-M12

Port Number			
Number of ports	5	4	8
10/100Base-T(X) RJ45 Ports	5 (M12 A-coding)	4	8 (M12 A-coding)
10/100/1000Base-T(X) Ports	-	-	-
100Base-FX Fiber Ports	-	-	-
100Base-FX SFP Ports	-	-	-
1000Base-X SFP Ports	-	-	-
Gigabit Combo Ports	-	-	-
Power Redundancy			
DC Terminal Block	1 (M12)	1	2(M23)
DC Power Jack	-	-	-
Installation			
DIN-Rail Mounting	•	-	•
Wall Mounting	•	-	•
Physical Characteristics			
Casing Protection	IP-67	-	IP-40
Dimensions (mm)	125(W) x 65(D) x 96(H)	121(W) x 100(D)	125(W) x 95(D) x 196(H)
Operating Temperature			
-10 to 60°C	-	•	-
-40 to 70°C	•	-	•
Network Redundancy			
O-Ring	•	•	•
Open-Ring	•	•	•
O-RSTP	-	-	•
STP/RSTP	•	•	•
MSTP	-	-	•
Management and Control			
802.1X	-	-	•
Rate Limit	-	-	•
Port Mirror	-	-	•
Port Security	-	-	•
IGMP v2/v3	-	-	•
QoS Port Base/COS/TOS	-	-	•
Port Trunk Static/LACP	-	-	•
LLDP	•	•	•
System Alarm	SYSLOG / SMTP / SNMP Trap	SYSLOG / SMTP / SNMP Trap / Relay	SYSLOG / SMTP / SNMP Trap / Relay
DHCP	Client	Client	Server/Client
VLAN	Port-Based	Port-Based	Port-Based/802.1Q/Q-in-Q/GVRP
Management / Configuration	WEB / Windows Utility / SNMP v1,v2c,v3 / Telnet	WEB / Windows Utility / SNMP v1,v2c,v3 / Telnet	WEB / Windows Utility / SNMP v1,v2c,v3 / Telnet / Console (CLI)
Warranty	5 years	3 years	5 years

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Optical / PoE Network Accessories

Optical Fiber Bypass Protection



IBS-102FX

PoE Accessories

PoE Injector



INJ-102GT

PoE Splitter



SPL-101GT-AF/AT

Port Number		
Number of ports	4	2
10/100Base-T(X) RJ45 Ports	-	-
10/100/1000Base-T(X) Ports	-	1+1 (P.D.)
100Base-FX Fiber Ports	4 (LC connector)	-
100Base-FX SFP Ports	-	-
1000Base-X SFP Ports	-	-
Gigabit Combo Ports	-	-
Power Redundancy		
DC Terminal Block	1	1 (24VDC output)
DC Power Jack	1	-
Installation		
DIN-Rail Mounting	•	•
Wall Mounting	•	•
Physical Characteristics		
Casing Protection	IP-30	IP-30
Dimensions (mm)	26.1(W)x94.9(D)x144.3(H)	26.1(W)x70(D)x95(H)
Operating Temperature		
-10 to 60°C	-	-
-40 to 70°C	•	•
Network Redundancy		
O-Ring	-	-
Open-Ring	-	-
O-RSTP	-	-
STP/RSTP	-	-
MSTP	-	-
Management and Control		
802.1X	-	-
Rate Limit	-	-
Port Mirror	-	-
Port Security	-	-
IGMP v2/v3	-	-
QoS Port Base/COS/TOS	-	-
Port Trunk Static/LACP	-	-
LLDP	-	-
System Alarm	Relay	-
DHCP	-	-
VLAN	-	-
Management / Configuration	-	-
Warranty	2 years	

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Industrial Rack-Mount Ethernet to Fiber Media Converter			Industrial Ethernet to Fiber Media Converter	
Chassis	Card type Ethernet to fiber		Slim type Gigabit Ethernet to fiber	Mini type Ethernet to fiber

Industrial Media Converter



RMC-1000



RMC-121FB



RMC-111FB / 111PB



IGMC-1011GF / 1011GP



IMC-121FB



IMC-111FB / 111PB

Port Number							
Chassis Slots	18	-	-	-	-	-	-
10/100Base-T(X) RJ45 Ports	-	2	1	-	2	1	
10/100/1000Base-T(X) RJ45 Ports	-	-	-	1	-	-	
100Base-FX Fiber Ports	-	1 (Multi/Single-Mode)	1 (Multi/Single-Mode) 1 (SFP)	-	1 (Multi/Single-Mode)	1 (Multi/Single-Mode)	1 (SFP)
1000Base-X Fiber Ports	-	-	-	1 (Multi/Single-Mode) 1 (SFP)	-	-	
USB Port	-	-	-	-	-	-	
RS-232 Serial Port	-	-	-	-	-	-	
RS-422/485 Serial Port	-	-	-	-	-	-	
RS-232/422/485 Serial Port	-	-	-	-	-	-	
Serial Port Feature							
Baud Rate	-	-	-	-	-	-	
Signals	-	-	-	-	-	-	
Power Redundancy							
DC Back Plane	-	1	1	-	-	-	
DC Terminal Block	-	-	-	2	2	2	
DC Power Jack	-	-	-	-	by cable	by cable	
AC Power Cord	2 (Optional)	-	-	-	-	-	
Installation							
DIN-Rail Mounting	-	-	-	•	•	•	
Wall mounting	-	-	-	•	•	•	
Rack-Mount	•	• (RMC-1000)	• (RMC-1000)	-	-	-	
Physical Characteristics							
Casing Protection	IP-20	IP-20	IP-20	IP-30	IP-30	IP-30	
Dimensions (mm)	430(W) x 243(D) x 132(H)	68(D) x 126(H)	68(D) x 126(H)	26.1(W) x 94.9(D) x 144.3(H)	26.1(W) x 70(D) x 95(H)	26.1(W) x 70(D) x 95(H)	
Operating Temperature							
-10 to 60°C	•	•	•	-	-	-	
-40 to 70°C	-	-	-	•	•	•	
Protection							
Power Overload Current Protection	•	•	•	•	•	•	
Power Reverse Polarity Protection	-	-	-	•	•	•	
Serial Isolation Protection	-	-	-	-	-	-	
Warranty	2 years			5 years			

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Industrial Media Converter



ISC-4110U / 8110U

ISC-1210U-I / 1310U-I

ISC-1112 / 1112-I

ISC-1212-I

USB to Serial Media Converter		Serial to Serial Media Converter	
USB to Serial		Serial to Serial	
Port Number			
10/100Base-T(X) RJ45 Ports	-	-	-
10/100/1000Base-T(X) RJ45 Ports	-	-	-
100Base-FX Fiber Ports	-	-	-
1000Base-X Fiber Ports	-	-	-
USB Port	1	1	-
RS-232 Serial Port	4 (DB62 female)	8 (DB62 female)	-
	DB62 to DB9 cable attached		1
RS-422/485 Serial Port	-	1	2
RS-232/422/485 Serial Port	-	-	1
Serial Port Feature			
Baud Rate	300 ~ 921.6Kbps	300 ~ 115.2Kbps	300 ~ 115.2Kbps
Signals	RS-232 : TX, RX, RTS, CTS, DTR, DSR, DCD, GND	RS-422 : TX+, TX-, RX+, RX-, RTS+, RTS-, CTS+, CTS-, RS-485 : Data+, Data-	RS-232 : TX, RX, GND RS-422 : TX+, TX-, RX+, RX-, RS-485 : Data+, Data-
Power Redundancy			
DC Terminal Block	1	-	1
DC Power Jack	1	-	-
USB Bus Power	•	•	-
Installation			
DIN-Rail Mounting	•	•	•
Wall mounting	•	•	•
Physical Characteristics			
Casing Protection	IP-30	IP-30	IP-30
Dimensions (mm)	26.1(W) x 94.9(D) x 144.3(H) mm	71.2(W) x 25.3(D) x 100.6(H) mm	71.2(W) x 25.3(D) x 100.6(H) mm
Operating Temperature			
-10 to 70°C	-	•	•
-40 to 70°C	•	-	-
Protection			
Power Overload Current Protection	•	•	•
Power Reverse Polarity Protection	•	-	-
Serial Isolation Protection	-	3000 VDC	3000 VDC
Warranty	5 years	2 years	2 years

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Industrial Device Server

1-Port Device Server

Industrial Device Server



IDS-5011



IDS-5011F-MM/SS



IDS-5012



IDS-5011-WG

Serial Port				
Serial port Numbers	1	1	1	1
Serial Mode	RS-232	RS-232/422/485	RS-232/422/485	RS-232/422/485
Serial Port Connector	DB9 (male)	DB9 (male)	DB9 (male)	DB9 (male)
Serial Port with 2KV Isolation	-	-	-	-
Serial Baud Rate	110 bps to 460.8 Kbps	110 bps to 460.8 Kbps	110 bps to 460.8 Kbps	110 bps to 230.4 Kbps
Ethernet Port				
10/100Base-T(X) in RJ45 Auto MDI/MDIX Ports	1	-	2	1
100Base-FX Fiber Ports	-	1 (Multi/Single Mode)	-	-
Wireless LAN Interface	-	-	-	IEEE 802.11b/g
ETH2 Support PoE (IEEE 802.3af compliant)	-	-	-	-
Ethernet Switch mode / Fast Recovery Mode supported	-	-	•	-
Power Redundancy				
DC Terminal Block	1	1	1	1
DC Power Jack	1	1	1	1
Installation				
DIN-Rail Mounting	•	•	•	•
Wall mounting	•	•	•	•
Physical Characteristics				
Casing Protection	IP-30	IP-30	IP-30	IP-30
Dimensions (mm)	72(W) x 29.4(D) x 123.4(H) mm	72(W) x 29.4(D) x 123.4(H) mm	72(W) x 29.4(D) x 123.4(H) mm	72(W) x 29.4(D) x 123.4(H) mm
Operating Temperature				
-40 to 70°C	-	-	-	-
-10 to 60°C	•	•	•	-
-10 to 55°C	-	-	-	•
Networking Technology				
Operating Modes	Virtual Com, Serial Tunnel, TCP Server, TCP Client, UDP	Virtual Com, Serial Tunnel, TCP Server, TCP Client, UDP	Virtual Com, Serial Tunnel, TCP Server, TCP Client, UDP	Virtual Com, Serial Tunnel, TCP Server, TCP Client, UDP
VCOM Driver	Windows NT/2000/XP/2003/VISTA 64-Bit/ Windows 7 64-Bit	Windows NT/2000/XP/2003/VISTA 64-Bit/ Windows 7 64-Bit	Windows NT/2000/XP/2003/VISTA 64-Bit/ Windows 7 64-Bit	Windows NT/2000/XP/2003/VISTA 64-Bit/ Windows 7 64-Bit
Multiple Link	5 host devices : Virtual COM, TCP Server, TCP Client mode; 4 host devices : UDP	5 host devices : Virtual COM, TCP Server, TCP Client mode; 4 host devices : UDP	5 host devices : Virtual COM, TCP Server, TCP Client mode; 4 host devices : UDP	5 host devices : Virtual COM, TCP Server, TCP Client mode; 4 host devices : UDP
Event Notification	Syslog / SMTP/ SNMP trap / and Beeper	Syslog / SMTP/ SNMP trap / and Beeper	Syslog / SMTP/ SNMP trap / and Beeper	Syslog / SMTP/ SNMP trap / and Beeper
NAT Router Pass Through	•	•	•	•
PPPoE	•	•	•	•
DDNS	•	•	•	•
Security				
HTTPS/SSH Management	•	•	•	•
IP White List	•	•	•	•
SSL Data Encryption	•	•	•	•
IEEE 802.1X	-	-	-	•
Warranty	5 years	5 years	5 years	3 years

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Industrial Device Server

4-Port Device Server

Slim Type Device Server

Industrial Device Server



IDS-5042 / 5042+



IDS-5042-I+



IDS-5042-WG / 5042-IWG



IDS-141A / 181A

Serial Port				
Serial port Numbers	4	4	4	4
Serial Mode	RS-232/422/485	RS-422/485	RS-232/422/485	RS-422/485
Serial Port Connector	DB9 (male)	5-Pin Terminal Block	DB9 (male)	5-Pin Terminal Block
Serial Port with 2KV Isolation	-	•	-	•
Serial Baud Rate	110 bps to 460.8 Kbps	110 bps to 460.8 Kbps	110 bps to 460.8 Kbps	110 bps to 115.2 Kbps
Ethernet Port				
10/100Base-T(X) in RJ45 Auto MDI/MDIX Ports	2	2	2	1
100Base-FX Fiber Ports	-	-	-	-
Wireless LAN Interface	-	-	IEEE 802.11b/g	-
ETH2 Support PoE (IEEE 802.3af Compliant)	-	•	-	-
Ethernet Switch mode / Fast Recovery Mode supported	•	•	•	-
Power Redundancy				
DC Terminal Block	2	2	2	2
DC Power Jack	-	-	-	1
Installation				
DIN-Rail Mounting	•	•	•	•
Wall mounting	•	•	•	•
Physical Characteristics				
Casing Protection	IP-30	IP-30	IP-30	IP-30
Dimensions (mm)	52(W) x 106(D) x 144(H) mm	52(W) x 106(D) x 144(H) mm	52(W) x 106(D) x 144(H) mm	26.1(W) x 94.9(D) x 144.3(H) mm
Operating Temperature				
-40 to 70°C	-	-	-	•
-10 to 60°C	•	•	-	-
-10 to 55°C	-	-	•	-
Networking Technology				
Operating Modes	Virtual Com, Serial Tunnel, TCP Server, TCP Client, UDP	Virtual Com, Serial Tunnel, TCP Server, TCP Client, UDP	Virtual Com, Serial Tunnel, TCP Server, TCP Client, UDP	Virtual Com, Serial Tunnel, TCP Server, TCP Client, UDP
VCOM Driver	Windows NT/2000/XP/2003/ VISTA 64-Bit/ Windows 7 64-Bit	Windows NT/2000/XP/2003/ VISTA 64-Bit/ Windows 7 64-Bit	Windows NT/2000/XP/2003/ VISTA 64-Bit/ Windows 7 64-Bit	Windows NT/2000/XP/2003/ VISTA 64-Bit/ Windows 7 64-Bit
Multiple Link	5 host devices : Virtual COM, TCP Server, TCP Client mode; 4 host devices : UDP	5 host devices : Virtual COM, TCP Server, TCP Client mode; 4 host devices : UDP	5 host devices : Virtual COM, TCP Server, TCP Client mode; 4 host devices : UDP	5 host devices : Virtual COM, TCP Server, TCP Client mode; 4 host devices : UDP
Event Notification	Syslog / SMTP/ SNMP trap / Relay / and Beeper	Syslog / SMTP/ SNMP trap / Relay / and Beeper	Syslog / SMTP/ SNMP trap / Relay / and Beeper	Syslog / SMTP/ SNMP trap / and Relay
NAT Router Pass Through	•	•	•	•
PPPoE	•	•	•	•
DDNS	•	•	•	•
Security				
HTTPS/SSH Management	•	•	•	•
IP White List	•	•	•	•
SSL Data Encryption	•	•	•	•
IEEE 802.1X	-	-	•	-
Warranty	5 years	5 years	3 years	5 years

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Wireless Access Point

IP-67 Wireless Access Point

Industrial Wireless Access Point



IAP-120/120+

IAP-320/320+

IAP-6701-WA+ /
IAP-6701-WG+IAP-6701N-WA+ /
IAP-6701N-WG+

IAP-W510 / IAP-W512

Ethernet Ports							
10/100 Base-T(X) LAN Ports	2	2	1	1	1		
PoE(P.D.) Support	-	• (LAN Port-2)	•	•	•	-	-
Ethernet switch/redundant mode support	•	•	-	-	-	-	-
WLAN Interface							
WLAN Standard	IEEE802.11b/g Dual Mode	IEEE802.11a/b/g Tri Mode	IEEE802.11a Mode	IEEE802.11b/g Dual Mode	IEEE802.11a Mode	IEEE802.11b/g Dual Mode	IEEE802.3a/n Dual Mode
Transmit Power	20 dBm max.	20 dBm max.	17 dBm max.	20 dBm max.	17 dBm max.	20 dBm max.	27 dbm max.
Transmission Rate	IEEE802.11b : 11Mbps IEEE802.11g : 54Mbps	IEEE802.11b : 11Mbps IEEE802.11a/g : 54Mbps	IEEE802.11a : 54Mbps	IEEE802.11b : 11Mbps IEEE802.11g : 54Mbps	IEEE802.11a : 54Mbps	IEEE802.11b : 11Mbps IEEE802.11g : 54Mbps	IEEE802.3a : 54Mbps IEEE802.3n : 300Mbps
Antenna connector	Reverse SMA	Reverse SMA	-	-	N-Type		- N-Type
Antenna	2 dBi	IEEE 802.3a : 3 dBi IEEE802.3b/g : 2 dBi	Built-in 14 dBi	Built-in 12 dBi	Built-in 14 dBi for AUX ANT	Built-in 12 dBi for AUX ANT	Built-in 15 dBi -
Power Redundancy							
DC Terminal Block	2	2	-	-	-	-	1 (RJ45)
Installation							
DIN-Rail Mounting	•	•	-	-	-	-	-
Wall mounting	•	•	•	•	•	•	•
Pillar-mounting	-	-	•	•	•	•	•
Physical Characteristics							
Casing Protection	IP-30	IP-30	IP-67	IP-67	IP-67	IP-67	IP-67
Dimensions (mm)	54.2(W)x106.1(D)x145.4(H)	54.2(W)x106.1(D)x145.4(H)	197.5(W)x63(D)x197.5(H)	197.5(W)x63(D)x197.5(H)	197.5(W)x63(D)x197.5(H)	197.5(W)x63(D)x197.5(H)	192(W)x102(D)x58(H)
Operating Temperature							
-10 to 55°C	•	•	-	-	-	-	-
-20 to 70°C	-	-	•	•	•	•	•
Network Technology							
Alarm Notification	Relay Output / SNMP Trap / System Log	Relay Output / SNMP Trap / System Log	SNMP Trap / System Log	SNMP Trap / System Log	SNMP Trap / System Log	SNMP Trap / System Log	SNMP Trap / System Log
Management / Configuration	WEB/Window Utility	WEB/Window Utility	WEB/Window Utility	WEB/Window Utility	WEB/Window Utility	WEB/Window Utility	WEB/Window Utility
Warranty	3 years						

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Industrial Router

Cellular VPN Router

Wireless Cellular VPN Router

EN50155 Railway Access Point and Router



IR-711UB

IAR-120 / 120+

IAR-320 / 320+

TAP-3120-M12

TAR-120-M12

Ethernet Ports					
10/100 Base-T(X) LAN Ports	1	2	2	2 (M12)	2 (M12)
10/100 Base-FX Fiber Ports	-	-	-	-	-
PoE (P.D.)Support	-	- •(LAN Port-2)	- •(LAN Port-2)	-	-
Ethernet switch/redundant mode support	-	•	•	•	•
USB Ports					
USB 2.0 host	1	1	1	-	-
WLAN Interface					
WLAN Standard	-	IEEE802.11b/g Dual Mode	IEEE802.11a/b/g Tri Mode	1: IEEE802.11a/b/g Tri Mode 2: IEEE802.11b/g Dual Mode	IEEE802.11b/g Dual Mode
Transmit Power	-	20 dBm max.	20 dBm max.	20 dBm max.	20 dBm max.
Transmission Rate	-	IEEE802.11b : 11Mbps IEEE802.11g : 54Mbps	IEEE802.11b : 11Mbps IEEE802.11a/g : 54Mbps	IEEE802.11b : 11Mbps IEEE802.11a/g : 54Mbps	IEEE802.11b : 11Mbps IEEE802.11a/g : 54Mbps
Antenna connector	-	Reverse SMA	Reverse SMA	Reverse SMA	Reverse SMA
Antenna	-	IEEE802.11b/g : 2 dBi	IEEE802.11a : 3 dBi IEEE802.11b/g : 2 dBi	IEEE802.11a : 3 dBi IEEE802.11b/g : 2 dBi	IEEE802.11a : 3 dBi IEEE802.11b/g : 2 dBi
Power Redundancy					
DC Terminal Block	1	2	2	2 (M23)	2 (M23)
Installation					
DIN-Rail Mounting	•	•	•	-	-
Wall mounting	•	•	•	•	•
Physical Characteristics					
Casing Protection	IP-30	IP-30	IP-30	IP-40	IP-40
Dimensions (mm)	26.1(W) x 70(D) x 95(H)	54.2(W) x 106.1(D) x 145.4(H)	54.2(W) x 106.1(D) x 145.4(H)	125(W) x 95(D) x 196(H)	125(W) x 95(D) x 196(H)
Operating Temperature					
-10 to 55°C	-	•	•	-	-
-20 to 70°C	•	-	-	•	•
Network Technology					
Alarm Notification	Relay Output / System Log	Relay Output / SNMP Trap / System Log / SMTP	Relay Output / SNMP Trap / System Log / SMTP	Relay Output / SNMP Trap / System Log	Relay Output / SNMP Trap / System Log / SMTP
Management / Configuration	WEB	WEB / Window Utility	WEB / Window Utility	WEB / Window Utility	WEB / Window Utility
Warranty	5 years	3 years	3 years	3 years	3 years

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USB-over-IP Server

Wireless USB-over-IP Server

Industrial USB-over-IP Server



IUSB-9041



IUSB-9041-WG

Ethernet Ports		
10/100Base-T(X) RJ45 Ports Auto MDI/MDIX	1	1
USB Ports		
USB Compliance	1.0 / 1.1 / 2.0	1.0 / 1.1 / 2.0
Connector Type	USB A Type (Female)	USB A Type (Female)
Ports Number	4	4
Wireless Feature		
WLAN Standard	-	IEEE802.11b/g Dual Mode
Transmit Power	-	18 dBm max.
Transmission Rate	-	IEEE802.11b : 11Mbps IEEE802.11g : 54Mbps
Antenna Connector	-	Reverse SMA
Antenna	-	2 dBi
Fault Contact		
Relay	•	•
Power Redundancy		
DC Terminal Block	2	2
DC Power Jack	1	1
Installation		
DIN-Rail Mounting	•	•
Wall Mounting	•	•
Physical Characteristics		
Casing Protection	IP-30	IP-30
Dimensions (mm)	26.1(W) x 94.9(D) x 144.3(H) mm	26.1(W) x 94.9(D) x 144.3(H) mm
Operating Temperature		
-10 to 60°C	•	-
-10 to 55°C	-	•
Warranty	5 years	3 years

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Accessories



Fiber Patch Cord					
Model Name	Optical Connector	Multi-mode	Single-mode	Diameter	Cable Length
FPC-SCSC-MM3M	SC / SC	•		62.5/125 µm	3 m
FPC-SCSC-SS3M	SC / SC		•	9/125 µm	3 m
FPC-SCLC-MM3M	SC / LC	•		62.5/125 µm	3 m
FPC-SCLC-SS3M	SC / LC		•	9/125 µm	3 m
FPC-SCST-MM3M	SC / ST	•		62.5/125 µm	3 m
FPC-SCST-SS3M	SC / ST		•	9/125 µm	3 m
FPC-LCLC-MM3M	LC / LC	•		62.5/125 µm	3 m
FPC-LCLC-SS3M	LC / LC		•	9/125 µm	3 m



Fiber Patch Adapter					
Model Name	Optical Connector	Multi-mode	Single-mode	Diameter	Cable Length
FCA-SC-MM	SC / SC	•		62.5/125 µm	-
FCA-SC-SS	SC / SC		•	9/125 µm	-



DIN-Rail Power Supply	
Model Name	Description
DR-4512	45W DIN-Rail 12VDC/3.5A Power Supply with universal 100 to 240VAC input
DR-4524	45W DIN-Rail 24VDC/2A Power Supply with universal 100 to 240VAC input
DR-75-12	75W DIN-Rail 12VDC/6.3A Power Supply with universal 100 to 240VAC input
DR-75-24	75W DIN-Rail 24VDC/3.2A Power Supply with universal 100 to 240VAC input
DR-75-48	75W DIN-Rail 48VDC/1.6A Power Supply with universal 100 to 240VAC input
DR-120-12	120W DIN-Rail 12VDC/10A Power Supply with 100 to 120VAC / 220 to 240VAC input
DR-120-24	120W DIN-Rail 24VDC/5A Power Supply with 100 to 120VAC / 220 to 240VAC input
DR-120-48	120W DIN-Rail 48VDC/2.5A Power Supply with 100 to 120VAC / 220 to 240VAC input



Power Adapter	
Model Name	Description
PAA-121000	12VDC/1000mA 12W Power Adapter with universal 100 to 240VAC input, US plug
PAE-121000	12VDC/1000mA 12W Power Adapter with universal 100 to 240VAC input, EU plug
PAA-482500	48VDC/2500mA 120W Power Adapter with universal 100 to 240VAC input, US power cord
PAE-482500	48VDC/2500mA 120W Power Adapter with universal 100 to 240VAC input, EU power cord
PAX-482500	48VDC/2500mA 120W Power Adapter with universal 100 to 240VAC input, without power cord

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RF Antenna Base (Magnetic)		
Model Name	Description	Cable Length
RFB-M2-150	Magnetic WLAN RF Antenna Base, Cable length 1.5m, N Female to SMA Male RS connector	1.5 m
RFB-M2-1000	Magnetic WLAN RF Antenna Base, Cable length 10m, N Female to SMA Male RS connector	10 m



RF Cable		
Model Name	Description	Cable Length
RFC-SFR-SMR-1000	Low loss RF Cable, Cable length 10m, SMA Female RS to SMA Male RS connector	10 m
RFC-NF-NM-1000	Low loss RF Cable, Cable length 10m, N Female to N Male connector	10 m
RFC-NM-NM-150	Low loss RF Cable, Cable length 1.5m, N Male to N Male connector	1.5 m
RFC-NM-SMR-150	Low loss RF Cable, Cable length 1.5m, N Male to SMA Male RS connector	1.5 m
RFC-NM-SMR-1000	Low loss RF Cable, Cable length 10m, N Male to SMA Male RS connector	10 m



RF Surge Protector		
Model Name	Description	
RFP-NF-NM-WAG	High-power RF Surge Protector, 0~6GHz, N Female to N Male connector	



WLAN RF Antenna (Outdoor Panel Type)		
Model Name	Description	
RFA-P12-WG	Outdoor High-gain Panel Antenna, 2.4GHz, 12dBi max, N Female connector	
RFA-P14-WA	Outdoor High-gain Panel Antenna, 5.8GHz, 14dBi max, N Female connector	



WLAN RF Antenna (Omni-directional)		
Model Name	Description	
RFA-O7-NM-WG	Omni-directional High-gain Dipole Antenna, 2.4GHz, 7dBi max, N Male connector	
RFA-O9-NM-WG	Omni-directional High-gain Dipole Antenna, 2.4GHz, 9dBi max, N Male connector	
RFA-O5-NM-WA	Omni-directional High-gain Dipole Antenna, 5.8GHz, 5dBi max, N Male connector	
RFA-O10-NM-WA	Omni-directional High-gain Dipole Antenna, 5.8GHz, 10dBi max, N Male connector	



Cables with M12 connectors		
Model Name	Description	Cable Length
M12C-4M4M-300	4-pin M12 Male to 4-pin M12 Male IP-67 Ethernet Cable, 3m	3 m
M12C-4M4F-1000	4-pin M12 Male to 4-pin M12 Female IP-67 Ethernet Cable, 10m	10 m
M12C-4M4F-3000	4-pin M12 Male to 4-pin M12 Female IP-67 Ethernet Cable, 30m	30 m
M12C-4MRJ-300	4-pin M12 Male to RJ45 plug Ethernet Cable, 3m	3 m
M12C-5M5F-1000	5-pin M12 Male to 5-pin M12 Female IP-67 Power Cable, 10m	10 m
M12C-5M5F-3000	5-pin M12 Male to 5-pin M12 Female IP-67 Power Cable, 30m	30 m

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Specifications

	Model name				
Characteristics	SFP100-MM/-I	SFP100-SS30/-I	SFP100-SS60/-I	SFP100-SS100/-I	* SFP100-SS120/-I
Fiber mode	multi-mode	single-mode	single-mode	single-mode	single-mode
Typical Distance	2 Km	30 Km	60 Km	100 Km	120 Km
Operating Temperature	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)
Wavelength	1310 nm	1310 nm	1310 nm	1550 nm	1550 nm
Optical Output Power 9/125 μm fiber (Max. TX)	-	-8 dBm	0 dBm	0 dBm	5 dBm
Optical Output Power 9/125 μm fiber (Min. TX)	-	-15 dBm	-5 dBm	-5 dBm	0 dBm
Optical Output Power 62.5/125 μm fiber (Max. TX)	-14 dBm	-	-	-	-
Optical Output Power 62.5/125 μm fiber (Min. TX)	-20 dBm	-	-	-	-
Optical Output Power 50/125 μm fiber (Max. TX)	-14 dBm	-	-	-	-
Optical Output Power 50/125 μm fiber (Min. TX)	-23.5 dBm	-	-	-	-
Optical Input Power-minimum (Sensitivity)	-31 dBm	-34 dBm	-35 dBm	-35 dBm	-35 dBm
Optical Input Power-maximum (Saturation)	-8 dBm	0 dBm	0 dBm	0 dBm	0 dBm
Link Budget	7.5 dB	19 dB	30 dB	30 dB	35 dB

* If two SFP transceivers are connected to each other in a short distance and the received optical power is greater than the listed specification of the received SFP transceiver, please add an optical attenuator to avoid any possible damages.

Ordering Information

Model Name	Description	Operating Temperature
SFP100-MM	100Mbps SFP optical transceiver, multi-mode / 2Km, 1310nm	0 ~ 70°C
SFP100-MM-I	100Mbps SFP optical transceiver, multi-mode / 2Km, 1310nm, industrial grade	-40 ~ 85°C
SFP100-SS30	100Mbps SFP optical transceiver, single-mode / 30Km, 1310nm	0 ~ 70°C
SFP100-SS30-I	100Mbps SFP optical transceiver, single-mode / 30Km, 1310nm, industrial grade	-40 ~ 85°C
SFP100-SS60	100Mbps SFP optical transceiver, single-mode / 60Km, 1310nm	0 ~ 70°C
SFP100-SS60-I	100Mbps SFP optical transceiver, single-mode / 60Km, 1310nm, industrial grade	-40 ~ 85°C
SFP100-SS100	100Mbps SFP optical transceiver, single-mode / 100Km, 1550nm	0 ~ 70°C
SFP100-SS100-I	100Mbps SFP optical transceiver, single-mode / 100Km, 1550nm, industrial grade	-40 ~ 85°C
SFP100-SS120	100Mbps SFP optical transceiver, single-mode / 120Km, 1550nm	0 ~ 70°C
SFP100-SS120-I	100Mbps SFP optical transceiver, single-mode / 120Km, 1550nm, industrial grade	-40 ~ 85°C

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Specifications

	Model Name					
Characteristics	SFP100B3-SS20/-I	SFP100B5-SS20/-I	SFP100B3-SS40/-I	SFP100B5-SS40/-I	SFP100B3-SS60/-I	SFP100B5-SS60/-I
Fiber mode	single-mode	single-mode	single-mode	single-mode	single-mode	single-mode
Typical Distance	20 Km	20 Km	40 Km	40 Km	60 Km	60 Km
Operating Temperature	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)
Wavelength	TX : 1310 nm RX : 1550 nm	TX : 1550 nm RX : 1310 nm	TX : 1310 nm RX : 1550 nm	TX : 1550 nm RX : 1310 nm	TX : 1310 nm RX : 1550 nm	TX : 1550 nm RX : 1310 nm
Optical Output Power 9/125 μm fiber (Max. TX)	-8 dBm	-8 dBm	0 dBm	0 dBm	0 dBm	0 dBm
Optical Output Power 9/125 μm fiber (Min. TX)	-14 dBm	-14 dBm	-8 dBm	-8 dBm	-5 dBm	-5 dBm
Optical Input Power-minimum (Sensitivity)	-32 dBm	-32 dBm	-34 dBm	-34 dBm	-34 dBm	-34 dBm
Optical Input Power-maximum (Saturation)	0 dBm	0 dBm	0 dBm	0 dBm	0 dBm	0 dBm
Link Budget	18 dB		26 dB		29 dB	

Ordering Information

Model Name	Description	Operating Temperature
SFP100B3-SS20	100Mbps SFP optical transceiver, single-mode BIDI / 20Km, TX1310nm, RX1550nm	0 ~ 70°C
SFP100B3-SS20-I	100Mbps SFP optical transceiver, single-mode BIDI / 20Km, TX1310nm, RX1550nm, industrial grade	-40 ~ 85°C
SFP100B5-SS20	100Mbps SFP optical transceiver, single-mode BIDI / 20Km, TX1550nm, RX1310nm	0 ~ 70°C
SFP100B5-SS20-I	100Mbps SFP optical transceiver, single-mode BIDI / 20Km, TX1550nm, RX1310nm, industrial grade	-40 ~ 85°C
SFP100B3-SS40	100Mbps SFP optical transceiver, single-mode BIDI / 40Km, TX1310nm, RX1550nm	0 ~ 70°C
SFP100B3-SS40-I	100Mbps SFP optical transceiver, single-mode BIDI / 40Km, TX1310nm, RX1550nm, industrial grade	-40 ~ 85°C
SFP100B5-SS40	100Mbps SFP optical transceiver, single-mode BIDI / 40Km, TX1550nm, RX1310nm	0 ~ 70°C
SFP100B5-SS40-I	100Mbps SFP optical transceiver, single-mode BIDI / 40Km, TX1550nm, RX1310nm, industrial grade	-40 ~ 85°C
SFP100B3-SS60	100Mbps SFP optical transceiver, single-mode BIDI / 60Km, TX1310nm, RX1550nm	0 ~ 70°C
SFP100B3-SS60-I	100Mbps SFP optical transceiver, single-mode BIDI / 60Km, TX1310nm, RX1550nm, industrial grade	-40 ~ 85°C
SFP100B5-SS60	100Mbps SFP optical transceiver, single-mode BIDI / 60Km, TX1550nm, RX1310nm	0 ~ 70°C
SFP100B5-SS60-I	100Mbps SFP optical transceiver, single-mode BIDI / 60Km, TX1550nm, RX1310nm, industrial grade	-40 ~ 85°C

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Specifications

	Model Name								
Characteristics	SFP1G-SX-I	SFP1G-MLX-I	SFP1G-LX10-I	*SFP1G-LX20-I	*SFP1G-LHX30-I	*SFP1G-LHX40-I	*SFP1G-XD50-I	*SFP1G-ZX70-I	*SFP1G-ZX80-I
Fiber mode	multi-mode	multi-mode	single-mode	single-mode	single-mode	single-mode	single-mode	single-mode	single-mode
Typical Distance	550 m	62.5/125 : 2Km 50/125 : 1Km	10 Km	20 Km	30 Km	40 Km	50 Km	70 Km	80 Km
Operating Temperature	0~70°C -20~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)
Wavelength	850 nm	1310 nm	1310 nm	1310 nm	1310 nm	1310 nm	1550 nm	1550 nm	1550 nm
Optical Output Power 9/125 μm fiber (Max. TX)	-	-	-3 dBm	-2 dBm	1 dBm	1 dBm	1 dBm	5 dBm	5 dBm
Optical Output Power 9/125 μm fiber (Min. TX)	-	-	-9.5 dBm	-8 dBm	-4 dBm	-4 dBm	-4 dBm	0 dBm	0 dBm
Optical Output Power 62.5/125 μm fiber (Max. TX)	-4 dBm	-1 dBm	-	-	-	-	-	-	-
Optical Output Power 62.5/125 μm fiber (Min. TX)	-9.5 dBm	-9 dBm	-	-	-	-	-	-	-
Optical Output Power 50/125 μm fiber (Max. TX)	-4 dBm	-1 dBm	-	-	-	-	-	-	-
Optical Output Power 50/125 μm fiber (Min. TX)	-9.5 dBm	-9 dBm	-	-	-	-	-	-	-
Optical Input Power-minimum (Sensitivity)	-18 dBm	-19 dBm	-20 dBm	-23 dBm	-24 dBm	-24 dBm	-24 dBm	-24 dBm	-24 dBm
Optical Input Power-maximum (Saturation)	0 dBm	-1 dBm	-3 dBm	-3 dBm	-3 dBm	-3 dBm	-3 dBm	-3 dBm	-3 dBm
Link Budget	8.5 dB	10 dB	10.5 dB	15 dB	20 dB	20 dB	20 dB	24 dB	24 dB

* If two SFP transceivers are connected to each other in a short distance and the received optical power is greater than the listed specification of the received SFP transceiver, please add an optical attenuator to avoid any possible damages.

Ordering Information

Model Name	Description	Operating Temperature
SFP1G-SX	1Gbps SFP optical transceiver, multi-mode / 550m, 850nm	0 ~ 70°C
SFP1G-SX-I	1Gbps SFP optical transceiver, multi-mode / 550m, 850nm, industrial grade	-20 ~ 85°C
SFP1G-MLX	1Gbps SFP optical transceiver, multi-mode / 2Km, 1310nm	0 ~ 70°C
SFP1G-MLX-I	1Gbps SFP optical transceiver, multi-mode / 2Km, 1310nm, industrial grade	-40 ~ 85°C
SFP1G-LX10	1Gbps SFP optical transceiver, single-mode / 10Km, 1310nm	0 ~ 70°C
SFP1G-LX10-I	1Gbps SFP optical transceiver, single-mode / 10Km, 1310nm, industrial grade	-40 ~ 85°C
SFP1G-LX20	1Gbps SFP optical transceiver, single-mode / 20Km, 1310nm	0 ~ 70°C
SFP1G-LX20-I	1Gbps SFP optical transceiver, single-mode / 20Km, 1310nm, industrial grade	-40 ~ 85°C
SFP1G-LHX30	1Gbps SFP optical transceiver, single-mode / 30Km, 1310nm	0 ~ 70°C
SFP1G-LHX30-I	1Gbps SFP optical transceiver, single-mode / 30Km, 1310nm, industrial grade	-40 ~ 85°C
SFP1G-LHX40	1Gbps SFP optical transceiver, single-mode / 40Km, 1310nm	0 ~ 70°C
SFP1G-LHX40-I	1Gbps SFP optical transceiver, single-mode / 40Km, 1310nm, industrial grade	-40 ~ 85°C
SFP1G-XD50	1Gbps SFP optical transceiver, single-mode / 50Km, 1550nm	0 ~ 70°C
SFP1G-XD50-I	1Gbps SFP optical transceiver, single-mode / 50Km, 1550nm, industrial grade	-40 ~ 85°C
SFP1G-ZX70	1Gbps SFP optical transceiver, single-mode / 70Km, 1550nm	0 ~ 70°C
SFP1G-ZX70-I	1Gbps SFP optical transceiver, single-mode / 70Km, 1550nm, industrial grade	-40 ~ 85°C
SFP1G-ZX80	1Gbps SFP optical transceiver, single-mode / 80Km, 1550nm	0 ~ 70°C
SFP1G-ZX80-I	1Gbps SFP optical transceiver, single-mode / 80Km, 1550nm, industrial grade	-40 ~ 85°C

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Specifications

	Model Name									
Characteristics	SFP1GB3-LX10/-I	SFP1GB5-LX10/-I	SFP1GB3-LX20/-I	SFP1GB5-LX20/-I	SFP1GB3-LX40/-I	SFP1GB5-LX40/-I	SFP1GB3-LX60/-I	SFP1GB5-LX60/-I	SFP1GB51-LX80/-I	SFP1GB59-LX80/-I
Fiber mode	single-mode	single-mode	single-mode	single-mode	single-mode	single-mode	single-mode	single-mode	single-mode	single-mode
Typical Distance	10 Km	10 Km	20 Km	20 Km	40 Km	40 Km	60 Km	60 Km	60 Km	60 Km
Operating Temperature	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)	0~70°C -40~85°C (-I model)
Wavelength	TX : 1310 nm RX : 1550 nm	TX : 1550 nm RX : 1310 nm	TX : 1310 nm RX : 1550 nm	TX : 1550 nm RX : 1310 nm	TX : 1310 nm RX : 1550 nm	TX : 1550 nm RX : 1310 nm	TX : 1310 nm RX : 1550 nm	TX : 1550 nm RX : 1310 nm	TX : 1510 nm RX : 1590 nm	TX : 1590 nm RX : 1510 nm
Optical Output Power 9/125 μm fiber (Max. TX)	-3 dBm	-3 dBm	-2 dBm	-2 dBm	2 dBm	2 dBm	5 dBm	4 dBm	3 dBm	3 dBm
Optical Output Power 9/125 μm fiber (Min. TX)	-9 dBm	-9 dBm	-8 dBm	-8 dBm	-3 dBm	-3 dBm	0 dBm	-2 dBm	-2 dBm	-2 dBm
Optical Input Power-minimum (Sensitivity)	-21 dBm	-21 dBm	-23 dBm	-23 dBm	-23 dBm	-23 dBm	-24 dBm	-25 dBm	-26 dBm	-26 dBm
Optical Input Power-maximum (Saturation)	-1 dBm	-1 dBm	-1 dBm	-1 dBm	-1 dBm	-1 dBm	-1 dBm	-1 dBm	-3 dBm	-3 dBm
Link Budget	12 dB		15 dB		20 dB		22 dB		24 dB	

* If two SFP transceivers are connected to each other in a short distance and the received optical power is greater than the listed specification of the received SFP transceiver, please add an optical attenuator to avoid any possible damages.

Ordering Information

Model Name	Description	Operating Temperature
SFP1GB3-LX10	1Gbps SFP optical transceiver, single-mode BIDI / 10Km, TX1310nm, RX1550nm	0 ~ 70°C
SFP1GB3-LX10-I	1Gbps SFP optical transceiver, single-mode BIDI / 10Km, TX1310nm, RX1550nm, industrial grade	-40 ~ 85°C
SFP1GB5-LX10	1Gbps SFP optical transceiver, single-mode BIDI / 10Km, TX1550nm, RX1310nm	0 ~ 70°C
SFP1GB5-LX10-I	1Gbps SFP optical transceiver, single-mode BIDI / 10Km, TX1550nm, RX1310nm, industrial grade	-40 ~ 85°C
SFP1GB3-LX20	1Gbps SFP optical transceiver, single-mode BIDI / 20Km, TX1310nm, RX1550nm	0 ~ 70°C
SFP1GB3-LX20-I	1Gbps SFP optical transceiver, single-mode BIDI / 20Km, TX1310nm, RX1550nm, industrial grade	-40 ~ 85°C
SFP1GB5-LX20	1Gbps SFP optical transceiver, single-mode BIDI / 20Km, TX1550nm, RX1310nm	0 ~ 70°C
SFP1GB5-LX20-I	1Gbps SFP optical transceiver, single-mode BIDI / 20Km, TX1550nm, RX1310nm, industrial grade	-40 ~ 85°C
SFP1GB3-LX40	1Gbps SFP optical transceiver, single-mode BIDI / 40Km, TX1310nm, RX1550nm	0 ~ 70°C
SFP1GB3-LX40-I	1Gbps SFP optical transceiver, single-mode BIDI / 40Km, TX1310nm, RX1550nm, industrial grade	-40 ~ 85°C
SFP1GB5-LX40	1Gbps SFP optical transceiver, single-mode BIDI / 40Km, TX1550nm, RX1310nm	0 ~ 70°C
SFP1GB5-LX40-I	1Gbps SFP optical transceiver, single-mode BIDI / 40Km, TX1550nm, RX1310nm, industrial grade	-40 ~ 85°C
SFP1GB3-LX60	1Gbps SFP optical transceiver, single-mode BIDI / 60Km, TX1310nm, RX1550nm	0 ~ 70°C
SFP1GB3-LX60-I	1Gbps SFP optical transceiver, single-mode BIDI / 60Km, TX1310nm, RX1550nm, industrial grade	-40 ~ 85°C
SFP1GB5-LX60	1Gbps SFP optical transceiver, single-mode BIDI / 60Km, TX1550nm, RX1310nm	0 ~ 70°C
SFP1GB5-LX60-I	1Gbps SFP optical transceiver, single-mode BIDI / 60Km, TX1550nm, RX1310nm, industrial grade	-40 ~ 85°C
SFP1GB51-LX80	1Gbps SFP optical transceiver, single-mode BIDI / 80Km, TX1510nm, RX1590nm	0 ~ 70°C
SFP1GB51-LX80-I	1Gbps SFP optical transceiver, single-mode BIDI / 80Km, TX1510nm, RX1590nm, industrial grade	-40 ~ 85°C
SFP1GB59-LX80	1Gbps SFP optical transceiver, single-mode BIDI / 80Km, TX1590nm, RX1510nm	0 ~ 70°C
SFP1GB59-LX80-I	1Gbps SFP optical transceiver, single-mode BIDI / 80Km, TX1590nm, RX1510nm, industrial grade	-40 ~ 85°C

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