Industrial 8-port 10/100/1000T 802.3at PoE + 2-port 1G/2.5G SFP Managed Switch

Environmentally Hardened Design

PLANET IGS-10020PT Industrial 8-port Gigabit 802.3at PoE+ Switch is equipped with a rugged IP30 metal case for stable operation in heavy industrial environments. Thus, the IGS-10020PT provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curbside traffic control cabinets.

Being able to operate under wide temperature range from -40 to 75 degrees C, the IGS-10020PT can be placed in almost any difficult environment. The IGS-10020PT also allows either DIN rail or wall mounting for efficient use of cabinet space.

Redundant Ring, Fast Recovery for Critical Network Applications

The IGS-10020PT supports redundant ring technology and features strong, rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates advanced **ITU-T G.8032 ERPS (Ethernet Ring Protection Switching)** technology, Spanning Tree Protocol (802.1s MSTP), and **redundant power** input system into customer's industrial automation network to enhance system reliability and uptime in harsh factory environments.

The IGS-10020PT also protects customer's industrial network connectivity with switching recovery capability that is used for implementing fault tolerant ring and mesh network architectures. If the Industrial network was interrupted accidentally, the fault recovery times could be less than 50ms to quickly bring the network back to normal operation.

Physical Port

- **8 10/100/1000BASE-T** Gigabit Ethernet RJ45 ports with **IEEE 802.3at PoE+** Injector
- **2 100/1000/2500BASE-X mini-GBIC/SFP slots for SFP** type auto detection
- One RJ45 console interface for basic management and setup

Power over Ethernet

- Complies with IEEE 802.3at Power over Ethernet Plus/end-span PSE
- Up to 8 IEEE 802.3af/802.3at devices powered
- Supports PoE power up to 36 watts for each PoE port
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100m in standard mode and 200m in extend mode
- PoE management features
  - PoE admin-mode control
  - PoE management mode selection
  - Per port PoE function enable/disable
  - PoE port power feeding priority
  - Per PoE port power limit
  - PoE Port Status monitoring
  - PD classification detection
  - Sequence port PoE
- Intelligent PoE features
  - PoE Legacy mode enable/disable
  - Temperature threshold control
  - PoE usage threshold control
  - PoE schedule
  - PD alive check
  - LLDP PoE Neighbors

Industrial Protocol

- Modbus TCP for real-time monitoring in a SCADA system
- IEEE 1588v2 PTP (Precision Time Protocol)

Industrial Case and Installation

- IP30 aluminum case
- DIN rail and wall-mount designs
- DC 48-54V, redundant power with reverse polarity protection

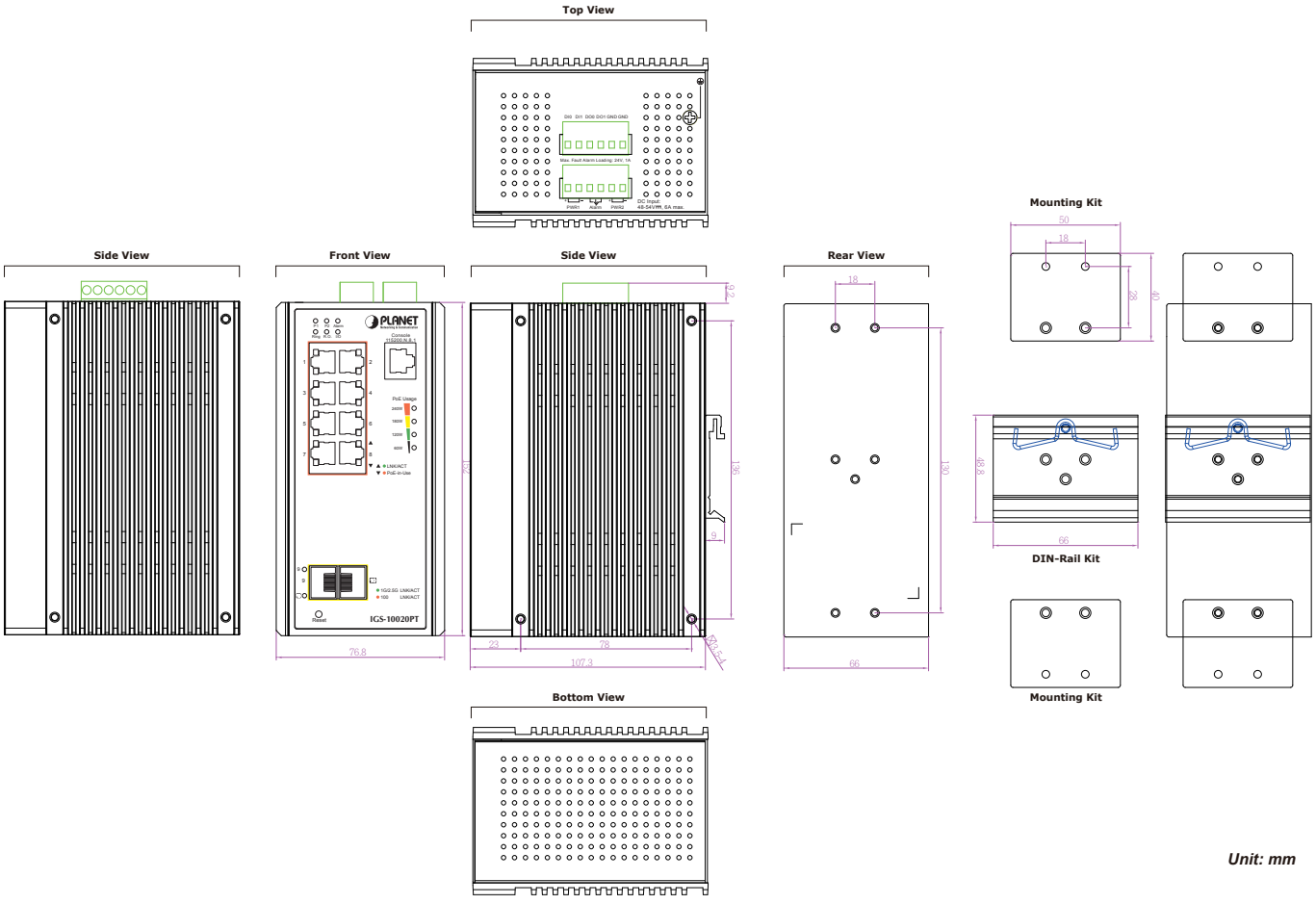
Specifications

Product	IGS-10020PT
Hardware Specifications	
Version	4
Copper Ports	8 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports
SFP/mini-GBIC Slots	2 100/1000/2500BASE-X mini-GBIC SFP ports (Port 9 and Port 10)
Console	1 x RJ45-to-RS232 serial port (115200, 8, N, 1)
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
Enclosure	IP30 aluminum case
Installation	DIN-rail kit and wall-mount kit
Connector	Removable 6-pin terminal block for power input Pin 1/2 for Power 1, Pin 3/4 for fault alarm, Pin 5/6 for Power 2 Removable 6-pin terminal block for DI/DO interface Pin 1/2 for DI 1 & 2, Pin 3/4 for DO 1 & 2, Pin 5/6 for GND
Alarm	One relay output for power failure. Alarm Relay current carry ability: 1A @ DC 24V
DI/DO	2 Digital Input (DI): Level 0: -24V~2.1V (±0.1V) Level 1: 2.1V~24V (±0.1V) Input Load to 24V DC, 10mA max. 2 Digital Output (DO): Open collector to 24V DC, 100mA max.
Dimensions (W x D x H)	76.8 x 107x 152 mm
Weight	1119g
Power Requirements	48-54V
Power Consumption	257 watts/876BTU (Full loading with PoE function)
ESD Protection	6KV DC
EFT Protection	6KV DC
LED Indicator	**System:** Power 1 (Green) Power 2 (Green) Fault Alarm (Red) Ring (Green) R.O. (Ring Owner) (Green) DIDO (Red) **Per 10/100/1000T RJ45 Ports:** PoE-in-Use (Amber) LNK/ACT (Green) **Per 100/1000/2500BASE-X SFP Interface:** 1G/2.5G (Green) 100 (Amber) **4 x LED for PoE Usage:** 60W, 120W, 180W and 240W (Amber)
Switching Specifications	
Switch Architecture	Store-and-Forward
Switch Fabric	26Gbps/non-blocking
Throughput (packet per second)	19.34Mpps@ 64Bytes packet
Address Table	8K entries, automatic source address learning and aging
Shared Data Buffer	4Mbits
Flow Control	IEEE 802.3x pause frame for full duplex Back pressure for half duplex
Jumbo Frame	9Kbytes
Power Over Ethernet	
PoE Standard	IEEE 802.3at Power over Ethernet Plus/PSE
PoE Power Supply Type	End-span
PoE Power Output	Per port 54V DC, 350mA; max. 15.4 watts (IEEE 802.3af) Per port 54V DC, 590mA; max. 36 watts (IEEE 802.3at)
Power Pin Assignment	1/2(+), 3/6(-)
PoE Power Budget	240W maximum (depending on power input)
Max. Number of Class 2 PD @ 7 watts	8
Max. Number of Class 3 PDs@ 15.4 watts	8
Max. Number of Class 4 PDs@ 30.8 watts	8
PoE Extend Mode	Remote power feeding up to 100m in standard mode and 200m in extend mode

Layer 2 Function	
Port Configuration	Port disable/enable Auto-negotiation 10/100/1000Mbps full and half duplex mode selection Flow control disable/enable
Port Status	Display each port's speed duplex mode, link status, flow control status, auto negotiation status, trunk status
Port Mirroring	TX/RX/both 1 to 1 monitor
VLAN	802.1Q tagged based VLAN, up to 255 VLAN groups Q-in-Q tunneling Private VLAN Edge (PVE) MAC-based VLAN Protocol-based VLAN Voice VLAN GVRP MVR (Multicast VLAN Registration) Up to 4K VLAN groups, out of 4094 VLAN IDs
Link Aggregation	IEEE 802.3ad LACP/static trunk Supports 5 trunk groups with 10 ports per trunk group
QoS	Traffic classification based, strict priority and WRR 8-level priority for switching - Port number - 802.1p priority - 802.1Q VLAN tag - DSCP/TOS field in IP packet
IGMP Snooping	IGMP (v1/v2/V3) snooping, up to 255 multicast groups IGMP querier mode support
MLD Snooping	MLD (v1/v2) snooping, up to 255 multicast groups MLD querier mode support
Access Control List	IP-based ACL/MAC-based ACL Up to 123 entries
Bandwidth Control	Per port bandwidth control Ingress: 500Kb~1000Mbps Egress: 500Kb~1000Mbps
Storm Control	Unicast/Multicast/Broadcast
Layer 3 Function	
IP Interfaces	Max. 8 VLAN interfaces
Routing Table	Max. 32 routing entries
Routing Protocols	IPv4 software static routing IPv6 software static routing
Management	
Basic Management Interfaces	Console; Telnet; Web browser; SNMP v1, v2c
Secure Management Interfaces	SSHv2,TLSv1.2, SNMP v3
ONVIF	ONVIF device discovery ONVIF device monitoring Floor Map
SNMP MIBs	RFC-1213 MIB-II IF-MIB RFC-1493 Bridge MIB RFC-1643 Ethernet MIB RFC-2863 Interface MIB RFC-2665 Ether-Like MIB RFC-2819 RMON MIB (Group 1, 2, 3 and 9) RFC-2737 Entity MIB RFC-2618 RADIUS Client MIB RFC-2933 IGMP-STD-MIB RFC 3411 SNMP-Frameworks-MIB IEEE 802.1X PAE LLDP MAU-MIB Power over Ethernet MIB
Standards Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE

Stability Testing	IEC60068-2-32 (free fall) IEC60068-2-27 (shock) IEC60068-2-6 (vibration)	
Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX/100BASE-FX IEEE 802.3ab Gigabit 1000T IEEE 802.3z Gigabit SX/LX IEEE 802.3bz 2.5GBASE-X IEEE 802.3x flow control and back pressure IEEE 802.3ad port trunk with LACP IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol IEEE 802.1p Class of Service IEEE 802.1Q VLAN tagging IEEE 802.1x Port Authentication Network Control IEEE 802.1ab LLDP IEEE 802.3af Power over Ethernet	IEEE 802.3at Power over Ethernet Plus IEEE 802.3ah OAM IEEE 802.1ag Connectivity Fault Management(CFM) IEEE 1588 PTPv2 RFC 768 UDP RFC 783 TFTP RFC 791 IP RFC 792 ICMP RFC 793 TCP RFC 2068 HTTP RFC 1112 IGMP v1 RFC 2236 IGMP v2 ITU-T G.8032 ERPS Ring ITU-T Y.1731 Performance Monitoring
Environment		
Operating Temperature	-40 ~ 75 degrees C	
Storage Temperature	-40 ~ 85 degrees C	
Humidity	5 ~ 95% (non-condensing)	

Diagram



Unit: mm

Ordering Information

IGS-10020PT	Industrial 8-port 10/100/1000T 802.3at PoE + 2-port 1G/2.5G SFP Managed Switch

Available 100Mbps Modules

Fast Ethernet Transceiver (100BASE-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MFB-TFX	100	LC	Multi-Mode	2km	1310nm	-40 ~ 85 degrees C
MFB-TF20	100	LC	Single Mode	20km	1310nm	-40 ~ 85 degrees C

Fast Ethernet Transceiver (100BASE-BX, Single Fiber Bi-directional SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MFB-TFA20	100	WDM (LC)	Single Mode	20km	1310nm	1550nm	-40~85 degrees C
MFB-TFB20	100	WDM (LC)	Single Mode	20km	1550nm	1310nm	-40~85 degrees C
MFB-TFA40	100	WDM (LC)	Single Mode	40km	1310nm	1550nm	-40~85 degrees C
MFB-TFB40	100	WDM (LC)	Single Mode	40km	1550nm	1310nm	-40~85 degrees C
MFB-TSA	100	WDM (LC)	Multi- Mode	2km	1310nm	1550nm	-40~85 degrees C
MFB-TSB	100	WDM (LC)	Multi- Mode	2km	1550nm	1310nm	-40~85 degrees C

Available 1000Mbps Modules

Gigabit Ethernet Transceiver (1000BASE-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Wavelength (nm)
MGB-TGT	1000	Copper	--	100m	--	-40 ~ 85 degrees C
MGB-TSX	1000	LC	Multi Mode	550m	850nm	-40 ~ 85 degrees C
MGB-TSX2	1000	LC	Multi Mode	2km	1310nm	-40 ~ 85 degrees C
MGB-TLX(V2)	1000	LC	Single Mode	20km	1310nm	-40 ~ 85 degrees C
MGB-TL30	1000	LC	Single Mode	30km	1310nm	-40 ~ 85 degrees C
MGB-TL40	1000	LC	Single Mode	40km	1310nm	-40 ~ 85 degrees C
MGB-TL70	1000	LC	Single Mode	70km	1550nm	-40 ~ 85 degrees C
MGB-TL80	1000	LC	Single Mode	80km	1550nm	-40 ~ 85 degrees C

Gigabit Ethernet Transceiver (1000BASE-BX, Single Fiber Bi-directional SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MGB-TSA	1000	WDM(LC)	Single Mode	2km	1310nm	1550nm	-40 ~ 85 degrees C
MGB-TSB	1000	WDM(LC)	Single Mode	2km	1550nm	1490nm	-40 ~ 85 degrees C
MGB-TLA10(V2)	1000	WDM(LC)	Single Mode	10km	1310nm	1550nm	-40 ~ 85 degrees C
MGB-TLB10(V2)	1000	WDM(LC)	Single Mode	10km	1550nm	1310nm	-40 ~ 85 degrees C
MGB-TLA20	1000	WDM(LC)	Single Mode	20km	1310nm	1550nm	-40 ~ 85 degrees C
MGB-TLB20	1000	WDM(LC)	Single Mode	20km	1550nm	1310nm	-40 ~ 85 degrees C
MGB-TLA40	1000	WDM(LC)	Single Mode	40km	1310nm	1550nm	-40 ~ 85 degrees C
MGB-TLB40	1000	WDM(LC)	Single Mode	40km	1550nm	1310nm	-40 ~ 85 degrees C
MGB-TLA60	1000	WDM(LC)	Single Mode	60km	1310nm	1550nm	-40 ~ 85 degrees C
MGB-TLB60	1000	WDM(LC)	Single Mode	60km	1550nm	1310nm	-40 ~ 85 degrees C
MGB-TLA80	1000	WDM(LC)	Single Mode	80km	1490nm	1550nm	-40 ~ 85 degrees C
MGB-TLB80	1000	WDM(LC)	Single Mode	80km	1550nm	1490nm	-40 ~ 85 degrees C
MGB-TLA120	1000	WDM(LC)	Single Mode	120km	1490nm	1550nm	-40 ~ 85 degrees C
MGB-TLB120	1000	WDM(LC)	Single Mode	120km	1550nm	1490nm	-40 ~ 85 degrees C

Available 2500Mbps Modules

Gigabit Ethernet Transceiver (2500BASE-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MGB-2GTSR	2500	LC	Multi Mode	300m	850nm	-40 ~ 85 degrees C
MGB-2GTLR2	2500	LC	Single Mode	2km	1310nm	-40 ~ 85 degrees C
MGB-2GTLR20	2500	LC	Single Mode	20km	1310nm	-40 ~ 85 degrees C

Gigabit Ethernet Transceiver (1000BASE-BX, Single Fiber Bi-directional SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MGB-2GTLA20	2500	WDM(LC)	Single Mode	20km	1310nm	1550nm	-40 ~ 85 degrees C
MGB-2GTLB20	2500	WDM(LC)	Single Mode	20km	1550nm	1310nm	-40 ~ 85 degrees C

Related DIN-rail Power Supplies

PWR-240-48	48V, 240W DIN-rail Power Supply (NDR-480-48, adjustable 48-56V DC Output)
PWR-480-48	48V, 480W DIN-rail Power Supply (NDR-480-48, adjustable 48-56V DC Output)

Related PoE+ Indoor Wireless Aps Products

WDAP-C1800AX	Dual Band 802.11ax 1800Mbps Ceiling-mount Wireless Access Point w/802.3at PoE+ and 2 10/100/1000T LAN Ports
WDAP-W1800AXU	Dual Band 802.11ax 1800Mbps In-wall Wireless Access Point w/802.3at PoE+ and Type C USB
WDAP-W1200E	Dual Band 802.11ac 1200Mbps Wave 2 In-wall Wireless Access Point (EU Type, 802.3at PoE, 3 x 10/100/1000T LAN Ports, 1 x RJ11 Port)
WDAP-C7210E	1200Mbps 802.11ac Wave 2 Dual Band Ceiling-mount Wireless Access Point w/802.3at PoE+ and 2 10/100/1000T LAN Ports

Related Outdoor Access Point/Bridge Products

WDAP-850AC	Dual Band 802.11ac 1200Mbps Wave 2 Outdoor Wireless AP
WDAP-1800AX	Dual Band 802.11ax 1800Mbps Outdoor Wireless AP
WBS-900AC-KIT	5GHz 802.11ac 900Mbps TDMA Outdoor Long Range Wireless CPE Kit
WBS-512AC	5GHz 802.11ac 900Mbps Outdoor Wireless CPE

Related IP Surveillance PoE Products

ICA-3280	H.265 1080p Smart IR Bullet IP Camera
ICA-4280	H.265 1080p Smart IR Dome IP Camera
ICA-3480F	H.265+ 4MP Full Color Bullet IP Camera
ICA-4480F	H.265+ 4MP Full Color Dome IP Camera
ICA-M3580P	H.265 5 Mega-pixel Smart IR Bullet IP Camera with Remote Focus and Zoom
ICA-M4580P	H.265 5 Mega-pixel Smart IR Dome IP Camera with Remote Focus and Zoom
ICA-HM620	2 Mega-pixel PoE Plus Speed Dome Internet Camera
ICA-E6260	2 Mega-pixel PoE Plus Speed Dome IP Camera with Extended Suppor

Related PoE+ Indoor VoIP Products

ICF-1900	High Definition Touch Color Screen Smart Media Android SIP Conference Phone
VIP-1120PT	High Definition Color PoE IP Phone
VIP-1140PT	High Definition Color PoE IP Phone
VIP-1260PT	High Definition Color PoE Gigabit IP Phone

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