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OI3120P/185W

20-Port Gigabit Industrial L2 Managed Switch with 8 PoE+ Ports and 12 SFP Ports

12x100/1000Base-X SFP, 8x1000Base-T PoE+ (30 W), 185W PoE Power Budget, 250m PoE distance, -40 to +75 °C Operating Temperature, IP40-rated

The ORIGO OI3120P/185W industrial-grade managed L2 switch with 8x1000Base-T PoE+ ports and 12xSFP[1] ports.

The ORIGO OI3120P/185W switch is designed for building secure and fault-tolerant data transmission networks and for supplying power to high-consumption PoE equipment at sites with strict environmental requirements.

The ports 1 to 8 support IEEE 802.3af/at PoE standards, providing up to 30 watts of power per port with a total PoE budget of 185 watts. Built-in ESD protection meets industry surge standards, guarding the switch and connected devices from damage and network instability caused by ESD and lightning-induced surges.

The switch is adapted for using in the CCTV systems. The Extend PoE mode allows to overcome a standard Ethernet 100 m limit and to connect IP cameras at the distance of up to 250 m at the rate of 10 Mbps. This simplifies the installation and reduces the cost when building CCTV networks. The support of PD Alive и PoE schedule functions provides an automatic restart of hanging devices and the power optimization.

The ORIGO OI3120P/185W operates within a wide temperature range from –40 to +75 °C and supports connection of two independent DC power supplies with redundancy capability, such as the OI240WPSU or OI480WPSU. The rugged metal housing with IP40 protection and passive, fanless ventilation system ensure stable operation in stringent industrial environments.

The switch's features include the support for static routing, virtual local area networks (VLANs), quality of service (QoS), multicast management, security functions, and user access control.

To enhance network performance and fault tolerance, the switch supports link aggregation (LACP), connection redundancy through STP/RSTP/MSTP protocols, and LoopBack Detection for preventing network loops. SCP and Fast Ring DIP switches allow to quickly activate broadcast storm control and ERPS function, ensuring minimal recovery time in case of a line failure within the ring.

[1] *To establish a 100 Mbps connection, the interface must be configured to 100Base-FX full-duplex mode.*

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Key Features

- 8 x 10/100/1000Base-T ports with IEEE 802.3af/at PoE support
- 12 x 100/1000Base-X SFP ports
- Total PoE power budget: 185 W
- Adapted for CCTV: up to 250 m PoE distance, PD Alive and PoE schedule
- Dual redundant 48–57 V DC power inputs
- Alarm relay output (dry contact)
- DIP switches for quick activation of ERPS and storm control
- Surge protection up to 4 kV; ESD protection up to 8 kV
- Operating temperature range: -40 to +75 °C
- Rugged metal housing with IP40 protection; DIN-rail mountable
- Advanced L2 features, including static routing support
- Management via web interface, Telnet, SSH, console, and SNMP

Specifications

Hardware

CPU and Memory	• CPU: RTL8382MI
	• RAM: 128 MB
	• Flash: 32 MB
Interfaces	• 8 x 10/100/1000Base-T PoE ports
	• 12 x 100/1000Base-X SFP ports[1]
	• RJ-45 console port
Standards and Functions	• IEEE 802.3 10Base-T
	• IEEE 802.3u 100Base-TX
	• IEEE 802.3ab 1000Base-T
	• IEEE 802.3u 100Base-FX
	• IEEE 802.3z 1000Base-X
	• IEEE 802.3af PoE
	• IEEE 802.3at PoE+
	• IEEE 802.3x Full Duplex Flow Control
	• IEEE 802.3az Energy-Efficient Ethernet
	• Auto MDI/MDIX for copper ports
LEDs	• Power
	- On: Power on state
	- Off: Power off state

[1] *To establish a 100 Mbps connection, the interface must be configured to 100Base-FX full-duplex mode.*

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	• Link/Act (Ports 1–20)
	  - Always bright: terminal device is connected
	  - Blinking: Data transmission in progress
	  - Off: No connection
	• PoE (Ports 1–8)
	  - On: PoE device is connected
	  - Off: No PoE device connected
	• SYS
	  - Blinking: System operating normally
	  - Off: System is booting or a fault has occurred

DIP Switches	• Fast Ring (ON) to switch on / off ERPS • SCP (ON) to switch on / off Broadcast Storm Control

Alarm Relay	• One relay output (dry contact) for power failure notification
	• Relay contact load capacity:
	  - 2A at 30V DC
	  - 0.5A at 125V DC

Power	• DC: terminal block for connection of up to two independent power supplies (48 to 57 V DC)
Ventilation System	• Fanless
Casing	• Metal • IP40-rated
Mounting	• Wall • DIN-rail

Capacity

Switching Capacity	• 40 Gbps
Packet Forwarding Rate	• 29.76 Mpps
Packet Buffer	• 512 KB
Transfer Mode	• Store-and-forward
MAC Address Table Size	• 8K entries
Routing Table Size	• 512 entries (IPv4/IPv6)
L3 Forwarding Table	• 512 entries (IPv4/IPv6)
Jumbo Frame	• 9 216 bytes

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PoE

PoE Standard	• IEEE 802.3af • IEEE 802.3at
PoE Ports	• Ports 1-8
Max. Power per Port	• 30 W
PoE Power Budget	• 185 W
PoE Mode	• Type B: 4/5(+), 7/8(-)[2]

PoE Transmission Distance	• Up to 100 m
	  - Data rate: up to 1000 Mbps
	• Up to 250 m[3]
	  - Data rate: up to 10 Mbps

Management and Monitoring	• PoE Scheduling: Allows scheduled enabling/disabling of PoE on specific ports • PD Alive: Continuously monitors PoE-powered devices (PDs) and automatically restarts unresponsive devices

Software Features

L2 Features	• Flow Control
	• Link Aggregation
	  - Static
	  - 802.3ad
	  - Up to 8 groups per device / up to 8 ports per group
	• Load Balance
	  - src-mac
	  - dst-mac
	  - src-ip
	  - dst-ip
	• Loopback Detection
	• ERPS
	• MRPP
	• ULPP
	• ULSM

[2] *PoE operation is possible only with 4-pair cable.*

[3] *Data and power transmission at the distance of up to 250 m is possible when the port speed is configured to 10 Mbps. The connected device must also maintain an operation at the rate of 10 Mbps.*

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	• Spanning Tree Protocol
	  - 802.1D STP
	  - 802.1w RSTP
	  - 802.1s MSTP (64 instances)
	  - Root Guard (Restriction)
	  - BPDU Guard (Restriction)
	• LLDP
	• LLDP-MED
	• Port mirroring
	  - One-to-One
	  - Many-to-One
	  - Flow-based
	  - CPU-based
	  - Ingress, egress, both
	  - RSPAN

VLAN	• 802.1Q, 4094 VLAN
	• Port-based VLAN
	• MAC-based VLAN
	• Protocol-based VLAN (802.1v)
	• Subnet-based VLAN
	• Private VLAN
	• VLAN Filtering
	• Voice VLAN
	• GVRP
	• GMRP
	• Double VLAN (Q-in-Q)
	  - Selective Q-in-Q
	  - Port-based Q-in-Q
	• VLAN Translation
	• Multicast VLAN

L2 Multicast	• IGMP Snooping
	  - IGMP v1/v2/v3
	  - Supports up to 512 groups
	  - IGMP Snooping Fast Leave
	  - IGMP Proxy
	• MLD Snooping
	  - MLD v1/v2
	  - Supports up to 512 groups

	• Multicast Source/Destination (DCSCM)
L3 Features	• Maximum number of IP interfaces: 16
	• 8K ARP entries
	• Static routing for IPv4/IPv6
	- 512 IPv4 routes
	- 512 IPv6 routes
	• Gratuitous ARP
QoS	• 802.1p
	• CoS based on:
	- DSCP
	- VLAN ID
	- IP Precedence
	- IP ACL/ MAC ACL/ IPv6 ACL
	- IPv6 Flow Labels
	• Queue handling
	- Strict Priority (SP)
	- Weighted Round Robin (WRR)
	- Weighted Deficit Round Robin (WDRR)
	• Port-based bandwidth control
	• Supports up to 8 egress queues per port
Security	• Port Security
	- Supports up to 8K MAC addresses per port
	• Port Isolation
	• Storm Control
	• Dynamic ARP Inspection
	• ARP Spoofing Protection
	• ARP Scanning Prevention
	• ARP Guard
	• DoS Attack Prevention
	• DHCP Snooping
	• DHCPv6 Snooping
	• IPv6 SAVI
	• Security RA
	• CPU Protection
AAA	• 802.1X Authentication:
	- Port-based
	- MAC-based
	• Guest VLAN

	• IPv6 RADIUS Server • RADIUS/TACACS+ Authentication

Access Control Lists (ACL)	• Up to 1.5K ACL entries
	• ACL based on:
	  - VLAN
	  - MAC address
	  - IPv4 address
	  - DSCP
	  - ToS
	  - TCP/UDP port number
	  - User-defined ACL
	• Time-based ACLs

OAM	• Cable diagnostics • ULDP (Unidirectional Link Detection Protocol) • Dying Gasp • 802.3ah Ethernet Link OAM • 802.1ag Connectivity Fault Management (CFM) • DDM (Digital Diagnostics Monitoring) • Watchdog
Management	• Web-based UI • CLI • Telnet • SSH • FTP • TFTP • System Log • SNMP v1/v2c/v3 • SNMP Traps • SNTP • NTP • Firmware Backup/Upgrade • Ping/Traceroute (IPv4/IPv6) • DHCP Server • DHCPv6 Server • BootP/DHCP Client • DHCP Relay • DHCPv6 Relay • DHCP Option 82, 43, 60, 61, 67

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- IPv4/IPv6 DNS Client

Physical Parameters

Dimensions (W x D x H)	• 145 x 109 x 62 mm
Weight	• 1.18 kg
Package Dimensions	• 23.4 x 19 x 8.6 cm
Gross Weight	• 1.44 kg

Operating Conditions

Power Input	• 48-57 V DC
Current Consumption	• 4.7 A (max.)
Maximum Power Consumption	• 16.54 W (PoE off) • 196.5 W (PoE on)
Standby Power Consumption	• 7.2 W
MTBF (hours)	• > 100 000
Surge Protection	• ±4 kV (common mode) • ±2 kV (differential mode)
Electrostatic Discharge (ESD) Protection	• Contact discharge: ± 6 kV • Air discharge: ± 8 kV
Temperature	• Operating: -40 to 75 °C • Storage: -40 to 80 °C
Humidity	• Operating: 5% to 95% (non-condensing) • Storage: 0% to 95% (non-condensing)

Package Contents

Package Contents	• OI3120P/185W Switch • RJ-45 Console Cable • Quick Installation Guide

Order info

OI3120P/185W	Industrial Managed L2 PoE Switch, 8x1000Base-T, 12x1000Base-X SFP, 250m PoE, -40 to +75°C