

Omada Pro L3 Managed Switch Datasheet

S6500-48G6XF

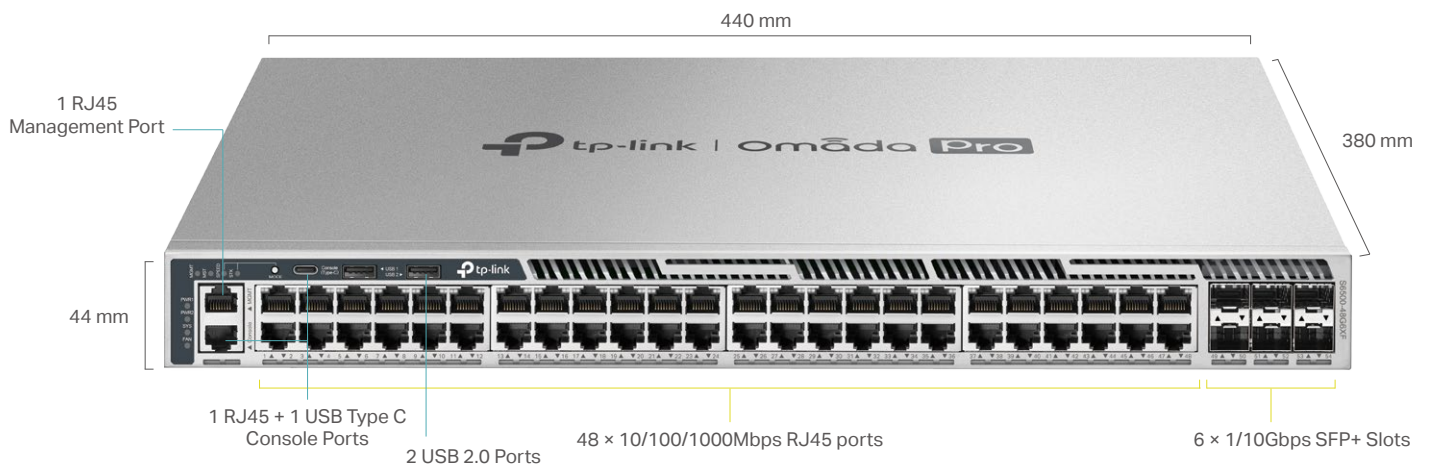
Omada Pro 48-Port Gigabit Stackable L3 Managed Switch with 6 10G Slots



Highlights

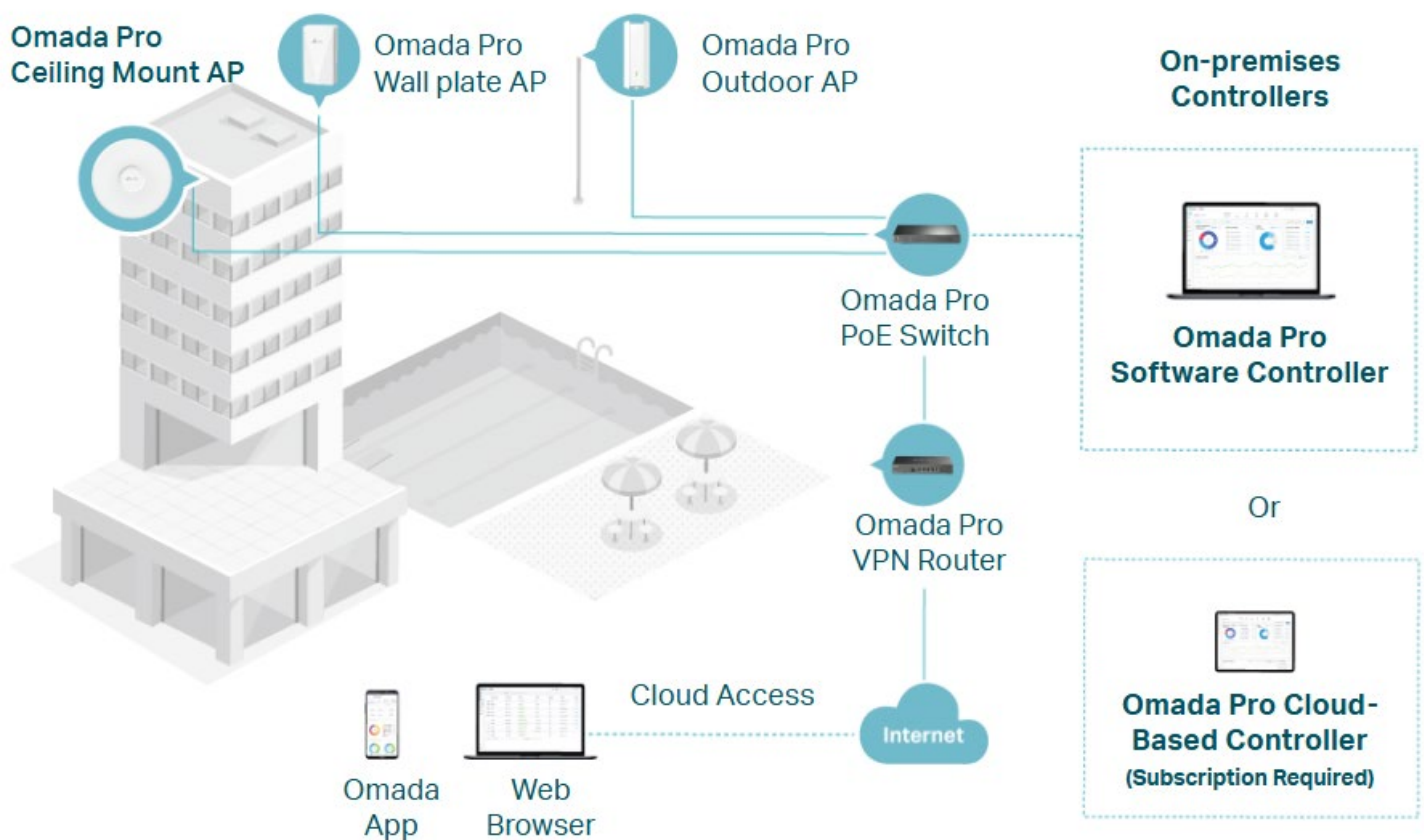
- 48× Gigabit RJ45 ports and 6× 10 Gbps SFP+ slots
- Physical stacking for built-in redundancy and performance
- L3 Features: OSPF, BGP, IS-IS, VRRP, PIM-SM/PIM-DM/PIM-SSM, ECMP, PBR
- Security Strategies: MACsec, Secure Boot, RADSEC, IMPB, SFTP, 802.1X
- Highly Available with two internal fixed power supplies, VRRP, ERPS, and BFD
- Easy O&M: NETCONF, Configuration Rollback, Hot Patching, and RSPAN
- Centralized cloud management via the web or the Omada app[†]

Product Pictures



Omada Pro Solution

Omada Pro is an intelligent cloud solution for enterprise networking, offering enterprise-grade product line designed to meet the high-capacity, security, and management needs of various industries, such as MDUs, hospitality, K-12 education, public works, and more.



MDUs



Hospitality



Public Works



Catering



Manufacturing



Retail

Specifications

Hardware Features & Performance		
Model		S6500-48G6XF
General	Interface	48 × 10/100/1000Mbps RJ45 ports 6 × 1/10Gbps SFP+ Slots*
	Console Ports	1 × RJ45 + 1 × USB Type C
	Management Port	1 × RJ45
	USB Ports	2 × USB 2.0
	Flash	2×4 MB Nor + 8 GB EMMC
	DRAM	4GB DDR4
	Processor	Dual-Core ARM @1.5GHz CPU
Performance	Switching Capacity	216 Gbps
	Forwarding Bandwidth	108 Gbps
	Packet Forwarding Rate	160.7 Mpps
	MAC Address Table	32 K
	Packet Buffer	3 MB
	Stacking Port	10G SFP+ slot (all uplink ports can be used as stacking ports)**
	Stacking Bandwidth	Up to 120 Gbps (6 stacking ports)
	Max Stacking Number	12 in standalone mode, 4 in Omada controller mode
	Compatible Models for Stacking	S6500-24G4XF, S6500-48G6XF, S6500-24GP4XF, S6500-48GP6XF
	Transmission Method	Store and Forward
	Jumbo Frame	9 KB
Physical & Environmet	Power Supply	100-240 V ~50/60 Hz
	Redundant Power Supply	2 internal fixed power supply modules
	Max Power Consumption	39.8 W (220 V/50 Hz)
	Max Heat Dissipation	135.81 BTU/hr (220 V/50 Hz)
	Standby Power Consumption	16.2 W (220 V/50 Hz)
	Noise	Min: 14.8 dBA @1m 25 °C Max: 40.7 dBA @1m 25 °C
	Fan Quantity	4 internal fixed fans
	Airflow	Front-to-back
	Surge Protection	Service port: ±6 kV in common mode Power port: ±4 kV in differential mode; ±4 kV in common mode
	ESD Protection	Air: ±15 kV, Contact: ±8 kV
	MTBF	547,093 h @ 25 °C
	Dimensions (W x D x H)	17.3 × 15.0 × 1.7 in (440 × 380 × 44 mm)
	Installation	Rackmount
	Operating Temperature & Altitude	-5 °C to 50 °C (23 °F to 122 °F) @ 300 meters -5 °C to 45 °C (23 °F to 113 °F) @ 2,000 meters -5 °C to 40 °C (23 °F to 104 °F) @ 3,000 meters
	Storage Temperature	-40 °C to 70 °C (-40 °F to 158 °F)
	Operation Humidity	10% to 90% RH, non-condensing
	Storage Humidity	5% to 90% RH, non-condensing
	Certification	CE, FCC, RoHS

*No more than two 10G RJ45 SFP+ modules are supported, and they can only be inserted into SFP+ slots 49&53.

**To ensure performance and stability, the slots need to work at 10 Gbps when used as stacking ports.

Software Features^			
Model		S6500-48G6XF	
System	System Info	• Device Description - Name - Location - System Contact • System Time - Manual - Synchronize with PC's Clock - SNTP Client • DST - Predefined Mode - Recurring Mode - Date Mode	• LED - LED on/off • System IP - Static IP/DHCP/BOOTP • System IPv6 - Link-local Address Config - Global Address Autoconfig via RA Message - Global Address Autoconfig via DHCPv6 Server - Add a Global Address Manually
	User Management	• User Settings • Access Level: 4 levels	• Password Recorvery Settings
	System Tools	• Config Restore/Backup - Web: HTTP - CLI: TFTP/Flash/USB • Firmware Upgrade - Web: HTTP - CLI: TFTP/Flash/USB	• System Reboot • System Reset • Boot Config (Dual Image) • Reboot Schedule • Config Rollback • Hot Patch
	Access Security	• Access Control Config - IP-based - MAC-based - Port-based - IPv6-based • HTTP Config - Enable/Disable - Session Config - Access User Number - Port Setting • SSL Config - SSLv3/TLSv1 Enable/Disable - CipherSuite Config - IPv6 SSL	• SSH Config - Enable/Disable - v2 - Encryption Algorithm - Data Integrity Algorithm - Port Setting - IPv6 SSH • Telnet Config - Enable/Disable - Port Setting - IPv6 Telnet • Console Port - Baud Rate setting
	Stack	• Stack Setting • Stack-port LAG: up to 6 groups, each group supports a maximum of all stackable-ports	• Stackable Devices: up to 12 devices • Stack MAC Address Switching Delay
	SDM Template	• Default Template - IPv4 ACL Rules: 300 entries - MAC ACL Rules: 300 entries - Combined ACL: 300 entries - IPv4 Source Guard: 299 entries • IPv4 Access - IPv4 ACL Rules: 0 entries - MAC ACL Rules: 300 entries - Combined ACL: 500 entries - IPv4 Source Guard: 499 entries	• IPv6 Access - IPv4 ACL Rules: 0 entries - MAC ACL Rules: 200 entries - IPv6 ACL: 250 entries - IPv6 Source Guard: 249 entries • Omada - IPv4 ACL Rules: 0 entries - MAC ACL Rules: 0 entries - Combined ACL: 600 entries - IPv6 ACL: 150 entries - IPv4 Source Guard: 0 entries
	Time Range	• Time Range Config	• Holiday Config
	File System	• File Operation • FTP • SFTP	• SCP • TFTP • USB Storage

Software Features^			
Model		S6500-48G6XF	
L2 Features	Port	• Auto Negotiation/Auto MDI/MDIX • Port config - Status - Speed and Duplex - Flow Control(802.3x) - Jumbo Frame: 1518-9216 KB • Port Mirror - Ingress (Many to One) - Egress (Many to One) - RSPAN	• Port Security - Learn mode: Dynamic/Static/Permanent/Sticky - Port Max Learned MAC: 64 - Current Learned Number - Status - Exceed Max Learned Trap • Port Isolation • Loopback Detection - Alert - Port Based - VLAN Based
	DDM		
	LAG	• Hash Algorithm: SRC MAC/DST MAC/SRC MAC + DST MAC/SRC IP/DST IP/SRC IP + DST IP	• Static LAG: Up to 64 groups, up to 8 ports per group • LACP(802.3ad)
	Traffic Monitor	• TX Packets/Bytes • RX Packets/Bytes • TX Unicast/Multicast/Broadcast • RX Unicast/Multicast/Broadcast	• TX Errors • RX Errors • RX Packet Size Analysis
	MAC Address	• MAC Address Table: 32K entries • IVL/SVL: IVL • Create Static Unicast Address	• Bind Dynamic Address • Create Filtering Address • MAC Notification Settings
	VLAN	• 802.1Q VLAN(802.1q): 4K VLANs • MAC VLAN: 200 entries • Protocol VLAN - 16 Protocol VLAN Template - 12 Protocol VLAN Group	• QinQ(VLAN VPN): 256 entries • Private VLAN • GVRP
	Multicast	• Max Multicast Groups: 4K (IPv4,IPv6) • IGMP Snooping - IGMP V1/V2/V3 - Report Message Suppression - Fast Leave - Unknown Multicast Discard - Static Multicast Groups - IGMP Snooping Querier - IGMP Packet Statistics - IGMP Authentication - Multicast Filtering: 256 profiles and 16 entries per profile - Router Port Setting: Static Router Port/Forbidden Router Port • MVR	• MLD Snooping - MLD V1/V2 - Report Message Suppression - Unknown Multicast Discard - Fast Leave - Static Multicast Groups - MLD Snooping Querier - MLD Packet Statistics - Multicast Filtering: 256 profiles and 16 entries per profile - Router Port Setting: Static Router Port/Forbidden Router Port • Multicast Table - IPv4 Multicast Table - IPv6 Multicast Table
	STP	• STP(802.1d) • RSTP(802.1w) • MSTP(802.1s) • MSTI entries: 16	• STP Security - Loop Protect - Root Protect - TC Protect - BPDU Protect - BPDU Filter
	LLDP (802.1ab)	• Enbale/Disable • Local Info • Neighbor Info • Statistic Info	• LLDP-MED - Local Info - Neighbor Info
	L2PT	• Layer 2 Protocol Tunneling	
	PPPoE ID Insertion	• Circuit-ID Type - IP - MAC - UDF - UDF-ONLY	• Remote-ID
	ERPS	• Ring: 16	
	Virtual MAC		
	Sticky MAC		

Software Features^		
Model		S6500-48G6XF
L3 Features	L3 INTERFACE: 256(IPv4,IPv6)	
	STATIC ROUTE: 1024 IPv4, 512 IPv6	
	IPv4 Host Router entries + IPv6 Host Router entries: 6100	
	IPv4 Network Router entries: 10240 (shared with IPv6 Network Router entries) IPv6 Network Router entries: 5120 (shared with IPv4 Network Router entries)	
	ECMP	• ECMP entries: 256 • MAX-PATH: 32
	ARP	• Static ARP: 512 • Dynamic ARP: 7680
	ND: 7680	
	DHCP	• DHCP Server - IP Pool: 64 - IP MAX entries: 8000 - Manual Binding: 1000 - Excluded IP Range: 100 • DHCP Relay • DHCP L2 Relay • DHCPv6 Relay • DHCPv6 L2 Relay
	VRRP	• VRRP V2/V3 • VRRP Instance: 64 • VRRP Virtual IP: 32 per instance
	OSPF	• OSPFv2 - OSPF Instance: 16 - Network entries: 256 entries - Area entries For Stub Or NSSA: 16 per instance - AreaRange entries: 16 per instance - Virtual-link entries: 16 per instance - Redistribute: conneted/static/RIP/OSPF/IS-IS/BGP - Graceful Restart - OSPFv2 BFD • OSPFv3 - Area entries For Stub Or NSSA: 16 per instance - AreaRange entries: 16 per instance - Redistribute: conneted/static/RIPng/IS-IS - OSPFv3 BFD
	RIP	• RIPv1/v2 - Network entries: 256 - Redistribute entries: 20 - Redistribute: BGP/connected/OSPF/IS-IS/static • RIPng - Redistribute: connected/OSPFv3/IS-IS/static
	IS-IS	• IS-IS Interfaces: 128 • IS-IS Area Numbers: 3 • Redistribute: BGP/connected/OSPF/OSPFv3/RIP/static/RIPng • Max Redistribute Configs: 10 • IS-IS IPV6 • IS-IS BFD
	BGP	• Redistribute: IS-IS/connected/OSPF/RIP/static • Max Redistribute Configs: 20
	PIM	• PIM DM • PIM SM • PIM SSM • IP Multicast Route entries: 1K • PIM Neighbors: 256 • Max PIM Interfaces: 128
	IGMP	• Version: v1/v2/v3 • IGMP Multicast Groups: 2K
	BFD	• Template Numbers: 16 • Session Numbers: 8
	PBR	
	uRPF	
QoS	Class of Service	• Priority Queues: 8 Queues • Port Priority • 802.1P Priority • DSCP/ToS Priority • Priority Schedule Mode: SP/WRR per Queue • Queue Weight Config: For WRR/SP+WRR Mode
	Bandwidth Control	• Rate Limit - Ingress Rate Limit - Egress Rate Limit - Rate Limit Grade: 64kbps • Storm Control - Control Mode: kbps/ratio - Broadcast - Multicast - Unknown Unicast
	Voice VLAN	• Supported OUI Numbers: 64
	WRED	• WRED profile: 16

Software Features^			
Model		S6500-48G6XF	
Network Security	IP-MAC Binding	• Binding entries: 1024 entries • Manual Binding	• ARP Scanning • DHCP Snooping
	IPv6-MAC Binding	• Binding entries: 1024 entries • Manual Binding	• DHCPv6 Snooping • ND Snooping
	ARP Inspection	• ARP Detect entries: 1024 entries • ARP Detect	• ARP Defend • ARP Statistics
	ND Detection	• ND Detection entries: 1024 entries • ND Detect	• ND Statistics
	IP Source Guard	• IP Source Guard entries - Default SDM Template: 299 - IPv4 SDM Template: 499 - IPv4 SDM Template: 0	• Security Type - Source IP - Source IP + Source MAC
	IPv6 Source Guard	• IPv6 Source Guard entries - Default SDM Template: 0 - IPv4 SDM Template: 0 - IPv4 SDM Template: 249	• Security Type - Source IPv6 - Source IPv6 + Source MAC
	RA Guard: 30 entries		
	DoS Defend	• Scan SYNFIN • Xmascan • NULL Scan	• SYN sPort less 1024 • Ping Flooding • SYN/SYN-ACK Flooding
	DHCP Filter	• DHCPv4 Filter - Legal Server entries: 200	• DHCPv6 Filter - Legal Server entries: 200
	802.1x	• Control Type - Port Based - MAC Based • Auth Method: PAP/EAP-MD5/EAP-TLS/EAP-TTLS/EAP-PEAP	• Radius Authentication • Radius Accounting • Radius Server Load Balancing • RADSEC • Guest VLAN
	AAA		
	ACL	• Time-Range - Time Slice - Week Time-Range - Absolute Time-Range - Holiday • MAC ACL - Source MAC - Destination MAC - VLAN ID - EtherType - User Priority • IP ACL - Source IP - Destination IP - IP Protocol - TCP Flag - TCP/UDP Source Port - TCP/UDP Destination Port - DSCP/IP ToS • Combined ACL • IPv6 ACL • Rule Operation - Permit - Deny • Policy Action - Mirror - Rate Limit - Redirect - QoS Remark • Binding - Port Binding - VLAN Binding	• Default Template - IPv4 ACL Rules: 300 entries - MAC ACL Rules: 300 entries - Combined ACL: 300 entries • IPv4 Access - IPv6 ACL Rules: 0 entries - MAC ACL Rules: 300 entries - Combined ACL: 500 entries • IPv6 Access - IPv4 ACL Rules: 0 entries - MAC ACL Rules: 200 entries - IPv6 ACL: 250 entries • Omada - IPv4 ACL Rules: 0 entries - MAC ACL Rules: 0 entries - Combined ACL: 600 entries - IPv4 Source Guard: 0 entries
	MACSec (-128, -256)		
	Secure boot		
Virtualization	IP Tunnel	• IPv6 over IPv4 • IPv6 over IPv4 GRE	• IPv4 over IPv4 GRE • Tunnel entries: 100

Software Features^		
Model		S6500-48G6XF
Maintenance	System Monitor	• CPU Monitor • Memory Monitor
	sFlow	
	OAM	• EFM - Link Monitoring - Remote Failure Indication Config - Statistics
	DLDP	
	SNMP	• SNMP Version: v1/v2c/v3 • SNMP Config - Global Config - SNMP View - SNMP Group - SNMP User - SNMP Community • Notification - Trap: IPv4/IPv6 - Inform: IPv4/IPv6 • RMON v1/v2 • Public MIBs • Private MIBs
	MIBs	• MIB II (RFC1213) • Interface MIB (RFC2233) • Ethernet Interface MIB (RFC1643) • Bridge MIB (RFC1493) • P/Q-Bridge MIB (RFC2674) • RMON MIB (RFC2819) • RMON2 MIB (RFC2021) • RADIUS Accounting Client MIB (RFC2620) • RADIUS Authentication Client MIB (RFC2618) • Remote Ping, Traceroute MIB (RFC2925) • Support TP-Link Private MIB
	NETCONF	
	IEEE802.3az Energy Efficient Ethernet (EEE)	
	DHCP Auto Install	
	Log	• Display/Filtering • Severity Level • Save to Flash • Remote Host • Backup Log
	Device Diagnostics	• Cable Test
	Network Diagnostics	• Ping • IPv6 Ping • Tracert • IPv6 Tracert
Others	Index	
	Show running config	• Use the show running config command to view device's running status via telnet. • Configuration File: Import/Export/Edit
Omada SDN Controller	Omada Pro SDN controller	

Ordering Information

Host Switch	
Model	Description
S6500-48G6XF	Omada Pro 48-Port Gigabit Stackable L3 Managed Switch with 6 10G Slots

SFP/SFP+ Modules	
Model	Description
SM311LS	Gigabit SFP module, Single-mode, LC interface, Up to 20km distance
SM311LM	Gigabit SFP module, Multi-mode, LC interface, Up to 550m distance
SM321A	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1550 nm/RX: 1310 nm, 20 km
SM321A-2	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1550 nm/RX: 1310 nm, 2 km
SM321B	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1310 nm/RX: 1550 nm, 20 km
SM321B-2	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1310 nm/RX: 1550 nm, 2 km
SM5110-LR	10GBase-LR SFP+ LC Transceiver, single-mode, LC connector, 1310nm, 10 km
SM5110-SR	10GBase-SR SFP+ LC Transceiver, multi-mode, LC connector, 850nm, 300 m

Direct Attach Cable	
Model	Description
SM5220-1M	1 Meter 10G SFP+ Direct Attach Cable
SM5220-3M	3 Meter 10G SFP+ Direct Attach Cable

RJ45 SFP/SFP+ Modules	
Model	Description
SM331T	1000BASE-T RJ45 SFP Module
SM5310-T	10GBASE-T RJ45 SFP+ Module

MC Series Media Converter	
Model	Description
MC210CS	Gigabit Single-Mode Media Converter, up to 20 km, chassis mountable
MC200CM	Gigabit multi-mode SC SFP Transceiver, up to 550 m, chassis mountable
MC200L	Gigabit SFP slot supporting mini-GBIC modules, chassis mountable
MC1400	14-slot power supply chassis for TP-LINK MC Series Media Converter, 19-inch rack-mountable

FC Series Media Converter	
Model	Description
FC111A-20	100Mbps Single-Mode WDM Media Converter, up to 20 km, TX:1550nm, RX:1310nm, chassis mountable
FC111B-20	100Mbps Single-Mode WDM Media Converter, up to 20 km, TX:1310nm, RX:1550nm, chassis mountable
FC311A-2	Gigabit Single-Mode WDM Media Converter, up to 2 km, TX:1550nm, RX:1310nm, chassis mountable
FC311B-2	Gigabit Single-Mode WDM Media Converter, up to 2 km, TX:1310nm, RX:1550nm, chassis mountable
FC311A-20	Gigabit Single-Mode WDM Media Converter, up to 20 km, TX:1550nm, RX:1310nm, chassis mountable
FC311B-20	Gigabit Single-Mode WDM Media Converter, up to 20 km, TX:1310nm, RX:1550nm, chassis mountable
FC1400	14-slot power supply chassis for TP-LINK FC Series Media Converter, 19-inch rack-mountable

†These functions require the use of the Omada Pro SDN Controller. Zero-Touch Provisioning requires the use of the Omada Pro Cloud-Based Controller.

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