

Omada Pro L3 Managed Switch Datasheet

S6500-48M6Y

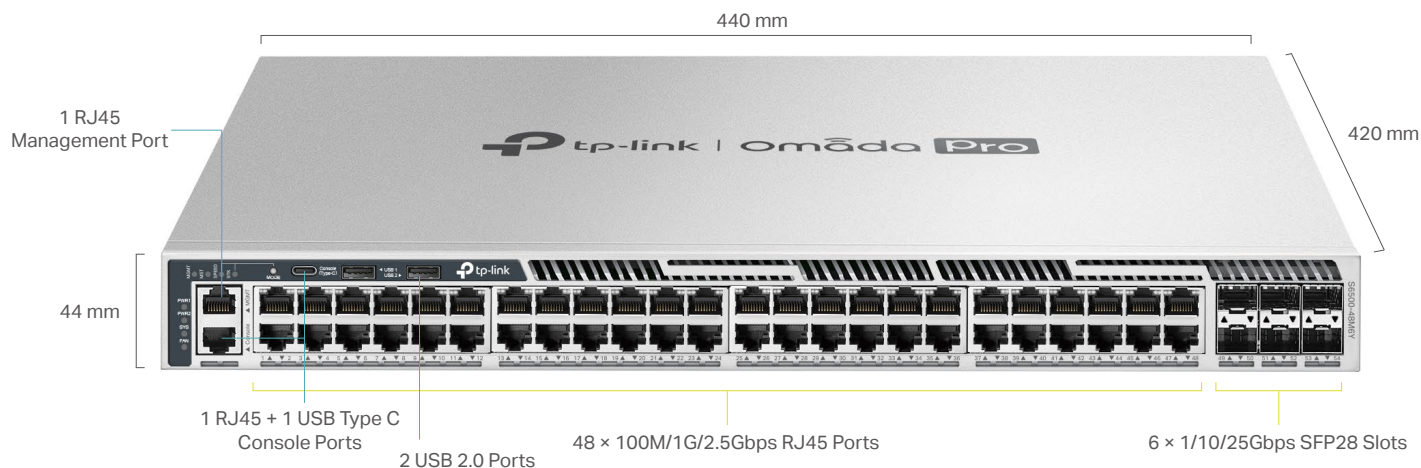
Omada Pro 48-Port 2.5G Stackable L3 Managed Switch with 6 25G Slots



Highlights

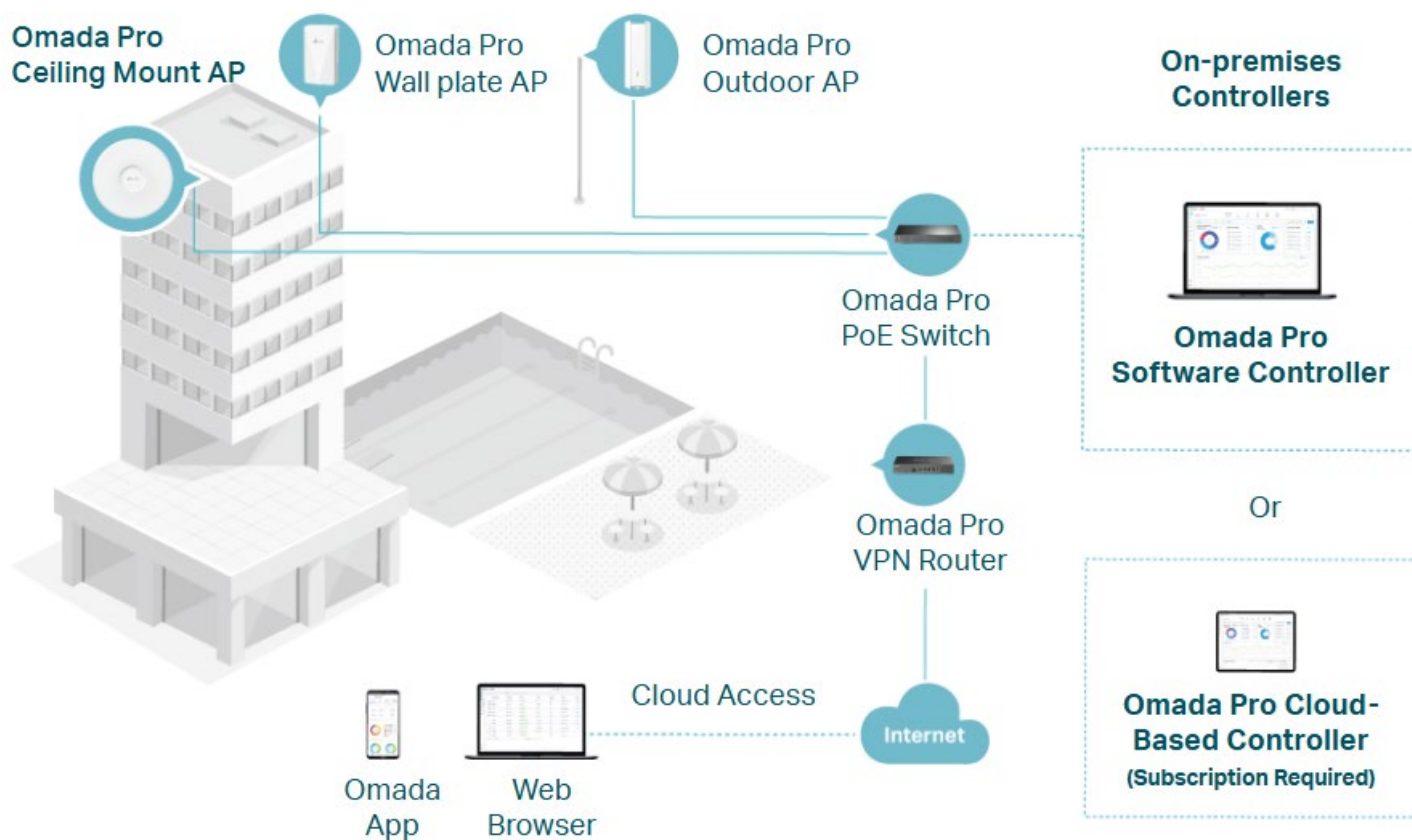
- 48× 2.5 Gbps RJ45 ports and 6× 25 Gbps SFP28 slots
- Physical stacking for built-in redundancy and performance
- M-LAG improve link reliability from the card level to the device level.
- L3 Features: OSPF, BGP, IS-IS, VRRP, VRF, PIM-SM/PIM-DM/PIM-SSM, ECMP, PBR, PTPv2
- Security Strategies: MACsec, Secure Boot, RADSEC, IMPB, SFTP, 802.1X, Port Security
- Highly available with two field-replaceable 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		S6500-48M6Y
General	Interface	48 × 100M/1G/2.5Gbps RJ45 Ports 6 × 1/10/25Gbps SFP28 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	540 Gbps
	Forwarding Bandwidth	270 Gbps
	Packet Forwarding Rate	401.7 Mpps
	MAC Address Table	32 K
	Packet Buffer	3 MB
	Stacking Port	25G SFP28 slot (all uplink ports can be used as stacking ports)**
	Stacking Bandwidth	Up to 300 Gbps (6 stacking ports)
	Max Stacking Number	12 in standalone mode, 4 in Omada controller mode
	Compatible Models for Stacking	S6500-24M4Y, S6500-24MPP4Y, S6500-48M6Y, S6500-48MPP6Y
	Transmission Method	Store and Forward
	Jumbo Frame	9 KB
Physical & Environmet	Power Supply	100-240 V ~50/60 Hz
	Redundant Power Supply	Max 2 hot swappable power supply module, N+1 redundant (shipping with one PSM550-AC module by default)***
	Suitable Power Supply Module	PSM550-AC
	Max Power Consumption	114.2 W (220 V/50 Hz)
	Max Heat Dissipation	389.4 BTU/hr (220 V/50 Hz)
	Standby Power Consumption	70.6 W (220 V/50 Hz)
	Noise	1× PSM550-AC power supply module: Min: 33.9 dBA @1m 25 °C Max: 47.1 dBA @1m 25 °C 2× PSM550-AC power supply modules: Min: 35.1 dBA @1m 25 °C Max: 48.1 dBA @1m 25 °C
	Fan Quantity	4 hot swappable fan modules N+1 redundant
	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	300,196 h @ 25 °C
	Dimensions (W x D x H)	17.3 × 16.5 × 1.7 in (440 × 420 × 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 (SM5310-T) are supported, and they can only be inserted into SFP+ slots 49&53.

**The 25G SFP28 slots support stacking only through 25G DAC/25G SFP28 modules rather than 10G DAC/10G SFP+ modules.

***An additional power supply module needs to be purchased separately.

****The supported altitude is sea level to 5000 m. It should be noted that when the altitude is above 2000 m, for every 220 meters of altitude increase, the maximum operating temperature will drop by 1°C (1.8°F).

Software Features [^]			
Model		S6500-48M6Y	
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 • Multi-active Detection (MAD) • Virtual MAC
	M-LAG	• M-LAG domain configuration • Dual-Active Detection • M-LAG Config Consistency Check	• Peer-link-port LAG: 1 Group, each group supports a maximum of all peerLinkable-ports • M-LAG Member Interface MAC Address Switching Delay
	SDM Template	• Default Template - IPv4 ACL Rules: 300 entries - MAC ACL Rules: 300 entries - Combined ACL Rules: 300 entries - IPv6 ACL Rules: 0 entries - IPv4 Source Guard: 299 entries - IPv6 Source Guard: 0 entries • IPv4 Access - IPv4 ACL Rules: 0 entries - MAC ACL Rules: 300 entries - Combined ACL Rules: 500 entries - IPv6 ACL Rules: 0 entries - IPv4 Source Guard: 499 entries - IPv6 Source Guard: 0 entries • IPv6 Access - IPv4 ACL Rules: 0 entries - MAC ACL Rules: 200 entries - Combined ACL Rules: 0 entries - IPv6 ACL Rules: 250 entries - IPv4 Source Guard: 0 entries - IPv6 Source Guard: 249 entries	• Omada - IPv4 ACL Rules: 0 entries - MAC ACL Rules: 0 entries - Combined ACL Rules: 600 entries - IPv6 ACL Rules: 150 entries - IPv4 Source Guard: 0 entries - IPv6 Source Guard: 0 entries • Extra - IPv4 ACL Rules: 600 entries - MAC ACL Rules: 800 entries - Combined ACL Rules: 600 entries - IPv6 ACL Rules: 300 entries - IPv4 Source Guard: 0 entries - IPv6 Source Guard: 0 entries
	Time Range	• Time Range Config	• Holiday Config
	PTP	• Profile: IEEE 1588v2 (PTPv2), IEEE 802.1AS	• Clock-type: oc, bc, e2etc, p2ptc
	File System	• File Operation • FTP • SFTP	• SCP • TFTP • USB Storage

Software Features [^]			
Model		S6500-48M6Y	
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
	L2 Multicast	• Max Multicast Groups: 4K (IGMP Snooping & MLD Snooping & MVR) • 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
	STP	• STP(802.1d) • RSTP(802.1w) • MSTP(802.1s) • MSTI instances: 16	• STP Security - Loop Protect - Root Protect - TC Protect - BPDU Protect - BPDU Filter
	LLDP (802.1ab)	• Local Info • Neighbor Info	• Statistic Info • LLDP-MED
	L2PT		
	PPPoE ID Insertion	• Circuit-ID Type	• Remote-ID
	ERPS	• Ring: 16	
	Virtual MAC		
	Sticky MAC		

Software Features [^]			
Model		S6500-48M6Y	
L3 Features	IPv4 Interfaces: 256(shared with IPv6 Interfaces) IPv6 Interfaces: 256(shared with IPv4 Interfaces)		
	IPv4 Static Routes: 1024 (shared with IPv6 Static Routes) IPv6 Static Routes: 512 (shared with IPv4 Static Routes)		
	IPv4 Host Routes: 6100 (shared with IPv4 Host Routes) IPv6 Host Routes: 6100 (shared with IPv6 Host Routes)		
	IPv4 Network Routes: 10240 (shared with IPv6 Network Routes) IPv6 Network Routes: 5120 (shared with IPv4 Network Routes)		
	ECMP	• Max ECMP Routes: 256 • Max ECMP Nexthops per Destination: 32	
	ARP	• Static ARP: 512 • Dynamic ARP: 12288	
	ND: 12288		
	DHCP	• DHCP Server - IP Pools: 64 - Max Leases: 8000 - Manual Binding Entries: 1000 - Exclude IP range Entries: 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 Process: 16 - Graceful Restart - OSPFv2 BFD	• OSPFv3 - OSPFv3 Instance: 1 - OSPFv3 BFD
	RIP	• RIPv1/v2	• RIPng
	VRF	• VRF Instance: 1024	
	IS-IS	• IS-ISv4 • IS-ISv6 • IS-IS BFD	• IS-IS Instance: 16 • IS-IS Graceful Restart
	BGP	• BGPv4	• BGP Graceful Restart
	PIM	• PIM-DM (IPv4) • PIM-SM (IPv4) • PIM-SSM (IPv4)	• IPv4 Multicast Route entries: 1024
	IGMP	• Version: v1/v2/v3	• IGMP Groups: 2048
	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		S6500-48M6Y	
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 - IPv6 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 - IPv6 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 • IP ACL • 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 - IPv6 ACL Rules: 0 entries - MAC ACL Rules: 300 entries - Combined ACL Rules: 300 entries • IPv4 Access - IPv4 ACL Rules: 0 entries - IPv6 ACL Rules: 0 entries - MAC ACL Rules: 300 entries - Combined ACL Rules: 500 entries • IPv6 Access - IPv4 ACL Rules: 0 entries - IPv6 ACL Rules: 250 entries - MAC ACL Rules: 200 entries - Combined ACL Rules: 0 entries • Omada - IPv4 ACL Rules: 0 entries - IPv6 ACL Rules: 150 entries - MAC ACL Rules: 0 entries - Combined ACL Rules: 600 entries • Extra - IPv4 ACL Rules: 600 entries - IPv6 ACL Rules: 300 entries - MAC ACL Rules: 800 entries - Combined ACL Rules: 600 entries
	MACSec (gcm-aes-128, gcm-aes-256)		
	Secure boot		
Virtualization	IP Tunnel	• IPv6 over IPv4 • IPv6 over IPv4 GRE	• IPv4 over IPv4 GRE • Tunnel entries: 100

Software Features [^]		
Model		S6500-48M6Y
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
S6500-48M6Y	Omada Pro 48-Port 2.5G Stackable L3 Managed Switch with 6 25G Slots

Power Supply Module	
Model	Description
PSM550-AC	550 W AC Power Supply Module

SFP/SFP+/SFP28 Module	
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
SM6110-SR	25GBase-SR SFP28 LC Transceiver, MMF (Multimode fiber), LC connector, 850 nm, 100 m
SM6110-LR	25GBase-LR SFP28 LC Transceiver, SMF (Single-mode fiber), LC connector, 1310 nm, 10 km

Direct Attach Cable	
Model	Description
SM6220-1M	1 Meter 25G SFP28 Direct Attach Cable
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

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

^Some features are available only after upgrading to the latest software version.

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