NETGEAR®

ProSAFE® Intelligent Edge Managed Switches

Unbeatable combination of performance, security and convergence for voice, video and data networking solutions at an extremely attractive price point
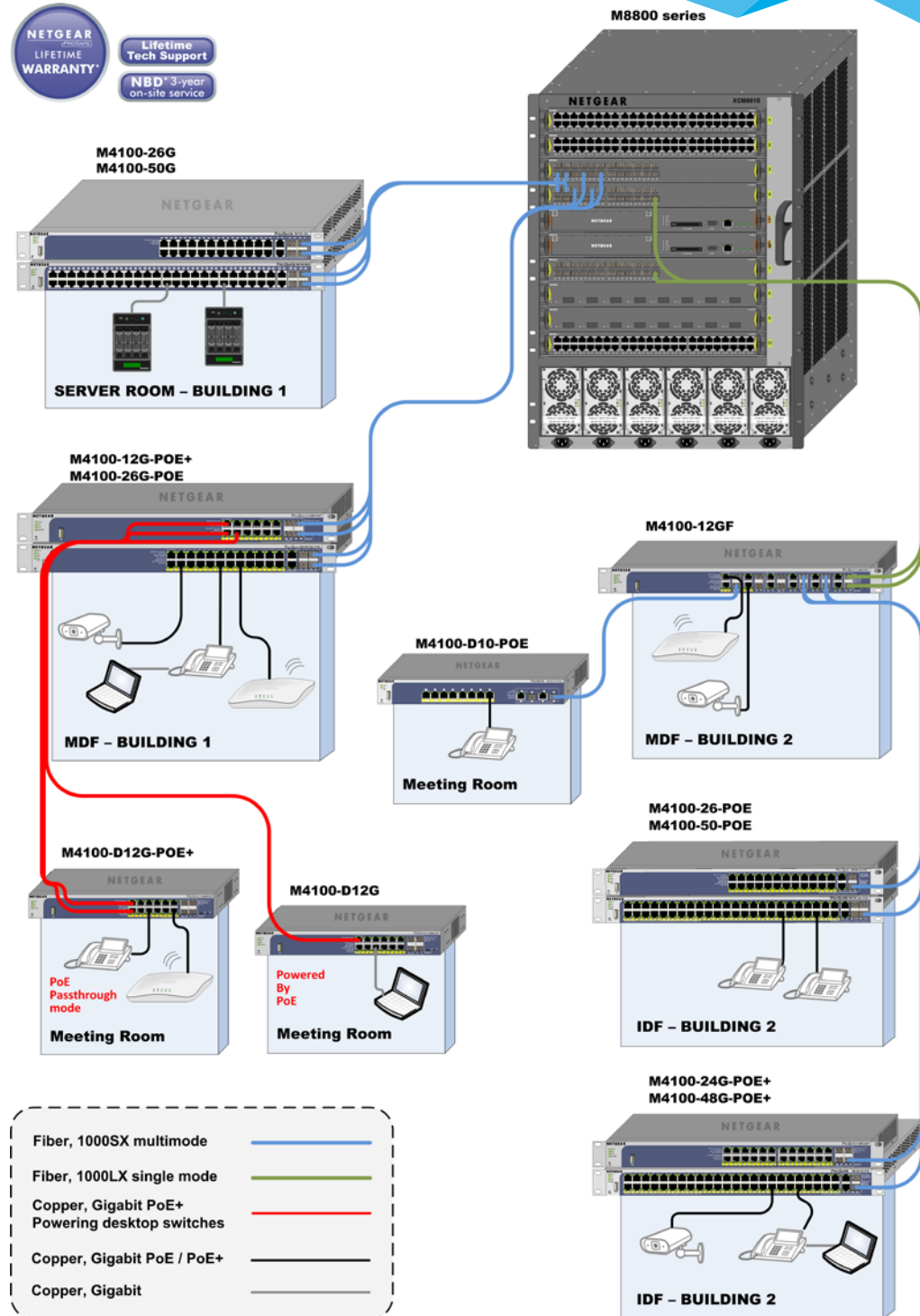

M4100 series

The M4100 series delivers an unbeatable combination of performance, security and ease-of-use for converged networking. Due to the rapid proliferation of multimedia applications, small and mid-sized organizations today have security, control and reliability requirements similar to those of large enterprises. Only NETGEAR is offering reliable, affordable and simple Managed switches packed with higher availability (RPS protection), investment protection (EPS upgrade) and scalability features that have so far been reserved only for enterprise-class VoIP, IP Surveillance and Wireless deployments. NETGEAR Managed switches dramatically reduce the lifecycle costs with Lifetime Hardware Warranty, Lifetime Technical Support, and included 3-Year Next Business Day Onsite Replacement.

Why M4100 series for the edge of small enterprise networks?

Because the M4100 series offers up to 3x better value:

• Combining superior resiliency and advanced security, NETGEAR Intelligent Edge managed switches feature comprehensive Layer 2, Lite Layer 3 and Layer 4 switching; including fiber aggregation capabilities. Unlike other 'cost conscious' products from competitors, the NETGEAR Intelligent Edge series has been designed from the ground up for organizations requiring intelligence at the network edge.

• Affordable and reliable, these access layer switches win as a proficient component of secure, converged voice, video and data networking solutions.

NETGEAR ProSafe
LIFETIME WARRANTY*

Lifetime Tech Support

NBD* 3-year on-site service

M8800 series

M4100-26G
M4100-50G

SERVER ROOM – BUILDING 1

M4100-12G-POE+
M4100-26G-POE

MDF – BUILDING 1

M4100-D10-POE

Meeting Room

M4100-12GF

MDF – BUILDING 2

M4100-D12G-POE+

PoE Passthrough mode

Meeting Room

M4100-D12G

Powered By PoE

Meeting Room

M4100-26-POE
M4100-50-POE

IDF – BUILDING 2

M4100-24G-POE+
M4100-48G-POE+

IDF – BUILDING 2

Fiber, 1000SX multimode

Fiber, 1000LX single mode

Copper, Gigabit PoE+
Powering desktop switches

Copper, Gigabit PoE / PoE+

Copper, Gigabit

Three Reasons to Get Started Today with the NETGEAR M4100 series

1. Versatile, Protected and Expendable Power

The M4100 series are the first affordable managed switches with both redundant and external power supply capabilities - key for critical applications such as VoIP, IP surveillance and Wireless access points. PoE devices gobble increasing amounts of PoE power, yet existing SMB switching solutions from other vendors don't scale to full power. Although most servers in SMB networks have dual power supplies, switches in SMB networks have not – until now.

Select desktop switches in the M4100 series can be powered by PoE as a cost-effective solution when there is no existing electrical wiring or power outlets, as the switch can draw power directly from the wiring closet. The flexibility of a PoE switch is also convenient for meeting rooms and open spaces where visible electrical wiring is unsightly or impractical. One PoE+ downlink (30W) from the upstream switch is sufficient for the standard operation of the M4100-D12G and M4100-D12G-POE+ switches. This also increases resiliency for critical installations: the Power over Ethernet PD connection on these switches also doubles as a redundant power supply (RPS) should the switch be locally powered.

Innovative PoE passthrough technology even lets M4100-D12G-POE+ power local PoE PD devices - redistributing PoE budget from the upstream switch. Up to 25W of power can be available for local PD devices - extending the reach of PoE deployments beyond the 100-meter or 328-feet bar: the M4100-D12G-POE+ can function as a "PoE repeater" for powering remote IP cameras, Wireless access points, etc.

For all other rackmount Power over Ethernet models in the NETGEAR Intelligent Edge M4100 series, in addition to their built-in PSU providing more PoE power than competitive solutions at a similar price point, the NETGEAR Intelligent Edge M4100 series is the only one allowing for an additional PoE power "upgrade" via external power supply; immediately or at later times.

Short story, all rackmount switches in the NETGEAR M4100 series are either PoE Full Power capable already or PoE Full Power capable when drawing external power from the RPS4000. All 24-port and 48-port models can scale up to 802.3af PoE full power or 802.3at PoE+ full power simultaneously for all ports. This is real investment protection.

2. Security and Control

Enhanced security includes network access control and isolation for improved convergence of voice, video and data: dynamic 802.1x VLAN assignment mode, including Dynamic VLAN creation mode and Guest VLAN/Unauthenticated VLAN are supported for rigorous user and equipment policy enforcement from a RADIUS server. The RADIUS server can also be the Network Policy Server (NPS) in Microsoft® Windows Server™ 2008 or 2012, when in an Active Directory domain.

Up to 48 clients (802.1x) per port are supported, including the authentication of a user's domain, in order to facilitate convergent deployments. When IP phones connect PCs on their bridge, IP phones and PCs authenticate on the same switch port but under different VLAN assignment policies (Voice VLAN versus data VLAN) - providing administrators with greater flexibility during deployment and policy enforcement.

For 802.1x unaware clients, 802.1x MAC Address Authentication Bypass (MAB) is a great alternative: when 802.1x unaware clients try to connect, the switch sends their MAC addresses to the authentication server. When checked, the RADIUS server returns the access policy and VLAN assignment to the switch for each client.

Enhanced security also includes better network isolation with Private VLANs, providing Layer 2 isolation between ports that share the same broadcast domain. A VLAN broadcast domain can be partitioned into smaller point-to-multipoint subdomains across switches in the same Layer 2 network.

This is useful for IP camera deployments, or in the DMZ when servers are not supposed to communicate with each other but need to communicate with a router. Private VLANs remove the need for more complex port-based VLANs with respective IP interface/subnets and associated L3 routing.

3. Reliability

Learn how the NETGEAR M4100 series delivers more for less: all models provide much longer MTBF (average lifetime) thanks to better/higher quality components and circuitry.

For instance, the desktop 8-port PoE Fast Ethernet M4100-D10-POE (FSM5210P) is predicted to have an average mean time between failure of 579,985 hours, or 66 years at an ambient standard 25°C temperature (77°F). The rackmount 24-port PoE Gigabit Ethernet M4100-26G-POE (GSM7226LP) is to predicted to have an average mean time between failure of 437,199 hours, more than 49 years. This is nearly double the reliability of the closest competitive solutions in this price band.

Conclusion

The M4100 series delivers an unbeatable combination of performance, security and convergence for voice, video and data networking solutions.

Due to the wide adoption of virtualization, the convergence of voice, video, and data and the rapid proliferation of bandwidth-intensive applications, small and mid-sized businesses, hospitals and schools today have security, control and reliability needs similar to those of large

enterprises. For approximately the same price as low-end solutions currently on the market aimed at SMBs, NETGEAR is offering high-end features that have so far been reserved only for enterprise-class offerings available at double or triple the price point.

The Intelligent Edge M4100 series switches are NETGEAR fully managed switches for 100M/1G access layer in SMB, Small Enterprise and Campus networks. The M4100 series delivers the best combination of performance, security and convergence at a high-value price point—unlike competitive, entry-level "SMB" solutions. Redundant power supply options (RPS), full PoE+ external power supply options (EPS), Private VLANs, LLDP-MED and MVR take a scalable, future-proof approach to delivering network services for Wireless access points, IP phones and IP cameras infrastructures.

NETGEAR Intelligent Edge M4100 series key features:

- Broad portfolio of access layer solutions, ranging from 8 ports Fast Ethernet to 50 ports Gigabit Ethernet

- 802.3af PoE and 802.3at PoE+ best fit, ranging from 66W to 1,440W power budget per switch

- IPv4 routing in Layer 2+ package (L3 static routing) with IPv4/IPv6 ACLs and QoS

- High value L2/L3 tables with 16K MAC, 512 ARP/NDP, 9K jumbo frames, 1K VLANs, 64 static L3 routes

- Redundant power supply option for uninterruptible operation (RPS)

- External power supply option for PoE and PoE+ full-power applications (EPS)

- Green Ethernet compliance for maximum power efficiency

NETGEAR Intelligent Edge M4100 series software features:

- Automatic multi-vendor Voice over IP prioritization based on SIP, H323 and SCCP protocol detection

- Voice VLAN and LLDP-MED for automatic IP phones QoS and VLAN configuration

- IPv4/IPv6 Multicast filtering with IGMP and MLD snooping, Querier mode and MVR for for simplified video deployments

- Advanced classifier-based hardware implementation for L2 (MAC), L3 (IP) and L4 (UDP/TCP transport ports) inbound security and prioritization

NETGEAR Intelligent Edge M4100 series management features:

- Flexible Port-Channel/LAG (802.3ad) implementation for maximum compatibility, fault tolerance and load sharing with any type of Ethernet channeling

- Including static (selectable hashing algorithms) or dynamic LAGs (LACP)

NETGEAR Intelligent Edge M4100 series link aggregation and channeling features:

- DHCP/BootP innovative auto-installation including firmware and configuration file upload automation

- Industry standard SNMP, RMON, MIB, LLDP, AAA and sFlow implementation

- Selectable serial RS232 DB9 and Mini-USB port for management console

- Standard USB port for local storage, configuration or image files

- Dual firmware image and configuration file for updates with minimum service interruption

- Industry standard command line interface (CLI) for IT admins used to other vendors commands

- Fully functional Web console (GUI) for IT admins who prefer an easy to use graphical interface

NETGEAR Intelligent Edge M4100 series warranty and support:

- NETGEAR ProSAFE Lifetime Hardware Warranty†

- Included ProSupport Lifetime 24x7 Advanced Technical Support*

- Included 3-Year Next Business Day Onsite Hardware Replacement**

Hardware at a Glance

Model Name	Form Factor	10/100 Base-T RJ45 ports	10/100/1000 Base-T RJ45 ports	100/1000X Fiber SFP ports	PoE 802.3af PoE+ 802.3at	Storage (image, config)	Power Supply/ Powered by PoE	RPS (connector)	PoE budget (PSU/Pass through)	PoE budget (with EPS)	Management console	Model number
									FRONT	REAR		
M4100-D10-POE	Desktop	8	2	2 (shared)	8 PoE 802.3af		External/No	–	66W	–		FSM5210P
M4100-26-POE	Rack mount	24	2	2 (shared)	24 PoE 802.3af		Internal/No	1 (RPS)	380W	–		FSM7226P
M4100-50-POE	Rack mount	48	2	2 (shared)	48 PoE 802.3af		Internal/No	1 (RPS or EPS)	380W	Up to 740W (EPS)		FSM7250P
M4100-D12G	Desktop	–	12	2 (shared)	–		External/Yes	PD mode	–	–		GSM5212
M4100-D12G-POE+	Desktop	–	12	4 (shared)	10 PoE+ 802.3at		Internal/Yes	PD mode	120W / 25W	–		GSM5212P v1h2
M4100-12GF	Rack mount	–	12	12 (shared)	4 PoE+ 802.3at	1 x USB	Internal/No	1 (RPS)	150W	–	1 x RS232 DB9, 1 x Mini-USB (selectable)	GSM7212F v1h2
M4100-12G-POE+	Rack mount	–	12	4 (shared)	12 PoE+ 802.3at		Internal/No	1 (RPS)	380W	–		GSM7212P v1h2
M4100-26G	Rack mount	–	26	4 (shared)	–		Internal/No	1 (RPS)	–	–		GSM7224 v2h2
M4100-50G	Rack mount	–	50	4 (shared)	–		Internal/No	1 (RPS)	–	–		GSM7248 v2h2
M4100-26G-POE	Rack mount	–	26	4 (shared)	24 PoE 802.3af		Internal/No	1 (RPS or EPS)	192W	Up to 380W (EPS)		GSM7226LP
M4100-24G-POE+	Rack mount	–	24	4 (shared)	24 PoE+ 802.3at		Internal/No	1 (RPS or EPS)	380W	Up to 720W (EPS)		GSM7224P v1h2
M4100-50G-POE+	Rack mount	–	50	4 (shared)	48 PoE+ 802.3at		Internal/No	1 (RPS or EPS)	380W	Up to 1,440W (EPS)		GSM7248P

Software at a Glance

	LAYER 2+ PACKAGE								
Model Name	Management	IPv4/IPv6 ACL and QoS, DiffServ	IPv4/IPv6 Multicast Filtering	Auto-VoIP	Green Ethernet	VLANs	Convergence	IPv4 Unicast Static Routing	Model Number
M4100 series	Web GUI: HTTPs; CLI: Telnet, SSH; SNMP	L2, L3, L4, ingress 1 Kbps	IGMP and MLD Snooping, IGMP and MLD Querier, MVR	Yes	EEE (802.3az) or Energy Detect Mode	Static, Dynamic, Voice, MAC, Subnet, Protocol-based, QoQ, Private VLANs	LLDP-MED, RADIUS, 802.1X, timer	Yes (Port-based, Subnet, VLANs, Loopback)	all models

Performance at a Glance

	TABLE SIZE									
Model Name	Packet buffer	CPU	ACLs	MAC address table ARP/NDP table VLANs DHCP server	Fabric	Latency	Static Routes IP interfaces	Multicast IGMP Group membership	sFlow	Model number
M4100 series all models	12 Mb	600Mhz 128M RAM 32M Flash	50 ACLs 512 rules (ingress)	16K MAC 512 ARP/NDP VLANs: 1K DHCP: 16 pools 1,024 max leases	Up to 100Gbps all models line-rate	1G <3.91 µs 100M <10.194 µs	64 static routes 64 IP interfaces IPv4	1K	32 samplers 52 pollers 8 receivers	all models

Accessories

RPS4000
RPS/EPS unit for up to 4 concurrent switches

Ordering information
- Americas, Europe: RPS4000-100NES
- Asia Pacific: RPS4000-100AJS
- Warranty: 5 years

- RPS mode: provide power backup for up to four switches concurrently
  - With same level of protection as with four dedicated, "one-to-one" RPS units

- EPS mode: provide supplemental PoE power up to four switches concurrently
  - Up to 2,880W shared PoE+ budget
  - When in EPS mode, RPS4000 supersedes each switch main PSU
  - Switch main PSU system power reverts to redundant power supply (RPS) function

Front view
- RPS4000 is 1RU unit with four (4) empty slots
- Power modules (APS1000W) are sold separately
- APS1000W requirement depends on RPS, EPS, PoE application

Rear view
- Four (4) embedded RPS connectors
- Switch selectors for RPS/EPS power modes
- Switch selectors for power modules two-by-two bridging

Included:
- Four (4) RPS cables - 60cm each (~2 ft)
- Rack mount kit
- Power cord

Accessories

Number of APS1000W	1 POWER MODULE	2 POWER MODULES	3 POWER MODULES	4 POWER MODULES
RPS mode (Redundant Power Supply)	**Up to 4 switches** (non-PoE versions) M4100-26G or M4100-50G or M4100-12GF **Complete protection** 12V system power Or: Up to 4 switches (PoE versions) but only for 12V system power, not PoE M4100-26-POE or M4100-50-POE M4100-12GF when PoE+ ports are used M4100-26G-POE or M4100-12G-POE+ M4100-24G-POE+ or M4100-50G-POE+	**2 switches (PoE versions)** M4100-26-POE or M4100-50-POE M4100-12GF when PoE+ ports are used M4100-26G-POE or M4100-12G-POE+ M4100-24G-POE+ or M4100-50G-POE+ **Complete protection** 12V system power and –56V PoE power	**3 switches (PoE versions)** M4100-26-POE or M4100-50-POE M4100-12GF when PoE+ ports are used M4100-26G-POE or M4100-12G-POE+ M4100-24G-POE+ or M4100-50G-POE+ **Complete protection** 12V system power and –56V PoE power	**4 switches (PoE versions)** M4100-26-POE or M4100-50-POE M4100-12GF when PoE+ ports are used M4100-26G-POE or M4100-12G-POE+ M4100-24G-POE+ or M4100-50G-POE+ **Complete protection** 12V system power and –56V PoE power
EPS mode (External Power Supply)	720W PoE budget available (total) for up to 2 switches (PoE versions) M4100-50-POE or M4100-26G-POE M4100-24G-POE+ or M4100-50G-POE+	1,440W PoE budget available (total) for up to 4 switches (PoE versions) M4100-50-POE or M4100-26G-POE M4100-24G-POE+ or M4100-50G-POE+	2,160W PoE budget available (total) for up to 4 switches (PoE versions) M4100-50-POE or M4100-26G-POE M4100-24G-POE+ or M4100-50G-POE+	2,880W PoE budget available (total) for up to 4 switches (PoE versions) M4100-50-POE or M4100-26G-POE M4100-24G-POE+ or M4100-50G-POE+
Example for PoE applications: (802.3af full power)	One M4100-50-POE providing 720W 46 ports full power 802.3af PoE	Two M4100-50-POE providing 720W each 96 ports full power 802.3af PoE	Three M4100-50-POE providing 720W each 138 ports full power 802.3af PoE	Four M4100-50-POE providing 720W each 192 ports full power 802.3af PoE
Example for PoE+ applications: (802.3at full power)	One M4100-24G-POE+ providing 720W 24 ports full power 802.3at PoE+	One M4100-50G-POE+ providing 1,440W 48 ports full power 802.3at PoE+	One M4100-24G-POE+ providing 720W One M4100-50G-POE+ providing 1,440W 72 ports full power 802.3at PoE+	Two M4100-50G-POE+ providing 1,440W each 96 ports full power 802.3at PoE+
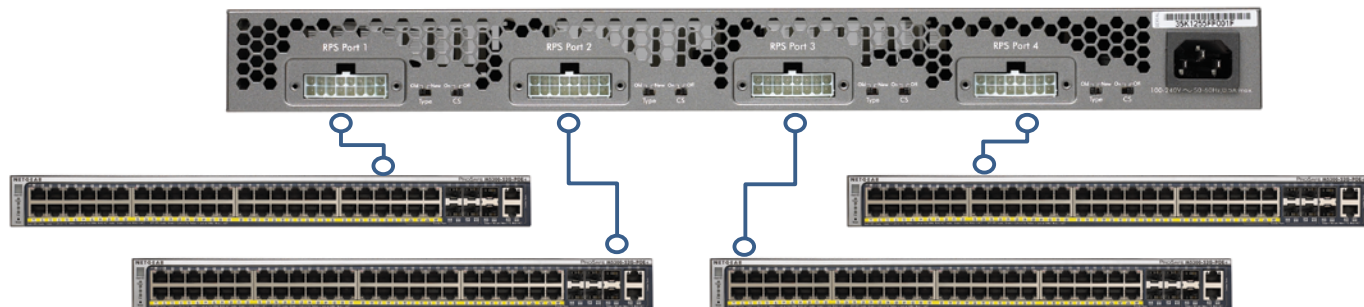
Accessories

APS1000W
Power Module for RPS4000

Ordering information
- Americas, Europe: APS1000W-100NES
- Asia Pacific: APS1000W-100AJS
- Warranty: 5 years

Capacity:
- 110V-240V AC power input
- Up to 960W DC 12V output power for up to 4 switches (RPS)
- Up to 720W DC -56V PoE budget output power for up to 2 PoE switches (EPS)

Inserting one APS1000Win RPS4000 power slot #1 (front view)

RPS4000 equipped with 4APS1000W power modules (front view)

RPS5412
RPS unit for 1 switch by Optimal Power®

Ordering information
- Americas: RPS5412-100NAS
- Europe: RPS5412-100EUS
- Asia Pacific: RPS5412-100AJS
- Warranty: 3 years

- Optimal Power® RPS unit certified by NETGEAR for M4100 series
- Includes the RPS cable for the switch RPS connector
- Provides seemless "one-to-one" redundant power to the Switch
- 56V DC power limited to 308W (maximum PoE budget)

420-10043-01
Rack mount kit for M4100 series desktop versions

Ordering information
- Worldwide: 420-10043-01
- Warranty: 5 years

- M4100 series desktop switches come with wall mount kit only
- This optional rack mount kit contains two brackets for standard 19" rack mount
- Compatible with:
  - M4100-D10-POE   (FSM5210P)
  - M4100-D12G   (GSM5212)
  - M4100-D12G-POE+   (GSM5212P)

GBIC SFP Optics for M4100 series

ORDERING INFORMATION WORLDWIDE: SEE TABLE BELOW WARRANTY: 5 YEARS	Multimode Fiber (MMF)		Single mode Fiber (SMF)
	OM1 or OM2 62.5/125μm	OM3 50/125μm	9/125μm
Gigabit SFP • Fits into M4100 series SFP interfaces (front)	**AGM731F** 1000Base-SX short range multimode LC duplex connector up to 275m (902 ft) **AGM731F (1 unit)**	**AGM731F** 1000Base-SX short range multimode LC duplex connector up to 550m (1,804 ft) **AGM731F (1 unit)**	**AGM732F** 1000Base-LX long range single mode LC duplex connector up to 10km (6.2 miles) **AGM732F (1 unit)**
Fast Ethernet SFP • Fits into M4100 series SFP interfaces (front)	**AFM735** 100Base-FX IEEE 802.3 LC duplex connector up to 2km (1.24 miles) **AFM735-10000S (1 unit)**	**AFM735** 100Base-FX IEEE 802.3 LC duplex connector up to 2km (1.24 miles) **AFM735-10000S (1 unit)**	

NETGEAR®

†   Lifetime warranty for product purchased after 05/01/2007. For product purchased before 05/01/2007, warranty is 5 years.

*   24x7 Lifetime Advanced Technical Support includes Remote Diagnostics performed by our technical experts for prompt resolution of technical issues.

** 3-year Next business day onsite hardware replacement support included: see http://onsite.netgear.com for coverage, availability and terms and conditions.