

# AMG560 SERIES INDUSTRIAL 12/20 PORT MANAGED LAYER 2 SWITCHES



## Industrial Ethernet Solutions

AMG's fully managed layer 2 Ethernet switches provide 100Mbps, Gigabit and 10 Gigabit Ethernet switching for industrial edge network applications. Available with either 8 or 16x RJ45 Gigabit ports and with 8x Gigabit SFP ports and either 4x Gigabit only or 4x 1/10 Gigabit SFP+ ports.



|  |  |  |  |  |  |  |  |  |   |
|--|--|--|--|--|--|--|--|--|---|
|  |  |  |  |  |  |  |  |  |  |
| Gigabit<br>up to x16   | 100/1000<br>up to x8   | Gigabit<br>up to x4  | 1/10 Gb<br>up to x4  | Managed<br>Full  | Secure<br>802.1x   | USB<br>x1  | Temp<br>-40°C~+75°C  | Mounting<br>DIN/Surface  | PSU<br>x2 Dual  |

[ AMG560 Series ]

### / OVERVIEW

AMG560 series layer 2 managed industrial Ethernet switches are designed in a DIN rail or wall mount housing and have 12 or 20 Ethernet ports in total (depending on model). 8 or 16 Gigabit Ethernet RJ45 ports, 8 100Mb/ Gigabit SFP ports plus an additional 4 Gigabit only or multi-rate SFP/SFP+ ports providing up to 10Gb speeds for data uplink and backbone connectivity. Fibre connectivity is determined by separate SFP device selection, providing application and site flexibility.

The AMG560 series support a wide range of management functions as well as Rapid Spanning Tree, Multiple Spanning Tree and Ethernet Ring Protection Switching (ERPS) protocols for network redundancy. IGMP functionality is supported to handle the multicast traffic which is commonly used in IP CCTV deployments.

A USB port is provided for easy configuration upload/download as well as automatic firmware upgrade, configuration settings on boot up and log file storage.

SFPs and PSUs need to be ordered separately.

### / FEATURES

- Compact size - ideal for confined spaces, including camera poles and roadside cabinets
- -40°C to +75°C temperature maintains performance in extreme conditions
- DIN rail or wall mountable - quick to install and remove for maintenance
- Compliant with all IEEE 802.3 speeds (i/u/ab/z/ae)
- Dual Speed SFP or SFP+ ports (up to 10Gb Speed)
- Supports RSTP, MSTP, ERPS, SNMP v1-3 and IGMP v1-3
- Port trunk functionality available with LACP
- IEEE 802.1x port security enabled
- Supports up to 16K bytes jumbo frames
- Digital input & relay output
- USB port for configuration free replacement
- AMG Lifetime Support Warranty

# Specifications.

## Standards.

|              |  |
|--------------|--|
| IEEE 802.3i  | 10Base-T                                   |
| IEEE 802.3u  | 100Base-TX & 100Base-FX                    |
| IEEE 802.3ab | 1000Base-T                                 |
| IEEE 802.3z  | 1000Base-X                                 |
| IEEE 802.3ae | 10GBase-R                                  |
| IEEE 802.3x  | Flow Control                               |
| IEEE 802.3ad | Port Trunk with LACP                       |
| IEEE 802.1D  | Spanning Tree (STP)                        |
| IEEE 802.1w  | Rapid Spanning Tree (RSTP)                 |
| IEEE 802.1s  | Multiple Spanning Tree (MSTP)              |
| IEEE 802.1p  | QoS Priority Marking                       |
| IEEE 802.1Q  | VLANs                                      |
| IEEE 802.1X  | Port Security                              |
| IEEE 802.3AB | LLDP                                       |
| RFC1112      | IGMP v1                                    |
| RFC2236      | IGMP v2                                    |
| RFC3376      | IGMP v3                                    |
| RFC2030      | Simple Network Time Protocol (SNTP)        |
| RFC2131      | Dynamic Host Configuration Protocol (DHCP) |
| ITU-T G.8032 | Ethernet Ring Protection Switching (ERPS)  |

## Hardware Features.

|                   |  |
|-------------------|--|
| Architecture      | Store-and-Forward  |
| Switch Latency    | <7µs   |
| Switch Fabric     | 24Gbps (12 Port 1GB Models)<br>40Gbps (20 Port 1GB Models)<br>96Gbps (12 Port 10GB Models)<br>112Gbps (20 Port 10GB Models)            |
| Address Table     | 16K MAC entries  |
| Buffer Memory     | 12M bits   |
| Jumbo Frames      | 16K bytes  |
| VLAN's            | 4K   |
| IGMP Groups       | 1023   |
| Throughput        | 16.86Mpps (12 Port 1GB Models)<br>29.76Mpps (20 Port 1GB Models)<br>71.42Mpps (12 Port 10GB Models)<br>83.32Mpps (20 Port 10GB Models) |
| Priority Queues   | 8  |
| Bandwidth Control | Ingress Packet Filter and Egress Rate Limit<br>The packet filter rate can be set from 100K to 250Mbps                                  |

## Software Features.

|                |                                      |
|----------------|--------------------------------------|
| Redundancy     | STP<br>RSTP<br>MSTP<br>ERPS (G.8032) |
| VLAN           | 802.1Q<br>Port Based VLAN<br>Q-in-Q  |
| LACP           | Link Aggregation Control Protocol    |
| SFP Monitoring | DDM                                  |
| IGMP Snooping  | v1/v2/v3                             |
| IGMP Querier   |                                      |

## QoS.

|                  |                       |
|------------------|-----------------------|
| Class of Service | 802.1p QoS & DSCP     |
| Rate Limiting    | Ingress / Egress      |
| Priority Queue   | WRR / Strict Priority |

## Security.

|               |                       |
|---------------|-----------------------|
| Port Security | MAC-based             |
| Storm Control | Rate Limiting         |
| 802.1x        | RADIUS Authentication |
| TACACS+       |                       |
| HTTPS/SSL     |                       |
| SSH v2.0      |                       |
| DHCP Snooping |                       |

## Management.

|                              |   |
|------------------------------|---|
| DHCP                         | Client / Server / Relay<br>Option 66/67/82  |
| Event/Error Log              | Syslog Client<br>SMTP E-Mail<br>USB         |
| Management Access            | SNMP<br>Web GUI<br>Telnet / SSH v2.0<br>CLI |
| SNMP                         | v1/v2c/v3                                   |
| RMON                         | 1/2/3/9 Groups                              |
| Port Mirroring               |   |
| Software Update              | HTTP/HTTPS/USB                              |
| Config Export /Import        |   |
| SNTP                         | Client                                      |
| LLDP                         | Link Layer Discovery Protocol               |
| Time Zone & Daylight Savings |   |
| Industrial Profiles          | Modbus TCP & Ethernet/IP                    |
| IPv4 & IPv6                  |   |

# Specifications.

## USB.

Firmware Update  
Configuration Backup / Restore  
Boot Up & System Log

## Alarms/Contact Closures.

|               |                             |
|---------------|-----------------------------|
| Inputs        | 1x Digital Input (Isolated) |
| Input Current | 8mA Max                     |
| State 1       | +13 to +30V                 |
| State 0       | -30 to +3V                  |

|               |                        |
|---------------|------------------------|
| Outputs       | 1x Relay Output        |
| Type          | Form A                 |
| Output Rating | 24V <sub>DC</sub> @ 1A |

## Interface.

|                 |   |
|-----------------|---|
| LED Indicators  | 2x Power<br>Fault<br>Ring State<br>Ring Master<br>SFP Link/Activity<br>RJ45 Link/Activity |
| RJ45 Ports      | 8 or 16x 10/100/1000T(X) RJ45 with Auto MDI/MDI-X and 1.5 kV Isolation Protection         |
| SFP Slot        | 8x 100/1000FX SFP and/or 4x 1000FX SFP  |
| SFP+ Slot       | 4 x 1/2.5/10G SFP+  |
| Power           | 1x 4 pin removable terminal   |
| DI/Relay        | 1x 4 pin removable terminal   |
| Serial Console  | 1x RJ45   |
| Config/Firmware | USB Type A  |
| Reset           | Ultra-small Tactile Switch  |

## Power.

|                    |  |
|--------------------|--|
| Power Inputs       | 2  |
| Operating Voltage  | 12-48V <sub>DC</sub>   |
| Power Consumption: | 14 Watts Max (12 Port 1Gb Model)<br>19 Watts Max (20 Port 1Gb Model)<br>16 Watts Max (12 Port 10Gb Model)<br>19 Watts Max (20 Port 10Gb Model) |
| Protection         | Reverse Polarity,<br>Overload Current  |

## Mechanical.

|                |  |
|----------------|--|
| Housing        | Aluminium  |
| Dimensions:    | (W x D x H)  |
| 12 Port Models | 72 x 113 x 145 mm<br>2.83 x 4.45 x 5.71 in                           |
| 20 Port Models | 91 x 118 x 145 mm<br>3.58 x 4.65 x 5.71 in                           |
| IP Rating      | IP30   |
| Installation   | Wall Mount or DIN-Rail   |
| Weight         | 0.87kg / 1.92lb (12 Port Models)<br>0.97kg / 2.14lb (20 Port Models) |

## Environmental.

|                  |  |
|------------------|--|
| Operating Temp.  | -40°C to +75°C   |
| Storage Tempe.   | -40°C to +85°C   |
| Humidity         | 5% to 95% (non-condensing)   |
| MTBF             | >250,000 hours   |
| MTBF Standard    | Telcordia (Bellcore) GB  |
| Heat Dissipation | 48 BTU/h (12 Port 1Gb Model)<br>65 BTU/h (20 Port 1Gb Model)<br>55 BTU/h (12 Port 10Gb Model)<br>65 BTU/h (20 Port 10Gb Model) |
| Cooling          | Passive  |

## Regulatory.

|               |   |
|---------------|---|
| Safety        | CE/EN60950-1  |
| EMI           | EN55032 Class A<br>FCC Part 15B Class A   |
| EMS           | EN61000-4-2 (ESD)<br>EN61000-4-3 (RS)<br>EN61000-4-4 (EFT)<br>EN61000-4-5 (Surge)<br>EN61000-4-6 (CS)<br>EN61000-4-8 (PFMF) |
| EMC           | EN61000-6-2<br>EN61000-6-4  |
| Shock         | IEC60068-2-27   |
| Free Fall     | IEC60068-2-32   |
| Vibration     | IEC60068-2-6  |
| Environmental | Reach<br>RoHS<br>WEEE   |

Designed to meet NEMA TS2 & EN 50121-4

# Part Numbers.

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## 1Gb Industrial Layer 2 Managed Switches

|               |  |
|---------------|--|
| AMG560-8G-4S  | 8 × 10/100/1000TX & 4 × 1000M SFP                    |
| AMG560-16G-4S | 16 × 10/100/1000TX & 4 × 1000M SFP                   |
| AMG560-8G-12S | 8 × 10/100/1000TX, 8 × 100/1000M SFP & 4 × 1000M SFP |

## 10Gb Industrial Layer 2 Managed Switches

|                  |  |
|------------------|--|
| AMG560-8G-4XS    | 8 × 10/100/1000TX & 4 × 1000M/2.5G/10G SFP+                    |
| AMG560-16G-4XS   | 16 × 10/100/1000TX & 4 × 1000M/2.5G/10G SFP+                   |
| AMG560-8G-8S-4XS | 8 × 10/100/1000TX, 8 × 100/1000M SFP & 4 × 1000M/2.5G/10G SFP+ |

## Recommended PSUs.

AMGPSU-I12-P24      DIN-Rail Mounting Industrial Grade PSU, -40 to +70°C, 12VDC, 24W

## Notes.

Optional Accessories:      SFP modules - Optical/Copper see separate list, need to be ordered separately

*In a continuing effort to improve and advance technology, product specifications are subject to change without notice. Please visit [www.amgsystems.com](http://www.amgsystems.com) for the latest product specifications.*