# Informacije o proizvodu (EN)

D-LINK DGS-1210-28P switch

# D-Link

**Building Networks for People**

## Product Highlights

**Flexibility and Reliability**

A combination of RJ-45, SFP, and SFP+ ports provides the necessary flexibility to adapt to a wide range of applications and environments

**Security and Authentication Features**

Robust security features, including the D-Link Safeguard Engine™, protect against malicious attacks, while authentication tools allow access control

**High Bandwidth**

Up to four 10G SFP+ ports[1] provide maximum throughput, reduce latency, and provide bandwidth for future network expansion

## DGS-1210ME Series
# Metro Ethernet Switches

## Features

**Flexible Hardware Design**
- Available in multiple configurations:
  - Different combinations of 1000BASE-T, 1G, and 10G ports
  - PoE and non-PoE variations
- Designed for standard 1U rack-mounting
- Rear panel RPS connector for an additional external power supply (for non-PoE models)

**Layer 2 Features**
- 16K MAC address table
- IEEE 802.1D STP, 802.1w RSTP, and 802.1s MSTP
- Loopback detection
- Supports IEEE 802.3ad Link Aggregation
- Port-based Q-in-Q
- VLAN Trunking

**Security and Authentication**
- Port security
- SSH/SSL
- IP-MAC-Port Binding (IMPB)
- Access Control List (ACL) and IEEE 802.1X
- Guest VLAN

**Reliability and Maintenance**
- Surge protection on all Gigabit Ethernet ports[2]
- ITU-T G.8032 ERPS sub-50 ms protection and recovery
- Dying Gasp for quick trouble shooting during power failures or system shut downs

The DGS-1210ME Series Metro Ethernet Switches are a range of switches designed for Metro Ethernet applications. They feature a variety of port configurations, including 10/100/1000BASE-T RJ-45 ports, 1G SFP ports, and 10G SFP+ ports for increased network bandwidth. Surge protection, advanced Layer 2 functions, and a suite of security and management tools make the DGS-1210ME Series Metro Ethernet Switches ideal for Metro Ethernet applications.

## Multi-Gigabit Performance

The DGS-1210ME Series Metro Ethernet Switches come in a variety of port setups, including Gigabit Ethernet RJ-45, 1G Ethernet SFP ports, or 10G SFP+ ports. All models offer a minimum of at least two 1G Ethernet SFP ports, excluding the DGS-1210-12TS/ME which offers ten 1G SFP ports and two 10/100/1000BASE-T ports. The DGS-1210-28X/ME and DGS-1210-28XS/ME offer four 10G SFP+ ports for improved uplink bandwidth. The DGS-1210-10P/ME, DGS-1210-28P/ME, DGS-1210-28MP/ME, DGS-1210-52P/ME, DGS-1210-52MP/ME and DGS-1210-52MPP/ME switches feature Power over Ethernet (PoE), allowing compatible devices to be installed and powered in remote locations without immediate access to power outlets.

## Efficient and Resilient

For mission critical environments, the DGS-1210ME Series Metro Ethernet Switches support IEEE 802.1D 2004 edition, 802.1w, and 802.1s Spanning Tree Protocols (STP). The Spanning Tree Protocol allows the switches to participate in Spanning Tree topology, providing an alternative Layer 2 path in the event of a network failover. The switches also support IEEE 802.3ad link aggregation, which enables multiple ports to be grouped to form a single virtual port, increasing bandwidth and redundancy for higher availability. This series furthermore features IEEE 802.1p Quality of Service (QoS), allowing for real-time traffic classification into Weighted Round Robin (WRR) and strict priority levels mapped to 8 queues. Advanced traffic classification parameters allow the network to be tuned for flexible configurations for specific multimedia applications such as VoIP or IPTV.

## Security & Authentication

The DGS-1210ME Series supports IEEE 802.1X port-based/host-based access control, guest VLAN, and RADIUS/TACACS+ authentication for strict access control to the network. The IP-MAC-Port Binding (IMPB) feature allows administrators to associate a source IP address with a designated MAC address and also offers the flexibility to define the port number to enhance user access control. The built-in D-Link Safeguard Engine™ protects the CPU from broadcast, multicast, and unicast flooding by automatically trapping packets and logging events in these situations. In addition, the Access Control List (ACL) feature enhances network security and switch performance.

## Management Capabilities

A user-friendly web interface gives administrators access to advanced management features such as DHCP auto-configuration. This enables switches to load their configuration from a TFTP server once they have been assigned an IP address, allowing central management of device configurations. The switches support Link Layer Discovery Protocol (LLDP), which advertises the device's capabilities and identity to the local network, allowing administrators to better manage their network topology. Each port also supports cable diagnostics, which can be used to troubleshoot cable length and functionality problems remotely, resulting in lower management overheads.

## Traffic & Bandwidth Control

Integrated bandwidth control allows network administrators to define the throughput levels for ingress and egress bandwidth. It provides a minimum granularity of 64 Kbps for ingress port and flow-based bandwidth control, and a minimum granularity of 64 Kbps for egress queue bandwidth. The DGS-1210ME Series also supports traffic control, which optimizes performance by dropping packets when exceeding a set threshold, while port mirroring helps administrators facilitate traffic diagnostics and track network performance. The DGS-1210ME Series also provides IGMP snooping with IGMP authentication to prune multicast traffic and to optimize available bandwidth.

## Multicast Applications

The DGS-1210ME Series features a full set of L2 multicast functions, including IGMP snooping, IGMP filtering, fast leave, and multicast traffic configuration for specific ports. With L2 multicast support, the DGS-1210ME Series is ready and capable of handling growing IPTV applications. Host-based IGMP/MLD snooping allows for multiple multicast subscribers per physical interface, and ISM VLAN sends multicast streams in a multicast VLAN, saving bandwidth on the backbone. Additionally, ISM VLAN profiles allow users to bind or replace the predefined multicast registration information to subscriber ports quickly and easily.

**D-Link**
Building Networks for People

DGS-1210-10/ME

DGS-1210-10P/ME

DGS-1210-20/ME

DGS-1210-12TS/ME

DGS-1210-28/ME

DGS-1210-28X/ME

DGS-1210-28P/ME

DGS-1210-28XS/ME

DGS-1210-28MP/ME

DGS-1210-52/ME

DGS-1210-52P/ME

DGS-1210-52MP/ME

DGS-1210-52MPP/ME

## Technical Specifications

| | DGS-1210-10P/ME | DGS-1210-28P/ME | DGS-1210-28MP/ME |
|---|---|---|---|
| Model Number | DGS-1210-10P/ME | DGS-1210-28P/ME | DGS-1210-28MP/ME |
| Hardware Version | B1 | B1 | B1 |

### Interface

| | | | |
|---|---|---|---|
| Size | • 11-inch standard rack-mount width<br>• 1U height | • 19-inch standard rack-mount width<br>• 1U height | • 19-inch standard rack-mount width<br>• 1U height |
| Interfaces | • 8 10/100/1000BASE-T PoE<br>• 2 1G SFP | • 24 10/100/1000BASE-T PoE<br>• 4 1G SFP | • 24 10/100/1000BASE-T PoE<br>• 4 1G SFP |
| Port Standards & Functions | • Ports 1 to 8 compliant with IEEE 802.3at | • Ports 1 to 24 compliant with IEEE 802.3at | • Ports 1 to 24 compliant with IEEE 802.3at |
| Console Port | • RJ-45 console port | | |
| Other Port Standards & Functions | • IEEE 802.3i 10BASE-T Ethernet (twisted-pair copper)<br>• IEEE 802.3u 100BASE-TX Fast Ethernet (twisted-pair copper)<br>• IEEE 802.3ab 1000BASE-T Gigabit Ethernet (twisted-pair copper)<br>• IEEE 802.3az compliance<br>• Auto-negotiation<br>• IEEE 802.3x Flow Control<br>• IEEE 802.3z 1000BASE-X Gigabit Fiber | | |
| Network Cables | • UTP Cat. 5, Cat. 5e (100 m max.) | | |
| Full/Half-Duplex | • Full/half-duplex for 10/100 Mbps speeds<br>• Full-duplex for 1000 Mbps speed | | |
| Media Interface Exchange | • Auto MDI/MDIX adjustment for all twisted-pair ports | | |

### Performance

| | | | |
|---|---|---|---|
| Switching Capacity | 20 Gbps | 56 Gbps | 56 Gbps |
| Forwarding Method | Store-and-forward | | |
| MAC Address Table Size | 16K entries | | |
| MAC Address Update | Up to 256 static MAC entries | | |
| 64-byte Max. Forwarding Rate | 14.88 Mpps | 41.7 Mpps | 41.7 Mpps |
| CPU Memory | 256 MB DDR3 | | |
| Packet Buffer | 1.5 MB | | |
| Flash Memory | 32 MB | | |

### LEDs

| | | | |
|---|---|---|---|
| Power (per device) | ✓ | ✓ | ✓ |
| Console (per device) | ✓ | ✓ | ✓ |
| Link/Active/Speed (per port) | ✓ | ✓ | ✓ |
| Fan Error | | ✓ | ✓ |

### Physical/Environmental

| | | | |
|---|---|---|---|
| MTBF | 315,336 hours | 331,699 hours | 267,960 hours |
| Acoustic | 0 dB(A) | High speed: 52.9 dB(A)<br>Low speed: 45.3 dB(A) | High Speed: 52.4 dB(A)<br>Low Speed: 47.9 dB(A) |

| Heat Dissipation | 307,703 BTU/hr | 857.98 BTU/hr | 1552.32 BTU/hr |
|---|---|---|---|
| Power Input | AC Input: 100 to 240 V AC, 50/60 Hz | | |
| Maximum Power Consumption | 101.7 W (PoE on) 17.9 W (PoE off) | 251.5 W (PoE on) 28.7 W (PoE off) | 445 W (PoE on) 35.6 W (PoE off) |
| Maximum PoE Budget | 78 W | 193 W | 370 W |
| Standby Power Consumption | 10.3 W/100 V 11.1 W/240 V | 18.4 W/100 V 16.1 W/240 V | 23.5 W/100 V 21.8 W/240 V |
| Dimensions (W x D x H) | 280 x 180 x 44 mm | 440 x 210 x 44 mm | 440 x 250 x 44 mm |
| Ventilation | Fanless | 2 x Smart fans | 3 x Smart fans |
| Weight | 1.92 kg | 3.34 kg | 3.96 kg |
| Power Surge Protection | All Gigabit Ethernet ports support IEC 61000-4-5 surge protection | | |
| Operating Temperature | -5 to 50 °C (23 to 122 °F) | | |
| Storage Temperature | -40 to 70 °C (-40 to 158 °F) | | |
| Operating Humidity | 10% to 90% non-condensing | | |
| Storage Humidity | 5% to 90% non-condensing | | |
| EMI | FCC class A, CE class A, VCCI, BSMI, CCC | | |
| Safety Certifications | CE, LVD, UL, CB | | |

## Technical Specifications

| Model Number | DGS-1210-52P/ME | DGS-1210-52MP/ME | DGS-1210-52MPP/ME |
|---|---|---|---|
| Hardware Version | B1 | B1 | B1 |

### Interface

| Size | • 19-inch standard rack-mount width • 1U height | • 19-inch standard rack-mount width • 1U height | • 19-inch standard rack-mount width • 1U height |
|---|---|---|---|
| Interfaces | • 24 10/100/1000BASE-T PoE • 24 10/100/1000BASE-T • 4 1G SFP | • 48 10/100/1000BASE-T PoE • 4 1G SFP | • 48 10/100/1000BASE-T PoE • 4 1G SFP |
| Port Standards & Functions | • Ports 1 to 8 compliant with IEEE 802.3at • Ports 9 to 24 compliant with IEEE 802.3af | Ports 1 to 8 compliant with IEEE 802.3at Ports 9 to 48 compliant with IEEE 802.3af | Ports 1 to 48 compliant with IEEE 802.3at |
| Console Port | • RJ-45 console port | | |
| Other Port Standards & Functions | • IEEE 802.3i 10BASE-T Ethernet (twisted-pair copper) • IEEE 802.3u 100BASE-TX Fast Ethernet (twisted-pair copper) • IEEE 802.3ab 1000BASE-T Gigabit Ethernet (twisted-pair copper) • IEEE 802.3az compliance • Auto-negotiation • IEEE 802.3x Flow Control • IEEE 802.3z 1000BASE-X Gigabit Fiber | | |
| Network Cables | • UTP Cat. 5, Cat. 5e (100 m max.) | | |
| Full/Half-Duplex | • Full/half-duplex for 10/100 Mbps speeds • Full-duplex for 1000 Mbps speed | | |
| Media Interface Exchange | • Auto MDI/MDIX adjustment for all twisted-pair ports | | |

## Performance

| | |
|---|---|
| Switching Capacity | 104 Gbps |
| Forwarding Method | Store-and-forward |
| MAC Address Table Size | 16K entries |
| MAC Address Update | Up to 256 static MAC entries |
| 64-byte Max. Forwarding Rate | 77.4 Mpps |
| CPU Memory | 256 MB DDR3 |
| Packet Buffer | 3.0 MB |
| Flash Memory | 32 MB |

## LEDs

| | | | |
|---|---|---|---|
| Power (per device) | ✓ | ✓ | ✓ |
| Console (per device) | ✓ | ✓ | ✓ |
| Link/Active/Speed (per port) | ✓ | ✓ | ✓ |
| Fan Error | ✓ | ✓ | ✓ |

## Physical/Environmental

| | | | |
|---|---|---|---|
| MTBF | 289,151 hours | 272,910 hours | 265,457 hours |
| Acoustic | High speed: 47.3 dB(A)<br>Low speed: 37.8 dB(A) | High speed: 50.1 dB(A)<br>Low speed: 40.4 dB(A) | High Speed: 55.2 dB(A)<br>Low Speed: 49.3 dB(A) |
| Heat Dissipation | 932.23 BTU/hr | 1636.16 BTU/hr | 3268.46 BTU/hr |
| Power Input | AC Input: 100 to 240 V AC, 50/60 Hz | | |
| Maximum Power Consumption | 273.2 W (PoE on)<br>47.9 W (PoE off) | 479.5 W (PoE on)<br>54.4 W (PoE off) | 957.9 W (PoE on)<br>56.8 W (PoE off) |
| Maximum PoE Budget | 193 W | 370 W | 740 W |
| Standby Power Consumption | 32 W/100 V<br>30.1 W/240 V | 33 W/100 V<br>31.6 W/240 V | 37.8 W/100 V<br>35.9 W/240 V |
| Dimensions (W x D x H) | 440 x 430 x 44 mm | 440 x 430 x 44 mm | 440 x 431 x 44 mm |
| Ventilation | 2 x Smart fans | 3 x Smart fans | 5 x Smart fans |
| Weight | 5.72 kg | 6.04 kg | 6.52 kg |
| Power Surge Protection | All Gigabit Ethernet ports support IEC 61000-4-5 surge protection | | |
| Operating Temperature | -5 to 50 °C (23 to 122 °F) | | |
| Storage Temperature | -40 to 70 °C (-40 to 158 °F) | | |
| Operating Humidity | 10% to 90% non-condensing | | |
| Storage Humidity | 5% to 90% non-condensing | | |
| EMI | FCC class A, CE class A, VCCI, BSMI, CCC | | |
| Safety Certifications | CE, LVD, UL, CB | | |

## Technical Specifications

| Model Number | DGS-1210-10/ME | DGS-1210-20/ME | DGS-1210-28/ME | DGS-1210-52/ME |
|---|---|---|---|---|
| Hardware Version | B1 | B1 | B1 | B1 |

### Interface

| | | | | |
|---|---|---|---|---|
| Size | • 11-inch standard rack-mount width<br>• 1U height | • 11-inch standard rack-mount width<br>• 1U height | • 19-inch standard rack-mount width<br>• 1U height | • 19-inch standard rack-mount width<br>• 1U height |
| Interfaces | • 8 10/100/1000BASE-T<br>• 2 1G SFP | • 16 10/100/1000BASE-T<br>• 4 1G SFP | • 24 10/100/1000BASE-T<br>• 4 1G SFP | • 48 10/100/1000BASE-T<br>• 4 1G SFP |
| Console Port | RJ-45 console port | | | |
| Other Port Standards & Functions | • IEEE 802.3i 10BASE-T Ethernet (twisted-pair copper)<br>• IEEE 802.3u 100BASE-TX Fast Ethernet (twisted-pair copper)<br>• IEEE 802.3ab 1000BASE-T Gigabit Ethernet (twisted-pair copper)<br>• IEEE 802.3az compliance<br>• Auto-negotiation<br>• IEEE 802.3x Flow Control<br>• IEEE 802.3z 1000BASE-X Gigabit Fiber | | | |
| Network Cables | • UTP Cat. 5, Cat. 5e (100 m max.) | | | |
| Full/Half-Duplex | • Full/half-duplex for 10/100 Mbps speeds<br>• Full-duplex for 1000 Mbps speed | | | |
| Media Interface Exchange | • Auto MDI/MDIX adjustment for all twisted-pair ports | | | |

### Performance

| | | | | |
|---|---|---|---|---|
| Switching Capacity | 20 Gbps | 40 Gbps | 56 Gbps | 104 Gbps |
| 64-byte Max. Forwarding Rate | 14.88 Mpps | 29.80 Mpps | 41.7 Mpps | 77.4 Mpps |
| MAC Address Table Size | 16K entries | | | |
| CPU Memory | 256 MB DDR3 | | | |
| Packet Buffer | 1.5 MB | 1.5 MB | 1.5 MB | 3.0 MB |
| Flash Memory | 32 MB | | | |

### LEDs

| | | | | |
|---|---|---|---|---|
| Power (per device) | ✓ | ✓ | ✓ | ✓ |
| Console (per device) | ✓ | ✓ | ✓ | ✓ |
| Link/Active/Speed (per port) | ✓ | ✓ | ✓ | ✓ |
| Fan Error | | | | ✓ |

### Physical/Environmental

| | | | | |
|---|---|---|---|---|
| MTBF | 412,956 hours | 349,836 hours | 497,918 hours | 381,999 hours |
| Acoustic | 0 dB(A) | 0 dB(A) | 0 dB(A) | High speed: 49 dB(A)<br>Low speed: 40 dB(A) |
| Heat Dissipation | 46.35 BTU/hr | 47.67 BTU/hr | 60.12 BTU/hr | 132.08 BTU/hr |
| Power Input | AC Input: 100 to 240 V AC, 50/60 Hz | | | |
| Optional 54 W AC to DC PSU | • Output: 12.4 V/3.7 A (min 11.78 V & max 13.02 V); 13.6 V/0.6 A (min 13.40 V & max 13.80 V)<br>• Charging output for lead-acid battery: 13.6 V +/- 1.5%; charge current 0.6 A +/- 0.1 A | | | |

| | | | | |
|---|---|---|---|---|
| Battery Connection Input | • Rear RPS socket for connecting external lead-acid batteries<br>• Battery status monitoring through CLI or SNMP | | | |
| Maximum Power Consumption | 13.38 W/100 V<br>13.59 W/240 V | 13.81 W/100 V<br>13.97 W/240 V | 19.05 W/100 V<br>19.14 W/240 V | 38.85 W/100 V<br>38.35 W/240 V |
| Standby Power Consumption | 9.3 W/100 V<br>9.4 W/240 V | 6.76 W/100 V<br>6.95 W/240 V | 7.87 W/100 V<br>8.21 W/240 V | 21.72 W/100 V<br>21.49 W/240 V |
| Dimensions (W x D x H) | 280 x 126 x 44 mm | 280 x 180 x 44 mm | 440 x 140 x 44 mm | 440 x 210 x 44 mm |
| Ventilation | Fanless | Fanless | Fanless | 1 x Smart fan |
| Weight | 1.05 kg | 1.38 kg | 2.21 kg | 3.31 kg |
| Power Surge Protection | All Gigabit Ethernet ports support IEC 61000-4-5 surge protection | | | |
| Operating Temperature | -5 to 50 ℃ (23 to 122 ℉) | | | |
| Storage Temperature | -40 to 70 ℃ (-40 to 158 ℉) | | | |
| Operating Humidity | 10% to 90% non-condensing | | | |
| Storage Humidity | 5% to 90% non-condensing | | | |
| EMI | FCC class A, CE class A, VCCI, BSMI, CCC | | | |
| Safety Certifications | CE, LVD, UL, CB | | | |

## Technical Specifications

| Model Number | DGS-1210-12TS/ME | DGS-1210-28X/ME | DGS-1210-28XS/ME |
|---|---|---|---|
| Hardware Version | B1 | B1 | B1 |
| **Interface** | | | |
| Size | • 11-inch standard rack-mount width<br>• 1U height | • 19-inch standard rack-mount width<br>• 1U height | • 19-inch standard rack-mount width<br>• 1U height |
| Interfaces | • 10 1G SFP<br>• 2 10/100/1000BASE-T | • 24 10/100/1000BASE-T<br>• 4 10G SFP+ | • 24 100/1000 Mbps SFP<br>• 4 10G SFP+ |
| Console Port | RJ-45 console port | | |
| Other Port Standards & Functions | • IEEE 802.3i 10BASE-T Ethernet (twisted-pair copper)<br>• IEEE 802.3u 100BASE-TX Fast Ethernet (twisted-pair copper)<br>• IEEE 802.3ab 1000BASE-T Gigabit Ethernet (twisted-pair copper)<br>• IEEE 802.3az compliance<br>• Auto-negotiation<br>• IEEE 802.3x Flow Control<br>• IEEE 802.3ae 10 Gigabit Ethernet (for 28X/ME, 28XS/ME)<br>• IEEE 802.3u 100BASE-FX (for 28XS/ME)<br>• IEEE 802.3z 1000BASE-X Gigabit Fiber (for 28XS/ME, 12TS/ME) | | |
| Network Cables | • UTP Cat. 5, Cat. 5e (100 m max.) | | |
| Full/Half-Duplex | • Full/half-duplex for 10/100 Mbps speeds<br>• Full-duplex for 1000 Mbps speeds | | |
| Media Interface Exchange | • Auto MDI/MDIX adjustment for all twisted-pair ports | | |

| Performance | | | |
|---|---|---|---|
| Switching Capacity | 24 Gbps | 128 Gbps | 128 Gbps |
| 64-byte Max. Forwarding Rate | 17.86 Mpps | 95.24 Mpps | 95.24 Mpps |
| MAC Address Table Size | 16K Entries | | |
| CPU Memory | 256 MB DDR3 | | |
| Packet Buffer | 1.5 MB | | |
| Flash Memory | 32 MB | | |
| **LEDs** | | | |
| Power (per device) | ✓ | ✓ | ✓ |
| Console (per device) | ✓ | ✓ | ✓ |
| Link/Active/Speed (per port) | ✓ | ✓ | ✓ |
| Fan Error | | ✓ | ✓ |
| **Physical/Environmental** | | | |
| MTBF | 405,083 hours | 450,021 hours | 243,327 hours |
| Acoustic | 0 dB(A) | 42.5 dB(A) | 48.9 dB(A) |
| Heat Dissipation | 47.25 BTU/hr | 83.72 BTU/hr | 115.17 BTU/hr |
| Power Input | AC Input: 100 to 240 V AC, 50/60 Hz | | |
| Maximum Power Consumption | 13.6 W/100 V<br>13.85 W/240 V | 24.5 W/100 V<br>24.4 W/240 V | 32.9 W/100 V<br>33.4 W/240 V |
| Standby Power Consumption | 7.28 W/100 V<br>7.49 W/240 V | 12.8 W/100 V<br>13.0 W/240 V | 15.5 W/100 V<br>16.7 W/240 V |
| Dimensions (W x D x H) | 280 x 180 x 44 mm | 440 x 210 x 44 mm | 440 x 210 x 44 mm |
| Ventilation | Fanless | 1 x Smart fan | 2 x Smart fans |
| Weight | 1.17 kg | 2.68 kg | 2.96 kg |
| Power Surge Protection | All Gigabit Ethernet ports support IEC 61000-4-5 surge protection | | |
| Operating Temperature | -5 to 50 °C (23 to 122 °F) | | |
| Storage Temperature | -20 to 70 °C (-4 to 158 °F) | | |
| Operating Humidity | 0% to 95% RH | | |
| Storage Humidity | 0% to 95% RH | | |
| EMI | BSMI, CE, FCC, VCCI | CE | |
| Safety Certifications | UL, CB, LVD, BSMI | CB, LVD | |

## Software

| | | |
|---|---|---|
| **L2 Features** | • MAC address table: 16K entries<br>• Spanning Tree Protocols<br>  - 802.1D STP<br>  - 802.1w RSTP<br>  - 802.1s MSTP<br>  - BPDU filtering<br>  - Root restriction<br>• Loopback detection | • Mirroring<br>  - Support 1 mirroring group<br>  - Support One-to-One, Many-to-One,<br>    Flow-based (ACL) mirroring for ingress traffic<br>• L2 Protocol Tunneling (L2PT)<br>• Link aggregation<br>  - Compliant with 802.3ad<br>  - Supports max. 8 groups, 8 ports per group |
| **L2 Multicasting** | • IGMP Snooping<br>  - IGMP v1/v2 snooping, v3 awareness<br>  - IGMP authentication/filtering<br>  - Supports 256 groups<br>  - VLAN/host-based IGMP snooping fast leave<br>  - Report suppression | • MLD Snooping<br>  - MLD v1, MLD v2 awareness<br>  - Supports 256 groups |
| **VLAN** | • 802.1Q tagged VLAN<br>• VLAN group<br>• Max. 4094 VLAN groups<br>• Port-based VLAN<br>• GVRP<br>• Asymmetric VLAN<br>• Max. 256 dynamic VLAN | • 802.1v protocol VLAN<br>• VLAN trunking<br>• MAC-based VLAN<br>• Port-based Q-in-Q<br>• ISM VLAN (multicast VLAN)<br>• Private VLAN |
| **L3 Features** | • Max. 256 ARP entries<br>• Supports 255 static ARP entries<br>• Static route<br>  - 64 IPv4 static routes<br>  - 32 IPv6 static routes | • Supports Gratuitous ARP<br>• Default route |
| **Quality of Service (QoS)** | • CoS based on:<br>  - Switch port<br>  - 802.1p priority queues<br>  - VLAN ID<br>  - MAC address<br>  - IPv4/IPv6 address<br>  - DSCP<br>  - TOS<br>  - Protocol type<br>  - TCP/UDP port<br>  - IPv6 traffic class | • Bandwidth control<br>  - Port-based (ingress, min. granularity 64 Kbps)<br>  - Flow-based (ingress, min. granularity 64 Kbps)<br>  - Egress queue bandwidth control (min. granularity 64 Kbps)<br>• Queue handling<br>  - Strict priority<br>  - Weighted Round Robin (WRR)<br>• 8 outbound queues |
| **Access Control List (ACL)** | • ACL based on<br>  - Switch port<br>  - 802.1p priority<br>  - VLAN ID<br>  - MAC address<br>  - EtherType<br>  - TOS<br>  - IPv4/v6 address<br>  - DSCP<br>  - Protocol type<br>  - IPv4/IPv6 TCP/UDP port number<br>  - ICMP<br>  - IPv6 traffic class | • Up to 256 ingress access rules<br>• ACL action (permit/deny/mirror)<br>• Time-based ACL<br>• ACL statistics<br>• CPU interface filtering |
| **Authentication, Authorization, and Accounting (AAA)** | • 802.1X<br>  - Host-based access control<br>  - Port-based access control<br>• Guest VLAN<br>• Host-based MAC authentication<br>• RADIUS accounting | • TACACS+ accounting<br>• User account privilege (4 level user access)<br>• MAC-based access control<br>  - Max. 512 entries when using local database<br>• Authentication for management access<br>  - Local, RADIUS, TACACS+ database |

| Security | • SSH v2 | • D-Link Safeguard Engine |
|---|---|---|
| | • SSL v1/2/3 | • DHCP server screening |
| | • Port security (Up to 64 MAC addresses per port) | • DHCP client filtering |
| | • IP-MAC-Port Binding (IMPB) | • BPDU attack protection |
| |   - ARP inspection | • DoS attack prevention |
| |   - IP inspection | • Traffic segmentation |
| |   - IPv6 DHCP snooping | |
| | • Broadcast/Multicast/Unicast storm control | |
| Operations, Administration, and Maintenance (OAM) | • 802.3ah Ethernet Link OAM | • Cable diagnostics |
| |   - Supports 802.3ah link layer remote loopback and discovery (System log and SNMP) | • Dying Gasp |
| | | • Supports optical transceiver digital diagnostics monitoring (DDM) |
| |   - 802.3ah D-Link extension: D-link Unidirectional Link Detection (DULD), (System log and SNMP) | |
| Management | • Web-based GUI (IPv4/IPv6) | • Trusted host |
| | • Command Line Interface (CLI) | • DHCP relay (IPv4/IPv6) |
| | • Telnet Server/Client (Support IPv4/IPv6) |   - DHCP relay agent/local relay |
| | • TFTP client (IPv4) |   - DHCP relay option 12, 18, 37, 38, 82 |
| | • Command logging | • PPPoE Circuit-ID tag insertion |
| | • SNMP v1/v2c/v3 | • Trap/alarm/log severity control |
| | • SNMP traps | • CPU monitoring |
| | • System log | • SNTP |
| | • RMON v1 | • LLDP-MED (for PoE models only) |
| | • RMON v2 | • Debug command |
| | • LLDP | • Password recovery |
| | • BootP/DHCP client | • Password encryption |
| | • DHCP auto-configuration | • Backdoor password |
| | • Text-editable config file | |
| MIB | • RFC1212 Concise MIB Definitions | • RFC2674 802.1p MIB |
| | • RFC1213 MIB II | • RFC 2233 Interface Group MIB |
| | • RFC1215 MIB Traps Convention | • RFC 2618 RADIUS authentication client MIB |
| | • RFC1065, 1151, 2578 MIB Structure | • RFC 2620 RADIUS accounting client MIB |
| | • RFC1493 Bridge MIB | • RFC3289 D-Link Zone Defense MIB |
| | • RFC1157, 2573, 2575, 2576 SNMP MIB | • RFC4022 MIB for TCP |
| | • RFC3418 SNMPv2 MIB | • RFC4113 MIB for UDP |
| | • RFC2819 RMON MIB | • PoE MIB |
| | • RFC2021 RMONv2 MIB | • DDP MIB |
| | • RFC1643, 1650, 2665 Ether-like MIB | • LLDP-MED MIB |
| IETF Standard | • RFC768 UDP | • RFC793 TCP |
| | • RFC791 IP | • RFC826 ARP |
| | • RFC792 ICMPv4 | • RFC1321, 2284, 2865, 2716, 3580 Extensible Authentication Protocol (EAP) |
| | • RFC2463, 4443 ICMPv6 | |
| IPv6 | • RFC1981 Path MTU Discovery | • RFC2462, 4862 IPv6 Stateless Address Auto-configuration |
| | • RFC2460 IPv6 | • RFC2893, 4213 IPv4/IPv6 dual stack function |
| | • RFC2461, 4861 Neighbor Discovery | |

## Order Information

| Part Number | Description |
|---|---|
| DGS-1210-10/ME | 8 10/100/1000BASE-T + 2 1G SFP Ports L2 Management Switch |
| DGS-1210-20/ME | 16 10/100/1000BASE-T + 4 1G SFP Ports L2 Management Switch |
| DGS-1210-28/ME | 24 10/100/1000BASE-T+ 4 1G SFP Ports L2 Management Switch |
| DGS-1210-52/ME | 48 10/100/1000BASE-T+ 4 1G SFP Ports L2 Management Switch |
| DGS-1210-28P/ME | 24 10/100/1000BASE-T PoE + 4 1G SFP Ports L2 Management Switch |
| DGS-1210-28MP/ME | 24 10/100/1000BASE-T PoE + 4 1G SFP Ports L2 Management Switch |
| DGS-1210-10P/ME | 8 10/100/1000BASE-T PoE + 2 1G SFP Ports L2 Management Switch |
| DGS-1210-52P/ME | 24 10/100/1000BASE-T PoE + 24 10/100/1000BASE-T + 4 1G SFP Ports L2 Management Switch |
| DGS-1210-52MP/ME | 48 10/100/1000BASE-T PoE + 4 1G SFP Ports L2 Management Switch |
| DGS-1210-52MPP/ME | 48 10/100/1000BASE-T PoE + 4 1G SFP Ports L2 Management Switch |
| DGS-1210-12TS/ME | 10 1G SFP + 2 10/100/1000BASE-T Ports L2 Management Switch |
| DGS-1210-28X/ME | 24 10/100/1000BASE-T + 4 10G SFP+ Ports L2 Management Switch |
| DGS-1210-28XS/ME | 24 100/1000 Mbps SFP + 4 10G SFP+ Ports L2 Management Switch |

## Redundant Power Supply (Non-PoE Models Only)

| | |
|---|---|
| DPS-200A | Redundant Power Supply |
| DPS-500A | Redundant Power Supply |
| DPS-500DC | Redundant Power Supply |
| DPS-CB150-2PS | 150 cm RPS cable for connecting DGS-1210-10/ME, 20/ME, 28/ME, 52/ME, 12TS/ME, 28XS/ME, 28X/ME, and DPS-200A/500A/500DC |
| SU54-21124-000S | Optional 54 W AC to DC Power Supply Unit (PSU) with external lead-acid battery support that can be used as a redundant power supply, or to connect an external 13.6 V DC lead-acid battery to charge the switch. The minimum required voltage for the lead-acid battery is 13.6 V DC, with a minimum capacity of 2 AH (for DGS-1210-10/ME, 20/ME, 28/ME, 52/ME). |

## Optional DC Primary Power Supply (Non-PoE Models Only)

| | |
|---|---|
| SF24-2120200-1C | Input voltage: 72 V DC to 36 V DC, output voltage: 12 V/2 A (for DGS-1210-10/ME, 20/ME, 28/ME B1) |
| SE40-1120333-3C | Input voltage: 72 V DC to 36 V DC, output voltage: 12 V/3.33 A (for DGS-1210-52/ME B1) |

## Optional SFP Transceivers

| | |
|---|---|
| DEM-310GT | 1000BASE-LX, Single-mode, 10 km |
| DEM-311GT | 1000BASE-SX, Multi-mode, 500 m |
| DEM-312GT2 | 1000BASE-SX, Multi-mode, 2 km |
| DEM-314GT | 1000BASE-LHX, Single-mode, 50 km |
| DEM-315GT | 1000BASE-ZX, Single-mode, 80 km |
| DGS-712 | 1000BASE-T 100 m (only supports 1000 Mbps mode) (no Flow Control) |
| DEM-302S-LX | 1000BASE-LX, Single-mode, 2 km |
| DEM-210 | 100BASE-FX, Single-mode, 15 km (for DGS-1210-28XS/ME only) |
| DEM-211 | 100BASE-FX, Multi-mode, 2 km (for DGS-1210-28XS/ME only) |

| Optional WDM SFP Transceiver | |
|---|---|
| DEM-330T | 1000BASE-LX, Single-mode, 10 km, Tx: 1550, Rx: 1310 nm |
| DEM-330R | 1000BASE-LX, Single-mode, 10 km, Tx: 1310, Rx: 1550 nm |
| DEM-331T | 1000BASE-LX, Single-mode, 40 km, Tx: 1550, Rx: 1310 nm |
| DEM-331R | 1000BASE-LX, Single-mode, 40 km, Tx: 1310, Rx: 1550 nm |
| DEM-302S-BXD | 1000BASE-LX, Single-Mode, 2 km, Tx: 1550, Rx: 1310 nm |
| DEM-302S-BXU | 1000BASE-LX, Single-Mode, 2 km, Tx: 1310, Rx: 1550 nm |
| DEM-220T | 100BASE-BX, Single-mode, 20 km, Tx: 1550, Rx: 1310 nm (for DGS-1210-28XS/ME only) |
| DEM-220R | 100BASE-BX, Single-mode, 20 km, Tx: 1310, Rx: 1550 nm (for DGS-1210-28XS/ME only) |

| Optional SFP+ Transceivers (for DGS-1210-28X/ME, 28XS/ME only) | |
|---|---|
| DEM-431XT | 10GBASE-SR SFP+ Transceiver (without DDM), 33 m: OM1 MMF, 82 m: OM2 MMF, 300 m: OM3 MMF |
| DEM-431XT-DD | 10GBASE-SR SFP+ Transceiver (with DDM), 33 m: OM1 MMF, 82 m: OM2 MMF, 300 m: OM3 MMF |
| DEM-432XT | 10GBASE-LR SFP+ Transceiver (without DDM), 10 km |
| DEM-432XT-DD | 10GBASE-LR SFP+ Transceiver (with DDM), 10 km |
| DEM-433XT | 10GBASE-ER SFP+ Transceiver (without DDM), 40 km |
| DEM-433XT-DD | 10GBASE-ER SFP+ Transceiver (with DDM), 40 km |
| DEM-434XT | 10GBASE-ZR SFP+ Transceiver (without DDM), 80 km |
| DEM-436XT-BXD | 10GBASE-LR BiDi SFP+ Transceiver (without DDM), Tx: 1330 nm, Rx: 1270 nm, 20 km |
| DEM-436XT-BXU | 10GBASE-LR BiDi SFP+ Transceiver (without DDM), Tx 1270 nm, Rx: 1330 nm, 20 km |

| Optional SFP+ Direct Attach Stacking Cables (for DGS-1210-28X/ME, 28XS/ME only) | |
|---|---|
| DEM-CB100S | 10-GbE SFP+ 1 m Direct Attach Cable |
| DEM-CB300S | 10-GbE SFP+ 3 m Direct Attach Cable |
| DEM-CB700S | 10-GbE SFP+ 7 m Direct Attach Cable |

[1]  Up to 4 10G SFP+ uplink ports are available in the DGS-1210-28X/ME and DGS-1210-28XS/ME switches.
[2]  All Gigabit Ethernet ports of the DGS-1210ME Series switches support up to 6 kV surge protection.

Please note that the latest firmware for the DGS-1210-28/ME B1 (v7.00) is not backwards compatible with A1 hardware.

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