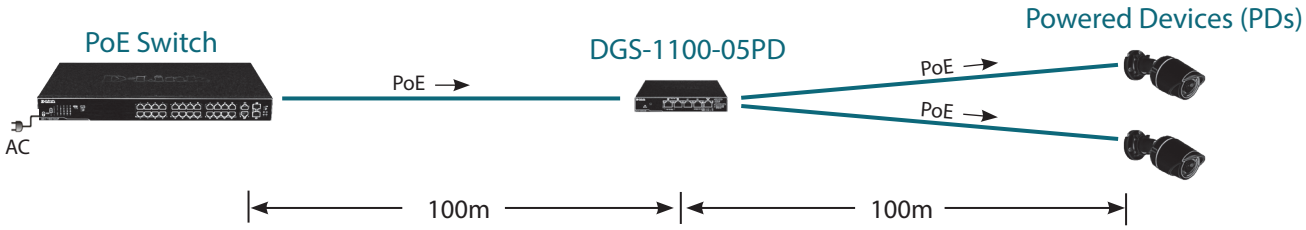
Technical Tip

DGS-1100-05PD

Smart Managed PoE-Powered 5-Port Gigabit Switch / PoE Extender

Overview:

The DGS-1100-05PD is a unique 5-port switch powered by an upstream IEEE 802.3af or 802.3at compliant PoE switch (or injector) through its port 5. The DGS-1100-05PD is also a "PoE extender". It has the ability to propagate (pass-through) PoE power downstream to Powered Devices (PDs) connected to its port 1 and/or port 2. The amount of power available to PDs is dependent on the PoE source (802.3af or 802.3at) and the PD's PoE Classification.

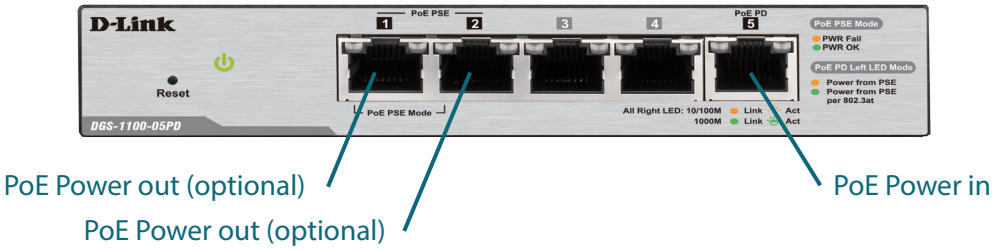


Product Details:

There is **no** AC/DC power adapter packaged in the DGS-1100-05PD box. The switch **must** be powered (through port 5) by a PoE switch or PoE injector located upstream. This upstream PoE source may support either 802.3af or 802.3at.

The DGS-1100-05PD switch can propogate PoE power to downstream PDs (such as IP Cameras, IP Phones, Wireless APs) using port 1 and/or port 2. This is also called PoE "pass-through". When using PoE pass-through functionality, it is **highly recommended** that this switch be powered via an 802.3at switch/injector (also known as PoE+). An 802.3af switch/injector *will* work, but the ability of the DGS-1100-05PD to pass-through PoE power will be significantly limited.

- If the DGS-1100-05PD is powered by 802.3af mode, the power budget will support up to 8W.
- If the DGS-1100-05PD is powered by 802.3at mode, the power budget will support up to 18W.



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The ability to pass-through PoE power to one or two downstream devices (PDs) is dependent on the **PoE Classification** of those devices. The following tables show the DGS-1100-05PD switch's capabilities when using PoE pass-through.

When the DGS-1100-05PD is powered by an **802.3af** switch/injector:

Port 5	**Port 1** PD Class Type Supported	**Port 2** PD Class Type Supported
802.3af PoE Switch/Injector	Class 1 or 2	not supported
	not supported	Class 1 or 2

When the DGS-1100-05PD is powered by an **802.3at** switch/injector:

Port 5	**Port 1** PD Class Type Supported	**Port 2** PD Class Type Supported
802.3at PoE Switch/Injector	Class 0 or 3	not supported
	not supported	Class 0 or 3
	Class 1 or 2	Class 1 or 2

PoE Classification explained:

When a PD is connected to ports 1 and/or 2, the DGS-1100-05PD switch will request the PD's classification during the power-up and signature-detection process. Classification is an optional process. Some PDs do it, some don't.

When a PD classifies itself, it informs the switch of the maximum power that the switch should reserve for it. If a PD fails to classify itself, the DGS-1100-05PD switch will default to Class 0 and assume the PD needs **full** 15.4 watts of power on that particular port.

The following table illustrates Class 0, 1, 2 and 3 power limits.

Class	Minimum PSE Power	Maximum PD Power
0	15.4 W	12.95 W
1	4 W	3.84 W
2	7 W	6.49 W
3	15.4 W	12.95 W

Note: Class 4 involves higher power (802.3at) and is not supported on the DGS-1100-05PD ports 1 and 2.

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Troubleshooting Tip 1:

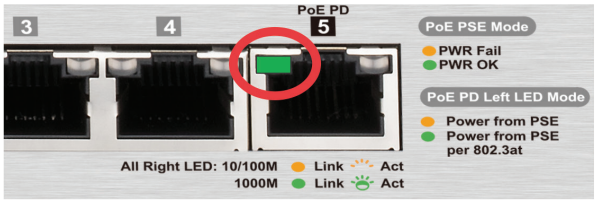
Not all IP cameras and other PDs classify themselves. If a PD fails to classify itself, the switch will default to Class 0 and reserve a maximum amount of power (15.4W), even if the PD actually consumes less. This may limit or prevent users from powering PD(s), even though the switch in theory does have sufficient power budget.

There is a potential work around that users may consider. Users may log into the DGS-1100-05PD user interface (GUI) and manually force the power limit to Class 1 or Class 2 for the port(s) connected to the PD(s). This will limit the amount of power that the switch reserves on each port to 4 watts (if Class 1) or 7 watts (if Class 2).

This workaround should be used with caution, however. Power demands for cameras often change during operation, such as when IR LEDs illuminate, or when outdoor heaters turn on. If actual power demands exceed the artifical threshold that has been set by the workaround, the camera(s) will malfunction.

Troubleshooting Tip 2:

To ensure the DGS-1100-05PD is properly powered by an 802.3at switch/injector, check the left LED of port 5. It should be green. If this LED is amber and not green, then the switch is receiving 802.3af power and not 802.3at power.



In such case, it may be necessary to enable LLDP-MED function in the switch/injector that provides the power. Doing so will ensure that the switch/injector detects the DGS-1100-05PD as an 802.3at device.

For more information:

Visit the product page or contact our sales support team at getmore@dlink.com or 888-331-8686

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