

# Using the DCS-1000/DCS-1000W IP Camera as a Security System



D-Link's IP Camera System is one of the most cost effect security solutions today. Both the DCS-1000 Wired model and DCS-1000W Wired/Wireless model have input/output controls for interfacing with security systems.

On the back of the Camera you will find an 8-position connector. This connector has 2 input triggers for security sensors and 2 output triggers for security alarms.

Security sensors for input are available as Passive (low-current/low voltage) sensors or Active (powered) sensors.

Because of power limitations of the DCS cameras and its compatibility with Power over Ethernet standards the sensor power requirement must be obeyed for proper operation. We have listed Passive and Active components that will interface with the DCS family of Cameras. Passive components must not exceed 5V 100mA. Active components must be self-powered by an external power source.

For the demonstration below a D-Link DCS-1000 was purchased from [www.dlinkshop.com](http://www.dlinkshop.com) , the security equipment was purchased from [www.smarthome.com](http://www.smarthome.com), and some cable accessories from a local hardware store.

## Materials

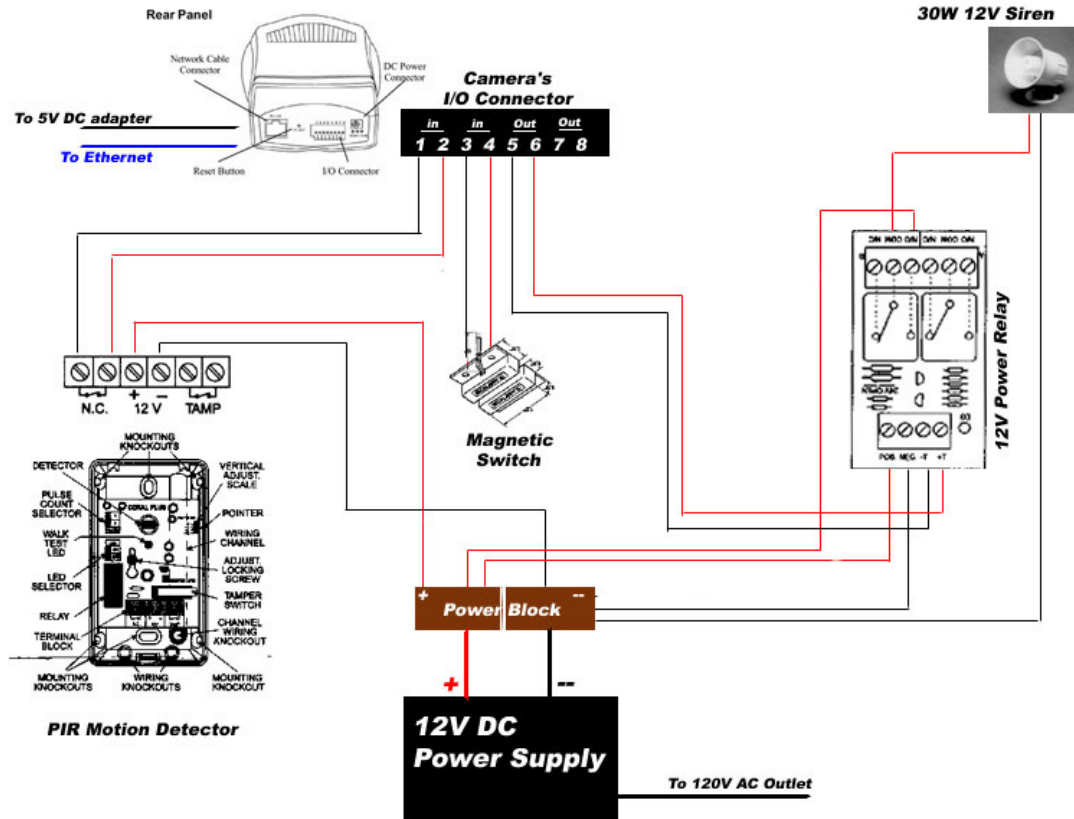
- DCS-1000
- 2 Ethernet Cables & Ethernet Switch/Internet Router
- An Ethernet based PC to configure system
- Internet Name Server and E-Mail Server to send capture information
- 10FT. 24Gauge
- 1 light current power distribution block for 12V power
- 30W Weatherproof Siren
- High Sensitivity DPDT relay (allows 5V camera to turn on 12V siren)
- Mini-Magnetic Contact Switch (commonly used for doors or windows)
- PIR Motion Detector

You will need some simple tools like wire cutters/strippers and the appropriate screwdriver for mounting and distribution block setup.

Everything less the camera cost about \$97 US Dollars including shipping.

## Basic Hardware Set-up Diagram

The diagram below shows the hardware configuration for 1 Active Sensor (PIR Motion Sensor), 1 Passive Sensor (Magnetic Switch), and 1 output (For Relay) for a siren.



### Passive Component Notes!!!

Only simple magnetic or contact switches can be used for Passive components. This limitation is by the camera only supplying 5V and less then 100mA current to those circuits. Distance for passive components is limited by a viewable camera range of about 25 Ft using 26GA wire.

### Active Component Notes!!!

A separate power supply is needed for these devices. In order to choose the proper PS. The total current draw by all the components cannot exceed the Max supplied by the power supply.

Example

Our PIR Motion Detector = 17 mA = .017A

Our Relay = 60 mA = .06A

Siren = 200mA = .20A

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Total : .277A

Purchased DC power adapter 12V DC 1.2A Max to cover all Active Sensors and Siren, with room to grow.

## Camera Configuration

Follow the instructions for setting up the camera either wired/wireless. If this is a home and the camera is behind an Internet router additional set-up notes for you router can be found on [www.dlink.com](http://www.dlink.com).

Once logged into the camera on the main menu click/select trigger and the following screen will appear.

**D-Link** Internet Camera **DCS-1000**

System Image Users Date Time **Trigger** Upload Information Tools Home

**Trigger**

I/O Input 1 Trigger

Send e-mail attached with image

SMTP Server Address : 10.80.1.7

Sender e-mail Address : SensorSwitch@dcs.com

Receiver e-mail Address : postmaster@dcs.com

Sending Interval : 1 Seconds

Sending Times : 1

Trigger I/O Output

Output 1 Time : 3 Seconds

Output 2 Time : 0 Seconds

I/O Input 2 Trigger

Send e-mail attached with image

SMTP Server Address : 10.80.1.7

Sender e-mail Address : MotionSensor@dcs.com

Receiver e-mail Address : postmaster@dcs.com

Sending Interval : 1 Seconds

Sending Times : 1

Trigger I/O Output

Output 1 Time : 3 Seconds

Output 2 Time : 0 Seconds

Save Cancel

These fields control Input Trigger 1 and Trigger 2. Each Input trigger can trigger either or both Output triggers.

**SMTP Server Address:** Name or IP address of a Mail Server that camera can use to send.

**Sender E-Mail:** Name of the Camera who sent the mail

**Receiver E-Mail:** Name of person to receive pictures when sensors are activated

**Sending Interval:** The time between additional sequences of pictures are taken when sensors activated

**Sending Times:** The number of times the camera takes additional sequences of pictures based on Sending Interval.

**Trigger I/O:** Enable Output trigger for the specified input trigger

**Output # Time:** How long the output trigger is activated if Sensor is activated. (ie. How long should siren ring?)

### INPUT TRIGGER RESPONSE NOTES!!!

The camera will take a sequence of pictures and the output trigger is activated when there is a change open or close of the sensor. Example: The magnetic switch is opened, a sequence is sent and siren goes off. The switch is then closed, an additional sequence is sent and the alarm goes off. The camera is designed this way so if there is an intrusion, the intrusion is detect if intruder simply opens then closes the entrance.

## Additional Component Listing for use with DCS-1000/DCS-1000W

All components listed below can be found and [www.smarthome.com](http://www.smarthome.com)

### *Passive Components*

Glass Break Sensor PN: 5150w – Sentrol Inc.  
Any contact switch or pressure switch not exceeding 100mW current draw  
Examples @ <http://www.smarthome.com/seccontacts.html>

### *Active Components*

Coral Plus Temperature Compensated PIR Detector – Visonic Ltd.  
Duet Dual Microwave/IR Motion Detector – Visonic Ltd.  
Bravo 6 Dual PIR Detector – DSC Security Products  
Any active security sensor that uses external power and a separate normally closed N/C circuit for detection: examples on <http://www.smarthome.com/secpirmotion.html>

### *Power and Relay Components*

ELK Products Inc. ELK-924 Single 12V to 120V relay switch  
DVE Power Supply 12V 1.2A  
More can be found on <http://www.smarthome.com/powersupply.html>

### *Alarm Components*

Universal SS30 30W 8Ohm Siren  
More visual and audible alarms can be found at examples @ <http://www.smarthome.com>