UltraVision Security Systems, Inc.

UltraSensor® Security System User Manual

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Product Overview

The CMD-2 motion sensor can be used in a wide variety of applications. The primary purpose of the sensor is to detect motion and provide additional information about the moving target. The sensor is designed to take advantage of one of the primary features of its technology, which is its ability to see through earth, concrete and other standard building materials. Other motion sensors need a window onto the world, the CMD-2 does not, and it can be completely buried where it is protected from tampering and from the environment.

One application of the CMD-2 is to protect buildings and premises from entry by unknown persons or vehicles. Used in conjunction with CCTV systems the CMD-2 can establish a powerful barrier to identify and track unknown intruders long before they enter a building. Sensors may be placed almost one quarter mile from the security center, giving the phrase 'detection beyond the fence', whole new meaning. Longer distances are possible with fiber optic or wireless Ethernet connection. Because the CMD-2 is buried, intruders cannot see or disable the sensor. False alarms are minimal.

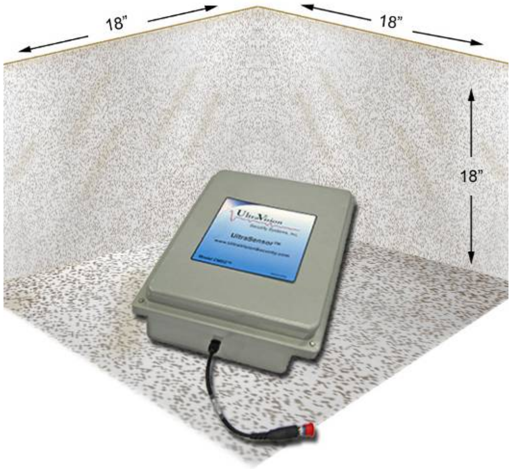
The sensor can be buried up to eight inches beneath the surface of earth, roads or walkways. The material covering the sensor can be concrete, granite, earth, bricks, etc. The only limitation is that the sensor cannot be covered with sheet metal or a dense metal mesh material.

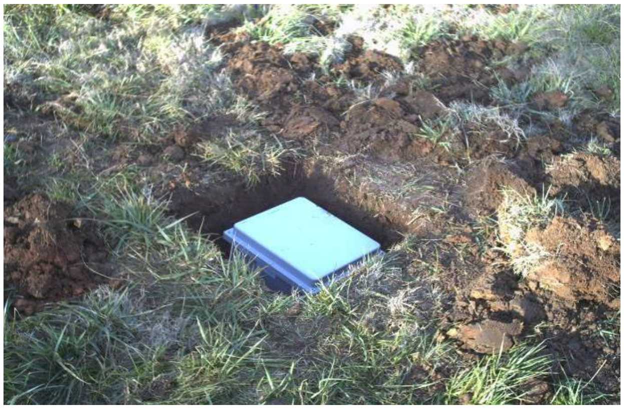
The radial range of the sensor is 22 to 25 feet (6.5 to 8 meters) and it covers an elliptical pattern on the ground (or approximates a hemisphere in 3D). It is able to detect motion from any direction. Therefore with a fifty foot diameter of coverage multiple sensors can form a ring or fence around a facility. When a sensor detects motion an alarm signal is generated and recorded. As an option, a designated CCTV camera can point in the direction of that sensor and record the target and its activity.

Each sensor is powered through its Ethernet connection (standard CAT-5 burial cable). The connecting cable from the sensor to a concentrator box (CB-06) and then to the server can be up to 400 feet (123 M) long. Longer cable distances requires daisy-chaining concentrator boxes (CB-06). Up to four concentrator boxes can be daisy chained resulting in a total cable distance from server to sensor of 1200 feet (393M). A separate power cable is required for daisy-chained concentrator boxes (hubs). See the attached diagrams for these two connection methods. Note that Ethernet has a limitation of 300 feet (91 meters)maximum between hubs. The use of remote power sources can increase the distance to any desired range.

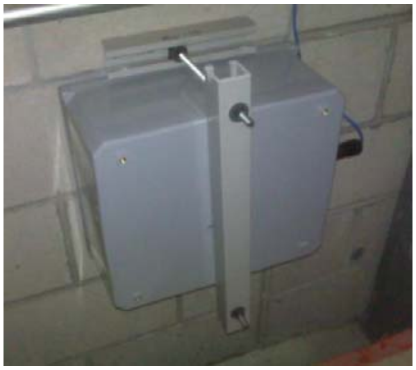
The two connection methods of daisy-chain and direct connection can be used together in a single security system. The limitations are defined by the number of sensors that can be powered by the server. Three standard servers are available; they are designed to control, monitor and power up to 8, 24 and 48 CMD sensors. Custom systems can be designed as required.

The following diagram shows how these sensors are buried in a typical installation. Signal and power to the sensor is supplied from a buried Ethernet wire which goes to the server at the security command and control console.



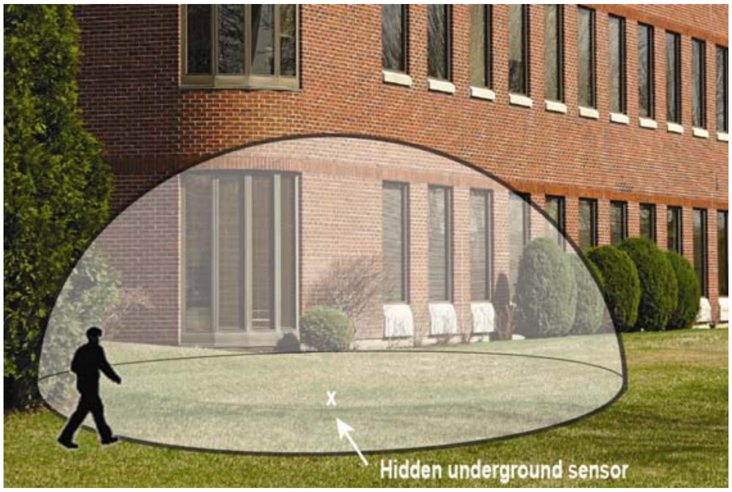


A hole is dug approximately 18 inches by 18 inches (45cm x 45cm) by about eighteen inches (45 cm) deep. A four inch (10 cm) layer of sand is placed in the hole and the sensor is placed on top of the sand. The sensor is then covered with sand about one inch 2.5 cm) deep. Earth (topsoil) is then used to fill the hole completely or if the sensor is under pavement then asphalt or concrete is used to fill the hole to the existing grade. Note that highly conductive soils such as wet clay covering the sensor can reduce the detection range.



The sensor can be wall mounted as shown.

The resulting side view of the installation complete with detection field is shown (right).The detection hemisphere has a diameter of 50 feet (15m).



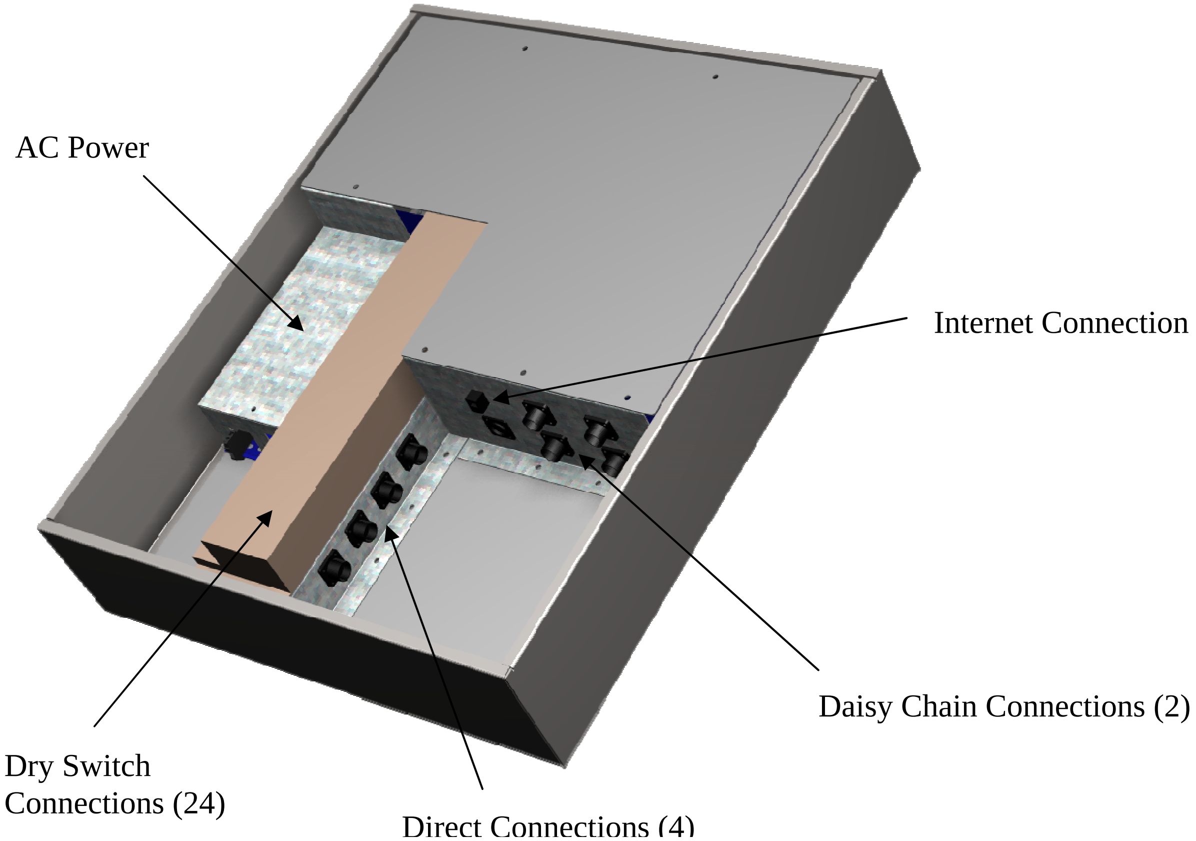
In very cold regions or where clay soils may prohibit drainage of water from the CMD installation, then holes should be drilled another two feet into the soil and then filled with pea gravel to permit better drainage. This type of installation will also provide better protection from freeze-thaw cycles over time.

Server-24

The **CMD Server** box provides the power and Ethernet connections to the CMD sensors. Up to 24 sensors can be connected to and powered from the basic server (shown below). Other servers are available with additional capacity and dry switches. Dry contact connections are provided for each sensor so that alarms can be turned on and/or CCTV camera presets can be utilized. The server also provides the gateway to the security network - and the Internet. It is lockable and made of steel, designed for wall mounted applications.

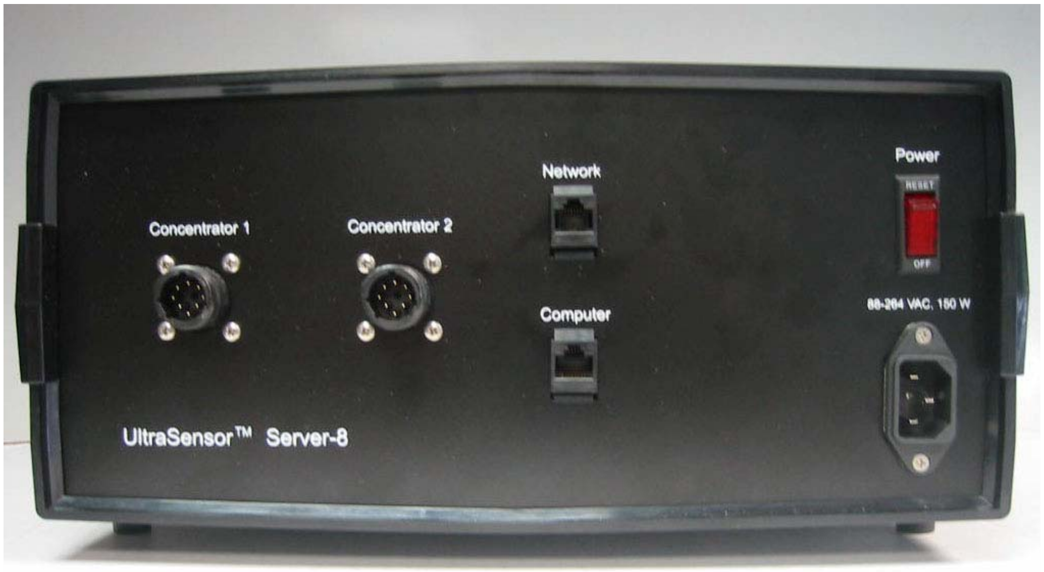
The server logs all alarms and monitors the sensor ‘heartbeat’ to insure each one is working. The internet connection allows users with the proper password to access the information from any location.

The following diagram shows the primary connections that can be made to the Server.

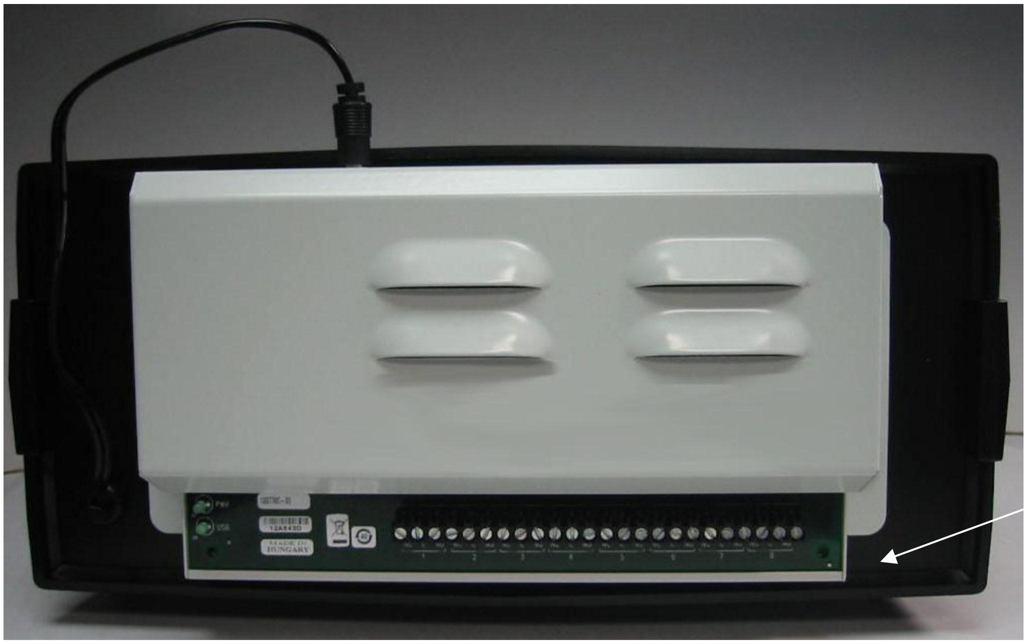


Server-8

The **CMD Server-8** is a laptop computer system that connects up to 8 sensors to collect and log data. This version of the Server is more compact and appropriate for smaller security installations. The CMD Server-8 includes a laptop with all the software needed to run the system.



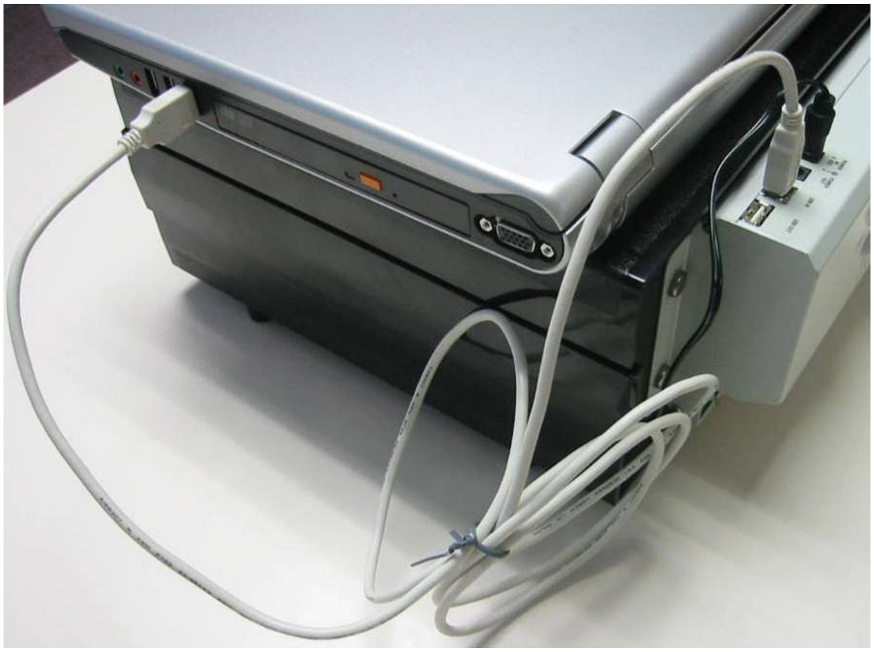
Front view



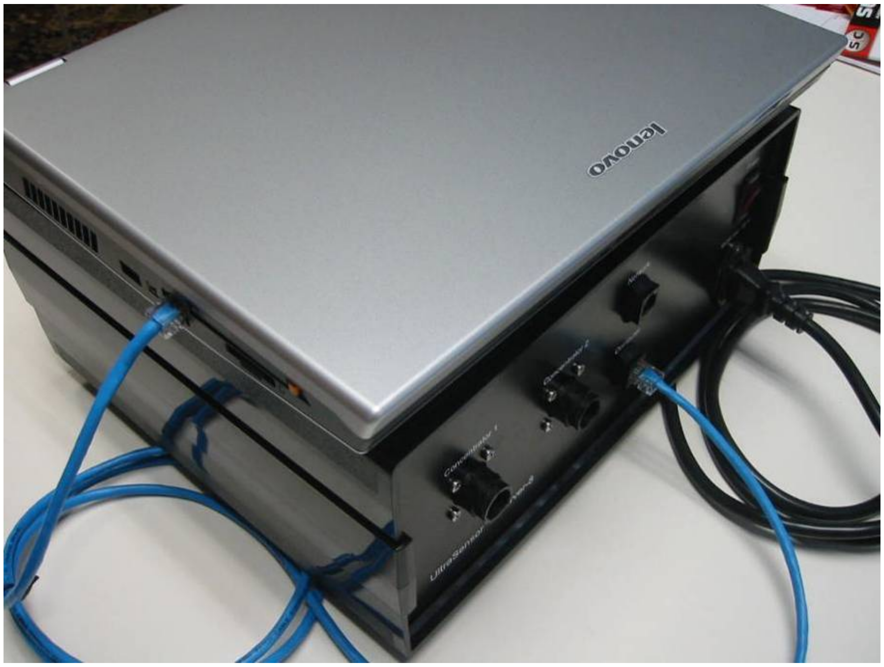
Dry switch contacts- 8 sets

Back view

USB connection



Ethernet connection



Ethernet Cable Installation

Standard CAT5 Ethernet cable is used to make all connections from the sensors to the concentrator boxes and from the concentrator boxes to the Server.

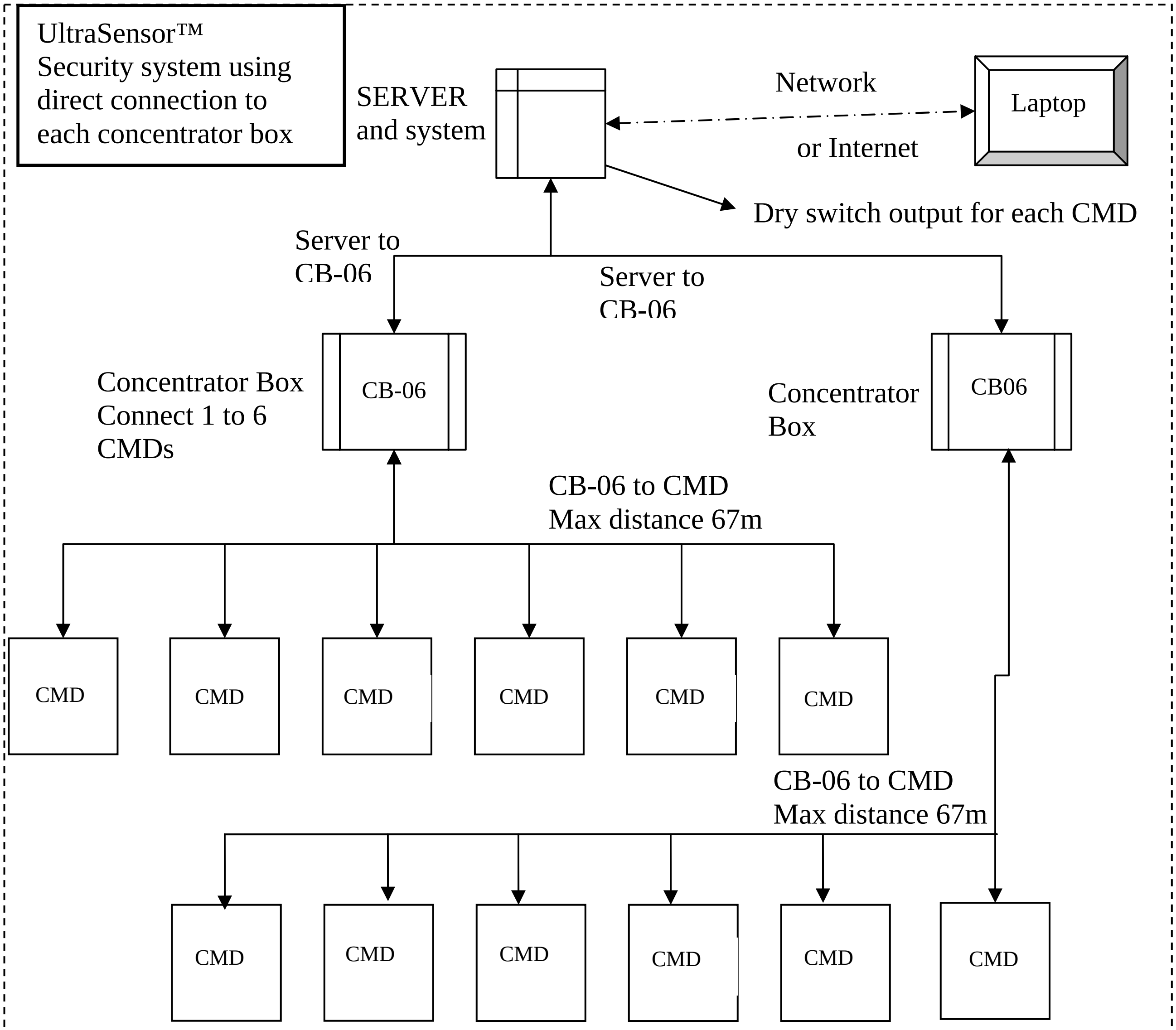
Buriable Ethernet cable should be used in all cases where conduit is not available. This type of cable is rugged, waterproof and rodent proof.

If conduit is available then CAT5 **plenum** Ethernet cable can be used. Plenum cable has solid wires which carry the signal and power over longer distances than stranded wire cables. Note that when installing the solid wire plenum cable it is very important not to get kinks in the cable. The cable should be carefully unrolled during installation. Kinks in the wire can cause breaks and internal signal reflections which will degrade the signal from the sensor.

The Ethernet cable may be buried at any depth desired. Typically the depth should be 3 to 4 inches (8 to 10 cm) to avoid most problems that may come from changes to the ground surface. In addition to trenching there are specialized tools to make cable installation fast and less disruptive to the ground surface. Companies who install fiber optic cable for Internet applications have this equipment.

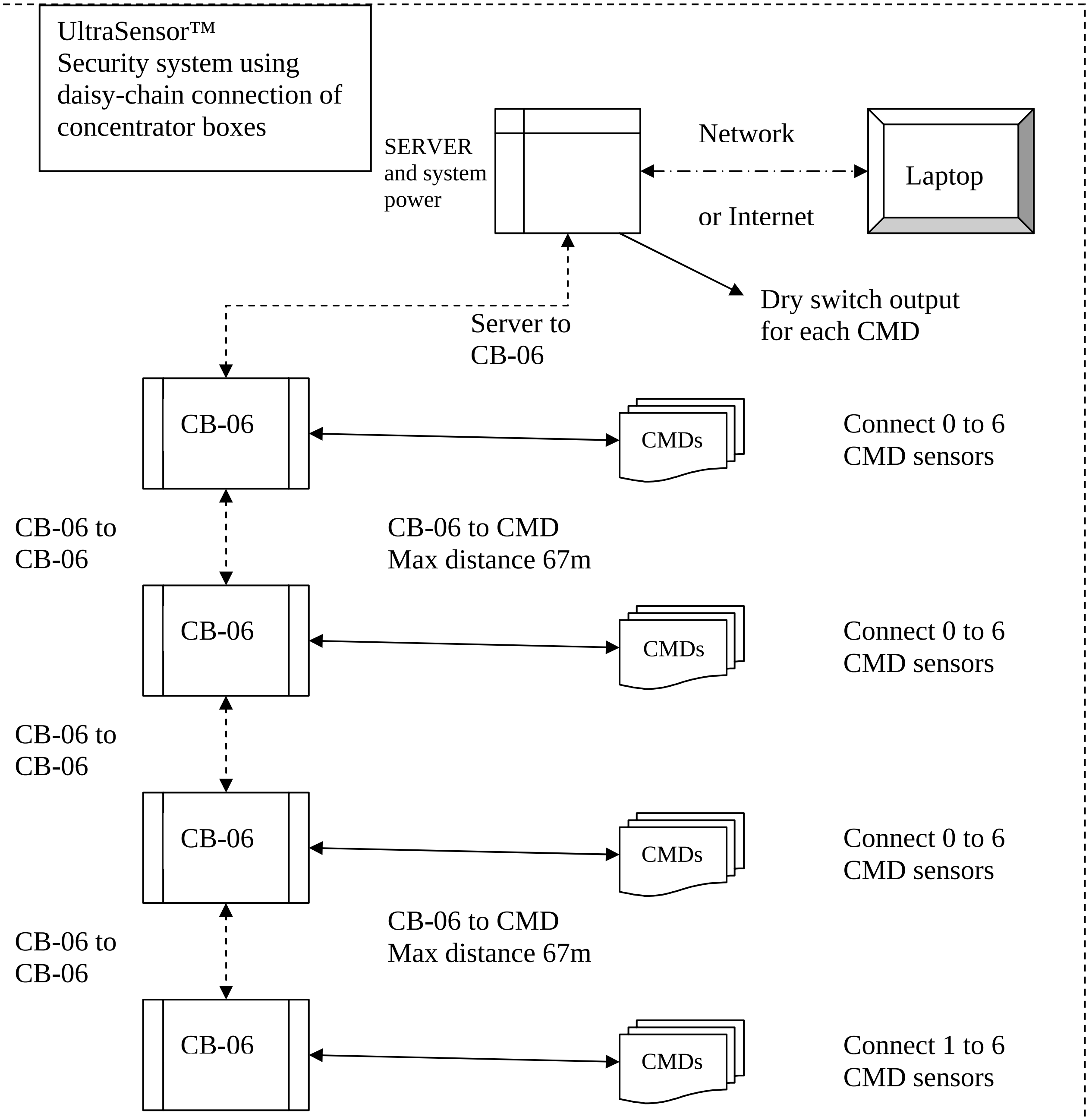
Typically once the cable run length is measured it is best to add another 5% to the measured length. This extra distance will take care of small variations that might have been missed.

The following diagram shows the direct connection method of connecting Concentrator hubs to the Server and defined cable length limitations. Cable length limits are due to Ethernet transmission limits and power transmission limits.

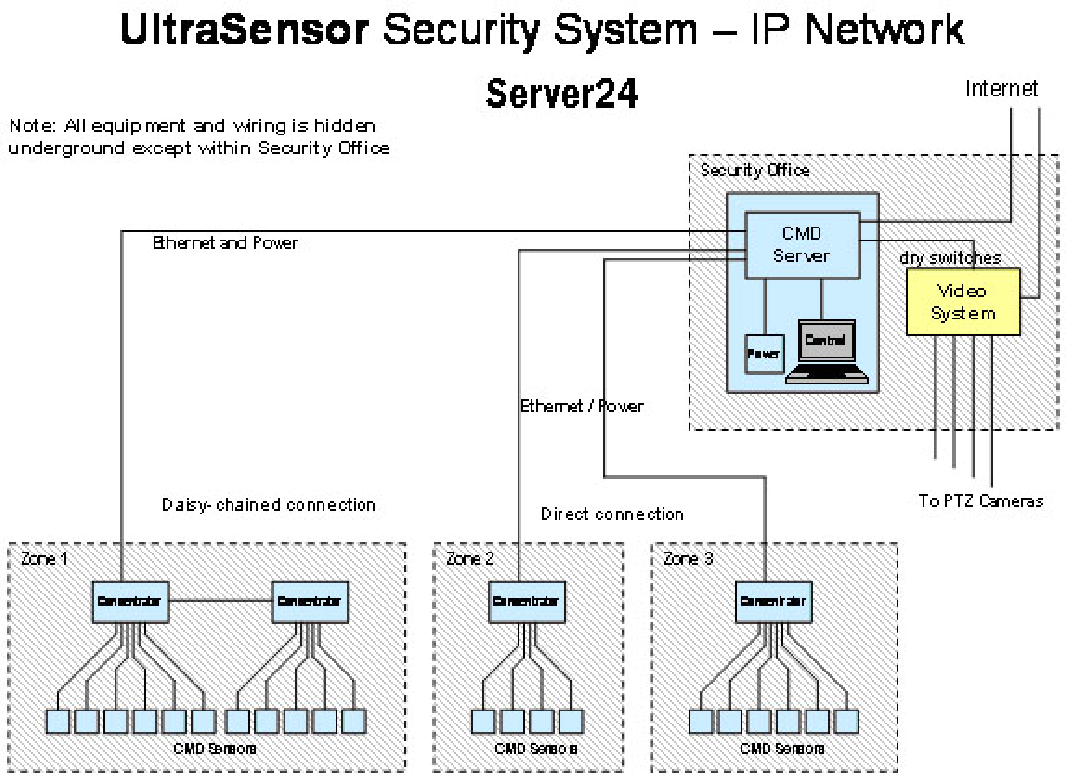


UltraSensor™ Security system using direct connection to each concentrator box

NOTES:
Each UltraSensor (CMD) has a separate Ethernet cable that connects it to the CB-06 Concentrator Box. Power is supplied through the Ethernet cable.
Each Concentrator Box (CB-06) has a separate Ethernet cable that connects it directly to the SERVER and power, all through the Ethernet cable (POE).
The SERVER also has a dry switch output (twisted pair) for each CMD sensor
A maximum of 6 CB-06 boxes and 24 CMD may be connected. (8 CMDs max for Server8)
Maximum cumulative cable distance from the SERVER to any CMD sensor is 150m (465 feet)
Wireless and F/O may be used in place of Ethernet cable . Power is then supplied from an indirect source.



NOTES:
Each UltraSensor (CMD) has a separate Ethernet cable that connects it to the CB-06 Concentrator Box.
Power is supplied through the Ethernet cable (POE).
Each Concentrator Box (CB-06) has a separate Ethernet cable AND a power cable (both parallel cables shown by dashed line) that connects it to another CB-06 Box and finally to the SERVER and Power
The SERVER also has a dry switch output (twisted pair) for each CMD sensor.
A maximum of 4 CB-06 Boxes can be in a single daisy-chain from the SERVE .
Maximum cumulative cable distance from the SERVER to any CMD sensor is 1,200 feet (390m).



The diagram above shows a typical installation and how the devices are connected. The devices colored blue are supplied by UltraVision. The units shown are:

- CMD motion sensors (21)
- Concentrator Hubs (4)
- CMD Server (1)

A Concentrator hub can have up to six sensors connected. Servers are available in three standard sizes;

1. CMD Laptop Server can have up to two hubs connected and a maximum of 8 sensors all direct connected.
2. CMD Server 24 can deploy 24 sensors.
3. CMD Server 48 can deploy 48 sensors.
4. Servers can be customized depending upon customer requirements.

The above limits are defined by power limits supplied through the server. When power is supplied from independent sources, the sensor limit for each server is 250. Dry switches may be added as required.

The dry switch outputs from the server can be connected to CCTV cameras in order to drive them to their preset locations. The dry switch outputs can also be used to sound alarms, turn on lighting and perform any other operation required in a standard security system.

CMD Cable Assembly

Cable is not supplied. Please follow the recommended specifications when sourcing the cable.

Cable Specifications:

Direct burial	**Direct burial, plenum CAT 5 or better grade, at least 4 twisted pairs**
Protected burial (conduit)	**CAT 5 or better plenum, at least 4 twisted pairs**
Power cable	**16 gauge, 3 conductor, shielded direct-burial (ref #8302S)**

Tools:

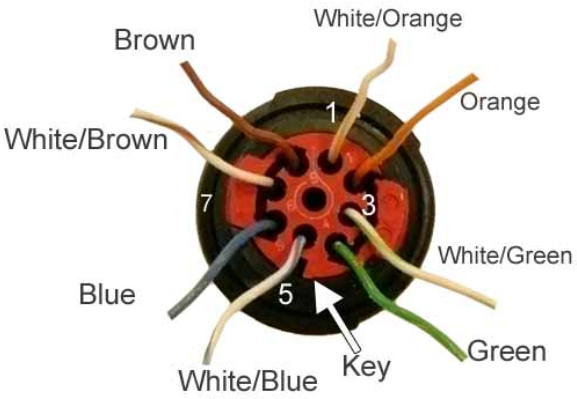
Follow manufacturer's instructions for assembling and using the DMC crimping tool M22520/1-01 and turret M22520/1-02.
Set up tool for gauge of wire and pins being used. For the most common 24 gauge wire, position turret for 20 (red cylinder) and black wire size dial to 24.

To attach 9 pin Clipper connectors to cable ends:

1. Strip off approx 50mm (2") of cable's outer jacket.
2. Take note of wire colors and twisted pairs. Note: Your cable will have its own color combinations. What is important is that it is wired the same on both ends and twisted pairs stay together.
3. The backshell comes in 3 pieces, all in one bag. Assemble the two major pieces together (they can only join one way) placing the washer between them. Tighten firmly. Excess force will distort the washer.
4. Feed the cable through the assembled backshell, entering the compression nut end.
5. Strip off 4mm (5/32) of each wire. Place a pin into the hole of the crimping tool on the side that has the yellow OSHA sticker. Insert a stripped wire into the pin.
6. Squeeze the handles of the crimping tool noting that it has a ratchet action. You must complete the crimping action all the way so the handle will release.

Repeat steps 5 & 6 for all 8 wires.

7. Release the red section from the black section of the Clipper connector by referring to the Clipper Assembly instructions (Page 16).
8. The 2 pieces do not need to be fully separated, just the red part slightly extracted.
9. Insert pins noting the pin numbering/labeling on the red section



Wire Diagram

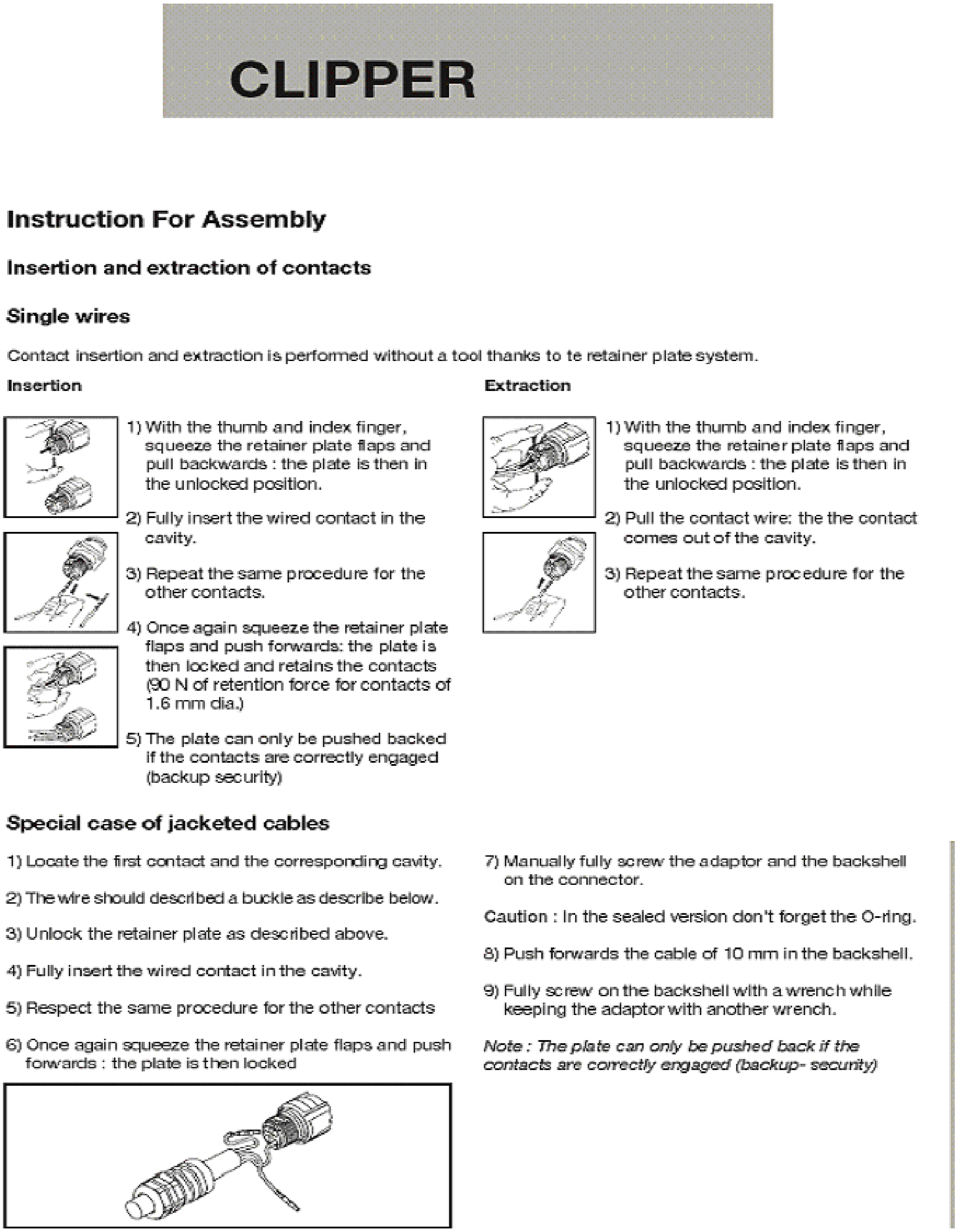
CB – Server	CB - CMD	Twisted Pairs	UVSS cable color
ETXD-P	ETXD-P	1 ------------------------------------- 1	White/Orange
ETXD-N	ETXD-N	2 ------------------------------------- 2	Orange
ERXD-P	ERXD-P	3 ------------------------------------- 3	White/Green
ERXD-N	ERXD-N	4 ------------------------------------- 4	Green
48-55V	RELAY-0	5 ----------------------------------- 5	White/Blue
48-55V	RELAY-1	6 ----------------------------------- 6	Blue
GND	12-15V	7 ----------------------------------- 7	White/Brown
GND	GND	8 ----------------------------------- 8	Brown
		9 ----------- Not Used ----------- 9	

Power Wire Diagram (for daisy-chained concentrator boxes)

48-55V Pos	1--1	Red
48-55V Neg	2--2	Black
GND	3--3	Blue
Shield	4--4	Shield

10. Squeeze tabs and return red section into black.
11. Screw backshell onto connector. It may be easier to temporarily connect to a CMD box while installing the backshell.
12. Tighten compression nut of backshell to complete Clipper connector installation.
13. Using a multimeter or similar device, verify continuity of cable. Pin 1 of one end connects to pin one of the other end, pin 2 to 2, pin 3 to 3, etc. Since the pins are not clearly numbered on the Clipper connector, it is helpful to use the inner keyed tabs surrounding the pin holes or the one indented pin for a reference.

If CB to CMD exceeds 110'/33m, crimp the pin 5 wire (wht/blu) with pin 7 (wht/brn), then crimp the pin 6 wire (blu) with pin 8 (brn) at both ends. Do not use pins 5 and 6.



CLIPPER

Instruction For Assembly

Insertion and extraction of contacts

Single wires

Contact insertion and extraction is performed without a tool thanks to te retainer plate system.

Insertion

1) With the thumb and index finger, squeeze the retainer plate flaps and pull backwards : the plate is then in the unlocked position.

2) Fully insert the wired contact in the cavity.

3) Repeat the same procedure for the other contacts.

4) Once again squeeze the retainer plate flaps and push forwards: the plate is then locked and retains the contacts (90 N of retention force for contacts of 1.6 mm dia.)

5) The plate can only be pushed backed if the contacts are correctly engaged (backup security)

Extraction

1) With the thumb and index finger, squeeze the retainer plate flaps and pull backwards : the plate is then in the unlocked position.

2) Pull the contact wire: the the contact comes out of the cavity.

3) Repeat the same procedure for the other contacts.

Special case of jacketed cables

1) Locate the first contact and the corresponding cavity.

2) The wire should described a buckle as describe below.

3) Unlock the retainer plate as described above.

4) Fully insert the wired contact in the cavity.

5) Respect the same procedure for the other contacts

6) Once again squeeze the retainer plate flaps and push forwards : the plate is then locked

7) Manually fully screw the adaptor and the backshell on the connector.

Caution : In the sealed version don't forget the O-ring.

8) Push forwards the cable of 10 mm in the backshell.

9) Fully screw on the backshell with a wrench while keeping the adaptor with another wrench.

Note : The plate can only be pushed back if the contacts are correctly engaged (backup- security)

Configuration Manager Software

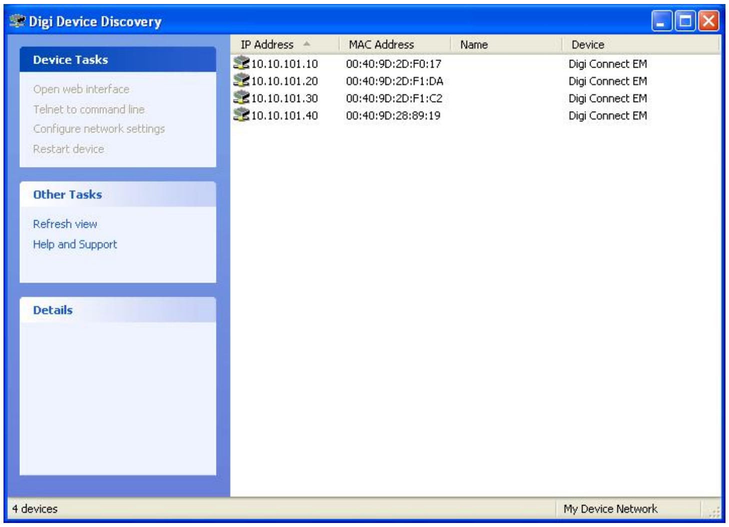
The configuration and operational software and user screens are the same for all server types.

The UVSS UltraSensor Configuration Manager Software/Laptop Server is capable of powering, configuring, and monitoring up to eight UltraSensors and two Concentrator Boxes. (If more than 8 relay contacts are required, a FGRMA24 should be used in place of a FGRMA8.) Prior to powering up any equipment, please make sure that all System components have been properly installed and connections made. Please note the following:

- If two Concentrator Boxes are used in the System, any combination of UltraSensors may be mixed on either Concentrator Box. Up to six Sensors are managed by one Concentrator Box.
- To return to the Windows desktop while the UltraSensor software is running, you can minimize the UltraSensor program by pressing the Windows flag icon and "D" simultaneously.
- If the graphic map of your facility did not come pre-installed, create a jpg image file of the facility and save it to c: Inetpub\wwwroot\Images. Recommended image size is 460 x 680 pixels/inch.

Start-up

1. **After** all connections are made, power up the CMD Server-8 module (black box), using the power switch on the front of the unit; **then** turn on the laptop. Upon laptop power up, double-click the UltraVision icon to enable Windows XP loading. In the Windows Start Menu or Desktop, select Digi Discovery. Verify all sensor IP's are present. (Sensors take 30 seconds to appear after powered on) Check cables and connections if any are missing. Close Digi Discovery when finished.

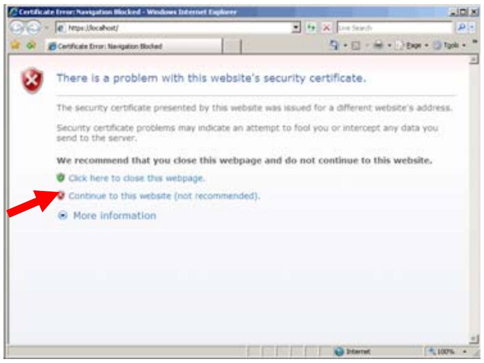


IP Address	MAC Address	Name	Device
10.10.101.10	00:40:9D:2D:F0:17		Digi Connect EM
10.10.101.20	00:40:9D:2D:F1:DA		Digi Connect EM
10.10.101.30	00:40:9D:2D:F1:C2		Digi Connect EM
10.10.101.40	00:40:9D:28:89:19		Digi Connect EM

4 devices

My Device Network

2. Double-click the Internet Explorer icon on the desktop. You may see a **Certificate Error** page pop up. If that happens, simply click “Continue to this website…”


Certificate Error: Navigation Blocked - Windows Internet Explorer
https://localhost/
Live Search
Certificate Error: Navigation Blocked
Page
Tools
Internet
100%

There is a problem with this website's security certificate.

The security certificate presented by this website was issued for a different website's address.

Security certificate problems may indicate an attempt to fool you or intercept any data you send to the server.

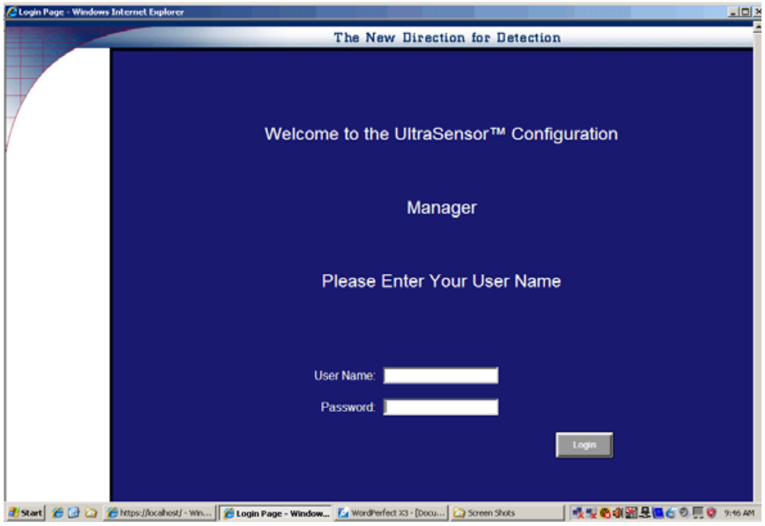
We recommend that you close this webpage and do not continue to this website.

Click here to close this webpage.

Continue to this website (not recommended).

More information

3. On the Log-in screen, User is ***Admin*** and the password is ***generic11..*** (The password is the word *generic*, the numeral 1 twice and a period twice.) Additional users may be added and password changed after initial log-in. Left click **Log-in**.


Login Page - Windows Internet Explorer
The New Direction for Detection
Login
Start
https://localhost/ - Win...
Login Page - Window...
WordPerfect X3 - [Docu...
Screen Shots
9:46 AM

Welcome to the UltraSensor™ Configuration

Manager

Please Enter Your User Name

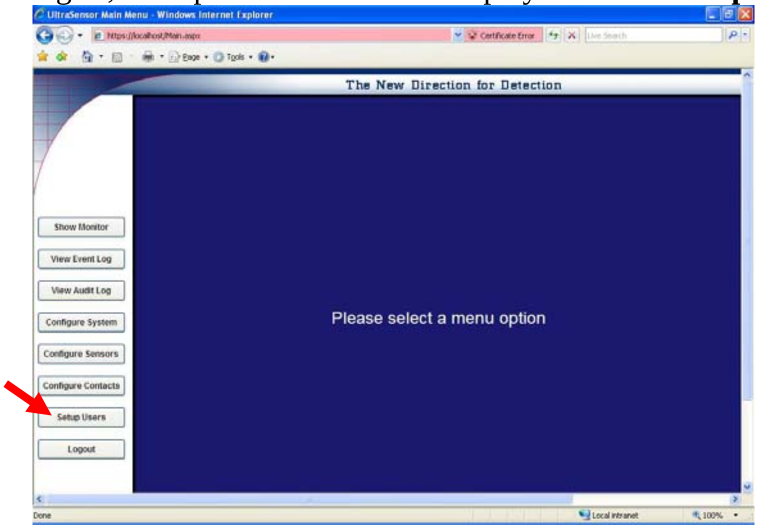
User Name:

Password:

User name: admin
Password: generic11..

Create / Edit Users

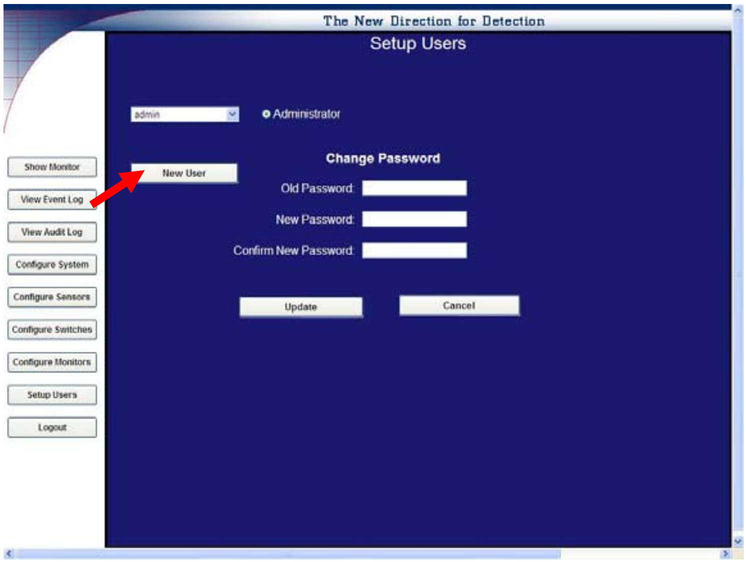
1. Upon successful log-in, the Option Menu will be displayed. Select **Setup Users**.



Please select a menu option

Select **Setup Users**

2. This page is used to change password or add a new user. Select **New User** to add a user.



Setup Users

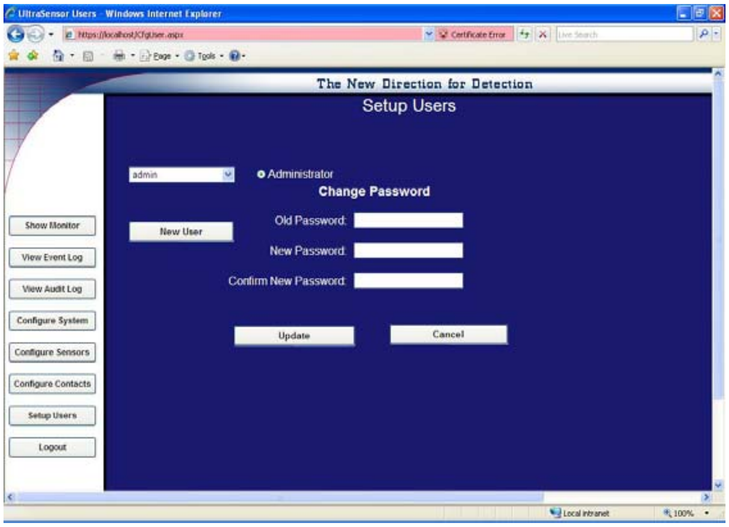
admin ● Administrator

Change Password

Old Password:

New Password:

Confirm New Password:



3. Select **Administrator** or **Guard**. [Guard will have access only to the Monitor Screen and Event log. Administrator can add/delete Users, configure Sensors and View Log File.]
4. Type in the new **User Name**, their **Password**, repeated in **Confirm Password**. Passwords must have at least seven characters with at least one non-alpha-numeric.
5. Select **Create User**.
6. Configuration Manager will confirm that User has been successfully added.
7. Click **Continue** to return to Create User screen. Continue to add Users or, if finished, select another screen from the menu on the left.

Change Password

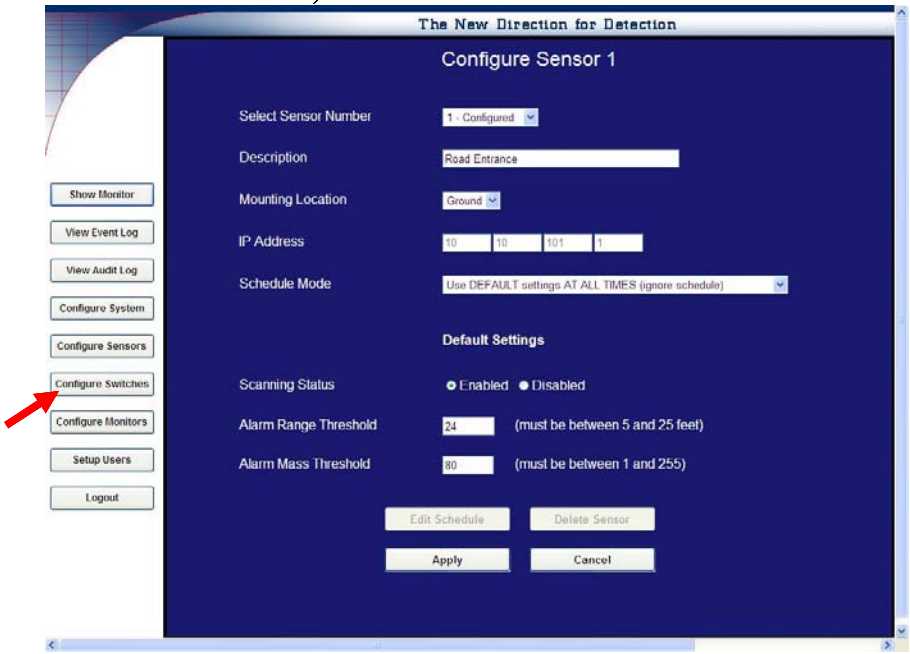
1. Password change may only be done by Administrator-level users and it is done through the **Setup Users** menu selection.
2. Select **User** from dropdown list.
3. Enter old password
4. Enter new password. Password parameters must be at least seven characters and at least one non-alpha-numeric character. Confirm password by re-typing.
5. Click **Update**.

Delete User

1. In the setup user screen, select the user in the pull down list to be deleted.
2. Click the **Delete User** button.
3. A confirmation page will open.

Configure Sensors

1. From Menu Screen, click **Configure Sensors**.
2. From the drop down box at the top of the screen, select the number of the Sensor to be configured. The **Sensor number** is the last digit of the Sensor IP address.
   (ex. 10.10.101.25 is sensor #25)



Configure Sensor 1

Select Sensor Number: 1 - Configured

Description: Road Entrance

Mounting Location: Ground

IP Address: 10 . 10 . 101 . 1

Schedule Mode: Use DEFAULT settings AT ALL TIMES (ignore schedule)

Default Settings

Scanning Status: ◉ Enabled ● Disabled

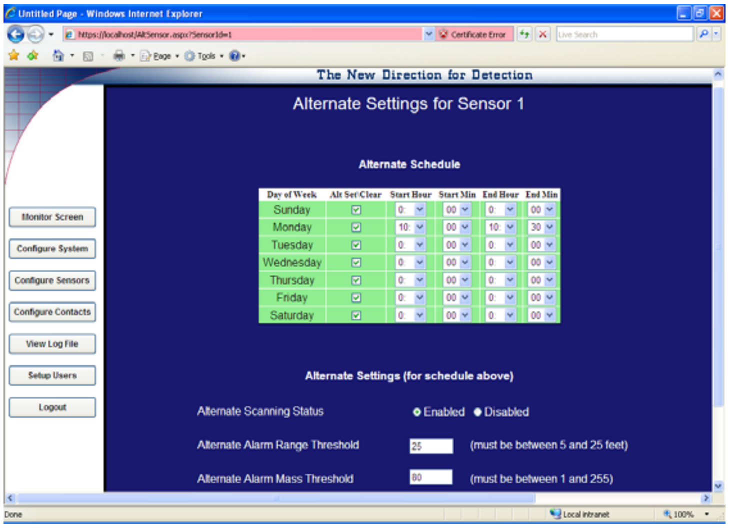
Alarm Range Threshold: 24 (must be between 5 and 25 feet)

Alarm Mass Threshold: 80 (must be between 1 and 255)

3. Enter the text **Description** of the Sensor (e.g., north walkway, front garden, southwest perimeter, etc.)
4. Select either Wall or Ground for **Mounting Location**.
5. Correct **IP address** will be automatically entered by the System.
6. Select **Schedule Mode**. Using drop down box select timed settings for this sensor or "always on" as default.
   a. **Use DEFAULT Settings AT ALL TIMES** (ignore schedule)
      i. For **Scanning Status**, Select **Enabled.**
      ii. Enter A**larm Range Threshold**. [Minimum 5 foot/1.5 meter, maximum 25 feet/ 7.6 meters.]
      iii. Enter **Alarm Mass Threshold**. [A setting of 1 will detect all possible motion, 255 the least. 60-75 is a "normal" setting.]
      iv. Click **Apply**. Message asks to confirm this step, if correct click "Yes."
      v. Repeat procedure for additional sensors
   b. **Use ALTERNATE settings as SCHEDULED**, otherwise DEFAULT
      i. Select Enable and set alarm range threshold and alarm mass threshold as above.
      ii. Click **Apply**, then **Yes** to confirm.
      iii. Return to Configure page for same sensor and select **Edit Schedule**. Note: Select **Alternate schedule** mode and **Apply** *before* **edit schedule**.
      iv. Use the Alternate settings table so turn sensors on and off to a schedule.

v. Using the appropriate drop down boxes set the Start Hour and Minute and the Stop Hour and Minute. Setting *can* cross midnight – i.e. 11 PM Monday evening Start and 3 AM Tuesday morning Stop.

vi. Enter the Alternate Scanning status, Alternate Alarm Range Threshold and Alternate Alarm Mass Threshold to be applied to the Alternate Schedule table. **Apply**.



Alternate Settings for Sensor 1

Alternate Schedule

Day of Week	Alt Set\Clear	Start Hour	Start Min	End Hour	End Min
Sunday	☑	0:	00	0:	00
Monday	☑	10:	00	10:	30
Tuesday	☑	0:	00	0:	00
Wednesday	☑	0:	00	0:	00
Thursday	☑	0:	00	0:	00
Friday	☑	0:	00	0:	00
Saturday	☑	0:	00	0:	00

Alternate Settings (for schedule above)

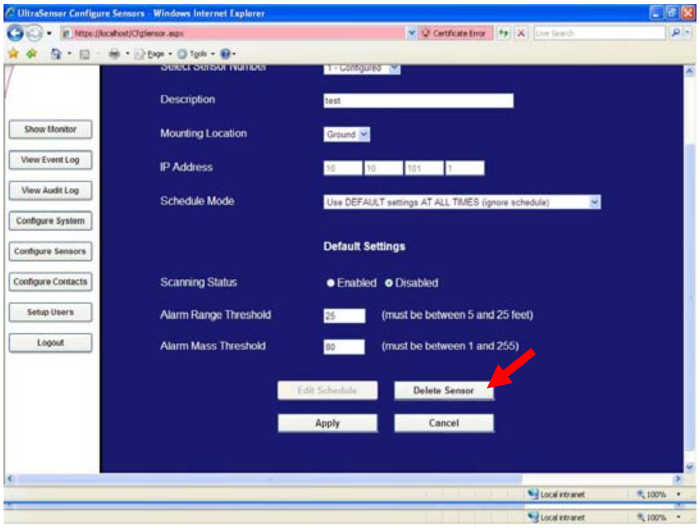
Alternate Scanning Status ◉ Enabled ○ Disabled

Alternate Alarm Range Threshold 25 (must be between 5 and 25 feet)

Alternate Alarm Mass Threshold 80 (must be between 1 and 255)

Delete a sensor

1. To delete a configured sensor, change the scanning status to **Disabled**.
2. Click **Apply.**
3. **Delete Sensor** button is now active. Click to delete selected sensor.



Select Sensor Number 1 - Configured

Description test

Mounting Location Ground

IP Address 10 10 101 1

Schedule Mode Use DEFAULT settings AT ALL TIMES (ignore schedule)

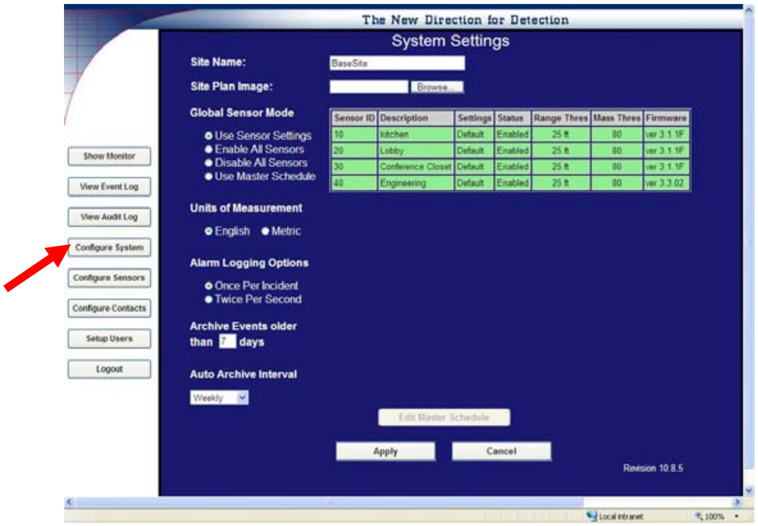
Default Settings

Scanning Status ○ Enabled ◉ Disabled

Alarm Range Threshold 25 (must be between 5 and 25 feet)

Alarm Mass Threshold 80 (must be between 1 and 255)

Configure System



The New Direction for Detection

System Settings

Site Name: BaseSite

Site Plan Image:

Global Sensor Mode

◉ Use Sensor Settings
○ Enable All Sensors
○ Disable All Sensors
○ Use Master Schedule

Sensor ID	Description	Settings	Status	Range Thres	Mass Thres	Firmware
10	kitchen	Default	Enabled	25 ft	80	ver 3.1.1F
20	Lobby	Default	Enabled	25 ft	80	ver 3.1.1F
30	Conference Closet	Default	Enabled	25 ft	80	ver 3.1.1F
40	Engineering	Default	Enabled	25 ft	80	ver 3.3.02

Units of Measurement

◉ English ○ Metric

Alarm Logging Options

◉ Once Per Incident
○ Twice Per Second

Archive Events older than 7 days

Auto Archive Interval

Weekly

Revision 10.8.5

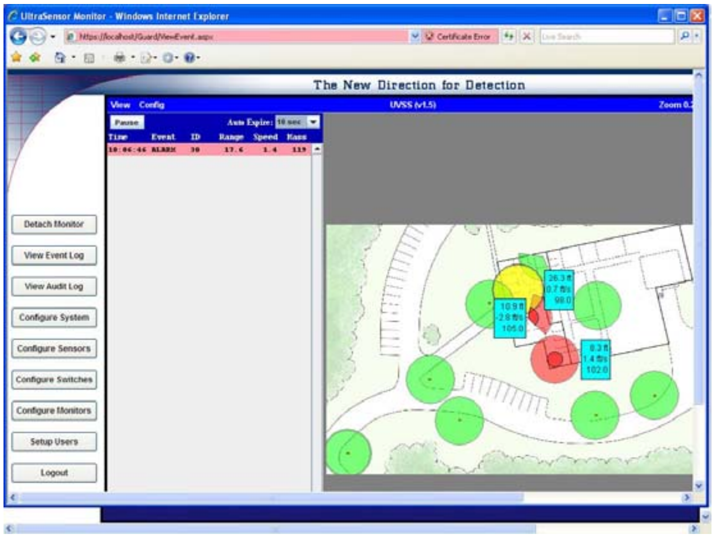
1. Select **Configure System**.
2. Assign a **Site name**.
3. Load the **Site plan image.** Use the browse button to locate a .jpg image of your site.As noted in the startup section, a site plan image file should be saved to the computer in the default file location: c:\Inetpub\wwwroot\images.
4. **Global Sensor Mode**
   a. Use sensor settings – Uses individual sensor settings
   b. Enable all sensors – Turn on all sensors
   c. Disable all sensors – Turn off all sensors
   d. Use Master schedule – Use the master schedule to control the sensors
5. Select **Units of measurement** – English (standard US feet) or Metric (meters).
6. Select **Alarm Logging Options** – twice per second or once per incident.
   a. Choosing **once per incident** will display and log sensor activity upon state change only. After activation, if the state does not change for a period of 10 seconds, a Sensor will revert to a “no motion” state. (Contact UVSS for custom settings faster or slower than 10 seconds.)
   b. Choosing **twice per second** will display and log the greatest amount of detail. All activity from *every* sensor will be recorded twice per second.
7. **Archive events days.** Enter the age of events to archive by entering the number of days old from 1 to 31. Archived events will be saved in a comma delimited file in c:\uvss directory.
8. **Auto Archive interval**. Select weekly, bi-weekly or monthly.
9. Select **Apply** to save settings.

After Sensors and Contacts are Configured (see below) you can return to Configure System at any time to view System Summary or Contact Summary.

Set Map Scale

Follow steps for Configure System above to connect to the site plan image file.

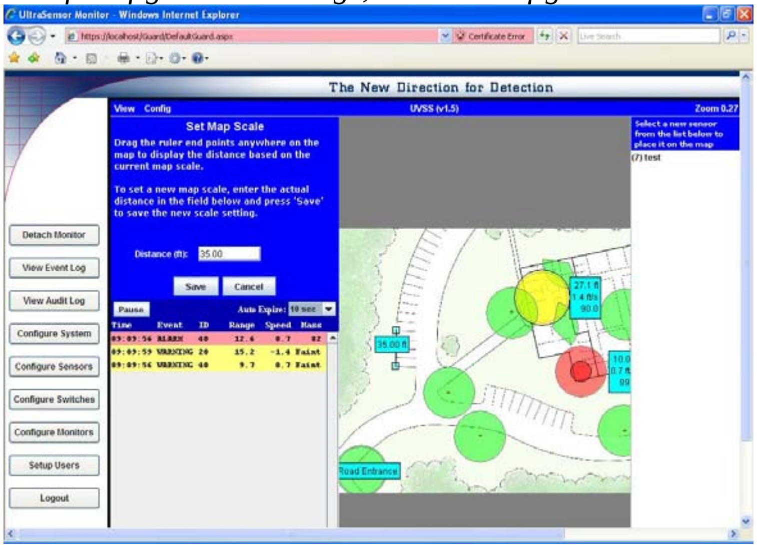
Select **Monitor Screen.** The selected site plan should appear. Click **Config**/ **Set Map scale** in the upper tool bar. Enter a distance (ft) for configuring the map. The distance will show on the map image. Move the distance boxes until the distance matches a known measurement. **Save**.



```
Time      Event  ID   Range  Speed  Mass
10:06:46  ALARM  30   17.6   1.4    119
```

Configure Sensor using Monitor Screen

Configure sensors for **Range** and **Mass Threshold** by selecting **Config / Edit Sensor** from the top toolbar. Double-click on the sensor you wish to change. Enter new values. **Save**.
For a more complete list of configuration settings, see the Configure Sensor section.



Set Map Scale

Drag the ruler end points anywhere on the map to display the distance based on the current map scale.

To set a new map scale, enter the actual distance in the field below and press 'Save' to save the new scale setting.

Distance (ft): 35.00

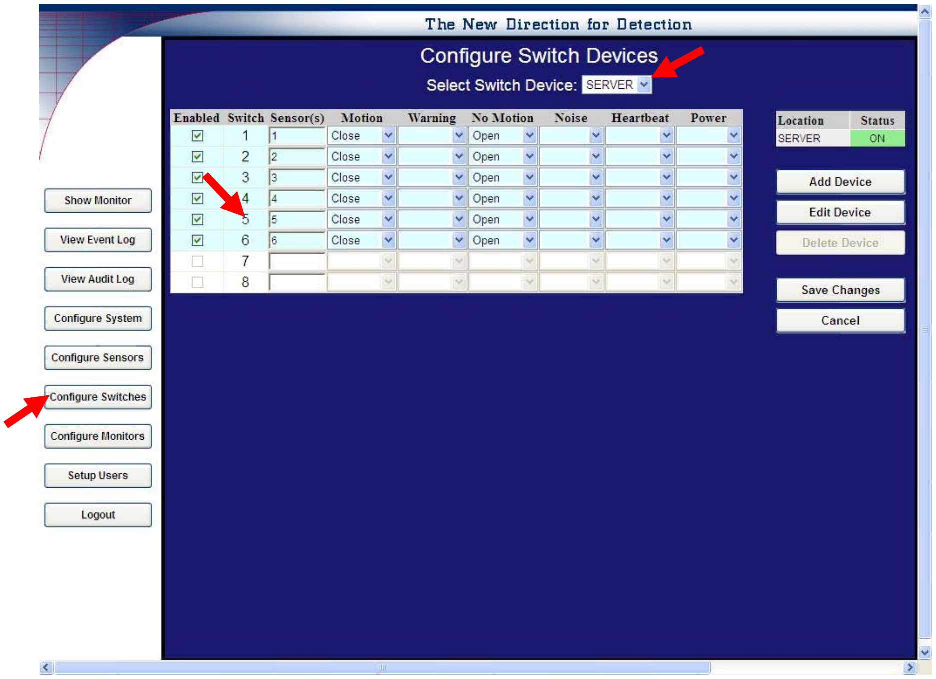
Select a new sensor from the list below to place it on the map

(7) test

```
Time      Event    ID   Range  Speed  Mass
09:09:56  ALARM    40   12.6   0.7    82
09:09:59  WARNING  20   15.2   -1.4   Faint
09:09:56  WARNING  40   9.7    0.7    Faint
```

Configure Contacts

1. To configure the output performance of an individual Sensor, select **Configure Contacts**.
2. Select the device from the **Select Dry contact Device** pull down list.



The New Direction for Detection

Configure Switch Devices

Select Switch Device: SERVER

Enabled	Switch	Sensor(s)	Motion	Warning	No Motion	Noise	Heartbeat	Power
☑	1	1	Close		Open			
☑	2	2	Close		Open			
☑	3	3	Close		Open			
☑	4	4	Close		Open			
☑	5	5	Close		Open			
☑	6	6	Close		Open			
□	7							
□	8							

Location	Status
SERVER	ON

3. Enter the sensor number to the **Sensor** column (ex 5,10,etc). Entries can either be a single sensor (ex:5) or in multiples (ex: 5,10,20). Tab or Enter to activate columns to set configurations. The contact switch chosen is independent of the sensor number. "ALL" can be used when any sensor can activate the same switch.
4. The number of sensors is dependent on the device settings. **Add Device** allows you to add a new switching device. Enter the location, access code and number of settings. Save.
5. **Edit Device** is used to change the access code or number of contacts.
6. Use the drop down boxes to configure each sensor depending on the input requirements of integrated alarm or CCTV panels when alarm notification is desired. *Each condition is described on the next page of this manual.* Example: Choose the opposite condition for "No Motion" when the Sensor is not detecting motion. In this example, the contact will "close" on intrusion detection and remain "open" when no motion is detected.
7. After configuring individual contacts, select **Save changes**. You will be asked to confirm the current Sensor configuration. If correct select **Yes**.
8. Repeat this process for as many sensors and contact closures as required.
9. To delete a device, select the device from the Select Dry contact Device pull down list. The **Delete Device** button is activated. Select and confirm.

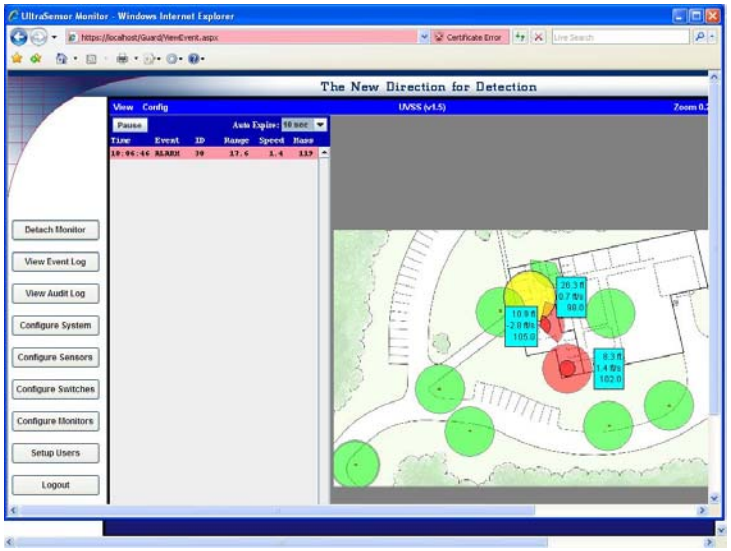
Contact Closure Detail

- **Motion –** motion detected by an UltraSensor that meets the alarm threshold criteria defined on the Configuration page will be indicated by a red icon on the Monitor Screen and recorded in the Log. It will also cause the chosen contact to open or close, as selected, sending a signal to associated systems (CCTV, access control, etc.).
- **Warning –** is an indication of motion within the full extent of the UltraSensor detection range but greater than the alarm range parameters set on the Configuration page. Icon will become yellow. Setting "warning" to open or close will cause the chosen contact to activate associated systems. Recommended setting is ignore except in high security applications where recognition of any motion within range of the UltraSensor is desirable.
- **No-Motion –** an absence of motion within the full range of an UltraSensor will be indicated by a green icon on the Monitor Screen. **No-motion** will cause the chosen contact to open or close, as selected, sending a signal to an associated systems (CCTV, access control, etc.). If **Motion** is set to open, set "No-motion" to closed. If **Motion** is set to closed, set "No-motion" to open.
- **Noise –** the occurrence of RF interference with performance of an UltraSensor will be indicated by a blue icon on the Monitor Screen and recorded in Log. Setting **noise** to either open or closed will cause the activation of an associated system to create another level of awareness.
- **Heartbeat –** UltraSensor communicates with the Server twice per second and upon initial power up "heartbeat" is displayed on the User Interface and recorded in the System log. Succeeding "heartbeats" are not logged nor displayed. If a Sensor loses communication with the System (cut cable, power loss, Sensor malfunction, etc.), a visual indication will be generated on the Monitor Screen (orange icon with "X") and recorded in the Log. Setting "heartbeat" to open or close will cause an activation of a contact upon initial power up only. **Heartbeat** is the opposite of "power." Recommended setting for **heartbeat** is ignore.
- **Power –** an absence of individual Sensor power will generate a visual indication on the Monitor screen (orange icon with "X") and be recorded in the Log. Setting "power" to close or open will cause an activation of the contact upon power loss only.

The choice of open or closed will be based upon the required input status of the associated system. Individual contacts *may* be programmed for multiple non-conflicting functions. For example when integrating with a CCTV system, Contact #1 can be set to open on **No-motion**, close on **Motion**, and close on **Warning** to activate a camera to record *any* motion from a given UltraSensor. Operational conditions like **Power** and **Heartbeat** would normally not call for camera activation and should be linked to other contacts to create operator or monitor awareness.

Monitor Screen

1. Once Sensors have been placed on the facility graphic and configured, Users may monitor Sensor activity by viewing the Monitor Screen. Select **Monitor Screen** from the menu. A graphic representation of the facility with Sensors in approximate locations will be displayed.
2. The circle surrounding each Sensor displays the approximate total detection area of each Sensor. Colored circle icons indicate as follows:
    a. Green – No motion
    b. Yellow – Motion detected outside of alarm threshold
    c. Red – Motion detected inside of alarm threshold (contact activation)
    d. Orange – Loss of sensor communications (trouble)
    e. Grey – Sensor configured as disabled.
    f. Blue – Excessive environmental "noise"



UltraSensor Monitor - Windows Internet Explorer

https://localhost/Guard/ViewEvent.aspx

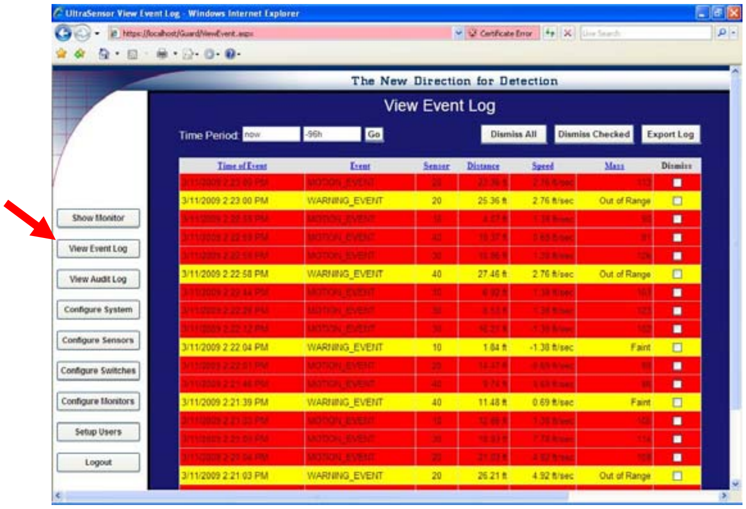
Auto Expire: 10 sec

Time	Event	ID	Range	Speed	Mass
10:06:46	ALARM	39	17.6	1.4	119

3. As shown above, the Monitor Screen also shows a mini-log of current Sensor activity.

View Log File

1. Viewing Log activity is available to Administrator level users only.
2. To view Log Activity, click on **View Log File** from Menu Screen.
3. All *administrative* activity will be displayed on a white background, *warning* events on a yellow background, *alarm* events on a red background and *heartbeats* on a green background.



View Event Log

Time Period: now -96h Go

Dismiss All | Dismiss Checked | Export Log

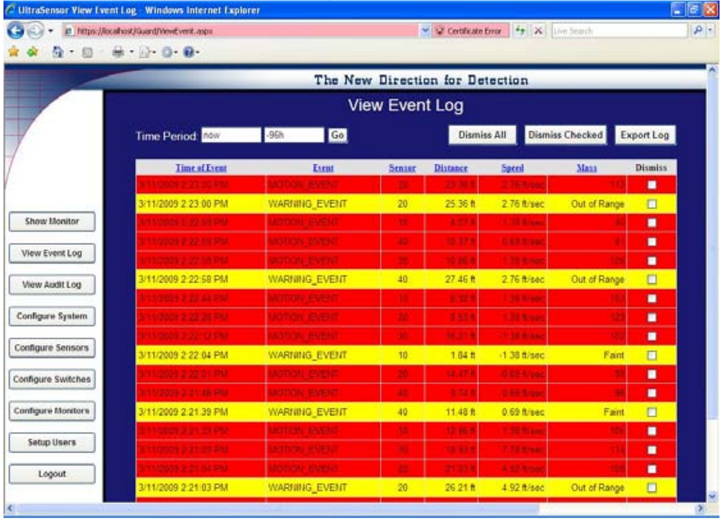
Time of Event	Event	Sensor	Distance	Speed	Mass	Dismiss
3/11/2009 2:23:09 PM	MOTION_EVENT	20	27.36 ft	2.76 ft/sec	113	□
3/11/2009 2:23:00 PM	WARNING_EVENT	20	25.36 ft	2.76 ft/sec	Out of Range	□
3/11/2009 2:22:55 PM	MOTION_EVENT	10	4.07 ft	1.38 ft/sec	92	□
3/11/2009 2:22:59 PM	MOTION_EVENT	40	10.37 ft	0.69 ft/sec	81	□
3/11/2009 2:22:59 PM	MOTION_EVENT	30	10.96 ft	1.38 ft/sec	106	□
3/11/2009 2:22:58 PM	WARNING_EVENT	40	27.46 ft	2.76 ft/sec	Out of Range	□
3/11/2009 2:22:44 PM	MOTION_EVENT	10	6.92 ft	1.38 ft/sec	101	□
3/11/2009 2:22:29 PM	MOTION_EVENT	30	8.53 ft	1.38 ft/sec	123	□
3/11/2009 2:22:12 PM	MOTION_EVENT	30	16.21 ft	-1.38 ft/sec	102	□
3/11/2009 2:22:04 PM	WARNING_EVENT	10	1.84 ft	-1.38 ft/sec	Faint	□
3/11/2009 2:22:01 PM	MOTION_EVENT	20	14.47 ft	-0.69 ft/sec	93	□
3/11/2009 2:21:46 PM	MOTION_EVENT	40	9.74 ft	0.69 ft/sec	88	□
3/11/2009 2:21:39 PM	WARNING_EVENT	40	11.48 ft	0.69 ft/sec	Faint	□
3/11/2009 2:21:33 PM	MOTION_EVENT	10	12.86 ft	1.38 ft/sec	105	□
3/11/2009 2:21:09 PM	MOTION_EVENT	30	18.93 ft	7.78 ft/sec	114	□
3/11/2009 2:21:04 PM	MOTION_EVENT	20	21.03 ft	4.92 ft/sec	108	□
3/11/2009 2:21:03 PM	WARNING_EVENT	20	26.21 ft	4.92 ft/sec	Out of Range	□

4. Alarms may be **Archived** or **Dismissed**.

   Only Administrative Level users may Archive or Dismiss events.

   a. Select **Archive Events** to clear and move the dated events in the log, as *specified in the configure system screen*, into a comma delimited file located within the c:\uvss directory.

   b. Select **Dismiss Events** to dismiss/delete all events by selecting **Dismiss All Events** or individually by checking the event(s) then selecting **Dismiss Checked**. You will be asked to confirm when dismissing events.



View Event Log

Time Period: now -96h Go

Dismiss All | Dismiss Checked | Export Log

Time of Event	Event	Sensor	Distance	Speed	Mass	Dismiss
3/11/2009 2:23:09 PM	MOTION_EVENT	20	27.36 ft	2.76 ft/sec	113	□
3/11/2009 2:23:00 PM	WARNING_EVENT	20	25.36 ft	2.76 ft/sec	Out of Range	□
3/11/2009 2:22:55 PM	MOTION_EVENT	10	4.07 ft	1.38 ft/sec	92	□
3/11/2009 2:22:59 PM	MOTION_EVENT	40	10.37 ft	0.69 ft/sec	81	□
3/11/2009 2:22:59 PM	MOTION_EVENT	30	10.96 ft	1.38 ft/sec	106	□
3/11/2009 2:22:58 PM	WARNING_EVENT	40	27.46 ft	2.76 ft/sec	Out of Range	□
3/11/2009 2:22:44 PM	MOTION_EVENT	10	6.92 ft	1.38 ft/sec	101	□
3/11/2009 2:22:29 PM	MOTION_EVENT	30	8.53 ft	1.38 ft/sec	123	□
3/11/2009 2:22:12 PM	MOTION_EVENT	30	16.21 ft	-1.38 ft/sec	102	□
3/11/2009 2:22:04 PM	WARNING_EVENT	10	1.84 ft	-1.38 ft/sec	Faint	□
3/11/2009 2:22:01 PM	MOTION_EVENT	20	14.47 ft	-0.69 ft/sec	93	□
3/11/2009 2:21:46 PM	MOTION_EVENT	40	9.74 ft	0.69 ft/sec	88	□
3/11/2009 2:21:39 PM	WARNING_EVENT	40	11.48 ft	0.69 ft/sec	Faint	□
3/11/2009 2:21:33 PM	MOTION_EVENT	10	12.86 ft	1.38 ft/sec	105	□
3/11/2009 2:21:09 PM	MOTION_EVENT	30	18.93 ft	7.78 ft/sec	114	□
3/11/2009 2:21:04 PM	MOTION_EVENT	20	21.03 ft	4.92 ft/sec	108	□
3/11/2009 2:21:03 PM	WARNING_EVENT	20	26.21 ft	4.92 ft/sec	Out of Range	□

Configure Alarm Mass Threshold (Sensitivity)

In order to adjust your system to detect people and ignore small animals such as birds, a number must be determined for each sensor Alarm Mass Threshold.

The actual detection of a moving person will determine the setting for each individual sensor.

Use the following steps:

1. On the **Configure System** screen, set the **Alarm Logging Option** to “twice per second”.
2. Set the **Alarm Mass Threshold** setting at 10 for each sensor.
3. Have a person walk to and over each sensor at a normal walking speed. Note the time that each sensor is passed. Do this for every sensor.
4. Go to **View Log File**. Note the lowest **Mass** reading for each sensor. This number will probably be different for each sensor. This is normal as each sensor might be buried under different materials or at different depths.
5. Subtract 10 from the lowest **Mass** reading for each sensor and enter this number as the **Alarm Mass Threshold** number for that sensor.
6. Once all the sensors are configured, return to the **Configure System** screen and set the **Alarm Logging Option** to “once per incident”.

Note: This is a good starting point to having each sensor detecting people and ignoring false alarms from smaller objects. The Mass Threshold can be further optimized as the user’s familiarity with the system is increased.

Logout

1. From any screen, a User may logout by selecting **Logout** from the menu at the left of the screen.
2. The User will be asked to confirm logout. If correct, select **Yes**.

Software Updates

Periodically, UVSS will add new features or enhancements to the software. To take advantage of these changes, please contact tech support at: techsupport@ultravisionsecurity.com

3/11/09 Version 10.9 Server software released. See Release 10.9 Notes page 41 for more information.

Sensor Specifications

Both the CMD1 and the CMD2 sensors have similar specifications. The primary difference is the CMD2 is water resistant for outdoor use and is larger in size.

1. Power 'on-off' operable through a standard computer network.
2. Motion detection of human size objects or larger will trigger the alarm, smaller objects are eliminated through the "mass threshold" setting.
3. Detection range is user selectable from 5 to 25 foot (1.5 -8m) radius when buried in earth six to twelve inches (15-30 cm).
4. Transmitter Frequency Range: 200 to 600 MHz.
5. POE power and communications. Standard IP compatibility.
6. Power, user supplied 240/120 VAC to the network hub, POE is 48 VDC from computer to concentrator box, then 12 VDC to sensors.
7. Alarm amplitude sensitivity is factory set and user adjustable, little or no drift.
8. Automatic self-adjusting for changing background noise.
9. Laptop on the security network controls the operating parameters (alarm range and sensitivity level) and monitors operation and communication established, through continuous polling.
10. Dry switch output that closes on alarm condition can connect to cameras and other alarm devices.
11. Operating Temperature Range -10 degrees to 55 degrees C.
12. The CMD2 is watertight to a depth of one meter.
13. All sensor software is upgradeable through the Internet.

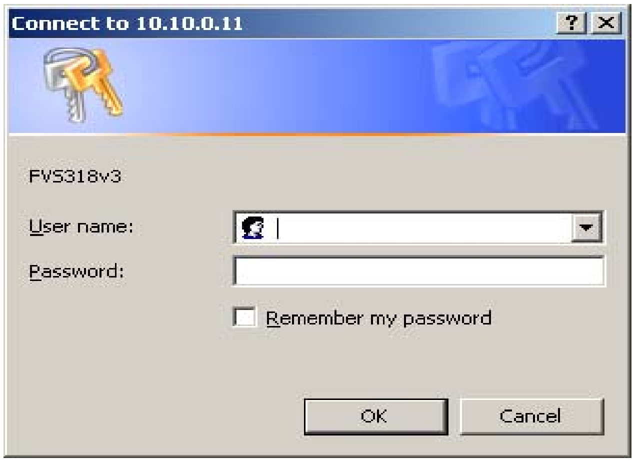
Integrating the CMD-Server 24 with your network

The CMD-Server 24 communicates to clients (laptops and PCs) via a Netgear FVS318 router. Specifically, using a web browser like Microsoft's Internet Explorer and entering an IP address will allow you to become a client of the CMD-Server. The IP address of the CMD-Server is preset to a value of 10.10.0.11 at manufacturing time. However, this can be changed to another value if the preset address is not compatible with your existing network. If there is no existing network, the user must purchase a router and configure it to be compatible with the CMD-Server's preset IP address, or configure the CMD-Server to be compatible with the router if a different set of IP addresses is desired.

Changing the CMD-Server IP address

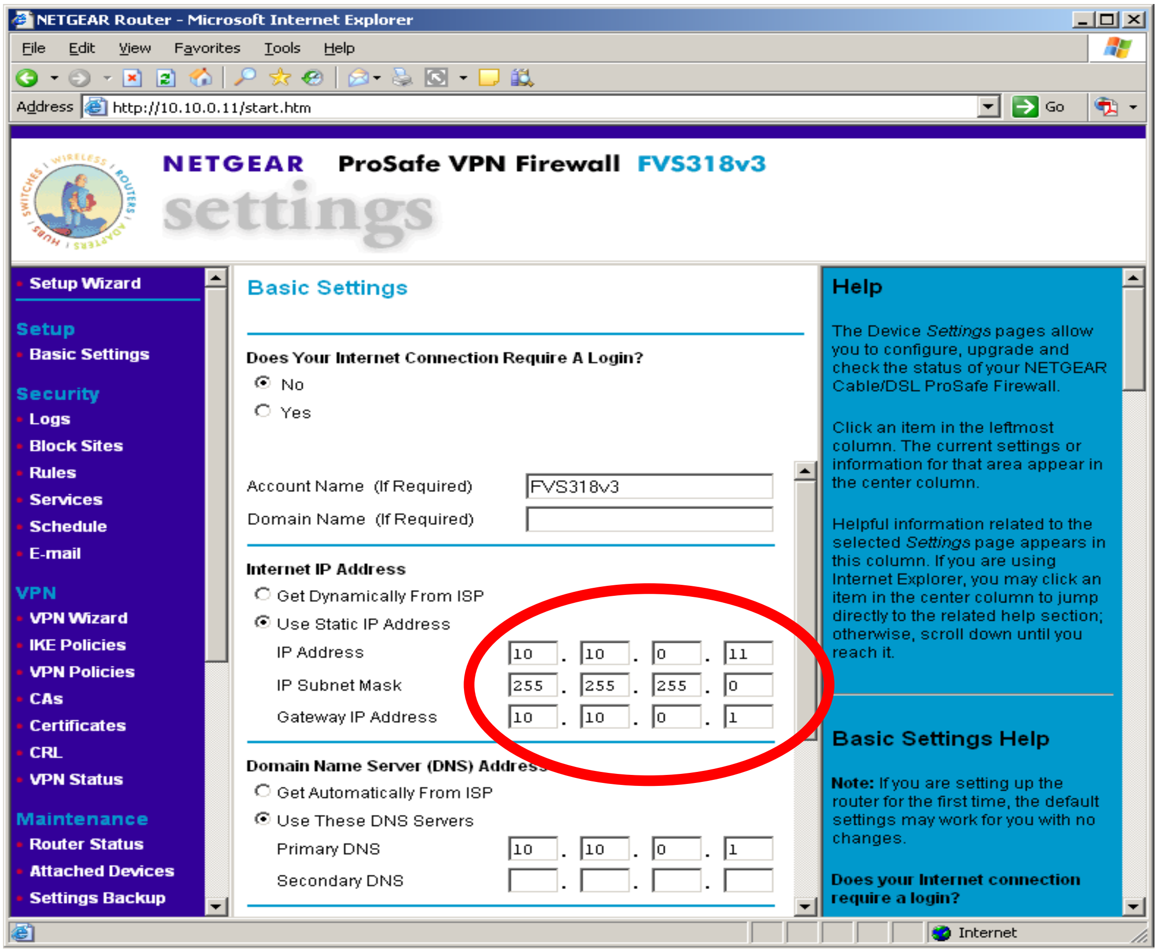
Warning: This procedure should only be attempted by qualified network administrators. Changing parameters other than those describe in this document can result in a non-functioning product that must be reset by UltraVision's Support personnel.

For this procedure you will need a router configured with a subnet of 10.10.0.0 and a subnet mask of 255.255.255.0 as well as a computer with either a compatible static IP address or a dynamic one if the router and the computer are setup to use DHCP (note that some systems ship with a separate Netgear model FVS114 router preconfigured to these settings). Next, connect both the CMD-Server and computer to the LAN side of the router. On the computer, run Internet Explorer and login to the CMD-Server router (Netgear model FVS318) by typing https://10.10.0.11:8080 . It is very important that you include the reference to port 8080 in your command-line, otherwise you will access the CMD-Server UltraSensor Security System instead of the Netgear router located inside the CMD-Server. If you entered the command correctly, you should see a small dialog box prompting you for a username and password as shown below:



The default username is **admin** and the password is **generic11..** . You should now have access to the full web interface of the Netgear router.

Change the IP address, select **Basic Settings** from the left menu bar and enter the parameters in the main window that will make the CMD-Server compatible with your network:



Basic Settings

Does Your Internet Connection Require A Login?

● No
○ Yes

Account Name (If Required) FVS318v3
Domain Name (If Required)

Internet IP Address

○ Get Dynamically From ISP
● Use Static IP Address

IP Address 10 . 10 . 0 . 11
IP Subnet Mask 255 . 255 . 255 . 0
Gateway IP Address 10 . 10 . 0 . 1

Domain Name Server (DNS) Address

○ Get Automatically From ISP
● Use These DNS Servers

Primary DNS 10 . 10 . 0 . 1
Secondary DNS . . .

Help

The Device *Settings* pages allow you to configure, upgrade and check the status of your NETGEAR Cable/DSL ProSafe Firewall.

Click an item in the leftmost column. The current settings or information for that area appear in the center column.

Helpful information related to the selected *Settings* page appears in this column. If you are using Internet Explorer, you may click an item in the center column to jump directly to the related help section; otherwise, scroll down until you reach it.

Basic Settings Help

Note: If you are setting up the router for the first time, the default settings may work for you with no changes.

Does your Internet connection require a login?

Accessing the CMD-Server over a WAN

The CMD-Server can be accessed from anywhere in the world if the LAN to which it is connected is configured to allow in-coming traffic. There are generally two ways that this can be done. The easiest (but less secure) approach is to setup the router that communicates with your ISP (Internet Service Provider) to use Port Forwarding of all HTTPS services so they are sent to the IP address of the CMD-Server. A much more secure, but significantly more difficult approach is to use VPN tunneling. The instructions for implementing a VPN tunnel go beyond the scope of this document. For detailed information please visit your router manufacturer’s website and consult with your network administrator on the best approach for your needs.

Integrating the CMD-Server 8 with your network

The CMD Server 8 communicates via a Netgear FVS114 router. Using a web browser like Microsoft's Internet Explorer and entering an IP address will allow you to view and control the server 8 as though you were physically at its keyboard. The IP address of the Server-8 is preset to a value of 10.10.0.10 at manufacturing time. However, this can be changed to another value if the preset address is not compatible with your existing network. If there is no existing network, the user must purchase a router and configure it to be compatible with the CMD Server-8's preset IP address, or configure the CMD Server-8 to be compatible with the router if a different set of IP addresses is desired.

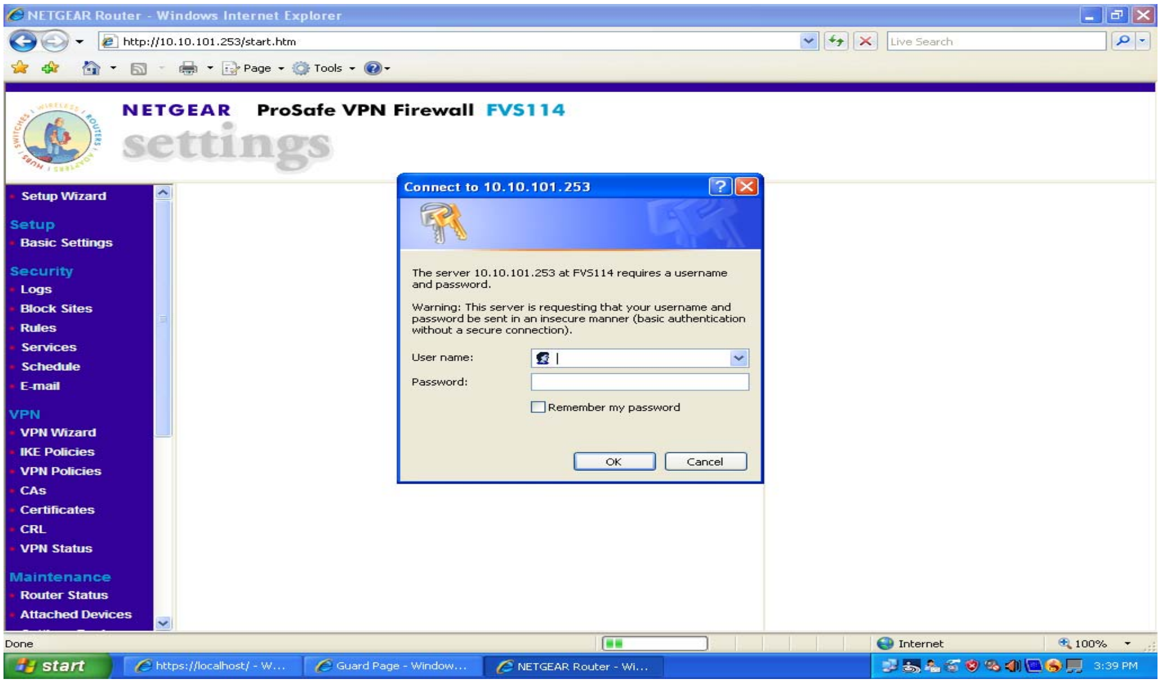
Changing the CMD Server-8 IP address

Warning: Changing parameters other than those described in this document can result in a non-functioning product.

On the CMD Server-8 laptop, open a web browser and type http://10.10.101.253. You should receive a login window like the one shown on the next page. Enter the username "admin" and password "password" (typed without quotation marks). Select "Basic Settings" on the left column if they are not already displayed in the center column. Scroll down to "use static IP address" and enter your network address parameters. (The Server-8 is preconfigured with an IP=10.10.0.10, Mask=255.255.255.0, GW=10.10.0.1 and DNS Primary=10.10.0.1) When finished, select **Logout** at the bottom of the left column. Connect the CMD Server-8 Network connector to your network. At another computer on this same network, open a web browser and type the UVSS default https://10.10.0.10 or the new IP that was previously entered. The Server-8 display should now be visible.

Accessing the CMD-Server over a WAN

The CMD-Server can be accessed from anywhere in the world if the LAN to which it is connected is configured to allow in-coming traffic. There are generally two ways that this can be done. The easiest (but less secure) approach is to setup the router that communicates with your ISP (Internet Service Provider) to use Port Forwarding of all HTTPS services so they are sent to the IP address of the CMD-Server. A much more secure, but significantly more difficult approach is to use VPN tunneling. The instructions for implementing a VPN tunnel go beyond the scope of this document. For detailed information please visit your router manufacturer's website and consult with your network administrator on the best approach for your needs.



Connect to 10.10.101.253

The server 10.10.101.253 at FVS114 requires a username and password.

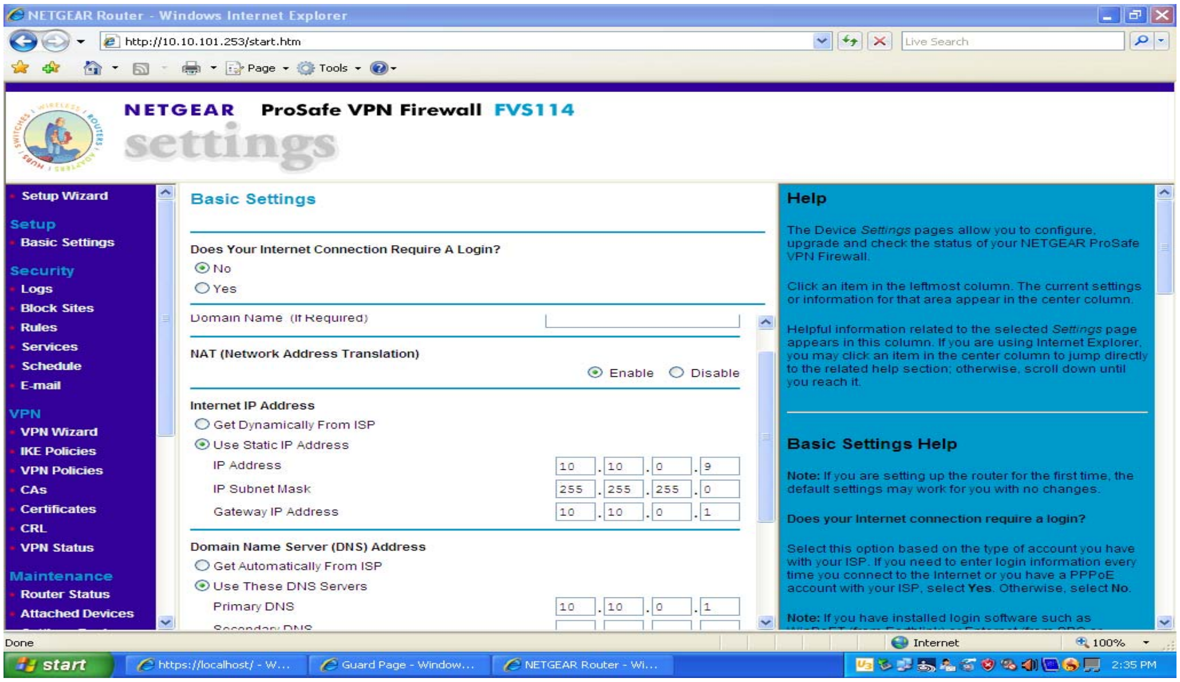
Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection).

User name:

Password:

□ Remember my password

OK Cancel



Basic Settings

Does Your Internet Connection Require A Login?

● No

○ Yes

Domain Name (If Required)

NAT (Network Address Translation)

● Enable ○ Disable

Internet IP Address

○ Get Dynamically From ISP

● Use Static IP Address

IP Address	10 . 10 . 0 . 9
IP Subnet Mask	255 . 255 . 255 . 0
Gateway IP Address	10 . 10 . 0 . 1

Domain Name Server (DNS) Address

○ Get Automatically From ISP

● Use These DNS Servers

Primary DNS	10 . 10 . 0 . 1
Secondary DNS	

Help

The Device *Settings* pages allow you to configure, upgrade and check the status of your NETGEAR ProSafe VPN Firewall.

Click an item in the leftmost column. The current settings or information for that area appear in the center column.

Helpful information related to the selected *Settings* page appears in this column. If you are using Internet Explorer, you may click an item in the center column to jump directly to the related help section; otherwise, scroll down until you reach it.

Basic Settings Help

Note: If you are setting up the router for the first time, the default settings may work for you with no changes.

Does your Internet connection require a login?

Select this option based on the type of account you have with your ISP. If you need to enter login information every time you connect to the Internet or you have a PPPoE account with your ISP, select **Yes**. Otherwise, select **No**.

Note: If you have installed login software such as

Remote Switch Device

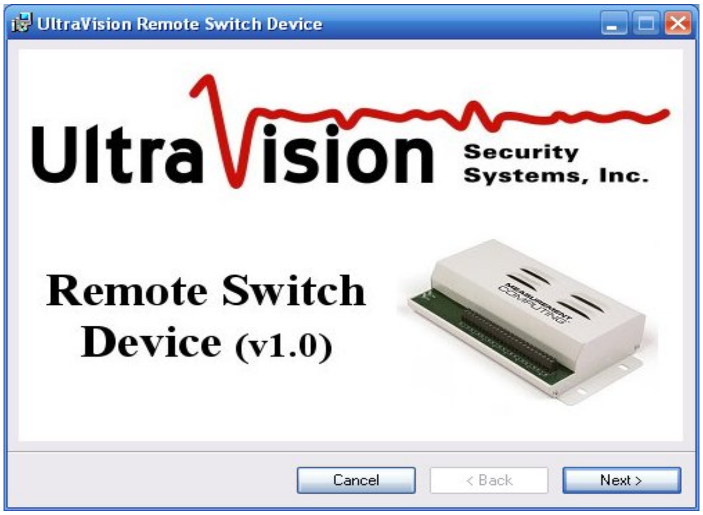
The UltraVision Remote Switch Device application software supports the integration of remote dry contact switches, such as those manufactured by Measurement Computing, with the UltraVision Sensor Servers. This allows users to control a wide array of hardware components, such as alert lights, audible alarms and security cameras, automatically when one or more UltraSensors detects a change in an area being monitored. Remote switches may be physically installed anywhere when connected to the company network or to the internet.

The UltraVision Remote Switch Device application can be executed on any Windows XP or Windows Vista PC and can control up to 48 switches using one or more contact devices manufactured by Measurement Computing (USB-ERB08 or USB-ERB24). During normal operation, the application resides in the Windows system tray, automatically changing the switch settings as directed by the associated UltraVision Sensor Server. Users can use the application GUI to monitor current switch settings, manually change switch settings and/or change server settings.

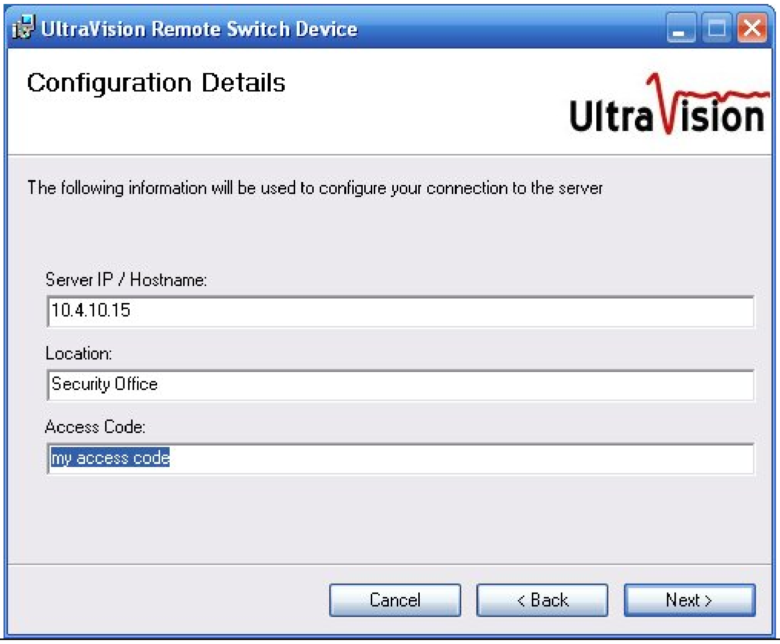
Installation

The UltraVision Remote Switch Device application can be installed using the following procedure:

- Insert the *UltraVision Remote Switch Device Installation* CDROM into the CD tray on a Windows XP or Windows Vista PC
- In most Windows PC operating environments the installation program will be automatically executed when the CDROM is loaded by the operating system. If not, use the Windows File Explorer to open the device folder associated with the CDROM and double-click on **setup.exe** file to start the installation program.
- When the installation program is started, it will display a banner page indicating the version of the software being installed, press **Next** to work through the installation steps


UltraVision Remote Switch Device
UltraVision Security Systems, Inc.
Remote Switch Device (v1.0)
Cancel
< Back
Next >

- When prompted to enter the **Configuration Details**, enter the **Server IP or Hostname** associated with the UltraVision Sensor Server running on your network. The **Location** and **Access Code** fields must correspond to those assigned to one of the **Remote Contact Devices** configured on the UltraVision Sensor Server using the **Configure Contacts** page. (See the UltraVision Sensor Server Administration Guide for more details.)



Configuration Details

The following information will be used to configure your connection to the server

Server IP / Hostname:
10.4.10.15

Location:
Security Office

Access Code:
my access code

NOTE: It is safe to leave any or all of the fields empty during installation if you don't know the information (or no Remote Contact Devices have been configured on the server yet). In that case, the Remote Switch Device application will simply not connect to any server until you enter the configuration information.

- Press **Next** to complete the installation steps

Running the Application

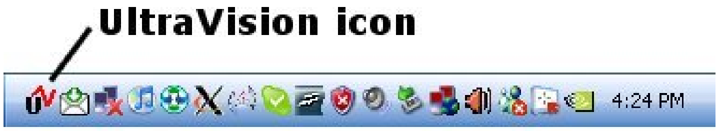
When initialized, the UltraVision Remote Switch Device application searches for all Measurement Computing switch devices connected to the PC via USB cables. Due to the nature of the driver provided by Measurement Computing, the USB devices must be connected to the PC ***before*** the Remote Switch Device is executed. If not, you'll need to exit the Remote Switch Device and restart it before it will find the Measurement Computing devices.

The Measurement Computing USB-ERB08 and USB-ERB24 devices are easily connected to any Windows PC using a standard USB cable. Once connected and powered up, the Windows O/S will automatically recognize and load any drivers required for that device. In most Windows environments you will hear an audible alert from Windows when it has successfully loaded the USB device driver.

After the USB device has been successfully connected to the PC, select the following entry from the Windows Start Menu:

Programs => UltraVision => UltraVision Remote Switch Device

Upon successful execution, the UltraVision icon will be visible in the Windows system tray (the set of icons in the lower-right corner of the Windows Desktop):

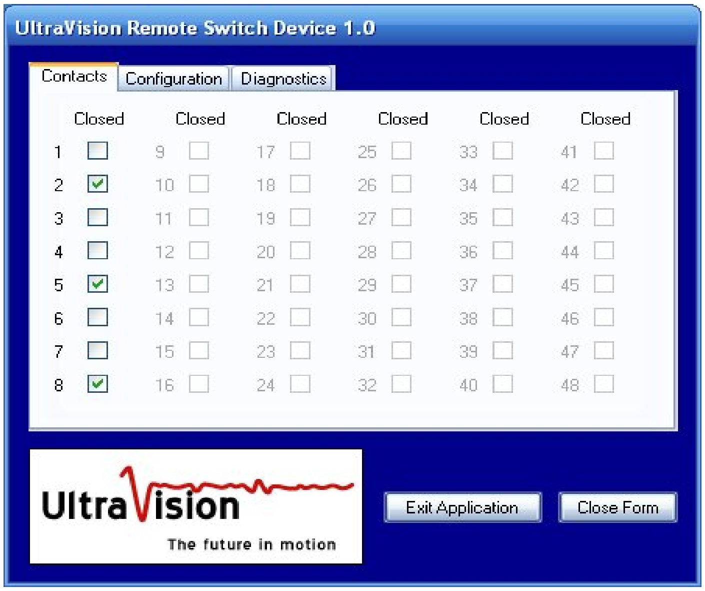


Whenever that icon is present, the Remote Switch Device is active and, if configured properly, will be automatically updating any Measurement Computing switches as directed by the UltraVision Sensor Server.

At any time while the application is running, you can double-click on the icon in the system tray to open the application's Graphical User Interface (GUI). The GUI allows you to:

- Monitor and/or alter the current state of each switch
- Modify the server configuration information
- Monitor the application log and/or flash the LED on the Measurement Computing device

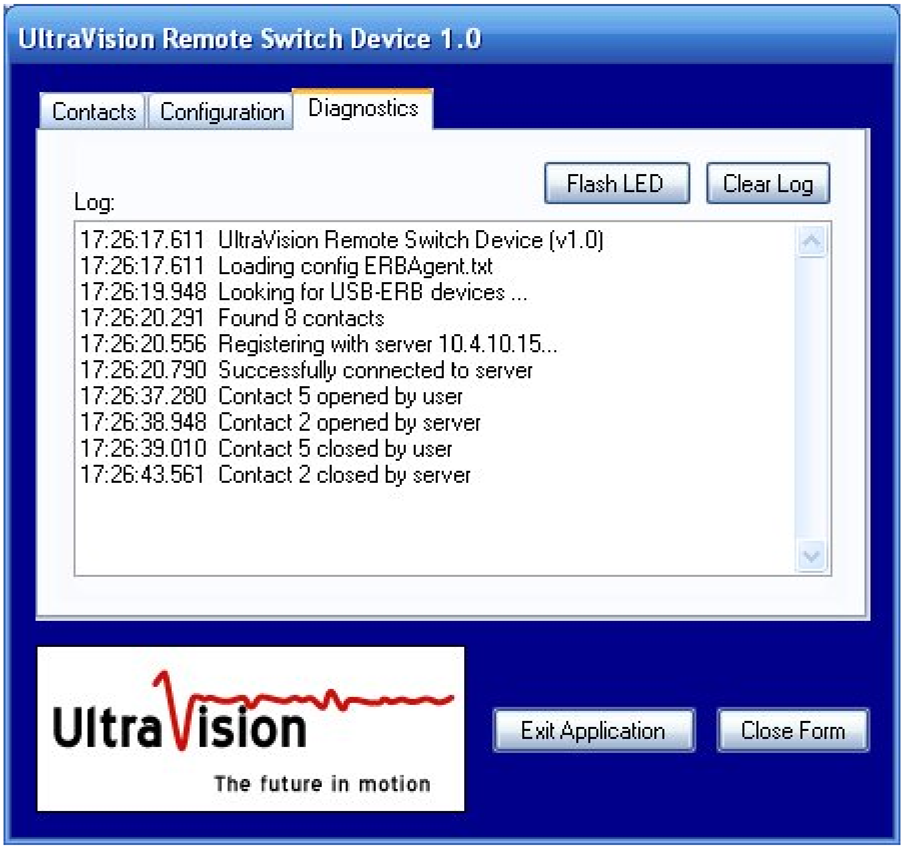
When the application GUI is launched, it will initially display a list of all the switches currently being controlled, as seen here:



	Closed		Closed		Closed		Closed		Closed		Closed
1	□	9	□	17	□	25	□	33	□	41	□
2	☑	10	□	18	□	26	□	34	□	42	□
3	□	11	□	19	□	27	□	35	□	43	□
4	□	12	□	20	□	28	□	36	□	44	□
5	☑	13	□	21	□	29	□	37	□	45	□
6	□	14	□	22	□	30	□	38	□	46	□
7	□	15	□	23	□	31	□	39	□	47	□
8	☑	16	□	24	□	32	□	40	□	48	□

The **Contacts** tab not only shows the current state of each switch being controlled, it also allows you to manually change the state of each switch simply by toggling the associated checkbox. This feature can be used to test switch settings or as part of a standard operating procedure that requires the operator to set or reset a switch for various reasons.

If all of the entries are disabled, then either no Measurement Computing device was found connected to the PC or the server configuration information is incomplete or incorrect. In that case, select the **Diagnostics** tab to view the log and determine the cause of the problem.



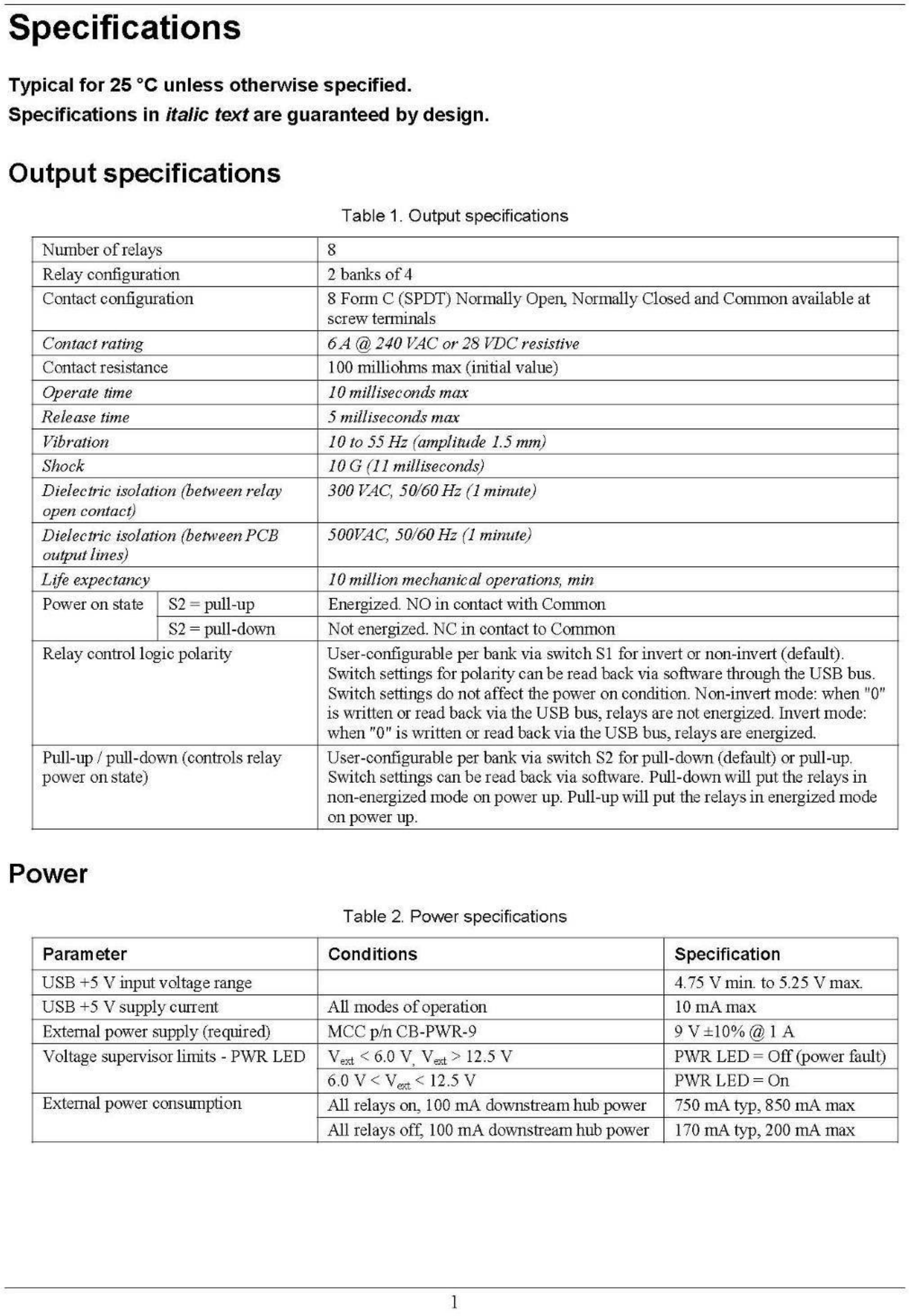
```
17:26:17.611  UltraVision Remote Switch Device (v1.0)
17:26:17.611  Loading config ERBAgent.txt
17:26:19.948  Looking for USB-ERB devices ...
17:26:20.291  Found 8 contacts
17:26:20.556  Registering with server 10.4.10.15...
17:26:20.790  Successfully connected to server
17:26:37.280  Contact 5 opened by user
17:26:38.948  Contact 2 opened by server
17:26:39.010  Contact 5 closed by user
17:26:43.561  Contact 2 closed by server
```

Removing the Application

The UltraVision Remote Switch Device application is easily removed from the system using the following procedure:

- If the application is currently running, double-click on the icon in the system tray to open the application GUI and press **Exit Application** to stop the application
- Select **Settings => Control Panel** from the Windows Start Menu
- Double-click **Add or Remove Programs** in the Control Panel window
- Select **Change or Remove Programs** from the left menu and select **UltraVision Remote Switch Device** from the list of currently installed programs
- Press **Remove** to remove the application

Dry contact switch specifications for Server-8



Specifications

Typical for 25 °C unless otherwise specified.

Specifications in *italic text* are guaranteed by design.

Output specifications

Table 1. Output specifications

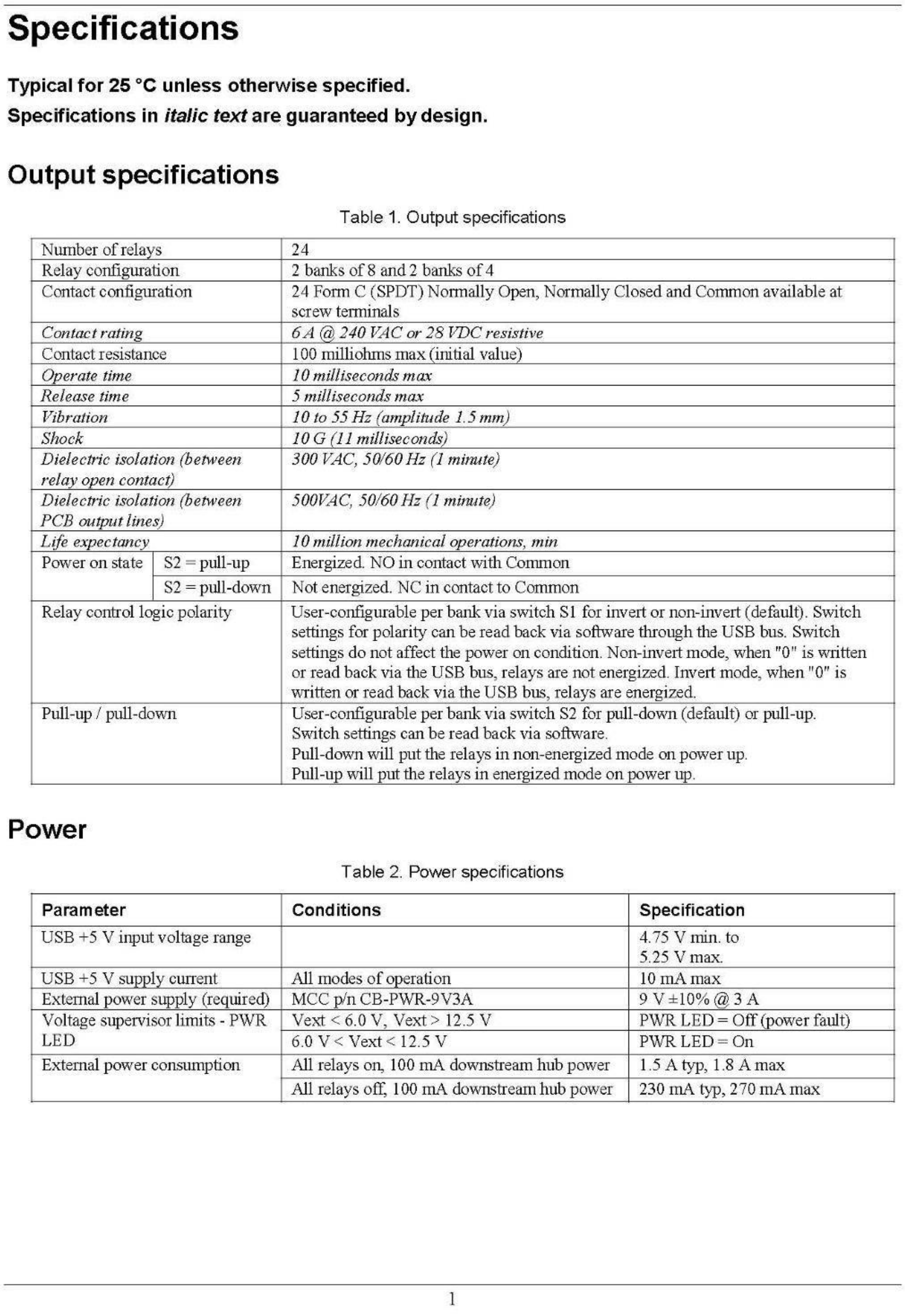
Number of relays		8
Relay configuration		2 banks of 4
Contact configuration		8 Form C (SPDT) Normally Open, Normally Closed and Common available at screw terminals
Contact rating		*6 A @ 240 VAC or 28 VDC resistive*
Contact resistance		100 milliohms max (initial value)
Operate time		*10 milliseconds max*
Release time		*5 milliseconds max*
Vibration		*10 to 55 Hz (amplitude 1.5 mm)*
Shock		*10 G (11 milliseconds)*
Dielectric isolation (between relay open contact)		*300 VAC, 50/60 Hz (1 minute)*
Dielectric isolation (between PCB output lines)		*500VAC, 50/60 Hz (1 minute)*
Life expectancy		*10 million mechanical operations, min*
Power on state	S2 = pull-up	Energized. NO in contact with Common
	S2 = pull-down	Not energized. NC in contact to Common
Relay control logic polarity		User-configurable per bank via switch S1 for invert or non-invert (default). Switch settings for polarity can be read back via software through the USB bus. Switch settings do not affect the power on condition. Non-invert mode: when "0" is written or read back via the USB bus, relays are not energized. Invert mode: when "0" is written or read back via the USB bus, relays are energized.
Pull-up / pull-down (controls relay power on state)		User-configurable per bank via switch S2 for pull-down (default) or pull-up. Switch settings can be read back via software. Pull-down will put the relays in non-energized mode on power up. Pull-up will put the relays in energized mode on power up.

Power

Table 2. Power specifications

Parameter	**Conditions**	**Specification**
USB +5 V input voltage range		4.75 V min. to 5.25 V max.
USB +5 V supply current	All modes of operation	10 mA max
External power supply (required)	MCC p/n CB-PWR-9	9 V ±10% @ 1 A
Voltage supervisor limits - PWR LED	V_{ext} < 6.0 V, V_{ext} > 12.5 V	PWR LED = Off (power fault)
	6.0 V < V_{ext} < 12.5 V	PWR LED = On
External power consumption	All relays on, 100 mA downstream hub power	750 mA typ, 850 mA max
	All relays off, 100 mA downstream hub power	170 mA typ, 200 mA max

Dry contact switch specifications for Server-24



Specifications

Typical for 25 °C unless otherwise specified.

Specifications in *italic text* are guaranteed by design.

Output specifications

Table 1. Output specifications

Number of relays		24
Relay configuration		2 banks of 8 and 2 banks of 4
Contact configuration		24 Form C (SPDT) Normally Open, Normally Closed and Common available at screw terminals
Contact rating		*6 A @ 240 VAC or 28 VDC resistive*
Contact resistance		100 milliohms max (initial value)
Operate time		*10 milliseconds max*
Release time		*5 milliseconds max*
Vibration		*10 to 55 Hz (amplitude 1.5 mm)*
Shock		*10 G (11 milliseconds)*
Dielectric isolation (between relay open contact)		*300 VAC, 50/60 Hz (1 minute)*
Dielectric isolation (between PCB output lines)		*500VAC, 50/60 Hz (1 minute)*
Life expectancy		*10 million mechanical operations, min*
Power on state	S2 = pull-up	Energized. NO in contact with Common
	S2 = pull-down	Not energized. NC in contact to Common
Relay control logic polarity		User-configurable per bank via switch S1 for invert or non-invert (default). Switch settings for polarity can be read back via software through the USB bus. Switch settings do not affect the power on condition. Non-invert mode, when "0" is written or read back via the USB bus, relays are not energized. Invert mode, when "0" is written or read back via the USB bus, relays are energized.
Pull-up / pull-down		User-configurable per bank via switch S2 for pull-down (default) or pull-up. Switch settings can be read back via software. Pull-down will put the relays in non-energized mode on power up. Pull-up will put the relays in energized mode on power up.

Power

Table 2. Power specifications

Parameter	Conditions	Specification
USB +5 V input voltage range		4.75 V min. to 5.25 V max.
USB +5 V supply current	All modes of operation	10 mA max
External power supply (required)	MCC p/n CB-PWR-9V3A	9 V ±10% @ 3 A
Voltage supervisor limits - PWR LED	Vext < 6.0 V, Vext > 12.5 V	PWR LED = Off (power fault)
	6.0 V < Vext < 12.5 V	PWR LED = On
External power consumption	All relays on, 100 mA downstream hub power	1.5 A typ, 1.8 A max
	All relays off, 100 mA downstream hub power	230 mA typ, 270 mA max

Problem Solving

If application's monitor display shows sensors as an orange dot with an "X" AND Digi Discovery can detect the sensors;

Stop and restart the II service by going to the Windows Start Menu (Press Window Pane Key on keyboard) then selecting **stop IIS**. A command window will flash on the display. You may see Internet Explorer error messages but ignore them; they will be continuous until this next step.
In the Windows Start Menu select **start IIS**. A command window will flash on the display. Answer OK to any Internet Explorer error messages that you received. Icons should return to appropriate colors but sensors may take up to 3 minutes to start responding.

If the database becomes corrupt, you can reinstall the program. Please note that all records, map and sensor configurations will be deleted. A new install should only be done when all other attempts to repair the database fail.

Update application by going to the Windows Start Menu (Press Window Pane Key on keyboard) then selecting **update script**. A command window will be displayed. Select option 3 for full installation. When it finishes scrolling, select option 2 to exit.

Install MS .NET framework and Java

Use these instructions to install MS .NET framework and Java on a Server 24 running UltraSensor 10.7 or higher.

To use an UltraSensor Server laptop on the web you need to configure it for DHCP so it will find an IP address and then change it back to a specific IP to reuse as the UltraSensor Server.

You get to the IP address window by going to:
Start
Settings
Network Connections
Local Area Connection
Properties
Highlight Internet Protocol (TCP/IP)
Select Properties

> These should be the current IP addresses to use for setting it back as a Server,
> IP Address 10.10.101.254
> Subnet Mask 255.255.255.0
> Default Gateway 10.10.101.253
> DNS Server 10.10.101.253
> Alternate DNS is blank

Select "Obtain IP address automatically" for both top and bottom of window
(This will blank out the numbers above)
"OK" all the way out
Now you should be able to get on the network.

Here's the link to install **Microsoft .NET** framework.

http://www.microsoft.com/downloads/details.aspx?familyid=333325fd-ae52-4e35-b531-508d977d32a6&displaylang=en

On that page, select ".NET Framework 3.5 full package"
(Most others listed will only change the bootstrap)
It's OK to chose RUN
Accept all questions, it will place the files where it wants.

To install **Java**:
Go to www.java.com
Select FREE JAVA DOWNLOAD

Allow a remote PC to fully communicate with a Server-8

This resolves 2 symptoms exhibited by the remote PC:

1) The site map area is all red
2) Remote switch bank will not work

At the Server-8 PC:

1) Log out of the UltraSensor application
2) Stop the service by going to START and select ‘Stop UltraSensor’
3) Open an Internet Explorer window (it will fail to find the local site)
4) In the URL area type www.routerlogin.net
5) Log in using “admin” for user name, “password” for password, without quotation marks then select OK
6) On the left column, select “Services”

   To correct the map issue;

   A) Select “Add custom service”
   B) In the NAME field type “MapViewer” without quotation marks
   C) If not already displayed use the dropdown menu to select TCP for TYPE (not TCP/UDP)
   D) Type “2201” without quotation marks in both the START AND FINISH PORT fields
   E) Select APPLY (Will display all services in a table)

   To correct the switch bank issue (optional, you don’t need to use a remote switch bank)

   A) Select “Add custom service”
   B) In the NAME field type “SwitchBank” without quotation marks
   C) If not already displayed use the dropdown menu to select TCP for TYPE (not TCP/UDP)
   D) Type “2200” without quotation marks in both the START AND FINISH PORT fields
   E) Select Apply (Will display all services in a table)

7) Select “Rules” on the left column
8) Under “Inbound Services”, select “ADD”
9) Scroll through “Service” menu, select MapViewer
10) For Action use dropdown menu to select “Allow Always”
11) For LAN type in 10.10.101.254
12) For WAN use dropdown menu to select ANY
13) Start and Finish IPs should be all zeros
14) For LOG use dropdown menu to select NEVER
15) Select APPLY
16) Should see new entry in table (HTTPS will also be there and must remain)

If you have a remote switch bank, repeat steps 8 through 16 but select “SwitchBank” instead of “MapViewer” in step 9.

Scroll down left column to select Logout and Yes to close window. Go to START to Start UltraSensor.

Release 10.9 Notes

Version 10.9

Upgrade Process

Execute the **Upgrade.cmd** script contained in the top-level directory of the distribution package to upgrade any version 10.4 or greater server to the current version. Distribution packages are cumulative, so there is no need to upgrade to each version. Simply run the upgrade script for the latest version to upgrade any previous version.

When the **Upgrade.cmd** script is executed, it will allow you to:

- upgrade just the server functionality (retaining current database data and user configuration),
- upgrade the server and database (retaining user configuration), or upgrade everything (losing all data and setting the server to factory default settings).

Summary

The following significant changes were made to the UltraVision Sensor Server:

- Added the UltraSensor Switch API
- Added the UltraSensor Monitor API
- Enhanced Audit Log archiving and pruning mechanisms
- Enhanced the incident processing logic in the server to better filter false motion alarms.

Each of these changes are discussed in more detail below.

Graphical User Interface (GUI) Changes

The following specific changes were made to the web-based Guard and Administrator Console used to monitor and control the UltraVision Sensor Server:

- Added the **Configure Monitors** page to the Administrator Console to allow administrators to configure remote monitor accounts. Remote monitor accounts allow client applications to monitor server activity using the new **UltraSensor Monitor API** (see below for details). This page also allows administrators to see a list of all active monitor connections.

- Added the **Online Event Retention** and **Archive Log Retention** properties to the **Configure System** page to allow administrators to specify how long event records should be retained in the database and how long archive event logs should be retained in the file system, respectively. This gives administrators better control over how database and file system resources are used on the server.

- Removed the **Auto Archive Interval** property from the **Configure System** page which was made obsolete by the archive process changes described below.

- Added the **Archived Logs** button to the **View Audit Log** page to allow administrators to view the list of Audit Log archive files currently stored on the server. The new **Audit Log Archive** page also allows administrators to export a CSV file containing all archived audit records for a given day.

- Modified the **View Audit Log** and **View Event Log** displays to limit the number of rows displayed in the GUI table and exported to a CSV file. This prevents users from accidentally trying to display more rows than the database, web server and browser are capable of handling.

Server Changes

The following specific changes were made to the server functionality and configuration mechanisms:

- Fixed a bug that was preventing switch actions based on the **POWER** event from triggering properly.

- Added support for the **UltraSensor Switch API** that allows client applications to receive switch state changes as defined on the **Configure Switches** administrator page. Client applications using this API must specify a valid **Switch ID** (e.g., location) and **Access Code** as defined on the **Configure Switches** page in order to start receiving state changes as events are processed by the server.

- Added support for the **UltraSensor Monitor API** that allows client applications to monitor server activity, including server property changes, target data and event data. Client applications using this API must specify a valid **Monitor ID** and **Access Code** as defined on the new **Configure Monitors** page in order to access the server.

- Fixed a problem with the maintenance task that prevented it from properly archiving and pruning the Audit/Event log on some systems. Event records are now automatically deleted from the database when they are older than the number of days specified by the **Online Event Retention** property on the **Configure System** page. The **Online Event Retention** property determines how far back in time Operators and Administrators can view Event Log or Audit Log records using the **View Event Log** and **View Audit Log** pages.

- The Audit Log is now archived to individual CSV files on a daily basis in the **c:\uvss\archive** directory on the server. The daily files make it easier for administrators to find past events for a given time period. Furthermore, the format of the archive files is now the same as that used when exporting the Audit Log from the GUI, making it easier to post-process the CSV files. Archive files are automatically removed from the file system when they are older than the number of days specified by the **Archive Log Retention** property on the **Configure System** page.

- Added support for the **LogViewMaxRows** and **LogExportMaxRows** configuration properties in the **c:\uvss\blogic.ini** file to control the maximum number of events that can be displayed in the GUI event table and exported to CSV files, respectively. The properties can be optionally specified as part of the **[GUI]** category, as in the following example:

  ```
  [GUI]
  LogViewMaxRows=1000
  LogExportMaxRows=5000
  ```

- Added support for the **MOTION_COUNT_FILTER** and **MOTION_RANGE_FILTER** configuration properties in the **c:\uvss\blogic.ini** file to fine-tune the algorithm used to filter out false alarms.

  a.) If MOTION_COUNT_FILTER is an integer greater than 1 (default value is 2), then the server will wait for a consecutive number of motion events before generating an alarm. This prevents alarms from being generated for spurious motion events.

  b.) If MOTION_RANGE_FILTER is a decimal value greater than zero (default value is 0), then the difference between the first motion event range and last motion event range (as determined by the MOTION_COUNT_FILTER) must be greater than or equal to the MOTION_RANGE_FILTER value (specified in feet) in order for an alarm to be generated. This prevents alarms from being generated unless two or more consecutive motion events occur with a "decreasing" range (i.e., target moving towards the sensor).

  - For example, suppose MOTION_COUNT_FILTER is specified as 2 and the MOTION_RANGE_FILTER is specified as 0.5 feet.

  - If the first motion event occurred at a range of 10 feet and the second consecutive motion event occurred at a range of 9 feet, then an alarm would be generated.

  - If the second consecutive motion event occurred at a range of 9.6 feet, then an alarm would not be generated at that time. However, if the 3rd consecutive motion event occurred at a range of 9.2 feet, then the alarm would be generated.

- Added support for the **INCIDENT_DEBUG** configuration variable which allows technical support staff to log incident processing information for a given sensor. For example, if the INCIDENT_DEBUG variable is set to "3", then only the incident processing information for Sensor 3 will be output to the server log. The amount of debug information generated could be quite large, so this configuration variable should be used only when actively trouble-shooting event filtering problems.

- All server logs have been moved from the **c:\uvss** directory to the **c:\uvss\logs** directory to better organize the server runtime directory.

- Created a new daily maintenance log in **c:\uvss\logs** to assist with trouble-shooting maintenance issues.

Thank you for purchasing our product.

Technical Support

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