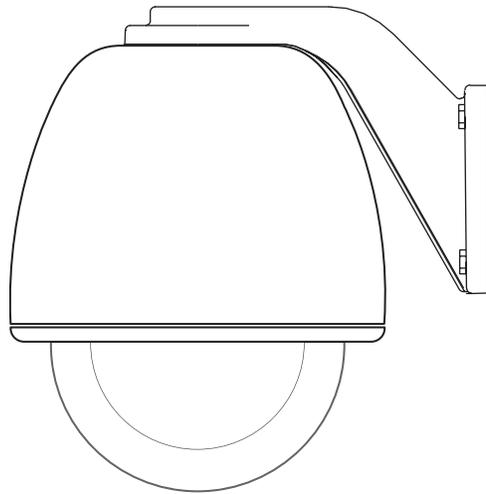


Legend User Manual



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Introduction

This is the *GE Legend User Manual*. It provides an overview of the product and detailed instructions explaining how to program and operate all models. There is also information describing how to contact technical support if you have questions or concerns. For installation instructions, refer to the *Legend Installation Manual*.

To use this document effectively, you should have the following minimum qualifications:

- a basic knowledge of CCTV systems and components; and
- a basic knowledge of electrical wiring and low-voltage electrical connections.

Read these instructions and all ancillary documentation entirely before installing or operating this product. The most current versions of this and related documentation may be found on our website. Refer to [Online publication library](#) on page 67 for instructions on accessing our online publication library.

Note: A qualified service person, complying with all applicable codes, should perform all required hardware installation.

Conventions used in this document

The following conventions are used in this document:

| | |
|--------------------|--|
| Bold | Menu items and buttons. |
| <i>Italic</i> | Emphasis of an instruction or point; special terms. |
| | File names, path names, windows, panes, tabs, fields, variables, and other GUI elements. |
| | Titles of books and various documents. |
| Monospace | Text that displays on the computer screen. |
| | Programming or coding sequences. |
| <i>Blue italic</i> | Hyperlinks to cross-references, related topics, and URL addresses. |

Safety terms and symbols

These terms may appear in this manual:

| | |
|--|--|
|  CAUTION | <i>Cautions</i> identify conditions or practices that may result in damage to the equipment or other property. |
|  WARNING | <i>Warnings</i> identify conditions or practices that could result in equipment damage or serious personal injury. |

References

If you want to investigate related topics, these other documents may prove helpful:

- GE Security. *Legend Installation Manual* (1052026)
- GE Security. *KTD-405 Controller Keypad User Manual* (1036547)
- GE Security. *Networking Cable Types Technical Reference Guide* (1047213)

Overview

The Legend™ dome is programmed through a graphical programming interface. The end-user's system administrator and/or the installer will do the programming. Be aware that the installer would have turned on the passcodes for the system during installation, if they were to be used during normal operation.

Legend is the next generation PTZ dome camera that maintains and enhances many of the features of CyberDome that you have come to rely on. One obvious difference that you will see is that the text-based onscreen display (OSD) programming interface has been replaced with an easy-to-use graphical programming interface (*Figure 1*).

The Legend protocol is backward compatible. So you can replace older domes in an existing Digiplex system with Legend domes. The hardware, however, is not backward compatible. Other enhancements that relate to performance and operation include passcode protection that prevents unauthorized personnel from changing programming settings while still allowing operator access. The dome also now offers an Ethernet connection to flash software upgrades over a standard IP network using a standard web browser.



When flashing software upgrades to the dome over a standard IP network via the dome's Ethernet connection, ensure that the network is secured from unauthorized access. Like all Ethernet connections, the dome's Ethernet connection has no security against unauthorized access. You may consider connecting the Ethernet cable only when you are flashing the dome, unless you have the dome connected to a secure, isolated network.

For additional details, refer to the data sheet and the installation manual for product specifications and installation instructions.

Figure 1. Main menu of the graphical programming interface



Accessing the programming interface

If passcodes were turned on during installation or later, access to the programming interface will be passcode-protected. You must log on to program the dome. Otherwise, you will be taken directly to the main programming screen. The passcodes control who has access to the features of your dome. See [Passcode screen \(Setup | Passcode \)](#) on page 11.

The steps for accessing the programming interface from all GE keypads are similar. The following procedure is based on the KTD-405 keypad, which is currently GE's most popular keypad. Exceptions to the procedure for other GE keypads are noted. You can also use the GE KTD-400 and KTD-404/304 keypads and other manufacturers' keypads and controllers using the PelcoD, Ultrak, Impac/485, and ASCII protocols. When using these other protocols, all common commands used for accessing programming, operating the joystick and iris key on the keypad, and controlling presets are supported by the Legend protocol. For an up-to-date list of compatible keypads and protocols, please contact your GE sales representative or Technical Support.

To access the programming interface from a KTD-405 keypad:

1. At the normal display, press and hold the **set** () key on the keypad until you hear a beep and the programming code display appears on the keypad's LCD.

Figure 2. Normal display (visible before programming interface accessed)



CAMERA 1
MONITOR 1

2. At the enter programming code display, enter the programming access code by pressing the **9, 5, 1**, and **seq** keys.

Figure 3. Enter programming code display



ENTER PROGRAMMING
CODE: _

This code is the same for all GE keypads.

3. At the equipment selection display, press **3** to select CAMERA (Figure 4, keypad version 1.2.09 or later) or CAMERA/RCVR (Figure 5, keypad version 1.1.06 or earlier).

Figure 4. Equipment selection display (v1.2.09 or later)



1=SWITCHER/MPLX 2=ALARMS
3=CAMERA EXIT

If you have an older keypad (version 1.1.06 or earlier), you will have a second equipment selection display, at which you need to press **1** for CYBERDOME.

Figure 5. Equipment selection display (v1.1.06 or earlier)



1=SWITCHER/MPLX 2=ALARMS
3=CAMERA/RCVR EXIT

Figure 6. Second equipment selection display for older keypads



1=CYBERDOME 2=PTZ
3=AUXILIARY BACK

4. At the enter site number display, enter the number for the camera site you are programming. This is a 3-digit number (for example, 007, 021, 243).

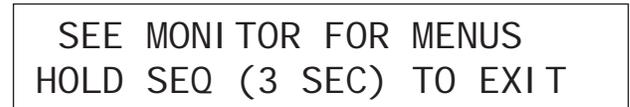
You can enter one, two, or three digits and press **set** (←).

5. Continue entering commands with the joystick.

Figure 7. Enter site number display



Figure 8. See Monitor For Menus display



6. If passcodes are turned on, select your passcode level and enter your passcode (Figure 9). If passcodes are turned off, you will be taken directly to the main programming screen (Figure 10).

You can now access any programming parameters that are allowed by your passcode.

Figure 9. Log on screen for the programming interface

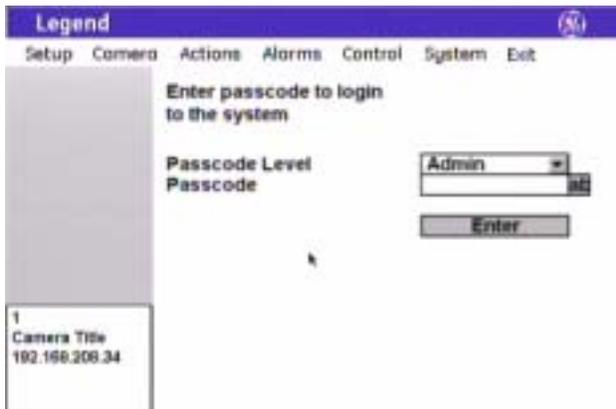


Figure 10. Main programming screen



Navigating the programming interface

While in the programming interface, the joystick of your keypad operates in two modes depending upon what your current action is. While moving among the menus of the programming interface, the joystick is a simulated mouse and you enter commands using the joystick. While controlling live video, the joystick is a video controller. So, whenever you are positioning titles or privacy masks, or programming live video features such as presets and ShadowTours, the joystick is a video controller, in which case, you will use the keypad's keys to enter commands.

The timeout of the keypad controls the timeout of the programming interface. The GE KTD-405 keypad times out after five minutes of inactivity. The programming interface will therefore time out after five minutes, as well.

On screens with tabs, be aware that the last tab accessed will be the first tab accessed the next time that you enter that page.

Joystick as simulated mouse

When the joystick is a simulated mouse, use it as described here to enter menus and commands.

Moving the cursor (the onscreen arrow) across the menus

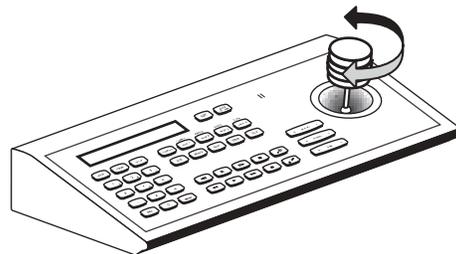
To move the cursor (the onscreen arrow), push or pull the joystick in any direction. The farther that you push or pull, the faster the cursor will move.

Making a selection in the menus

To make a selection, place the cursor over a menu, button, check box, item in a list, or arrow of a drop-down box, and twist the knob on the joystick.

You can also use the **zoom+/-** key on the keypad to make selections.

Figure 11. Twist the joystick knob to make selections



Joystick as video controller

When the joystick is controlling video, use the keypad's keys to enter the following programming commands.

Saving (accepting) live video programming

To save or accept live video programming, such as positioned titles, privacy masks, presets, and ShadowTours, press the **iris +** or the **set** (←) key on the keypad.

Canceling (aborting) live video programming

To cancel or abort live video programming, such as positioned titles, privacy masks, presets, and ShadowTours, press the **iris -** or the **esc** key on the keypad.

Keypad shortcuts

The following are keypad shortcut commands carried over from CyberDome programming. Where keypad shortcuts exist for a feature, such as setting presets, you can use keys from the keypad, instead of menus from the programming interface, to program the feature. See *Table 1*. You can then go into the programming interface and customize the programmed feature with titles and other attributes.

Table 1. Keypad shortcuts (for details, see the KTD-405 Controller Keypad User Manual (1036547))

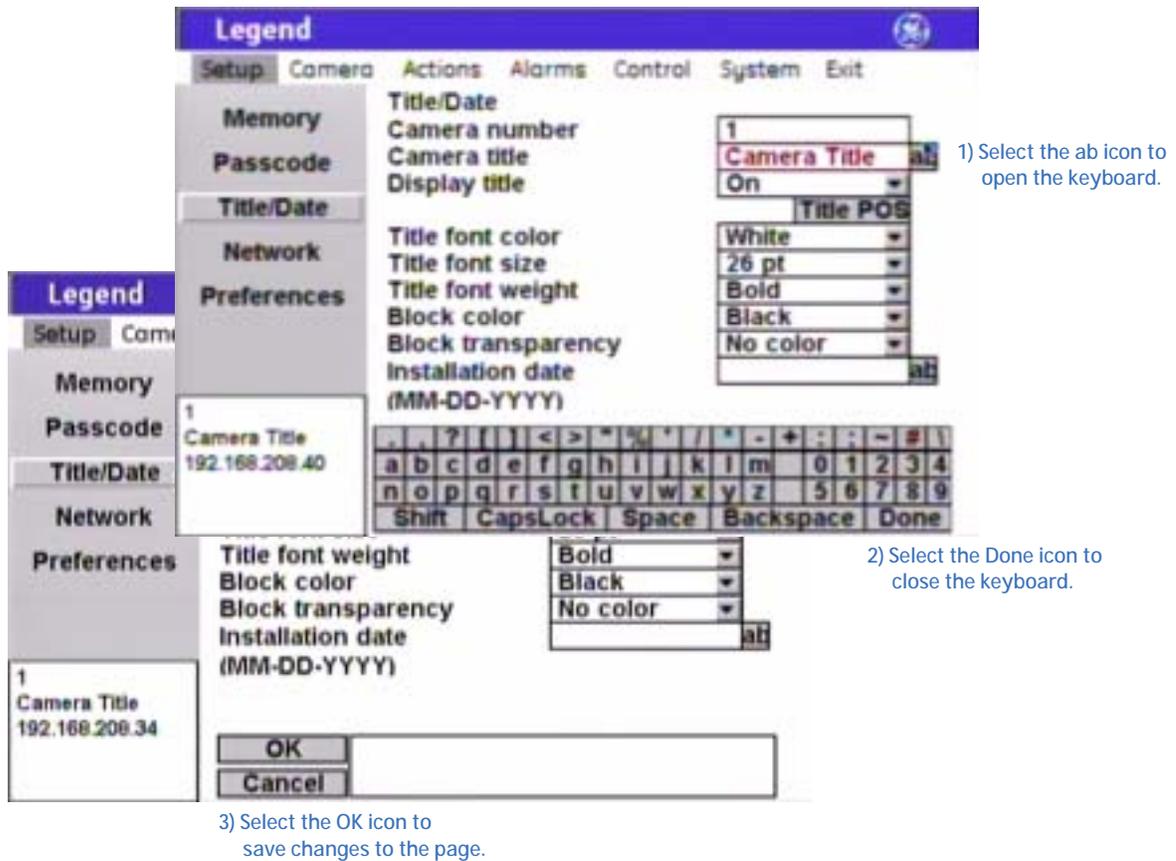
| Command | Keypad shortcut |
|-----------------------------|--|
| Set a preset | <i>store</i> (number) <i>store</i> |
| Set the left autopan limit | <i>store</i> ◀ <i>store</i> |
| Set the right autopan limit | <i>store</i> ▶ <i>store</i> |

See [Setting autopan limits](#) on page 63 for restrictions for setting autopan limits.

Using the keyboard of the programming interface

Open the keyboard by selecting the **ab** icon. After you have entered the necessary characters, select **Done** on the keyboard to return to the page and select **OK** to save the changes made to the page.

Figure 12. Using the keyboard of the programming interface



Basic programming

The dome is ready to operate with its defaults. Presets and ShadowTours are the most commonly used programmable features. This section provides the step-by-step instructions for programming presets and ShadowTours. For more challenging surveillance conditions, you can take full advantage of the dome's programming features. See [Advanced programming](#) on page 10.

Presets

You can set presets from the keypad or with the programming interface. If you set your presets from the keypad, you may want to go into the programming interface to customize them with titles and exposure settings.

There are a total of 127 presets (1 through 127) that you can define for your dome. If you are using presets 62 and 63 for your left and right autopan limits, then you have a total of 125 presets that you can define.

The dome also provides the ability to remap any preset or tour command coming in from a keypad to activate any of the 127 presets, 16 tours, or 32 macro actions. This enables you to manually initiate any of the expanded capabilities of the dome from keypad controllers with limited command capability. See [Command Map screen \(Control / Command Map \)](#) on page 54.

Note: Most keypads have a limited number of preset numbers they can call. If you have a GE KTD-405 keypad with firmware version 1.2.09 or later, then you can call up all 127 preset numbers (1 through 127) directly from the keypad. If, however, you have a GE KTD-405 keypad with an earlier version of firmware, then you can use the keypad to call up only the first 63 preset numbers (1 through 63). If you are using presets 62 and 63 for your left and right autopan limits, then you have a total of 125 or 61 preset numbers that you can call up from the keypad. To verify your keypad's version, press and hold the **mon** key on the keypad, until the keypad beeps, then press the **>>** key.

Programming presets from the keypad

To program presets from the KTD-405 keypad:

1. Use the joystick to pan, tilt, and zoom the camera to the desired view.
2. Press **store** on the keypad.
3. Press the number keys on the keypad that correspond to the preset number you want to assign for this position.
4. Press **store** again.

Note: If the keypad does not allow you to program a desired preset, you may need to change the lowest user definable preset in the keypad program menus. Refer to the keypad manual.

5. After programming your presets, you can verify them, one at a time, by pressing the **find** key on the keypad and then pressing the number keys that correspond to each preset. If you are not satisfied with any views, you can reprogram those preset positions starting with step 1 above.
6. If desired, go into the programming interface to customize the preset with a title and exposure settings. See [Presets screen \(Actions / Presets \)](#) on page 29.

Programming presets with the programming interface

To program presets with the programming interface:

1. Access the programming interface. (For details, see [Accessing the programming interface](#) on page 3.)
 - a. Press and hold the **set** () key on the keypad until you hear a beep and the programming code display appears on the keypad's LCD.
 - b. Press the **9**, **5**, **1**, and **seq** keys on the keypad.
 - c. Press **3** to select CAMERA.

Note: If you have an older keypad, the LCD will say CYBERDOME, instead of CAMERA, and you will have an additional self-explanatory screen to step through.

- d. Enter the number for the camera site you are programming.

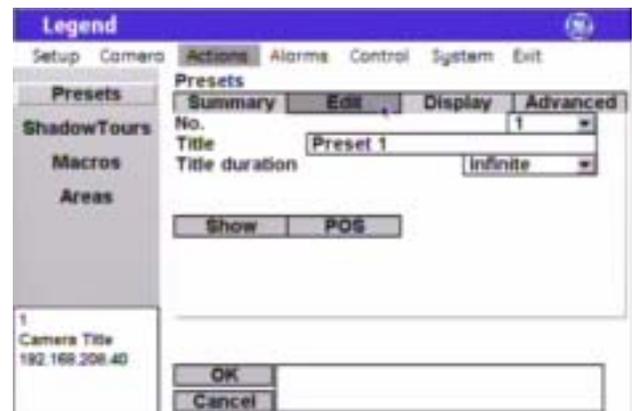
The programming interface will appear on the monitor screen and you will start using the joystick to enter commands.

- e. If passcodes are turned on, select your passcode level and enter your passcode. If passcodes are turned off, you will be taken directly to the main programming screen.

The programming interface will appear on the monitor screen and you will start using the joystick to enter commands.

2. Select **Actions** by guiding the joystick to move the cursor over the *Actions* menu and twisting the joystick knob.
3. Select **Presets**.
4. Select the **Edit** tab.
5. Select a preset number.
6. Select **POS**.

Figure 13. Preset programming page (Actions | Presets | Edit)



7. Use the joystick to pan, tilt, and zoom the camera to the desired view.
8. Press the **iris+** or **set** () key on the keypad to save (accept) the preset position or press the **iris-** or **esc** key to cancel (abort) the preset position. Both canceling and saving the preset position returns you to the *Edit* page.
9. After you have saved a preset position, then you can use the other options on the *Edit*, *Display*, and *Advanced* tab pages to customize the preset's title, duration, and exposure settings. See [Presets screen \(Actions | Presets \)](#) on page 29.

ShadowTours

You have a total of 16 ShadowTours (totaling 20 minutes) that you can define for the dome. A ShadowTour is a tour that the camera learns by recording your manual operation of the camera. Use a keypad to manually direct the camera through the desired PTZ movements. The camera stores those movements in memory. The recorded tour can be replayed at any time.

To program ShadowTours with the programming interface:

1. Access the programming interface. (For details, see [Accessing the programming interface](#) on page 3).
 - a. Press and hold the **set** () key on the keypad until you hear a beep and the programming code display appears on the keypad's LCD.
 - b. Press the **9**, **5**, **1**, and **seq** keys on the keypad.
 - c. Press **3** to select CAMERA.

Note: If you have an older keypad, the LCD will say CYBERDOME, instead of CAMERA, and you will have an additional self-explanatory screen to step through.

- d. Enter the number for the camera site you are programming.

The programming interface will appear on the monitor screen and you will start using the joystick to enter commands.

- e. If passcodes are turned on, select your passcode level and enter your passcode. If passcodes are turned off, you will be taken directly to the main programming screen.

The programming interface will appear on the monitor screen and you will start using the joystick to enter commands.

2. Select **Actions** by guiding the joystick to move the cursor over the *Actions* menu and twisting the joystick knob.
3. Select **ShadowTours**.
4. Select a ShadowTour number.
5. Select **Program**.
6. Press and release the **set** () key on the keypad to start the ShadowTour timer.
7. Use the joystick to manually direct the camera through the desired PTZ movements

Figure 14. ShadowTour programming page (Actions | ShadowTours)



8. Press the **iris+** or **set** () key on the keypad to save (accept) the ShadowTour or press the **iris-** or **esc** key to cancel (abort) the ShadowTour. Both canceling and saving the ShadowTour returns you to the *ShadowTour* page.
9. After you have saved a ShadowTour, then you can use the other options on the *ShadowTour* page to customize the tour's title. See [ShadowTours screen \(Actions | ShadowTours\)](#) on page 38.
10. After programming your tours, you can verify them, one at a time, from within the programming interface by selecting a tour number and **Show**. If you are out of the programming interface, you can press the **tour** key on the keypad and the tour number to activate the desired tour.

Advanced programming

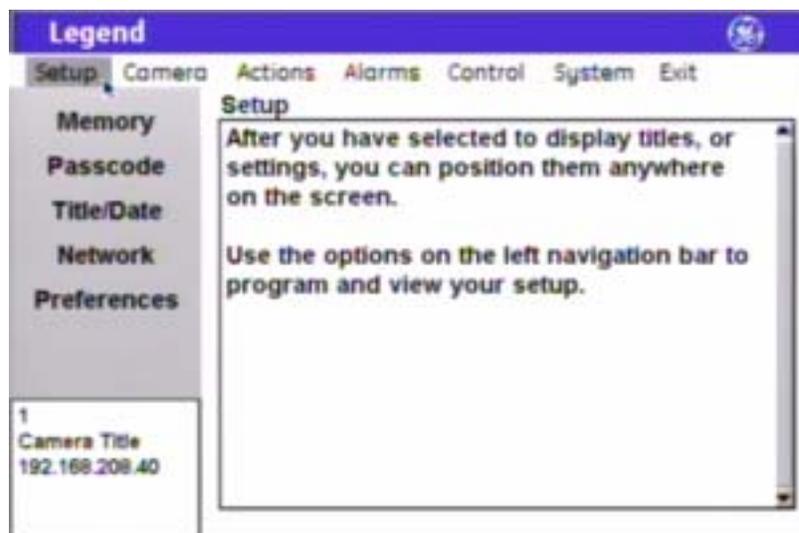
You will be using the graphical programming interface to program the dome. Keypad shortcuts do exist for some programmable features. These keypad commands are carried over from CyberDome programming (see [Keypad shortcuts](#) on page 6). Where keypad shortcuts exist for a feature, such as setting presets, you can use keys from the keypad or you can use menus from the programming interface to program the feature.

When changing settings on any programming page, you need to confirm the new settings by selecting **OK** on that page. When establishing live video settings, you need to save the live video settings (by pressing the **iris +** or the **set** () key on the keypad) and save the changes made on the programming page (by selecting **OK** in the programming interface) when you return to programming mode from live video mode.

Setup menu

This is the beginning of your system's setup. Start here to number and title your dome, turn on/off or change passcodes, establish network connectivity, set the north point, and manage your dome's memory.

Figure 15. Setup menu

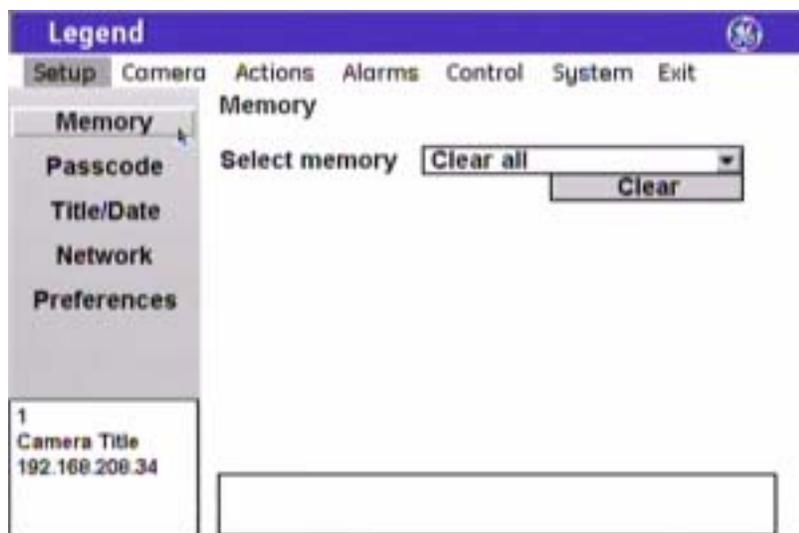


Memory screen (Setup | Memory)

Programming and addressing for the dome are site-tied to the housing. Site-tied memory allows you to replace cameras or move them between sites without having to reprogram cameras for each new site, because the camera will operate using the housing memory.

The *Memory* screen allows you to manage your dome's memory during setup and operation. When you clear part or all of your dome's memory, you are overwriting your custom programmed settings with the factory default settings.

Figure 16. Memory screen (Setup | Memory)



CAUTION

Clearing memory replaces your custom programmed settings with the factory default settings.

Select memory (clear options) You can clear all or specific portions of your dome's programming, which is saved in the housing's site-tied memory. After selecting an option, select **Clear**. Choices are Clear all (default), Clear setup options, Clear presets, Clear macros, Clear ShadowTours, Clear areas, Clear alarm actions, and Clear privacy masks.

Passcode screen (Setup | Passcode)

You can control who has access to the features of your dome by distributing passcodes that allow varying degrees of access. The dome ships with no default passcodes. When you enter the programming interface for the first time during installation and go to Setup | Passcode, the passcode fields are blank. Blank passcode fields mean the passcodes are turned off (disabled). You can choose to enter passcodes into the blanks. This turns passcodes on (enabled) and a passcode will be required to enter the programming interface the next time you access it.



CAUTION

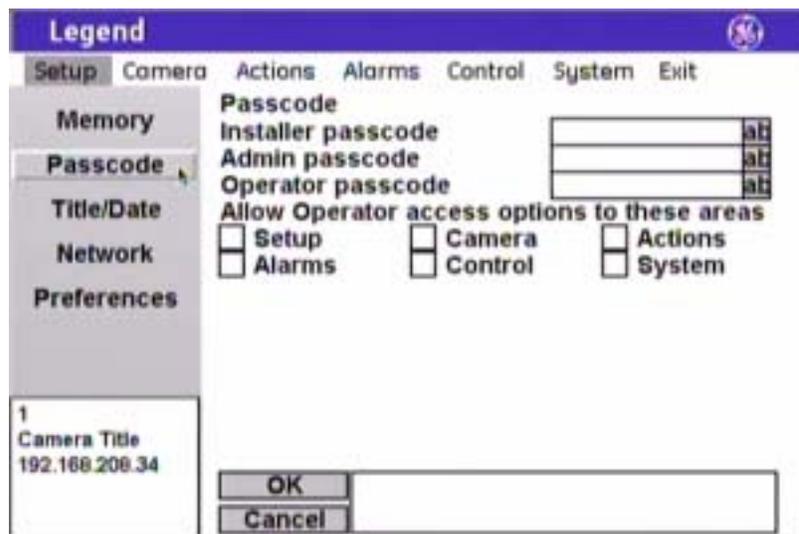
If using passcodes, record them in a secure place. If you forget the passcodes for a dome, you will need to send the dome back to the factory so that it can be reset by the factory with no passcodes.

If no passcodes are programmed, all users are given installer access and are not required to log on. If only the Admin and Operator passcodes are programmed, then anyone can still access the entire programming interface as an installer, since the Installer passcode was not programmed.

You can turn on one installer passcode, one admin passcode, and one operator passcode. They have the following permissions:

- **Installer:** The installer passcode allows access to all dome features.
- **Admin:** The admin passcode allows access to all dome features, except passcodes and firmware updates.
- **Operator:** The operator passcode allows no access until it is granted access to specific features on an area-by-area basis.

Figure 17. Passcode screen (Setup | Passcode)



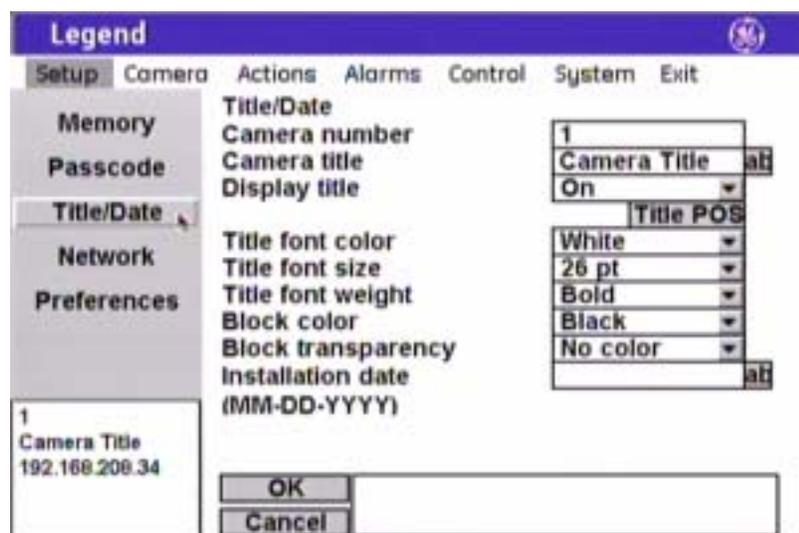
Note: Remember to select **OK** to save any changes you make on the page.

- Installer passcode** The installer passcode feature allows the installer to operate and change all dome features, including all three default passcodes (installer, admin, and operator). There is a 4-digit limit.
- Admin passcode** The admin passcode feature allows your system administrator to operate and change all dome features, except passcodes. There is a 4-digit limit.
- Operator passcode** The operator passcode feature allows the operator to operate and change only those dome features that have been enabled for the operator passcode. There is a 4-digit limit.
- Operator access options** The operator access options feature allows the installer to choose which features an operator has access to operate and change. Choices are as shown.

Title/Date screen (Setup | Title/Date)

The Title/Date screen establishes the camera number, title, and installation date for the dome.

Figure 18. Title/Date screen (Setup | Title/Date)



Note: Remember to select **OK** to save any changes you make on the page.

Camera number

The programming interface reads the address number set in the camera with the rotary address switches and displays that address as the camera number. The camera number is not editable.

Camera title

The *Camera title* box allows you to give your cameras unique titles. There is a 60-character limit for all titles, but be aware of how much video you want to cover with your titles.

Display title

The *Display title* feature enables or disables the display of individual camera titles on the monitor screen.

Choices are On (default) and Off.

Title POS (position)

The camera title will appear on screen in a default position on the monitor screen (upper left corner), but you can reposition it with the *Title POS* button. Be aware of where you already have other titles (privacy masks, presets, tours, macros, areas, and alarms) positioned.

To set the position of the camera title:

1. Select **Title POS**.
2. Move the joystick to move the title to the desired position.
3. Press the **iris +** or the **set** (←) key on the keypad to save (accept) the new position or press the **iris -** or the **esc** key to cancel (abort) the new position.

Title font color

The camera title will appear on screen in the color selected.

Choices are as shown. Default is White.

- Title font size** The camera title will appear on screen in the font size selected. Choices are as shown. Default is 26 pt.
- Title font weight** The camera title will appear on screen in the font weight selected. Choices are as shown. Default is Bold.
- Block color** You can create a block (background) that offsets the camera title from the video behind it. The block will appear on screen in the color selected. Choices are as shown. Default is Black.
- Block transparency** You can set the block (background) to be a solid color or a transparency. The block will appear on screen in the transparency selected. Choices are as shown. Default is No color.
- Installation date** Enter the actual date of installation for your camera. Include the punctuation in the format shown.

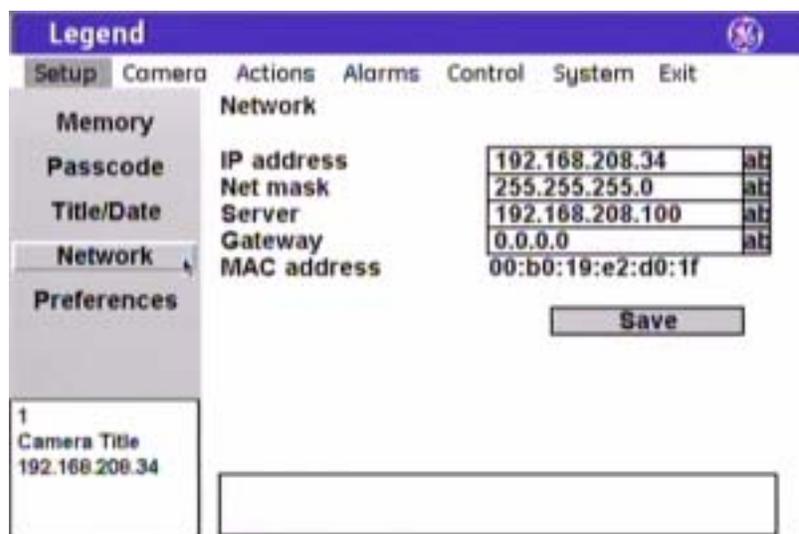
Network screen (Setup | Network)

The *Network* screen establishes the IP addressing for a network connection that you can use to flash software upgrades over a standard IP connection to the dome via its Ethernet connection.



When flashing software upgrades to the dome over a standard IP network via the dome's Ethernet connection, ensure that the network is secured from unauthorized access. Like all Ethernet connections, the dome's Ethernet connection has no security against unauthorized access. You may consider connecting the Ethernet cable only when you are flashing the dome, unless you have the dome connected to a secure, isolated network.

Figure 19. Network screen (Setup | Network)



IP address Enter the IP address of the dome.

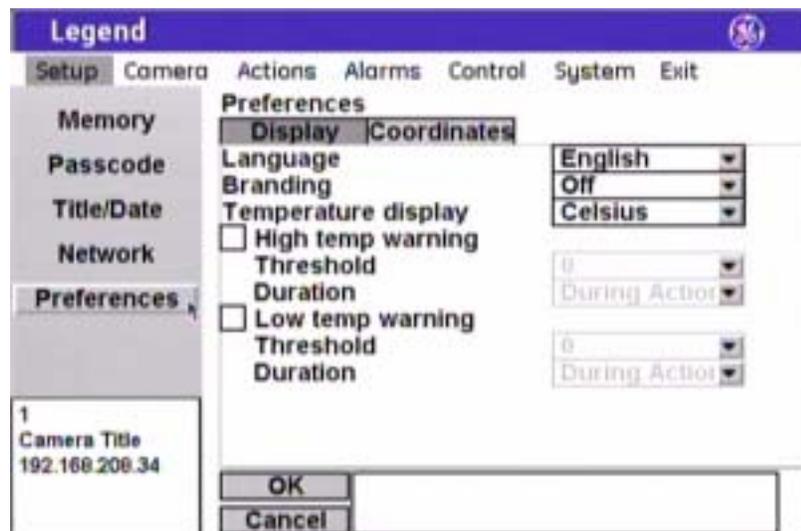
| | |
|--------------------|---|
| Net mask | Enter the subnet mask address of the network subdivision that the dome is assigned to. |
| Server | Enter the IP address of the network server. If used, enter the IP address of the TFTP host. See <i>Firmware Update screen (System Firmware Update)</i> on page 61. |
| Gateway | Enter the address of the gateway between the dome and the network server. |
| MAC address | Provided as the unique address of the dome, the MAC address allows you to connect to the dome before you have set up its network addressing. The MAC address is assigned at the factory. The installer establishes the overriding IP address during installation. See the above <i>IP address</i> item. |

Preferences screen (Setup | Preferences)

The *Preferences* screen establishes the systemwide features of language and the display of the camera's spatial coordinates.

Display page (Setup | Preferences | Display)

Figure 20. Display page (Setup | Preferences | Display)



Note: Remember to select **OK** to save any changes you make on the page.

| | |
|----------------------------|--|
| Language | The <i>Language</i> feature sets which language the programming interface uses to display its content and your entries. Choice is English. |
| Branding | The <i>Branding</i> feature displays GE branding during product demonstrations. Choices are Off (default) and On. |
| Temperature display | The <i>Temperature display</i> feature sets which unit is used to display the current operating temperature for the dome on the monitor screen. Choices are Off (default), Celsius, and Fahrenheit. |

High temp warning

The *High temp warning* feature allows you to display a high-temperature reading on the monitor screen when the temperature in the dome has reached a set high threshold. Place a check mark in the check box to display this warning. The threshold and duration features then become available.

Threshold (high-temp)

The high-temperature threshold feature allows you to set the high boundary of the allowable temperature range for the dome.

Choices range from -40 to 200 in 10-degree increments. Default is 0.

Duration (high-temp)

The high-temperature duration feature allows you to set how long the warning appears on the monitor screen.

Choices are During action (default) and Indefinite.

Low temp warning

The *Low temp warning* feature allows you to display a low-temperature reading on the monitor screen when the temperature in the dome has reached a set low threshold. Place a check mark in the check box to display this warning. The threshold and duration features then become available.

Threshold (low-temp)

The low-temperature threshold feature allows you to set the low boundary of the allowable temperature range for the dome.

Choices range from -40 to 200 in 10-degree increments. Default is 0.

Duration (low-temp)

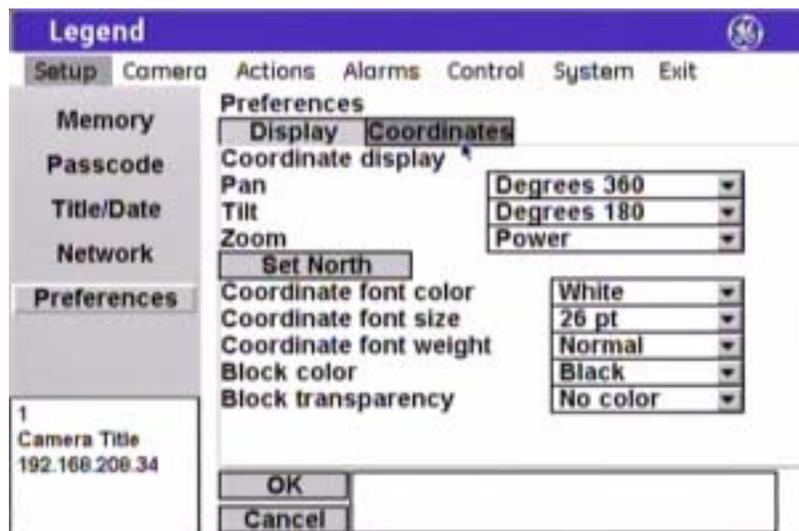
The low-temperature duration feature allows you to set how long the warning appears on the monitor screen.

Choices are During action (default) and Indefinite.

Coordinates page (Setup | Preferences | Coordinates)

You can display the dome’s pan, tilt, or zoom coordinates on the monitor screen, if desired. You can display any or all of the coordinates. You can also choose how to display each one.

Figure 21. Coordinates page (Setup | Preferences | Coordinates)

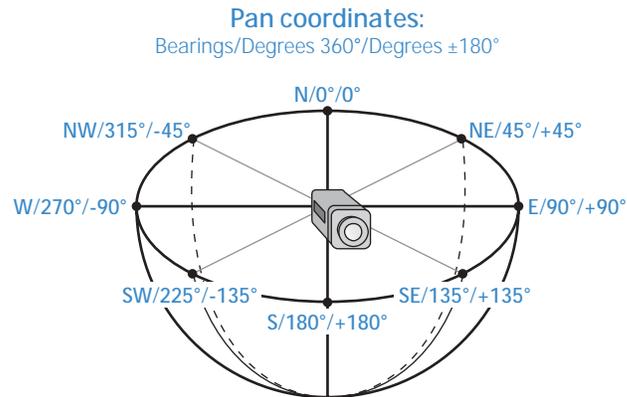


Note: Remember to select OK to save any changes you make on the page.

Pan

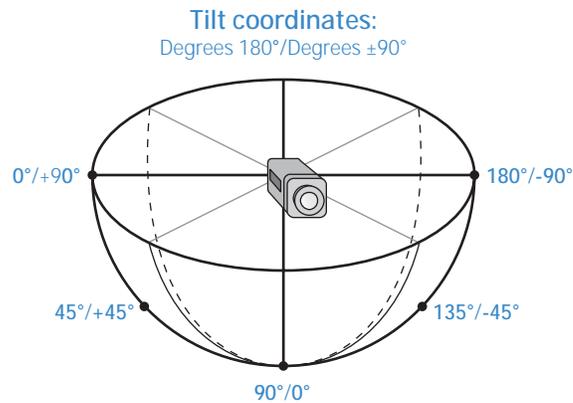
The *Pan* feature displays the pan coordinate of the dome.
 Choices are Off, Bearings, Degrees 360 (default), and Degrees +/- 180.

Figure 22. Pan coordinates

**Tilt**

The *Tilt* feature displays the tilt coordinate of the dome.
 Choices are Off, Degrees 180 (default), and Degrees +/- 90.

Figure 23. Tilt coordinates

**Zoom**

The *Zoom* feature displays the zoom coordinate of the dome.
 Choices are Off and Power (default).

Set north

The *Set north* button programs the north (0°) point for the camera.

Note: When using bearings for your pan coordinates, they are easier to interpret if you set the true due north point as the 0° point. If, however, you are using degree pan coordinates, you can set the 0° point anywhere along the scale. For example, you may want the 0° point to be a main entrance of a facility.

To program the north point:

1. Select **Set north**. The programming interface will be replaced by a full screen of live video that asks you to aim the camera to the due north point.
2. At the live video screen, use the joystick to pan the camera to the desired position.
3. Press the **iris +** or the **set** (←) key on the keypad to save (accept) the north point or press the **iris -** or **esc** key to cancel (abort) the north point. Both canceling and saving the north point returns you to the Coordinates page of the Preferences screen.

Coordinate font color

Coordinates will appear on screen in the color selected.

Choices are as shown. Default is White.

Coordinate font size

Coordinates will appear on screen in the font size selected.

Choices are as shown. Default is 26 pt.

Coordinate font weight

Coordinates will appear on screen in the font weight selected.

Choices are as shown. Default is Bold.

Block color

You can create a block (background) that offsets the coordinates from the video behind it. The block will appear on screen in the color selected.

Choices are as shown. Default is Black.

Block transparency

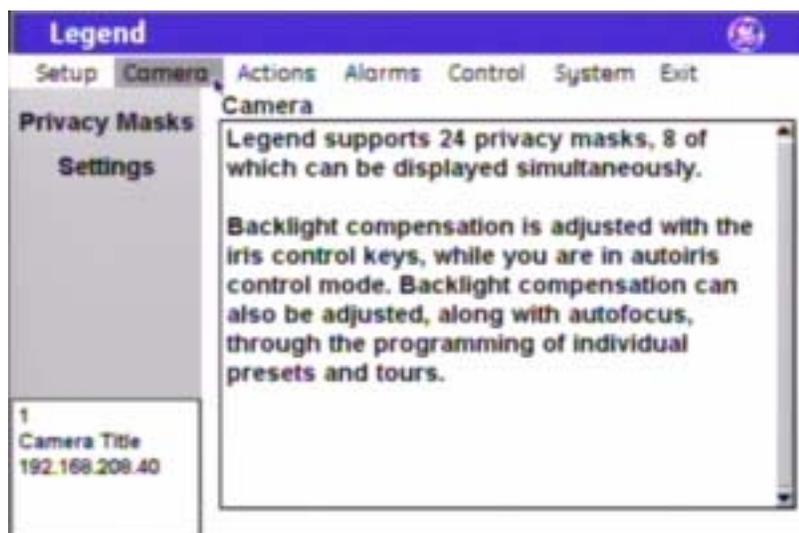
You can set the block (background) to be a solid color or a transparency. The block will appear on screen in the transparency selected.

Choices are as shown. Default is No color.

Camera menu

The dome is ready to operate with its default settings. The defaults are optimized for general applications. You can customize the dome's performance for challenging applications by changing the dome's camera features in the *Camera* menu. One camera feature, however, is adjusted with the keys on your keypad. Backlight compensation is adjusted with the iris control key, while you are in auto exposure mode. Backlight compensation can also be adjusted through the programming of individual presets and tours.

Figure 24. Camera menu



Privacy Masks screen (Camera | Privacy Masks)

Privacy masks let you place a block over sensitive areas (such as neighboring windows) to protect them from view on the monitor screen and in the recorded video. You can create 24 privacy masks (numbered 1 to 24) per dome. A maximum of eight privacy masks can be displayed at one time.

When creating your masks, it is a common practice to make them 50% larger than the areas that you wish to cover so that the masked areas are properly covered (*Figure 25*).

Also be aware that masks cannot be created in the area directly below the dome (*Figure 26*).

Figure 25. Masks should be 50% larger than the areas to be covered

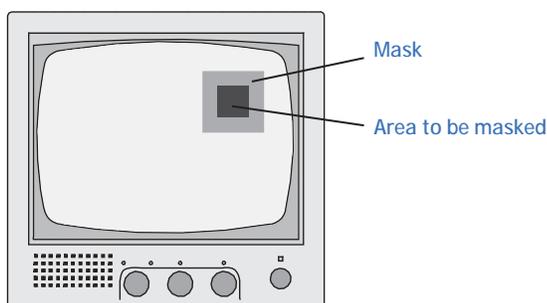


Figure 26. Masks are not allowed directly below the dome

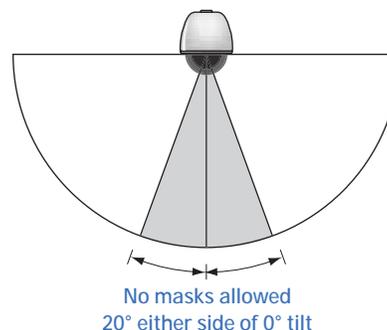
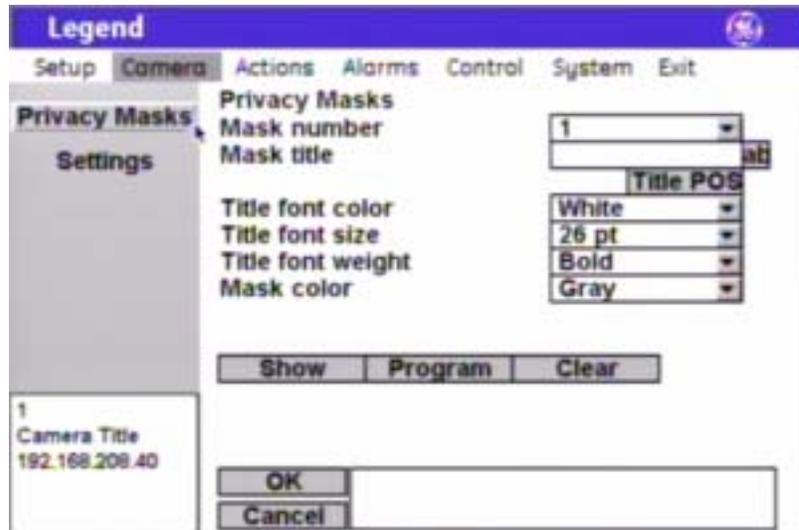


Figure 27. Privacy masks screen (Camera | Privacy Masks)



Note: Remember to select **OK** to save any changes you make on the page.

Mask number

The *Mask number* drop-down box allows you to select the mask number that you want to program.

Mask title

The *Mask title* box allows you to give your masks unique titles. Default numerical titles are provided. There is a 60-character limit for all titles, but be aware of how much video you want to cover with your titles.

Title POS

The mask title will appear on screen in a default position on the monitor screen (upper center), but you can reposition it with the *Title POS* button. Be aware of where you already have other titles (camera, presets, tours, macros, areas, and alarms) positioned.

To set the position of the mask title:

1. Select **Title POS**.
2. Move the joystick to move the title to the desired position.
3. Press the **iris +** or the **set** (←↙) key on the keypad to accept (save) the new position or press the **iris -** or **esc** key to cancel (abort) the new position.

Title font color

Individual mask titles will appear on screen in the color selected. Choices are as shown. Default is White.

Title font size

Individual mask titles will appear on screen in the font size selected. Choices are as shown. Default is 26 pt.

Title font weight

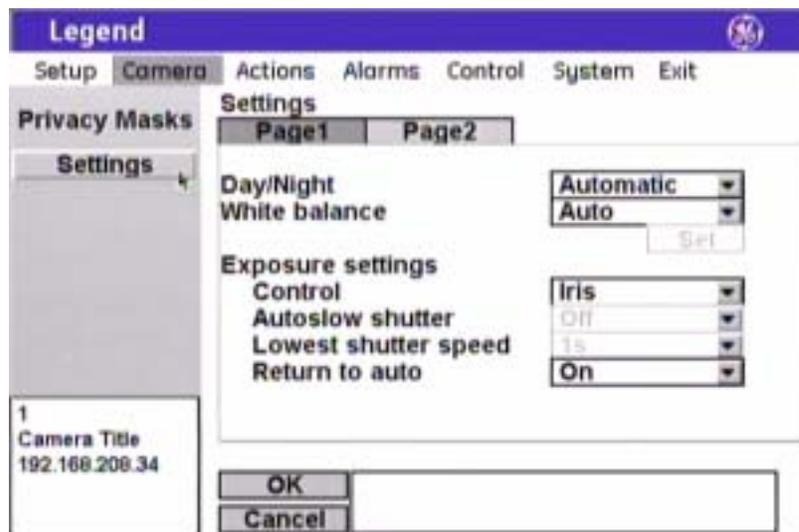
Individual mask titles will appear on screen in the font weight selected. Choices are as shown. Default is Bold.

| | |
|-------------------|---|
| Mask color | <p>You can customize the color of each mask. Individual masks will appear on screen in the color selected.</p> <p>Choices are Gray (default) and Red.</p> |
| Show | <p>The Show button displays the mask that is currently selected by the mask number field. The screen will say “Privacy mask preview” in the upper left corner. Press iris +/-, esc, or set () to return to the menus.</p> |
| Program | <p>The Program button programs the mask. There are two screens for programming masks. The first screen positions the camera view and the second screen sizes the mask.</p> <p>To program masks:</p> <ol style="list-style-type: none"> 1. Select Program on the programming interface. <p>The programming interface will be replaced by a full screen of live video overlaid with a grid that asks you to establish the center of the privacy mask area.</p> 2. Use the joystick to pan, tilt, and zoom the camera to the desired view. 3. Press the iris + or the set () key on the keypad to save (accept) the camera view or press the iris - or esc key to cancel (abort) the camera view. <p>Canceling the camera view returns you to the <i>Privacy Masks</i> screen. Accepting the camera view advances you to the second mask-programming screen.</p> 4. At the second screen (if you accepted the camera view), use the joystick to adjust the height and width of the mask. Remember to make the mask 50% larger than the area you want hidden. <p>Up increases the height, down decreases the height, left decreases the width, and right increases the width.</p> 5. Press the iris + or the set () key to save (accept) the mask size or press the iris - or esc key to cancel (abort) the mask. <p>Canceling the mask returns you to the first mask-programming screen, where you reposition the camera view. Accepting the mask size accepts the mask, and its size, and returns you to the <i>Privacy Masks</i> screen.</p> |
| Clear | <p>The Clear button deletes the mask currently assigned to the selected mask number.</p> |

Settings screen (Camera | Settings)

Page1 page (Camera | Settings | Page1)

Figure 28. Page1 page (Camera | Settings | Page1)



Note: Remember to select OK to save any changes you make on the page.

Day/Night

Day/Night is a camera feature that switches the camera mode from color (day) to monochrome (night) and removes the IR cut filter, which increases the camera's sensitivity in low light. It also allows the camera to function with IR lighting.

Note: The *Day/Night* feature works only if the *Exposure* feature is set to Auto or Return to auto. See [Interrelationship between the Exposure and Day/Night features](#) on page 64.

Choices are Automatic (default), Manual, and Disabled.

- **Automatic:** Enables the camera to automatically switch between day (color) and night (monochrome) modes at a factory default light level. The factory default is not changeable. You can briefly override the day/night setting from the keypad. Within a few seconds, the dome will return to the mode (day or night) determined by the Automatic setting.
- **Manual:** Allows you to manually switch the camera between day (color) and night (monochrome) modes using a command from the controlling device (keypad, ASCII control software, etc.).
- **Disabled:** Allows you to disable (turn off) both the automatic and manual modes. There will be no switching between the day and night modes. Switching commands from the keypad are ignored. The dome remains in the mode that it was in when Disabled was selected.

White balance

White balance is another camera feature that compensates for lighting conditions. It adjusts the quality of all of the colors in the video by balancing the colors to achieve the truest white possible for the available lighting conditions (Tungsten, fluorescent, natural). This feature is used instead of a more general color temperature setting. To correctly set the white balance, focus the camera on a white object.

Choices are Auto (default), Indoor, Outdoor, ATW, and Manual.

- **Auto:** This mode automatically adjusts the color within the 3000 to 7500 Kelvin color temperature range.
- **Indoor:** This mode provides you with a fixed cooler color temperature setting.
- **Outdoor:** This mode provides you with a fixed warmer color temperature setting.
- **ATW** (autotracking white balance): This mode automatically adjusts the color, while the images change, within the 2000 to 10000 Kelvin color temperature range.
- **Manual:** This mode allows you to manually adjust the current blue and red settings. After selecting the Manual option, select **Set** to access the red and blue scales.
 - **Red:** This adjustment is available only if Manual white balance is selected. Options range from 0 to 127. Default is 64.
 - Move the joystick right to increase and left to decrease the red value.
 - Press the **iris +** or the **set** (←) key on the keypad to save (accept) the changed value or press the **iris -** or **esc** key to cancel (abort) the changed value.
 - **Blue:** This adjustment is available only if Manual white balance is selected. Options range from 0 to 127. Default is 64.
 - Move the joystick up to increase and down to decrease the blue value.
 - Press the **iris +** or the **set** (←) key on the keypad to save (accept) the changed value or press the **iris -** or **esc** key to cancel (abort) the changed value.

Exposure settings

Exposure is a camera feature that establishes what controls the light coming into the camera through the lens. Depending on your exposure selection under Control, one or more of the light controlling options (Autoslow shutter, Lowest shutter speed, and Return to auto) will be available.

Note: The *Day/Night* feature works only if the *Exposure* feature is set to Auto or Return to auto. Also see [Interrelationship between the Exposure and Day/Night features](#) on page 64.

**Exposure:
Control**

Control is an exposure feature that determines which exposure control setting takes priority in automatic and manual operation.

Note: The *Day/Night* feature works only if the *Exposure* feature is set to Auto or Return to auto. Also see *Interrelationship between the Exposure and Day/Night features* on page 64.

Choices are Auto, Shutter, Iris (default), and Manual. See *Table 2* on page 24 and *Table 3* on page 25 for details about the exposure settings.

**Exposure:
Autoslow shutter**

This setting is available only if the Auto control setting is selected. Autoslow shutter is a camera feature that compensates for lighting conditions. It automatically slows the shutter speed as the light level entering the camera decreases so that more light can be gathered to increase image clarity. This option works best when the camera is stationary. Because of the slowing shutter speed, any motion in the image will begin to blur. As the light level and the shutter speed continue to decrease, the blur of the video will gradually increase.

Choices are Off (default) and On.

See *Table 2* on page 24 and *Table 3* on page 25 for details about the exposure settings.

**Exposure:
Lowest shutter speed**

This setting is available only if the Shutter or Manual control setting is selected. It sets the lowest allowable shutter speed that can be used.

Choices are as shown and are different for NTSC and PAL domes.

See *Table 2* on page 24 and *Table 3* on page 25 for details about the exposure settings.

**Exposure:
Return to auto**

This setting is available only if the Shutter, Iris, or Manual control setting is selected. It returns the dome to the Auto exposure mode when the camera is manually moved.

Choices are Off and On (default).

See *Table 2* on page 24 and *Table 3* on page 25 for details about the exposure settings.

Table 2. Exposure control settings

| Operation | Exposure control setting | | | |
|--------------------------------------|--|---------------------|-----------------------|--|
| | Auto | Shutter | Iris | Manual |
| Function controlled by the iris keys | Backlight compensation (irs + for on and iris - for off) | Shutter speed (sec) | Iris setting (F-stop) | First, iris setting (F-stop), until limit reached. Second, shutter speed (sec), until limit reached. Third, gain (dB). |

Table 2. Exposure control settings

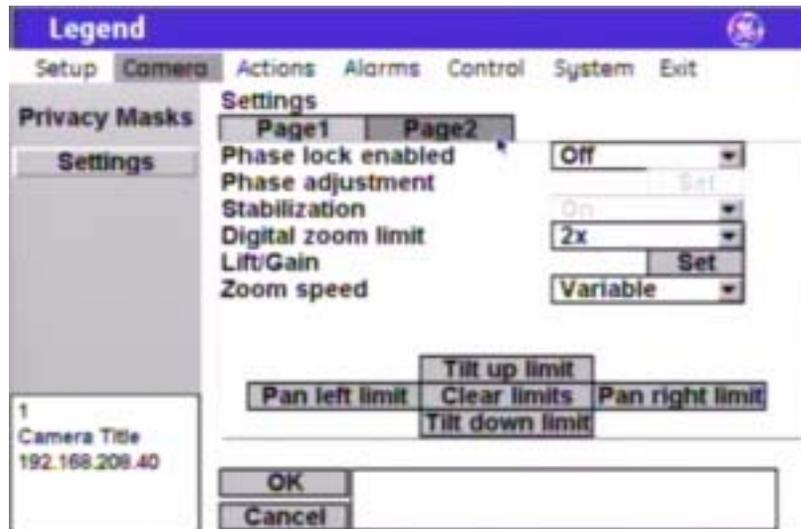
| Operation | Exposure control setting | | | |
|-----------------------|--|--|--|--|
| | Auto | Shutter | Iris | Manual |
| Automatic adjustments | <ul style="list-style-type: none"> • Iris setting (F-stop) • Shutter speed (sec) • Gain (dB) <p>Except when the shutter speed is below 1/60s NTSC or 1/50s PAL.</p> | <ul style="list-style-type: none"> • Iris setting (F-stop) • Gain (dB) | <ul style="list-style-type: none"> • Shutter speed (sec) • Gain (dB) | N/A |
| Available controls | Autoslow shutter | <ul style="list-style-type: none"> • Lowest shutter speed • Return to auto | Return to auto | <ul style="list-style-type: none"> • Lowest shutter speed • Return to auto |

Table 3. Exposure options

| Operation | Exposure option | | |
|-------------------------------------|--|---|--|
| | Autoslow shutter | Lowest shutter speed | Return to auto |
| Available for which control setting | Auto | <ul style="list-style-type: none"> • Shutter • Manual | <ul style="list-style-type: none"> • Shutter • Iris • Manual |
| How it works | Automatically slows the shutter speed below the normal setting as needed to compensate for low-light conditions. | Sets the lowest allowable shutter speed. | Returns the dome to Auto exposure mode with any manual pan or tilt movement. Thereby returning the iris toggle key to function as a control for the shutter speed, iris setting, or gain, depending on the exposure mode selected. |

Page2 page (Camera | Settings | Page2)

Figure 29. Page2 page (Camera | Settings | Page1)



Note: Remember to select **OK** to save any changes you make on the page.

Phase lock enabled

Phase lock enabled is a camera feature that allows synchronization of the video signal to reduce the effect of picture roll on analog video switchers. By default, the phase lock is off. As such, each camera is synchronizing its video signal to its own internal clock crystal. This is called internal synchronization. If you enable phase lock (select On), you are selecting what is called line lock synchronization and the camera will synchronize its video signal to the AC input voltage. With line lock synchronization, you also adjust the vertical phase shift of a camera’s video signal to coordinate with other cameras. Due to differences in cameras, environments, and cable lengths, the phase shift will not be the same for all cameras being synchronized. Use an oscilloscope or a GE Security vertical phase adjustment tool (KTS-56). Contact your GE Security sales representative.

Phase adjustment

This option is available only if On is selected for Phase lock enabled. Choices range from 0 to 127°. Default is 50°. These settings map to the 0 to 360° angle adjustment range. Use your oscilloscope or vertical phase adjustment tool to verify settings.

Stabilization

Stabilization is a camera feature that reduces video shaking for cameras that are located in areas prone to vibration. It works best for low frequency vibration (3 to 10 Hz). If it is available for your camera, it creates a slight lag and movement backward when a pan/tilt movement stops. Choices are Off and On.

Digital zoom limit

Digital zoom is an electronic camera feature that increases the apparent size of images beyond the magnification of the camera's optical lens. Because image information is not also increased, there is some loss of image resolution. So test the different settings for suitability. Selecting too high of a digital zoom can result in the loss of video clarity for some scenes. To test: Select a setting and use your keypad's zoom key to zoom in and out.

Choices range from 1x to 12x (default).

Lift

Lift is a camera feature that optimizes the video's color over long runs of coaxial cable.

Use the joystick to adjust the lift. Right increases and left decreases the lift.

Choices range from 0 to 7. Default is 0.

**CAUTION**

Lift and gain compensate for long runs of video coaxial cable. Only qualified personnel should adjust these settings. Incorrect adjustments can impair video quality.

Gain

Gain is a camera feature that optimizes the video's brightness over long runs of coaxial cable. Gain increases the video signal's amplitude to increase the brightness of darkened video and to reduce the noise of weakened video.

Use the joystick to adjust the gain. Up increases and down decreases the gain.

Choices range from 0 to 31. Default is 0.

**CAUTION**

Lift and gain compensate for long runs of video coaxial cable. Only qualified personnel should adjust these settings. Incorrect adjustments can impair video quality.

Zoom speed

Zoom speed is a camera feature that sets the rate at which the zoom motors operate. There are three fixed settings and one variable setting. If your keypad provides variable-speed control for zooming, you can use the Variable setting and the joystick's range of motion for operation. You quicken or slow the zoom by how far you twist the joystick. Farther is faster.

Choices are Variable (default), Slow, Medium, and Fast.

Tilt up limit

Tilt up limit is a feature that sets a programmable stop for the camera at the highest point that you want it to tilt up.

By default, the pan and tilt limits are off. Programming them turns them on.

Note: The dome prevents any hourglassing behavior by restricting the tilt limit to 90°, when necessary, to accommodate some pan limits set to less than 180°. To avoid setting tilt limits too tightly, we recommend that you set the pan limits first, then set the tilt limits.

Tilt down limit

Tilt down limit is a feature that sets a programmable stop for the camera at the lowest point that you want it to tilt down.

By default, the pan and tilt limits are off. Programming them turns them on.

Note: The dome prevents any hourglassing behavior by restricting the tilt limit to 90°, when necessary, to accommodate some pan limits set to less than 180°. To avoid setting tilt limits too tightly, we recommend that you set the pan limits first, then set the tilt limits.

Pan left limit

Pan left limit is a feature that sets a programmable stop for the camera at the leftmost point that you want it to pan left.

By default, the pan and tilt limits are off. Programming them turns them on.

Note: The dome prevents any hourglassing behavior by restricting the tilt limit to 90°, when necessary, to accommodate some pan limits set to less than 180°. To avoid setting tilt limits too tightly, we recommend that you set the pan limits first, then set the tilt limits.

Pan right limit

Pan right limit is a feature that sets a programmable stop for the camera at the rightmost point that you want it to pan right.

By default, the pan and tilt limits are off. Programming them turns them on.

Note: The dome prevents any hourglassing behavior by restricting the tilt limit to 90°, when necessary, to accommodate some pan limits set to less than 180°. To avoid setting tilt limits too tightly, we recommend that you set the pan limits first, then set the tilt limits.

Clear limits

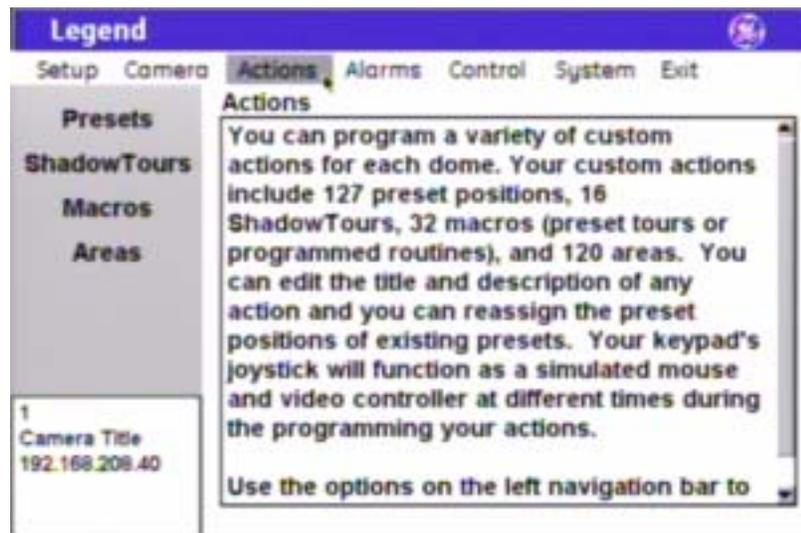
Clear limits is a feature that clears all programmable stops that have been set for the camera.

Actions menu

You can program a variety of custom actions for each dome. Your custom actions include 127 preset positions, 16 ShadowTours, 32 macros, and 120 areas. You can edit the title and description of any action and you can reassign the positions of existing presets.

The keypad's joystick will function as a simulated mouse or video controller at different times during the programming of your actions.

Figure 30. Actions menu



Presets screen (Actions | Presets)

There are a total of 127 presets (1 through 127) that you can define for your dome. If you are using presets 62 and 63 for your left and right autopan limits, then you have a total of 125 presets that you can define.

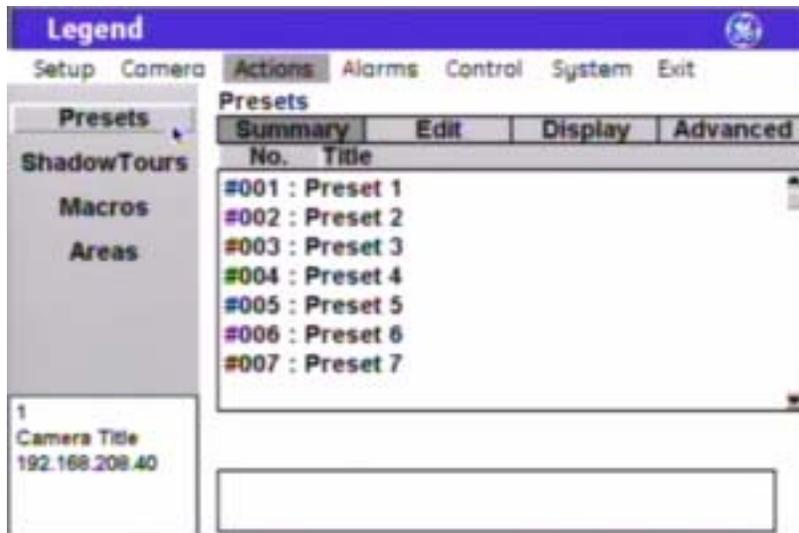
The dome also provides the ability to remap any preset or tour command coming in from a keypad to activate any of the 127 presets, 16 tours, or 32 macro actions. This enables you to manually initiate any of the expanded capabilities of the dome from keypad controllers with limited command capability. See [Command Map screen \(Control | Command Map \)](#) on page 54.

Note: Most keypads have a limited number of preset numbers they can call. If you have a GE KTD-405 keypad with firmware version 1.2.09 or later, then you can call up all 127 preset numbers (1 through 127) directly from the keypad. If, however, you have a GE KTD-405 keypad with an earlier version of firmware, then you can use the keypad to call up only the first 63 preset numbers (1 through 63). If you are using presets 62 and 63 for your left and right autopan limits, then you have a total of 125 or 61 preset numbers that you can call up from the keypad. To verify your keypad's version, press and hold the **mon** key on the keypad, until the keypad beeps, then press the **>>** key.

Summary page (Actions | Presets | Summary)

The summary page provides the number and title of all 127 presets (1 through 127) that are available for the dome, whether or not they are programmed or titled.

Figure 31. Summary page (Actions | Presets | Summary)



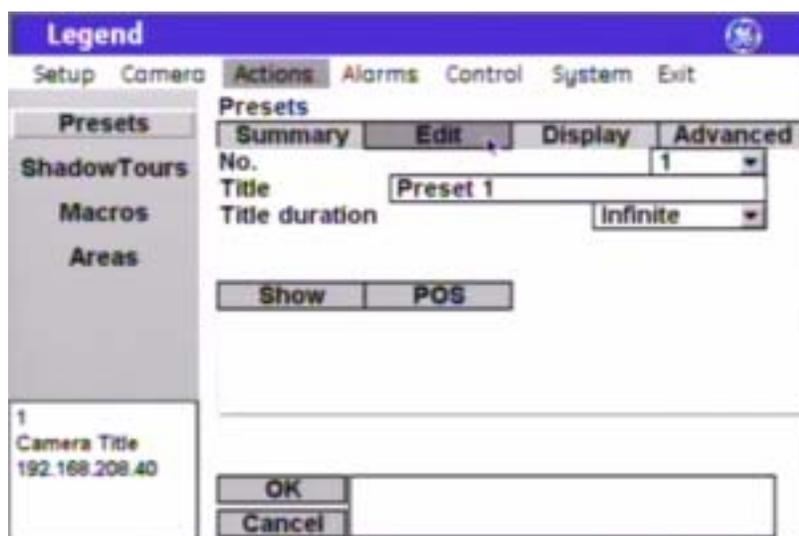
No. The *No.* column of the summary page lists all 127 presets (1 through 127) in numerical order, whether or not they are programmed.

Title The *Title* column of the summary page lists the titles of all 127 presets. The default titles are listed if they have not been retitled.

Edit page (Actions | Presets | Edit)

The *Edit* page is where you program your presets. You can select any preset number, whether previously programmed with a preset position or not. You can reassign new positions to existing presets. After you have selected a number and established the duration of the preset title, you will select the POS button and program the preset position. After setting the position, you can use the *Display* and *Advanced* pages to program additional characteristics for the preset such as title and specific exposure modes, if needed.

Figure 32. Edit page (Actions | Presets | Edit)



Note: Remember to select **OK** to save any changes you make on the page.

No. The *No.* drop-down box allows you to select the preset number that you want to program or reprogram.

Title The *Title* box shows you the existing title for the selected preset number. You can customize the default title on the *Display* page.

Duration The *Duration* feature defines how long the preset title appears on the monitor screen.

Choices are Infinite (default) and 5 to 120 seconds in 5-second increments.

Show The *Show* button displays the preset that is currently selected by the preset number option. The screen will say “Show preset” in the upper left corner. Press **iris +/-**, **esc**, or **set** (←) to return to the menus.

POS (position)

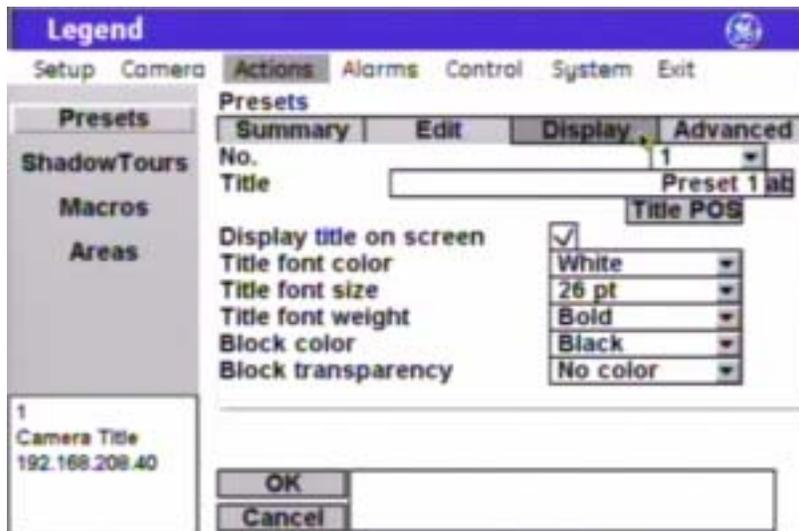
The POS (position) button programs the preset. There is one screen for programming presets.

To program a preset:

1. Select **POS**. The programming interface will be replaced by a full screen of live video that asks you to set the desired position for the preset.
2. At the live video screen, use the joystick to pan, tilt, and zoom the camera to the desired position.
3. Press the **iris +** or the **set** (←) key on the keypad to save (accept) the preset position or press the **iris -** or **esc** key to cancel (abort) the preset position. Both cancelling and saving the preset position returns you to the *Edit* page of the *Presets* screen.

Display page (Actions | Presets | Display)

Figure 33. Display page (Actions | Presets | Display)



Note: Remember to select **OK** to save any changes you make on the page.

No. The *No.* drop-down box allows you to select the preset number that you want to continue programming.

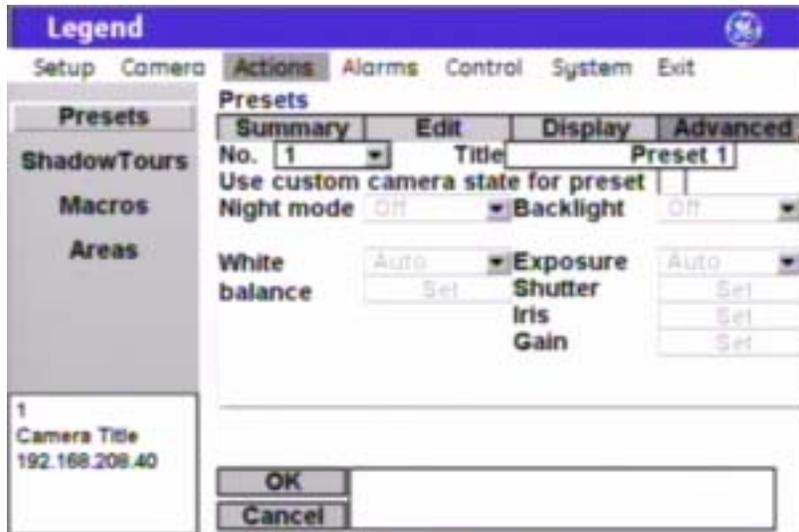
Title The *Title* box allows you to give your presets unique titles. Default numerical titles are provided. There is a 60-character limit for all titles, but be aware of how much video you want to cover with your titles.

| | |
|--------------------------------|--|
| Title POS | <p>The preset title will appear on screen in a default position on the monitor screen (bottom center), but you can reposition it with the <i>Title POS</i> button. Be aware of where you already have other titles (camera, privacy masks, tours, macros, areas, and alarms) positioned.</p> <p>To set the position of the preset title:</p> <ol style="list-style-type: none"> 1. Select Title POS. 2. Move the joystick to move the title to the desired position. 3. Press the iris + or the set (←) key on the keypad to save (accept) the new position or press the iris - or esc key to cancel (abort) the new position. |
| Display title on screen | <p>The <i>Display title on screen</i> feature sets the preset title to appear on the monitor screen, if checked. The duration that the title appears on the monitor screen is set by the <i>Duration</i> feature on the <i>Edit</i> page.</p> |
| Title font color | <p>The preset title will appear on screen in the color selected.</p> <p>Choices are as shown. Default is White.</p> |
| Title font size | <p>The preset title will appear on screen in the font size selected.</p> <p>Choices are as shown. Default is 26 pt.</p> |
| Title font weight | <p>The preset title will appear on screen in the font weight selected.</p> <p>Choices are as shown. Default is Bold.</p> |
| Block color | <p>You can create a block (background) that offsets the preset title from the video behind it. The block will appear on screen in the color selected.</p> <p>Choices are as shown. Default is Black.</p> |
| Block transparency | <p>You can set the block (background) to be a solid color or a transparency. The block will appear on screen in the transparency selected.</p> <p>Choices are as shown. Default is No color.</p> |

Advanced page (Actions | Presets | Advanced)

The *Advanced* page of the *Presets* screen (under the *Actions* menu) allows you to change a camera's feature settings for the duration of individual presets.

Figure 34. Advanced page (Actions | Presets | Advanced)



Note: Remember to select OK to save any changes you make on the page.

- No.** The *No.* drop-down box allows you to select the preset number that you want to continue programming.
- Title** The *Title* box shows you the existing title for the selected preset number. You can customize the default title on the Display page.
- Use custom camera state for preset** The *Use custom camera state for preset* feature overrides the settings established for the camera's normal operation under Camera | Settings, if checked. You must check this feature to make the other features on this screen available.

Night mode

For the duration of this preset, you can change the camera's *Day/Night* setting. *Day/Night* is a camera feature that switches the camera mode from color (day) to monochrome (night) and removes the IR cut filter, which increases the camera's sensitivity in low light. It also allows the camera to function with IR lighting. It is programmed under Camera | Settings (see [Settings screen \(Camera | Settings \)](#) on page 22).

Note: The *Day/Night* feature works only if the *Exposure* feature is set to Auto or Return to auto. See [Interrelationship between the Exposure and Day/Night features](#) on page 64.

When you turn on the *Night mode* feature, you are telling the camera to override the normal operating setting as follows:

- **Automatic:** If the *Day/Night* feature is set to Automatic under Camera | Settings, then the *Night mode* feature will use the *Day/Night* setting customized for the preset for 5 to 10 seconds. After 5 to 10 seconds, the camera will revert to the normal operating setting and adjust for the current light conditions.
- **Manual:** If the *Day/Night* feature is set to Manual under Camera | Settings, then the *Night mode* feature will use the *Day/Night* setting customized for the preset until the preset is left. After the preset is left, the camera will revert to the *Day/Night* setting that it was using before the preset was called.
- **Disabled:** If the *Day/Night* feature is set to Manual under Camera | Settings, then the *Night mode* feature will do nothing.

Choices are Off (default) and On.

Backlight

For the duration of this preset, you can change the camera's *Backlight compensation* setting. *Backlight compensation* is a feature that illuminates the display so that the foreground appears sharper in contrast with the background.

Choices are Off (default) and On.

White (white balance)

For the duration of this preset, you can change the camera's *White balance* setting. *White balance* is a the feature that compensates for lighting conditions. It adjusts the quality of all of the colors in the video by balancing the colors to achieve the truest white possible for the available lighting conditions (Tungsten, fluorescent, natural). This feature is used instead of a more general color temperature setting. To correctly set the white balance, focus the camera on a white object.

Choices are Auto (default), Indoor, Outdoor, ATW, and Manual.

- **Auto:** This mode automatically adjusts the color within the 3000 to 7500 Kelvin color temperature range.
- **Indoor:** This mode provides you with a fixed cooler color temperature setting.
- **Outdoor:** This mode provides you with a fixed warmer color temperature setting.
- **ATW** (autotracking white balance): This mode automatically adjusts the color, while the images changes, within the 2000 to 10000 Kelvin color temperature range.
- **Manual:** This mode allows you to manually adjust the current blue and red settings. After selecting the Manual option, select **Set** to access the red and blue scales.
 - **Red:** This adjustment is available only if Manual white balance is selected. Options range from 0 to 127 (default is 64).
 - Push the joystick right to increase and left to decrease the red value.
 - Press the **iris +** or the **set** () key on the keypad to save (accept) the changed value or press the **iris -** or **esc** key to cancel (abort) the changed value.
 - **Blue:** This adjustment is available only if Manual white balance is selected. Options range from 0 to 127 (default is 64).
 - Push the joystick up to increase and down to decrease the blue value.
 - Press the **iris +** or the **set** () key on the keypad to save (accept) the changed value or press the **iris -** or **esc** key to cancel (abort) the changed value.

Exposure

For the duration of this preset, you can change the camera's *Exposure* setting. *Exposure* is a feature that establishes what controls the light coming into the camera through the lens.

Note: The *Day/Night* feature works only if the *Exposure* feature is set to Auto or Return to auto. See [Interrelationship between the Exposure and Day/Night features](#) on page 64.

Choices are Auto (default), Shutter, Iris, and Manual.

- **Auto:** Selecting this feature makes the camera determine what features (iris aperture, gain, shutter speed, or combination thereof) control the incoming light. You will not be able to set values for iris, gain, or shutter speed.
- **Shutter:** The set shutter speed controls the length of time that the aperture is open to let light into the camera through the lens. You will not be able to set values for iris or gain. The choices for shutter speed are as shown.

Use the **zoom +/-** key on the keypad to scroll through the choices, then press the **iris +** or the **set** () key on the keypad to save (accept) the changed value or press the **iris -** or **esc** key to cancel (abort) the changed value.

- **Iris:** The set iris F-stop controls the size of the aperture that lets light into the camera through the lens. You will not be able to set values for gain or shutter speed. The choices for iris F-stop are as shown.

Use the **zoom +/-** key on the keypad to scroll through the choices, then press the **iris +** or the **set** () key on the keypad to save (accept) the changed value or press the **iris -** or **esc** key to cancel (abort) the changed value.

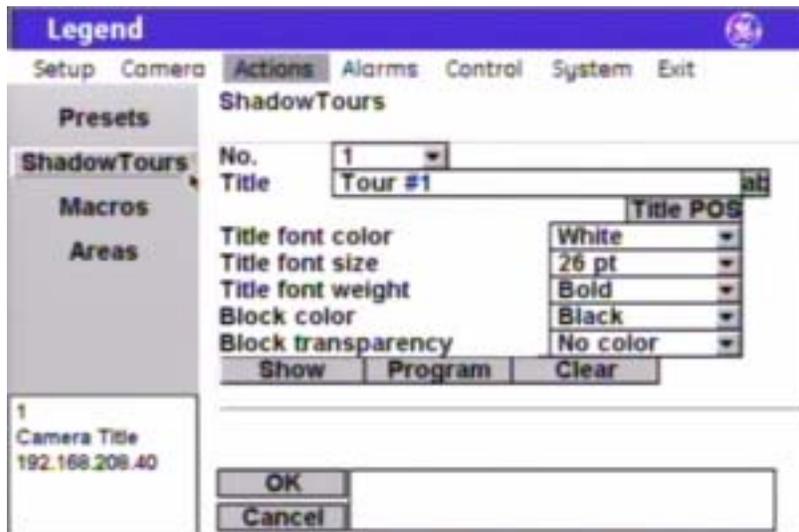
- **Manual:** You control the light coming into the camera through the lens by setting specific values for iris, gain, and shutter speed. The choices are as shown. After selecting the Manual option, select **Set** to access each shutter, iris, and gain controls. The choices for each are as shown.

Use the **zoom +/-** key on the keypad to scroll through the choices, then press the **iris +** or the **set** () key on the keypad to save (accept) the changed value or press the **iris -** or **esc** key to cancel (abort) the changed value.

ShadowTours screen (Actions | ShadowTours)

You have a total of 16 ShadowTours (totaling 20 minutes) that you can define for the dome.

Figure 35. ShadowTours screen (Actions | ShadowTours)



Note: Remember to select OK to save any changes you make on the page.

No. The *No.* drop-down box allows you to select the ShadowTour number that you want to program.

Title The *Title* box allows you to give your ShadowTours unique titles. Default numerical titles are provided. There is a 60-character limit for all titles, but be aware of how much video you want to cover with your titles.

Title POS The ShadowTour title will appear on screen in a default position on the monitor screen (center, above the macro title default position), but you can reposition it with the *Title POS* button. Be aware of where you already have other titles (camera, privacy masks, presets, macros, areas, and alarms) positioned.

To set the position of the preset title:

1. Select **Title POS**.
2. Move the joystick to move the title to the desired position.
3. Press the **iris +** or the **set** (←↙) key on the keypad to accept (save) the new position or press the **iris -** or **esc** key to cancel (abort) the new position.

Title font color The ShadowTour title will appear on screen in the color selected. Choices are as shown. Default is White.

Title font size The ShadowTour title will appear on screen in the font size selected. Choices are as shown. Default is 26 pt.

| | |
|---------------------------|---|
| Title font weight | The ShadowTour title will appear on screen in the font weight selected. Choices are as shown. Default is Bold. |
| Block color | You can create a block (background) that offsets the ShadowTour title from the video behind it. The block will appear on screen in the color selected. Choices are as shown. Default is Black. |
| Block transparency | You can set the block (background) to be a solid color or a transparency. The block will appear on screen in the transparency selected. Choices are as shown. Default is No color. |
| Show | The Show button displays the ShadowTour that is currently selected by the ShadowTour number field. Press iris + , esc , or set () to return to the menus. Note: Since the GE KTD-405 keypad times out after five minutes of inactivity and the programming interface times out along with it, you will want to exit the programming interface to view ShadowTours that are longer than five minutes. |
| Program | The Program button programs the ShadowTour. To program a ShadowTour: <ol style="list-style-type: none"> 1. Select Program. The programming interface will be replaced by a full screen of live video. 2. At the live video screen, press the iris + or the set () key on the keypad to set the starting point of the ShadowTour, then use the joystick to pan, tilt, and zoom the camera through the desired views. 3. Press the press the iris + or the set () key on the keypad to save (accept) the ShadowTour or press the iris - or esc key to cancel (abort) the ShadowTour. |
| Clear | The Clear button deletes the ShadowTour currently assigned to the selected ShadowTour number. |

Macros screen (Actions | Macros)

You can program 32 macros per dome. Macros are any preset tour or programmed routine. Each macro can contain up to 16 steps. The step, type, and type number options will appear on all macro programming screens. The step type determines what additional options are available for programming.

Program page (Actions | Macros | Program)

Figure 36. Program page (Actions | Macros | Program)



Note: Remember to select **OK** to save any changes you make on the page.

No. The *No.* drop-down box allows you to select the macro number that you want to program.

Title The *Title* box shows you the existing title for the selected macro number. You can customize the default title on the Display page.

Macro list (step, type, no., speed, zoom, and duration) The macro list shows the defined steps for the macro in sequential order. You can use the drop-down boxes and buttons located below the summary to add (append), delete (remove), move up, or move down individual steps.

Step (number) The *Step* box selects the step number you want to program.

Type The *Type* box selects the action for the selected step. It determines what additional options appear (are available) for programming. Choices are Preset (default), Tour, Macro, Relay, and Jump (jumps to a prior step).

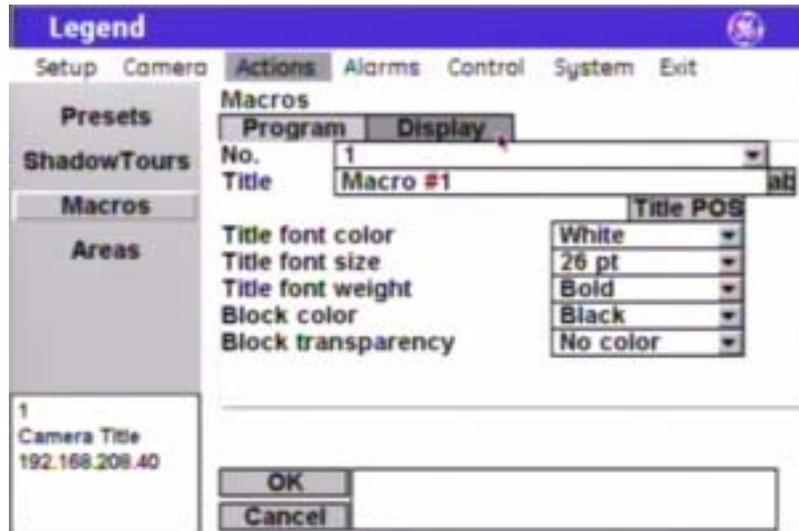
Type # (e.g., preset number) The *Type #* option selects which of the group (for example, presets) is to be assigned to the step. The type number changes its name depending on the type selected under Type (Preset, Tour, Macro, Relay, or Jump).

Repeats (with Jump) The *# Repeats* option allows you to repeat a jump step up to 49 times.

| | |
|---|---|
| Speed (with Preset or Tour) | The <i>Speed</i> option allows you to set how fast the camera will move to the preset step. Choices are Slow, Medium, Fast, and Max. |
| Transition (with Preset or Tour) | The <i>Transition</i> option allows you to set how the video will be seen on the monitor screen during a preset step. Choices are Freeze (default) and Zoom out. <ul style="list-style-type: none"> • The Freeze feature freezes the last image on the monitor screen while the camera is moving. A static image will show on the monitor screen until the camera stops. • The Zoom out feature zooms the camera out before it moves, remains zoomed out during travel, and reestablishes the set zoom when it arrives at its destination. |
| Duration (if Preset selected) | The <i>Duration</i> feature defines how long the action for the step continues. For presets, the duration is the dwell time that the camera remains at a preset before continuing on to the next macro step. Choices are 1 to 60 seconds in 1-second increments. |
| Duration (if Relay selected) | The <i>Duration</i> feature defines how long the action for the step continues. For relays, the duration is a timer for the relay action. The next macro step is immediately performed after the relay timer runs out. Choices are Infinite (default) and seconds (1, 2, 3, 4, 5, 15, 30, and 60). |
| Energize (with Relay) | The <i>Energize</i> option, if checked, sets the relay to its energized state. Which is closed for a normally open connection and open for a normally closed connection. |
| Display title (checkbox) | The <i>Display title</i> feature sets the macro title to appear on the monitor screen, if checked. |
| Append | The Append button adds one step to the bottom of the list of macro steps. |
| Remove | The Remove button deletes the currently selected step. |
| Move up | The Move up button moves the currently selected step up one step number in the macro sequence each time it is selected. |
| Move down | The Move down button moves the currently selected step down one step number in the macro sequence each time it is selected. |

Display page (Actions | Macros | Display)

Figure 37. Display page (Actions | Macros | Display)



Note: Remember to select **OK** to save any changes you make on the page.

No. The *No.* drop-down box allows you to select the macro number that you want to continue programming.

Title The *Title* box allows you to give your macros unique titles. Default numerical titles are provided. There is a 60-character limit for all titles, but be aware of how much video you want to cover with your titles.

Title POS The macro title will appear on screen in a default position on the monitor screen (center, below the tour title default position), but you can reposition it with the *Title POS* button. Be aware of where you already have other titles (camera, privacy masks, presets, tours, areas, and alarms) positioned.

To set the position of the macro title:

1. Select **Title POS**.
2. Move the joystick to move the title to the desired position.
3. Press the **iris +** or the **set** (←) key on the keypad to accept (save) the new position or press the **iris -** or **esc** key to cancel (abort) the new position.

Title font color The macro title will appear on screen in the color selected. Choices are as shown. Default is White.

Title font size The macro title will appear on screen in the font size selected. Choices are as shown. Default is 26 pt.

Title font weight The macro title will appear on screen in the font weight selected. Choices are as shown. Default is Bold.

Block color You can create a block (background) that offsets the ShadowTour title from the video behind it. The block will appear on screen in the color selected. Choices are as shown. Default is Black.

Block transparency You can set the block (background) to be a solid color or a transparency. The block will appear on screen in the transparency selected. Choices are as shown. Default is No color.

Areas screen (Actions | Areas)

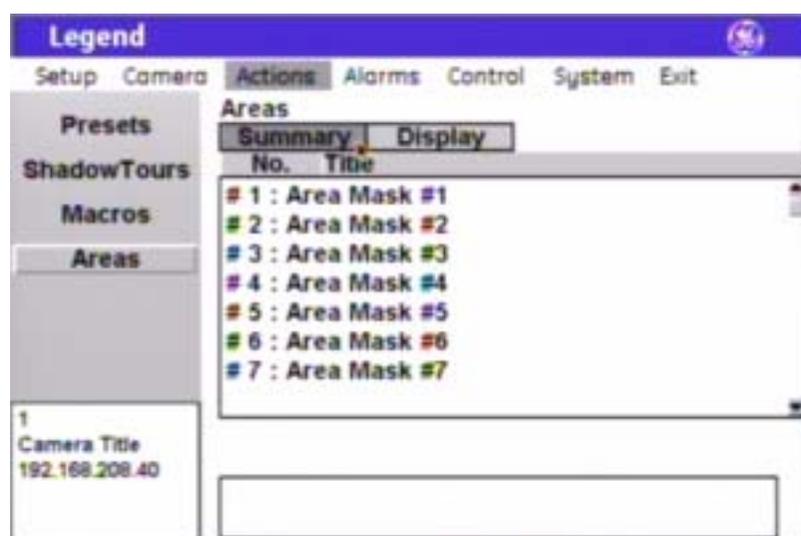
Areas are similar to privacy masks. Both hide areas designated as sensitive. But whereas privacy masks cover only a portion of the video displayed, areas hide all of it. Areas replace the video with a blue screen when the camera passes the center point of a marked area. You can also display the title on the monitor screen of a designated area without blanking the video with a blue screen. You can create 120 areas.

When creating your masks, be aware that they are triggered by their center viewpoint. Therefore, it is a common practice to make masks twice the size of the area that you wish to cover so that the masked areas are properly triggered when the camera enters the trigger zone.

Summary page (Actions | Areas | Summary)

The summary page provides the number and title of all areas that are programmed for the dome.

Figure 38. Summary page (Actions | Areas | Summary)

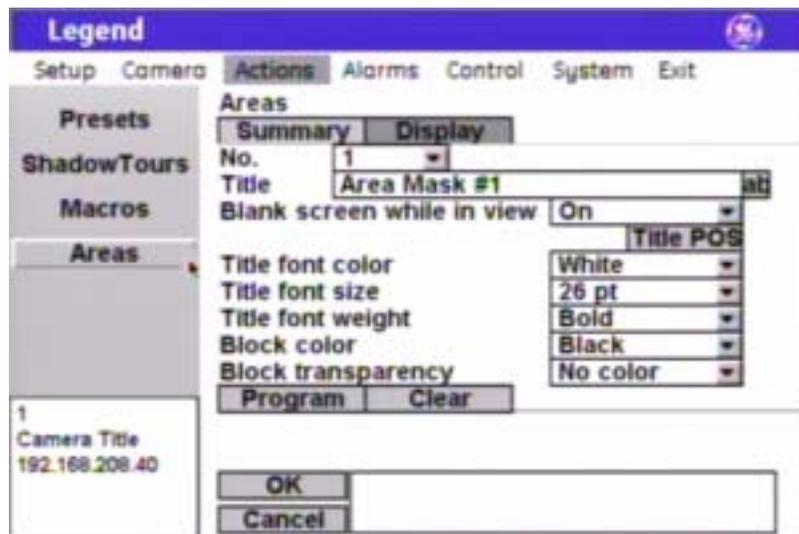


No. The *No.* column of the summary page lists all 120 areas in numerical order, whether programmed or not.

Title The *Title* column of the summary page lists the titles of all 120 areas. The default titles are listed if they have not been retitled.

Display page (Actions | Areas | Display)

Figure 39. Display page (Actions | Areas | Display)



Note: Remember to select **OK** to save any changes you make on the page.

No. The *No.* drop-down box allows you to select the area number that you want to program.

Title The *Title* box allows you to give your areas unique titles. Default numerical titles are provided. There is a 60-character limit for all titles, but be aware of how much video you want to cover with your titles.

Blank screen while in view The *Blank screen while in view* feature replaces the video of a marked area with a blue screen.
Choices are On (default) and Off. When on, the video is replaced with a blue screen and title. When off, the video is not blanked but an area title appears in an area is programmed.

Title POS The area title will appear on screen in a default position on the monitor screen (upper center), but you can reposition it with the *Title POS* button. Be aware of where you already have other titles (camera, privacy masks, presets, tours, macros, and alarms) positioned.

To set the position of the macro title:

1. Select **Title POS**.
2. Move the joystick to move the title to the desired position.
3. Press the **iris +** or the **set** () key on the keypad to accept (save) the new position or press the **iris -** or **esc** key to cancel (abort) the new position.

Title font color Individual area titles will appear on screen in the color selected.
Choices are as shown. Default is White.

| | |
|---------------------------|--|
| Title font size | Individual area titles will appear on screen in the font size selected. Choices are as shown. Default is 26 pt. |
| Title font weight | Individual area titles will appear on screen in the font weight selected. Choices are as shown. Default is Bold. |
| Block color | You can create a block (background) that offsets the title from the video behind it. Individual area blocks will appear on screen in the color selected. Choices are as shown. Default is Black. |
| Block transparency | You can set the background to be a solid color or a transparency. Individual area blocks will appear on screen in the transparency selected. Choices are as shown. Default is No color. |
| Program | The <i>Program</i> button programs the area. There are two screens for programming areas. To program an area: <ol style="list-style-type: none"> 1. Select Program. The programming interface will be replaced by a full screen of live video overlaid with a grid that asks you to establish the upper left corner of the area. 2. At the first screen (live video), use the joystick to pan, tilt, and zoom the center of the grid to the upper left corner of the desired view. 3. Press the iris + or the set (←) key on the keypad to save (accept) the upper left corner position or press the iris - or esc key on the keypad to cancel (abort) it. Canceling the position returns you to the <i>Display</i> page of the <i>Areas</i> screen. Accepting the position advances you to the second area-programming screen. 4. At the second screen, use the joystick to pan, tilt, and zoom the center of the grid to the lower right corner of the desired view. 5. Press the iris + or the set (←) key on the keypad to save (accept) the lower right corner position or press the iris - or esc key on the keypad to cancel (abort) it. Canceling the position returns you to the first area-programming screen, where you reposition the camera view. Accepting the position returns you to the <i>Display</i> page. |
| Clear | The <i>Clear</i> button deletes the area currently selected. |

Alarms menu

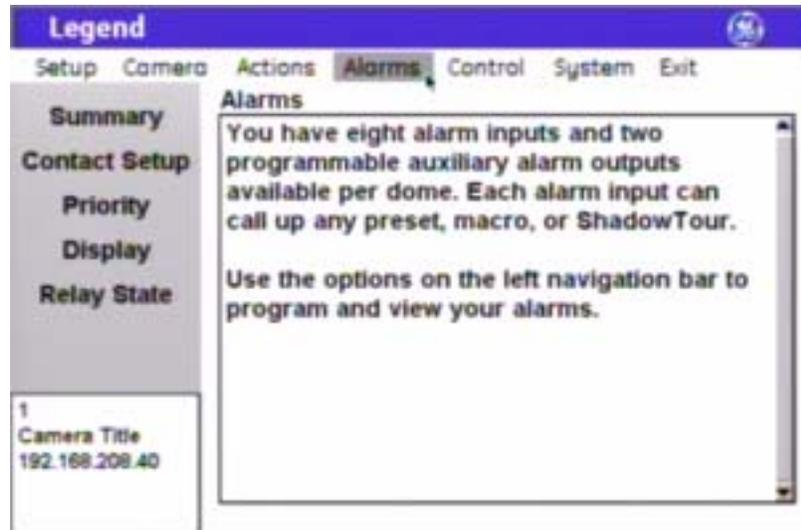
You can program up to eight alarm inputs and two relay outputs per dome. Each alarm input can call up (display) any preset, macro (preset tour or programmed routine), or ShadowTour. The eight alarms are numbered from 1 to 8.

Programming tips for dome alarms

Legend domes do not handle alarms the same way as most other alarm equipment. You need to be aware of the differences to manage the dome's inputs and outputs effectively. Here are some key concepts.

- You can set each alarm to have up to three components: a dome action (preset, tour, or macro), a relay 1 action (on or off), and a relay 2 action (on or off). The relays can be used to trip such devices as lights, doors, or DVMRs. A dome action is not required. You could have an alarm just action one or both relays.
- The priority that you set for the alarms determines which one is actioned.
- When an alarm action is set to a preset, tour, or macro, the camera will remain with that action until the operator issues another camera command from the keypad. The *Resume* feature is disabled by alarms.
- Alarms are not held in a queue. Only the highest priority alarm that is activated is actioned. If several alarms are activated at the same time, then the one with the highest priority is actioned. After that alarm has finished, the next highest priority alarm will be actioned **only if** it is still active. If a higher priority alarm is activated while a lower priority alarm is being actioned, then the higher priority alarm overrides the lower priority alarm and is actioned instead. After the higher priority alarm has finished being actioned, then the first, lower priority alarm will have its action restarted **only if** it is still active.
- You do not need to acknowledge dome alarms in the same sense as required by typical alarm equipment. To move the camera from the position of the alarmed action and reenable the *Resume* feature, however, you do need to issue a command from the keypad.
- The only time you need to “clear” a relay state is when you have set a relay with the Infinite duration.
- If you have a relay set to the Infinite duration, you can clear it (turn it off) one of three ways. One, you can manually clear it by selecting a **Relay Off** button on the *Relay State* screen. Two, you can automatically clear it by using another programmed alarm number that sets that relay with a duration of at least one second. And three, you can clear it with a remapped preset command that activates a macro from the keypad. To remap preset commands, see [Command Map screen \(Control | Command Map \)](#) on page 54. An example of the second scenario would be Alarm 1 being used with a badge reader to open a door and Alarm 2 being used with a PIR on the other side of the door to lock the door. Alarm 1 would energize a relay with an infinite duration to open the electronic door lock and Alarm 2 would deenergize the relay with at least a one-second duration to close the electronic door lock.
- If you select the **Relay 1 on** or the **Relay 2 on** button on the Alarms | Relay State page, and select **OK**, then you are programming the dome to activate either or both of these relays each time the dome is powered up. The relay action becomes a default.
- Even though you can create an alarm block title and alarm titles that are up to 60 characters, 15 characters we suggest to reduce the size of the video obstruction.

Figure 40. Alarms menu



Summary screen (Alarms | Summary)

You can view the status of alarms from the summary page. Alarms are presented in numerical order with whatever titles have been assigned. Statuses are as follows:

- **On:** Status shows as On if the contact for the alarm is in its active state. So, for a N/O (normally open) contact that is closed, the status reports as on, because it is in its activated, abnormal state.
- **Off:** Status shows as Off if the contact for the alarm is in its inactive state. So, for a N/C (normally closed) contact that is closed, the status reports as off, because it is in its normal state.

Upon initial installation, all alarm contacts are N/O. Changing an alarm to N/C will not refresh the summary page until after the contact has been tripped or the camera has been rebooted. All other changes will refresh immediately.

Figure 41. Summary screen (Alarms | Summary)

| No. | Title | Status |
|-------|---------|--------|
| # 1 : | Alarm 1 | Off |
| # 2 : | Alarm 2 | Off |
| # 3 : | Alarm 3 | Off |
| # 4 : | Alarm 4 | Off |
| # 5 : | Alarm 5 | Off |
| # 6 : | Alarm 6 | Off |
| # 7 : | Alarm 7 | Off |
| # 8 : | Alarm 8 | Off |

1
Camera Title
192.168.208.34

Summary:

No.

Summary:

Title

Summary:

Status

The No. column of the summary page lists all alarms in numerical order, whether programmed or not. The eight alarms are numbered from 1 to 8.

The Title column of the summary page lists the titles for all available alarms, whether programmed or not.

The Status column of the summary page lists the status of each programmed alarm as either on (active) or off (inactive).

Contact Setup screen (Alarms | Contact Setup)

The Contact Setup screen is where you define the individual alarms. For tips, see [Programming tips for dome alarms](#) on page 46.

Figure 42. Contact Setup screen (Alarms | Contact Setup)

Note: Remember to select OK to save any changes you make on the page.

- Contact no.** The *Contact no.* drop-down box allows you to select the alarm number that you want to program.
- Contact type** Alarm contacts are identified as N/O (normally open) or N/C (normally closed). Default is N/O.
- Contact name** The *Contact name* box allows you to give your alarms unique titles. Default numerical titles are provided. There is a 60-character limit for all titles, but be aware of how much video you want to cover with your titles.
- Action** The Action feature associates an action with an alarm. An action is not required. Choices are None (default), Preset, Tour, and Macro. If you select preset, tour, or macro, the Action number feature is activated to let you select a specific one.
- Action number** The Action number feature lets you select a specific preset, tour, or macro, if you selected preset, tour, or macro in the Action feature.
- Relay 1** Each *Relay* feature associates one relay action with an alarm. Relays can be used to trip such devices as speakers, doors, and DVMRs. Each alarm can be programmed with up to three actions (one dome action and two relay actions). You can set both relays to activate with an alarm. An action is not required. Choices are No action (default), On, and Off.
- Duration** The Duration feature defines how long the relay is active. Choices are Infinite (default) and seconds (1, 2, 3, 5, 15, 30, and 60). The Infinite duration does not end unless another alarm is tripped.

Relay 2

Each *Relay* feature associates one relay action with an alarm. Relays can be used to trip such devices as speakers, doors, and DVMRs. Each alarm can be programmed with up to three actions (one dome action and two relay actions). You can set both relays to activate with an alarm. An action is not required. Choices are No action (default), On, and Off.

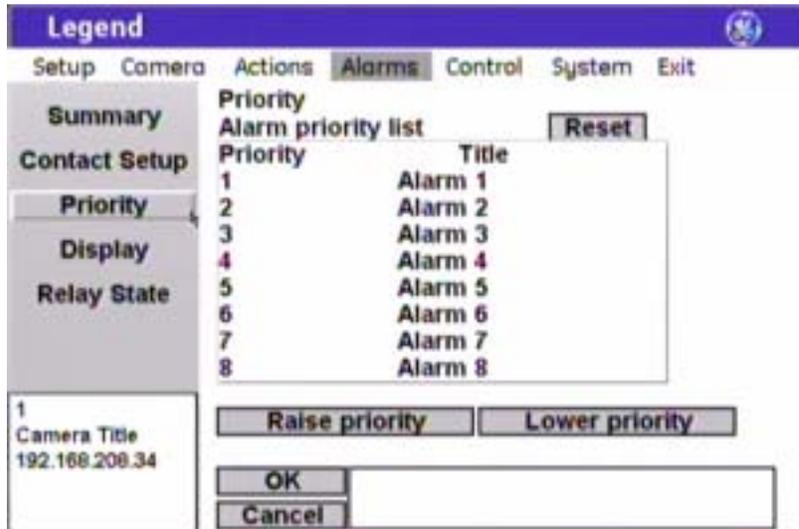
Duration

The Duration feature defines how long the relay is active. Choices are Infinite (default) and seconds (1, 2, 3, 5, 15, 30, and 60). The Infinite duration does not end unless another alarm is tripped.

Priority screen (Alarms | Priority)

You can assign a priority ranking to your alarms that is independent of their contact numbers. The topmost alarm in the priority list is the highest priority regardless of the alarm’s number, while the bottommost alarm is the lowest priority. If more than one alarm is activated sequentially, only the highest priority alarm is actioned. If several alarms are activated at the same time, then the one with the highest priority is actioned. After that alarm has cleared, the next highest priority alarm will be actioned *only if* it is still active (for instance, a door is still open). Alarms are not held in a queue.

Figure 43. Priority screen (Alarms | Priority)



Note: Remember to select OK to save any changes you make on the page.

Reset

The Reset button reorders the alarms in numerical order.

Raise priority

The Raise priority button moves a selected alarm up in the priority list. Select an alarm, then select **Raise priority** to move it up in the list.

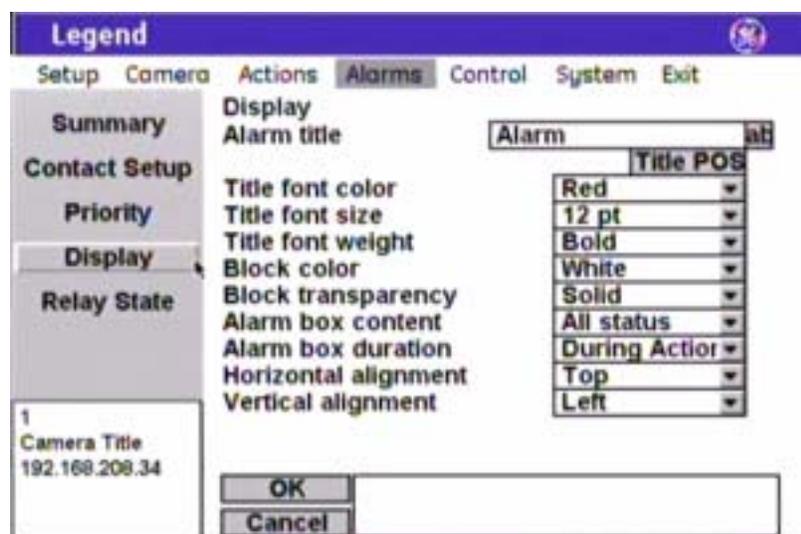
Lower priority

The Lower priority button moves a selected alarm down in the priority list. Select an alarm, then select **Lower priority** to move it down in the list.

Display screen (Alarms | Display)

The Display screen is where you define the appearance of the block of alarms and relays that displays on the monitor screen. To display the alarm block at all times, you must set the *Alarm box content* to **All status** and the *Alarm box duration* to **Indefinite**.

Figure 44. Display screen (Alarms | Display)



Note: Remember to select OK to save any changes you make on the page.

Alarm title

This feature does not title the individual alarms. Alarms appear in a list (or block) on the monitor screen according to the display settings you set. You can give this alarm block a title with this feature to identify the group of alarms displayed. There is a 60-character limit, but be aware of how much video you want to cover with your alarm block.

Title POS

The alarm block will appear on screen in a default position on the monitor screen (upper right), but you can reposition it with the *Title POS* button. Be aware of where you already have other titles (camera, privacy masks, presets, tours, macros, and areas) positioned.

To set the position of the macro title:

1. Select **Title POS**.
2. Move the joystick to move the title to the desired position.
3. Press the **iris +** or the **set** (←) key on the keypad to accept (save) the new position or press the **iris -** or **esc** key to cancel (abort) the new position.

Title font color

Alarm titles will appear on screen in the color selected.

Choices are as shown. Default is Red.

Title font size

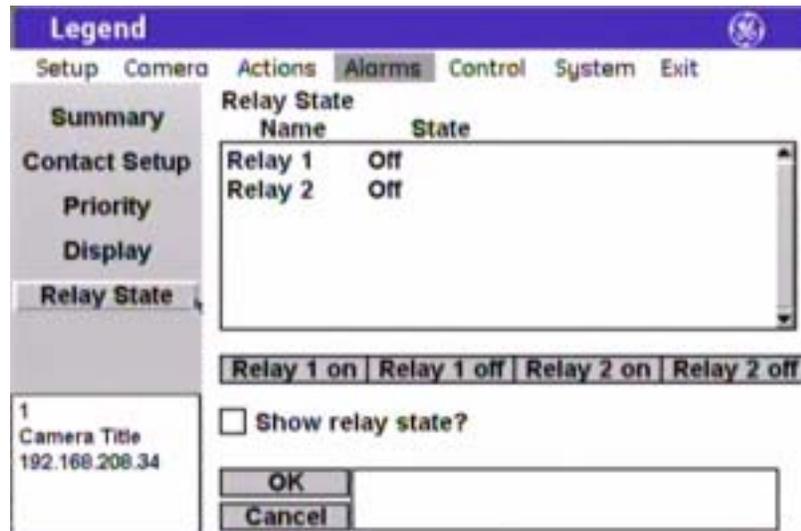
Alarm titles will appear on screen in the font size selected.

Choices are as shown. Default is 12 pt.

| | |
|-----------------------------|---|
| Title font weight | Alarm titles will appear on screen in the font weight selected. Choices are as shown. Default is Bold. Note: If <i>All status</i> is selected for the <i>Alarm box content</i> feature, then the selected <i>Title font weight</i> is overridden and all alarms are listed in the alarm box with normal weight and only the active alarms are listed with bold weight. |
| Block color | You can create a block (background) that offsets the alarm block from the video behind it. The blocks will appear on screen in the color selected. Choices are as shown. Default is White. |
| Block transparency | You can set the block (background) to be a solid color or a transparency. The blocks will appear on screen in the transparency selected. Choices are as shown. Default is Solid. |
| Alarm box content | The Alarm box content feature sets how many alarms will display on the monitor screen in the alarm block. Choices are Off (displays no alarms, whether active or inactive), All status (displays all alarms, whether active or inactive), Highest priority (displays only the highest priority alarm, when active), and Active only (displays all active alarms). Active alarms appear as bold in the list when All status is selected. Default is All status. |
| Alarm box duration | The Alarm box duration feature sets how long the alarm block will display on the monitor screen, when All status is selected for the Alarm box content feature. Choices are During action (default) and Indefinite (always displayed). |
| Horizontal alignment | For future use. |
| Vertical alignment | For future use. |

Relay State screen (Alarms | Relay State)

Figure 45. Relay State screen (Alarms | Relay State)



Note: Remember to select **OK** to save any changes you make on the page.

Summary: The Name column of the summary page lists both relays in numerical order, whether programmed or not. The two relays are numbered 1 and 2.

Summary: The State column of the summary page lists the status of each programmed relay as either on (active) or off (inactive).

Relay 1 on The Relay 1 on button lets you turn relay 1 on regardless of the current state of any associated alarm.

Note: If you select **Relay 1 on** and select **OK**, then you are programming the dome to activate this relay each time the dome is powered up.

Relay 1 off The Relay 1 off button lets you turn relay 1 off regardless of the current state of any associated alarm.

Relay 2 on The Relay 2 on button lets you turn relay 2 on regardless of the current state of any associated alarm.

Note: If you select **Relay 2 on** and select **OK**, then you are programming the dome to activate this relay each time the dome is powered up.

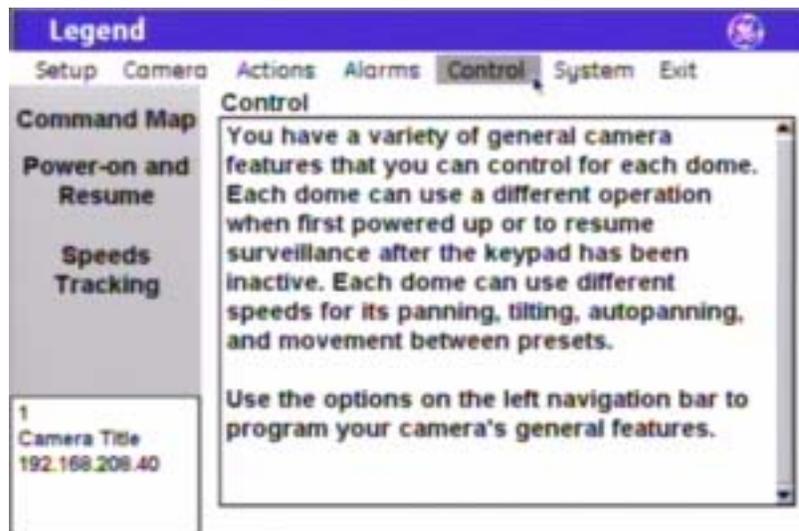
Relay 2 off The Relay 2 off button lets you turn relay 2 off regardless of the current state of any associated alarm.

Show relay state (check box) The Show relay state feature, when checked, lets you display the status of the relays on the monitor screen at all times. If the status of alarms is also being displayed, the relays will be listed at the bottom of the list after the alarms.

Control menu

You can program a variety of general camera features that control each dome. These general features include a specific operation for the camera to execute when it is first powered up (Power-on), a specific operation for the camera to execute when the keypad has been inactive for a duration of time (Resume), and speed settings for panning, tilting, autopanning, and moving between presets.

Figure 46. Control menu



Command Map screen (Control | Command Map)

The dome provides the ability to remap any preset or tour command coming in from a keypad to activate any of the 127 presets, 16 tours, or 32 macro actions. This enables you to manually initiate any of the expanded capabilities of the dome from keypad controllers with limited command capability. The command mapping does not effect any of the internal command operations the dome performs, such as resume and alarm actions. It only effects the actions the dome will perform when it receives a command from an external device (keypad or alarm interface). An example of remapping is using a preset command from the keypad to run Macro 1. In the command map programming, you would select the preset number you wish to use and remap that command to activate Macro 1.

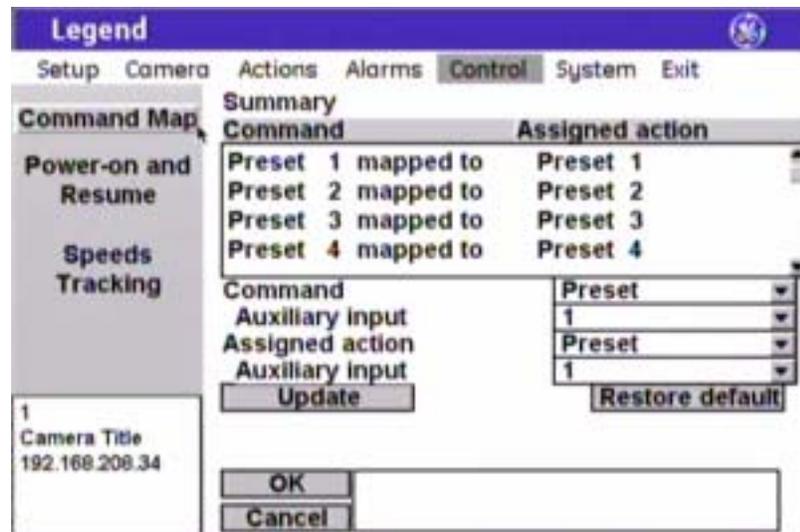
Note: Most keypads have a limited number of preset numbers they can call, which will limit how many commands can be remapped. If you have a GE KTD-405 keypad with firmware version 1.2.09 or later, then you can call up all 127 preset numbers (1 through 127) directly from the keypad. If, however, you have a GE KTD-405 keypad with an earlier version of firmware, then you can use the keypad to call up only the first 63 preset numbers (1 through 63). If you are using presets 62 and 63 for your left and right autopan limits, then you have a total of 125 or 61 preset numbers that you can call up from the keypad. To verify your keypad's version, press and hold the **mon** key on the keypad, until the keypad beeps, then press the >> key.

To create your presets, if you have not already done so, see [Presets screen \(Actions | Presets \)](#) on page 29.

To create your tours, if you have not already done so, see [ShadowTours screen \(Actions | ShadowTours \)](#) on page 38.

To create your macros, if you have not already done so, see [Macros screen \(Actions | Macros \)](#) on page 40.

Figure 47. Command Map screen (Control | Command Map)



Note: Remember to select **OK** to save any changes you make on the page.

Summary

The *Summary* feature lists what actions are currently assigned to each command. The Summary feature lists presets and tours separately, according to whichever list (preset or tour) you currently have selected under the Command option.

Command

The *Command* feature changes the group of commands listed in the summary between presets and tours.

Auxiliary input (command)

The *Auxiliary input* feature specifies the number of the command (for example, Preset 2 or Preset 102) that is to be remapped.

Note: To see the title of the selected command, go to the corresponding summary or list under the Actions menu.

Assigned action

The *Assigned action* feature remaps the selected command (preset or tour) to the same type of command or to another type of command (for example, from a preset to a tour or macro).

Auxiliary input (assigned action) The *Auxiliary input* feature specifies the number of the command that is assigned.

Note: To see the title of the selected command, go to the corresponding summary or list under the Actions menu.

Update

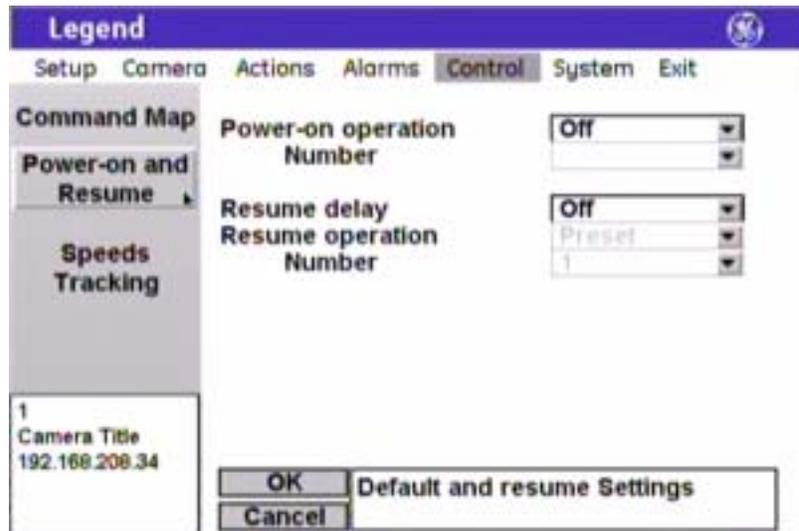
The *Update* feature, when selected, remaps the selected command with the selected action.

Restored default

The *Restore default* feature, when selected, unmaps all commands in the current list (preset or tour). Any commands remapped in the other list (tour or preset) are not restored.

Power-on and Resume screen (Control | Power-on and Resume)

Figure 48. Power-on and Resume screen (Control | Power-on and Resume)



Note: Remember to select OK to save any changes you make on the page.

Power-on operation

Power-on defines the first operation that the dome performs after it is powered up and initialized.

Choices are Off (default), Preset, Macro, ShadowTour, and Autopan.

Number

(power-on operation)

Enter a number for the operation selected under Power-on operation.

Choices are based on the selection made under operation.

Resume delay

Resume delay is a feature that sets how long the keypad is inactive before the Resume operation is performed.

Choices are Off (default), 15 sec, 30 sec, 1 min, 2 min, 3 min, 4 min, and 5 min.

Resume operation

Resume defines the operation for the dome to perform after the keypad has been inactive for a period of time. This command will not activate if a tour or autopan is in progress.

Note: If turned on, the Resume feature interrupts tours and autopanning. Resume does not interrupt alarms.

Choices are available only if a delay time is selected and include Preset (default), Macro, ShadowTour, and Autopan.

Number

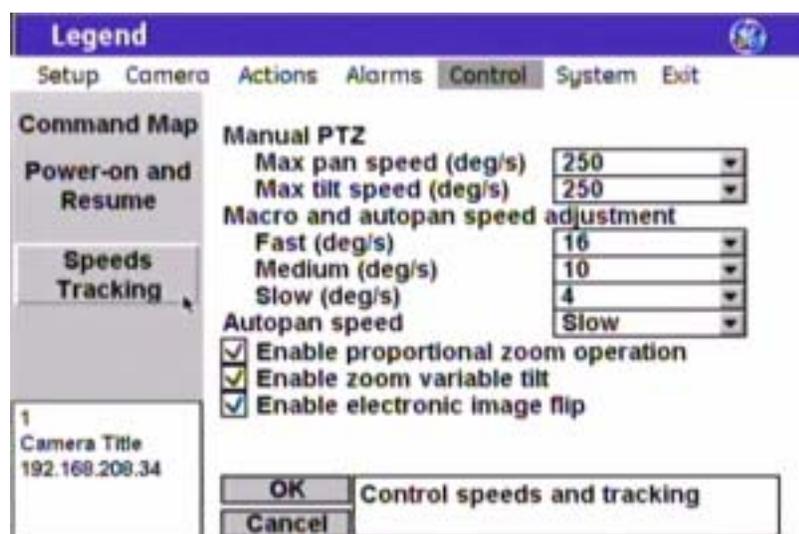
(resume operation)

Enter a number for the operation selected under Resume operation.

Choices are based on the selection made under operation.

Speeds/Tracking screen (Control | Speeds/Tracking)

Figure 49. Speeds/Tracking screen (Control | Speeds/Tracking)



Note: Remember to select OK to save any changes you make on the page.

Manual PTZ:
Max pan speed (deg/s) The *Max pan speed* is a feature that sets the fastest the camera will move (in degrees per second) while manually panning.

Choices are 100 through 250 (default) in increments of 10.

Manual PTZ:
Max tilt speed (deg/s) The *Max tilt speed* is a feature that sets the fastest the camera will move (in degrees per second) while manually tilting.

Choices are 100 through 250 (default) in increments of 10.

Macro/autopan speed:
Fast (deg/s) The *Fast* speed setting is a feature that sets how fast the camera moves (in degrees per second) at the fast speed while traveling between presets in macros and while autopanning.

Choices are 0 through 20 in increments of 2. Default is 16. A setting of 0 (degrees/second) makes the camera move as slowly as possible. This is not a stop motion command.

Macro/autopan speed:
Medium (deg/s) The *Medium* speed setting is a feature that sets how fast the camera moves (in degrees per second) at the medium speed while traveling between presets in macros and while autopanning.

Choices are 0 through 20 in increments of 2. Default is 10. A setting of 0 (degrees/second) makes the camera move as slowly as possible. This is not a stop motion command.

Macro/autopan speed:
Slow (deg/s) The *Slow* speed setting is a feature that sets how fast the camera moves (in degrees per second) at the slow speed while traveling between presets in macros and while autopanning.

Choices are 0 through 20 in increments of 2. Default is 4. A setting of 0 (degrees/second) makes the camera move as slowly as possible. This is not a stop motion command.

Autopan speed

The *Autopan speed* is a feature that sets how fast the camera moves while autopanning.

Choices are Slow (default), Medium, and Fast. These settings are scaled according to the settings set for the slow, medium, and fast *Macro and autopan speed* settings. If the numbers in the *Macro and autopan speed* setting boxes are lower, then the corresponding *Autopan speed* settings will be slower. For example, if the fast *Macro and autopan speed* setting were set to 1, instead of 16, then the fast *Autopan speed* setting would operate proportionately slower.

Enable proportional zoom operation

Proportional zoom is a feature that slows the pan and tilt speeds as you zoom in. This makes it easier to follow far off moving targets when you are zoomed in to them.

Choices are checked (default) and unchecked.

Enable zoom variable tilt

Zoom variable tilt is a feature that lowers the upper tilt limit when the camera is zoomed out to a wide angle of view so that the trim ring of the dome is not in view. The feature raises the upper tilt limit when the camera zooms in to a narrower angle of view, because the trim ring recedes out of view.

Choices are checked (default) and unchecked.

Enable electronic image flip (E-flip)

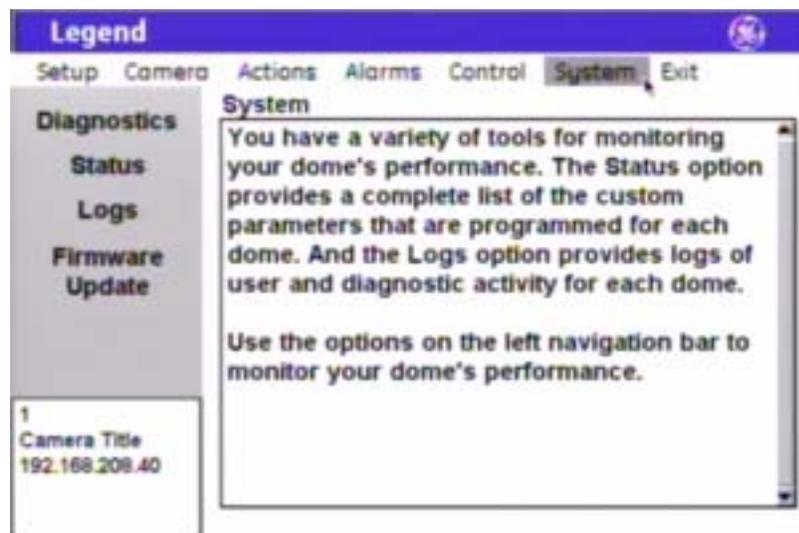
Electronic image flip (E-flip) is a feature that electronically flips the video image when the camera is looking straight down so that the camera does not have to physically flip.

Choices are checked (default) and unchecked.

System menu

You can access diagnostics, status, and communication logs of your system's features through the *System* menu screens. Under *Diagnostics*, you can see what temperature your dome is operating at. Under *Status*, you can see a detailed listing of your dome's site (camera) information such as title and IP address, customized settings, alarm status, and customized presets, tours, masks, and macros. Under *Logs*, you can see a history of the command, protocol, and motor messages being managed by the dome. Under *Firmware Update*, you can update the dome's software (firmware), if you are logged on as the Installer.

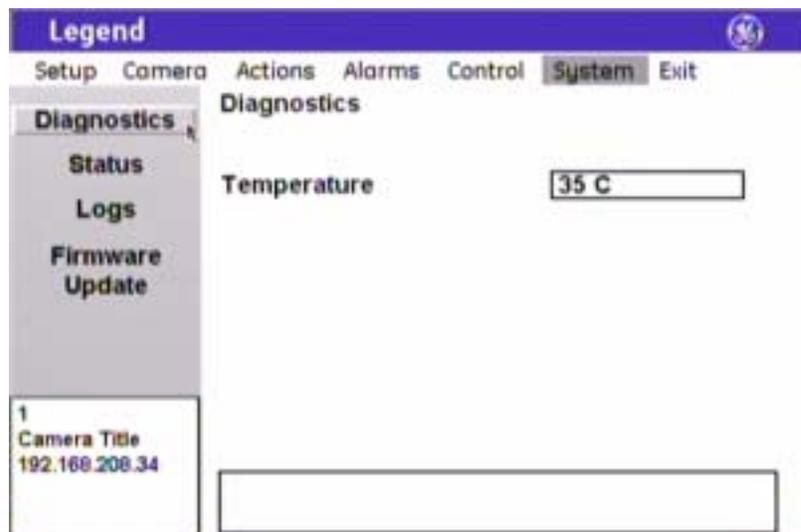
Figure 50. System menu



Diagnostics screen (System | Diagnostics)

The *Diagnostics* screen provides the operating temperature of your dome.

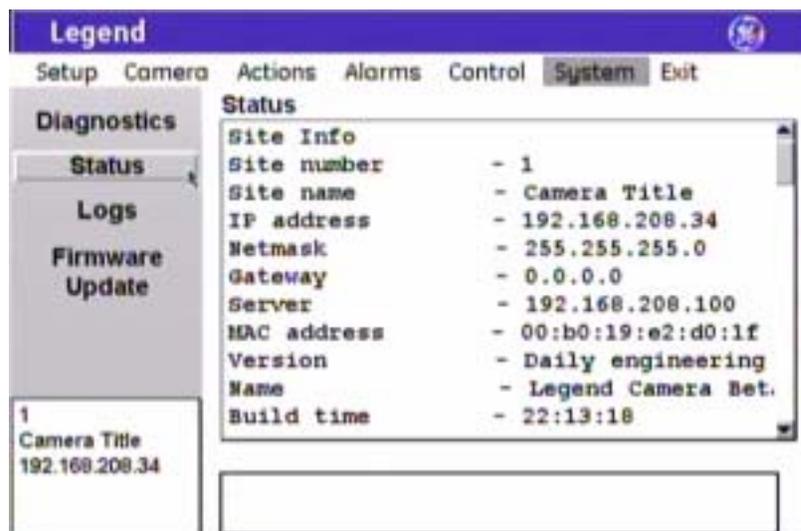
Figure 51. Diagnostics screen (System | Diagnostics)



Status screen (System | Status)

The *Status* screen provides a detailed listing of your dome's site (camera) information such as title and IP address, customized settings, alarm status, and customized presets, tours, masks, and macros.

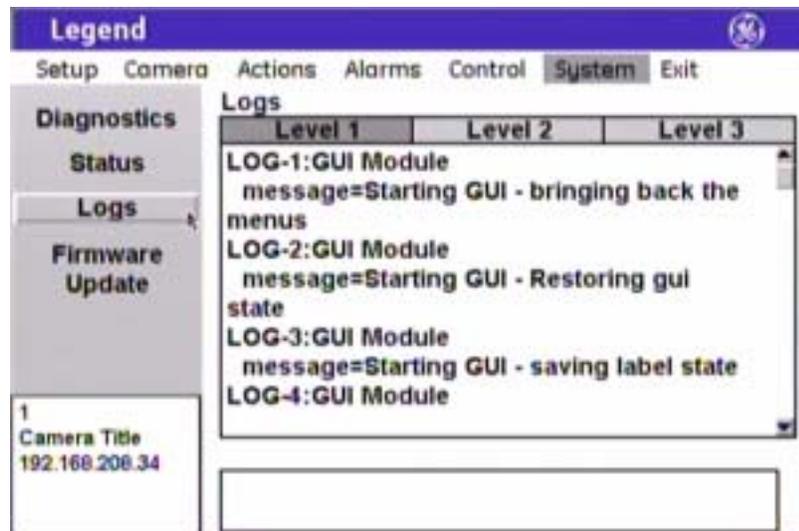
Figure 52. Status screen (System | Status)



Logs screen (System | Log)

The *Logs* screen provides a history of the command, protocol, and motor messages of the dome's most recent operations. Level 1 logs list the most restrictive and important messages, level 2 list those of medium restriction and importance, and level 3 lists those of least restriction and importance.

Figure 53. Log screen (System | Log)



Firmware Update screen (System | Firmware Update)

There are two ways to reload or update the software in your dome. One way is using the *Firmware Update* feature. The other way is using a web browser. The *Firmware Update* feature is explained here. To use the web browser method, see [Reloading or updating the software](#) on page 65.

The *Firmware Update* screen allows you to reload or update the dome's software (firmware) easily through the Ethernet connection.

Figure 54. Firmware Update screen (System | Firmware Update)



To update (or reload) the dome's software using the Firmware Update feature, see *Figure 54* and do the following:



For all installations, heed these cautions:

- DO NOT interrupt the reload/update purpose until it has completed. Don't use the keypad, don't break the network connection, and don't cycle the power to the dome.
- When flashing software upgrades to the dome over a standard IP network via the dome's Ethernet connection, ensure that the network is secured from unauthorized access. Like all Ethernet connections, the dome's Ethernet connection has no security against unauthorized access. You may consider connecting the Ethernet cable only when you are flashing the dome, unless you have the dome connected to a secure, isolated network.

1. Create your TFTP server using the corresponding file from the Legend system CD.

Note: Make sure that the TFTP server is in the same physical IP and subnet network as the dome. We do not recommend to update the dome through a gateway. The extended setup that is required is not provided.

2. Copy the update file from the Legend system CD to the TFTP server.
3. Confirm or retype the TFTP server's IP address into the *TFTP host address* box.
4. Confirm or retype the file name into the *File name* box.
5. Select **Begin update**.
6. At this point, ensure that the reload/update process is *not interrupted*. The system is not safe to interact with until after the system is successfully rebooted. Wait until after you see the splash and color bar screens on the monitor screen, and live video is again playing normally.

You may see a blank or gray screen for up to five minutes. Do nothing until you see live video again. Only after 10 minutes have elapsed without a successful reload/update should you try cycling power to restart the dome.

System operation

Legend domes are controlled from at least one controller keypad. Refer to your keypad's manual for instructions on operating the dome. This chapter lists some general guidelines and restrictions for operating the Legend domes.

Setting autopan limits

When setting autopan limits, be aware that you must set both the right and left limit in the same tilt hemisphere. You can set them in either tilt hemisphere, but you cannot cross tilt hemispheres, meaning that you cannot pass the bottommost point or turn the camera upside down. Allowing the camera to E-flip will create an invalid set of autopan limits that may cause unexpected camera performance. See [Speeds/Tracking screen \(Control | Speeds/Tracking \)](#) on page 57.

Remember that there is a positive and a negative hemisphere. Depending on what coordinates you selected under Setup | Preferences | Coordinates, the positive hemisphere will be identified by a tilt position of 0° to 90° or +90° to 0°.

Rebooting the dome

If you are using a GE KTD-405 keypad, and have valid communication between the keypad and the dome, you can easily reboot a dome when necessary. You cannot currently reboot Legend domes from other keypads.

To reboot a dome, do the following from the KTD-405 keypad:

1. At the normal display (CAMERA #/MONITOR #), press and hold the **set** () key on the keypad until you hear a beep and the programming code display appears on the keypad's LCD.
2. At the ENTER PROGRAMMING CODE: display, enter the reset access code by pressing the **1**, **4**, **7**, **6**, and **seq** keys.
3. At the RESET TO DEFAULTS? display, press **iris +** for yes.
4. At the reset which display, press **3** to select CAMERA.
5. At the RESET CAMERA #? ARE YOU SURE? display, press **iris +** to select yes.

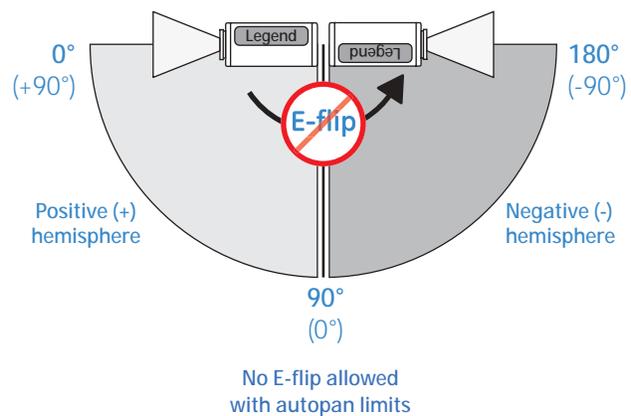
The camera reboots in about 60 seconds. You will see the **RESETTING CAMERA #** display on the keypad LCD and the splash screen and color bars on the monitor screen as the camera reinitializes itself.

Resetting the dome

You can reset the dome whether or not you have valid communication between the keypad and the dome.

To reset the dome, cycle the power to the dome by turning the power off then on.

Figure 55. No E-flip with autopan limits



Calling up presets from a keypad

Most keypads have a limited number of preset numbers they can call. If you have a GE KTD-405 keypad with firmware version 1.2.09 or later, then you can call up all 127 preset numbers (1 through 127) directly from the keypad. If, however, you have a GE KTD-405 keypad with an earlier version of firmware, then you can use the keypad to call up only the first 63 preset numbers (1 through 63). If you are using presets 62 and 63 for your left and right autopan limits, then you have a total of 125 or 61 preset numbers that you can call up from the keypad.

To verify your keypad's version, press and hold the **mon** key on the keypad, until the keypad beeps, then press the >> key.

To create presets, see [Presets screen \(Actions / Presets \)](#) on page 29.

To create tours, see [ShadowTours screen \(Actions / ShadowTours \)](#) on page 38.

To create macros, see [Macros screen \(Actions / Macros \)](#) on page 40.

To remap presets, tours, and macros, see [Command Map screen \(Control / Command Map \)](#) on page 54.

To use the KTD-405 keypad, see *KTD-405 Controller Keypad User Manual (1036547)*.

Interrelationship between the Exposure and Day/Night features

The *Day/Night* feature works only if the *Exposure* feature is set to Auto or Return to auto. Two conditions can prevent the camera from switching between the color and monochrome modes according the *Day/Night* setting. One, if you've overridden the Auto *Exposure* setting with manual commands from the keypad. Two, if you've called a preset (or a command containing a preset) that is programmed to override the Auto *Exposure* setting.

In the second scenario, the camera returns to the Auto *Exposure* setting after you leave the preset. In the first scenario, you must issue a command to return to the Auto *Exposure* setting. Using the iris key on the keypad manually adjusts the camera's iris setting or shutter speed, overriding the Auto *Exposure* setting. You must issue a pan or tilt command from the keypad to leave the manual override and return to the Auto *Exposure* setting. While you remain in the manual override, the color and monochrome modes of the *Day/Night* setting will not switch according to the changes in the lighting conditions.

Troubleshooting, maintenance, support

This section provides information to help you diagnose and solve various problems that may arise while configuring or using your GE Security product and offers technical support contacts in case you need assistance. See [Contacting technical support](#) on page 67.

Troubleshooting your Legend system

Common programming issues

Is the programming interface not responding?

- First, reboot the camera with the keypad using the procedure in [Rebooting the dome](#) on page 63.
- If that doesn't work, then reset (cycle) the power to the dome by turning the power off then on.

Forget your passcode?

If you forget the passcodes for a dome, you will need to send the dome back to the factory so that it can be reset by the factory with no passcodes.

Is the programming interface not opening?

Contact technical support. See [Contacting technical support](#) on page 67 for web, e-mail, fax, and phone information.

Is the programming interface not closing?

Reset (cycle) the power to the dome by turning the power off then on.

Maintenance

Reloading or updating the software

There are two ways to reload or update the software in your dome. One way is using the *Firmware Update* feature from the programming interface. The other way is using a web browser. The web browser method is explained here. To use the *Firmware Update* feature, see [Firmware Update screen \(System | Firmware Update \)](#) on page 61.

To reload or update software using the http method:



For all installations, heed these cautions:

- DO NOT interrupt the reload/update purpose until it has completed. Don't use the keypad, don't break the network connection, and don't cycle the power to the dome.
- When flashing software upgrades to the dome over a standard IP network via the dome's Ethernet connection, ensure that the network is secured from unauthorized access. Like all Ethernet connections, the dome's Ethernet connection has no security against unauthorized access. You may consider connecting the Ethernet cable only when you are flashing the dome, unless you have the dome connected to a secure, isolated network.

-
1. Make sure that the computer that you are using for the server has the same subnet address as the dome.

The default addresses are:

- IP for domes: 192.168.208.XXX, where XXX is the site number (or camera address) of the dome.
 - Subnet mask for domes: 255.255.255.0
2. Copy the update file from the Legend system CD to your computer. It will usually be named in the format of *Legend.raw.gz* with some variations.
 3. Open Microsoft Internet Explorer.
 4. Type your dome's IP address into the address box in the form of `http://XXX.XXX.XXX.XXX/update.htm`.
 5. Press **Enter** or click **Go**.

6. If this is the first time you are accessing the web browser for the dome after it has rebooted, you will be asked to log on to the dome.

Figure 56. Legend web-based log in screen



- Only installers have passcode permission to update software.
- You need to type in *Installer* with a capital letter **I**.
- Finally, you need to use the same passcode as is used for accessing the dome's programming interface. Leave the password box blank, if the Installer passcode was not turned on for the programming interface.

7. At the *Legend web based firmware update* page, enter the name of the firmware file, if known, or click the **Browse** button to locate the file.

Figure 57. Legend web based firmware update page



8. If you are browsing for the file, once you find it, click **File | Open** to populate the filename entry on the previous page.
9. Click **Send File**.

10. At this point, ensure that the reload/update process is *not interrupted*. The unit is not safe to interact with until after the system is successfully rebooted. Wait until after you see the splash and color bar screens on the monitor screen, and live video is again showing normally.

You may see a blank or gray screen for up to five minutes. Do nothing until you see live video again. Only after 10 minutes have elapsed without a successful reload/update can you try cycling power to restart the dome.

After you have clicked Send File, the reload/update can continue processing in one of two ways:

- In most cases, a notice will appear on the monitor screen saying that the update is in progress, while another message appears on the computer screen in Internet Explorer saying that the update is proceeding successfully.
- In some cases, the camera may not have enough memory to process the reload/update files. In which case, a camera memory low message is displayed. If you get this message, the camera will automatically reset (reboot) itself and when it is again displaying live video, you will need to go back to the address box in Internet Explorer and reselect the dome's IP address with the correct file extension, which should now appear beside the IP address. The reload/update should process normally after selecting the update file this second time.

Contacting technical support

For assistance installing, operating, maintaining, and troubleshooting this product, refer to this document and any other documentation provided. If you still have questions, you may contact technical support during normal business hours (Monday through Friday, excluding holidays, between 6 a.m. and 5 p.m. Pacific Time).

| | Sales | Technical support |
|--------|--|---|
| Phone: | Toll-free: 888.GESECUrity (888.437.3287 in the US, including Alaska and Hawaii; Puerto Rico; Canada). Outside the toll-free area: 503.885.5700. | |
| E-mail | info@gesecurity.com | generaltech@ge.com |
| Fax | 800.483.2495 | 541.752.9096 (available 24 hours a day) |

Note: Be ready at the equipment before calling for technical support.

Online publication library

Another great resource for assistance with your GE Security products is our online publication library, available to all of our customers on our website. To access our publication library, go to our website at the following location:

<http://www.gesecurity.com>

In the **Tools** area at the top, click the [Publication Library](#) link then select [Video Surveillance](#). After you register and log on, you may search through our online library for the documentation you need.¹

1. Many GE Security documents are provided as PDFs (portable document format). To read these documents, you will need Adobe Acrobat Reader, which can be downloaded free from Adobe's website at www.adobe.com.

Appendix. System defaults

Default title positions

Figure 58 shows you all of the titles that you can turn on to appear on the monitor screen.

Figure 58. Default title positions



Default programming settings

Table 4 lists the system's programming defaults.

Table 4. Default programming settings

| Setting | Default |
|------------------------|---------------|
| Alarm box content | All status |
| Alarm box duration | During action |
| Alarm contact type | N/O |
| Autopan speed | Slow |
| Autoslow shutter | Off |
| Backlight compensation | Off |
| Block color | Black |
| Block transparency | No color |
| Branding | Off |
| Contact type (alarms) | N/O |

Table 4. Default programming settings

| Setting | Default |
|--|-----------------|
| Day/Night | Automatic |
| Digital zoom limit | 12x |
| Electronic image flip (E-flip) | On |
| Exposure control | Iris |
| Gain | 0 |
| Language | English |
| Lift | 0 |
| Night mode | Off |
| IP address | 192.168.208.250 |
| Pan coordinates | Degrees 360 |
| Pan limits | Off |
| Passcodes | Off (blank) |
| Phase adjustment | 50° |
| Phase lock enabled | Off |
| Power-on | Off |
| Preset title duration | Infinite |
| Privacy mask color | Gray |
| Relay 1/Relay 2 | No action |
| Relay duration | Infinite |
| Resume | Off |
| Resume delay | Off |
| Resume operation | Preset |
| Return-to-auto | On |
| Subnet mask | 255.255.255.0 |
| Temperature display | Off |
| Temperature display duration | During action |
| Temperature thresholds (high and low) | 0 |
| Tilt coordinates | Degrees 180 |
| Tilt limits | Off |
| Title font color | White |

Table 4. Default programming settings

| Setting | Default |
|--------------------|---------------|
| Title font weight | Bold |
| Title font size | 26 pt |
| Title length | 60 characters |
| White balance | Auto |
| Zoom coordinates | Power |
| Zoom proportional | On |
| Zoom speed | Variable |
| Zoom variable tilt | On |

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