



# Divar 700 Series

Digital Hybrid Recorder / Digital Network Recorder



**BOSCH**

## Operating instructions

These instructions explain the purpose of the front panel keys. The functions available can be limited by setting passwords. Some functions may also require a software license. An administrator has access to many more functions in the menu.

### Front panel controls

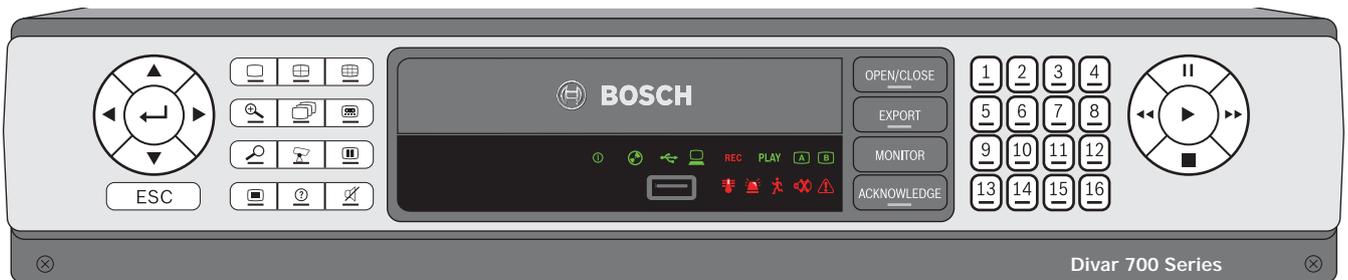


Figure 1 Front panel controls

### Keys

The keys on the front panel control all functions. Symbols on the keys show the functions. Inactive keys emit an audible beep when pressed.

#### Arrow keys:

▲ Up ▼ Down ◀ Left ▶ Right

- move around through menu items or values when in menu mode
- in PTZ mode, the arrow keys can be used to control the pan, tilt, or zoom functions of the selected camera
- moves the visible area of the selected image in digital zoom mode

↵ Enter key

- selects a submenu or menu item, or confirms selections made in menus
- the selected cameo is shown full screen when viewing video in multiscreen mode

ESC ESC key

- press to return to previous level or to exit menu system without saving

□ Full screen key

- press to go to full screen mode

▣ Quad key

- press to go to quad mode
- in quad mode, press to toggle between the enabled quad screens

▤ Multiscreen key

- press to go to multiscreen mode
- in multiscreen mode, press to toggle between enabled 3x3 and 4x4 screens

🔍 Digital zoom key

- zooms in on the active full screen camera display

📄 Sequence key

- view cameras in sequence on full-screen or quad displays

-  OSD key
  - press to view date/time and camera information, date/time only, or none
-  Search key
  - press to open the date/time search menu to look for recorded images
-  PTZ key
  - enables either pan/tilt or pan/zoom modes
-  Freeze key
  - in live mode, press to freeze the selected image
-  Menu key
  - opens the menu system
-  Help key
  - press to view help
-  Mute key
  - press to mute audio monitoring
-  Open/Close key
  - press to open or close the DVD drawer
-  Export key
  - press to open the export menu; an indicator light is located on the key
-  Monitor key
  - toggles control between monitor A or B
-  Acknowledge key
  - press to acknowledge an alarm event; an indicator light is located on the key
-  Camera keys (1-16)
  - press to see a full-screen display of the analog video input
  - press again to see a full-screen display of an IP camera (if connected)
-  Pause key
  - in the playback mode, press to freeze the playback picture
-  Reverse key
  - in live mode, press to start reverse playback of recordings for the displayed cameras
  - in playback mode, press to start or speed up reverse playback
  - in pause mode, press to step back one frame
-  Play key
  - in live mode, press to resume playback from the last selected playback position
  - in pause or fast forward/reverse modes, press to resume playback
-  Fast forward key
  - in live mode, press to start playback from one minute earlier
  - in playback mode, press to speed up the forward playback rate
  - in pause mode, press to step forward one frame

- Stop key
  - while in playback mode, press to return to live mode

**Note:**

IP camera numbering starts at 9 on an 8-channel hybrid model and at 17 on a 16-channel hybrid model. So on a 16-channel hybrid unit with IP cameras, camera key 1 selects analog camera 1 and, when pressed again, IP camera 17.

**Indicators**

The indicators on the front panel display light or flash to alert of various operating conditions.

- ⓘ Power - lights when the unit is powered
- 📀 DVD- lights when a DVD is in the unit
- 🔌 USB - lights when a USB memory device is connected to the unit
- 🖥️ Network - lights when a remote user is connected to the unit
- REC** Record - lights when the unit is recording video
- PLAY** Playback - lights when the unit is in playback mode
- A** Monitor A - indicates monitor A is being controlled
- B** Monitor B - indicates monitor B is being controlled
- 🌡️ Temperature - flashes when internal temperature is outside operational range
- 🚨 Alarm - flashes when an alarm is detected
- 🚶 Motion - flashes when motion is detected in a video signal
- 🔊 Video loss - flashes when video loss is detected for a video input
- ⚠️ System failure - flashes when a system failure is detected

**Mouse Controls**

All functions controlled by the front panel can, alternatively, be accessed using the supplied USB mouse. All main DVR functions are accessible via the on-screen button panel. To display the panel (monitor A only), move the mouse pointer to the bottom left of the screen. Press ESC to remove it from the screen.



**Figure 2** On-screen button panel

The buttons and indicators of the on-screen button panel work the same as the keys and indicators on the front panel.

## Viewing pictures

The hybrid version has two monitor outputs, A and B. The way in which these monitors display pictures depends on how the system is configured. When an alarm or motion input is detected, the camera picture with the Alarm/Motion indicator can be displayed on monitor A, B, or both. When multiple alarms or motion occur, camera pictures are combined in a multiscreen window on monitor A, B, or both.

### Monitor A

Monitor A is the main monitor. It shows full-screen, quad, or multiscreen live or playback pictures of both analog and IP cameras. Status messages, alarms, motion, and video loss warnings are also displayed on this monitor. When the menu system is activated it is displayed on this monitor.

### Monitor B (hybrid version only)

Monitor B displays full-screen, quad, or multiscreen live pictures of analog cameras.

#### Selecting a monitor to control

To control the display on monitor A:

1. Check that the **A** light on the front panel is lit.
2. If **A** is not lit, press the monitor **MONITOR** key.

To control the display on monitor B:

1. Check that the **B** light on the front panel is lit.
2. If **B** is not lit, press the monitor **MONITOR** key

### Viewing

The drawing shows all possible views for monitor A and B. Some multiscreen views may have been disabled during set up. The Divar model and the number of connected cameras also influence the available multiscreen views.



**Figure 3** Supports single, quad, 3x3, and 4x4 screen viewing

The multiscreen modes can have different multiscreens that can be shown in sequence to display all camera pictures.

### Multiscreen

To view different multiscreen displays on monitor A or B:

1. Press the multiscreen  key.
  - A multiscreen display of camera pictures appears on the active monitor.
  - The camera keys of the selected cameras light (green).
2. Press the multiscreen  key again to go to the next programmed multiscreen view.
  - Continue to press the multiscreen  key; the unit cycles through all enabled multiscreen views.

### Full-screen

To view a full-screen shot of a camera:

1. Press a camera key.
  - A full-screen shot of the selected analog camera appears.
  - The camera key of the selected analog camera lights (green).
  - Press the camera key again to display the linked IP camera.
  - The camera key of the selected IP camera lights (orange).
2. While in multiscreen mode, press enter  to view the active cameo in full-screen.

### Note:

IP camera numbering starts at 9 on an 8-channel hybrid model and at 17 on a 16-channel hybrid model. So on a 16-channel hybrid unit with IP cameras, camera key 1 selects analog camera 1 and, when pressed again, IP camera 17.

### Sequence

To view a sequence of live camera pictures of several cameras:

1. Press the sequence  key.
  - A sequence of camera pictures appears, each for a pre-programmed dwell time.
2. Press the sequence  key to stop sequencing.
  - Zooming, pressing the multiscreen key, or selecting a single camera also stops sequencing.

### Cameo assignment

Assigning cameras to cameos in a multiscreen view:

1. Use the arrow keys to select a cameo.
2. Press and hold a camera key to display and assign that camera's picture in the active cameo.
3. Alternatively, right click a cameo with the mouse and choose a video input from the context menu.

The cameo assignment that was made is used in playback mode as well as in live mode.

### Freeze image

Freezing a camera shot on monitor A:

1. Press the freeze  key to freeze the picture in the active cameo.
2. Press the freeze  key again to return to live viewing.
 

Alternatively, right click and select **Freeze** or **Unfreeze** from the context menu using the mouse.

When viewing a camera picture in full-screen mode, then this picture is frozen. The zoom function can be used on a frozen picture. When changing viewing mode, any frozen pictures are released.

### Zoom

To zoom in on a video image:

1. Press the zoom  key.
  - The picture is enlarged by a factor of 2.
2. Use the arrow keys to select the area of the picture to be displayed.
3. Press the zoom  key again to zoom in further.
  - The picture is enlarged by a factor of 4.
4. Use the arrow keys to select the area of the picture to be displayed.
5. Press the zoom  key again to return to a full picture and leave the zoom mode. Alternatively, right click and select **Zoom** or **Exit zoom** to enable or disable zoom mode with the mouse. While in zoom mode, click on an area of the screen to zoom in on. Use the scroll wheel to zoom in and out.

## Live and playback

### Live mode

The live mode is the normal operating mode of the unit where live pictures are viewed from the cameras. From live mode, switching to playback mode or to the system menu is possible.

### Accessing playback functions

Access to playback functions may require a password. Discuss this with the administrator.

1. To search, use the top menu and click the search icon.
2. Choose **Event** search or **Date/time** search from the pull-down menu.

Alternatively, press the search  key to switch to date/time search directly.

To enter the playback mode, use one of the following keys:

- Press the rewind  key to start reverse playback of recordings for the displayed cameras.
- Press the fast forward  key to start playback from one minute earlier.
- Press the play  key to resume playback from the last selected playback position.

Press the stop  key to switch back to live viewing. An alarm also switches the unit back to live viewing.

### Playback mode

In playback mode, the video control keys operate as follows:

- Press the rewind  key to start reverse playback of recordings. Pressing it again and again increases the display rate to a maximum before returning it back to normal speed again. Press the rewind  key in the pause mode to step back one frame at a time.
- Press the pause  key to freeze the picture.
- Press the fast forward  key to start playback of recordings. Pressing it again and again increases the display rate to a maximum before returning it back to normal speed again. Press the forward  key in the pause mode to step forward one frame at a time.
- Press the play  key to resume playback.

Press the stop  key to switch back to live viewing. An alarm also switches the unit back to live viewing.

## Overview of the menu system

The menu gives access to several functions to help use the unit. Access to some menu items is password protected. There are three ways of accessing the menu system:

- via the front panel keys,
- the USB mouse, or
- a Intuikey keyboard.

Slight differences in navigation and selection are only due to the differences between the keys on the unit, the keyboard and the mouse. The menu structure is the same in all cases.

The top menu consists of four main menus with drop-down submenus, a help item and an exit item.



Figure 4 Top menu

### Search



The Search menu contains two submenus:

- Date/time - plays back video from a specific date and time.
- Events search - searches for events in a specific time frame.

These submenus can only be accessed if playback rights have been given.

### Export



The Export menu is used to archive a video clip to a USB memory device or DVD.

This submenu can only be accessed if export rights have been given.

### Configuration



The Configuration menu contains three submenus:

- Quick installation - opens a wizard to configure basic DVR settings.
- Advanced configuration - opens the configuration menu to configure all DVR settings.
- Monitor settings - opens a menu to configure the monitor output settings.

These submenus can only be accessed if configuration rights have been given.

### System information



The System information menu contains two submenus:

- Status - opens a menu to view status information.
- Log Book - opens a menu to view the system log.

### Help



The Help function displays a help text.

### Exit



Click to log off.

### Access using the front panel keys

To open the menu, press the menu  key.

- The top menu appears on monitor A.

To move through a menu or list, use the arrow     keys on the front panel.

To select a submenu or item, use the enter  key.

To go back, use the escape  key

To open the help text, press the help  key.

To exit the menu, press the escape  key.

### Access using the mouse

To open the menu, move the pointer to the top of the screen.

- The top menu appears on monitor A.

To select a menu item, move the pointer over it and left click.

### Access using the Intuikey keyboard

Press the Menu key to access the top menu. Use the keyboard joystick to navigate through the menu items.

To select a menu item use the enter  key on the keyboard.

### Search



**Figure 5** Top menu - Search

1. To search, enter the top menu and click **Search**.
2. Choose **Date/time** search or event or text search from the pull-down menu.

Alternatively, press the search  key to switch to **Date/time** search directly.

### Date/time search



Enter the start date and time and click **OK** to start playback.  
Playback of the displayed cameos starts.

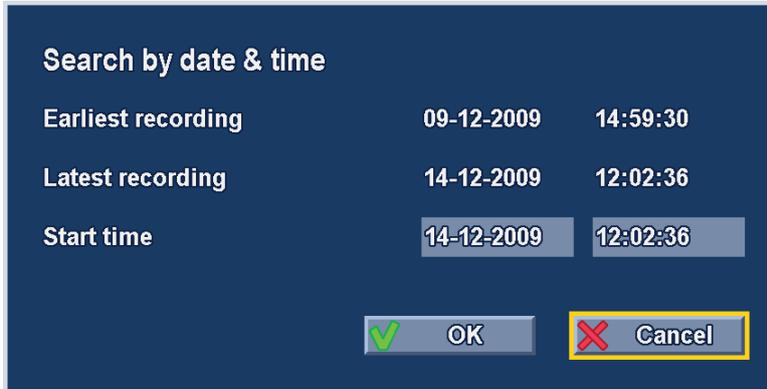


Figure 6 Search by date and time

### Search

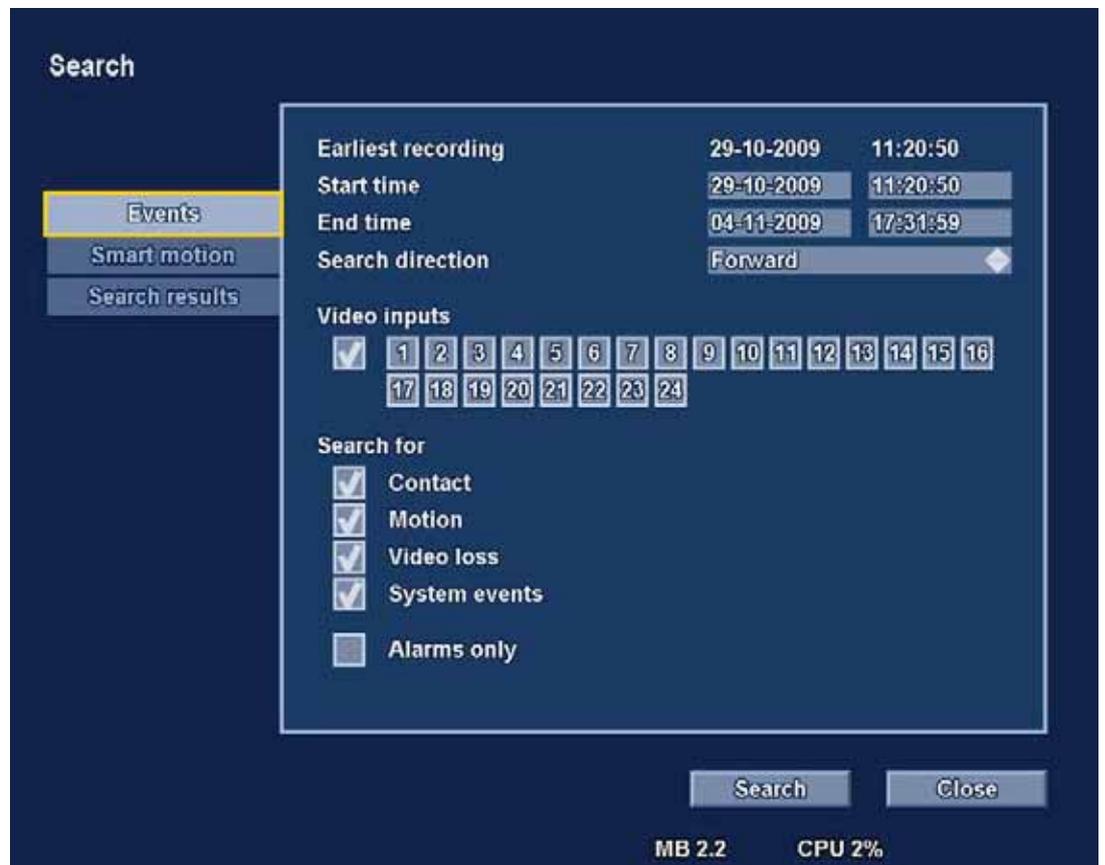


Figure 7 Search menu - Events

### Events search criteria

- Under **Start time** and **End time**, fill in date and time values to determine the time span of the search.
- To set the **Search direction**, select **Forward** to search from start time to end time or **Backward** to search from end time to start time.
- Under **Video inputs**, check the inputs to search for (highlight the un-numbered box to select all). The selected inputs are highlighted.
- Under **Search for** check the boxes to search for contact, motion, video loss and system events. Check the **Alarms only** box so that the search is restricted to alarm events.
- Select **Search** to start the search.

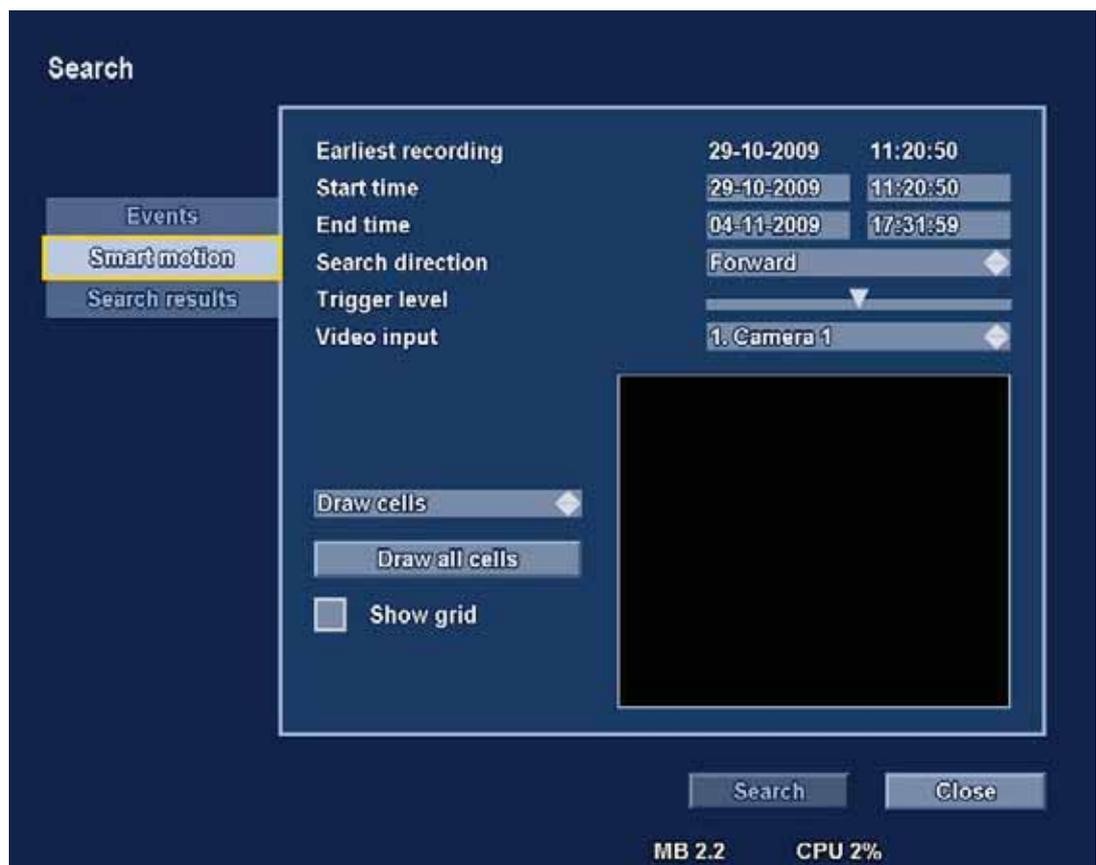


Figure 8 Search menu - Smart motion

### Smart motion search criteria

1. Set the smart motion search parameters as follows:
  - Under **Start time** and **End time**, fill in date and time values to determine the time span of the search.
  - To set the **Search direction**, select **Forward** to search from start time to end time or **Backward** to search from end time to start time.
  - Adjust the **Trigger level** slider to set the level of motion that will be detected. Sliding to the right raises sensitivity, sliding to the left lowers sensitivity. The highest value detects even the slightest motion.
  - **Select the input to search using Video input.**
2. To define the motion sensitive area in the smart motion preview cameo window:
  - Select **Draw cells** and draw in the motion cameo to add or increase detection areas.
  - Select **Erase cells** and draw in the motion cameo to erase or reduce detection areas.

3. To activate or clear the entire area, select one of the following:
  - **Draw all cells** to activate the entire motion detection area.
  - **Erase all cells** to clear the entire motion detection area.
  - Check the **Show grid** box to outline grid zones.
4. Select **Search** to start the search.



Figure 9 Search menu - Search results

**Search results**

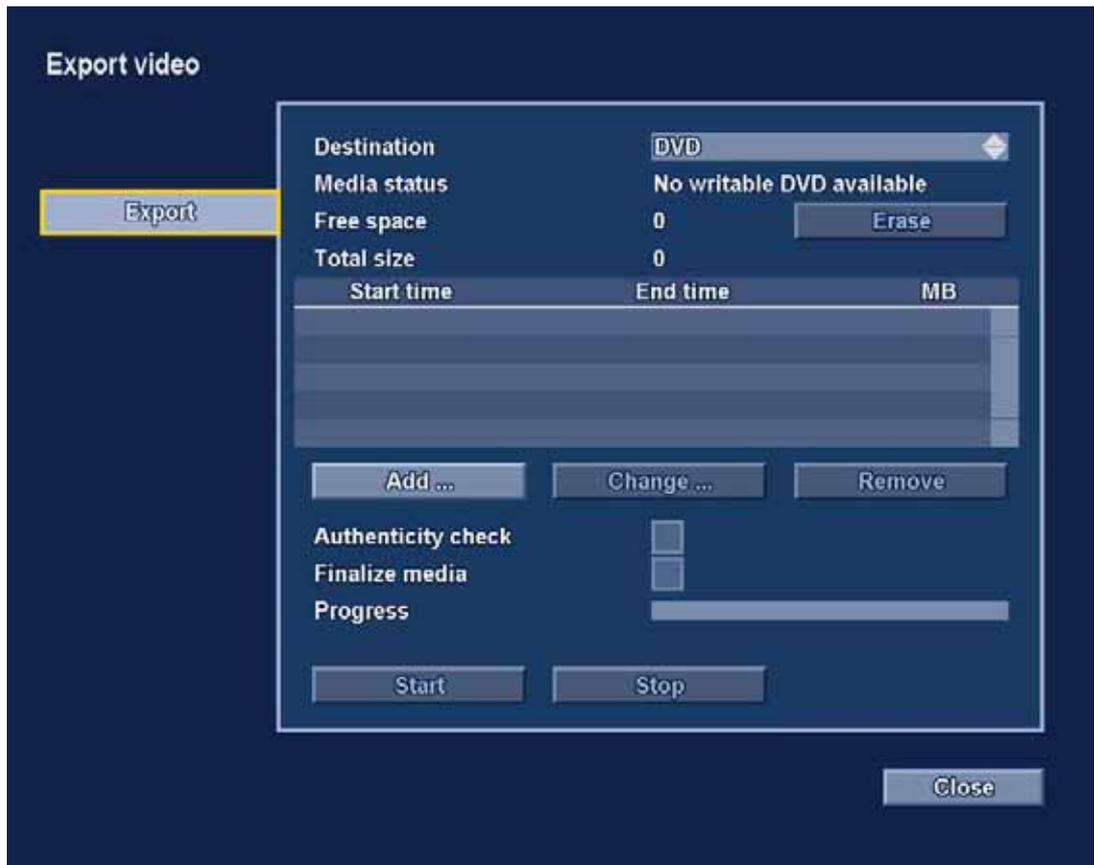
- The recording fitting the filter and closest to the selected date and time is shown first.
- Use the up/down arrow keys to move through the list. The selected recording is shown in the preview window.
- Press the enter key for a full-screen playback of the selected recording.
- Press the escape key to return to the search menu.

**Export**



Figure 10 Top menu - Export video

The export menu is accessed from the top menu. It allows writing segments of recorded video and audio to a USB storage device or recordable DVD. The main export screen shows information about the connected media and a list of the video segments to be archived.



**Figure 11** Export video menu

- Choose a memory device from the **Destination** selection box. **Media status** displays the status of the selected memory device; **Free space** displays the available space for archiving.  
Select **Erase** to empty the selected memory device.
  - A list of the video segments to be archived is displayed.
  - To add a video segment to the list, click **Add**.  
Fill in a **Start time** and **End time** for the video segments to be archived.  
Click **OK** to place the segment in the list.  
Select the camera numbers to be archived (highlight the un-numbered box to select all).
  - To add another video segment to the list, click **Add**.
  - To change a video segment in the list, select it and click **Change**.
  - To remove a video segment from the list, select it and click **Remove**.
- The archive list is saved until archiving is carried out. Video segments that have been partially overwritten or deleted from the internal hard drive(s) are removed from the list.
- Place a check mark next to **Authenticity check** to authenticate the video segments before archiving.
  - Place a check mark next to **Finalize media** to ensure that DVD media can be read on other players.
  - Select **Start** to write the video segments to the destination device.
  - Select **Stop** to cancel the archiving process.
  - Select **Details** for an error report if the authenticity check or archiving is unsuccessful.
- If the total size of the video segments is greater than the memory device's free space, then only the first segments that fit are archived. Those segments that are not archived remain in the list so that they can be archived to a new device.

## Configuration



**Figure 12** Top menu - Configuration

The Configuration menu is accessed from the top menu. The Configuration menu contains three submenus:

- Quick Installation - opens a wizard to configure basic settings. For more information refer to *Section 3 Quick install*.
- Advanced configuration - opens the advanced configuration menu to configure all settings.
- Monitor Settings - opens a menu to configure monitor settings.

## Monitor settings



The Monitor settings submenu contains display settings for monitor A (and monitor B for hybrid models).

### Display options

Select a transparent background to see the camera display behind the menus.  
Select the color for the cameo borders (black, white or gray).

### Multiscreens

Select the multiscreens to be viewed.



Figure 13 Configure monitors menu - Sequence

### Sequence

Select the length of time a camera remains visible on screen (1 to 60 seconds) in the **Sequence dwell time** field.

Use the the **Add** button to move camera inputs to the sequence list. Use the **Move up** or **Move down** buttons to put them in the desired order. Use **Remove** to clear a single item from the sequence list. Use **Erase** to clear all items from the sequence list.

### Event display

Check the **Contact inputs events**, **Motion detection events** or **Video loss alarms** boxes to display these events on the screen.

Set the length of time these events remain on the screen in the **Display duration** field (non-alarm events only) and enter the number of lines to display in the event list.

## System information



Figure 14 Top menu - System information

The System information menu is accessed from the top menu. The System information menu contains two submenus:

- Status - opens a menu to view status information.
- Logbook - opens a menu to view the system log.

### Status



The Status submenu contains five tabs displaying status information.

#### Version Info

The version information tab displays the installed firmware version, serial number, and other version-related information for service purposes.

#### Storage status

The storage status tab displays information on disk size and content.



Figure 15 Status menu - Storage status

- Earliest recording - displays **date** and **time** of the earliest (oldest) recording on disk.
- Latest recording - displays **date** and **time** of the latest (newest) recording on disk.
- Total Disk Size - displays the total installed disk space.
- RAID status - displays enabled if the disks are used as a RAID array.
- Time till overwrite appr. - estimated time video is retained until overwriting.
- Authenticity check... - click to check authenticity of recorded audio and video.
- Disks in active disk set - gives a status overview of the installed harddisks.

### Video signals

The video signals tab displays the system video mode (PAL or NTSC) and video input status.

### Recording status

Currently active profile - displays current profile

Alarm recording at input - displays which inputs are in alarm recording mode

Motion recording at input - displays which inputs are in motion recording mode

Current recording status - displays video and audio recording mode and status for each input

### Sensors

Displays actual temperature and voltage sensor values. If temperature levels are outside of the normal range, the displayed values are yellow. If this occurs, check that the ambient temperature is within the recommended specifications and that there is proper air ventilation. If the temperature reaches a critical level, the unit automatically shuts down. To restart the unit, disconnect the power cord, wait for at least 30 seconds, and then reconnect the power cord.

Sensor name	Lower limit	Upper limit
Processor	5 °C / 41 °F	100 °C / 212 °F
Air inlet	5 °C / 41 °F	45 °C / 113 °F
Air outlet	5 °C / 41 °F	55 °C / 131 °F
Hard disk #1	5 °C / 41 °F	55 °C / 131 °F
Hard disk #2	5 °C / 41 °F	55 °C / 131 °F
Hard disk #3	5 °C / 41 °F	55 °C / 131 °F
Hard disk #4	5 °C / 41 °F	55 °C / 131 °F

**Table 5.1** Temperature sensors

Voltage level	Lower limit	Upper limit
12 Volt	10.8 V	13.2 V
5 Volt	4.7 V	5.3 V
3.3 Volt	3.1 V	3.5 V

**Table 5.2** Power supply levels

### Logbook



The logbook menu is used to display a filtered history of system events.

#### Logbook filter

Set various filter criteria to search in a specified time period for various system events.

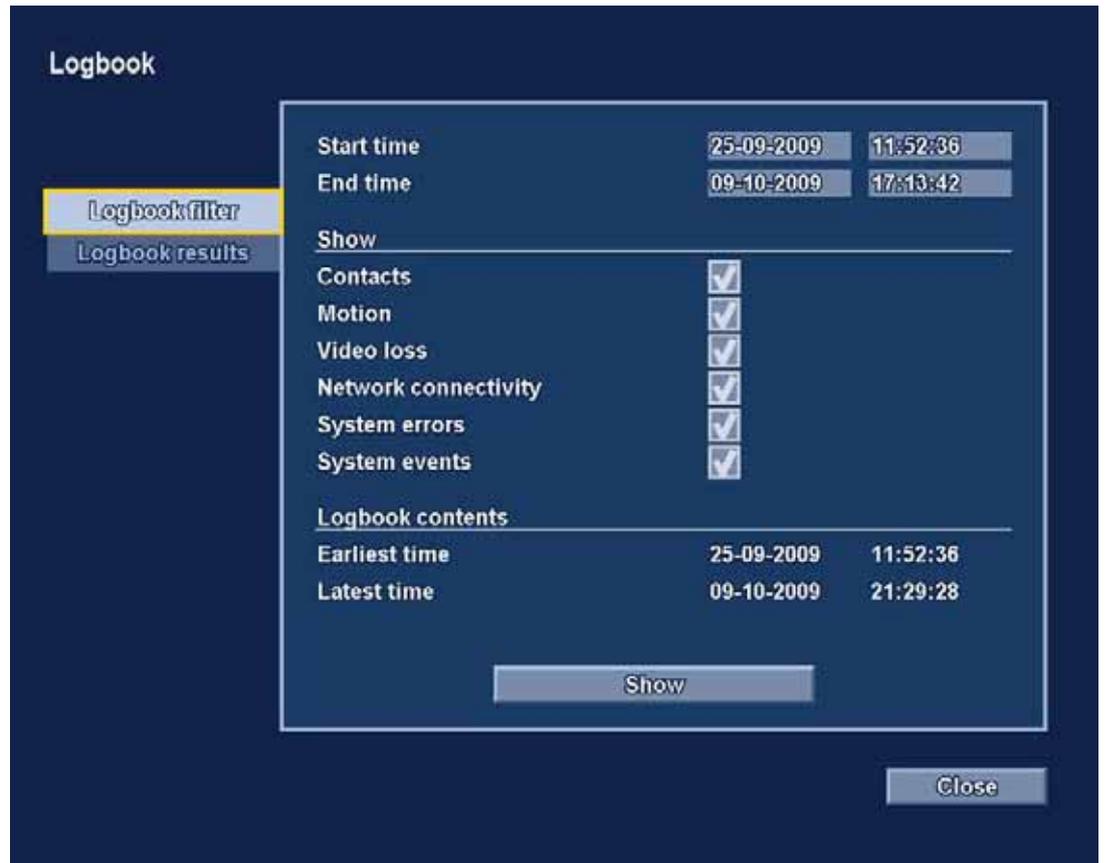


Figure 16 Logbook menu - Logbook filter

- Enter start and end times.
- Make a selection of which system events to show.
- Logbook contents - shows the earliest and latest available log contents.
- Show - click to show the results.

#### Logbook results

Shows the **Date**, **Time**, and **Event** type of various system events. A video preview screen of the selected event is shown, if applicable.

## Event handling

Various types of events change the way the unit works. These events are:

- a contact input signal applied to the unit;
- motion detection in a camera signal;
- a loss of video from one of the cameras;
- an internal alert from the unit itself (i.e. disk failure, temperature alarm).

The way the unit reacts to events depends on how it is programmed.

An event can change the way the unit works and, if it is an alarm, can require a response from the user.

### Background events

Events can change background tasks that a user may not notice. Unit responses that are not visible to the user are, for example, a change in recording speed, the activation of the output relay, or event logging. The unit can also be configured to record upon the activation of an event or it might change the way the camera images are displayed on the monitors without requiring user intervention.

### Alarms

An alarm can cause the unit to react as follows:

- A beeper sounds.
- A status message is displayed.
- An alarm icon is displayed.
- The border around a cameo changes color to red.
- An alarm  indicator, a motion  indicator or a video loss  indicator flashes.
- The indicator on the  key flashes.
- An output relay is activated.
- The view modes on the monitors change.
- A controllable camera might be moved to a pre-defined position.
- Recording behavior changes.
- The unit changes the way it operates via pre-defined profiles.

### Acknowledging an alarm

Press the acknowledge key  to acknowledge the alarm or use the mouse to click

 on the on-screen button panel.

- The beeper is silent.
- The alarm and  indicators are no longer lit.
- The alarm status message disappears.
- The last-used view mode is restored.

The alarm icon remains visible as long as the input causing the alarm is active.

If an alarm is not acknowledged, the beeper switches off after the dwell time but the alarm still needs to be acknowledged.

If auto-acknowledge is enabled, the beeper and the alarm  and  indicators, switch off after the dwell time.

## Contact inputs

### If a contact input causes an alarm

- Monitors A and B (hybrid version only) can display an array of pre-selected cameras.
- Monitor A: The border around the displayed cameos is red. The alarm icon is displayed in the corresponding cameo. An alarm status message is displayed.
- The alarm beeper sounds. The alarm  and the  indicators flash.
- Controllable cameras might be moved to pre-defined positions.

## Motion events

### If a motion detection signal causes an event

- Monitors A and B (hybrid version only) can switch to display the motion events.
- The motion icon is displayed in the corresponding cameo. An alarm status message is displayed.
- The motion  indicator on the front panel flashes.

## Video loss alarm

### If the loss of a video signal causes an alarm:

Monitor A or B (hybrid version only) can be configured to show the video loss signal.

- One or both monitors can switch to a multiscreen view. The lost camera signal is displayed as a black cameo with the video loss message. On monitor A, the border around the camera with the video loss is red. An alarm status message is displayed.
- The alarm beeper sounds.
- The video loss  and  indicators flash.

### Acknowledging a video loss alarm

Press the acknowledge key  to acknowledge a video loss alarm.

- The beeper is silent.
- The video loss  and  indicators are no longer lit.
- The alarm status message disappears.
- The last-used view mode is restored.

If the camera with video loss is visible, the black cameo and the video loss message continue to be displayed as long as there is no video present.

If an alarm is not acknowledged, the beeper switches off after the dwell time but the alarm still needs to be acknowledged.

If auto-acknowledge is enabled the beeper, and the video loss  and  indicators, switch off after the dwell time.

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