



Divar XF

Digital Versatile Recorder



BOSCH

en User manual

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1 Introduction

1.1 Digital video recorder for security applications

The Divar XF is a video and audio recording system that records multiple camera and audio signals while simultaneously providing live multiscreen viewing and playback.

The unit has comprehensive search and playback facilities for viewing stored video. Once configured, all recording takes place in the background without requiring operator intervention. Maximum recording rates of 30 (NTSC) and 25 (PAL) images per second, per channel, are guaranteed. The recording rate and quality are selectable per camera. Up to four internal hard disks can be used to provide various storage capacities for recording.

All models have extensive alarm handling functions and telemetry control. Alarm functions include motion detection in user-definable areas of the image on any camera input.

The unit can be easily operated and programmed via the front panel control keys, mouse, and the on-screen display menu system. Two monitor outputs provide full-screen, quad, and multiscreen viewing. Connect a KBD (Intuikey) keyboard for PTZ control and to improve the ease-of-use.

Looping auto-terminating video inputs and outputs, audio inputs and outputs, alarm inputs and outputs, and remote control connectors are on the rear panel. Two VGA connectors provide outputs for an A and a B monitor. CVBS and Y/C video outputs in either NTSC or PAL are also provided. Monitor A displays full-screen or multiscreen digital pictures that can be frozen and zoomed. Monitor B displays live full-screen or multiscreen pictures.

Use the Control Center PC-application via a network for live viewing, playback, and configuration. Five simultaneous users can control multiple Divar XFs. The Divar XF includes an authenticity check for both local and remote playback. A dedicated PC player is provided for playback of secure video files. The PC-based Configuration Tool facilitates the installation of the unit.

An SDK (software development kit) is available to integrate the Divar XF into third party management software.

1.1.1 Versions

There are various Divar XF models; 8-channel and 16-channel, each with various storage capacities. Both 8-channel and 16-channel versions operate in exactly the same way except that fewer camera, audio, and alarm inputs are present, and the number of available multiscreen views differs.

1.1.2 Manuals

Four manuals are supplied:

- Installation manual - a detailed description for installers on how to install the product.
- Quick Installation guide - gives a brief overview on how to set up and install the product.
- Operation manual - a detailed description for end-users on how to operate the unit.
- Control Center and Archive Player operation manual - a detailed description for end-users and administrators on how to set up and operate the Control Center and Archive Player software.

1.1.3 Features

The Divar XF has the following features:

- 8 or 16 looped-through, auto-terminating camera inputs
- 8 or 16 audio inputs
- Simultaneous recording and playback
- Internal hard disk video storage (front replaceable)

- 10/100Base-T Ethernet port for Ethernet connection and networking
- Two RS232 serial ports for serial communication
- External KBD keyboard input
- Dual monitor outputs
- Full-screen and various multiscreen display capabilities in live and playback modes
- Spot monitor output with sequencing, multiscreen, and OSD
- Two audio outputs (dual mono)
- Motion detection
- 8 or 16 switching (alarm) inputs and 4 alarm outputs
- Video loss detection
- Audible alarm
- Pan, tilt, and zoom camera control via RS485 and biphase
- Local archiving via USB

1.1.4 On-screen help

On-screen context-sensitive help is available for some topics. Just press the help  button to see the help text associated with your current activity. Press the escape  button to exit help.

1.2 Unpacking

Check the package for visible damage. If any items appear to have been damaged in shipment, notify the shipping company. Unpack carefully. This is electronic equipment and should be handled with care to prevent damage to the unit. Do not attempt to use the unit if any components are damaged. If any items are missing, notify your customer service representative or Bosch Security Systems sales representative. The shipping carton is the safest container in which to transport the unit. Save it and all packing materials for future use. If the unit must be returned, use the original packing materials.

1.2.1 Package contents

Check for the following items:

- Digital Video Recorder (Divar XF 16 or Divar XF 8 unit)
- USB mouse
- Quick installation guide
- Divar XF operation manual
- Divar XF Control Center and Archive Player operation manual
- Installation manual (this manual)
- A 25-pin D-type switching and alarm connector board
- A 15-pin D-type connector board (used for PTZ connections)
- Power supply cord
- Shielded network cross-over cable (for service and testing purposes)
- Rack mounting kit
- A CD-ROM containing the software and manuals

1.3 Installation environment

1.3.1 Mounting

The Divar XF is supplied as a desktop unit. If desired, the unit can be rack mounted using the rack mounting kit supplied with the unit. Please refer to the Installation Manual, Section 4.2 Rack mounting, page 23.

1.3.2 Ventilation

Ensure that the location planned for the installation of the unit is well ventilated. Take note of the locations of the cooling vents in the unit's enclosure and ensure that they are not obstructed.

1.3.3 Temperature

Observe the unit's ambient temperature specifications when choosing an installation space. Extremes of heat or cold beyond the specified operating temperature limits may cause the unit to fail. Do not install the unit on top of hot equipment.

1.3.4 Power Supply

Ensure that the site's AC power supply is stable and within the rated voltage of the unit. If the site's AC power is likely to have spikes or power dips, use power line conditioning or an uninterruptible power supply (UPS).

1.4 Associated equipment

A typical system could contain the following components (not included with the unit):

- A primary monitor for multiscreen monitoring (monitor A)
- A second monitor for spot/alarm monitoring (monitor B)
- Cameras with 1 Vpp composite video outputs
- Amplified microphone(s)
- Audio amplifier with speaker(s)
- Video coaxial cable with BNC connectors for connecting the video signals
- Audio cable with RCA connectors for connecting audio signals.
- AC power supply outlet for the unit that allows for secure isolation (the unit has no on/off switch for security reasons)
- A KBD keyboard
- PC for Control Center and Configuration Tool applications
- Pan/tilt/zoom control units

2 Quick install

To get the unit quickly operational, make the connections described below and then enter the relevant data in the Quick install menu. The Quick install menu appears the first time the unit is started. When the relevant information is entered, the unit will be operational.

2.1 Connections

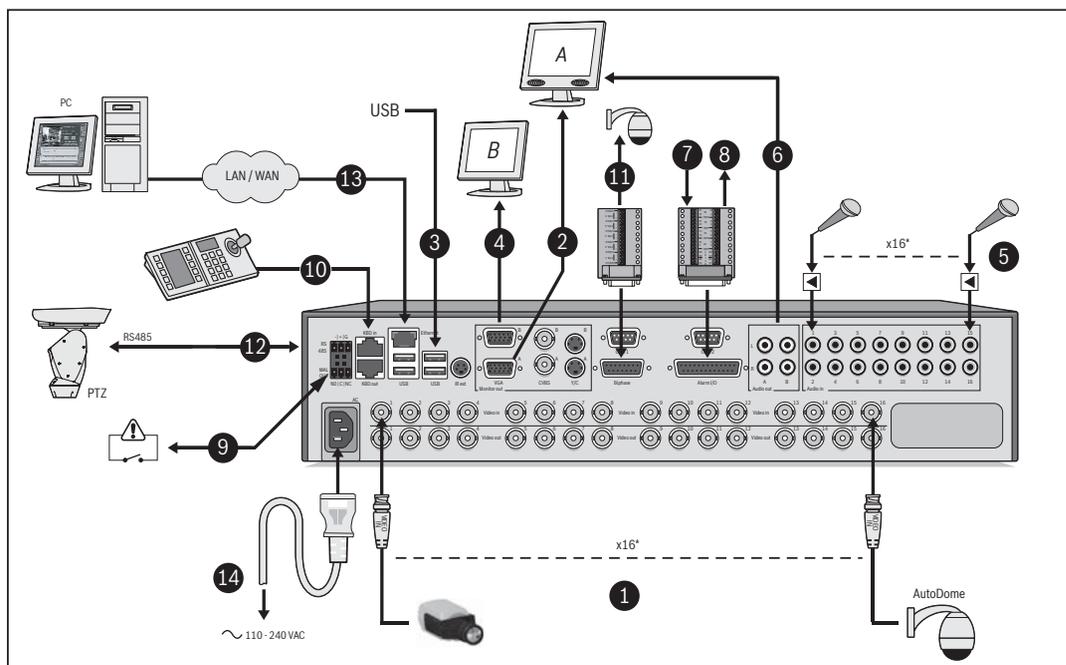


Figure 2.1 Back panel connections

2.1.1 Primary connections

1. Connect the cameras to the BNC camera inputs (automatically terminated).
2. Connect monitor A to the BNC, Y/C, or VGA (supporting 1280x1024) output MON A.
3. Connect (supplied) USB mouse to a USB port.

2.1.2 Optional connections

4. Connect monitor B to the BNC, Y/C, or VGA (supporting 1024x768) output MON B.
5. Connect up to 16 audio signals to the RCA audio inputs.
6. Connect the RCA audio output(s) to the monitor or an audio amplifier.
7. Connect up to 16 (alarm) inputs (via the supplied 25-pin D-type connector board).
8. Connect up to 4 alarm outputs (via the supplied 25-pin D-type connector board).
9. Connect the malfunction output (via the supplied screw terminal adapter).
10. Connect an Intukey keyboard to the KBD In socket and connect the terminator (supplied with the keyboard) to the KBD Out socket.
11. Connect a Bosch pan/tilt/zoom control unit to the Biphase port (via the supplied 15-pole D-type connector board).
12. Connect a third-party pan/tilt/zoom control unit to the RS485 port (via the supplied screw terminal adapter).
13. Connect to your network via the Ethernet port.

2.1.3 Powering up

Switch on all connected equipment.

14. Connect the power cord to the unit.

2.2 First-time use

The unit starts with a multiscreen display. The Quick install menu opens the first time the unit is used. Fill in the basic settings in the four tabs to get the unit operational. The unit begins recording automatically when the Quick install menu is closed.

To open the Quick install menu at any other time:

1. Press the menu  button.
2. The main menu appears on monitor A.
3. Click Configuration and then Quick install.

Navigating

Use the supplied USB mouse. Alternatively, use the following front panel keys:

- Use the enter  button to select a submenu or item.
- Use the arrow     buttons to move through a menu or list.
- Use the escape  button to go back or to switch off the menu.

2.3 Quick install menu

The Quick install menu contains four tabs: International, Schedule, Recording, and Network. Navigate through these tabs using **Back** and **Next**. Click **Undo** to cancel changes made in the active tab. Click **Close** to exit the Quick install menu. Changing Quick install settings overwrites customized settings.

2.3.1 International

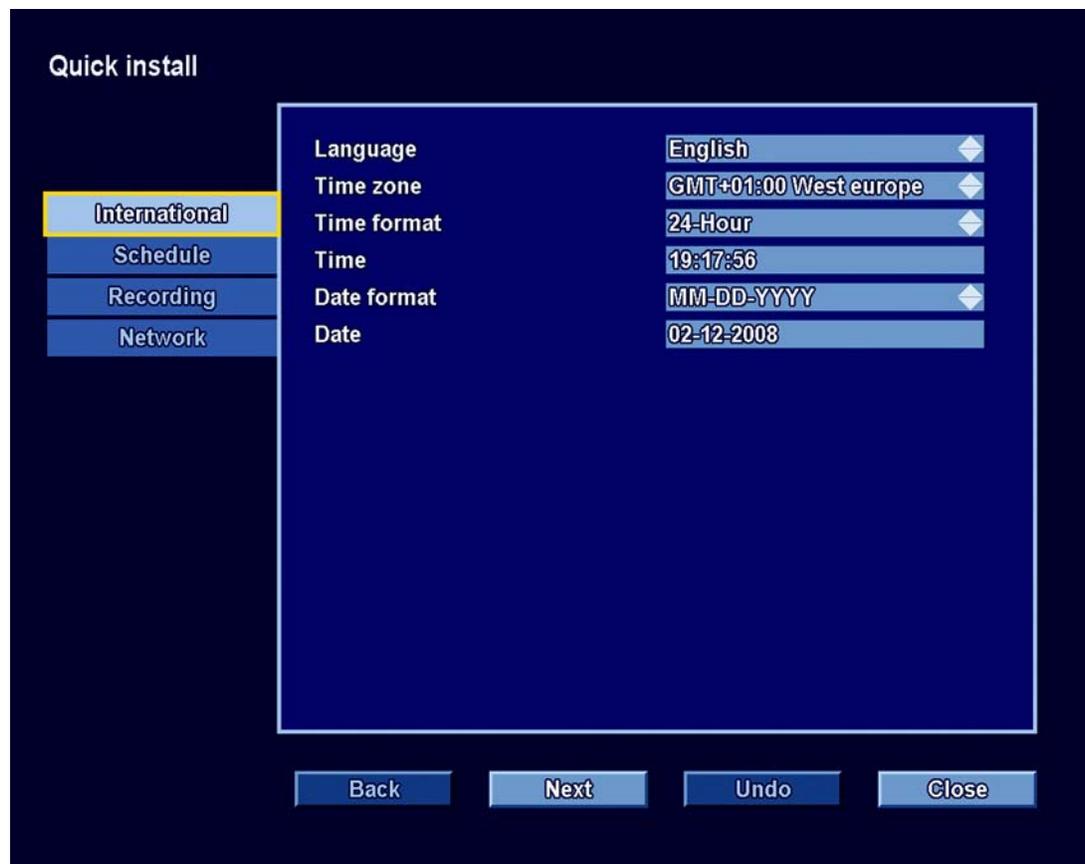


Figure 2.2 Quick install menu - International

Language	Select the language for the menu from the list.
Time zone	Select a time zone from the list.
Time format	Select either a 12 or a 24 hour clock format.
Time	Fill in the current time.
Date format	Select from three date formats which show either the month (MM), the day (DD), or the year (YYYY) first.
Date	Fill in the current date.

Click **Next** to move to the next tab.

2.3.2

Schedule

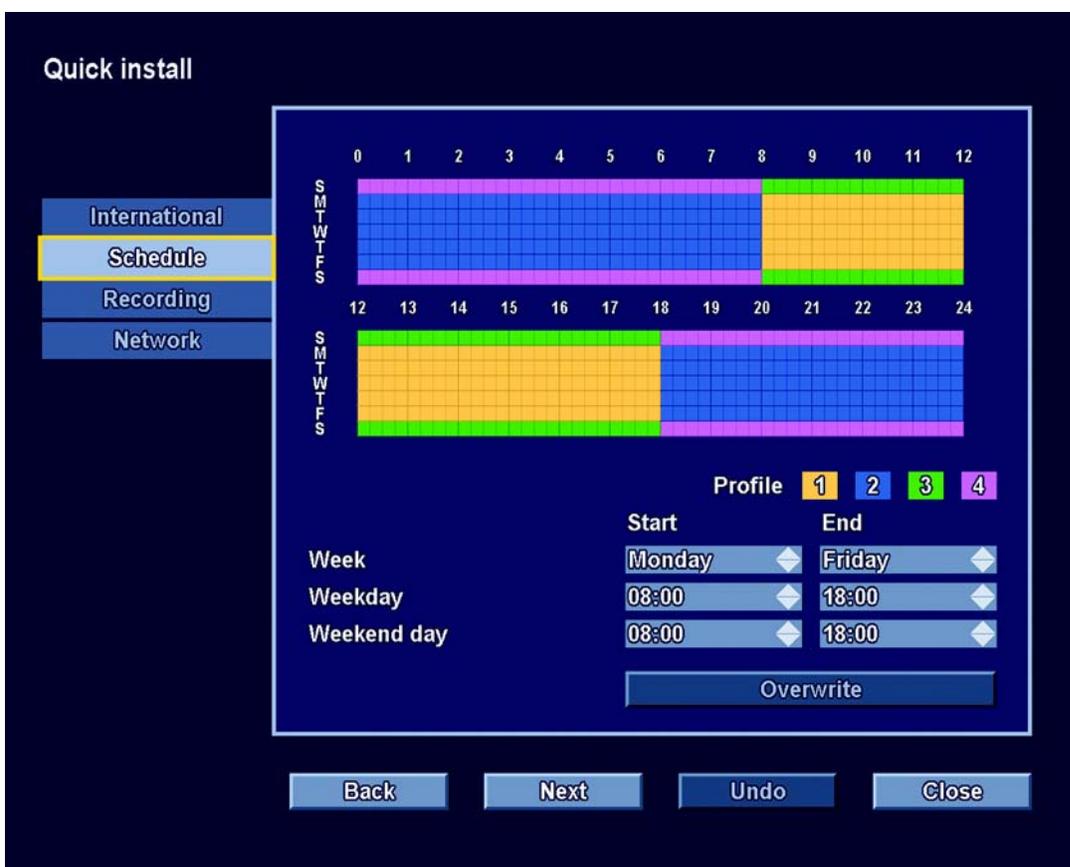


Figure 2.3 Quick install menu - Schedule

A graphical representation of the currently active weekly schedule is shown. Each color represents one of the four available profiles:

- Yellow - Profile 1
- Blue - Profile 2
- Green - Profile 3
- Pink - Profile 4

Click **Overwrite** to start making changes.

- Select at which day the week should start and end.
- Select at which time the day begins and ends on weekdays.
- Select at which time the day begins and ends on weekends.

The graphical representation is automatically updated when settings are changed.
Click **Next** to move to the next tab.

2.3.3

Recording

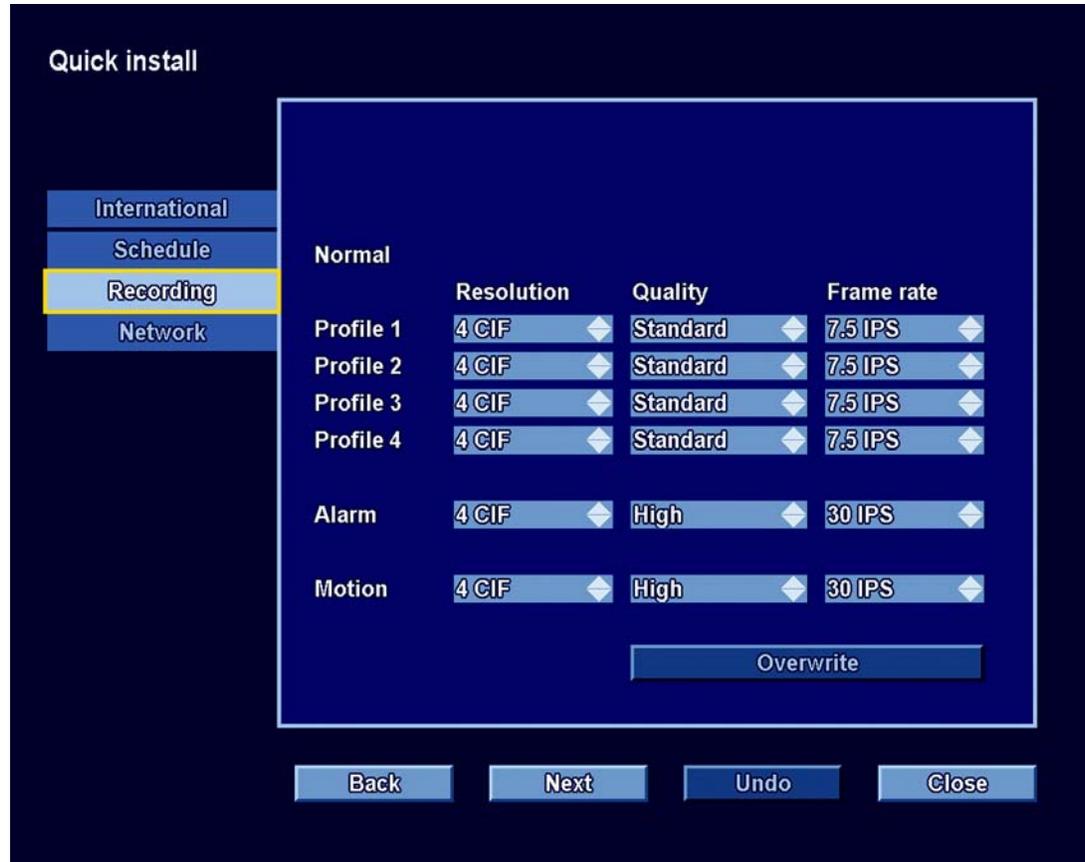


Figure 2.4 Quick install menu - Recording

Set the Normal recording Resolution, Quality, and Frame rate for each profile in the table. Set the Alarm and Motion recording Resolution, Quality, and Frame rate. These settings are generic for all four profiles. In case of previously made advanced settings, click Overwrite to replace them with Quick install settings.

Click **Next** to move to the next tab.

2.3.4 Network

Quick install

- International
- Schedule
- Recording
- Network**

DVR name	DivarXF
DHCP	<input checked="" type="checkbox"/>
IP address	10.10.181.88
Subnet mask	255.255.254.0
Default gateway	10.10.180.1
DNS server	10.10.169.22
Bandwidth limit	100 Mbps
MAC address	00:04:63:0F:C0:A6

Back Next Undo Close

Figure 2.5 Quick install menu - Network

Fill in the settings that control the behavior of the unit with respect to a network.

DVR name	Enter a DVR name to be used in the network.
DHCP	Enable DHCP to have IP address, subnet mask, and default gateway assigned automatically by the network server. The actual values are displayed.
IP address, Subnet mask, Default gateway, and DNS server	Fill in the IP, subnet mask, default gateway, and DNS server addresses when DHCP is disabled.
Bandwidth limit	Restrict the network bandwidth by entering a value between 0.1 and 100 Mbps for the bandwidth limit.
MAC address	The MAC address is read only.

3 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. Refer to *Section 6 Configuration menu* for a full list of available menu items.

3.1 Front panel controls



Fig. 3.1 Front panel controls

3.1.1

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 camera 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
- 
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 video input
- 
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

3.1.2

Indicators

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

-  Power - lights when the unit is powered
-  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
-  Monitor A - indicates monitor A is being controlled
-  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

3.2

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.



Fig. 3.2 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.

3.3

Viewing pictures

The unit has two monitor outputs, A and B. The way in which these monitors display pictures depends on how the system is configured.

3.3.1

Monitor A

Monitor A is the main monitor. It shows full-screen, quad, or multiscreen live or playback camera pictures. 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.

3.3.2

Monitor B

Monitor B displays full-screen, quad, or multiscreen live pictures. When an alarm or motion input is detected, the camera picture with the Alarm/Motion indicator can be displayed on monitor B. When multiple alarms or motion occur, camera pictures are sequenced on monitor B.

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  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  key

3.3.3

Viewing

The drawing shows all possible views for monitor A. 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.

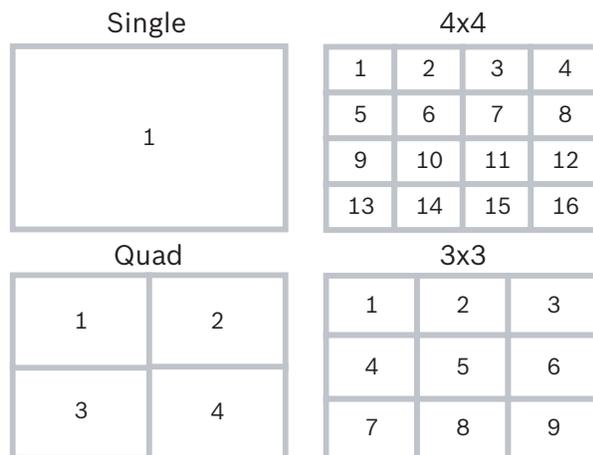


Fig. 3.3 Divar XF supports single, quad, 3x3, and 4x4 screen viewing

The quad mode can have 4 different quad screens that can be shown in sequence to display 16 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 will light (green).
2. Press the multiscreen  key again to go to the next programmed multiscreen view.
 - If you 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 camera you selected appears.
 - The camera key of the selected camera lights (green).
2. While in multiscreen mode, press enter  to view the active cameo in full-screen.

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

If you are viewing a camera picture in full-screen mode, then this picture is frozen. The zoom function can be used on a frozen picture. If you change 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.

3.4 Live and playback

3.4.1 Live mode

The live mode is the normal operating mode of the unit where you watch live pictures from the cameras. From live mode you can switch to playback mode or to the system menu.

3.4.2 Accessing playback functions

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

1. To search, enter the main menu and click **Search**.
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.

3.4.3 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.

3.5 Overview of the menu system

The menu gives access to several functions to help you 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,
- a 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.



Fig. 3.4 Main 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 you have playback rights.

Export

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

This submenu can only be accessed if you have playback rights.

Configuration

The Configuration menu contains three submenus:

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

These submenus can only be accessed if you have administrator rights.

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

Exits the menu.

3.5.1

Access using the front panel keys

To open the menu, press the menu  key.

- The main 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.

3.5.2

Access using the mouse

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

- The main menu appears on monitor A.

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

3.5.3 Access using the Intuikey keyboard

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

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

3.6 Search



Fig. 3.5 Main menu - Search

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

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

3.6.1 Date/time search

- Select start date and time and click Ok to start playback. Playback of the displayed cameos will start.



Fig. 3.6 Search by date and time

3.6.2 Event search

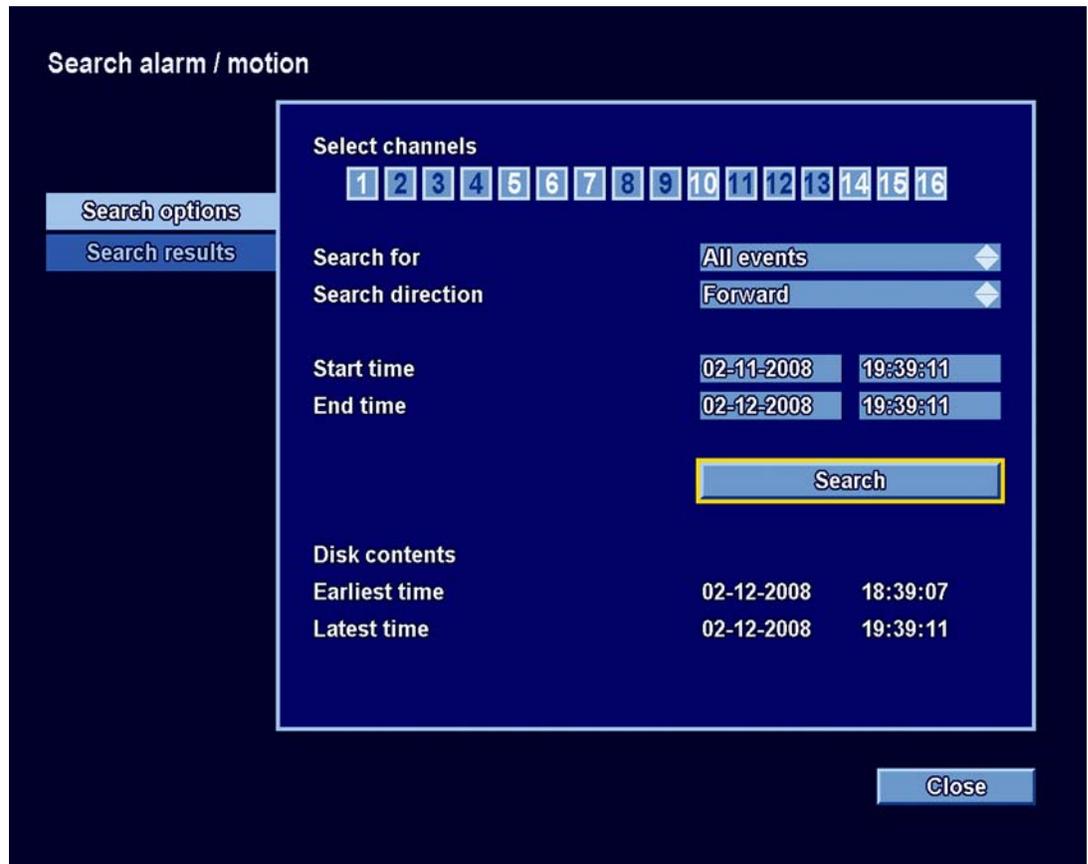


Fig. 3.7 Search alarm/motion menu - Search options

Search criteria

- Under **Select Channels**, specify the camera inputs to search for. The selected inputs will be highlighted.
- Set **Search for** to search for alarm events, motion events, or both. Set to **All events** so that the search is not restricted by an event type.
- 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 **Start time** and **End time**, fill in date and time values to determine the time span of the search.
- Select **Search** to start the search.



Fig. 3.8 Search alarm/motion 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 results menu.

3.7

Export



Fig. 3.9 Main menu - Export video

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

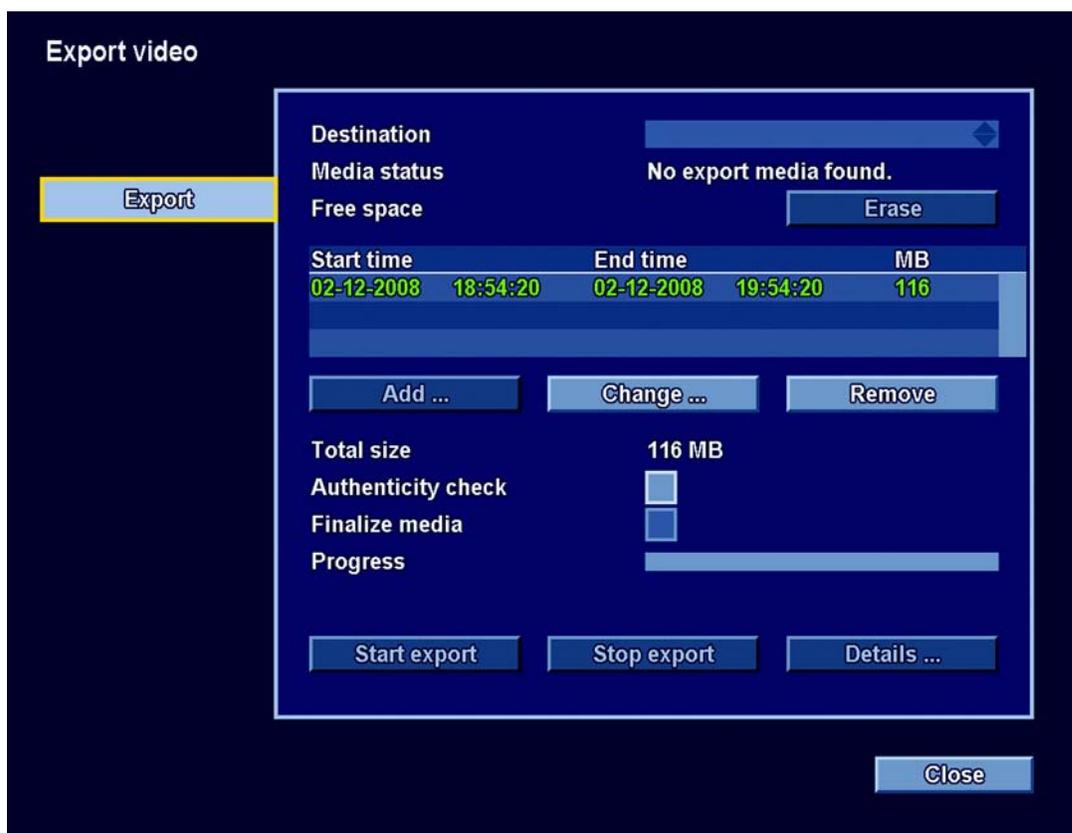


Fig. 3.10 Export video menu

1. Choose a memory device from the **Destination** selection box. **Media status** will display the status of the selected memory device, while **Free space** displays the available space for archiving.
 - Select **Erase** to empty the selected memory device.
2. A list of the video segments to be archived is displayed.
3. To add a video segment to the list, click **Add**.
 - a. Fill in a **Start time** and **End time** for the video segments you wish to archive.
 - b. Select the camera numbers you wish to archive.
 - c. Click **OK** to place the segment in the list.
- 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 Divar's internal hard drive(s) are removed from the list.

4. Place a check mark next to **Authenticity check** to authenticate the video segments before archiving.
5. Select **Start export** to write the video segments to the USB device.
 - a. Select **Stop export** to cancel the archiving process.
 - b. 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.

3.8 System information



Fig. 3.11 Main 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.

3.8.1

Status

The Status submenu contains five tabs displaying status information of the DVR and the internal hard disks.

Version Info

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

Storage status

Displays information on disk size and content.

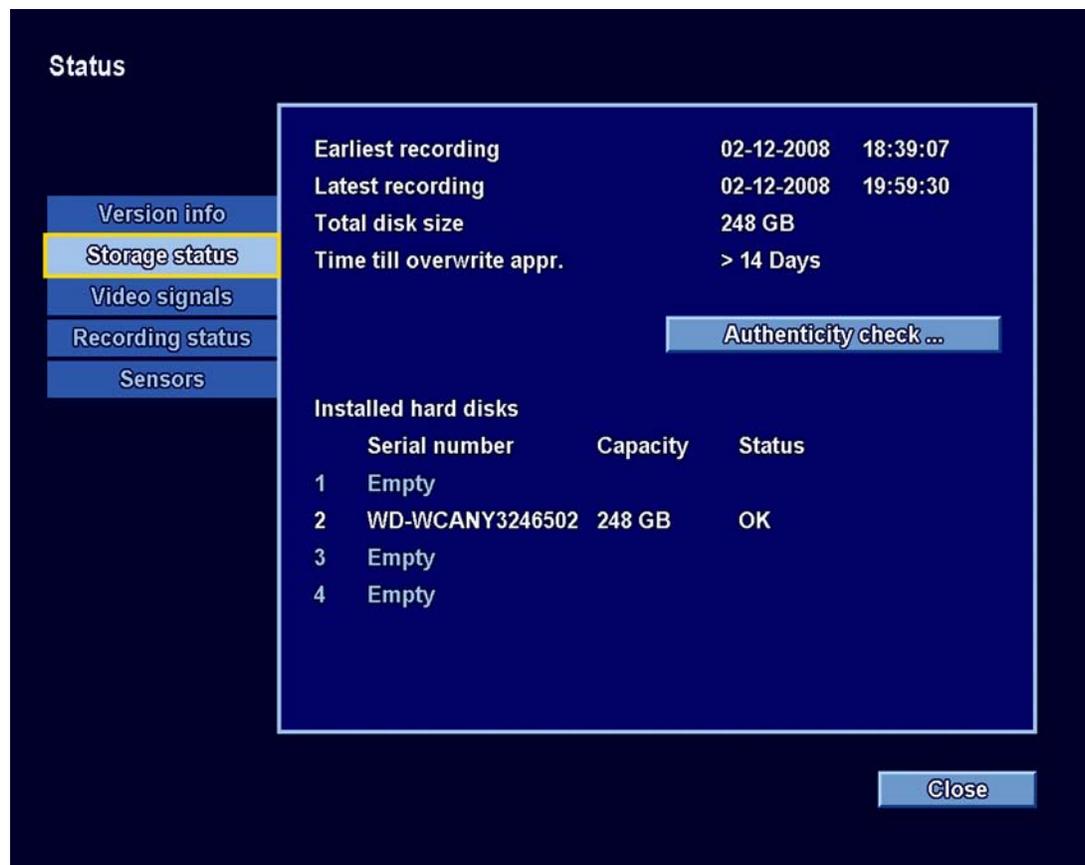


Fig. 3.12 Status menu - Storage status

- 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.
- Time till overwrite - estimated time video is retained until overwriting.
- Authenticity check - click to check authenticity of recorded audio and video.
- Installed hard disks - gives a status overview of the installed harddisks.

Video signals

Displays the system video mode (PAL/NTSC) and video input status.

Recording status

- Currently recording 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 status for each input

Sensors

Displays actual temperature and voltage sensor values. In case temperature levels are outside of the normal range, the displayed values will be yellow. If this occurs, check that the ambient temperature is within the recommended specifications *Section 9.1.2 Environmental* and that there is proper air ventilation. In case the temperature reaches a critical level, the unit will automatically shut 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 3.1 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 3.2 Power supply levels

3.8.2

Logbook

Displays historic system events.

Logbook filter

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

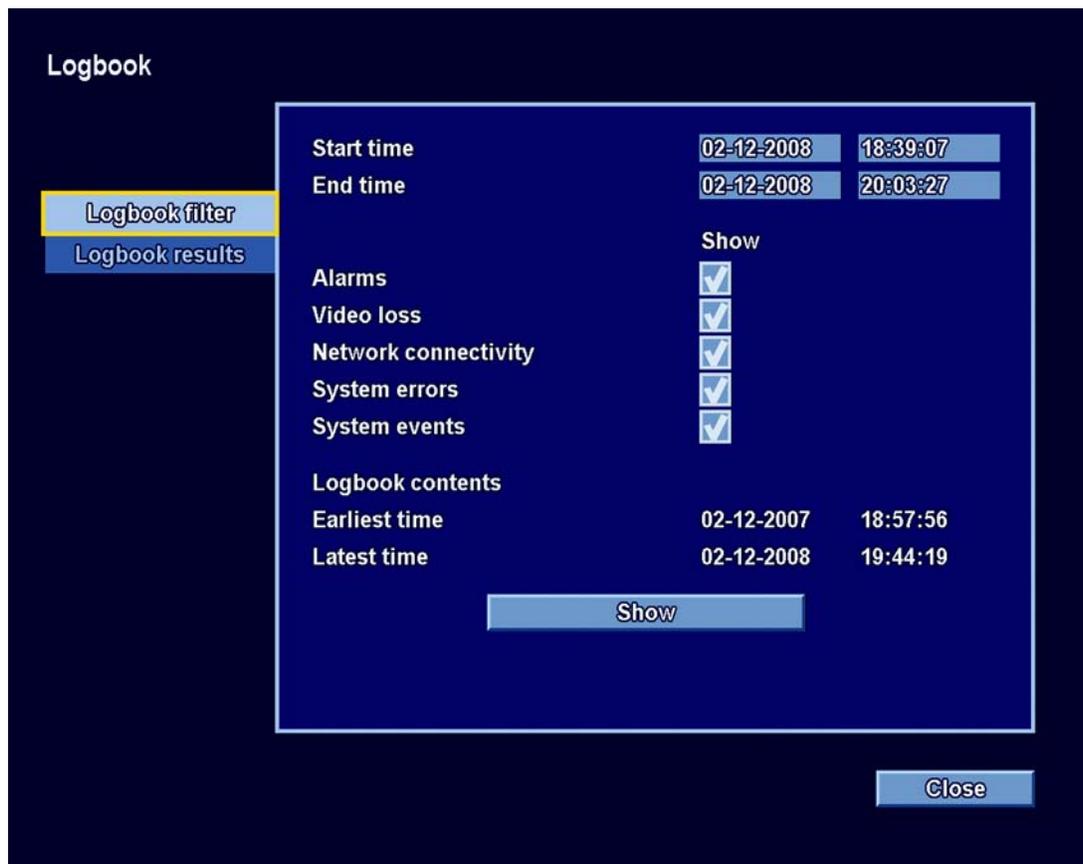


Fig. 3.13 Logbook menu - Logbook filter

1. Enter start and end times.
2. 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.

3.9

Triggers and alarms

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

- an alarm 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 cause either a trigger or an alarm. A trigger changes the way the unit works but does not require a response from the user. An alarm also changes the way the unit works but, in addition, usually activates several indicators and requires the user to acknowledge the alarm situation.

The unit reacts to an event in any one of the following ways:

Alarms

- A beeper sounds.
- A status message is displayed.

- An alarm icon is displayed.
- The border around a cameo changes color to red.
- An alarm  or video loss  indicator flashes.
- The indicator on the  key flashes.
- An output relay is activated.

Alarms and triggers

- A motion  indicator flashes.
- 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.

Background events

Triggers and alarms 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, and event logging. The unit can also be configured to record upon the activation of an alarm input. A trigger may change the way the camera images are displayed on the monitors without requiring your intervention.

3.9.1

Alarm inputs

If an input causes an alarm

- Monitors A and B can switch to a pre-programmed view mode.
- 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.
- Monitor B: Multiscreen or sequenced display of pre-programmed cameras.
- The alarm beeper sounds. The alarm  and the  indicators flash.
- A controllable camera might be moved to a pre-defined position.

Acknowledging an input alarm

Press the acknowledge key  to acknowledge the alarm.

- 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.

3.9.2

Motion events

If a motion detection signal causes an event

- Monitors A and B 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.

3.9.3

Video loss alarm

If the loss of a video signal causes an alarm:

Monitor A or B 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.

3.9.4

Multiple alarms

One or both monitors can switch to a multiscreen view if more than one alarm occurs. The

latest alarm status message is always shown. Press the acknowledge key  to deactivate all alarms.

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