Installation manual

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IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions - All the safety, operating and installation instructions should be read before the unit is operated.

2. Keep these instructions - The safety, operating and installation instructions should be retained for future reference.

3. Heed all warnings - All warnings on the unit and in the operating instructions should be adhered to.

4. Follow all instructions - All operating and use instructions should be followed.

5. Do not use this apparatus near water - for example, in an unprotected outdoor installation; or any area which is classified as a wet location.

6. Clean only with a dry cloth - Unplug the unit from the outlet before cleaning. Do not use liquid cleaners or aerosol cleaners.

7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider that the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or third prong are provided for your safety. If the provided plug does not fit into the outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

SAFETY PRECAUTIONS

CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT OPEN COVERS. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This label may appear on the bottom of the unit due to space limitations.

The lightning flash with an arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.

Attention: Installation should be performed by qualified service personnel only in accordance with the National Electrical Code or applicable local codes.

Power Disconnect. Units have power supplied whenever the power cord is inserted into the power source. The power cord is the main power disconnect for all units.

The socket outlet shall be installed near the equipment and shall be easily accessible.
11. Only use attachments/accessories specified by the manufacturer.

12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. Unplug this unit during lightning storms or when unused for long periods of time.

14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

15. Moving - Disconnect the power before moving the unit. The unit should be moved with care. Excessive force or shock may result in damage to the unit and the hard disk drives.

16. Power Sources - This unit should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply you plan to use, consult your appliance dealer or local power company.

17. Overloading - Do not overload outlets and extension cords as this can result in a risk of fire or electric shock.

18. Object and Liquid Entry - Never push objects of any kind into this unit through openings, as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the unit.

19. Replacement Parts - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

20. Safety Check - Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.

21. Coax Grounding - If an outside cable system is connected to the unit, be sure the cable system is grounded. U.S.A. models only—Section 810 of the National Electrical Code, ANSI/NFPA No.70-1981, provides information with respect to proper grounding of the mount and supporting structure, grounding of the coax to a discharge unit, size of grounding conductors, location of discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.
FCC & ICES INFORMATION
(U.S.A. and Canadian Models Only)
This is a Class B product. This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Reference

Definition of terms
Cameo: Single camera picture in a multiscreen display.
Dwell time: The length of time that an alarm indicator continues to operate after the event causing it has occurred. The length of time a single image of a sequence is shown.
Full-screen: A display that only shows one picture occupying a full screen.
Multiscreen: The division of a display screen so that it shows a certain number of cameras at the same time.
Sequence: Camera pictures shown one after the other in time either in full-screen or quad modes.
Quad: Four camera pictures shown on one display screen.

Icons shown on the screen

- Play forward
- Pause
- Alarm
- Play reverse
- Freeze
- Motion
- Fast forward
- Zoom
- Network
- Fast reverse
- Sequence
- Error
- Sequence
CHAPTER 1 Introduction

Digital video recorder for security applications

The Divar is a video recording system that can record multiple camera signals while simultaneously providing live multiscreen viewing and playback. It combines the functionality of a digital recorder with a multiplexer and a switcher.

The unit has comprehensive search and playback facilities for viewing stored video. Once set up, all recording takes place in the background without requiring operator intervention. Maximum recording rates of 60 (NTSC) and 50 (PAL) images per second in total are guaranteed with unsynchronized cameras. The recording rate and quality are selectable per camera.

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 and on-screen display menu system. One monitor output provides full-screen, quad and multiscreen viewing; another spot/alarm monitoring. A keyboard can be connected for PTZ control and to improve the ease-of-use.

Via a network, the Control Center PC-application can be used for live viewing, playback and configuration. The Divar 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 setup of the unit.
Looping auto-terminating video inputs, video outputs, alarm inputs and outputs, and remote control connectors are on the rear panel. The two monitor outputs provide CVBS video signals in either NTSC or PAL. Monitor A displays full-screen or multiscreen digital pictures that can be frozen and zoomed. Monitor B displays live full-screen pictures.

Features

The Divar has the following features:

- 6, 9 or 16 looped-through, auto-terminating camera inputs.
- Simultaneous recording and playback.
- Internal hard disk video storage.
- Narrow SCSI port for external SCSI storage expansion.
- 10/100Base-T Ethernet port for Ethernet connection and networking.
- RS232 serial port for serial communications.
- External keyboard input and output ports for keyboard connection and system expansion.
- Dual monitor outputs.
- Full-screen and various multiscreen display capabilities in live and playback modes.
- Spot monitor output with sequencing and OSD.
- Motion detection.
- 16 switching (alarm) inputs and 4 alarm outputs.
- Video loss detection.
- Audible alarm.
- Pan, tilt and zoom camera control.

Versions

There are three Divar models; 6-channel, 9-channel and 16-channel, each with various storage capacities. This manual describes the 16-channel version. Both 6-channel and 9-channel versions operate in exactly the same way except that fewer cameras can be connected, there are fewer camera keys and the number of multiscreen views is reduced.

On-screen help

On-screen context-sensitive help is available for all topics. Just press the yellow ALT key for at least one second to see the help text associated with your current activity. Press the escape key to exit help.

For more information please visit:

www.philipscsi.com
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 Philips CSI 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.

Package contents

Check for the following items:
- Digital Video Recorder (Divar 16, Divar 9 or Divar 6 unit)
- Quick reference guide
- Divar operation manual
- Divar Control Center and Archive Player operation manual
- Installation manual (this manual)
- A 25-pin D-type connector board with screw terminals (used for switching and alarm connections)
- A 15-pin D-type connector board with screw terminals (used for PTZ connections)
- Power supply cord
- Network cross-over cable
- Serial RS232 cross-over (null-modem) cable
- Divar loop-through cable
- Rack mounting kit
- A CD-ROM with the software and the manuals.

Installation Environment

Mounting: The Divar is supplied as a desktop unit. If desired, the unit may be rack mounted using the rack mounting kit supplied with the unit.

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.

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.

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 uninterruptable power supply (UPS).
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.
- 75-ohm BNC connectors and video coaxial cable for connecting the video signals.
- AC power supply outlet for the unit that allows for secure isolation. (The unit has no on/off switch for security reasons.)
- A keyboard (KBD-Digital).
- PC for Control Center and Configuration Tool applications.
- Pan/tilt/zoom control units.
- SCSI cable for connection to external storage devices.
- External storage devices (DVAD LP Storage Array or DVAS RAID Storage Array).
- Video Manager for system expansion.
CHAPTER 2

Quick install

This chapter gives instructions on how to quickly get the unit operational. Make the connections described on the following pages and then enter the relevant data in the quick install menu.

The Quick Install menu appears the first time you start the unit. When you have entered the relevant information the unit will be operational.
Quick installation

2-2 Philips Communication, Security & Imaging
Primary connections

1. Connect the cameras to the BNC loop-through camera inputs (automatically terminated).
2. Connect monitor A to the BNC output MON A.

Optional connections

3. Connect monitor B to the BNC output MON B.
4. Connect up to 16 (alarm) inputs via the supplied 25-pin D-type connector board.
5. Connect up to 4 alarm output relays via the supplied 25-pin D-type connector board.
6. Connect a keyboard unit to the KBD IN socket.
7. Connect a pan/tilt/zoom control unit via the supplied 15-pole D-type connector board.
8. Connect to your network via the Ethernet port or use the RS232 connector to connect directly to a PC serial port.
9. Connect an external storage unit via the narrow 50-pin high density SCSI-2 port.

Powering up

10. Switch on all connected equipment.
11. Connect the power cord to the unit.

First-time use

The unit starts with a multiscreen display. The Quick install menu opens the first time you use the unit. Fill in these basic settings to get the unit operational. Select the **Install** item to save your settings and close the menu. When you close the Quick install menu, the unit begins recording automatically.

To open the Quick install menu at any other time:

1. Press the ALT key \( \text{⇒} \) to enter the alternate function mode.
   
   > The ALT indicator lights.

2. Press the menu key \( \text{⇒} \).
   
   > The main menu appears full-screen on monitor A.

Select the System settings menu and then the Quick install submenu.

Navigating

- Use the arrow keys to move through a menu or list.
- Use the select key \( \text{⇒} \) to select a submenu or item.
- Use the escape key \( \text{⇒} \) to go back or to switch off the menu.
Quick Install

QUICK INSTALL MENU >

QUICK INSTALL

<table>
<thead>
<tr>
<th>LANGUAGE</th>
<th>ENGLISH</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIME FORMAT</td>
<td>24-HOUR</td>
</tr>
<tr>
<td>TIME</td>
<td>19:45:00</td>
</tr>
<tr>
<td>DATE FORMAT</td>
<td>YYYY-MM-DD</td>
</tr>
<tr>
<td>DATE</td>
<td>2002-06-20</td>
</tr>
<tr>
<td>ACTIVE CAMS</td>
<td></td>
</tr>
<tr>
<td>ALARM MONITOR</td>
<td>MON A ONLY</td>
</tr>
<tr>
<td>RECORDING SETTINGS</td>
<td>&gt;</td>
</tr>
<tr>
<td>NETWORK SETTINGS</td>
<td>&gt;</td>
</tr>
<tr>
<td>SAVE &amp; EXIT</td>
<td>&gt;</td>
</tr>
<tr>
<td>CANCEL</td>
<td></td>
</tr>
</tbody>
</table>

>> Language
• Select the language for the menu from the list.

>> Time format
• Select either a 12 or a 24 hour clock format.

>> Time
• Fill in the actual 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 actual date.

>> Active cams
• Select the cameras you wish to activate. Only activated cameras are configured after exiting the Quick Install menu. Press the camera keys to select or deselect a camera. A check mark means selected.

>> Alarm Monitor
• Select the monitor on which input alarm messages are displayed.

>> Recording settings
• Opens recording settings submenu to fill in the basic recording settings for the day and weekend/night profiles.

>> Network settings
• Opens network settings submenu to fill in the settings that control the behavior of the unit with respect to a network.

>> Save & exit
• Select this item to load the settings you have made into the unit and exit the Quick Install.

>> Cancel
• Select this item to exit the Quick Install without saving.
>> Recording settings

<table>
<thead>
<tr>
<th>RECORDING SETTINGS</th>
<th>DAY PERIOD</th>
<th>WEEKEND</th>
<th>REC DAY</th>
<th>REC WEEKEND/NIGHT</th>
<th>ENABLE ALARM INPUTS FOR</th>
<th>ALARM INPUT RECORDING</th>
<th>ENABLE MOTION FOR</th>
<th>MOTION RECORDING</th>
<th>APPROX. REC. DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8:00</td>
<td>SAT AND SUN</td>
<td>1 IPS/CAM</td>
<td>2 IPS/CAM</td>
<td>DAY/NIGHT</td>
<td>12.5 IPS/INPUT</td>
<td>NIGHT</td>
<td>5 IPS/CAM</td>
<td>036 HOURS</td>
</tr>
</tbody>
</table>

>> Day period
- Fill in a start time and an end time to define the period during which the day profile is active.
- The weekend/night profile is active for the rest of the 24-hour period.

>> Weekend
- When a day is defined as a weekend day, then the weekend/night profile is active that whole day.
- Define the weekend as either Saturday and Sunday or just Sunday.
- Select none if you wish the weekend to be the same as the other days of the week.

>> Rec day
- Select the normal recording speed to be used for each of the activated cameras during the day profile.
- The Images Per Second (IPS) rates available for PAL range from Never, 0, 1/10 (one image every 10 seconds), up to 25 IPS.
- The Images Per Second (IPS) rates available for NTSC range from Never, 0, 1/10 (one image every 10 seconds), up to 30 IPS.
- Set the recording speed to NEVER to not record a camera at all. No pre-alarm recording is done and the camera cannot be viewed over the network.

>> Rec weekend/night
- Select the normal recording speed to be used for each of the activated cameras during the weekend/night profile.
- The Images Per Second (IPS) rates available for PAL range from Never, 0, 1/10 (one image every 10 seconds), up to 25 IPS.
- The Images Per Second (IPS) rates available for NTSC range from Never, 0, 1/10 (one image every 10 seconds), up to 30 IPS.
- Set the recording speed to NEVER to not record a camera at all. No pre-alarm recording is done and the camera cannot be viewed over the network.

>> Enable alarm inputs for
- Select the profiles during which alarm inputs are enabled.
- Choose day only, weekend/night only, both day and weekend/night or none.

>> Alarm input recording
- An activated input alarm can increase the recording speed of a camera. Select the recording speed to be used when an input is activated.
- The camera with the number that corresponds to the alarm input number is recorded at the speed you set.
Quick install

>> Enable motion for
  • Select the profiles during which motion events are enabled. Choose day,
    weekend/night, both day and weekend/night or none.
  • Press the camera keys to select or deselect the cameras for which motion
    should be enabled. A check mark means enabled.

>> Motion recording
  • A camera can be recorded at an increased recording speed when motion is
    detected. Select the recording speed to be used for each of the cameras
    when motion is detected.

>> Approximate recording duration
  • This is an estimate of the recording duration based on the total amount of
    storage space available and the recording setup. For event recording, the
    following parameters are used:
    - During the day, one camera is in input alarm recording 5% of the
      time and every motion enabled camera is in motion recording 10% of
      the time.
    - During the night and weekend, one camera is in input alarm
      recording 1% of the time and in motion recording for 3% of the time.

>> Network settings

<table>
<thead>
<tr>
<th>NETWORK SETTINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHCP</td>
</tr>
<tr>
<td>DVR NAME</td>
</tr>
<tr>
<td>IP ADDRESS</td>
</tr>
<tr>
<td>SUBNET MASK</td>
</tr>
<tr>
<td>DEFAULT GATEWAY</td>
</tr>
<tr>
<td>MAC ADDRESS</td>
</tr>
<tr>
<td>BANDWIDTH LIMIT</td>
</tr>
</tbody>
</table>

>> DHCP
  • Set DHCP to Yes to have IP address, subnet mask and default gateway
    assigned automatically by the network server. The actual values are
    displayed.

>> DVR name
  • Enter a Divar name to be used in the network.

>> IP address, Subnet mask and Default gateway
  • Fill in the IP, subnet mask and default gateway addresses when DHCP is
    set to No.

>> MAC address
  • The MAC address is read only.

>> Bandwidth limit
  • Restrict the network bandwidth by entering an MBPS between 0 and 100
    for the bandwidth limit.
The instructions in this chapter explain the purpose of the front panel keys. The functions available can be limited by setting passwords.

An administrator has access to many more functions in the menu. Refer to Chapter 5 - Advanced Menu Setup for a full list of available menu items.
Front panel controls

Indicators

The power indicator  lights to indicate that power is being supplied to the unit.

The indicators across the top of the unit light or flash to alert you to various operating conditions.

- **Record** - lights when the unit is recording video.
- **Network** - lights when a remote user is connected to the unit.
- **Alarm** - flashes when an alarm is detected.
- **Motion** - flashes when motion is detected in a camera signal.
- **Video loss** - flashes when a video loss condition is detected for a camera input.

Keys

The keys on the front panel can be used for controlling primary functions or alternate functions. Symbols for the primary functions are shown above the keys. Symbols for the alternate functions are shown below the keys.

The alternate functions are activated by first pressing the ALT key  and then the desired key. When the alternate function mode is active, the light below the ALT key is lit.

The unit automatically exits the alternate mode if the monitor A key , monitor B key  or sequence key  is pressed. When in a menu, the keys operate according to their alternate function.
Primary functions

(light below ALT key off)

**Live**
- Live key - press to switch to live viewing.

**Search**
- Search key - press to open a search menu to look for recorded events.

**Reverse**
- Reverse key - in live mode, press to start reverse playback of recordings for the displayed cameras.
- - in playback mode, press to speed up rewind.
- - in pause mode, press to step back one frame.

**Pause**
- Pause key - in live mode, press to freeze a camera picture.
- - in the playback mode, press to freeze playback picture; press for longer than one second to protect recordings.

**Play**
- Play key - in live mode, press to resume playback from the last used playback position.
- - in pause mode, press to resume playback.

**Fast forward**
- Fast forward - in live mode, press to start playback from one minute earlier.
- - in playback mode, press to speed up the playback rate.
- - in pause mode, press to step forward one frame.

**ACK**
- ACK key - press when flashing to acknowledge an alarm.

**Multiscreen**
- Multiscreen key - press to see different monitor display layouts.

**ALT**
- ALT key - switches the front panel keys between a normal function and an alternate function (shown below the key).
- - press for longer than one second to get on-screen help.

**1 - 16 Camera keys**
- Camera keys - press to see a full-screen display of the camera's picture.
- - in the menu mode, press to select the camera or enter a password.
Alternate functions

(light below ALT key is lit)

F1 key - restores defaults in active menu.
F2 key - is assigned a specific function in some submenus.
Arrow keys: - move around through menu items or values.
   - Left
   - Up
   - Down
   - Right
Select key - selects a submenu or menu item, or saves selections made in menus.
ESC key - press to return to previous level or to exit menu system without saving.
   - press to leave help system.

Menu key - opens the menu system.
Mon A key - assigns front panel keys to monitor A.
Mon B key - assigns front panel keys to monitor B.
Sequence key - view cameras in sequence on full-screen or quad displays.
Zoom key - zooms in on the active camera display (full-screen or active cameo).
Viewing pictures

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

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.

Monitor B
Monitor B displays a single full-screen picture of a selected camera or a sequence of full-screen 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 light on the front panel is lit.
2. If is not lit, press the ALT key and then press the monitor A key .

To control the display on monitor B:
1. Check that the light on the front panel is lit.
2. If is not lit, press the ALT key and then press the monitor B key .

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 can also influence the multiscreen views available.

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:

1. Press the multiscreen key [MultiScreen] 1.
   > A multiscreen display of camera pictures appears on monitor A.
2. Press the multiscreen key [MultiScreen] again to go to the next programmed multiscreen view.
   > If you continue to press the multiscreen key [MultiScreen], 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. Press the multiscreen key [MultiScreen] to go back to your previous multiscreen view on monitor A.

Sequence

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

1. Press the ALT key [Alt] and then the sequence key [Sequence].
   > The [Sequence] indicator lights.
   > A sequence of camera pictures appears, each for a pre-programmed dwell time.
2. Press the ALT key [Alt] and then the sequence key [Sequence] 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. Press the ALT key [Alt] and then the multiscreen key [MultiScreen].
   > The multiscreen key indicator flashes.
   > The border around the active cameo is green.
   > The camera key of the camera shown in the active cameo lights (green).
2. Use the arrow keys if you wish to select a different cameo.
3. Press a camera key to display that camera’s picture in the active cameo.
   > The camera is assigned and the following cameo becomes active.
4. Continue to press camera keys to assign camera pictures to cameos.
5. Press the ALT key [Alt] to interrupt cameo assignment and exit the assignment mode.
   > The assignment mode is automatically ended when the last cameo has been assigned.

The cameo assignment that you make is used in playback mode as well as in live mode.

Image freeze

Freezing a camera shot on monitor A:

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

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 camera picture:

1. Press the ALT key  Alt .
   > The ALT indicator lights.

2. Press the zoom key  Zoom .
   > The zoom indicator lights.
   > The picture is enlarged by a factor of 2.

3. Use the arrow keys to select the area of the picture to be displayed.

4. Press the zoom key  Zoom again to zoom in further.
   > The picture is enlarged by a factor of 4.

5. Use the arrow keys to select the area of the picture you want to see.

6. Press the zoom key  Zoom again to return to a full picture and leave the zoom mode.
   > The zoom indicator no longer lights.

7. Press the ALT key  Alt to return the keys to normal operation.
   > The ALT indicator no longer lights.
Live, playback and search modes

Live mode

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

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

Press the search key \( \text{Search} \) to switch to the search mode. The search menu opens.

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

- Press the rewind key \( \leftarrow \) to start reverse playback of recordings for the displayed cameras.
- Press the forward key \( \rightarrow \) to start playback from one minute earlier.
- Press the play key \( \triangleright \) to resume playback from the last selected playback position.

Press the live key \( \text{Live} \) 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 \( \leftarrow \) to start reverse play of recordings. Pressing it again and again increases the display rate to a maximum and then back to normal speed again. Press the rewind key \( \leftarrow \) in the pause mode to step back one field at a time.
- Press the pause key \( \triangleright \) to freeze the picture.
- Press the forward key \( \rightarrow \) to start forward playback of recordings. Pressing it again and again increases the display rate to a maximum and then back to normal speed again. Press the forward key \( \rightarrow \) in the pause mode to step forward one field at a time.
- Press the play key \( \triangleright \) to resume playback.

Press the live key \( \text{Live} \) to switch back to live viewing or press the search key \( \text{Search} \) to switch to the search mode. In both cases, playback stops.

Protecting a video recording

1. Press the pause key \( \triangleright \) for longer than one second during playback to mark the beginning of a protected recording.
   > A dialog window appears.
   > The time and date of the marker at which protection of the video starts is shown.

2. Press the select key \( \triangleright \) to continue playing the video you wish to protect.

3. During playback, press the pause key \( \triangleright \) for longer than one second again to mark the end of a protected recording.
   > A dialog window appears.
   > The date and time of the beginning and end markers of the video to be protected is shown.

4. Select Yes to protect the marked video from deletion.
Search mode

Press the search key \( \text{search} \) to open the search menu. Use the search menu to search for stored video recordings.

<table>
<thead>
<tr>
<th>PLAYBACK SEARCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEARCH EVENT FILTER</td>
</tr>
<tr>
<td>CAMERA</td>
</tr>
<tr>
<td>START TIME</td>
</tr>
<tr>
<td>SEARCH RESULTS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DISK CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EARLIEST TIME</td>
</tr>
<tr>
<td>LATEST TIME</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FILTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16</td>
</tr>
</tbody>
</table>

>> SEARCH CRITERIA

- Set the Event filter to search for only alarm events, only motion events or both.
- Set to None so that the search is not restricted by events.
- Fill in a time and date from where to start the search.
- Specify the cameras to search for. The selected cameras are shown at the bottom of the menu with a check mark.
- Press a camera key to change the selection.
- Select Search results to see a list of results.
- Press the escape key \( \text{esc} \) to exit the search mode and return to the previous mode.

>> SEARCH RESULTS

- The recording fitting the filter and closest to the start date and time is shown first.
- Use the up/down arrow keys to move through a long list. The selected recording is shown.
- Press the select key \( \text{select} \) for a full-screen playback of the selected recording.
- Press the search key \( \text{search} \) during playback to return to the list.
- Press the escape key \( \text{esc} \) to return to the filter menu.
Triggers and alarms

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

- 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.

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

An event can cause either a trigger or an alarm. A trigger can change the way the unit works but does not require a response from the user. An alarm can also change the way the unit works but, in addition, it usually activates several indicators and requires that the user acknowledges the alarm situation.

The unit can react 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 can change color
- An alarm indicator , , or flashes
- The indicator flashes
- An output relay is activated

**Alarms and Triggers**
- The view modes on the monitors change
- A controllable camera is moved to a pre-defined position.
- Recording speed changes
- The unit changes the way it operates via pre-defined profiles.

---

**Background events**

Triggers and alarms can change background tasks that you, as user, may not even 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. A trigger may change the way the camera images are displayed on the monitors without requiring your intervention.
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 each cameo. An alarm status message is displayed.
- Monitor B: Sequenced display of pre-programmed cameras.
- The alarm beeper sounds. The alarm △ and the status indicators flash.
- A controllable camera might be moved to a pre-defined position.

Acknowledging an input alarm

1. Press the acknowledge key ▶️ to acknowledge the alarm.
   > The beeper is silent.
   > The alarm △ and status 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 status indicators switch off after the dwell time.

Motion alarm

If a motion detection signal causes an alarm

- Monitors A and B can switch to a pre-programmed view mode.
- Monitor A: The border around the displayed cameos is yellow. The motion icon is displayed in each cameo. An alarm status message is displayed.
- Monitor B: Sequenced display of pre-programmed cameras.
- The alarm beeper sounds. The motion △ and status indicators flash.
- A controllable camera might be moved to a pre-defined position.

Acknowledging a motion alarm

1. Press the acknowledge key ▶️ to acknowledge the alarm.
   > The beeper is silent.
   > The motion △ and status indicators are no longer lit.
   > The alarm status message disappears.
   > The last-used view mode is restored.

The motion 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 motion △ and status indicators switch off after the dwell time.
Video loss alarm

If the loss of a video signal causes an alarm:
Monitor A or B can be set up to show the video loss signal.
- Monitor A switches to multiscreen view. The lost camera signal is displayed as a black cameo with the video loss message. The border around the camera with the video loss is red. An alarm status message is displayed.
- Monitor B: Sequenced display of cameras that do not have video loss.
- The alarm beeper sounds.
- The video loss and indicators flash.

Acknowledging a video loss alarm

1. 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, and the video loss and indicators switch 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.

Multiple alarms

Monitor A switches to multiscreen view if more than one alarm occurs. The latest alarm status message is always shown. Pressing the acknowledge key deactivates all alarms.

Disk-full alarm

A disk-full alarm message is displayed on monitor A and the alarm beeper sounds.

1. Press the acknowledge key to acknowledge the disk-full alarm.
   > The beeper is silent.
   > The disk-full alert message disappears.
2. To avoid losing information, take corrective action to free disk space (for example, archive and delete some recordings).
CHAPTER 4  Hardware setup

This chapter contains detailed information about the connection of external equipment to the unit. The connector types and their pin signals are described. All the connectors are located at the rear panel of the unit.
Hardware setup

Rack mounting

The Divar can be mounted in a 19-inch rack. A rack mounting kit is supplied with the unit that includes:
- left and right rack mount ears
- four Torx screws with integrated lock washers.
- a Torx screwdriver

Mounting
1. Remove the four Torx screws (two on each side) located near the front panel on the right and left side of the housing.
2. Attach the mounting ears to each side ensuring that the lip is under the unit. Use the four Torx screws with lock washers and tighten securely.
3. Install the unit into the rack using the rack manufacturer’s supplied hardware.

When installing the assembly into the rack, be careful not to restrict airflow around the vent holes located in the side panels or to exceed the recommended operating temperature.

Camera connections

Connect cameras to the unit using 75-ohm video coaxial cables with BNC connectors. There are two BNC connectors for each camera. Either connector can receive a camera’s signal. This signal is looped-through (directly connected) to the other connector, so that you can send the camera’s signal to other equipment. The camera input connectors are auto-terminating, so you do not need to add a terminator to the output connector if no additional equipment is connected.

If the camera signal is looped-through to additional equipment, make sure that the end of the video line is terminated with a 75-ohm termination.

The Divar automatically configures itself as a PAL or NTSC unit. The unit determines the standard by detecting the signal format of the first connected camera (lowest camera input number).

Specification

Input signal: Composite video 1Vpp, 75 Ohm
Color standard: PAL/NTSC, auto-detect.
Gain control: Automatic or manual gain control for each video input.
Connector type: BNC looped-through, automatic termination.
Monitor connections

Connect the unit to the monitors using 75-ohm video coaxial cables with BNC connectors. The unit provides a 1Vpp CVBS signal.

If the monitor has a loop-through connection and you are not using the loop-through output, then select the 75-ohm impedance setting on the monitor. If the monitor’s loop-through output is connected to an additional device, the device’s termination is set to 75 ohms and the monitor’s termination is set to high impedance. (Note that this is not necessary on devices with automatic termination.)

Specifications

Output signal: Composite video 1Vpp, 75 Ohm, Sync. 0.3Vpp ±10%
Resolution: 720 x 576 PAL, 720 X 484 NTSC
Connector type: BNC

Console port connection

The serial RS232 console port connector is used to connect a PC to the unit for configuration or service purposes. Use a null-modem cable to connect the serial port of the PC to the unit. The Baud rate can be selected in the menu system.

Specification

Connector type: 9-pole D-type male connector
Maximum input voltage: ±25V
Communicaton protocol: Output signals according EIA/TIA-232-F

RS232 console port socket.

<table>
<thead>
<tr>
<th>Signal Name:</th>
<th>Pin no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCD_in</td>
<td>1</td>
<td>Carrier detection signal (not used).</td>
</tr>
<tr>
<td>RX</td>
<td>2</td>
<td>RS232 receive signal</td>
</tr>
<tr>
<td>TX</td>
<td>3</td>
<td>RS232 transmit signal</td>
</tr>
<tr>
<td>N/C</td>
<td>4</td>
<td>No Connection</td>
</tr>
<tr>
<td>System Ground</td>
<td>5</td>
<td>System Ground</td>
</tr>
<tr>
<td>N/C</td>
<td>6</td>
<td>No Connection</td>
</tr>
<tr>
<td>RTS</td>
<td>7</td>
<td>RS232 request to send signal</td>
</tr>
<tr>
<td>CTS</td>
<td>8</td>
<td>RS232 clear to send signal</td>
</tr>
<tr>
<td>N/C</td>
<td>9</td>
<td>No Connection</td>
</tr>
</tbody>
</table>

Panel view
**Keyboard connections**

The keyboard input and output connectors are used to connect an external keyboard to the unit. Connect the keyboard to the KBD IN connector. Up to 4 external keyboards can be connected when the optional keyboard port expander (LTC2604) is used.

For short distances (up to 30m), standard 6-core telecom flat cable can be used to supply power and signal connections for the keyboard.

For distances over 30m, the Keyboard Extension Kit (LTC 8557) must be used. This kit provides junction boxes, cables and the appropriate power supply for the external keyboards. The recommended cable type is Belden 9841 or equivalent.

**Divar connection**

The KBD IN and KBD OUT connectors can also be used to connect several Divar units to each other. The loop-through connector arrangement allows easy interconnection of up to 30 Divars. The connection uses RS485-based communications.

**Specifications**

<table>
<thead>
<tr>
<th>Communicaton protocol:</th>
<th>RS485</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum signal voltage:</td>
<td>± 12V</td>
</tr>
<tr>
<td>Power supply:</td>
<td>11 - 12.6V, maximum 400mA</td>
</tr>
<tr>
<td>Maximum cable length:</td>
<td>1.5 kilometers</td>
</tr>
<tr>
<td>Cable type:</td>
<td>black (cross-over) cable (supplied with keyboard)</td>
</tr>
<tr>
<td>Termination:</td>
<td>390 Ohm terminator</td>
</tr>
</tbody>
</table>

**Keyboard In - RJ11 socket (KBD IN)**

<table>
<thead>
<tr>
<th>Pin no.</th>
<th>Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+12 V DC (11V Min to 12.6V Max, 400mA Max)</td>
</tr>
<tr>
<td>2</td>
<td>System ground</td>
</tr>
<tr>
<td>3</td>
<td>Keyboard plus line</td>
</tr>
<tr>
<td>4</td>
<td>Keyboard minus line</td>
</tr>
<tr>
<td>5</td>
<td>System ground</td>
</tr>
<tr>
<td>6</td>
<td>System ground</td>
</tr>
</tbody>
</table>

**Keyboard out - RJ11 socket (KBD OUT)**

<table>
<thead>
<tr>
<th>Pin no.</th>
<th>Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No Connection</td>
</tr>
<tr>
<td>2</td>
<td>System ground</td>
</tr>
<tr>
<td>3</td>
<td>Keyboard minus line</td>
</tr>
<tr>
<td>4</td>
<td>Keyboard plus line</td>
</tr>
<tr>
<td>5</td>
<td>System ground</td>
</tr>
<tr>
<td>6</td>
<td>No Connection</td>
</tr>
</tbody>
</table>

Panel view
Ethernet connection

The standard RJ-45 Ethernet socket is used to connect the unit directly to a PC or to a network. To connect directly to a network hub, use a straight-through network cable. To connect directly to a PC, use the supplied cross-over network cable. Consult with your local IT personnel for the specific type of cable needed. The cable length from node to node is limited to 100 feet (30.5 meters) maximum length and 6 feet (1.8 meters) minimum length.

Network configuration

The Divar is delivered with the DHCP function switched on, so IP addresses are assigned automatically if the network server uses DHCP. (Refer to the System settings/Connectivity/Network setup menu.)

Specifications

Connection: 10/100 BaseT, IEEE 802.3
Differential signal voltage: ± 2.8V max, inputs have transient overvoltage protection.
Port details: IEEE 802.3/802.3u - 100Base-TX/10Base-T physical layer.
Auto Negotiation: 10/100, Full / Half Duplex
Cable length: 100 Meters: 100 Ohm unshielded twisted pair cable, category 3/4/5.
100 Meters: 150 Ohm shielded twisted pair cable.
Impedance: In-built compensation for impedance matching.
Indicators: ACT, 10, 100

<table>
<thead>
<tr>
<th>Signal Name</th>
<th>Pin no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAN_TX+</td>
<td>1</td>
<td>Ethernet transmit line plus</td>
</tr>
<tr>
<td>LAN_TX-</td>
<td>2</td>
<td>Ethernet transmit line minus</td>
</tr>
<tr>
<td>LAN_RX+</td>
<td>3</td>
<td>Ethernet receive line plus</td>
</tr>
<tr>
<td>N/C</td>
<td>4</td>
<td>No Connection</td>
</tr>
<tr>
<td>N/C</td>
<td>5</td>
<td>No Connection</td>
</tr>
<tr>
<td>LAN_RX-</td>
<td>6</td>
<td>Ethernet receive line minus</td>
</tr>
<tr>
<td>N/C</td>
<td>7</td>
<td>No Connection</td>
</tr>
<tr>
<td>N/C</td>
<td>8</td>
<td>No Connection</td>
</tr>
</tbody>
</table>
Control port

The control port is a bi-phase port for connecting the control units of controllable cameras. Five bi-phase outputs are provided for dome camera and pan, tilt and zoom control. The screw terminal connection board supplied with the unit simplifies all bi-phase connections to the unit.

### Specifications

- **Output impedance:** 128 Ohm
- **Overvoltage protection:** ±30V max.
- **Differential voltage amplitude:** 1V min, 2V max. with a characteristic load of 220 Ohms connected across the differential output
- **Cable length:** 1.5 Kilometers max.
- **Recommended cable:** Belden 8760
- **Number of loads per output:** 4 max.

### Control port - 15-pole D-type socket

<table>
<thead>
<tr>
<th>Signal name</th>
<th>Pin no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code 1 -</td>
<td>1</td>
<td>Bi-phase control ch. 1 (minus)</td>
</tr>
<tr>
<td>Code 1 +</td>
<td>2</td>
<td>Bi-phase control ch. 1 (plus)</td>
</tr>
<tr>
<td>Shield</td>
<td>3</td>
<td>System ground/cable shield.</td>
</tr>
<tr>
<td>Code 2 -</td>
<td>4</td>
<td>Bi-phase control ch. 2 (minus)</td>
</tr>
<tr>
<td>Code 2 +</td>
<td>5</td>
<td>Bi-phase control ch. 2 (plus)</td>
</tr>
<tr>
<td>Shield</td>
<td>6</td>
<td>System ground/cable shield.</td>
</tr>
<tr>
<td>Code 3 -</td>
<td>7</td>
<td>Bi-phase control ch. 3 (minus)</td>
</tr>
<tr>
<td>Code 3 +</td>
<td>8</td>
<td>Bi-phase control ch. 3 (plus)</td>
</tr>
<tr>
<td>Shield</td>
<td>9</td>
<td>System ground/cable shield.</td>
</tr>
<tr>
<td>Code 4 -</td>
<td>10</td>
<td>Bi-phase control ch. 4 (minus)</td>
</tr>
<tr>
<td>Code 4 +</td>
<td>11</td>
<td>Bi-phase control ch. 4 (plus)</td>
</tr>
<tr>
<td>Shield</td>
<td>12</td>
<td>System ground/cable shield.</td>
</tr>
<tr>
<td>Code 5 -</td>
<td>13</td>
<td>Bi-phase control ch. 5 (minus)</td>
</tr>
<tr>
<td>Code 5 +</td>
<td>14</td>
<td>Bi-phase control ch. 5 (plus)</td>
</tr>
<tr>
<td>Shield</td>
<td>15</td>
<td>System ground/cable shield.</td>
</tr>
</tbody>
</table>
External I/O connection

Alarm inputs and outputs are supplied via a 25-pole D-type socket. The screw terminal input/output connection board supplied with the unit simplifies all alarm connections to the unit.

Connecting the Inputs

Each (alarm) input line can be switched by a relay contact from devices such as pressure pads, passive infra-red detectors, smoke detectors and similar devices. Wire them as either N/O or N/C. You can configure the alarm inputs as N/O or N/C in the menu system. The default is N/O.

Connecting the Alarm Outputs

The four alarm output relays respond to input alarms and triggers. You can configure the alarm outputs as N/O or N/C in the menu system. The relays are active for the duration of the driving event. Connect the application to the alarm output relays (resistive loads only). Do not exceed 30 Vac, 40Vdc, 500 mA (continuous) or 10VA on an alarm output relay’s contacts. The contacts must not be used at AC line voltages.

Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm input impedance:</td>
<td>Internal pull-up 10K to +5V</td>
</tr>
<tr>
<td>Input voltage range:</td>
<td>-0.3V min to 30V max</td>
</tr>
<tr>
<td>Input voltage threshold:</td>
<td>Low voltage 0.8V max</td>
</tr>
<tr>
<td></td>
<td>High voltage 2.4V min</td>
</tr>
<tr>
<td>Switching current (resistive):</td>
<td>500mA max</td>
</tr>
<tr>
<td>Carrying power:</td>
<td>10VA max</td>
</tr>
<tr>
<td>Switching voltage (resistive):</td>
<td>30 Vac / 40 Vdc max</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Signal name</th>
<th>Pin no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm_in_1</td>
<td>1</td>
<td>Alarm input 1</td>
</tr>
<tr>
<td>Alarm_in_2</td>
<td>2</td>
<td>Alarm input 2</td>
</tr>
<tr>
<td>Alarm_in_3</td>
<td>3</td>
<td>Alarm input 3</td>
</tr>
<tr>
<td>Alarm_in_4</td>
<td>4</td>
<td>Alarm input 4</td>
</tr>
<tr>
<td>Alarm_in_5</td>
<td>5</td>
<td>Alarm input 5</td>
</tr>
</tbody>
</table>
**Hardware setup**

**SCSI connection**

The unit provides a 50-pin high density SCSI-2 port for connection of an external storage system, for example, a LP (DVAD) or a RAID (DVAS) storage array. To use this feature, connect the drive’s SCSI cable to the SCSI-2 connector on the rear panel.

**Specification**

<table>
<thead>
<tr>
<th>Connector type:</th>
<th>50-pin narrow SCSI connector for external SCSI device</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus format:</td>
<td>Narrow (8 Bits) single-ended</td>
</tr>
<tr>
<td>Max. number of SCSI devices:</td>
<td>7</td>
</tr>
<tr>
<td>Max. transfer rate:</td>
<td>20 Mbytes per second</td>
</tr>
<tr>
<td>Total cable length:</td>
<td>Fast-20</td>
</tr>
<tr>
<td>1 to 4 SCSI devices</td>
<td>3m</td>
</tr>
<tr>
<td>5 to 7 SCSI devices</td>
<td>1.5m</td>
</tr>
</tbody>
</table>

**Panel view**

**Signal name: | Pin no. | Description**
---|---|---
Alarm_in_6 | 6 | Alarm input 6 |
Alarm_in_7 | 7 | Alarm input 7 |
Alarm_in_8 | 8 | Alarm input 8 |
Alarm_in_9 | 9 | Alarm input 9 |
Alarm_in_10 | 10 | Alarm input 10 |
Alarm_in_11 | 11 | Alarm input 11 |
Alarm_in_12 | 12 | Alarm input 12 |
Alarm_in_13 | 13 | Alarm input 13 |
Alarm_in_14 | 14 | Alarm input 14 |
Alarm_in_15 | 15 | Alarm input 15 |
Alarm_in_16 | 16 | Alarm input 16 |
Relay1_A | 17 | Relay 1 output pole 1 |
Relay1_B | 18 | Relay 1 output pole 2 |
Relay2_A | 19 | Relay 2 output pole 1 |
Relay2_B | 20 | Relay 2 output pole 2 |
Relay3_A | 21 | Relay 3 output pole 1 |
Relay3_B | 22 | Relay 3 output pole 2 |
Relay4_A | 23 | Relay 4 output pole 1 |
Relay4_B | 24 | Relay 4 output pole 2 |
System Ground | 25 | Chassis Ground |
Power Supply

Power is supplied to the unit via the IEC-style socket. The unit has no on/off switch for security reasons. This means that the unit is always powered as long as the power cable is connected from the unit to a live power socket.

Specifications:

| Input Voltage: | 100 - 240 Vac ±10% |
| Current:       | 0.7A - 0.3A         |
| Input Frequency: | 50/60 Hz          |

Testing

In Live mode, select full-screen display for each camera and check the picture quality. If the quality is poor, check:

- The BNC connections.
- Loop-through terminations.
- Video levels of incoming signals and the possibility of ground loops.

Record for at least three minutes at the highest recording speed. Then play back the recording, selecting each camera for full-screen display in turn. Check the playback picture quality. Check to see whether the programmed quality setting is adequate.

Maintenance

Maintenance of this unit is limited to external cleaning and inspection. Refer all servicing to qualified personnel.

WARNING!

Do not open the top cover or attempt to service the unit as this may expose you to dangerous voltages and other hazards. Opening the unit will void the warranty!
You access all the parameters used to set up the unit via the menu system. The large number of parameters available gives you the opportunity to program an extensive functionality.

There are two ways of accessing the menu system, via the keys on the front of the unit itself or via the PC-based Configuration Tool application. Using the keys on the unit has the advantage of not requiring a PC and is the recommended method if you are using the unit in a stand-alone configuration. If you do have a PC connected to the unit or the unit is used in a network environment, then the Configuration Tool offers a more convenient way of accessing and using the menu.

In both cases the parameters available are the same. Slight differences in navigation and selection are only due to the differences between the keys on the unit and the keyboard and mouse interface of the PC. The menu structure is the same in both cases.

This chapter explains how to use the keys on the unit to access the menus. It also documents the full structure of the menu system. To find out how to use the PC-based Configuration Tool refer to Chapter 6.
Overview of the menu system

The main menu consists of six menu groups:

History. The History menu allows you to trace all events that have occurred on the unit.

Disk manager. The Disk Manager menu provides information and functions that relate to the maintenance of the storage system including internal and external hard disks.

Time/Date. The Time/Date menu is used to set the actual reference time and date for the unit and the format that is used to display them.

View settings. The View Settings menu is used to program how the individual cameras are displayed on the monitors.

System settings. The System Settings menu is where most of the static parameters for the unit are set.

Profiles. The Profiles menu is used to set up and store the dynamic characteristics of the unit.

Setting the dynamic characteristics

The settings in the Profiles menu provide the opportunity to tap the powerful functionality of the unit. By spending some time in planning and setting up the six profiles available, you can provide efficient use of resources while maintaining effective cover for most types of working situations.

Profiles are usually based on a calendar, switching on and off at a particular date or time (for example, weekends or night). Profiles can also be switched by an input signal based on an external switch or armed alarm system.

A profile determines how a unit behaves when that profile is active. Unit behavior includes how events are handled. It also defines recording rates both under normal conditions and in response to input and motion events.

Unit behavior can be set up differently for each of the six profiles. Profiles can be named and copied to facilitate their setup and management.

Accessing the menu from the unit

To open the menu:

1. Press the ALT key $\text{Alt}$ to enter the alternate function mode.  
   > The ALT indicator lights.

2. Press the menu $\text{Menu}$ key.  
   > The main menu appears full-screen on monitor A.

Navigating

- Use the arrow keys to move through a menu or list.
- Use the select key $\text{Select}$ to select a submenu or item.
- Use the escape key $\text{Esc}$ to go back.

Access to some menu items can be password protected.
**Main Menu**

The main menu gives access to six major menu groups. Each of these groups has a submenu tree where the values and functions can be selected.

- Set **Advanced Menus to Yes** to see all items; set to **No** for standard features only.

<table>
<thead>
<tr>
<th>Main Menu</th>
<th>History</th>
<th>Disk manager</th>
<th>Time / Date</th>
<th>View settings</th>
<th>System settings</th>
<th>Profiles</th>
<th>Advanced menus</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HISTORY</strong></td>
<td>View history list</td>
<td>Status overview</td>
<td>Protected recordings</td>
<td>Authenticity check*</td>
<td>Stop recording</td>
<td>Storage setup*</td>
<td>Delete video</td>
</tr>
<tr>
<td><strong>DISK MANAGER</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TIME / DATE</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>VIEW SETTINGS</strong></td>
<td></td>
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<tr>
<td><strong>SYSTEM SETTINGS</strong></td>
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</tr>
<tr>
<td><strong>PROFILES</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **ADVANCED MENUS** | | | | | | | *advanced items

*advanced items
**HISTORY >**
The History menu provides a list of all events that have occurred. This list can be filtered to show only those events you wish to see.

**>>History Filter**
- Fill in the date/time values to restrict the period for viewing events.
- Select No for those events that you do not wish to see.

**>>History List**
- The latest event is shown first.
- Use the right/left arrow keys to move through a long history list.
- If a date or time has been changed, the original values are also displayed.
- Alarm, motion and video loss events are stored for a maximum of one month.

---

**DISK MANAGER >**
The Disk Manager menu gives access to information on the internal hard disk(s) and any external disks connected. The status of the recorded video and associated data is also accessed via this menu. Access to some menus can be password protected.

---

**>>Status Overview**
- **Disk Capacity** shows the total space available in Gigabytes.
- **Used Space** shows the total space used by all video recordings including protected recordings.
- **Protected Recordings Usage** shows the space used by protected recordings that cannot be overwritten.
- The displayed **Recording Time Left** value depends on the recording options that are set, and alarm and motion frequency. The estimated recording time shown depends on the available storage capacity and recording setup.
>> Protected Recordings  
- Move to a protected recording in the list and press the select key to play it back.
- Press the escape key to stop playback and return to the list.
- To remove the protection of a recording, move to it in the list and press F2. You must fill in a password (if configured) and confirm before the recording is unprotected.

>> Authenticity Check  
- This check verifies that video images and associated data have not been modified.
- Select the period within which the authenticity check runs. The default values are the same as the earliest and latest available recording times.
- Press the escape key to cancel the check.
- During the check all other front panel keys are disabled.
- If the result is Not OK, the date and time of the tampered video is displayed.

>> Stop recording  
- Set the period for which you wish to temporarily stop recording.
- The maximum period is one hour.
- The duration counts down to zero.
- Alarms are not recorded when recording is interrupted.
- Interruption of recordings is always logged in the history list.
- Recording starts automatically when interrupt period has elapsed.

>> Storage setup  
- Storage Setup gives an overview of internal and external storage. The total disk space available is shown in Gigabytes.
- Any new disks found are disabled by default.
- Select the storage location you wish to enable or disable. All recorded video is lost if you change a disk configuration. If you choose Yes to continue, all video is erased.
- Select Storage Status for an overview of the status of all internal and external disks.

>>> Storage status  
- OK if everything is all right.
- Fail if for some reason the disk is not working properly.
- Fail - reconfigure storage if the disk is not part of the disk set or is empty.
- SCSI mismatch: change ID to X where X is the expected SCSI ID and the SCSI ID needs to be changed.
- Not found if the disk is not connected
- Unused if a valid disk is found which is not used (disabled).

>> Delete Video  
- Delete recorded video by filling in an end date and time, and selecting delete video.
- All non-protected recordings made before the specified date and time are deleted. You must confirm the deletion.
- Protected recordings are not deleted.

>> Erase Disk  
- Deletes all recorded video on the disk.
- You must confirm the deletion.
Menu system

TIME/DATE >

- Fill in the actual time and date.
- Select either a 12-hour or a 24-hour clock format.
- Select from three date formats which show either the month (MM), the day (DD) or the year (YYYY) first.

>> Synchronize

- Use the Synchronize function to set the time of the unit from the time of the network. (Synchronize only works if the Divar time is within 7½ minutes of the server time.) Fill in the IP address of the network time server.
- The time and date of all other connected units are automatically synchronized every hour from the time and date of the unit with DVR ID 1.

VIEW SETTINGS >

The View Settings menu allows you to set up the display of the individual cameras. You can also set the sequence in which the cameras are displayed and the duration. Use the Configure Monitors submenu to set up the monitor displays.

>> Camera setup

Use the Camera Setup menu to access the submenus for setting the camera names, for locking cameras and for controlling cameras.

>>> Camera name

- Select a camera by pressing a camera key on the unit. The number of the camera is the number of the connector at the rear of the unit to which it is connected.
- Enter a name for the selected camera. The name can be up to 16 characters long.

>>> Camera lock-out

- Locked cameras are not visible during normal use.
- Place a check mark under the number of the camera you wish to lock or press a camera key on the unit to switch the lock on or off.
- Select the Set Password submenu and fill in a 4-digit password to restrict access to the camera lock-out menu.
>>> Camera control
- Set the **Auto Camera Contrast** to **On** to let the system automatically adjust the contrast for each camera.
- If you set the **Auto Camera Contrast** to **Off**, you can access the **Adjust Contrast** submenu.

Adjust contrast
- Select a camera in the menu or press a camera key on the unit. The selected camera image appears.
- Vary the manual gain value between -100 and +100 to adjust the contrast.
- To set the default value (0), press the F1 key.

>> Camera controllable
- A check mark under a camera number indicates that it can be controlled remotely by the Control Center application.
- Press a camera key on the unit to make a camera controllable or not.
- By default all cameras are controllable.

>> Sequences
The sequence in which cameras are displayed on monitor A and monitor B is set in the full screen list menu.
- Set the length of time each image remains on the screen by filling in the dwell time value for each monitor.
- Dwell time can vary from 1 to 60 seconds. The default value is 5 seconds.

>>> List Full screen monitor A
- The sequence list shows the order in which the camera images are displayed in full screen mode.
- Use the arrow keys to select a position in the list. Press a camera key on the unit to enter a camera number in the list.
- Press F2 to clear the rest of the list.
- Press F1 to restore all defaults. Connected cameras are then listed in ascending order.

>>> List Full screen monitor B
- The sequence list shows the order in which the camera images are displayed in full screen mode.
- Use the arrow keys to select a position in the list. Press a camera key on the unit to enter a camera number in the list.
- Press F2 to clear the rest of the list.
- Press F1 to restore all defaults. Connected cameras are then listed in ascending order.

>> Configure Monitors
- To view camera names, and time and date on a monitor set these items to **On**.
- Select the position for the text (top or bottom and fine position +11/-11). Select text intensity. Select the border intensity of the cameos from four values.
- To automatically close the menu when an alarm or event occurs, set the **Exit Menu on Alarms** item to **Yes**.
- The menu is closed after five minutes if you set the **Menu Time-out** to **On**.
>>> Multiscreen modes
- Pressing the multiscreen key on the unit cycles through all enabled multiple view modes.
- Enable only those views you wish to see when you use the multiscreen key.
- The multiscreen modes that are available depend on the number of cameras connected and the Divar model.

SYSTEM SETTINGS >
Use the System Settings menu to get access to those items that are used to configure the system.

<table>
<thead>
<tr>
<th>MAIN MENU</th>
<th>SYSTEM SETTINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANGUAGE</td>
<td>ENGLISH</td>
</tr>
<tr>
<td>QUICK INSTALL</td>
<td>&gt;</td>
</tr>
<tr>
<td>RECORDING SETUP</td>
<td>&gt;</td>
</tr>
<tr>
<td>PLAYBACK SETUP</td>
<td>&gt;</td>
</tr>
<tr>
<td>EVENT SETUP</td>
<td>&gt;</td>
</tr>
<tr>
<td>HISTORY LOG SETUP</td>
<td>&gt;</td>
</tr>
<tr>
<td>LOCAL PASSWORDS</td>
<td>&gt;</td>
</tr>
<tr>
<td>CONNECTIVITY</td>
<td>&gt;</td>
</tr>
<tr>
<td>LICENSES</td>
<td>&gt;</td>
</tr>
<tr>
<td>INPUT AND OUTPUT CONTACTS</td>
<td>&gt;</td>
</tr>
<tr>
<td>FACTORY DEFAULTS</td>
<td>&gt;</td>
</tr>
</tbody>
</table>

- Select the language for the menu from the list.
- Select Quick Install to quickly set up the system. The quick install menu is described in Chapter 2.
- If you select Factory Defaults, all settings in the menu system are reset to their default value.

>> Recording Setup
- The continuous mode overwrites older recordings when the disk is full. You can set an overwrite protection period of up to 15 weeks for the latest recordings.
- The linear mode first gives a warning and then stops recording when the disk is full. Older recordings must be manually deleted.
- Set the Pre-event time so that recording begins before an alarm is activated. The maximum is 30 seconds.
>>> Disk Full Alarm Setup
- Set the percentage of used disk space at which the disk-full warning message is displayed.
- Set the time in minutes before the disk is full at which a disk-full alarm is generated.
- Select the number of the output relay that is activated when a disk-full alarm is generated.
- Enable the beeper to activate it when a disk-full alarm is generated.

>> Playback Setup
Use the Playback Setup list to block the playback of recordings from particular cameras after a specified period of time.
- Choose from No Block, 1 to 7 days, 14 days, 21 days, 28 days or 31 days. When the specified time has elapsed, the recordings of that camera from before that time cannot be played back.

>> Event Setup
Use the Event Setup menu to specify the display behavior for an input, detected motion or video loss.
- Set the Alarm Dwell Time to select the period during which the output relay and the beeper remain active after activation.
- Set the Trigger Dwell Time to select the period during which the triggered view mode is displayed after activation.
- The value Follows activates the beeper and relay or view, only as long as the event is present.

>>> Input Setup
- To restore the default input settings select the Clear Input Settings item.
- Select the Display Monitor submenu to choose the view mode and cameras to be displayed when an input is activated.
- Select the number of the output relay to be activated when any alarm input is activated.
- Enable the beeper to activate it when an alarm input is activated.

Display mon A
- Select the input number (1 to 16) for which you wish to set the view mode.
- If you have controllable cameras, set a camera number and a pre-position number (1 to 99). The specified camera goes to this position when the numbered input is activated.
- Select a view mode. Only view modes that are enabled can be selected.
- If you have selected the full-screen or quad view mode, select the cameras to be displayed.

Display mon B
- Select the input number (1 to 16) for which you wish to set the view mode.
- If you have controllable cameras, set a camera number and a pre-position number (1 to 99). The specified camera goes to this position when the numbered input is activated.
- Select up to four cameras to be displayed in sequence.
>>> Motion Setup
- To restore the default motion settings select the **Clear Motion Settings** item.
- Select the **Display Monitor** submenu to set up the view mode and cameras to be activated on the monitor for each motion event. The **Motion Area** submenu sets the area and sensitivity for each camera.
- Select the number of the output relay that is activated when motion is detected.
- Enable the beeper to activate it when any motion is detected.

Display mon A
- Select the camera number that generates the motion event.
- If you have controllable cameras, set a camera number and a pre-position number (1 to 99). The specified camera goes to this position when motion is detected by the selected camera (not necessarily the controllable camera).
- Select a view mode. Only view modes that are enabled can be selected.
- If you have selected the full-screen or quad view mode, select the cameras to be displayed.

Display mon B
- Select the camera number that generates the motion event.
- If you have controllable cameras, set a camera number and a pre-position number (1 to 99). The specified camera goes to this position when motion is detected by the selected camera (not necessarily the controllable camera).
- Select up to four cameras to be displayed in sequence.

Motion area
- Select a camera number.
- The **motion indicator** shows the maximum level of camera motion that has been detected for the defined area. Press F2 to clear it if you want to re-test the level of motion detection.
- Use the arrow keys to adjust the **Trigger level** slider to just below the indicated motion level.
- A motion detection signal is generated when the level of motion reaches the trigger level set.

Edit area
- Select **Motion Area** to define the picture area where motion is detected.
- Use the arrow keys to move around the grid. Press F1 to insert a motion detection area and use the arrow keys to enlarge it. Press F1 again to save the area. Press the escape key to cancel and return to grid square selection.
- Press the select key to leave the grid. F2 clears all motion detection areas.

>>> Video loss Setup
- Select the monitor on which the camera with the video loss is displayed.
- Select the number of the output relay that is activated when video loss occurs.
- Enable the beeper to activate it when any video loss occurs.

>>> History Log Setup
- Select **Yes** for those events that you want to log in the history file.
- The entire history list is erased if you select the **Clear History** item.
- Date/time changes of stored video are always logged and cannot be disabled or cleared.
**Local Passwords**
- Set or change the password that allows access to playback functions.
- Set or change the password that allows access to the configuration functions.
- Use the camera keys (1 to 9) on the front of the unit to enter a four-digit password in the dialog box that appears.
- Enter the same password again to have it verified.
- Press F2 to remove password protection.

**Connectivity**
The Connectivity menu gives access to settings that control the behavior of the unit with respect to all external devices or a network. It also gives access to settings for connecting multiple units to each other and for connecting computers via the communications port.

- **Keyboard access restrictions**
  - Four external keyboards can be connected to the unit.
  - Allow these keyboards to control monitor A only, monitor B only, both or neither.

- **Network setup**
  - Set DHCP to **Yes** to have IP address, subnet mask and default gateway assigned automatically by the network server. The actual values are displayed.
  - Enter a Divar name to be used in the network.
  - Fill in the IP, subnet mask and default gateway addresses when DHCP is set to **No**. The MAC address is read only.
  - Restrict the network bandwidth by entering an Mbps between 0 and 100 for the bandwidth limit.

**Network access**
- Access to the unit via the network can be set for up to six different users.
- Restrict access to the unit by listing an IP address range. The range you use will normally depend on your network setup.
- Select a user number to set up the configuration for that remote user. The administrator is user 1 and is identified as ADMINISTRATOR.

- **IP Range**
  - Eight IP ranges can be entered to allow access.
  - Enter the same begin and end address to specify a single IP address. Enter different begin and end addresses to specify an IP address range.
  - Use the up/down arrow keys to move to an IP entry. Press the select key to edit the entries. Press F1 to set the default values (000.000.000.000 to 255.255.255.255).

- **List of Users**
  - Enter a name, up to 16-characters long, for each user. Enter a password up to 12-digits long.
  - Set **User Rights** to **Live** to restrict viewing rights to live video only.
  - Select the cameras in the Camera Lock Out submenu that are not accessible for the user.
  - Set the camera sequence list and dwell time (from 3 to 59 seconds) for the remote viewer. All connected cameras are listed by default.
  - Set **Camera Control** to allow control of controllable cameras remotely.
Menu system

>>> Expand system
• When you have multiple units linked, give each unit a unique identification number (from 1 to 30).
• Enter a first camera number (from 1 to 999) to offset the camera numbers for the different Divars.
• Only default camera identification numbers (Camera 1, Camera 2, etc.) are offset.

>>> COM port
• The COM port is an RS232 serial port used mainly for connecting a PC to the unit.
• Most parameters are fixed. Select the appropriate baud rate.

>> Licenses
• The license key supplied with the unit for a single user is shown first.
• Fill-in the key of any additional licenses you purchase exactly as supplied.
• The MAC address and a description of the installed licenses are shown at the bottom of the menu-screen.

>> Input and output contacts
• The contacts of the input and output relays default to normally open (N/O).
• Place a check mark in the box under a specific relay to set its contacts to normally closed (N/C).
• Press a camera key to place or remove a check mark.

Profiles >
Six different profiles can be stored. These profiles can be activated by an input switch or by a date or time. The profiles contain configuration settings for recording data, handling events and restricting access. You can define a calendar that automatically selects profiles. These profiles can be configured for day, night, weekend or holidays for example.

| MAIN MENU |
| PROFILES |
| CURRENTLY ACTIVE | 1 |
| CALENDAR SETUP | > |
| PROFILE OVERRIDE | > |
| PROFILE MANAGER | > |
| SYSTEM BEHAVIOR | > |

>>> Calendar setup
• The use of profiles is defined in a calendar that covers one week. This calendar is then repeated for subsequent weeks.
• A profile is specified at intervals of 15 minutes for each day of the week.
• You can program exception days to change profiles for special days and holidays.

>>> Calendar edit
• The Calendar Edit menu shows the profile identification numbers used in a 24-hour period (0 to 23). Each hour is divided into four 15-minute periods.
• To see the other days of the week use the left /right arrow keys.
• Select the Add Schedule item to edit the calendar.
Add schedule
- Select the profile name, the begin and end times, and the days on which you want the profile to be active.
- Only five profiles changes can occur in any one day.
- Select a number from 0 to 23 for the hour. Select between 0, 15, 30 or 45 for the minutes.
- If the begin time is later than the end time, then the profile is active from the end time until the begin time on the next day.

>>> Exception days
- Up to 32 exception days can be set that override the calendar list.
- Use the up/down keys to move to an exception entry and press the select key to start editing. Enter the start date/time, the duration and the profile name.
- Press the F2 key to empty an entry.

>>> Profile override
- Select a different profile to manually override the active profile for a temporary period.
- Set the duration for which you wish to override the active profile. The maximum is 24 hours. If set to Always, the calendar is disabled completely. If set to zero, the override function is disabled.

>>> Profile titles
- Select a profile. Enter up to 12 characters to give a meaningful name to the profile.

>>> System behavior
- Use the System Behavior menu to configure the event handling, the recording setup and the access restrictions for each of the six profiles.
- Profile settings can be copied from one profile to another in the Copy System Behavior submenu.

>>> Event handling
- Select the profile for which you wish to configure the event handling.
- Move to the line that you wish to change. Press the camera keys to select an input or camera. Press the select key to enable or disable the selection. A check mark means enabled.
- Enabled selections act as triggers. If alarm is checked, the selection acts as an alarm.
>>> Output handling
- Select the profile for which you wish to configure the output handling.
- Select the number of the output relays to be activated when an enabled event in the selected profile is activated.
- Enable the beeper to activate it when an enabled event in the selected profile is activated.

>>> Recording setup
- Recording behavior for each of the six profiles is specified in three submenus. The Normal submenu is for a normal situation without alarms or motion events. The Input submenu is for input changes. The Motion submenu is for motion events.
- The list gives an overview of inputs and motions that are used in any of the profiles. A check mark means used.

Normal
- Select the profile. The Unallocated IPS item shows the IPS capacity remaining.
- A total of 60 images per second (IPS) can be recorded for NTSC; 50 IPS for PAL. A minimum of 1 IPS is always allocated per camera for pre-alarm recording and network viewing.
- Set the recording rates and quality levels for each camera. Quality is standard, medium or high.
- IPS rates for PAL range from Never, 0, 1/10 (one image every 10 seconds), up to 25 IPS.
- IPS rates for NTSC range from Never, 0, 1/10 (one image every 10 seconds), up to 30 IPS.
- Set the recording speed to NEVER to not record a camera at all. No pre-alarm recording is done and the camera cannot be viewed over the network.

Input
- Each input, when activated, can change the normal recording behavior of up to four cameras for a maximum of 120 seconds.
- Select the profile. Select the input number.
- Select the cameras whose recording behavior should change. Set the recording rates and quality levels for each camera. Set camera name to None to use less than four cameras.
- To free IPS bandwidth, the recording rate of cameras not in alarm is limited to the IPS number displayed.

Motion
- Each motion input, when activated, can change the normal recording behavior of up to four cameras for a maximum of 120 seconds.
- Select the profile. Select the motion camera number.
- Select the cameras whose recording behavior should change. Set the recording rates and quality levels for each camera. Set camera name to None to use less than four cameras.
- To free IPS bandwidth, the recording rate of cameras not in alarm is limited to the IPS number displayed.

>>> Access restrictions
- Remote access restrictions can be set for each of the six profiles. Remote user 1, the administrator, always has access.
- Select the profile. Select if remote playback can be enabled or not for remote users.
- Select which remote users have access and which are blocked.

>>> Copy system behavior
- To copy the settings of one profile to another, enter the number of the source profile, enter the number of the destination profile and select the Copy Now item.
CHAPTER 6 Using the Configuration Tool

The Configuration Tool is a software application that makes the installation and configuration of a unit faster and easier. The Configuration Tool runs on a PC that is connected to the Divar either directly via an RS232 serial connection or via an Ethernet network connection.

Although all settings can also be configured with the on-screen display menu of the Divar itself, the Configuration Tool offers a very user-friendly alternative. It also allows configuration settings to be saved on the PC hard disk. These can be restored later and used to configure other units.
Getting started

To use the Configuration Tool to change settings, the unit must be physically connected to a PC via the RS232 Console Port or via a network connection. The Configuration Tool application must be installed on the PC.

System requirements

<table>
<thead>
<tr>
<th>Operating platform:</th>
<th>A PC or compatible running Windows 95, Windows 98, Windows Millennium, Windows NT 4.0 (SP4), Windows 2000 or Windows XP.</th>
</tr>
</thead>
</table>

For the Configuration Tool application, the **minimum** PC requirements are:

- Processor: 200 MHz Pentium with MMX (or equivalent)
- RAM memory: 32 MB (depends on operating system)
- Hard disk space: 15 MB free
- Video system: 800x600 with 16-bit color
- Connectivity: A free RS232 port or a 10/100-BaseT network interface

Installing the Configuration Tool

The Configuration Tool is automatically installed on the PC when you install the Control Center application. To install separately:

1. Insert the CD-ROM into the CD-ROM drive on your PC.  
   > The installation program starts automatically.
2. If installation does not start automatically, locate the Setup.exe file on the CD and double click it.
3. Follow the instructions on the screen and select to install the Configuration Tool when asked to complete the installation.

Starting the Configuration Tool

Starting the Configuration Tool depends on how you are connected to the unit:

- via a serial RS232 connection,
- via a network, or
- offline

Serial connection

If your PC is connected directly to the unit via the serial RS232 connection, double click the Configuration Tool icon on your desktop window to start the program. Select the **Serial connection** entry from the DVR list.

Network connection

To start the Configuration Tool without using the Control Center, double click the Configuration Tool icon on your desktop window to start the program. Alternatively, select the Divar Configuration Tool program via the Start button on the task bar and the Programs menu item. Follow the login procedure.

To start the Configuration Tool via the Control Center, click the **Config** button in the Control Center window. You must first be logged into the Control Center as an administrator to open the Configuration Tool in this way.

Offline configuration

If you choose to log in with an offline configuration, you should select the model, the video standard and the cameras that are connected.
How to Log in

When you start the Configuration Tool as a stand-alone application via a network, the **Login** window appears. (Click **Cancel** to discontinue login and exit the application.)

When the Configuration Tool application is started for the first time, the Divar list is empty. You must first add a Divar to the list. To add a Divar to the list or to modify a Divar entry, click **Edit >>** (see following paragraph).

To control a particular Divar:
1. Select the Divar you want to control.
2. Type your user name and password.
   - The user name and password to be filled-in are set in the System settings/Connectivity/Network access menu of the Divar itself.
3. Click **Login**.

To modify the Divar list

The **Edit Divar list** window allows you to add Divars to the list or delete Divars from the list.

To add a Divar to the list:
1. Click **Add ...**
2. Enter the IP address or nickname of the new Divar.
   - The IP address to be filled-in is set in the System settings/Connectivity/Network setup menu of the Divar itself.
3. Type a name in the **Name** box or retrieve it from the Divar by checking the **Retrieve from Divar** box.
4. Click **OK**.

To delete a Divar from the list:
1. In the list, select the Divar you wish to delete.
2. Click **Delete**.
   - The selected Divar is removed from the list.
Maximum number of users
If the maximum number of users for the Control Center is exceeded, a window is displayed. An administrator can use this window to force off a user. The list shows all users that are currently logged in.

To disconnect a user:
1. Select a user in the list.
2. Click Yes.

Menu structure differences
The Configuration Tool allows you to access and use menu items of the unit. These menu items are explained in Chapter 5. Although the items are the same, the menu structure is slightly different in the Configuration Tool:

- The History menu item is removed from the menu tree structure and is now accessed via the Event log button.
- The Disk manager submenu is replaced by the Storage setup item of the menu tree structure in the Configuration Tool.

As a result of the windows interface, selection and editing of some functions with the Configuration Tool is different to the methods used on the unit itself. For example, scroll bars are used instead of the arrow keys, the motion area selection interface is simpler, and the Calendar edit item of the Profiles menu uses a color code to add profiles to the calendar. The Configuration Tool interface, although different, is intuitive and does not change the functionality of the menu items.
Introducing the main window

The Configuration Tool window is divided into 3 panes. The buttons in the left pane are always available. Clicking one of these buttons changes the contents of the center pane. The buttons in the right pane are control buttons that give you direct access to various tasks.

Overview button

Click the Overview button to get general information about the Divar that is connected.

History button

Click the History button to display a list of events in the center pane. This list can be filtered to show only those events you want to see.

- Fill in the date/time values to restrict the period for viewing events.
- Uncheck those type of events that you do not wish to see.

The latest event is shown first. If a date or time has been changed, the original values are also displayed. Press More to see more events.

Settings button

Click the Settings button to display the menu for configuring the Divar. The menu tree structure and the selected submenu is shown in the center pane.

Using the Menu tree

When you click the Settings button, the menu tree is displayed on the left of the center pane. Use this tree to navigate through the menu system.

- Click + to expand the branch structure.
- Click - to collapse it.
- Click an entry to display the parameters for that menu item.
- Select the values you want for the parameters.
- These values are updated immediately.
Service button

Click the Service button to get a list of diagnostic messages and to access the firmware update function. This function is only available if you are connected to the unit via a serial connection and is password protected.

Help button

Click the Help button at any time to get help. A pop-up help window appears.

Logout button

To return to the Control Center application or to log on to different unit, click the Logout button.

Using the control buttons

The right side of the main window has several buttons that allow you to perform common tasks quickly:

Import / Export

All settings that you set in the Configuration Tool can be saved in a file that is stored on the PC disk. You can save as many of these files as you like, just give them different names. The settings in these files can be loaded back into the Configuration Tool either completely or in subgroups. Although these files are stored as text files and can be viewed with a text viewer, do not change or edit them as this makes them unusable.

Import

1. Click the import button to open a settings file.
2. In the dialog box, select the location and name of the file you want to open.
3. Select the groups of settings you want to load and click OK.
4. The selected settings are downloaded to the unit immediately

Export

1. Click the export button to save the current settings in a PC file.
2. In the dialog box, select the location and enter a name for the file you want to save.
3. Select the groups of settings you want to save and click OK to save the settings.

Refresh

Click the refresh button to refresh the content of the current page settings only.
Undo / Redo
Click these buttons to undo or redo your last action. Up to 100 actions can be undone.

Previous / Next
Use these buttons to move through the settings menu.

Click the previous button to go back to the page that was active before the current page.

Click the next button to activate the next page in the menu system.

Print
When the Overview or Event log page is active, you can print the complete contents of the page or list.

1. Click the print button to print the current settings.
2. Click OK to print.

Save
When the Overview or Event log page is active, you can save the complete contents of the page or list.

1. Click the save button to save the current settings in a PC file.
2. In the Save dialog box, enter a file name and location.
3. Click OK to save.

The information is saved in a text file.

Clear
Click the clear button to set all settings on the active page to their default values.
CHAPTER 7

Menu default values

The table on the following pages lists the items of the menu system of the unit with default values. The righthand column of the table gives the default values of these menu items. These values are restored when the Factory defaults item of the System settings menu is selected.
### Menu Default Values

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
<th>Default value</th>
</tr>
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<tr>
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<td>Show motions</td>
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<td>Yes</td>
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<td>Time format</td>
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<td></td>
<td>Date format</td>
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<td>12-hour (NTSC)</td>
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<td>List of users</td>
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<td>User name ADMINISTRATOR, USER2...6</td>
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## Menu default values

### Input and Output contacts

<table>
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<tr>
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<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
<th>Default value</th>
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<tbody>
<tr>
<td>Inputs</td>
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<td>N/O</td>
</tr>
<tr>
<td>Outputs</td>
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<td></td>
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### Profiles

#### System behavior

#### Event handling

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<th>Level 4</th>
<th>Level 5</th>
<th>Default value</th>
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<tbody>
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<td>Select profile</td>
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<tr>
<td>Inputs enable</td>
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<td>Enabled for connected cameras</td>
</tr>
<tr>
<td>Inputs alarm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Enabled for connected cameras</td>
</tr>
<tr>
<td>Motion enable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Disable all</td>
</tr>
<tr>
<td>Motion alarm</td>
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<td>Disable all</td>
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<tr>
<td>Auto acknowledge alarms</td>
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### Output handling

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</thead>
<tbody>
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<td>Select profile</td>
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<td>Relay enable</td>
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<td>Relays 1 and 2 enabled</td>
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<tr>
<td>Beeper</td>
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<td>Enable</td>
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### Recording setup

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<td>Normal</td>
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<td>List all cameras, quality, IPS Medium, IIPS</td>
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### Input

<table>
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<th>Default value</th>
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</thead>
<tbody>
<tr>
<td>Cameras not in alarm, IPS</td>
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<td></td>
<td></td>
<td>No change</td>
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### Menu default values

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<td>Recording duration</td>
<td>30 seconds</td>
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<td>Motion</td>
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<td>Cameras not in alarm IPS</td>
<td>No change</td>
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<td></td>
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<td>Recording duration</td>
<td>15 seconds</td>
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<td>Local playback password</td>
<td>Disable</td>
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<td></td>
<td>User 2</td>
<td>Access</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>User 3</td>
<td>Access</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>User 4</td>
<td>Access</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>User 5</td>
<td>Access</td>
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<td></td>
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<td>User 6</td>
<td>Access</td>
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<td>Copy system behavior</td>
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<td>Copy from</td>
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<tr>
<td></td>
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<td>Copy to</td>
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</tr>
<tr>
<td>Advanced menus</td>
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<td></td>
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<td>No</td>
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CHAPTER 8

Technical specifications

The following pages give the technical specifications of the unit.
### Electrical

#### Voltage and Power
All models: 100-240 VAC; 0.7-0.3A, 50/60Hz

#### Video
- **Video standard:** PAL/NTSC auto-detect
- **Resolution:** 720 x 576 PAL - 720 x 484 NTSC
- **AGC:** Automatic adjustment or manual adjustment of gain for each video input
- **Digital Zoom:** 2 or 4 times
- **Compression:** WAVELET
- **Inputs:** composite video 0.5-2Vpp, 75 ohm, automatic termination
- **Outputs:** 1Vpp, 75 ohm, sync 0.3 V ± 10%

#### Alarm Handling:
- **Inputs:** 6, 9 or 16 configurable NO/NC
  - max. input voltage 40 VDC
- **Outputs:** 4 relay outputs, configurable NO/NC
  - max. rated 30 VAC - 40 VDC - 0.5A continuous -10VA

### Control
- **RS232:** Output signals according EIA/TIA-232-F
  - max. input voltage ±25V
- **Keyboard input:** Conform RS485, max. signal voltage ±12V,
  - supply 11V-12.6V at max. 400mA
- **Keyboard output:** Conform RS485, max. signal voltage ±12V
  - Impedance 128 ohm, max.
  - overvoltage protection ±40V,
  - max. cable length 1.5km

### Connectors
- **Video inputs:** 6, 9 or 16 looping BNC, auto-terminating
- **Ethernet:** RJ45 shielded, 10/100 BaseT according IEEE802.3
- **Monitors:** BNC (2), MON-A multiscreen, MON-B spot/alarm
- **Alarm connectors:** Screw terminal input
- **Bi-Phase:** Screw terminal output
- **RS232:** DB9 male
- **Keyboard input:** RJ11 (6-pin)
- **Keyboard output:** RJ11 (4-pin), conform RS485, 30 units max.
- **SCSI:** HD 50-pin, max. 7 connected ultra SCSI devices,
  - 20Mbytes/sec, terminated internally
**Storage**

**Hard Disks:** 80GB - 160GB - 320GB
Expandable via SCSI-2 HD50-pin, up to 7 external storage arrays: type DVAD or DVAS.

**File sizes:**
- High quality: 40Kb
- Medium quality: 24Kb
- Standard quality: 16Kb

**Record Rate (IPS):**
- NTSC: 60 total, configurable per camera: 30, 15, 10, 7.5, 6, 5, 4, 3, 2, 1, ½, 1/5, 1/10, 0, Never
- PAL: 50 total, configurable per camera: 25, 12.5, 8, 6, 5, 4, 3, 2, 1, ½, 1/5, 1/10, 0, Never

**Recording Resolution:** 720 x 288 PAL - 720 x 242 NTSC

**Display Modes:**
- Monitor A: Full, full sequence, quad, quad sequence, multiscreen, alarm call-up (live and playback)
- Monitor B: Full, full sequence and alarm call-up

**Recording Modes:**
Linear, Continuous, Continuous with conditional overwrite.

**Environmental**

| **Temperature** | Operating: | +0°C to +45°C (+32°F to +113°F) |
|                | Storage:   | -25°C to +70°C (-13°F to +158°F) |
| **Relative humidity:** | Operating: | <93% non-condensing |
|                | Storage:   | <95% non-condensing |

**Electromagnetic Compatibility**

**EMC requirements:**
- USA: FCC Part 15, Class B
- EU: EMC directive 89/336/EEC
- Immunity: EN50130-4
- Emission: EN55022 Class B
- Harmonics: EN61000-3-2
- Voltage fluctuations: EN61000-3-3

**Safety:**
- USA: UL6500 2nd edition
- EU: CE, EN60950: 2000
- Canada: CAN/CSA - E60065-00

**Accessories (Optional)**

| **KBD-Digital** | Intui-Key keyboard with joystick |
| **LTC 8557**    | Keyboard Extension Kit |
| **DVAD**        | LP Storage Array |
| **DVAS**        | RAID Storage Array |
| **LTC 2605/91** | Video manager |
| **LTC 8782**    | Bi-phase code translaters |
| **LTC 2604**    | Keyboard port expander |
| **DVRSEU5**     | Software license for 5 simultaneous users |
| **DVRSEU5x5**   | Packet of five DVRSEU5 licenses |