User Manual

CCTV System
Type: HERNIS Flex System

Installation Name: Banggai Ammonia Plant

HERNIS Installation ID: 32137
HERNIS System No: 32137-02

The following projects are included in this manual:

Project No	Description	P.O. No
32137-02-001	CCTV System	PO 3165167982

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Revision History

Rev.:	Chapter:	Modifications
A		First Issue

1. Introduction

1.1 General

This User Manual covers the HERNIS CCTV system installed on the “Banggai Ammonia Plant“ project and describes in general the main components of the CCTV system.

The manual is intended as a guideline for the involved parties during installation, operation and maintenance of the CCTV system.

This document uses the following notation to draw the user’s attention to safe and correct installation and maintenance practice:

WARNING
A warning provides additional information which, if ignored, may result in a risk of personal injury, or in equipment malfunction or damage.

NOTE
Notes provide useful information not associated with safety.

The document will not cover detailed maintenance, repairs and fault-finding instructions for “off the shelf” products delivered for this project from a third party supplier. HERNIS Scan Systems use products from well-known suppliers for the CCTV system and can supply assistance, guidance and parts upon request. These products must not, if required, be repaired by non-qualified personnel. Failure to comply will relieve HERNIS Scan Systems or any third party supplier from any warranty claims.

1.2 HERNIS Contact Information

Technical Support Customers (Head Office)
HERNIS Scan Systems AS
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Tel: +47 37 06 37 00
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www.hernis.com

2. System Description

2.1 General

The following chapters describe the CCTV System ***HERNIS Flex System***, its components and functionality. Some details may not be fully explained, please refer to the individual manuals and documentation for each product for more details. For information about the components included in this delivery, please refer to the equipment list and the block diagram.

2.2 System Description

The HERNIS Flex System is in general a network consisting of a HERNIS System Server, HERNIS HVE video extenders, HERNIS HVR network recorders and/or HERNIS HVS video streamers with recording. The server, installed in the CCTV Central Cabinets, controls the system, administrates video and data streams and provides access to the network.

The HVE video extenders, installed in the CCTV Local Cabinets and the CCTV Central Cabinet, receive video streams from camera stations in the system and distribute live video to client applications in the CCTV system. The data to control the camera stations is sent on the IP network from the HVE units.

The HVR video recorders, installed in the CCTV Local Cabinets, the CCTV Central Cabinet and/or other locations continuously record live video streams from the camera stations and distribute requested playback of recorded video on the network.

The server and the network recorders run on Windows 7 PC platform, and communicate with each other by means of TCP/IP and UDP/IP on an Ethernet network. Video from the camera stations is encoded as H.264 and transmitted on the network using RTSP video streams.

Video from the camera stations and control of a camera station is administrated by the HERNIS System Server, which also routs the video images to requested display station/PC monitor.

Request for camera video, control of camera functions and selection of video image presentations is performed from the Operator Control Stations located at dedicated locations in the administration complex, or by alarm signals to the System Node from other systems on the plant. In addition, camera selection, operation and video image presentation can be utilised on a standard office PC connected to the plant operator LAN, as long as it has the required software installed and it meets the minimum hardware requirements.

The HERNIS Flex System is colour compatible, modular, and provide high quality real time video with maximum 500 ms internal encoding delay from the cameras to the connected display/monitor. Each HERNIS Flex HVE and HVR unit is capable of processing up to 64 camera streams. The modular design makes it easy to add new applications, operator control stations, camera stations, additional video connection and network recording.

The HERNIS Flex System maintains the functionality of traditional analogue CCTV system whilst utilizing the accessibility of digital IT networks.

2.3 System Features

The HERNIS Flex System is network based and the system software allows the operator to select and control any camera via Operator Control Stations (PC) or traditional operator keyboards, and view the video image on any display station / PC monitor.

The system can have a number of alarm output functions, which will be activated in the event of system failure. The system status can be transmitted via traditional I/O signals or be displayed on any control / display station by utilizing the fault diagnostic software application.
This information can also be made available on SNMP.

The system can have a number of input channels (alarms). Alarms activated on any of the input channel on the I/O card in the System Node can activate a predefined action. Pre-defined cameras can automatically be adjusted to Pre-Set positions and camera video images presented on predefined (Pre-Set) display(s)/monitor(s). The Pre-Setting of cameras is not included at delivery of the system, but the facility is software based and easily accessible from any Operator Control Stations using HERNIS HWIN software (Ref. chapter HERNIS HWIN).

The system also offers basic VMD functionality with detection on 1 to 3 regions for each camera. The VMD events are coupled to alarms in the system that can be set up to start recording of video to an alarm archive and switch camera onto designated monitors. The VMD can be configured with a weekly schedule for when to enable VMD.

Users can have different access levels, which limits access to system functionality. The access levels are:

1. Guest (lowest)
2. Operator
3. Supervisor
4. Service (highest)

In addition to access level the user priority level can be set from 0 to 255. Depending on priority level, users may take exclusive control of a camera. The user with the highest priority on a camera can always exclude others from control of the camera.

2.4 System component descriptions

The following subchapters describe each component of the HERNIS Flex System.

2.4.1 HERNIS System Server

This is a primary component of the HERNIS Flex System. The System Server controls the communication between Operator Control Stations and the Local Processing Units / Network Recorders. It also handles the communication towards other kind of systems interfaced to the CCTV system.

The system is built up of several applications (modules) that handle different tasks. These tasks range from data handling to message handling.

Each HERNIS Flex System has at least one System Server. If the system consists of two System Servers it can be made partially redundant. This is achieved by running multiple versions of the modules supporting redundancy on both servers. The HVR, HVE and HVS units does not support redundancy. The HERNIS Flex System will however allow duplicate recording of one camera on different HVR recorders.

2.4.2 HERNIS HVE

The HERNIS HVE Video Extender distributes live video from the HERNIS IP camera stations to Operator Control Stations. It also transmits control commands to the camera stations. For small systems, up to 16 cameras, the HVE functionality can be included on the HERNIS System Server. For larger systems, dedicated HVE units will be used. These HVE units will be able to handle up to 32 camera stations each.

2.4.3 HERNIS HVR

The HERNIS HVR Video Recorder records video streams from IP cameras in the HERNIS Flex System. Each recorder can record up to 64 video streams. The HVR can be set up with a weekly schedule for each recorded streams to define periods when the video stream should not be recorded. The HVR also supports playback and download of recorded video. The video recorder connects directly to the camera it is recording.

The HVR keeps a local copy of the system configuration and will start recording even if it cannot establish contact with the system server, and it will also continue recording if the connection to the system server is broken.

The HVR uses internal disks for recording of video streams. It comes in two configurations; as a 5 disk unit with RAID 5 and a 10 disk unit with RAID 6.

2.5 Operator Control Stations

An Operator Control Station is a man-machine interface to the HERNIS CCTV System. System facilities can be controlled from Operator Control Stations. Both hardware based and software based operator control stations are available.
The hardware based stations are dedicated "keyboards" for controlling HERNIS systems.

The functions available in each "Operator Control Station" varies, some stations support maintenance while others offer camera control. The following chapters outline each Operator Control Stations available in HERNIS Systems:

2.5.1 HERNIS HWIN Standard

HERNIS HWIN Standard is a monitoring station that can control the system and do runtime configuration. All operation of HWIN Standard is performed using mouse, keyboard and joystick.

The remote control functions available to the operator are:

- ✓ View live or recorded video
- ✓ Selection of any camera to any display station / monitor
- ✓ Support for multiple video splits.
- ✓ Control of camera functions on any camera
- ✓ Control of pan and tilt of any camera station, with pan & tilt units
- ✓ Playback / Time search of recorded video cameras in the HERNIS Flex System
- ✓ Program camera names
- ✓ Program and activate Preset Positions
- ✓ Program and activate Sequences
- ✓ Program and activate Multi Switch (groups of camera to monitor selections)
- ✓ Program Alarm Actions
- ✓ Access to Service Functions
- ✓ Built in help functions
- ✓ Handle alarms and auto select related cameras.
- ✓ Review and playback alarms from the alarm log. and more

2.5.2 HERNIS HWIN Standard Alarm

HERNIS HWIN Standard Alarm is the alarm monitor application for HERNIS CCTV systems. It contains special features to monitor and review alarm events in addition to the functionality in HERNIS HWIN Standard.

- ✓ Advanced alarm handling

2.6 Cabling and communication

This chapter describes many of the connections that are used in the system.

2.6.1 Power

Cameras can be powered from the central equipment rack, sub racks, or they can have local power. Available power options are 30/110/230VAC.

2.6.2 CAN (Controller Area Network)

The following components are connected through CAN:

- ✓ HSS05 IO-32-8 (Alarm card)
- ✓ System Node

System Node cards are interconnected using an internal CAN bus network.

2.6.3 LAN (Local Area Network) / Ethernet

Ethernet is used to connect the networked components. Both messaging and video is transmitted over Ethernet using TCP/IP and UDP/IP.

The following components are interconnected through one or more network switches:

- ✓ HERNIS System Server
- ✓ HERNIS Flex HVE
- ✓ HERNIS Flex HVR
- ✓ HERNIS HWIN
- ✓ HERINS IP Cameras

It is recommended to use a separate secure network with dedicated switches between camera stations and CCTV servers, and use another secure network for client applications. The CCTV servers must be connected to both networks.
It is possible to use multiple subnets, but in some cases the system might need custom configuration to allow connection across the boundary of the local subnet.

Firewalls are in general not used in HERNIS Flex systems. The Flex system can work with firewalls but each firewall will need to be confirmed by HERNIS.

The recommended speed of the network depends on the number of cameras and workstations in the system. In a small or medium size system it will be enough with Gigabit Ethernet. For larger systems you might need to have a backbone with more capacity. The required capacity depends on the topology of the network and the number of streams that will be transmitted over each individual link.

To reduce packets loss during UDP/IP video transmission, the speed between two networked devices (A & B) that transmits video from A to B must not go through a reduction in speed that brings the transmit speed lower than the initial transmit speed of device A.

It is required to have NTP time synchronization within the network. All network devices are required to synchronize using NTP. The HERNIS System Server can be the synchronization source (This will at least ensure that the clock is the same across the entire HERNIS Flex System)

2.6.4 Fibre optical transmission

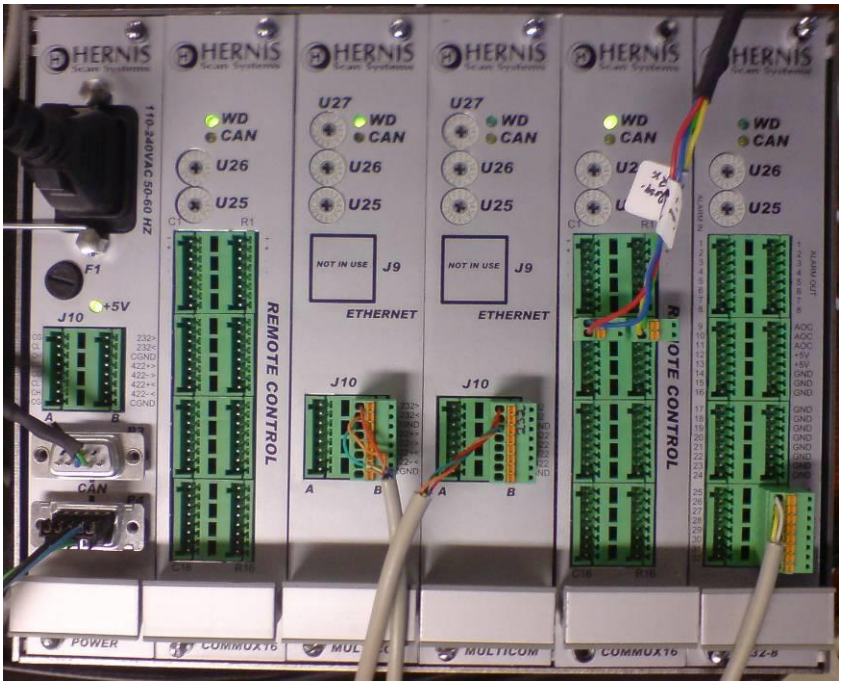
Fibre optical transmission is used when video and data to camera stations, remote systems and operator stations has to be transmitted over large distances.

2.7 HERNIS 05 System Node

The HERNIS 05 System Node consists of a node box with motherboard, power and a selection of HSS05 series cards. The System Node is designed to allow two System Nodes to be mounted side by side in a 19” cabinet. The following cards can be inserted into the System Node:

HSS05 Power	Power card
HSS05 IO-32-8,	Alarm input and output.

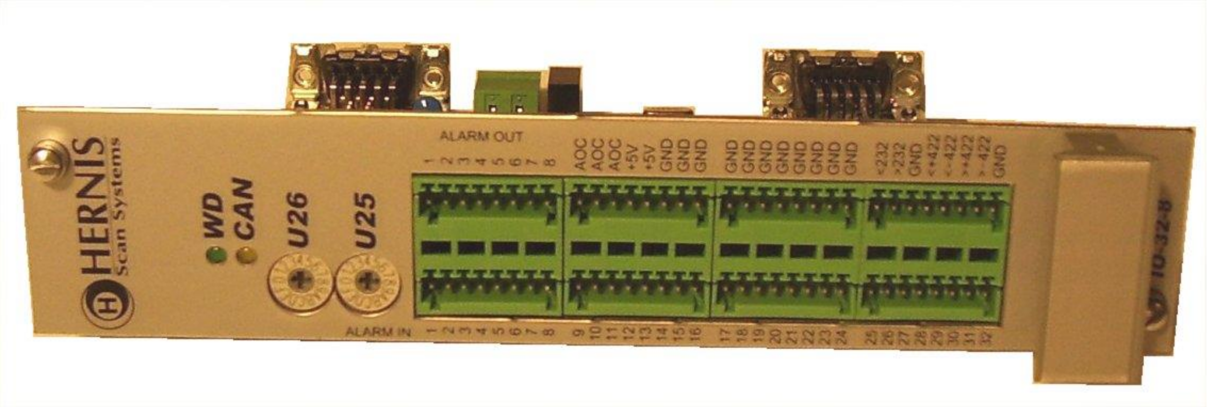
The System Node box is equipped with a motherboard with connection for up to 6 cards. The first slot is always occupied by the HSS05 Power card. This leaves 5 slots for other HSS05 cards. The motherboard supplies power and CAN (ref. chapter 1.5.5.4) bus connection to all cards in the System Node.



System Node consisting of 1x Power, 1xIO-32-16, 2x Commux16 (not needed for this project), and 2xMulticom (not needed for this project)

2.7.1 Alarm input/output card (HSS05 I/O-32-8)

The HSS05 I/O-32-8 card is compatible with the HERNIS 05 System Node. The card is connected to the network via the CAN (Controller Area Network) through the motherboard of the HERNIS 05 System Node. The card handles 32 alarms from other systems, through potential free relay contacts. The incoming alarm signal must be in normally open / normally closed format. The alarm inputs triggers internal alarms in the HERNIS System that can be configured to perform alarm actions (e.g. that cameras go to pre-defined positions). Other options for alarm input are Modbus and NMEA Consilium soft alarm interfaces on serial connection.



The HSS05 I/O-32-8 can generate 8 output alarms from the HERNIS System .The alarms can be set to equipment failure detection (System Server, Control Panel data, DVR data, camera data and camera video –failure) or trigger events for incoming alarms.
The card also has an RS232/ RS422 communication port in the front panel that is designed for communicating with Operator Panels and System Server.

2.8 Camera Stations

There are several types of HERNIS camera stations that suit the different requirements for each specific project. For example for marine applications we recommend stainless steel for safe and maintenance free operation.

All outdoor camera housings and pan/tilts units are made from AISI 316L (stainless steel), which is ideally suited for marine applications. The surface is electro polished and require no maintenance at all. Ingress protection to IP66 (some versions to IP67 and IP68), and certified for hazardous area, if applicable.

Camera stations that are fitted with a pan/tilt unit are heavy-duty, and incorporate position feedback for pan and tilt.

An important feature is the modular design of the pan/tilt camera station, where the cabling is done internally in the pan/tilt up to the camera housing, and the problems with exposed, moving cables is eliminated.

Internal cabling simplifies installation, service and improves the reliability.
The telemetry receiver is mounted inside the pan/tilt unit, and thus the cost of a junction box is saved.

The pan/tilt unit has a robust design in order to withstand vibration.

For easy operation, the pan/tilt has variable speed. When the operator zooms in on a distant object, it is required to use very slow speed in order to keep the object within the picture frame.

For fast access to specific positions the camera station has the capacity to store up to 100 positions. In this mode the pan/tilt unit moves to the pre-programmed preset position at a higher speed to minimize wait time.

As a standard we use high quality colour CCD cameras with high resolution and excellent light sensitivity. Various zoom lenses are available for pan/tilt camera stations. For cameras without pan/tilt functions varifocal lenses are also offered.

2.8.1 Analogue Camera Stations

Analogue camera stations can be used in HERNIS Flex systems by connecting 75Ω coax cables from the cameras to HVS units, or by installing an encoder in a local junction box by the camera stations to convert the analogue video to an IP-video stream.

2.9 Glossary

Bit rate	Amount of data per second.
CAN	Controller Area Network (Node communication)
DVR	Digital Video Recorder
Frame rate	Number of video images per second.
HVE	Video Extender for the HERNIS Flex System
HVR	Video Recorder for the HERNIS Flex System
HVS	Multichannel Video Streamer for the HERNIS Flex system
H264	Video encoding standard
LAN	Local Area Network – Ethernet
MVE	Monitor Video Extender for HERNIS Flex System
NTSC	National Television System Committee, video encoding system
NVR	Video Recorder for the HERNIS 500 System
PAL	Phase Alternating Line, video encoding system
QCIF,CIF,DCIF,2CIF,4CIF	Video resolution.
RAID	Redundant Array of Inexpensive Disks
Remote System	HERNIS CCTV System operated via video and data link
Resolution	The number of pixels (x/y axis) used to represent the picture.
Runtime configuration	Configuration of system that does not require a restart
VMD	Video Motion Detection

3. Equipment List

Qty	P/N	Description	Data Sheet No	Project No
		Ex-proof PTZ camera with wipe & wash, locally powered (XP40VEA4NNP2)		
9 ea	TBA XP40VEA4 NNP21HA1 0	XP40 PTZ explosion protected camera station, certification product code 1410-XX/2420-01 (depending on specification). IP66/67. Includes sunshield and demister. Variable speed 45°/second pan, 24°/second tilt. Preset positional accuracy <0.1°. 360° continuous rotation and +/- 90° tilt. Single fixed M25 cable entry. ** Visual (Day-Night) camera housing with precision polished toughened glass ** Heavy duty 316L stainless steel wiper with pressure governing spring, resilient rubber blade and spray nozzle including wiring for 24VAC switching from telemetry receiver for Oxalis external washer pump ** Analogue Video ** ¼" CCD 36x zoom camera: Image Sensor 1/4" EXview HAD CCD (Progressive Scan), resolution: High Resolution Mode On: 550 TV lines, Lens: 36x zoom 3.4-122.4 mm F1.6 to F4.5, Horizontal Angle of View 57.8° - 1.7°, Auto Focus, Auto Iris, minimum illumination: 1/60 s, 1/50 s mode: 1.4 Lux, 1/4 s, 1/3 s mode: 0.1 Lux, 1/4 s, 1/3 s mode& ICR On: 0.01 Lux, S/N Ratio: >50dB. Features: ATW, Day & Night Auto/Colour / BW (IR-Cut Filter Removable), Camera Title ON/OFF. Includes Oxalis 2450-400 telemetry interface PCBPAL ** 110VAC supply ** Continuous rotation (unrestricted) pan at maximum speed of 45o per second. Tilt 180o (+90o/-90o from straight ahead) restricted to maximum speed of 24o/second ** Pelco D protocol, Baud rate 2400bps ** II 2 G Ex d (op pr) IIC T4 (T5 & T6 On Request) II 2 D Ex tb IIIC T135°C Db IP6x. Certificate Number: ITS08ATEX15950X / ITS08ATEX15927X ** T4 temperature class at -20°C to +60°C operating temperature ** Standard electrical connection compatible with build	Manufacturer's	32137-02-001
9 ea	TBA	TBA Capri M25 ADE-4F Compression SS Exd Gland	Manufacturer's	32137-02-001
9 ea	TBA XWP10-24	Pressurised 10 Litre wash system: Ex em(b) zone 1, 21 solenoid valve, 24VAC operation. Manually pressurised stainless steel cylinder. 10m hose. Up to 20m head height 316L stainless steel cover.	Manufacturer's	32137-02-001
9 ea	TBA BPW6800	Wall mount bracket for XP/SP camera	Manufacturer's	32137-02-001

Qty	P/N	Description	Data Sheet No	Project No
		5 mtr Pigtail Cable to ABB Singapore's supplied Junction Boxes for (XP40VEA4NNP2)		
45 m	025044	Cable Multi Offshore w/Screen & Armour HERNIS Multicable Offshore W/Armour. 2 x 75ohm coax for video or sync. 2 x 0,22mm2 twisted pair for control. 4 x 2,5mm2 conductors for power supply to the camera-station. Halogen free and flame retardent acc. to IEC 332 part 1& 3. Weight: 670 gram/m Outer diameter 21,1mm	DS025044I	32137-02-001
		IP Encoder & Media Converters for JB of (XP40VEA4NNP2)		
9 ea	096033	Video Encoder AXIS, 1ch RS-422/RS-485	Manufacturer's	32137-02-001
9 ea	019078	Ethernet Media Conv.1ch 10/100 OSD2051 OSD for SFP	DS019078A	32137-02-001
9 ea	019097	Ethernet SFP SM TX1310/RX1550 155Mb 20km LC FTTX	DS019097A	32137-02-001
9 ea	025595	Cable Fibre patch 1m single LC-ST/PC SM	Not Available	32137-02-001
9 ea	012241	F.O. Patch panel for 16 ST/FC adapters Mounting of max. 16 adapters ST(Pn.026111) or FC(Pn.095859)	DS012241B	32137-02-001
54 ea	026111	F.O.Adapter Single/Multi Mode ST-ST Plugg chas	DS026111B	32137-02-001
Note for the above: Exd JBs with Glands shall be provided by ABB Singapore. HERNIS Singapore shall free issued the IP Encoders and Media Converters to ABB Singapore for installation.				

Qty	P/N	Description	Data Sheet No	Project No
		Weatherproof PTZ camera with wipe & wash, locally powered (SP40VEA4NNP21DN10)		
8 ea	TBA SP40VEA4 NNP21HN1 0	SP40 safe area 316L stainless steel PTZ camera station. Includes sunshield and demister. Variable speed 45°/second pan, 24°/second tilt. Preset positional accuracy <0.1°. 360° continuous rotation and +/- 90° tilt. 2 x M20 cable entries ** Visual (Day-Night) camera housing with precision polished toughened glass ** Heavy duty 316L stainless steel wiper with pressure governing spring, resilient rubber blade and spray nozzle including wiring for 24VAC switching from telemetry receiver for Oxalis external washer pump ** Analogue Video ** ¼" CCD 36x zoom camera: Image Sensor 1/4" EXview HAD CCD (Progressive Scan), resolution: High Resolution Mode On: 550 TV lines, Lens: 36x zoom 3.4-122.4 mm F1.6 to F4.5, Horizontal Angle of View 57.8° - 1.7°, Auto Focus, Auto Iris, minimum illumination: 1/60 s, 1/50 s mode: 1.4 Lux, 1/4 s, 1/3 s mode: 0.1 Lux, 1/4 s, 1/3 s mode& ICR On: 0.01 Lux, S/N Ratio: >50dB. Features: ATW, Day & Night Auto/Colour / BW (IR-Cut Filter Removable), Camera Title ON/OFF. Includes Oxalis 2450-400 telemetry interface PCBPAL ** 110VAC supply ** Continuous rotation (unrestricted) pan at maximum speed of 45o per second. Tilt 180o (+90o/-90o from straight ahead) restricted to maximum speed of 24o/second ** Pelco D protocol, Baud rate 2400bps ** No certification required ** -20°C to +60°C operating temperature ** Standard electrical connection compatible with build	Manufacturer's	32137-02-001
8 ea	TBA	TBA Capri M25 ADE-4F Compression SS Exd Gland	Manufacturer's	32137-02-001
8 ea	TBA SW10-24	Safe Area 10 litre washer tank with submerged pump and motor enclosed in an IP66 GRP enclosure attached to the tank. Maximum 6m head height. 7m hose, 10m cable. Switched from Oxalis camera station internal telemetry pcb (24VAC) or independently switched (24VAC). Operating temperature -30°C to 60°C.	Manufacturer's	32137-02-001
8 ea	TBA BPW6800	Wall mount bracket for XP/SP camera	Manufacturer's	32137-02-001
		5 mtr Pigtail Cable to ABB Singapore's supplied Junction Boxes for (SP40VEA4NNP21DN10)		
40 m	025044	Cable Multi Offshore w/Screen & Armour HERNIS Multicable Offshore W/Armour. 2 x 75ohm coax for video or sync. 2 x 0,22mm2 twisted pair for control. 4 x 2,5mm2 conductors for power supply to the camera-station. Halogen free and flame retardent acc. to IEC 332 part 1& 3. Weight: 670 gram/m Outer diameter 21,1mm	DS025044I	32137-02-001

Qty	P/N	Description	Data Sheet No	Project No
		IP Encoder & Media Converters for JB of (SP40VEA4NNP21DN10)		
8 ea	096033	Video Encoder AXIS, 1ch RS-422/RS-485	Manufacturer's	32137-02-001
8 ea	019078	Ethernet Media Conv.1ch 10/100 OSD2051 OSD for SFP	DS019078A	32137-02-001
8 ea	019097	Ethernet SFP SM TX1310/RX1550 155Mb 20km LC FTTX	DS019097A	32137-02-001
8 ea	025595	Cable Fibre patch 1m single LC-ST/PC SM	Not Available	32137-02-001
8 ea	012241	F.O. Patch panel for 16 ST/FC adapters Mounting of max. 16 adapters ST(Pn.026111) or FC(Pn.095859)	DS012241B	32137-02-001
48 ea	026111	F.O.Adapter Single/Multi Mode ST-ST Plugg chas	DS026111B	32137-02-001
Note for the above: Exd JBs with Glands shall be provided by ABB Singapore. HERNIS Singapore shall free issued the IP Encoders and Media Converters to ABB Singapore for installation.				
		Indoor Dome PTZ Camera Station		
3 ea	097111-115/282-C	Cam.st.PT70 Outdoor Dome / 1/4".PAL.H.R. 3.4-122mmP.El.polish	DS097111F	32137-02-001
3 ea	029650	Gland Stainless Steel A2 M20 8-14,5mm	Not Available	32137-02-001
3 ea	025401	Bracket for outdoor Dome PT70/S71 wallmount	DS025401A	32137-02-001
		5mtr Pigtail Cable to ABB Singapore's supplied Junction boxes.		
15 m	025118	Cable Multi Ships w/Screen HERNIS Multicable Ship w/Screen. 2 x 75ohm coax for video or sync. 2 x 0,22mm2 twisted pair for control. 2 x 2,5mm2 conductors for power supply to the camera station. Halogen free and flame retardant acc. to IEC 332 part 1. Weight: 275 gram/m Outer diameter 13,8mm	DS025118G	32137-02-001
		IP Encoder & Media Converters for JB of (PT70)		
3 ea	096033	Video Encoder AXIS, 1ch RS-422/RS-485	Manufacturer's	32137-02-001
3 ea	019078	Ethernet Media Conv.1ch 10/100 OSD2051 OSD for SFP	DS019078A	32137-02-001
3 ea	019097	Ethernet SFP SM TX1310/RX1550 155Mb 20km LC FTTX	DS019097A	32137-02-001
3 ea	025595	Cable Fibre patch 1m single LC-ST/PC SM	Not Available	32137-02-001

Qty	P/N	Description	Data Sheet No	Project No
3 ea	012241	F.O. Patch panel for 16 ST/FC adapters Mounting of max. 16 adapters ST(Pn.026111) or FC(Pn.095859)	DS012241B	32137-02-001
3 ea	023025	Spare Trafo 2x115V/2x30V 100VA Innp:2x115Vac Output 2x30Vac	DS023025D	32137-02-001
Note: Weather-proof JBs with Glands shall be provided by ABB Singapore. HERNIS Singapore shall free issued those IP Encoders and Media Converters to ABB Singapore for installation.				
		Central Equipment		
Note: 42U Central Rack, Fan Unit, Filter and Service Lamp shall be free issued by ABB Singapore to HERNIS Premises.				
1 ea	095406-01-C	HERNIS 4U CCTV system server / Std.	DS095406D	32137-02-001
1 ea	095408-01-C	HERNIS 2U video extender / Std.	DS095408D	32137-02-001
1 ea	095536-10-C	HERNIS video recorder / 20TB w/Raid	DS095536D	32137-02-001
20 ea	097779	Camera Management Software	NA	32137-02-001
		Camera LAN Switch		
1 ea	022638	Ethernet Switch 24SFP/Gb/10G +2GbCombo ECS4510-28F Edge Core	Manufacturer's	32137-02-001
20 ea	019096	Ethernet SFP SM TX1550/RX1310 155Mb 20km LC FTTX	DS019096A	32137-02-001
2 ea	019098	Ethernet SFP Copper TX/RX 10/100/1000 RJ45 FTTX	Manufacturer's	32137-02-001 (IVO #1)
		System LAN Switch		
1 ea	022647	Ethernet Switch 24Gb+2SFP ECS2000-26T Edge Core +50C	Manufacturer's	32137-02-001
1 ea	019096	Ethernet SFP SM TX1550/RX1310 155Mb 20km LC FTTX	DS019096A	32137-02-001
1 ea	012241	F.O. Patch panel for 16 ST/FC adapters Mounting of max. 16 adapters ST(Pn.026111) or FC(Pn.095859)	DS012241B	32137-02-001
1 ea	012241	F.O. Patch panel for 16 ST/FC adapters Mounting of max. 16 adapters ST(Pn.026111) or FC(Pn.095859)	DS012241B	32137-02-001
21 ea	026111	F.O.Adapter Single/Multi Mode ST-ST Plugg chas Adapter for connecting two fiber optical connectors(ST) together. Bulkhead mounting.	DS026111B	32137-02-001
21 ea	025593	Cable Fibre patch 3m single LC-ST/PC SM	Manufacturer's	32137-02-001

Qty	P/N	Description	Data Sheet No	Project No
		Alarm interfaces via dry contact		
1 ea	095519	HERNIS 05 System Node The node box is delivered with Power as standard. There is also space for optional 5 Card. The optional Cards has to be ordered Separately	DS095519J	32137-02-001
1 ea	095419-02-A	HERNIS HSS05 IO-32-8 / Alarm Card Alarm Card for 32Alarm inputs and 8Alarm Outputs (Relay driver output) Two serial ports (400 protocol) for Keyboard, Pc-Interface.	DS095419B	32137-02-001
		Control Room Equipment		
3 ea	024024	Monitor 24" LED 16:9 Desktop/Vesa PC	Manufacturer's	32137-02-001
1 ea	097000-120	HERNIS HWIN Software / HWIN Standard Alarm - Base License	DS097000E	32137-02-001
2 ea	097000-121	HERNIS HWIN Software / HWIN Standard Alarm – Additional License	DS097000E	32137-02-001
Note: PC Workstation shall be supplied by ABB				
		Additional HWIN Software for HQ and Remote PC Workstation		
6 ea	097000-121	HERNIS HWIN Software / HWIN Standard Alarm - Additional License	DS097000E	32137-02-001
		Joystick Control for PC Workstation with HWIN Software		
4 ea	095345	Joystick three axis w/6 switch for HWIN W/USB	Manufacturer's	32137-02-001
		Media converter for extension of workstation		
1 ea	019078	Ethernet Media Conv.1ch 10/100 OSD2051 OSD for SFP	DS019078A	32137-02-001
3 ea	019097	Ethernet SFP SM TX1310/RX1550 155Mb 20km LC FTTX	DS019097A	32137-02-001
1 ea	025593	Cable Fibre patch 3m single LC-ST/PC SM	Manufacturer's	32137-02-001
Note: 1) PC Workstation shall be free issued by ABB Singapore to HERNIS Premises for FAT Purpose. 2) Media Converter shall mount in the 3rd party rack located in Security building				
50 ea	026044	BNC Plug Male for HERNIS Multicable Coax BNC plug male to be used on coax cable in HERNIS multicable	DS026044C	32137-02-001

Qty	P/N	Description	Data Sheet No	Project No
		Commissioning Spare Parts		
1 ea	096630	Spare fusekit Consists of: 10 x 0,5A (S) 10 x 1A (S) 10 x 2A (S) 10 x 3,15A (S) 10 x 4A (S)	DS096630C	32137-02-001
1 ea	019096	Ethernet SFP SM TX1550/RX1310 155Mb 20km LC FTTX	DS019096A	32137-02-001
1 ea	TBA XWP10-24	Pressurised 10 Litre wash system: Ex em(b) zone 1, 21 solenoid valve, 24VAC operation. Manually pressurised stainless steel cylinder. 10m hose. Up to 20m head height 316L stainless steel cover.	Manufacturer's	32137-02-001
1 ea	096033	Video Encoder AXIS, 1ch RS-422/RS-485	Manufacturer's	32137-02-001

4. Installation Instructions

4.1 Unpacking, Field Handling and Lifting Instructions

4.1.1 Purpose and Scope

This document describes the procedure that shall be followed during unpacking, transportation and lifting of the CCTV equipment.

4.1.2 Unpacking Procedure

Unpacking of the equipment must take place indoors, in a dry, clean environment, free from dust and other particles, and at normal room temperature (10-25°C).

Before removing the packing material (plywood crates, standard cardboards boxes, etc.) inspect the goods for any visible damage. If any damage is observed, immediately contact the responsible Site Supervisor, and inform HERNIS Scan Systems prior to commissioning.

Record the nature of damage, and check if any damage has been done to the equipment packed inside (after the package material has been removed). If possible, take a picture of the damaged equipment. Forward the image to HERNIS' Logistics Dept., either digitally by e-mail or by mail. Description of the damage must be enclosed.

Do not use unsuitable tools or undue force while removing the equipment from the packaging material.

Check the contents of the crate/box against the packing list located inside and/or outside the crate/box. If there are any items missing, immediately inform the responsible Site Supervisor and/or HERNIS Scan Systems.

If moisture-absorbing material (silica or Cortec) is used inside racks, cubicles or units, these should remain in place until on-site erection takes place and the equipment is ready for installation, wiring, and pre-testing.

The best solution is not to unpack the equipment until it is to be installed. If this is impossible or impractical, take care while moving the equipment from where it is to be unpacked to where it is to be installed. Cover the equipment with thick polyethylene sheeting and do not expose the equipment to rain, snow, etc.

Bear in mind that this is delicate, electronic equipment, and thus has to be treated carefully.
Where lifting lugs are provided by HERNIS Scan Systems, use these for lifting the equipment.

If sub-units have been removed from racks and/or cubicles and packed separately, please do not replace these units before the rack and/or cubicle has been properly installed. The best solution is not to unpack the sub-units until they are needed for installation or commissioning.
Any damage caused by failure to follow these instructions will relieve HERNIS Scan Systems of the responsibility for consequential damage to the equipment.

4.1.3 Field Handling Procedure

4.1.3.1 Transportation

All equipment is packed in plywood crates (6 mm min.) and placed on wooden skids/pallets.

If ocean freight is used, all crates shall be shipped in 20' or 40' containers if shipped on deck. Crates may be shipped without a container if crates are shipped in a dry storage hold/room under deck.

All land transport of goods shall be by means of fully enclosed furniture vans or rail cars.

All goods shall be shipped in an upright position, no more that 3 crates in height. No other crates/boxes/materials shall be shipped on top of the goods.

The goods shall not be shipped in a container/van containing materials of corrosive nature.

All goods shall be securely braced during shipment.

Should it be necessary to transport/ship the equipment *after* it has been unpacked, the equipment shall be replaced in the original packing material (or equivalent) prior to transport/shipping of goods.

Transporting the equipment from the warehouse to the erection location is the responsibility of the customer. Be aware of and follow instructions given in the Unpacking Procedure. The transportation is not completed until the equipment is at the location where it is to be fixed to the designated foundation.

4.1.3.2 Site Location/Erection Area

To avoid damage to the equipment, all other "Heavy work" such as welding, painting etc., must be completed before bringing the equipment into the designated installation area. Ensure that the surroundings are as clean as possible, and that all rubbish etc. has been removed. Also check that the foundation is ready to support the equipment. Loose equipment should be protected against theft.

If any additional work is necessary in the vicinity of the equipment, all precautions must be taken to protect the equipment from dust, mechanical damage etc.

WARNING
If pan and tilt units are installed, do *not* turn the pan and tilt by hand. Turning the pan and/or tilt by hand will cause damage to the gearbox assembly.

Do not use camera equipment, racks etc. as steps nor as a support for scaffolding.

4.1.4 Lifting Instructions

Most of the delivered CCTV equipment can easily be lifted by hand or by means of a lifting strap. However, where lifting lugs have been provided by HERNIS Scan Systems (central rack), use these for lifting the equipment. If the monitors are to be lifted by hand, lift the monitor with the screen facing towards you.

If sub-units have been removed from racks and/or cubicles and packed separately, please do not mount these sub-units in the rack/cubicle before the rack/cubicle is properly installed. It is recommended that all sub-units remain packed until they are needed for installation or commissioning.

WARNING
Caution should be exercised when lifting the pan and tilt unit. If a lifting strap is used, place strap around the pan housing to avoid turning the pan and tilt manually. Turning the pan and tilt by hand or otherwise, will damage the equipment.

Any damage caused by failure to follow these instructions will relieve HERNIS Scan Systems of the responsibility for consequential damage to the equipment.

4.2 Installation Instructions for HERNIS Camera Station

4.2.1 Purpose and Scope

This document describes the general rules/considerations that should be taken into account prior to installation of the camera stations delivered by HERNIS Scan Systems.

4.2.2 Location of Camera Stations

The camera station must be fixed to a rigid steel or concrete, vibration-free structure.

It is extremely important to consider all aspects, which might have influence on the picture quality. If the Engineering dept. has any doubt in this regard, call HERNIS' Service Department for support.

4.2.3 General Rules

Cameras should not be mounted too close to the object to be viewed. Try to locate the camera at least 5 metres away from the principle-viewing field. This applies particularly to cameras with zoom lenses. It is easy access to the units, for service/maintenance.

Camera Stations with Pan & Tilt shall be mounted in an upright (vertical) position. The camera stations may be mounted up side down, but some configuration must be performed. Contact HERNIS' Service Department., for instructions.

If a location requires a special bracket, e.g. for beam support, vertical, diagonal or horizontal positioning of the equipment, contact HERNIS. We have standard brackets available which will meet any special requirements the customer may have regarding placement of the CCTV equipment.

NOTE:
Prior to camera station installation, field cabling and installation of all other related equipment must be completed and ready to supply the remote units with power. The camera station(s) may be equipped with electrical heating, and is essential for the unit's life expectancy to have the units powered up as soon as possible, even if the camera stations are not going to be in operation for a period. The heating element inside the camera station will prevent build up of condensation inside the unit.

For termination details of the camera stations, refer to the Interconnection Diagrams for camera stations supplied for the system or contact HERNIS Project Department for further assistance.

If camera stations are to be lifted on to the mounting surface by crane, place the lifting ropes around the pan/tilt unit.

4.3 Installation Instructions for PT70 Outdoor Dome

4.3.1 Purpose and Scope

This document describes the procedure/steps that shall be followed during the installation of the camera station Dome PT70 with pan & tilt.

4.3.2 Location of Camera Stations

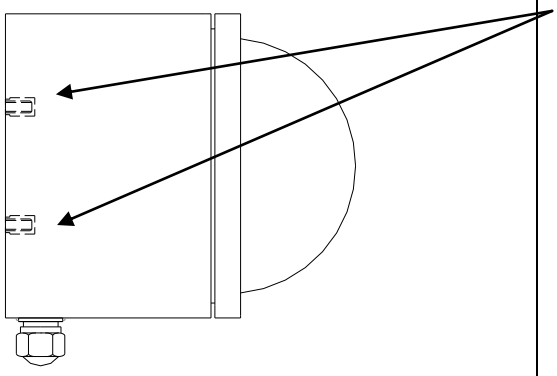
It is extremely important to consider all aspects, which might influence the picture quality. If the Engineering dept. has any doubt in this regard, call the HERNIS Service Department for support. Cameras should not be mounted too close to the object to be viewed. Try to place the camera at least 5 metres away from the primary viewing field.

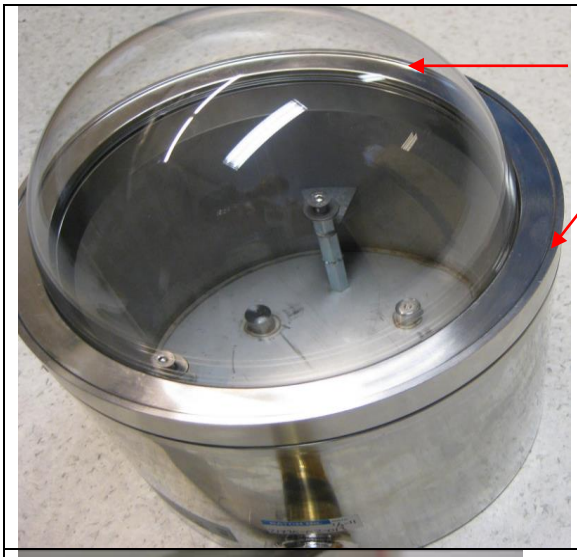
4.3.3 Mechanical Mounting

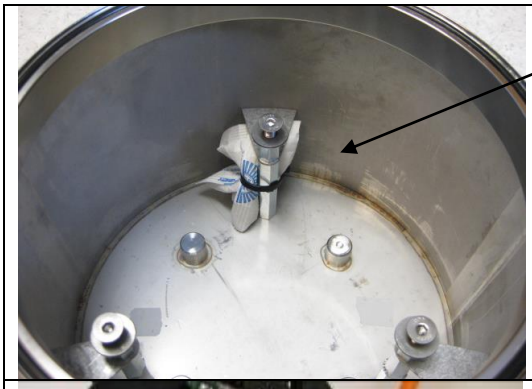
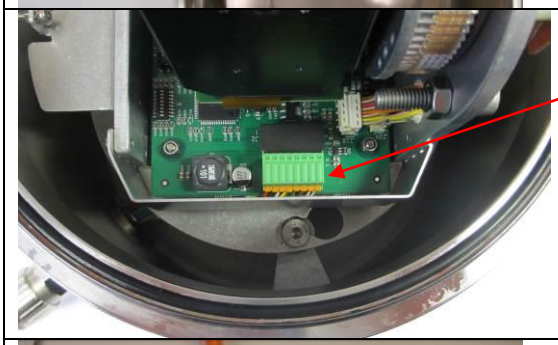
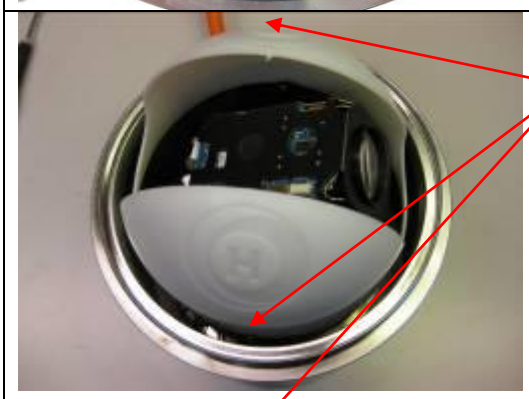
The steps below shall be followed when installing the camera station Dome PT70.

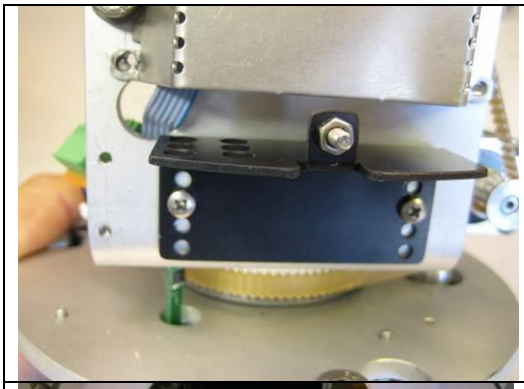
4.3.4 Special tools

To open or close then enclosure a large oil filter tool is needed. The diameter of the top ring, which the tool is used on, is 206mm. A tool from Boa Constrictor is recommended for this usage.

	Service tool PN 098102 Dome Glass/Top-ring BOA
	Mount the dome enclosure by means of 4 stainless steel bolts, M6. There are two options: 1. Place the dome enclosure into position on the bracket. Screw the 4 bolts directly into the rear of the enclosure 2. Mount the adapter plate into the enclosure by means of 4 bolts. Fix the enclosure to the mounting surface by means of four (4) M6 stainless steel bolts/screws.

	Glass cupola Top-ring (glass-ring)
	Loosen this setscrew with a 3mm hexagonal key, and loosen the top-ring by turning the glass-ring counter clockwise (using the Boa tool).
	Unpack the driver unit DDU-272 remove the plastic cover.
	Strip the cable approx. 20 – 25 cm. Feed the multi-cable through the gland. The screen must be terminated in the gland. Outside shrinking of the cable must be well inside the rubber gasket. Make sure that the gland is tightened sufficiently to avoid water leakage.

	Enclosed Silica gel bag mounted as shown in the picture. Remember to remove the plastic bag. **Important!** Mount so the drive unit can move freely.
	Connect driver unit DDU-272. See applicable interconnection diagram in the project drawings
	Mount the driver unit DDU-272 by turning it counter-clockwise in position over the big furrow and tighten the three (3) M6 countersunk screw. Make sure the cables are not clamped, but placed properly.
 	Mount plastic cover on the two (2) pins (one on each side). Put on the dome glass and make sure that there is a clearance between the dome and the plastic cover inside. Also try to tilt the camera in the drive unit up/down and check that the camera never touches the dome glass inside.

	If the plastic cover touches the dome glass it can be adjusted to a lower position in the housing by mounting the cover bracket to another position. The two M3 screws are holding the brackets on each side. This adjustment will normally not be necessary.
	If the camera touches the dome glass it can be adjusted to another position on the bracket. The four (4) M2 screws with plastic bushings are holding the camera. This adjustment will normally not be necessary. To check the clearance to the dome glass it is important to avoid damage of the glass.
	Mount the O-ring and top-ring with glass. To make the mounting of the O-ring easier, put some grease in the O-ring trace. This will prevent the O-ring from falling out during assembling. Tighten with the Boa Constrictor (or similar) tool. Be sure the ring is tightened up sufficiently to avoid water leakage. Check that the ring is pressing against the dome glass. Tighten the set screw. Use Locktite 222 for thread lock on the screws.
	Cover the dome with the Neopren Cap Protection, if the unit is mounted in the construction period, and not in use. This will prevent the glass from damage, like scratches and painting.

NOTE:
Make sure that the cable from/to the camera station is well supported, and check the cable glands for damage after the installation.
The HERNIS camera stations must only be connected to correct HERNIS central equipment!
Failure to comply will damage the electronics in the remote units.

4.4 Installation Instructions for Central Rack

4.4.1 Purpose and Scope

This document describes the procedure/steps that shall be followed during the installation of the Central Equipment Rack(s) associated with the HERNIS CCTV System. The mounting details and physical dimensions of the various equipment racks delivered for any given CCTV System will vary depending upon the type of rack. Hence, one must refer to the applicable General Arrangement Drawing(s) for specific details.

4.4.2 Mechanical Mounting:

Inspect the rack(s) for physical damage prior to installation/ termination of the rack(s) and cables. All physical damage shall be recorded and presented to the Area Supervisor, and to a HERNIS Scan Systems' representative, prior to commissioning.

The central rack may have eyebolts located on top of the cabinet, depending of rack type. If so, lift the central rack into position by means of these eyebolts.

The central rack should be situated upright in a clean, environmentally controlled instrument room, with "normal" humidity and temperature (+5 to +25°C). The temperature must not exceed the temperature spec. of the equipment installed in the rack.

The environment into which the rack is installed shall not exceed the following:

- Frequency range: 2-80 Hz (sin)
- Velocity amplitude: 20 mm/sec
- Acceleration: 1.0 G

The central rack shall be fixed to a flat (horizontal or vertical, depending upon rack type) surface. The support structure shall provide adequate support for a stationary weight of at least 350 kg.

Positioning of the rack should be such that easy access to cabinet, during both installation and servicing, is ensured. Allow a clear width of at least 800 mm measured from the front of the cabinet. Recommended clear width is l m.

Access to the central equipment is via the hinged doors located in front of the cabinet.
Fix the cabinet to the mounting surface using stainless steel bolts with locknuts, or stud bolts. Refer to the applicable General Arrangement Drawing(s) for details.

The eyebolts may now be removed if so desired.

4.5 Installation Instructions for Desktop Monitor(s)

4.5.1 Purpose and Scope

This document describes the procedure/steps that shall be followed when installing a desktop monitor.

4.5.2 General Rules

Inspect the equipment for physical damage prior to installation. All physical damage shall be recorded and presented to the area supervisor, and to a HERNIS Scan Systems' representative, prior to commissioning.

It is essential to consider the weight of the monitor unit when planning the location and subsequent installation of these items.

NOTE
Be mindful of possible vibration being transferred to the monitor unit.

If possible, select a location for the monitor, which is dimly lit, or position the unit so that the screen is shaded from direct light, as this will enhance picture contrast.

Place the monitor securely on a level surface. The monitor must be placed such that easy access to the rear of the unit, during servicing and installation purposes, is ensured.

NOTE
Do not mount the monitor(s) near sources of magnetic fields. Strong magnetic fields will distort the picture and could damage the monitor.

4.5.3 Field Cabling

Termination of the monitor is shown in the applicable interconnection Diagram(s).

Connect the coax cable to the video input connector located at the rear of the monitor, and plug the monitor power cord into the local power net.

The transmission of any video signal requires the use of a 75 ohms coaxial cable. The use of any other cable will seriously degrade picture quality

The 75-ohm characteristic impedance of the video cable is critical for optimum transmission of picture quality, and can be altered considerably if the cable is physically distorted.

Unlike when installing a conventional power cable, note the following whilst installing
a video cable:

a) Do not bend the cable into a curve whose radius is less than 10 times its diameter.

b) Never pinch, crush or staple the cable.
Even circular staples must never be used.

4.5.4 Field Cabling

Unless otherwise specified in the applicable purchase order, cable entry will be through the bottom of the rack. Hence, feed each cable through the bottom of the cabinet and fix the cables to the cabinet by means of fixing brackets.

NOTE:
The cable, measured from the fixing bracket to the end of the cable, must be long enough to reach the connectors located farthest from the fixing bracket.

Preparation of field cables, and subsequent termination of the cables, may now begin. Terminate cables according to the applicable Interconnection Drawings.

NOTE:
Field cables should be checked for insulation and continuity prior to cable termination. Install stress relief straps on field cables, inside the central rack.

All field cables and conductors shall be labelled according to contract specifications. The labelling must be verified before connecting power to the system.

4.6 Installation Instruction for HERNIS Multicable

4.6.1 Purpose and Scope

This document describes the procedure/steps that shall be followed during the installation of HERNIS Multicables. In addition, the document also describes the different cable types used and delivered by HERNIS.

NOTE
Do not bend the HERNIS Multicable (or any cable) into a curve whose radius is less than 10 x the cable diameter. Never pinch, crush or staple the cable.

4.6.2 General

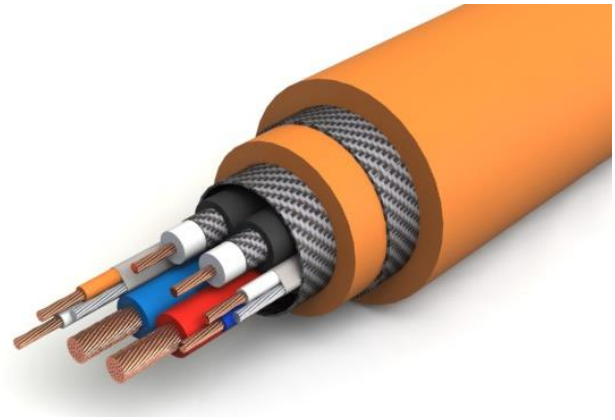
These are the different multi cables manufactured by HERNIS Scan Systems. The different types are:

Cable No	Nom. Breaking Load	Min. Bending Radius
025119	1410 Kg	20 cm
025044	1410 Kg	21 cm
025045	1410 Kg	21 cm
025106	1410 Kg	16 cm
025108	1410 Kg	14 cm
025118	335 Kg	14 cm
025122	150 Kg	10 cm
025098	-	5 cm
025233	1410 Kg	25 cm
025223	1410 Kg	15cm

025119 & 025044
These multicables has a 0,3 mm galvanized armour. The outer diameter for 025119 is 19,3 mm ± 0,9 mm and for 025044 is 21,1 mm ± 0,9 mm. The colour is orange. The armoured cable can be used in hazardous area, flame retardant and oil & mud resistant. The cable contains the following:

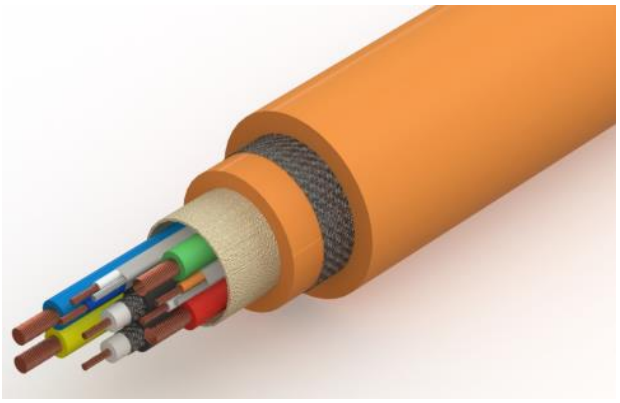
025119:
2 X 2,5mm^2 Power conductor
2 X 2 X 0.22mm^2 Twisted pair w/screen
2 X Coax
Screen & Armour

025044:
4 X 2,5mm^2 Power conductor
2 X 2 X 0.22mm^2 Twisted pair w/screen
2 X Coax
Screen, Kevlar & Armour



025045
This multicable is braided with kevlar. The outer diameter is 18,0 mm ± 0,9 mm the colour is orange. The cable can be used in Subsea area. The cable contains the following:

4 X 1,5mm^2 Power conductor
2 X 2 X 0.22mm^2 Twisted pair w/screen
2 X Coax
Screen & Kevlar



025106 & 025118
These multicables are the most commonly used HERNIS Multicable. The structure of the 025106 cable is the same as the structure of the 024044 except of the armour.
The outer dimension for 025106 is 15,8 mm ± 0,5 m and the colour is orange.
The structure of the 025118 cable is the same as the structure of the 025119 except of the armour.
The outer dimension for 025118 cable is 13,8 mm ± 0,5 mm and the colour is orange The cable contains the following:

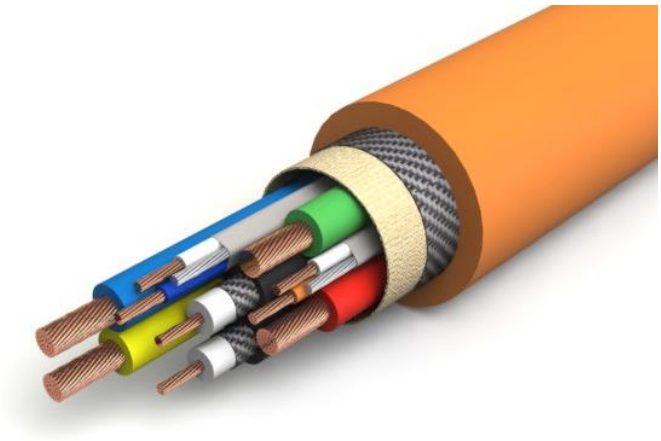
025106:
4 X 2,5mm^2 Power conductor
2 X 2 X 0.22mm^2 Twisted pair w/screen
2 X Coax
Screen & Kevlar

025118:
2 X 2,5mm^2 Power conductor
2 X 2 X 0.22mm^2 Twisted pair w/screen
2 X Coax
Screen



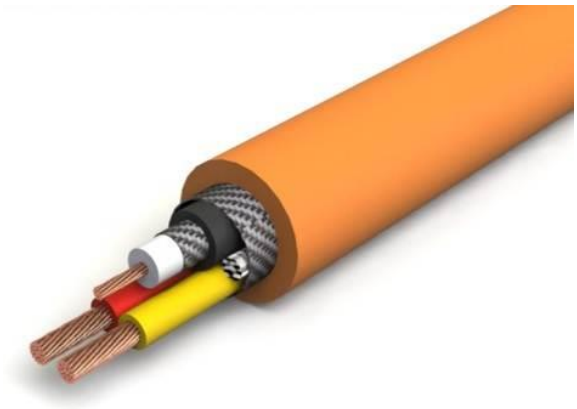
025108
This multicable is used as flying lead and on Crane-TV system.
The outer dimension of the cable is 14,1 mm ± 0,5 m and the colour is orange
The cable contains the following:

4 X 1,0mm^2 Power conductor
2 X 2 X 0.22mm^2 Twisted pair w/screen
2 X Coax
Screen & Kevlar



025122
This flame retardant multicord cable
contains one coax for video and two conductors for power supply. The colour is orange and the outer dimension is only 10,0 mm ± 0,4 mm.
The cable contains the following:

2 X 1,5mm^2 Power conductor
1 X Coax
Screen



025098
This flame retardant coax cable contains one coax for video.
The colour is orange and the outer dimension is only 5 mm ± 0,25 mm.
The cable contains the following:

1 X Coax



4.6.3 Termination of BNC Connectors

BNC connectors are normally used together with HERNIS Multicables (all types). Use a crimping tool device in order to crimp the BNC connector onto the coaxial wire inside the Multicable. It is most common to use male BNC connectors on the Multicable. However, this may vary from item to item, hence, check the BNC type of which the Multicable is going to. The following items can be ordered from HERNIS Scan Systems AS.

Part number: 050100 - Crimping tool for BNC connectors
Part number: 026044 - MALE BNC crimp connector.

4.6.4 Termination of Other Multicable Cords

Remove adequate length of the outer sheet of the multicore cable, so that the individual cords can be attached to the termination blocks without being stretched.
Remove 1,0 cm of each multicable cord insulation and fasten the cords in each dedicated terminal as indicated on the applicable interconnection diagram(s). Make sure that the cords are tightened securely.
If present, fastened the cable gland securely before closing the junction box.
(or other type of equipment).

4.6.5 Connection of BNC Connectors

Strip the cable as shown in fig. 1.

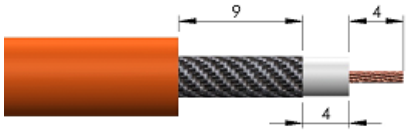


Fig.1

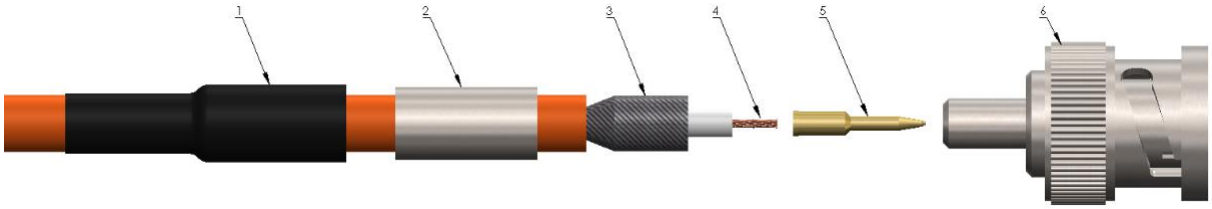


Fig.2

1. Thread the heat shrink sleeve (1) and the shiny bush (2) on to the coaxial cable.
2. Bend the screen (3) backwards as shown in fig. 2.
3. Ease the centre cord (4) into the centre pin (5) and crimp.
4. Ease the centre into the BNC plug (6) until it snaps into place.
5. Ease the BNC plug (6) on to the cable. Bend the screen over the end of the BNC plug, ease the cover over the screen. Use a coax plier to fix the cover to the screen and BNC plug.
6. Adapt the heat shrink sleeve connection and shrink by heating gun.

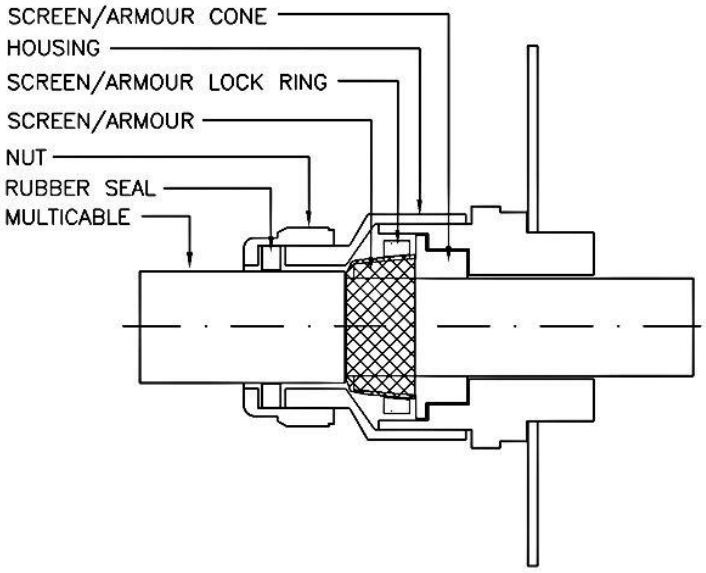
4.7 Assembly Instruction for HERNIS/Hawke Gland

4.7.1 Termination of Screen in Gland

This procedure describes the steps which have to be performed to terminate the different cables in the gland. The procedure describes the termination of HERNIS Multicable. It is vitally important to terminate the screen of the multicable in the gland properly to ensure ground signal of the system.

Different types of glands are used in HERNIS CCTV systems, but the terminations of cables are performed equally for the different types.

Example of Exe gland and HSS Multicable termination.



1. Disassemble the cable gland into the different items, **nut** – **housing** - **screen armour lock ring** and **screen armour cone**.

2. Thread the following items of the gland on to the cable in this order: nut – housing – screen armour lock ring.

3. Remove the outer (orange) sheath of the multicable at a length, which makes it possible to terminate the different cords into the respective equipment.

4. Fold the screen back to reveal the plastic cover sheath and the Kevlar braid.

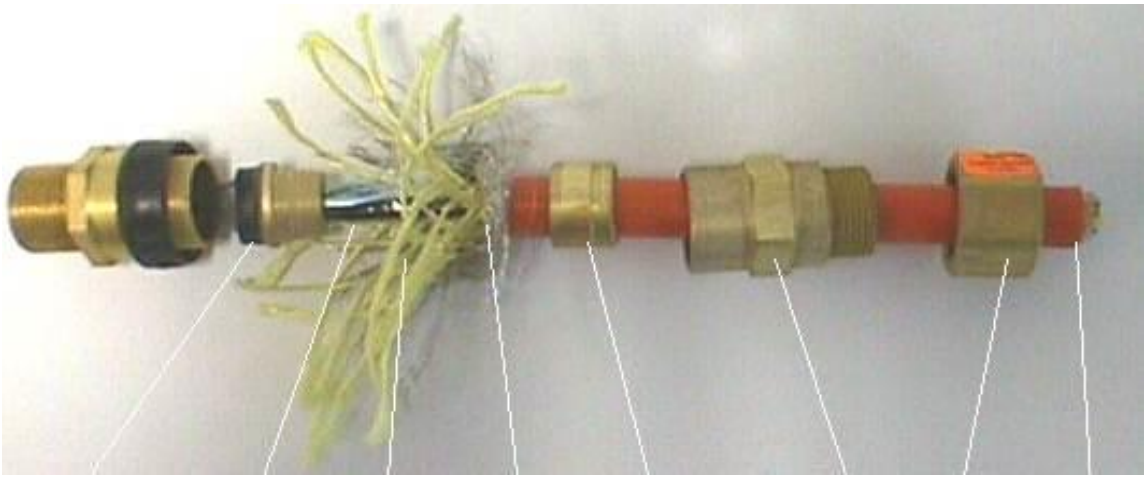
5. Fold the Kevlar braid back towards the screen. (The cores of the multicable will be revealed.) Remove as much as possible of the Kevlar braid. (If the cable has steel armour, this also has to be removed)

6. Thread the cords through the screen armour cone until it meets the Kevlar braid.(Do not damage the rubber cone fixed to the screen armour cone.)

7. Thread the screen armour lock ring over the screen armour cone. Remove the excessive screen.

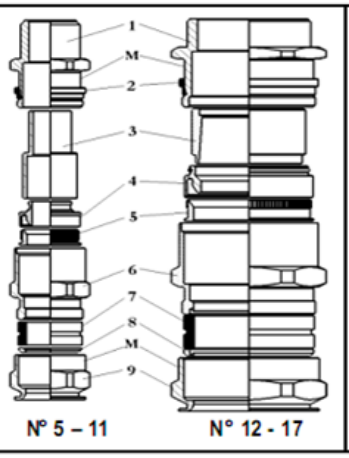
8. Assemble the gland and tighten the nuts properly.

4.7.2 Disassembled Cable Gland and Multicable



Screen Armour Cone (Rubber Cone) | Cores | Kevlar Braid | Screen | Screen Armour Lock Ring | Housing | Nut | Multicable

4.8 Assembly Instruction for HERNIS/Capri Gland



M : Marking
1 : Body
2 : Deluge ring
3 : Compound chamber
4 : Compression ring
5 : Clamping ring
6 : Internal cap
7 : External seal
8 : Skid washer
9 : External cap

Fixation on Equipment

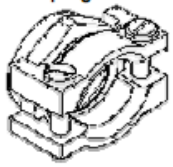
ISO **16**
& NPT **3/8"**
non
& non

A: Torque value for ISO Body with Neoprene gasket

B: Torque value for ISO Body with Fiber gasket or for NPT Body

ISO	NPT	A Nm	B Nm
16	**3/8"**	2	12,5
20	1/2"	3	20
25	3/4"	5	30
32	1"	7,5	55
40	1"1/4	12,5	75
50	1"1/2	17,5	100
63	2"	27,5	135
75	2"1/2	40	175
90	3"	55	300
110	4"	85	480

Clamping Module



Cable & tightening

C: cable outer diameter
D: Armor or braid thickness
E: Armor or braid preparation
F: Inner sheath maximal diameter
G: Maximal diameter over cords
H: Maximal quantity of cords
J: Torque value for caps

N° ADE	C mm	D mm	E mm	F mm	G mm	H mm	J Nm
5	6 - 12	0,2 - 0,9	12	8	6.5	6	12,5
6	8,5 - 16	0,2 - 1,25	15	12	9,5	6	20
7	12 - 21	0,2 - 1,25	17	16	12	10	30
8	16 - 27,5	0,2 - 1,6	20	21	17	21	55
9	21 - 34	0,2 - 1,6	22	27	23	42	75
10	27 - 41	0,2 - 2	24	34	29	60	100
11	33 à 48	0,2 - 2,5	26	41	36	80	135
12	40 - 56	0,2 - 2,5	28	48	43	100	175
13	47 - 65	0,2 - 2,5	30	56	50	100	240
14	54 - 74	0,2 - 2,5	32	65	59	120	300
15	63 - 83	0,2 - 3,15	34	73	66	140	400
16	72 - 93	0,2 - 3,15	36	82	75	140	480
17	85 - 107	0,2 - 3,15	40	92	85	200	610

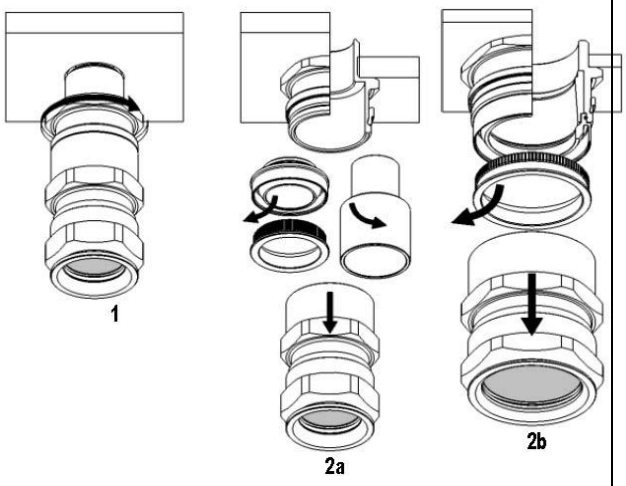
Verifications:

- Check if the size of the cable entry (size n° marked on the external cap) is adapted to all the characteristics of the cable, see table on the left.
- Check if the type and size of the entry thread, marked on the body, are correct for the equipment.
- During assembly the temperature must not be less than+10°C.

Assembling / Generalities:

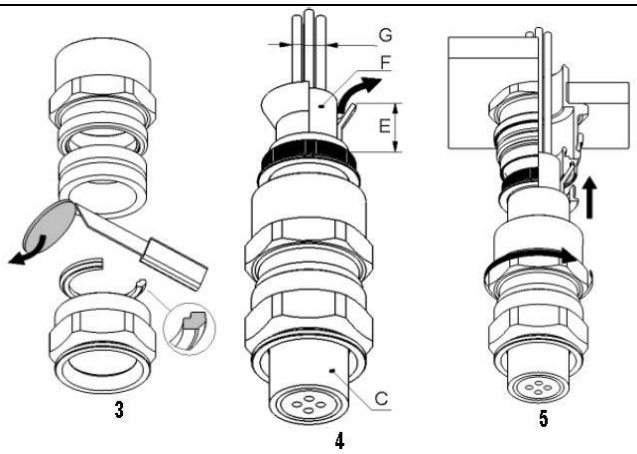
- Use gloves when handling products.
- At low temperature the sealing rings harden, it may be necessary to knead them until they are sufficiently flexible.
- For Aluminum and stainless steel version, grease must be used on the threads of all the caps.
- The appropriate torque is stated in the table to the left. Do not tighten more than 1.5 times the indicated torque.
- Always hold the body in position with a spanner to prevent rotation before tightening the first cap.
- Always hold the internal cap in position with a spanner to prevent rotation before tightening the external cap.
- Always respect the position of assembly parts; see the drawings.

Assembling:

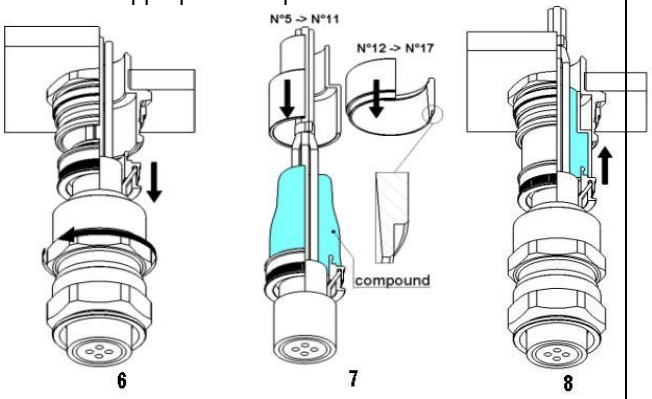


1. Fix the cable gland to the equipment by screwing the body to the appropriate torque.
2. Remove the cap assembly (Internal gland nut, external sealing ring, skid washer and external gland nut). Recover the moving parts:

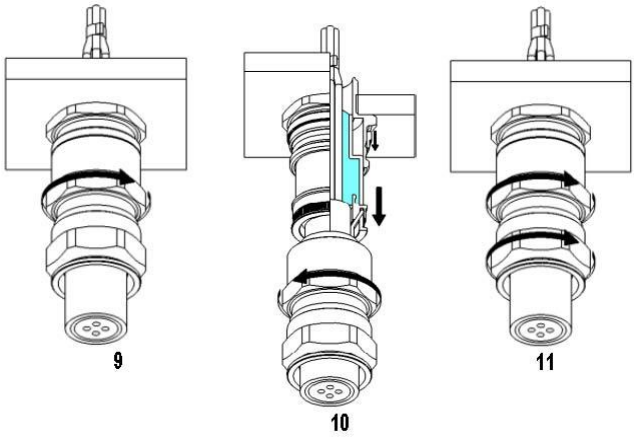
A. For n°5 to 11: Clamping ring, Compression ring and Compound chamber.
B. For n°12 to 17: Clamping ring only (let the compression ring and the compound chamber in place in the body).



3. Before introducing the cable through the sealing ring, totally remove the temporary protective membrane. Take care of Skid Washer positioning.
4. Place the cap assembly and the clamping ring (Large external diameter first) on the cable. Prepare the armor or braid of the cable:
- Mark on the cable, the position to connect the cable gland taking into account the total length of wire needed for the equipment.
- Cut on the mark, the outer sheath, the armor or braid and the inner sheath of the cable to release the cords, without damaging the individual insulation of the cords.
- Strip the cable to expose the armor or braid to the dimension E, see table on the top.
- Enlarge the armor or braid to the external diameter of the clamping ring.
5. For n°5 to 11, replace the compression ring onto the cable (conical part first). Push the cable into the body until the end of the armor or braid is up against the inside of the compression ring. Hold the cable in the center of the capnut and tighten by hand, the cap assemblies on to the body. Tighten the internal gland nut to the appropriate torque.



6. Dismount the cap assembly and, if the Deluge sealing ring, located outside the body, does not return to its correct position near the thread, put it back in place. Pull out the cable and inspect the connection of the armor or braid.
For n°12 to 17 remove the compound chamber out of the body.
7. Proceed to the compound seal:
- Depending on the cable features, the compound should not be used in full, the amount should be adjusted to properly fill, without overflowing, all the intervals along the length of the compound chamber.
- Mix the compound needed by folding and kneading until resulting mixture is a uniform green color without streaks (approximately 3 minutes). From now, the working time at 20°C is 45 – 60 minutes, at 30°C is 20 – 30 minutes.
- Separate the cords to the nearest of the internal sheath of the cable, put compound between each cord over a length equal to the total length of the compound chamber and attach them together.
- Coat completely, the outside of this seal with compound until a diameter slightly greater than the biggest inside diameter of the compound chamber.
- Insert the compound chamber over all the cords:
.Large external diameter of the chamber first for n°5 to 11
.Small external diameter of the chamber first for n°12to 17
- Push with force the chamber over the compound up to the nearest possible contact with the compression ring.
- Remove excess compound around the chamber and the compression ring.



8. Insert the so equipped cable until the chamber is in contact with the inside of the body and screw, by hand, the cap assembly.
9. Tighten the internal gland nut to the appropriate torque.

9. Tighten the internal gland nut to the appropriate torque.
10. To ensure the possibility of a subsequent removal for inspection, clean any eventual overflow of compound within the cable gland:
- Dismount the cap assembly and, if the Deluge sealing ring, located outside the body, does not return to its correct position near the thread, put it back in place.
- Pull out the cable with the compound chamber and thoroughly clean the excess compound around the Chamber, around the Compression Ring and within the Body.
- Definitely push the equipped cable through the body and screw, by hand, the cap assembly.
- Tighten the internal gland nut to the appropriate torque.
11. Tighten the external gland nut to the appropriate torque. Don't move the cable for a minimum of:
- 30 minutes with minimum service temperature of 20°C,
- 24 hours with service temperature lower than 4.4°C.

5. Operating

5.1 Operating Procedure for Control Panel OK450

5.1.1 Introduction

The OK450 control panel for HERNIS CCTV Systems is designed to achieve easy and effective control over the system. It has dedicated camera control keys in a distinct colour that makes them easy to identify. These keys control all the main features of the camera stations like zoom, focus and pan/tilt. The control panel is also equipped with a joystick for more precise control of the camera station. The name of the camera controlled by these keys is always displayed in bold text at the top of the display to make it easy to identify.

The menu system on the OK450 is based on selection in lists displaying the names of the different selectable items. To select an item in the list you can scroll in the list until the item you want is selected and press enter. You can also jump directly to the item you want in the list by entering the number of the item on the keypad, and the list will be updated with the selected item highlighted. The highlighted item can then be selected by pressing enter.

It is easy to switch between the different menus. Normally you press the key for the menu you want, and the menu is displayed on the screen.

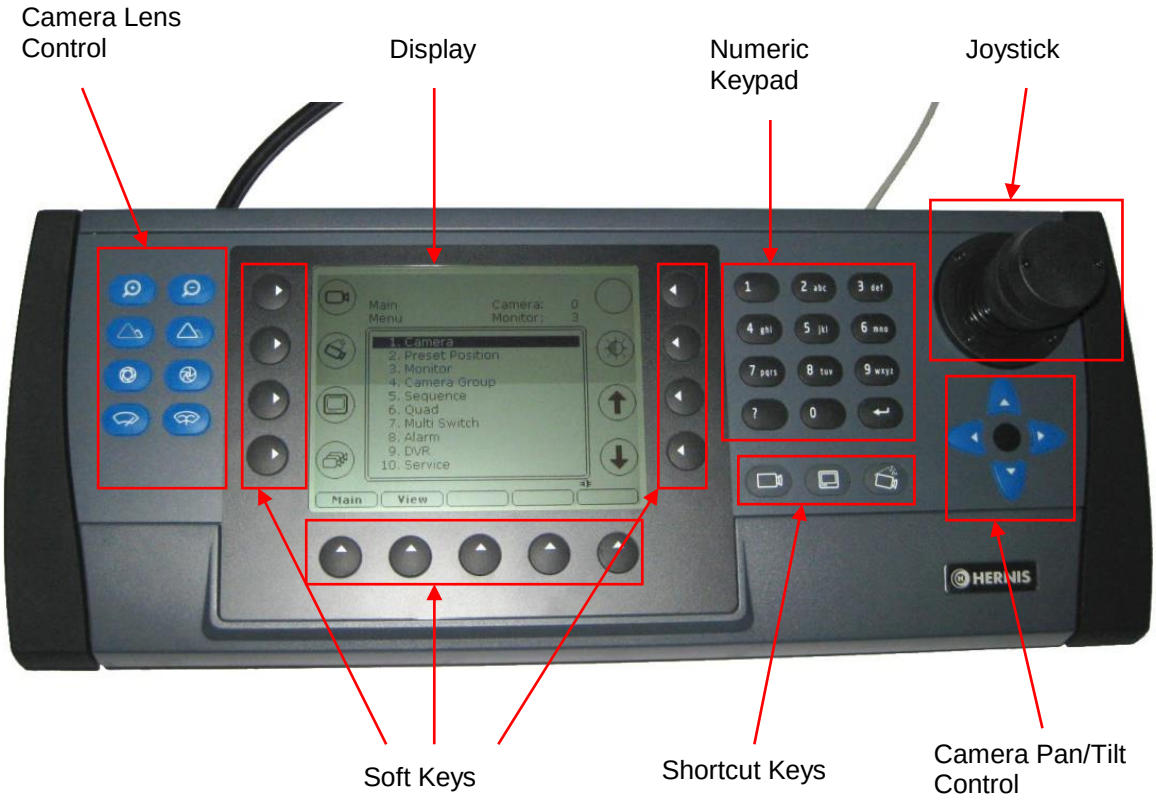
For some of the most frequent commands there are added dedicated shortcut keys that will save time for the experienced user that knows the CCTV system well. When you use the shortcut keys it does not matter which menu is currently displayed, they are always available. The shortcut key operations are:

- Change the active camera on active monitor
- Change which monitor is active
- Release preset position for the active camera.

This document is for firmware version 1.11 and later for the OK450 control panel. Please check appendix for differences from previous versions.

5.1.2 Control Panel Controls

Control panel Layout



Information Icons

The information icons will appear below the list in the display on the right hand side. The connection status icon will always be displayed, but the other icons are only displayed when appropriate. The following information icons are used:

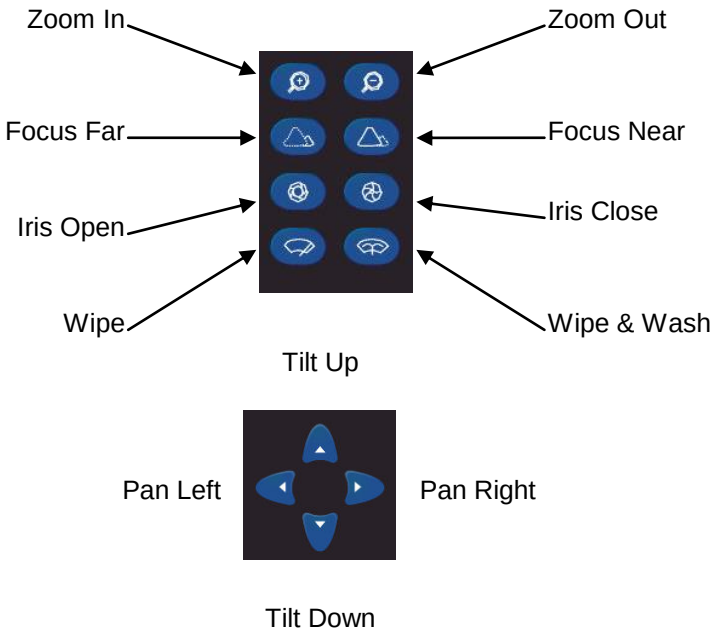
- CCTV System communication OK
- CCTV System communication lost
- Alarm active on selected monitor
- Sequence active on selected monitor
- Camera Lock activated by another user on selected camera
- Camera Lock active on selected camera
- Password mode active for access to edit and service menus

5.1.2.1 Control Panel Keys

The OK450 control panel keys are grouped into the following categories:

- **Camera Control Keys**. The blue keys on the left and right on the panel are used to control the currently selected camera. On the left are the keys to control the camera lens (zoom, focus, iris), and the wipe/wash. On the right there are pan and tilt keys used to control the camera station.
- **Numeric Keypad**. The numeric keypad on the right of the display has three main uses:
  - Enter shortcut selections for camera, monitor and preset position.
  - Manoeuvre directly to an entry in any list on the display.
  - Entering text when changing names on entities in the system (camera names, sequence names, etc.). Text is entered in the same style as for single letter spelling on a mobile phone. For text entry the available numbers and letters are printed on numeric keys. In addition you have space on numeric key 1, and punctuation and delimiters on numeric key 0.
- **Soft Keys.** These are the buttons surrounding the display, and the functions on the keys varies according to which menu is currently active. The function for each key is indicated by an icon next to the key. A complete list of icons can be found in one of the appendices.

5.1.2.1.1 Camera Control Keys



5.1.2.1.2 Soft Keys for Menu Control

The **Soft Keys** are the keys surrounding the display on three sides. The functions on these keys may vary depending on which menu is displayed on the screen, and the current function for each key is indicated by an icon on the display adjacent to each key. If a key does not have an icon displayed, that key does not have any function for the menu being displayed.



The soft keys on the left hand side will be called soft key **L1** to **L4** (where **L1** is the topmost), the soft keys on the right hand side are called soft key **R1** to **R4** and the bottom five are called soft keys **B1** to **B5** (**B1** is the leftmost).

There are some of the soft keys that will have the similar functionality in most menus:

- **L1** to **L4** switches between menus. The menu displayed depends on which icon is displayed for the key.
- **R1** and **R2** will often be used to perform actions on selected list item.
- **R3** and **R4** are used for *scroll up* and *scroll down* in lists.
- **B1** returns to main page or logoff.
- **B2** displays the contents of the currently selected item.
- **B3** is used to edit the selected item.
- **B4** locks or unlocks the currently selected camera.
- **B5** start recording of active on dedicated DVR (configured from Control Panel Setup menu).

Navigating the Menus
All the menus can be selected from a list in the main menu. To select a menu you can enter the menu number on the numeric keypad and then press enter. You can always go back to the main menu by pressing the **Main** soft key (bottom left).

The different menus available on the L1 - L4 keys are grouped in three different groups. Which menu group is active depends on the last selected menu. The menu groups are:

- Menu Group 1:
  - Camera Selection Menu
  - Preset Position Menu
  - Monitor Selection Menu
  - Camera Group Menu
- Menu Group 2:
  - Camera Selection Menu
  - Sequence Menu
  - Quad Menu

- Multi Switch Menu
- Menu Group 3:
  - Camera Selection Menu
  - Alarm Menu
  - DVR Menu
  - Camera Playback Menu (for HERNIS 500 system).

Note that the “Camera Selection Menu” is included in all menu groups. This is to make sure the camera selection is always easily accessed, since selecting and controlling camera stations are some of the most common operations to use in the CCTV system.

If you don’t have the menu you want in current menu group, you will have to go to the main menu (pressing B1). In the main menu you can select the menu you want from the menu list, and the group for the selected menu will be displayed on the left hand soft keys.

The “Service Menu” can only be selected from the list in the “Main Menu”.

Selection in List Menus
Most of the menus on the OK450 control panel are list based. The soft keys ⬆ and ⬇ are used to scroll up and down in the list. If you release the key as for a normal key press, the list will scroll one item in the selected direction. If you press a scroll key and hold it down it will continue scrolling in the list until you release the key or the end of the list is reached. When the marker has scrolled to the top or bottom of the list display, the list will start scrolling one page at the time.

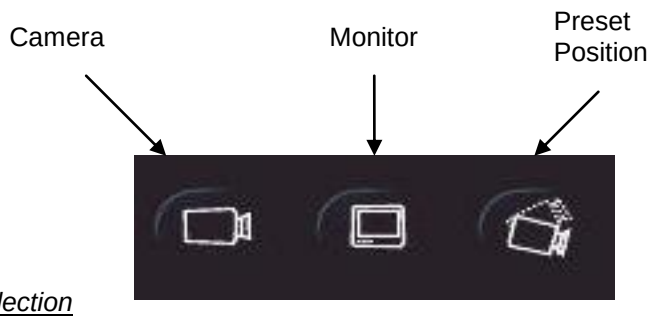
You can move the list marker directly to a specific item in the list by entering the number of the item on the numeric keypad.

When you have selected the item you want by scrolling or direct selection, you press the **Enter** key on the numeric keypad to select the item.

Entering text
When you are in a menu requiring text entry, the top section of the list will change to a text entry field. The text is then entered from the numeric keypad in the same manner as for single letter text entry on a mobile phone. One of the soft keys on the right hand side of the display is used to switch between uppercase Aa and lowercase aA characters, and the soft key ⬅ is used to clear entered text. When the text entry is complete, the text is saved by pressing the **OK** (✓) soft key or by pressing enter on the numeric keypad. The text entry is cancelled by pressing the **Cancel** (✗) soft key.

5.1.2.1.3 Shortcut Selection Keys

The shortcut keys can be used for quick selection of camera and monitor or to release preset position on active camera. To use the shortcut keys you have to know the camera, monitor or preset position number. Select by pressing the shortcut key and then enter the number on the numeric keypad.



Camera Selection
Press the left shortcut key with the camera symbol and enter the camera number. The selected camera will be switched onto the active monitor, and the display on the OK450 will be updated to show the name of the new camera.

Monitor Selection
Press the middle shortcut key with the monitor symbol and enter the monitor number. The active monitor will be changed, and the display on the OK450 will be updated to show the name of the camera currently displayed on the selected monitor.

Preset Position Release
Press the right shortcut key with the preset position symbol and enter the preset position number. The active camera will now automatically be repositioned to the selected preset position, and the preset position name will be displayed on the monitor.

5.1.2.2 Joystick

The OK450 control panel is equipped with a three axis joystick. The three axis are:

- pan (left/right)
- tilt (up/down)
- zoom (by turning the knob on the joystick).

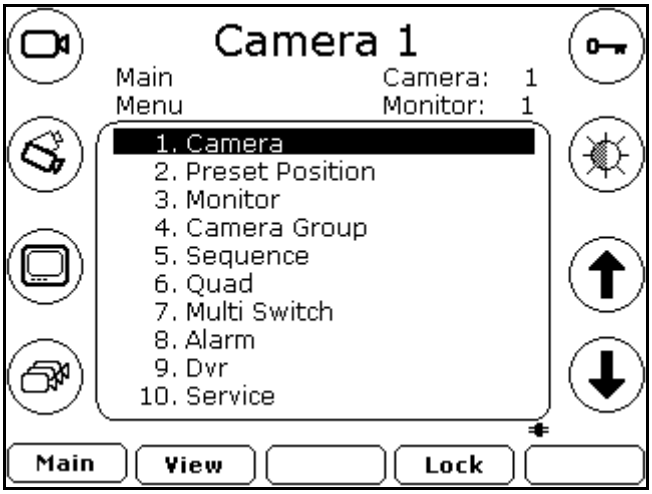
By using the joystick you will be able to control the speed of the camera station during pan/tilt operations. The speed of the camera station will be proportional to the deflection of the joystick in the pan/tilt directions. If you use the pan/tilt keys below the joystick, the speed of the camera station will increase according to a fixed ramp function until top speed is achieved. By using the joystick you will get more flexibility, and you can pan the camera station slowly past areas of interest.

5.1.3 Menu System

5.1.3.1 Main Menu

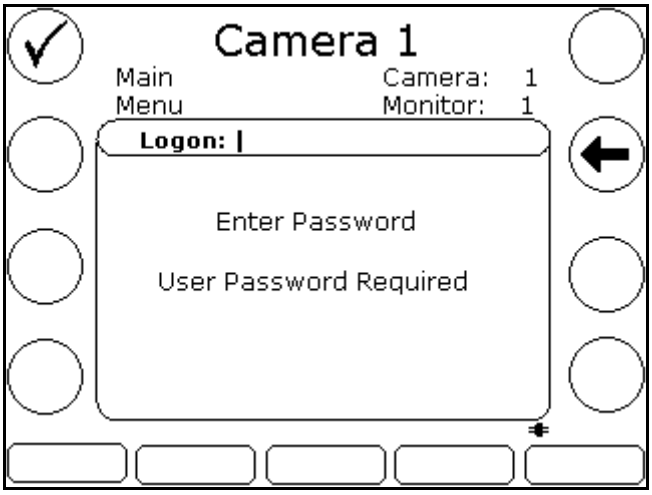
From the top menu on the OK450 control panel, you have access to all the menus in the list displayed on the screen. From any menu on the OK450 the top menu is only one step away by using the **Main** soft key.

This is how the menu looks:

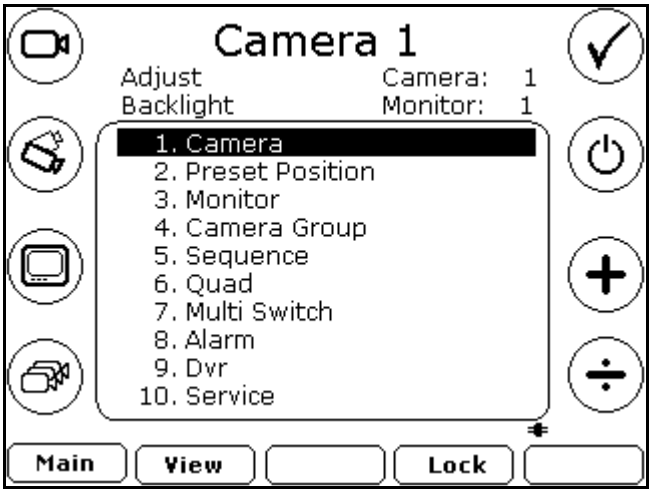


The ***Logoff*** soft key is used to log off the CCTV System. If the control panel is configured for automatic logon, this icon will not be displayed.

The control panel may be configured with manual logon, in which case you will have to enter a valid logon password before you get access to the menu.



The backlight on the display of the OK450 control panel can be adjusted by pressing the ***Backlight*** soft key. When you press this key you will get the options to adjust the backlight or to turn it off all together. When you press the backlight soft key the menu icons will change to the following functions:



You can now adjust the backlight by using the ***Increase*** + and ***Decrease*** ÷ soft keys. You can also toggle the backlight on / off by using the ***Standby*** soft key. This ensures that you can quickly turn off the backlight on the control panel. The procedure to turn off backlight will be as follows:

1. Press the **Main** soft key to go to the Main Menu list.
2. Press the ***Backlight*** soft key to enter the Adjust Backlight menu
3. Press the ***Standby*** soft key to turn off backlight.

To turn the backlight back on you enter this menu and press the ***Standby*** soft key or use one of the ***Backlight Adjust*** keys (+ or ÷).

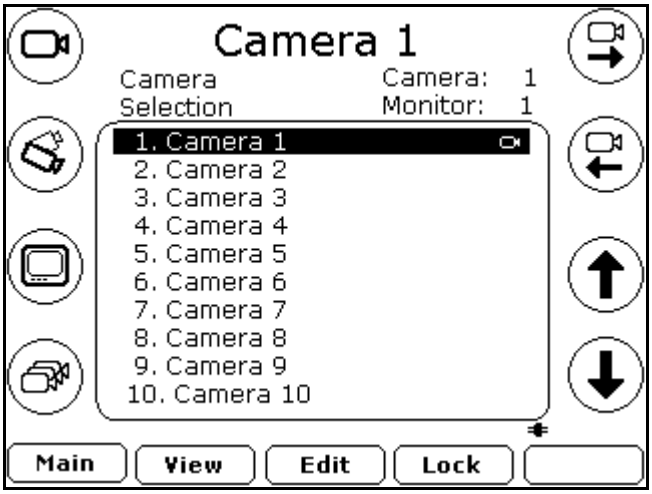
5.1.3.2 Camera Menus

The Camera Selection menu displays all available cameras in the CCTV system in the list, and you can select any camera from this menu. In a large CCTV system with many cameras it can be hard to find the camera you want if the full camera list is displayed. The CCTV system therefore allows each user to create smaller groups of cameras that will make it easier to locate specific cameras. These camera groups are displayed in the Camera Group Menu. Each defined Camera Group is assigned a name that can be used to identify which cameras are included in the group. When you select a single camera group, the control panel will show a list with only the cameras included for the group, and you can select camera from this list.

5.1.3.2.1 Camera Select

You can select camera by using the shortcut key if you know the camera number of the camera you want. Then you just have to press the camera select key and enter the camera number on the numeric keypad.

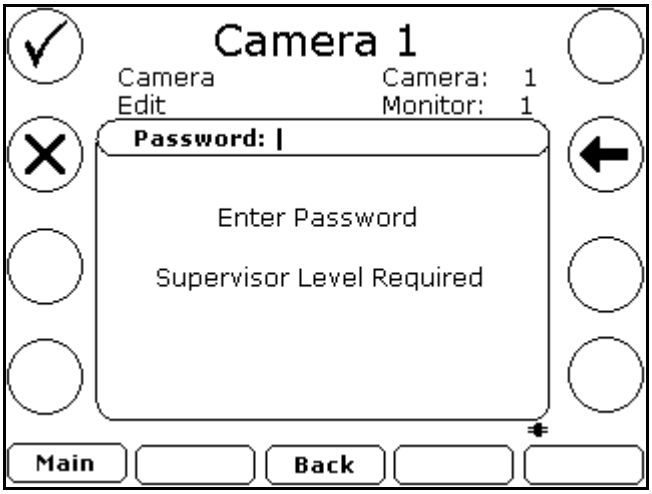
If you don't know the camera number you must open the Camera Selection menu displayed below. This menu will display a list of the camera names. You can select camera by scrolling to the camera you want and press the Enter key on the numeric keypad.



As you can see, this menu also contains two camera selection keys on the right hand side. These keys are used to select next or previous camera. I.e. if Camera 1 is selected and you press the ***Next Camera*** key, Camera 2 will be selected to the monitor.

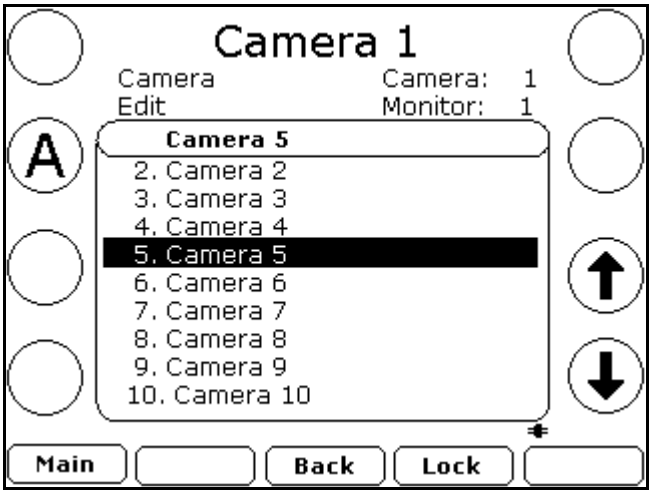
5.1.3.2.2 Camera Edit

To change the camera name you press the soft key marked ***Edit*** while in the "Camera Selection" menu. You then have to enter a password to confirm that you have access to change camera names.

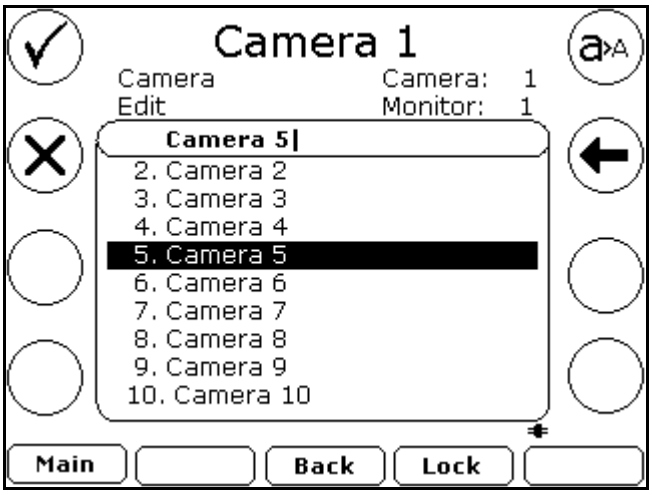


When you enter the edit mode by pressing the soft key ***Edit***, this soft key will change to ***Back***, and you press it once more to leave edit mode.

When access is granted, you will be able to change the name using the numeric keypad to enter a new title for the selected camera. Text is entered in the same way as on a mobile phone when using single letter spelling.



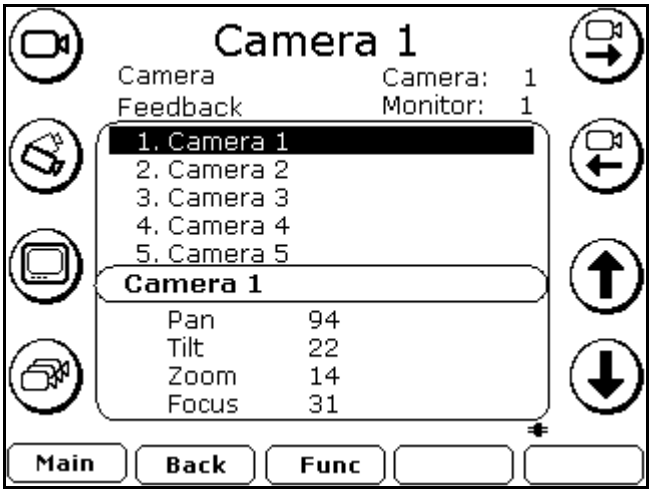
When you first get into edit mode, the marked camera name will be displayed in the edit field on top of the camera list ready to be changed. If you want to edit another camera name, you can use the scroll buttons to edit another camera name, and the text in the edit field will follow the selection in the list. As soon as you start editing a camera name by pressing the ***Edit*** A soft key, the ***Scroll Keys*** ⬆ and ⬇ will disappear and you will get an ***OK*** ✓ and ***Cancel*** ✕ key on the left of the display.



When you have finished editing the camera name and has pressed ***OK*** ✓ (or ***Cancel*** ✕), the ***Scroll Keys*** will reappear, and you can select another camera to edit the name.

5.1.3.2.3 Camera Feedback

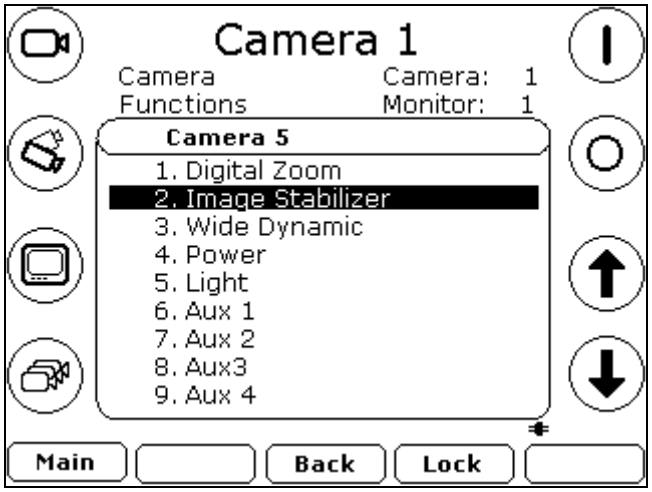
To show the position feedback from the camera, you press the soft key marked ***View*** while in the "Camera Selection" menu. The menu display will change to a split view where the top half of the menu displays the camera list, and the bottom half changes to display feedback values for the selected camera. You will see the values change when you control the camera stations using pan, tilt, zoom and focus commands.



You can still select camera in the same way as you do in the "Camera Selection" menu, and the display will update to show the camera feedback values for the new camera.
To go back to the "Camera Selection" menu you press the Back soft key.

5.1.3.2.4 Camera Function

Some camera stations have additional functions available. To control these functions you press the soft key marked ***Func*** from the "Camera Feedback" menu. A new menu will be displayed with camera functions that may be controlled. The available commands are digital zoom, image stabilizer, wide dynamic range auto function and power on/off. These functions will only have effect if the selected camera supports the function.



You can go back to the "Camera Feedback" menu by pressing the Back soft key.

Digital Zoom
Some camera stations have the possibility to use digital zoom. For the camera stations that support this function this feature may be turned on or off. Whether this feature is available for the selected camera station will depend on the camera used in the camera station and the program version of the camera receiver.

Digital zoom is turned on by pressing the ***On*** I soft key, and off by pressing O.

The zoom value in the position feedback from the camera station will report 0 – 100% in the optical zoom range. When digital zoom is on, you will get a feedback above 100% when you enter into the digital zoom range, and you may also get some pixelation in the video picture due to the digital zoom.

Image Stabilizer
Some cameras have image stabilizer. For the camera stations that support this function this feature may be turned on or off. Whether this feature is available for the selected camera station will depend on the camera used in the camera station and the program version of the camera receiver.

Image stabilizer is turned on by pressing the ***On*** I soft key, and off by pressing O.

Switching on the Image Stabilizer function reduces image blurring caused by, for example, vibration, which allows you to obtain images without much blurring.

Wide Dynamic
Some camera stations have a wide dynamic range auto function to compensate for large differences in brightness within the video image. For the camera stations that support this function this feature may be turned on or off. Whether this feature is available for the selected camera station will depend on the camera used in the camera station and the program version of the camera receiver.

Wide dynamic setting is turned on by pressing the ***On*** I soft key, and off by pressing O.

Power
This function can be used to turn off the camera video for certain camera stations. The function is mostly used to prolong the lifetime for thermal cameras.

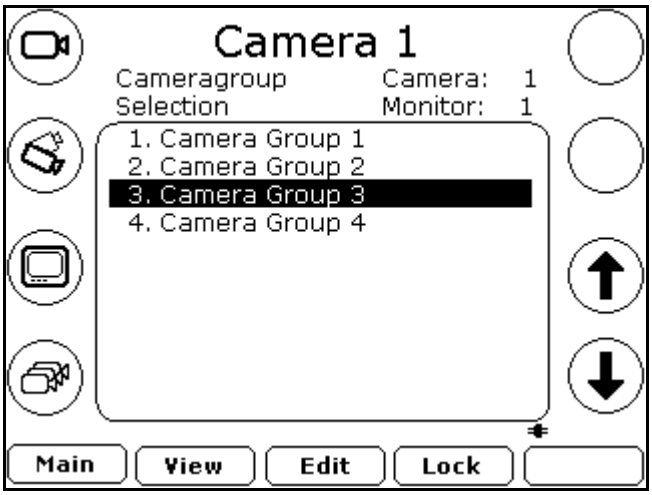
Light
The light function is used to enable and disable light control on certain camera stations that support this function. The light control is used to enable a light sensor to that controls when the light is switched on/off for camera stations that support this feature.

Aux 1-4
These are auxiliary commands that are used to control special functions on some camera stations.

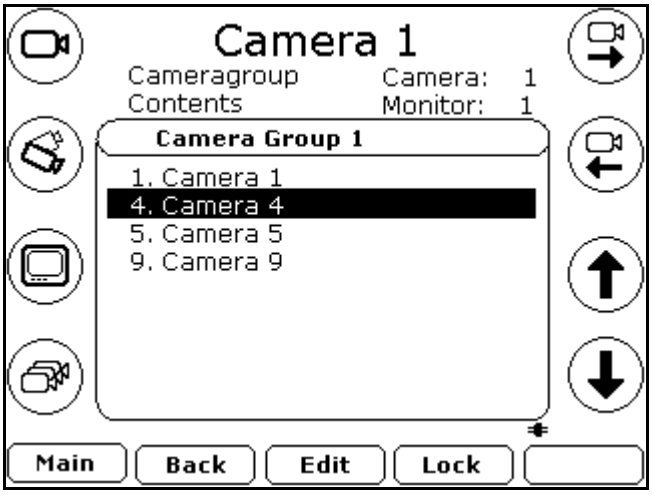
5.1.3.3 Camera Group Select

In large CCTV systems the full camera list will be long and it can be cumbersome to scroll all the way up and down the camera list to find the camera you want. If this is the case you can use the camera group feature to relieve this problem. By dividing the list into groups of related cameras you can create shorter camera lists that make it easier to find the camera you need.

To select a camera group you enter the ***Camera Group*** menu. The display will then show a list of the available camera groups for the operator. Camera group names can be changed to better identify which cameras are available in the group. If you want to see the list of cameras in the camera group, press the **View** soft key, and you will see which cameras reside in the selected camera group. To go back to the camera group view press the same button again (now labelled **Back**).



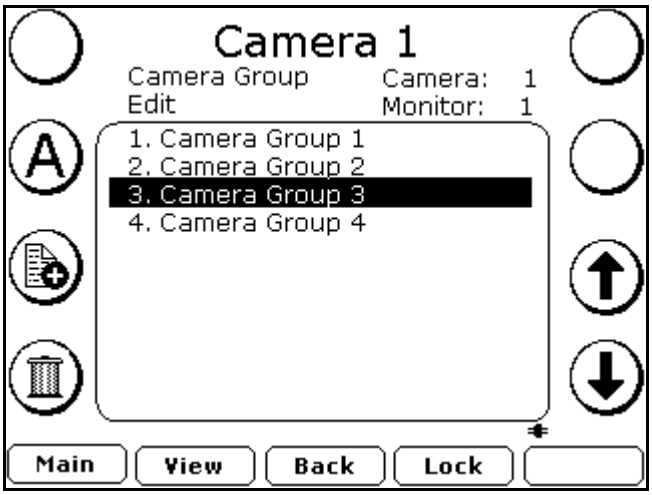
To use a camera group to select camera, you press the **View** soft key or the ***Enter*** key to show the list of cameras in the group.



Here you can scroll in the list and select camera by pressing ***Enter*** or you can use the ***Next Camera*** and ***Previous Camera*** soft keys to select the next / previous camera in the list.

5.1.3.3.1 Camera Group Edit

When you press the ***Edit*** key in the Camera Group menu, the control panel will display the edit menu for camera groups. In this menu you can edit the camera group names and add or delete camera groups.



Edit Camera Group Name

To edit the names of the camera groups you press the ***Edit Text*** soft key A, and the menu will display an edit field at the top of the camera group list ready to edit the name of the camera group currently marked in the selection list. The edit pages for Camera Group names works in the same way as the edit pages for Camera names described earlier.

Add Camera Group

To add a camera group, press the ***Add List Item*** soft key. A new camera group will be added to the list, and the default name for the new camera group will be displayed in edit field at the top of the list, and you can edit the name here. When you have given the camera group the name you want, you press the ***OK*** soft key ✓ (or ***Enter***) to set the camera group name. When the camera group is added, you will go directly to the menu for adding cameras to the new camera group, where you can select which cameras you want in the camera group.

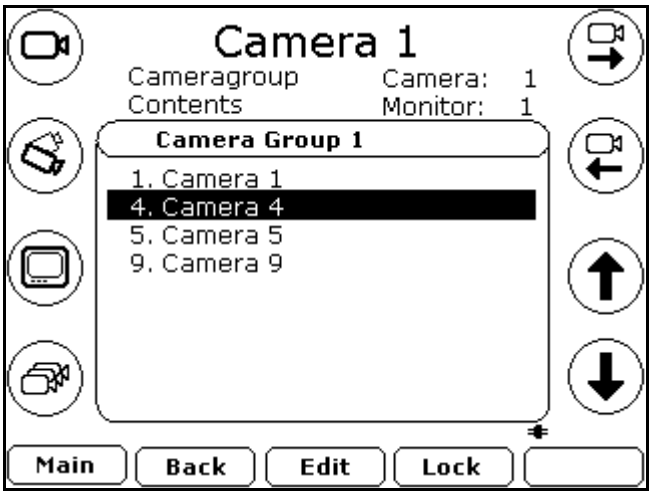
Note: When you add a camera group and then press ***Cancel***, the camera group will still be added in the list with the default camera group name. If you don't want the camera group you have to delete it with the ***Delete*** soft key.

Delete Camera Group

To delete a camera group you press the ***Delete*** soft key. The control panel will then ask for confirmation and you select either ***OK*** ✓ to delete the group or ***Cancel*** ✗ to keep the camera group.

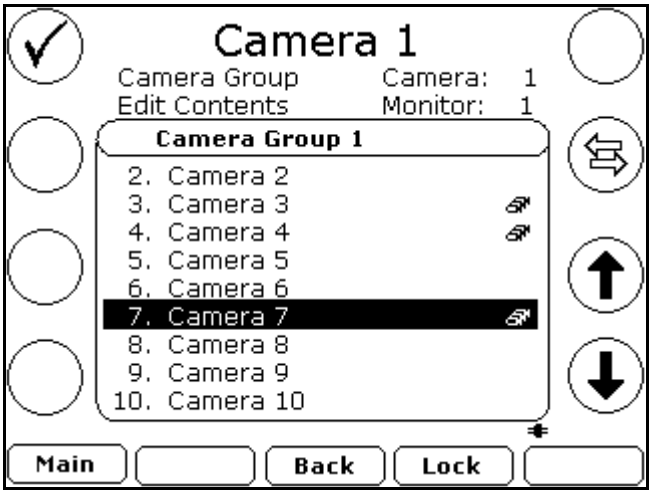
5.1.3.3.2 Camera Group Contents

Press the ***View*** soft key (or ***Enter***) to view the contents of the camera group marked in the list. You will get a new list displaying the cameras included in the camera group. You can switch cameras from this menu in the same way as from the camera list menu.



Edit Camera Group Contents

To edit the contents you can then press the ***Edit*** soft key. If you are not in edit mode (the icon is displayed beneath the list), you will have to enter the user password to get access to the edit menu. The list will then change to display all cameras in the CCTV system, and the cameras used in the selected camera group will be marked with a camera group symbol. You can then add or remove cameras until you have the cameras you want in the camera group. You choose camera by scrolling in the list and press the ***Toggle*** soft key ⇆ to toggle the "included" mark on the selected camera. Press the **Back** or the **OK** soft key ✓ to exit edit mode.



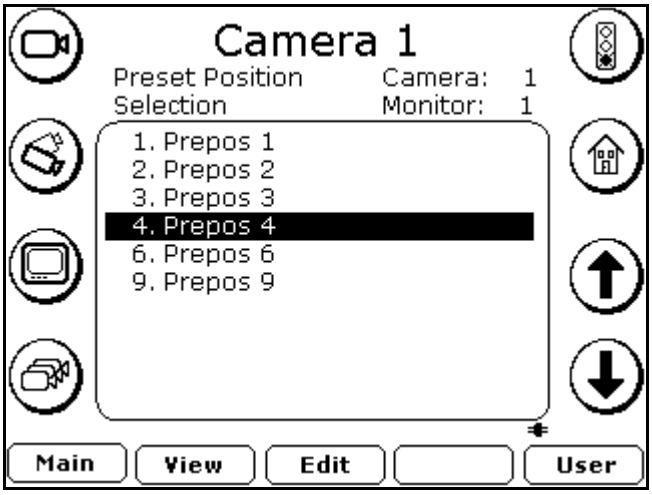
In the menu picture above you can see that Camera 3, Camera 4 and Camera 7 are currently included in Camera Group 1.

5.1.3.4 Preset Position Menus

Preset positions can be used on all controllable cameras in the CCTV system. I.e. cameras where you can control the zoom/focus functions of the lens and/or control the pan/tilt position of the camera station. When you define a Preset Position, you store the current settings for these parameters. The camera station can then later be ordered to return to this position by releasing the preset position from this menu. Each preset position is given a name, and this name will be displayed on the monitor when the preset position is released from the control panel.

5.1.3.4.1 Preset Position Release

To release a preset position you can use the shortcut key for preset positions if you know the number of the preset position you want to release. You can also enter the preset position menu and select the preset position from a list. When you have selected the correct preset position you press the ***Release*** soft key.



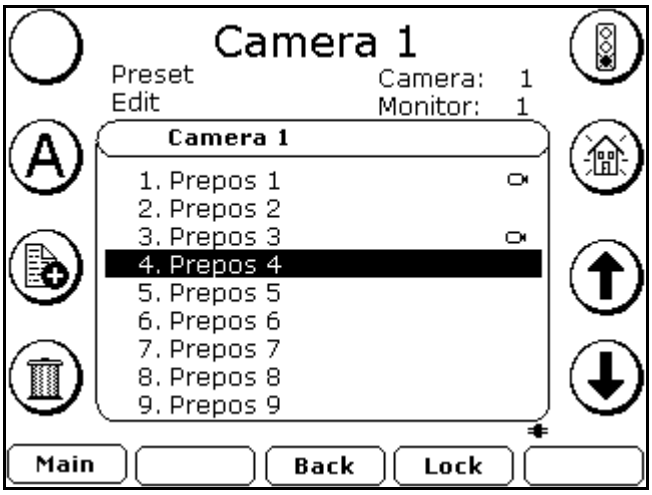
You can also release the home position for the camera station from this menu. The home position is a special preset position that is set up with a timeout, and when the camera station has not been used by any user during the timeout period, the camera station will automatically return to its home position. If you do not want to use the automatic home position feature, you can set it up with a timeout of zero, and the camera station will not return automatically but only go to home position if explicitly released from this menu. To release the home position manually, you press the ***Home Position*** soft key.

5.1.3.4.2 Preset Position Edit

The edit menu for preset positions is password protected, and you have to enter a password when the dialog is presented that gives you a privilege level of *Supervisor* or *Service* on the control panel to be allowed to edit the preset position setup.

Press the ***Edit*** soft key to change the setup for the preset positions and enter the password. The preset position edit menu is now displayed for the currently selected camera. (If you want to change camera station you can select another camera by using the shortcut camera selection while you are in this menu.)

In this menu the list of preset positions will have all possible preset positions displayed. Preset positions that are already defined will be marked by a camera symbol. From this menu you can add, delete or redefine preset positions, and you can also change the name of the preset position.



To edit the name of an already defined preset position you first have to move the marker to select the preset position and then press the ***Edit Text*** A soft key. You can then edit the name and save the new name by pressing the ***OK*** soft key ✓. Note that you can only edit names for preset positions that are defined.

To define a new preset position, you use the camera control keys to adjust the camera until you have the view from the camera that you want. Then you scroll up / down to the preset position you want to define and press the ***Define Preset Position*** soft key. The preset position will be defined and the default preset position name will be displayed in an edit field so you can change the name of the preset position. Press **OK** ✓ when you are done.

If you selected an unused preset position you have now defined a new preset position. If you select preset position marked with a camera symbol you will redefine an already defined preset position.

When you delete a preset position you will not be asked for confirmation before the preset position is deleted.

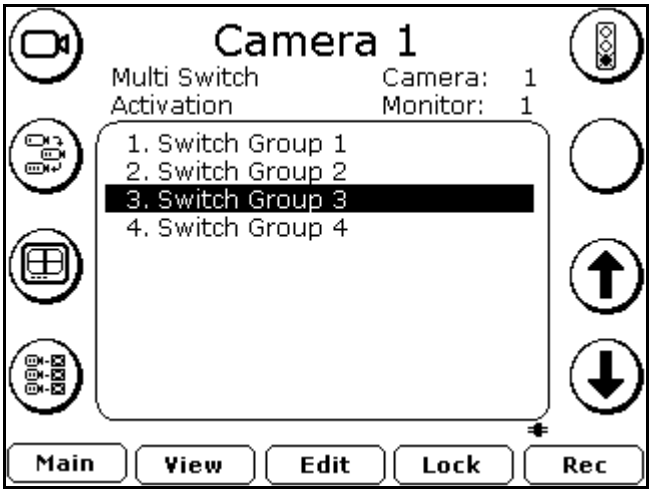
To change the home position you press the ***New Home Position*** soft key. You will then be prompted to enter a timeout (in minutes) for the home position. This timeout is used to make the camera return to a fixed position if no one has used the camera for the timeout period.
If you enter 0 for the timeout period, the automatic home position feature will be turned off for this camera, and the home position can only be released manually from a control panel.

5.1.3.5 Multi Switch Menus

A multi switch group is a collection of camera to monitor switches that can be performed by a single command from the user. In addition to the camera switch, the camera can also be directed to release a preset position. This can be used to predefine a set of cameras to show on the monitors at a location for a specific task. The user at this location can then set up the CCTV system for the task by a single command.
You can select the Multi Switch Menu from the menu list in the Main Menu. The Multi Switch group menu is also available from the menu page for the Quad Menu and the Sequence Menu.

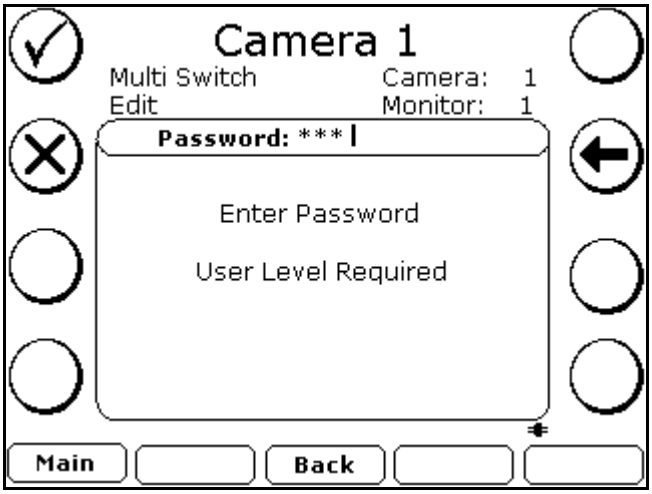
5.1.3.5.1 Multi Switch Group Activation

To activate a Multi Switch Group, you scroll in the list until the group you want is marked, and you activate the switches in the group by pressing the S***tart*** soft key.

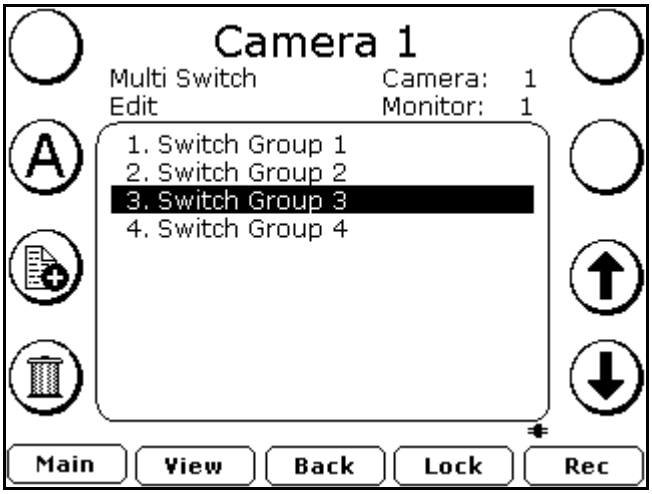


5.1.3.5.2 Edit Multi Switch Group

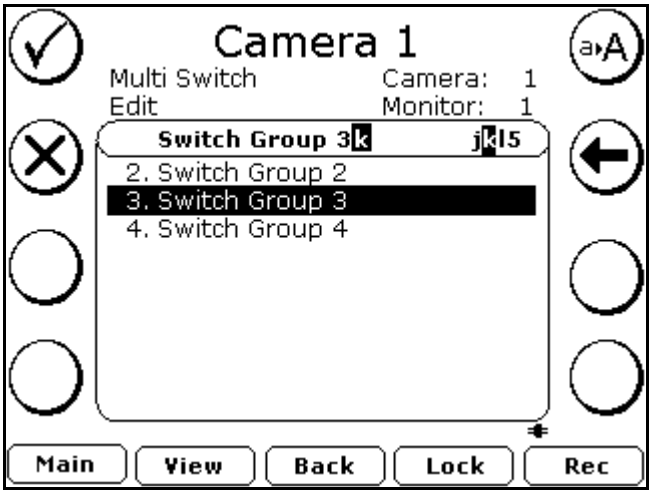
If you press the ***Edit*** soft key you will be able to edit the multi switch group setup. The control panel will allow you to add or delete groups, and to change name on existing groups. To access this menu you will have to enter a password.



When you have entered a valid password the menu will look like this:



To change the name of a multi switch group you use the scroll keys to select the group you want to change name for and press the ***Edit Text*** soft key A.



On the display above you can also see how the selected letter for text entry is displayed to the right on the line with the text being edited. In the case above you can see that the '5' key on the numeric keypad has been pressed twice, and 'k' is the letter selected to append to the existing text. Press the soft keys A›a or a›A to switch between uppercase and lowercase letters.

When you have entered the name you want, press the ***OK*** ✓ soft key or ***Enter*** to save the name.

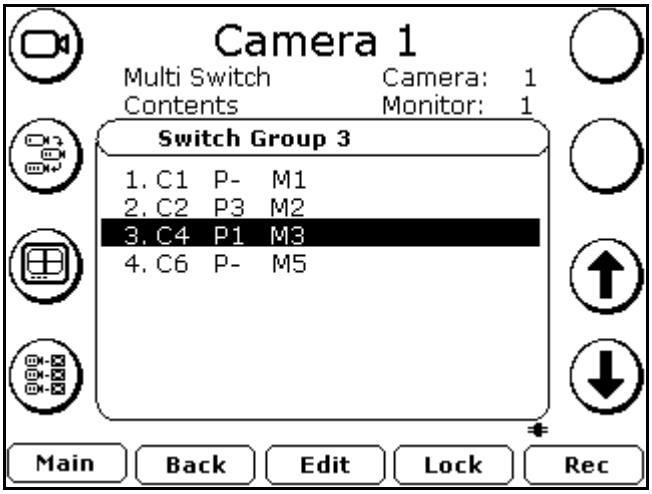
To exit Edit Mode, press the ***Back*** soft key.

To add a new Multi Switch group, press the ***New Item*** soft key. The new Multi Switch group will be defined and you will enter Edit Name for the new Multi Switch group. When you have entered the name, press OK (✓). The control panel will then enter the "Multi Switch Edit Contents" menu for the new multi switch to let you set up the actions for the new group. This menu is described later.

To delete a multi switch group you select the group you want to delete in the list and press the delete soft key. You will then be asked for confirmation before the group is deleted.

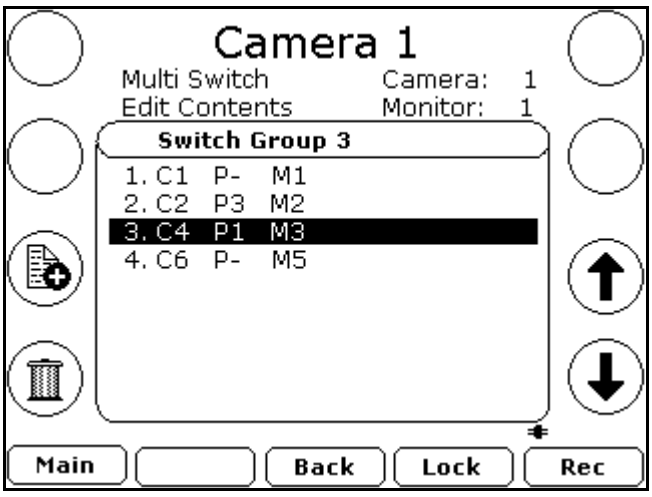
5.1.3.5.3 View Multi Switch Actions

To look at the contents of a multi switch group, you can press the ***View*** soft key when the group you want to look at is selected in the list. You will then get a list of all the switches contained in the multi switch group. Each item in the list contains a camera to monitor switch command. There may also be a release of preset position for the selected camera, but this is optional. When the Multi Switch group is released, the camera to monitor switches in the list will be performed.



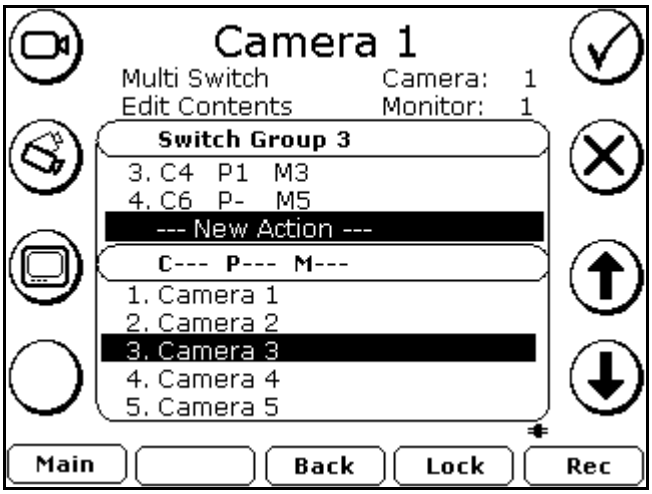
5.1.3.5.4 Edit Multi Switch Actions

Press the ***Edit*** soft key to change the contents of the displayed multi switch group. The display will then show you the same list with the options to add new switches or delete existing entries. Each camera switch in the group must have both camera and monitor defined. You should also take care that all the monitors used in one multi switch group should be different. If two or more entries in the multi switch group use the same monitor, the CCTV system will perform all switches, but you will only see the last camera switched onto the monitor. The use of preset position when defining an entry in the multi switch is optional and is not used for fixed camera stations. When you specify a preset position in a multi switch action, the camera will be switched onto the corresponding monitor and the camera station will automatically move to this preset position when the multi switch group is released.



Add Action

When you press the ***Add*** soft key you will be presented with the display below. You can then select camera, preset position and monitor for the new action from the bottom list on the display. The upper part of the display will show the last actions in the multi switch group being edited.



The three active soft keys on the left side of the display are used to choose which list to display. When you press one of these keys, the selection list will be updated with the selected list and the cursor will start to flash. You can then select an item in the list by scrolling up and down and select the marked entry by pressing the ***Enter*** key, or you can use the numeric keypad to enter the number of the item you want. When you press the ***Enter*** key, the next list will be displayed (preset positions or monitor). If you press the ***Enter*** key in the Monitor List the new item will be added to the list, and the display will show the Camera List ready to enter a new switch item to the list.

When the action is defined you press the ***OK*** soft key ✓ to add the new action to the list of actions in the multi switch group. The display will be updated to show the new action at the bottom of the upper list, and the display will show the Camera List in the lower part ready to enter a new switch item to the list.

When you have added all the entries you want, you press the ***Back*** soft key to exit edit mode and display the list of actions for the multi switch group. You can also press the ***Cancel*** soft key ✕ to go back to the multi switch group list in edit mode where you can add and delete actions.

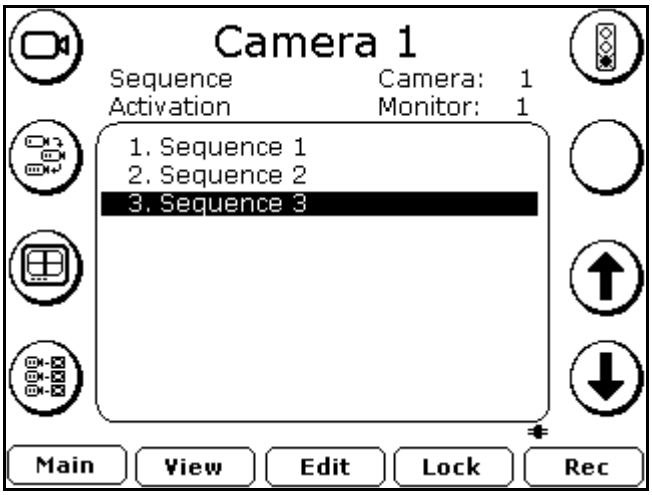
Note: You cannot select preset position until you have selected which camera to use. If you have selected camera and preset position and then change the camera, the preset position will be cleared.

Delete Action

When you select the ***Delete*** soft key 🗑, the item currently selected will be removed from the list.

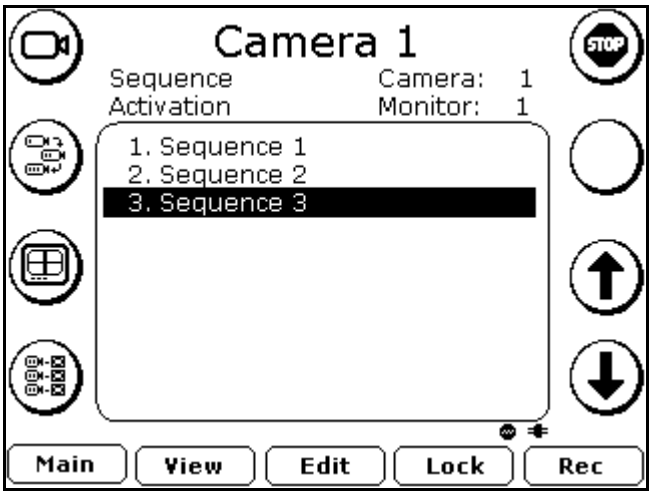
5.1.3.6 Sequence Menus

A sequence is a list of different cameras that are sequentially displayed on the same monitor on the CCTV system. For each camera in the sequence you can specify for how long the camera shall be displayed before the next camera is switched onto the monitor. For each camera in the sequence you can also specify a preset position for the camera, and make sure that pan/tilt camera stations always will display the same view when used by the sequence. When a sequence is started on a monitor, the sequence will continue running on this monitor until it is either stopped, or a user makes a camera selection to the monitor the sequence is running on. The sequence will wrap around to the first action of the sequence when the last action of the sequence is completed.
To enter the sequence menu you can go to the Main Menu and select the “Sequence Menu” item in the list, or you can press the S***equence*** soft key if it is available from the menu displayed on the OK450 control panel.



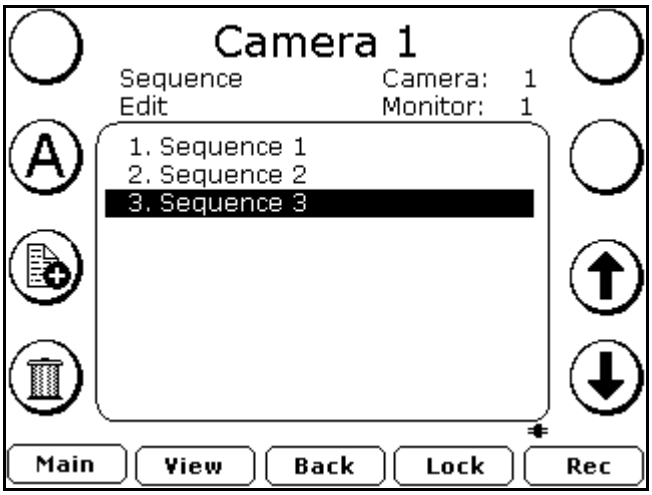
5.1.3.6.1 Sequence Control

If you press the ***Start*** soft key the sequence will then start running on the current monitor. The **Start** soft key will be replaced by a **Stop** soft key, and the information icon for Active Sequence on monitor will be displayed below the list.

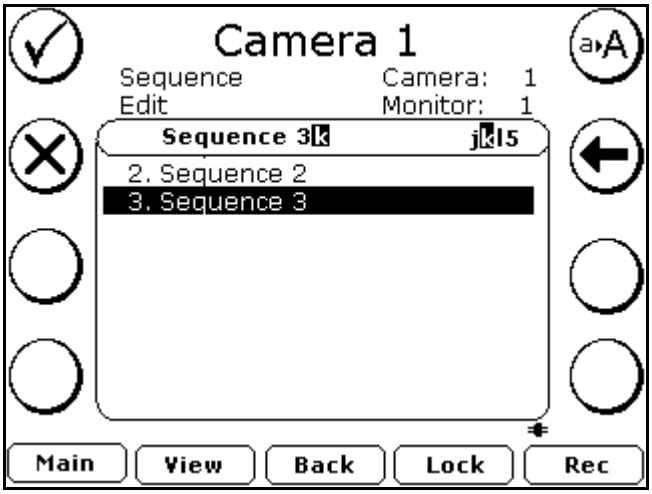


5.1.3.6.2 Edit Sequence

To change the sequence setup you press the ***Edit*** soft key. You will then have to enter a password to get access to the menu that will allow you to change the name of sequences, add new sequences or delete existing sequences.



To change the name of an existing sequence you select the sequence in the list (scrolling or direct selection) and then press the ***Edit Name*** soft key A. The name of the selected sequence will then be displayed in an edit field at the top of the list, and you can change the name. When you have changed the sequence name to what you want you press the OK soft key ✓ to save the new name.



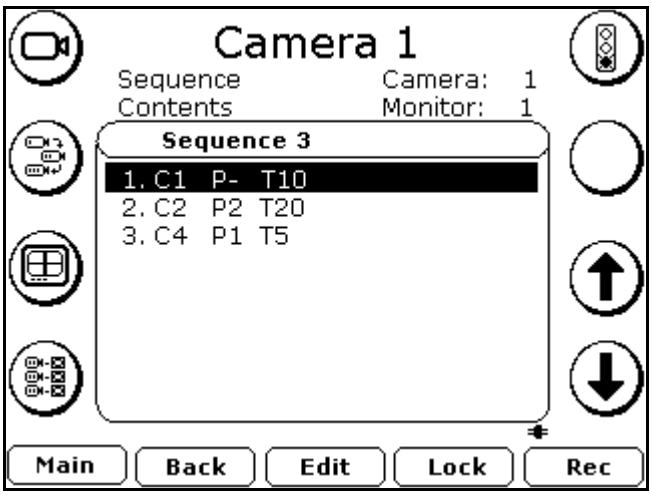
Adding a sequence is done by pressing the ***New*** soft key. When you add a sequence the operating panel will give the sequence a default name, and go to the "Edit Name" menu where you can change the name of the sequence to give a more descriptive name. When you have entered a name for the sequence, the control panel will display the menu to add sequence elements to the new sequence. The menu for adding elements is described in a later section.

To delete a sequence you select the sequence in the list and press the ***Delete*** soft key. The operating panel will then ask for confirmation before the sequence is deleted.

To exit the Edit menu you press the ***Back*** soft key. This is the same key you used to enter the edit menu, but the function of the key changed when you entered the edit menu. The control panel will also exit edit mode if you select the ***Main*** soft key to return to the main menu.

5.1.3.6.3 View Sequence Actions

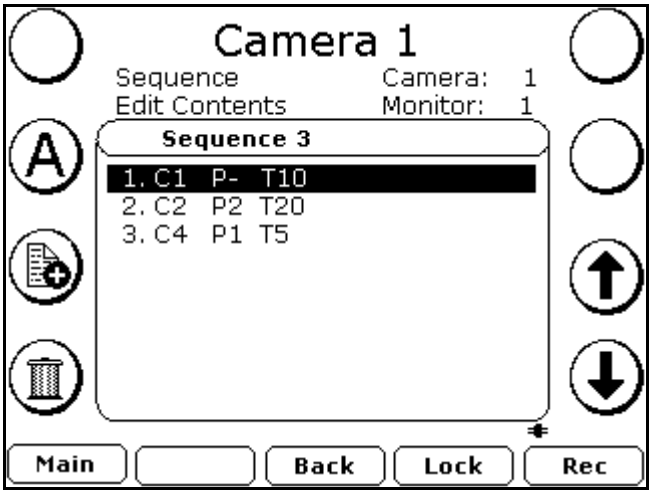
To look at the actions set up for a sequence you press the ***View*** soft key. The menu will then open the selected sequence and display a list of actions configured for the sequence.



The actions in the sequence is defined by a camera, an optional preset position for this camera, and the time (in seconds) for how long the camera shall be displayed on the monitor before the next camera in the sequence is selected.

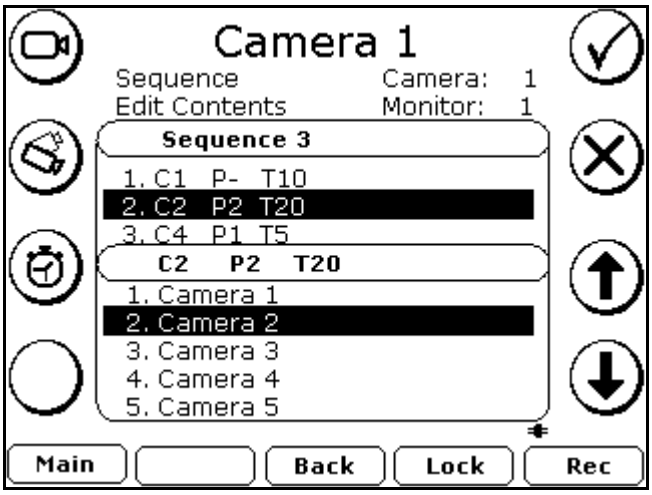
5.1.3.6.4 Edit Sequence Actions

Press the ***Edit*** soft key to change the contents of the displayed sequence. The soft keys will be updated to let you change an existing item, add a new item or delete an existing item from the list of actions.



Change Existing Action

When you press the ***Edit Action*** soft key A the control panel will open the selected action in an edit field, and you can change the settings for the sequence action. The display will look like this:

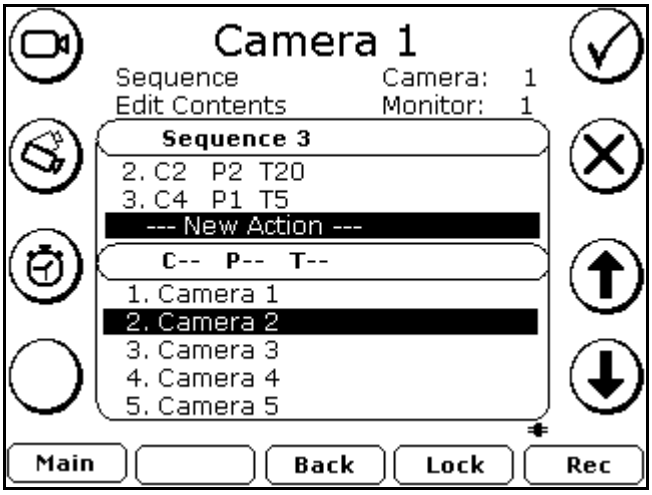


The action you are currently editing will be marked in the upper list, and the lower part of the list is used to change settings for the action. When the edit page opens it will automatically open the camera list for selection of another camera. To select another camera you scroll to the camera you want and press enter. The menu will automatically change to the preset position list if the camera has preset positions, or otherwise to the dwell time list. If you don't want to change the selected camera, you can go to another setting by pressing the preset position or the dwell time soft keys on the left of the display. When you select the preset position soft key the list will show the preset positions that are defined for the selected camera station, and you can select between these. When the dwell time soft key is selected, the list will display some selectable defaults, but you can also enter the new dwell time on the numeric keypad. The dwell time is entered in seconds. When the changes are complete and you press the OK soft key ✓ (or when you press ***Enter*** on the time delay setting), the selected action will be updated in the action list.

Note that if you change the selected camera, any defined preset position will be cleared. If you want to use a preset position you have to set this after selecting the camera.

Add Action

To add an action at the end of the list you press the ***Add Action*** soft key in the "Sequence Edit Contents" menu. The display will be updated with an empty entry field for the new action, and the camera list will be displayed below the field for the new entry. Entering the settings for the new action is done in the same manner as when changing an existing entry. The new entry will however not be accepted until you have specified at least a camera and entered a dwell time for the camera. Setting a preset position for the selected camera is optional. When you press OK ✓ or ***Enter*** the list of actions will be updated with the new action, and the lower part of the list will be reset to the camera list and you can enter another action to add to the list. When you are done adding sequence actions, you press the Cancel ✕ soft key.



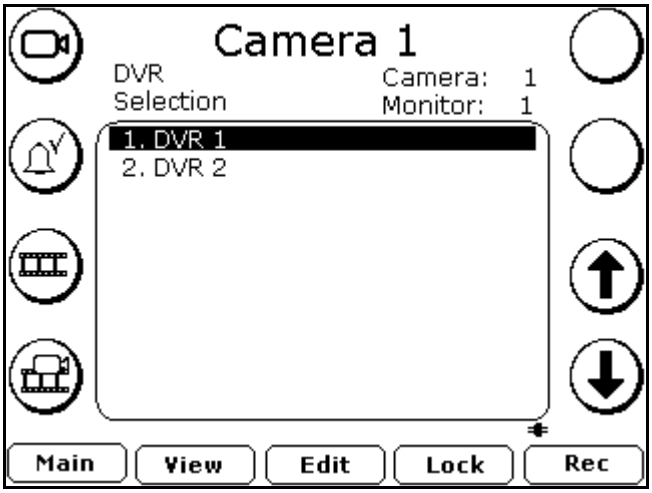
Delete Action
To delete an action at the end of the list you press the ***Delete Action*** soft key in the "Sequence Edit Contents" menu. The control panel will not ask for confirmation when deleting actions from the sequence.

5.1.3.7 DVR Menus

All controllable DVR's in the CCTV System can be used from the OK450. Different types of DVR's will give you different set of possibilities. If the system includes a third party controllable DVR, you will get the basic functionality of the DVR with playback, recording and winding back and forth. If the system includes a HERNIS DVR-M unit, you will in addition be able to do time search in the recorded video.

5.1.3.7.1 Selecting a DVR

To select a DVR in the CCTV system you can use the DVR menu from the *Main Menu*. Pressing the ***Main*** soft key will get you to the Main Menu where you find the DVR menu. You will then be presented with a list of available DVR's in the CCTV system. If there is no DVR configured in the system (empty list) you can select the *Camera Playback* icon to play back recorded video from HERNIS 500 NVR. Note that the *Camera Playback* icon will only be available when the OK450 control panel is connected to a HERNIS 500 CCTV System.

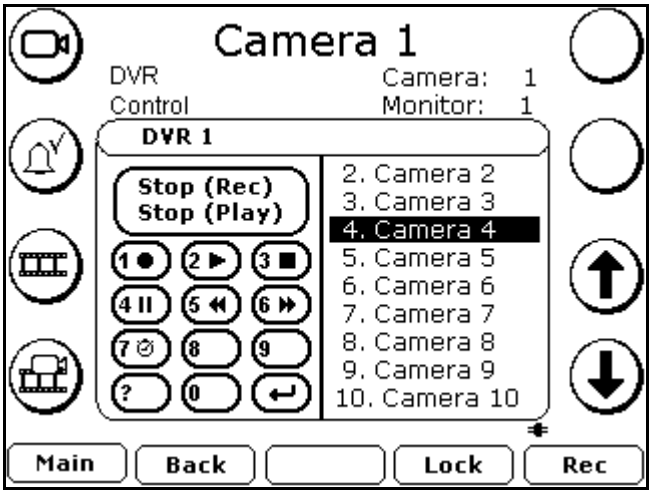


5.1.3.7.2 DVR Control

The DVR is controlled using the numeric keypad. The location of the different controls is shown on the display, and has the following functions:

1. Record
2. Stop
3. Play
4. Pause
5. Rewind
6. Fast Forward
7. Time Search (only for HERNIS DVR-M and HERNIS 500 NVR)

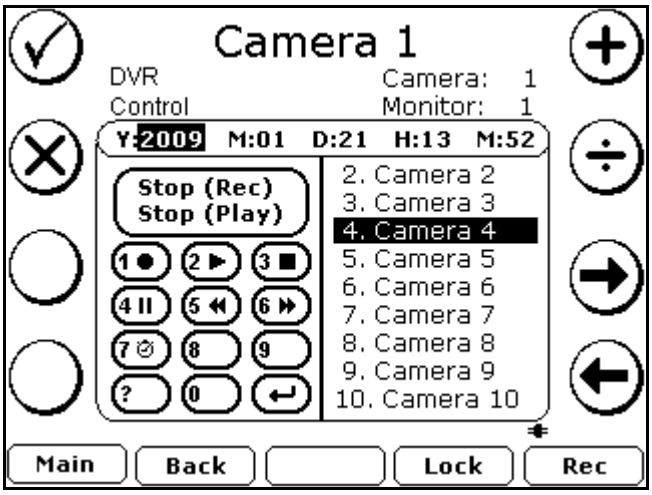
When you enter this menu the monitor will display the camera currently selected onto the DVR. (If the DVR is in playback mode, the monitor will display recorded video from the DVR.)



To select another camera to the DVR you scroll in the camera list to the camera you want and press ***Enter***. In this menu you cannot use the direct list selection by entering a number on the numeric keypad as for other list menus since the numeric keypad is used to control the DVR. You can however change camera on the DVR by using the Camera Selection shortcut key below the numeric keypad and then enter the number of the camera you want to select.

Time Search Playback for HERNIS DVR-M

If you press the Time Search key (numeric key 7) the display will show a field where you can enter the time. The time fields will be initialized with the values used in the last time search made on the control panel. If you want to change the time, you can use the ***Next*** ➔ and ***Previous*** ← soft keys to select which field to change (the selected field is the one displayed in inverted colours). To change the value in the selected field, you use the ***Plus*** + and ***Minus*** ÷ soft keys. When the time is set correctly you press the ***OK*** soft key ✓ to start playback from the selected time.



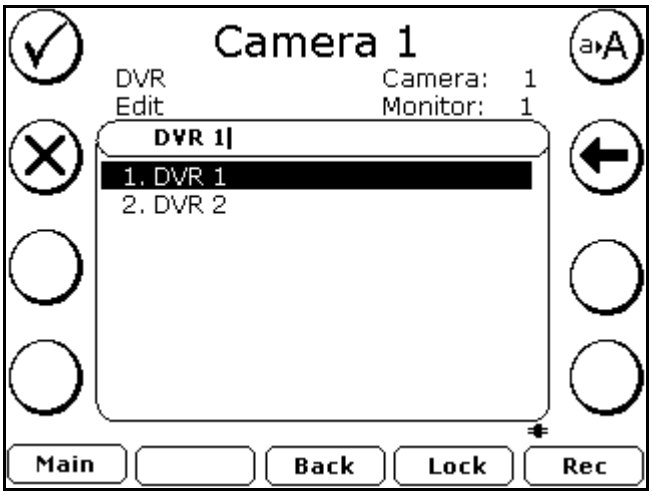
Time Search Playback for HERNIS 500 NVR
To activate the playback menu for the HERNIS 500 NVR, the OK450 keyboard needs to be in HERNIS 500 system mode, see Control Panel Setup under the Service menu.

The Camera Playback can only be used when the camera is connected to a HERNIS 500 NVR and the monitor you are using is a computer screen connected to a PC running the Monitor Application client software, an analogue monitor connected to a multi-video decoder (MVD) unit, or using a monitor viewed on a HLSA display. The function is similar to the DVR-M time search. The playback command is always for the camera currently displayed on the monitor. If you want playback for another camera than the one currently selected you have to select the camera before starting playback.

If you entered this page directly by pressing the ***Camera Playback*** soft key in the "DVR Selection" menu, the menu will look the same but the header will display the name of the selected camera.

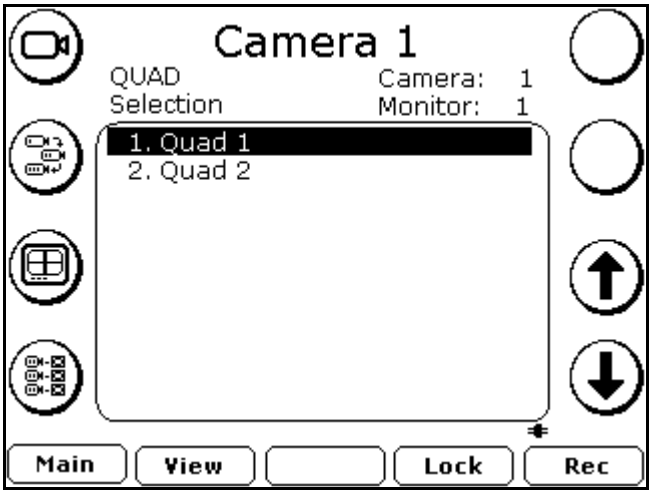
5.1.3.7.3 DVR Edit Name

To change the name for a DVR, you press the ***Edit*** soft key below the display. You have to first enter a password to confirm that you have access to change the name before the edit page opens on the display. When you are in edit mode you can change name for any of the DVR's in the list.



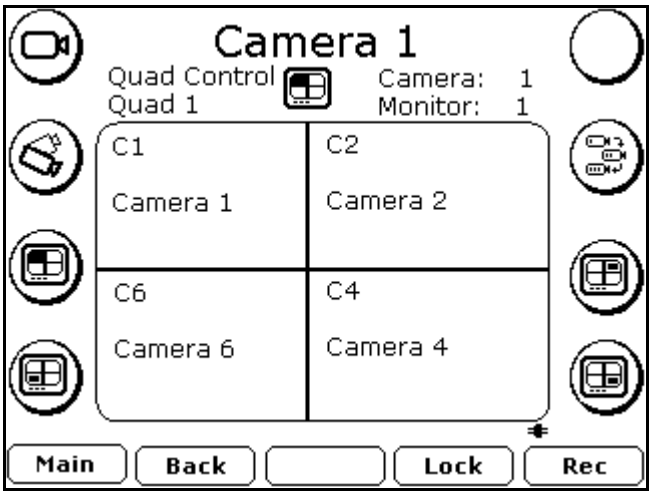
5.1.3.8 Quad Menus

When there are Quad units set up in the CCTV system, the menu for controlling these will be available from the Main Menu. When you select this menu you will be presented with a list of the available quad units on the system to select from.



5.1.3.8.1 Quad Control

When you select one of the quad units, you get into the Quad Control Menu. From this menu you can select cameras onto any of the quadrants on the monitor, and you can also choose to start a sequence in a quadrant of the monitor.

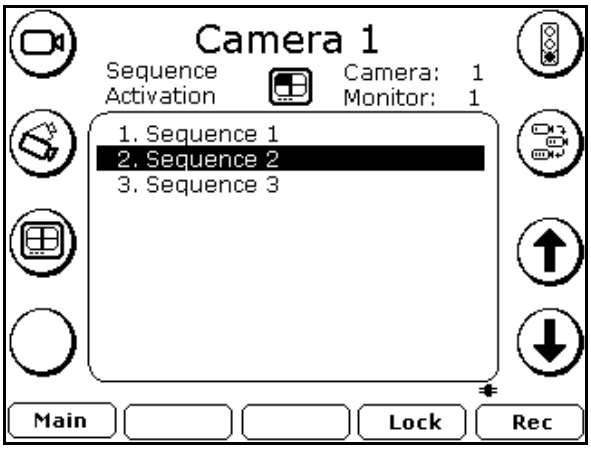


To set a quadrant on the quad unit active, you use the soft keys with the quad symbols (, , ,). The symbol with the quadrant filled marks the currently active quadrant.

When you select one of the soft keys (camera , sequence or preset position), you will be able to do the selected action on the active quadrant of the quad. The active quadrant on the quad unit will be displayed by an icon directly beneath the camera name on the top of the display. These functions are described in the sections below.

Starting a sequence in active quadrant

To start or stop a sequence in the selected quadrant, you press the key with the sequence icon, and the display will show you a list of available sequences.



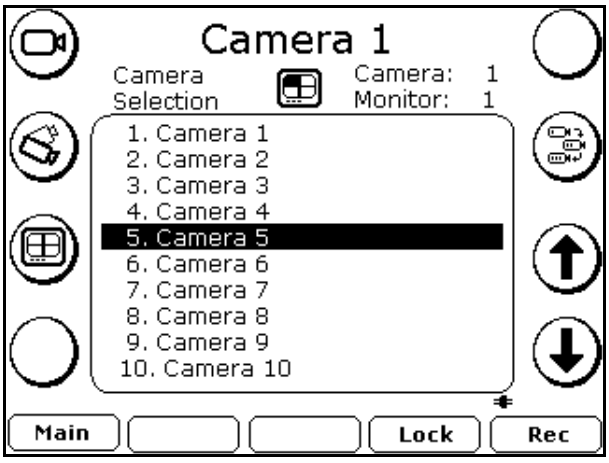
To start a sequence, you select the sequence you want using the scroll keys (or by entering the number of the sequence on the numeric keypad), and press the ***Start*** soft key .

If a sequence is already running in the active quadrant you will see a ***Stop*** soft key instead of the Start soft key displayed above. In this case you have to stop the current sequence (by pressing the key with the stop symbol) before you can start another sequence on the active quadrant.

To return to the Quad menu press the soft key with the Quad symbol .

Selecting camera to active quadrant

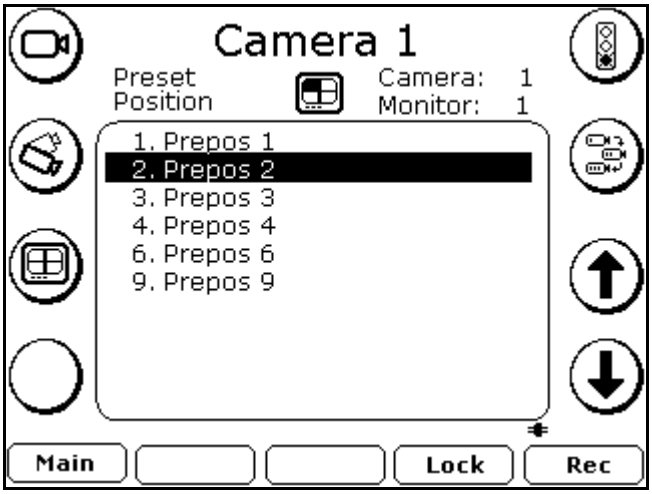
Selecting a camera to the active quadrant on the quad unit is done by pressing the key with the camera symbol , and selecting a camera from the displayed list. You can also select camera directly to the quadrant by using the shortcut key for direct camera selection and enter the camera number on the numeric keypad.



To return to the Quad Menu press the soft key with the Quad symbol .

Releasing a preset position on camera in active quadrant

To release a preset position on the camera currently displayed on the active quadrant of the quad you can press the key with the Preset Position symbol and select from a list, or you can use the Preset Position shortcut key and enter the preset position number on the numeric keypad.



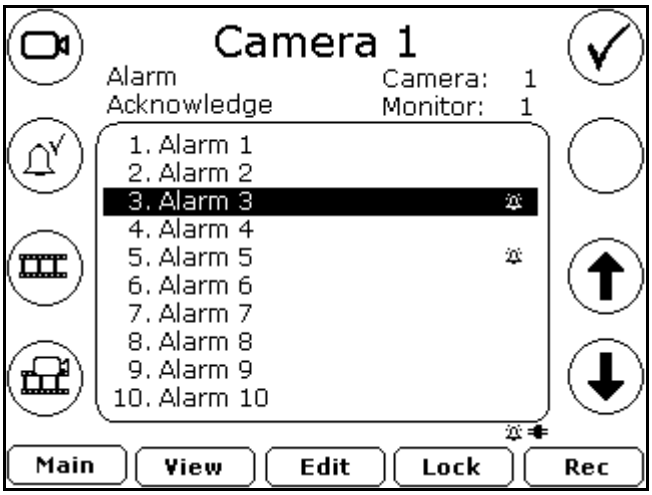
To return to the Quad menu press the soft key with the Quad symbol .

5.1.3.9 Alarm Menus

The alarm menu allows you to look at the current state of all alarms defined in the CCTV system. You can also acknowledge alarms if your user has the privilege to do so. In addition you can look at the actions defined for each alarm, and change the setup (actions) for the alarm. To change the alarm setup you will have to enter a password to verify that you are allowed to do so.

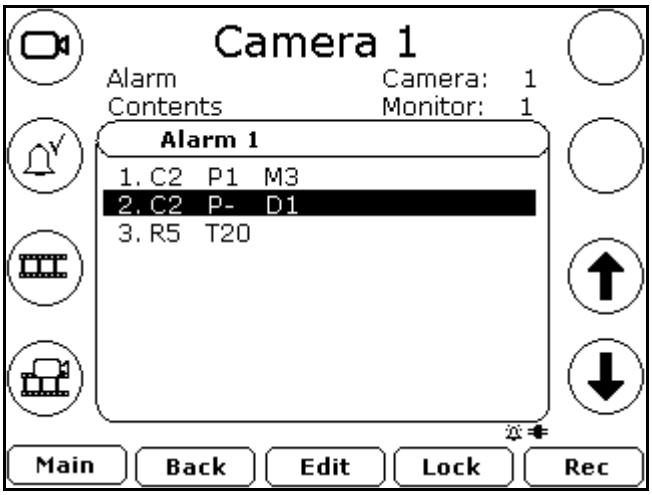
5.1.3.9.1 Alarm Acknowledge

In the Alarm Acknowledge menu you will see a list of all alarms in the system. Any alarm that is active (triggered) will be marked with an active alarm icon in the list. If you want to acknowledge this alarm you scroll down in the list to mark it (or enter the alarm number on the keypad), and press the ***OK*** ✓ (acknowledge) soft key. If the alarm is successfully acknowledged, the "Active Alarm" mark will be removed from the alarm list, and the alarm text on the monitors currently displaying this alarm will be removed.



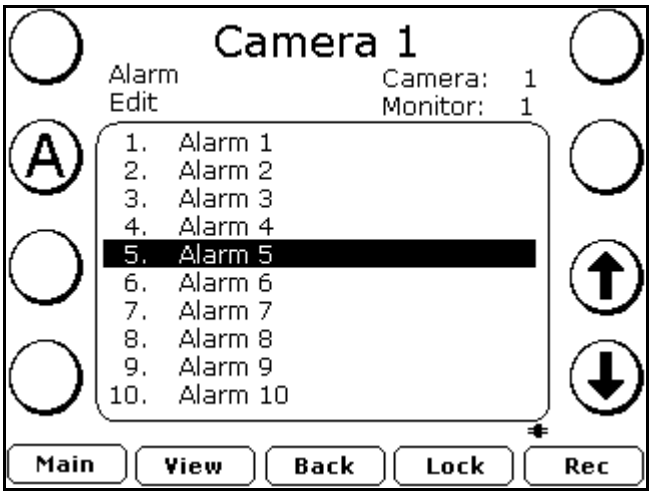
5.1.3.9.2 Alarm Setup

You can look at the setup for each alarm by selecting the alarm in the list and press the ***View*** soft key below the display. You will then be shown a list of all actions the CCTV system will perform when this alarm is activated. To exit back to the alarm list you can press the same key as you pressed to enter the menu. This key is now labelled ***Back***.



5.1.3.9.3 Alarm Edit

You can change the alarm name for any alarm in the CCTV system by pressing the ***Edit*** soft key and enter a valid password. The alarm name is then changed in the same manner as for camera name.

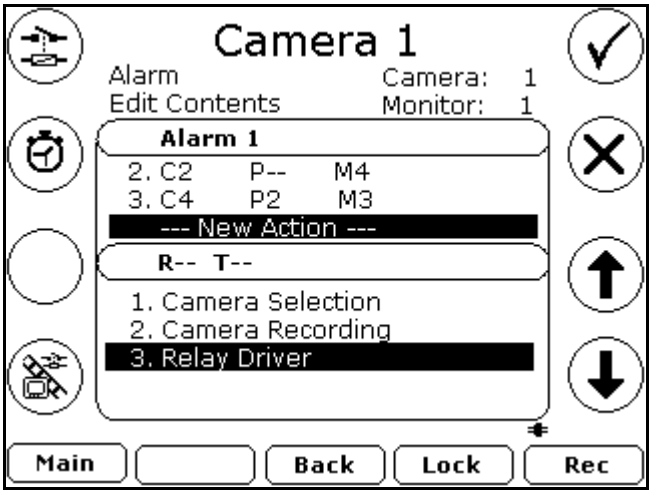


For alarms you can also change the contents of an alarm. I.e. you can select which actions should be performed in the CCTV system when each alarm in the system is triggered. These actions include selecting camera to monitor, start recording camera on DVR and activating relay outputs. To enter this menu you have to enter a password to verify that you have access privilege that allows you to change this setup.

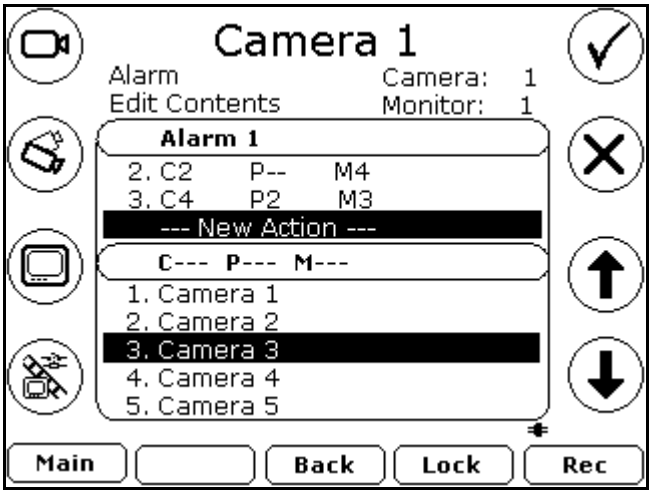
When you add an action to an alarm there are three different types of actions that can be defined:

1. Select Camera to Monitor
2. Select Camera to DVR and Start Recording
3. Activate a Relay Driver Output.

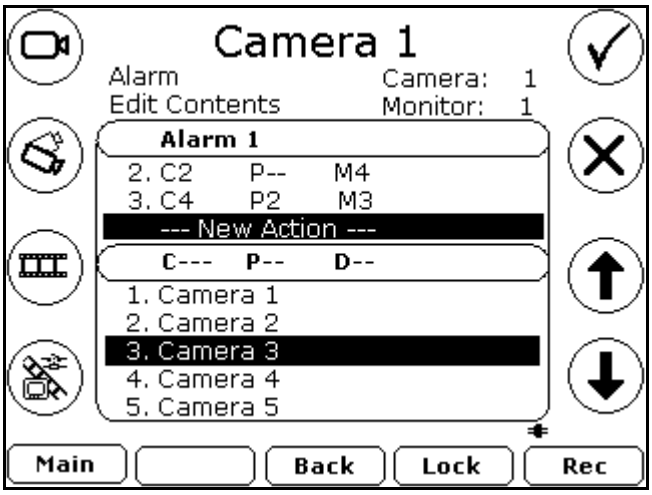
The default action type is Select Camera to Monitor, and if you want to add another type of action, you have to select the ***Action Type*** soft key to change the type. The soft keys used to select items for the action depends on which action type is selected.



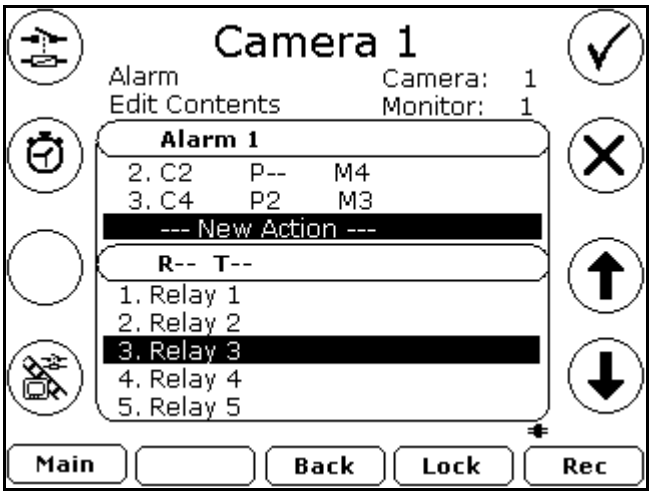
Adding a Camera to Monitor selection
You must select Camera and Monitor. You can also optionally select preset position for the camera. If you change camera selection, the preset position field will be cleared, and if you want to use a preset position you have to reselect between the preset positions that exists for the new camera. Preset position can not be selected until camera selection is done.



Adding Recording of Camera on DVR
You must select DVR and Camera. You can also optionally select preset position. If you change camera selection, the preset position field will be cleared, and if you want to use a preset position you have to reselect between the preset positions that exists for the new camera. Preset position can not be selected until camera selection is done.



Adding Activation of Relay Driver
You must select Relay Driver Output. You can also optionally enter a delay so that the relay is not activated until a set time has passed since the alarm was triggered. This will enable users to acknowledge faulty alarms before the relay is activated e.g. when the relay is used to sound an alarm via loudspeaker.

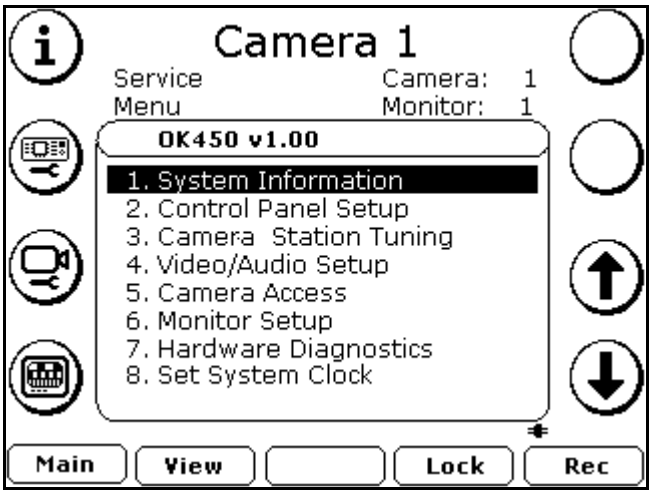


5.1.3.10 Service Menus

When you enter the Service Menu you will get a list of the available service menus. The most commonly used service menus will be available for direct selection on the soft keys to the left of the display (L1-L4). The service menus are used for four main areas:

- Information on system configuration
- Local configuration of the OK450 Control Panel
- Settings and Tuning for Camera Stations in the CCTV system
- Adjustment of Video Input and Output levels for the video switch matrix.

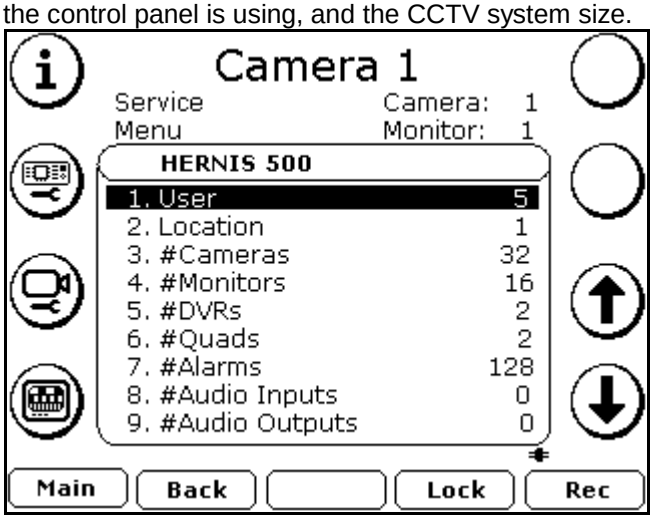
For most of the configuration menus, you have to enter a password to access the menu. Each of the service menus are described in the sections below.



The “Set System Clock” menu will only be available when connected to a HERNIS 8x8 or a HERNIS Compact CCTV system.

5.1.3.10.1 System Information

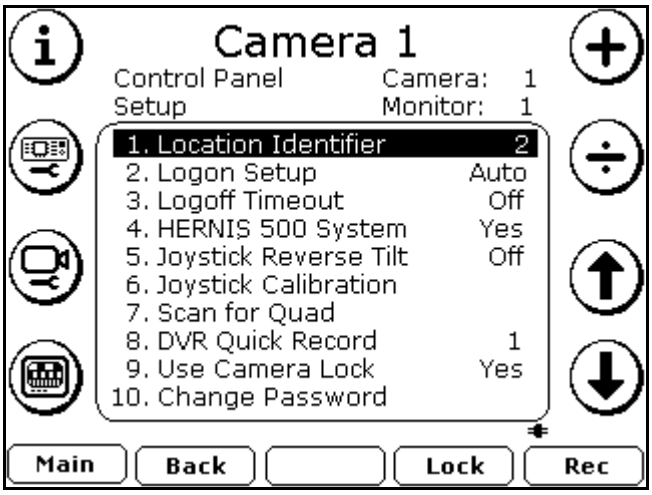
The system information menu header displays the type of HERNIS CCTV system the control panel is connected to. The list will display information on which user is currently logged on to the control panel, which location identifier the control panel is using, and the CCTV system size.



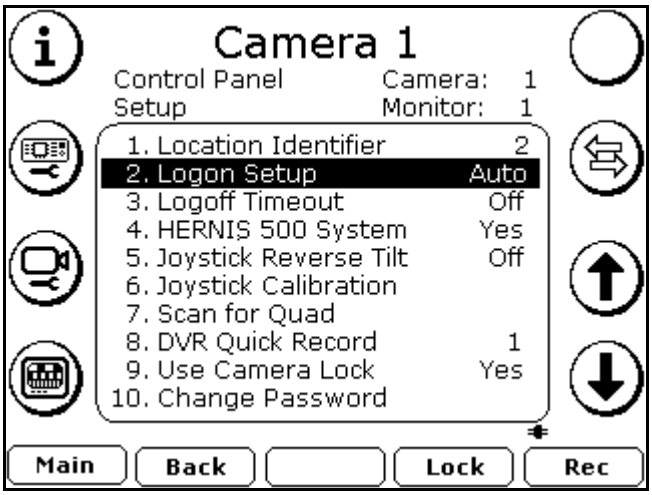
5.1.3.10.2 Control Panel Setup

To access the control panel setup menu, you have to enter a password. Depending on the password level used to enter the menu, some of the menus may ask for password again before you can change the settings. The functionality for each menu item with required password level is described below.

Location Identifier *Service Level*
This is the identifier for the control panel location. Each control panel in the CCTV system should be set up with a unique location identifier. When you use the system, the location identifier is used to download the correct multi switch groups to the control panel.



Logon Setup *Supervisor Level*
Logon can be set to Automatic or Manual, and the setting is toggled by using the ⇆ soft key.

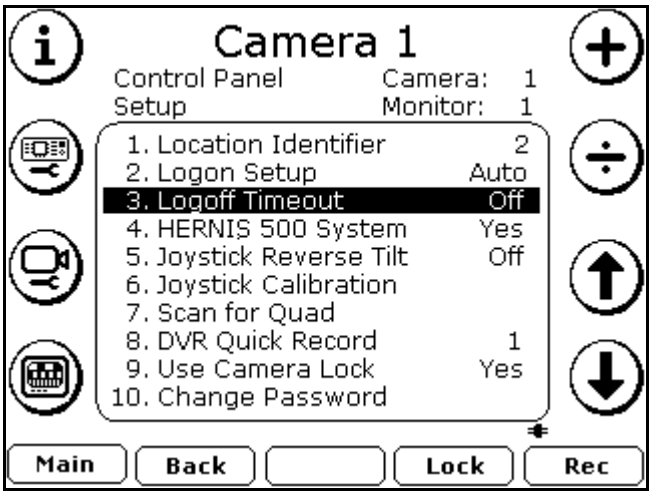


Automatic Mode
The control panel will start up in the Main Menu. The User Identifier for the control panel will be set to the same value as the configured Location Identifier. When you access menus on the control panel that requires passwords, the control panel will check against the internal passwords to verify the password.

Manual Mode
The control panel will display the Logon Menu on start-up. The operator then has to enter a password to log on to the CCTV system. The password is sent to the CCTV server and is checked there. If the password is valid, the user is logged on with the user identified by the password. When you access menus that require password, you have to use the same password you used to log on, and the password level is defined by the user setup in the server.
If you have logged on with a user that has User Level access and needs to enter a menu that requires Service Level access, you have to log out the current user and log on with a user that is set up in the CCTV system with Service Level access.

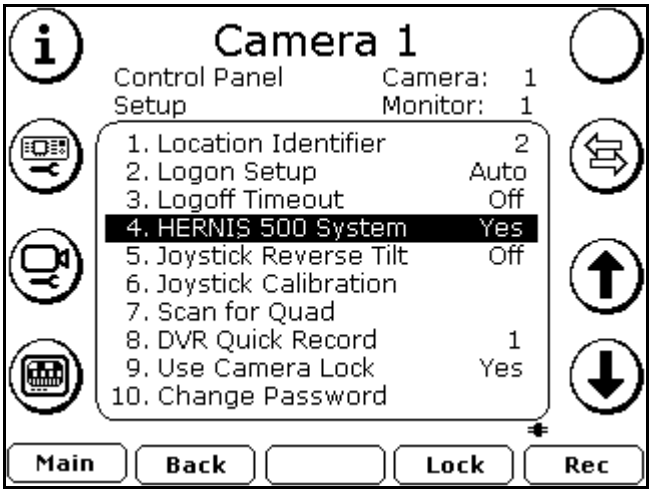
Logoff Timeout *Supervisor Level*

You can set up a logoff timeout for the control panel. The timeout can be set from 1 to 255 minutes, or turned off (by setting to 0). The timeout value is adjusted with the + and ÷ soft keys. In Manual logon mode, the control panel will go to the logon screen when the timeout has expired without any use of the control panel, and in Automatic logon mode the control panel will go back to the main menu if the timeout has expired without any use of the control panel.



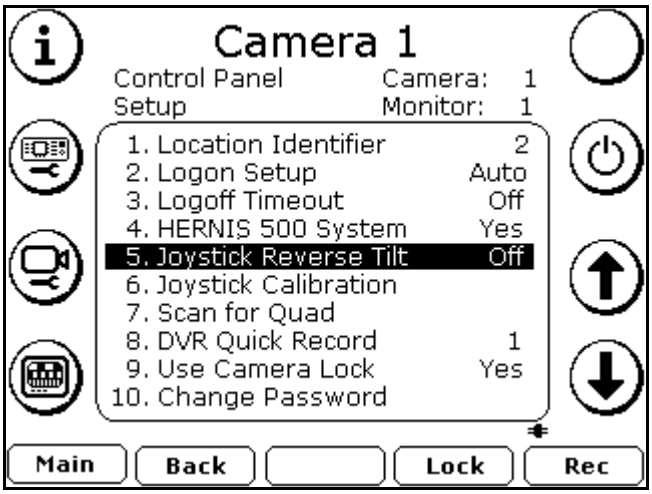
HERNIS 500 System *Service Level*

This setting will normally be set to **Yes** when the control panel is connected to a HERNIS 500 system and **No** otherwise. When the control panel is connected to a HERNIS 500 system you will be able to playback video from the camera recordings in the system. This requires that the video is displayed on the monitor of a PC running the Monitor Application.



Joystick Reverse Tilt *User Level*

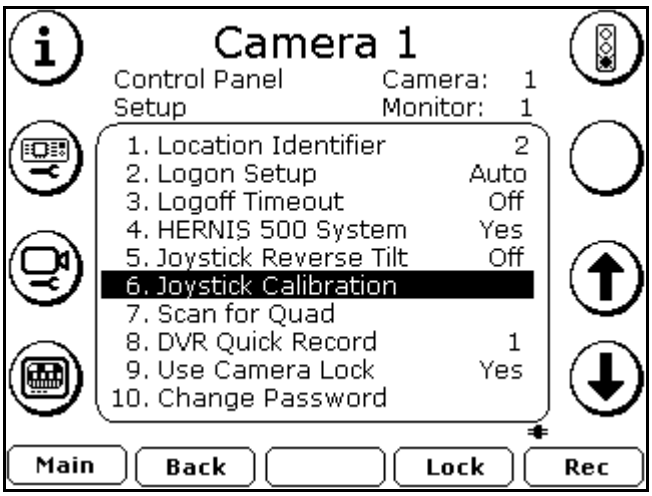
This setting is used to reverse the direction of the camera station tilt for the joystick. If you set *Joystick Reverse Tilt* to ON, the camera station will tilt down when you press the joystick forward, and tilt up when you pull the joystick towards you.



Joystick Calibration *User Level*

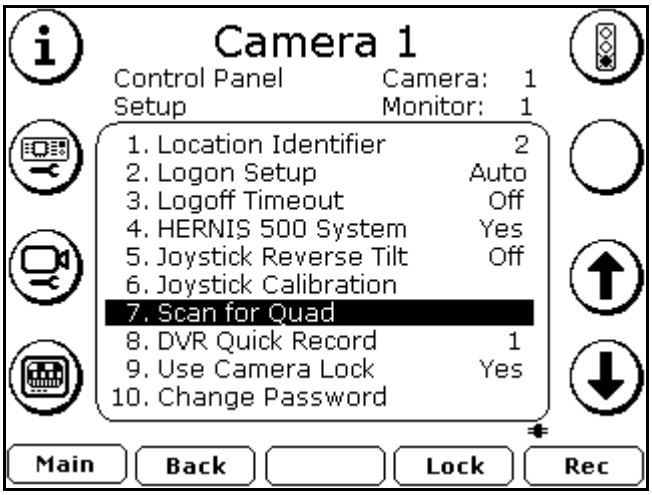
The joystick on the OK450 control panel uses automatic calibration, and will therefore function correctly on first start-up of keyboard. If there should be any problem with the automatic calibration of the joystick, you can use this menu. You start the calibration by pressing the soft key. The soft key will then change to and is pressed once more to end the calibration. Before you press the stop button, you have to deflect the joystick to maximum deflection in all directions including turning the knob of the joystick as far as possible both ways. When you press the soft key, the calibration values will be stored internally in the control panel and will be used as calibration for the joystick.

If you press the start and stop keys without using the joystick in between, the control panel will return to use automatic calibration for the joystick.



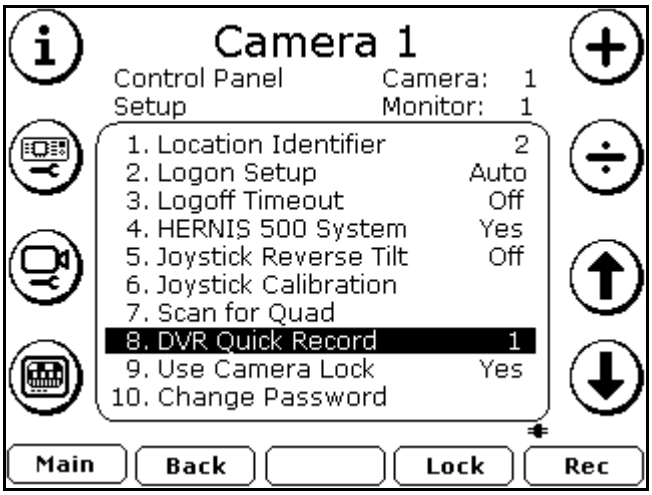
Scan for QUAD *Service Level*

The OK450 control panel is designed to be able to control quad units. When the control panel is connected to the CCTV system it does not know the configuration of the quad units on the system. This menu is used to scan through the system and find the quad units on the CCTV system and their configuration. After using this function, the Quad Menu list will be updated with all configured quad units on the CCTV system.



DVR Quick Record *User Level*

This setting is used to allow the user of the control panel to start recording the active camera on a dedicated DVR. The menu can only be used for CCTV systems that are set up with DVR's. When you change this setting to select a DVR, the fifth soft key below the display is updated, ***Rec*** , and when you press this key, the camera with its name on top of the display will be selected to the dedicated DVR and recording will be started.

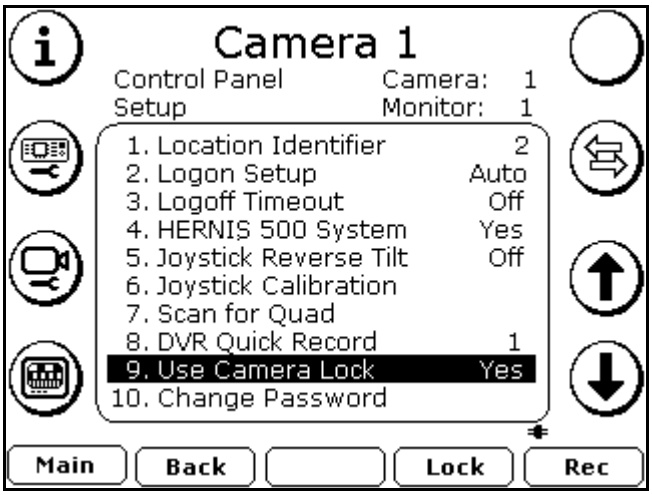


Use Camera Lock *User Level*
This setting activates or deactivates the use of the Camera Lock function from the control panel. When the Camera Lock function is activated, the fourth of the bottom five soft keys will be updated to display ***Lock***, and this soft key can then be used to control locking and unlocking of camera stations.

Camera Lock is a function that is available on HERNIS 400 / 500 systems set up to use priorities. A user given a priority in the system can then lock the camera station for exclusive use. Other operators on the system will then only be able to select the camera station, but not be able to control it. The camera station will remain locked for the user until the lock is released.

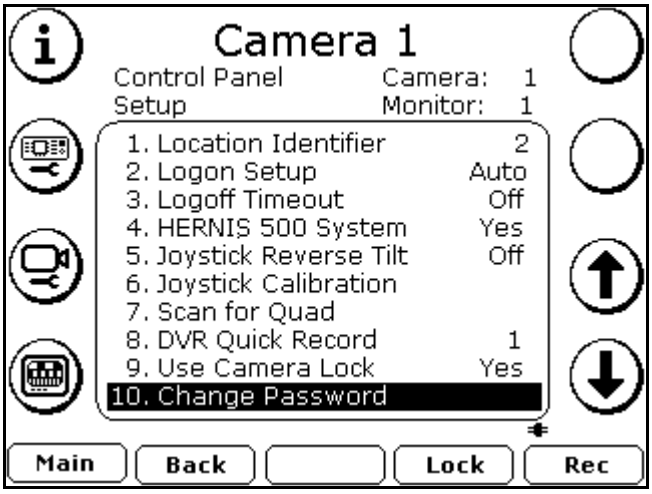
To indicate that a camera station is locked, the display will use information icons below the menu list on the right hand side. When the selected camera station is locked from the control panel, the symbol is displayed, and if the camera station has been locked from another control panel the symbol is displayed.

When a camera station is locked from another control panel, you can break this lock if you have higher priority in the CCTV system than the user currently holding the lock. This is done by pressing the ***Lock*** soft key. Pressing the same key once more will lock the camera station for your exclusive use.



Change Password *User Level*

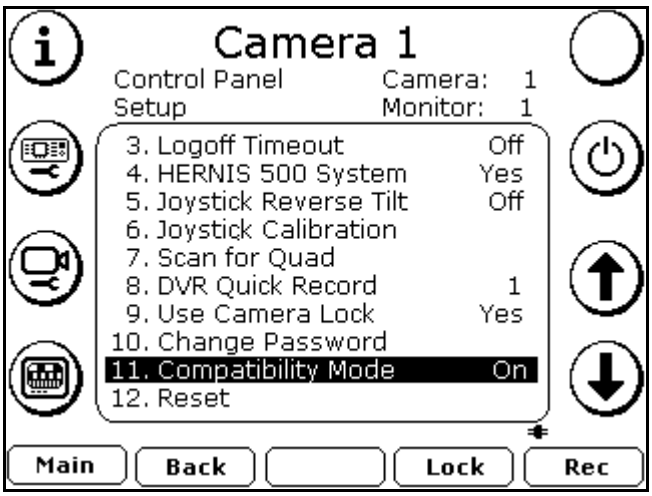
To use this menu the control panel must be set up with *Logon Setup* set to *Auto*. You can only change the local passwords on the control panel from this menu. You will change the password you used to enter the Service Menu. I.e. if you used the Supervisor password to enter the Service Menu, you can change the Supervisor password from this menu. To change the password you have to enter the new password twice to make sure you have written the password correctly. The password consist of 6 digits, and are entered using the numeric keypad.



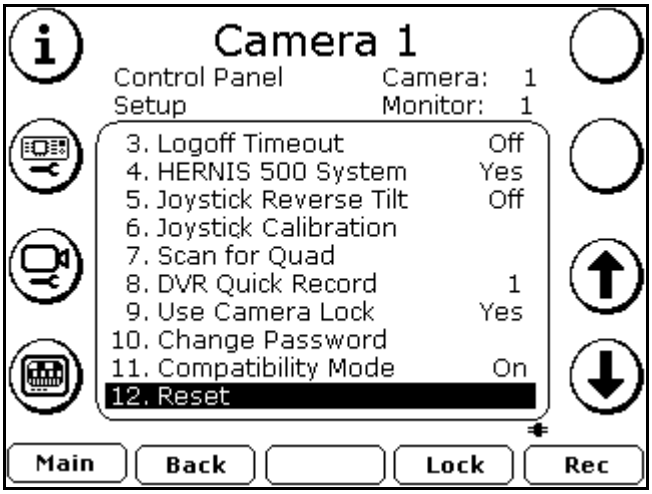
Compatibility Mode *User Level*

Compatibility mode is normally set to OFF. When the control panel is connected to a HERNIS 400/500 system with version from 4.0.x.x to 4.6.x.x the compatibility mode must be set to ON for correct operation of the control panel. When the setting is ON, the following limitations apply:

- The control panel will not be able to display or edit the Alarm configuration.
- Time Search will not be available for the DVR-M
- Camera Playback will not be available on HERNIS 500 systems

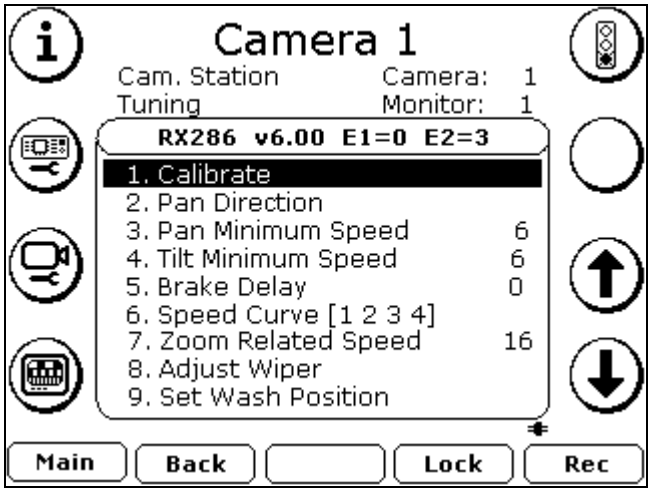


Reset *User Level*
Selecting this menu will reset the OK450 control panel. After reset the control panel will display the Logon page or the Main Menu depending on the *Logon Setup* described above.



5.1.3.10.3 Camera Station Tuning

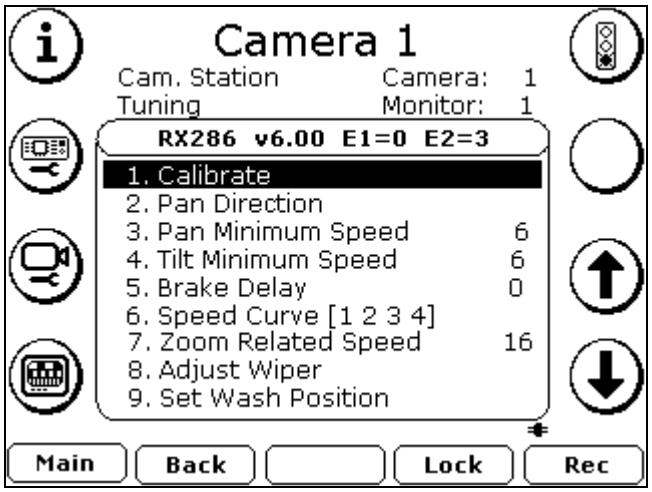
To get access to the *Camera Station Tuning* menu you will have to enter a service level password. You can enter this menu by selecting the menu in the list, or by pressing the soft key for the menu . The header field in the list menus will here show the type and program version for the camera receiver in the selected camera station if this information is available.



The actions for each menu in the list will be available on the soft keys on the right hand side of the display. As you scroll down the menu the upper two soft keys will change according to which functions are available for the selected menu item. The action available for each menu is described in sections below.

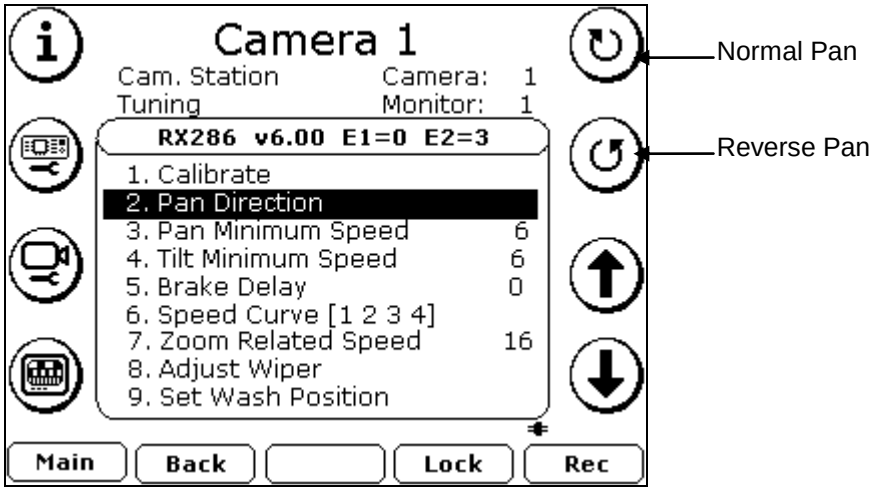
Calibrate

For the “Calibrate” command you will have one action key . This key is used to start calibrating the currently selected camera station. If you want to change which camera station to calibrate you can do this by using the Camera Selection shortcut key and enter the number of the camera station you want to calibrate on the numeric keypad.



Pan Direction

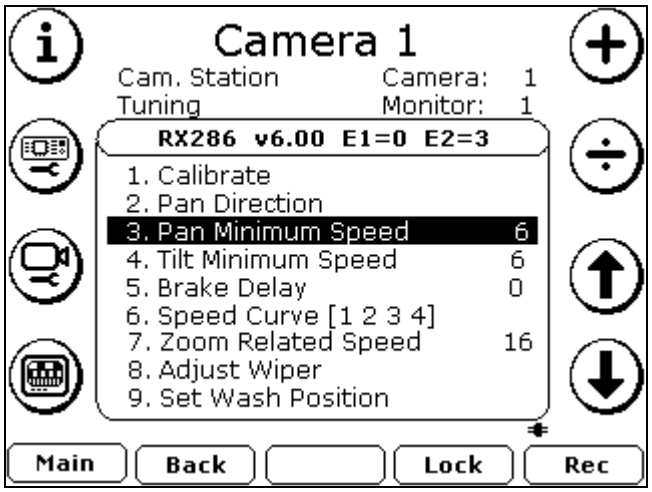
When the “Pan Direction” menu item is marked you have two action soft keys (↻ and ↺).



Normal Pan Direction is the standard setting for camera stations.
Reverse Pan Direction is used for camera stations that are mounted upside down

Pan/Tilt Minimum Speed

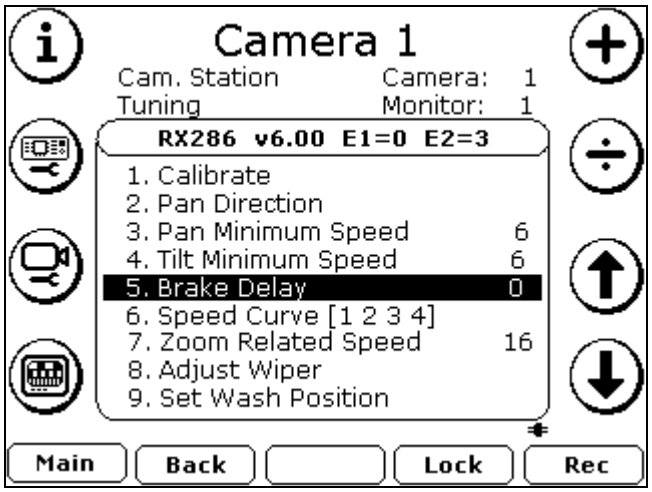
This setting is used to set the slowest pan speed for the camera station. The setting is used to make sure that the camera station will draw enough power on minimum speed on the joystick to be able to move the camera stations from standstill. This setting is automatically configured during calibration, but can be manually adjusted from this menu.



Brake Delay

This value is used to control the delay from a stop command is issued until the brakes are activated on the camera station. The reason to introduce a delay here is to allow heavy camera stations with big inertia to slow down after power to the motors are turned off before the brakes are activated. This will reduce the stress on the camera station and its foundation when the camera station stops after panning.

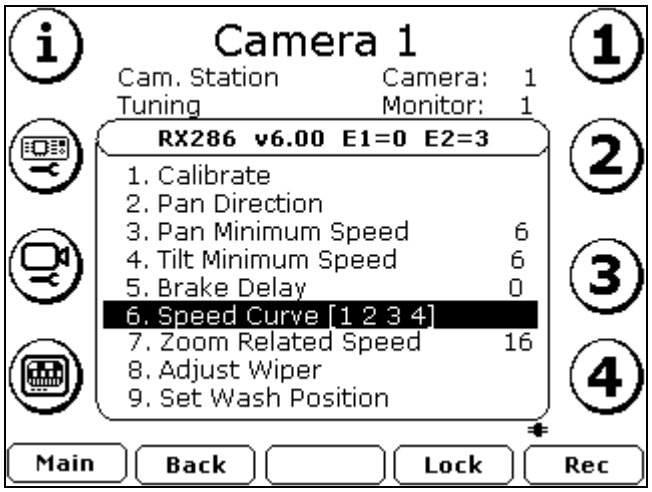
The menu will display the + and ÷ soft keys to adjust the value.



Speed Curve

The speed curve setting can be selected from 1 to 4. The different settings correspond to different ramp functions for the acceleration of camera stations when controlled by the Pan/Tilt keys on the control panel. The ramp functions for each speed curve function may differ depending on which type of camera station is used.

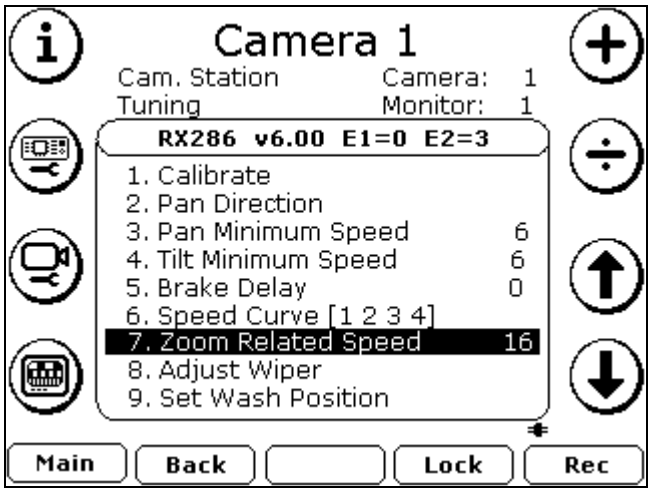
To change speed curve setting, you have to press the ***Edit*** soft key. The menu will then change to display the soft keys **1 2 3** and **4** on the right side of the menu. Selecting a speed curve soft key will change the setting on the selected camera station.



Zoom related Speed

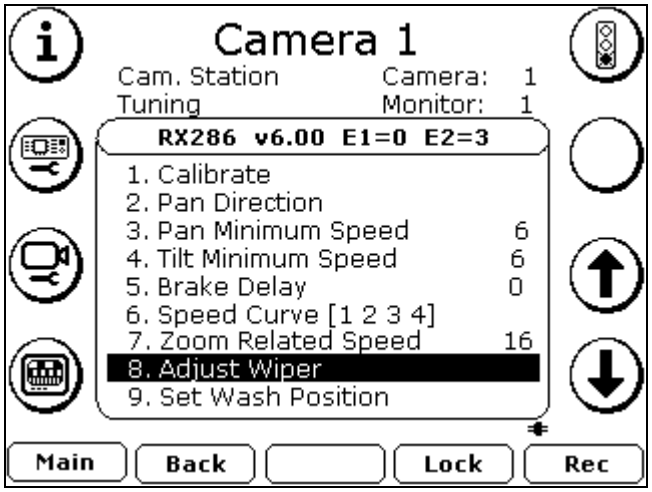
The zoom related speed setting is used to slow down the top speed of the camera station when the picture is zoomed in. Higher value for this setting will make the camera station pan and tilt slower when the camera is zoomed in.

The menu will display the + and ÷ soft keys to adjust the value.



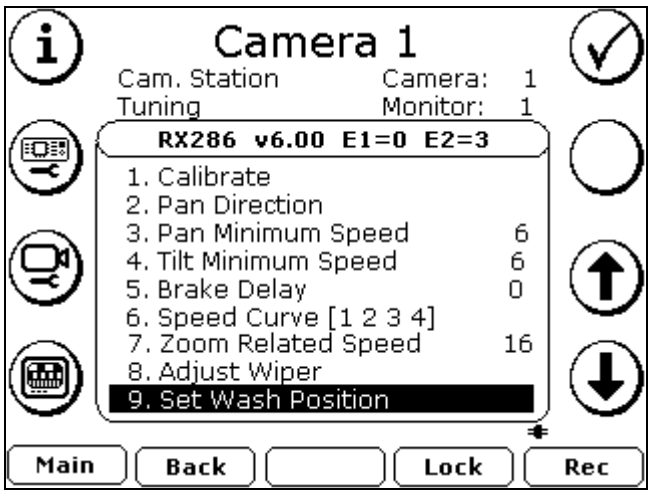
Adjust Wiper

The wiper on some HERNIS camera stations like the EX286. The wiper can be calibrated from the control panel. Press the ***Start*** soft key to enter calibration mode. The camera station will then position the wiper in the centre position. The control panel will change soft keys to + and ÷ to adjust the wiper setting. Press the + and ÷ soft keys to adjust the wiper until it is in the middle of the picture. When the position is correct just wait a few seconds, and the control panel will complete the wiper configuration, and the wiper on the camera station will return to its resting position.



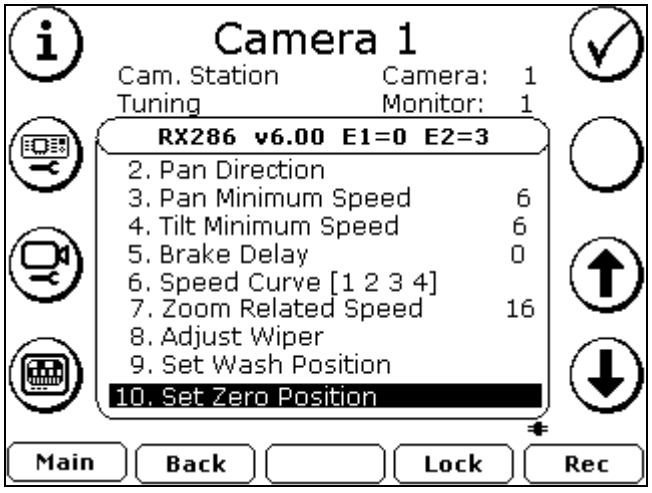
Set Wash Position

Some camera stations use a fixed position for the washer. This menu is used to tune the position used for the washer to ensure the washing fluids hits the camera glass.



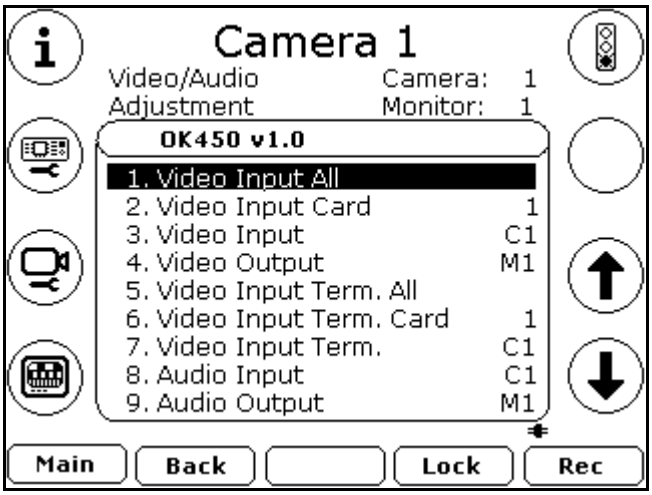
Set Zero Position

Some camera stations use a fixed position for navigation. This menu is used to set the position used as the reference position for the camera.



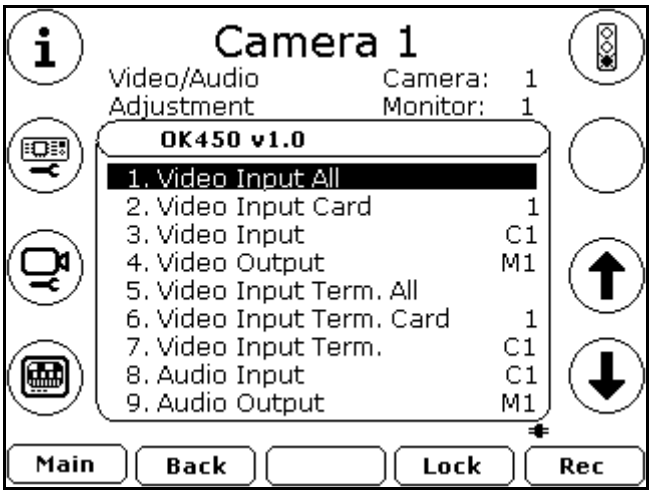
5.1.3.10.4 Video/Audio Setup

The menus items in this menu are used to configure the input and output levels and termination for video and audio in the system. You need to enter a service level password to access the menu.

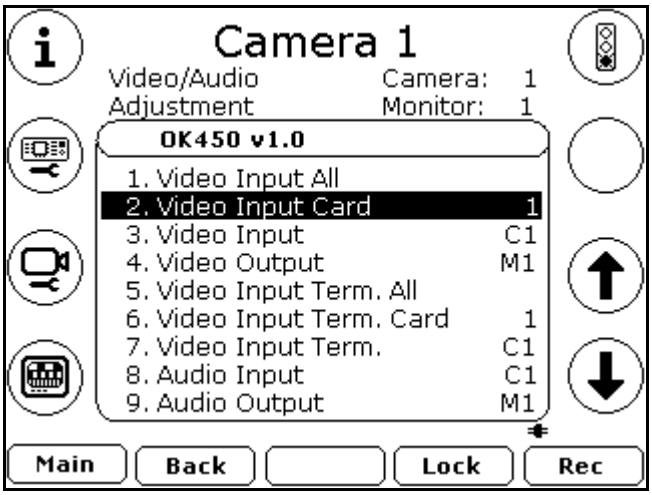


In general when you press a start adjustment soft key, the icon for the key will change to the stop symbol, and you press the key once more to stop adjusting in the selected direction. If you exit the menu while adjusting an individual input or output, the adjustment will stop as you leave the menu. When you have started auto adjustment for an entire card, you can leave the menu, and the auto adjust will continue in the background.
Each menu item is described in sections below.

Video Input All
This menu is used for automatic adjustment of all video inputs on analogue matrices in the CCTV system. To get correct adjustments, all inputs needs to have a standard video source connected to the input. The video sync pulse is measured, and adjusted to 0.3V. Any input without video connection will be ignored.
When you press the **Start** soft key, the control panel will start the adjustment process, and the menu header will display which camera is currently adjusted. When the adjustment process is started, the **Start** symbol will be replaced by a **Stop** symbol. To abort the adjustment you can press the **Stop** soft key.

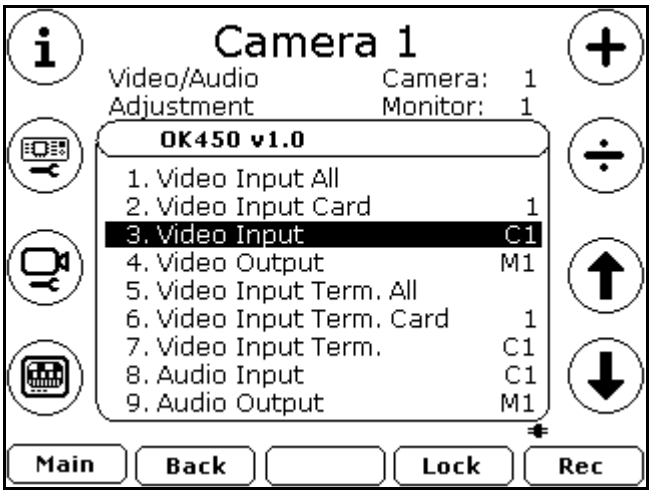


Video Input Card
Works in the same way as *Video Input All*, but will only adjust the selected video input card in the analogue video matrix.[1]



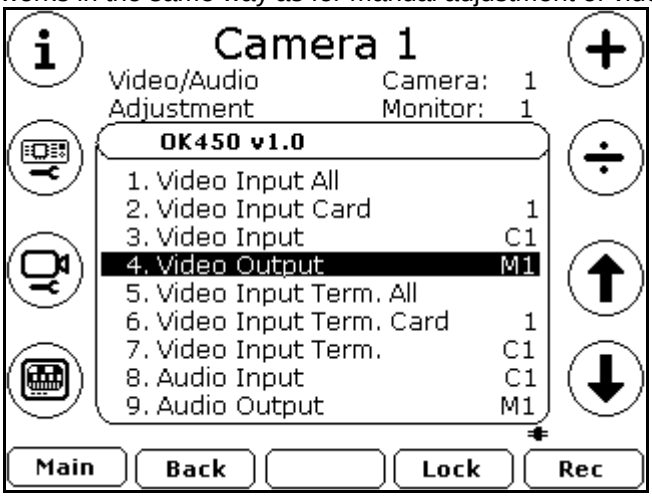
Video Input
This menu will adjust the video input for the selected camera manually. Use the + soft key to start increasing and ÷ soft key to start decreasing amplification of the video signal. When you press any of these soft keys they will change to display the STOP icon. Press the same key once more to stop adjusting in the selected direction.

[1] For systems with more than 48 monitors, the system will include 2 or more video input cards with the same identifier in different physical matrices. The current monitor selection will then determine the video matrix for the card being adjusted. (Monitor 1-48 selected will adjust card in matrix 1, Monitor 49-96 selected will adjust card in matrix 2, etc.)

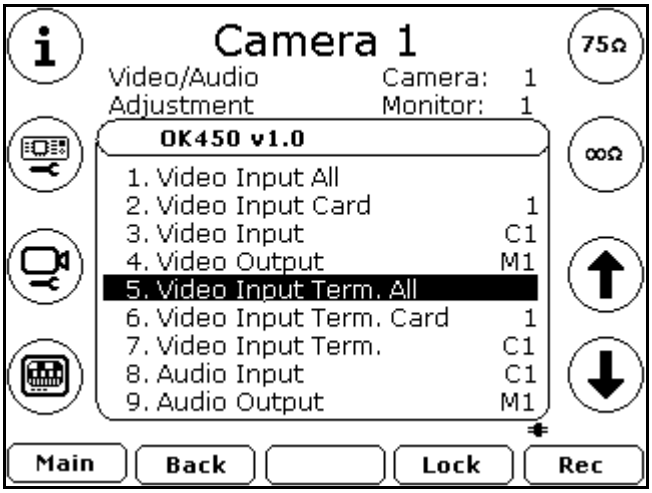


Video Output

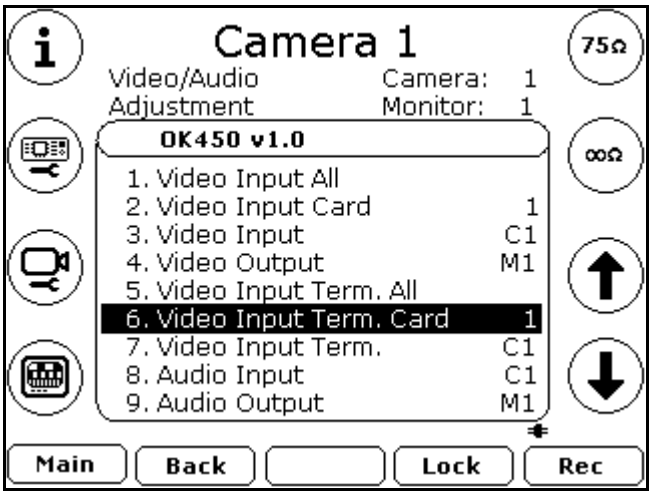
This menu will adjust the output level of the currently selected monitor output from the analogue video matrix. The adjustment works in the same way as for manual adjustment of video input.



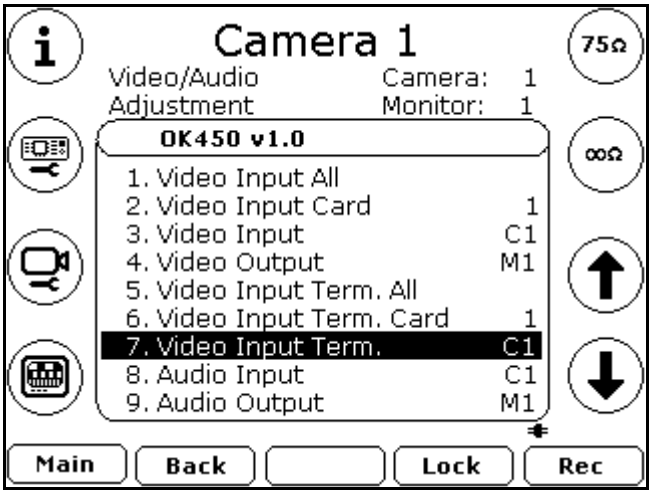
Video Input Term. All
Turn video termination ON (75Ω) or OFF (∞Ω) for all video inputs in the analogue video matrix by pressing the respective softkey.[1]



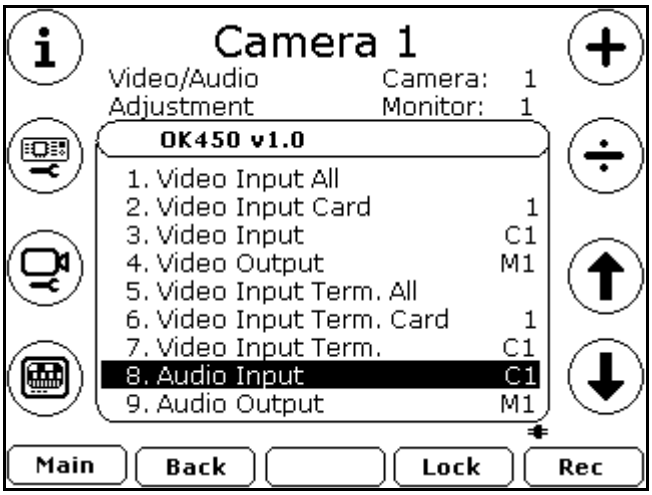
Video Input Term. Card
The same as *Video Input Term. All*, but for a single video input card in the analogue video matrix.[1]



Video Input Term.
Turn video termination on (75Ω) or off (∞Ω) for the currently selected camera.

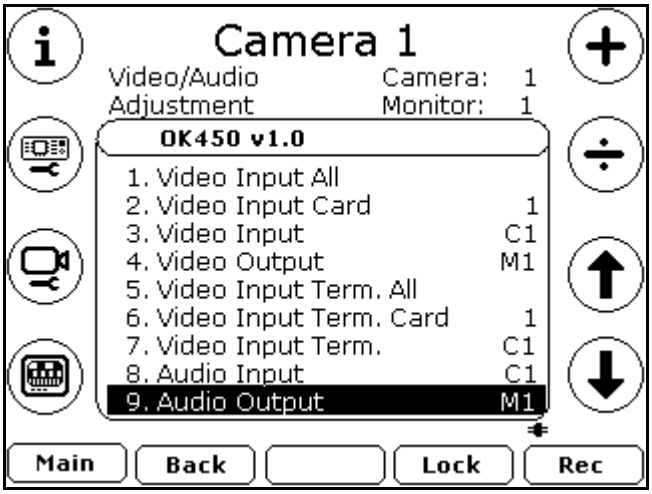


Audio Input
Use the + and ÷ soft keys to adjust the default input level for the audio input to the audio matrix.



Audio Output

Use the + and ÷ soft keys to adjust the default output level for the output from the audio matrix. This menu only sets the default level supplied to the monitor that normally will have a volume control that is used during operation of the system.

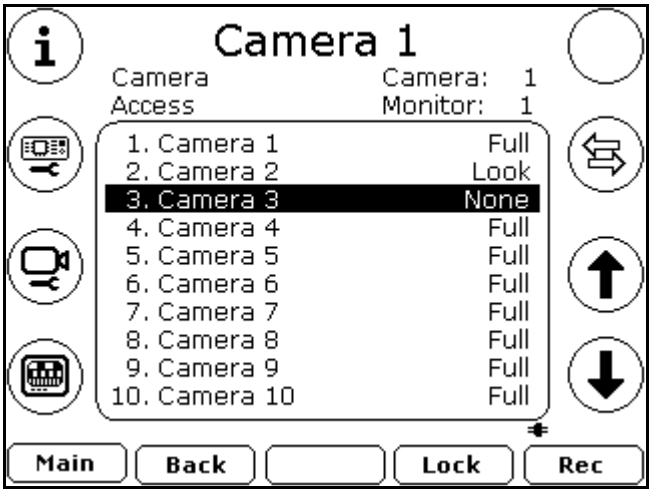


5.1.3.10.5 Camera Access

The camera access menu is used to limit access to camera stations locally on the control panel. Each camera in the system can be set to one of three settings:

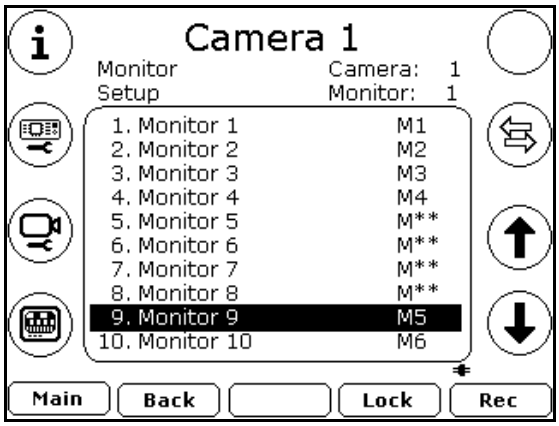
- Full The control panel has access to select and control the camera station.
- Look The control panel has access to select but not control the camera station.
- None The control panel cannot select the camera station.

When access is set to **None**, the camera will not be displayed in the camera list in other menus on the control panel.



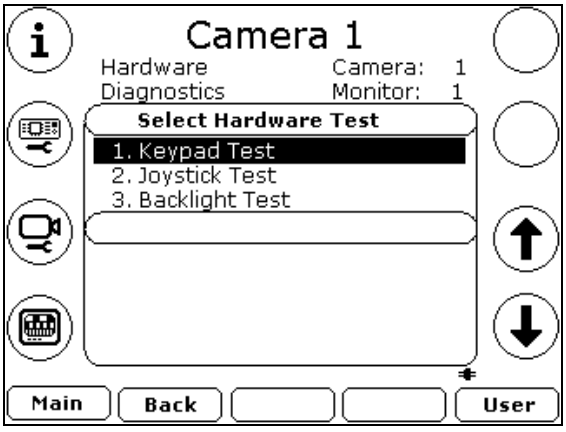
5.1.3.10.6 Monitor Setup

This menu is mainly used to remove monitors from the list that should not be controlled from the control panel. The remaining monitors that can be used from the control panel will be renumbered from 1 locally on the control panel. The remapping to physical monitors used on the CCTV system is done internally on the control panel and is transparent for the user.[2]



5.1.3.10.7 Hardware Diagnostics

To get access to the *Hardware Diagnostics* menu you will have to enter a service level password. You enter this menu by selecting the menu in the list and press ***Enter***.

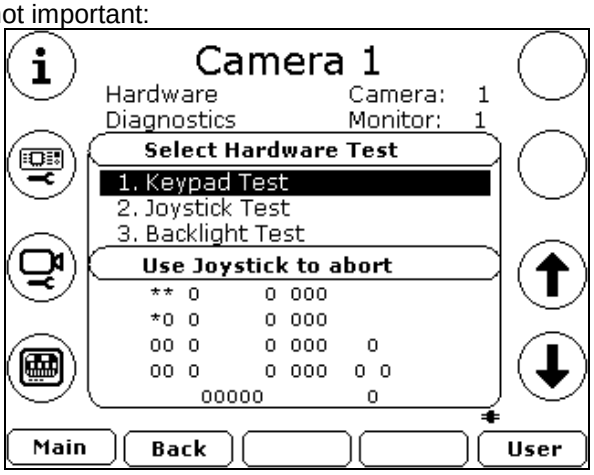


Use the arrows ↓ ↑ to mark the test to be run, and press the ***Enter*** button on the numeric keypad to start the test. Follow the instructions for each test.

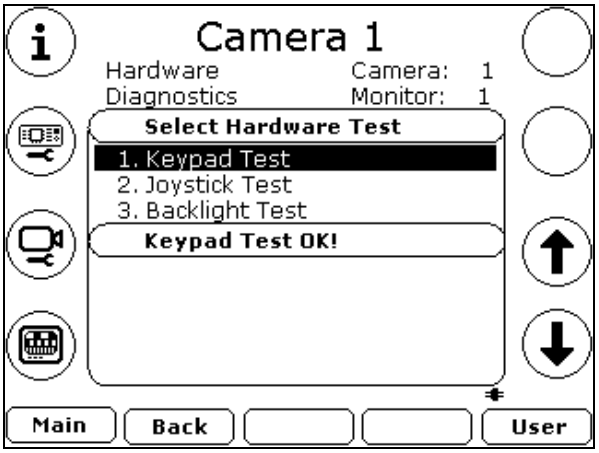
[2] Note that in edit menus you will only get access to the monitors configured for the control panel, and if you look at action lists for alarms, etc. using monitors you have removed from your configuration, they will be displayed as '**M****' in the list.

Keypad Test

In the keypad test, all the key positions are indicated with zeroes '0'. When a key is pressed, the '0' is changed to an 'X', and to a '*' when the key is released. All the keys must be pressed to complete the test, but the sequence is not important:



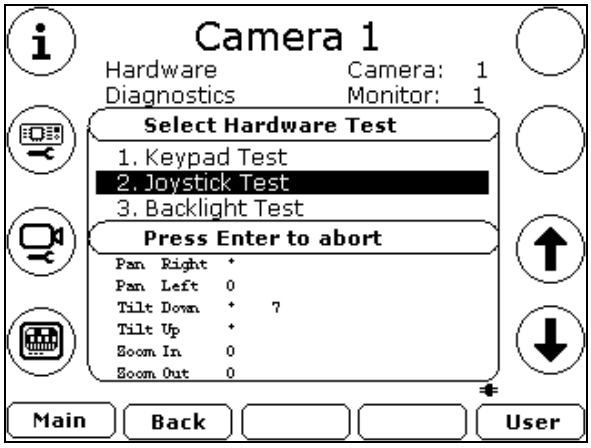
When all the keys are pressed a status message is shown:



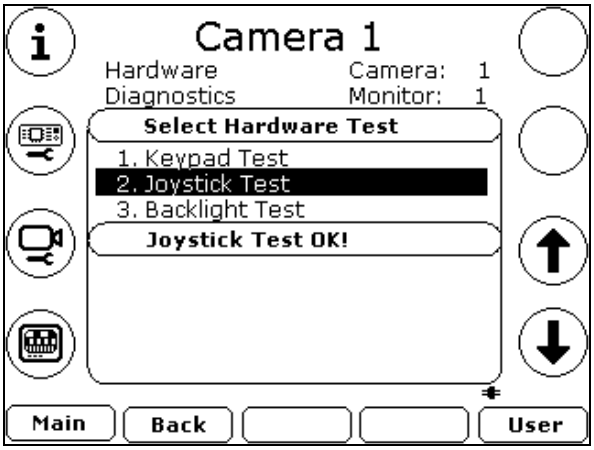
If you need to abort the keypad test before it is completed, press the joystick in any direction to leave the test.

Joystick Test

In the joystick test, all the three axis of the joystick are to be tested. The deflection of the joystick is measured when it is pressed, and an 'X' and a value for the deflection are written in the display for the movement direction. If a deflection is registered stable for at least 0.4 second, it is accepted as OK. For the pan and tilt direction of the joystick the stable deflection value must have a value above 10 to ensure correct operation. For the joystick zoom function, where the joystick has to be turned in each direction the active value can only be 1. A '*' mark for each test that it is accepted:

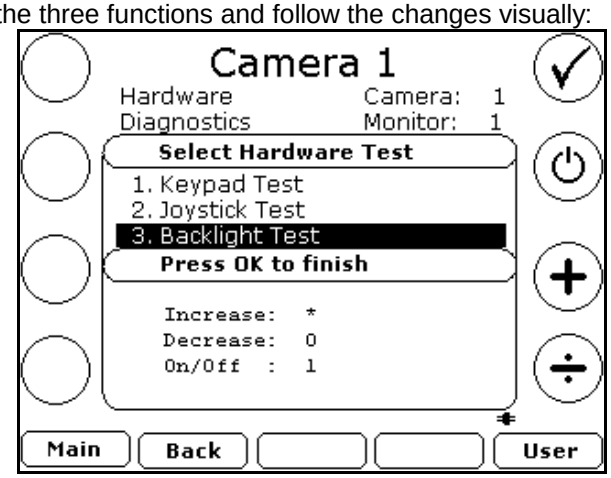


When the joystick test is OK a status message is written to the display:



Backlight Test

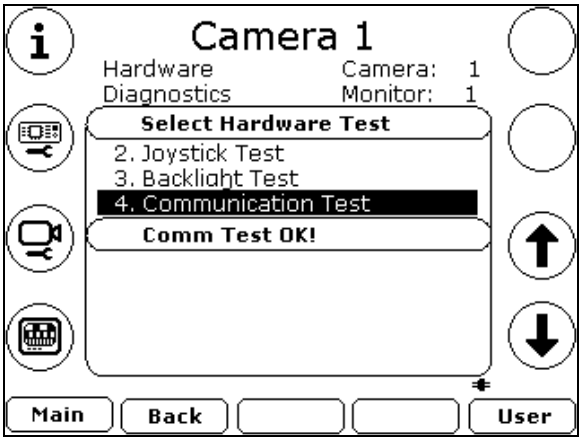
During the display backlight test the increase + and decrease ÷ backlight functions are to be tested, in addition to the on/off ⏻ function. If the control panel has backlight, the adjust function is common with the display. Test all the three functions and follow the changes visually:

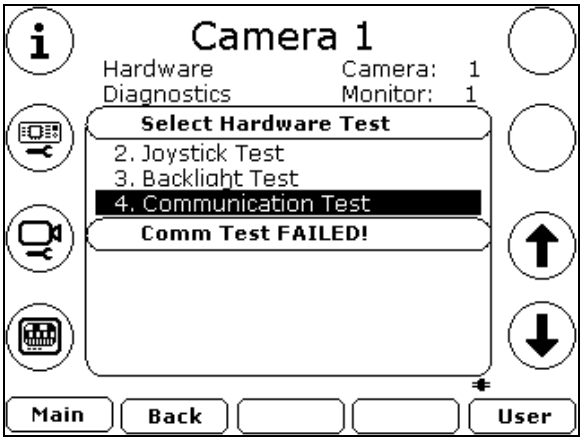


The tests are marked with a '*' when they are tested. Press OK ✓ when the test is completed. A status message 'Test Complete!' is then written to the display.

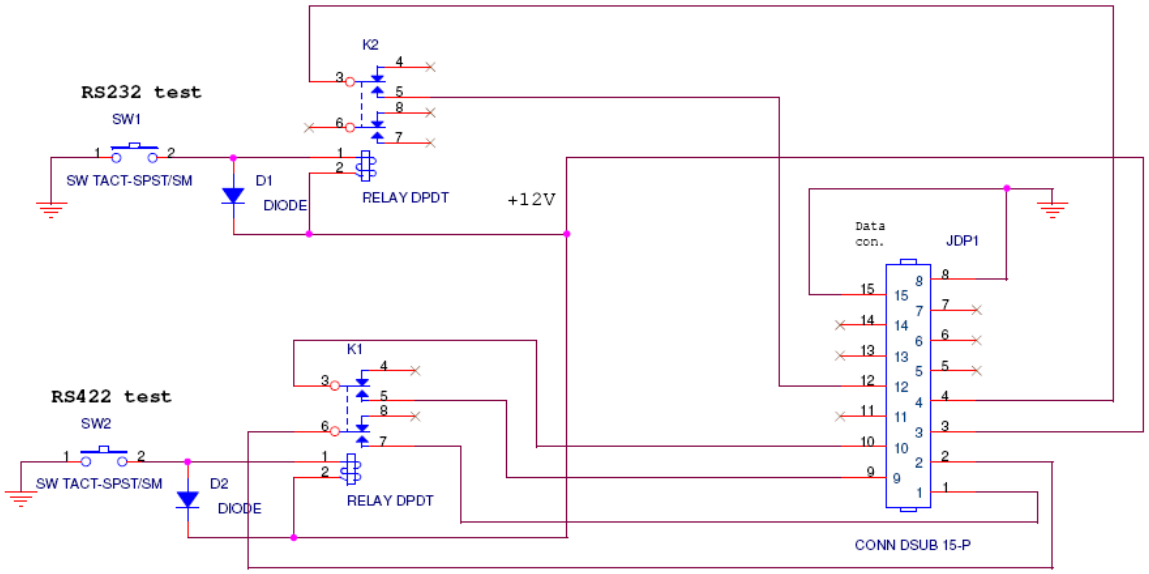
Communication Test

When '4. Communication Test' is marked in the display and the ENTER button ↵ is pressed, a test message is sent out on the serial lines. The RS-232 and RS-422 communication circuits are tested once at a time by pressing down the corresponding switch on the test box when the test message is sent. The test data is routed from the transmit lines to the receive lines through loop back in the test box. If the data sent out is read correctly back, the status message 'Comm Test OK!' can be read, else the message 'Comm Test FAILED!' is shown:



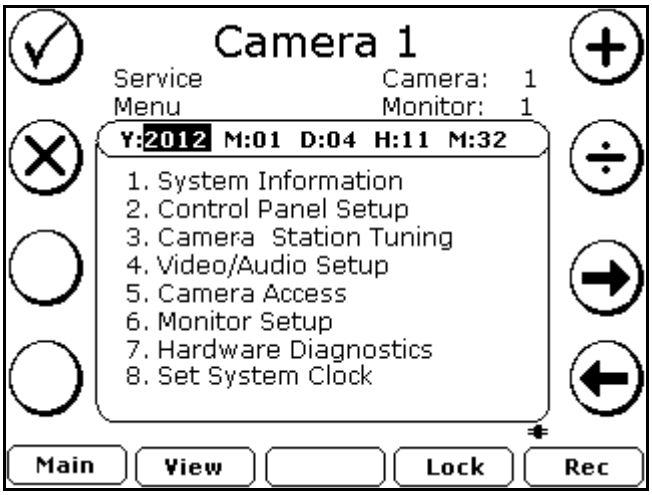


NB! This test requires a special loop back adapter connected to the serial port connector on the back of the OK450 control panel. If this adapter is not used, the test will always fail. The diagram below gives an overview over the loop back adapter used to test the RS-232 and RS-422 serial communication lines:



5.1.3.10.8 Set System Clock

This menu is only available when the OK450 control panel is connected to a HERNIS 8x8 or HERNIS Compact system. It will set the internal clock on the video card serving as controller in the system. Service level password is required to use this menu. When you select this menu and have entered the password, the display for entering the new system clock looks like this:



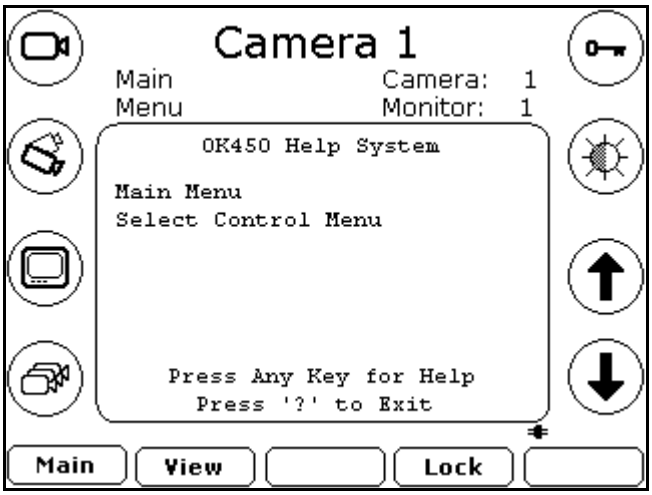
To edit the system clock setting, you can use the ***Next*** ➔ and ***Previous*** ➔ soft keys to select which field to change (the selected field is the one displayed in inverted colours). To change the value in the selected field, you use the ***Plus*** + and ***Minus*** ÷ soft keys. When the time is set correctly you press the ***OK*** soft key ✓ to set the new time. The ***cancel*** soft key ✕ exits the menu without setting the new time.

5.1.4 The Help System

The help system on the OK450 control panel is fairly self explaining. When you press the button on the numeric keypad marked “?”, the control panel enters Help Mode. The help page will give a short explanation of how the current menu is used, and how the help function can be used.

When you have entered help mode you can press any key on the control panel, and you will be presented with a short explanation of how the key functions in the active menu.

When you want to exit the help system, you press the “?” key once more. You will then be back in the same menu that was active when you entered the system.



5.1.5 AppendicesMenu Icons

Menu Selection Icons		Edit Menu Icons	
	Camera Selection Menu		OK
	Preset Position Menu		Cancel
	Monitor Selection Menu		Edit Selected Item
	Camera Group Selection Menu		Add Item to List
	Sequence Activation Menu		Delete Item from List
	Quad Selection Menu		Toggle Setting for Item in List
	Multi Switch Activation Menu		Increase Value of Item in List
	Alarm Acknowledge Menu		Decrease Value of Item in List
	DVR Selection Menu		Change to Lowercase in Edit Text
	Camera Playback Menu		Change to Uppercase in Edit Text
	System Information Menu		Backspace in Edit Text
	Control Panel Setup Menu		Select Action type for Alarm Action
	Camera Station Tuning Menu		Select Relay Driver for Action
	Video/Audio Setup Menu		Set Time Delay for Action
Menu Action Icons		**Service Menu Icons**	
	Scroll Up in List		Set Camera Pan Direction to Normal
	Scroll Down in List		Set Camera Pan Direction to Reverse
	Logoff	∞Ω	Video Termination OFF
	Adjust Brightness	75Ω	Video Termination ON
	Select Next Camera	1	Set camera station to Speed Curve 1
	Select Previous Camera	2	Set camera station to Speed Curve 2
	Start / Activate	3	Set camera station to Speed Curve 3
STOP	Stop	4	Set camera station to Speed Curve 4
	Release Home Position		ON/OFF - Toggle Selected Setting
	Define Home Position		ON – Activate function
	Quadrant Not Active on Quad Unit		OFF – Activate function
	Quadrant Active on Quad Unit		
	Next Field (Time Search)		
	Previous Field (Time Search)		

5.1.5.1 Information Icons

The information icons will appear below the list in the display on the right hand side. The connection status icon will always be displayed, but the other icons are only displayed when appropriate. The following information icons are used:

- CCTV System communication OK
- CCTV System communication lost
- Alarm active on selected monitor
- Sequence active on selected monitor
- Camera Lock activated by another user on selected camera
- Camera Lock active on selected camera
- Password mode active for access to edit and service menus

5.1.5.2 Passwords

The default passwords configured when the control panel is shipped is the following:

- User Level 111111
- Supervisor Level 222222
- Service Level 333333

5.1.5.3 Password Timeout

When you enter a password on the OK450, the control panel will display an active password icon under the menu list adjacent to the connection symbol. The icon is displayed as long as the password is active on the control panel. When you exit the password protected menu, the password will be kept active for up to one minute. This will enable you as user of the control panel to go between menus to edit the setup without re-entering the password.

5.1.5.4 Connections

The OK450 control panel is normally connected to the HSS05 Multicom node card using RS232 or RS422 connection. In addition there is an optional connection for Ethernet communication that can be added to the control panel. By using this connection you can use existing Ethernet cabling for direct communication with the HERNIS CCTV system server[3], or communication with a HSS05 Multicom Node card that is equipped with the same optional Ethernet unit. These two units are then set up to communicate directly with each other over the Ethernet.

The RS232 and RS422 connections are available in a 15 pin DSUB connector on the back of the OK450 control panel. If the optional network connection is used there will be mounted an extra card inside the control panel and you will have a RJ45 connector on the back of the OK450 for connection to the network.

[3] Only available with HERNIS 400/500 systems v4.x with active NetworkNodeGateway module.

5.1.5.5 Replacing OK400 with OK450

Major differences between OK400 and OK450

Not supported on OK450:

- CAN connection is not supported
- Incompatible with HE250 systems

Additional features on OK450:

- Quad control
  - Use the "Scan for Quad" menu on the "Control Panel Setup" Service page to detect quads in the CCTV system.
- NVR camera playback for HERNIS 500 system with Time Search
- Time Search for DVR-M and DVR-M2 units
- Alarm handling
  - Alarm list with marking for active alarms
  - Alarm acknowledge
  - Alarm configuration
- For systems with DVR you can configure a DVR for the OK450 that uses one touch recording from a soft key to start recording of the currently selected camera on the OK450.
- You have additional functions for setting up camera stations, like digital zoom on/off, calibrating wiper on EX286 and set wash position for PT12.
- You have additional functions for configuring video and audio matrix, like turning off video termination and adjusting default audio level for audio input and output.

Replacing OK400 with OK450

The next sections will describe how to replace OK400 with OK450 for each HERNIS CCTV system type.

HE250
OK450 is **NOT** compatible with the HE250 system and cannot be used to replace OK400. Consider upgrading the HE250 system to a HERNIS 400 Compact system.

HERNIS 8x8 and HERNIS 400 Compact

OK400 on CAN
OK450 does not support CAN connection. There are two ways to replace with OK450:

1. RS422 Connection using 5-wire (or 4-wire with shield) to the MultiNode or SystemNode

2. Use OK450 with network connection to a HSS05 Multicom with Network and set up a Serial Bridge connection between the two units as described in the Technical Manual for OK450.

OK400 on RS422 connected to SystemNode

The OK400 can be replaced by OK450 without changes to the cabling. Make sure the ground wire from OK450 is connected in the SystemNode.

HERNIS 400 version 2.1

OK450 is **NOT** compatible with the HERNIS 400 v2.1 system and cannot be used to replace OK400. Consider replacing the CCTV system server with a server running HE400 version 4.x.

HERNIS 400 version 3.x

OK400 on CAN
OK450 does not support CAN connection. There are two ways to replace with OK450:

1. RS422 Connection using 5-wire (or 4-wire with shield) to the MultiNode or SystemNode

2. Use OK450 with network connection to a HSS05 Multicom with Network and set up a Serial Bridge connection between the two units as described in the Technical Manual for OK450.

OK400 on RS422 connected to SystemNode
The OK400 can be replaced by OK450 without changes to the cabling. Make sure the ground wire from OK450 is connected in the SystemNode.

OK400 on RS422 connected to MultiNode
The OK400 can be replaced by OK450 without changes to the cabling.
The setup on the Keyboard Node connection used for the OK450 must be changed in HAS from OK400 to HE400.
The OK450 encoders must be changed to use baud rate 9600.
TIP: If you add a HSS05 Multicom card to the MultiNode for OK450 connections you can use the standard baud rate of 57600, and you will get better response from the OK450 control panel.

HERNIS 400 version 4.x and HERNIS 500

OK400 on CAN
OK450 does not support CAN connection. There are two ways to replace with OK450:

1. RS422 Connection using 5-wire (or 4-wire with shield) to the MultiNode or SystemNode

2. Use OK450 with network connection, and start the Network Node Gateway on the HERNIS 400 / HERNIS 500 server. The network port on the OK450 must be set up with UDP Setup for communication with Network Node Gateway as described in the Technical Manual for OK450.

OK400 on RS422 connected to SystemNode
The OK400 can be replaced by OK450 without changes to the cabling. Make sure the ground wire from OK450 is connected in the SystemNode.

OK400 on RS422 connected to MultiNode
The OK400 can be replaced by OK450 without changes to the cabling.
The setup on the Keyboard Node connection used for the OK450 must be changed in HAS from OK400 to HE400.
The OK450 encoders must be changed to use baud rate 9600.
TIP: You can also use an OK450 with Network Connection and communicate directly with the CCTV system by starting the Network Node Gateway on the HERNIS 400 / HERNIS 500 server.

Setting up OK450 after replacement
Check that the baud rate set up on the OK450 match the baud rate setting for the OK400 that was replaced if you are using the existing connection.

Service Menu

After replacement you must enter the Service menu and set up the OK450 to match the replaced OK400.

Control Panel Setup
Set up the ***Location Identifier*** on OK450 under Control Panel Setup in the Service menu to the same number as the Keyboard Id on the replaced OK400.
Set the ***Logon Setup*** to **Auto** or **Manual** according to the Logon setting in the System Setup menu on OK400.
Set ***HERNIS 500 System*** to **Yes** if OK450 is connected to a HERNIS 500 system, otherwise set to **No**. This setting will enable camera playback when connected to HERNIS 500 CCTV system.
Use ***Scan for QUAD*** if your system is configured with controllable quads. You need to have a working connection to the CCTV system for this function to work. The OK450 will check the system for quad units, and display them in the Quad menu.
If you are connected to a HERNIS 400 or HERNIS 500 system with an earlier version than 4.4.7.x, you must set ***Compatibility Mode*** to **Off**. When you are connected to HERNIS 8x8, HERNIS 400 Compact or HERNIS 400 / HERNIS 500 system with version 4.4.7.x or later, the setting should be **On**. When set to Off you will not be able to view or configure alarm actions.

Camera Access
If you have configured limited access to cameras on the OK400 keyboard, you should set the same settings on OK450 in this menu.

Monitor Setup
If you have used the Monitor Setup on the OK400 to limit the available monitors, the same setup must be entered in this menu on the OK450.

Encoder SW2
Located back on the keyboard behind the cover plug.

Encoder	Function	
0	Baud rate 57600	Serial Port Connection
1	Baud rate 9600	Serial Port Connection
2	Baud rate 19200	Serial Port Connection
3	Baud rate 57600	Network Port Connection
4-F	Not used (sets default baud rate 57600)	

5.1.5.6 Firmware revisions

This section describes user interface changes for different firmware versions on the OK450 control panel.

Version 1.11

- Camera Function menu is added. The menu is entered by selecting the Camera Menu, then press “View” to display the Camera Feedback menu and last press “Func” to open the Camera Function menu.
  - Digital Zoom setting is moved from the “Camera Station Tuning” menu under the “Service Menu” to the new “Camera Function” menu
  - Power on / off is moved from the middle bottom soft key in the “Camera Feedback” menu to the new “Camera Function“ menu
  - Wide Dynamic auto function and Image Stabilizer menu items are new to this version.
- Set System Clock menu is a new menu item in the Service Menu. The menu item is only displayed when the OK450 control panel is connected to HERNIS 8x8 or HERNIS Compact CCTV system.

Version 1.06

- Added calibration of wash position for PT12 camera station. The menu is called “Set PT12 Wash Pan Pos.” and is found under the “Camera Station Tuning” menu in the “Service Menu”.

5.1.5.7 Configuration of Yuhua Camera Stations

5.1.5.7.1 Configuration by DIP Switches

The camera type, communication protocol, baudrate and address are set by dip switches in the camera station. For all Yuhua camera stations connected to a Hernis system use the following settings:

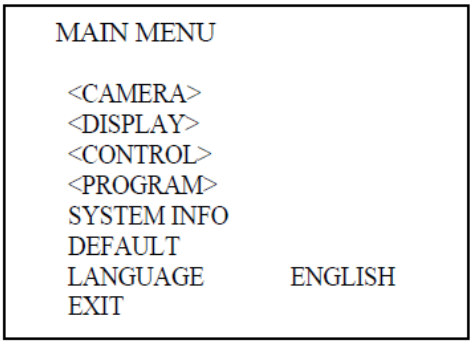
* protocol Pelco-D
* baudrate 4800
* camera address 1

Internally in the Hernis system the cameras are given addresses according to the configuration of the camera addresses in the system.

5.1.5.7.2 Configuration by OSD and Menu Setup

The On Screen Display (OSD) menu can be displayed by running preset number 55 or 95. To manoeuvre in the menu, use the pan and tilt buttons. The **tilt up** and **down** buttons are used to scroll in the menus, and the **pan right** and **left** buttons are used to show the alternatives for a selection. **Iris close** button means to go to the last line in the menu list, and the **iris open** button means OK. When an item is active, it flashes.

The main menu structure for a Yuhua camera station can look like this:



See the manual book for the camera station to be configured for more details.

5.1.5.8 Configuration of Oxalis camera stations

5.1.5.8.1 Configuration by DIP switches

The Oxalis camera stations must use the HERNIS firmware on the camera receivers. If the Oxalis camera receiver inside the camera station has a 4 bit DIP switch SW2 on the card, this should be set up with the two first switches ON to select HERNIS protocol. If the card does not have a 4 bit DIP switch, a configuration program from Oxalis must be run in order to configure for the Hernis protocol.

5.1.5.8.2 Configuration by OSD menu

The OSD menu is only available for Oxalis camera stations with Sony or Samsung camera modules. The available settings in the on screen menu will depend on which camera module is installed in the camera station.

The On Screen Display (OSD) menu can be displayed by defining preset number 54 or 90. To navigate in the menu, use the zoom and focus buttons. The **zoom in** and **out** buttons are used to select function, and the **focus near** and **far** buttons are used to scroll through the alternatives for a function.

Define preset number 54 or 90 again to save and exit, or define preset number 55 or 91 to exit without saving changes.

We recommend that you delete the preset positions that are defined when using the on screen menu when you are done with the adjustments.

5.1.5.8.3 Pan/tilt hysteresis calibration

The pan/tilt hysteresis is adjusted to increase the precision for preset positions. This calibration is set from factory and cannot be changed from OK450.

If changes to the factory calibration are needed, HWIN version 5.6 or later can be used to change the calibration. Check the reference manual for Oxalis camera station and the HWIN user manual.

5.2 HERNIS Software Manuals

Refer to HERNIS Software Manuals in Appendix A

6. Maintenance

6.1 Preventive Maintenance Instructions for HERNIS CCTV System

6.1.1 Purpose and Scope

This document describes the procedures required to perform preventive maintenance on all CCTV equipment manufactured by HERNIS Scan Systems. The following procedure may therefore contain information regarding preventive maintenance of equipment that is not delivered under the given purchase order.

6.1.2 General Maintenance

HERNIS CCTV systems require very little maintenance as they consist mainly of "state-of-the-art" electronics. However, if the following routines are implemented, higher reliability and better performance can be expected:

6.1.2.1 As Required Maintenance

- Clean glass in front of camera
- Refill washer with liquid. Use anti-freeze of automotive grade (Applies for cameras with wiper / washer).

6.1.2.2 14 Days (or after every offshore loading)

Applicable for sub-sea equipment only.

Inspect sub-sea cameras and lights for physical damage and water penetration. Inspect cables and splices for physical damage.

6.1.2.3 Semi-annual Maintenance

Pan/tilt mounted cameras should be operated until stopped by limit switches in all 4 directions (pan left + right, tilt up + down) using the arrow marked buttons on the keyboard. View the picture from the actual camera to detect possible lugging.

Refill washer with liquid. Use anti-freeze of automotive grade (Applies for cameras with wiper/washer).

Open sub-sea cameras/lights and change O-rings. Apply PCB grease on glass flanges and connectors. Check heater in camera housing.

NOTE
When sub-sea housings have been opened, extreme care should be taken to get the O-rings mounted correctly. Remember PCB grease on all bolts.

6.1.2.4 Yearly Maintenance

- Check all terminals for loose screws
- Inspect all plug-in connections for proper contacts.
- Clean contacts if required.
- Clean all cabinets, and fan at the back of the computer, using a vacuum cleaner.
- Clean all monitors and Operator's panels with a damp cloth. No chemicals please!
- Inspect all camera stations for possible physical damage.

6.1.2.5 Refilling of the Washer Tank

Mix anti-freeze and water together in proportions that are suitable for the operating conditions.

Remove the cap on top of the tank (retained by a "check chain", 3,2 L tank only) and refill with anti-freeze.

If the tank has run dry, the pump will be able to transport new fluid to the nozzle after re-filling. The wipe / wash function has to be operated from the keyboard until new fluid squirts on to the glass of the camera station.

6.1.2.6 Limitations

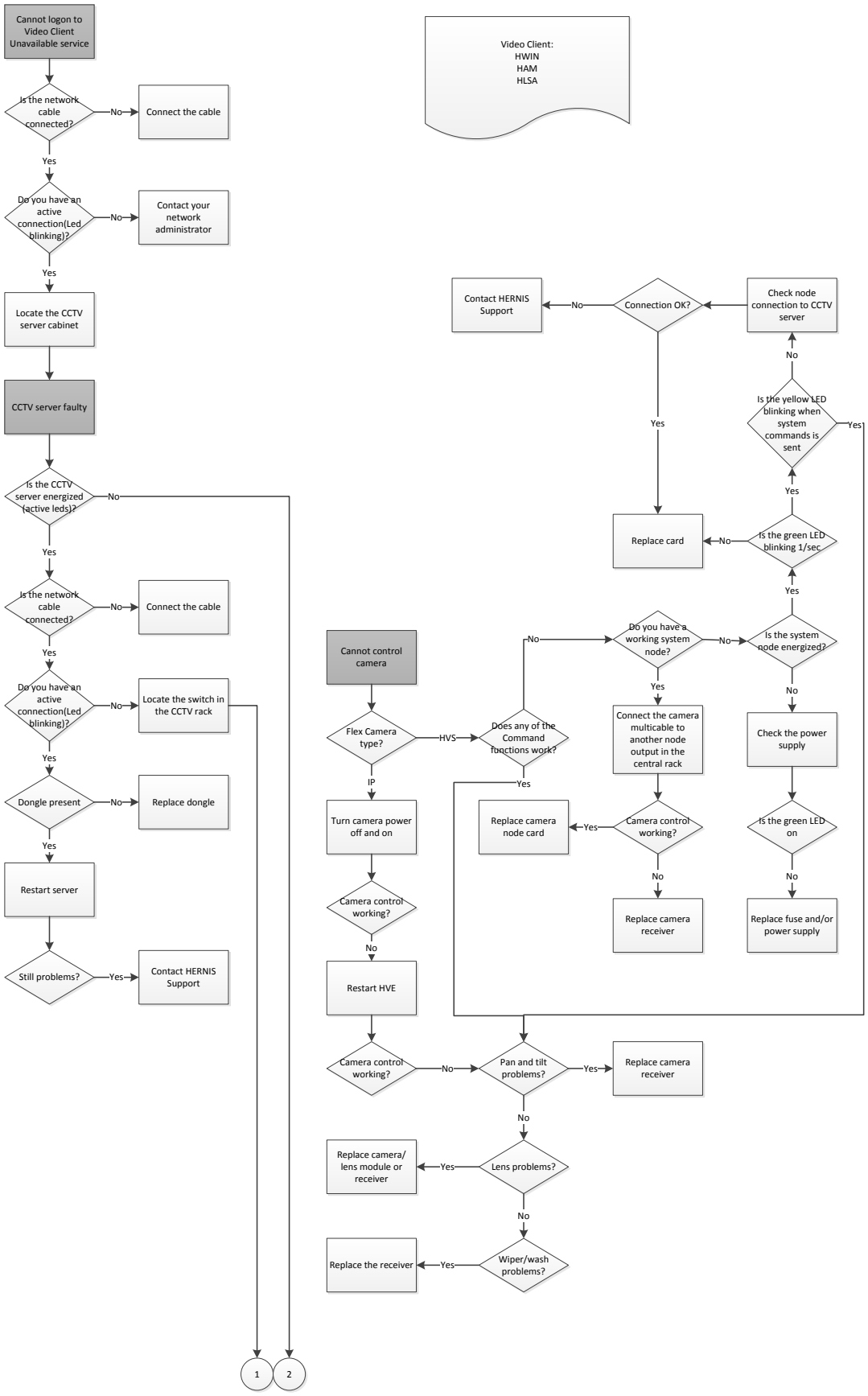
This CCTV system is of modular design, therefore most modules or sub-units can easily be replaced if necessary.

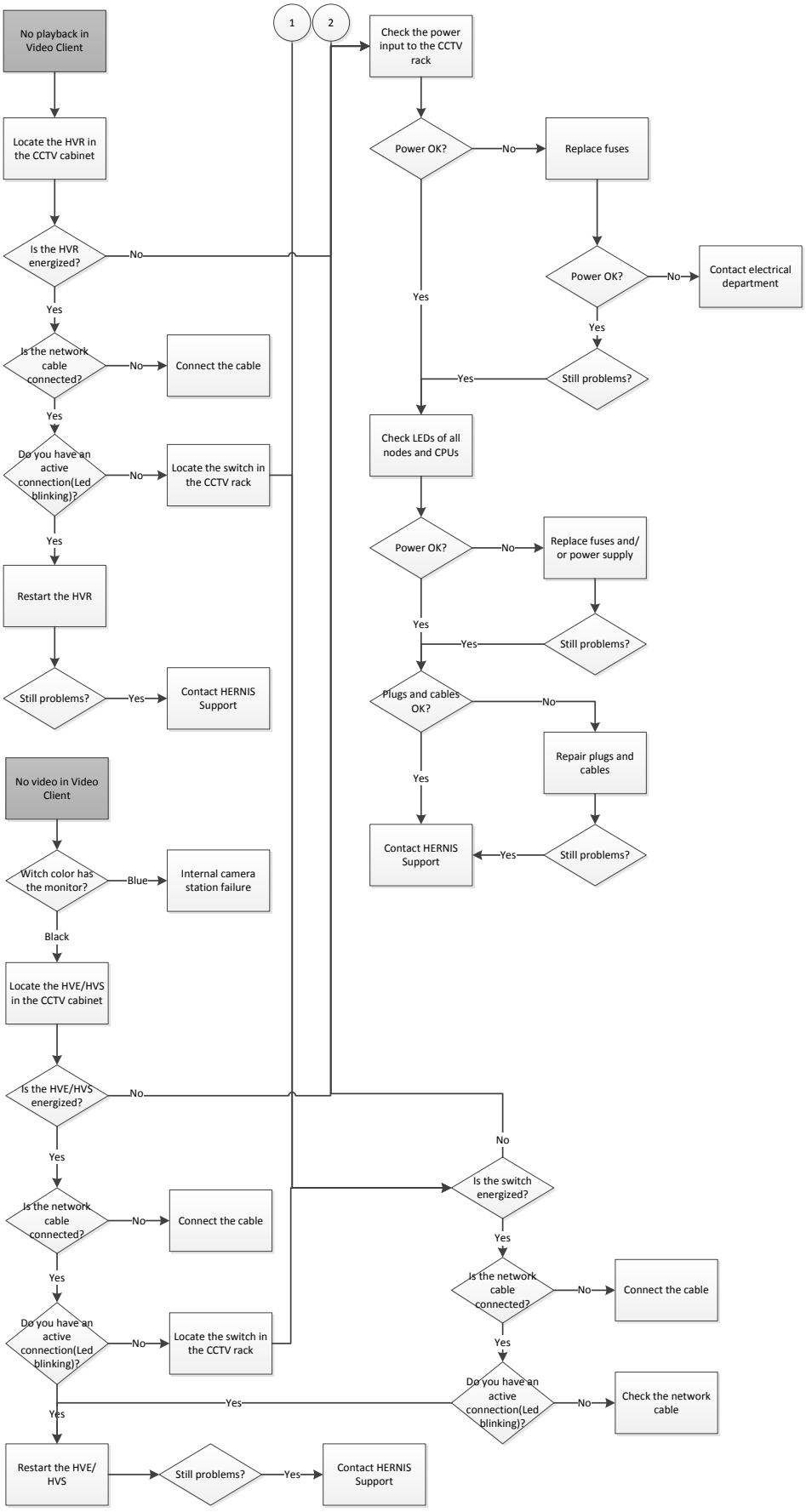
However, it is not always practical to attempt repairs down to component-level without being familiar with the system or in some cases, without having special tools/facilities.

WARNING
Disconnect all power to the EX equipment before opening the units. If any equipment is opened for whatever reason, all O-rings must be inspected for damage and replaced if necessary. All O-rings must be given an ample coating of grease (example PCB) prior to re-assembly of the unit.

WARNING
HERNIS camera stations that are made from electro-polished stainless steel shall not be painted or have any other type of coating whatsoever.

6.2 Typical Fault Finding Procedure for HERNIS FLEX CCTV System




No playback in Video Client
Locate the HVR in the CCTV cabinet
Is the HVR energized?
No
Yes
Is the network cable connected?
No
Connect the cable
Yes
Do you have an active connection(Led blinking)?
No
Locate the switch in the CCTV rack
Yes
Restart the HVR
Still problems?
Yes
Contact HERNIS Support
1
2
Check the power input to the CCTV rack
Power OK?
No
Replace fuses
Power OK?
No
Contact electrical department
Yes
Still problems?
Yes
Yes
Check LEDs of all nodes and CPUs
Power OK?
No
Replace fuses and/ or power supply
Still problems?
Yes
Yes
Plugs and cables OK?
No
Repair plugs and cables
Still problems?
Yes
Contact HERNIS Support
Yes
No video in Video Client
Witch color has the monitor?
Blue
Internal camera station failure
Black
Locate the HVE/HVS in the CCTV cabinet
Is the HVE/HVS energized?
No
Yes
Is the network cable connected?
No
Connect the cable
Yes
Do you have an active connection(Led blinking)?
No
Locate the switch in the CCTV rack
Yes
Restart the HVE/ HVS
Still problems?
Yes
Contact HERNIS Support
No
Is the switch energized?
Yes
Is the network cable connected?
No
Connect the cable
Yes
Do you have an active connection(Led blinking)?
No
Check the network cable
Yes

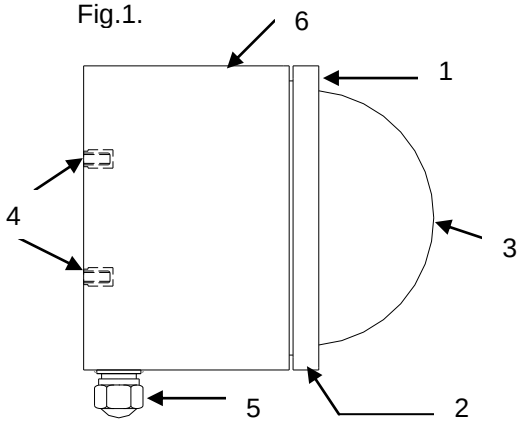
6.3 Maintenance and Repair Instructions for PT70 Outdoor Dome

6.3.1 Purpose and Scope

This documents describes the Maintenance and Repair Instructions for camera station Dome PT70 with Pan & Tilt.

6.3.2 Removal of Pan/ Tilt/ Camera Module

Fig.1.



1) Switch off the camera power in central equipment rack.

2) Open the dome by loosens the M4 setscrew (Fig.1, 2) with a 3mm hexagonal key. Carefully, to avoid the cupola (Fig.1, 3) and glass-ring (Fig.1, 1) to fall down, turn the glass-ring counter clockwise until glass-cupola and glass-ring is loose.

3) Loosen the three (3) M6 countersunk screw, and turn the dome machine clockwise till the screw are in position over the big furrow. Carefully, take the dome machine out.

4) Disconnect the cable by pulling out the connectors.

6.3.3 Mounting of Pan/Tilt/Camera Module

1) Connect the connectors into the new dome machine. Make sure the cable conductors are not clamped, but placed properly.

2) Place the domes machine into the dome enclosure (Fig.1, 6), turn it counter clockwise, and fix it by means of the three (3) M6 countersunk screw.

3) Apply some grease in the O-ring grooves, the O-ring and the threaded area, and place the O-ring into the groove. Now, close the dome enclosure with the dome glass and the middle ring. Tighten the ring with a thong weed (Boa tool), and fasten the setscrew.

6.3.4 Cleaning of the Dome

If the cupola has become dirty, clean the glass gently with hot water and mild detergent. Then clean carefully with a dry soft rag.

6.4 Maintenance Instructions for “off the shelf” Products

6.4.1 Purpose and Scope

This document describes the Maintenance and Repair procedures for the "off the shelf" items.

6.4.2 Maintenance and Repair of "off the shelf" Items

All "off the shelf" items delivered as part of HERNIS Scan Systems' CCTV System(s) carries a warranty by the original manufacturer. Hence, repair of these items must be performed by HERNIS Scan Systems or other qualified personnel only.

Technical Manuals from the suppliers of "off the shelf" items will only be supplied by HERNIS Scan Systems upon request by the customer, and will therefore not be supplied as part of the standard documentation for the CCTV System.

6.4.3 Definition of “off the shelf” Products

“Off the shelf” products are typically:

- cameras
- lenses
- monitors
- VCR
- multiplexers
- codecs
- quad units
- converters

6.5 Instructions for Ordering Spare Parts

6.5.1 Purpose and Scope

This document describes the proper procedure for ordering spare parts for the delivered CCTV System.

6.5.2 Ordering of Spare Parts

Spare parts can be obtained from:

HERNIS Scan Systems AS
After Sales Dep.
P.O.Box 791 Stoa, N-4809 Arendal
Norway

Phone:	+47 37 06 37 00
Telefax:	+47 37 06 37 06
24 hour first-line support:	+47 90 84 87 25
E-mail HERNIS:	cctv@eaton.com

A wide range of Spare Parts and Maintenance Equipment to the CCTV system is available on request from owner/user.

Please confirm an oral order by sending a written copy of the order within two days of placing the oral order.

If available, refer to HERNIS' 5-digit part number or, type of equipment and serial no.

6.5.3 List of Appointed Agents

Spare parts can be ordered from our appointed agents. We have Agents located in more than 30 countries all over the World. For updated list and contact information see http://www.hernis.com

6.6 Preservation and Storage Procedure

6.6.1 Purpose and Scope

This document describes HERNIS Scan Systems' practices and procedures for preservation and storage of delivered CCTV equipment.

6.6.2 Preservation and Preparation for Shipping

The racks/cubicles/units will be packed in plywood (6 mm) crates.
Crates will be stuffed with Ethafoam (PE foam, non-toxic, environment-friendly product).
Some equipment will be packed in moulded EPC (expanded polystyrene), alternatively chips in bags, based on environment-friendly products.
Moisture-absorbing material (silica gel or Cortec) will be placed in the racks/cubicles/units, if specified in the applicable contract.
A packing list will be attached both outside and the inside of the crate.
Necessary certificates will be enclosed in the crate.
The crates are to be kept in an upright position. Do not lay them on the side or upside down. Observe relevant special instructions and signs on the crates.
Crates will be shipped on pallet.
When shipping together with other goods, keep the crates away from material of a corrosive nature.
Do not expose the crates to rain, snow or other harsh environmental conditions.

6.6.3 Storage Procedure

The equipment may be stored in the original plywood crates provided attention is paid to the following:
Do not store equipment uncovered, must be preserved if removed from original box.
While in storage, the equipment should be inspected for damage every 3 months.
The equipment must be stored under "normal" warehouse conditions, i.e. temperature of 10 to 25°C and maximum humidity of 95%.
Any material capable of creating a corrosive atmosphere must not be present in the vicinity.
If a dry, well-ventilated warehouse with normal (+20°) temperature is used, the plywood crates may be removed. The atmosphere in the warehouse should be free from dust
Do not store more than 3 crates in height. Other crates and/or equipment must not be stored on top of the crates.

Do not remove the inside packing list from the equipment. If it is not necessary to remove the packing list on the outside, leave this in place.

Be careful when moving unpacked equipment (i.e. with plywood crates removed). If the equipment has to be lifted or transported, all relevant special instructions must be strictly observed.

6.6.4 Marking instruction

The marking of containers and crates will be as specified in the applicable contract. If no marking instruction has been specified in the applicable contract, the boxes/crates/containers will be marked with project name, "ship to" address, and MMT number (when applicable). The markings will be on a minimum of two sides of the box/crate, and written with lettering which is min. 20 mm in height.
Packing list shall be affixed to the outside of the box/crate.

6.7 Disposal of used HERNIS products



6.7.1 In the European Union

EU-wide legislation as implemented in each Member State requires that used electrical and electronic products carrying the mark (above) must be disposed of separately from normal household waste. This includes cameras, monitors or electrical accessories, such as signal cables or power cords. When you dispose of such products, please follow the guidance of your local authority.The mark on the electrical and electronic products only applies to the current European Union Member States.

6.7.2 Outside the European Union

If you wish to dispose of used electrical and electronic products outside the European Union, please contact your local authority and ask for the correct method of disposal.

7. APPENDICES

APPENDIX A - DATA SHEETS

APPENDIX B - CERTIFICATES /DECLARATIONS

APPENDIX C - DRAWINGS

APPENDIX D – INSTALLATION INSTRUCTION FOR OXALIS EQUIPMENT

APPENDIX E – IP LIST FOR HERNIS CCTV SYSTEM

APPENDIX F – SUB SUPPLIER'S MANUALS

APPENDIX A - HERNIS Software Manuals

Appendix A1	Software Manual HWIN	See doc. No SM097000D

APPENDIX B - Data Sheets

Equipment Data Sheets

Description	Data Sheet No	Project No
XP40 PTZ explosion protected camera station (TBA XP40VEA4NNP21HA10)	Manufacturer's	32137-02-001
TBA Capri M25 ADE-4F Compression SS Exd Gland	Manufacturer's	32137-02-001
Pressurised 10 Litre wash system: Ex em(b) zone 1, 21 (TBA XWP10-24)	Manufacturer's	32137-02-001
Wall mount bracket for XP/SP camera (TBA BPW6800)	Manufacturer's	32137-02-001
Cable Multi Offshore w/Screen & Armour	DS025044I	32137-02-001
Video Encoder AXIS, 1ch RS-422/RS-485 (096033)	Manufacturer's	32137-02-001
Ethernet Media Conv.1ch 10/100 OSD2051 OSD for SFP	DS019078A	32137-02-001
Ethernet SFP SM TX1310/RX1550 155Mb 20km LC FTTX	DS019097A	32137-02-001
F.O. Patch panel for 16 ST/FC adapters	DS012241B	32137-02-001
F.O.Adapter Single/Multi Mode ST-ST Plugg chas	DS026111B	32137-02-001
SP40 safe area 316L stainless steel PTZ camera station. (TBA SP40VEA4NNP21HN10)	Manufacturer's	32137-02-001
Safe Area 10 litre washer tank (TBA SW10-24)	Manufacturer's	32137-02-001
Cam.st.PT70 Outdoor Dome / 1/4".PAL.H.R.	DS097111F	32137-02-001
Bracket for outdoor Dome PT70/S71 wallmount	DS025401A	32137-02-001
Cable Multi Ships w/Screen	DS025118G	32137-02-001
Spare Trafo 2x115V/2x30V 100VA	DS023025D	32137-02-001
HERNIS 4U CCTV system server / Std.	DS095406D	32137-02-001
HERNIS 2U video extender / Std.	DS095408D	32137-02-001
HERNIS video recorder / 20TB w/Raid	DS095536D	32137-02-001
Ethernet Switch 24SFP/Gb/10G +2GbCombo ECS4510-28F (022638)	Manufacturer's	32137-02-001
Ethernet SFP SM TX1550/RX1310 155Mb 20km LC FTTX	DS019096A	32137-02-001
Ethernet SFP Copper TX/RX 10/100/1000 RJ45 FTTX (019098)	Manufacturer's	32137-02-001 (IVO #1)
Ethernet Switch 24Gb+2SFP ECS2000-26T Edge Core +50C (022647)	Manufacturer's	32137-02-001
Cable Fibre patch 3m single LC-ST/PC SM (025593)	Manufacturer's	32137-02-001
HERNIS 05 System Node	DS095519J	32137-02-001
HERNIS HSS05 IO-32-8 / Alarm Card	DS095419B	32137-02-001
Monitor 24" LED 16:9 Desktop/Vesa PC (024024)	Manufacturer's	32137-02-001
HERNIS HWIN Software / HWIN Standard Alarm	DS097000E	32137-02-001

Description	Data Sheet No	Project No
Joystick three axis w/6 switch for HWIN W/USB (095345)	Manufacturer's	32137-02-001
BNC Plug Male for HERNIS Multicable	DS026044C	32137-02-001
Spare fusekit	DS096630C	32137-02-001

APPENDIX C - Certificates/ Declarations

EX Certificates

Equipment	Authority	Certificate No
Camera Station XP40VE	INTERTEK	ITS15ATEX18249X
Capri NPB cable gland	LCIE	LCIE 97 ATEX 6008 X
Capri NPB cable gland	INERIS	INERIS 12ATEX0032X Issue 03

EC Declarations of Conformity

Description	Document No
Camera Station XP40VE	IECEx ITS 15.0019X CofC

Declaration of Conformity

Description	Document No
Declaration of Conformity CCTV System and non-ex equipment	Q-201602 Rev A

Material Declaration(s)

Description	Document No
Non-Asbestos Declaration	EMS-201405 Rev A

APPENDIX D - Drawings

Refer to Drawing Index, doc. No: 32137022301

APPENDIX E – Installation Instructions for Oxalis Equipment

Appendix E1	Installation & Maintenance Instruction for XP40 PTZ Camera
Appendix E2	Installation Instruction for XWP10-24 Tank & Pump
Appendix E3	Installation & maintenance Instruction for SP40 safe area Camera
Appendix E4	Installation Instruction for SW10-24 Tank & Pump

APPENDIX F - IP List for HERNIS CCTV System

Refer to IP List, doc. No: 32137020012201

APPENDIX G - Sub Supplier Manuals

Appendix G1	Video Encoder, AXIS, Q7 401 (096033)
Appendix G2	llation Guide, ECS4510-28T/P/F, Ethernet Switch, (022638)
Appendix G3	Installation Guide, ECS2000-26T, Gigabit Ethernet Switch, (022647)
Appendix G4	Monitor 24" LED 16:9 Desktop/Vesa PC, BenQ, (024024)