User Manual

CCTV System
Type: HERNIS 400

Installation Name: KOTC HMD2327

HERNIS Installation ID: 28040
HERNIS System No: 28040-02

The following HERNIS projects are included in this manual:

Project No	Description	P.O. No
28040-02-001	Hull side - 400 System	232721028AE51

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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 "KOTC HMD2327 - Hull side - 400 System " 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.

WARNING
A warning appears in this manual like this. 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

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2. System Description

2.1 System Description "KOTC HMD2327 - Hull side - 400 System" Project

2.1.1 General

HERNIS 400 CCTV system is based on an analogue video matrix, controlled by a Windows XP based system server. It is a colour compatible modular system, which is expandable in steps of 16 camera stations.

The internal communication of the HERNIS 400 system operates on CAN (Controlled Area Network) system. The CAN configuration makes it easy to add new communication nodes. The maximum length for the CAN network should not exceed 600 metres. The CAN network shall be terminated with 120Ω resistance in both ends. In case of large amounts of equipment hooked up to the system, resulting in unavoidable long distances, the CAN signalling must be converted into more suitable signalling types for transmission. The signal transmission over long distances can either be done on ordinary copper cable or fibre optical cable.

The HERNIS 400 system is designed with nodes, each responsible for different activities within the system. All units on the CAN network are called nodes;

2.1.2 HERNIS OK 450 Control Panel

The control panel is the man-machine interface to the system. All system functions are controlled from this panel. The OK450 is connected on RS422 or RS232 to a Multicom card in the System Node. The control panel is equipped with a LCD display. The LCD display has a full menu with icons, used to control all features and possibilities within the system. The system has self-diagnostics capabilities.

2.1.3 HERNIS 05 System Node

The HERNIS05 System Node consists of the node box and a selection of the new HSS05 series node cards. The System Node is designed to allow two System Nodes to be mounted side by side in a 19” cabinet. The following modules are used to build System Nodes:

- Cabinet HSS05 System Node
- HSS05 Motherboard
- HSS05 Power
- HSS05 IO-32-8
- HSS05 Commux16
- HSS05 Multicom

The System Node cabinet is always equipped with a motherboard with connection for up to 6 cards, and a HSS05 Power card mounted in the first slot. This leaves 5 available slots for other HSS05 series node cards. The motherboard supplies power and CAN bus connection to all cards in the System Node.

2.1.3.1 HSS05 I/O-32-8

The HSS05 I/O-32-8 is installed in the HERNIS 05 System node .The HSS05 I/O-32-8 is hooked up to the network via the CAN (Controller Area Network) in the motherboard of the HERNIS 05 System node. The HSS05 I/O-32-8 handles 32 alarms from external systems, through potential free relay contacts. The incoming alarm signal must be in normally open / normally closed format. The alarms trigger the cameras to go to pre-defined positions and switch the alarm images to dedicated monitors.
The HSS05 I/O-32-8 can also generate 8 alarms from the CCTV system .The alarms from the CCTV system can be set to Main Computer, Control Panel Data, Camera Data and Camera Video –failure, or generate alarm for incoming external alarms.
The HSS05 I/O-32-8 also has a RS232/ RS422 communication port in the front panel that is designed for communicating with control panels.
In addition there is a second communication port available on HSS05 I/O-32-8. The serial port is only available when HSS05 I/O-32-8 is placed in slot 2 in the HERNIS 05 System Node, and the RS232 / RS422 connections will be available on the front of the HSS05 Power card in slot 1.
The HERNIS 400 Compact system can handle 2 HSS05 IO-32-8 cards, hence up to 64 alarm inputs and 16 relay outputs.

2.1.3.2 HSS05 Commux16

The HSS05 Commux16 is installed in the HERNIS 05 System node. The HSS05 Commux16 is hooked up to the network via the CAN (Controller Area Network) in the motherboard of the HERNIS 05 System node, and is responsible for all communication to the camera stations in the system. The signalling interface between the camera stations and the HSS05 Commux16 is RS422. Each HSS05 Commux16 can control up to 16 camera stations.

2.1.3.3 HSS05 Multicom

The HSS05 Multicom is installed in the HERNIS 05 System node. The HSS05 Multicom is hooked up to the network via the CAN (Controller Area Network) in the motherboard of the HERNIS 05 System node. Each HSS05 Multicom has two communications ports for RS232/ RS422. The HSS05 Multicom is designed for communicating with control panels and auxiliary inputs designed for equipment needing a RS232/RS422 interface. The RS232/422 makes it possible to interface other equipment such as alarm systems and external control systems. The HERNIS 400 Compact System utilises two-way communication between control panel and system in order to ensure that any command function is carried out.

2.1.4 HERNIS 400 Matrix

Every composite video signals coming from the camera stations, and also video output signals going to the monitors, are connected to the matrix. Each matrix can be configured with a maximum 10 input/output cards. Maximum number of video inputs in one matrix is 144, i.e. 9 video input cards with 16 channel each. Maximum number of video outputs in one matrix is 48, 3 video output cards with 16 channel each. All termination of video signals is done with male BNC connectors in the front.

2.1.5 HERNIS SYSTEM SERVER

This is the main processing unit in the HERNIS 400 system. The CPU is controlling the communication with the keyboards/ control panels including the different priorities it is possible to have on them. It is also handling the communication towards other kind of systems interfaced to the CCTV system, i.e. external alarm systems such as Fire and Gas and DCS systems. External systems can either be interfaced via TCP/IP or serial port. The SW interface to other systems normally claims a SW adjustment, or even new SW development. Alarm inputs are normally gated into an I/O device called Alarm node.

2.1.6 HERNIS DVR-M

The HERNIS DVR-M is a non-multiplexed multi channel digital video recorder (DVR). Each composite video signal is hardware encoded using MPEG4. Each of these encoded video signals can be stored on the internal hard drive either by manually starting recording or by configuring the recorder for continuous loop recording. Each DVR-M has 1 analogue video output that can be connected to a camera input on a HERNIS video matrix. This enables playback from HERNIS OK400 keyboards/ OK450 control panels, but only 1 keyboard/ control panel will be able to control the DVR-M at the same time. The DVR-M is also compatible with the HWIN(*) software. Playback is not limited 1 playback per DVR-M unit, but only 1 playback per channel is possible.

2.1.7 "Hernis 400" CCTV System

The CCTV system intended for the "KOTC HMD2326 - Hull side" project is based on the well proven HERNIS 400 control and matrix switcher.

The system consists basically of the following items:

- 2 ea. EX286W hazardous area camera stations with pan/tilt and wipe/wash functions
- 5 ea. S36W safe area dual camera stations with pan/tilt and wipe/ wash functions
- 8 ea. S71 safe area fixed indoor dome camera stations
- 2ea. S71 safe area fixed outdoor dome camera stations
- 1 ea. PT9W safe area camera stations with pan/tilt functions
- 8 ea. PT9 safe area camera station(with pan/tilt
- 2 ea. 32” colour monitors
- 1 ea. 19” colour monitors
- 3 ea. OK450 Control Panels
- 1 ea. Central Rack containing fuses, HERNIS 400 matrix, HERNIS 400 CPU, HERNIS 05 System Node, HERNIS DVR-M, power supply for up to 32 camera stations and termination blocks/BNCs for field cables
- 1 ea. interface to Conference System.
- 1 ea. interface to external system
- various junction boxes
- HERNIS Multicables

The system is designed for various combinations of camera inputs, monitor outputs and keyboards/ control panels.

2.1.8 System Features

The HERNIS 400 CCTV system is software controlled and allows the operator to command any camera via the operator's keyboard/ control panels, and view the video image on any monitor.

The remote control functions available to the operator are:

- Selection of any camera to any monitor
- Control of camera functions on any camera
- Control of pan and tilt of any camera station, with pan & tilt units
- Switch groups of camera stations (multi-switch function)
- Add camera text (description) to monitor (protected by password)

In addition to the above, the operator may:

- Restrict the access to the camera functions. This function is protected by a password. Setting of the privilege levels is normally performed during commissioning and can be changed at a later date should the need arise.

- Configure the system on for up to 100 pre-set positions per camera. The pre-set function includes camera position in azimuth and elevation and degree of zoom and focus (only applicable for camera stations delivered by HERNIS).

- Pre-program the system to run through any given sequence, of up to 100 different pre-positioned cameras per monitor. The sequencing option also allows the operator to determine the dwell time of each camera selected. The operator can, at any given time, change both the pre-positioning and sequencing program by following the instructions displayed on the keyboard/ control panels. (Not valid for non-HERNIS camera stations).

The system has a number of alarm output functions, which can be activated in the event of system failure.

3. Equipment List

Qty	P/N	Description	Data Sheet No	Project No
		Ex Camera Stations w/pan/tilt & wiper/washer		
2 ea	095177-115/261-F	Cam.st.EX286W / 1/4".PAL.H.R.4-74mmP Exd camera station zone 1 & 2 Approval: (ATEX): EX II2 G, EEx de IIC T6 Certification: DNV: DNV-2003-OSL-ATEX-0366 Material: Stainless steel Surface: Electro polished Equipment: Wiper/ Washer, Sunshield.	DS095177O	28040-02-001
2 ea	095173	Tank & Pump EX287PMP 5.0L Steel can Approval: (ATEX): EX II2 GD EEx d mb IIC T5 Certification, DNV: DNV-2006-OSL-ATEX-0150X Material: Stainless steel Surface: Electro polished	DS095173L	28040-02-001
		Safe area Pan/Tilt Camera Stations		
8 ea	095431-115/261-E	Cam.st.PT9 / 1/4".PAL.H.R.4-74mmP Pan & tilt camera housing Approval: IP66 Material: Stainless steel Surface: Electro polished Equipment: Receiver Option: Sunshield PN:095138	DS095431I	28040-02-001
		Safe area Pan/Tilt Camera Stations w/wiper/washer		
1 ea	095437-115/261-C	Cam.st.PT9W / 1/4".PAL.H.R.4-74mmP Pan & tilt camera housing Approval: IP66 Material: Stainless steel Surface: Electro polished Equipment: Sunshield,Receiver, Washer/ Wiper	DS095437J	28040-02-001
5 ea	096036-718/6011-B	Cam.st.S36WT PTZ Dual / 320 PAL 9Hz. 19mmP & CCD Cam.	DS096036C	28040-02-001
		Fixed Outdoor Dome Camera Stations		
2 ea	096839-112/Vari-B	Cam.st.S71 Dome Outdoor / 1/3".PAL.H.R.3.6-9mm Option:Mounting plate 012655	DS096839C	28040-02-001

Qty	P/N	Description	Data Sheet No	Project No
		Fixed Indoor Dome Camera Stations		
8 ea	096837-112/Vari-B	Cam.st.S71 Dome Indoor / 1/3".PAL.H.R.3.6-9mm For ceiling mount.	DS096837C	28040-02-001
		Central Equipment		
1 ea	096384-01-H	Rack 42U 80x200x80cm w/ass.&term.hardw. / 230VAC W/Fan Dimension: 80 x 200 x 80 Includes building and termination hardware.Fan & filter 46133 Color Plint: RAL 7022	DS096384H	28040-02-001
1 ea	095400	HERNIS CCTV System Server	DS095400B	28040-02-001
1 ea	095450-048/48-B	HERNIS 400 Matrix / 48 in/48 out	DS095450D	28040-02-001
2 ea	095526-162-k	HERNIS DVR-M HSS06 Ver.4.x / 16 Ch.4TB	DS095526H	28040-02-001
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	28040-02-001
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	28040-02-001
2 ea	095417	HERNIS HSS05 Commux16 Remote control of max. 16 Cameras.1 serial port (400 protocol) for Keyboard, PC-Interface. (Only available in 1X16 mode).	DS095417C	28040-02-001
2 ea	095416	HERNIS HSS05 Multicom Serial port Card 2ch.for keyboard, PC-interface, VCR or Converter node Interface	DS095416C	28040-02-001
3 ea	095984-01-B	Quad 4 video in Color Loop through / PAL Colour quad video processor Video input: 4 PAL/ NTSC Video output: 2 Power: 100-240Vac(12Vdc) Note: 4ch loop through	DS095984D	28040-02-001
1 ea	021964	Ethernet Switch 24+2ComboPort10/100/1000 SFP HP +40C 22 auto-sensing 10/100/1000 ports. 2 dual-ports for optional RJ45 or mini-GBIC tranceiver	DS021964C	28040-02-001

Qty	P/N	Description	Data Sheet No	Project No
2 ea	096031-01-A	Video Encoder Acti / H.264	DS096031A	28040-02-001
2 ea	091211-00-A	Video Distribution Amp.16in/64out 12VDC VDA / Std.	DS091211B	28040-02-001
4 ea	095567	Power PS350-30Vac Centralised power supply with key switches. Provides 30V AC for up to 8 Camera stations. Input 230V AC or 115V AC +/-10%	DS095567C	28040-02-001
1 ea	095115	UPS 19" 230V 1000VA/700W 11min w/shut down Runtime with typical load(75%) is 11min (with Extra optional battery 021839 30min)	DS095115C	28040-02-001
1 ea	081223	Power switch 230V/16A w/softstart inrush kit	DS081223A	28040-02-001
5 ea	020512	Relay 5VDC / 5A 250AC Socket 020662	Manufacturer's	28040-02-001
5 ea	020662	Socket relay (Til AL400)	Manufacturer's	28040-02-001
		Control Room Equipment		
2 ea	025306	Monitor 32" LCD 16:9 Desktop/Vesa Video/PC	Manufacturer's	28040-02-001
2 ea	021995	Bracket Monitor 30-63" LCD Wall D32mm For monitors upto 75kg D32mm (Vesa 200x200 to 750x480mm)	DS021995B	28040-02-001
1 ea	021799	Monitor 19" Marine JH 4:3 Panel Video option bracket 021805	DS021799D	28040-02-001
2 ea	095485-00-B	Control Panel OK450 / Std.	DS095485F	28040-02-001
2 ea	096330	JB OK400/450/CS100. 3m fl.lead Steel Junction box for safe area operators panel. Designed to terminate HERNIS Multicable and provide two BNC outlets for monitors and flying lead connection to operators panel .	DS096330G	28040-02-001
2 ea	097219-01-B	HERNIS HWIN Standard Ver5.x Software / 1 user HERNIS Windows Control Application software	DS097219C	28040-02-001

Qty	P/N	Description	Data Sheet No	Project No
		Video Conference System		
1 ea	025594	Monitor 42" LCD/LED 16:9 Desktop/Vesa Video/PC	Manufacturer's	28040-02-001
1 ea	021995	Bracket Monitor 30-63" LCD Wall D32mm For monitors upto 75kg D32mm (Vesa 200x200 to 750x480mm)	DS021995B	28040-02-001
1 ea	TBA10179	Camera/Codec mic Arrow300/XG80	Manufacturer's	28040-02-001
1 ea	TBA10181	Bracket for Arrow300/XG80 TBA10179	Not Available	28040-02-001
1 ea	021682	Converter Video/Pal/Ntsc to VGA XGA High Res.	Manufacturer's	28040-02-001
		Cables & Connectors		
1350 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	28040-02-001
50 m	025098	Cable Coax RG59 mini IEC 332.1 HERNIS flame retardant coax cable. Impedance: 75ohm. Max attenuation: 3,3dB/m Weight: 20g/m. Outer diameter: 5,0mm	DS025098E	28040-02-001
105 m	026044	BNC Plug Male for HERNIS Multicable Coax BNC plug male to be used on coax cable in HERNIS multicable	DS026044C	28040-02-001
		Spare Parts		
1 ea	081204	Glass for Dome RDC400/PT70 outdoor	DS081204B	28040-02-001
2 ea	096642	Spare O-ring kit for PT70/RDC400	DS096642B	28040-02-001
1 ea	096838	Spare Glass Complete for S71 indoor	DS096838A	28040-02-001
3 ea	096677	Spare O-ring kit for S71	DS096677A	28040-02-001
3 ea	081760	Spare Wiperblade S9W/PT9W	DS081760B	28040-02-001
2 ea	096773	Spare O-ring kit for S9/PT9 Gasket kit for S9 camerahousing. Contents: 1 gasket and grease bag.	DS096773E	28040-02-001
1 ea	096669	Spare Washer pump for PT30W/PT9W/PT36W	DS096669D	28040-02-001

Qty	P/N	Description	Data Sheet No	Project No
5 ea	081840	Spare Wiperblade S10W/S36W	DS081840A	28040-02-001
1 ea	081069	Spare Valve/Nozzle kit PT9W/S9W/S36W/EX285WT Consists of: Plastic hose kit	DS081069D	28040-02-001

4. Installation

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 EX286(W) Camera Station

4.3.1 Purpose and Scope

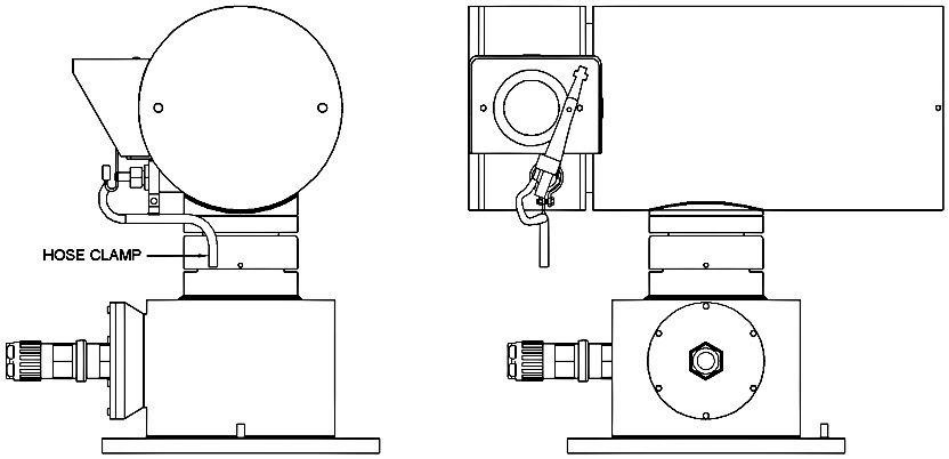
This document describes the procedure/steps that shall be followed during the installation of the EX286(W) Camera Stations.

Note:
Do not remove the transport safety strip, between gland plate and camera housing, before the installation is complete and the camera station is energized.

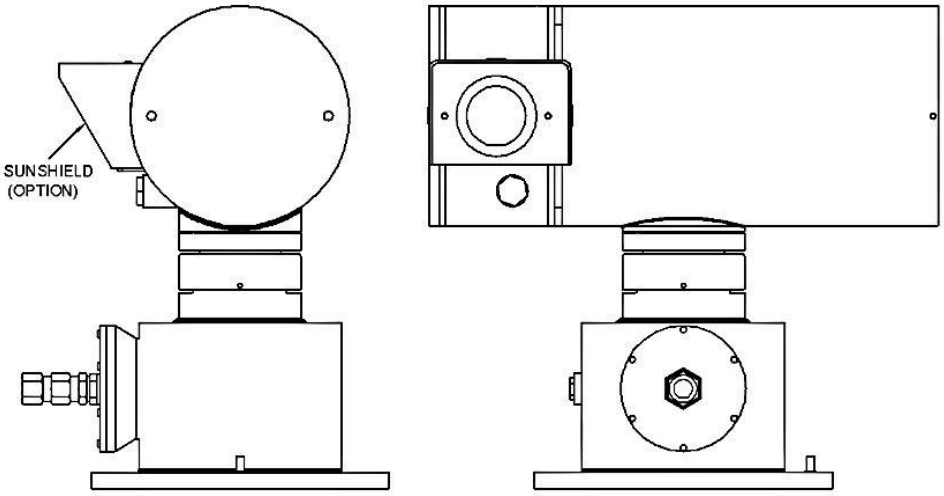
4.3.2 Mechanical Mounting

The following steps shall be followed when installing the Ex camera stations with pan & tilt:

The location of the camera station and the support mounting must be such that the camera station does not come in contact with its immediate surroundings. Hence, one must ensure that there is a free radius of 190 mm around the centre of the mounting plate and a free height of 315 mm above the mounting plate, ref to the applicable General Arrangement drawing.



EX286W Pan/Tilt Part: 095177, 095176 (Low temp)



EX286 Pan/Tilt Part: 095175, 095445(Low Temp)
Illustration No.1

1. The camera Station must be mounted on a level horizontal plane. The camera station can be mounted upside down, but then some configuration has to be done. Please contact HERNIS Service Dept. for instructions. If the camera station is connected to the HERNIS400 CCTV system, the Operating Instructions will describe the configuration, which has to be performed in order to be able to use the camera station for mounting upside down. Basically, the PAN direction of the camera station needs to be reversed.

2. Use a level to verify that the mounting plate is horizontal prior to drilling holes or fixing bolts.

3. Arrange the mounting holes in the manner as de shown in illustration 3. The gland should point in the opposite direction of the "Direction of View". The arrangement is shown in illustration 4. Also refer to the applicable General Arrangement drawing for Footprint details.

4. Lift the camera station onto the mounting surface. Fix the pan and tilt unit to the mounting surface by using four (4) M12 stainless steel bolts with nuts and washers.

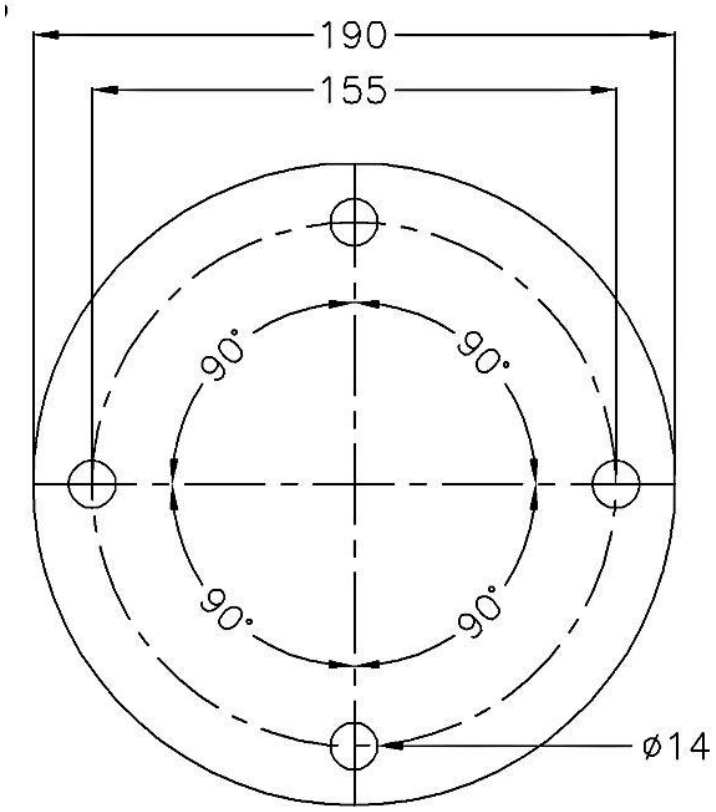
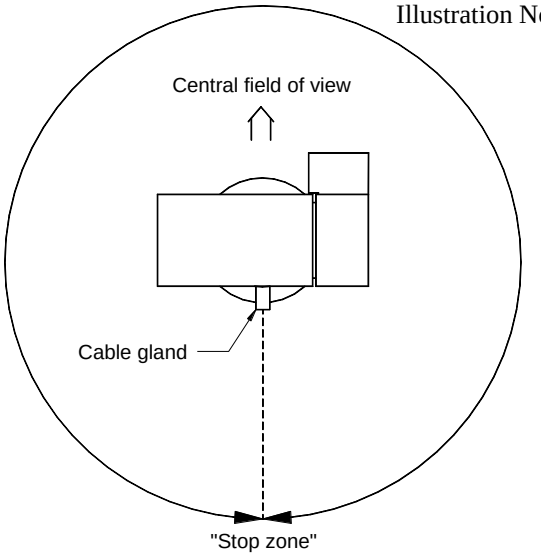


Illustration No.2

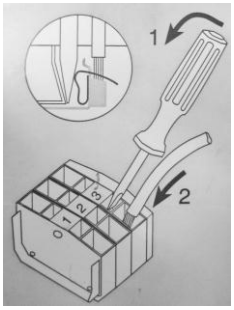
Illustration No.3



Be aware that the pan and tilt unit is mechanically and electrically prevented from rotating more than ≈ 360°, hence, there is a stop zone located in the same direction as the cable gland for the multicable. To prevent this from obstructing the required field of view, the cable gland must be directly opposite to the central field/line of view prior to fixing the unit to the mounting plate.

4.3.3 Field Cabling

The termination of the field cable to the camera station is performed within an Ex e junction box below the camera station, refer to the applicable Interconnection Diagrams for further details (illustration 4 or Project drawings).



HERNIS' camera stations must only be connected to correct HERNIS central equipment!
Failure to comply will damage the remote units' electronics.

Note:
Do not remove the transport safety strip, between gland plate and camera housing, before the installation is complete and the camera station is energized.

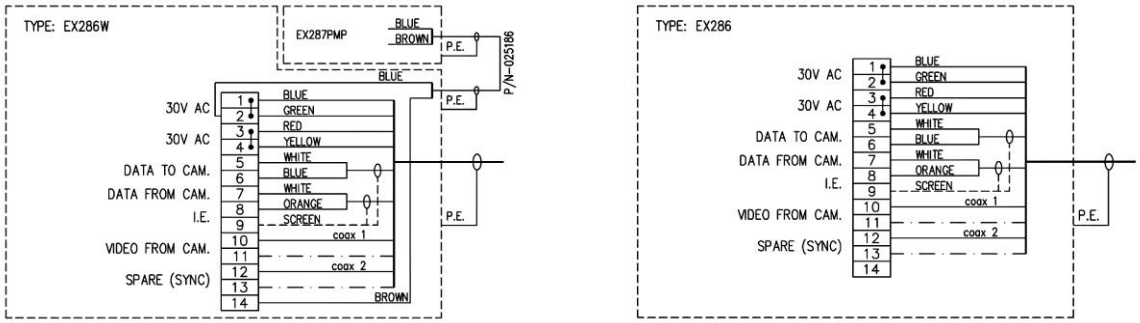


Illustration No.4

The Termination Details shown are typical for the EX286 version with EX e junction box in the base. The Details will also be dependent upon the type of HERNIS Scan Systems AS Multi cable being used. Refer to the applicable Interconnection Drawing. Interconnection Drawings are always delivered as an Attachment to the Technical Manual or Technical Documentation for every project.

4.3.4 Installation of Separate Pump Unit.

Reference is made to Document No IP095178 or to the applicable section of the Technical Documentation where this procedure is described.

4.3.5 Equipment Marking

The equipment is marked with following certificate information as per Directive 94/9/EC:



Part: 095175, 095177



Part: 095176, 095445

Illustration No. 5 Equipment marking for ATEX/IECEx

Note:
The same equipment marking plate allows for two different EX Codes depending if EX e – or EX d base is used. The applicable and correct EX code has to be clearly marked on each unit.

Serial number and the last digit of the production year will be engraved during the manufacturing process.

4.4 Installation Instructions for Tank and Pump Unit EX287PMP

4.4.1 Purpose and Scope

This document describes the procedure/steps that shall be followed when installing EX287PMP tank and pump unit for EX286W HERNIS Camera Station.

4.4.2 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 find a suitable location for the tank and pump. The applicable General Arrangement drawing will show the footprint of the bracket for the unit. The mounting surface needs to have a mirror image of the footprint to enable the installer to fix the unit to the surface. The unit is normally fixed with four bolts. Applicable dimension must correspond to the information about the holes given on the applicable General Arrangement Drawing.

The standard tank and pump unit delivered from HERNIS Scan Systems includes two sections of flexible hose. The longest section of flexible water hose is for transporting fluid from the pump to the camera station and the shortest section is for fluid from the tank to the pump. The water pump used for transport of the fluid to the nozzle of the camera station is to be located under the tank, i.e. electrical wiring to the tank from camera station is necessary.

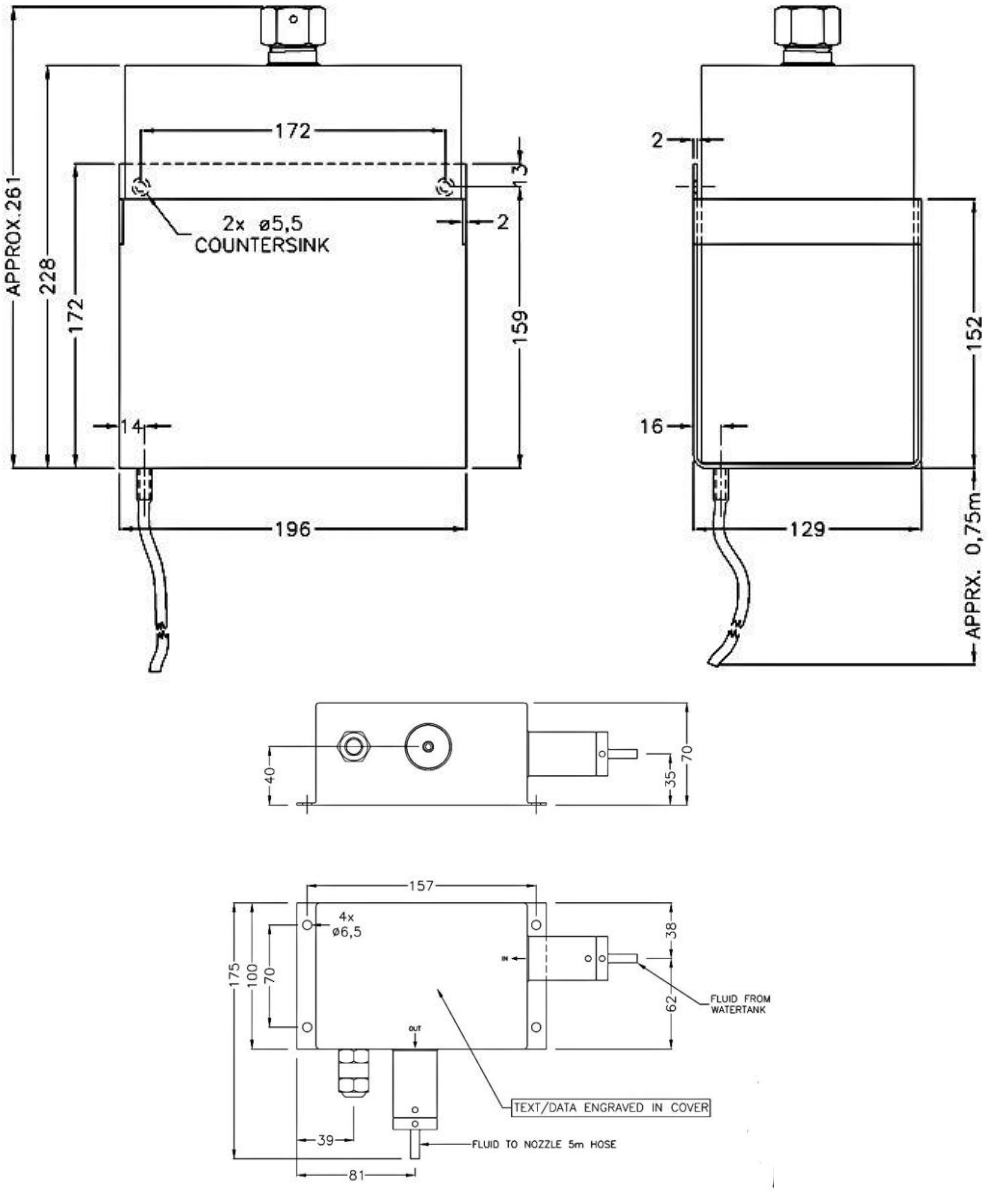
Thread the hose on to the stainless steel tube located underneath the camera station. A hose clamp is normally not required.

4.4.3 Location of the Tank and Pump unit in Conjunction to the Camera Station.

The water pumps used in HERNIS Camera Stations are guaranteed to pump fluid to a height of 3 m from tank level. The tank and pump unit can be located anywhere below the camera station. (Longer hoses can be used, or delivered by HERNIS Scan Systems upon request.)

For installation of the tank and pump unit, follow the procedures described above. The unit cannot be fixed to the camera station itself. The hose can be fixed to any surface but make sure that it can move freely around the camera station when pan/tilt functions are used.

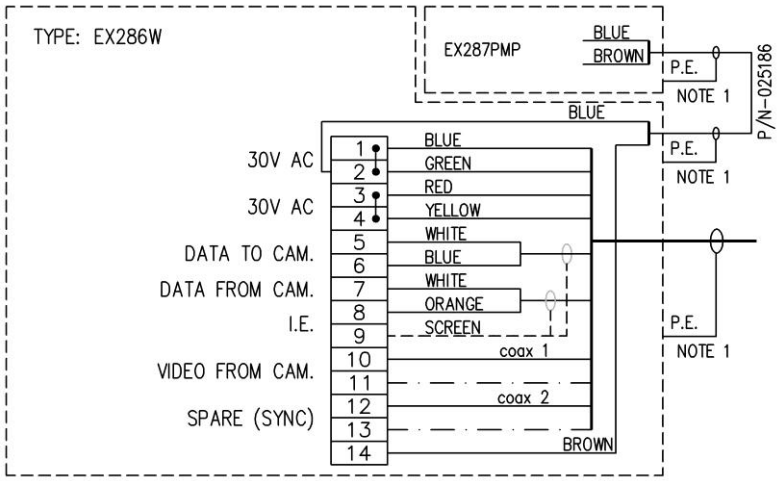
WARNING
Holes must never be made for fixing the tank to any Ex enclosure, i.e. camera housings or pan/tilt enclosures.
The pump unit must be mounted on a solid surface so that no part of the moulding is exposed to direct sunlight.
Static discharge may occur when handling the plastic fluid tank. Precautions must be taken when the fluid tank and hose is cleaned, replaced or removed. Do not rub the fluid tank or hose with a dry cloth. Use a wet cloth only wile cleaning the tank and hose.



5 L Water Tank (Tank and Bracket/Pump unit: AISI316 SS)

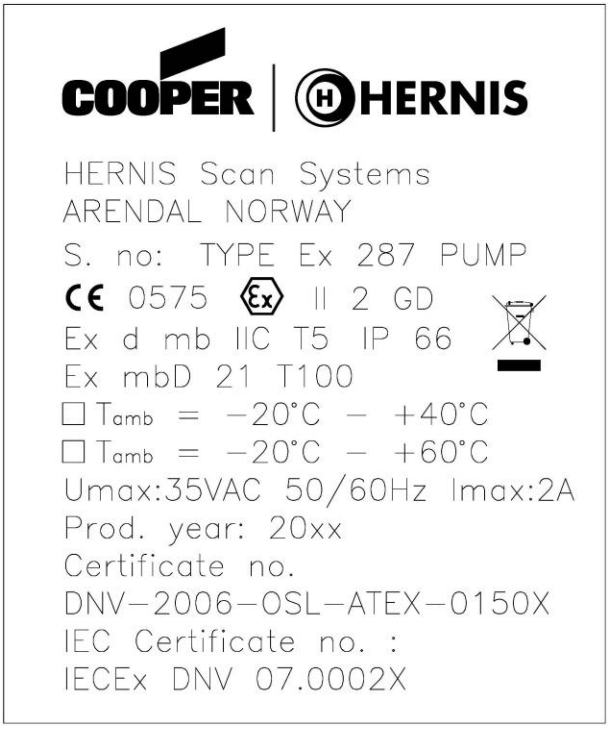
NOTE
These pictures are subject to change. Make sure that the applicable General Arrangement Drawing is available.

4.4.4 Electrical Connection



4.4.5 Equipment Marking

The equipment is marked with following certificate information as per Directive 94/9/EC:



The pump unit is normally delivered for use in ambient temperatures between -20°C and +40°C, but can be used also in ambient temperatures up to +60°C. The applicable temperature range has to be clearly marked on the tag plate. If +60°C is chosen the control program has to limit the use of the pump to 8 cycles of 1 second within any 10 minute period.

Serial number and the last digits of the production year will be engraved during the

manufacturing process.

4.5 Installation Instructions for PT9(W) (Low Temp) Camera Station

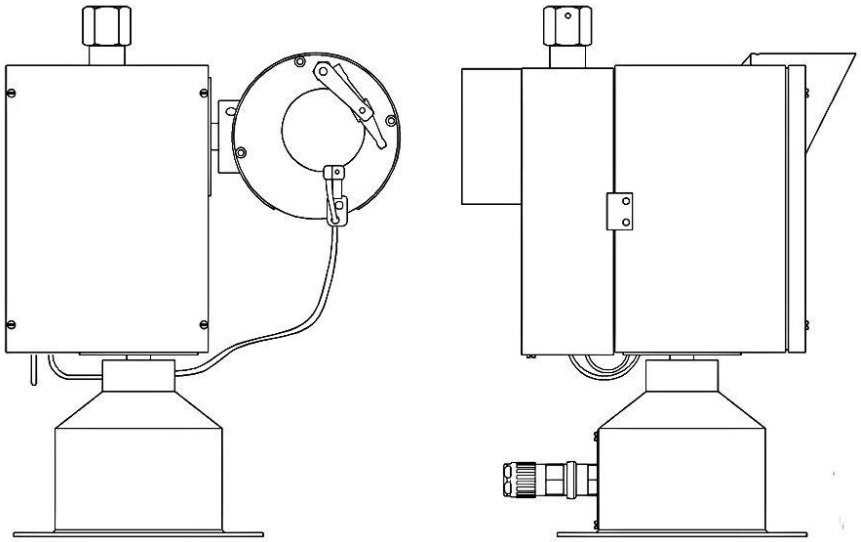
4.5.1 Purpose and Scope

This document describes the procedure/steps that shall be followed during the installation of the PT9(W) (LT) Pan & Tilt unit with Camera Housing.

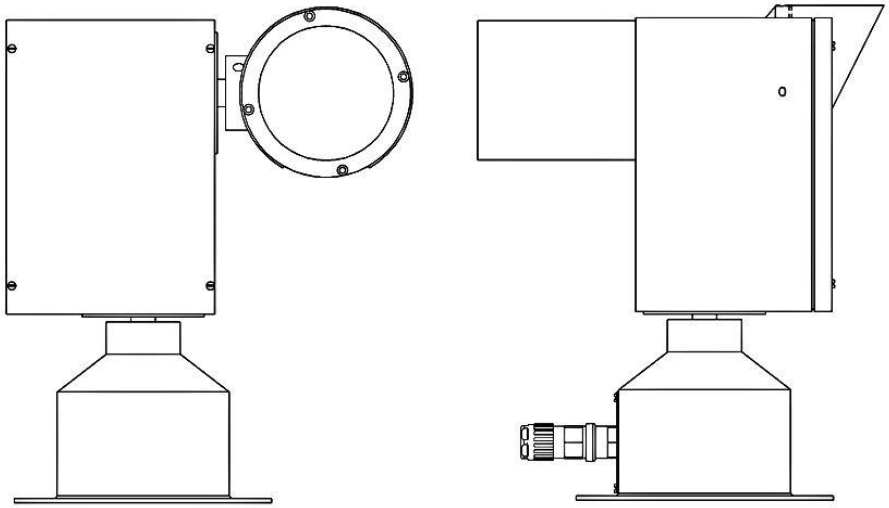
4.5.2 Mechanical Mounting

The following steps shall be followed when installing the camera stations with pan & tilt:

The location of the camera station and the support mounting must be such that the camera station does not come in contact with its immediate surroundings. Hence, one must ensure that there is a free radius of 255mm around the centre of the mounting plate and a free height of 490mm above the mounting plate, ref to the applicable General Arrangement drawing.



PT9(W) Part: 095437, 095442 Low Temp



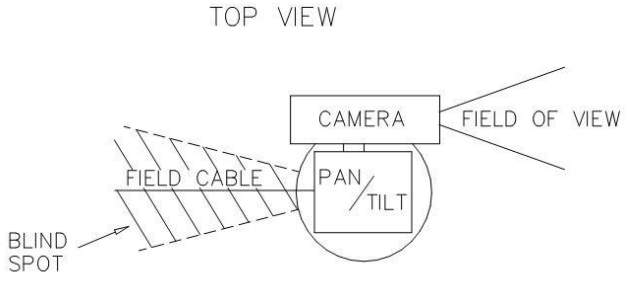
PT9 Part: 095431, 095443 Low Temp

Illustration No.1

1. The camera Station must be mounted on a level horizontal plane. The camera station can be mounted upside down, but then some configuration has to be done. Please contact HERNIS Service Dept. for instructions. Basically, the PAN direction of the camera station needs to be reversed.

2. Use a level to verify that the mounting plate is horizontal prior to drilling holes or fixing bolts.

3. Arrange the mounting holes in the manner as de shown in illustration 2. The gland should point in the opposite direction of the "Direction of View". The arrangement is shown in illustration 3. Also refer to the applicable General Arrangement drawing for Footprint details.



4. Lift the camera station onto the mounting surface. Fix the pan and tilt unit to the mounting surface by using four (4) M12*35 stainless steel bolts with nuts and washers. Never use other fixing devices than stainless steel in order to prevent material damage and corrosion. Do not use bolts or stud bolts at field cable input.

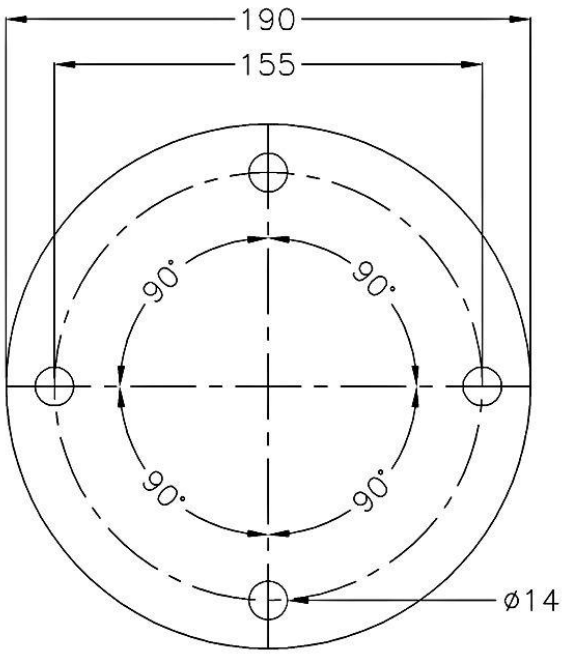


Illustration No.2

NOTE:
Make sure that the cable from the junction box below the pan & tilt unit is well supported, and check the cable gland after installation for damage.

Be aware that the pan and tilt unit is mechanically and electrically prevented from rotating more than ≈ 350°, hence, there is a "blind zone" when zoom angel (view angel) is smaller than 10°. The direction of the blind angle coincides with the direction of the unit's cable gland.

To prevent this "blind zone" from obstructing the required field of view, the cable gland must be directly opposite to the central field/line of view prior to fixing the unit to the mounting surface.

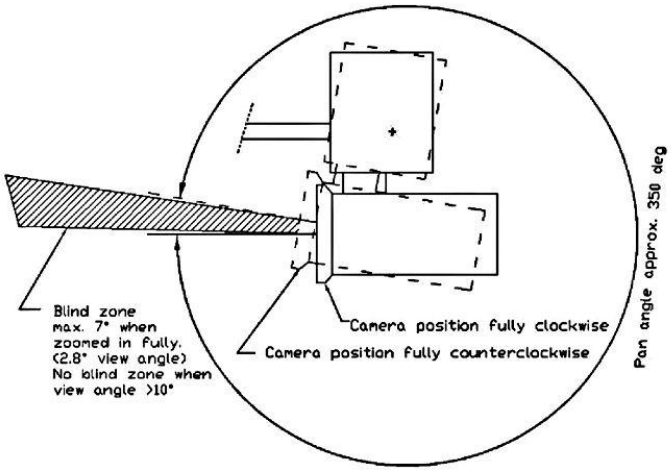


Illustration No:3

If the unit is supplied with wiper/washer make sure that the tank is filled with washer fluid. For a climate with temperature below freezing point, use a mixture of water and antifreeze fluid appropriate for the operating temperature conditions.

NOTE:
If the water system has been allowed to "run dry" and/or created an "air lock", remove the rubber tube connected to the check-valve (located at the washer unit) and ventilate the washer sufficiently to allow the air out of the system.
Re-connect the hose to the check valve once the water flows (Illustration No.4).

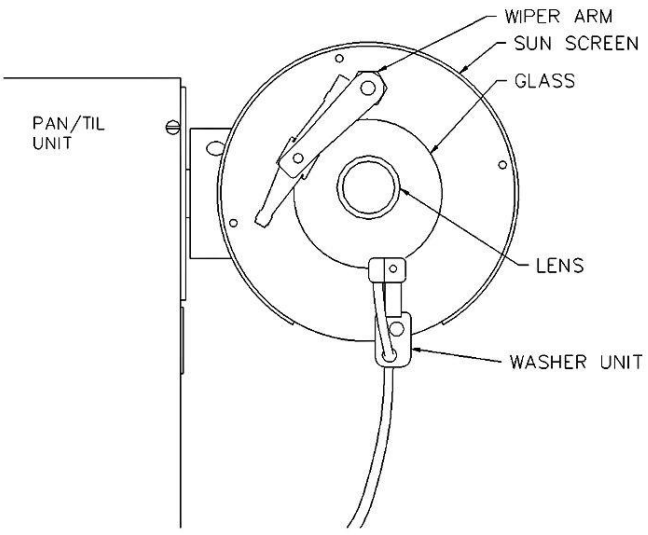


Illustration No.4

4.5.3 Field Cabling

This camera station has a junction box located below the pan & tilt unit.
Terminate the field cable in the termination Rail according to applicable interconnection diagrams.
Make sure that outer cable screen is terminated in gland.
All conductors shall be terminated individually.
BNC connectors shall be insulated with heat shrink tubing after termination.

NOTE:
HERNIS` camera stations must be connected to correct HERNIS central equipment!
Failure to comply will damage the remote unit's electronics.

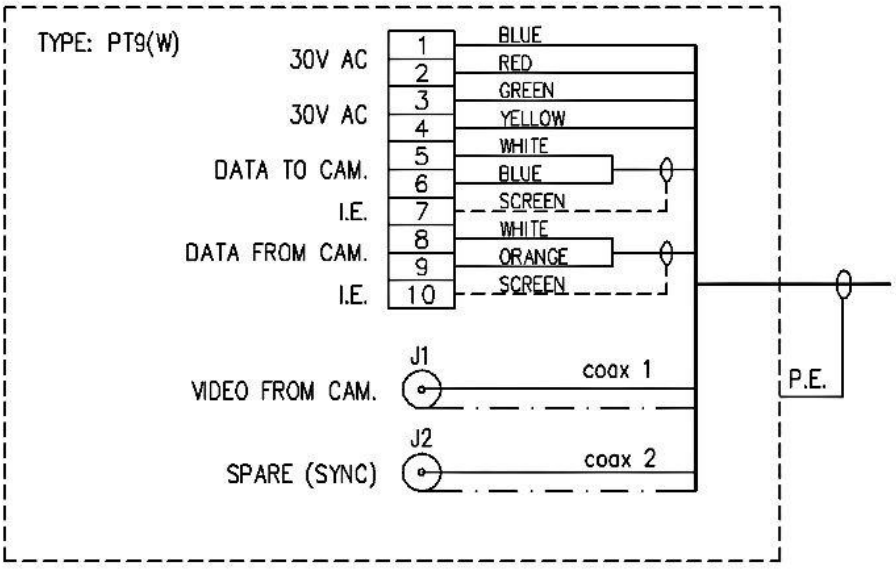


Illustration No.5

4.6 Installation Instructions for Camera station S36W PTZ Dual

4.6.1 Purpose and Scope

This document describes the procedure/steps that shall be followed during the installation of the S36 pan & tilt unit with Camera Housing. This document should be read in conjunction with HERNIS Doc.: Installation Procedure for HERNIS Camera Stations.

4.6.2 Mechanical Mounting

The following steps shall be followed when installing the camera stations:

The location of the camera station and the support mounting must be such that the camera station does not come in contact with its immediate surroundings. Hence, one must ensure that there is a free radius of 270 mm around the centre of the mounting plate and a free height of 500 mm above the mounting plate, ref to the applicable General Arrangement drawing.

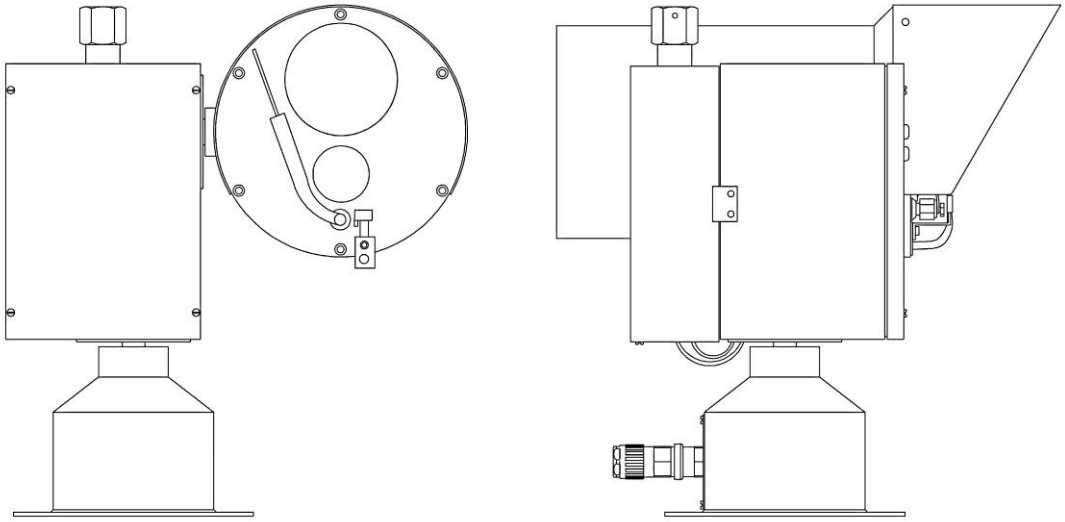


Illustration No.1

1. The camera Station must be mounted on a level horizontal plane. Be aware that the pan & tilt unit is electrically and mechanically prevented from rotating more than ≈ 350°, hence, there is a "blind spot" which coincides with the position of the unit's cable gland. To prevent this "blind spot" from obstructing the required field of view, the cable gland must be directly opposite the central field/line of view prior to fixing the unit to the mounting surface.

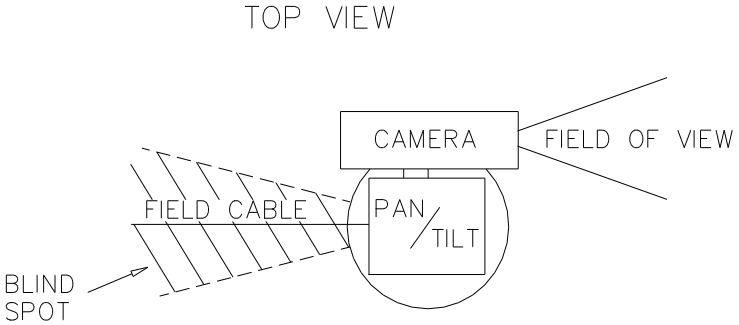


Illustration No.2

2. Use a level to verify that the mounting plate is horizontal prior to drilling holes or fixing bolts.

3. Arrange the mounting holes in the manner as de shown in illustration 3. Also refer to the applicable General Arrangement drawing for Footprint details. Fix the pan & tilt unit to the mounting surface by using four (4) M12 stainless steel bolts or stud bolts with lock nuts. Never use other fixing devices than stainless steel in order to prevent material damage and corrosion. Do not use bolts or stud bolts at field cable input.

3. If the unit is supplied with wiper/washer make sure that the tank is filled with washer fluid. For a climate with temperature below freezing point, use a mixture of water and antifreeze fluid appropriate for the operating temperature conditions.

NOTE:

If the water system has been allowed to "run dry" and/or created an "air lock", remove the rubber tube connected to the check-value (located at the wiper arm) and ventilate the washer sufficiently to allow the air out of the system. Re-connect the hose to the check valve once the water flows. (Fig.3)

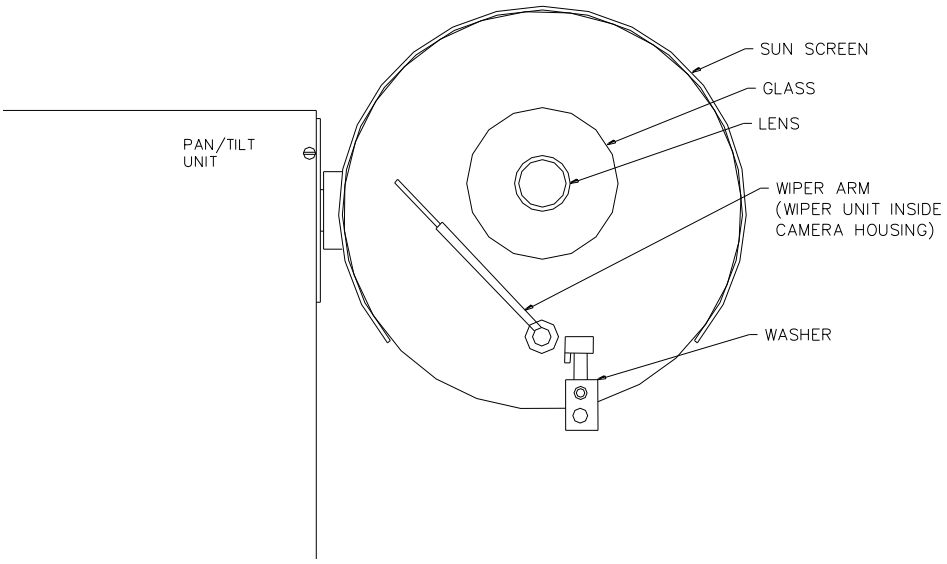


Illustration No.3

3. If the unit is supplied with a bracket, lift the bracket into position; make sure that the pan & tilt unit is safely affixed to the bracket by applicable stainless steel bolts and/or with lock nuts.

FOOTPRINT OF S36W PTZ CAMERA STATION

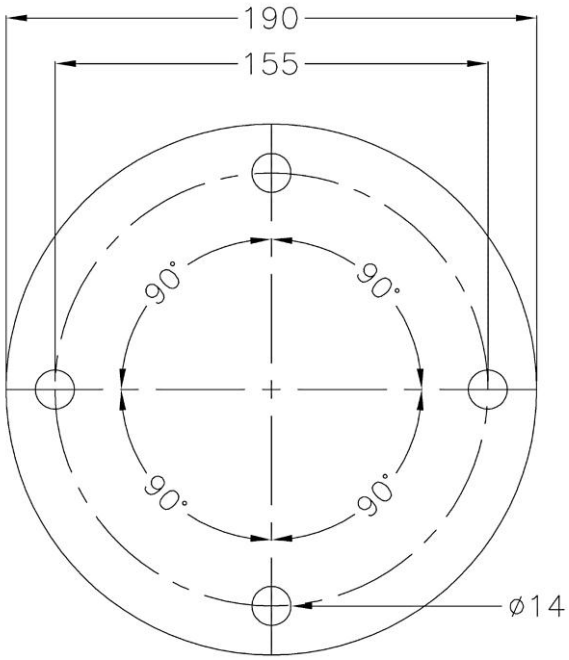


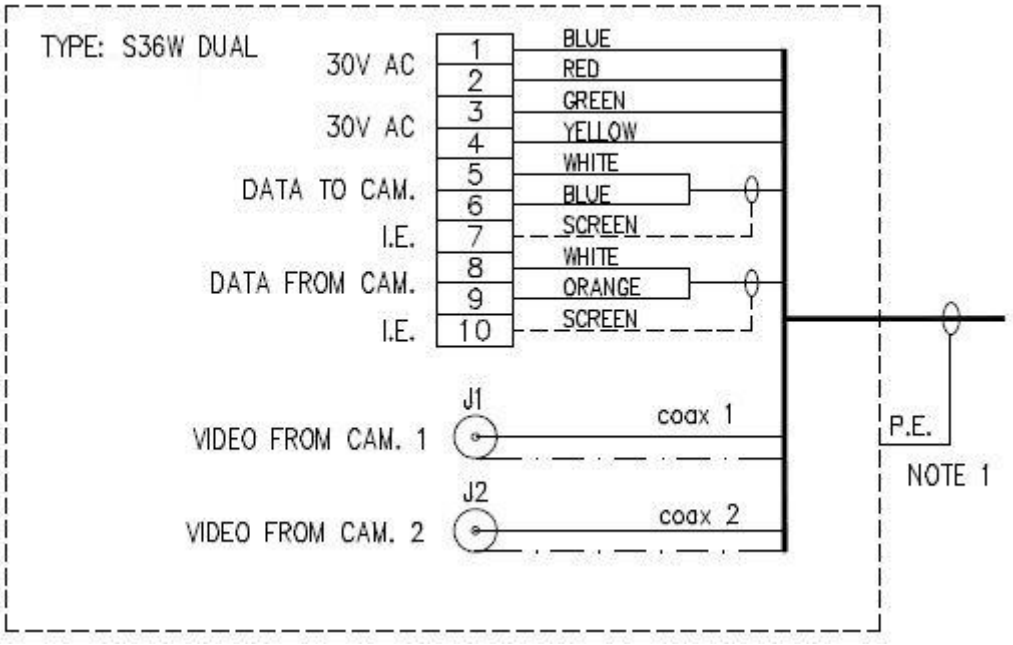
Illustration No.3

NOTE:
Make sure that the cable from the junction box below the pan & tilt unit is well supported, and check the cable gland after installation for damage.

Warning:
Prevent the camera looking directly into the sun to avoid damaged to the detector in the thermal camera.

4.6.3 Field Cabling

This camera station has a junction box located below the pan & tilt unit. Terminate the field cable in the termination Rail according to applicable interconnection diagrams. Make sure that outer cable screen is terminated in gland. All conductors shall be terminated individually. BNC connectors shall be insulated with heat shrink tubing after termination.



NOTE:
HERNIS` camera stations must be connected to correct HERNIS central equipment! Failure to comply will damage the remote unit's electronics.

4.7 Installation Instructions for S71 Dome Camera Housing

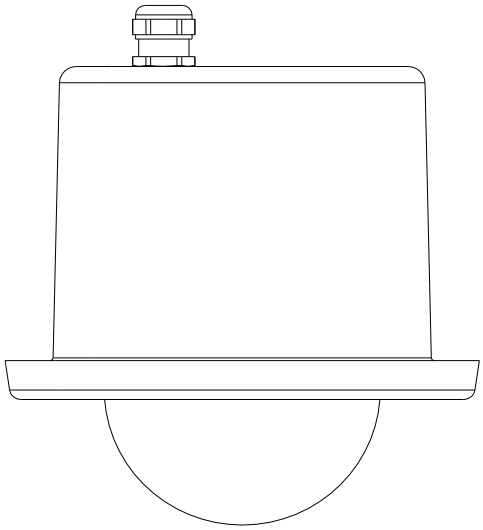
4.7.1 Purpose and Scope

This document describes the procedure/steps that shall be followed during the installation of the Fixed Cameras S71 Dome.

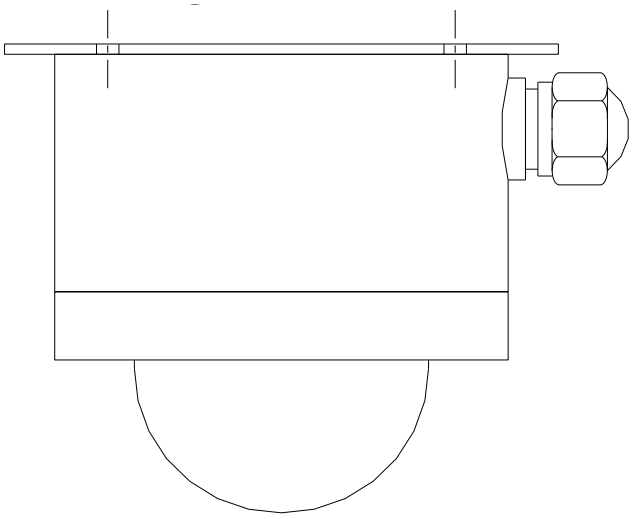
4.7.2 Mechanical Mounting

The following steps shall be followed when installing the Camera S71 Dome.

When deciding the location of the camera it is 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. Cameras should not be mounted too close to the object to be viewed. Try to locate the camera at least 3-5 metres away from the principle-viewing field.



S71 Dome Indoor
Part: 096837



S71 Dome Outdoor
Part: 096839

Illustration 1

Indoor Dome

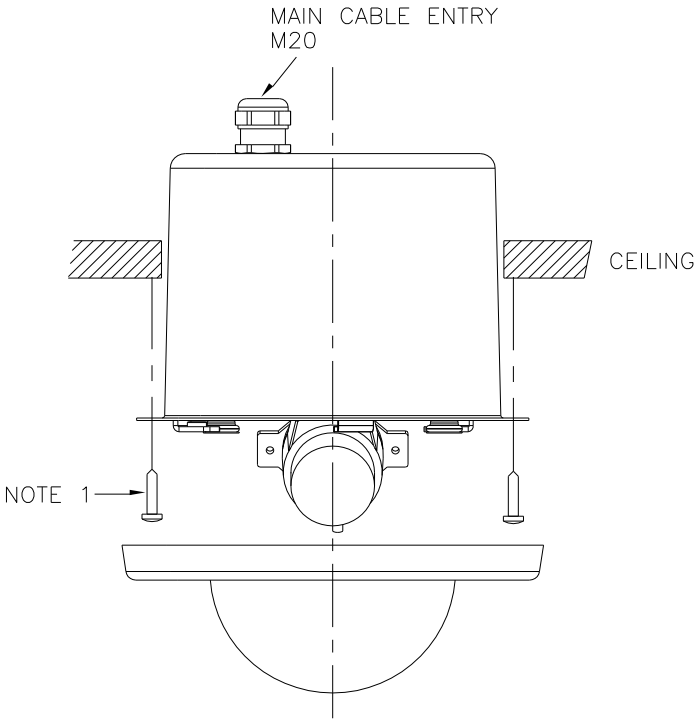


Illustration 2

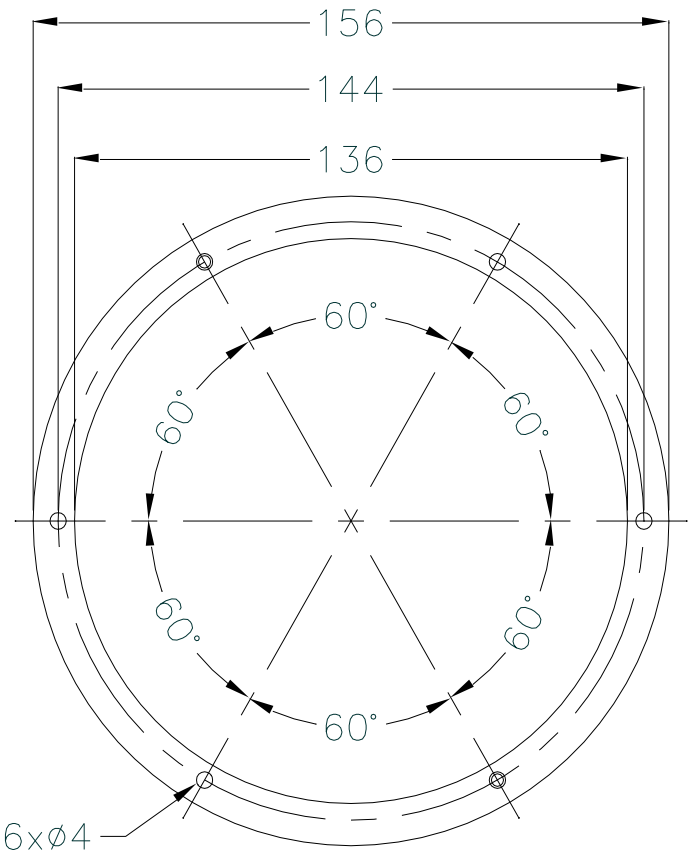


Illustration 3

1) Remove the cover ring by pulling it up. This ring is mounted by Push button

2) Loosen the three hexagonal socket cap screws, and remove the camera bracket.

3) Make a ∅137mm hole in the ceiling for the dome pot.
Mark the position for the screws, and make appropriate holes.

4) Lead the cable through the cable gland, and mount the dome pot with 6 x 4mm screws.
If the roofing sheet is too thick to get the dome pot in position, demount the gland, and mount it over the roofing sheet after mounting the dome pot.
Then lead the cable to the gland.

5) Terminate the wires to the Phoenix terminal, and the coax to the BNC connector.

6) Place the bracket with the camera, and the cupola.
Adjust pan and tilt of the camera till the right position.

7) Fasten the three hexagonal socket cap screws.

8) Mount the cover ring. Press until a click from the Push buttom.

Outdoor Dome

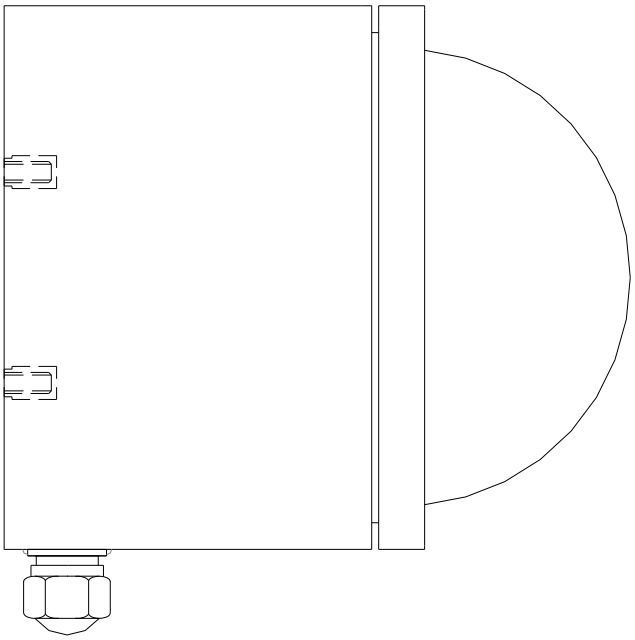


Illustration 4

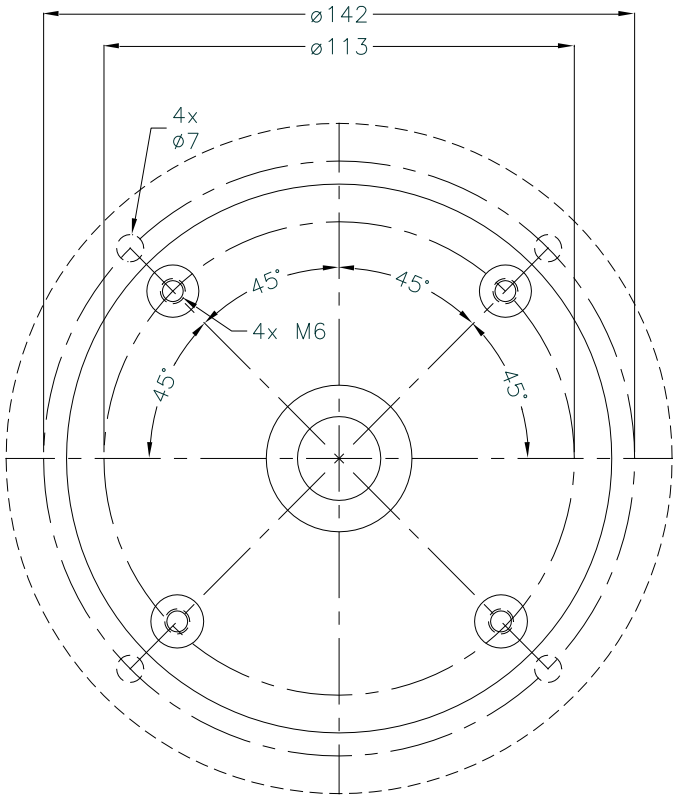


Illustration 5

1) Loosen the M4 setscrew on the side of the glass ring with a 3mm hexagonal key.

2) Open the dome by turning the glass-ring counter clockwise until ring and glass cupola is loose. Remove the Dome glass.

3) The camera /lens module is fixed with a spring with two grips. Carefully remove the spring by pressing the two grips together and pull it out. The camera/lens unit can be lifted out and you will have access to the video and power terminations at the power supply PCB, mounted at the back of the camera / lens module.

4) Mount the dome enclosure by means of 4 M6 stainless steel bolts.
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 adaptor plate into the enclosure by means of 4 bolts. Fix enclosure to the mounting surface by means of 4 M6 stainless steel bolts/screws.
   The adaptor plate is optional and has to be purchased separately.

5) Strip the cable approx. 20 – 25 cm. feed the multi-cable through the gland.
The screen must be terminated in gland. Terminate the power conductors to the Green plug and plug it into the socket of the power supply PCB of the camera.
Install a BNC connector to the coax cable and plug it to the BNC connector on the power supply PCB the dome camera. Ref. Interconnection diagram.

6) Place the camera/lens module back in the dome enclosure and fix it with the spring.

7) Adjust the camera/lens module in horizontal / azimuth direction to the position where the lens points towards the object or area which are going to be viewed.
For adjustment in the horizontal direction, the spring needs to be loosened.
For adjustment in the azimuth direction, the two tilt screws needs to be loosened and tightened when the position has been found.
If fine-tuning is required, power up the camera, select the camera to a monitor or connect a separate monitor directly to the camera station.
Look at the picture while fine-tuning, following the procedure described above.

8) Apply some grease in the O-ring groove, 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 glass-ring.
Tighten the rings with a thong weed, and fasten the setscrew with loctite 222 on.

4.7.3 Field Cabling

Terminate the field cable in the termination Rail according to applicable interconnection diagrams. (Se illustration No 6)
Make sure that outer cable screen is terminated in gland.
All conductors shall be terminated individually.
BNC connectors shall be insulated with heat shrink tubing after termination.

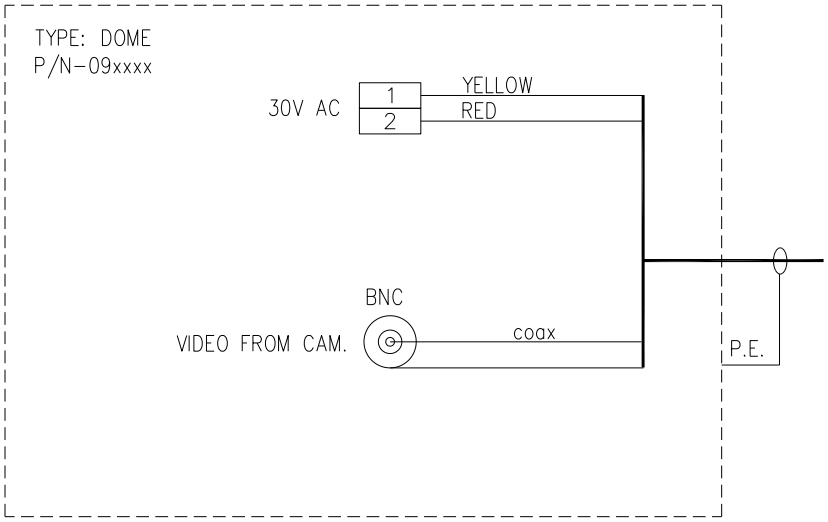


Illustration 5

NOTE:
Make sure that the cable from/to the camera station is well supported, and check the cable glands, after installation, for damage.

HERNIS' camera stations must only be connected to correct HERNIS central equipment! Failure to comply will damage the remote units' electronics.

4.8 Installation Instructions for Central Rack

4.8.1 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.

4.8.2 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.

4.8.3 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.

4.9 Installation Instructions for Control Panel OK450

4.9.1 Purpose and Scope

This document describes the procedure/steps that shall be followed during the installation of the Control Panel OK450.

4.9.2 Mechanical Mounting

The following steps shall be followed when installing the Operator's Control Panel:

1) a. Desktop: Place the Control Panel securely on a level surface.

b. Flush mount: Use the GA095485 drawing or the cabinet itself to mark cut out dimensions. Use 4 pc of 4mm screws suitable for your desk to fasten the OK450 Control Panel.

	Flush mount: Remove screw to be able to remove the side cover. Use a screwdriver to bend off the side cover.
	Now you have access to the 4 holes for flush mount of the OK450 Control Panel.

2) Connect the power cord into the local power net and then the data cable into the 15 pin D-sub or Ethernet connectors located at the rear of the unit.

4.9.3 Adjusting of contrast, normally not necessary!

The following steps shall be followed when adjusting the contrast on the Operator's Control Panel:

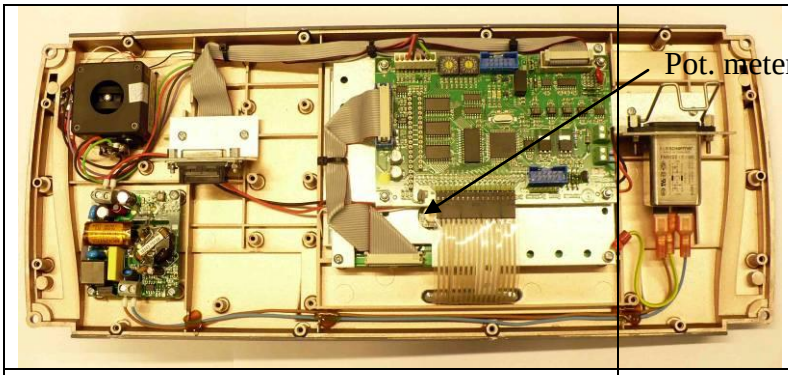
1) The Control Panel should be connected to the local power net for approx. 2 hours prior to adjusting the contrast.

2) Disconnect the all cables from Control Panel.
Place the Control Panel face down on a surface that will not scratch the Control Panel, and remove 12 screws and then the rear cover. Reconnect the Control Panel to the system.

3) Locate the potentiometer R21 on the LCD-card (see photo below).

4) Contrast: Adjust R21 until the contrast of the LCD display is at the desired level.

5) Once contrast has been adjusted, replace the rear cover of the Control Panel.



4.9.4 Adjusting of Backlight

See the Operating procedure for HERNIS OK450.

4.10 Installation Instructions for Junction Box for the CCTV System

4.10.1 Purpose and Scope

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

4.10.2 Mechanical Mounting

NOTE:
Inspect all junction boxes for physical damage prior to installation/termination of cables. All physical damage shall be recorded and presented to the area supervisor, and to a HERNIS Scan Systems representative prior to commissioning.

The junction boxes must be mounted onto a level surface and placed in such a manner that easy access, during installation and servicing, is ensured. Fix the junction boxes to the mounting surface by means of (4) four stainless steel bolts (or stud bolts) with lock nuts. (Type of bolts will vary depending on which junction is used, refer to the applicable General Arrangement Drawing(s) for further details.)

The junction boxes associated with the camera stations, may have been pre-connected to a 3-metre length of cable from the camera station prior to delivery, thus eliminating possible errors.

All cable gland entries shall remain capped with PVC caps until the cable termination process has begun.

HERNIS recommends that the junction boxes are not installed (mounted to surface) until one is ready to attach the gland assembly to the cable. However, if this is not practical, wrap polyethylene sheeting over the junction box so that it covers the gland entries and seal with tape. Do not completely seal the sheeting around the base of the junction box.

4.10.3 Field Cabling

Termination of the field cable from the field equipment (i.e. Camera Station(s), Operator's Keyboard(s), Monitor(s), etc.) is effected within the junction boxes. All conductors should be terminated individually, colour to colour.

Refer to applicable Interconnection Drawings for further details.

NOTE
HERNIS' camera stations must only be connected to correct HERNIS' central equipment. Failure to comply will damage the remote units' electronics.

4.11 Installation Instructions for HERNIS Software

For installation of HERNIS Software, refer to User Manuals as listed under chapter 5.

4.12 Installation Instruction for HERNIS Multicable

4.12.1 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.

4.12.2 General

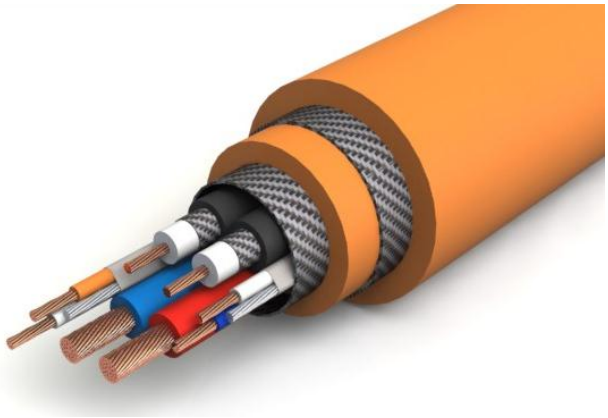
These are the different multi cables manufactured by HERNIS Scan Systems. The different types are:

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

<u>025119 & 025044</u>
These multicables has a 0,3 mm galvanized armour. The outer diameter for 025119 is 19,3 mm $\pm$ 0,9 mm and for 025044 is 21,1 mm $\pm$ 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:

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

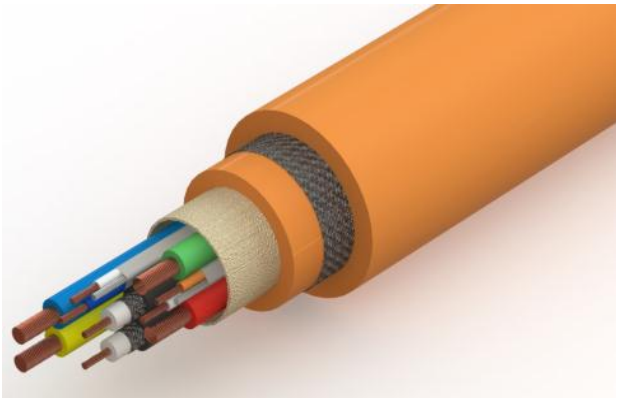
<u>025044:</u>
4 X 2,5mm^2 Power conductor
2 X 2 X 0.22mm^2 Twisted pair w/screen
2 X Coax
Screen, Kevlar & Armour



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

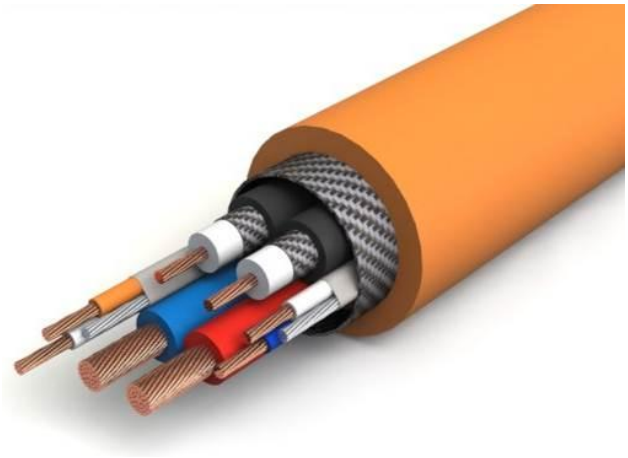


025106 & 025118

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

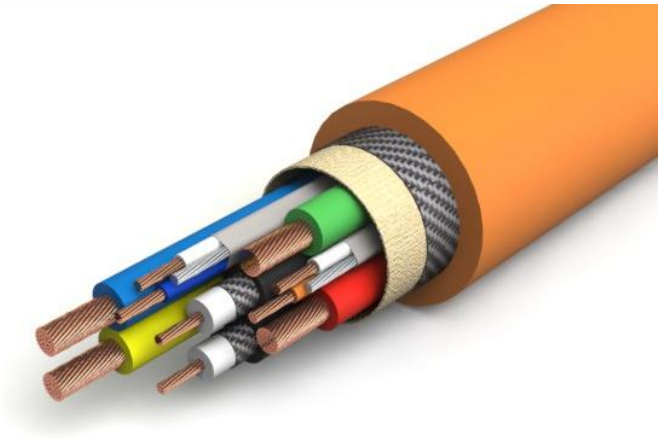
025118:
2 X 2,5mm^2 Power conductor
2 X 2 X 0.22mm^2 Twisted pair w/screen
2 X Coax
Screen



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:

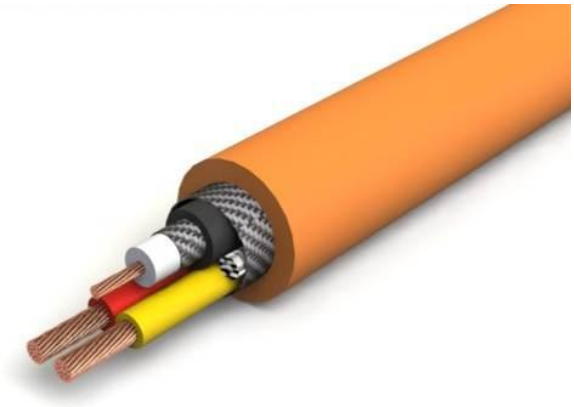
4 X 1,0mm^2 Power conductor
2 X 2 X 0.22mm^2 Twisted pair w/screen
2 X Coax
Screen & Kevlar



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:

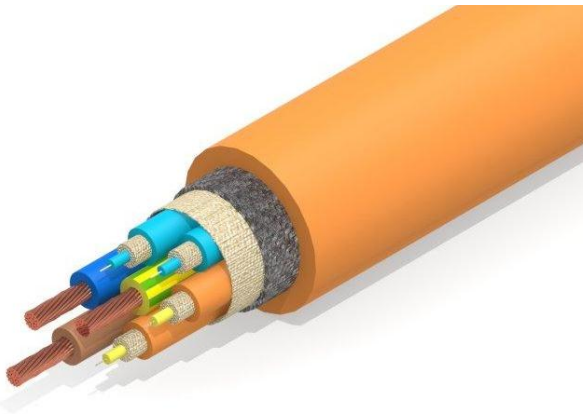
1 X Coax



025233

This multicable is braided with kevlar. The outer diameter is 12,5 mm ± 0,5 mm the colour is orange. The cable contains the following:

3 X 1,5mm^2 Power conductor
2 X MM fibre 63,5/125um
2 X SM fibre 9/125um
Screen & Kevlar



4.12.3 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.

4.12.4 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).

4.12.5 Connection of BNC Connectors

Strip the cable as shown in fig. 1.

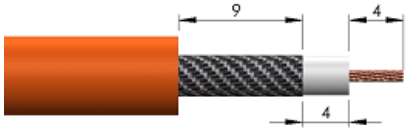


Fig.1

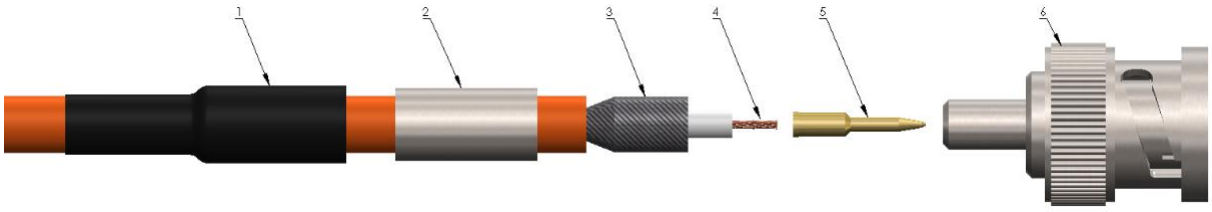


Fig.2

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.

4.12.6 Termination of Fibre Cable

For the fibre cable there has to be an authorized installer to splice the fibre cable to a pigtail with the right connector. (FC, ST, PC,,)

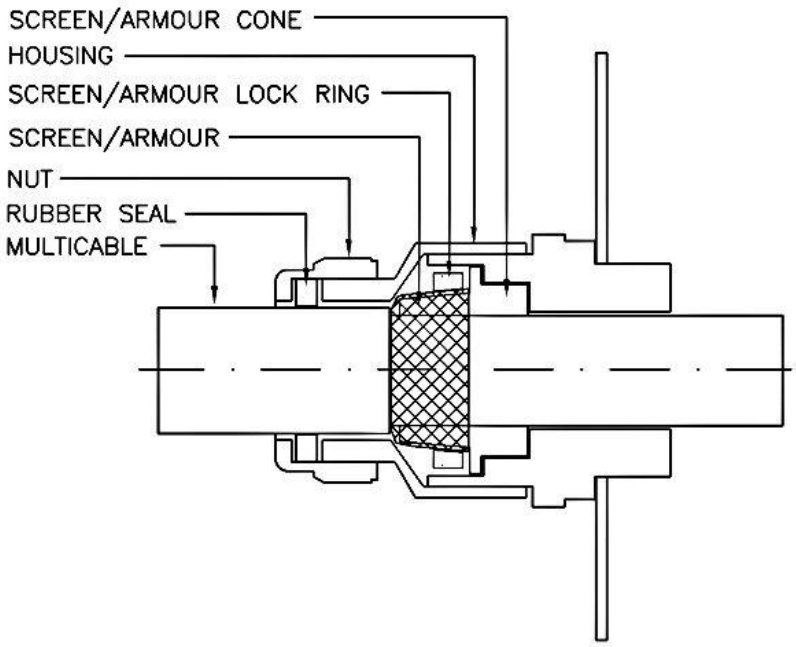
4.13 Assembly Instruction for HERNIS/Hawke Gland

4.13.1 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.

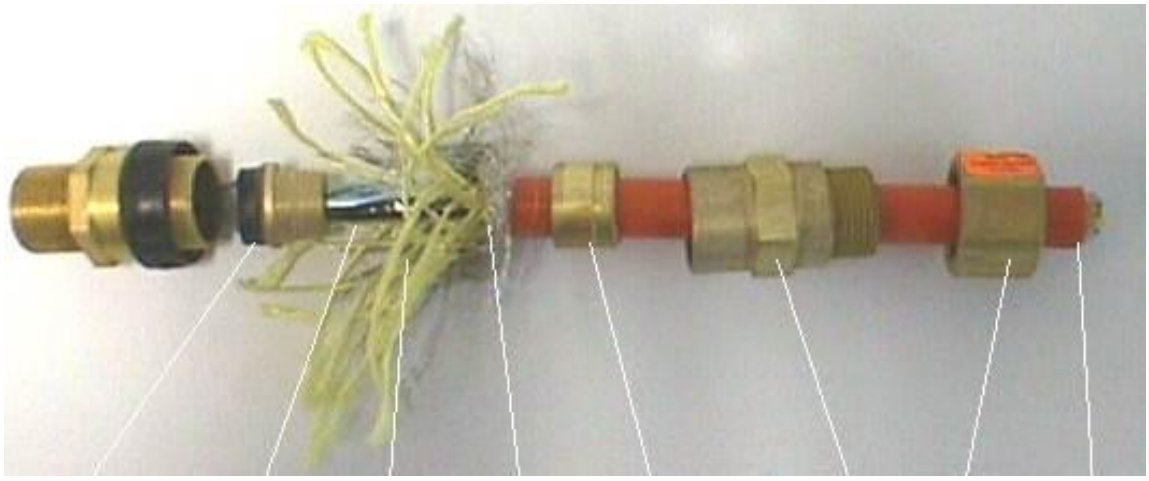
5. Fold the Kevlar braid back towards the screen. (The cores of the multicable will be revealed.) Remove as much as possible of the Kevlar braid.

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.

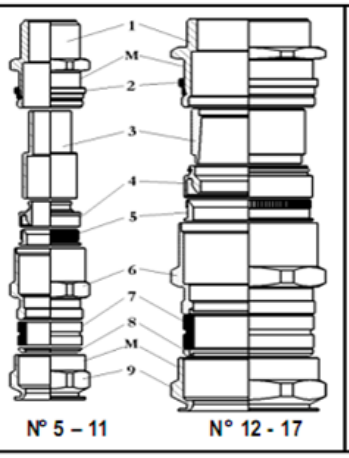
8. Assemble the gland and tighten the nuts properly.

4.13.2 Disassembled Cable Gland and Multicable



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

4.14 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

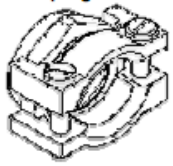
Fixation on Equipment

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

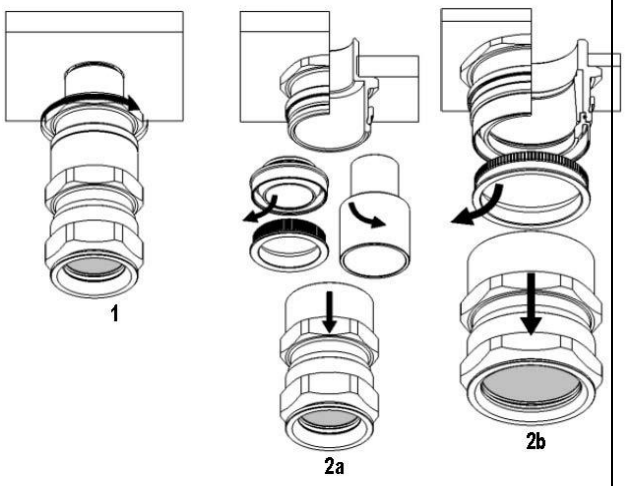
Verifications:

- 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:

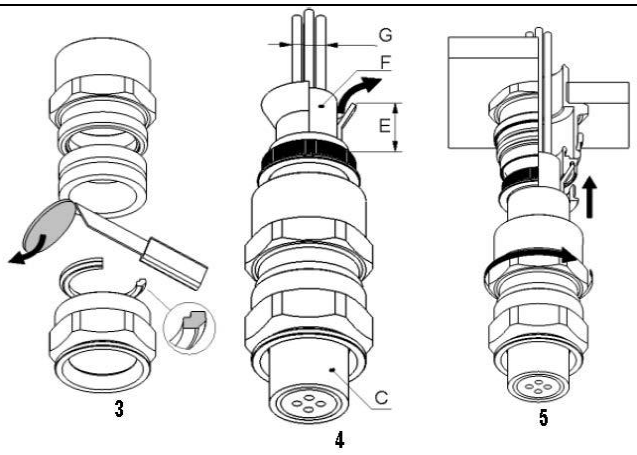
- Use gloves when handling products.
- At low temperature the sealing rings harden, it may be necessary to knead them until they are sufficiently flexible.
- For Aluminum and stainless steel version, grease must be used on the threads of all the caps.
- The appropriate torque is stated in the table to 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:

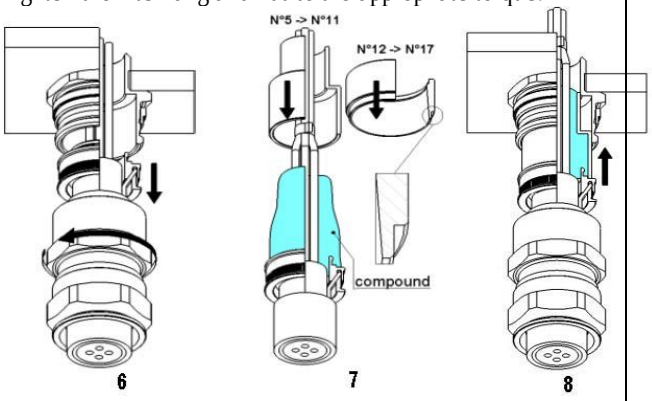


1. Fix the cable gland to the equipment by screwing the body to the appropriate torque.
2. Remove the cap assembly (Internal gland nut, external sealing ring, skid washer and external gland nut). Recover the moving parts:

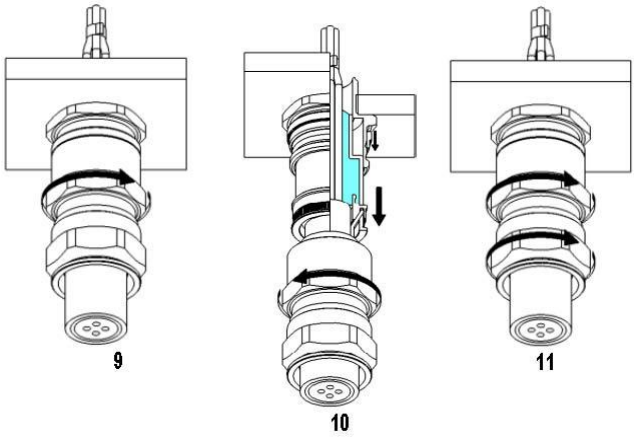
A. For n°5 to 11: Clamping ring, Compression ring and Compound chamber.
B. For n°12 to 17: Clamping ring only (let the compression ring and the compound chamber in place in the body).



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 Instructions HERNIS 400 System

5.1.1 General

The CCTV system configuration varies depending upon the given purchase order. However, the basic CCTV system normally consists of a Central Electronics Cabinet which houses System Server, Video Matrix, System Node and individual Power supplies for the cameras.

The monitor and control panel are normally powered locally.

The CCTV system is normally controlled by using an OK450 Control Panel, also referred to as the Operator's control panel.

Alternatively, the HERNIS 400 system can be operated via a computer based MMI.
The standard HERNIS computer based MMI's is called HWIN or SeaTouch.
A customer developed MMI Interface based upon the HERNIS Development Toolkit (HAKI) with ActiveX, Java or .NET can also be utilized for controlling the HERNIS 400 CCTV system.

The OK450 Control Panel, HWIN and SeaTouch operating procedures are described in separate operating procedures.

In addition HERNIS has HERNIS HSM application for monitoring the HERNIS CCTV system and HERNIS HAM application for controlling alarms in HERNIS CCTV systems. These applications will also be described in separate operation procedures.

5.2 Operating Procedure for Control Panel OK450

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.

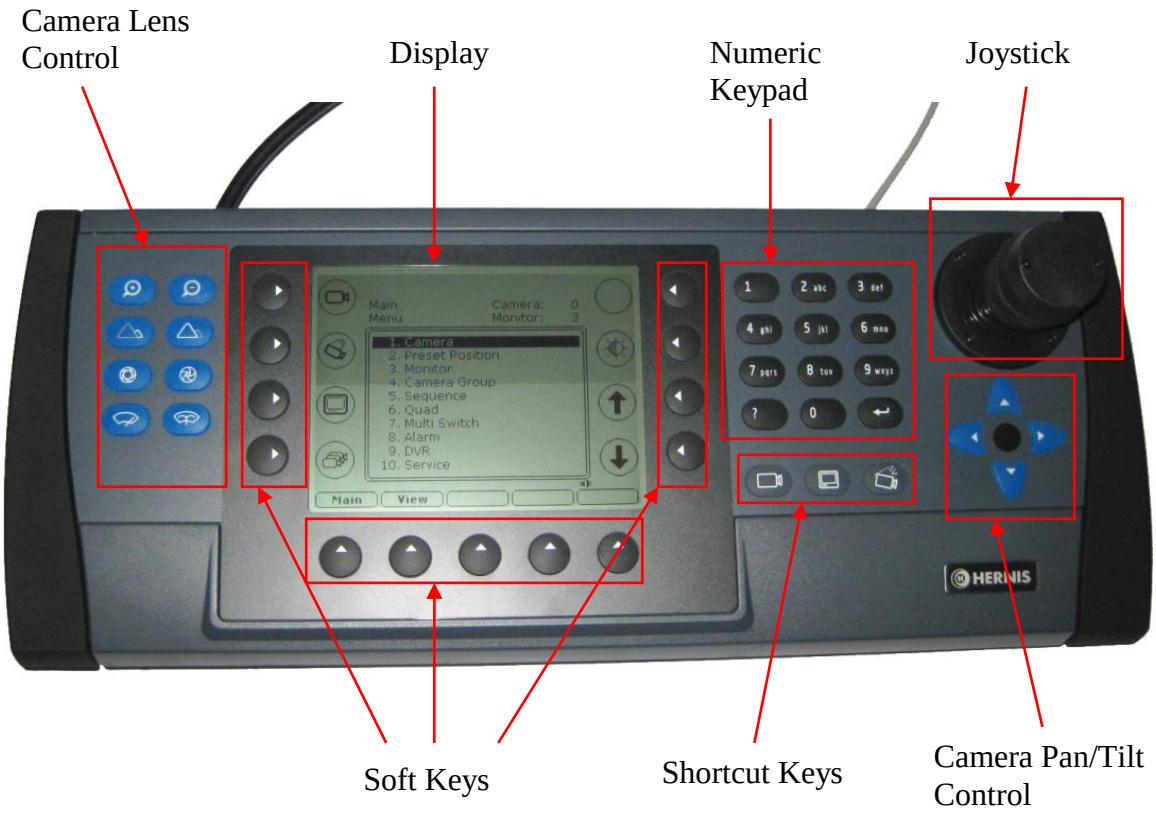
For some of the most frequent commands there are added dedicated shortcut keys that will save time for the experienced user that knows the CCTV system well. When you use the shortcut keys it does not matter which menu is currently displayed, they are always available. The shortcut key operations are:

- 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.

5.2.1 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:

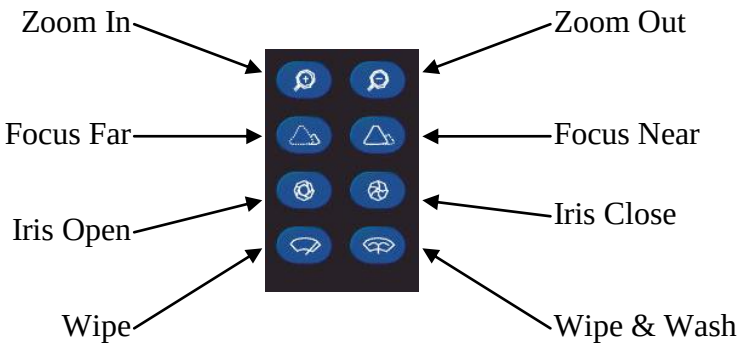
- CCTV System communication OK
- CCTV System communication lost
- Alarm active on selected monitor
- Sequence active on selected monitor
- Camera Lock activated by another user on selected camera
- Camera Lock active on selected camera
- Password mode active for access to edit and service menus

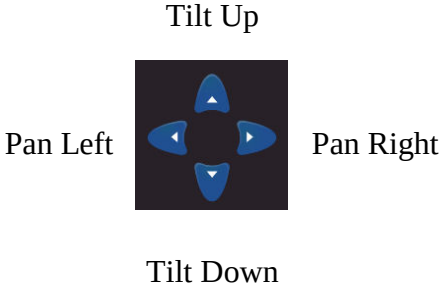
5.2.1.1 Control Panel Keys

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.

5.2.1.1.1 Camera Control Keys





5.2.1.1.2 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.

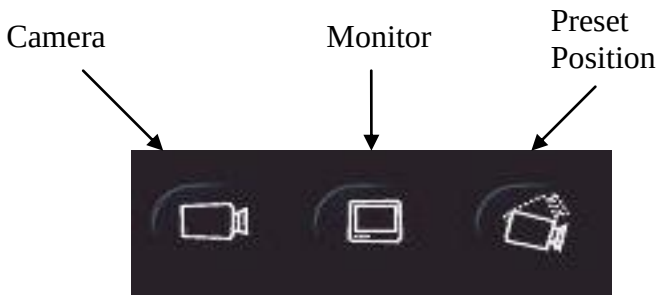
When you have selected the item you want by scrolling or direct selection, you press the **Enter** key on the numeric keypad to select the item.

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.

5.2.1.1.3 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.

5.2.1.2 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).

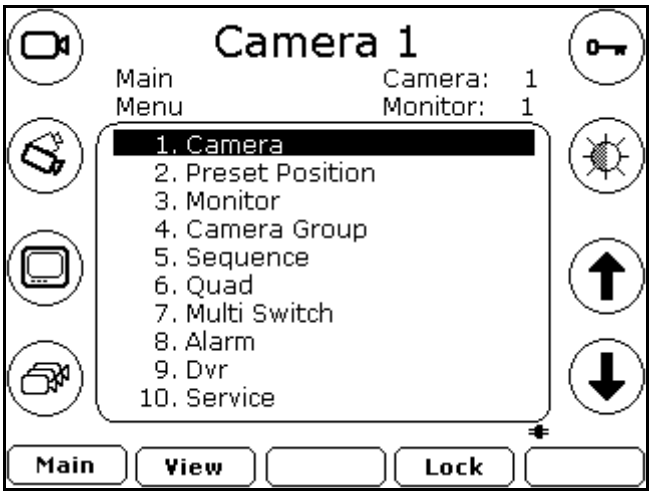
By using the joystick you will be able to control the speed of the camera station during pan/tilt operations. The speed of the camera station will be proportional to the deflection of the joystick in the pan/tilt directions. If you use the pan/tilt keys below the joystick, the speed of the camera station 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.

5.2.2 Menu System

5.2.2.1 Main Menu

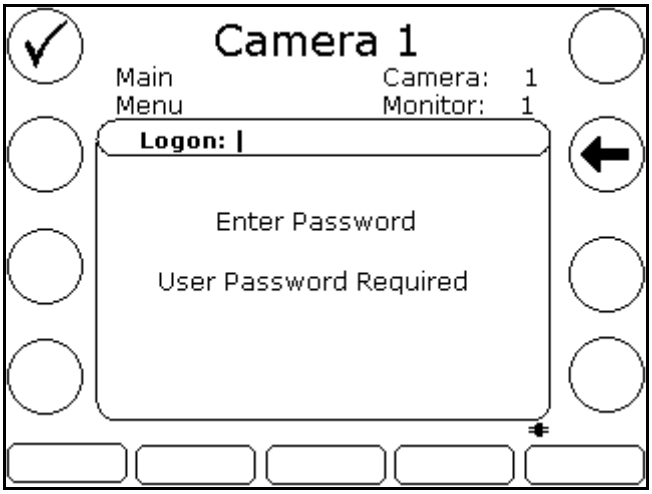
From the top menu on the OK450 control panel, you have access to all the menus in the list displayed on the screen. From any menu on the OK450 the top menu is only one step away by using the **Main** soft key.

This is how the menu looks:

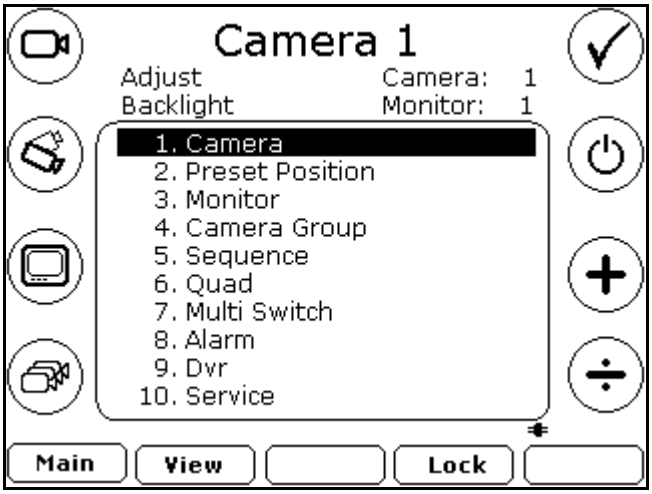


The ***Logoff*** 🗝 soft key is used to log off the CCTV System. If the control panel is configured for automatic logon, this icon will not be displayed.

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 ÷).

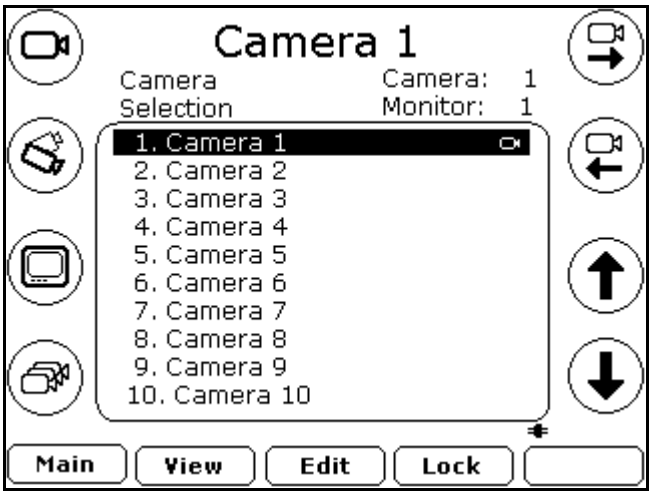
5.2.2.2 Camera Menus

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.

5.2.2.2.1 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.

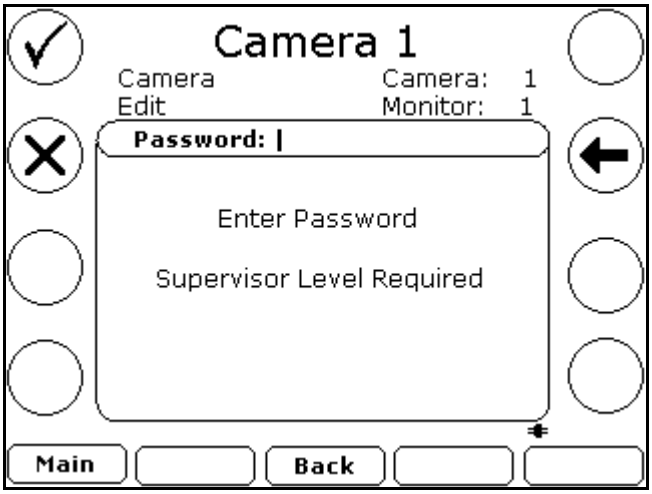
If you don't know the camera number you must open the Camera Selection menu displayed below. This menu will display a list of the camera names. You can select camera by scrolling to the camera you want and press the Enter key on the numeric keypad.



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.

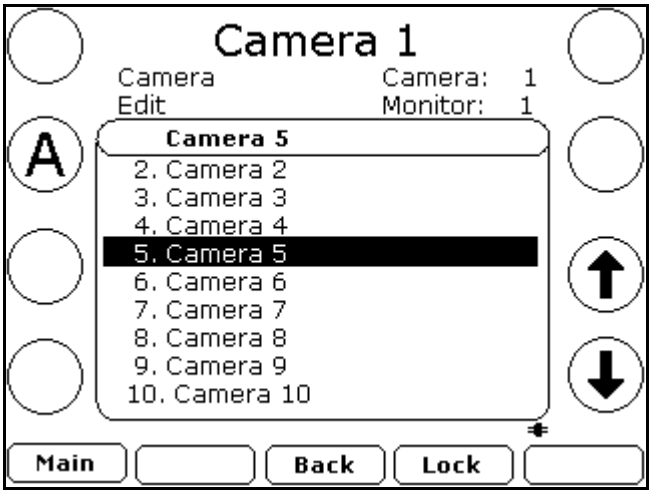
5.2.2.2.2 Camera Edit

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.

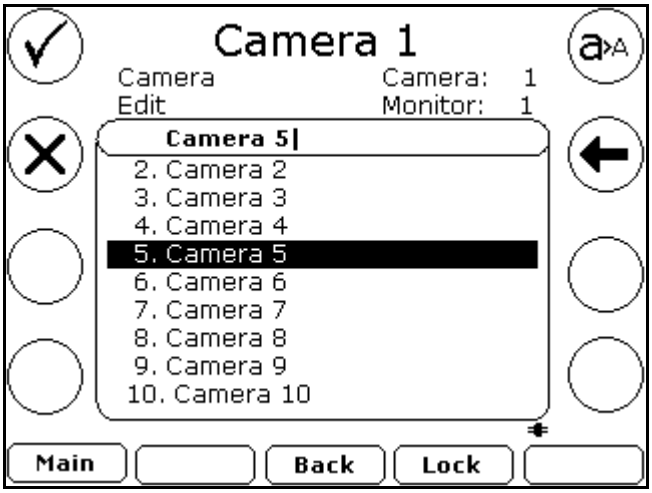


When you enter the edit mode by pressing the soft key ***Edit***, this soft key will change to ***Back***, and you press it once more to leave edit mode.

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.



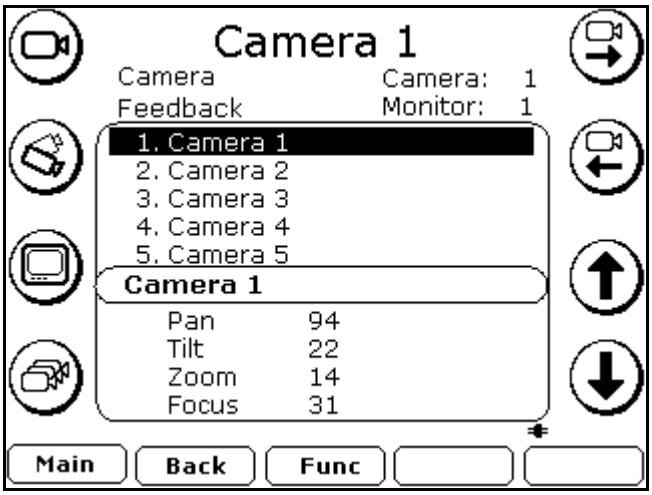
When you first get into edit mode, the marked camera name will be displayed in the edit field on top of the camera list ready to be changed. If you want to edit another camera name, you can use the scroll buttons to edit another camera name, and the text in the edit field will follow the selection in 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.

5.2.2.2.3 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.

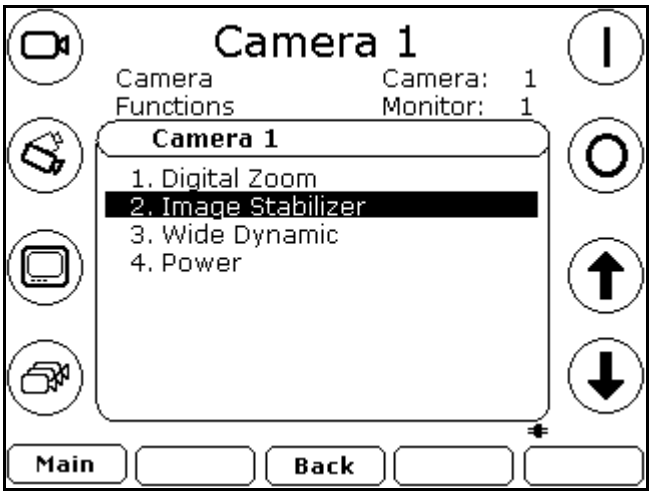


You can still select camera in the same way as you do in the "Camera Selection" menu, and the display will update to show the camera feedback values for the new camera.
To go back to the "Camera Selection" menu you press the Back soft key.

5.2.2.2.4 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.

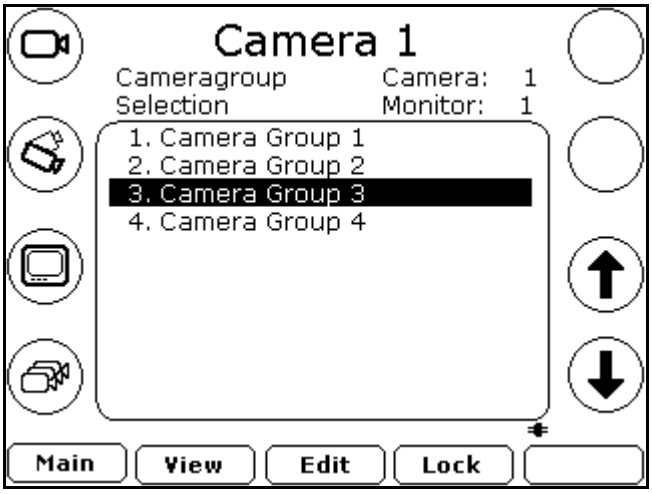
Wide dynamic setting is turned on by pressing the ***On*** I soft key, and off by pressing O.

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.

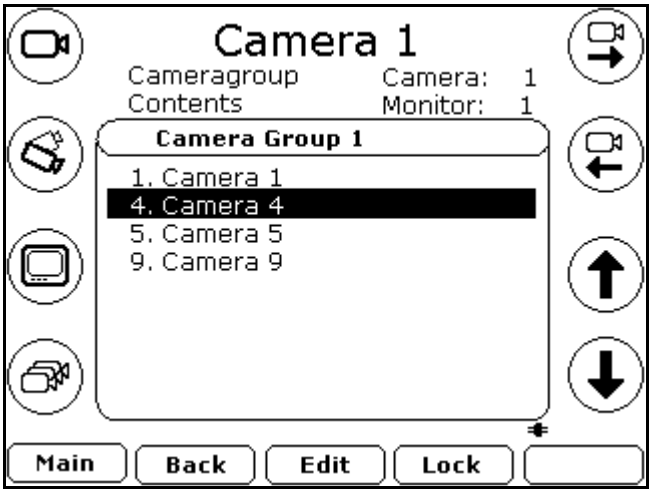
5.2.2.3 Camera Group Select

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**).



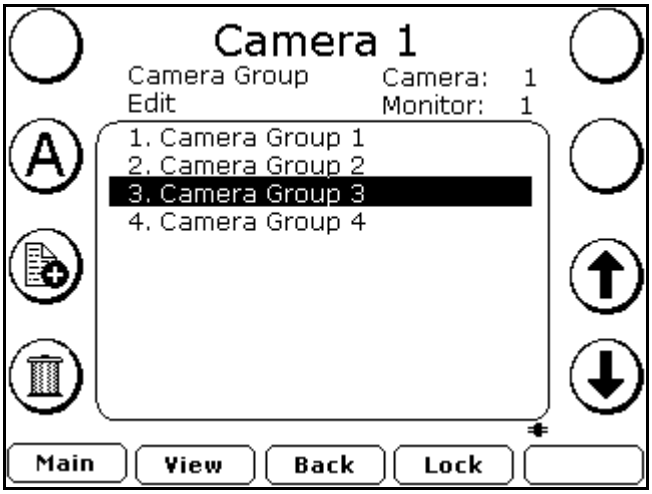
To use a camera group to select camera, you press the **View** soft key or the ***Enter*** key to show the list of cameras in the group.



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.

5.2.2.3.1 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.

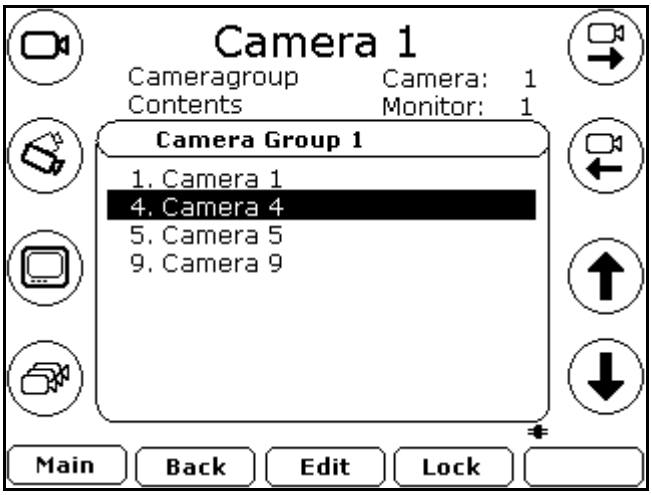
Note: When you add a camera group and then press ***Cancel***, the camera group will still be added in the list with the default camera group name. If you don't want the camera group you have to delete it with the ***Delete*** soft key.

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.

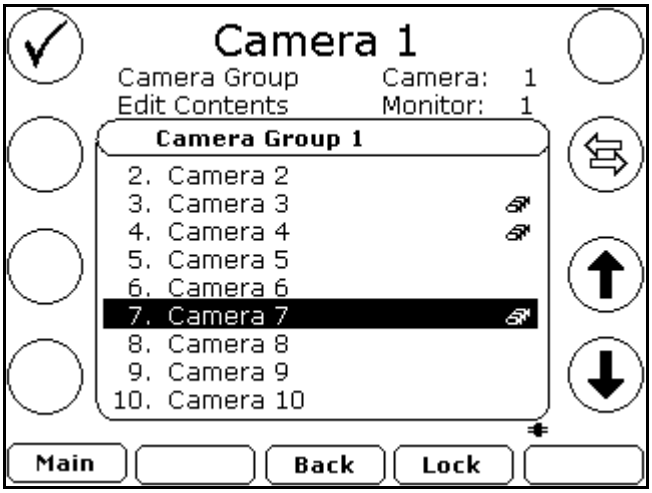
5.2.2.3.2 Camera Group Contents

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.



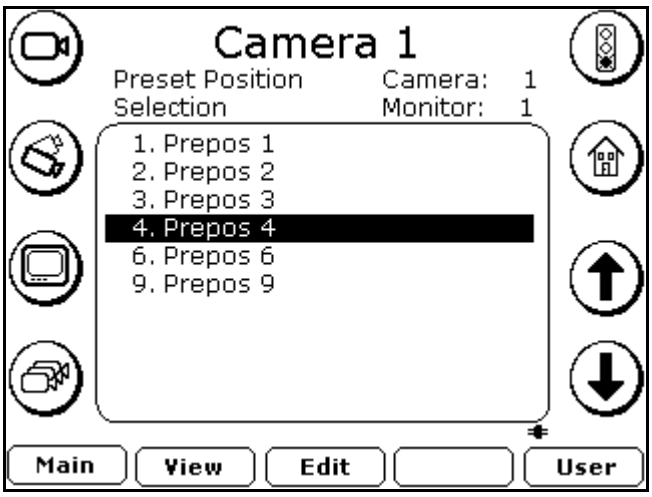
In the menu picture above you can see that Camera 3, Camera 4 and Camera 7 are currently included in Camera Group 1.

5.2.2.4 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.

5.2.2.4.1 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.



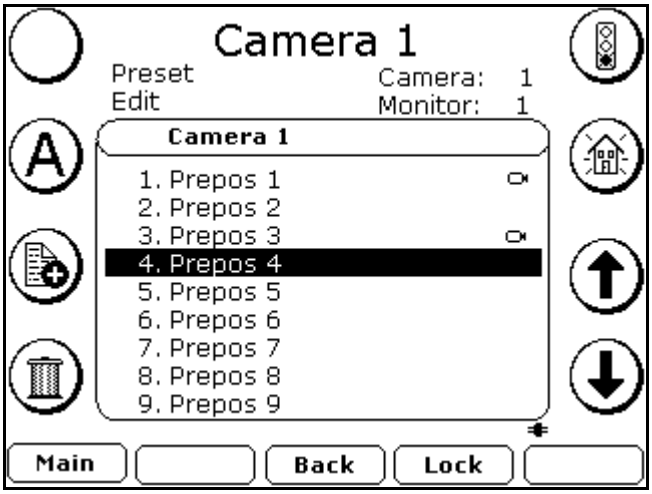
You can also release the home position for the camera station from this menu. The home position is a special preset position that is set up with a timeout, and when the camera station has not been used by any user during the timeout period, the camera station will automatically return to its home position. 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.

5.2.2.4.2 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.

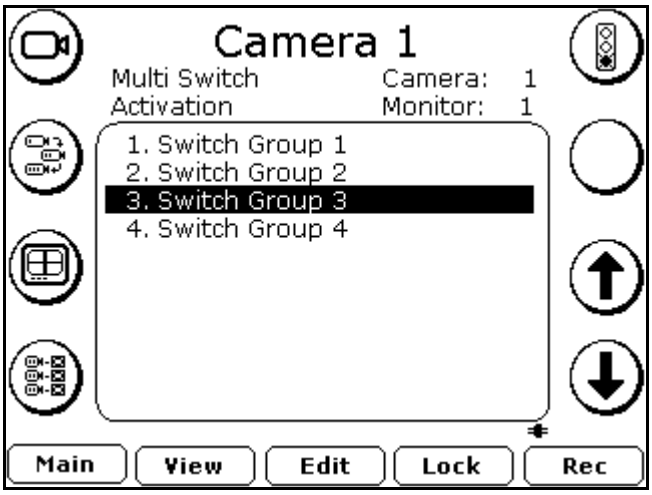
To change the home position you press the ***New Home Position*** soft key. You will then be prompted to enter a timeout (in minutes) for the home position. This timeout is used to make the camera return to a fixed position if no one has used the camera for the timeout period.
If you enter 0 for the 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.

5.2.2.5 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.

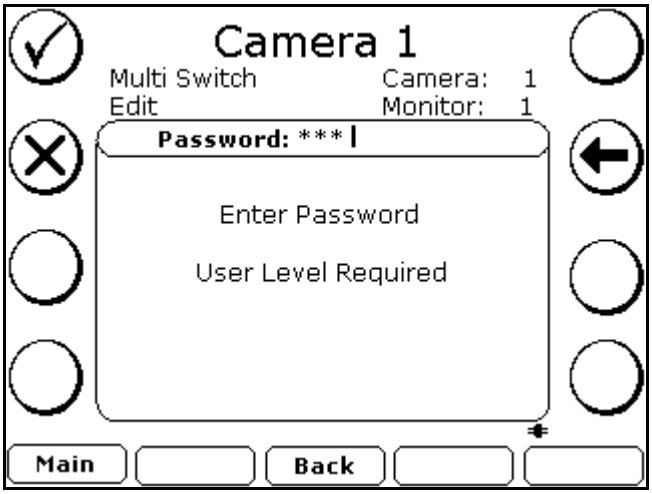
5.2.2.5.1 Multi Switch Group Activation

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.

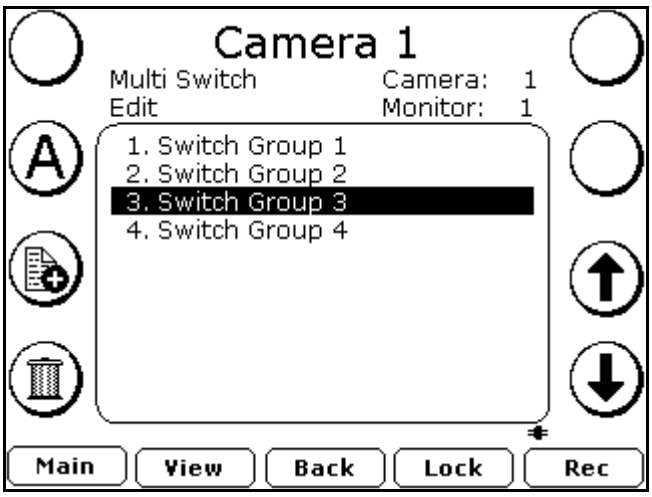


5.2.2.5.2 Edit Multi Switch Group

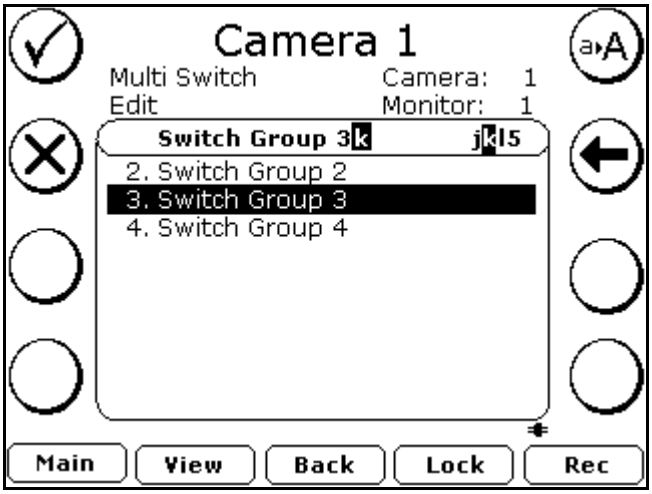
If you press the ***Edit*** soft key you will be able to edit the multi switch group setup. The control panel will allow you to add or delete groups, and to change name on existing groups. To access this menu you will have to enter a password.



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 Aa or aA 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.

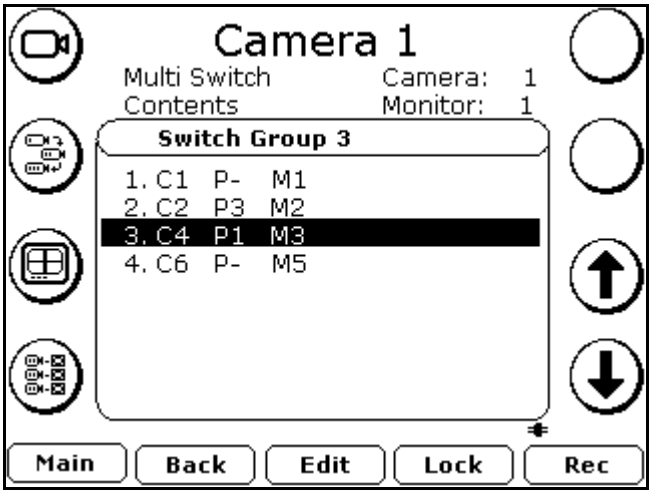
To exit Edit Mode, press the ***Back*** soft key.

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.

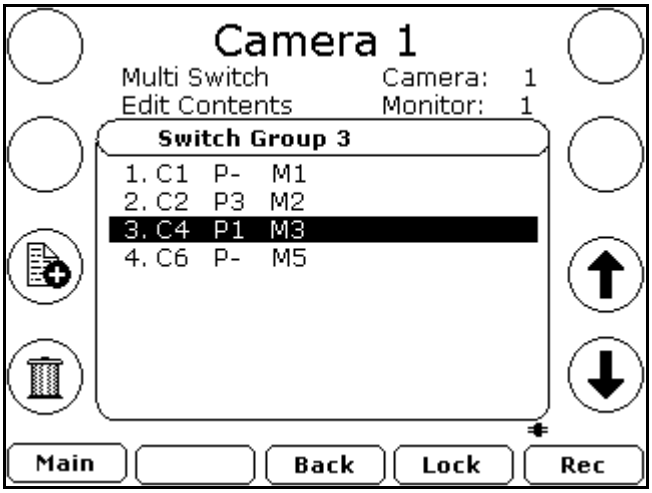
5.2.2.5.3 View Multi Switch Actions

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.



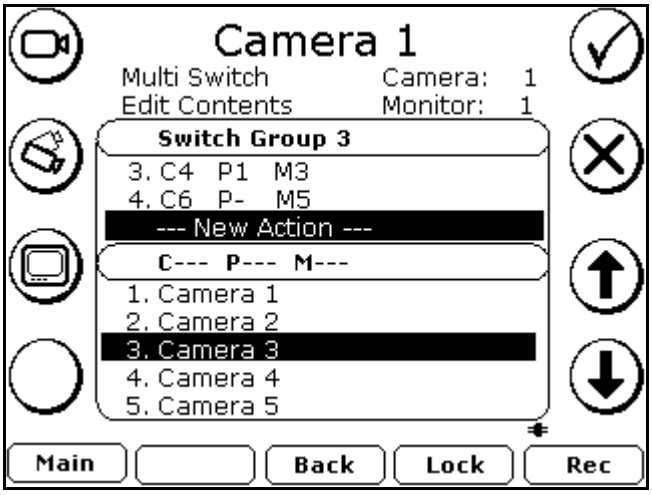
5.2.2.5.4 Edit Multi Switch Actions

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.

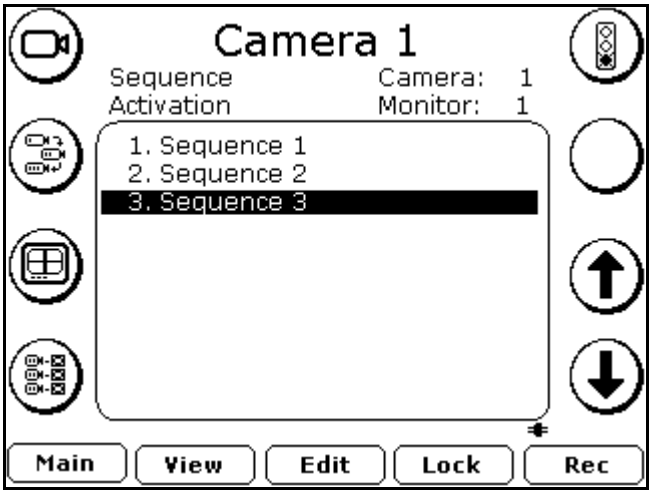
When you have added all the entries you want, you press the ***Back*** soft key to exit edit mode and display the list of actions for the multi switch group. You can also press the ***Cancel*** soft key ✕ to go back to the multi switch group list in edit mode where you can add and delete actions.

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.

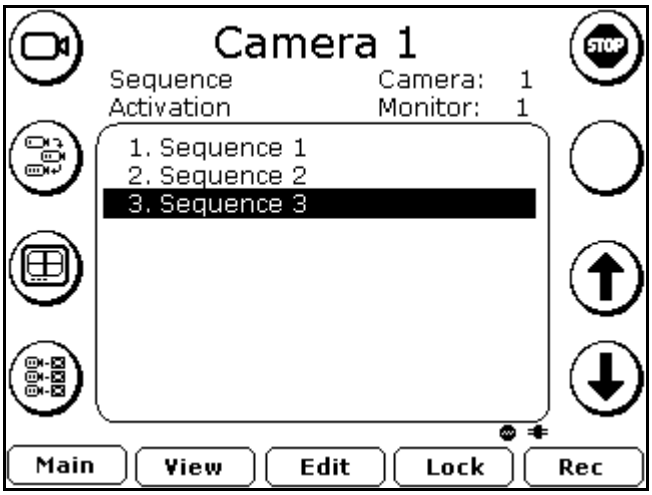
5.2.2.6 Sequence Menus

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.



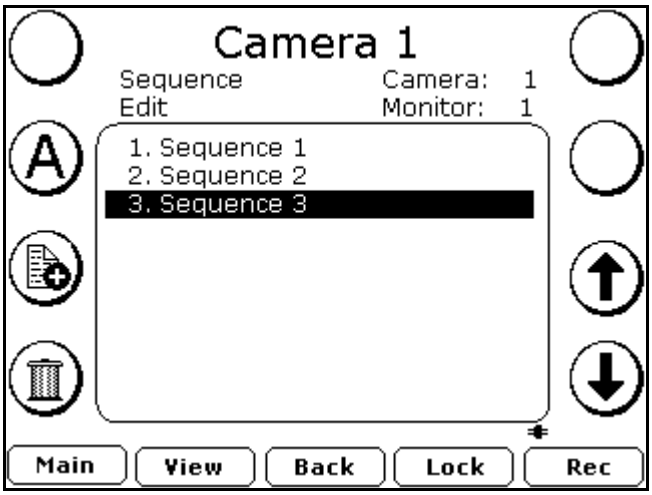
5.2.2.6.1 Sequence Control

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.

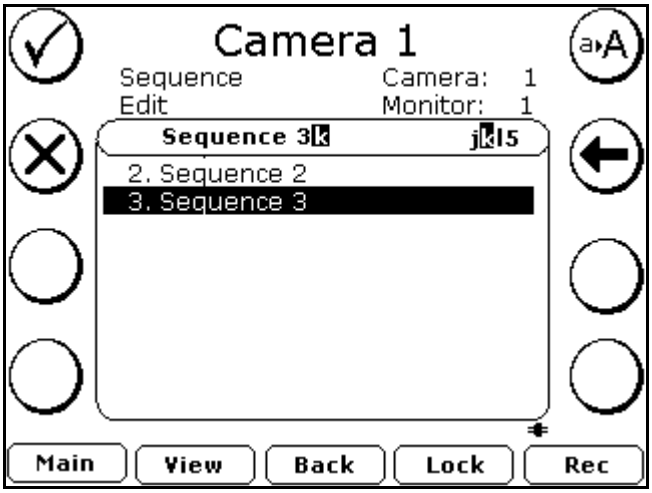


5.2.2.6.2 Edit Sequence

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.



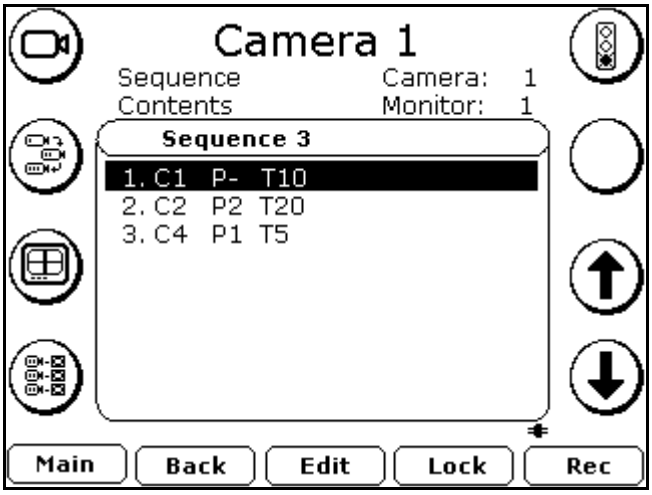
Adding a sequence is done by pressing the ***New*** soft key. When you add a sequence the operating panel will give the sequence a default name, and go to the "Edit Name" menu where you can change the name of the sequence to give a more descriptive name. When you have entered a name for the sequence, 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.

5.2.2.6.3 View Sequence Actions

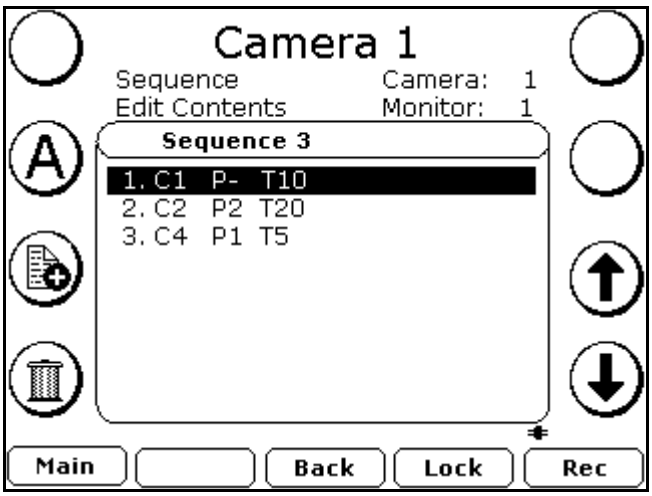
To look at the actions set up for a sequence you press the ***View*** soft key. The menu will then open the selected sequence and display a list of actions configured for the sequence.



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.

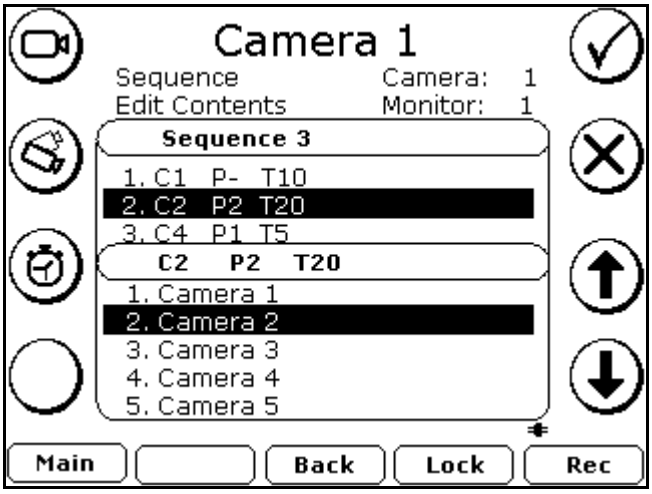
5.2.2.6.4 Edit Sequence Actions

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:



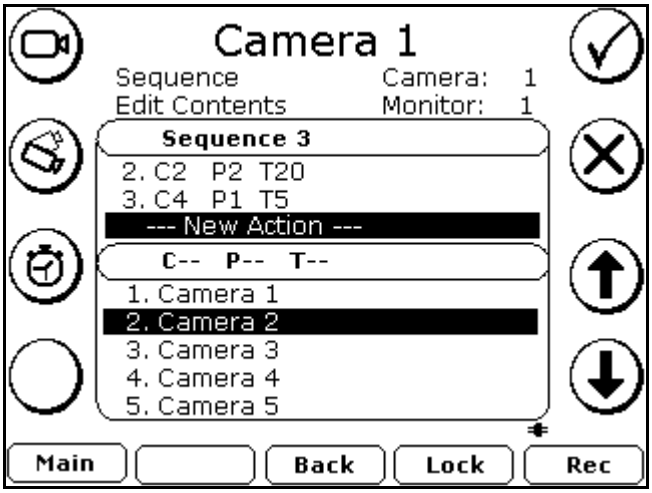
The action you are currently editing will be marked in the upper list, and the lower part of the list is used to change settings for the action. When the edit page opens it will automatically open the camera list for selection of another camera. To select another camera you scroll to the camera you want 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

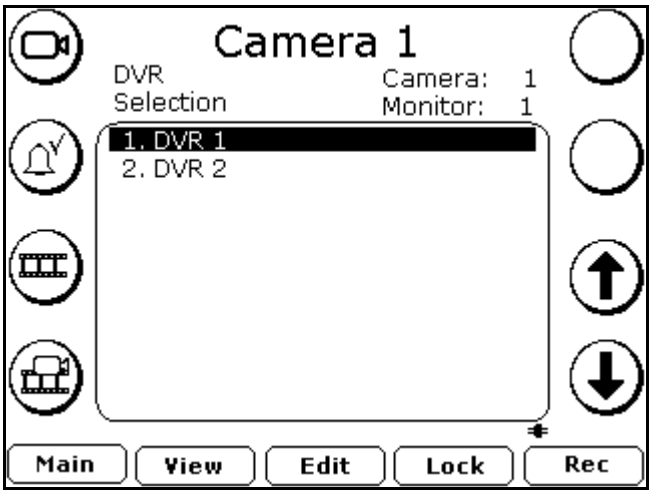
To delete an action at the end of the list you press the ***Delete Action*** soft key in the "Sequence Edit Contents" menu. The control panel will not ask for confirmation when deleting actions from the sequence.

5.2.2.7 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.

5.2.2.7.1 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.

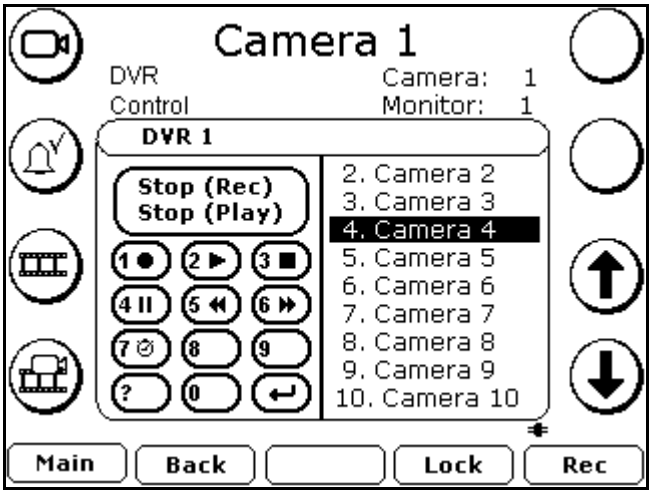


5.2.2.7.2 DVR Control

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)

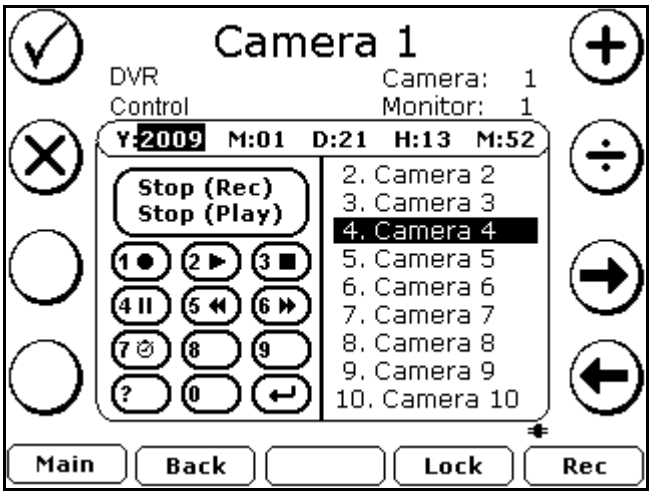
When you enter this menu the monitor will display the camera currently selected onto the DVR. (If the DVR is in playback mode, the monitor will display recorded video from the DVR.)



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

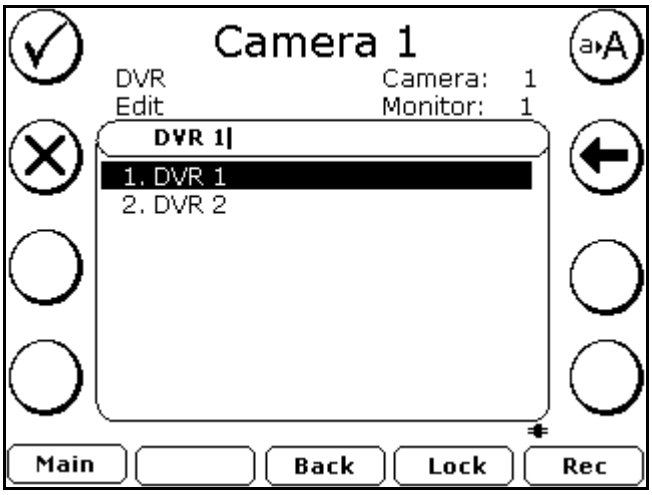
To activate the playback menu for the HERNIS 500 NVR, the OK450 keyboard needs to be in HERNIS 500 system mode, see Control Panel Setup under the Service menu.

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.

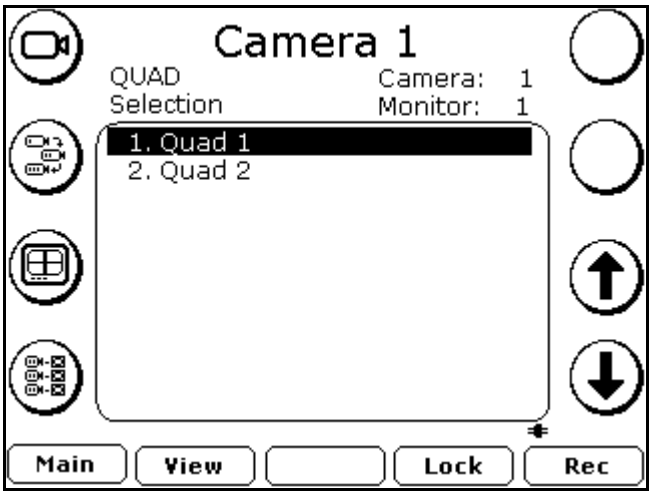
5.2.2.7.3 DVR Edit Name

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.



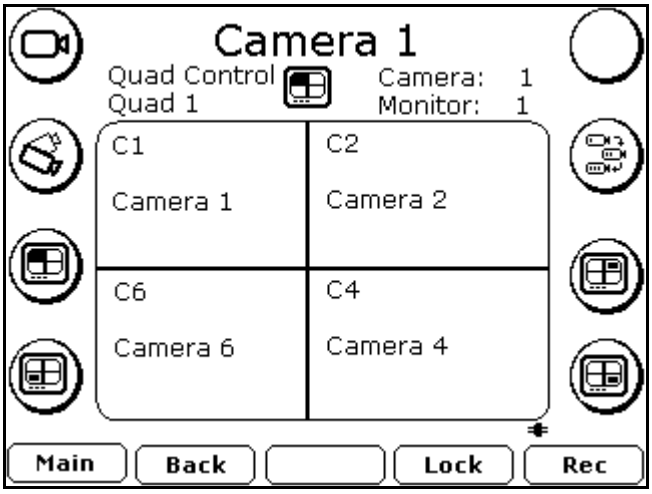
5.2.2.8 Quad Menus

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.



5.2.2.8.1 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.

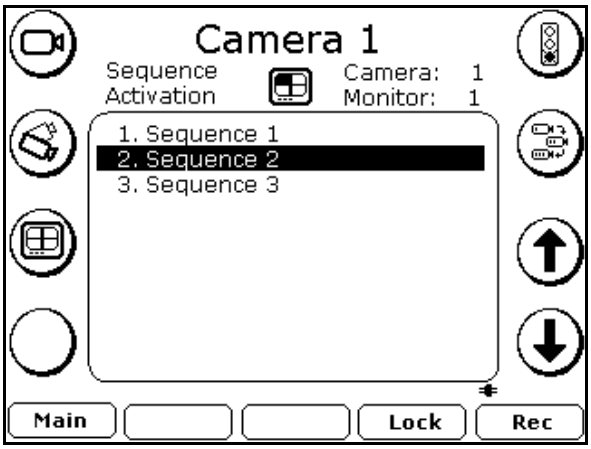


To set a quadrant on the quad unit active, you use the soft keys with the quad symbols (, , ,). The symbol with the quadrant filled marks the currently active quadrant.

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.



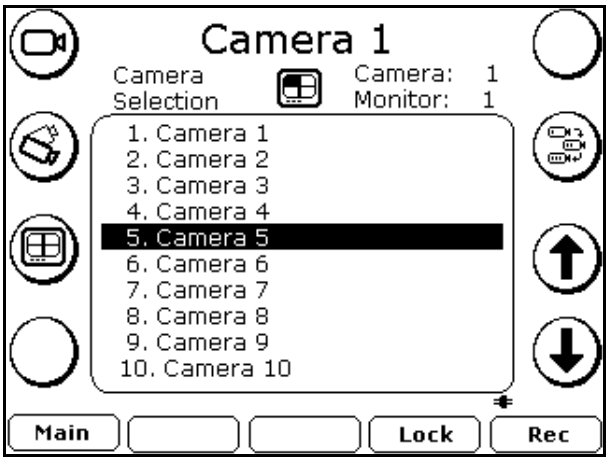
To start a sequence, you select the sequence you want using the scroll keys (or by entering the number of the sequence on the numeric keypad), and press the ***Start*** soft key .

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

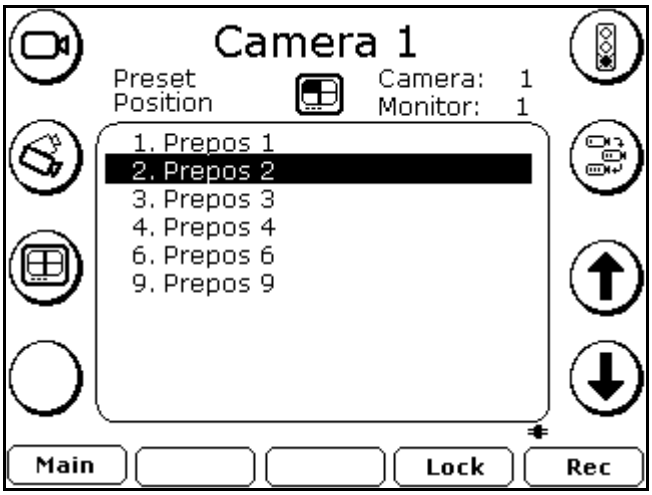
Selecting a camera to the active quadrant on the quad unit is done by pressing the key with the camera symbol , and selecting a camera from the displayed list. You can also select camera directly to the quadrant by using the shortcut key for direct camera selection and enter the camera number on the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



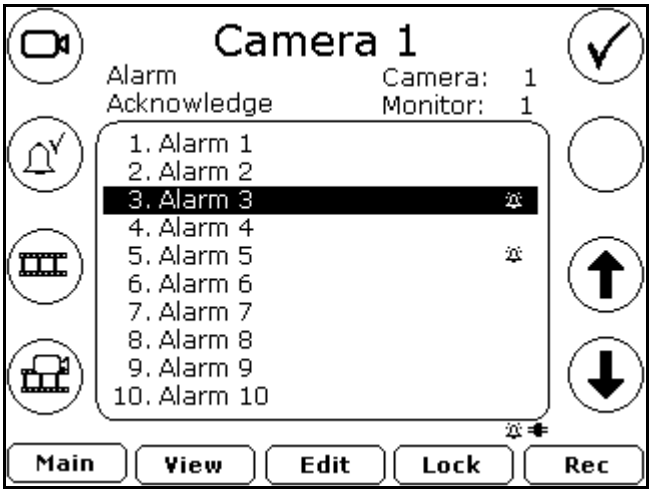
To return to the Quad menu press the soft key with the Quad symbol.

5.2.2.9 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.

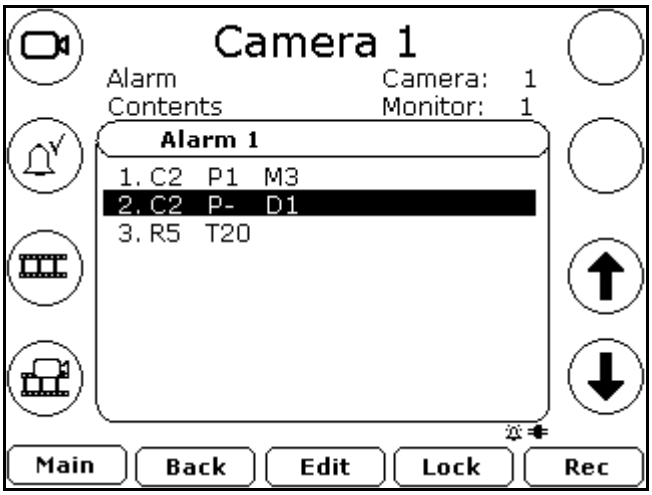
5.2.2.9.1 Alarm Acknowledge

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.



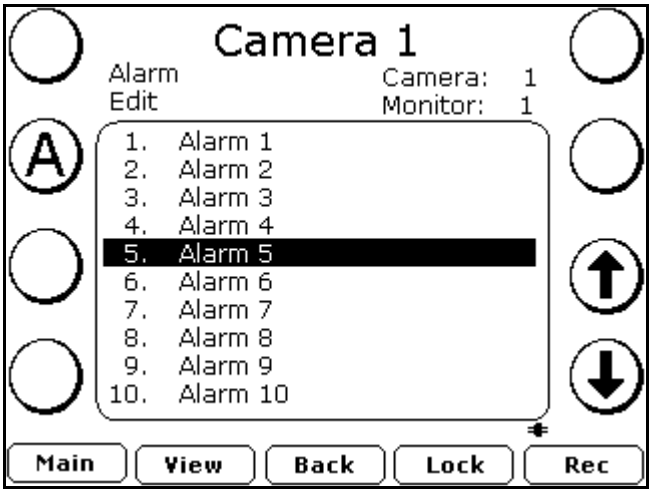
5.2.2.9.2 Alarm Setup

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***.



5.2.2.9.3 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.

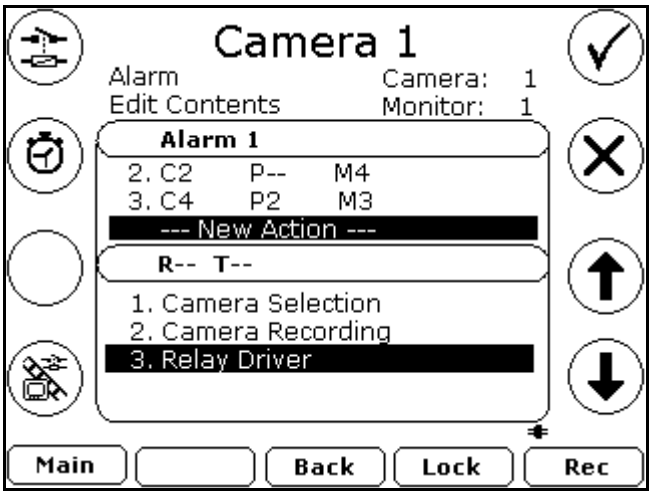


For alarms you can also change the contents of an alarm. I.e. you can select which actions should be performed in the CCTV system when each alarm in the system is triggered. These actions include selecting camera to monitor, start recording camera on DVR and activating relay outputs. To enter this menu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

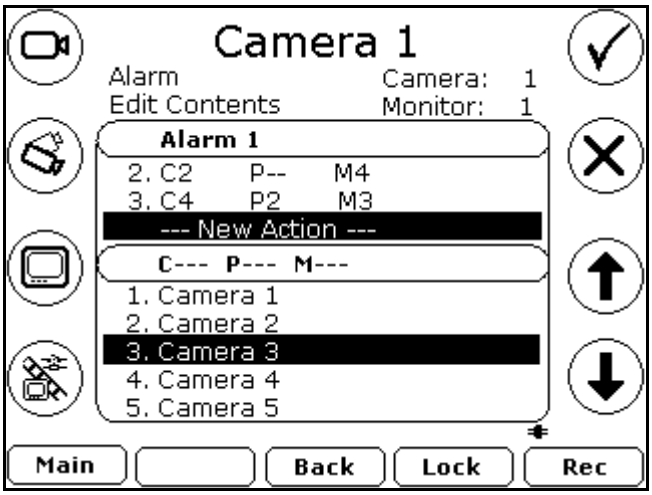
1. Select Camera to Monitor
2. Select Camera to DVR and Start Recording
3. Activate a Relay Driver Output.

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.



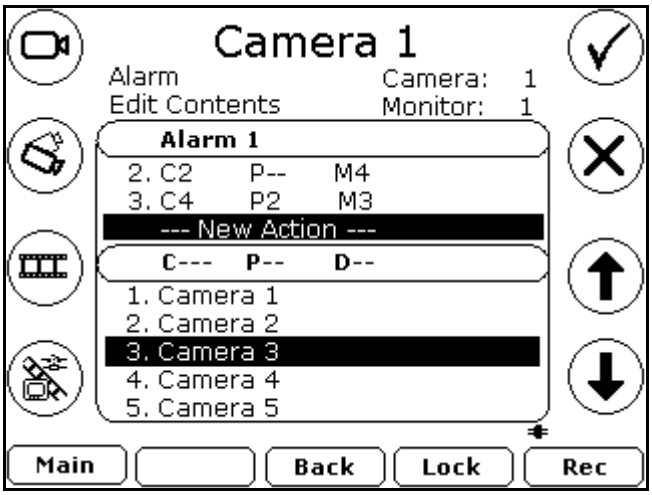
Adding a Camera to Monitor selection

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.



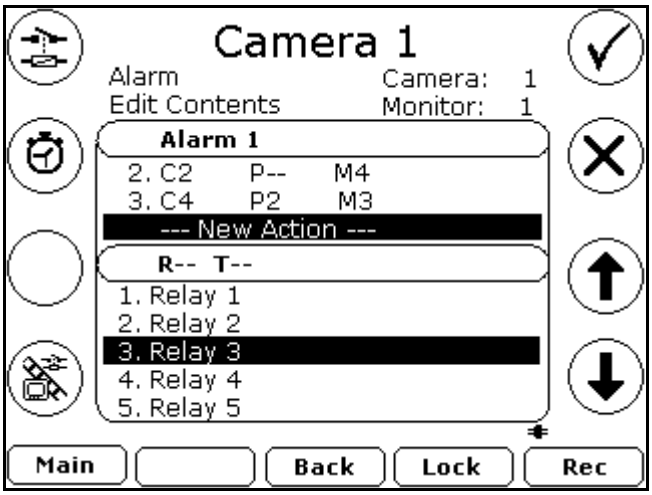
Adding Recording of Camera on DVR

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.

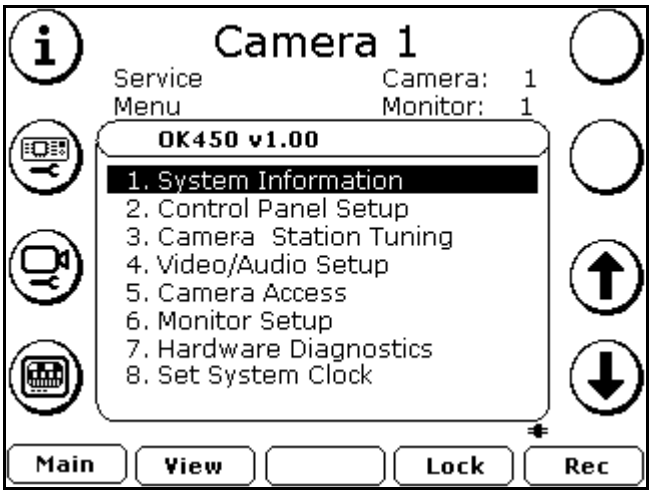


5.2.2.10 Service Menus

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.

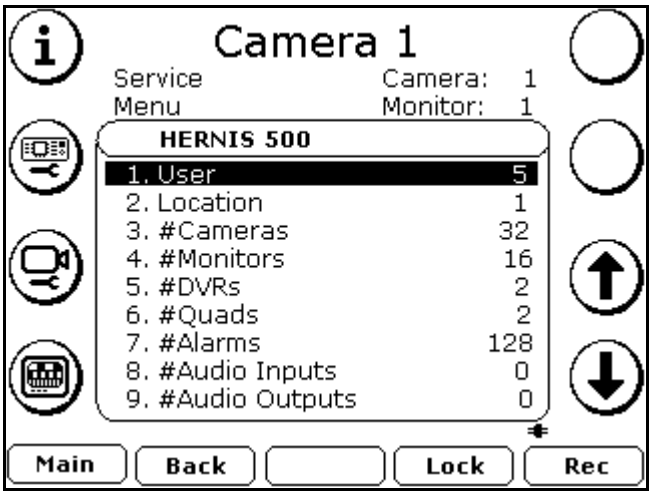
For most of the configuration menus, you have to enter a password to access the menu. Each of the service menus are described in the sections below.



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

5.2.2.10.1 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.

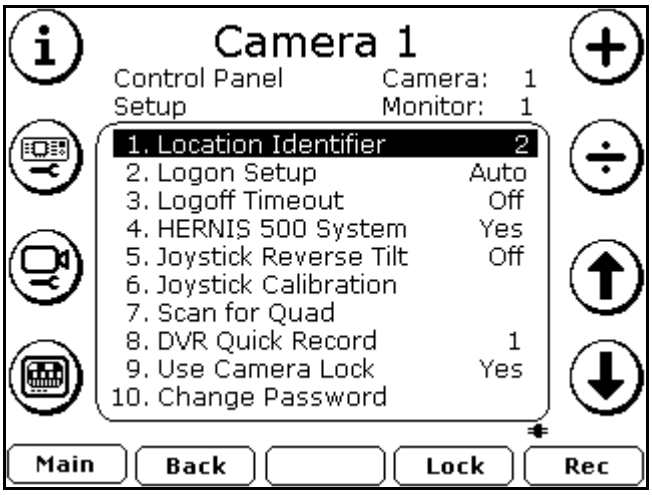


5.2.2.10.2 Control Panel Setup

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.

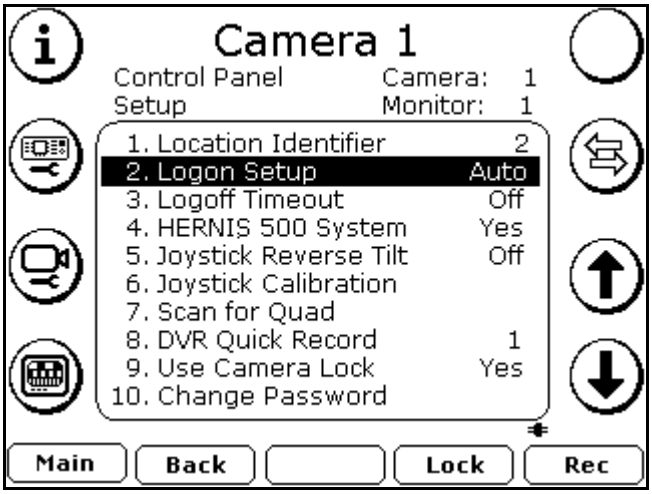
Location Identifier *Service Level*

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

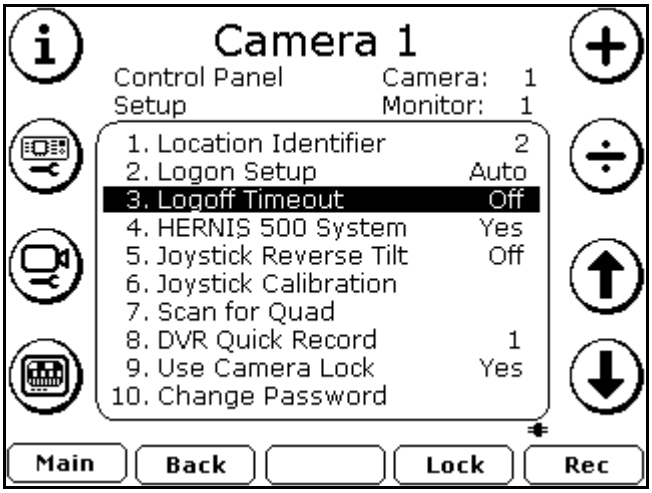
The control panel will start up in the Main Menu. The User Identifier for the control panel will be set to the same value as the configured Location Identifier. When you access menus on the control panel that requires passwords, the control panel will check against the internal passwords to verify the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

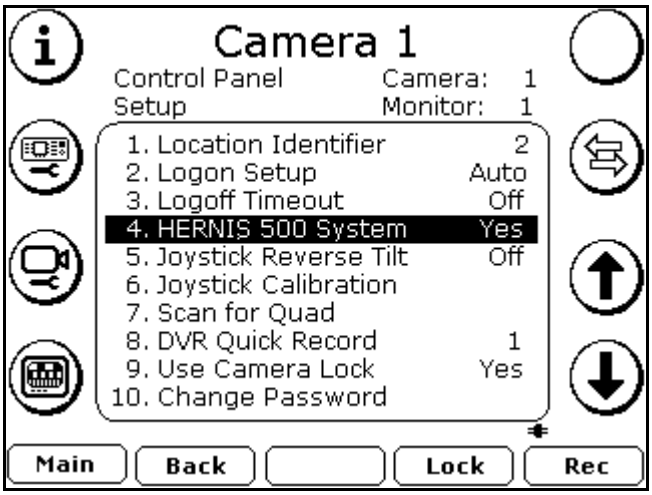
Logoff Timeout *Supervisor Level*

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.



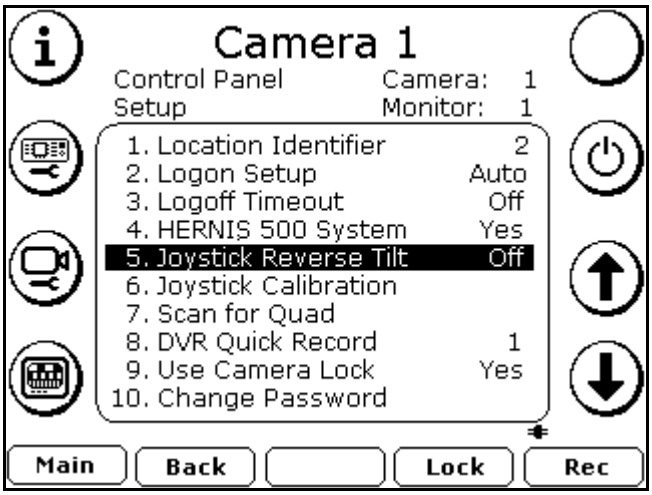
HERNIS 500 System *Service Level*

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*

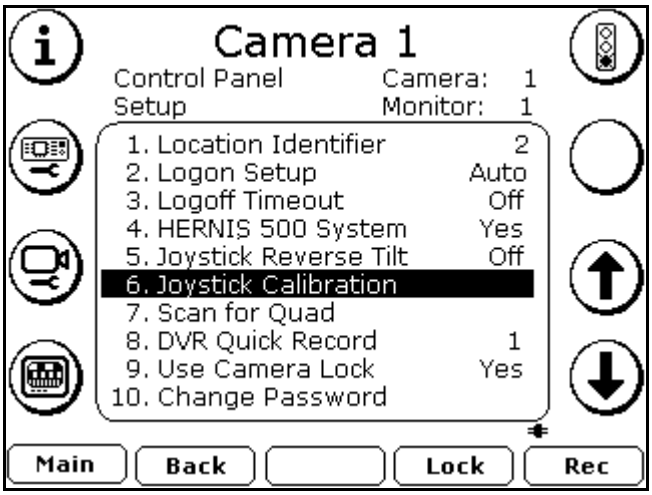
This setting is used to reverse the direction of the camera station tilt for the joystick. If you set *Joystick Reverse Tilt* to ON, the camera station will tilt down when you press the joystick forward, and tilt up when you pull the joystick towards you.



Joystick Calibration *User Level*

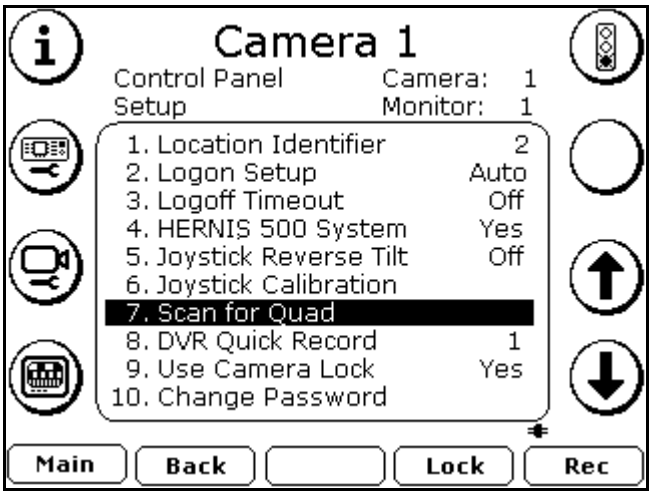
The joystick on the OK450 control panel uses automatic calibration, and will therefore function correctly on first start-up of keyboard. If there should be any problem with the automatic calibration of the joystick, you can use this menu. You start the calibration by pressing the soft key. The soft key 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.



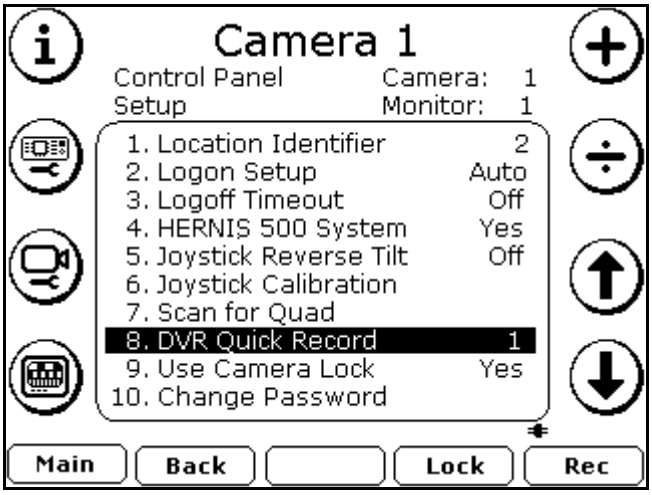
Scan for QUAD *Service Level*

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.



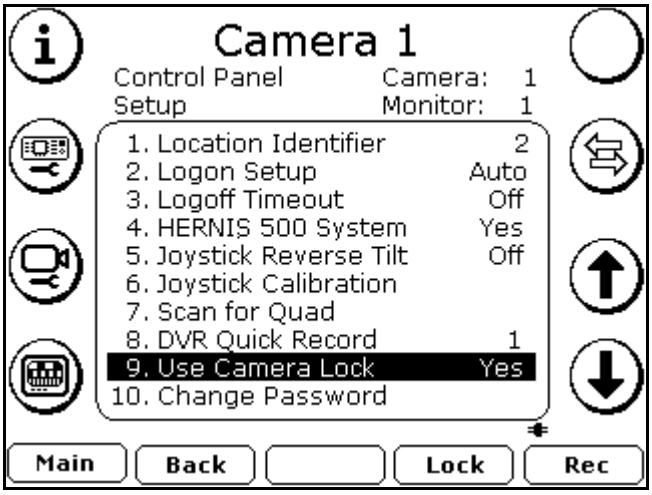
Use Camera Lock *User Level*

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.

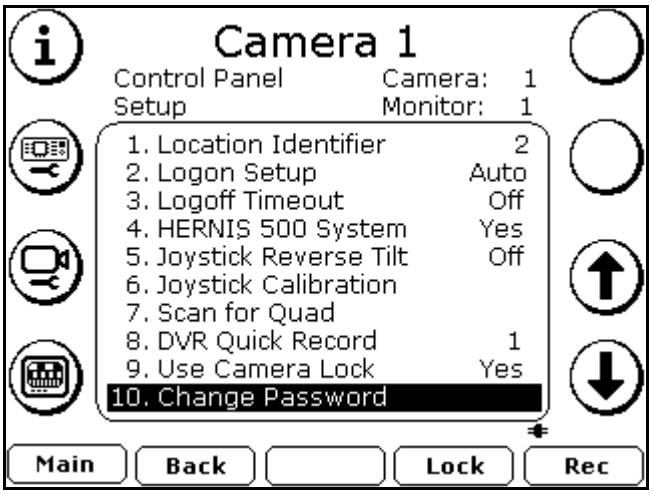
To indicate that a camera station is locked, the display will use information icons below the menu list on the right hand side. When the selected camera station is locked from the control panel, the symbol is displayed, and if the camera station has been locked from another control panel the symbol is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

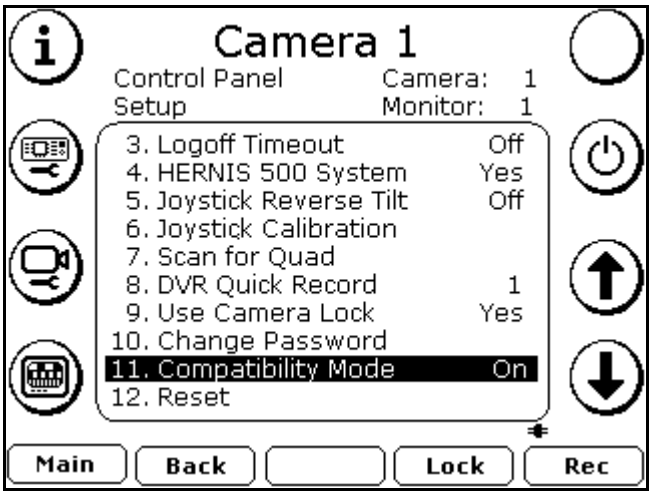
To use this menu the control panel must be set up with *Logon Setup* set to *Auto*. You can only change the local passwords on the control panel from this menu. You will change the password you used to enter the Service Menu. I.e. if you used the Supervisor password to enter the Service Menu, you can 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*

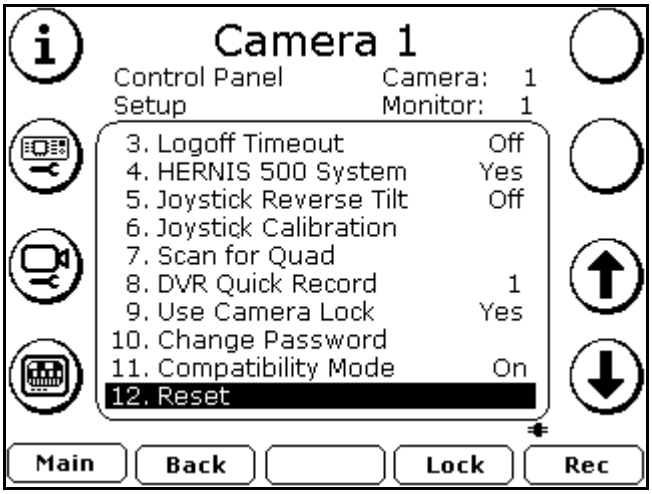
Compatibility mode is normally set to OFF. When the control panel is connected to a HERNIS 400/500 system with version from 4.0.x.x to 4.6.x.x the compatibility mode must be set to ON for correct operation of the control panel. When the setting is ON, the following limitations apply:

- 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



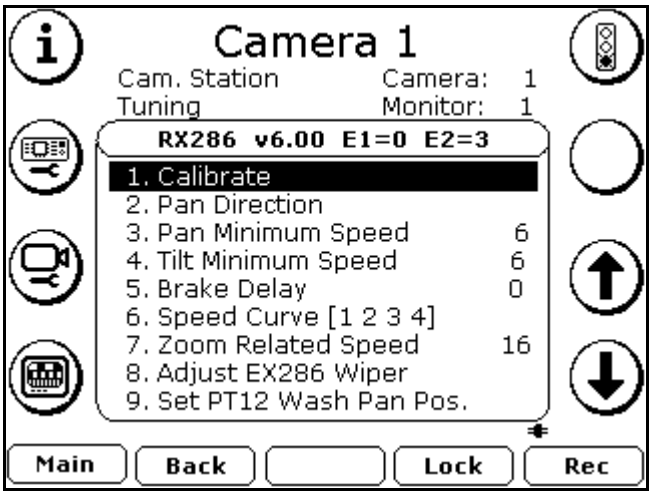
Reset *User Level*

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.



5.2.2.10.3 Camera Station Tuning

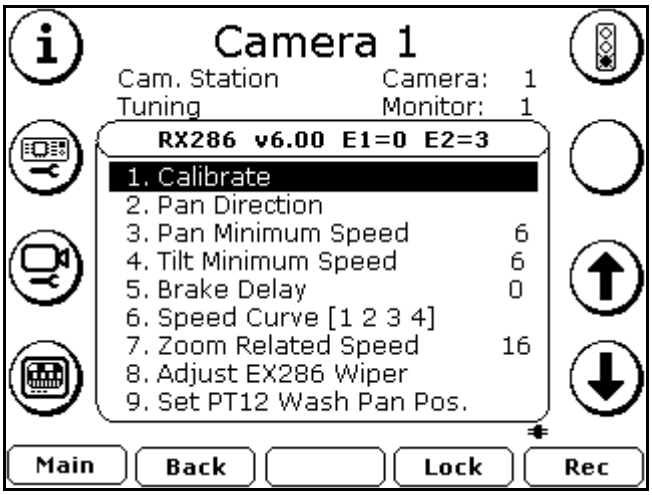
To get access to the *Camera Station Tuning* menu you will have to enter a service level password. You can enter this menu by selecting the menu in the list, or by pressing the soft key for the menu . The header field in the list menus will here show the type and program version for the camera receiver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

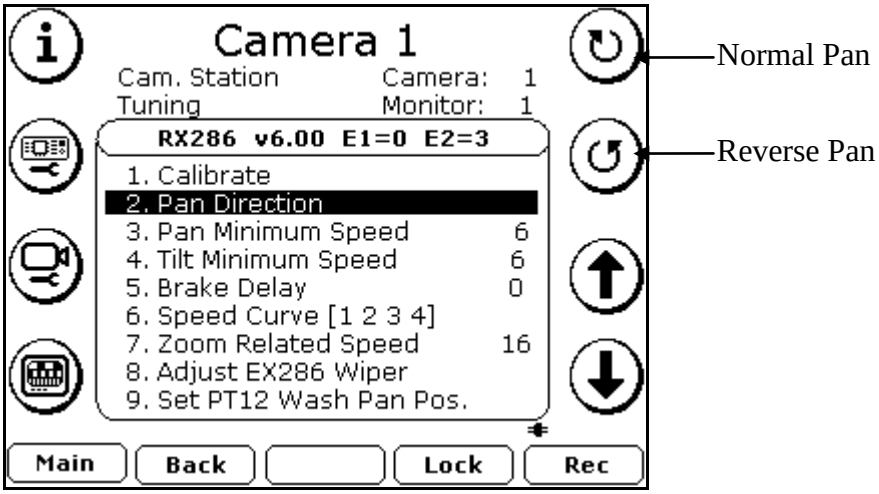
Calibrate

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

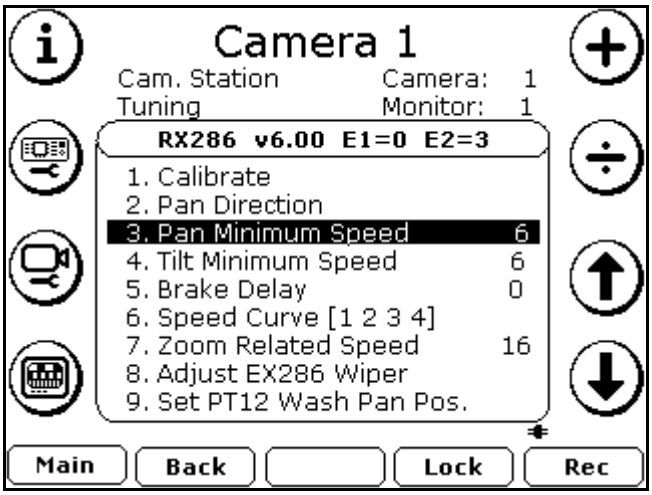
When the "Pan Direction" menu item is marked you have two action soft keys (↻ and ↺).



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

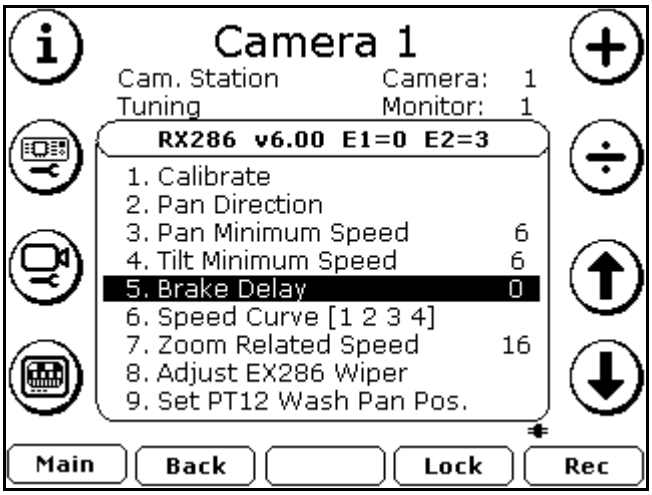
This setting is used to set the slowest pan speed for the camera station. The setting is used to make sure that the camera station will draw enough power on minimum speed on the joystick to be able to move the camera stations from standstill. This setting is automatically configured during calibration,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

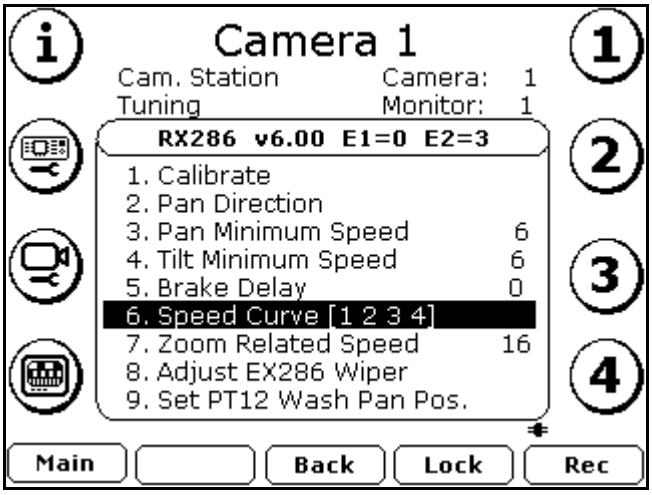
The menu will display the **+** and **÷** soft keys to adjust the value.



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.

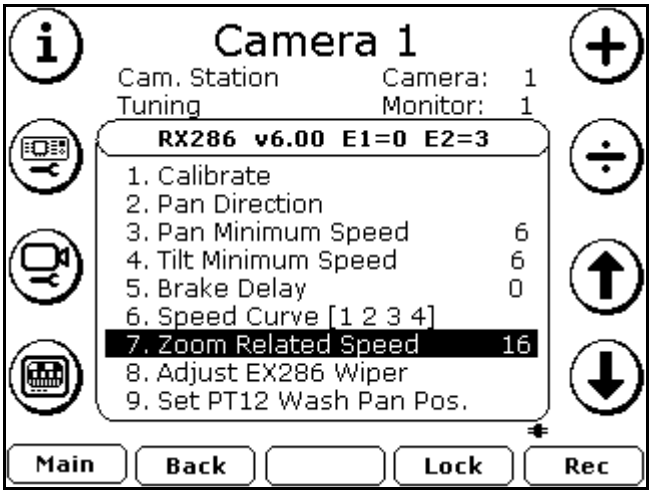
To change speed curve setting, you have to press the ***Edit*** soft key. The menu will then change to display the soft keys **1 2 3** and **4** on the right side of the menu. Selecting a speed curve soft key will change the setting on the selected camera station.



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.

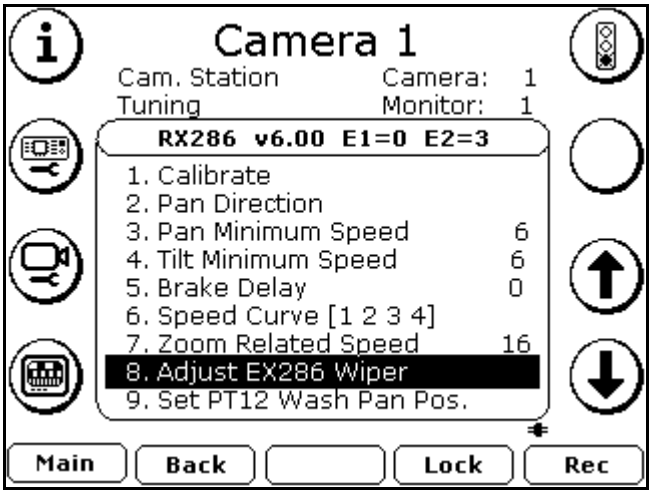
The menu will display the **+** and **÷** soft keys to adjust the value.



Adjust EX286 Wiper

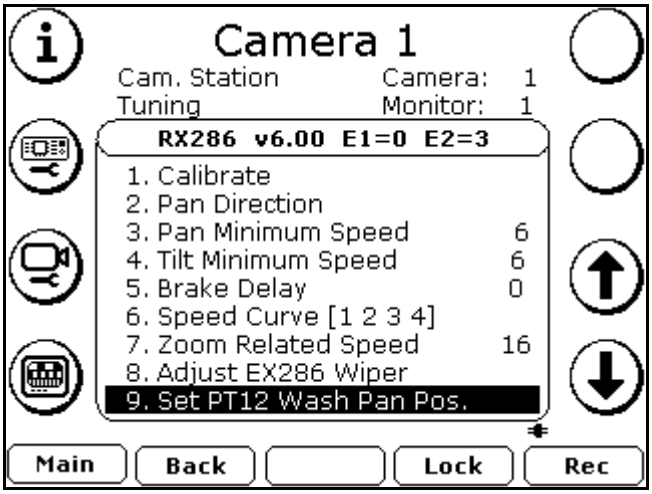
The wiper on the EX286 camera station can be calibrated from the control panel. Press the ***Start*** soft key to enter calibration mode. The EX286 camera station will then position the wiper in the centre position. The control panel will change soft keys to **+** and **÷** to adjust the wiper setting. 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 EX286 camera station will return to its resting position.



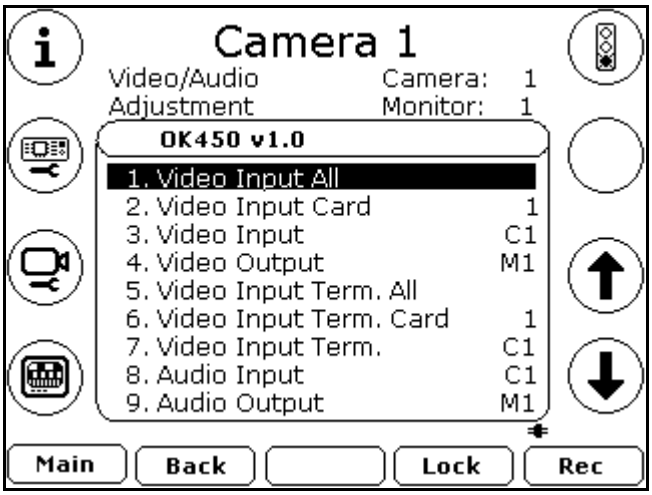
Set PT12 Wash Pan Pos.

The PT12 camera station uses a fixed pan 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. The menu is only used for PT12 camera stations.



5.2.2.10.4 Video/Audio Setup

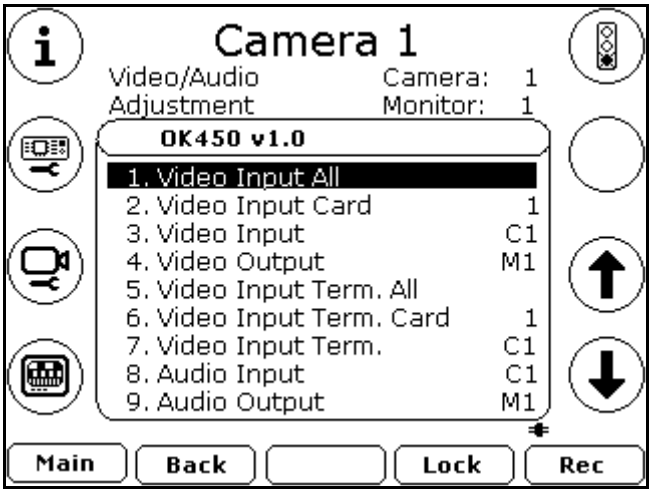
The menus items in this menu are used to configure the input and output levels and termination for video and audio in the system. You need to enter a service level password to access the menu.



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.

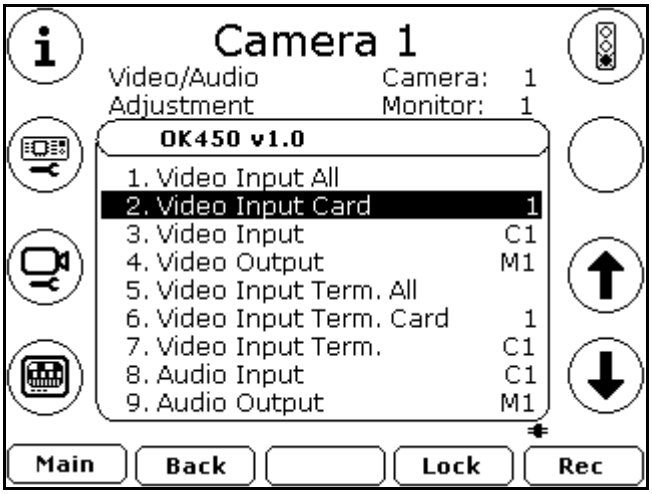
Video Input All

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

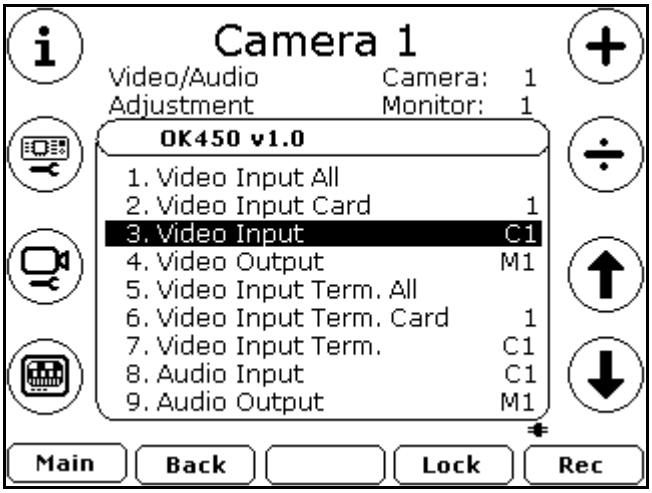
Works in the same way as *Video Input All*, but will only adjust the selected video input card in the analogue video matrix.[1]



Video Input

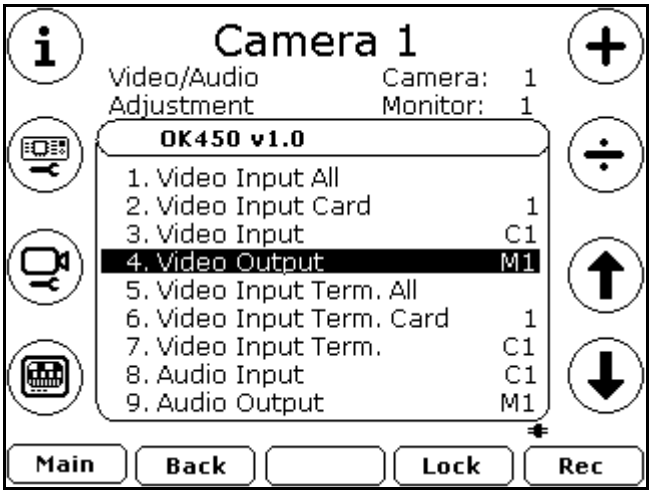
This menu will adjust the video input for the selected camera manually. Use the + soft key to start increasing and ÷ soft key to start decreasing amplification of the video signal. When you press any of these soft keys they will change to display the STOP icon. Press the same key once more to stop adjusting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



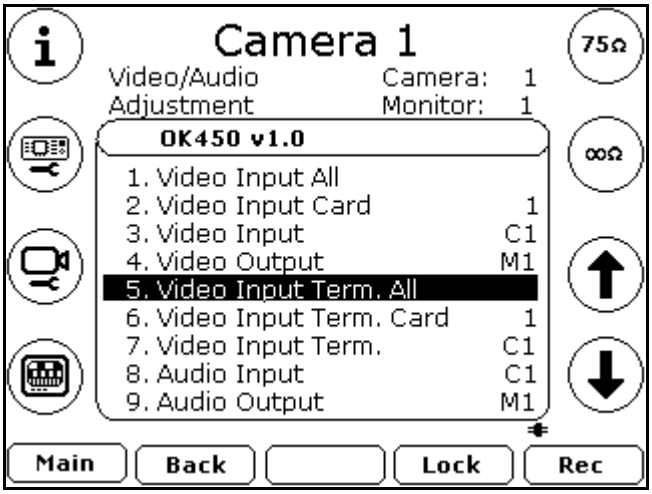
Video Output

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.



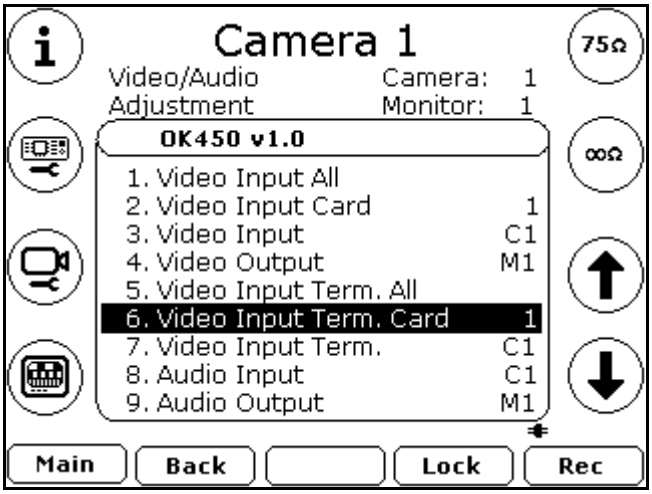
Video Input Term. All

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



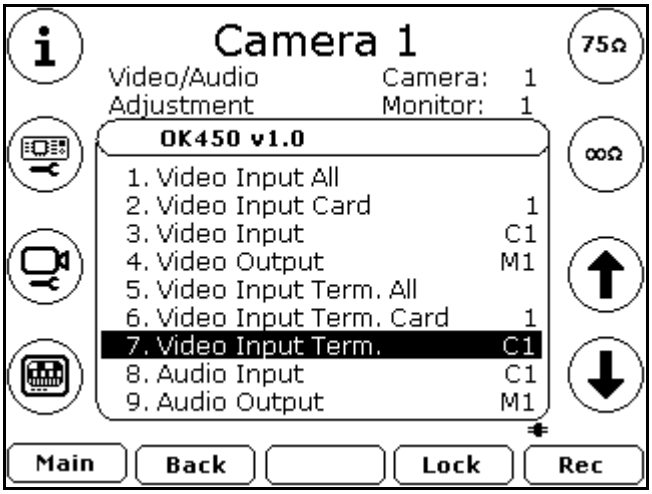
Video Input Term. Card

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



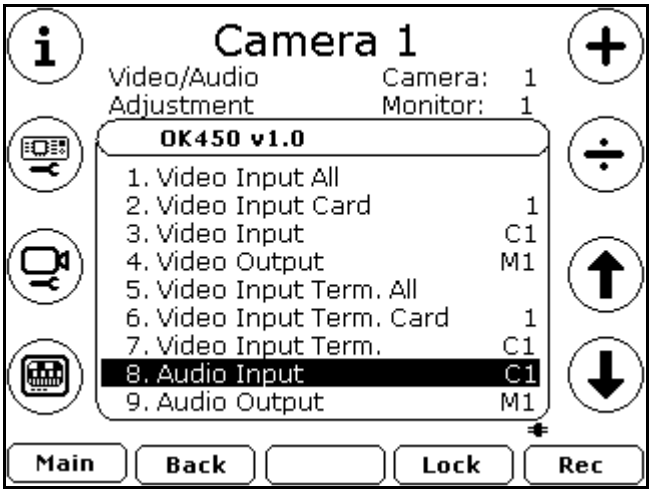
Video Input Term.

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



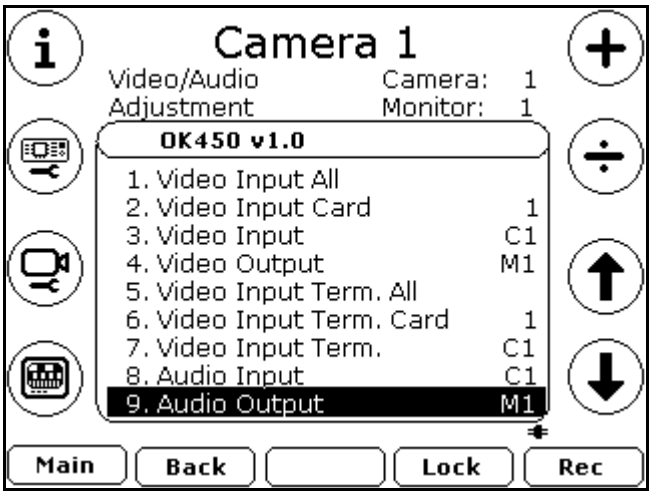
Audio Input

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.

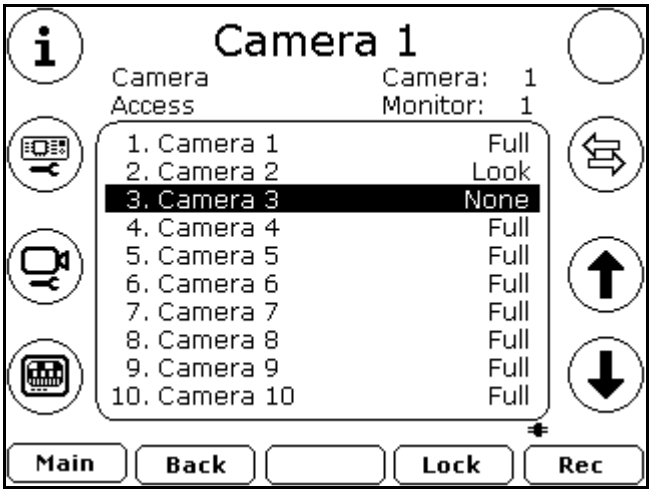


5.2.2.10.5 Camera Access

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:

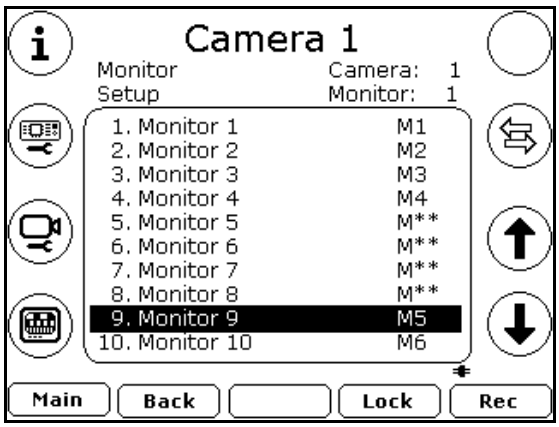
- Full The control panel has access to select and control the camera station.
- Look The control panel has access to select but not control the camera station.
- None The control panel can not select the camera station.

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



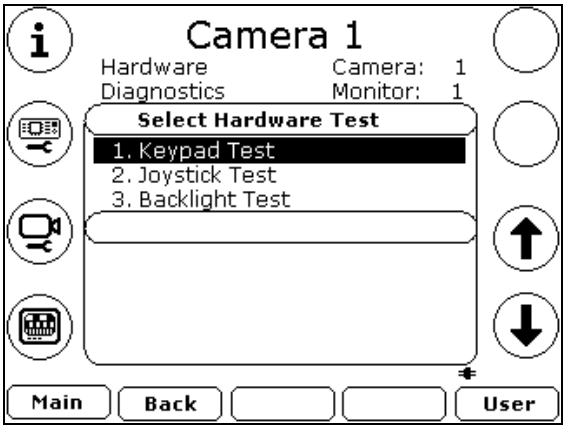
5.2.2.10.6 Monitor Setup

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]



5.2.2.10.7 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***.

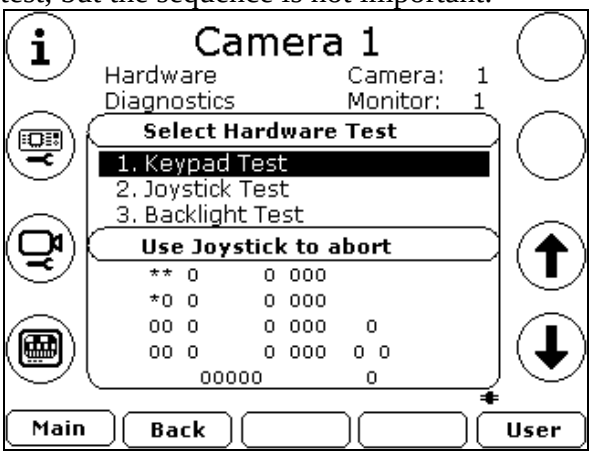


Use the arrows ↓ ↑ to mark the test to be run, and press the ***Enter*** button on the numeric keypad to start the test. Follow the instructions for each test.

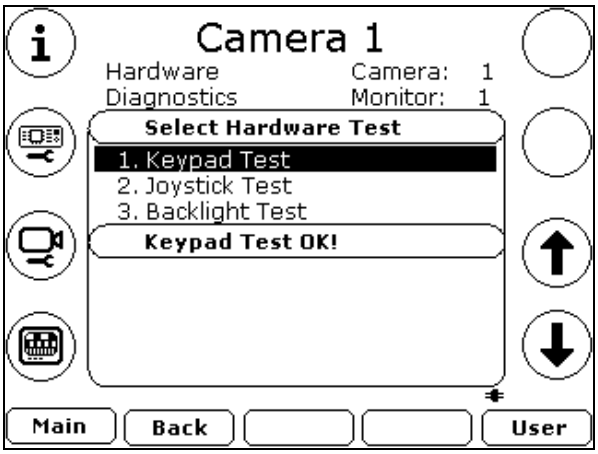
[2] Note that in edit menus you will only get access to the monitors configured for the control panel, and if you look at action lists for alarms, etc. using monitors you have removed from your configuration, they will be displayed as '**M****' in the list.

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:



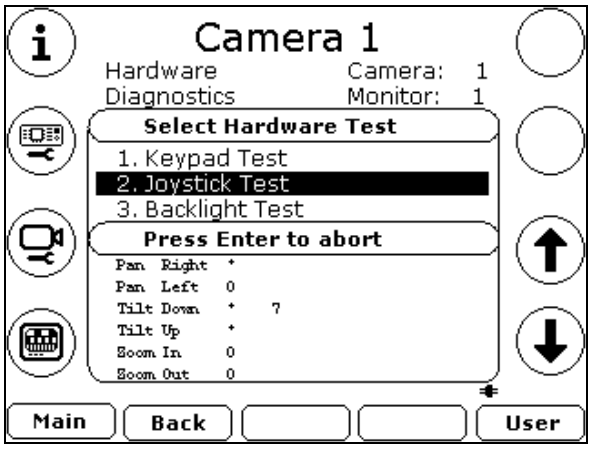
When all the keys are pressed a status message is shown:



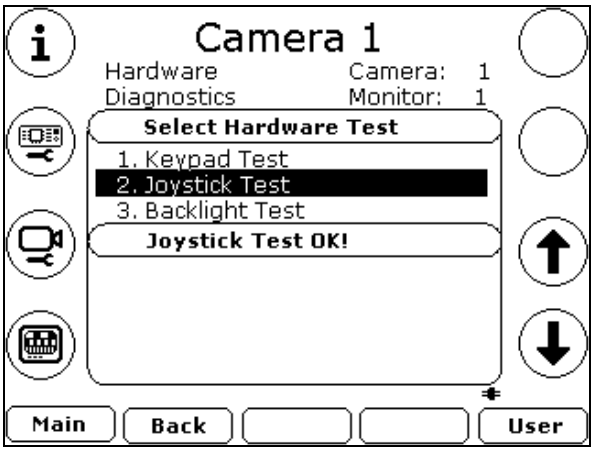
If you need to abort the keypad test before it is completed, press the joystick in any direction to leave the test.

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:

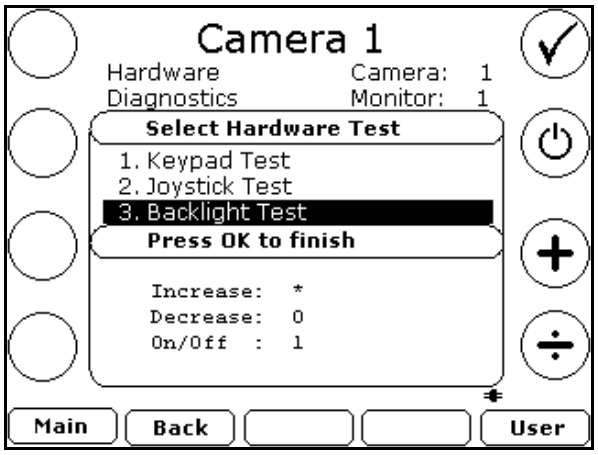


When the joystick test is OK a status message is written to the display:



Backlight Test

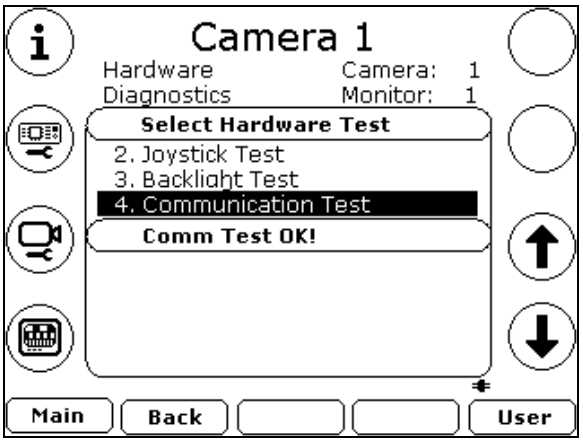
During the display backlight test the increase + and decrease ÷ backlight functions are to be tested, in addition to the on/off ⏻ function. If the control panel has backlight, the adjust function is common with the display. Test all the three functions and follow the changes visually:

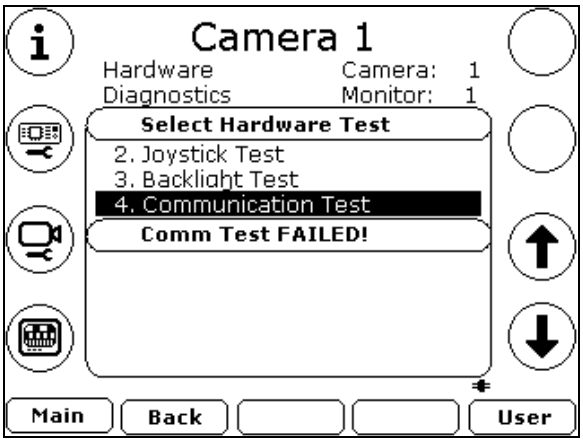


The tests are marked with a '*' when they are tested. Press OK ✓ when the test is completed. A status message 'Test Complete!' is then written to the display.

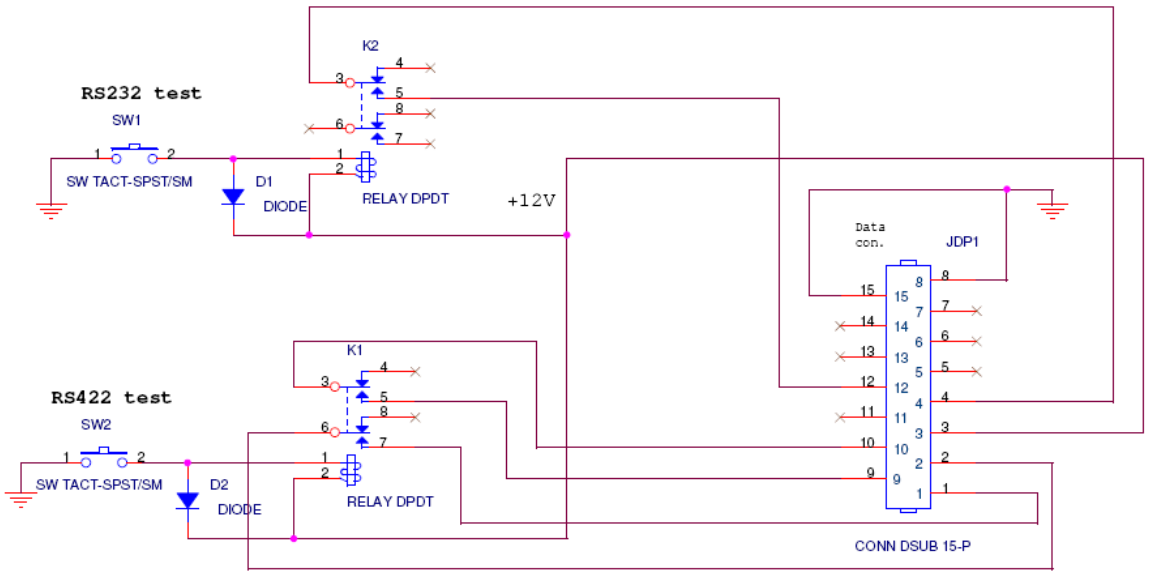
Communication Test

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:



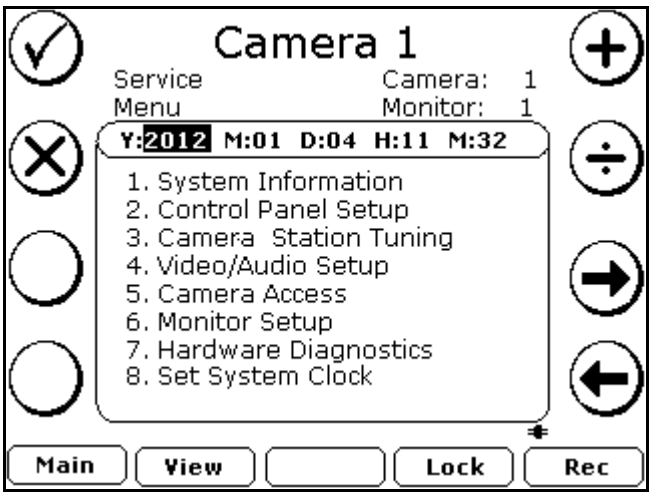


NB! This test requires a special loop back adapter connected to the serial port connector on the back of the OK450 control panel. If this adapter is not used, the test will always fail. The diagram below gives an overview over the loop back adapter used to test the RS-232 and RS-422 serial communication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



5.2.2.10.8 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:



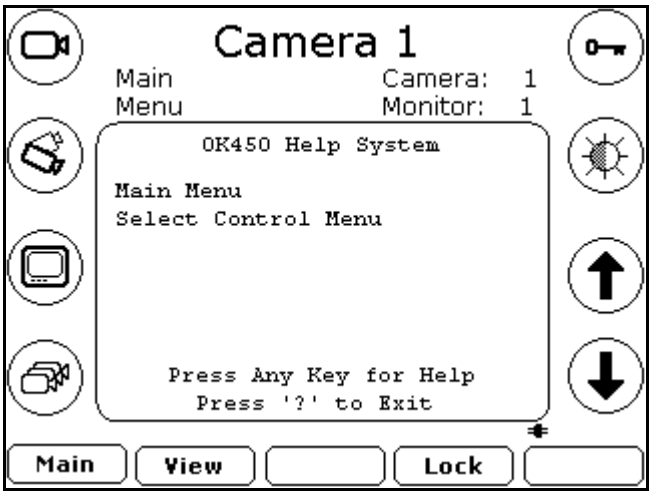
To edit the system clock setting, you can use the ***Next*** ➔ and ***Previous*** ← soft keys to select which field to change (the selected field is the one displayed in inverted colours). To change the value in the selected field, you use the ***Plus*** + and ***Minus*** ÷ soft keys. When the time is 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.

5.2.3 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.

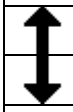
When you have entered help mode you can press any key on the control panel, and you will be presented with a short explanation of how the key functions in the active menu.

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.



5.2.4 Appendices

5.2.4.1 Menu 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	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)		

5.2.4.2 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

5.2.4.3 Passwords

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

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

5.2.4.4 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.

5.2.4.5 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.

5.2.4.6 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)

5.2.4.7 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".

5.2.4.8 Configuration of Yuhua Camera Stations

5.2.4.8.1 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:

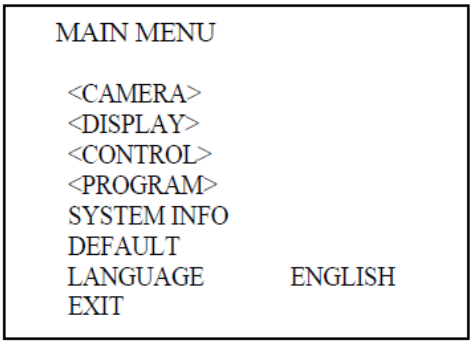
* protocol Pelco-D
* baudrate 4800
* camera address 1

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

5.2.4.8.2 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.

5.3 User Manuals HERNIS Software

Refer to the following manuals:

User Manual HERNIS HWIN Ver5.x Software See file “SM097218D”

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

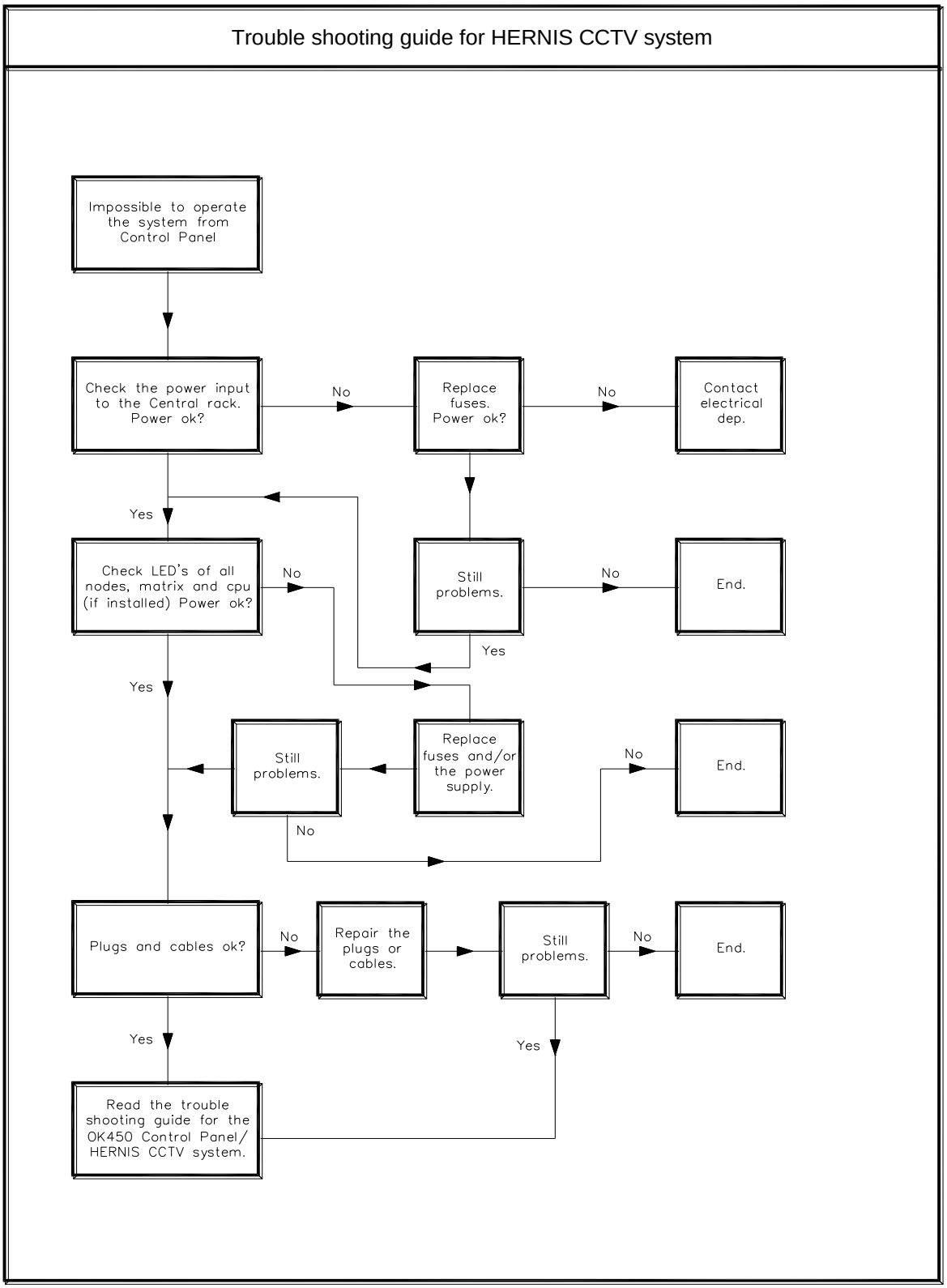
This CCTV system is of modular design, therefore most modules or sub-units can easily be replaced if necessary.

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.

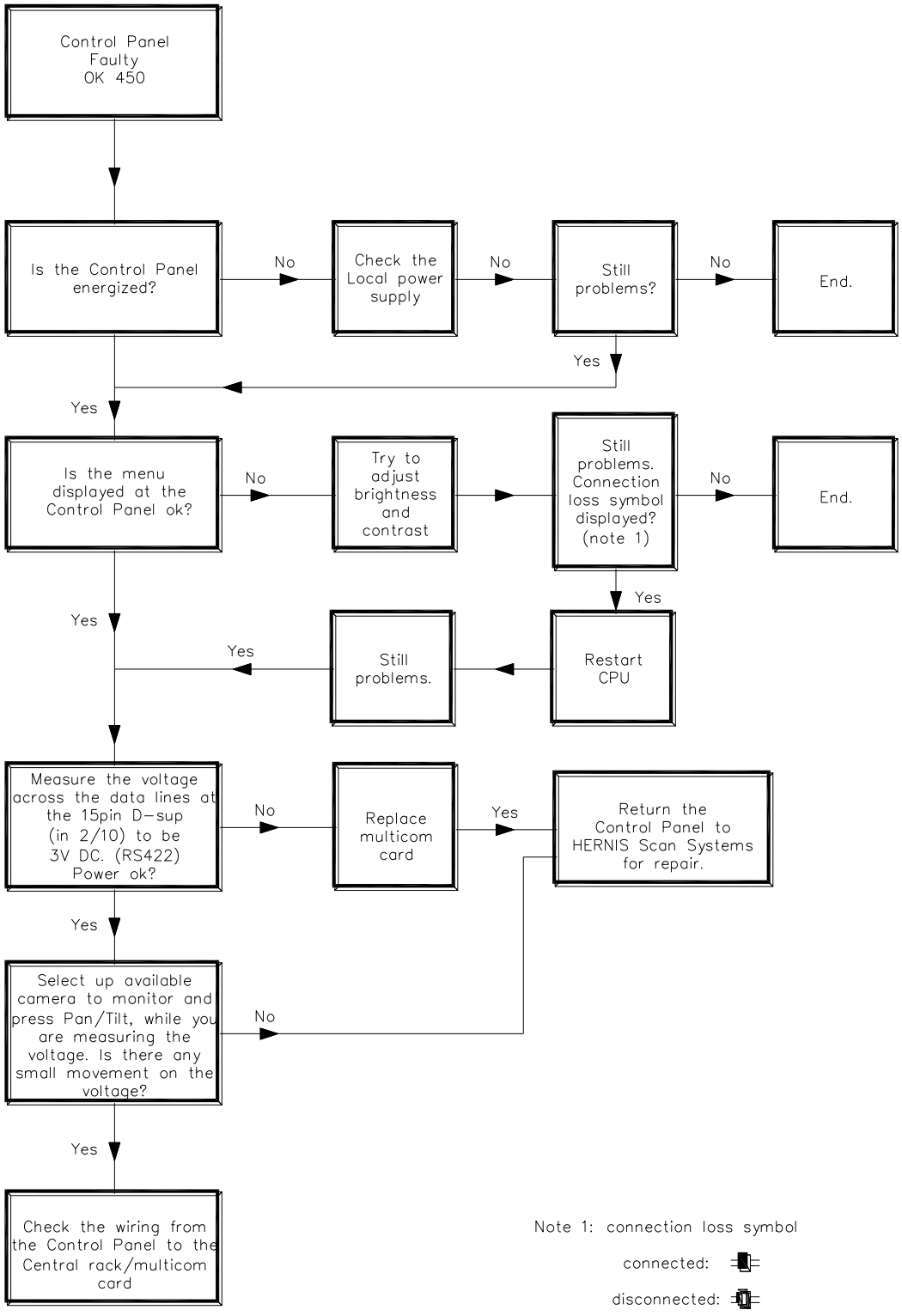
WARNING
Disconnect all power to the EX equipment before opening the units. If any equipment is opened for whatever reason, all O-rings must be inspected for damage and replaced if necessary. All O-rings must be given an ample coating of grease (example PCB) prior to re-assembly of the unit.

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

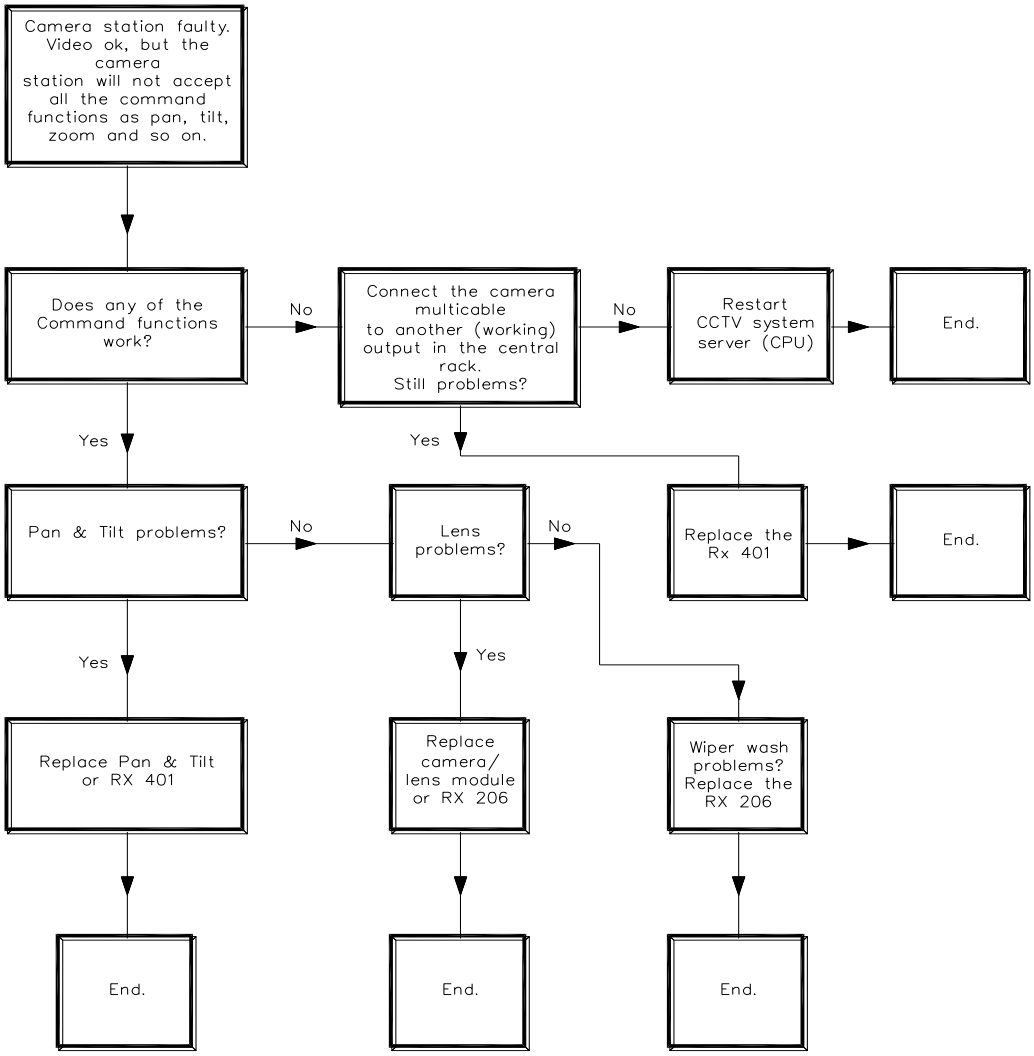
6.2 Typical Fault Finding Procedures for HERNIS CCTV System



Trouble shooting guide for OK450 Control Panel / HERNIS CCTV system fault.



Trouble shooting guide for camera stations/HERNIS CCTV System



6.3 Maintenance and Repair Instructions for EX286 (W) Camera Station

6.3.1 Purpose and Scope

This document describes the procedures required to perform preventive maintenance and/or repair on all EX286 Camera stations.



EX286(W) Pan/Tilt
Part: 095175, 095177(wipe/wash), 095445 Low Temp, 095176 Low Temp (wipe/wash)

Disassembly of any internal mechanical parts, such as axels, brakes, motors and potentiometers, must never be performed by non-qualified personnel.

Required tools for general maintenance:

- 2 mm Allen key (Umbraco)
- 2.5 mm Allen key (Umbraco) or 5,5mm Allan key
- 10 mm Wrench
- Service tool for EX286 (P/N 012899)
- Snap ring pliers
- Torque wrench

6.3.2 General Maintenance

As required maintenance

- Clean glass in front of camera.
- Refill washer with liquid. Use anti-freeze of automotive grade.
  (Applies for camera station with wipe/wash function only)

Semi-annual maintenance

Pan/tilt mounted cameras should be operated until stopped in all 4 directions (pan left + right, tilt up + down). View the picture for the actual camera to detect possible lugging (uneven movement of the camera station).

Annual maintenance

1. Check that all outside screws are tighten up to 15 Nm.

2. Check all outside bolts.

3. Inspect all camera stations for possible physical damage.

4. Check EX gland and local cables for possible damage.

5. Refill washer with liquid. Use anti-freeze of automotive grade.
   (Applies for camera station with wipe/wash function only)

6. Check / change wiper blade (if equipped with wiper blade)

7. Check terminals in local junction box for loose screws.

NOTE
If any equipment is opened for whatever reason, all O-rings must be inspected and replaced (if they are worn or damaged) and given an ample coat of grease (Example STL-2 or PCB)

NOTE
HERNIS camera stations are made from electro polished stainless steel.
Do not paint or apply any coating whatsoever.

6.3.3 Replacement of wipe/wash unit

Replacing a wiper blade
The wiper blade is connected to a wiper arm with an M3x5mm countersunk screw.

To replace the wiper blade, remove countersunk screw, offer up a replacement wiper blade and insert countersunk screw into the locating hole and fasten.

NOTE
Wiper blades may need replacing every (6) six months, depending on the operating conditions.

Replacing a "check valve"
If water siphons from the tank it is usually due to a faulty "check valve". This unit (located on the wiper arm) is simply replaced by substitution, either with or without the rubber tubing connections.

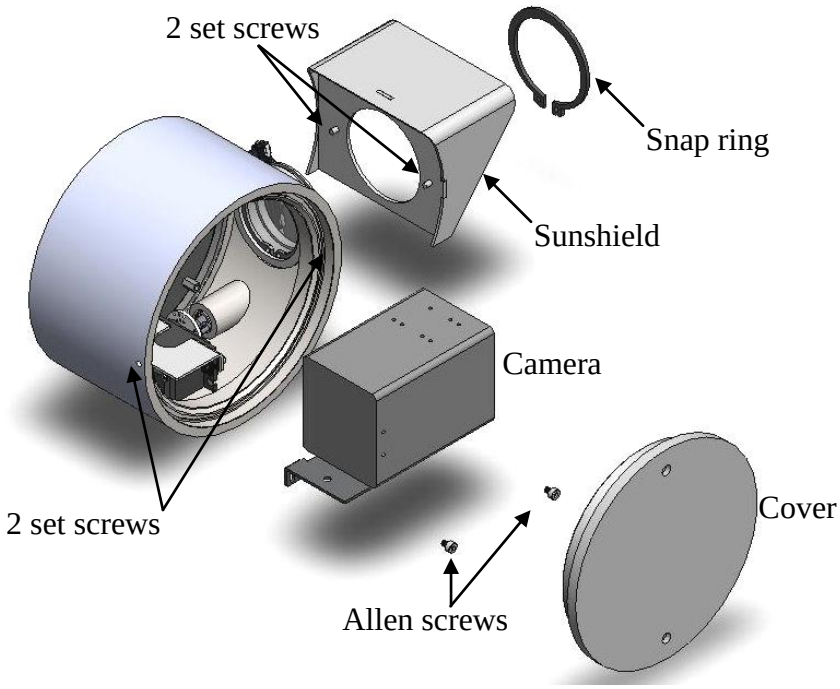
6.3.4 Removal of Camera Unit

WARNING
All power to the Ex equipment must be disconnected prior to opening the unit.

For access to camera housing, the sunshield must be carefully removed. Loosen and remove 2 set screws with 2 mm Allen key. Remove the Snap ring that ensures the sunshield around the glass flange, by using a Snap ring pliers and pull gently the sunshield off.

When the sunshield is removed, the first set screw can be accessed and unscrewed by using a 2mm Allan key. Unscrew the 2nd set screw, and then use the special key to open the cover, turning counter clockwise. Precautions must be taken to avoid damaging the O-ring. Extreme caution should be taken to avoid damaging the threads which are flame-path for the EX protection.

ATTENTION! Never try to open cover if the setscrews are not loosened and with other tools than the special key. The camera housing can be permanently damaged.

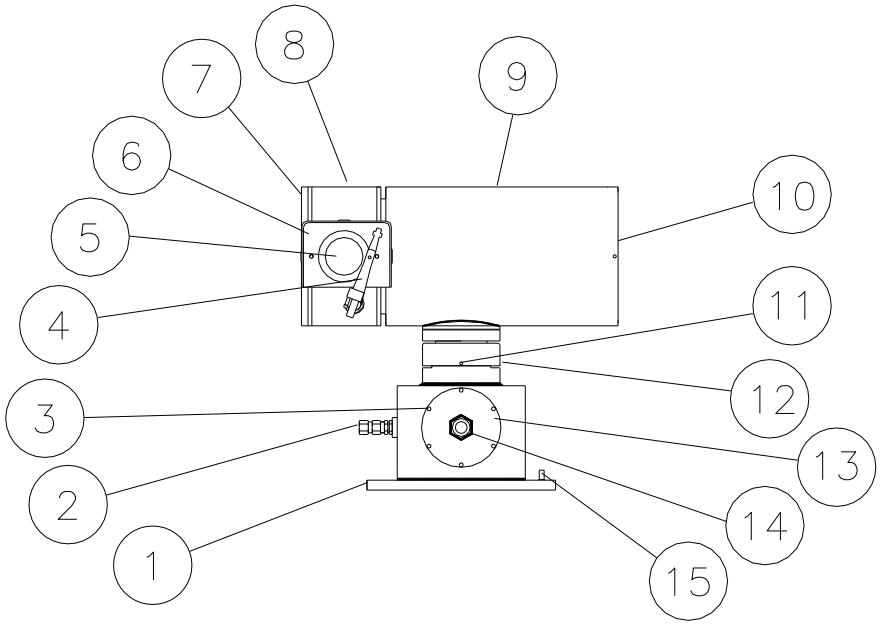


Loosen and remove 2 Allen screws under compact camera using a 2mm Allen key.

Lift out the compact camera with bracket and detach the cable from the PCB in the camera house. Cut the strip that attaches the cable and detach the compact camera. Remove the screws that fasten the camera to bracket.

NOTE! Before reassembling, clean and inspect the threads (EX Flame Path) and o-ring for scratches. Replaced the cover and/or o-ring if they are worn or damaged and then apply a thin layer of special grease (Example STL-2 or PCB).

Follow the instruction above in reverse order to reassembling the camera module.
Tighten the camera cover with 15Nm.
Use pink Locktite 222, on all screws when reassembling.



6.3.5 Parts List

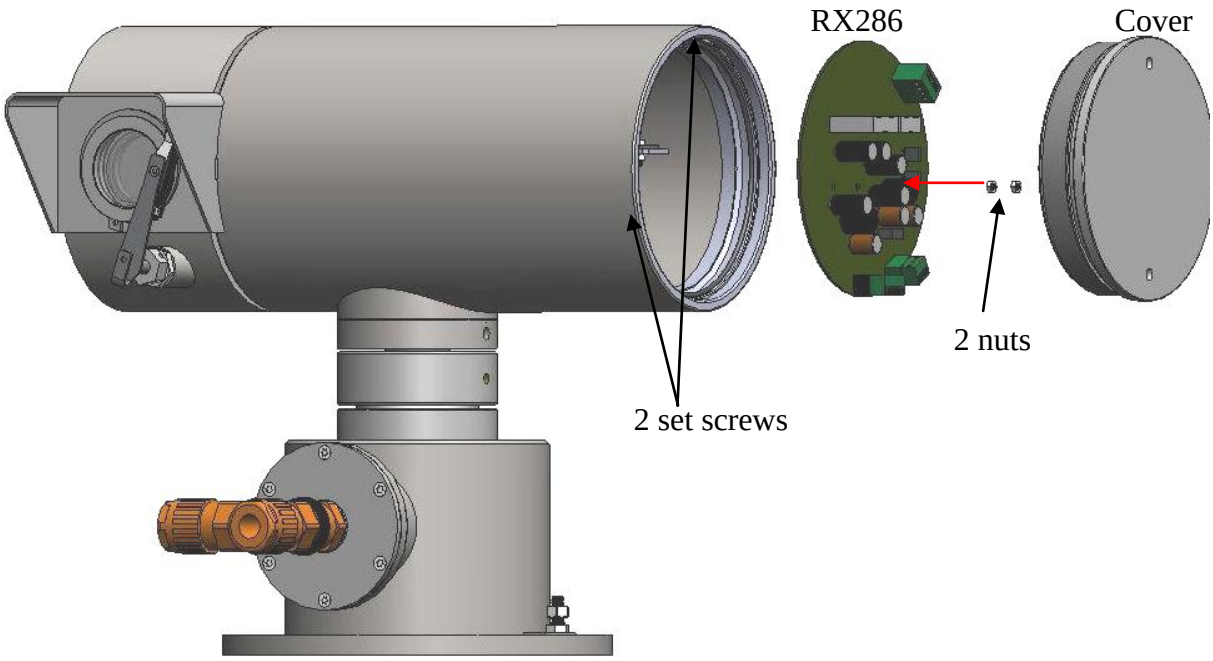
1) Mounting base
2) Gland for pump unit, if applicable
3) Bolts for opening the Exe junction box
4) Wiper arm, if applicable
5) Glass front
6) Sun shield
7) Cover, camera housing
8) Camera House
9) Pan/Tilt housing
10) Cover, Pan/Tilt house
11) Set bolt
12) Pan Shaft Nut
13) Exe Junction box
14) Gland (cable entry)
15) Earth

NOTE
Never fold the ribbon cable, nor stretch any of the cables between the camera housing and the pan & tilt unit.

6.3.6 Maintenance inside Pan/Tilt Unit

Replacing of RX286
Loosen 2 set screws with a 2mm Allen key. Use the special key for opening of Pan/tilt cover, turning counter clockwise. Precautions must be taken to avoid damaging the O-ring. Extreme caution should be taken to avoid damaging the threads which are flame-path for the EX protection.

ATTENTION! Never try to open cover if the setscrews are not loosened and with other tools than the special key. The pan/tilt housing can be permanently damaged.



To change the RX286 card, loosen carefully the connectors and remove the 2 nuts that's hold the RX card.
On the reverse side of RX286 card please pay attention to a plastic isolator. Take it of the card and us it for the new card. This plastic isolator must be entered on the screws before entering the new card.
Use pink Locktite 222 to fasten all screws and nuts.

When mounting the card please follow the instruction above in reverse order.
Tighten the pan/tilt cover with 25Nm.

NOTE! O-rings must be inspected and replaced (if they are worn or damaged) and given an ample coat of grease (Example STL-2 or PCB).

WARNING
Disassembly of any internal mechanical parts, such as axels, brakes, motors and potentiometers, must never be performed by non-qualified personnel.
Contact Service department at HERNIS for in house repair.

6.3.7 Receiver, RX286TB

The RX286TB receiver is located inside the camera housing, and controls the data to and from compact camera.

J1: 14 wire ribbon cable connection (wire between receiver inside pan & tilt housing)

J2: Power to Wiper Servo.
Pin 1: GND
Pin 2: +6V
Pin 3: PWM

PAD3: GND
PAD4: RS232 Signal Transmit
PAD5: RS232 Signal Receive
PAD6: 0V
PAD7: + 12V
PAD8: Video
PAD9: VGND

6.3.8 Receiver RX286

The RX286 receiver is communicating with the control system(RS422) and controls the functions of the pan/tilt motors, camera, wipe, wash and heating. The camera station can be controlled from HERNIS 200, HERNIS 250, HERNIS 300 and HERNIS 400 control systems.

J2: 14 ribbon cable connection (Wire between receiver inside camera housing)

J3: Pin 1: Tilt motor
Pin 2: Tilt motor
Pin 3: Tilt pot.meter
Pin 4: Feedback Tilt Pot.meter
Pin 5: Tilt Pot.meter

J5: Coax cable connection from field cables

J6: Connector for ribbon cable to termination block for field cables

J7: Pin 1: Pan potmeter
Pin 2: Feedback Pan potmeter
Pin 3: Pan potmeter

J8: Pin 1: Pan motor
Pin 2: Pan motor
Pin 3: Pan motor
Pin 4: Pan motor

J9: Option (relay driver output)

SW1: There is a rotary switch SW1 on the receiver. This switch has 16 positions and is used for setting of different functions. Below is a list of the settings :

0 : HE250 and HE400 control.
1: HE250 and HE400 control, digital zoom on.
2: Not used.
3: Not used.
4: HE300 control.
5: HE300 control, digital zoom on.
6: Not used.
7: Not used.
8: HE200 control.
9: HE200 control, digital zoom on.
A: Not used.
B: Not used.
C: Not used.
D: Not used.
E: Wiper calibration. (Note 1)
F: Not used.

Note 1: Wiper calibration is used for positioning of the wiper blade. When SW1 is in position E, the left/right movement of the wiper blade can be controlled by the WIPE and WIPE/WASH keys on the keyboard. Drive the blade to the middle of the camera window. Turn SW1 to one of the other positions to end the calibration.

6.4 Maintenance and Repair Instructions for PT9(W) Camera Station

6.4.1 Purpose and Scope

This document describes the procedures required to perform preventive maintenance and/or repair on all PT9 Camera Stations.



PT9(W) Pan/Tilt
Part: 095431, 095437(wipe/wash), 095443 Low Temp, 095442 Low Temp (wipe/wash)

Disassembly of any internal mechanical parts, such as axels, brakes, motors and potentiometers, must never be performed by non-qualified personnel.

Required tools for general maintenance:

- 2.5 mm Allen key (Umbraco)
- 3mm Allan key (Umbraco)
- Star screwdriver
- 13mm wrench

6.4.2 General Maintenance

As required maintenance

- Clean glass in front of camera.
- Refill washer with liquid. Use anti-freeze of automotive grade (Applies for camera station with wipe/wash function only).

Semi-annual maintenance

Pan/tilt mounted cameras should be operated until stopped in all 4 directions (pan left + right, tilt up + down). View the picture for the actual camera to detect possible lugging (uneven movement of the camera station).

Annual maintenance

8. Check that all outside screws are tighten up to 15 Nm

9. Check all outside bolts.

10. Inspect all camera stations for possible physical damage.

11. Check gland and local cables for possible damage.

12. Refill washer with liquid. Use anti-freeze of automotive grade. (Applies for camera station with wipe/wash function only)

13. Check / change wiper blade. (if equipped with wiper blade)

7. Check/change the silicone tube in the pump unit and replace if any damage or leakage is found.

NOTE
If any equipment is opened for whatever reason, all O-rings must be inspected and replaced (if they are worn or damaged) and given an ample coat of grease (Example STL-2 or PCB)

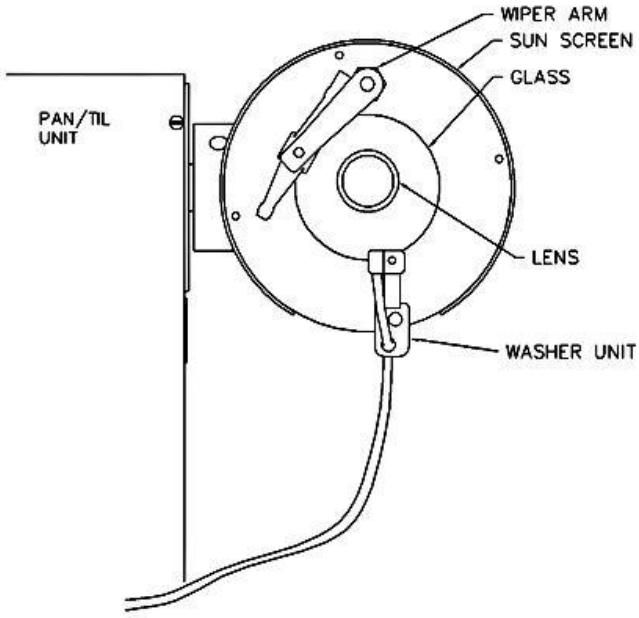
NOTE
HERNIS camera stations are made from electro polished stainless steel.
Do not paint or apply any coating whatsoever.

6.4.3 Replacing the Wiper Blade

(Only applicable for camera stations with wiper and washer unit)

The wiper blade is connected to a wiper arm with a small cotter pin. To replace the wiper blade, remove the cotter pin, replace the wiper blade with a new one, and re-insert cotter pin into the locating hole.

NOTE
Wiper blades may need replacing every (6) six months, depending on the operating conditions.



6.4.4 Removal of Wiper Arm

(Only applicable for camera stations with wiper and washer unit)

If there is damage on the wiper arm, and the arm needs to be changed. The whole wiper arm included the wiper unit inside the camera housing must be changed, because the wiper arm is welded on to the spindle.

The wiper arm and wiper unit to be changed by qualified personnel. Please call the service department.

6.4.5 Replacing of Wiper Unit

Only applicable for camera stations with wiper and washer unit)

The wiper unit is located inside the camera housing and need to be changed by qualified personnel, please call the service department.

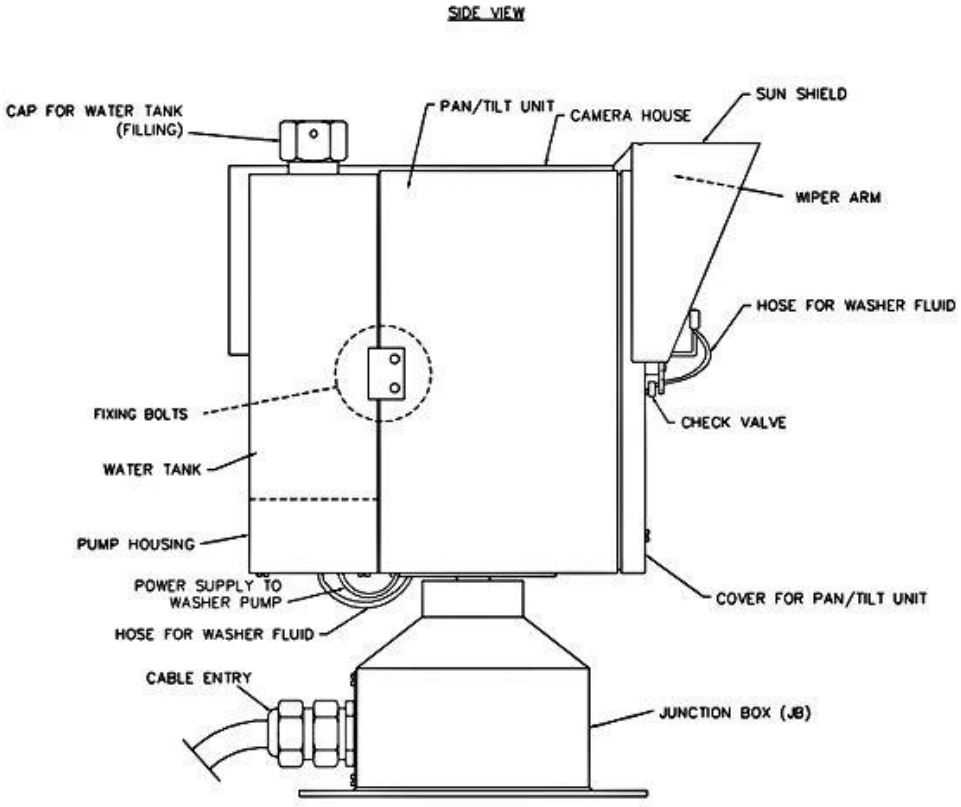
6.4.6 Replacing of Check Valve

(Only applicable for camera stations with wiper and washer unit)

If the water siphons from the tank, it is usually due to a faulty "check valve". This check valve unit (located on hose under the nozzle opening) is simply replaced. If the water system has been allowed to "run dry", thereby creating an "air lock", remove the rubber tube connected to the check-valve (located at the wiper arm), and vent the air out of the system. Re-connect the hose once water flows freely.

6.4.7 Replacement of water tank

The water tank is located at the rear end of the pan & tilt unit. Remove the two (2) bolts fixing the tank to the pan / tilt unit, detach the water hose from the wiper nozzle and disconnect the two (2) wires connected to the RX401 inside the pan/tilt housing.
To mount a new tank, fasten the tank by means of two (2) fixing bolts to the pan & tilt unit. Attach the hose between the bottoms of the tank to the wiper unit. Attach the power cord at the bottom of the tank to the bottom of the pan & tilt unit. The power cord is attached inside the pan & tilt unit to the receiver card according to applicable internal drawings. For additional help, please call the Service Department.



6.4.8 Removal of Camera/Lens Module

Open up the camera housing cover by means of four (4) bolts in front of the cover. Then pull gently the cover with the camera and PCB out of the camera housing. Make a note of all the cabling or call Service Department for wiring diagram. Disconnect the wires and remove the ribbon cable at the left side (lens pointing towards yourself). Remove the BNC connector at the rear of the camera. Notify termination of camera, and then remove wiring. Remove the camera and lens from the mounting plate by unscrewing the one (1) bolt at the bottom of the mounting plate.

WARNING
At all time show extreme care when removing the camera/lens module so that no danger to the cabling of to the equipment occurs.

NOTE
In every Low Temp camera house there is a silica gel packed that need to be replaced when the camera house has been open.

6.4.9 Removal of Camera Housing

The camera housing can be removed by means of two (2) 5 mm Allen bolts located between the pan & tilt module and the camera housing.

Separate the camera housing from the pan & tilt module by pulling the camera house outwards. Make sure that the coax cables and ribbon cable are not attached to the receiver and camera inside the camera housing when separating the camera house from the pan & tilt module.

Receiver, RX401

Open up the pan / tilt housing cover, by unscrewing the four (4) fixing bolts at the top of the cover. Make a note of all the cabling and disconnect the wires. Remove the receiver by unscrewing the one (1) nut and lock the washer. Pull out the receiver.

The RX400 receiver controls the functions of the pan/tilt motors and the electro-mechanical brakes. The unit also processes the feedback from the two potentiometers installed. (Potentiometers are only installed for camera stations connected to HERNIS 250, HERNIS 300 and HERNIS 400 control systems).

NOTE
All connectors for the RX401 receiver are located on the top of the card

J1: Connector for ribbon cable to termination block for filed cables

J2: Connector for RX203/RX205/RX206

J3 Connector for motors, brakes, and potentiometers
Pin 1: Pan motor
Pin 2: Pan motor
Pin 3: Pan brake
Pin 4: Pan brake
Pin 5: Washer
Pin 6: Washer
Pin 7: Tilt brake
Pin 8: Tilt brake
Pin 9: Tilt motor
Pin 10: Tilt motor
Pin 11: Feedback pot. meter Supply
Pin 12: Feedback pot. meter Pan
Pin 13: Feedback pot. meter Tilt
Pin 14: Feedback pot. meter GND

J4: Connector for compact camera

SW1 Encoder setting

Select communication protocol / camera type supported out from RX401CC according to this table:

Encoder value	Protocol / camera type selected	Connector to use on RX401Power board	Type of camera
0	Sony_FCB_IX47	J4	Sony FCB-IX47
5	Sony_FCB_EX480B	J4	Sony FCB-EX480 Sony FCB-EX780

Prosecur configuration

When RX401CC is to be configured via prosecur, wait 5 sec. from powerup before configuration is started so camera initialization can first be finished. Otherwise commands can be lost. The configuration must be performed during one minute after powerup.

The following commands must be sent in sequence to configure a camera station from a prosecur keyboard:

The configuration sequence always starts with:

2 x ZoomIn
2 x ZoomOut
1 x ZoomIn

Then the sequence of the following buttons pressed on the keyboard select the configuration:

0x00	FF FF FF	Full speed, normal pan
0x01	FF FF FN	Full speed, reverse pan
0x02	FF FN FF	High speed, normal pan
0x03	FF FN FN	High speed, reverse pan
0x04	FN FF FF	Default speed, normal pan
0x05	FN FF FN	Default speed, reverse pan
0x06	FN FN FF	Low speed, normal pan
0x07	FN FN FN	Low speed, reverse pan
0x08	FF FF ZI	Calibrate

If a successful configuration is performed, the configuration timer is reset to another minute.

6.5 Maintenance and Repair Instructions for Cam. St. S36W PTZ Dual

6.5.1 Purpose and Scope

This document describes the procedures required to perform preventive maintenance and/or repair on the S36 camera stations.



S36W PTZ Dual
Part: 096036

Disassembly of any internal mechanical parts, such as axels, brakes, motors and potentiometers, must never be performed by non-qualified personnel.

Warning:
Prevent the camera looking directly into the sun to avoid damaged to the detector in the thermal camera.

6.5.2 General Maintenance

As required maintenance

- Clean glass in front of camera.
- Refill washer with liquid. Use anti-freeze of automotive grade (Applies for camera station with wipe/wash function only).

Yearly operations

14. Check that all outside screws are tighten up to 15 Nm.

15. Check all outside bolts.

16. Inspect all camera stations for possible physical damage.
17. Check cable gland and local cables for possible damage.

18. Refill washer with liquid. Use anti-freeze of automotive grade (Applies for camera station with wipe/wash function only).

19. Check / change wiper blade (if equipped with wiper blade).

20. Remove pump cover (if equipped with pump) at the rear end of the camera housing. Check/change the silicone tube in the pump unit and replace if any damage or leakage is found.

NOTE
HERNIS camera stations are made from electro polished stainless steel.
Do not paint or apply any coating whatsoever.

6.5.3 Repair/Replacement of the Wiper/Wash Unit

Replacing a Wiper Blade

The wiper blade is connected to a wiper arm with a small cotter pin.
To replace the wiper blade, remove the cotter pin, replace the wiper blade with a new one, and re-insert cotter pin into the locating hole.

NOTE
Wiper blades may need replacing every (6) six months, depending on the operating conditions.

Removal of a Wiper Arm w/Blade

If there is any damage on the wiper arm, the arm needs to be changed.
The wiper arm and wiper spindle, inside the camera housing, must be changed.
The wiper arm is welded on to the spindle.

Replacing of "Check Valve"

If the water siphons from the tank, it is usually due to a faulty "check valve". This check valve unit (located on hose under the nozzle opening) is simply replaced with new unit.

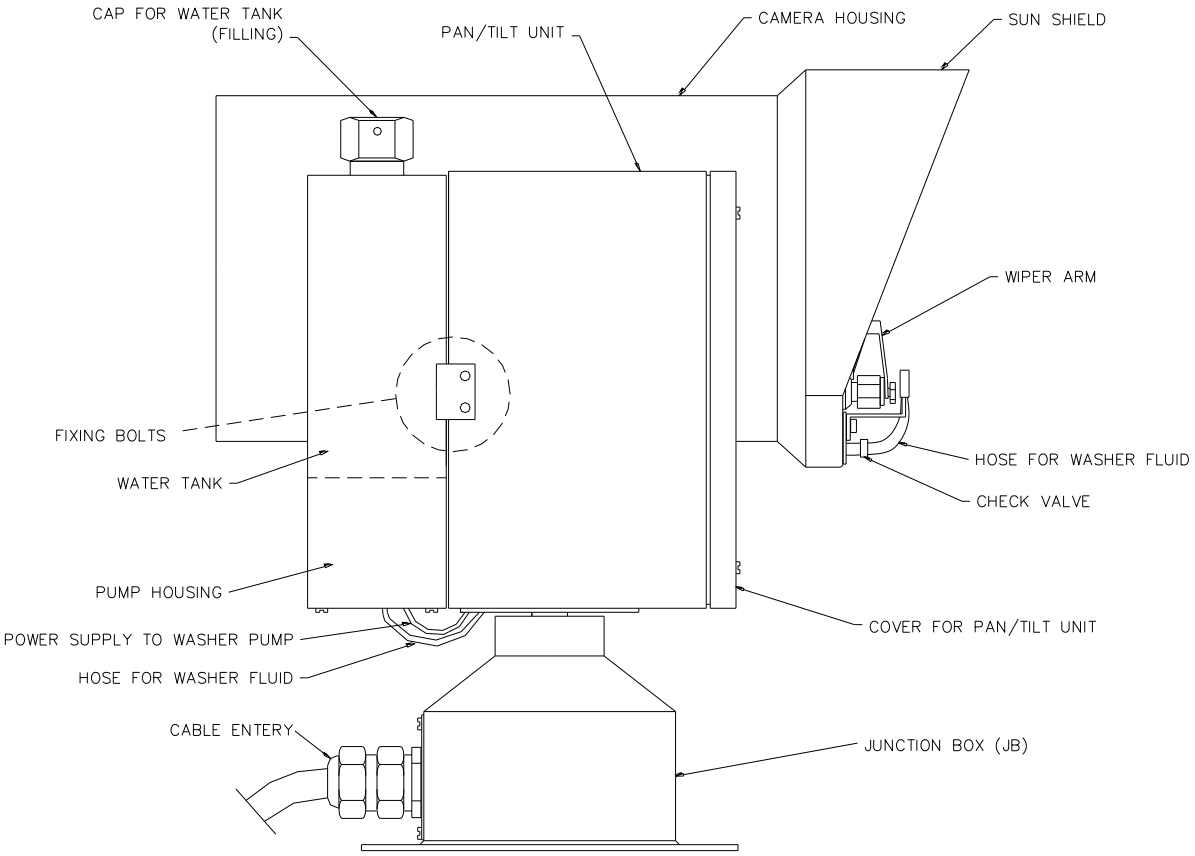
If the water system has been allowed to "run dry", and thereby creating an "air lock" in the hose, remove the rubber tube connected to the check-valve (located at the wiper arm), and vent the air out of the system. Re-connect the hose once water flows freely.

Replacing of Wiper Unit

The wiper unit is located inside the camera housing, behind the cover glass. To change this unit, the camera/ lens module must be disassembled. Accordingly the wiper-unit has to be changed by qualified personnel. Please call our service department.

Replacement of Water Tank

The water tank is located at the rear end of the Pan & Tilt Unit. Remove the two bolts fixing the tank to the pan / tilt unit, detach the water hose from the wiper nozzle and disconnect the two (2) wires connected to the RX401 inside the pan/tilt housing.
Refer to the wiring diagram for identification of the wires.
To mount a new tank, fasten the tank by means of two (2) fixing bolts to the pan & tilt unit. Attach the hose between the bottoms of the tank to the wiper unit. Attach the power cord at the bottom of the tank to the bottom of the pan & tilt unit. Connect the power cord inside the pan & tilt unit to the receiver card se RX401 descriptions for details.
For additional help, please call the Service Department.



6.5.4 Removal of Camera/Lens Module

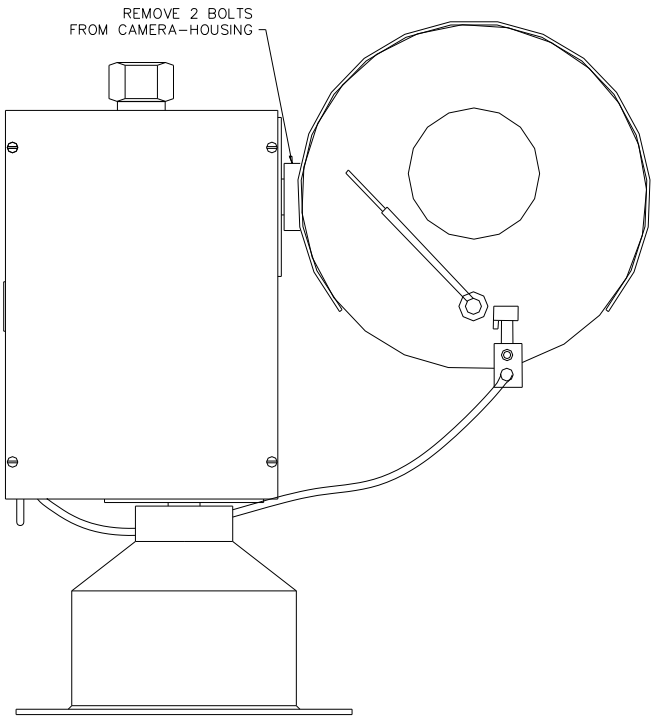
Loosen and remove the six (6) M4 Allen bolts located on the front plate.
The cover, camera/lens, wiper and PCB are assembled as one unit, therefore pull cautiously out the cover from the camera housing.
Disconnect the ribbon cable and BNC connector on the middle section of the module.

NOTE
At all time show extreme care when removing the camera/lens module so that no danger to the cabling of to the equipment occurs.

Do not disassemble the lens from the IR engine of the thermal imager.
Do not touch the lens (glass) of the thermal imager.
Use only a dry clean cloth to clean the lens aperture if needed.

6.5.5 Removal of Camera Housing

Do not try to remove camera housing before the camera/lens module is removed.
The camera housing can be removed by means of two (2) 8 mm Allen bolts located between the pan & tilt module and the camera housing.



Separate the Camera Housing from the Pan & Tilt Module by pulling the Camera House outwards.
Make sure that the coax cables and ribbon cable are not attached to the receiver and camera inside the camera housing when separating the Camera House from the Pan & Tilt Module.

6.5.6 Receiver RX401

Open up the Pan/Tilt Housing cover, by unscrewing the four (4) fixing bolts at the top of the cover. Make a note of all the cabling and disconnect the wires. Remove the receiver by unscrewing the locknut. Pull out the receiver.

Note: The RX 401 receiver consists of two parts:
1) RX401 power
2) RX401 controller

The RX401 receiver controls the functions of the pan/tilt motors and the electro-mechanical brakes. The unit also processes the feedback from the two potentiometers installed.
In addition, the RX401 receiver feeds power and communicates to the RX206 for S36W.

NOTE
All connectors for the RX401 receiver are located on the Power Card

J1: Connector for 14 core ribbon cable to termination block for filed cables

J2: Connector for 16 core ribbon cable to RX206

J3: Connector for Motors, Brakes, and Potentiometers
Pin 1: Pan motor
Pin 2: Pan motor
Pin 3: Pan brake
Pin 4: Pan brake
Pin 5: Washer motor (if applicable)
Pin 6: Washer motor (if applicable)
Pin 7: Tilt brake
Pin 8: Tilt brake
Pin 9: Tilt motor
Pin 10: Tilt motor
Pin 11: Feedback pot. meter Supply
Pin 12: Feedback pot. meter Pan
Pin 13: Feedback pot. meter Tilt
Pin 14: Feedback pot. meter GND

6.5.7 Receiver RX206

Open up the cover of camera housing located at the same side as the camera housing glass.
The cover is connected to the camera housing by means of six (6) 5 mm Allen bolts.
The cover, camera/lens, wiper and PCB are assembled as one unit; therefore pull out the cover cautiously.
Remove four (4) 3 mm fixing screws on the RX206 (receiver). Disconnect the ribbon cable and the sixteen (16) pin connector from the receiver. The ribbon cable is connected to J1 of the receiver. Lift the receiver end above the fixing 3 mm bolts and pull the receiver gently out. Make sure that no ribbon cables are trapped and torn.
Remove the other cable on the receiver rear side.

The RX206 receiver controls the data to and from camera and lens.
The unit also controls and supplies the wiper motor with power.

J1: 16 wire Ribbon Cable connection to RX401
(wire between receiver inside pan & tilt housing)

J4: Power on/off to Thermal Imager
Pin 1: +12V
Pin 2: AUX
Pin 3: VCC
Pin 4: LADC

J5: Remote Control Data for thermal camera (optional if J14 not used)
Pin 1: +12V
Pin 2: GND
Pin 3: RS232RESP
Pin 4: RS232COM

J6: Connection to wiper motor and heating elements
Pin : 30VAC1, Wiper motor
Pin 2: 30VAC2, Wiper motor
Pin 3: Wiper motor on/off (30VAC2)
Pin 4: 30VAC1 (NA)
Pin 5: Washer pump on/off (30VAC2) (NA)
Pin 6: 30VAC1, Heating element
Pin 7: Heating element on/off (30VAC2)
Pin 8: NA

J9: Multicable from System (only for fixed Cameras)
Pin 1: RS422COM+
Pin 2: RS422COM-
Pin 3: COM GND
Pin 4: RS422RESP+
Pin 5: RS422RESP-
Pin 6: COM GND

J11: Power to FDC100 power card for CCD camera
Pin 1: 30VAC1
Pin 2: 30VAC2

J14: Power to Thermal Imager
Pin 1: +12V
Pin 2: GND

6.5.8 Power card FDC100POWER for CCD Camera

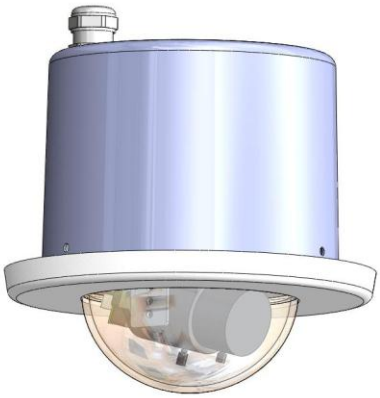
CON1: Pin 1: +12VDC input on/off
Pin 2: GND

CON 2: BNC connection to video from compact camera

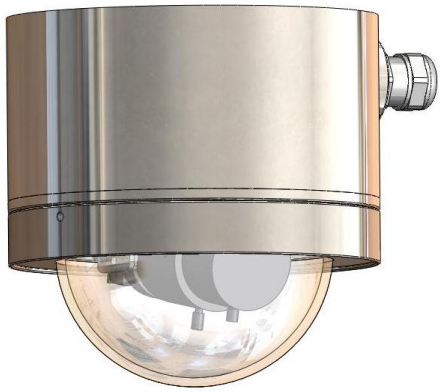
6.6 Maintenance and Repair Instructions for Camera Station S71 Dome

6.6.1 Purpose and Scope

This document describes the procedures required to perform preventive maintenance and/or repair for Camera S71 Dome Indoor and S71 Dome.



S71 Dome Indoor
Part: 096837



S71 Dome
Part: 096839

6.6.2 General Maintenance

As required maintenance:

The Dome enclosure is maintenance free and the cupola is coated and required washing is up to the owner to decide. If the cupola of the dome becomes dirty, the picture quality will be degraded and washing is required. A mild detergent can be used in conjunction with warm water and a soft cloth.

Yearly operations:

21. Inspect all camera stations for possible physical damage.

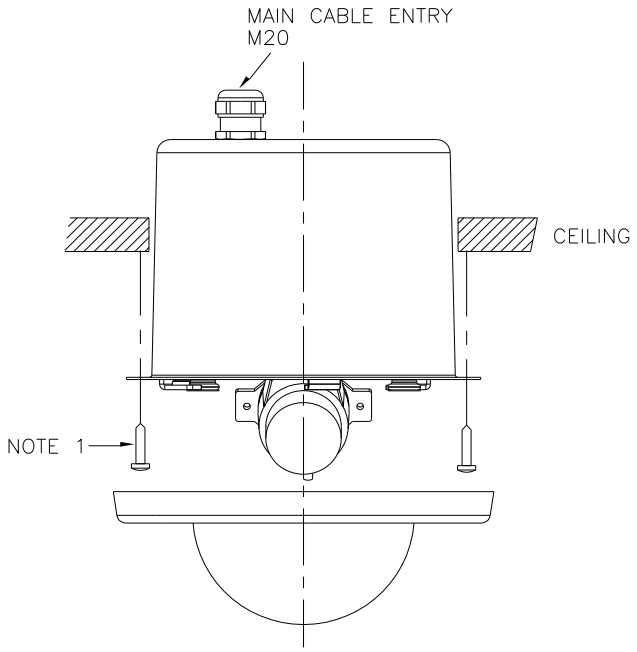
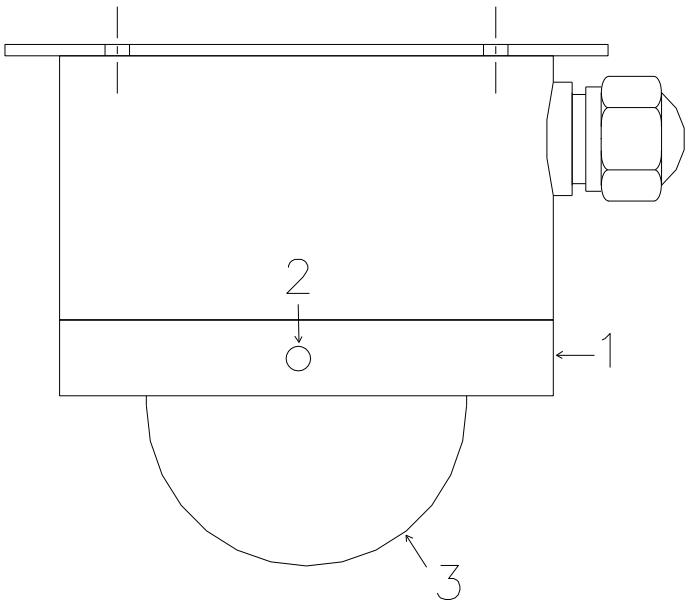
22. Check gland and local cables for possible damage.

NOTE
If any equipment is opened for whatever reason, all O-rings must be inspected and replaced (if they are worn or damaged) and given an ample coat of grease (Example STL-2 or PCB).

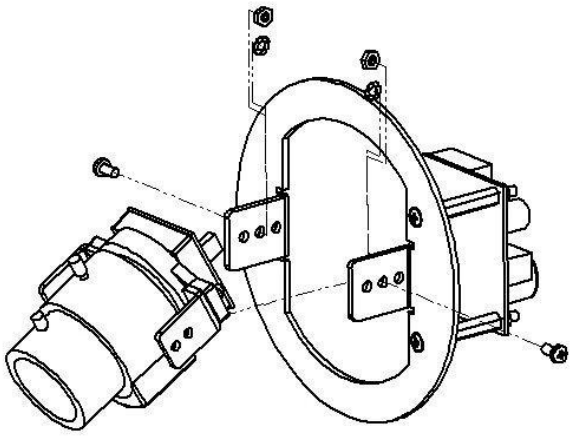
WARNING!
HERNIS S71 Dome is made from electro polished stainless steel.
Do not paint or apply any coating whatsoever.
All power to the equipment must be disconnected prior to opening the unit.

If the camera, lens or power supply PCB becomes faulty, the applicable part has to be replaced. It is preferred that the entire unit is replaced and returned to HERNIS Scan Systems AS for repair. The following steps should be followed in removing / replacing the module.

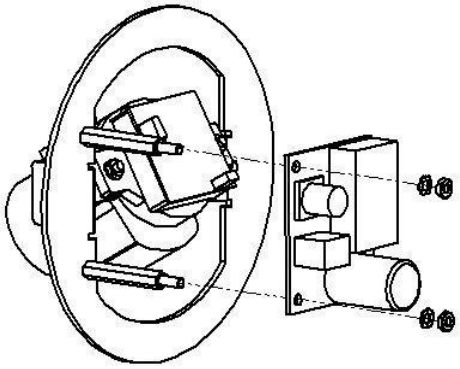
6.6.3 Removal of Camera/Lens (power) Module

Indoor Domes Remove the dome cover ring. Then remove the camera bracket, by loosen the three hexagonal socket cap screws. Take out the camera bracket and disconnect the power plug and the BNC connector.	
Outdoor Domes Loosen the M4 setscrew (2) with a 3mm hexagonal key. Remove the dome glass (3) and glass ring (1) by turning the ring counter clockwise. Carefully remove the spring that hold the camera unit by pressing the two grips together and pull it out. Take out the camera bracket and disconnect the power plug and the BNC connector.	

To replace the camera/lens unit loosen the two M 2,5 nuts on the camera bracket and detach the two Molex plugs.
Replace the camera/lens unit by following the above steps, in reverse order.



Demount the power PCB by loosening the two 3 mm nuts. Replace the PCB, and solder the wires from the old PCB to the new PCB.
Replace the power by following the steps in reverse order.



Adjust the camera/lens module in horizontal/azimuth direction to the position where the lens points towards the object or area which are going to be viewed.
For adjustment in the horizontal direction you need to loosen the spring for outdoor or hexagonal socket cap screws for indoor.
For adjustment in the azimuth direction, the two tilt screws needs to be loosened and tightened when the position has been found. If fine-tuning is required, power up the camera, select the camera to a monitor or connect a separate monitor directly to the camera station. Look at the picture while fine-tuning, following the procedure described above.

For outdoor dome apply some grease in the O-ring groove, the O-ring and the threaded area, and place the O-ring into the groove. Close the dome enclosure with a thong weed, and fasten the setscrew.

For indoor dome mount the cover ring. Press until a click from the Push buttons.

NOTE:
Make sure that the cable from/to the camera station is well supported, and check the cable glands, after installation, for damage.

6.6.4 Camera Models

The Camera S71 Dome and S71Dome Indoor are delivered with lens, which may require some adjustments.

The Dome camera models do have Auto Iris function (AI) and the focus needs to be adjusted for the lens used for this configuration. The focus is adjusted, when the image from the camera can be seen on a monitor by adjusting the focus ring marked FAR / NEAR. When the focus has been found, the setscrew needs to be tightened.

NOTE:
HERNIS' camera stations must only be connected to correct HERNIS central equipment! Failure to comply will damage the remote units' electronics.

6.7 Maintenance procedure for rack with fan/filter

6.7.1 Purpose and Scope

This document describes the procedures required to perform preventive maintenance for rack with fan/filter.

1.1.2 General Maintenance

Ensure that room temperature, humidity and environmental parameters is not violating recommendations described in installation procedure.

Fan

Perform an audio check on rack fan to discover noise from a bearing or other moveable parts. Hernis has orderable spare parts for rack fan and it is recommended to replace a fan with noise before it stops and causes overheating of rack equipment.

Filter

Perform a visually check of filter mat to discover if it is discolored, dirty or any other reasons why filter might pass less air than expected.
Filters should be replaced periodically depending on the environment where the rack is installed.
Hernis has orderable spare parts for filter mat and it is recommended to replace a filter before it causes overheating of rack equipment.
Filter mat replacement can easily be done without tools since louvered grille has a latch for this purpose.

6.8 Maintenance and Repair Instructions for Control Panel OK450

6.8.1 Purpose and Scope

This document describes the Maintenance and Repair Instructions for OK450 Control Panel.

Disassembly of any internal mechanical parts, PCB, and or potentiometers, must never be performed by non-qualified personnel.

Required tool for general maintenance:

Screwdriver pozidriv PZ-1 for opening of OK450.

6.8.2 General Maintenance

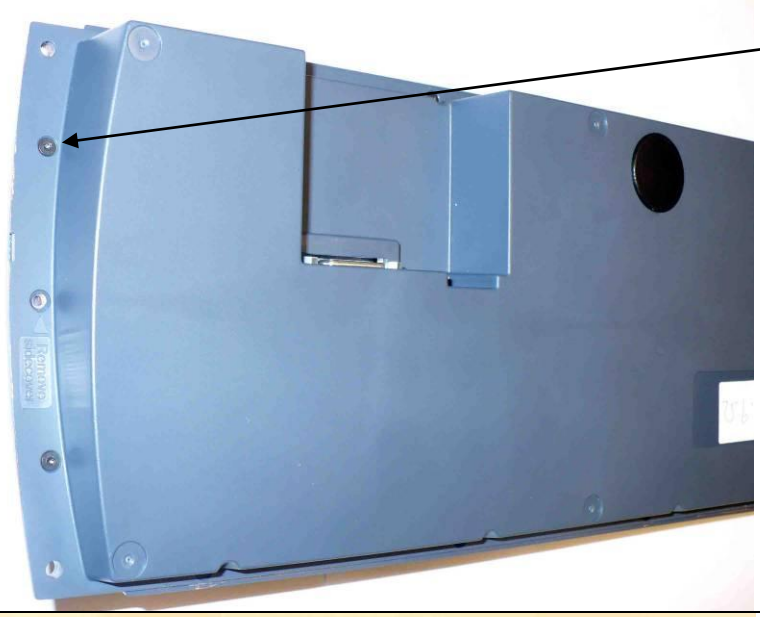
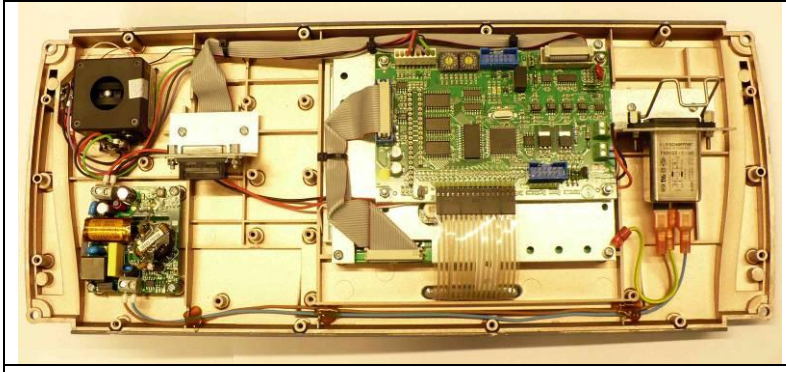
Turn the power off.
Cleaning of the OK450: Clean with a soft cloth, and **gently** wipe the screen and surface. A great choice would be the microfiber type of cloth used to clean eyeglasses.

Never spray any liquid directly on the keyboard.

Avoid cleaning products that contain ammonia, ethyl alcohol, acetone, toluene, ethyl acid, or methyl chloride. These chemicals can react with the materials the Control Panel is made of.

	OK450 Control Panel.

6.8.3 Repair of OK450 Control Panel

	Disconnect all cables. Remove 12 screws, and then remove the rear cover to access internal equipment.
	Any repairs to be done by qualified personnel only!

6.9 Maintenance Instructions for “off the shelf” Products

6.9.1 Purpose and Scope

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

6.9.2 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.

6.9.3 Definition of “off the shelf” Products

“Off the shelf” products are typically:

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

6.10 Instructions for Ordering Spare Parts

6.10.1 Purpose and Scope

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

6.10.2 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 immediate assistance:	+47 90 84 87 25
E-mail HERNIS:	cctv.hernis@cooperindustries.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.

6.10.3 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 www.cooperhernis.com

6.11 Preservation and Storage Procedure

6.11.1 Purpose and Scope

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

6.11.2 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.

6.11.3 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.

6.11.4 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.

6.12 Disposal of used HERNIS products



6.12.1 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.

6.12.2 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. Data Sheets

7.1 Equipment Data Sheets

Description	Data Sheet No	Project No
Cam.st.EX286W / 1/4".PAL.H.R.4-74mmP	DS095177O	28040-02-001
Tank & Pump EX287PMP 5.0L Steel can	DS095173L	28040-02-001
Cam.st.PT9 / 1/4".PAL.H.R.4-74mmP	DS095431I	28040-02-001
Cam.st.PT9W / 1/4".PAL.H.R.4-74mmP	DS095437J	28040-02-001
Cam.st.S36WT PTZ Dual / 320 PAL 9Hz.	DS096036C	28040-02-001
Cam.st.S71 Dome Outdoor / 1/3".PAL.H.R.	DS096839C	28040-02-001
Cam.st.S71 Dome Indoor / 1/3".PAL.H.R	DS096837C	28040-02-001
Rack 42U 80x200x80cm w/ass. & term. hardw.	DS096384H	28040-02-001
HERNIS CCTV System Server	DS095400B	28040-02-001
HERNIS 400 Matrix / 48 in/48 out	DS095450D	28040-02-001
HERNIS DVR-M HSS06 Ver.4.x / 16 Ch.4TB	DS095526H	28040-02-001
HERNIS 05 System Node	DS095519J	28040-02-001
HERNIS HSS05 IO-32-8 / Alarm Card	DS095419B	28040-02-001
HERNIS HSS05 Commux16	DS095417C	28040-02-001
HERNIS HSS05 Multicom	DS095416C	28040-02-001
Quad 4 video in Color Loop through / PAL (022098)	DS095984D	28040-02-001
Ethernet Switch 24+2ComboPort10/100/1000 SFP HP	DS021964C	28040-02-001
Video Encoder Acti / H.264	DS096031A	28040-02-001
Video Distribution Amp.16in/64out 12VDC VDA	DS091211B	28040-02-001
Power PS350-30Vac	DS095567C	28040-02-001
UPS 19" 230V 1000VA/700W (021813)	DS095115C	28040-02-001
Power switch 230V/16A w/softstart inrush kit (022451)	DS081223A	28040-02-001
Relay 5VDC / 5A 250AC (020512)	Manufacturer's	28040-02-001
Socket relay (Til AL400) (020662)	Manufacturer's	28040-02-001
Monitor 32" LCD 16:9 Desktop/Vesa Video/PC (025306)	Manufacturer's	28040-02-001
Bracket Monitor 30-63" LCD Wall D32mm	DS021995B	28040-02-001
Monitor 19" Marine JH 4:3 Panel Video	DS021799D	28040-02-001

Description	Data Sheet No	Project No
Control Panel OK450 / Std.	DS095485F	28040-02-001
JB OK400/450/CS100. 3m fl.lead Steel	DS096330G	28040-02-001
HERNIS HWIN Standard Ver5.x Software / 1 user	DS097219C	28040-02-001
Monitor 42" LCD/LED 16:9 Desktop (025594)	Manufacturer's	28040-02-001
Camera/Codec mic Arrow300/XG80 (TBA10179)	Manufacturer's	28040-02-001
Converter Video/Pal/Ntsc (021682)	Manufacturer's	28040-02-001
wBNC Plug Male for HERNIS Multicable	DS026044C	28040-02-001
Glass for Dome RDC400/PT70 outdoor	DS081204B	28040-02-001
Spare O-ring kit for PT70/RDC400	DS096642B	28040-02-001
Spare Glass Complete for S71 indoor	DS096838A	28040-02-001
Spare O-ring kit for S71	DS096677A	28040-02-001
Spare Wiperblade S9W/PT9W	DS081760B	28040-02-001
Spare O-ring kit for S9/PT9	DS096773E	28040-02-001
Spare Washer pump for PT30W/PT9W/PT36W	DS096669D	28040-02-001
Spare Wiperblade S10W/S36W	DS081840A	28040-02-001
Spare Valve/Nozzle kit PT9W/S9W/S36W/EX285WT	DS081069D	28040-02-001

7.2 Data Sheets for Recommended Cables, ref. Block Diagram

Description	Data Sheet No	Project No
Cable Multi Ships w/Screen	DS025118G	28040-02-001
Cable Coax RG59 mini IEC 332.1	DS025098E	28040-02-001
Cable Keyboard w/screen Halogenfree 8x0.25mm	DS025049E	28040-02-001

8. Certificates

8.1 EX Certificates

Equipment	Authority	Certificate No
Camera Station EX286W	Det Norske Veritas	DNV-2003-OSL-ATEX-0366 Rev. 5
EX287PMP Tank & Pump unit	Det Norske Veritas	DNV- 2006-OSL-ATEX-0150X Rev. 4
Capri NPB cable gland	LCIE	LCIE97ATEX6008X
Ex Accessories, Capri	LCIE	LCIE 08 ATEX 6085 X

8.2 EC Declaration of Conformity

Equipment	QA Document No
EX286/EX286W Camera Station	Q-201007 Rev C
EX287PMP Tank & Pump unit	Q-201008 Rev C

9. Drawings

Refer to Drawing Index, doc. No: 28040022301

10. APPENDIX A - Sub Supplier Manuals

10.1 Monitor 32", Philips, BDL3245E, (025306)

10.2 Monitor, JH 19T14, Hatteland Display, (021799)

10.3 Monitor, LG, M4210L, (025594)

10.4 Quad, ADQUAD77-1, (022098)

10.5 UPS, GE Consumer & Industrial, VH1000, (021813)

10.6 Automatic power switch 16A 230Vac (022451)

10.7 Camera/Codec mic Arrow300/XG80 (TBA10179)