

# HERNIS CCTV Control Systems

Purpose-designed for Marine and Oil & Gas applications



# HERNIS CCTV Control Systems

## Applying the right technology

HERNIS deliver CCTV systems suitable for projects of any size and complexity. We have the competence and experience to advise on what technology to apply in any given project.

Our focus is to be able to present an optimized package with respect to the image quality, user friendliness and lifecycle cost.

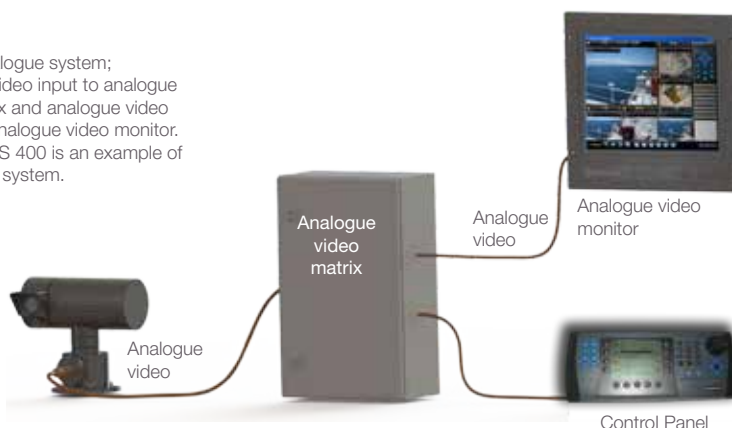
Our solutions are based on both analogue and digital technology and in many cases a combination of both is called for. An example is operations where no video stream latency is tolerated where a digital system can incorporate an analogue subsystem for cameras.

In the end it is the user's requirements that will determine what technology must be applied.

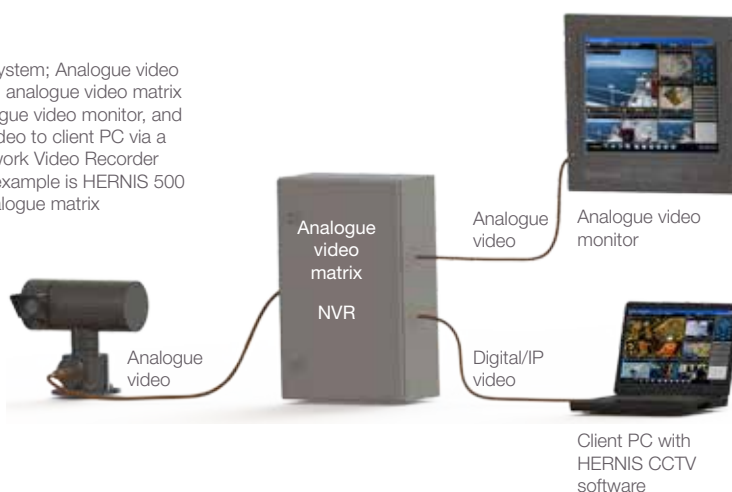
To the right illustrations of different systems solutions with regard to transmission technology:

1. Fully Analogue System
2. Hybrid System;
  - Analogue In
  - Analogue & Digital Out
3. Hybrid System;
  - Analogue In
  - Digital Out
4. Fully Digital System
  - Digital In
  - Digital Out

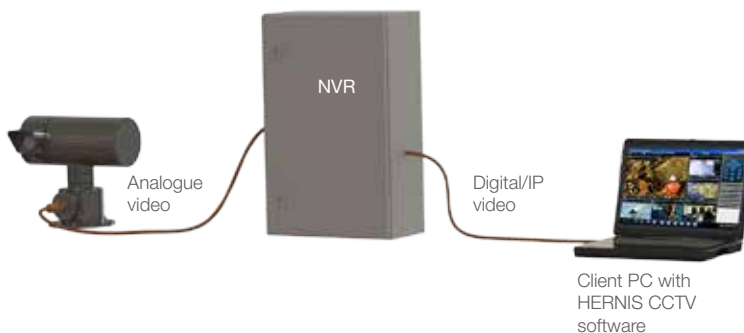
1. Fully analogue system; Analogue video input to analogue video matrix and analogue video output to analogue video monitor. The HERNIS 400 is an example of this type of system.



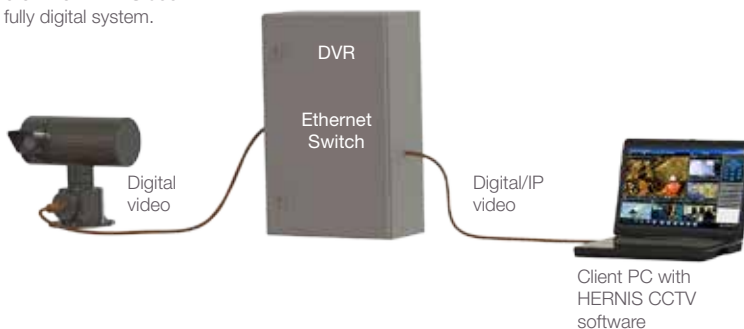
2. Hybrid system; Analogue video input via an analogue video matrix to an analogue video monitor, and digital/IP video to client PC via a digital Network Video Recorder (NVR). An example is HERNIS 500 with an analogue matrix



3. Hybrid system with analogue video input and digital video output. Example; HERNIS 500 system



4. Fully Digital system; Digital video in via Digital Video Recorder (DVR) or a switch to a PC with HERNIS CCTV software. The HERNIS 500 system is a fully digital system.



## HERNIS Flex

HERNIS Flex CCTV achieves a complete IP architecture or accepts analog/serial signals if required. Systems are deliberately designed to maximize hi-speed manipulation, superior video quality and reliable recording requirements.

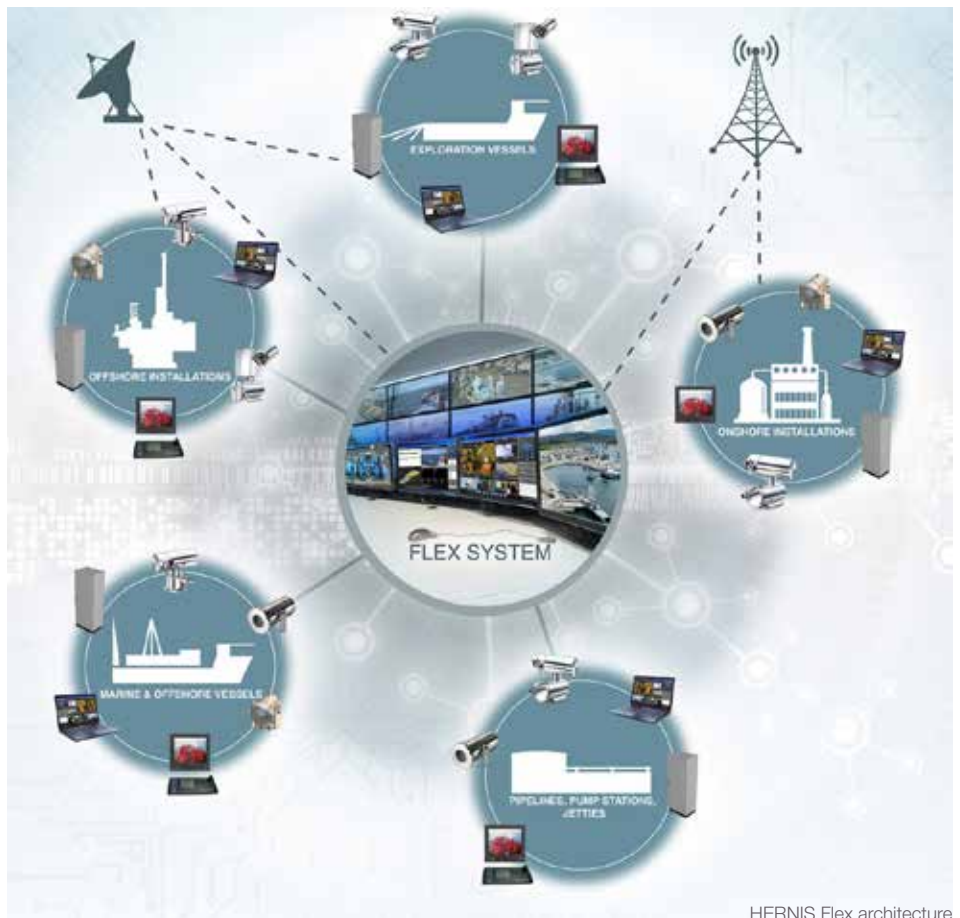
HERNIS Flex CCTV Systems, from straightforward small systems to large complex systems, are designed and engineered for the following functional capabilities:

- Remote and local system transmission and control via Satellite, Radio Link, Internet, Analog and Serial (zero latency)
- Complete system diagnostics, down to each component
- Remote administration
- User friendly software that accesses many layers of information

HERNIS Flex system camera stations are linked to a camera-dedicated network via an integrated transmitter/receiver unit. The video signal from the IP camera station is encoded and streamed to a HERNIS Video Extender, allowing a virtually unlimited number of cameras and users to access the video. The architecture supports dual video streams from each camera enabling image quality from each encoder to be controlled individually and set to transmit at different rates to meet different user requirements and adapt to possible hardware/network limitations. Flexible recording capabilities increase the integrity of the Flex CCTV system.

A HERNIS Flex system central cabinet is typically equipped with:

- HERNIS System Server w/software correlating to the number of cameras connected to the system
- Built in recording & IP streaming capability
- System Node with communication and integration to Fire & Gas and other Alarm systems
- Local power supply for camera stations and/or Fibre Optical Equip-



HERNIS Flex architecture

ment for transmission over longer distances

- LAN Switches designed and dimensioned for IP traffic and optimal operation
- Dual Power inlet if UPS/Normal power feeds are used

The HERNIS Flex architecture uses industry standard networks and integration protocols thereby catering for easy and efficient increases in the number of cameras, control stations, system servers and geographic expansion to meet future requirements.

### TYPICAL APPLICATIONS:

Onshore Oil & Gas Installations

### LIMITATIONS:

Virtually unlimited in terms of expansion and interfacing

- Features:
- Flexible infrastructure
- Modular system, caters for CCTV systems of all sizes

- Flexible recording capabilities
- Equipment designed to meet extreme CCTV performance criteria
- Can incorporate remote and local systems
- Incorporates with third party telecommunications, alarms, hardware, software or DCS management and security systems
- User profile priority scheme
- Complete system diagnostic software available
- Alarm Management software available
- Video wall application available

### BENEFITS:

- Flexible
- Enhances safety and security
- Improves efficiency
- Easily expandable

# HERNIS CCTV Control Systems

## HERNIS 500

The HERNIS 500 system is suitable for most vessels, onshore and offshore oil & gas installations.

This digital CCTV system eliminates the need for a traditional analogue video matrix utilising the common infrastructure provided by an Ethernet backbone. The HERNIS 500 NVR encodes the video signal, which can be streamed to hard disc and/or directly to the network/backbone. The image quality from each encoder can be individually controlled and set to transmit at various rates depending on user requirements.

The 500 system is virtually unlimited in terms of expansion and interfacing. For operations where no latency is tolerated on the video stream, the HERNIS 500 system can incorporate an analogue subsystem for cameras.

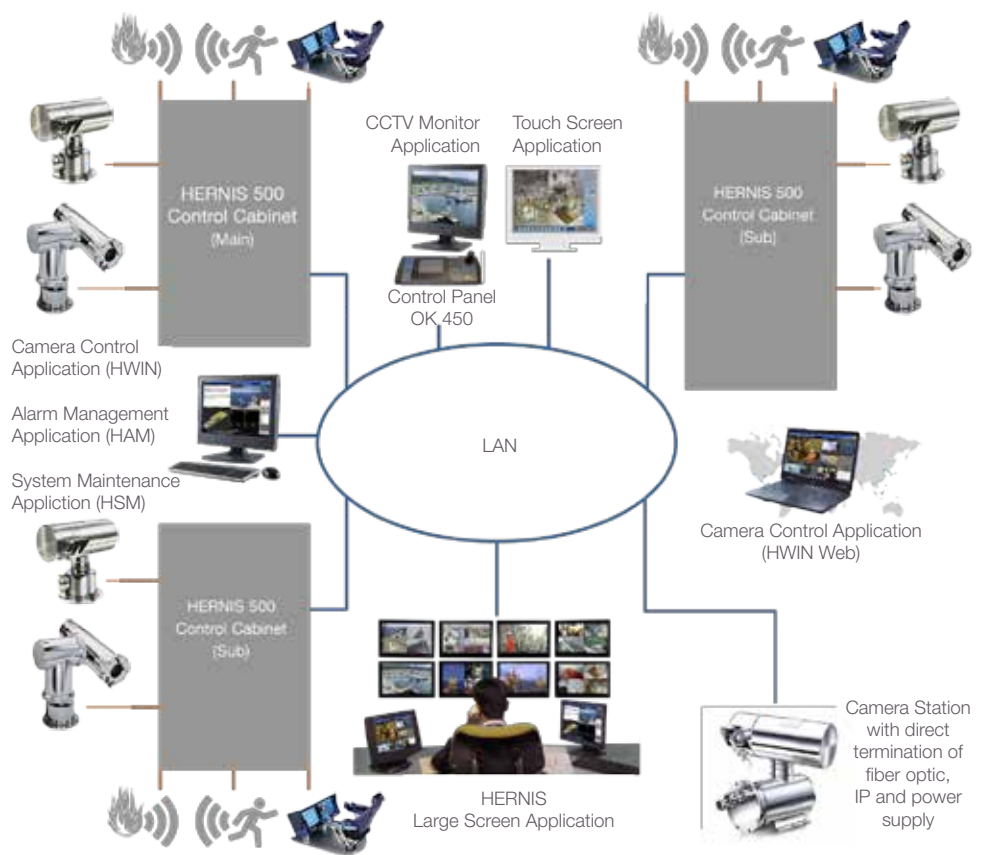
All HERNIS camera stations, Ex and weather-proof, are compatible with the HERNIS 500 control system.

A HERNIS 500 CCTV system cabinet is normally equipped with:

- CPU with HERNIS CCTV Server & Video Software
- NVR inbuilt recording & IP streaming capability
- System Node with cards for camera control, communication and integration to Fire & Gas Alarm systems
- Local power supply of camera stations and/or Fibre Optical Equipment for transmission over longer distances
- Dual Power inlet if UPS/Normal power feeds are used
- LAN switches

Note! Caution is mandatory when basing the CCTV system on existing infrastructure. Factors such as network quality and down-time can increase the vulnerability of the system and must be taken into consideration. For larger CCTV systems a separate network/sub net is recommended.

HERNIS products' long life cycle and



HERNIS 500 architecture

low maintenance contributes to a minimal environmental impact so vital in today's global awareness.

24 hour technical support line available for documented systems.

### TYPICAL APPLICATIONS:

Large vessels, Onshore Oil & Gas Installations and FPSOs

### LIMITATIONS:

Virtually unlimited in terms of expansion and interfacing

### FEATURES:

- Optional Graphic Map Navigation
- Digital video processing and distribution
- Built-in video streaming, recording and storage
- Mpeg 4/H.264 compression algorithm
- Supports all HERNIS software packages

### BENEFITS:

- Watermarked video
- Built-in video recording for all cameras
- Built-in audio recording
- Pre-recordings for alarms
- Easily expandable to new sub-systems
- Easy to add additional operator's stations
- Supports both centralised and decentralised structure
- Simple transmission in decentralised systems using existing IT infrastructure
- Graphical site maps provide improved navigation (recommended for larger systems)
- User friendly HMI
- "Future proof" modular system
- Advanced Video Search

## HERNIS 400 System

The HERNIS 400 CCTV system is an analogue system consisting of an analogue video matrix and a PC based system server. The internal communication of the HERNIS 400 system operates on a Controlled Area Network (CAN) making it easy to add new communication nodes for camera stations and control panels. The modular design enables easy and virtually limitless expansion and use of decentralized systems. Its integration capabilities to external systems such as drilling, process, automation, security and safety systems on serial, TCP/IP, I/O or relay interfaces, makes the HERNIS 400 a versatile system. The 400 system can be remotely controlled (slave) constituting a part of larger CCTV systems, or it can be used to control other systems (master). It can further be configured as a hybrid system including both analogue and digital (IP based) features. By including an NVR you allow for simultaneous recording and streaming of all cameras. A programmable text generator enables camera names, pre-positions and alarms to be shown in the video image adding to the operator's level of control. The 400 system matrix may be equipped with audio. A redundant CPU makes the system less susceptible to hardware failures thus improving the systems overall uptime.

### TYPICAL APPLICATIONS:

The HERNIS 400 system is typically used on medium sized to large vessels, oil rigs, platforms, drillships and onshore oil & gas installations.

### LIMITATIONS:

Virtually unlimited in terms of expansion and interfacing



HERNIS 400 architecture

### FEATURES:

- Analogue system
- Modular system
- Graphic Map Navigation (Option)
- Integration on serial, TCP/IP, I/O and relays
- Dynamic on-screen Text
- Audio (option)
- Redundant CPU (option)

### BENEFITS:

- Real-time video - no delay
- Runs on existing communication structure
- Integration potential
- Remote accessibility
- Remote control possible
- Supports all HERNIS software packages
- Compatible with all HERNIS camera stations and current control panels
- Easily expanded with 500 NVR to include the benefits of the HE500 system
- User friendly HMI

# HERNIS CCTV Control Systems

## HERNIS 400 Compact

The HERNIS 400 Compact is a down-scaled version of the HERNIS 400 analogue system, developed to serve as the centre of a medium sized CCTV system. The compact system has no PC and slightly limited functionality. The systems shares the components with the larger CCTV control systems and is easily upgradable to a full 400 system. HERNIS can also offer a hybrid solution combining the digital HERNIS 500 System with the analogue HERNIS 400 System. This combined solution offers both the clarity of an analogue video system and lets you utilize all aspects of a digital cctv system.

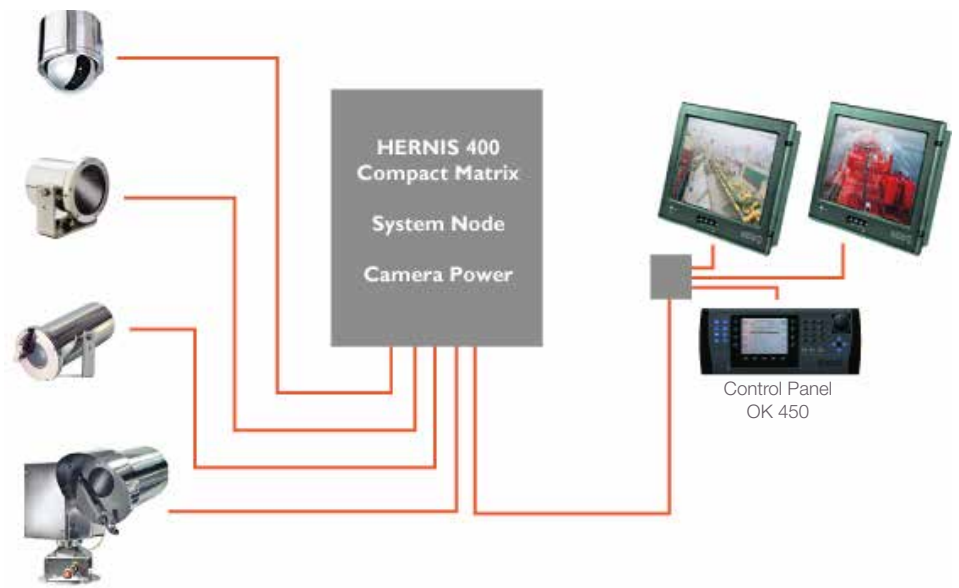
### TYPICAL APPLICATIONS:

The HERNIS 400 Compact system is typically used on small and medium sized vessels and often serves as slave of large CCTV systems.

Often used as a direct replacement of the HERNIS 250 System.

### LIMITATIONS:

- Video Inputs: 32
- Video Outputs: 16
- Camera Preset Positions: 55
- Operator Panels: 16



HERNIS 400 Compact Matrix

### FEATURES:

- Compact matrix
- Dynamic text generator

### BENEFITS:

- Compact dimensions, wall-mount cabinet
- Modular design
- Sharing components with larger systems
- “Future proof ” modular system
- Easily upgradable
- Compatible with all HERNIS camera stations and current control panels
- User friendly HMI

## HERNIS 8x8 System

The HERNIS 8x8 CCTV System is the smallest analogue CCTV system in our generation of modular systems. The compact 8x8 video matrix installs painlessly and fits in where space is limited, non the less covering all basic CCTV requirements. As a new generation system the 8x8 system shares components with the larger HERNIS CCTV systems preparing for integration and future upgrades.

The 8x8 is a computerless (embedded) system and the small matrix allows for quick replacement of spare parts. DVR-M 2 channel recording provides improved image quality compared to the tape recordings in dated CCTV systems. Hard-disc recording further enables simultaneous viewing and recording and adds search facilities not possible with tapes.

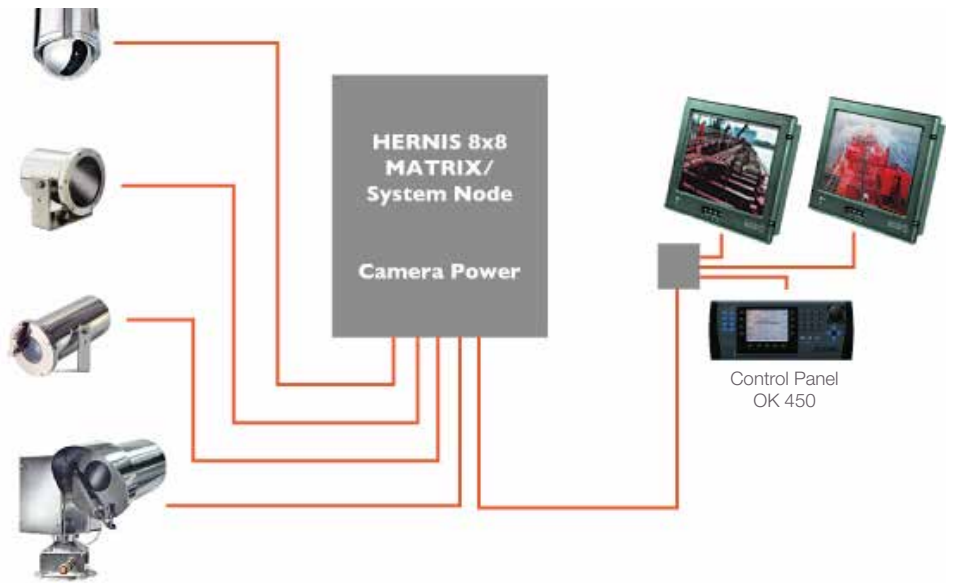
Analogue CCTV systems deliver reliable video without delay. This makes the 8x8 system perfect for operations such as drilling, winch and crane operations. The PC clients HERNIS HWIN or HERNIS MasterView Basic provide a user friendly interface. The 8x8 system can be integrated into general security systems using the Input/Output card as a Normally Open/Normally closed connection. The 8x8 cctv system can be set up as a slave to larger CCTV systems, enabling remote control of the camera units in the system. The 8x8 system does not support on-screen text, such as camera names, positions, monitor names etc.

### TYPICAL APPLICATIONS:

The 8x8 CCTV system has a versatile area of use. Typically applied on small vessels and for operations such as drilling, winch and crane operations.

### LIMITATIONS:

- Video Inputs: 8
- Video Outputs: 8
- Camera Preset Positions: 55
- Control Panels: 16
- Text: None



HERNIS 8x8 Matrix

### FEATURES:

- Modular system
- Embedded system
- Small dimensions
- Digital recording (optional)

### BENEFITS:

- “Future proof ” modular system
- Upgradable
- Integration possible
- User friendly HMI
- Configurable alarms
- Configurable preset positions
- Remote control possible
- Compatible with all HERNIS camera stations and current control panels

# HERNIS CCTV Control Systems

## JB OK 150

The JB OK150 serves as a control unit for one or two HERNIS CCTV camera stations. This space efficient solution is perfect where one operator needs visual through one or two camera stations to improve safety and efficiency in operations. The system can utilize two dual camera stations, thereby providing both thermal and CCD images.

The system is controlled with a joystick or a control panel of the customer's own choice. The control buttons can be configured with the functionality suiting your specific needs. Typical functions would be zoom, focus, pan, tilt, iris, wipe and wash depending on the type of camera stations deployed.

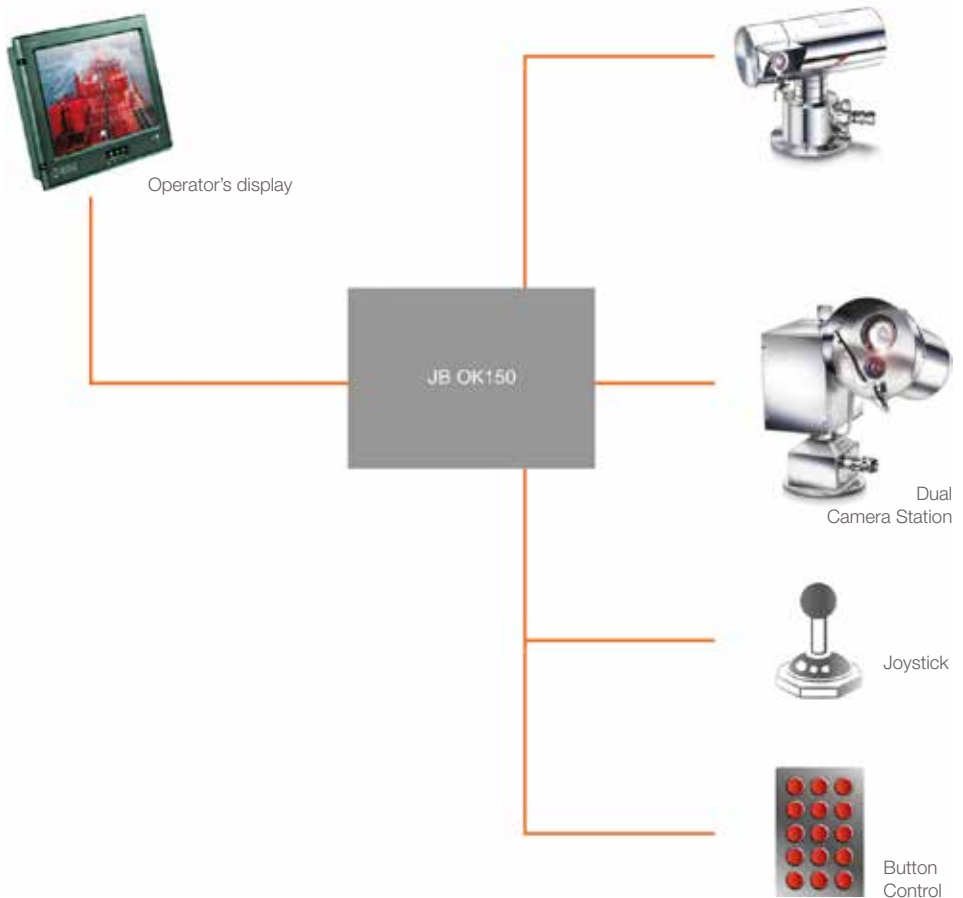
The iris function is pre-set at the factory. It is normal practice to re-adjust the iris function during commissioning of the system to adjust to the actual operating light conditions. If attempting to view an area in the shade of very bright light, it may be necessary to adjust the auto-iris function in order to see the area clearly. Manual adjustment of the auto-iris function is done by pressing the iris open/close keys on the key panel or Joystick.

Standard camera functions available from the joystick are:

- Joystick left: pan camera left
- Joystick right: pan camera right
- Joystick up: tilt camera up
- Joystick down: tilt camera down
- Turn joystick counter clockwise: zoom out
- Turn joystick clockwise: zoom in
- Left button: Camera 1
- Right button: Camera 2

The recommended cable length is 10m between the JB OK150 control unit and the HERNIS supplied joystick or third party control panel. The monitor and cameras are normally powered locally.

Camera stations, cameras, monitors and multi-cables are optional from the



HERNIS JB OK150 architecture

wide range of HERNIS Ex and safe area equipment. Our experienced team will be able to recommend the perfect solution to your requirements.

HERNIS products' long life cycle and low maintenance contributes to a minimal environmental impact so vital in today's global awareness.

24 hour technical support line available for documented systems.

### TYPICAL APPLICATIONS:

Primarily used for control of standalone systems

### LIMITATIONS:

- Inputs: 2
- Outputs: 1
- Camera Preset positions: None
- Control Panels: Joystick or button control
- Text: Menu

### FEATURES:

- 1 or 2 cameras (Ex, Safe or Thermal)
- Modular design
- Compatible with third party control panels
- Joystick or button control

### BENEFITS:

- Space efficient
- Controls full flex Ex, Safe and Thermal camera stations
- Purpose-built and resilient
- Reduced environmental foot print
- Easy Installation
- No maintenance
- Field Serviceable
- No exposed cabling
- Accurate positioning
- Long design life



## HERNIS Crane TV

HERNIS well proven Crane TV system meets the requirements of Crane operators worldwide. The system can be supplied with up to 3 cameras providing clear view of the cargo, the wire drum and pedestal etc.

An optional Automatic Object Tracking function makes operation easier as the zoom automatically follows the cargo providing optimal view during hoist operations. The interface unit uses an analogue feedback signal from the wire drum. All camera functions such as iris, zoom, focus and camera selections can be operated from the joystick or push-button controls. An oil damper keeps the camera housing in a stable vertical position.

### TYPICAL APPLICATIONS:

The Crane TV system is primarily used on offshore cranes.

### LIMITATIONS:

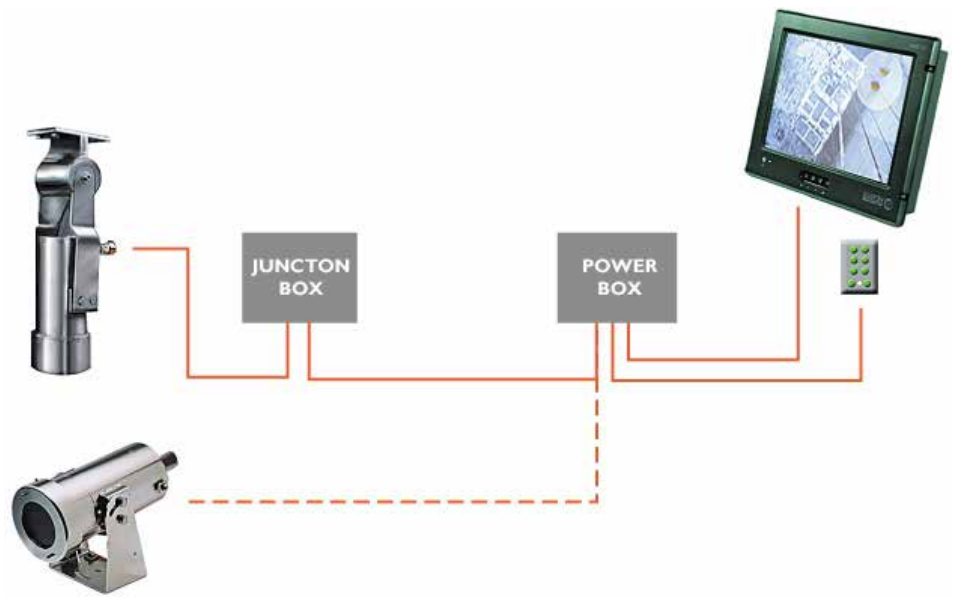
- Inputs: 3
- Outputs: 1
- Camera Preset positions: None
- Control Panels: 1
- Text: Menu

### FEATURES:

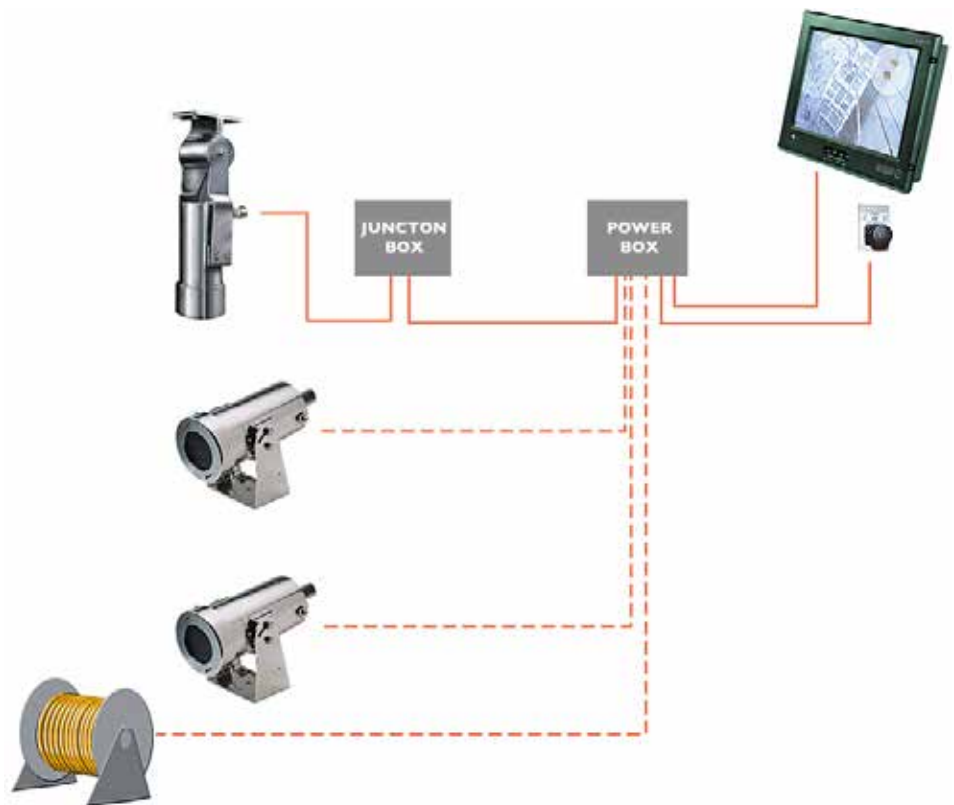
- Embedded system

### BENEFITS:

- Compact system
- User friendly operation
- Compact Oil Damper
- Automatic Object Tracking (option)



HERNIS Crane TV CT10 EX



HERNIS Crane TV CT30 EX Advanced

# HERNIS CCTV Control Systems

## Radar Tracking CCTV

With access to live video of one or several radar targets the operator can easily monitor potentially criminal elements improving his threat assessment ability and reducing risk.

The HERNIS Radar Tracking Solution can be delivered as a compact stand-alone system or integrated in your HERNIS CCTV solution.

To offer the optimal solution for each project, different HERNIS camera stations will be chosen for their ability to meet customer criteria, such as;

- 1.Purpose
- 2.Distance
- 3.Physical environment

By employing a dual camera station the operator can choose between CCD and thermal images providing optimal viewing in the different conditions prevailing. HERNIS offer dual camera stations for both EX and Safe areas.

The HERNIS camera station tracks the targets selected in your radar system via messages received from the radar system on the NMEA protocol format (National Marine Electronics Association).

The CCTV system gains access to the target's positioning data once the target has been selected on the radar. You can track up to 10 targets at a time, dwelling on each target sequentially for as long specified in the configuration. Default dwell time is 10 seconds.

You easily control the camera by selecting a target with the cursor on your radar screen. The camera will immediately position itself to track the target upon receiving the positioning data.

A dedicated touch control panel with joystick and configured buttons provides smooth operation of the Radar Tracking camera and functions.

A Configuration Tracking Program is included as standard for easy configuration of the Radar Tracking unit.



HERNIS Radar Tracking illustration

### TYPICAL APPLICATIONS:

The Radar Tracking CCTV solution is applied as a stand alone system or integrated in a larger CCTV solution on large vessels for enhanced safety and security.

### LIMITATIONS:

- Inputs: 2
- Outputs: 1
- Camera Preset positions: None
- Control Panels: OK160
- Text:

### FEATURES:

- Dual camera station (CCD/Thermal)
- Ex or safe area camera station
- Track up to 10 targets in sequence
- Configurable dwell time
- Compact control unit
- Dedicated control panel

### BENEFITS:

- Improves threat assessment ability
- Live images with zoom
- Easy operation
- Accurate Camera Positioning
- Tracks up to 10 targets in sequence
- Easy installation
- Easy configuration
- Long design life



Control Panel OK160

## Flare Monitoring

The HERNIS Flare Monitoring System can be a stand-alone system or an integrated part of a larger CCTV system.

The Basic Flare Monitoring system includes a fixed camera station connected to a monitor located in the control room providing live images of the flare to the operator.

The optional Intelligent Flare Detection feature uses thermal sensitive camera, which only reproduces rays emitted from the heat of the flare, discarding the rays of visible light, like reflections, shifting weather conditions, or the general difference between day and night time that would otherwise disturb the surveillance. The video image is fed to and analysed by a PC with dedicated software suitable for this purpose. In the event that the flare stops burning, predefined actions can be activated and the operators are notified by an alarm. The incident may also be recorded.

The camera station can be explosion proof or weatherproof depending on the operating environment. Normally a CCD camera sensor is applied. The lens is selected based on the height of the flare itself and the distance between the camera and the flare. For Intelligent Flare Detection a thermal sensitive camera is applied.

The optimal method for transmitting video, power and control signals depends on the distance between the camera and the control room. HERNIS offers Multi-cables, fibre optical or twisted pair cables and in some cases wireless transmission is the cost effective choice.

The HERNIS flare monitoring system can improve time-critical decisions increasing the safety of people and equipment.

### TYPICAL APPLICATIONS:

The Flare Monitoring solution is applied as a stand alone system or integrated in a larger CCTV solution on oil & gas installations with gas flares to enhance safety and security.



HERNIS Flare Monitoring

### LIMITATIONS:

- Inputs:
- Outputs:
- Camera Preset positions:
- Control Panels:
- Text:

### FEATURES:

- CCD and/or Thermal camera
- Ex or weatherproof camera stations designed to operate in extreme environments
- Live images of the flare relayed directly to the control room monitor
- Thermal sensitive camera provides reliable surveillance independent of lighting conditions
- Intelligent surveillance with Alarm notification
- Stand-alone system or part of a larger CCTV solution

### BENEFITS:

- Full visual overview of remote flares
- Enhanced safety for personnel
- Reduced downtime and operational costs
- Integrated alarm if flare is not burning
- Interface to remote ignition system
- Decision aid in time-critical situations
- Live images with zoom
- Easy operation
- Easy installation
- Easy configuration
- Application available on all HERNIS control systems

# HERNIS CCTV Control Systems

## System Combinations

### HERNIS 400 with NVR

A combination of HERNIS control systems is often employed to achieve optimal performance.

Drilling rigs typically require absolute real time robust video for the process surveillance whereas a number of secondary users can access the video and recordings digitally.

A typical combination for drilling installations is a 400 matrix with a digital network recorder (NVR).



Notes:







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