CCTV(Closed Circuit Television)

Digital Closed Circuit Television for risk prevention, security and safety of the ship.

GENERAL DESCRIPTION

Closed-circuit television (CCTV) is a system of cameras to capture the video (With or without audio) about a specific place, and transmit to a different location for viewing and recording. It differs from broadcasting television in that the signal is not openly transmitted, though it may employ point to point (P2P), point to multipoint, or mesh wireless technologies. Although most video communications fit this definition, the term CCTV is now commonly referred to a video system applied for surveillance purposes in areas which need monitoring, such as engine room, steering gear room, mooring stations, and specific risk areas.

In marine vessel and industrial plant applications, CCTV equipment may be used to monitor parts of a process from a central control room, for example in an environment not suitable for humans. CCTV systems may operate continuously, or as required to monitor a particular event only. More advanced CCTV systems utilize Digital Video Recorder (DVR) for long term recording and playback, with adjustment of various quality and performance options, and provides extra features such as motion-detection and thermal infrared cameras.

More recent development to name a few, are decentralized IP-based CCTV cameras, some equipped with megapixel sensors, supporting direct recording to network attached storage devices, or internal flash memory for completely stand-alone operation.

Advantages of CCTV monitoring in vessels

- Promote safety by monitoring of a particular place or subject
- Improve security enforcement by CCTV
- Provide safe management for hazardous area without human risk
- Overcome visual limitation by environment and conditions
- Preservation of records for reviews
- Manpower utilization and increase operational efficiency

CCTV System General

- CCTV System intended for marine and offshore project is based on a marine control system. It is a color compatible modular system, which is expandable in steps of 4 camera station.
- The central rack is equipped with hardware to connect one 8 camera station, 2 monitors and 2 keyboards, and is expandable to 16 camera stations, 8 monitors and 4 keyboards.
- Some of the available system functions are:
  1. Camera Selecter: Any camera in a multi-camera system can be selected for control and view on the monitor.
  2. Camera Sequencer: Selected camera in a multi-camera system can be set for a sequence to view.
  3. Camera Speed: The "Jewel" period, i.e., the time for the particular image to be on the monitor screen, can be adjusted for installed camera stations.
  4. Pan/Tilt/Focus/Zoom: Allows a camera station to pan, tilt, and zoom functions, and also remote control the selected camera station as desired.

Main Rack of CCTV System: Configurable

- 1. Matrix: 64 Camera Input, 2-32 user monitor, 32-keyboard control
- 2. VDA (Video Distributor & Amplifier): For network system, 100/1000Ux
- 3. Modulator, Converter (NTSC / PAL / ISCEAM) for CAS
- 4. DVR (Digital Video Recorder): 16CH, with keyboard & mouse
- 5. Hub Switch: 8/16/24 Port (POE, Power Over Ethernet)
- 6. UPS (Uninterruptible Power Supply): 2KVA (11U2000) or other
- 7. LCD Monitor, Keyboard, Mouse and etc (Options)

DVR: 16-ch, keyboard & Mouse, 4-Mic (Option)

- 1. Signal method: NTSC / PAL
- 2. Compression: Video (MPG 4), Audio (E.721, 8 kHz)
- 3. Operating system: Microsoft Windows XP
- 4. CPU/RAM: Intel Pentium 3 CPU 2.5G / 1GB DDR
- 5. Placa: NTSC (172x44), PAL (122x57)
- 6. Hard disk: Max 400G expandable
- 7. DVD / CD: Integrated DVD / CD
- 8. Communications: RS485 / Coaxial superimposition / Network
- 9. Video in (out): 11Pin-p, 75ohm, BNC (T/S/CH/G/VA, 15-Pin D bus)
- 10. Audio in (out): Micro Cross 16 / 4 dBs 600ohm, unbalanced
- 11. Alarm in (out): 100ms, NO / NC / Max. 25mA, NO / NC available

Matrix: Video Matrix Switching System (Option)

- 1. Control 64 cameras (Up to 256 cameras) / 32 monitors
- 2. Video Card: Up to 16 cards (1 Board of 64 input, 2-output)
- 3. Video Input: 64 Camera Inputs, control up to 256 cameras
- 4. Each Video Card (DVC-X302), built-in 8, 32, TIME Generator
- 5. Monitor switching: Automatic smooth switching screen
- 6. Matrix Controller Keyboard: Up to 8 rub keyboard
- 7. Delayed alarm system: Input up to 512 sensors
- 8. Can be connected PCI directly due to built-in RS-232 Port

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