MARINE RADIO CO.,LTD.

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PRODUCT DESCRIPTIONS

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 links technologies. Although most video communications fit this definition, the term CCTV is now commonly referred to a video system applied for surveillance purpose 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 system utilizes 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

System Features

- The central rack contains the DVR / Matrix and camera power supply. The camera power unit supplies the camera stations with 30 VAC. The operator, with the keyboard, may select video images from the camera stations and view the images from the camera stations and view the images on the monitor, or cabin rooms via main unit of CAS
- The operator may also control movement of the camera stations with pan & tilt, wipe & wash and all lens functions with the operator's keyboard
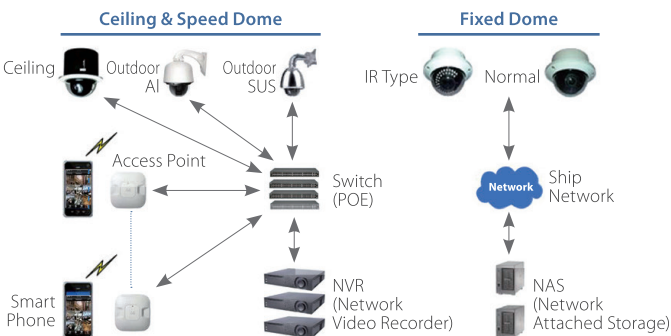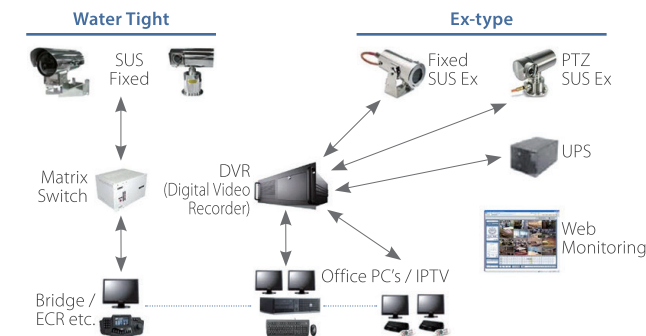
CCTV System General

- CCTV System intended for marine and off-shore project is based on a matrix control system. It is a color compatible modular system, which is expandable in steps of 8 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 Selector :** Any camera in a multi camera system can be selected for control and view on the monitor
2. **Camera Sequence :** Selected cameras in a multi camera system can be set for a sequence to view
3. **Camera Speed :** The "dwell" period, i.e. the time for the particular image of the selected camera to remain on the monitor screen, can be adjusted for the installed camera stations
4. **Pan/Tilt/Focus/Zoom/Iris :** When a camera station has pan, tilt and zoom functions, the operator can remotely control the selected camera station as desired.

Ceiling & Speed Dome — Ceiling, Outdoor AI, Outdoor SUS, Access Point, Smart Phone, Switch (POE), NVR (Network Video Recorder)

Fixed Dome — IR Type, Normal, Network, Ship Network, NAS (Network Attached Storage)

Water Tight — SUS Fixed, Matrix Switch, Bridge / ECR etc., DVR (Digital Video Recorder), Office PC's / IPTV

Ex-type — Fixed SUS Ex, PTZ SUS Ex, UPS, Web Monitoring


Main Rack of CCTV System : Configurable

1. **Matrix :** 64 Camera input, 2~32 user monitor, 32-keyboard control
2. **VDA (Video Distributor & Amp) :** For network system, 10(In)/20(Out)
3. **Modulator, Converter (NTSC / PAL / SECAM) 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 (SU2000I) or other
7. **LCD Monitor, Keyboard, Mouse and etc (Options)**

Matrix : Video Matrix Switching System(Option)

1. **Control 64 cameras (Up to 255 cameras) / 32 monitors**
2. **Video Card :** Up to 16 cards (1 Card of 64-input, 2-output)
3. **Video Input :** 64 Camera inputs, control up to 256 cameras
4. **Each Video Card (DVC-6432), built-in I/D, TIME Generator**
5. **Monitor switching :** Automatic smooth switching screen
6. **Matrix Controller Keyboard :** Up to 8-sub keyboard
7. **Relayed alarm system :** Input up to 512 sensors
8. **Can be connected P/C directly due to built-in RS-232 Port**

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

1. **Signal method :** NTSC / PAL
2. **Compression :** Video (MPEG 4), Audio (G.721, 8 kHz)
3. **Operating system :** Microsoft Windows XP
4. **CPU/RAM :** Intel Pentium 5 CPU 2.50 / 1GB, DDR3
5. **Pixels :** NTSC (720x480), PAL (720x576)
6. **Hard disk :** Max. 4HDDs expandable
7. **DVD / CD :** Integrated DVD / CD
8. **Communications :** RS485 / Coaxial superimposition / Network
9. **Video in /out :** 1V(p-p), 75ohm, BNC (16CH)/VGA, 15-Pin D-bus
10. **Audio in /out :** Micro Cross x 16 / -8 dBs 600ohm, unbalanced
11. **Alarm in /out:** 100ms, NO / NC / Max. 25mA, NO / NC available
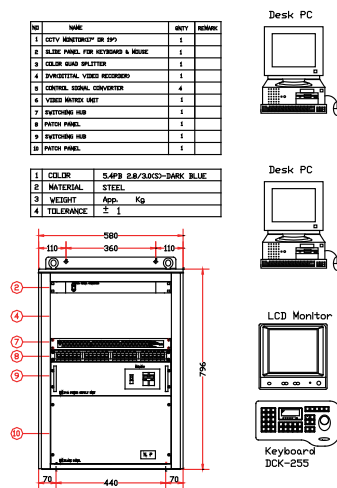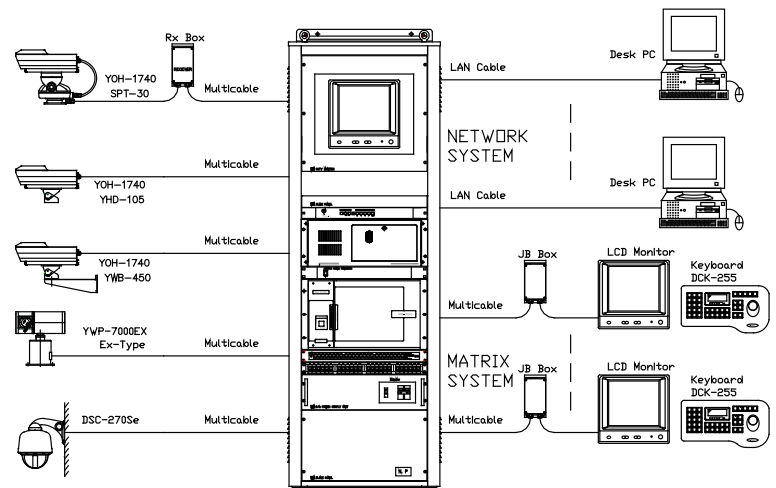
[DVR CCTV System]   [Wiring Diagram of CCTV System (LAN (IP) or Matrix Type)]