Exacq Technologies, headquartered in Indianapolis, Indiana, is a leading developer of open architecture, Video Management System (VMS) solutions for security and surveillance applications. Our exacqVision VMS client-server solutions are scalable from a small single camera solution to large scale corporate or campus systems with thousands of cameras. Real-time and recorded video can be viewed, managed and configured from any location on the network.

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**LIVE VIDEO MONITORING STATION**

**DIVISION 28 – ELECTRONIC SAFETY AND SECURITY**

**28 00 00 Electronic Safety and Security**

**28 20 00 Electronic Surveillance**

**28 23 00** **Video Surveillance**

**28 23 16 Video Surveillance Monitoring and Supervisory Interfaces**

**Notes to Specifier:**

1. Where several alternative parameters or specifications exist, or where, the specifier has the option of inserting text, such choices are presented in **<bold text>.**

2. Explanatory notes and comments are presented in **colored** text.

**Important Note to Security Systems Specifiers**

CSI MasterFormat 2016 incorporates numerous significant changes affecting electronic safety and security. This document is written to provide flexibility in using either format, although adoption of MasterFormat 2016 is encouraged. The following is a guide to the MasterFormat numbers relevant and related to the product referenced in this specification.

**MasterFormat 2014:**

27 20 00 Data Communications

28 05 00 Common Work Results for Electronic Safety and Security

28 13 00 Access Control

28 13 16 Access Control Systems and Database Management

28 16 00 Intrusion Detection

28 16 33 Intrusion Detection Control, GUI, and Logic Systems

28 23 00 Video Surveillance

28 23 13 Video Surveillance Control and Management Systems

28 23 16 Video Surveillance Monitoring and Supervisory Interfaces

28 23 19 Digital Video Recorders and Analog Recording Devices

28 23 23 Video Surveillance Systems Infrastructure

28 23 29 Video Surveillance Remote Devices and Sensors

**MasterFormat 2016:**

27 15 01.xx Video Surveillance Communications Conductors and Cables

27 20 00 Data Communications

28 05 00 Common Work Results for Electronic Safety and Security

28 05 xx Power Sources for Electronic Safety and Security

28 05 xx Servers, Workstations and Storage for Electronic Safety and Security

28 05 xx Storage Appliances for Electronic Safety and Security

28 05 xx.xx Network Video Recorders

28 05 xx Cyber Requirements for Electronic Safety and Security

28 05 xx Communications Equipment for Electronic Safety and Security

28 05 xx Systems Integration and Interconnection Requirements

28 05 xx.xx Electrical

28 05 xx.xx Information

28 10 00 Access Control

28 10 xx Access Control Software

28 20 00 Video Surveillance

28 2x 00 Video Management System

28 30 00 Security Detection, Alarm, and Monitoring

28 3x 00 Intrusion Detection

28 3x xx.xx Intrusion Detection Interfaces to Security Monitoring and Control

**LIVE VIDEO MONITORING STATION**

* + - 1. **GENERAL**
  1. **SUMMARY**

## Section includes a device to acquire and display video signals from connected IP network video recorders.

Unless, otherwise noted, < > bracketed options apply to Pro and Pro Plus product versions, respectively.

## Related Requirements

* + - 1. 28 23 19 – Digital Video Recorders and Analog Recording Devices
      2. 28 23 23 – Video Surveillance Systems Infrastructure
      3. 28 23 29 – Video Surveillance Remote Devices and Sensors
  1. **REFERENCES**
     1. Abbreviations
        1. HDD – Hard Disk Drive
        2. IP - Internet Protocol
        3. LDAP – Lightweight Directory Access Protocol
        4. Mbps – Megabits per second
        5. NVR – Network Video Recorder
        6. POS – Point of Sale
        7. PSIM – Physical Security Information Management
        8. VMS - Video Management System
        9. LVMS – Live Video Monitoring Station
        10. SFF – Small Form Factor
     2. Reference Standards
        1. Institute of Electrical and Electronics Engineers (IEEE) 802.3 standards
        2. FCC – Code of Federal Regulations, Title 47, Part 15
        3. ISO / IEC 14496 – 10 – MPEG-4, Part 10 (H.264)
        4. UL
        5. CE
  2. **SUBMITTALS**
     1. Product Data
        1. Manufacturer’s printed or electronic data sheets
        2. Manufacturer’s installation and operation manuals
  3. **QUALIFICATIONS**
     1. Manufacturer shall be ISO 9001 certified with a minimum of three years’ experience in manufacturing digital storage equipment and associated interfaces.
  4. **WARRANTY AND SUPPORT**
     1. Manufacturer shall provide a limited three-year warranty and updates for device firmware and client software during the warranty period.
        1. An upgraded support option shall be available.

**END OF SECTION**

1. **PRODUCTS**
   1. **EQUIPMENT**
      1. Manufacturer: Exacq Technologies, Inc.

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* + 1. Model: C-Series
    2. Alternates: None
  1. **DESCRIPTION**
     1. The Live View Monitoring Station (“LVMS”) shall be an appliance to acquire and display video signals from an IP Network Video Recorder (“NVR”).
     2. The MWS appliance hardware shall have the following characteristics:
        1. Chassis: **SFF**
        2. Audio Inputs: **N/A**
        3. Storage capacity: 128 GB (16S), 256 GB (32S)
           1. Additional storage: Up to 1TB SSD (32S)

Exacq part numbers differentiated by number of viewable streams and on-board storage capacity:  
  
Model Number Live Viewable Streams Storage Drive Capacity (TB)  
  
C-00T-32S 32 N/A  
C-01T-32S 32 1

* + - 1. Video outputs: N/A
      2. Microphone input: 1 RCA connector
      3. Audio outputs: 1 stereo (RCA connectors)
      4. Workstation characteristics:
         1. Operating system:

Ubuntu Linux 22.04 (16S)

Ubuntu Linux 22.04, Windows 10 (32S)

* + - * 1. Monitor outputs:

2 DisplayPort, max 1 recommended (16S)

2 DisplayPort, max 2 recommended (32S)

* + - * 1. Processor:

Celeron (16S)

i5 (32S)

* + - * 1. Memory: **<8 GB> <16 GB>**
        2. Network: 1 x 1.0 Gbps + 1 x 2.5 Gbps + 1 x 802.11ac 5Ghz Wifi
        3. USB 2.0 ports: 3 (2 front + 1 rear)
        4. USB 3.0 ports: 2 (front)
        5. USB 3.1 ports: 2 (rear)
        6. USB 3.2 Gen 2x2 ports: 1 (front)
        7. Optical Drive: **optional (external)**
      1. Enclosure
         1. Material: Painted steel
         2. Dimensions (l x w x h): 7 in x 7 in x 2 in (17.78 cm x 17.78 cm x 5.08 cm)
         3. Weight:

Pounds (lbs): **3 – 4** maximum

Kilograms (kg): **1.36 – 1.81** maximum

* + - 1. Electrical
         1. Input voltage: 100/240 VAC auto-sensing
         2. Output Voltage: 19V 2.1A DC
    1. Video Management System (“VMS”)
       1. The LVMS shall come pre-loaded with VMS server software.
       2. The VMS server software shall provide the following features as a minimum:
          1. System

One server connection per client

Browser-based viewing of live and stored video

Auto detection of supported cameras

Support for fish-eye and panoramic lens cameras

Client bandwidth throttling

Soft triggers

Pre and post alarm recording

Continuous motion, time or alarm-based recording, configurable per camera

* + - * 1. Live video view

Multiple monitor view support

PTZ control and presets

Digital PTZ control and presets

Motion and alarm indication

Event linking on discrete inputs

* + - * 1. Search, playback, export, archive

Instant replay

Event search

Thumbnail views

Timeline views

Multi-camera playback

Export options

USB storage device

.AVI, .MOV, .MP4 or.EXE file

* + - * 1. The LVMS shall have the ability to support pre-loaded VMS software providing additional advanced functionality, including the following:

System

Server connections – up to 512 via a thick client interface or 16 via web client

Ability to specify minimum and maximum retention times on a per camera basis

Time-lapse recording

Extended storage

Archiving

Audit trail

Custom user groups

Intelligent search

E-mail notifications on system health

Enterprise level camera, server, and user management

LDAP and active directory support

Live view

Event linking on video, serial, and health events

Video wall support

Event-driven and time-based video switching

Camera groups

Multi-streaming

Event notifications

Map support, including hierarchical maps

Two-way audio

Search, playback, export, archive

Multiple camera export

The LVMS comes with the exacqVision Client software pre-loaded. Additional functionality is available through upgrade to exacqVision Professional or exacqVision Enterprise VMS software.

* 1. **PERFORMANCE**
     1. Compatibility
        1. Video – The LVMS shall be compatible with the following NVR manufacturers: exacqVision
     2. Display
        1. Frame rate: 15 fps per stream
  2. **ENVIRONMENTAL**
     1. Operating temperature: 40 – 95 degrees Fahrenheit (4.5 – 35 degrees C)
     2. Power/heat load: 120 Watts/160 BTU per hour maximum
  3. **OPTIONAL EQUIPMENT** 
     1. The NVR shall have optional expansion capability for a Surveillance Keyboard.

Exacq’s Surveillance Keyboard provides a Hall-effect three axis joystick and 27 pushbuttons (11 fixed and 16 user-programmable) through a USB interface.

**END OF SECTION**

1. **EXECUTION**
   1. **INSTALLATION**
      1. Contractor shall comply with all Manufacturer installation guidelines.
      2. Contractor personnel shall comply with all applicable state and local licensing requirements.
   2. **STORAGE**
      1. Hardware shall be stored in an environment where temperature and humidity are in the range specified by the hardware manufacturer.

**END OF SECTION**