



Honeywell Network Video Recorder

A&E Specifications

GENERAL

SECTION INCLUDES

Provide a high definition camera system for video surveillance, including design, supply, installation and commissioning.

RELATED SECTIONS

NOTE TO SPECIFIER: Include related sections as appropriate if video surveillance system is integrated to other systems.

- Section 26 05 00: Common Work Results for Electrical, for interface and coordination with building electrical systems and distribution.
- Section 28 05 13: Conductors and Cables for Electronic Safety and Security, for cabling between system servers, panels, and remote devices.
- Section 28 05 28: Pathways for Electronic Safety and Security, for conduit and raceway requirements.
- Section 28 23 00: Video Surveillance Equipment, for interface with, and administration of video recording equipment.
- Section 28 23 23: Video Surveillance Systems Infrastructure.
- Section 28 23 29: Video Surveillance Remote Devices and Sensors.

REFERENCES

Reference Standards: Provide systems that meet or exceed the requirements of the following publications and organizations as applicable to the work of this Section.

- Canadian ICES-003.
- Canadian Standards Association (CSA).
- Conformity for Europe (CE).
- Electronic Industry Association (EIA).
- Federal Communications Commission (FCC).
- Institute of Electronic and Electrical Engineers (IEEE).
- Joint Photographic Experts Group (JPEG).
- National Television Systems Committee (NTSC).
- Phase Alternating Line (PAL).
- Underwriters Laboratories Inc. (UL).
- IP Code (Ingress Protection Rating) per IEC 60529.

SUBMITTALS

General: Submittals shall be made in accordance with the Conditions of the Contract and Submittal Procedure Section.

Manufacturer's Product Data: Submit manufacturer's data sheets indicating systems and components proposed for use, including instruction manuals.

Shop Drawings: Submit installation drawings, including connection diagrams for interfacing equipment, list of connected equipment, and locations for major equipment components. Shop drawings shall indicate surrounding construction as provided for the Project.

Project Record Drawings: Indicate location of equipment and wiring on project record drawings. Submit an electronic version of the project record drawings not later than Substantial Completion of the Project.

Operation and Maintenance Data: Submit manufacturer's operation and maintenance data customized to the system installed. Include operator manuals.

Field Tests: Submit results of field testing of every device, including date, testing personnel, retesting date (if applicable), and confirmation that every device passed field testing.

Maintenance Service Agreement: Submit a sample copy of the manufacturer's maintenance service agreement, including cost and services for a period of one year for Owner's review. Maintenance shall include, but not be limited to, labor and materials to repair the system, tests and adjustments, and regular inspections.

DELIVERY, STORAGE, AND HANDLING

Packing and Shipping: Deliver products in manufacturer's labeled packages.

Storage and Protection: Store and handle products in accordance with manufacturer's requirements, in a facility where environmental conditions are within recommended limits.

WARRANTY

Manufacturer's Guarantee: Three (3) years from the manufacture date code under normal use and service for the video surveillance system.

QUALITY ASSURANCE

- **Manufacturer:** Minimum 10 years' experience in manufacturing and maintaining video surveillance systems. Manufacturer shall provide toll-free technical assistance and support available 24/7.
- **Installer:** Minimum 2 years' experience installing similar systems and shall be acceptable to the manufacturer of the video surveillance system.

MANUFACTURER SUPPORT

- Manufacturer shall provide customer service, pre-sales applications assistance, after-sales technical assistance, access to online technical support, and online training using Web conferencing.
- Manufacturer shall provide 24/7 technical assistance and support by means of a toll-free telephone number at no extra charge.

EXECUTION

EXAMINATION

Examine site conditions prior to installation. Notify Architect and Owner in writing if unsuitable conditions are encountered. Do not start installation until site conditions are acceptable.

INSTALLATION

- All components of the camera system shall be thoroughly tested before shipping to the project location.
- Camera system shall be installed, programmed, and tested in accordance with manufacturer's instructions and recommendations.
 - Coordinate interfaces with other products with Owner's representative where appropriate.
 - Provide conduit, cable, and wire for complete and reliable installation. Obtain Owner's approval for exact location of cameras, boxes, conduit, cable, and wiring runs prior to installation.

- Install conduit, cable, and wire parallel and square with building lines, including raised floor areas. Do not exceed 40 percent fill in conduits. Gather and tie wires for orderly installation.
- Coordinate with other trades to provide proper sequencing of installation.

FIELD COMMISSIONING AND CERTIFICATION

Field Commissioning: Test camera system as recommended by manufacturer, including the following:

- Conduct complete inspection and testing of equipment, including verification of operation with connected equipment.
- Test devices and demonstrate operational features for Owner's representative and authorities having jurisdiction, as applicable.
- Correct deficiencies until satisfactory results are obtained.
- Submit written copies of test results.

TRAINING

Conduct on-site system administrator and security/surveillance operator training in accordance with the manufacturer's instructions and recommendations. Training shall include, but not be limited to camera administration, provisioning, configuration, operation, and diagnostics.

SYSTEM DESCRIPTION

The 35 Series NVR shall provide:

1. Fully featured NVRs
 - a. High decoding capability for 4K Ultra HD (UHD) viewing and recording
 - b. View 1 to 16 channels simultaneously with synchronized real-time playback on your monitor (depending on the decoding capacity and recording resolution)
 - c. Up to 8 MP (4K) resolution live view and playback
 - d. Supports H.265 HEVC smart codec/H.264
 - e. De-warp fisheye camera(HC30WF5R1) video, Honeywell Smart Viewer (HSV) windows desktop and HSV Mobile App for 360 degree situational awareness
 - f. Together with 35 series cameras, offering bandwidth saving features like Smart codec
 - g. Supported alarms from 35 Series Cameras to NVR: Tampering, Intrusion, Crowd Detection, Multi-Loitering
 - h. Two way audio/push notification for incident management
2. Dynamic, Accessible Monitoring

- a. Global P2P Service with reliable connection anytime, anywhere
- b. Mobile apps provide anytime, anywhere access for both Apple® and Android™ devices
3. Secure and Compliant Solution
 - a. For use as part of video system (lower case) which comply with NDAA Section 889
 - b. Together with 35 series cameras, providing end to end encrypted solution, with video streaming encrypted from 35 cameras to NVR, and video streaming/control encrypted between NVR and web client/viewer/mobile App
 - c. PCI-DSS compliance
4. Convenient, Flexible Storage Options
 - a. Internal storage supports 2 HDDs expandable up to 20 TB (10 TB per drive)
 - b. Store video clips and snapshots to external storage, such as USB device on local side or PC client on web side
5. Easy to Use
 - a. Together Plug and play feature, together with 35 Series cameras for rapid and simple setup
 - b. Full channels POE make it easy for use, also saving total cost of ownership
 - c. Intuitive NVR design, quick installation wizard and easy-to-understand installation guide for fast and easy setup

PRODUCTS

MANUFACTURERS

- A. Specified Manufacturer: 35 Series NVR, www.security.honeywell.com.
- B. Accepted Part Numbers:
 - HN35040100: 4 Chs NVR 4k (8 Mp) Support, H.265/H.264, 4 Chs POE, Stream Encryption, 0 TB, 1HD
 - HN35040101: 4 Chs NVR 4k (8 Mp) Support, H.265/H.264, 4 Chs POE, Stream Encryption, 1 TB, 1HD
 - HN35040102: 4 Chs NVR 4k (8 Mp) Support, H.265/H.264, 4 Chs POE, Stream Encryption, 2 TB, 1HD
 - HN35040104: 4 Chs NVR 4k (8 Mp) Support, H.265/H.264, 4 Chs POE, Stream Encryption, 4 TB, 1HD
 - HN35040106: 4 Chs NVR 4k (8 Mp) Support, H.265/H.264, 4 Chs POE, Stream Encryption, 6 TB, 1HD
 - HN35040108: 4 Chs NVR 4k (8 Mp) Support, H.265/H.264, 4 Chs POE, Stream Encryption, 8 TB, 1HD
 - HN35040110: 4 Chs NVR 4k (8 Mp) Support, H.265/H.264, 4 Chs POE, Stream Encryption, 10 TB, 1HD
 - HN35080200: 8 Chs NVR 4K (8 MP) Support, H.265/H.264, 8 Chs POE, Stream Encryption, 0 TB, 2HD
 - HN35080202: 8 Chs NVR 4K (8 MP) Support, H.265/H.264, 8 Chs POE, Stream Encryption, 2 TB, 2HD

HN35080204: 8 Chs NVR 4K (8 MP) Support, H.265/H.264, 8 Chs POE, Stream Encryption, 4 TB,2HD
HN35080208: 8 Chs NVR 4K (8 MP) Support, H.265/H.264, 8 Chs POE, Stream Encryption, 8 TB,2HD
HN35080210: 8 Chs NVR 4K (8 MP) Support, H.265/H.264, 8 Chs POE, Stream Encryption, 10 TB,2HD
HN35080216: 8 Chs NVR 4K (8 MP) Support, H.265/H.264, 8 Chs POE, Stream Encryption, 16 TB,2HD
HN35160200: 16 Chs NVR 4K (8 MP) Support, H.265/H.264, 16 Chs POE, Stream Encryption, 0 TB,2HD
HN35160204: 16 Chs NVR 4K (8 MP) Support, H.265/H.264, 16 Chs POE, Stream Encryption, 4 TB,2HD
HN35160208: 16 Chs NVR 4K (8 MP) Support, H.265/H.264, 16 Chs POE, Stream Encryption, 8 TB,2HD
HN35160210: 16 Chs NVR 4K (8 MP) Support, H.265/H.264, 16 Chs POE, Stream Encryption, 10TB,2HD
HN35160216: 16 Chs NVR 4K (8 MP) Support, H.265/H.264, 16 Chs POE, Stream Encryption, 16 TB,2HD
HN35160220: 16 Chs NVR 4K (8 MP) Support, H.265/H.264, 16 Chs POE, Stream Encryption, 20 TB,2HD
HN35040100N: H.265 4CH NVR 0TB, 1HDD, Non-PoE
HN35080100N: H.265 8CH NVR 0TB, 1HDD, Non-PoE
HN35160200N: H.265 16CH NVR 0TB, 2HDD, Non-PoE

SYSTEM COMPONENTS

- A. NVR: The NVR shall contain the recording engine, database of all network connected cameras.
- B. Web Client: The NVR Web Client shall render video and act as a main human/machine interface.

OPERATIONAL REQUIREMENTS

- A. 35 Series NVR shall provide a user-friendly graphical user interface (GUI) to configure the cameras, create schedules for recording, perform video surveillance and recording operations, and view various reports.
- B. 35 Series NVR shall be configured to store and view images captured by up to 16 cameras.
- C. 35 Series NVR shall have the following major capabilities:
 - 1. Record and monitor up to 16 IP channels with 1~30 fps per stream.
 - 2. Network bandwidth/throughput supported per NVR:
 - HN350401xx/HN350802xx: 64 Mb
 - HN351602xx: 128 Mb
 - 3. Support of up to 4 channels at 1080p H.265/H.264 decoding.

4. Live viewing of up to 16 channels simultaneously with synchronized real-time playback on your monitor.
 5. Powerful investigation and video archive search tools from local or remote client.
 6. Capable of managing motion detection-based recording, with pre-event and post-event recording based on IP camera-based motion detection events and “advanced” search on recordings from local or remote client.
 7. Preview and Calendar Search permitting search for videos and events based on user-selected date and time from local or remote client.
 - ~~8.~~ Simultaneous use of multiple video compressions including H.265, H.264.
 9. Internationalization – supports the following languages: English, Traditional Chinese, Japanese, German, Spanish, Italian, Polish, Portuguese, Russian, Slovakia, Arabic, Czech, Danish, Dutch, Finnish, French, Hebrew, Hungarian, Indonesian, Thai, Turkish, Vietnamese.
 10. Email on alarm.
 11. Dynamic IP Camera Discovery – Automatically discover all compatible cameras connected to the NVR.
 12. Multi-level user access rights for viewing and manages access to the recorder functions.
 13. Capable of managing continuous, scheduled, manual, event-based, and alarm-based recording features.
 14. Support for web client and mobile apps.
- D. Workstation (NVR Client) shall provide the following operator options:
- Configuration: The operator (with Administrator privileges) shall have the option to configure the NVR. Live update of all configurations is supported. The following configurations shall be possible:
1. System Configuration: Provide options to configure the system level settings.
 2. Camera Configuration: Provide options to add /delete IP cameras and modify the camera settings.
 3. Schedules: Provide options to configure schedule-based recording for cameras connected to the NVR.
 4. Sequences: Provide options to group a fixed number of cameras to view video.
 5. User Management (Users, Groups and Roles): Provide option to add/edit/delete users and/or groups.
- E. Configurations for cameras connected to the NVR:
1. Camera Configuration: The user shall be able to configure the following parameters for each camera connected to the NVR.
 - a. Camera Name
 - b. IP Address

- c. Camera Type
 - d. Continuous Recording: All cameras added shall be defaulted to "24/7" recording with the option to select other recording modes.
 - e. Event Based Recording: Shall be "None" by default, with the option to select motion-based recording.
 - f. User name: Shall display and enable setting the user name for a camera.
 - g. Password: Shall enable setting the password for a camera.
 - h. Camera Advanced Settings: Shall enable configuration of Resolution, Video Frame Rate, and Video Bit Rate.
- 2 The following video recording options shall be supported:
- a. Schedule-based recording: The system shall support the ability to schedule recordings for each individual camera for times in the future.
 - b. User-based recording: The user shall be able to configure user-activated settings for recording moments of interest while viewing live video from a camera. After configuring the user activated settings, the operator can start recording of video when needed. The video is recorded for the time period specified in the System settings for user activated recording.
 - c. Event-based recording: Event based recording shall be possible on Video Motion Detection and alarms triggered.
- F. Viewer: The 35 Series NVR Viewer shall have the following minimum capabilities:
- 1 Main video viewing screen capable of showing 1-, 4-, 8-, 9-, 16- split salvos of live or recorded video. Standard presets shall be customizable to the user preferences.
 - 2 Capable of configuring and running scan sequences.
 - 3 Capable of setting the IP camera resolution and frame rate.
 - 4 Capable of exporting user-selected image or video clips. A digital signature shall be attached to every exported clip.
 - 5 Capability to play back the exported video clips. Each video channel that is being recorded by the recording system shall be overlaid with text and a time stamp that is customizable by the user.
 - 6 Allow the user to initiate recording through the GUI or a controller.
 - 7 Capability of complete alarm management for the alarms coming from the 35 Series NVR.
 - 8 Playback control including play/pause, stop, rewind, fast play, slow play, frame-by-frame playback, full screen, and back up.
- G. Search: The Search facility shall include search for recorded video and events based on date and time.

NOTE TO SPECIFIER: IMPORTANT! Any damaged files on an installed micro SD card incurred by malfunction or error in files saved on the micro SD card, regardless of the cause, are not guaranteed by Honeywell.

SERIES INTEGRATIONS

- A. The 35 Series NVR shall be compatible with the following interoperability standards:
 - 1. Open Network Video Interface Forum (ONVIF)
 - 2. Real Time Streaming Protocol (RTSP)
- B. The 35 Series NVR shall be compatible with the following Honeywell Performance Series IP and other Honeywell cameras and encoders:
 - 1. Fixed Dome Cameras
 - a. HC35W43R3
 - b. HC35W45R3
 - c. HC35W48R3
 - 2. MFZ Dome Camera
 - a. HC35W43R2
 - b. HC35W45R2
 - c. HC35W48R2
 - 3. Fixed Bullet Camera
 - a. HC35WB3R3
 - b. HC35WB5R3
 - c. HC35WB8R3
 - 4. MFZ Bullet Camera
 - a. HC35WB3R2
 - b. HC35WB5R2
 - c. HC35WB8R2
 - 5. Fixed Ball Camera
 - a. HC35WE3R3
 - b. HC35WE5R3
 - c. HC35WE8R3
 - 6. MFZ Ball Camera
 - a. HC35WE3R2

- b. HC35WE5R2
- c. HC35WE8R2
- 7. Fixed Micro Dome Camera
 - a. HC35W25R3
- 8. Speed Dome Camera
 - a. HC35WZ2R25
 - b. HC35WZ5R30

NOTE TO SPECIFIER: Some development may be required in specific user cases to support some of these protocols in the field as they mature over time.

SYSTEM HARDWARE

- A. The 35 Series NVR shall have the following specifications:
 - 1. Processor: ARM processor
 - 2. Internal HDD:
 - HN350401xx/HN35040100N/HN35080100N: Internal x1 (3.5")
 - HN350802xx/HN351602xx/HN35160200N: Internal x2 (3.5")
 - 3. Operating System: Embedded LINUX
 - 4. Storage Capacities: 2 HDDs expandable up to 20 TB (10 TB per drive)
 - 5. Video Storage Hard Disk Options: Internal fixed up to 10 TB SATA Hard Disk Drive options
 - 6. Inputs and outputs:
 - Alarm Input:
 - HN350401xx: 4
 - HN350802xx/HN351602xx: 8
 - Alarm Out:
 - HN350401xx/HN350802xx: 1
 - HN351602xx: 2
 - 7. Network Interface:
 - HN350401xx/HN35040100N/HN35080100N: 10/100Mbps Ethernet (RJ-45) x 1
 - HN350802xx/HN351602xx/HN35160200N: 10/100/1000Mbps Ethernet (RJ-45) x 1
 - 8. Monitor Output: HDMI x 1 (4K Max), VGA x1 (1080P)

9. Unit Dimensions:

HN350401xx/ HN35040100N/HN35080100N:: 255.0 × 237.3 × 45.3 mm (10.04 × 9.34 × 1.78 inch)

HN350802xx/HN351602xx/HN35160200N: 372.0 × 313.3 × 46.5 mm (14.65 × 12.33 × 1.83 inch)

10. Unit Weight (Without HDD):

HN350401xx: 1 kg (2.20 lb) without HDD

HN350802xx: 2.65 kg (5.84 lb) without HDD

HN351602xx: 2.75 kg (6.05 lb) without HDD

HN35160200N: 2.65 kg (5.84 lb) without HDD

HN35040100N/HN35080100N: 0.8 kg (1.76 lb) without HDD

B. The 35 Series NVR shall have the following electrical specifications:

1. Power Supply: 100-240V AC, 50/60 Hz

2. Power Consumption:

- HN350401xx:

Max. 65 W;

15W without HDD

Total PoE power consumption Max. 45W,

30 W for a single port

- HN350802xx/HN351602xx:

Max. 180 W;

15W without HDD

Total PoE power consumption Max. 130 W, 30 W for a single port

- HN35040100N/HN35080100N:

Max. 18 W;

5W without HDD

- HN35160200N:

Max. 24 W;

5W without HDD

C. The 35 Series NVR shall be designed to meet the following environmental conditions:

1. Operating temperatures shall be between -10°C ~ 55°C (14°F ~ 131°F).

2. Storage temperatures shall be between $-40^{\circ}\text{C} \sim 60^{\circ}\text{C}$ ($-40^{\circ}\text{F} \sim 140^{\circ}\text{F}$).
3. Relative Humidity: Less than 90% RH.
4. Emissions: FCC Part 15, CE (EN 55032, EN 61000-3-2, EN 61000-3-3, EN 61000-6-4), ICES-003, Comply with UKCA and RCM.
5. Immunity: CE(EN 50130-4, EN 55024, EN 55035) Comply with UKCA and RCM.
6. Safety: UL LISTED TO UL/CSA 62368-1, CE(EN 62368-1), Comply with UKCA and RCM.
7. RoHS: CE(EN 63000), UAE(Cabinet Decree No.10 of 2017).

END OF SECTION