

# Longwatch Surveillance System

## Remote Video Engine



The Longwatch Surveillance System is comprised of two main components: the Longwatch Video Control Center (VCC) for centralized configuration and video handling, and one or more video engines connected to field cameras. The Remote Video Engine is designed for multiple-camera field applications.

### RVE Product Overview

The Longwatch Remote Video Engine is a unit comprised of a purpose built industrial computer with an integrated digital video recorder, power supply, digital I/O and proprietary Longwatch technology. The RVE is a field mounted hardware component that connects to the Longwatch VCC in your operations center.

The RVE constantly records high quality video from hardware component that connects to the Longwatch Video Control Center (VCC) in your operations center. up to four analog or six IP camera inputs. The RVE generates and transmits video event clips from remote sites back to a central plant using the existing communications infrastructure. These clips can be triggered



from up to twelve physical event triggers, such as door switches, motion detectors, PLC outputs, SCADA based alarms, or manually initiated from the SCADA system. Additionally, the RVE can perform video image analysis to make any supported camera act as a motion detector. The Card Access Control option enables central management of the employee access permissions and can remotely monitor and unlock entry points.

The RVE is designed to leverage existing wireless communication networks including dedicated PLC / RTU architectures, as well as, wireless Ethernet, LAN, or WAN IP networks.

The RVE comes in two models (RVE-EU and RVE-SI). The RVE-SI model is geared for system integrators who wish to embed within their own panel. The RVE-SI model contains the industrial computer and Longwatch software with the 16 channel DIO terminal strip. The RVE-EU adds a 90 Watt Power supply, Din Rail mounts, and a Nema-4 enclosure.

### Capabilities

- Live video transmission
- Local DVR storage of high quality video
- Easy access to DVR video
- Guard Tour Video Updates
- Automated Video Event Clip generation, including pre and post event video
- Ability to communicate over existing PLC networks, serial connections, or TCP/IP networks
- Communications Method Indifferent
  - Radio, Telephone, Satellite, Fiber-Optic, Frame Relay, T1, Cellular, etc.
- Scalable from 2400 baud to Gigabit Ethernet
- Supports up to 6 cameras (4 analog), Pelco Type D Pan Tilt Zoom (PTZ), and Axis IP
- Remotely Distributed - Centrally or Remotely Managed
- Advanced Security Capability
  - Windows Security Integration
  - RIJNDAEL-AES 128 bit encryption
- Optional Card Access Control

### Applications

- Water Distribution
- Oil and Gas Transmission and Distribution
- Distributed Power Generation
- Electric Power Transmission and Distribution
- Wastewater Systems
- Remote Site Equipment Management
- Railroad Facilities Monitoring

# Longwatch Surveillance System Remote Video Engine RVE-100

## SYSTEM SPECIFICATIONS

### VIDEO

**Inputs:** Four composite NTSC or PAL inputs  
Up to 6 Axis IP camera inputs

Virtually all analog Standard, Day/Night, High Sensitivity, Infrared Illuminated, or other security cameras supported as well as Pelco Type D Pan Tilt Zoom (PTZ) and Axis IP Cameras.

**IP Camera:** Framerate: 30 Frames/Second, 150 total fps  
Resolution: 320x240, 640x480, 1280x1024  
Camera Trigs: Motion, IO, Tamper, NoVideo, Audio

**Analog Video:** Framerate: 10 Frames/Second  
Resolution: 320x240, 640x480

The RVE stores to DVR at the above maximum rates. It will also transmit Live and Event video to the VCC, depending on available bandwidth, up to the above rates, but normally at a rate appropriate to the communications network.

**Storage:** 250 Gigs storage. Up to 30 days depending on resolution and frame rate speeds

### EVENT DETECTION

**Inputs:** Thirteen (13) optically isolated input channels. The RVE powers inputs. For AC powered RVE's, inputs are powered at 12 VDC wetting voltage. For DC power, RVE inputs are wetted at the RVE power source voltage.

Turn-on Time (Off to On), 3.5 (Typ)  
Turn-Off Time (On to Off), 50 MS (Typ)

All Inputs are designed to operate with standard contact closure type devices. Debounce protection can be enabled and configured for older style contacts. The first twelve inputs are used for zoned Alarm/Event Inputs. The last input is used for ARM/DISARM.

**Outputs:** Five Optically Isolated Output Channels  
Optionally powered externally or by RVE  
Voltage between terminals, DC30V (Max)  
Output current, 80mA(Max per Channel)  
Output voltage drop, 1.0 V(Max)  
Turn-on time (off to on), 2.8uS (Typ)  
Turn-off time (on to off), 400uS (Typ)

The first four outputs can be used to control annunciating, surveillance or operational devices, such as horns, beacons, lighting contactors, etc. The last output is reserved to operate a status LED for the RVE. (Optional external Modbus TCP IO supported).

**Notification:** Event Notification is performed via the Longwatch VCC

**Access Control Components (Optional):** HID-Compatible Proximity Card Readers (up to 9 per remote) and an Essex Electronics Keypad (for user PIN entry) as well as ISONAS Ethernet readers.

### SYSTEM CONTROLLER

**Connectivity:** Two USB 1.1 Compliant Ports  
One 50-pin socket Type I/II Compact Flash  
One 10BaseT/100BaseTX Ethernet Port

**Local Access:** 15-Pin VGA, PS/2 type Mini-DIN, Keyboard, Video & Mouse Connectors. (Unit is normally locally accessed via the Ethernet port to a technician computer via built-in Web server)

**Bulk Storage:** 250GB (support for external removable storage)

**MTBF:** 62,440 Hours (7.12 Years)

### PHYSICAL COMMUNICATIONS

Leased Telephone lines, Licensed or Unlicensed Radio, Cellular, Satellite, Frame Relay, T1, Fiber-Optic cable, Cellular Networks, etc.

### PROTOCOLS SUPPORTED

Allen-Bradley DF1, Modbus/RTU, Modbus/ASCII, Bristol Babcock BSAP, TCP, UDP, Phone Dialer, SIO\*

(Modbus/TCP, Modbus/RTU, Modbus/ASCII, Allen-Bradley DH+ SLC, Allen-Bradley Ethernet SLC, Phone Dialer, TCP and UDP are supported at the Longwatch VCC.)

\* SIO is the native Longwatch Serial Protocol for use on dedicated serial networks.

### ENVIRONMENTAL

**Cooling Type:** Convection Cooling, No Forced Air Required

**Storage/Shipment Temperature:** -15° to +150° F (-10 to +65° C)

#### Operating Temperature:

Backplane Mounting: +32° to 125° F (0° to +50° C)  
Longwatch Enclosure +27° to 115° F (-5° to +45° C)

**Humidity:** 10 - 95% RH (non-condensing)

**Altitude:** 0 to 10,000 ft.

### POWER

**Input Voltages:** 85-264VAC - 47-63Hz, 90-375VDC, 10-30VDC

**Nominal Voltages:** 115/230 VAC, 12VDC, 24VDC

**Power Consumption:** 42 Watts - Internally Fused

### ENCLOSURE MOUNTING

NEMA and CSA Type 4X (Incl. Type 4, 12 and 13). IEC 60529, IP66. Molded Fiberglass Polyester. Corrosion Resistant 316 Stainless Steel Hardware

#### Dimensions:

Enclosure: 18" x 16" x 10" (457mm x 406mm x 254mm)  
Back panel: 16.75" x 14.88" (425mm x 378mm)  
Panel Fabricated in accordance with UL508A

#### About Longwatch

Longwatch was founded by a team of industry veterans with the goal of providing video over existing SCADA communication networks. The result was the development of the Longwatch Video Surveillance System. Advanced technology incorporated in the system allows SCADA system operators the ability to utilize video to monitor and verify alarms at remote sites utilizing the existing communications infrastructure.

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