

CASE STUDY

PLC-INTEGRATED VIDEO MONITORING FOR SMART MANUFACTURING

Real-Time Production Line Visibility with Watchman NVR



OVERVIEW

Industry

Manufacturing / Factory Automation

Region

Korea with Overseas Production Facilities

Deployment Scope

Multiple production lines across domestic and international sites

A well-established manufacturing company required a scalable and standardized method to link PLC alarms with real-time video monitoring across all production lines. The solution needed to be deployable globally while remaining manageable by local factory teams after initial implementation.



CHALLENGE

Manufacturing facilities generate a large number of PLC alarms during daily operations. The client faced several operational challenges:

- 01 Excessive PLC alarms**, making it difficult to identify truly critical events
- 02 Delayed response** to production issues due to lack of visual context
- 03 Numeric PLC error codes** that were difficult to interpret remotely
- 04 Dependence on specialists** for ongoing system changes
- 05 Need for a solution** that local factory teams could maintain independently

The customer required a system that could be **customized initially**, but **operated and maintained by on-site teams afterward** without continuous vendor involvement.

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By linking PLC alarms to real-time video, we can confirm incidents instantly and standardize response across every production line - without relying on specialists for daily changes.

SOLUTIONS

Implementation of PLC integration with our NVR, enabling real-time correlation between PLC alarms and video surveillance. The solution was developed in collaboration with a **major Korean manufacturing organization** and has since been **standardized across all production lines**, both in Korea and overseas.

PLC Customization & Management Model

Initial PLC integration and customization

are performed during deployment:

- PLC protocol selection and communication setup
- Memory address mapping for alarm monitoring
- Alarm logic verification and testing

Post-deployment management is handled by the factory team:

- Alarm codes, descriptions, and camera mappings are maintained using Excel files
- Updates can be applied locally by importing revised Excel documents into the NVR
- No ongoing PLC programming or vendor customization is required

This approach ensures **fast deployment** while giving factories **long-term autonomy**.



Supported PLC Platforms

The Watchman PLC integration supports major industrial PLC systems, including:

- Mitsubishi Electric PLC
- Siemens PLC



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Seeing the right camera at the moment an alarm occurs dramatically shortens response time and helps prevent unnecessary downtime.



HOW THE SYSTEM WORKS

01 Continuous PLC Monitoring

Watchman NVR monitors defined PLC memory areas over the network in real time.

02 Critical Alarm Detection

Only **user-defined critical alarms** trigger events (not every PLC signal).

03 Instant Video Correlation

- Live video from associated cameras automatically pops up
- Alarm code and human-readable description are displayed together

04 Remote Visibility

- Identical alarm popups appear on remote Viewer systems
- Managers and engineers can respond immediately from off-site locations

05 Alarm History & Analysis

- All alarms are stored in a searchable database
- Alarm frequency and trends can be reviewed by process or code

RESULTS

Faster response to production issues

through immediate visual confirmation

Reduced downtime

by prioritizing only critical PLC alarms

Improved communication

using descriptive alarms instead of numeric codes

Operational independence

for factory teams after initial customization

Successful global rollout

across domestic and overseas production lines

The success of the initial deployment led the manufacturer to adopt the solution as a **standard architecture** for all current and future production facilities.





WHY WATCHMAN FOR PLC INTEGRATION

- 01** Initial customization with long-term self- management
- 02** No custom coding required after deployment
- 03** Excel-based configuration maintained by factory engineers
- 04** Real-time PLC alarm + video correlation
- 05** Proven in live production environments
- 06** Scalable for multi-line, multi-country operations

WATCHMAN

Real-time visibility for smart manufacturing



About Power Technology Inc.

Power Technology Inc.(PTI) delivers enterprise - grade surveillance and integration solutions for manufacturing and critical infrastructure.

The Watchman Series, designed and manufactured in Korea, provides reliable platforms for advanced applications including **PLC-integrated video monitoring** and production -line visibility.

"PLC alarms + video, correlated in real time"



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