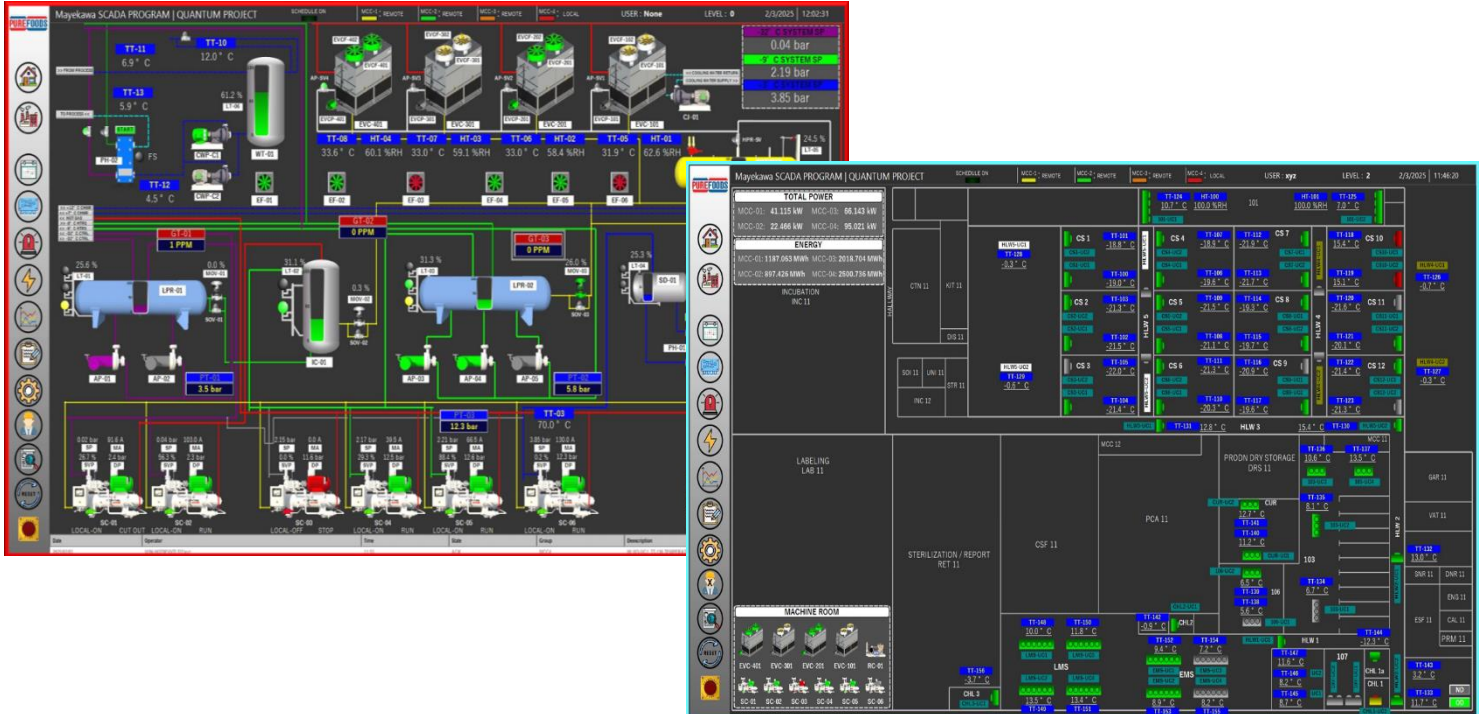# SCADA SYSTEM BY MAYEKAWA

MYCOM SCADA is a **supervisory control system** specifically designed to monitor and manage **MYCOM (Mayekawa)** refrigeration and compressor systems. It is not a general-purpose SCADA platform, but one **customized or optimized for MYCOM industrial machines**, often used in refrigeration-heavy industries like food processing, cold storage

Main Components of MYCOM SCADA System

1. **Field Devices (Sensors/Actuators):**
   - Temperature sensors
   - Pressure sensors
   - Valves
   - Motorized valves
   - Gas detectors
   - Level sensors
   - Float switch
2. **Programmable Logic Controllers (PLCs):**
   - These collect data from the field devices and execute control commands.
   - They communicate with the SCADA software.
   - We use brands like – SIEMENS, MITSUBISHI AND ALLEN BRADLLEY, but we can be flexible to customer's brand preference.
3. **SCADA Software Interface:**
   - This is where operators see dashboards, system graphics, alarms, trends, and logs.
   - MYCOM typically integrates its own logic, compressor data, and parameters here.
4. **Human-Machine Interface (HMI):**
   - Provides real-time interaction with equipment (e.g., start/stop compressors, set points).
5. **Communication Network:**
   - Connects compressors, sensors, PLCs, and the SCADA system (often using industrial protocols like Modbus, Ethernet/IP, Profibus, Profinet, Modbus TCP, OPC UA, DeviceNet, HART, CC-Link).

Key Functionalities of MYCOM SCADA

Function	Description
Real-Time Monitoring	Live display of compressor pressures, temperatures, oil levels, and runtime hours. Cold storage - fan status, valve status, temperature. Vessel - level, temperature, valve status, ammonia pump status.
Alarm & Fault Management	Triggers alerts for abnormal conditions such as high discharge pressure or oil level failure. High or low temperature alarms. Motor trip. Early warning for alarm.
Data Logging / Trends	Historical data trends for analysis and troubleshooting (e.g., temperature over time).
Compressor Control	Start/stop compressor units, switch from automatic to manual, change setpoints.
Energy Monitoring / Energy Efficiency	Track power consumption, system load, and operational efficiency.
Safety Interlocks	Built-in protection to prevent compressor damage (e.g., shutdown on overheat). High level on vessel interlock. Defrost interlock on cold storage.
Remote Access (optional)	Some versions support remote desktop or web-based access for off-site monitoring. We can offer WinCC Unified or IGNITION for remote version.

Where You Commonly See MYCOM SCADA

- **Ice plants** controlling multiple MYCOM ammonia compressors
- **Cold storage warehouses** ensuring stable temperatures 24/7
- **Food processing facilities** that rely on consistent cooling for meat, dairy, or seafood
- **Beverages & Brewery**

Benefits of MYCOM SCADA

- **Preventative Maintenance** – Use runtime and alarm data to service machines before failures occur.
- **Efficiency Optimization** – Reduce power usage by adjusting operations based on load conditions.
- **Operator Safety** – Minimize manual interaction with high-risk machines (e.g., ammonia compressors).
- **Faster Troubleshooting** – Logs and trends make it easier to identify root causes of issues.
- **Comprehensive Overview** – One centralized screen for all critical compressor and refrigeration operations.
- **Enhanced security –** manages security level (e.g., visitor – level 1, operator – level 2, admin – level 3)
- **Long term investment –** it will probably cost more initially but will ensure future cost efficiency

Example Interface (What You Might See)

- A screen showing a **system flow diagram** with all compressors, evaporators, condensers, etc.
- Color-coded readings:
  - **Green:** Normal
  - **Yellow:** Warning
  - **Red:** Fault/Alarm
- Graphs showing:
  - Suction and discharge pressures
  - Motor current
  - Compressor oil temperature
  - Cold storage temperatures
  - Energy consumption
  - Energy efficiency
- Buttons:
  - Start/Stop Compressor
  - Acknowledge Alarm
  - Switch Control Mode (Auto/Manual)

Conclusion

MYCOM SCADA is essential for **automating and optimizing** refrigeration systems using MYCOM compressors. It removes the guesswork and manual checks by giving you **real-time visibility, control, and historical analysis**, ensuring operations stay smooth and safe.

PROJECT REFERENCES:

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