



# Plunkett Orchards: Refrigeration System Extension & Upgrade Stage 2

## PROJECT PROFILE

### Automation Services

The roles of Cold Energy Automation during this project were;

- Retrofit Automation controls for 14 Cold Storage Rooms to existing switchboards.
- Retrofit Automation controls for facility refrigeration plant.
- Control System Design, Programming and Commissioning.
- Automation services point testing & commissioning.
- System Integration: Automation Controls and Variable Speed drives.
- Create & Commission System Graphical Supervisor.

### Project Equipment

- Allen Bradley Automation System (Micro 800)
- Panel Mount Industrial Touch Screen PC's.
- Allen Bradley VSD's.
- Fruit Pulp probes.

### Control System Communication Protocols

- Modbus RTU
- Modbus TCP/IP

### Project Overview

The existing fruit storage rooms and ammonia refrigeration plant was upgraded with;

- 3 x Allen Bradley Micro 850 Controllers, 1 x Industrial Panel PC, 1 x Indusoft SCADA Server, 1 x Allen Bradley VSD.

The new automation strategy controlled;

- 5 x Reciprocating Compressors, 1 x Screw Compressor, 2 x Cooling Towers, 2 x Ammonia Liquid Pumps, 5 x Water Pumps.

The new automation and SCADA system controlled the;

- Staging operating for the 3500 kW of available cooling capacity, temperature conditions for 7000 tonnes of fruit storage, coordinated defrost control, 3 stage setpoint control (Day, Night, Off Peak), Monitoring of fruit probes for export and report generation for system logging.