



PlantScape Controller Implementation

Lesson 1

PlantScape Hardware Configuration

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Notes

Introduction

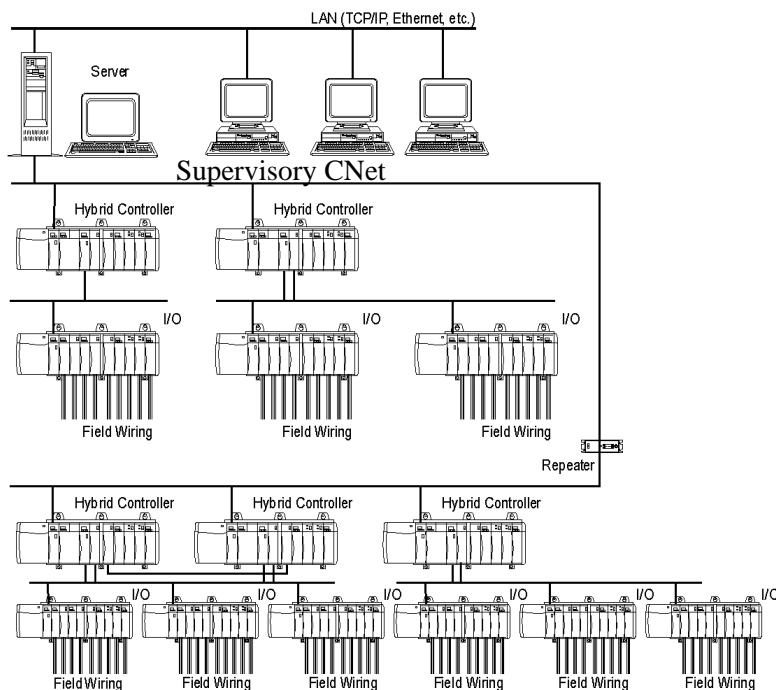
The purpose of this Lesson is to introduce you the typical PlantScape hardware configuration. After you complete this Lesson you should be able to identify and understand the uses of the individual components of the PlantScape System.

Objectives

- ❶ Given a statement on hardware slot locations, determine whether the statement is correct
- ❷ Given a statement regarding the communication hardware of the PlantScape system, identify the correct use of a particular hardware module



PlantScape System Architecture



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Notes

PlantScape System Architecture

The PlantScape server, the heart of the system

- Consists of a standard Pentium chip computer
- Acts as the central repository for all system data

The server also runs all the core system functions, including

- Data acquisition and processing
- Alarm and event management
- History collection, archiving and trending, report generation
- Specialist and user applications (TPH), (TPB)

The server also supports the operator station client personality, enabling systems to “start small” with just one box.

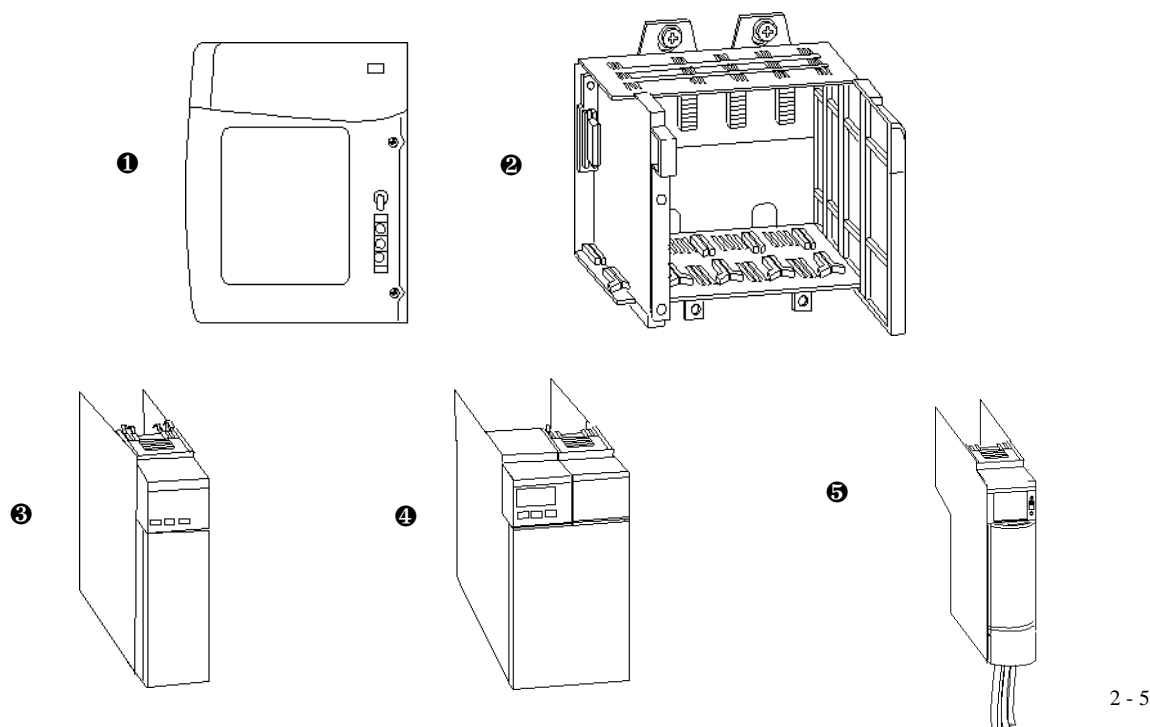
Additional operator stations may be connected via standard local & wide area networks.

Full-function operator stations may also be connected remotely via dial-up communication links.



PlantScape Rack

➤ Rack Components



Notes

Rack Components

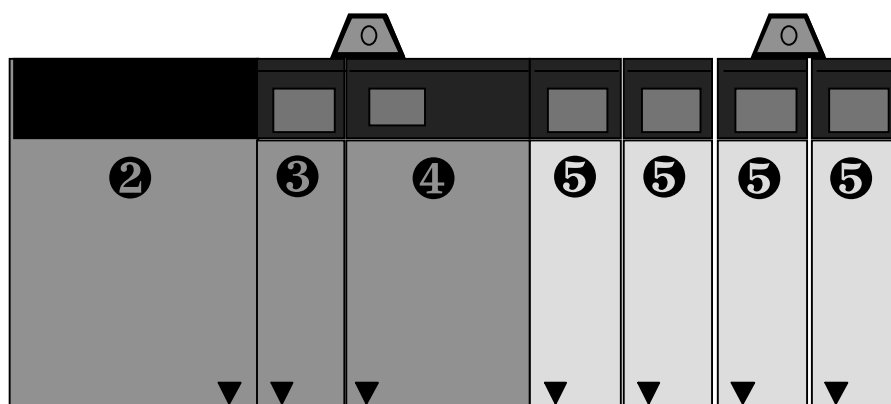
- ❶ The power supply is always the first, left end module. It is separate from the rack and does not consume any slots. It operates on 115/230 VAC or 24VDC.
- ❷ The rack has available capacity for 4, 7, 10, 13 and 17 slots. It is used for processor and I/O interface to plant equipment. The rack features removal and insertion under power, which ensures the automated control system can continue operation while various options are modified.
- ❸ The ControlNet interface module is the PlantScape communications interface. It supports supervisory/peer and I/O network communications. In I/O communications one CNI can support a maximum of 16 I/O modules
- ❹ C200 Control Processor modules are double wide, 2 board assemblies that provide the hybrid control.
- ❺ I/O modules support analog, digital AC and digital DC.



PlantScape Rack Configuration

➤ Standard Configuration

- Below is an example of the rack configured with
 - 7 slot chassis
 - Power supply
 - ControlNet Interface (CNI)
 - Control Processor (C200)
 - Input Output Modules



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Notes

Configuring the Controller CNet address

The controller CNet address is set on two rotary switches on the CNI module. One Hybrid controller must have an address of 1. It is the “keeper” of the CNet communication parameters. These parameters are specified in the *ControlNet Installation Guide*.



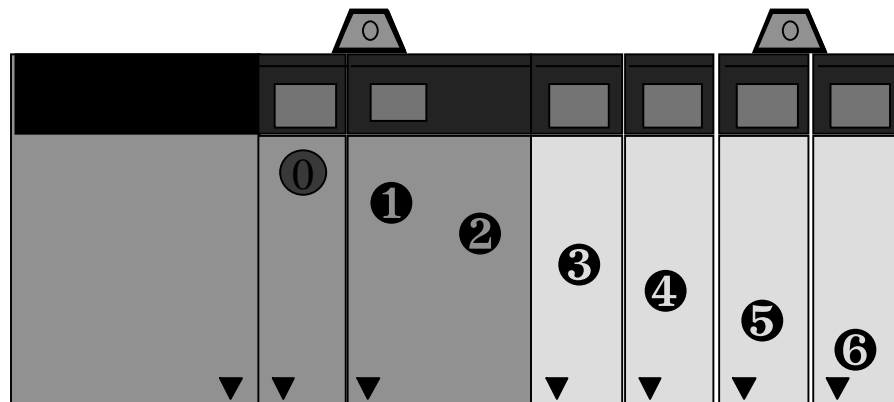
The power unit is not part of the slot number sequence. Begin counting with the first slot next to the power unit.



Determining Slot Numbers

➤ Finding the location of hardware in your chassis

- To determine the IOM Slot Number you must:
 - Count starting at zero
 - Count from left to right
 - Count both spaces if the module occupies two spaces



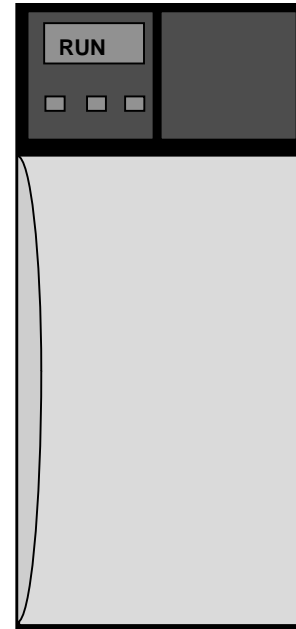
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Notes

Honeywell

Control Processor Module

- 2 board, double-wide module
- 100 MHz PowerPC microprocessor
- Memory
 - 8 Mbyte RAM with EDAC
 - 4 Mbyte Flash ROM with EDAC
(upgrades w/o a new chip)
- Built in lithium battery; Optional rechargeable Battery Extension Module
- Supports up to 64 I/O modules
 - 32 analog I/O modules



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Notes

Control Processor Module: LED Indicators

<u>States</u>	<u>Definition</u>
RUN	- loaded and operating
IDLE	- loaded and not processing
NODB	- personality loaded, no configuration
RDY	- inactive and ready to be loaded
ALIV	- alive; base software not loaded
FAIL	- hardware/software failure

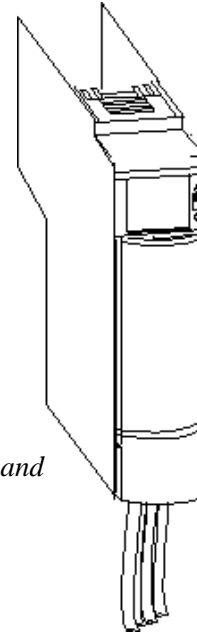
BATtery and OK indicator LEDs

Battery LEDs should be lit when OK is lit; otherwise the Battery has failed



PlantScape Rack I/O

- I/O modules are configured via Control Builder
- Removable Wiring Hood
 - Includes a wire tie slot
 - Protects wiring while removed from module
 - Removable hood to gain termination access
- Choice of Removable Terminal Block (RTB) style
 - 20 position RTB (8 point or less I/O modules)
 - 36 position RTB (16 point I/O modules)
- Termination Connector
 - Supports “Removal & Insertion under Power” for field termination *and* backplane connectors
 - Door opens to provide a handle for connector removal
- 5” x 5” I/O modules



Always check hardware wiring specifications in the Control Hardware Installation Guide before wiring any Modules

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Notes

Rack I/O LED Indicators

<u>LED</u>	<u>Display</u>	<u>Definition</u>
OK	steady green	normal operations
OK	flashing green	passed internal diagnostics, but not operational
OK	flashing red	communications time-out
OK	steady red	replace module
I/O State	yellow	active I/O (point active)
I/O Fault	red	point failed
Cal	flashing green	calibration mode



Lesson 1

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Notes