



CK722

Network Controller

Installation and Configuration Manual

CK722

Network Controller

Installation and Configuration Manual

December 2008

24-10239-6 Revision A



Security Solutions
(805) 522-5555

www.johnsoncontrols.com

Copyright 2008
Johnson Controls, Inc.
All Rights Reserved

No part of this document may be reproduced without the prior permission of Johnson Controls, Inc.

If this document is translated from the original English version by Johnson Controls, Inc., all reasonable endeavors will be used to ensure the accuracy of translation. Johnson Controls, Inc. shall not be liable for any translation errors contained herein or for incidental or consequential damages in connection with the furnishing or use of this translated material.

Due to continuous development of our products, the information in this document is subject to change without notice. Johnson Controls, Inc. shall not be liable for errors contained herein or for incidental or consequential damages in connection with furnishing or use of this material. Contents of this publication may be preliminary and/or may be changed at any time without any obligation to notify anyone of such revision or change, and shall not be regarded as a warranty.

Acknowledgment

Company and product names published in this manual are trademarks or registered trademarks of their respective owners.

Federal Communications Commissions Notice

This equipment, CK722, has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The user is cautioned that changes and modifications made to the equipment without approval of the manufacturer could void the user's authority to operate this equipment.

Canadian Notice

This Class B digital apparatus, CK722, complies with Canadian ICES-003.

Cet appareil numérique de la classe B, CK722, est conforme à la norme NMB-003 du Canada.



Declaration of Conformity

This product complies with the requirements of the European Council Electromagnetic Compatibility Directive 2004/108/EEC and the Low Voltage Directive 2006/95/EEC.

This equipment must not be modified for any reason and it must be installed as stated in the Manufacturer's instruction.

If this shipment (or any part thereof) is supplied as second-hand equipment, equipment for sale outside the European Economic Area or as spare parts for either a single unit or system, it is not covered by the Directives.

UNDERWRITERS LABORATORIES COMPLIANCE VERIFICATION SHEET CK722

This product is listed under Underwriters Laboratories UL 1076 for Proprietary Burglar Alarm Units and Systems and UL 294 for Access Control Systems Units. When installed at the site the following requirements must be met to comply with these standards.

1. Transient protection devices that are installed must not be removed or defeated.
2. The CK722 shall be mounted in subassembly S300-DIN-L or S300-DIN-S.
3. The CK722 in combination with the S300-DIN-L or S300-DIN-S must be connected to a UL Listed Uninterruptible Power Supply that provides a minimum of 24 hours of AC emergency power.
4. The tamper switch must be enabled at all times.
5. Systems requiring the use of network hubs, routers, bridges, network switches or the like shall guarantee these devices are UL Listed for fire and shock in the category control number (CCN) NWGQ and/or EMRT. These devices shall be installed in a temperature-controlled environment. The temperature-controlled environment must be maintained between 13 - 35°C (55 - 95°F) and relative humidity of 85 ±5% by the HVAC system. Twenty-four hour standby power shall be provided for the HVAC system.
6. The installer shall incorporate a supply line transient suppression device complying with the Standard for Transient Voltage Surge Suppressors, UL 1449, with a maximum rating of 330 V. Supply line transient suppression device is to be used with the power supply to the network hub(s) routers, bridges and/or network switches.
7. External network hubs, routers, bridges or network switches must use signal line transient suppression devices complying with the Standard for Protectors for Data Communications and Fire Alarm Circuits, UL 497B, with a maximum marked rating of 50V.
8. Modems shall not be used for primary connection to the host computer. Modems have only been investigated by UL for supplementary use.
9. Do not connect equipment to an AC power source that is controlled by a switch.
10. The following products have not been investigated by Underwriters Laboratories:
 - S300-KDM keypad display terminal
 - S300-RDR8S reader/input/output terminal
 - Metasys® products using the BACnet interface
11. The Intrusion feature has not been investigated by Underwriters Laboratories.
12. In SCT, the system level Notification Class, Suppress Default attribute must be unchecked.

TABLE OF CONTENTS

Chapter 1: Introduction

Chapter Summaries	1-1
Manual Conventions	1-2
Key Terms	1-2
Note on Other Manufacturer's Documentation	1-3
Technical Support	1-3
About CK722	1-3
System Configuration with CK722 Controller	1-5
Application	1-6
RS485 Bus	1-6
Ground Wiring on S300 Bus	1-7

Chapter 2: Hardware Installation

Installation	2-1
Unpacking the Equipment	2-1
Package Contents	2-1
Tools Needed	2-1
Mounting	2-1
Wiring	2-2
Power Supply, Network, and Communication Connections	2-2
Power Supply	2-2
Connecting the Network	2-3
RS485	2-4
Serial Ports	2-5
Binary Input	2-5
Binary Output	2-6
Wiring the CK722	2-6
Wiring Considerations and Guidelines	2-7
Cable Requirements	2-7
Cable Routing	2-8
CK722 Ethernet Network Rules	2-9
Ground and Grounding Cable Shields	2-9
Ground	2-9
Grounding Cable Shields	2-9
Setup and Adjustments	2-12
Powering on the CK722	2-12
Setting the End-of-Line Switch	2-13
Lithium Battery	2-14

Technical Specifications	2-14
Maintenance	2-15
Impaired Performance Conditions.....	2-16
Field Servicing.....	2-17
Troubleshooting	2-17

Chapter 3: SCT User Interface

Accessing SCT	3-1
Screen Layout and Frames.....	3-1
Navigation Tree.....	3-3
Items	3-3
Navigating to an Item	3-3
Displaying Information about an Item.....	3-4
Modifying Items	3-4
Deleting Objects/Items	3-5
Printing a Copy of the Navigation Tree	3-5
Display Frame	3-5
Display Frame Layout	3-6
Display Panel	3-7
Display Panel Tabs	3-7
Display Panel Buttons	3-7
Printing a Copy of the Display Panel.....	3-8
Pop-Up Menus	3-8
System Inactivity Timeout	3-8
Logging Out	3-9
Exiting	3-10

Chapter 4: CK722 Commissioning

Starting a P2000 SCT Project.....	4-1
Once per Project	4-2
Once per Site	4-2
Once per CK722	4-4
Linking Schedule Objects to P2000 Time Zones	4-5
CK722 Installation and Configuration Verification	4-6
Downloading the P2000 SCT Object Database to a CK722 Controller for the First Time	4-7
Verifying Online Status of the CK722.....	4-7
Once per Hardware Module	4-7
Option 1: Creating a Hardware Module Using a Basic Hardware Module Template	4-7
Option 2: Creating a Hardware Module Manually	4-9
Once per Door.....	4-9
Creating a Package for a Door (x-Templates)	4-9
Creating a Package for a Door (Hardware Module Templates)	4-10
Cursory Test.....	4-10
JCI Standard SCT Templates	4-11
Hardware Module Templates	4-12
JCI_RDR2S_Card-In.....	4-12
JCI_RDR2SA_Full-IO	4-15

Chapter 5: Database Download/Synchronization

Introduction	5-1
Database Download.....	5-1
Object References to Objects in Other Controllers	5-3
Update P2000 Only.....	5-4
Database Synchronization	5-4
Database Locking	5-6
Downloading or Synchronizing a Database	5-6
ActionQ	5-8
ActionQ Operation.....	5-8
ActionQ Interface	5-9
Using the ActionQ	5-10
Sequence of Events.....	A-1
P2000 System Configuration Tool (SCT) Procedures	A-2
Multiple Command Object Configuration	A-2
Controller Event Object Configuration.....	A-4
Access Control Object Configuration	A-5
Synchronizing the Object Database with the Host and Controller	A-5
P2000 Host Procedures	A-5

INTRODUCTION

The CK722 is a powerful and flexible network controller for the P2000AE Security Management System (SMS) that is configured using the P2000AE System Configuration Tool (SCT). Configuring the CK722 consists of inserting and interconnecting BACnet objects to create a unified access control or intrusion detection application. Applications can range from basic access control functions, such as configuring an entry reader for a particular door, to more advanced functions, such as assigning anti-passback, occupancy and anti-loitering rules to a controlled area of the facility.

This document describes features of the CK722 controller and provides instructions on its installation and commissioning.

Further information can be found in the *CK722 Commissioning Guide*, *P2000AE System Configuration Tool (SCT)*, and the *P2000AE Software User Manual*.

NOTE

Throughout this manual the terms P2000AE and P2000 are used interchangeably.

CHAPTER SUMMARIES

The manual is divided into the following chapters and an appendix:

- **Chapter 1: Introduction**, provides a brief description of this guide and each chapter, and defines the key terms and conventions used throughout the guide. It also provides basic information about the CK7222 controller.
- **Chapter 2: Hardware Installation**, describes how install CK722 module and how to perform maintenance and troubleshooting tasks.
- **Chapter 3: SCT User Interface**, provides information about the SCT tool used to configure the CK722 controller.
- **Chapter 4: CK722 Commissioning**, outlines the process of commissioning the CK722 controller for use in the P2000 Security Management System (SMS). It also describes two of the JCI Standard Templates for SCT.
- **Chapter 5: Database Download/Synchronization**, provides step-by-step instructions for downloading and synchronizing the database.

- **Appendix A: Secured Premises Notification Settings**, explains how to configure the P2000 SMS to enable entities to suppress and unsuppress alarms using a Controller Event object in accordance with UL 1076.

MANUAL CONVENTIONS

The following items are used throughout this manual to indicate special circumstances, exceptions, important points regarding the equipment or personal safety, or to emphasize a particular point.

NOTE

Notes indicate important points or exceptions to the information provided in the main text.



Cautions remind you that certain actions, if not performed exactly as stated, can cause damage to equipment, security problems, or cause the system to operate incorrectly due to errors in system setup or programming.

KEY TERMS

The following terms are used throughout this manual:

BACnet (Building Automation and Control network) – A standard protocol from the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). This protocol provides a standard for allowing computers and equipment controllers to transfer data between the devices in an object-oriented fashion. The BACnet standard defines the types of information and attributes that any device must maintain, and defines how BACnet messages are communicated between the various devices.

MCE (Metasys Control Engine) – An object-based operating system that resides on a controller and performs control functions with BACnet objects. MCE interfaces with external control hardware to perform various control functions.

Object – Objects are self-contained functional items in the P2000 SMS that contain processes to manage security components. Each object that exists in a system is based on a specific object type. There is an object type to manage the functions of the site, object types to manage the operation of the various device types installed on the site, object types to manage the physical input and output points of each field device, and others.

Objects communicate with the rest of the system and with the user through their attributes. The object type defines the basic function of the object, but the actual behavior of each object also depends on the values assigned to its configuration attributes and received by its input attributes from other objects. The object writes its status conditions and the results of internal processes to its output attributes.

P2000 SCT – P2000 System Configuration Tool used to configure CK722 controllers for use with the P2000 SMS. The P2000 SCT is a browser-based application provided as part of the P2000 SMS software package. Users can access the P2000 SCT directly from the P2000 SMS software or via their browser on any computer with a LAN/WAN connection to the P2000 server. When the P2000 SCT's configuration settings are modified, these changes can be downloaded to the CK722 controller, and the P2000 SMS host software is updated simultaneously to reflect the changes.

P2000 SMS – P2000 Security Management System, which consists of the host, SCT, controllers, field devices (e.g. S300 modules), terminals, etc. The P2000 host system software is a Windows®-based application that resides on P2000 servers and workstations and oversees the operation of the complete security system.

Template – “Rubber stamps” of pre-defined applications that can be used to rapidly populate the P2000 SCT hardware configuration database. Templates are used to create *Packages*, which contain all of the components for a single application, such as a door.

NOTE ON OTHER MANUFACTURER'S DOCUMENTATION

*Johnson Controls does not duplicate documentation of other equipment manufacturers. When necessary, as in this installation procedure, Johnson Controls provides documentation that supplements that of other manufacturers. When unpacking your equipment, **keep all original manufacturer documentation for future reference.***

TECHNICAL SUPPORT

Technical assistance is provided to Johnson Controls® authorized dealer representatives from 5 a.m. PT to 5 p.m. PT, Monday through Friday. System users can get answers to operator questions by calling the nearest district sales/service office.

ABOUT CK722

The CK722 is a powerful and flexible network controller for the P2000AE Security Management System (SMS) that is configured using the P2000AE System Configuration Tool (SCT).

The CK722 controller:

- Performs control applications based on the objects defined in Metasys® Control Engine (MCE).
- Handles high volume, high-speed traffic and communicates with the system host (P2000AE server).
- Uses the S300 field devices to provide controls.

The CK722 is intended to be mounted on a wall, DIN rail, or in an S300-DIN enclosure.

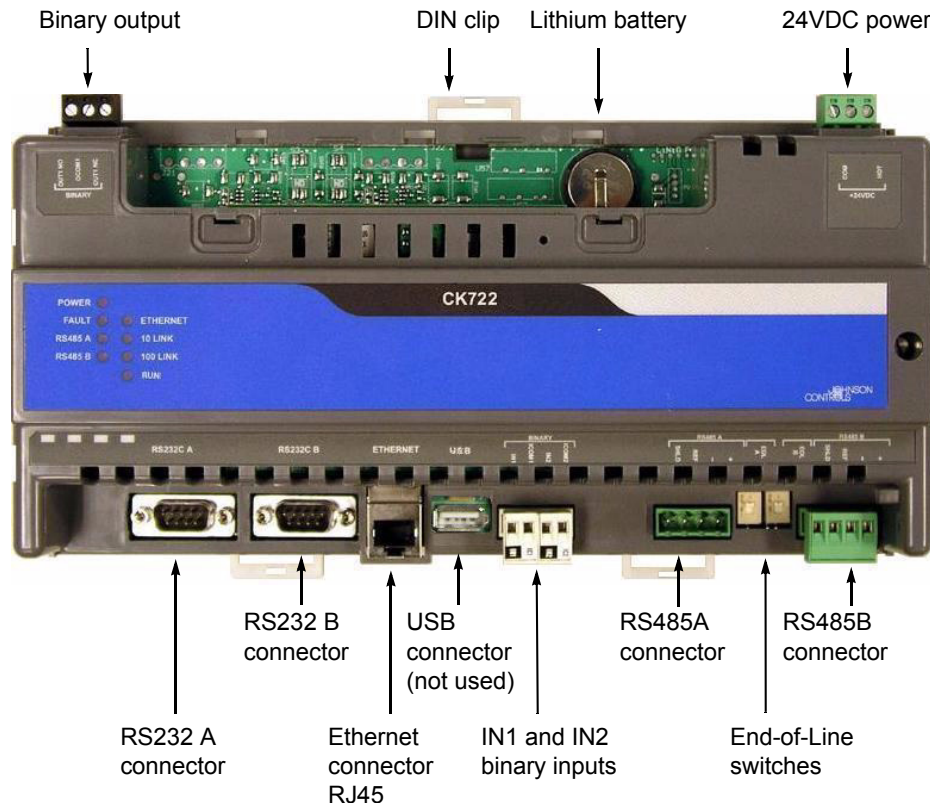


Figure 1-1: CK722 Controller Hardware

The major functional components of the CK722 are:

- Embedded 32-bit processor
- 128 MB onboard flash memory (for the operating system and database)
- 3V lithium battery
- IN1 and IN2 - Binary inputs, unsupervised
- Binary output - Form C Relay, SPDT, 30VDC/VAC maximum
- LED indicators (POWER, FAULT, RS485 A, RS485 B, ETHERNET, 10/LINK, 100/LINK, and RUN)
- Connectors (see Table 1-1 for description)

Table 1-1: CK722 Connectors

Connector	Description
RS232C A	RS-232 Serial Interface, DB9 port for setting the static IP address
RS232C B	RS-232 Serial Interface, DB9 port for high level elevator integration
RS485A	For field device communication
RS485B	For field device communication
RJ45	10/100Base-T network port for host communication
USB	Not used

System Configuration with CK722 Controller

Figure 1-2 illustrates a simple system configuration, including CK722 controllers, DIN enclosures, and expansion enclosures.

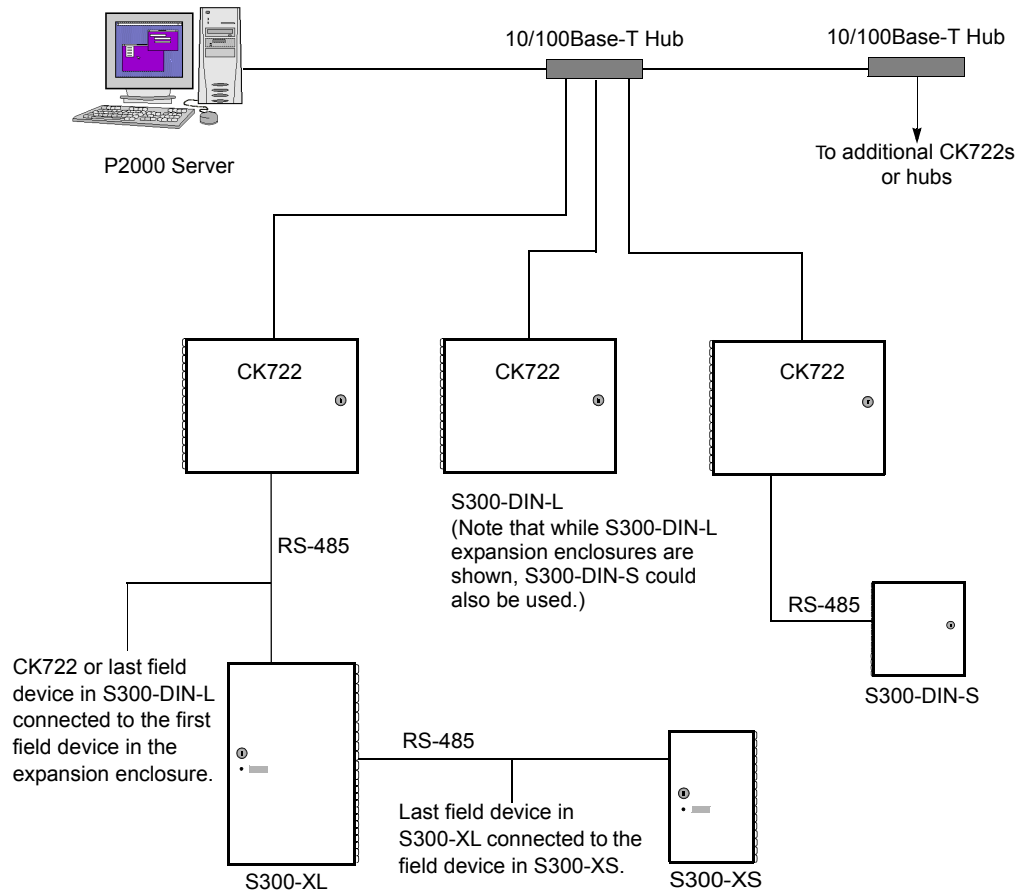


Figure 1-2: Example of System Configuration

APPLICATION

All CK722 controllers are connected to, and programmed/monitored via the P2000AE server.

You can create a CK722 system by adding field devices to connect readers, monitor 2 or 4-state input points, and adding output relays to perform manual or automatic control functions. In addition, input points can be linked to output relays. The CK722 uses the legacy S300 field devices (S300-RDR2, S300-I16, S300-IO8, S300-SIO8, and S300-SI8), the S300-DIN-RDR2S field device, and the S300-KDM field device.

Communication between the CK722 and the field devices is accomplished via the S300 protocol over RS-485.

Each CK722 can have 2 buses and support up to 32 field devices on each bus, for a maximum of 64 readers.

Configuring the CK722 is done using the P2000AE System Configuration Tool (SCT) and consists of inserting and interconnecting BACnet objects to create a unified access control or intrusion detection application. Applications can range from basic access control functions, such as configuring an entry reader for a particular door, to more advanced functions, such as assigning anti-passback, occupancy and anti-loitering rules to a controlled area of the facility.

RS485 Bus

The CK722 uses the RS485A and RS485B ports to communicate with S300 I/O modules on the serial bus.

The following hardware modules (also called field devices or terminals) can be used with CK722:

- S300-DIN-RDR2S - Reader
- S300-DIN-RDR2SA - Reader
- S300-KDM - Keypad/Display module
- S300-RDR2 - Reader terminal
- S300-SIO8 - Supervised Input/Output terminal
- S300-IO8 - Unsupervised Input/Output terminal
- S300-I16 - Unsupervised Input terminal
- S300-SI8 - Supervised Input terminal

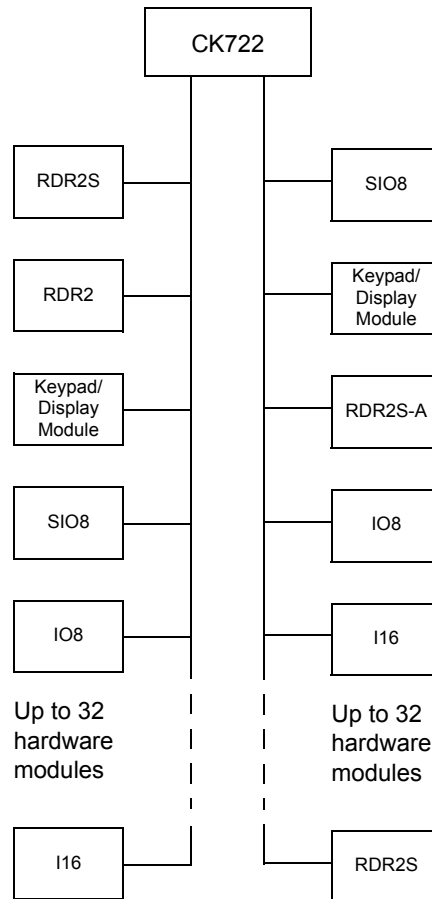


Figure 1-3: RS485 Buses

Ground Wiring on S300 Bus

Some of the Johnson Controls devices that can be connected to an S300 bus have opto-isolated RS485 interfaces, while others do not.

Examples of devices with opto-isolated RS485 interfaces include CK721, CK722, S300-DIN-RDR2S, and S300-DIN-RDR2S-A.

Examples of devices without opto-isolated RS485 interfaces include S300-KDM, CK705, S300-SI8, S300-SIO8, S300-IO8, and S300-I16.

As long as *all* the devices on an S300 bus have opto-isolated RS485 interfaces, connecting the Ground wire (also called COM or REF) is not needed.

As soon as even one device with a non opto-isolated RS485 interface is connected to the S300 bus, it is necessary to connect the ground wire to all devices on this S300 bus, including the devices which do have opto-isolated RS485 interfaces.

HARDWARE INSTALLATION

INSTALLATION

Unpacking the Equipment

Carefully inspect the shipping containers as soon as you receive them (with the delivery agent present). Some shipping companies want to have an agent present when a damaged container is opened. If a container is damaged, open it immediately, inspect the contents, and have the agent make note on the shipping document. Check the purchase order against the packing slips to ensure the order is complete. If the contents of a container are damaged in any way, notify the carrier and your Johnson Controls representative immediately. Report any discrepancies to your Johnson Controls representative. Save the packing materials for possible return shipments.

Package Contents

- One CK722 network controller with removable terminal plugs
- One Real-Time Clock (RTC) battery (installed and connected when the CK722 is shipped)
- This document

Tools Needed

Small straight blade screwdriver for securing wires in the terminal blocks.

MOUNTING

For mounting information refer to the *S300-DIN-L Hardware Installation Manual* and the *S300-DIN-S Hardware Installation Manual*.

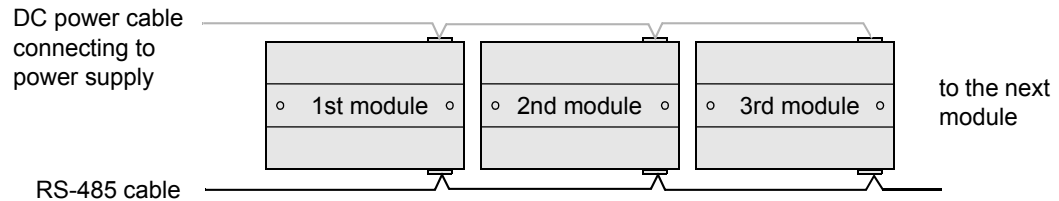
WIRING

Power Supply, Network, and Communication Connections

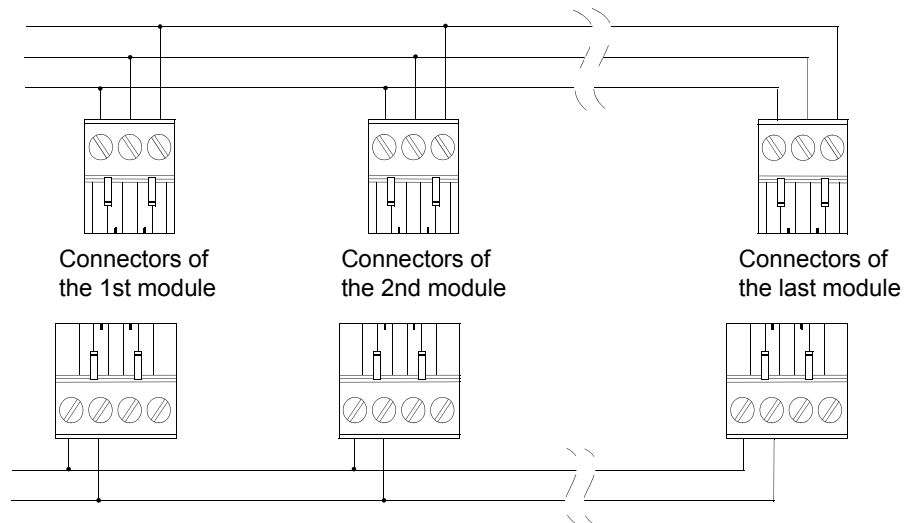
See page 1-4 for the location of the power supply terminal, network terminals, Ethernet port, and modem port.

Power Supply

When connecting multiple CK722 modules, wire the modules in parallel following the “daisy chain” pattern. To construct the power wiring, use 18AWG wires.



Make sure each wire is connected to the same corresponding connector position in the subsequent CK722 module. See the figure below for connector details.

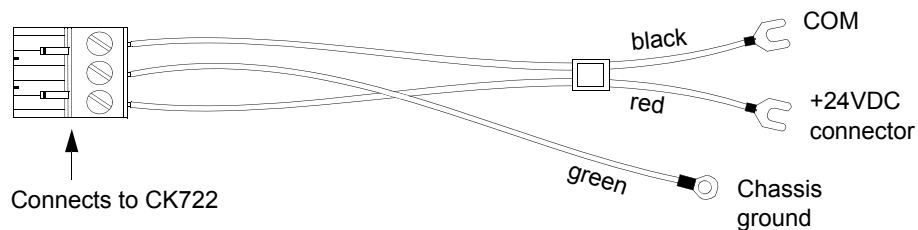




Observe the following precautions:

- Do not connect the 24VDC power supply cable to the CK722 module until all wiring is complete. Short circuits or improperly connected wires may result in permanent damage to the equipment.
- Use copper conductors only. Make all wiring in accordance with local, national, and regional regulations. The CK722 is a low-voltage (<30 VDC) device. Do not exceed the CK722 electrical ratings.
- Prevent any static electric discharge to the CK722. Static electric discharge can damage the CK722.

For power wiring with either the large or small DIN enclosure, use the cable assembly shown below.



Connecting the Network

The CK722 communicates with the P2000 server over 10/100Base-T Ethernet and the BACnet protocol, using a standard 10/100Base-T cabling and 10/100Base-T hubs. Cabling of the system needs to comply with the industry-standard network guidelines.

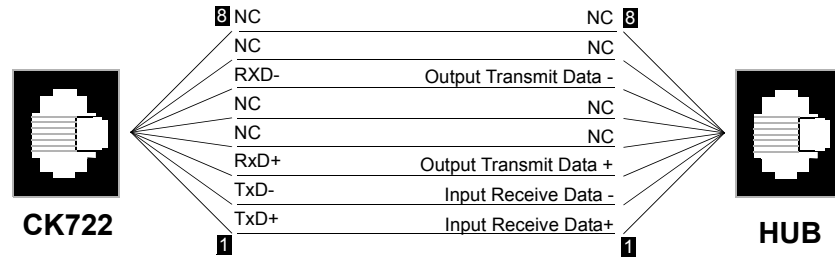
As a network device, the CK722 can be installed in a variety of configurations based on the needs of your sites.

For connection, use the 8-pin RJ-45 network port (see page 1-4).

The following types of wiring may be required:

- Hub to CK722, straight through. Like other 10/100Base-T devices, the CK722 RJ45 port is designed to connect to a hub using pins 1, 2, 3, and 6 (see the figure below)
- Hub to hub straight-through or crossed, depending on the hub used

The maximum segment length is 328 ft (100 m). This is the distance between two hubs, or the distance between a hub and a network device such as the CK722.



RS485

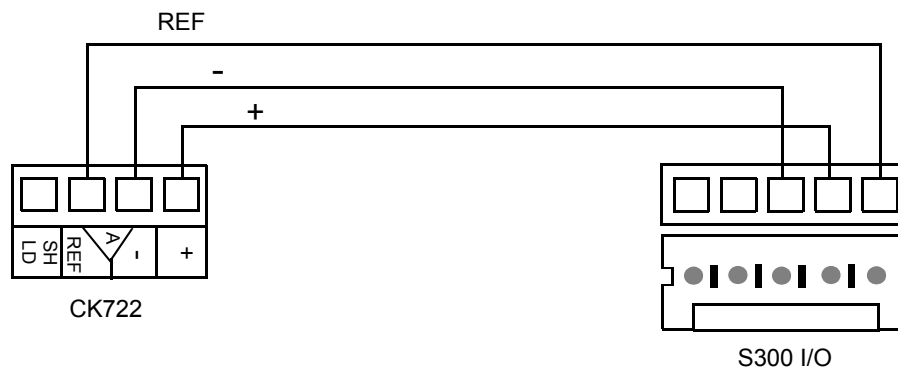
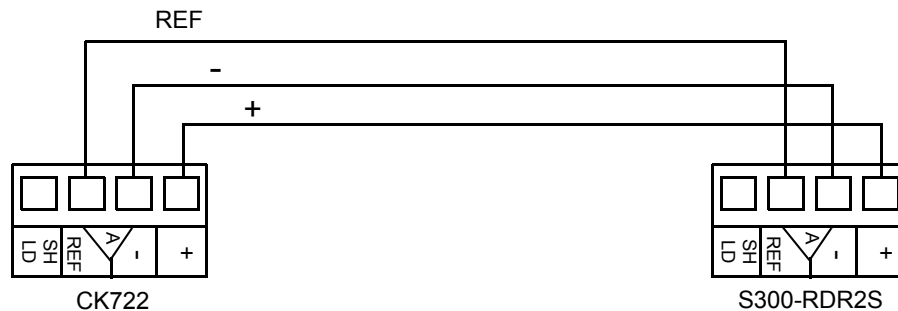
The CK722 controller has two RS485 ports: RS485A and RS485B. They are used to communicate with field devices on the S300 bus. The controller can use *either* of the following communication settings:

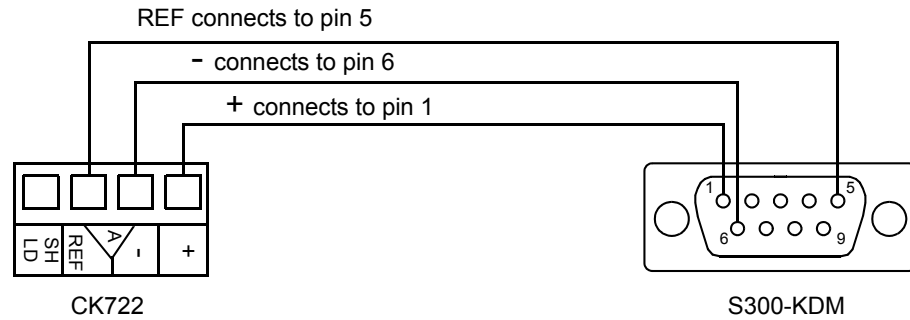
- 19200 bps, no parity, 8 bits per character, and one stop bit
- 9600 bps, even parity, 8 bit per character, and one stop bit

The CK722 can have two S300 buses, and supports up to 32 field devices on each bus.

To connect, use the terminal plug at the RS-485 4-wire connection (see page 1-4).

For details on the wiring between an RS485 port and field devices refer to the figures that follow.





Serial Ports

Use the RS232C A serial port for direct connections to a personal computer's serial port in order to browse to the CK722, or to connect to a field device emulator in order to see diagnostic information during controller startup.

To connect, use a standard 9-pin female to 9-pin female Data Termination Equipment (DTE) to DTE null modem cable (see page 1-4).

The communication parameters are 115000 bps, no parity, 8 bits per character, one stop bit, and no control flow.

The pinout is as follows:

<i>Pin</i>	<i>Function</i>	<i>Direction</i>
1.	Carrier Detection	In
2.	Receive Data	In
3.	Transmit Data	Out
4.	Data Terminal Ready	Out
5.	Signal ground	
6.	Data Set Ready	In
7.	Request to Send	Out
8.	Clear to Send	In
9.	Ring Indicator	In

The RS232C B connector is not used.

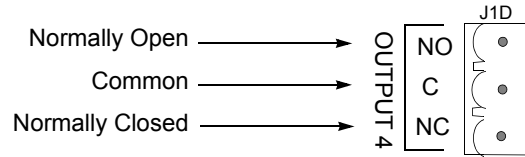
Binary Input

The CK722 has two binary inputs.

Binary Output

A relay output is provided for connecting to customer-supplied devices.

The output supplies a normally open, common, and normally closed relay contact.



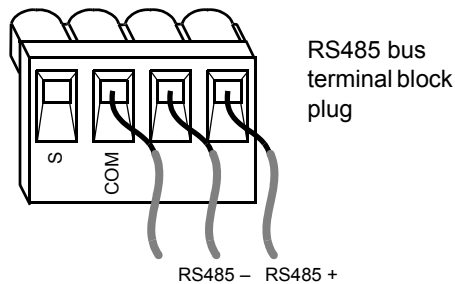
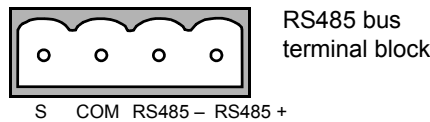
Wiring the CK722

Mount the CK722 securely before wiring, and then follow these guidelines:

- Route the power supply wires and communication cables at least 2 inches (50 mm) away from the vent slots on the sides of the CK722 housing.
- Provide slack in the wires and cables. Keep cables routed neatly around the CK722 to promote good ventilation, LED visibility, and ease of service.

► To wire the CK722:

1. Connect the Ethernet communications cable to the RJ-45, 8-pin Ethernet port shown on page 1-4.
2. Connect the three RS485 bus wires to the removable 4-terminal plug as shown below. The shield terminal is not used.



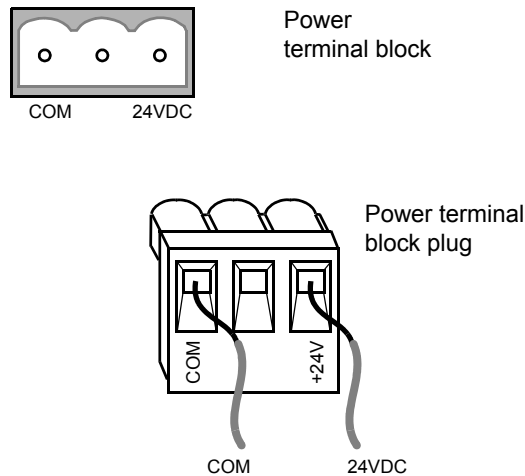
NOTE

If the CK722 is connected to an RS485 bus, you must set the EOL switch to the proper position. See “Setting the End-of-Line Switch” on page 2-13 for details.

3. Make connections to the RS-232 serial ports (if necessary).
4. Connect the 24VDC power supply wires from the transformer to the removable 3-terminal plug as shown below. The middle terminal is not used.

NOTE

The 24VDC power should be connected to all network devices so transformer phasing is uniform across the devices. Powering devices with uniform 24VDC supply power phasing reduces noise, interference, and ground loop problems. The CK722 does not require an earth ground connection.



Wiring Considerations and Guidelines

Cable Requirements

Description	Recommended Cable Type	Maximum Segment Length
+24VDC	Listed, 18 AWG, Stranded, Hook-up wire.	Limited to within cabinet
RS485 A and RS485 B	Listed, 22 AWG, Stranded, Hook-up wire.	Limited to within cabinet
	Listed, 18 AWG, 3-cond, stranded, shielded.	4000 ft (1215 m). All modules connected to a single CK722 panel must be within 4000 feet of the panel.
Inputs ICOM1 and ICOM2	Belden 88442, 1 twisted pair, 22 AWG.	500 ft (152m)

Description	Recommended Cable Type	Maximum Segment Length
Output/Relay OUT1	Belden 8461, 1 twisted pair, 18 AWG.	Depends on power requirements of the door strike. Voltage to the strike must not be reduced more than 10% over the 18 AWG wire.
RS232 A	Listed DB9 serial null modem cable	25 ft (7m). Cable must remain in the same room as the CK722.
RS232 B	Listed DB9 serial null modem cable	25 ft (7m). Cable must remain in the same room as the CK722.
Ethernet	Listed, Category 5, 24 AWG, solid, 2 pair or 4 pair type.	328 ft (100 m). Cable, RJ45 connector, and RJ45 crimp tool to be supplied by customer.

See the table below for null modem cable connector pinout:

Connector 1 Pinout	Connector 2 Pinout
3 TX	2 RX
2 RX	3 TX
7 RTS	8 CTS
8 CTS	7 RTS
5 SG	5 SG
6 DSR	4 DTR
4 DTR	6 DSR

TX = Transmit
RX = Receive
RTS = Request to Send
CTS = Clear to Send
SG = Signal Ground
DSR = Data Set Ready
DTR = Data Terminal Ready

Cable Routing

All low-level input cables, such as system data and reader cables, must be shielded types. The cables should run in grounded conduit or at least two feet from AC power, fluorescent lights, or other high energy sources.



All data cables should be physically separated from power lines. If conduit is used, do not run data cables in the same conduit as power cables or certain door strike cables, e.g. strike voltage greater than 42V or Magnetic door locks without EMI suppression.

All cables must conform with the following regulations:

- National Electrical Code
- NFPA 70
- Local electrical codes
- Canadian Electric Code C22.1 (installations in Canada)
- BSI Standard BS7671, latest edition (installations in Great Britain)

Cabling should be made using good wiring practices and should be long enough to allow service loops at their terminations in the enclosure.

CK722 Ethernet Network Rules

Category	Rule
General	Star topology with network hubs/switches
Number of devices	Maximum of 100 supervisory devices (such as CK722) may be connected to one site in the Metasys system extended architecture
Line length and type	6600 ft (2000 m) for plastic/glass fiber optic with external adapter; 330 ft (100 m) CAT5 cable
Terminations	No line terminators are allowed for 10/100BaseT

Ground and Grounding Cable Shields

Ground

Every metal DIN enclosure in a Johnson Controls installation must have its chassis bonded to a verified electrical ground (earth).



Conduit ground, cold water pipes, unbrazed joints, or dissimilar metals are unacceptable in the path of either building or supplement ground. Where grounding is required, connect only to the proven building electrical system ground (earth).

Grounding Cable Shields

This section gives instructions for grounding cable shields at data and low voltage installations. Follow these guidelines for electromagnetic compatibility (EMC) conformity, and to improve system reliability.

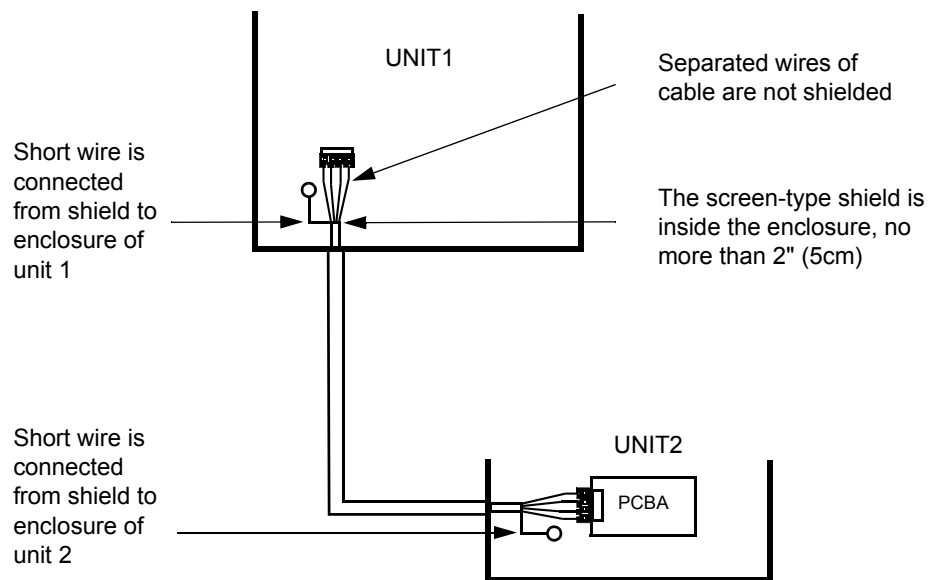
The following key points will help ensure a good ground for cable shields:

- Shield must be connected to chassis ground
- Grounding point should be free from paint and corrosion
- Keep the cable's shield as short as possible. Ideally, the length of exposed shield should not exceed 3 in (76 mm). This length includes any crimp-type terminal lug used to connect the shield to chassis ground
- Do not connect the cable shield to any existing internal ground (earth) bonding straps

The following information will help you decide how best to terminate the shield.

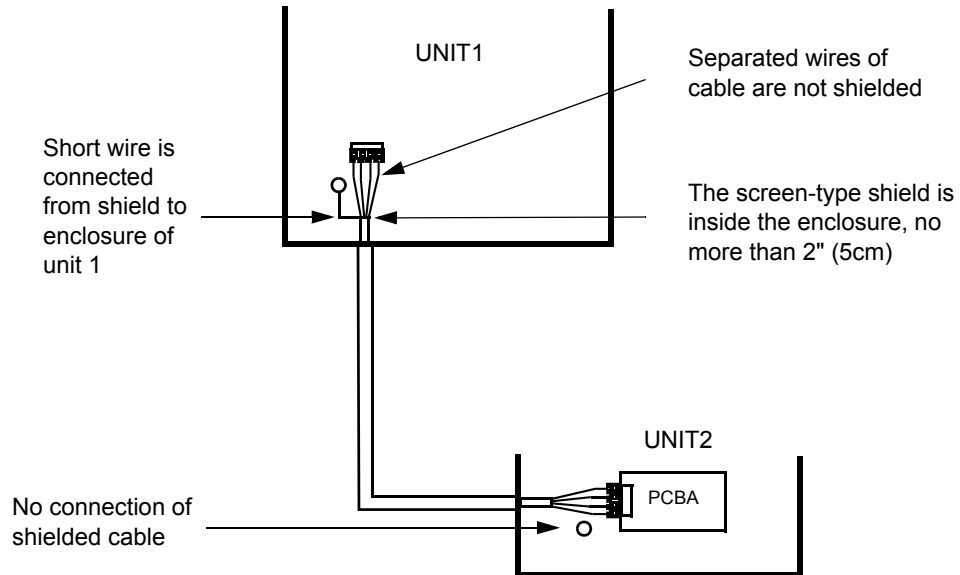
The equipment to be interconnected is at the same ground voltage potential (zero volts).

This scenario is typically used when the units are in close proximity to each other. Connect the cable's shield at both ends of the cable to the closest chassis ground point (see the figure below).



The equipment to be interconnected is at different ground voltage potential.

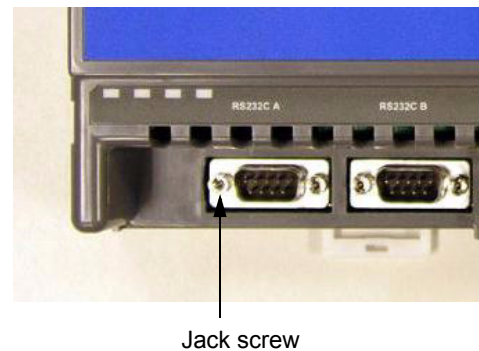
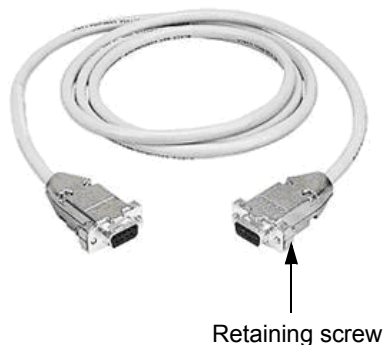
This scenario is typically used when the units are not in close proximity. Only connect the cable's shield at one end (see the figure below). The termination point is generally at the higher end of the system hierarchy.



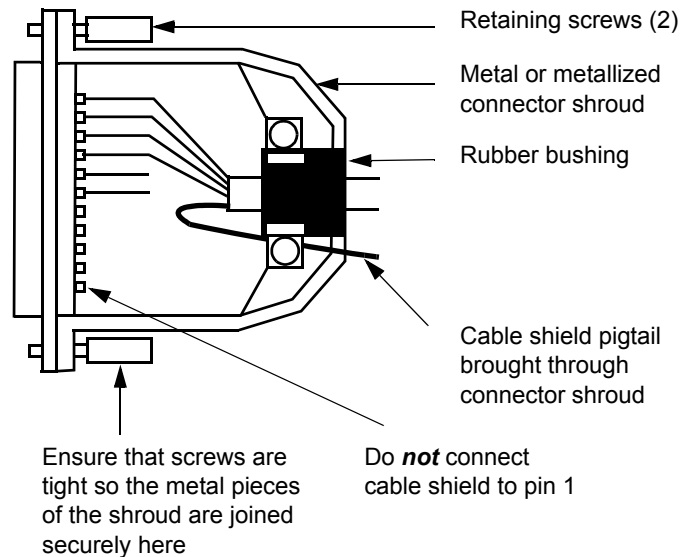
The equipment to be interconnected uses D-type connectors (as with an RS232 interface).

There are two ways to terminate the shield:

- For pre-made cables, make sure the cable specification or description states it is shielded. In this case, the shield will be internally connected to the metal body of the D-type connector. Ground the cable's shield by plugging the connector into the mating header and tightening the retaining screws into the jack-screws.



- For cables that are not pre-made and will use a D-type connector and a metallized shroud, you must ensure the D-type connector grounding by terminating the signal wires to the connector, and terminating the shield to a metallized shroud (see the figure below).



It is very important that the cable's shield fits snugly at the point of entry to the shell. It may be necessary to apply metallic tape to ensure a firm contact. After the cable assembly is complete, attach it to its mating header and tighten the retaining screws to the jack screws of the header.

The equipment to be interconnected uses D-type connectors and no shroud.

The type of shield grounding depends on the ground voltage potential of the equipment. Refer to the two scenarios described at the beginning of the section (page 2-9) to determine proper grounding procedure. In either scenario, the goal is to keep the shield as short as possible from where it separates from the cable and connects to its chassis ground point.

SETUP AND ADJUSTMENTS

Powering on the CK722

After applying 24VDC power, the CK722 requires up to 5 minutes to start up and become operational.

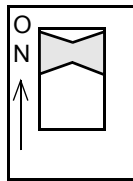
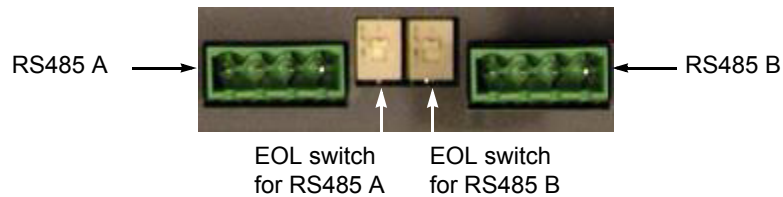
Startup is complete and the CK722 is operational when the green RUN LED is on steady, and the red FAULT LED is off.

NOTE

Wait for the CK722 to complete the startup sequence before initiating any other action on the CK722.

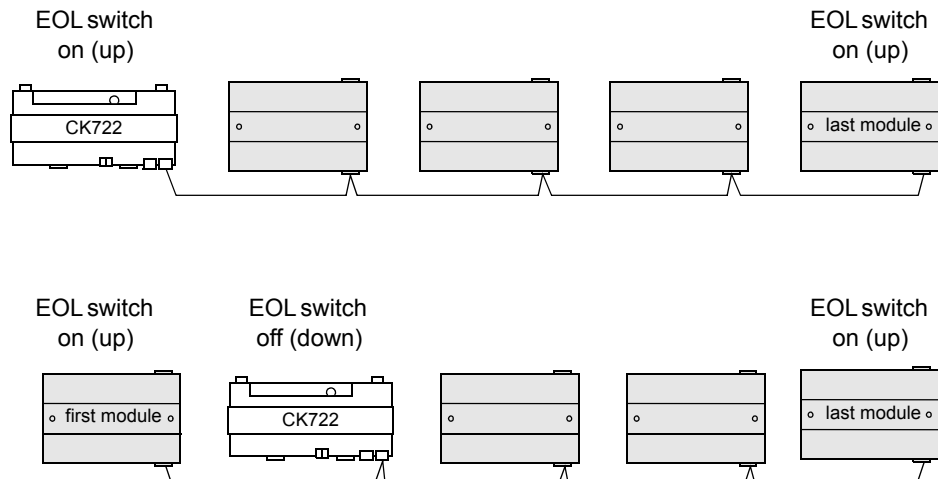
Setting the End-of-Line Switch

Network devices at either end of the RS485 network must be set as network terminated devices. This is done with the use of the End-of-Line (EOL) switch. The CK722 module has two EOL switches, one for each RS485 connector. The CK722 is shipped with the EOL switches in the factory default position, which is on (up).



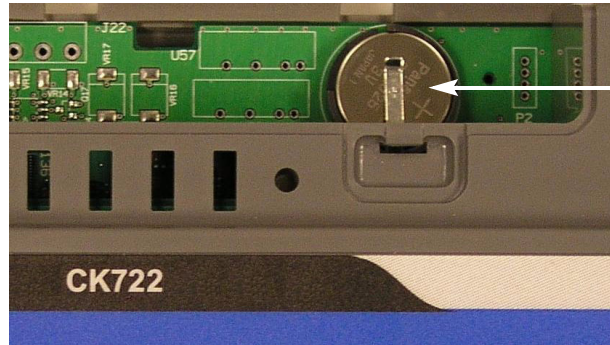
Note: Before changing the EOL position, remove the 24VDC supply power to the CK722 and wait for the RUN LED to go off.

The CK722 modules follow the same rules as other terminated device. See the figure below to determine the appropriate EOL switch setting for all CK722 modules in your network and set the EOL switch to the appropriate position for each CK722.



Lithium Battery

The CK722 contains a lithium battery that is used for realtime clock backup. The lithium battery is shipped from the factory charged. If it is isolated with a plastic strip, the strip must be removed to make the battery operational.



Lithium battery

If there are no power outages, the battery should be changed every five years. If a power outage occurs, the battery life is approximately 30 days. See “Maintenance” on page 2-15 for information on lithium battery replacement.



Before you replace the lithium battery (recommended every five years or after extended use), ensure AC power or backup battery power is supplied to the CK722. If AC power or backup battery power is not supplied before you remove the lithium battery, the realtime clock will be incorrect.



Danger of explosion if battery is incorrectly replaced.

TECHNICAL SPECIFICATIONS

Item	Specification
Dimensions (H x W x D)	5.2 x 10.6 x 2.5 in (131 x 270 x 62 mm) Minimum space for mounting: 8.3 x 13.8 x 4.3 in (210 x 350 x 11 mm)
Housing	Plastic housing, material ABS = polycarbonate, IP20 (IEC60529) protection
Shipping weight	2.7 lb (1.2 kg)
Ambient storage conditions	5 to 95% RH, 86°F (30° C) maximum dew point

Item	Specification
Ambient storage temperature	-40 to 158 °F (-40 to 70° C)
Ambient operating temperature	32 to 122 °F (0 to 50° C)
Humidity	20% to 80% non-condensing
Mounting	In the S300-DIN-L or S300-DIN-S enclosure
Processor	192 MHz Renesas™ SH47760 RICS processor
Operating system	Microsoft® Windows® CE embedded
Input power	Volts: Min. 20VDC, nominal 24V, max. 30VDC Amps: Max. 1A
Memory	128 MB Flash nonvolatile memory for operating system, configuration data, and operations data storage and backup. 128 MB Synchronous Dynamic Random Access Memory (DRAM) for operations data dynamic memory.
Lithium battery	3V, Panasonic® CR2025 or equivalent
Network port	10/100Base-T RJ45 (for host communication)
Serial interfaces	RS232C A – RS-232, DB9 port RS232C B – RS-232, DB9 port
Binary inputs	ICOM1 and ICOM2, unsupervised
Binary output	The CK722 provides a relay output (Form C Relay, SPDT) at Binary Out1. The relay will switch 24 VDC @ 2A.
Agency compliances	FCC Class B, ICES-003 Class B, CE, and C-Tick.

MAINTENANCE

This section describes maintenance and troubleshooting procedures.

► To properly maintain the CK722 system:

- Periodically: check the continuity of the grounding circuit.
- Monthly: test the operation of the CK722.
- Every five years or after extended (five days) power interruption: replace the lithium battery.

➤ **To test operation of the CK722:**

1. Verify POWER LED on the CK722.
2. Verify that the FAULT LED on the CK722 is not on.
3. Verify that the RS485 LEDs are flashing to show activity on the bus.
4. Present a *valid* card to a reader, and then verify that access is granted (green lamp lights).
5. Present an *invalid* card to a reader, and then verify that access is denied (red lamp lights).

➤ **To replace the lithium battery:**



Before you replace the lithium battery, ensure that AC power or backup battery power is supplied to the CK722. If AC power or backup battery power is not supplied before you remove the lithium battery, the realtime clock will be incorrect.

1. Ensure that AC power is supplied to the panel.
2. With a narrow blade (1/8 in. blade) carefully pry up the battery until a portion of the battery is out of the plastic holder.
3. With your free hand gently move the battery out of the holder while keeping the battery pried up.
4. Dispose of the old battery according to local requirements.
5. Insert the new battery into holder.



The lithium battery is polarized. Ensure the side marked '+' faces out or towards you.



Danger of explosion if battery is incorrectly replaced.

Impaired Performance Conditions

A list of conditions that may cause impaired performance is provided below with reference pages.

Condition	Information Location
Unit environment not as specified.	Page page 2-14
Unit power and grounding not as specified.	Page page 2-9 For power supply information refer to the <i>S300-DIN-L Hardware Installation Manual</i> and the <i>S300-DIN-S Hardware Installation Manual</i> .
Cable length or type not as specified.	Page page 2-7

Field Servicing

Troubleshoot the CK722 by substituting the suspected defective controller with a new component.

All replaceable parts are available from Johnson Controls, Inc.

Consult your Customer Success Center representative at (722) 482-2778 for domestic orders or for instructions on how to obtain replaceable parts.

TROUBLESHOOTING

Refer to the figure and table below for the description of LED indicators.

POWER ●
 FAULT ● ● ETHERNET
 RS485 A ● ● 10 LINK
 RS485 B ● ● 100 LINK
 ● RUN

LED	Function
POWER	ON steady when power is applied.
FAULT	OFF to indicate normal operation.ON indicates a general fault.
RS485 A	OFF (the RS485A connector is not used in CK722)
RS485 B	Flashes/flickers to indicate data transmit.
ETHERNET	Flashes/flickers to indicate data traffic on the Ethernet connection. OFF indicates no Ethernet data traffic, and probably indicates a dead Ethernet network or bad Ethernet connection.

LED	Function
10/LINK	ON to indicate 10 Mbit connection is established.
100/LINK	ON to indicate 100 Mbit connection is established.
RUN	<p>On Steady = CK722 software is running.</p> <p>On 1 second, Off 1 second = CK722 software is in startup mode.</p> <p>On 0.5 second, Off 0.5 second = CK722 software is shutting down.</p> <p>Off steady = Operating system is shutting down or software is not running.</p>

SCT USER INTERFACE

The P2000AE SCT (also called “SCT” in this document) is a browser-based application installed on the P2000 server that allows you to configure CK722 controllers. The SCT is provided as part of the P2000AE SMS software package.

When the SCT’s configuration settings are modified, these changes can be downloaded to the CK722 controller, and the P2000AE SMS host software will be automatically updated to reflect the changes.

This chapter describes basic information about the SCT. For more details refer to the following manual: *P2000AE System Configuration Tool (SCT)*.

ACCESSING SCT

Users can access the P2000AE SCT directly from the P2000AE SMS software or via their browser on any computer with a LAN/WAN connection to the P2000AE server (if permitted by the Security or IT Manager).

After launching the P2000 SCT and, if applicable, logging on, you can perform all of the desired functions available to configure the system.

NOTE

The P2000 SCT does not currently follow P2000 partitioning rules. Once you log on, regardless of the partition to which you are assigned, you will have access and editing rights to all objects in the archive.

SCREEN LAYOUT AND FRAMES

The screen contains four frames and provides a consistent look and feel.

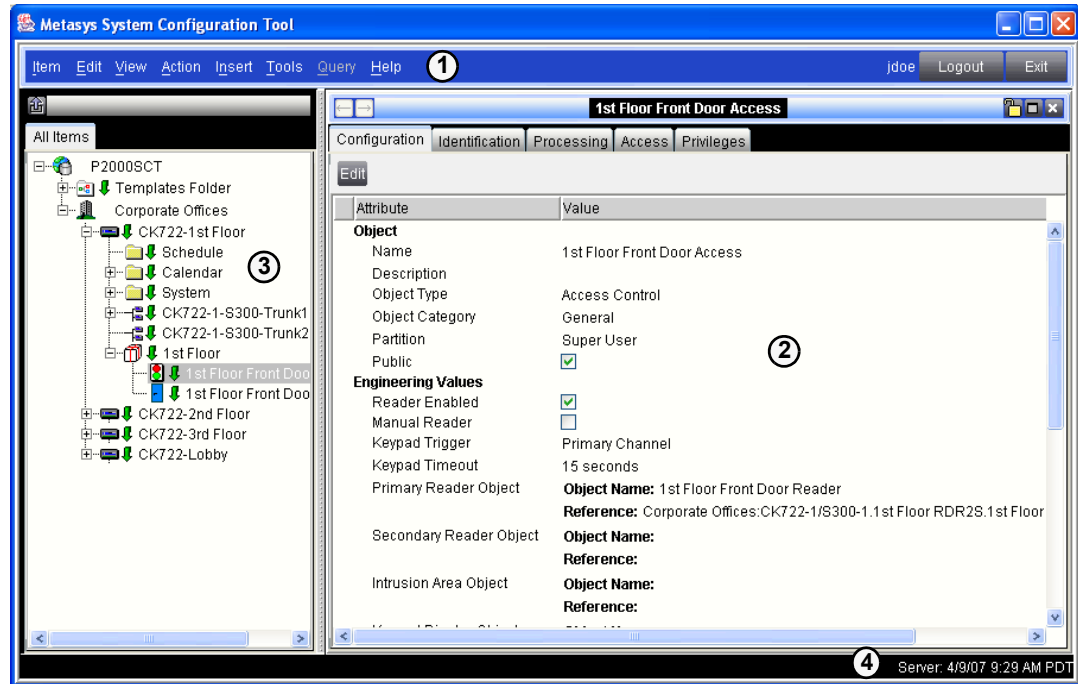


Table 3-1: User Interface (UI) Screen Frames

Number	Name	Description
1	Menu	Displays the menu bar and the name of the logged-on user. Log out or exit from the system using buttons in this frame.
2	Display	Presents data or information in the user-selected panel layout. In the example above, the Display Frame shows information about the Access Control object named 1st Floor Front Door Access (the object is selected in the Navigation Tree and the name of the object appears at the top of the Display Panel). See "Display Frame" on page 3-5 for more information.
3	Navigation	Displays the Navigation Tree that organizes items in the system. The Navigation Tree generates automatically when you configure the system database. For more information on the Navigation Tree, see "Navigation Tree" on page 3-3.
4	Status	Displays information about current user actions and the current time and time zone of the P2000 server into which you are logged. Status bar icons indicate system status.

NOTE

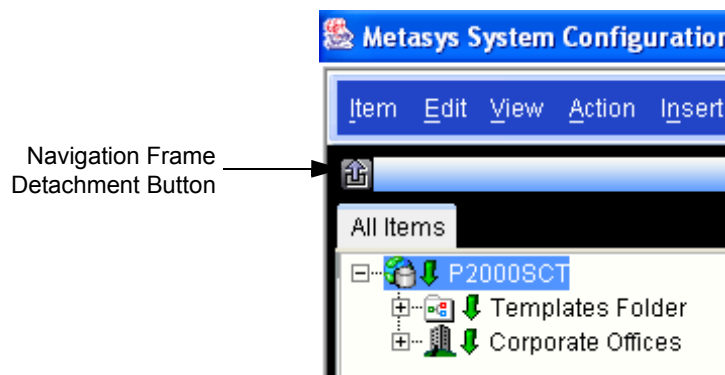
If the Navigation Frame or a Display frame is active, the header bar of the active frame or pane is highlighted. The Menu and Status frames are not highlighted even when you click in them.

NAVIGATION TREE

The Navigation Frame can display several navigation trees. The **All Items** Navigation Tree is generated during system configuration and represents the network layout of your system.

Navigation trees support standard browsing concepts such as the plus sign (+) for expanding items in the tree and the minus sign (-) for collapsing or hiding items in the tree. To see more details on an item in the Navigation Tree, you can select the item with a mouse, and click and drag and drop it into a display panel, or double-click the item in the Navigation Tree. The Navigation Frame also supports scroll bars and both right-click and left-click options.

To detach and move the Navigation frame to a different area of the screen, if desired, click the **Navigation Frame Detachment** button.



You can minimize and maximize the Navigation frame, but if you click the **X** button, the frame is restored to its default position.

ITEMS

The P2000 SCT uses the term **item** as a generic reference to an object or selection in the Navigation Tree. Items in the All Items Navigation Tree include the site, devices, objects, schedules, field points, and other system data. Each item may have another item under it. Items have right-click pop-up menus that provide viewing options. A symbol represents each item in the Navigation Tree.

Navigating to an Item

To navigate to and select an item, click the plus (+) and minus (-) signs in the Navigation Tree to expand and collapse folders or parent items until the desired item appears on the tree.

NOTE

Use the **<Ctrl>** or **<Shift>** key to select multiple items. Also, to display information about the item, see the "Displaying Information about an Item" section.

Displaying Information about an Item

To display information about an item you selected in the Navigation Tree, do one of the following and click on the desired tab:

- Double-click the item in the Navigation Tree and it displays in the default display panel.
- Drag and drop the item from the Navigation Tree into a display panel.
- Select an item in the Navigation Tree, open the **View** menu and click **Selected Item** and the data displays in the default display frame.

When you display information in a panel that already contains data, the older data is replaced and added to the panel history. To access up to 5 previously displayed items in the panel history, click on the **back** button in the display panel.

NOTE

If all available panels are locked and you try to display information about an item, a message appears stating so. Click **OK** and unlock a panel to display other item information.

Modifying Items

To modify the attributes of an item:

1. View the details of the item in a display panel.
2. Select the desired item tab.

Some items contain an **Advanced** radio button. If you select this button, additional attributes appear.

3. Click **Edit** and modify the attributes, as needed.

If you place your cursor over an edit field, the tool tip provides information about the valid format or range for that value. Tool tips also appear for certain strings (not those with drop-down choices).

NOTE

Required fields are highlighted in red.

4. Click **Save**.

Deleting Objects/Items

To delete objects/items:

1. Select the object/item you want to delete in the **All Items** Navigation Tree.
2. From the menu bar, select **Edit>Delete Items** OR right-click over the item and select **Edit>Delete Items** in the pop-up menu.

You cannot select an object/item in the display frame and delete it from the system. You can only delete objects/items that are not part of a template by selecting them in the Navigation Tree.

NOTE

*When deleting **template** objects, you can only delete certain objects, such as an S300 Trunk object, using the Navigation Tree. All other template objects are deleted from the object logic diagram (Logic tab).*

3. After deleting objects/items, perform a download or synchronization to update the CK722 controller.

Printing a Copy of the Navigation Tree

► To print a copy of the Navigation Tree:

1. Select the Navigation Tree you wish to print.

NOTE

You must select the Navigation Tree to enable Print. When you select the Navigation Tree, all visible parts of the tree print out (even parts of the tree that you need to scroll to view). Parts of the tree that are collapsed (not visible in the tree) do not print.

2. From the menu bar, select **Item>Page Setup** if you wish to change the paper, orientation, or margin size.
3. Click **OK** when done.
4. From the menu bar, select **Item>Print Preview** to see what the printout will look like.
5. Click **Print**.

DISPLAY FRAME

The Display Frame can be divided into and up to four display panels. When viewing an item in a display panel, the name, status, and default attribute (usually the present value) of the item you are displaying appear at the top of the display panel. Each display panel can contain

different tabs depending on the item selected from the Navigation Tree, and each tab shows different information. The default display panel is the first empty panel or last unlocked panel if all displayed panels are filled. Display panels are locked while in **Edit** mode, or may be locked using the **Lock** button of the selected display panel. If all available panels are locked, you will not be able to display an additional item in any of the display panels.

Each display panel has its own buttons and can be resized by dragging the borders. With some items, an **Edit** button appears allowing you to edit the item's configuration attributes.

You can drag and drop up to five items into a display panel and navigate between them using the back and forward display panel buttons.

Display Frame Layout

The user interface allows you to define your own display frame layout. Six options are available:

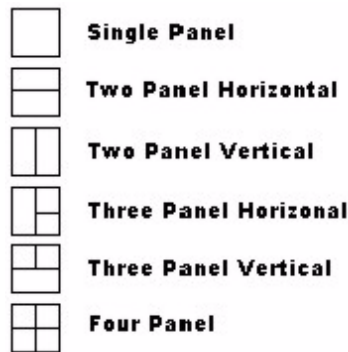


Figure 3-1: Panel Layout Options

To change the Display Panel layout, select **View>Panel Layout** from the menu bar and choose one of the 6 layouts.

If you have a multi-panel display and you change to a layout with fewer panels, the locked items/newest items in the view stay, depending on how many panes are available in the new layout. The other panels close (they do not re-appear if you switch back to the multi-pane view).

To resize the panels, drag the borders of the panel until it reaches the desired size. To make one panel (in a multi-panel arrangement) cover the entire Display frame temporarily, click on the **maximize** button. To restore a maximized panel in a multi-pane view, click the **restore** button.

DISPLAY PANEL










Display Panel Tabs

Each display panel contains tabs that vary depending on the item displayed, and the number and type of attributes associated with the item. For example, the Access Control object has five different tabs (Configuration, Identification, Processing, Access, and Privileges), whereas the Door Sequence object has a single tab (Configuration). Refer to the *CK722 Commissioning Guide* or the individual object manuals for more information.

Display Panel Buttons

The display panel buttons are shown below:

Table 3-2: Display Panel Buttons

Button	Description
	Allows you to edit attributes for the displayed item. The values you can edit vary depending on the displayed item. Select the Save button to save your changes. Note: After saving the changes in the P2000 SCT, the values remain unchanged until you click refresh.
	Displays the content previously displayed in that panel. Each panel can have a display history of up to 5 items.
	Displays the content of the next panel saved in the history.
	Locks the selected display panel (prevents another item from being dropped in this panel and overwriting it). A locked panel can be resized. This button toggles between locked and unlocked.
	Clears the current item displayed in the panel and the history of items displayed (history can contain up to 5 items).
	Maximizes the active panel to the full size of the Display Frame. The other panels reappear if you click the restore button.
	Restores the panels to their original size and position.
 Basic	Displays commonly used information about the displayed item.
 Advanced	Displays all the information the system contains pertaining to the displayed item.

Printing a Copy of the Display Panel

► To print a copy of the Display Panel:

1. Select the display panel you wish to print.

NOTE

You must select a display panel to enable Print. When you select a display panel, the entire contents of the visible display panel prints out.

2. From the menu bar, select **Item>Page Setup** if you wish to change the paper, orientation, or margin size.
3. Click **OK** when done.
4. From the menu bar, select **Item>Print Preview** to see what the printout will look like.
5. Click **Print**.

NOTE

If the panel you selected is not printable, Print is disabled.

POP-UP MENUS

Pop-up menus provide an efficient way to quickly access important item information. To access pop-up menus, right-click on an item in the Navigation Tree. Content of the menu depends on the type of selected item. For example, object pop-up menus usually show the options **View** and **Edit**.

SYSTEM INACTIVITY TIMEOUT

If the P2000 SCT does not detect system activity for a defined number of minutes, the system will time out. When the system times out, you will be logged out of the current session and the P2000 SCT Welcome screen will appear. You must log back in to the P2000 SCT to continue.

NOTE

The P2000 SCT system activity timeout feature does not apply to a session launched from the P2000 host software.

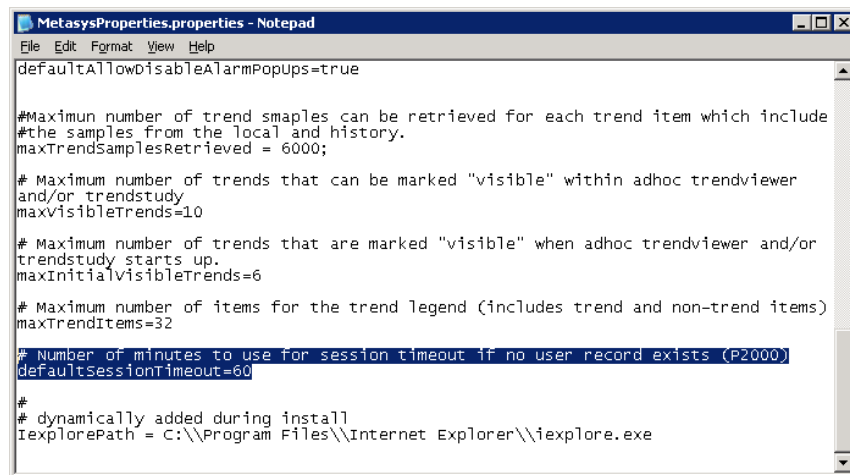
The default timeout setting is 60 minutes.

➤ **To change the timeout setting:**

NOTE

The timeout setting should only be modified by the System Administrator or other qualified individual responsible for administering the P2000 system.

1. From the P2000 server, access the following location:
Local Disk: \inetpub\wwwroot\MetasysIII\toolUI\com\jci\metasys
2. Double-click the **MetasysProperties.Properties** file and open it in Notepad or other text editor.
3. Locate the following text:
Number of minutes to use for session timeout if no user record exists (P2000)
defaultSessionTimeout=60



4. Replace the 60 (or whatever value was entered) with the new timeout setting.
5. Click **File>Save**.

LOGGING OUT

Save changes before logging out. Logging out closes all open windows (except the log in screen) associated with the session. For information on exiting, see “Exiting”.

NOTE

If you launched the P2000 SMS from the host software, there is no Logout button. You can only exit the tool by closing the P2000 SCT browser instance.

➤ **To log out:**

1. From the menu bar, click the **Logout** button.
2. If you are currently editing an object/item in a display panel, the P2000 SCT aborts the logout process and displays a dialog box asking if you wish to save or cancel your changes. You must exit edit mode before you can log out of the application.

EXITING

Save changes before exiting. Exiting closes all open windows associated with the session, including the login screen (if you launched the tool from the host software). For information on logging out, see “Logging Out”.

➤ **To exit:**

1. From the menu bar, click the **Exit** button. If you launched the tool from the host software, click the **X** button at the upper-right corner of the browser window to exit the P2000 SCT.
2. If you are currently editing an object/item in a display panel, the P2000 SCT aborts the exit process and displays a dialog box asking if you wish to save or cancel your changes. You must exit edit mode before you can exit the application.

CK722 COMMISSIONING

This chapter outlines the process of commissioning the CK722 controller for use in the P2000 Security Management System (SMS).

STARTING A P2000 SCT PROJECT

This section describes how to properly start a P2000 SCT project, which is essential in streamlining the P2000 SCT configuration of a P2000 4.x project.

NOTE

This section does not take into account the installation of an Enterprise Solution or a Redundant P2000 4.x configuration.

The steps are organized into the following subsections, which include instructions that should be performed “once” for each item listed (e.g. project, site, CK722 controller, etc.):

- Once per Project
- Once per Site
- Once per CK722
- Once per Hardware Module
- Once per Door
- Cursory Test

NOTE

The instructions in the following sections are designed to provide an overview of the steps needed to successfully start a P2000 SCT project. During this process, if you are an inexperienced P2000 user, you may need to reference other sections or documents for more detailed information or instructions. These sections and documents will be identified accordingly.

Once per Project

Before actually installing or configuring the P2000 SCT, do the following as part of your project preparation:

1. Create a naming convention.

Before starting any configuration, have a comprehensive naming convention in place. This affects all items that will be named (e.g. hardware and software items).

See “Create and Adhere to a Naming Convention” on page 5-15 for details about the naming convention for controller applications.

2. Create a list of partitions.

Figure out the partitioning scheme before starting any configuration. Refer to the *P2000AE Software User Manual* for more information on partitions.

3. Create a security flag scheme.

Security flags need to be consistent enterprise-wide. If you intend to use security flags, verify that their assignment and labels are in place before starting any configuration. Refer to the *P2000AE Software User Manual* for more information on security flags.

Once per Site

Perform the following actions for each site in a project:

1. **Networking:** Plan the Information Technology (IT) infrastructure. This includes performing the following actions:
 - Establish whether the controllers need to have peer-to-peer communication.
 - Decide whether nodes will use Dynamic Host Configuration Protocol (DHCP) or static Internet Protocol (IP) addresses.

Note

DHCP is a network protocol that automatically assigns IP addresses to devices on a DHCP-enabled network. CK722 controllers can be connected to this type of network to receive their dynamic IP addresses.

- Document the topology of the IT infrastructure.
2. **P2000:** Install and register the P2000 Version 4.1 software on all P2000 servers and workstations. Refer to the *P2000AE Server/Workstation Software Installation Manual*.
Then launch P2000 at the P2000 server. Refer to the *P2000AE Software User Manual*.

3. **P2000:** Copy any custom card formats (if necessary).

If your project requires card formats that are not included with the standard P2000 installation, copy the *.txt files associated with the custom card formats to the following directory on the P2000 server:

Local Disk:\Program Files\Johnson Controls\P2000\Identifier Formats

The card formats provided with the P2000 installation are included in the previous directory. See also “Appendix D: Identifier Formats”.

4. **P2000:** Import all identifier formats. Refer to the *P2000AE Software User Manual* for detailed instructions.
5. **P2000:** Define the P2000 Site Parameters, accessible from the System Configuration window. Create all required facility codes on the **Facility Code** tab. Refer to the *P2000AE Software User Manual*.
6. **P2000:** Add and configure all Security Flags (if required) from the System Configuration window. Refer to the *P2000AE Software User Manual*.
7. **P2000:** Add and configure all P2000 Time Zones. Refer to the *P2000AE Software User Manual*.

When adding a time zone, click **Yes** when asked whether you want to add it to all Legacy panels that do not have it.

8. **P2000 SCT:** If you wish to reuse existing custom P2000 SCT templates from other projects, copy their associated *.zip file to the following directory:

Local Disk:\Documents and Settings\Application Data\Johnson Controls\MetasysIII\DatabaseFiles

For more information on templates, see “Chapter 6: JCI Standard Templates” and “Chapter 7: Creating Job-Specific Templates”.

9. **P2000 SCT:** If the P2000 SCT is already running, close it. Then launch the application.
10. **P2000 SCT:** When launching the P2000 SCT initially, select **Yes** when prompted to import all standard templates.

NOTE

This step is skipped when upgrading an existing project.

To import custom templates at a later time, refer to the *P2000AE System Configuration Tool (SCT) Manual* for detailed instructions.

11. **P2000 SCT:** When prompted to create a Site object, select **Yes**. Create the Site object. Refer to the *P2000AE System Configuration Tool (SCT) Manual* for detailed instructions.

Note

This step is skipped when upgrading an existing project.

12. **P2000 SCT:** When prompted to create a supervisory device, select **No**. These devices will be added in the “Once per CK722” section starting on page 4-4.
13. **P2000 SCT:** If you will reuse existing custom P2000 SCT templates from other projects, import them into the P2000 SCT database. Refer to the *P2000AE System Configuration Tool (SCT) Manual* for instructions on importing a template.
14. **P2000 SCT:** Copy and adapt Job-Specific Templates, as needed.

NOTE

Typically the Set 1 First Identifier Format attribute of any Access Control Object needs to be set to the desired card format at the site.

For information on copying a template, see “Copying Existing Templates as Job-Specific Templates” on page 7-2. For information on adapting a Job-Specific Template, see “Adapting the New Template According to the Job” on page 7-3.

Once per CK722

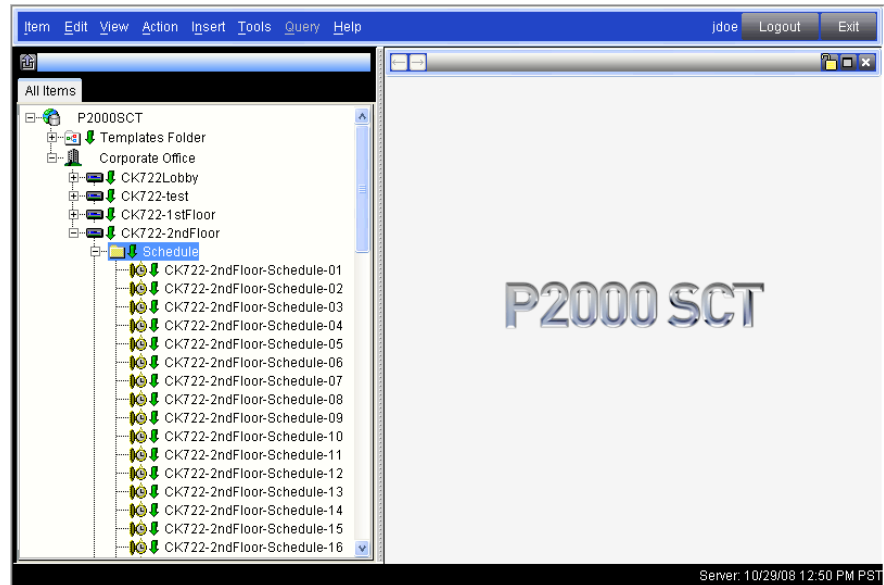
Perform the following actions for each CK722 controller in a site:

1. **P2000 SCT:** Add and configure the CK722 Device object.
 - The CK722 Device object’s name should be the name that the IT department uses for this node.
 - Enter the P2000 Server’s IP address into the **Database Server IP Address** attribute.
 - If assigning a static IP address to the controller, on the **Network** tab, deselect the **DHCP Enabled** check box, and enter the **IP Address** and **IP Mask** attributes.
 - Refer to the *P2000AE System Configuration Tool (SCT) Manual* for detailed information on adding and configuring a CK722 Device object.
2. **P2000 SCT:** Link Schedule objects to P2000 Time Zones. See page 4-5 for detailed instructions.
3. **CK722:** Verify the CK722 is correctly installed and configured. See “CK722 Installation and Configuration Verification” on page 4-6 for detailed instructions.
4. **P2000 SCT:** Download the object database to the CK722 for the first time. See “Downloading the P2000 SCT Object Database to a CK722 Controller for the First Time” on page 5-8 for detailed instructions.
5. **P2000:** Verify that the CK722 is online. See “Verifying Online Status of the CK722” on page 5-10 for detailed instructions.

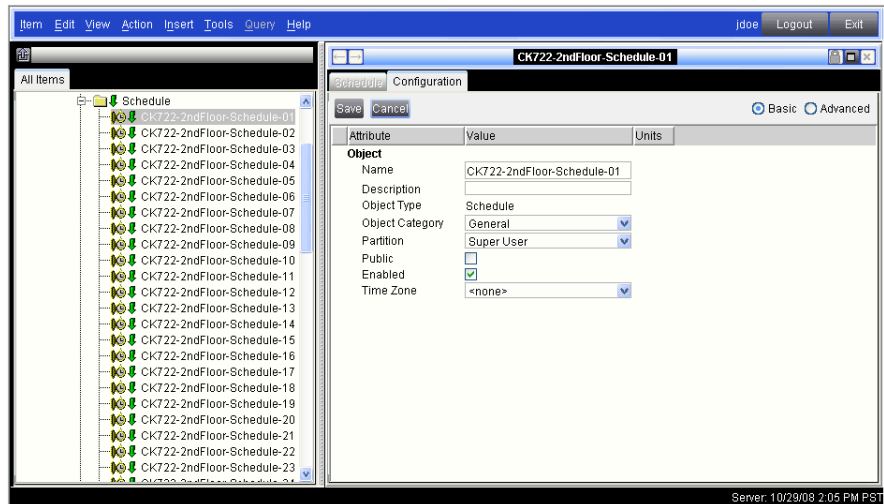
Linking Schedule Objects to P2000 Time Zones

► To link Schedule objects to P2000 Time Zones:

1. In the P2000 SCT Navigation Tree, select and expand the CK722 Device object. Then expand the **Schedule** folder.



2. Double-click on the first Schedule object (the object ending in **...-Schedule-01**).
3. Select the **Configuration** tab and click **Edit**.



4. In the **Time Zone** drop-down list, select the P2000 time zone you wish to link to the selected Schedule object.
5. Modify the **Name** attribute by replacing the **...-Schedule-XX** portion with something that identifies the P2000 Time Zone. Although not required, this step makes the Schedule object's names more organized.

6. Click **Save**.
7. Repeat the previous steps for each P2000 Time Zone that will be used by this CK722 controller.

CK722 Installation and Configuration Verification

】 To verify the CK722 is installed and configured correctly:

1. Update the CK722 with the latest firmware and operating system. Refer to the *CK722 Network Utility Tool (NUT) Manual* for instructions. See also “Network Utility Tool (NUT)” on page 5-29.
2. Use the NUT to assign the CK722 its ultimate name. Although you can change the name later, assigning the name as early as possible is good practice.
3. If assigning the CK722 a static IP address (i.e. the CK722 is not connected to a DHCP-enabled network), follow the instructions in “Assigning a Static IP Address” starting on page 4-6.
4. From the P2000 server, ping the CK722 controller by its **IP address**.
5. From the P2000 server, ping the CK722 controller by its **name**.

Assigning a Static IP Address

This section describes how to assign a static IP address to a CK722 controller when the device is not connected to a DHCP-enabled network.

】 To assign a static IP address:

1. Follow the instructions in “Using the CK722 Command Line Interface” starting on page 5-31 to connect a PC to the CK722 controller using an RS232 null modem cable and to access the CK722’s command line interface.
2. At the command prompt, enter the following command line according to the IP address you wish to assign and press **<Enter>**, substituting the text in brackets with the new static IP address, subnet mask, and gateway (optional).

Command structure:

```
netconfig -ip <addr> -mask <netmask> -gwy <gateway>
```

Example:

```
netconfig -ip 152.222.7.2 -mask 255.255.255.0 -gwy 152.222.7.4
```

NOTE

*As an alternative, you may enter `netconfig` at the prompt and press **<Enter>** to enter the IP address, subnet mask, and gateway with separate command prompts, instead of entering them as a single command line.*

3. At the prompt, enter `reboot` and press **<Enter>** to reboot the CK722 controller. Press “Y” on your keyboard to confirm.

4. Ensure that the CK722 has completely rebooted and indicates its current firmware version and name.


Downloading the P2000 SCT Object Database to a CK722 Controller for the First Time

For information refer to *Chapter 5: Database Download/Synchronization*.

Verifying Online Status of the CK722

After downloading the P2000 SCT object database from the P2000, verify whether the CK722 controller is online.

】 To verify whether the CK722 is online:

1. From the P2000 Main menu, select **System>System Status**.
2. On the System Status window, select **Panels** in the drop-down list in the upper-left corner of the window.
3. Select the **Network Panels** and **BACnet Panels** check boxes.
4. Verify that the CK722 is indicated as **Up** . Click **Refresh**, if necessary. Refer to the *P2000AE Software User Manual* for more information on the System Status window.

Once per Hardware Module

When adding hardware modules, use one of following options.

Option 1: Creating a Hardware Module Using a Basic Hardware Module Template

Because some hardware modules, such as the RDR8S, can hold a variety of different door packages, it is more efficient to configure it first as an empty field device, and subsequently add its doors using x-Templates.

We recommend this option when using the Panel Tamper, Power Fail, and Battery Low input points for the hardware module(s) that will be added. Otherwise, consider Option 2 (see page 4-9).

】 To create a hardware module using a basic hardware module template:

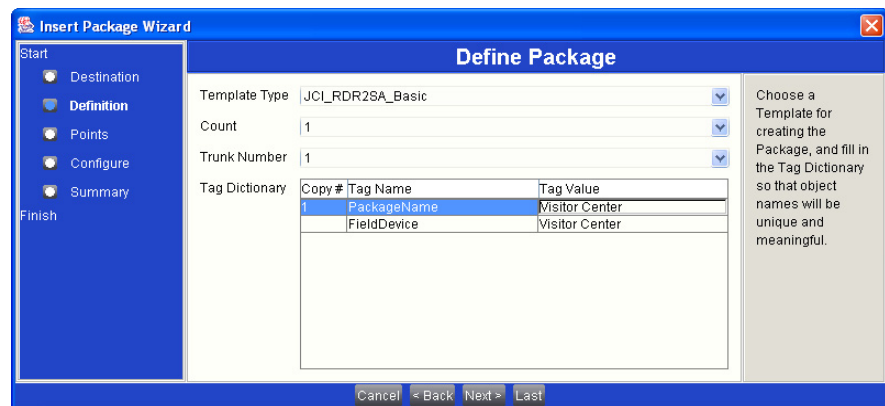
1. From the P2000 SCT menu bar, select **Insert>Package**. The Destination screen of the Insert Package Wizard appears.

2. Select the CK722 to which the hardware module(s) will be added and click **Next**. The Define Package screen appears.



3. In the **Template Type** drop-down list, select the desired Basic Hardware Module Template (e.g. JCI_RDR2SA_Basic).
4. In the **Count** field, enter the number of hardware modules of this type that will be created on the same trunk.
5. In the **Trunk Number** field, select the trunk on which the hardware module(s) will reside.
6. In the **Tag Dictionary** table, enter a name for the **FieldDevice** tag value, which is the name that each hardware module will have.
7. Enter a name for the **PackageName** tag value for each hardware module being created.

The P2000 SCT does not let you assign the same name as the one assigned to the **FieldDevice** tag. As a workaround, add a space to the end of the **PackageName** tag; however, do not add a space to the end of the **FieldDevice** tag.



8. Click **Next**.
9. On the Define Points screen, click **Next**.
10. On the Configure screen, Enter the **Hardware Module Number** attribute for each hardware module.

11. Click **Next**.
12. Click **Finish**.

For more information on inserting a package, refer to the *P2000AE System Configuration Tool (SCT) Manual*.

Option 2: Creating a Hardware Module Manually

We recommend this option when the Panel Tamper, Power Fail, and Battery Low input points are *not* used for the hardware module(s) that will be added. Otherwise, consider Option 1 (see page 4-7).

For detailed instructions on inserting a hardware module manually, refer to the *P2000AE System Configuration Tool (SCT) Manual*.

Once per Door

Perform one of the following sets of the instructions to create a package for each door, depending on whether the package's Template Type is an x-Template or a Hardware Module Template.

Creating a Package for a Door (x-Templates)

This section assumes that you are using a template that has been previously tested at least once. If not, create only one package at first to reduce the amount of potential rework.

» To create a package for a door using an x-Template:

1. From the P2000 SCT menu bar, select **Insert>Package**. The Destination screen of the Insert Package Wizard appears.
2. Select the CK722 to which the package will be added and click **Next**. The Define Package screen appears.
3. Select the **Template Type** and **Trunk Number**.
4. In the **Count** field, enter the number of doors of this type you want to create.
5. Enter a name for the **PackageName** tag value for each door being created.
6. Click **Next**.
7. Select the **S300 Hardware Module** and the **Connector** for each prompted field point.
8. Click **Next**.
9. Click **Last** and then click **Finish**.

For more information on inserting a package from an x-Template, refer to the *P2000AE System Configuration Tool (SCT) Manual*.

Creating a Package for a Door (Hardware Module Templates)

Because the RDR2S and RDR2S-A only hold a limited variety of different door packages, it is more efficient to use the packages that already contain the field device (via a Hardware Module Template). In case free connectors remain on the field device, an additional door can be added via an x-Template.

This section assumes that you are using a template that has been previously tested at least once. If not, create only one package at first to reduce the amount of potential rework.

】 To create a package for a door using a Hardware Module Template:

1. From the P2000 SCT menu bar, select **Insert>Package**. The Destination screen of the Insert Package Wizard appears.
2. Select the CK722 to which the package will be added and click **Next**. The Define Package screen appears.
3. Select the **Template Type** and **Trunk Number**.
4. In the **Count** field, enter the number of doors of this type you want to create.
5. Enter a name for the **PackageName** tag value for each door being created.
6. Enter a name for the **FieldDevice** tag value for each field device being created.
7. Click **Next**.
8. Click **Next**.
9. Enter all **Hardware Module Numbers** for each field device being created.
10. Click **Next** and then click **Finish**.


For more information on inserting a package from a Hardware Module Template, refer to the *P2000AE System Configuration Tool (SCT) Manual*.

Cursory Test

You are now ready to perform a cursory test of the system.

】 To perform a cursory test of the system:

1. **P2000 SCT:** Synchronize the P2000 SCT object database with the CK722. Refer to the *P2000AE System Configuration Tool (SCT) Manual* for more information.
2. **P2000:** Calibrate the input.
 - Refer to the *P2000AE Software User Manual* (under the **Database Maintenance** section) for instructions on calibrating the input.
 - Only calibrate the input once, unless the actual resistance or the connected field device changes.

- Familiarize yourself with the rules of input calibration stated in the device's product documentation.
 - Verify correct calibration by monitoring the Real Time List.
3. **P2000:** Verify the system status for the following items is Up :
- CK722 Controller (see “Verifying Online Status of the CK722” on page 4-7)
 - S300 Hardware Modules
 - Inputs
 - Outputs
 - Access Control Objects
 - Door Terminals

For information on using the System Status window in P2000, refer to the *P2000 AE Software User Manual*.

4. Present a badge to every reader and verify that the badge information is correctly read.
5. **P2000:** Using the P2000 software, unlock each new door. Refer to the *P2000 AE Software User Manual*.
6. **P2000:** Verify that door status is correctly reported. Refer to the *P2000 AE Software User Manual*.
7. Verify that all control strategies work as soon as practically feasible.
Examples: Anti-Passback, Occupancy, Anti-Loitering, Executive Privilege, Overrides, etc.

JCI STANDARD SCT TEMPLATES

Templates are “rubber stamps” of pre-defined applications that can be used to rapidly populate the P2000 SCT hardware configuration database. Templates are used to create *packages*, which contain all of the components for a single application, such as a door.

JCI Standard Templates are delivered with the P2000 SCT installation and are intended to be a starting point to create Job-Specific Templates, which are more closely adapted to the job-specific requirements. These Job-Specific Templates are then used to populate the P2000 SCT hardware configuration database.

Templates are used to define security logic functions using the P2000 SCT graphics tool, and a package is simply an instance of a particular template. Applying templates enables you to streamline the object creation and logic definition process by assigning pre-defined security functions to CK722 controllers.

Hardware Module Templates

The following hardware module templates are described in this section:

- JCI_RDR2S_Card-In
- JCI_RDR2SA_Full-IO

For a full list of JCI Standard Templates provided with the P2000 SCT refer to the *CK722 Commissioning Guide*.

JCI_RDR2S_Card-In

This template adds objects for an RDR2S hardware module with Reader 1 enabled for use with a single, fully configured Card-In door. The remaining input/output points, which are not defined in the P2000 SCT, are designated as general purpose I/Os, meaning you can use these I/Os for other applications, such as a reader with a tamper switch (input), alarm annunciation output (siren, lights), or for a different door entirely.

Object Diagram

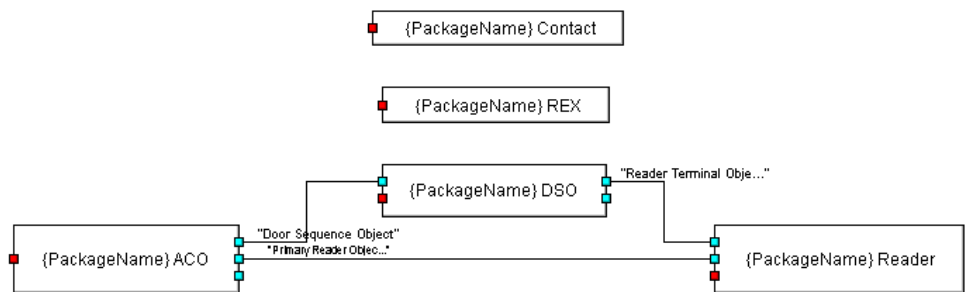


Figure 4-1: Object Diagram for the JCI_RDR2S_Card-In Template

Graphical Representation

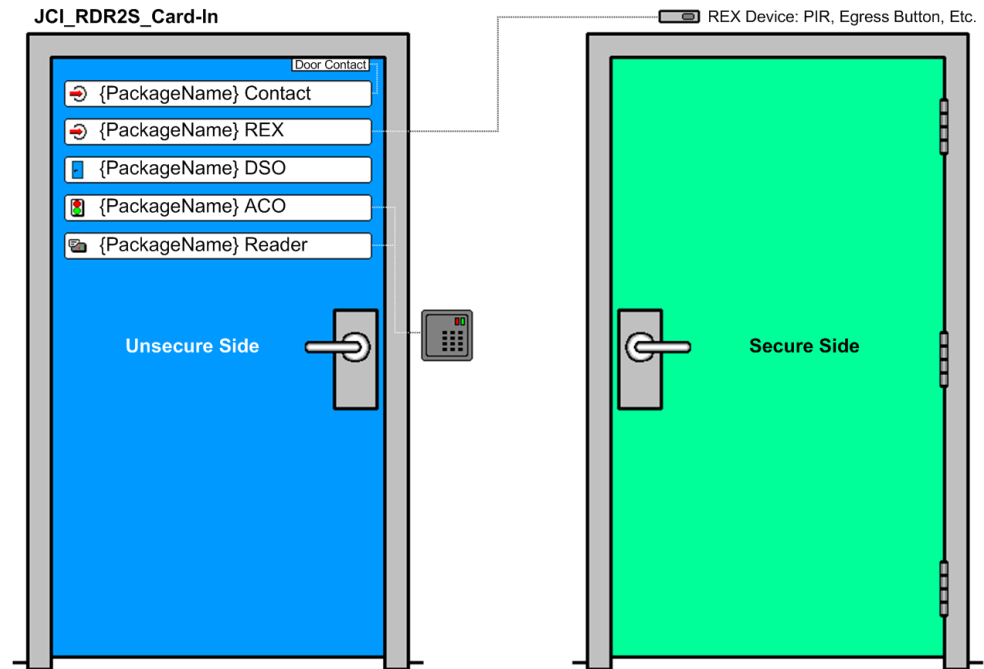


Figure 4-2: Graphical Representation of the JCI_RDR2S_Card-In Template

Object List and Description

Table 4-1: Object List for the JCI_RDR2S_Card-In Template

Type	Name	Description
Access Control	{PackageName} ACO	Controls access control logic for the door. Sends door commands to the {PackageName} DSO object. Destination Objects: {PackageName} DSO {PackageName} Reader
Door Sequence	{PackageName} DSO	Logic for controlling the door hardware. When prompted by the {PackageName} ACO object, the {PackageName} DSO object can control the door hardware, such as the strike or magnetic lock. Source Object: {PackageName} ACO Destination Object: {PackageName} Reader

Table 4-1: Object List for the JCI_RDR2S_Card-In Template

Type	Name	Description
S300 Trunk	S300	Represents the S300 bus for the S300 hardware modules and their input and output points.
S300 Hardware Module	{FieldDevice}	S300 hardware module object that represents the RDR2S module.
Security Supervised Input	{PackageName} Contact	Object representing the door contact, which allows the system to determine the state of the door (open, closed, forced, propped). See “Door Contacts” on page 4-13 for details on this type of device. Connector: IN11 The door contact is wired to the IN11 input on the RDR2S module.
Security Supervised Input	{PackageName} REX	Object representing the request to exit (REX) device. See “Request to Exit (REX) or Egress Devices” on page 4-14 for details on this type of device. Connector: IN12 The REX device is wired to the IN12 input on the RDR2S module.
S300 Reader Terminal	{PackageName} Reader	Object representing the entry reader. Source Objects: {PackageName} ACO {PackageName} DSO Connector: DATA0 / DATA1 (top)

Non-Default Attributes

Table 4-2: Non-Default Attributes for the JCI_RDR2S_Card-In Template

Object	Attribute	Non-Default Value
{PackageName} ACO	Primary Reader Object	{PackageName} Reader
	Door Sequence Object	{PackageName} DSO
	Set 1 First Identifier Format	10000 - Default
{PackageName} DSO	Reader Terminal Object	{PackageName} Reader
	Timed Override Mode	Timed Override
{PackageName} Contact	Suppress Default	Selected
{PackageName} REX	Debounce Time	50 ms
	Suppress Default	Selected

Assumptions

Since Reader 1 is defined, the following output points are automatically assigned (and therefore not available as general purpose outputs):

OUT11 – Red Light Output for Reader 1. Output is set every time an access deny occurs.

OUT12 – Green Light Output for Reader 1. Output is set every time an access grant occurs.

OUT13 – Shunt Output for Reader 1. Output is set every time an access grant occurs.

NO / NC (top) – Output controlling the door strike or magnetic lock. NO = Normally Open; NC = Normally Closed.

JCI_RDR2SA_Full-IO

This template adds objects for an RDR2S-A hardware module with 3 device-related inputs (Panel Tamper, Power Fail, and Battery Low), 8 suppressed inputs, and 8 outputs.

Object Diagram

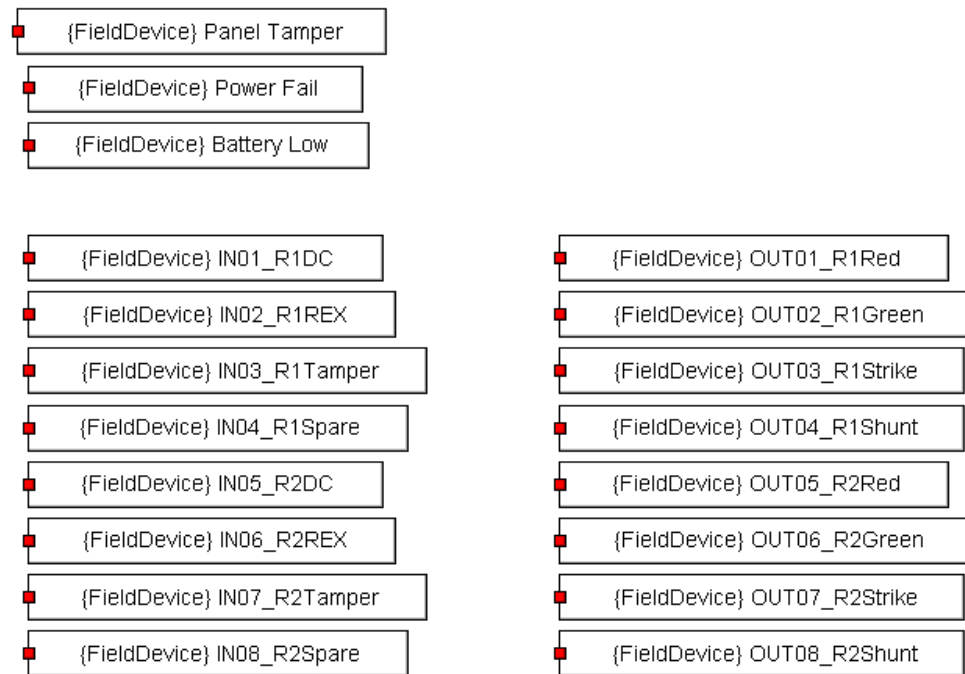


Figure 4-3: Object Diagram for the JCI_RDR2SA_Full-IO Template

Graphical Representation

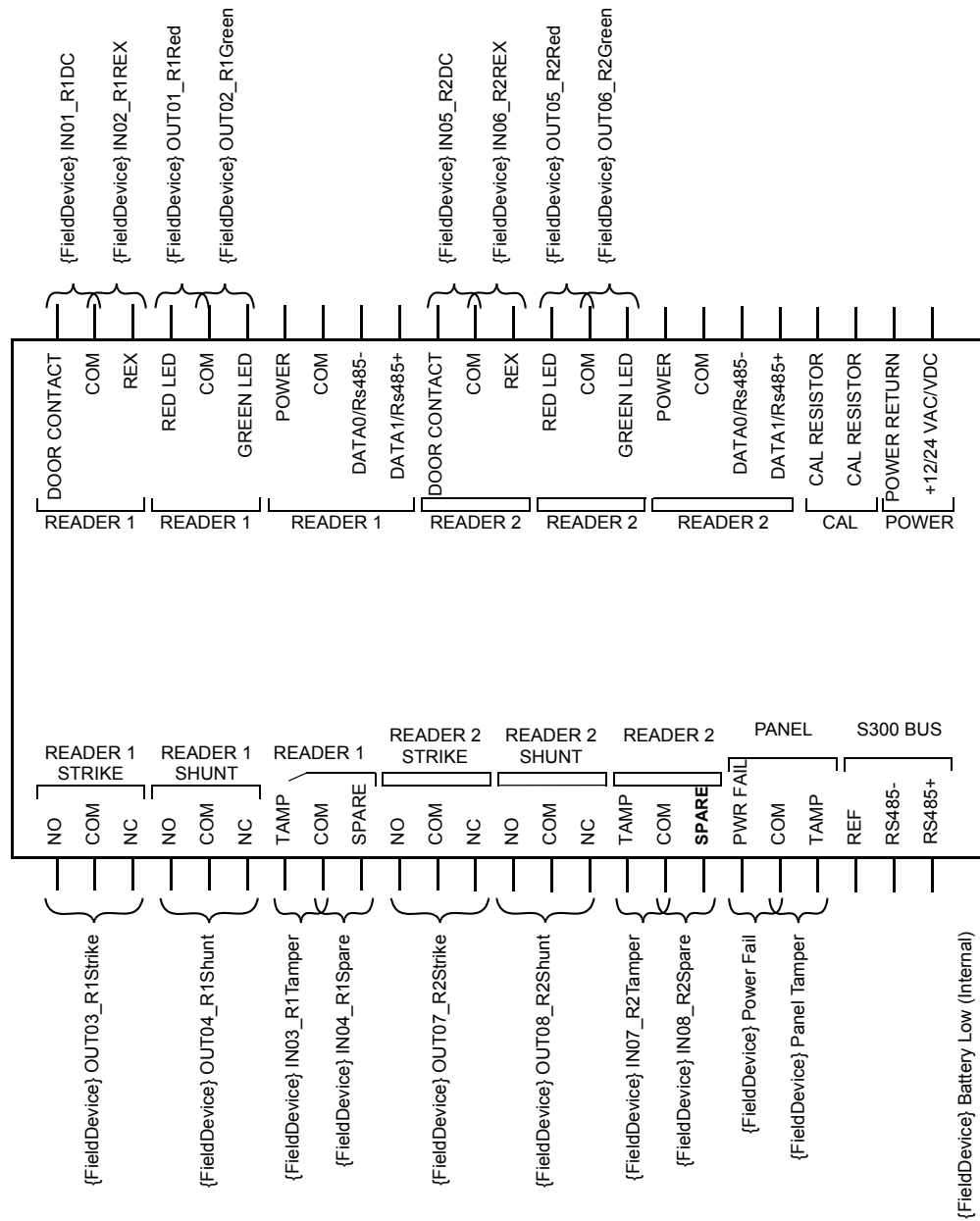


Figure 4-4: Graphical Representation of the JCI_RDR2SA_Full-IO Template

*Object List and Description**Table 4-3: Object List for the JCI_RDR2SA_Full-IO Template*

Type	Name	Description
S300 Trunk	S300	Represents the S300 bus for the S300 hardware modules and their input and output points.
S300 Hardware Module	{FieldDevice}	S300 Hardware Module object that represents the RDR2S-A module.
Security Supervised Input	{FieldDevice} Panel Tamper {FieldDevice} Power Fail {FieldDevice} Battery Low	Device-related inputs. Connector: Panel Tamper Connector: Power Fail Connector: Panel Battery Low
Security Supervised Input	{FieldDevice} IN01_R1DC {FieldDevice} IN02_R1REX {FieldDevice} IN03_R1Tamper {FieldDevice} IN04_R1Spare {FieldDevice} IN05_R2DC {FieldDevice} IN06_R2REX {FieldDevice} IN07_R2Tamper {FieldDevice} IN08_R2Spare	General purpose inputs. Configuration for inputs can be 2-state or 4-state. Connector: Reader 1 Door Contact Connector: Reader 1 REX Connector: Reader 1 Tamper Connector: Reader 1 Spare Connector: Reader 2 Door Contact Connector: Reader 2 REX Connector: Reader 2 Tamper Connector: Reader 2 Spare

Table 4-3: Object List for the JCI_RDR2SA_Full-IO Template

Type	Name	Description
Security Binary Output	{FieldDevice} OUT1_R1Red {FieldDevice} OUT2_R1Green {FieldDevice} OUT3_R1Strike {FieldDevice} OUT4_R1Shunt {FieldDevice} OUT5_R2Red {FieldDevice} OUT6_R2Green {FieldDevice} OUT7_R2Strike {FieldDevice} OUT8_R2Shunt	General purpose outputs. Each output can be timed, set, reset, fast flash, or slow flash. Connector: Reader 1 Red LED Connector: Reader 1 Green LED Connector: Reader 1 Strike Connector: Reader 1 Shunt Connector: Reader 2 Red LED Connector: Reader 2 Green LED Connector: Reader 2 Strike Connector: Reader 2 Shunt

Non-Default Attributes

Table 4-4: Non-Default Attributes for the JCI_RDR2SA_Full-IO Template

Object	Attribute	Non-Default Value
All Security Supervised Input objects	Suppress Default	Selected

DATABASE DOWNLOAD / SYNCHRONIZATION

INTRODUCTION

The P2000 SCT enables you to download or synchronize the archive (configuration) database using the database Load Wizard. This wizard uses the ActionQ (ActionQueue) to initiate and monitor the load process.

Access the Load Wizard by selecting **Tools>Load Archive** from the menu bar. The Load Wizard collects information necessary to perform the load such as load type, controller names, and load time. Once you complete the wizard, the load commands are added to the ActionQ. The ActionQ initiates and monitors the load.

There are three types of loads:

- Download
- Synchronize
- Update P2000 Host Only

For more information on the ActionQ, see page 5-8.

DATABASE DOWNLOAD

The Load Wizard's **Download** option downloads (copies) the archive database from the P2000 SCT and overwrites the database of each selected CK722 controller. The download function also updates the P2000 host software with the changes made to the P2000 SCT.



Use the **Download** feature only when downloading the archive database to a new CK722 controller for the first time. Do not use the Download feature on an already operational controller, as it will cause the controller to reset and will result in the loss of operational data. After performing a full initial download, use the **Synchronize** loading feature for all updates thereafter. The Synchronize feature downloads only the changes made to the SCT, instead of downloading the entire database. Also, the Synchronize feature does not interrupt the operation of the controller.

Figure 5-1 and Table 5-1 describe the download process.

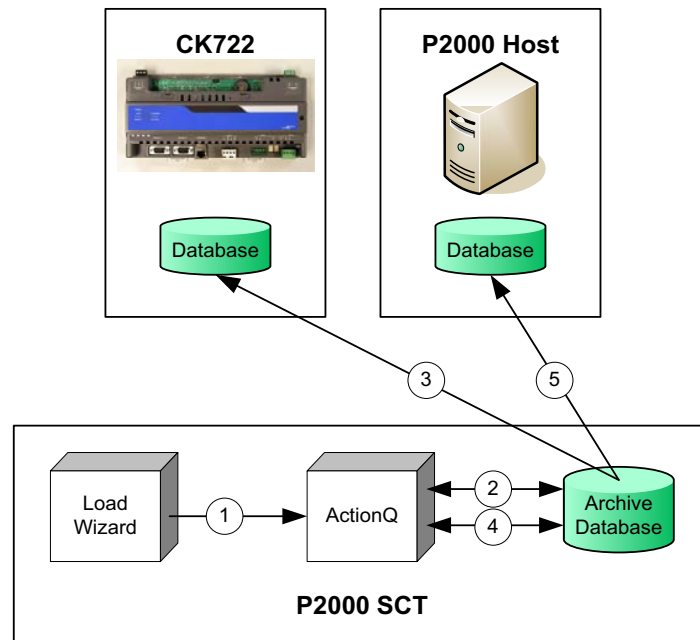


Figure 5-1: Download Process

Table 5-1: Download Process

Number	Process Description
1	<ul style="list-style-type: none"> After configuring a download in the Load Wizard, the Load Wizard sends the download command to the ActionQ in the P2000 SCT.
2	<ul style="list-style-type: none"> The ActionQ locks the Archive Database for the selected controller(s) in the P2000 SCT. See “Database Locking” on page 5-6. The ActionQ begins the download process at the time defined for the download.
3	<ul style="list-style-type: none"> The ActionQ transfers the P2000 SCT Archive Database file to the CK722 database.
4	<ul style="list-style-type: none"> The ActionQ unlocks the Archive Database for the selected controller(s) in the P2000 SCT. The ActionQ displays the final status of the download.
5	<ul style="list-style-type: none"> The ActionQ transfers the updated P2000 SCT data to the P2000 host database.

NOTE

If the **Update P2000 Only** check box is enabled, the system will not download the archive database to CK722 controllers. See “Update P2000 Only” on page 5-4 for more information on this download option.

Object References to Objects in Other Controllers

When downloading to a CK722 controller an object that references an object in a different controller, the P2000 host must be “aware” of the CK722 controller being referenced or the download will fail. That is, the controller being referenced must be downloaded to the P2000 host first. Then the controller with the object that references an object in a different CK722 controller must be downloaded afterwards.

For example, imagine your P2000 SCT archive database consists of objects for two CK722 controllers: Controller 1 and Controller 2. Neither controller has been downloaded from the P2000 SCT, so the P2000 host has not received data about these two controllers. Controller 1 has an Intrusion Area object (“A”) that references the Intrusion Area object (“B”) in Controller 2. If you attempt to download Controller 1, the download will fail, since the P2000 host does not know about Controller 2, which is being referenced by an object in Controller 1. See Figure 5-2.

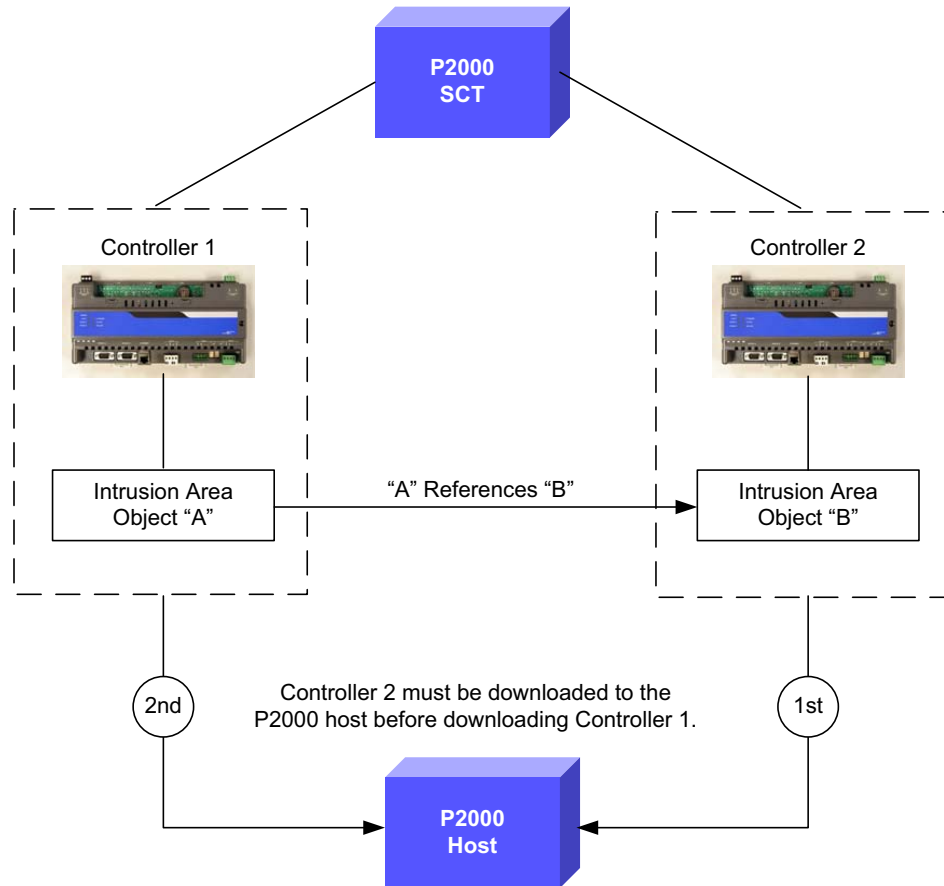


Figure 5-2: External Object References

UPDATE P2000 ONLY

The Update P2000 Only download option provides a way to update the P2000 server without downloading the archive database to CK722 controllers.



Use the **Update to P2000 Only** feature only if you wish to configure the P2000 SCT and update the P2000 server with the archive database information AND the CK722 controller hardware has not been installed. Once the hardware is installed, perform a full download to the controller and the P2000 server, so that the controller and P2000 server are in sync. If you use the Update to P2000 Only option after the controller has received the archive database information, the P2000 server and CK722 controller will be out-of-sync. After performing a full initial download, use the **Synchronize** loading feature for all updates thereafter. See “Database Synchronization” on page 5-4.

DATABASE SYNCHRONIZATION

The Load Wizard’s **Synchronize** option synchronizes a CK722 database with the P2000 SCT archive database. The CK722 database and the P2000 SCT archive database will match after you run the Synchronize option.

NOTE

Once the archive database has been downloaded to a CK722 controller, use the Synchronize option thereafter to update the CK722 controller with changes made to the P2000 SCT archive configuration. See “Database Download” on page 5-1 for more information.

Figure 5-3 and Table 5-2 describe the synchronization process.

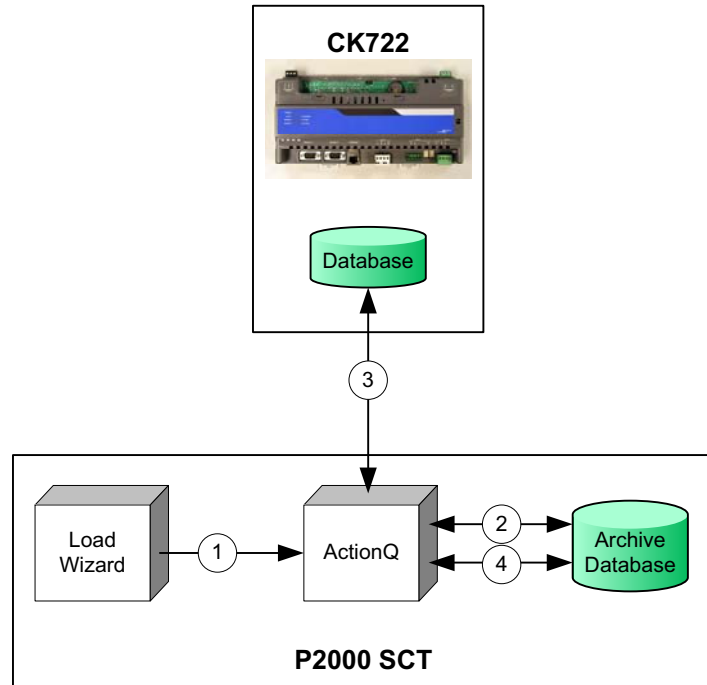


Figure 5-3: Synchronization Process

Table 5-2: Synchronization Process

Number	Process Description
1	<ul style="list-style-type: none"> After configuring a synchronization load in the Load Wizard, the Load Wizard sends the synchronization command to the ActionQ in the P2000 SCT.
2	<ul style="list-style-type: none"> The ActionQ locks the Archive Database for the selected controller(s) in the P2000 SCT. See “Database Locking” on page 5-6.
3, 4	<ul style="list-style-type: none"> The ActionQ downloads the changes from the P2000 SCT to the CK722 database. However, the CK722 applies the changes from the new file to the database. The ActionQ unlocks the Archive Database for the selected controller(s) in the P2000 SCT. The ActionQ displays the final status of the synchronization.

DATABASE LOCKING

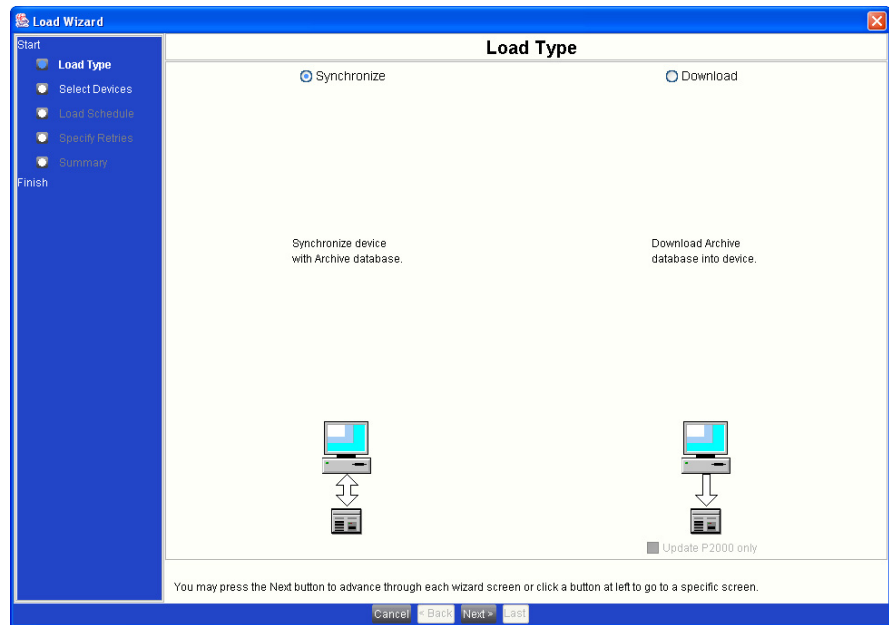
After scheduling a load, the archive database for that device is locked in the P2000 SCT until the load for that device has been completed or is deleted. Only the device being loaded is locked. You can still access devices that have no scheduled loads.

If you need to modify the archive database in the P2000 SCT for a device with a scheduled load (locked device), you can still delete the load to clear the lock. After making your modifications, you can schedule the load again.

DOWNLOADING OR SYNCHRONIZING A DATABASE

► To download or synchronize a database:

1. From the menu bar, select **Tools>Load Archive**. The Load Wizard appears.



2. Follow the wizard instructions.

See Table 5-3 for tips. The ActionQ appears after clicking **Finish** on the Summary screen of the load wizard. See “ActionQ” on page 5-8 for information on monitoring the load.

NOTE

During the following procedure, you may be prompted to enter your username and password.

Table 5-3: Load Wizard Tips

Wizard Screen	Tips
Load Type	<ul style="list-style-type: none"> Select the radio button for the type of load: Synchronize or Download. If you wish to update the P2000 host only, select the Update P2000 Only check box. If you select the Download radio button and click Next, a warning message appears. Click OK to continue to the Select Devices screen or click Cancel to select a different load option.
Select Devices	<ul style="list-style-type: none"> Select one or more devices to synchronize or download. Use the <Ctrl> or <Shift> keys to select multiple items.
Device Change	<ul style="list-style-type: none"> Appears only in the Download Wizard when only one CK722 controller is selected for download. To change the name of a device during the download, click Use this option to rename a device via download and enter the existing name of the device in the text box. The new name will be taken from the archive. To change the address of a device during the download, click Use this option to change a device address via download and enter the existing address of the device in the text box. The new address will be taken from the archive.
Load Schedule	<ul style="list-style-type: none"> Select either the Synchronize now (or Download now) or Schedule synchronize (or Schedule download) radio button. If you select Schedule synchronize (or Schedule download), a date and time selector appears. <p>Note: If you schedule multiple loads to begin at the same time, some loads may not begin at the specified time because they are waiting for other loads to complete. You cannot define a load order for devices scheduled together. If you must load a certain device first, schedule that device separately with an earlier load time.</p>
Specify Retries	<ul style="list-style-type: none"> Enter the number of times you want to retry the load if communication failure occurs.
Summary	<ul style="list-style-type: none"> View the final information for the load and click Finish.

ACTIONQ

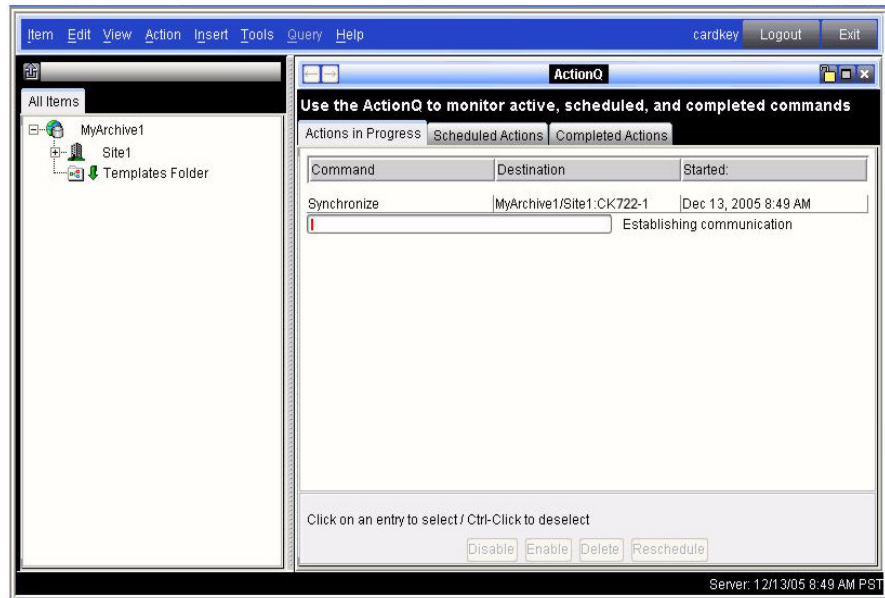
The ActionQ (Queue) receives download or synchronize commands, allows you to modify and monitor the commands, and performs scheduled command executions. You can access the ActionQ from the **View** menu.

ActionQ Operation

The ActionQ shows the status of load commands and allows you to monitor, enable, disable, delete, or reschedule them. See “ActionQ Interface” on page 5-9 for more information. The ActionQ receives a load command from the Load Wizard and executes the command based on the date, time, and other specified parameters.

The order of operation is as follows:

1. The ActionQ receives a load command from the Load Wizard.
2. The ActionQ initiates the command (for example, starts the load process).
3. The ActionQ interface displays the progress and final status of the load command.



The final status remains on the ActionQ screen until you delete it or it is automatically deleted after a user-defined number of days (1-30).

At this time, the ActionQ only supports download, synchronization, and update P2000 only commands from the Load Wizard.

ActionQ Interface

The ActionQ contains three main screens/dialogs.

Table 5-4: ActionQ Screens

Screen	Description
ActionQ	<p>Allows you to view active, scheduled, and completed load commands. This screen is the main screen of the ActionQ interface and has three tabs:</p> <ul style="list-style-type: none"> ■ Actions in Progress – Allows you to monitor, enable, disable, delete, and reschedule load commands that are in progress or pending. ■ Scheduled Actions – Allows you to view, enable/disable, delete, and reschedule upcoming scheduled commands. ■ Completed Actions – Allows you to view the status of completed or failed commands, reschedule commands, and clear them from the screen. <p>Note: A command is pending when it has not been issued because the recipient device is busy as a result of too many incoming commands.</p> <p>Note: Once a command is issued, it may be complete before a command to disable, delete, or reschedule reaches it.</p>
ActionQ Reschedule a Command Dialog	<ul style="list-style-type: none"> ■ Appears after clicking the Reschedule button from the Action in Progress, Scheduled Actions, or Completed Actions tabs of the ActionQ main screen. ■ Allows you to modify the scheduled start date and time of a command. <p>Note: If you schedule multiple commands to occur at the same time, not all commands may begin at the specified time because they are waiting for other commands to complete.</p>
ActionQ View Status Dialog	<ul style="list-style-type: none"> ■ Appears after clicking the View Status button from the Completed Actions tab of the ActionQ main screen. ■ Allows you to view the completion information of a command, such as destination, start time, end time, final status, error status, and any additional information.

Using the ActionQ

► To launch the ActionQ interface:

The ActionQ automatically launches after the Load Wizard completes.

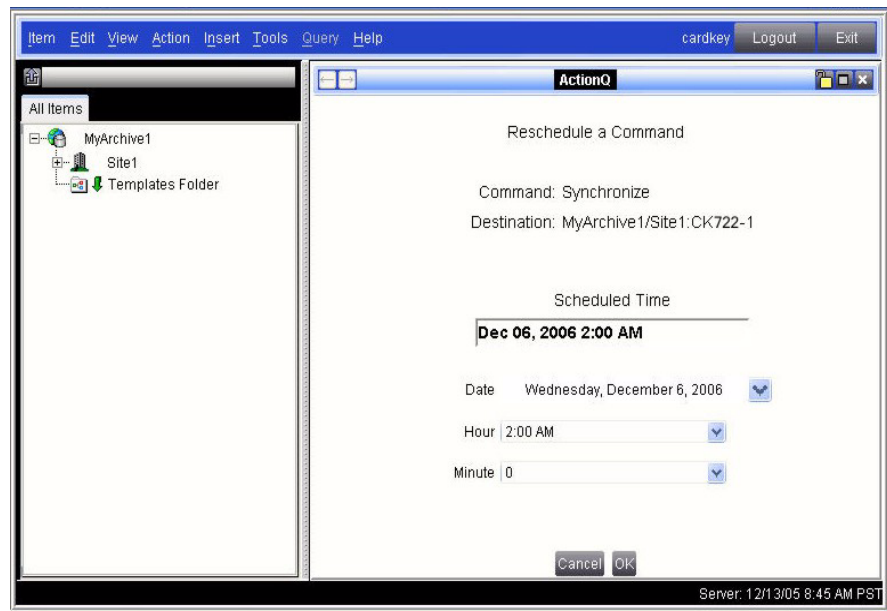
1. From the menu bar, select **View>ActionQ**.

► To enable/disable a command:

1. Launch the ActionQ and select either the **Actions in Progress** tab or the **Scheduled Actions** tab.
2. Click on the command.
3. Click **Enable** or **Disable**.

► To reschedule a command:

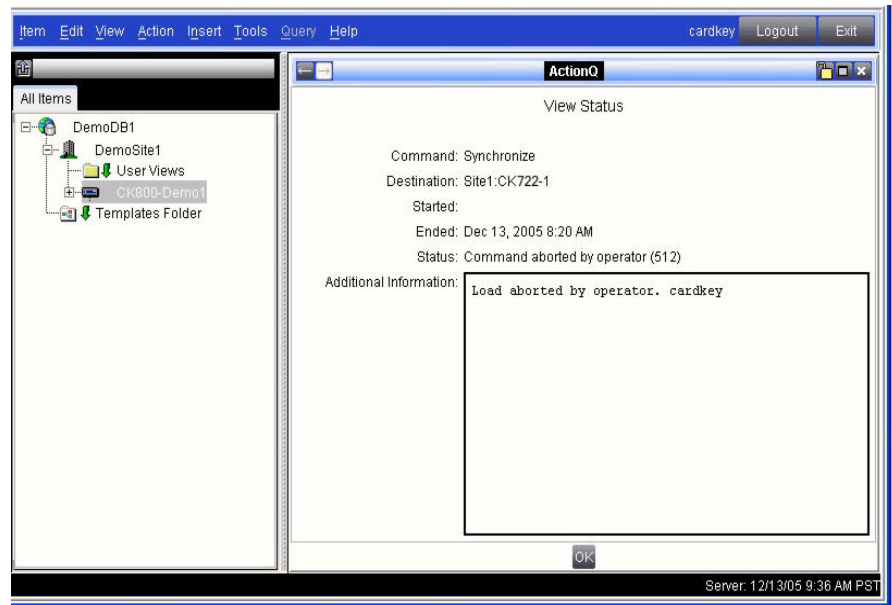
1. Launch the ActionQ and select a tab.
2. Click on the command.
3. Click **Reschedule**. The ActionQ Reschedule a Command dialog appears.



4. Modify the date and time using the drop-down menus.
5. Click **OK**.

► To view the status of a command:

1. Launch the ActionQ and select the **Completed Actions** tab.
2. Click on the command.
3. Click **View Status**. The ActionQ View Status dialog appears.



4. Click **OK** to return to the ActionQ screen.

➤ **To delete a command:**

1. Launch the ActionQ and select a tab.
2. Click on the command.
3. Click **Delete**.

➤ **To automatically delete completed commands:**

1. Launch the ActionQ and select the **Completed Actions** tab.
2. Enter the desired amount of days in the **Number of days after which entries will be automatically deleted (1-30)** text box.

SECURED PREMISES NOTIFICATION SETTINGS

The steps described in this appendix are necessary to ensure UL 1076 compliance when a controller event is used to unsuppress (arm) life safety alarm signals.

Per UL 1076, if a user can unsuppress life safety alarms at the protected premises, e.g. through a controller event, then when this event is invoked the user must receive an audible or visible indication that the P2000 server received the message generated by the controller after the event was processed. If the user does not receive the expected indication, then either the controller is offline from the server or the controller did not process the controller event request.

Verify that your P2000 SMS's settings are configured according to the information provided in this appendix. Any parameters not specified may be programmed at the end-user's discretion.

SEQUENCE OF EVENTS

The following information describes a typical sequence of events given the configurations described in this chapter.

1. Applicable life safety alarm inputs are in a secure state and are not suppressed (i.e. they are armed).
2. An authorized person initiates (activates) a controller event, which suppresses (disarms) one or more life safety alarm input points.
3. All life safety alarm signals associated with the controller event are now suppressed and will not report to the host.
4. An authorized person deactivates the previously activated controller event.
5. All life safety alarm signals associated with the controller event are now unsuppressed (armed) and will report to the host (if the panel is online).
6. The P2000 SMS, having received the controller event deactivate message, initiates its event and sets the appropriate output point.
7. The output point activation causes an audible or visible indicator to be annunciated at the location where the controller event was deactivated.

P2000 SYSTEM CONFIGURATION TOOL (SCT) PROCEDURES

The following minimum objects must be inserted in the P2000 SCT:

- Site object
- CK722 Device object
- S300 Hardware Module object that supports at least one reader (e.g. RDR2S, RDR2)
- S300 Hardware Module object that supports input/output control (e.g. SIO8, IO8, RDR2S with available general purpose inputs/outputs, etc.)
- S300 Reader Terminal object (the device associated with this object triggers the controller event)
- Security Binary Output object (the output device that audibly or visibly annunciates to the entity that the life safety alarms are currently unsuppressed whenever the entity deactivates the controller event)
- Security Supervised Input object (alarm input point that is suppressed/unsuppressed by the activation/deactivation of the controller event)
- Access Control object (links with the Controller Event object)
- Multiple Command object (modifies the suppress/unsuppress state of the life safety alarm inputs)
- Controller Event object (initiates the card event)

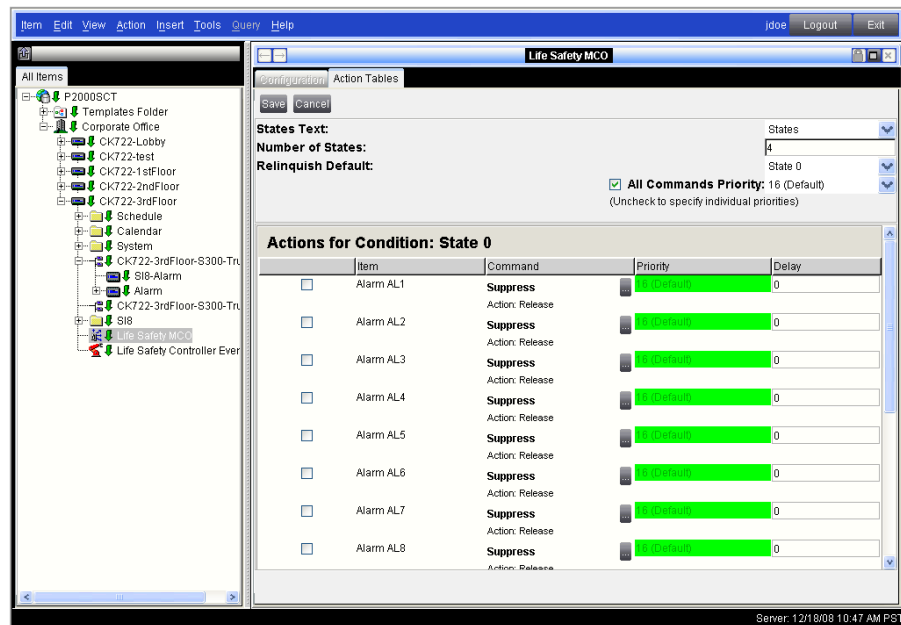
The information in this section does not cover how to insert the objects listed. For information on inserting objects, refer to the *P2000AE System Configuration Tool (SCT) Manual*.

Once all objects are inserted, follow the procedures in this section to configure the objects for UL 1076 compliance. For additional attribute information, refer to the associated object manual.

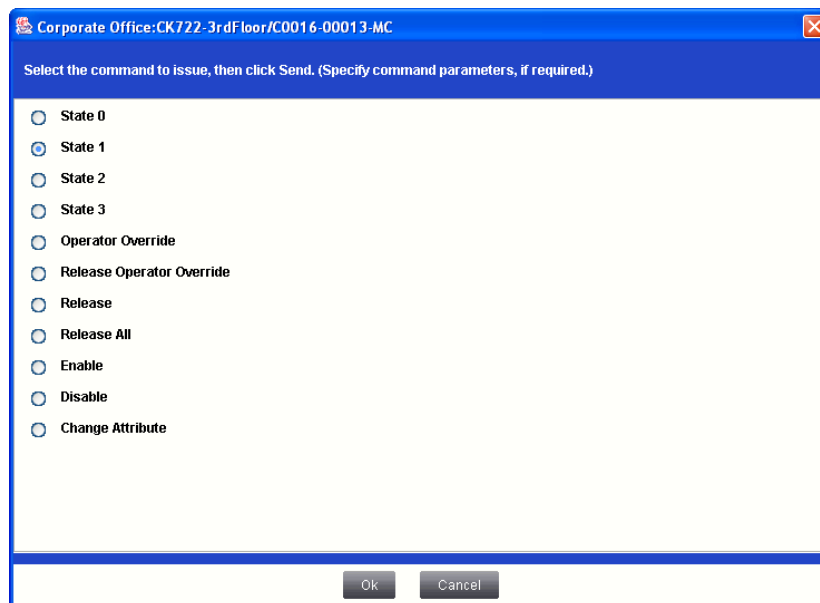
Multiple Command Object Configuration

1. Open the Multiple Command object and click **Edit**.
2. Change the **Notification Class** attribute to **1** and click **Save**.
3. Select the **Action Tables** tab and click **Edit**.
4. Select **State 0** in the drop-down list across from the **Relinquish Default** caption.
5. Click the **Add** button under **Actions for Condition: State 0**.
6. Select the life safety alarm input and click **OK**.
7. Do **not** change the default **Command** values (**Suppress – Action: Release**).

8. Repeat steps 5-7 for each life safety alarm input associated with the controller event.

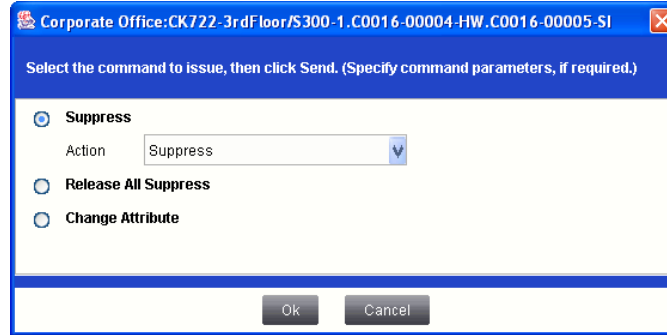


9. Click the **Add** button under **Actions for Condition: State 0**.
10. Select the Multiple Command object and click **OK**.
11. Click the browse button under the **Command** column of the Multiple Command object.
12. Select the **State 1** radio button and click **Ok**.



13. Click the **Add** button under **Actions for Condition: State 2**.
14. Select the life safety alarm input and click **OK**.

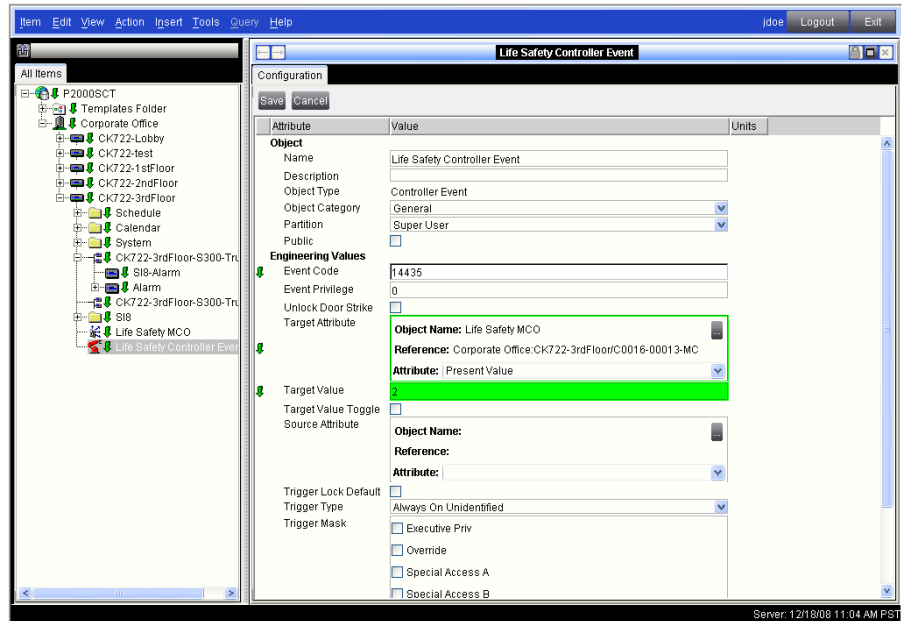
15. Under **Actions for Condition: State 2**, click the browse button under the **Command** column of the life safety alarm input.
16. Select the **Suppress** radio button.
17. Select **Suppress** in the **Action** drop-down list.



18. Click **Ok**.
19. Repeat steps 13-18 for each life safety alarm input associated with the controller event.
20. Click the **Add** button under **Actions for Condition: State 2**.
21. Select the Multiple Command object and click **OK**.
22. Under **Actions for Condition: State 2**, click the browse button under the **Command** column of the Multiple Command object.
23. Select the **State 1** radio button and click **Ok**.
24. Click **Save**.

Controller Event Object Configuration

1. Open the Controller Event object and click **Edit**.
2. Select the Multiple Command object in the **Target Attribute** field. Verify that **Present Value** is selected as the attribute.
3. Change the **Target Value** attribute to **2**.
4. Enter the **Event Code** that will be used to initiate the event.



5. Set up how the controller event will be invoked from the keypad.
6. Click **Save**.

Access Control Object Configuration

1. Open the Access Control object associated with the reader that will be used to initiate the event and click **Edit**.
2. Select the Controller Event object in the **Controller Event Object List** attribute (**Configuration** tab).
3. Click **Save**.

Synchronizing the Object Database with the Host and Controller

When you have completed the configuration of the required objects, synchronize the P2000 SCT object database with the P2000 host and the CK722 controller. Refer to the *P2000AE System Configuration Tool (SCT) Manual* for more information.

P2000 HOST PROCEDURES

Refer also to **Appendix I** of the *P2000AE Software User Manual* for instructions on configuring P2000 to comply with secured premises notification rules.

