

Contents

Chapter 1

Introduction

Overview	1-1
Document Conventions	1-1
Related Documentation	1-2
Installation	1-2
Development and Runtime Applications	1-2
Package Contents	1-2
About the Hardware Key	1-3
System Requirements	1-3
Development Systems	1-3
Runtime System	1-3
Installing LookoutDirect	1-3
Setting System Options	1-5
Computer Name Setting	1-5
Citadel Database Settings	1-5
Virtual Keyboard Settings	1-6
Log Alarms Setting	1-6
Security Level Settings	1-6
Panel Navigation Arrows	1-6
Startup Process File Setting	1-7

Chapter 2

How LookoutDirect Works

Architecture	2-2
What is an Object?	2-2
LookoutDirect Object Classes and Functionality	2-4
Parameters	2-4
Object Databases and Data Members	2-5
Logical Data Members	2-7
Numeric Data Members	2-7
Text Data Members	2-13
(implicit) Data Members	2-13
Data Polymorphism	2-14
Data Quality Attributes	2-15
Connections	2-16
Client and Server Processes	2-18
Supervisory Control	2-18
Event-Driven Processing	2-19

- Advantages of Active Notification.....2-20
- LookoutDirect Environment Services2-21
 - Serial Port Communication Environment Service2-21
 - Database Environment Service2-22
 - Graphics Environment Service.....2-22
 - Alarm Environment Service.....2-22
 - Multimedia Environment Service2-22
 - Security Environment Service.....2-23
 - Historical Logging Environment Service.....2-23
 - ODBC Environment Service.....2-23
 - DDE Environment Service.....2-23
 - Networking Environment Service.....2-24
 - Redundancy Environment Service2-24
- LookoutDirect Windows Services2-24

Chapter 3

Getting Started with LookoutDirect

- Basic Features Tour3-2
 - Starting a New Process.....3-2
 - Adding an Object3-4
 - Creating and Working with Expressions.....3-6
 - Saving Your Work3-8
 - Connecting Objects3-8
 - Creating Useful Interactions Between Objects3-11
 - Dressing Up the Control Panel.....3-15
 - Adding Alarms3-21
- Connected Tour3-23
 - Toggling a Discrete PLC Output.....3-23
 - Writing and Reading a Numeric Value3-27
 - Reading a Discrete Signal3-29
 - Displaying the Number of Scans.....3-30
- Advanced Features Tour.....3-31
 - Creating Panel Navigation Buttons3-31
 - Importing Custom Graphics3-33
 - Creating Alarm Management Buttons.....3-33
 - Process Data Logging.....3-36

Chapter 4

LookoutDirect Basics: Windows, Tools, Files, and Path Names

Starting LookoutDirect	4-1
Logging on to LookoutDirect	4-1
Opening a Process File.....	4-2
The LookoutDirect Screen	4-3
Title Bar	4-4
Menu Bar	4-4
Status Bar.....	4-4
LookoutDirect Workspace.....	4-5
Object Explorer	4-5
Control Panels	4-8
Alarm Window	4-9
Operator Input and Navigation	4-10
Virtual Keypad	4-10
Virtual Keyboard	4-10
Connection Browser	4-11
Connection Browser Options	4-14
LookoutDirect Application Files	4-15
Process File.....	4-15
Source Code File	4-16
State File.....	4-17
Security File.....	4-17
Configuration Shortcuts	4-18
Mouse Shortcuts	4-18
Remembering Object Names.....	4-19
Path Names in LookoutDirect.....	4-20

Chapter 5 Using LookoutDirect

Overview of the Process Development Cycle.....	5-23
Building Client and Server Processes	5-24
LookoutDirect Navigation	5-25
Creating A LookoutDirect Process	5-26
Creating Objects.....	5-28
Choosing Objects.....	5-28
Create an Object	5-28
Object Names.....	5-32
Connecting Objects	5-34
Connecting Data Members to Parameters	5-35
Identifying Object Data Members	5-36
Connecting Data Members to Data Members	5-36
URL Connections	5-40
Remote Position Source Connections	5-41
Symbolic Link Connections	5-41
HyperTrend Item Connections	5-42
Displaying Data Members on Control Panels.....	5-42

Glossary

Index