



**Honeywell**

# Excel Live CARE

USER GUIDE

**EXCEL** 5000 **OPEN**™  
S Y S T E M

74-3556-9 (US)  
EN2B-0183 GE51 R0404



---

# Excel Live CARE

## V5.00.00

---

### USER GUIDE

#### Software License Advisory

This document supports software that is proprietary to Honeywell Inc. and/or to third party software vendors. Before software delivery, the end user must execute a software license agreement that governs software use. Software license agreement provisions include limiting use of the software to equipment furnished, limiting copying, preserving confidentiality, and prohibiting transfer to a third party. Disclosure, use, or reproduction beyond that permitted in the license agreement is prohibited.



# CONTENTS

<b>OVERVIEW</b>	1
<b>APPLICABLE LITERATURE</b>	1
<b>LIVE CARE CONCEPTS</b>	2
<b>GETTING STARTED</b>	3
Connect to Controller (Online Monitoring)	3
Initiate Controller Simulation	4
Initiate Live CARE	5
On-Line Help	7
<b>EXIT LIVE CARE</b>	7
<b>TYPICAL PROCEDURES</b>	8
Select a Plant and the Communication Interface	9
Simulate Controller Operation	12
Simulation Window	13
Simulation Setup	15
View User Addresses	18
View Control Strategy	19
View Switching Logic	21
Monitoring	23
Monitor(s) Dialog Box	26
Monitor Hardware Points	27
Monitor Software Points	28
Monitor Flag Points	29
Monitor XFM Points	30
Search for Datapoints via Keyboard	33
Monitor Points in "No Response" Mode	33
Monitor Points in "Manual Override" Mode	34
Monitor Z-Registers	35
Monitor XFM Z-Registers	36
Fix/Unfix Points	39
Modify Flag Points	41
Modify Z-Registers	42
View/Change Symbol Information	44
View/Change Symbol Inputs	45
View/Change Symbol Parameters	46
Change XFM Internal User Addresses and Mapped Parameters	48
Modify XFM Z-Registers	50
<b>SET CARE.INI FILE ENTRIES</b>	52
<b>ERROR MESSAGES</b>	54
General Error Messages	54
Simulation Error Messages	55
<b>INDEX</b>	58



---

## OVERVIEW

---

<b>General</b>	<p>Excel Live Computer Aided Regulation Engineering ("Live CARE") software provides functions to check Excel 50, 80, 100, 500, 600, and Excel Smart, for correct control operation. You can check operation either via physical connection to a Controller or by using simulation software to mimic controller operation. You can monitor hardware and software points as well as z-registers from the schematic, control strategy, or switching logic functions. You can also "fix" points and modify z-registers (set them to specific values and have the controller maintain those values). You can view user addresses, control strategy and switching tables in the schematic.</p> <p>Excel Live CARE software matches the functions and windows in Excel CARE software to provide an easily recognizable format.</p>
<b>Manual Assumptions</b>	<p>You should know and understand Excel CARE software and its schematic, control strategy, and switching logic functions. See Excel CARE User Guide 74-5587 (US) / EN2B-0182 (Europe) for details.</p>
<b>Manual Organization</b>	<p>This manual contains the following chapters:</p> <p>This <i>Overview</i> states the purpose of Live CARE, required operator knowledge, and manual organization. In addition, newly implemented features are described.</p> <p><i>Live CARE Concepts</i> provides general information on Live CARE software, its relationship to other software, and its performance capacity.</p> <p><i>Getting Started</i> explains how to connect to a controller (physically or by simulation), initiate Live CARE software, exit Live CARE software, and how to use the on-line help function. The chapter also describes the Live CARE main window.</p> <p><i>Typical Procedures</i> includes step-by-step instructions for Live CARE functions. These functions include:</p> <ul style="list-style-type: none"> <li>• <i>Select a Plant and the Communication Interface</i> to specify a project, controller, and plant for viewing and monitoring.</li> <li>• <i>Simulate Controller Operation</i> to simulate an Excel 50, 80, 100, 500, or 600 Controller; vary the speed of controller simulation; change date and/or time in the controller; and select continuous or step-wise functioning.</li> <li>• <i>View User Addresses</i> to display user addresses in the schematic view.</li> <li>• <i>View Control Strategy</i> to display the control strategy for the selected plant.</li> <li>• <i>View Switching Logic</i> to display switching logic for the selected plant.</li> <li>• <i>Fix/Unfix Points</i> to change point mode (automatic to manual and vice versa) and assign point values or statuses.</li> <li>• <i>Modify Flag Points</i> to change flag point values</li> <li>• <i>Modify Z-Registers</i> to change z-register values</li> <li>• <i>View/Change Symbol Information</i> to view/change input and internal control symbol parameters, internal user addresses, mapped parameters and z-registers of XFMs.</li> <li>• <i>Error Messages</i> provides a list of error messages that can display and explains probable causes and solutions.</li> </ul>

---

## APPLICABLE LITERATURE

---

Form No.	Title
74-5587 (US) EN2B-0182 (Europe)	Excel CARE User Guide Description of Excel CARE and procedures to use Excel CARE functions.
74-5577 (US) EN2B-0184 (Europe)	Excel CARE Control Icons User Guide Descriptions of the control strategy icons in CARE.
EN2B-162	RACL Editor User Guide Graphical Editor for creation of strategy logic programs for Excel 500 controllers.
74-3594 (US) EN2B-0185 (Europe)	ASPECD Editor User Guide Provides functions to modify the user interface for Excel Operator Terminals.

---

## LIVE CARE CONCEPTS

---

<b>Purpose</b>	This chapter provides general information on Live CARE software, its relationship to other software, and its performance capacity.
<b>Data Changes</b>	Live CARE can change control strategy symbol parameters, point mode, and manual values in the controller database. Live CARE does not save any other changes (for example, point value or status changes).
<b>Capacities</b>	Live CARE can monitor any point/z-register in a plant. The maximum number of monitored points at any one time is 20 per controller.
<b>Communication</b>	<p>Live CARE can either communicate directly with a controller (online) or simulate controller function via simulation software.</p> <p>Live CARE communicates directly with controllers via the B Port (XI584 Port) on the controller and the serial port (RS-232-C) on the back of the Personal Computer (PC).</p> <p>Live CARE simulates controller function if you select the static simulator interface option. See the Getting Started chapter for direct-connect and simulation procedures.</p>
<b>Excel Building Supervisor</b>	Both Excel Building Supervisor software and Live CARE software can communicate with the same controller. Since the Excel Building Supervisor ("XBS") communicates with the controllers via the C-bus and Live CARE communicates through the B port, both programs can run concurrently without problem.
<b>XI584 and Live CARE</b>	Live CARE and XI584 software both use the controller B Port and thus cannot be running at the same time if Live CARE is directly connected to the controller.
<b>System Performance</b>	<p>Response time for Live CARE varies depending on controller type, the number of points/z-registers being monitored, and the number of other programs running at the same time as Live CARE.</p> <p>The more points/z-registers being monitored, the slower the controller responds. To speed response and reduce message traffic, Live CARE requests that the controller only report point changes by exception, that is, if a point does not change value or status, the controller does not issue a message to Live CARE. In contrast to points z-registers are polled continuously according to a defined poll cycle time.</p>



**Purpose** This chapter describes how to connect to the desired controller or start the simulation software; start Live CARE software; and display on-line help. In addition, newly implemented features and the Live CARE main window are described.

The first step is to decide whether to directly connect to a controller or to simulate controller function. The next two sections discuss each option.

## Connect to Controller (Online Monitoring)

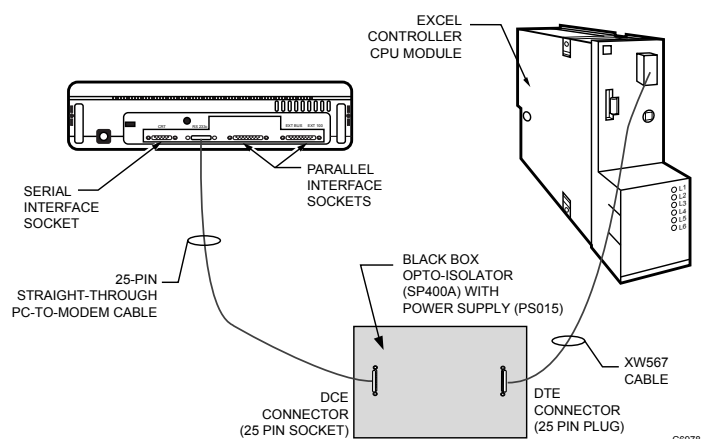
**Purpose** Physically connect controller to Excel CARE Personal Computer (PC) so that Live CARE can read the controller database.

**Requirements** The PC must be within 49 ft. (15m) of the controller. At greater distances (up to 3281 ft. [1000m]), you must add a line driver.

Use a XW567 Connection Cable, 25-pin straight-through PC-to-modem cable, and an Opto-Isolator to connect the PC and controller. The Opto-Isolator SP400A is available from Black Box Corporation, P.O. Box 12800, Pittsburgh, PA 15241 ([412] 746-5500; FAX order number 1-800-321-0746 within the US and 412-746-0746 outside the US). Also use Power Supply PS015 from Black Box to power the Opto-Isolator.

### Procedure (Hardware)

1. Exit CARE. Turn off power switches of the PC and printer (if used).
  - a. Insert plug on the XW567 connection cable into the socket on the front of the controller computer module.
  - b. Insert the other plug on the XW567 connection cable into the DTE side of the Opto-Isolator. Connect Power Supply PS015 to the Opto-Isolator and set the single-throw DIP switch to the DTE side.
  - c. Keep the distances between the PC and controller short (less than 16 feet [5 m] either side of the Opto-Isolator) so that the power supply conversion from the RS-232 signal lines is not compromised.
  - d. Connect one end of the 25-pin straight-through PC-to-modem cable to the serial interface socket on the back of the PC (COM 1 or COM 2).
  - e. Connect the other end of the cable to the 25-pin DCE socket on the Opto-Isolator.



2. Insert the PC power supply cable into the socket on the back of the PC.
3. Insert the plug on the power supply cable into a wall socket.

4. If there is a printer:
  - a. Insert the printer connection cable into the socket on the back of the printer.
  - b. Insert the other end of the printer connection cable into the socket on the back of the PC.
  - c. Insert the printer power cable into the socket on the printer.
  - d. Insert the printer power cable into a wall socket.
5. To start the PC, apply power in the following order:
  - a. Switch ON (I) the controller computer module, if not yet running.
  - b. Switch ON (I) the printer.
  - c. Switch ON (I) the PC.

Always switch on the printer before switching on the PC. Always switch off the printer after switching off the PC.

RESULT: Screen display depends on the setup of the software in the PC. To operate Live CARE, Windows™ and Excel CARE software must be running.

6. If Windows™ is not running (only a DOS prompt on the screen, for example, c: >), type **win** to initiate Windows™.
7. When Windows™ is running, click the Start menu.
8. Select Programs and HONEYWELL XL 5000, then click on CARE 3.00.00

RESULT: The Excel CARE window displays. Use the Initiate Live CARE section to open a Live CARE window.

#### Procedure (Software)

To perform online monitoring see the following sections:

- Initiate Live CARE
- Select a Plant and the Communication Interface
- Typical Procedures

---

## Initiate Controller Simulation

---

### Purpose

CARE generates an application program for a controller after a successful controller translation. Live CARE simulation software creates a simulated controller in your PC workstation that maintains application files, interprets RACL programs, and executes Time Programs so you can evaluate controller applications before they are downloaded into a controller.

Some of the advantages of using the simulation tool for DDC static testing are:

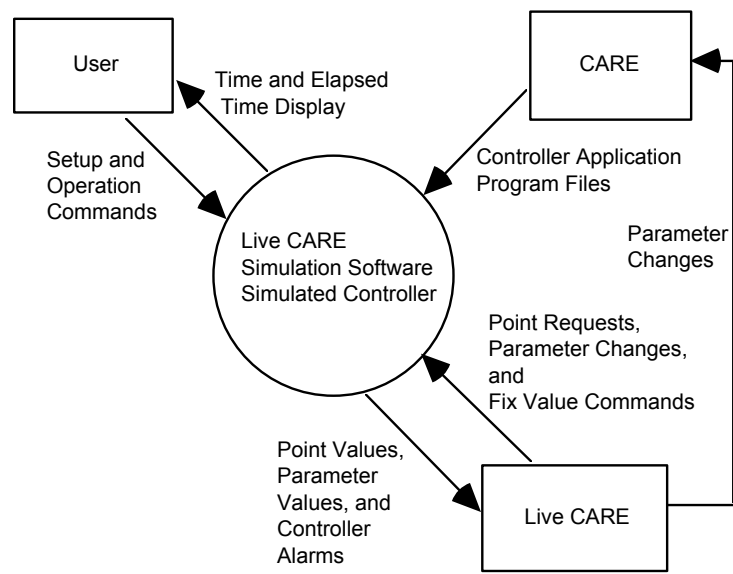
- You can debug controller applications in accelerated real-time.
- There are debug productivity savings due to the elimination of Excel 500 and 600 I/O module selection and addressing during testing.
- There are debug productivity savings due to the elimination of the B port controller download during testing.
- You can save and load a controller simulation for repeated tests.
- You can debug an application using a single time step mode.
- You can fix global point values.
- Simulation eliminates the time required for controller address assignment.

### Description

The simulation is a “static” simulation, that is, you can set input point values, run the controller application, and view output point values, but the software does not simulate any field inputs/outputs.

The following diagram illustrates simulation software operation along with CARE and Live CARE. The user specifies setup commands (for example, simulated controller

date and time, step size) and operation commands (for example, continuous or step operation, acceleration of real-time). Simulation software creates a simulated controller from CARE controller application program files and runs its application program. Simulation software communicates with Live CARE software to receive point requests and fix value commands and then return new point values based on controller operation.



**Requirements** The controller you want to simulate must have one or more attached plants and be translated. See CARE User Guide 74-5587 (US) / EN2B-0182 ( Europe) for procedures.

NOTE: Only Excel 50, 80, 100, 500, 600, and Excel Smart Controllers can be simulated.

**Procedure** To perform simulation see the following sections:

- Initiate Live CARE
- Select a Plant and the Communication Interface
- Simulate Controller Operation
- Typical Procedures

---

Initiate Live CARE

---

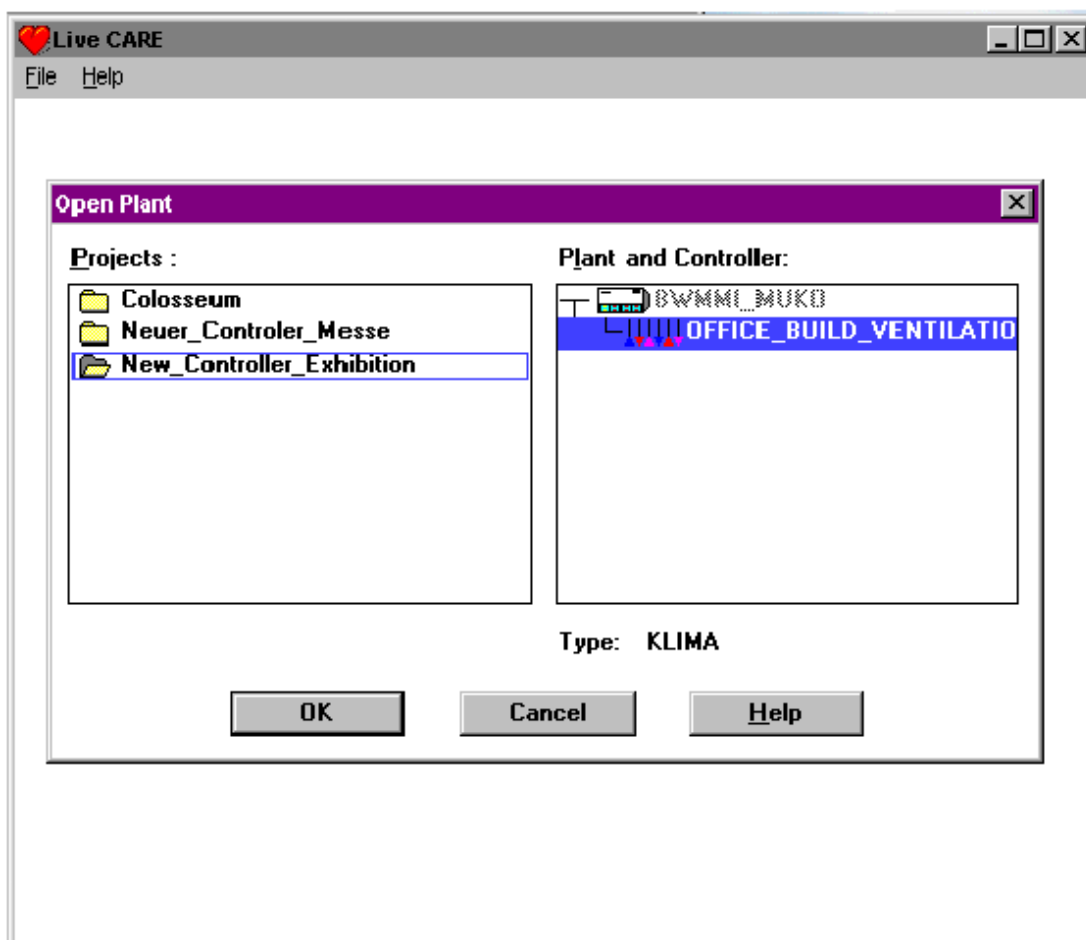
Purpose	Open the Live CARE window to select a plant and check its control functions.
Assumption	Excel CARE is running and is the active window on the PC. Live CARE is only available within Excel CARE.
Procedure	<div><div>1. Select a controller in Excel CARE that has at least one attached and translated plant.</div><div>2. Click menu item Database, then dropdown item Select to display the Select dialog box. Or, click the Select button in the button bar below the menu bar.</div><div>3. Click desired project name (or folder icon).</div><div>RESULT: The plants and controllers associated with the selected project display.</div><div>4. Click desired controller name (or controller icon) or attached plant, then click <b>OK</b>.</div><div>RESULT: If you have not already selected the project, the Enter Project Password dialog box displays. Enter password and click <b>OK</b>.</div></div>

A new window displays with controller name in the title and controller information in the window.

5. Click menu item Controller, then dropdown items Tools, Live CARE. This item is available only if the currently active (selected) CARE window is a controller or attached plant window.

RESULT: The Live CARE main window and the Open Plant dialog box concurrently display.

To continue with opening a plant see the Select a Plant and the Communication Interface section. For description of the Live CARE main window see the following sections.



**Title Line** The title line contains the System menu (CARE symbol), the software name (Live CARE and window control icons).

**Menu Bar** The menu bar contains two items, File and Help.

The File menu item provides options to select a plant (Open); and exit Live CARE (Exit).

- See the Select a Plant section to use the Open item.
- See the Exit Live CARE chapter to use the Exit item.

The Help menu item displays a list of help topics that you can click and display. The Help menu item also includes an About Live Care... function that displays the About Live Care dialog box with software version copyright notice, and memory available.

- See the On-Line Help section in this manual for details on the on-line help function.

---

## On-Line Help

---

**Purpose** The Help menu item provides access to an on-line version of this user guide and the About Live Care dialog box.

You can also display the on-line user guide by clicking the **Help** button in any dialog box or window. When you click a **Help** button, the help topic related to that dialog box or window displays.

**Procedure** 1. Click Help menu bar item.

RESULT: A dropdown list displays with help topics and an About Live Care... item:

*Contents* displays the contents page of the on-line user guide.

*Overview* displays the same overview information as in this manual.

*Topics List* presents a list of the other sections of this manual that are on-line.

*Search for...* displays the Search dialog box so that you can type or select words and find them in the on-line user guide.

*Using Help* opens the standard Windows™ help file. The help file describes how to use the help function in general.

*Applicable Literature* displays a list of the form numbers and titles of manuals related to Live CARE.

*About Live CARE...* displays the About Live CARE dialog box.

2. Click desired topic or About Live Care.

RESULT: Text relating to the selected topic displays. Or, for the About Live Care item, the About Live Care dialog box displays with software version, copyright notice, and memory available.

---

## EXIT LIVE CARE

---

**Purpose** Stop all point monitoring and terminate the Live CARE session.

**Procedure** Click File menu item, then dropdown item Exit.

RESULT: The Live CARE window closes and the Excel CARE main window redisplay.

---

## TYPICAL PROCEDURES

---

<b>Purpose</b>	<p>This chapter includes step-by-step instructions for the following functions:</p> <ul style="list-style-type: none"> <li>• <i>Select a Plant and the Communication Interface</i> to select a project, controller, and plant for viewing and monitoring.</li> <li>• <i>View User Addresses</i> to display user addresses in the schematic view.</li> <li>• <i>View Control Strategy</i> to display the control strategy for the selected plant.</li> <li>• <i>View Switching Logic</i> to display switching logic for the selected plant.</li> <li>• <i>Simulate Controller Operation</i> to vary the speed of controller simulation, change date and/or time in the controller, and select continuous or step-wise functioning.</li> <li>• <i>Monitoring</i> to start and stop monitoring of points, z-registers and XFM points.</li> <li>• <i>Fix/Unfix Points</i> to change point mode (automatic to manual and vice versa) and assign point values or statuses.</li> <li>• <i>Modify Flag Points</i> to change flag point values</li> <li>• <i>Modify Z-Registers</i> to change z-register values</li> <li>• <i>View/Change Symbol Information</i> to view/change input and internal control symbol parameters, internal user addresses, mapped parameters and z-registers of XFMs.</li> </ul>
----------------	---

<b>General Procedure</b>	<p>You must first select a project, controller, and plant. After you make your selections, Live CARE displays the schematic and user addresses for the plant. You can begin monitoring hardware, software and flag points by clicking the arrow heads for the hardware points or the abbreviations in the software points line. In addition, you can monitor z-registers by selecting the Z-Registers dropdown item from the View menu.</p>
--------------------------	---

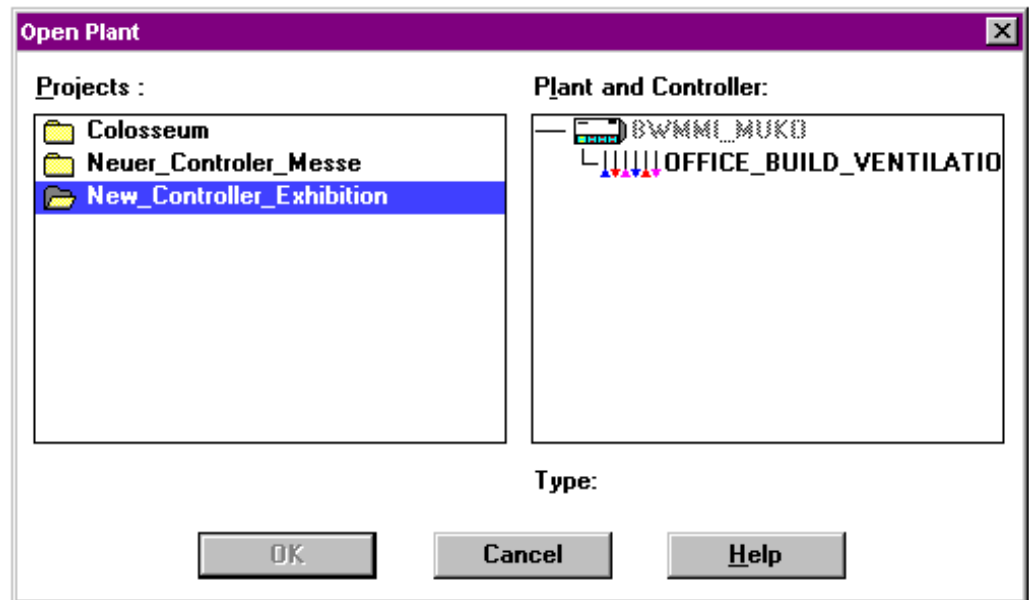
Or, you can select one of the view options to display control strategy loops or switching logic tables. If you select another view, you can stop current point /z-register monitoring and select other points/z-register to monitor, or continue current monitoring and add more points/z-registers for Live CARE to monitor.

If you are simulating controller operation rather than connecting to a controller, you can manipulate simulation values to affect monitored points and test controller reaction.

The following sections describe how to perform these functions.

## Select a Plant and the Communication Interface

- Purpose** Select a project, controller, or plant; or switch to another project, controller or plant.
- Procedure**
1. In the Live CARE main window, click File, then dropdown item Open.
- or
- Select the desired plant or controller in CARE, click Controller, then dropdown item Live CARE (see Initiate Live CARE section)
- RESULT:** The Open Plant dialog box displays.

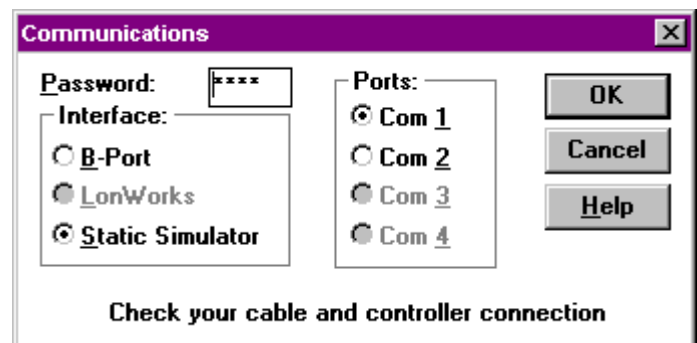


2. Click desired project name (or folder icon).

**RESULT:** The plants and controllers associated with the selected project display in the "Plant and Controller" box.

3. Click desired plant name (or plant icon). Select only attached plants. Attached plants list *below* the controller where they are attached.
4. Click **OK**. This button is not active if the selected plant is not attached.

**RESULT:** The Communications dialog box displays next if you changed to a different project, controller, or plant.



Software stops all point monitoring in the previously selected plant.

If you changed a point's mode (auto to manual or manual to auto) and did not return it back to the original mode, a dialog box

displays. This dialog box says that one or more point modes were changed and not returned back to the original mode. Click **OK** to continue. Or, click **Cancel** to keep the controller selection and correct point mode.

5. Type the four-digit password for project. The default password is 3333 as defined in the care.ini file. If the password was changed via a portable operator's terminal such as the XI581/582 or XI584, you need to enter the new password; see site supervisor if unknown.
6. Click the desired serial port that you wish to use (default is Com 1).
7. Click the type of interface connection you are using. Static Simulator initiates simulation software. If you select Static Simulator, the Ports option becomes inactive (gray).
8. Click **OK**.  
Or, to exit without making these selections, click **Cancel**.

**RESULT:** If you click **OK**, software checks whether or not controller name matches the name in the controller and whether or not controller password matches the password in the Communications dialog box (if a password is required).

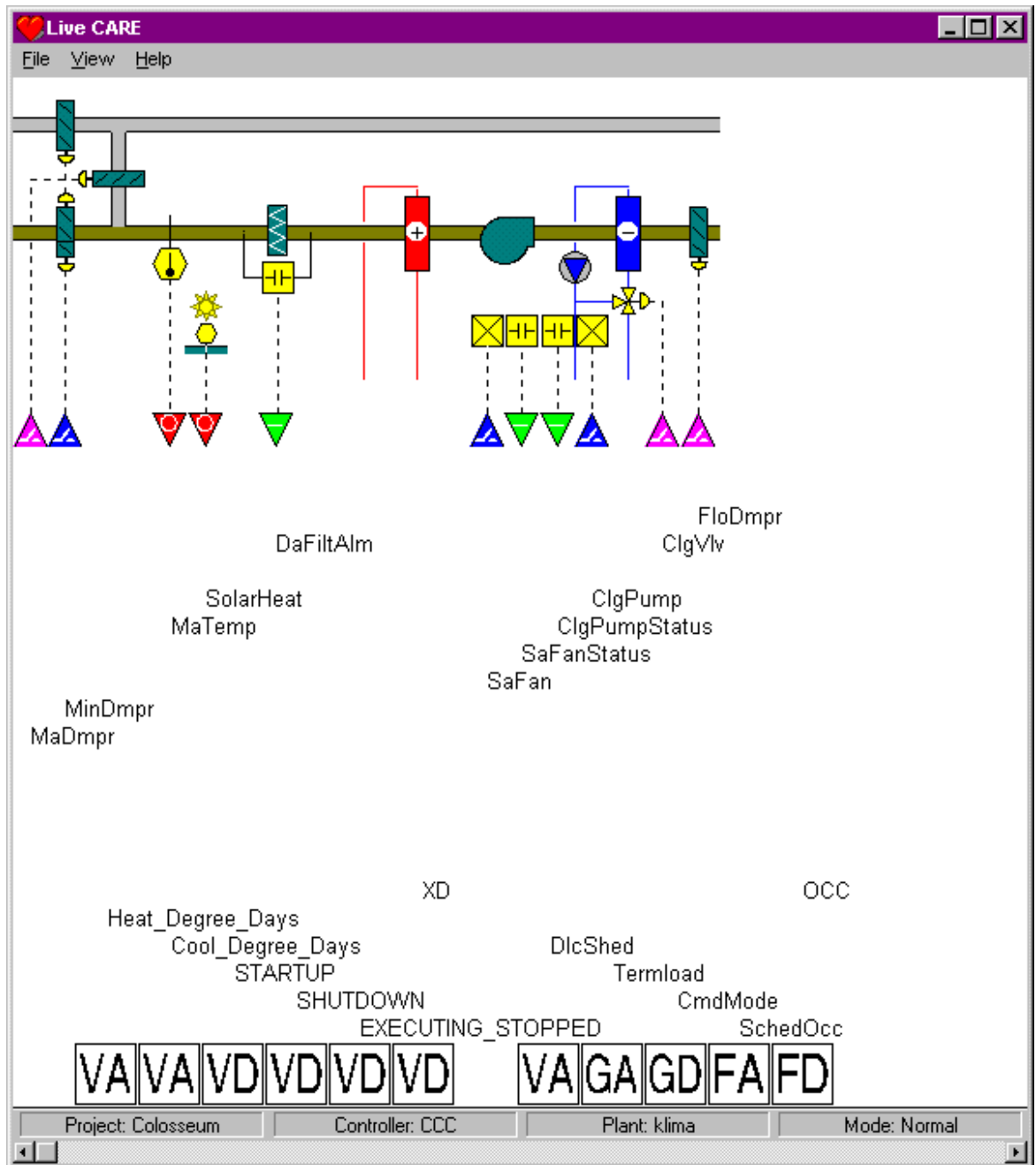
If the selected controller name does not match the name in the controller, an error dialog box displays telling you the incorrect controller name and giving the selected name and the name in the controller. Click **OK** to close the message box. The Open Plant dialog box redisplay for another selection.

If the password does not match that in the controller, an error dialog box displays. Click **OK** to close the message box. The Communications dialog box redisplay to allow you to reenter a valid password.

When controller name and password are correct, software initiates communication with the selected controller and updates the schematic, hardware point, and software point monitor dialog boxes for that plant. The display defaults to the user addresses view. The following window is an example of a plant schematic display.



## Schematic Window



If you are simulating controller operation rather than connecting to a controller, the Live CARE Simulation window displays over the bottom part of the Live CARE window. See the Simulate Controller Operation section for details on manipulating simulation values.

**Title Line** The same title line displays as for the main Live CARE window.

**Menu Bar** The same menu bar displays as for the main Live CARE window with the addition of a View menu item.

The View menu item provides options to view control strategy, switching logic, and user addresses for a selected plant.

NOTE: See the View Control Strategy, View Switching Logic, and View User Addressess sections for details on these items.

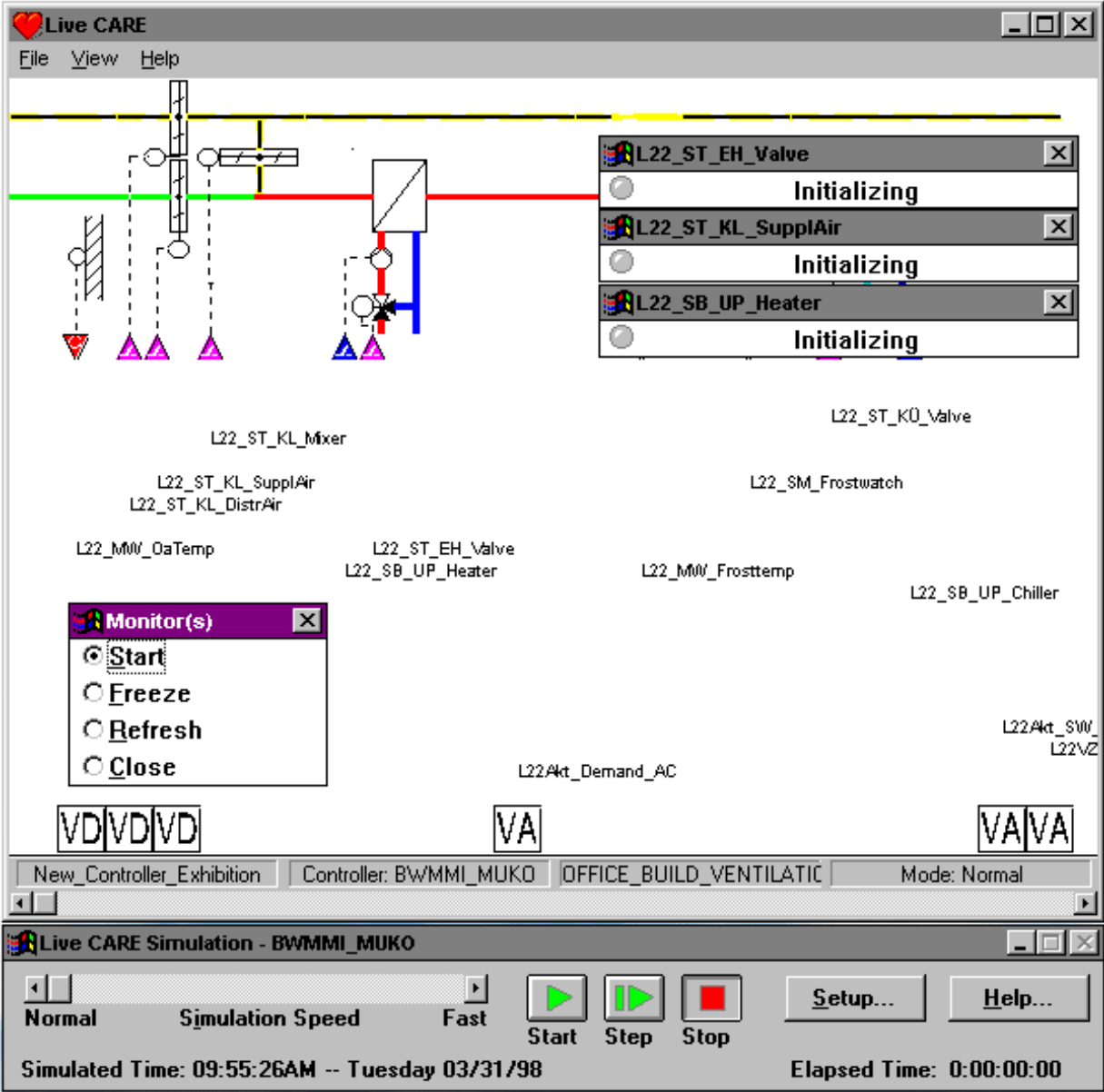
<b>Schematic</b>	Schematic displays for the selected plant. This schematic is the same as the one created during the Excel CARE process.
<b>View Area</b>	The view area displays the control strategy, switching logic tables, or user addresses for the plant. You select which function displays here by clicking View, then one of the dropdown items.
<b>Hardware Points</b>	The physical points assigned to the plant display on this line. These triangles are the same as those shown in Excel CARE. To highlight the user address, position mouse cursor over the triangle and hold down the mouse button. If you click an arrow head, software begins monitoring the point.
<b>Software Points</b>	<p>The software points assigned to the plant in the control strategy display on this line just as they do in Excel CARE. In addition, the name of the software point displays above the abbreviated point type. For example, VA is the type (analog pseudopoint) and Heat_Degree_Days is the name of the point. To highlight the user address, position mouse cursor over the triangle and hold down the mouse button.</p> <p>Software points added in the CARE switching logic function appear in the software points line in the first available position.</p> <p>If you click the abbreviated type (in the box), software begins monitoring the point.</p>
<b>Z-Registers</b>	Z-registers can be accessed by the Z-Register dropdown item from the View menu, by clicking a flag point in the software points line or by clicking an XFM symbol.
<b>XFMs</b>	For XFMs internal user addresses and mapped parameters can be monitored by selecting the XFM control symbol or by the XFM-Points dropdown item from the View menu.
<b>Status Bar</b>	The status bar displays the names of the currently selected project, controller, and plant as well as the current mode (always Normal).
<b>Scroll Bar</b>	The scroll bar allows you to move the schematic and other plant items to the right or left to view all plant components. Click within the bar to the left or right of the thumb (white square), or click the left or right arrows to move the view left or right.
<b>Continuing Procedures</b>	<p>When selecting Static Simulator in the Communications dialog box see the Simulate Controller Operation and the Monitoring sections for further steps.</p> <p>When selecting B-Port in the Communications dialog box see the Monitoring section for further steps.</p>

---

## Simulate Controller Operation

---

<b>Purpose</b>	Enable DDC application static checkout without requiring controller hardware. You can vary speed of controller simulation, change date and/or time in the controller, and select continuous or single-time step simulation.
<b>Requirements</b>	<p>This procedure assumes you initiated simulation software as described in the Initiate Controller Simulation section.</p> <p>The static simulator option is available only for Excel 50, 80, 100, 500, 600, and Excel Smart Controllers.</p> <p>Simulation software maintains a window in the foreground at the bottom of the Live CARE window. This window allows you to control the simulation while Live CARE displays the changing values of monitored points. The simulation tool displays controller alarm messages, for example, when an analog input is commanded from automatic to manual operation.</p>



**Procedure** Simulating controller operation and monitoring point/z-register value and status changes are dynamic actions that require adjustments in the simulation window and the Live CARE window.

The Monitoring, Fix/Unfix Points and Modify Z-Registers sections describe how to control and display point and z-register values and statuses in the Live CARE window.

Following is a description of the Simulation window with guidelines for using its features.

Simulation Window

Simulation Speed Control Bar



The speed control bar allows to operate the controller faster than real time (maximum of 18 times faster). For example, you could execute and test the equivalent of an 8-hour day's program in 30 minutes.

Simulation speed is limited by the hardware platform. For example, a 386, 20 MHz PC is limited to 1.7 times simulation speed. You can set the speed faster, but the simulation will continue to operate at 1.7 times real time.

Click the left or right arrows to set the speed slower (left) or faster (right). Or, move the thumb (white box) in the scroll bar to the left or right.

#### Start Button



Start the controller application program and run continuously. To stop the program, click the red Stop button. To run the controller program for a set amount of time, use the Step button.

This button is not active if no application is loaded.

#### Step Button



Start the controller application program and run for a specific length of time. Step time ("size") is set in the simulation setup window. Default is controller cycle time.

If Step Size is shorter than the length of the DDC Cycle Time for the controller application program, the simulation will run one complete execution cycle and stop.

Click the Setup button to display the setup window and change step size, if desired. See Simulation Setup Window description later in this section.

Example: You can use Step Size to set up a simulation to run the equivalent of a day of controller operation. Or, just 2 hours or just 15 minutes.

This button is not active if no application is loaded.

#### Stop Button



Stop the simulation. The simulation window remains on display so you can restart the simulation as desired.

This button is not active if no application is loaded.

#### Setup Button

Display the setup window. The setup window allows you to set date and time in the controller; define the length of time for a step simulation; save and restore a simulation session; and change DDC cycle time for the controller application program. See the Simulation Setup Window description later in this section.

#### Help Button

Display the on-line help topic related to the simulation window.

#### Simulated Time

Date and time assigned to the controller. You can change date and time in the simulation setup window. Click the Setup button to display the setup window. See Simulation Setup Window description later in this section.

Example: You may want to change date and time to test controller operation on Sundays or Holidays.

#### Elapsed Time

Length of time the simulation has been running. This time does not match real time if the Simulation Speed control bar is set faster than normal. Note that at normal speed, some workstations may operate slower than real time.

## Simulation Setup

**Menu Items**

The File menu item has the following dropdown selections:

**Open**

Display the Open dialog box to find and select a previously saved simulation file (.SSV).

**Save**

If the current application was loaded from an .SSV file or previously saved, this function saves the current state of the simulation into the current .SSV file. Otherwise, it displays the File Save As dialog box so you can enter a file name to receive a saved copy of the simulation. Default file extension is .SSV.

For example, you can use the File Save function to save a simulation session so that you can continue testing with the same controller configuration at a later time. The saved controller simulation session includes all the I/O point manual values as well as a snapshot of all applications.

**Save As**

Display the File Sav As dialog box to enter a file name to receive a saved copy of the simulation. Default file extension is .SSV.

**Exit**

Terminate simulation software.

**IMPORTANT**

*Do not execute the Exit menu option if the Live CARE application is operating. The following message displays if you try to exit the simulation application before Live CARE:*

**LIVE CARE SIMULATION**  
**Live CARE still connected!**  
**Please disconnect before exiting simulator.**

Click **OK** to close the message box. Then, exit Live CARE (File, Exit in the Live CARE window).

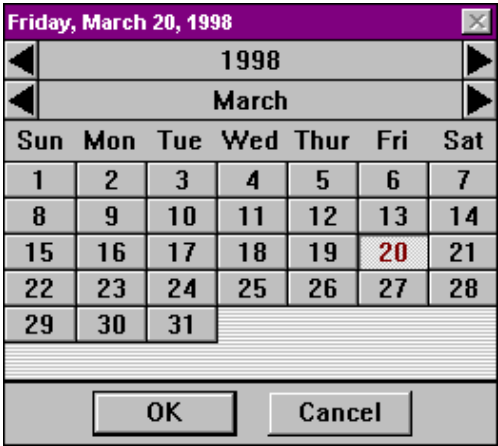
The Help menu item has dropdown items that go directly to help sections relevant to the item. The About CARE Simulation item displays a dialog box that has the current software version number and copyright notice.

**Simulation Start**

**Date, Time**  
Date and time to assign to the controller. Default is current PC date and time. Date and time format follow that defined in the international setting in the Windows™ Control Panel. For example, you may want to change date and time to test controller operation on Sundays or Holidays.

You can use the following methods to change date and time assignment:

- Select and type over date and time parts.
- Click the up and down arrows.
- Double-click date to display a calendar:



Click the left and right arrows to select different years and/or months. Click a date to select it. When the desired date is selected, click **OK** to save the date and close the dialog box.

**Simulation Step Size**

Length of time the simulation should run when you select the Step button in the Simulation window. Default is controller DDC cycle time. Integer values only. Select and type over to change or click the up and down arrows to change.

If Step Size is shorter than the length of the DDC Cycle Time for the controller application program, the simulation will run one complete execution cycle and stop.

Example: You can use Step Size to set up a simulation to run the equivalent of a day of controller operation. Or, just 2 hours or just 15 minutes.

**DDC Cycle Time**

Length of the cycle time CARE calculated during translation of the controller application program. Select and type over to change or click the up and down arrows to change.

**OK  
Cancel**

Save changes and close the dialog box.  
Close the dialog box without saving any changes.

**Help**

Display the related on-line help topic.

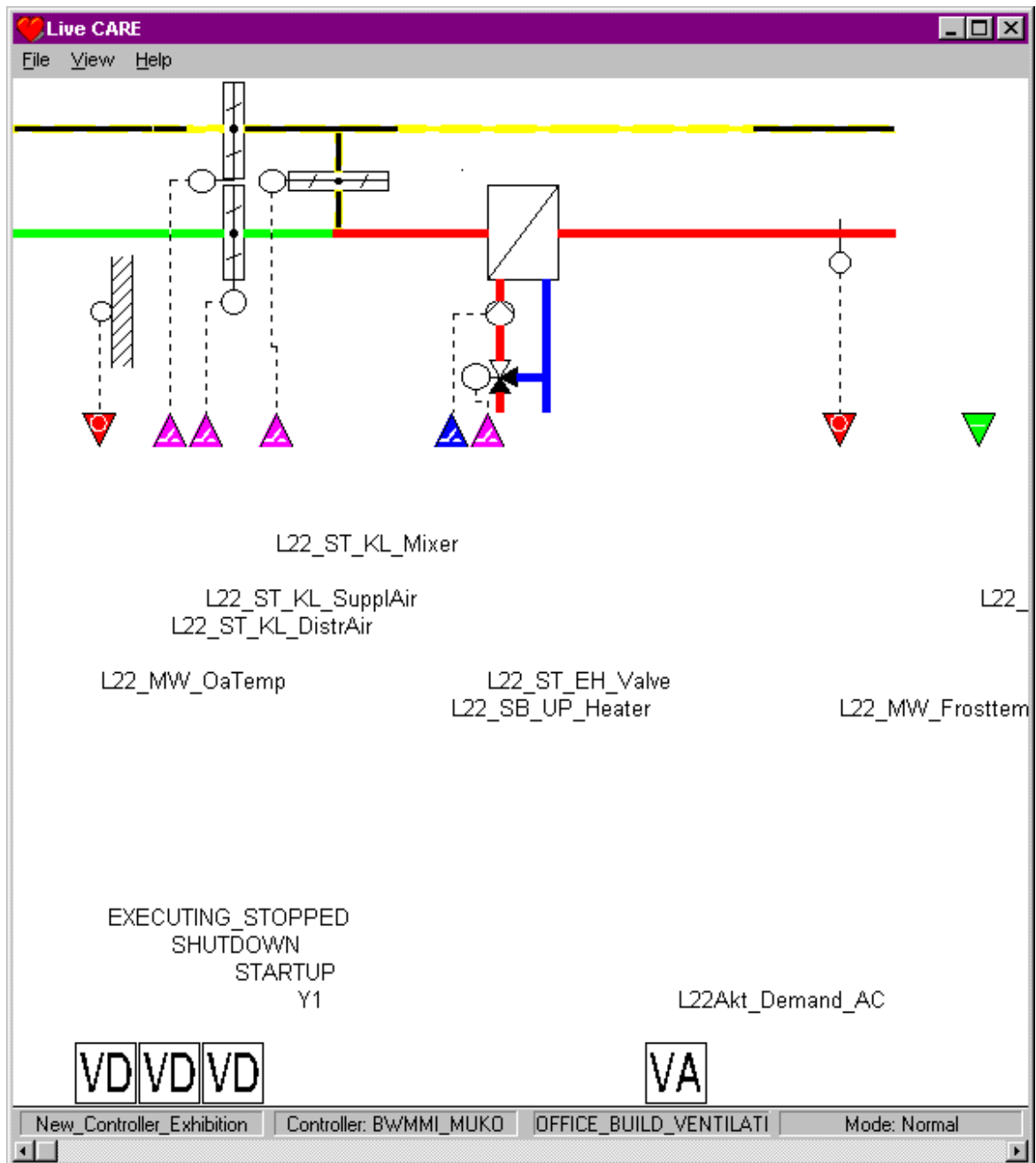
## View User Addresses

**Purpose** Display user addresses for hardware and software points in the schematic. This view is the default view when you first open a plant. The user address view provides the following functions:

- Monitor software, hardware and flag points
- Monitor z-registers
- Fix/Unfix points
- Modify flag points and z-registers

**Procedure** 1. Click menu item View, then dropdown item User Addresses.

**RESULT:** Software displays user addresses from hardware and software points beneath the schematic and above the software points line.



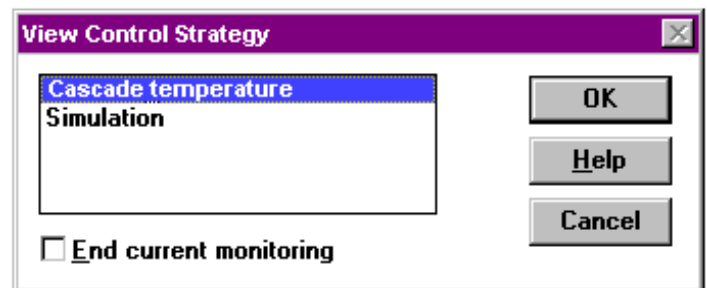


Parts of the schematic do not appear in the window, use the scroll bar at the bottom of the window to change the view to include the rest of the schematic. Click in the bar or the left and right arrows to move the schematic left or right.

2. For monitoring software, hardware and flag points, and z-registers see the Monitoring section.  
For fixing points see the Fix/Unfix Points section.  
For modifying flag points and z-registers see the Modify Flag Points and Modify Z-Registers sections.
3. To view a control loop or view a switching table, select the View, Control Strategy and Switching Logic option respectively.
4. To exit the user addresses function, select another function from the File or View menu items. Software continues monitoring any points that you set up for monitoring unless you turn them off (via point/z-register monitor dialog box or Monitor(s) dialog box).

## View Control Strategy

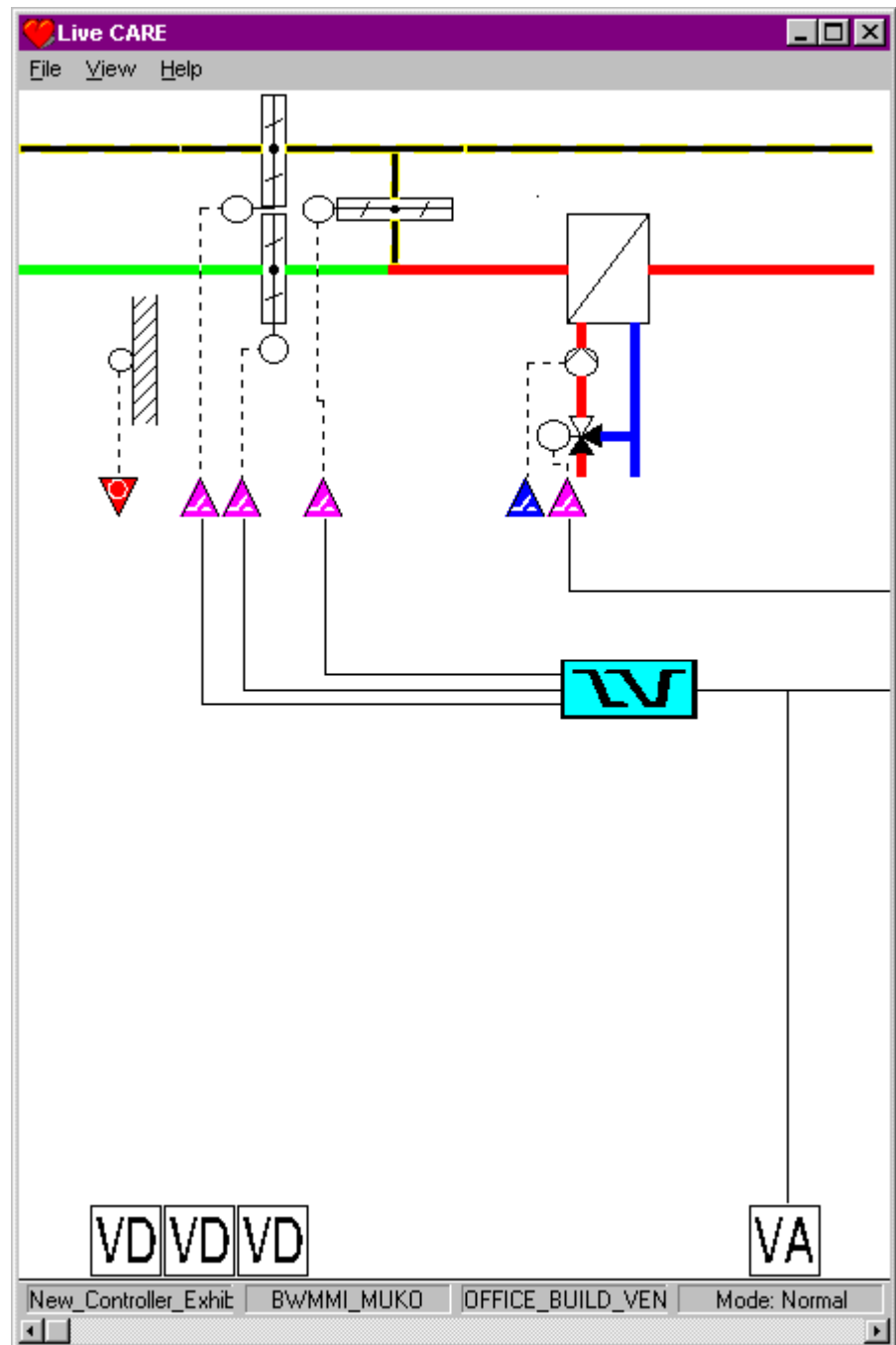
- Purpose** Display control strategy loops for the selected plant. The Control Strategy view provides the following functions :
- Monitor software, hardware and flag points
  - Monitor z-registers
  - Monitor XFM points
  - Fix/Unfix points
  - Modify flag points and z-registers
  - Change internal and input parameters of symbols
  - Change internal user addresses, mapped parameters and z-registers of XFMs
- Procedure**
1. Click main window item View, then dropdown item Control strategy.
- RESULT:** The View Control Strategy dialog box displays with a list of control strategy loops for the selected plant.



If no control loop was previously selected for the current plant, the first loop in the list is automatically selected. Otherwise, the last control loop viewed is highlighted.

2. Check/uncheck End current monitoring box, as desired. If the box is checked when you click **OK**, software stops all existing point/z-register monitoring and closes the Monitor(s) dialog box. If not checked, software continues all point/z-register monitoring. The default mode for this box is checked. If this option is gray, there is no current monitoring.
3. Click desired loop name. Then click **OK**. (Or, a shorter method is to double-click the loop name).

**RESULT:** The View window displays the selected control strategy loop with all control symbols and connected hardware and software points. You can scroll the window with the scroll bar.



4. For monitoring points and z-registers see the Monitoring section.  
 For fixing points see the Fix/Unfix Points section.  
 For modifying flag points and z-registers see the Modify Flag Points and Modify Z-Registers sections.  
 For Viewing/changing control symbol internal and input parameters see the View/Change Symbol Inputs and View/Change Symbol Parameters sections.  
 For viewing/changing internal user addresses, mapped parameters or z-registers of XFM's see the Change XFM Internal User Addresses and Mapped Parameters and Change XFM Z-Registers sections respectively.
5. To view a different control loop, reselect the View, Control Strategy option.
6. To exit the control strategy function, select another function from the File or View menu items. Software continues monitoring any points/z-registers that you set up for monitoring unless you turn them off (via point window or Monitor(s) window).

**Intermediate Values**

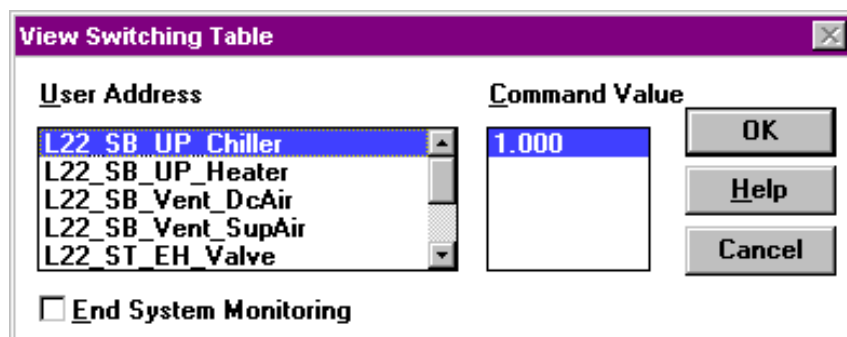
You cannot monitor intermediate values between control symbols in a control strategy loop unless you assign a software point to the values. To assign software points, return to CARE, add a software point (to the schematic, control strategy, or switching logic), and retranslate and download the new database to the controller. Restart Live CARE and select that new software point for monitoring.

## View Switching Logic

**Purpose** Display switching tables for the selected plant. Software automatically begins monitoring all points/z-registers in a switching table when you select it.

**Procedure** 1. Click main window item View, then dropdown item Switching logic.

**RESULT:** The View Switching Table dialog box displays with a list of User Addresses that have switching tables in the selected plant. The dialog box also shows the command values available for the selected User Address. If this is the first time you are selecting a switching table, the first User Address in the list is selected; otherwise, the most recently selected User Address and command value are selected.



2. Check/uncheck End current monitoring box, as desired. If the box is checked when you click **OK**, software stops all existing point/z-register monitoring (excluding the points/z-registers in the selected switching table). If not checked, software continues all point/z-register monitoring for points/z-registers already being monitored. Default mode for this box is checked. This option is gray if there is no current monitoring.

3. Click desired User Address.

**RESULT:** Software displays available command values for the selected User Address.

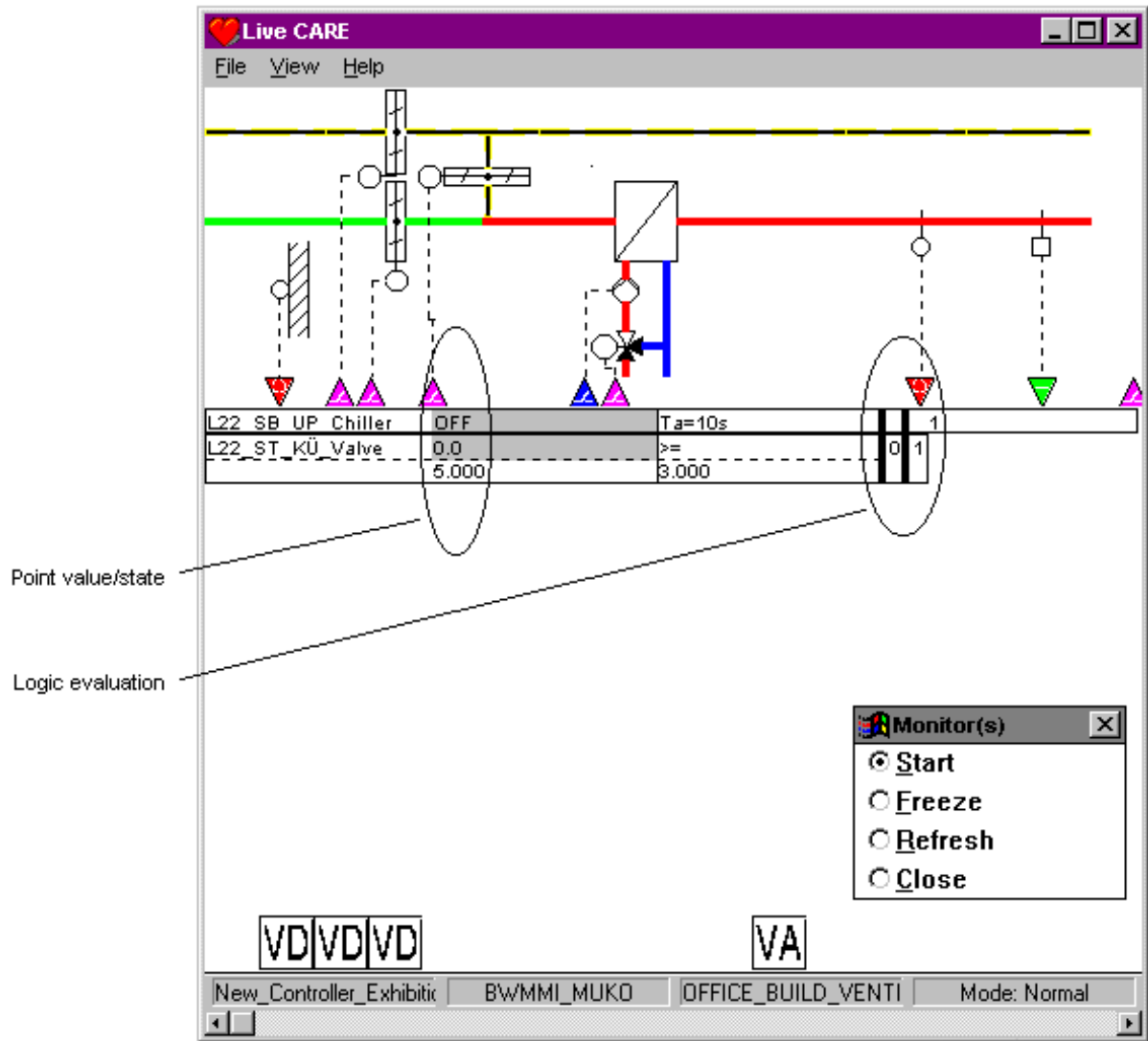
4. Click desired command value. Then click **OK**. (Or, a shorter method is to double-click the value.)

**RESULT:** The View window displays the selected switching table. The table looks just as it does in Excel CARE, except that there are two additional columns.

One new column appears after User Address. The column is gray and contains the current value/state of the point. Engineering unit does not display.

A second column appears between the delay columns and the truth table. This new column has bold vertical lines to distinguish it from the previous columns. The new column shows the logical equivalent of the left side of the table. A 0 displays if the evaluation was false; a 1 displays if the evaluation was true.

Software automatically begins monitoring all points in the displayed switching table.



5. To fix a switching table point, click point value/state in the gray area in the switching table. See the Fix/Unfix Points section for more information.

NOTE: Modifying a z-register value from a flag point within a switching table is **not** possible.

To monitor points not in the switching table (for example, hardware, software and flag points), click point arrow head or abbreviation. For more information, see the Monitoring section.

To fix points not in the switching table see the Fix/Unfix Points section

To modify flag points and z-registers not in the switching table see the Modify Flag Points and Modify Z-Registers sections.

To view a table for a different User Address and monitor those points, reselect the View, Switching Logic option.

6. To exit the Switching Logic function, select another function from the File or View menu items. Note that software continues monitoring any points/z-registers that you set up for monitoring unless you turn them off (via point/z-register monitor dialog box or Monitor(s) dialog box).

Another way to exit is to close the Monitor(s) dialog box. When the dialog box closes, software stops all point monitoring, closes the switching logic view, and selects the user addresses view to display.

**Engineering Unit  
and Mode Display**

Point engineering unit and mode(manual or auto) do not display in the switching table. To view engineering unit and mode, display the Fix Point dialog box by clicking point value/state in the gray area in the switching table.

**Hysteresis and Delays**

Truth table values do not reflect time delays that may be in the switching table. Hysteresis is reflected in switching tables. Therefore, the values have to change by the hysteresis value to cause the output to change. You can change time delays by clicking on the time delay field and changing the time.

**Monitoring**

**Purpose** Display point/z-register value or status (status only for points) as it changes in the controller. Live CARE provides concurrently monitoring of the following items:

- Hardware points
- Software points
- Flag points
- XFM points (internal user addresses and mapped parameters)
- Z-registers in general, corresponding to flag points and XFMs

There are two ways to monitor items. The first way is to display a monitor dialog box that shows value/state, engineering unit, and mode (automatic or manual) of the item. The second way is to select a switching table in the View Switching Logic function. Software automatically monitors all items in the switching table without displaying monitor dialog boxes. Both functions can be used at the same time.

This section describes monitoring via displaying monitor dialog boxes for the selected items. Refer to the View Switching Logic section for a description of monitoring switching table items.

NOTE: The way to access the above mentioned items for monitoring is different. You find a detailed description in the corresponding Monitor sections. The basic procedure is described as follows.

**Assumption** The plant is open and the communication interface is selected (B-Port or Static Simulator).

**Procedure**

1. Select the desired view from the View menu.
2. To monitor software or hardware points, click the point on the hardware and software points line respectively.

To monitor z-registers select the Z-Register dropdown item from the View menu, enter the file and index numbers into the fields in the Select Z-Register dialog box and click Display.

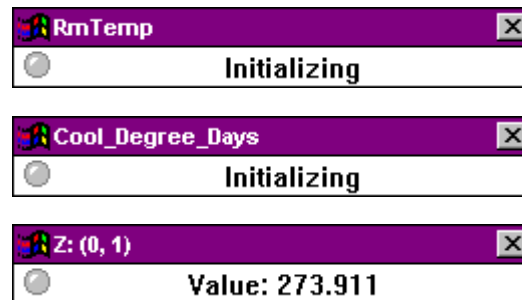
RESULT: Concurrently two dialog boxes display.  
On the left-hand side of the screen, the Monitor(s) dialog box appears.



It is shown after you activate the first item to be monitored. The Monitor(s) dialog box controls point monitoring by providing functions to restart monitoring, freeze monitoring, refresh screen displays, and stop monitoring. You can also restack point/z-register monitor dialog boxes on the right-hand side of the screen if you moved some and want to put them all back in a column by using cascade or tile.

Refer to the Monitor(s) Dialog Box section for detailed description.

On the right-hand side of the screen each point/z-register selected is displayed in a monitor dialog box indicating that the point is currently being initialized. For z-registers the current value is displayed. The following figures show some monitor dialog box examples for hardware points, software points and z-registers.

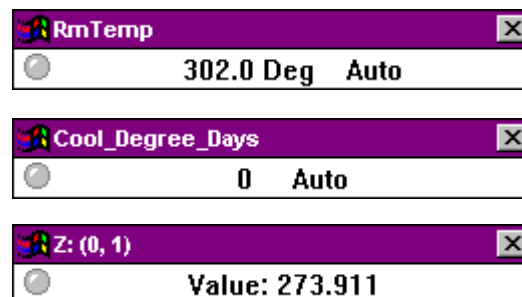


3. Click Start in the simulation software window at the bottom of the screen when Static Simulator was selected for the communication interface. When directly communicating with a controller via the B-Port or LonWorks communication interface monitoring starts automatically after initializing.

**RESULT:** Each point's monitor dialog box shows the user address for the point in the title line, its current value (for example 302.0) and engineering unit (for example, Deg or blank), the status (for example On or Off, Normal or Alarm). For z-registers the current value is displayed. The current mode of the monitor dialog box is indicated as either Auto or Manual and the LED symbol at the left corner in one of the following colors:

- Gray  
Indicates normal mode.
- Green  
A point update has occurred. A z-register was polled. A z-register is polled as long as the monitor box is open and the Freeze or Refresh option in the Monitor(s) dialog box is **not** selected.
- Yellow  
The point is in alarm. Note that the yellow LED shows only if you toggle in and out of the Monitor(s) dialog box. There is no automatic refresh.

The following figures show the monitor dialog box examples after initializing for the corresponding hardware points, software points, and z-registers shown above.



3. To check point/z-register functions:

- Note value and state changes (state changes for points only).
- Use the Monitor(s) dialog box to stop monitoring, freeze values/statuses, refresh values/statuses, and restart monitoring as desired. See the Monitor(s) dialog box section for details.

- Use the Fix dropdown item from the system menu (click window symbol) in an individual point monitor dialog box to fix a point value/state as desired (see the Fix/Unfix Points section for details).
- Use the Modify dropdown item from the system menu in an individual z-register monitor dialog box to change a z-register value as desired (see the Modify Z-Registers section for details).

4. To stop monitoring when using a simulated controller, click Stop in the simulation software window at the bottom of the screen.

RESULT: This stops the application program running in the simulated controller. All monitor dialog boxes remain open on the screen.

5. To end monitoring one single point/z-register, click the system menu in the individual monitor dialog box and select Close.
6. To end all monitoring, click Close in the Monitor(s) dialog box or select a different plant via Open dropdown item from the File menu.

RESULT: This closes all monitor dialog boxes. The application program is still running in the (simulated) controller. Click STOP in the simulation software window if you want to stop the application program.

**Special Points:** There are three special points that Live CARE always monitors: STARTUP, SHUTDOWN, and EXECUTING\_STOPPED. These points are automatically attached to each EXCEL 5000 controller. You can check the status of these points to prove that the application programs are running. Excel CARE User Guide 74-5587 (US) / EN2B-0182 (Europe) describes these points and their active/passive modes in detail. User addresses display in bold if you hold down the mouse button while selecting a point.

**Point Monitoring Limits:** You can monitor a maximum of 20 points per controller.

**Points From Other Controllers:** Live CARE connects directly to a controller and cannot look at points on other controllers unless they are global points on the connected controller.

**Intermediate Values:** You cannot monitor intermediate values between control symbols in a control strategy loop unless you assign a software point to the values. To assign software points, return to CARE, add a software point (to the schematic, control strategy, or switching logic), and retranslate and download the new database to the controller. Restart Live CARE and select that new software point for monitoring.

**Reporting by Exception:** To reduce message traffic Live CARE requests that the controller only reports point changes by exception, that is, if a point does not change value or status, the controller does not issue a message to Live CARE.

**Polling:** In case a flag point or a z-register has been selected, the displayed value in the monitor dialog box will be polled as long as the monitor dialog box is open and the Freeze or Refresh option in the Monitor(s) dialog box is **not** selected.

**Positioning of monitor dialog boxes** When you scroll plant information via the scroll bar, the point display and monitor dialog boxes remain at the same place on the screen. You cannot scroll them off the screen. However, you can move them elsewhere. Click title line and hold down the mouse button as you move the monitor dialog box elsewhere. Release mouse button when it is in the desired position.

**Double Monitoring** If a point/z-register is being monitored and you click it again, software does not open another point/z-register monitor dialog box; it simply highlights the existing point/z-register monitor dialog box.

**Multiple Monitoring** Software can monitor a point in a switching logic table and in a point monitor dialog box at the same time. For z-registers this is not possible.

**Start Monitoring** When using static simulator, monitoring starts after the point/z-register was selected and the Start button in the simulation software window was clicked. When directly connected to a controller, monitoring is running automatically after the monitor dialog box was opened.

Stop Monitoring a Point/Z-Register	If you close the point/z-register monitor dialog box (click the System menu and then select Close, or double-click the System menu), software stops monitoring the point/z-register.
Stop All Point/Z-Register Monitoring	If you close the Monitor(s) dialog box (Close button), software stops all point/z-register monitoring and removes all point/z-register monitor dialog boxes from the screen.

Monitor(s) Dialog Box

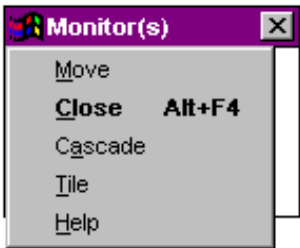
Purpose	Control point/z-register monitoring by providing functions to restart monitoring, freeze monitoring, refresh screen displays, and stop monitoring. You can also restack point dialog boxes on the right-hand side of the screen if you moved some and want to put them all back in a column by using cascade or tile:
Path	The Monitor(s) dialog box appears after you select the first item to be monitored or after you select a switching table in the switching logic view. It remains on display as long as there are items being monitored.



Procedure Click desired radio button to perform the following actions:

- Start**  
Restart monitoring, if you stopped it or chose the Freeze option. Set by default after the dialog box is opened. When connecting directly to a controller, monitoring is running automatically. When using the static simulation, the Start button in the simulation software window has to be clicked on additionally. Z-registers are polled and point updates are displayed when a value/state has changed.
- Freeze**  
Stop updating point values/statuses in the point/z-register monitor dialog boxes. Z-registers are not polled any longer.
- Refresh**  
Display the latest values/statuses in the point/z-register monitor dialog boxes and then freeze the display again.
- During the Freeze and Refresh states, software still updates point and z-register values/statuses internally but the values do not display.  
Z-registers are not polled any longer.  
This technique allows fast updates when you restart monitoring or request a refresh.
- Close**  
The Monitor(s) dialog box closes and all monitoring stops (point/z-registers disappear). The current plant and view selection remain on the screen and you can either continue or exit Live CARE.

System menu The System menu in the upper left corner provides the following functions when you click the window symbol:





- Move**  
Change cursor to the positioning cursor to move the dialog box.
- Close**  
Stop monitoring and close the Monitor(s) dialog box. This function is the same as the Close radio button in the Monitor(s) dialog box.
- Cascade**  
Displays points/z-registers in cascade format. Repositions all point/z-register monitor dialog boxes in a column down the right-hand side of the screen.
- Tile**  
Displays points/-z-registers in tile format.
- Help**  
Display the on-line help for the Monitor(s) dialog box.
- NOTE:** After selecting Cascade or Tile, Live CARE saves the last setting and uses it during the next monitoring session.

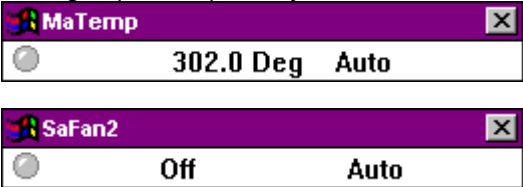
Monitor Hardware Points

- Purpose**  
Display hardware point value or status as it changes in the controller.  
  
There are two ways to monitor points. The first way is to display a point monitor dialog box that shows point value/state, engineering unit, and mode (automatic or manual). The second way is to select a switching table in the View Switching Logic function. Software automatically monitors all points in the switching table without displaying monitor dialog boxes. Both functions can be used at the same time.  
  
This section describes point monitoring via point selection. Refer to the View Switching Logic section for a description of monitoring switching table points.
- Assumption**  
Application program is running in the (simulated) controller.
- Procedure**  

1. In any view (control strategy, switching logic, or user addresses), click the arrow head on the hardware points line to monitor the desired hardware point.

**RESULT:** The corresponding hardware point monitor dialog box displays showing the user address in the title line, the current value (for example 302.0) and engineering unit (for example, Deg or blank), or the status (for example On or Off, Normal or Alarm). The current mode of the monitor dialog box is indicated as either Auto or Manual and the LED symbol at the left corner in one of the following colors:
  - Gray  
Indicates normal mode.
  - Green  
A point update has occurred.
  - Yellow  
The point is in alarm. Note that the yellow LED shows only if you toggle in and out of the Monitor(s) dialog box. There is no automatic refresh.

The following figures are examples of displays for an analog point and digital point respectively:



The Monitor(s) dialog box displays if not already opened (see Monitor(s) Dialog Box section).

**2.** To check point functions:

- Note value and state changes
- Use the Monitor(s) dialog box to stop monitoring, freeze values/statuses, refresh values/statuses, and restart monitoring as desired. See the Monitor(s) dialog box section for details
- Use the Fix dropdown item from the system menu in individual point monitor dialog boxes to fix a point value/state as desired (see the Fix/Unfix Points section for details).

**3.** To stop monitoring when using a simulated controller, click Stop in the simulation software window at the bottom of the screen.

**RESULT:** This stops the application program running in the simulated controller. All monitor dialog boxes remain open on the screen.

**4.** To end monitoring one single point, click the system menu in the individual point monitor dialog box and select Close.

**5.** To end all monitoring, click Close in the Monitor(s) dialog box or select a different plant via Open dropdown item from the File menu.

**RESULT:** This closes all monitor dialog boxes. The application program is still running in the (simulated) controller. Click STOP in the simulation software window if you want to stop the application program.

## Monitor Software Points

**Purpose** Display software point value or status as it changes in the controller.

There are two ways to monitor points. The first way is to display a point monitor dialog box that shows point value/state, engineering unit, and mode (automatic or manual). The second way is to select a switching table in the View Switching Logic function. Software automatically monitors all points in the switching table without displaying monitor dialog boxes. Both functions can be used at the same time.

This section describes point monitoring via point selection. Refer to the View Switching Logic section for a description of monitoring switching table points.

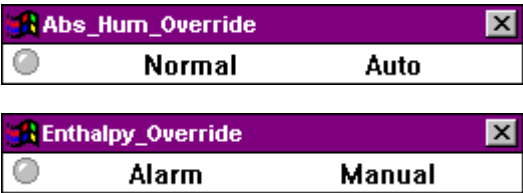
**Assumption** Application program is running in the (simulated) controller.

**Procedure** **1.** In any view (control strategy, switching logic, or user addresses), click the abbreviation on the software points line to monitor the desired software point.

**RESULT:** The corresponding software point monitor dialog box displays showing the user address in the title line, the current value (for example 0.1) and engineering unit (for example, Deg or blank), or the status (for example On or Off, Normal or Alarm). The current mode of the monitor dialog box is indicated as either Auto or Manual and the LED symbol at the left corner in one of the following colors:

- Gray  
Indicates normal mode.
- Green  
A point update has occurred.
- Yellow  
The point is in alarm. Note that the yellow LED shows only if you toggle in and out of the Monitor(s) dialog box. There is no automatic refresh.

The following figures are examples of displays for software points:



The Monitor(s) dialog box displays if not already open (see Monitor(s) Dialog Box section).

2. To check point functions:
- Note value and state changes
  - Use the Monitor(s) dialog box to stop monitoring, freeze values/statuses, refresh values/statuses, and restart monitoring as desired. See the Monitor(s) dialog box section for details
  - Use the Fix dropdown item from the system menu in individual point monitor dialog boxes to fix a point value/state as desired (see the Fix/Unfix Points section for details).

3. To stop monitoring when using a simulated controller, click Stop in the simulation software window at the bottom of the screen.

RESULT: This stops the application program running in the controller. All monitor dialog boxes remain open on the screen.

4. To end monitoring one single point, click the system menu in the individual point monitor dialog box and select Close.
5. To end all monitoring, click Close in the Monitor(s) dialog box or select a different plant via Open dropdown item from the File menu.

RESULT: This closes all monitor dialog boxes. The application program is still running (simulated) controller. Click STOP in the simulation software window if you want to stop the application program.

Monitor Flag Points

**Purpose** Display of selected flag point value as it changes in the controller. A value is polled as long as the monitor box is open and the Freeze or Refresh option in the Monitor(s) dialog box is **not** selected. .

NOTES: Flag points can be seen as z-registers and the format of a flag point monitor dialog box is equivalent to a z-register monitor dialog box.

The z-register and flag points access respectively can be enabled/disabled in the CARE.INI file (see SET CARE.INI FILE ENTRIES chapter).

For modifying z-register values refer to the Modify Z-Registers section.

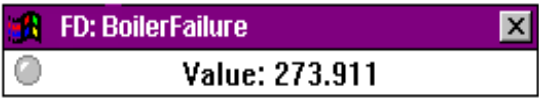
There are two ways to monitor flag points. The first way is to display a flag point monitor dialog box that shows the current value. The second way is to select a switching table in the View Switching Logic function. Software automatically monitors all z-registers and points in the switching table without displaying monitor dialog boxes. Both functions can be used at the same time.

This section describes point monitoring via point selection. Refer to the View Switching Logic section for a description of monitoring switching table points.

**Assumption** Application program is running in the (simulated) controller.

- Procedure**
1. In any view (control strategy, switching logic, or user addresses), click the desired flag point (abbreviations are: FA = analog flag point, FD=digital flag point) on the software points line.

RESULT: The Analog Flag and Digital Flag dialog box respectively displays showing the current value of the corresponding z-register. The title line shows the flag type (FD, FA) and the user address, for example, FD:BoilerFailure, FA:Temperature Slope.



The LED symbol at the left corner indicates the current mode of the flag point monitor dialog box:

- Gray  
Indicates normal mode.
- Green  
The z-register was polled. The z-register is polled as long as the monitor box is open and the Freeze or Refresh option in the Monitor(s) dialog box is **not** selected.

The Monitor(s) dialog box displays if not already open (see Monitor(s) Dialog Box section).

2. Overwrite the current value if desired by typing the value into the New Value field and clicking Modify. For digital flags it is only allowed to enter 0 or 1. For analog flags it is only allowed to enter a positive or negative float number.

RESULT: The new value is written to the z-register.

3. To check point (z-register) functions:
- Note value changes
  - Use the Monitor(s) dialog box to stop monitoring, freeze values/statuses, refresh values/statuses, and restart monitoring as desired. See the Monitor(s) dialog box section for details
  - Use the Modify dropdown item from the system menu in individual point monitor dialog boxes to change a z-register value as desired (see the Modify Flag Points section for details).
4. To stop monitoring when using a simulated controller, click Stop in the simulation software window at the bottom of the screen.

RESULT: This stops the application program running in the (simulated) controller. All monitor dialog boxes remain open on the screen.

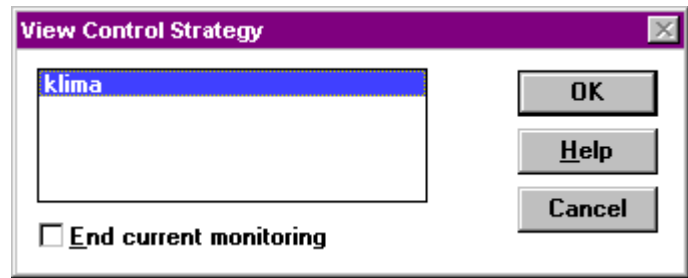
5. To end monitoring one single point/z-register, click the system menu in the individual monitor dialog box and select Close.
6. To end all monitoring, click Close in the Monitor(s) dialog box or select a different plant via Open dropdown item from the File menu.

RESULT: This closes all monitor dialog boxes. The application program is still running in the controller. Click STOP in the simulation software window if you want to stop the application program.

Monitor XFM Points

Purpose	Display values/statuses of XFM datapoints which are internal user addresses or parameters mapped to software points as they changed in the controller.
Assumption	Application program is running in the (simulated) controller.
Procedures	1. Select Control strategy from the View menu.

RESULT: The View Control Strategy displays.

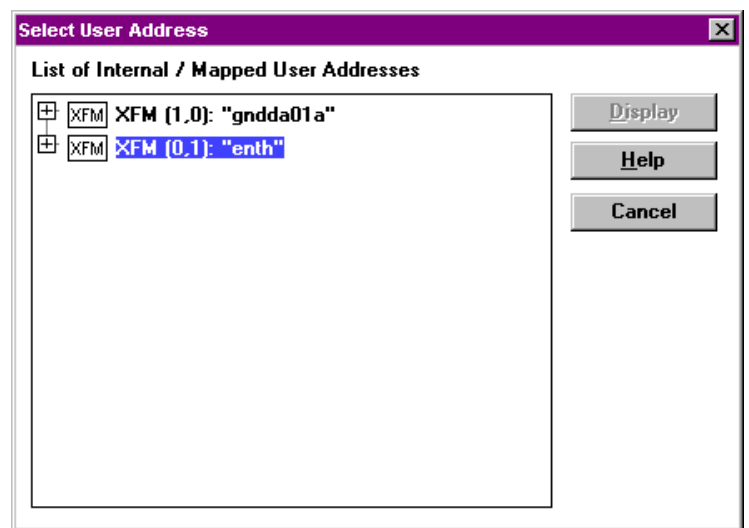


2. Select the desired control strategy including the XFM(s) and click OK.

#### Selecting from all XFMs

3. Select XFM-Points from the View menu, if you want to choose between **all** XFMs included in the control strategy. For selecting one XFM see the Selecting one single XFM section.

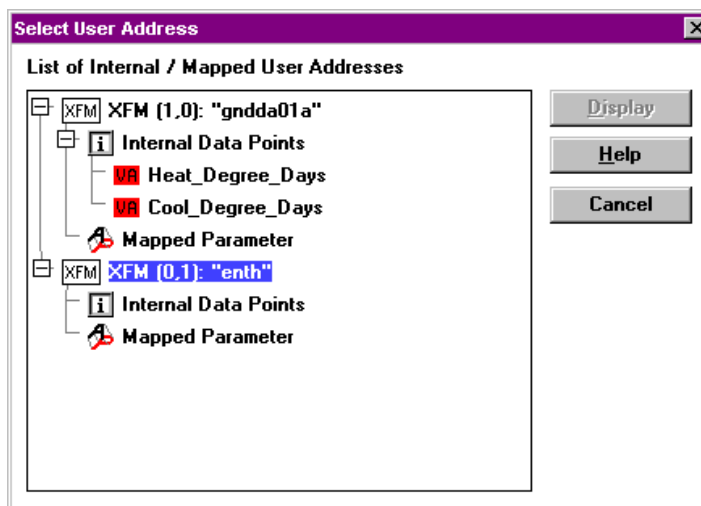
RESULT: The Select User Address dialog box displays showing all existing XFMs.



Each XFM is shown as unique symbol with its position in the control loop (column, row) and its name, for example:

 XFM (1,0): "gndda01a"

4. View the user addresses and the mapped parameters by clicking the plus symbols at the XFM, Internal Data Points and Mapped Parameters symbol. If there are no internal data points and/or mapped parameters available for the desired XFM the Internal Data Points and/or Mapped Parameters structure can not be expanded (see the XFM enth in the following figure).



For Internal user addresses and mapped parameters their type, such as VA or VD, and their name, such as Heat\_Degree-Days or P08\_Factor are shown.

5. Click the internal datapoint or the mapped parameter and click Display.

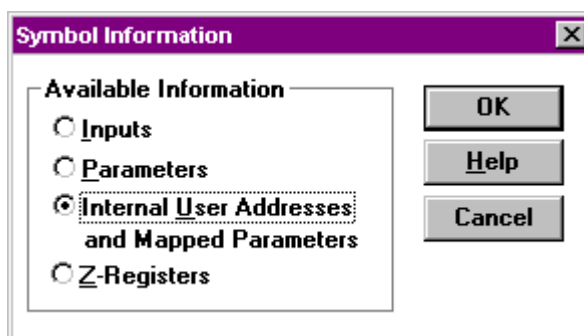
RESULT: The corresponding monitor dialog box is displayed.



NOTE: Internal user addresses can be assigned to software and hardware points in CARE. For monitoring see the Monitor Hardware Points and Monitor Software Points sections respectively. Since parameters can only be mapped to software points (except flag points) refer to the Monitor Software Points section for monitoring mapped parameters.

#### Selecting one single XFM

1. After selection of the control loop as described in step 1 and 2, open the Symbol Information dialog box by clicking the control symbol with the left mouse button.



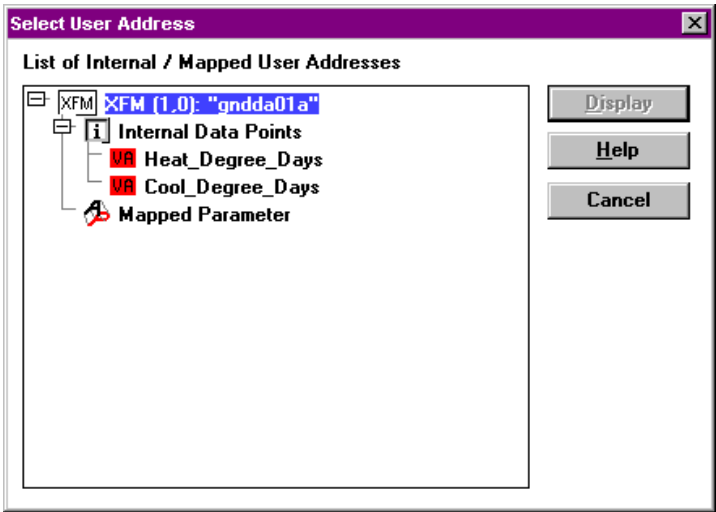
or

Display the context menu by clicking the control symbol with the right mouse button.



4. In the Symbol Information dialog box, click Internal User Addresses and Mapped Parameters and confirm by clicking OK. In the context menu, click Datapoints.

RESULT: The Select User Address dialog box displays showing all internal user addresses and mapped parameters of the selected XFM.



If there are no internal data points and/or mapped parameters available for the desired XFM the Internal Data Points and/or Mapped Parameters structure is not expanded.

For Internal user addresses and mapped parameters their type, such as VA or VD, and their name, such as Heat\_Degree-Days or P08\_Factor are shown.

- 5. Click the internal datapoint or the mapped parameter and dick Display.

RESULT: The corresponding monitor dialog box is displayed.



NOTE: Internal user addresses can be assigned to software and hardware points in CARE. For monitoring see the Monitor Hardware Points and Monitor Software Points sections respectively. Since parameters can only be mapped to software points (except flag points) refer to the Monitor Software Points section for monitoring mapped parameters.

Search for Datapoints via Keyboard	
Purpose	Quick search to find special datapoint name (mapped parameter or internal datapoint) in the Select User Address dialog box.
Procedure	<div>1. In the Select User Address dialog box, type the complete name or single characters (search entry) of the datapoint name you want to find.</div> <div>RESULT: CARE automatically finds the first name that matches the search entry. CARE finds matched datapoint names in closed folders too.</div> <div>If a datapoint name you search for is not found, CARE continues searching with the next search entry you enter. CARE does not distinguish between upper-case and lower-case letters except on umlauts or country specific characters.</div> <div>2. To find the next name that matches the same search entry click the asterics (*).</div> <div>3. To find a different datapoint name enter the new search entry.</div>

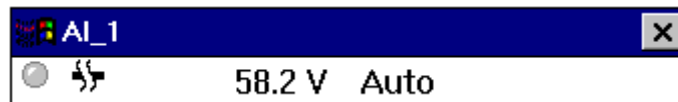
Monitor Points in “No Response” Mode

**Purpose** Display of a DIO hardware point value/status, which is in “no response” mode, which means that the communication between DIO module and controller is interrupted. A hardware point in “no response mode” can be changed to manual or automatic mode and fixed respectively. Refer to the Fix/Unfix Points section for fixing a point in “no response” mode.

NOTE: Monitoring hardware points in “no response” mode can only be accessible when Live CARE communicates directly with a controller via B port.

**Assumption** Application program is running in the controller.

**Procedure** The procedure for monitoring a hardware point in no response mode is parallel to monitoring a normal hardware point (see the Monitor Hardware Points section). In comparison to a hardware point which is not in no response mode, the monitor dialog box for a point in no response mode additionally shows only a “no response” symbol to the right hand side of the LED symbol.



### Monitor Points in “Manual Override” Mode

**Purpose** Display value and status of a hardware point, which is in “manual override” by a distributed IO (DIO) Module (XFR 522 or XFR 524). This concerns only the DO and AO types of the DIO modules.

NOTES: A hardware point in “manual override” mode is in remote mode and cannot be changed to manual or automatic mode and fixed respectively.

Monitoring hardware points in “manual override” mode can only be accessible when Live CARE communicates directly with a controller via B port.

There are two ways to monitor points. The first way is to display a point monitor dialog box that shows point value/state, engineering unit, and mode (automatic or manual). The second way is to select a switching table in the View Switching Logic function. Software automatically monitors all points in the switching table without displaying monitor dialog boxes. Both functions can be used at the same time.

This section describes point monitoring via point selection. Refer to the View Switching Logic section for a description of monitoring switching table points.

**Assumption** Application program is running in the controller.

**Procedure** 1. In any view (control strategy, switching logic, or user addresses), click the arrow head on the hardware points line to monitor the desired DIO hardware point.

RESULT: The corresponding monitor dialog box displays showing the user address in the title line, the current value (for example, 302.0) and the engineering unit (for example, Deg or blank), or status (for example, ON or OFF, Normal or Alarm). If a selected point is in manual override, the hand symbol at the left side and the term “Remote” indicates this.



The LED symbol at the left corner indicates the current mode of the monitor dialog box:

- Gray  
Indicates normal mode.
- Green



- A point update has occurred.
- Yellow  
The point is in alarm. Note that the yellow LED shows only if you toggle in and out of the Monitor(s) dialog box. There is no automatic refresh.

The Monitor(s) dialog box displays if not already opened (see Monitor(s) Dialog Box section).

### **IMPORTANT**

*It is not possible to fix a hardware point which is in "manual override" mode.*

#### **2. To check point functions:**

- Note value and state changes
- Use the Monitor(s) dialog box to stop monitoring, freeze values/statuses, refresh values/statuses, and restart monitoring as desired. See the Monitor(s) dialog box section for details

#### **3. To stop monitoring when using a simulated controller, click Stop in the simulation software window at the bottom of the screen.**

**RESULT:** This stops the application program running in the controller. All monitor dialog boxes remain open on the screen.

#### **4. To end monitoring one single point/, click the system menu in the individual point monitor dialog box and select Close.**

#### **5. To end monitoring, click Close in the Monitor(s) dialog box or select a different plant via Open dropdown item from the File menu.**

**RESULT:** This closes all monitor dialog boxes. The application program is still running in the (simulated) controller. Click STOP in the simulation software window if you want to stop the application program.

## **Monitor Z-Registers**

**Purpose** Display of a selected z-register value as it changes in the controller. The value is polled as long as the monitor dialog box is open (green LED symbol is flashing) and the Freeze or Refresh option in the Monitor(s) dialog box is **not** selected. Refer to the Modify Z-Registers section for modifying z-registers.

**NOTES:** Z-registers access can be enabled/disabled in the CARE INI file (see SET CARE.INI FILE ENTRIES chapter).

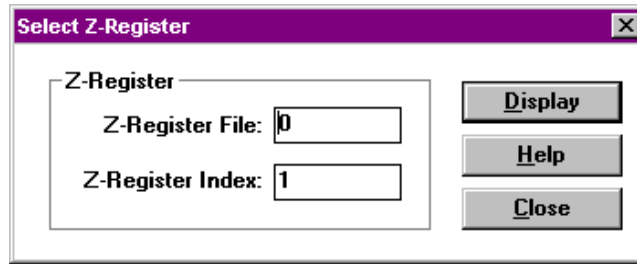
Z-registers can be accessed in general, from special flag points, and from XFMs. With the procedure described in this section you can select and monitor any existing z-register. For this you must know the file and index number from the z-register you want to monitor.

There are two ways to monitor z-registers. The first way is to display a z-register monitor dialog box that shows the current value. The second way is to select a switching table in the View Switching Logic function. Software automatically monitors all z-registers and points in the switching table without displaying monitor dialog boxes. Both functions can be used at the same time.

Refer to the Monitor Flag Points section for directly monitoring z-registers of flag points and to the Monitor XFM Z-Registers section for directly monitoring z-registers of an XFM.

**Assumption** Application program is running in the (simulated) controller.

**Procedure** 1. In any view (control strategy, switching logic, or user addresses), choose Z-Registers from the View menu. The Select Z-Register dialog box displays.



2. Into the Z-Register File field enter the desired number.

3. Into the Z-Register Index field enter the desired number.

NOTE: The fields for file and index do accept numbers (0 ...9) only and up to 3 characters. The z-register number is equal to the parameter file number of the submodule that contains the z-register. The parameter list printout shows which file number is assigned to which submodule.

4. Click Display.

RESULT: The corresponding monitor dialog box displays showing the current value of the z-register. The title line displays z-register identification in brackets (file number, index).



The LED symbol at the left corner indicates the current mode of the z-register monitor dialog box:

- Gray  
Indicates normal mode.
- Green  
The z-register was polled. The z-register is polled as long as the monitor box is open and the Freeze or Refresh option in the Monitor(s) dialog box is **not** selected.

5. To check z-register functions:

- Note value changes
- Use the Monitor(s) dialog box to stop monitoring, freeze values, refresh values, and restart monitoring as desired. See the Monitor(s) dialog box section for details
- Use the Modify dropdown item from the system menu in individual z-register monitor dialog boxes to change a z-register value as desired (see the Modify Z-Registers section for details).

6. To stop monitoring when using a simulated controller, click Stop in the simulation software window at the bottom of the screen.

RESULT: This stops the application program running in the controller. All monitor dialog boxes remain open on the screen.

7. To end monitoring one single z-register, click the system menu in the individual z-register monitor dialog box and select Close.

8. To end all monitoring, click Close in the Monitor(s) dialog box or select a different plant via Open dropdown item from the File menu.

RESULT: This closes all monitor dialog boxes. The application program is still running in the (simulated) controller. Click STOP in the simulation software window if you want to stop the application program.

## Monitor XFM Z-Registers

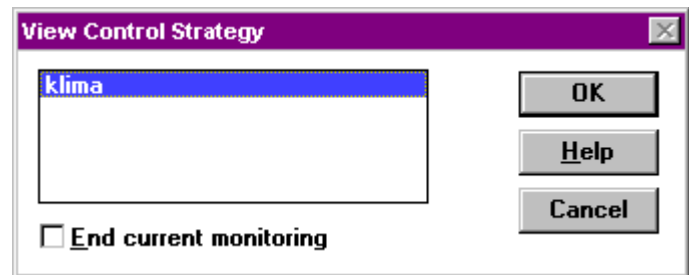
**Purpose** Display of an XFM z-register value as it changes in the controller. The value is polled as long as the monitor dialog box is open (green LED symbol is flashing) and the Freeze or Refresh option in the Monitor(s) dialog box is **not** selected.

Z-registers can be accessed in general, from flag points, and from XFMs. With the procedure described in this section you can select and monitor z-registers from any XFM control symbol. For modifying an XFM z-register refer to the Modify XFM Z-Registers section.

NOTE: The Z-Registers option in the Symbol Information dialog box is not visible, if z-registers access is disabled in the CARE.INI file (see SET CARE.INI FILE ENTRIES chapter).

**Assumption** Application program is running in the (simulated) controller.

**Procedure** 1. Select Control Strategy from the View menu.  
RESULT: The View Control Strategy displays.

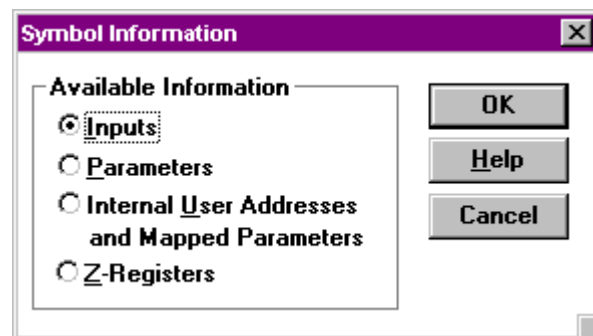


2. Select the desired control strategy and click OK.

RESULT: The control strategy displays.

3. Click the symbol with the left mouse button.

RESULT: The Symbol Information dialog box displays.



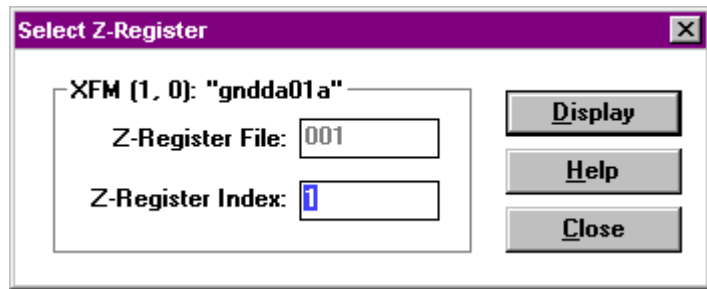
or

Click the symbol with the right mouse button to open the context menu.



4. In the Symbol Information dialog box select Z-Registers and confirm by clicking OK. In the context menu click Z-Register.

RESULT: The Select Z-Register dialog box displays. The dialog caption shows the XFM position in the control strategy in brackets (column, row). The z-register file number is already set to match the XFM.

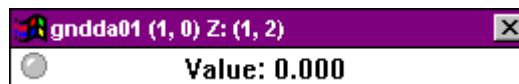


5. Enter the z-register index into the Z-Register Index field.

NOTE: The field do accept numbers (0 ...9) only and up to 3 characters. The Z-Register File field is disabled.

6. Click Display

RESULT: The corresponding monitor dialog box displays showing the current value of the z-register. The title line displays the XFM name, followed by the position in brackets (column, row), followed by the z-register identification in brackets (file number, index number).



The LED symbol at the left corner indicates the current mode of the monitor dialog box:

- Gray  
Indicates normal mode.
- Green  
The z-register was polled. The z-register is polled as long as the monitor box is open and the Freeze or Refresh option in the Monitor(s) dialog box is **not** selected.

The Monitor(s) dialog box displays if not already opened (see Monitor(s) Dialog Box section).

7. To check z-register functions:

- Note value changes
- Use the Monitor(s) dialog box to stop monitoring, freeze values, refresh values, and restart monitoring as desired. See the Monitor(s) dialog box section for details
- Use the Modify dropdown item from the system menu in individual z-register monitor dialog boxes to change a z-register value as desired (see the Modify Z-Registers section for details).

8. To stop monitoring when using a simulated controller, click Stop in the simulation software window at the bottom of the screen.

RESULT: This stops the application program running in the simulated controller. All monitor dialog boxes remain open on the screen.

9. To end monitoring one single z-register, click the system menu in the individual z-register monitor dialog box and select Close.

10. To end all monitoring, click Close in the Monitor(s) dialog box or select a different plant via Open dropdown item from the File menu.

RESULT: This closes all monitor dialog boxes. The application program is still running in the (simulated) controller. Click STOP in the simulation software window if you want to stop the application program.

Fix/Unfix Points

**Purpose** To fix a point means to change point mode from automatic to manual. To unfix a point means to change point mode from manual to automatic. Automatic (Auto) tells the system to update point value/status according to sensor or actuator readings. “Manual” allows you to assign a point value/status that the system cannot change. For example, you can assign a low value to an outdoor air temperature point to see how the controller will react. The following points can be fixed/unfixed:

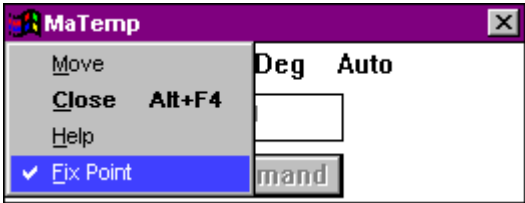
- Hardware points
- Software points
- Internal user addresses and mapped parameters of XFMs

**IMPORTANT**  
*Software maintains the manual value or status for the point and does not change it until you change point mode to Auto.*

**Procedures** 1. Begin monitoring the point you want to fix (if it is not already being monitored).  
  
The Monitoring section describes monitoring for hardware, software and XFM points. The View Switching Logic section describes monitoring for switching tables.

**Fix a point** 2. To fix a point that has a point dialog box (that is, non-switching table points), click the System menu in the monitor point dialog box and select Fix Point.

RESULT: A check mark is added to the Fix Point dropdown item.



NOTE: The monitor dialog box remains open as long as the Fix Point dropdown item is checked irrespective of whether the point is in manual (fixed) or automatic mode (unfixed). In order to fix or unfix a point the Fix Point dropdown item must be checked.

To fix a switching table point, click point value/state in the gray area in the switching table.

RESULT: The point monitor dialog box displays with Manual/Auto options.



User address displays in the dialog box title line. Point value/status, engineering unit, and mode display in the dialog box.

3. To assign a value or status, click Manual. Then, for an analog point, type desired value in the field to the right of Manual. For a digital point, type desired status in the field to the right of Manual, or click down arrow to display possible

statuses and click one to select it. For a flex point, click selections relevant to the point.

NOTE: You cannot change value or status unless you select Manual.

4. Click **Command** to save settings.

RESULT: The point remains at that value/status until you unfix it.

#### Unfix a Point

1. Begin monitoring the point you want to unfix (if it is not already being monitored).
2. To unfix a point that has a point dialog box (that is, non-switching table points), click the System menu in the monitor point dialog box and click Fix Point if not already checked.

To unfix a switching table point, click point value/state in the gray area in the switching table.

3. Click Auto.
4. Click **Command** to save settings.

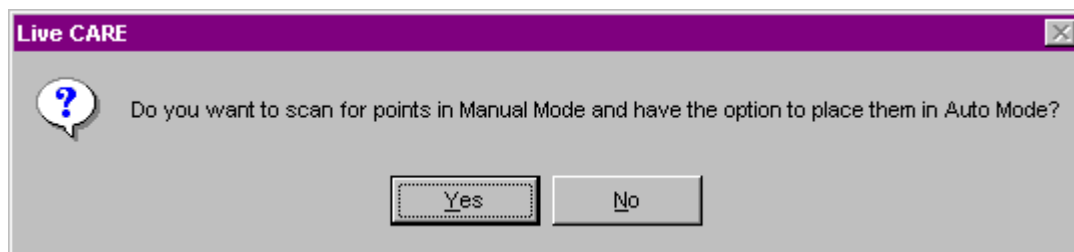
RESULT: Software begins updating point value/status according to its sensor/actuator setting.

#### Error Messages

If the controller returns an error message from an invalid command (for example, point command value out of range....), Live CARE displays the message with the appropriate data.

#### Points Remain in Manual Mode

When you close a plant, software displays the following dialog box asking if you want to scan for points in Manual Mode.

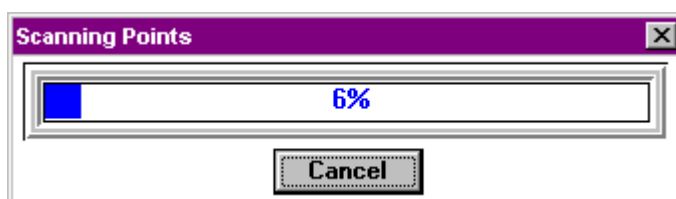


If you click No, any points set to Manual Mode remain in that mode.

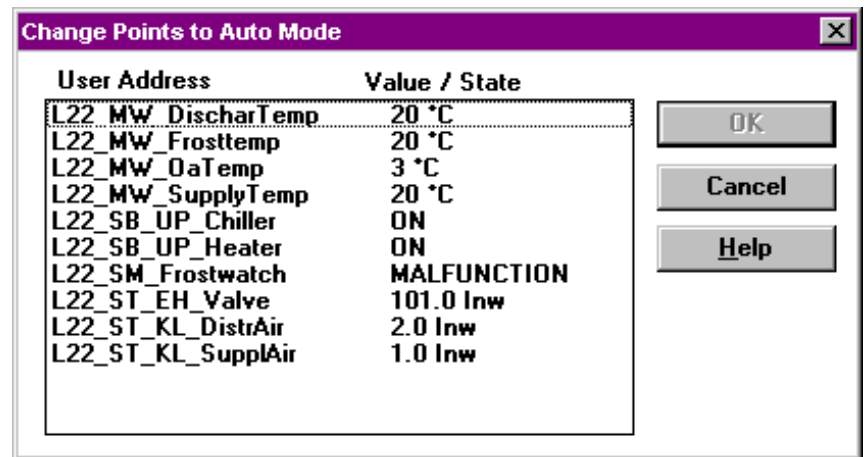
#### Points Return to Auto Mode

1. Click Yes to return points in Manual Mode to Auto Mode.

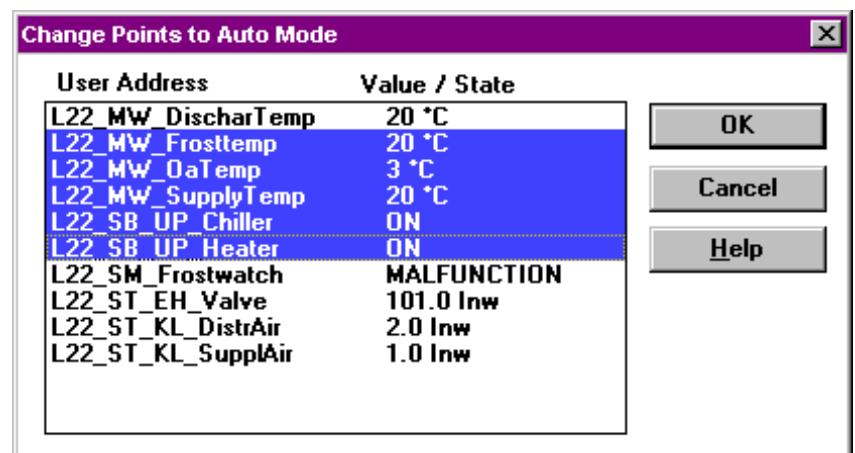
RESULT: The Scanning Points message box displays.



After all points in the project have been scanned for Manual Mode, the Change Points to Auto Mode dialog box displays.



- To change points back to Auto Mode, highlight the desired points with SHIFT and left mouse button and click OK.

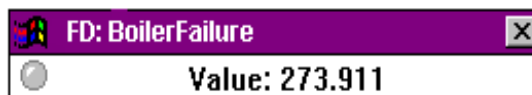


**RESULT:** The selected points are returned to Auto Mode and the dialog box closes.

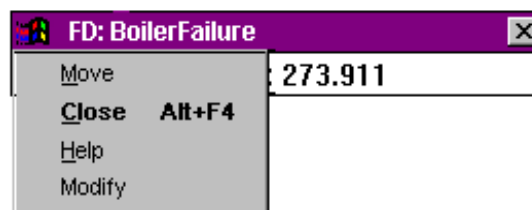
**NOTE:** The Change Points to Auto Mode function is not available when using the static simulator.

## Modify Flag Points

- Purpose** Change a z-register value from a flag point. Modifying a z-register value is different from the “Fix” mechanism for points, because the value is only written to the controller once and is not maintained afterwards. After the next poll cycle the previous value is established.
- For modifying z-registers in general refer to the Modify Z-Registers section. For modifying z-registers of XFM's refer to the Modify XFM Z-Registers section.
- Assumption** Application program is running in the (simulated) controller.
- Procedure**
- In any view (control strategy, switching logic, or user addresses), click the desired flag point (abbreviations are: FA = analog flag point, FD=digital flag point) on the software points line.
- RESULT:** The Analog Flag and Digital Flag dialog box respectively displays showing the current value of the corresponding z-register.

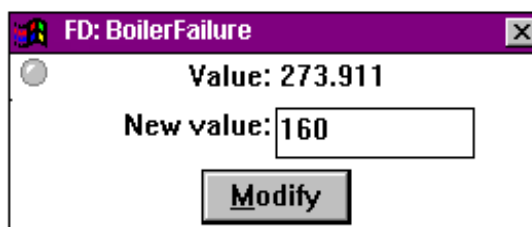


2. Click the system menu (window symbol) at the upper left corner and select Modify.



**RESULT:** The additional New value field and the Modify button appears. A check mark is added to the Modify dropdown item in the system menu.

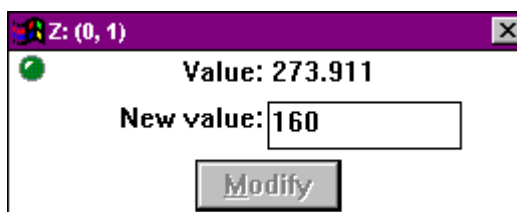
**NOTE:** The monitor dialog box remains open as long as the Modify dropdown item is checked. In order to modify a flag point the Modify dropdown item must be checked.



3. Enter the new value and click Modify. For digital flags it is only allowed to enter 0 or 1. For analog flags it is only allowed to enter a positive or negative float number.

**RESULT:** The new value is written to the z-register.

**NOTE:** Modifying a value is different from the "Fix" mechanism on points, because the value is only written to the controller once and is not maintained afterwards. While your application program is running it could seem as if the modified value is not accepted. That stems from the fact that the RACL application program has in the meantime already overwritten the value you entered, for example see the following monitor dialog box.



## Modify Z-Registers

### Purpose

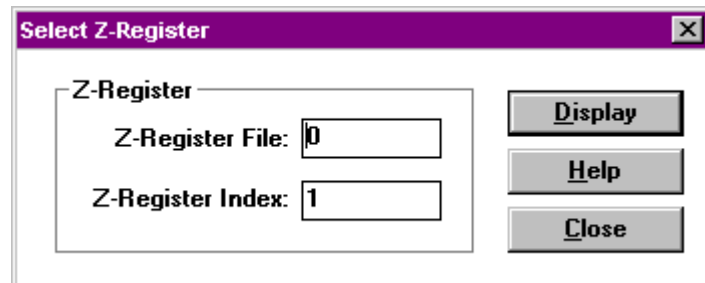
Change a z-register value. With the procedure described in this section you can select and modify any existing z-register, that is, z-registers in general, from flag points and from XFMs. For this you must know the file and index number from the z-register you want to monitor.



Modifying a z-register value is different from the "Fix" mechanism for points, because the value is only written to the controller once and is not maintained afterwards. After the next poll cycle the previous value is established. For modifying z-registers of flag points or XFMs refer to the Modify Flag Points and Modify XFM Z-Registers sections respectively.

**Assumption** Application program is running in the (simulated) controller.

**Procedure** 1. In any view (control strategy, switching logic, or user addresses), choose Z-Registers from the View menu. The Select Z-Register dialog box displays.



2. Into the Z-Register File field enter the desired number.
3. Into the Z-Register Index field enter the desired number.

NOTE: The fields for file and index do accept numbers (0 ...9) only and up to 3 characters.

4. Click Display.

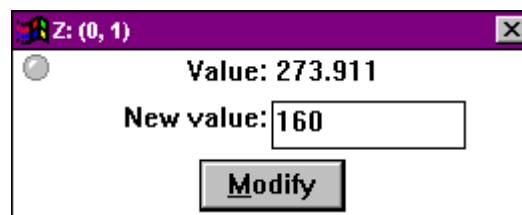
RESULT: The corresponding z-register monitor dialog box displays showing the current value of the z-register.



5. Click the system menu (window symbol) at the upper left corner and select Modify.

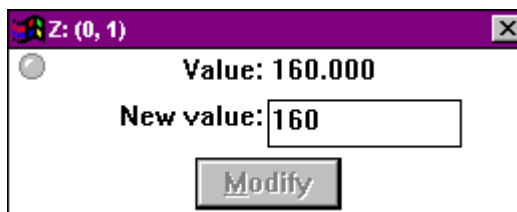
RESULT: The additional New value field and the Modify button appears. A check mark is added to the Modify dropdown item in the system menu.

NOTE: The monitor dialog box remains open as long as the Modify dropdown item is checked. In order to modify a z-register the Modify dropdown item must be checked.

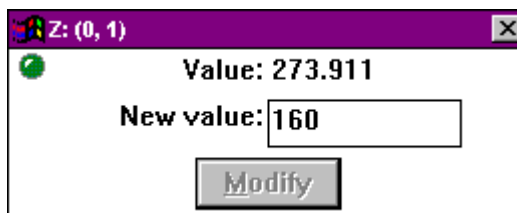


6. Enter the new value and click Modify. For digital flags it is only allowed to enter 0 or 1. For analog flags it is only allowed to enter a positive or negative float number.

RESULT: The new value is written to the z-register.



NOTE: Modifying a value is different from the "Fix" mechanism on points, because the value is only written to the controller once and is not maintained afterwards. While your application program is running it could seem as if the modified value is not accepted. That stems from the fact that the RACL application program has in the meantime already overwritten the value you entered, for example see the following monitor dialog box.



## View/Change Symbol Information

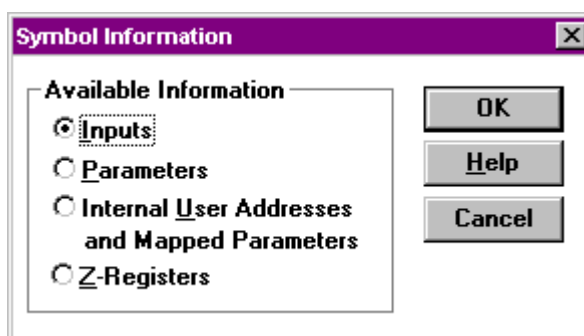
**Purpose** View/Change the following items from control strategy symbols:

- Inputs
- Internal parameters
- Internal user addresses, mapped parameters, and z-registers of XFM's

NOTE: Not all items are necessarily available for each control strategy symbol. For example, only XFM's have internal user addresses and mapped parameters. The Z-Registers option is generally not available, if z-registers access is disabled in the CARE.INI file (see SET CARE.INI FILE ENTRIES chapter).

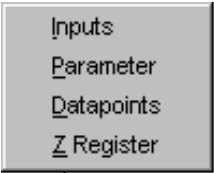
**Procedure** Symbol Information can be accessed in two ways:

1. First, if not already opened, open the control strategy by clicking View and then dropdown item Control strategy.
2. Click the symbol with left mouse button to open the Symbol Information dialog box.



or

Click the symbol with the right mouse button to display the following context menu.



Items which are not available for the selected symbol are disabled, that is, gray in the Symbol Information dialog box and totally missing in the context menu.

For example, The Inputs option is inactive/missing, if there are no “entered-value” inputs for the symbol. For example, if all inputs to a PID are outputs from other symbols, physical points, or pseudopoints, the Inputs option is gray. Parameters is inactive/missing, if the symbol does not provide any parameters to assign. Internal User Addresses and Mapped Parameters as well as z-registers are inactive/missing unless the symbol selected is an XFM.

- 3. Select the desired item by clicking the radio button in the Symbol Information dialog box and by clicking the option in the context menu respectively.

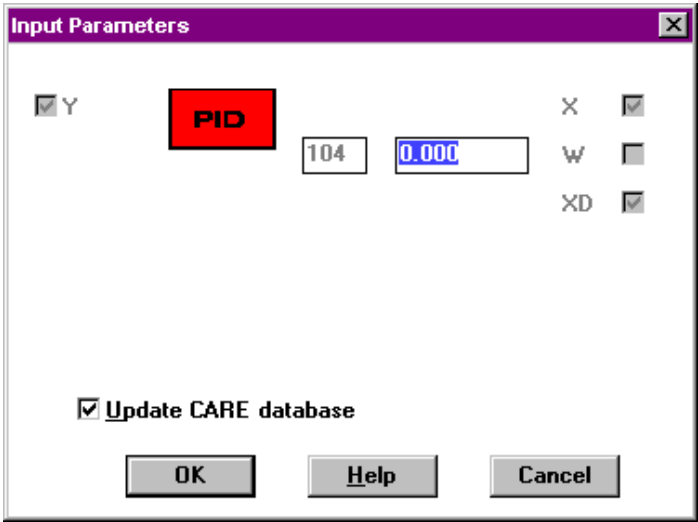
Refer to the following sections for viewing/changing the corresponding items (Inputs, Parameters etc.) of a control symbol.

View/Change Symbol Inputs

**Purpose** View/Change input parameter values for a control symbol in the plant control strategy.  
During control symbol assignment in Excel CARE, you assign inputs and outputs for control symbols. Live CARE allows you to change these input parameters and save them to the CARE database and controller.

- Procedure**
- 1. Open the Symbol Information dialog box by clicking the control symbol with the left mouse button or display the context menu by clicking the control symbol with the right mouse button.
  - 2. In the Symbol Information dialog box, click Inputs and confirm by clicking OK. In the context menu, click Inputs.

**RESULT:** The Input Parameters dialog box displays. For example, for a PID control symbol, the following dialog box can display:



**NOTE:** The dialog box is the same as in Excel CARE except for the addition of the Update CARE database check box. If this box has a checkmark, Live CARE writes any changes you make to the CARE database when you click **OK**. If the box does not have a checkmark, changes you make are not saved in the database, when you leave Live CARE.

- 3. In Input Parameters dialog boxes of I/Os, you can change any input that is a parameter only if the input box does not have an x. If there is a checkmark, you cannot change it. You also cannot change an input point into a parameter or vice versa. If you need to make those changes, use Excel CARE. There are also special conditions for the RAMP and SEQ control icons and for XFMs. See the RAMP and SEQ Operation note following this procedure. For changing Internal user addresses, mapped parameters , and z-registers of XFMs see the Change XFM Internal User Addresses and Mapped Parameters and Modify XFM Z-Registers sections respectively.
  - 4. Click **OK** to save changes and update the controller file. If the Update CARE database check box has a checkmark, software also updates the CARE database. Otherwise, software only updates the controller. The check box defaults to checkmark (always update the CARE database).
- RESULT: The dialog box closes and the View Control Strategy window displays.

**RAMP and SEQ Operation**

In CARE, you define minimum and maximum inputs and outputs as well as a ratio. The controller does not store these values. It stores minimum and maximum outputs and translated values that represent slope and y intercept. The following formulas represent the controller translation:

$$\text{SLOPE} = \frac{\text{MaxOutput} - \text{MinOutput}}{\text{MaxInput} - \text{MinInput}}$$
$$\text{Y INTERCEPT} = \frac{\text{MinOutput}}{\text{Slope} * \text{MinInput}}$$

**View/Change Symbol Parameters**

<b>Purpose</b>	<p>View/Change internal parameter values for a control symbol in the plant control strategy.</p> <p>During control symbol assignment in Excel CARE you assign internal parameters for some symbols related to the symbol function, for example, proportional band and derivative time for the Proportional-Integral-Derivative (PID) symbol. Live CARE allows you to change these internal parameters and save them to the CARE database and controller.</p>
<b>Procedure</b>	<ul style="list-style-type: none"><li>1. Open the Symbol Information dialog box by clicking the control symbol with the left mouse button or display the context menu by clicking the control symbol with the right mouse button.</li><li>2. In the Symbol Information dialog box, click Parameters and confirm by clicking OK. In the context menu, click Parameters.</li></ul> <p>RESULT: The corresponding dialog box for internal parameters displays. The following figures show an example for a PID and an XFM control symbol.</p>

**PID**

Proportional band (Xp)

Derivative time (Tv)  sec

Integral action time (Tn)  sec

Minimum output  %

Maximum output  %

☒ Update CARE database

OK Cancel Help

Range: -9999.0 to 99999.0

**XFM ( 3, 2 ): gndda01a**

Index	Parameter	Value	Unit	New Value:
1	XFM GNDDA01A 9504	950476.000		<input type="text" value="0.000"/>
2	OAT high lim htgdd	18.000	°C	<input type="button" value="Modify"/> <input type="button" value="Info"/> <input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Help"/>
3	OAT low lim clgdd	19.000	°C	
4	* RMT setp (RMT=999)	0.000		
5	DISP htgdd last wk	0.000		
6	DISP htgdd last mo	0.000		
7	DISP clgdd last wk	0.000		
8	DISP clgdd last mo	0.000		
9	Internal variable	0.000		

Mapped to: AC1DIcShed ☒ Update CARE database

Range 0.000 ... 50.000

Note that the dialog boxes are the same as in Excel CARE except for the addition of the Update CARE database check box. If this box has a checkmark, Live CARE writes any changes you make to the CARE database when you click **OK**. If the box does not have a checkmark, changes you make are not saved in the database, when you leave Live CARE.

Also, parameters dialog boxes include an information line at the bottom of the dialog box that shows the valid value range for the currently selected item.

The parameter dialog box of an XFM shows the parameters with its index, value and unit. All parameters that are mapped to data points are marked as mapped by an asterisks. The corresponding datapoint is displayed in the Mapped to: line when selecting the parameter in the list.

### Control symbols other than XFMs

- To change parameters for a symbol other than an XFM, enter the desired value into the field. You can change any of the parameters that are framed. Unframed Parameters are static text and cannot be changed.

NOTE: Live CARE does **not** do any error checking for validity.

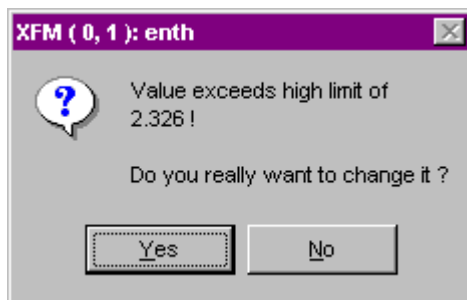
4. Click **OK** to save changes and update the controller file. If the Update CARE database check box has a checkmark, software also updates the CARE database. Otherwise, software only updates the controller. The check box defaults to a checkmark (always update the CARE database).

RESULT: The parameter dialog box closes and the View Control Strategy window displays.

#### XFM control symbols

3. To change a parameter of an XFM control symbol, click the parameter, enter the new value into the New Value field and click Modify.

RESULT: Software starts limit checking. If the new value is within the range as shown in the information line at the bottom of the dialog box, it is accepted without a warning. If the value exceeds the high or low limit a warning dialog box appears asking if you really want to change the value.



4. Clicking Yes accepts the new value, clicking No discards the new value.

NOTE: The limits are float values stored in the \*.csd file for each XFM.

5. Click OK to confirm the modified parameter.
6. Click **OK** in the parameter dialog box to save changes and update the controller file. If the Update CARE database check box has a checkmark, software also updates the CARE database. Otherwise, software only updates the controller. The check box defaults to a checkmark (always update the CARE database).

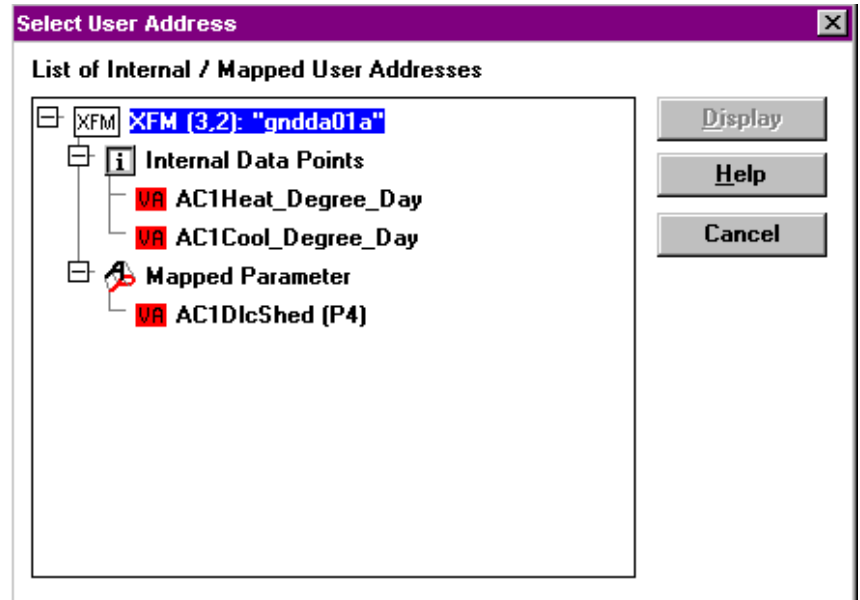
RESULT: The parameter dialog box closes and the View Control Strategy window displays.

### Change XFM Internal User Addresses and Mapped Parameters

**Purpose** Change values/statuses of XFM datapoints which are internal user addresses or mapped to parameters.

- Procedure**
1. Open the Symbol Information dialog box by clicking the control symbol with the left mouse button or display the context menu by clicking the control symbol with the right mouse button.
  2. In the Symbol Information dialog box, click Internal User Addresses and Mapped Parameters and confirm by clicking OK. In the context menu, click Datapoints.

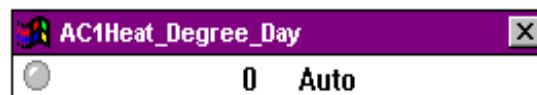
RESULT: The Select User Address dialog box displays showing all internal user addresses and mapped parameters of the selected XFM.



The XFM is displayed prefixed by the position of the XFM in the control strategy (column, row). If there are no internal data points and/or mapped parameters available for the desired XFM the Internal Data Points and/or Mapped Parameters structure is not expanded.

3. Click the internal datapoint or the mapped parameter and click Display.

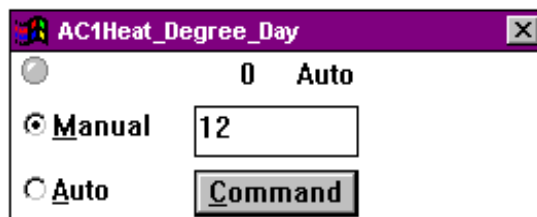
RESULT: The corresponding monitor dialog box is displayed.



#### Fix Point

4. For changing value/status of the internal datapoint or the mapped parameter click the System menu in the monitor point dialog box and select Fix Point.

RESULT: A check mark is added to the Fix Point dropdown item. The point monitor dialog box displays with Manual/Auto options.



5. To assign a value or status, click Manual. Then, for an analog point, type desired value in the field to the right of Manual. For a digital point, type desired status in the field to the right of Manual, or click down arrow to display possible statuses and click one to select it. For a flex point, click selections relevant to the point.

NOTE: You cannot change value or status unless you select Manual.

6. Click **Command** to save settings.

RESULT: The point remains at that value/status until you unfix it.

#### Unfix Point

1. To unfix a internal user address or a mapped parameter, click the System menu in the monitor point dialog box and click Fix Point if not already checked.

2. Click Auto.

3. Click **Command** to save settings.

RESULT: Software begins updating point value/status according to its sensor/actuator setting.

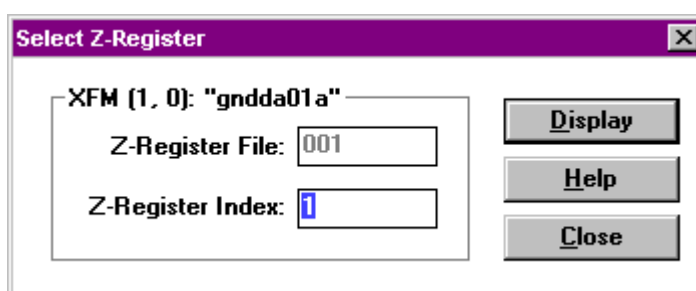
## Modify XFM Z-Registers

**Purpose** View/Change z-register values of an XFM symbol in the plant control strategy.

**Procedure**

1. Open the Symbol Information dialog box by clicking the XFM symbol with the left mouse button or display the context menu by clicking the XFM symbol with the right mouse button.
2. In the Symbol Information dialog box, click Z-Registers and confirm by clicking OK. In the context menu, click Z-Registers.

RESULT: The Select Z-Register dialog box displays.

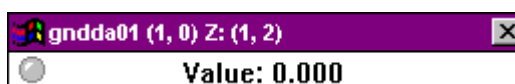


3. Enter the z-register index into the Z-Register Index field.

NOTE: The field do accept numbers (0 ...9) only and up to 3 characters. The Z-Register File field is disabled and cannot be changed.

4. Click Display.

RESULT: The corresponding monitor dialog box displays showing the current value of the z-register. The title line displays the symbol name, Z and the file and index number from the z-register.



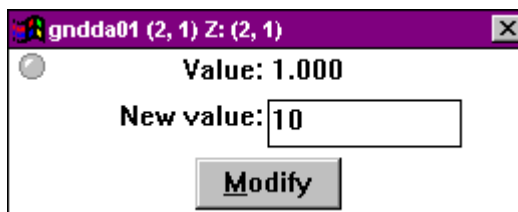
5. Click the system menu (window symbol) at the upper left corner and select Modify.

RESULT: The additional New value field and the Modify button appears. A check mark is added to the Modify dropdown item in the system menu.

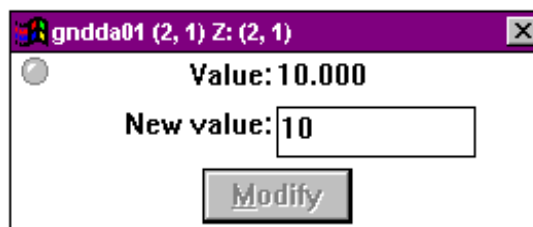
NOTE: The monitor dialog box remains open as long as the Modify dropdown item is checked. In order to modify a z-register the Modify dropdown item must be checked.

6. Enter the new value and click Modify. For digital flags it is only allowed to enter 0 or 1. For analog flags it is only allowed to enter a positive or negative float number.

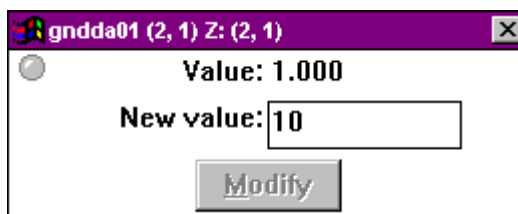




RESULT: The new value is written to the z-register.



NOTE: Modifying a value is different from the "Fix" mechanism on points, because the value is only written to the controller once and is not maintained afterwards. While your application program is running it could seem as if the modified value is not accepted. That stems from the fact that the RACL application program has in the meantime already overwritten the value you entered, for example see the following monitor dialog box.



## SET CARE.INI FILE ENTRIES

Besides others the following entries concerning z-registers are relevant for Live CARE and can be changed:

### Z-Register Access

Z-registers access can be set in the [User Privileges] section as follows:

Example:

```
[User Privileges]
CanAccessZRegs=1
```

The "CanAccessZRegs" entry must be set to 1 to enable z-register access. No, off or 0 disables z-register access. If access is disabled the Z-Registers dropdown item from the View menu and the Z-Registers option in the Symbol Information dialog box is not visible. In addition, disabled z-register access effects flag points, that they also can not be accessed.

### Z-Register Poll Cycle

The minimum time between 2 z-register poll actions can be set in the [LiveCARE] section as follows:

Example:

```
[LiveCARE]
MinZRegisterPollCycle=5 ; time value in seconds
```

The value is read as integer number and values less than 1 will be treated as 1. Default value is 5 seconds.

### Password

The password can be set in the [LCDisp Goodies] section:

```
[LCDisp Goodies]
XL500DefaultPassword=3333
```

The password can be set to a 4 digit numeric value. Default value is 3333.

### Port, Interface

The default selection for the Port and Interface options in the Communications dialog box can be set in the [LCDisp Goodies] section as follows:

```
[LCDisp Goodies]
XL500SetPortDefault=1
XL500SetSimulatorDefault=1
```

The PortDefault can be set to 1 through 4. 1 sets COM1, 2 sets COM2 to default port, etc.

The SimulatorDefault can be set to 0 or 1. 1 sets the Simulator to the default Interface, 0 sets the B-Port to the default interface.

### Procedure

1. Double-click the CARE.INI file in the WINDOWS™ folder (by default) to open the file via Notepad Editor.
2. Edit the desired entries and select Save from the File menu.



## ERROR MESSAGES

This chapter lists error messages that may display during Live CARE operation and describes possible causes. In addition, a second error message table lists error messages that may occur while you are running a simulation in Live CARE.

### General Error Messages

Error Message	Possible Causes
Out of local memory	Windows™ cannot allocate any local memory. Exit Windows™ and re-start your computer.
Out of global memory	Windows™ cannot allocate any global memory. Exit the application and close other applications to free more memory.
Cannot connect to network, no devices on network	Exit the Commissioning Tool and add devices to the network using CARE.
Controller Name mismatch	The Controller and CARE database have different names. You are probably attached to the wrong controller.
Cannot determine controller type	Controller files not found. Retranslate controller.
No valid comm ports in system	Your computer's communication port(s) are already in use or improperly configured.
Invalid LDVSLTA.SYS driver in config.sys	The SLTA Driver is corrupted. Reboot the PC. If that does not work, reinstall Live CARE.
Too many switching logic monitors	Switching Logic Monitors are monitors just like the Point Monitors. The controller in use may have a point display limitation.
Data Server has disconnected	The Data Server has disconnected prematurely. Exit Live CARE and restart.
Unable to Connect to Data Server	The Data Server will not start. Exit Live CARE. If the LCSRVR icon is still active, close it.
Unable to get the data from the controller	The Communications Manager for the controller type is failing the Advise Request for point updates. The controller in use may have a point display limitation.
Error assigning address to the controller	The Communications Manager is failing the address assignment. The controller may not be responding.
Unable to enter service pin mode	Exit and restart Live CARE.
Controller already in use	Another tool is logged into the device that you are trying to access. Wait until the other tool has logged out of the device and try again. If no other tool is logged in, wait for device to time out on login (usually 1 minute) and try again.
Comm Manager not logged into controller	Connection with device has failed. Check power to device, wiring, SLTA or B-Port connection, and power.
No SLTA Network Management Nodes available	Exceeded limit of SLTA devices on network. Remove one or more SLTAs from network and try again.
Error on i/f port	Cannot communicate to SLTA or B-Port. Check power to interface device and wiring connection.
No message within timeout period	Device is not responding to message. Check connection between interface device and network. Check network connection to device. Verify device is powered. You may need to cycle power on device.
Specified key already exists	Detected duplicate ID for device. Use different physical device or remove other device from network using Network Configuration in CARE.
Error occurred accessing network	Cannot communicate to SLTA or B-Port. Check power to interface device and wiring connection. You may need to cycle power on SLTA.
Could not verify delivery of message to dest	Device is not responding to message. Check connection between interface device and network. Check network connection to device. Verify device is powered. You may need to cycle power on device.
Message not received within specified timeout period	Device is not responding to message. Check connection between interface device and network. Check network connection to device. Verify device is powered. You may need to cycle power on device.
Cannot determine controller type	Controller files not found. Retranslate controller.

## Simulation Error Messages

The following errors can display in unusual circumstances.

Your first step in most cases is to verify that the CARE data file for the selected controller was translated after the last changes were made so that all data file parameters are correct and up-to-date. If the same error displays after a new translation, contact the Honeywell Technical Assistance Center.

Error Message	Possible Cause
" Bad ""defined"" constant Parameter"	Design error. Report to Honeywell Technical Assistance Center.
(characters) String passed in was too long	Design error. Report to Honeywell Technical Assistance Center.
(file name) File existence error	The named controller file is missing from the CARE directory. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
(file name) File I/O Error	Hardware error.
(file name) File size is larger than maximum	The named file is not an application file or is corrupted. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
(file name) has a bad checksum	The file is not an application file or is corrupted. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
(file name) has a short file header	The file is not an application file or is corrupted. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
(file name) is too long to load	The file is not an application file or is corrupted. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
(file name) is truncated	The file is not an application file or is corrupted. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
(file name) Memory error	Design error. Report to Honeywell Technical Assistance Center.
(file name) was not found	The file does not exist. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
(name) Controller File is not open	The file is not an application file or is corrupted. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
(name) Header Version incorrect	The file is not an application file or is corrupted. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
(name) Illegal application ID	The file is not an application file or is corrupted. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
(name) Padding state is wrong	The file is not an application file or is corrupted. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
(name) Section open status error	The file is not an application file or is corrupted. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
(name) The handle could not be locked	Design error. Report to Honeywell Technical Assistance Center.
(name) Unknown section ID referenced	The file is not an application file or is corrupted. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
(name) Write protection status wrong	The file is not an application file or is corrupted. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
A controller is already connected to Live CARE! Disconnect the controller or change the simulator service name (Port).	Error message associated with the Simulator master mode. Test mode error only.
Cannot determine controller type	Controller files not found. Retranslate controller.
Current version is: Simulator %1 Excel Controller %2	Attempt to load an obsolete saved simulation session.
DDE Server Error Unknown Topic.	Another application made an unrecognized DDE request. Report to Honeywell Technical Assistance Center.
DDE Server Error Unknown System conversation OnRequest item.	Another application made an unrecognized DDE request. Report to Honeywell Technical Assistance Center.
DDE Server Error Unknown Live Care conversation OnRequest item.	Another application made an unrecognized DDE request. Report to Honeywell Technical Assistance Center.
DDE Server Error Digital point state text length invalid.	The controller application files are corrupted. Retranslate the controller.

DDE Server Error Digital point state text copy failed.	The controller application files are corrupted. Retranslate the controller.
DDE Server Error Flex point copy failed.	The controller application files are corrupted. Retranslate the controller.
DDE Server Error Point request search failed.	A request was made for a non-existent user address. Retranslate the controller.
DDE Server Error Point request encountered an unknown type of point.	A request was made for an unknown point type. Retranslate the controller.
DDE Server Error Zregister search failed.	A request was made for a non-existent z-register. Retranslate the controller.
DDE Server Error Parameter search failed.	The parameter does not exist. Retranslate the controller.
DDE Server Error Advise start point base search failed.	A point referenced in an advise start transaction does not exist. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
DDE Server Error Advise start invalid parameter file number.	A rac parameter referenced in an advise start transaction does not exist. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
DDE Server Error Advise start invalid parameter file index.	A rac parameter referenced in an advise start transaction does not exist. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
DDE Server Error Advise start invalid item type.	An advise start transaction was received that was not recognized. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
DDE Server Error Poke unknown item.	The item does not exist. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
DDE Server Error Write point search failed.	The point does not exist. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
DDE Server Error Poke point failed.	The point does not exist. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
DDE Server Error Poke parameter failed.	The parameter does not exist. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
DDE Server Error Poke ZRegister failed.	The Z register does not exist. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
DDE Server Error Advise start invalid ZRegister.	The Z register does not exist. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
DDE Server Error ZRegister search failed.	The Z register does not exist. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
Error Reading Point Auto Value.	The point does not exist. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
Error reading flex point class.	The point does not exist. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
Error reading point engineering units.	The point does not exist. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
Error reading point Hand Value.	The point does not exist. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
File Error.	The file could be missing, or in use by another application, or there could be a hardware problem.
File is optional and will be ignored.	The following controller file is missing from the CARE directory. This file is not required to operate the Simulator. Time Schedules file *.ZPG

File is required for correct simulator operation. Continue Loading?	One of the following controller files is missing from the CARE directory. This file is required to operate the Simulator. RACL program file *.RAL RACL parameter file *.RAP RACL intermediate register file *.RAZ RACL timer register file *.RAT ASPECD program file *.ADL Time Schedules file *.ZPG Data Point Description file *.IPL Point Descriptors file *.KLX Alarm text file *.ALX State text file *.ZSX Engineering unit text file *.PHX Characteristics data file *.KDX Configuration data file *.KFX Edit the controller in CARE to create the necessary file. Retranslate.
Global Memory Allocation Failed!	Design error. Report to Honeywell Technical Assistance Center.
Incompatible Simulation Save File! Save file version: Simulator %1 Excel Controller %2	Attempt to load an obsolete saved simulation session.
Live CARE Simulation requires a system icon size of 32x32 pixels - please use a different video driver.	Attempt to run the simulator with EGA or other rare display adapters that use other icon sizes.
Live CARE still connected! Please disconnect before exiting simulator.	Error message associated with the Simulator master mode. Test mode error only.
Local Language Resource File not found - Terminating Simulator	The LCUSA.DLL file that comes with Live CARE software is missing.
Memory Free Failed	Windows™ internal malfunction.
Minimum compatible version: Simulator %1 Excel Controller %2	Attempt to load an obsolete saved simulation session.
"No CARE path found - defaulting to ""C:\\CARE""."	Check Live CARE .INI file to correct CARE path.
No Program Loaded	An attempt was made to start the simulator before loading a controller application. Test mode error only.
No timer available	Other applications are using all the Windows™ timers.
Not Implemented Yet	User has accessed a future function not implemented in the current release of the Simulator.
NULL Parameter passed in	Design error. Report to Honeywell Technical Assistance Center.
RACL Application Not Running.	Corruption of the rac1 program, illegal operations, etc., as detected by the XL500 rac1 interpreter. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.
RACL Time Overflow	Divide by zero overflow. Design error. Report to Honeywell Technical Assistance Center.
Severe Internal Error %d in Module %d. Application will terminate now.	Design error. Report to Honeywell Technical Assistance Center.
Severe Internal Error! Unused Function %s called. Application will terminate now.	Design error. Report to Honeywell Technical Assistance Center.
The selected file is neither a controller file nor a simulation save file	Error message associated with the Simulator master mode. Test mode error only.
"Unknown code tag %1 found by code coverage tracer, Disable tracing?"	Error message associated with the Simulator master mode. Test mode error only.
Unknown flex point class	The point class does not exist. Retranslate the controller. If error persists, contact the Honeywell Technical Assistance Center.

**A**

Automatic mode 40  
return points to 41

**B**

B port 3  
select as communication interface 10

**C**

Capacities  
Live CARE 3  
CARE.INI file  
set entries 53  
Change  
input parameter 46  
mapped XFM parameter 49  
parameter 47  
point mode 40  
points to automatic mode 41  
symbol information 45  
XFM internal user address 49  
Communication 3  
Communication interface  
select 10  
Connect to controller 4  
procedure 4  
Control strategy  
display 20  
view 20

**D**

DDC cycle time 16  
Delays 24  
Display  
control strategy 20  
switching logic 22  
user addresses 19  
Display latest values/statuses 27  
Double monitoring 26  
E  
End current monitoring 20  
Engineering unit 24  
Error messages 41  
general 55  
simulation 56  
Excel Building Supervisor (XBS) 3  
EXECUTING\_STOPPED 26  
Exit Live CARE 8

**F**

FA 31  
FD 31  
Fix point 50  
automatic mode 40  
manual mode 40  
Flag points

modifying 42  
monitoring 30  
Freeze monitoring 27

**G**

General error messages 55  
General procedure 9  
Getting started 4

**H**

Hardware points 13  
monitoring 28  
Hysteresis 24

**I**

Initiate Live CARE 6  
Input parameter  
change 46  
view 46  
Intermediate values 26

**L**

Limit  
checking  
XFM parameter 49  
Limit checking  
XFM parameter 1  
Literature 2  
Live CARE  
capacities 3  
concepts 3  
exit 8  
general procedure 9  
getting started 4  
initiate 6  
main window 7  
menu bar 7  
new features 1  
overview 1  
response time 3  
scroll bar 13  
simulate controller operation 13  
simulation  
diagram 5  
status bar 13  
title line 7  
typical procedure 9  
view area 13  
Live CARE and CARE  
operation diagram 5  
LonWorks 10

**M**

Main window 7  
menu bar 7  
scroll bar 13  
status bar 13



- title line 7
- Manual mode 40
  - points remain in 41
- Manual override mode 35
- Manual value 40
- Mapped XFM parameter
  - change 49
  - displayed 48
- Menu bar 7
- Message traffic 26
- Mode 24
- Modify
  - flag points 42
  - XFM z-registers 51
  - z-registers 43
- Monitor(s) dialog box 27
- Monitoring
  - close command 27
  - double points 26
  - end 20
  - flag points 30
  - freeze command 27
  - general procedure 24
  - hardware points 28
  - intermediate values 26
  - limits 26
  - message traffic 26
  - monitor(s) dialog box 27
  - multiple poin 26
  - online 4
  - points
    - in no response mode 35
  - points from other controllers 26
  - points in manual override mode 35
  - polling 26
  - positioning monitor dialog boxes 26
  - refresh command 27
  - reporting by exception 26
  - restart command 27
  - software points 29
  - special points 26
  - start command 27
  - stop all point monitoring 27
  - XFM z-registers 38
  - z-registers 36
- Multiple monitoring 26

## N

- New features 1
- No response mode 35

## O

- Online help 8
- Online monitoring 4
- Open plant 10
- Opto-isolator 4

## P

- Parameter
  - change 47
  - view 47
- Plant
  - open 10

- select 10
- Point monitoring limits 26
- Points
  - from other controllers 26
  - in manual override mode 35
  - remain in manual mode 41
  - return to auto mode 41
- Points in no response mode 35
- Polling 26
- Ports 3, 10
- Positioning monitor dialog boxes 26

## R

- RACL Editor
  - General 2
  - Overview 2
- RAMP operation 47
- Refresh monitoring 27
- Reporting by exception 26
- Response time for Live CARE 3
- Restart monitoring 27
- Return to auto mode 41
- RS-232-C 3

## S

- Schematic window 12
- Scroll bar 13
- Search
  - flag via keyboard 34
  - pseudopoint via keyboard 34
- Select
  - communication interface 10
  - plant 10
- SEQ operation 47
- Serial port 3
- Set CARE.INI file entries 53
- Setup simulation 16
- SHUTDOWN 26
- Simulate controller operation 13
- Simulation 13
  - error messages 56
  - setup 16
  - step size 16
  - window 14
- Simulation diagram 5
- Software points 13
  - monitoring 29
- Special points 26
- Start monitoring 26, 27
- STARTUP 26
- Static simulator
  - select as communication interface 10
- Status bar 13
- Stop
  - all point monitoring 27
  - monitoring point 27
  - updating point values/statuses 27
- Switch to another project 10
- Switching logic
  - delays 24
  - display 22
  - engineering unit display 24
  - hysteresis 24
  - mode display 24
  - view 22

Symbol information  
    change 45  
    view 45  
System performance 3

## T

Title line 7  
Typical procedures 9  
U  
Unfix point 41, 50  
Update CARE database 48  
User addresses  
    display 19  
    view 19

## V

View  
    area 13  
    control strategy 20  
    input parameter 46  
    parameter 47  
    switching logic 22  
    symbol information 45  
    user addresses 19

## X

XBS 3  
XFM  
    change internal user address 49  
    change mapped parameter 49  
    modify z-register 51  
    parameter limit checking 1  
XFM internal user address  
    change 49  
XFM parameter limit checking 1, 49  
XFM z-registers  
    modifying 51  
    monitoring 38  
XFM's 13  
XI584 and Live CARE 3  
XI584 port 3  
XW567 Connection cable 4

## Z

Z-registers 13  
    modifying 43  
    monitoring 36



**Honeywell**

---

**Automation and Control Solutions**

Honeywell International Inc.  
1985 Douglas Drive North  
Golden Valley, MN 55422  
USA  
<http://www.honeywell.com>

Honeywell Limited-Honeywell Limitee  
35 Dynamic Drive  
Scarborough, Ontario M1V 4Z9  
Canada  
<http://www.honeywell.ca>

Honeywell GmbH  
Böblinger Straße 17  
D-71101 Schönaich  
Germany  
<http://europe.hbc.honeywell.com>



74-3556-9 (US)  
EN2B-0183 GE51 R0404 (Europe)

Printed in Germany

Subject to change without notice