PlateLoc Sealer ActiveX

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User Guide

Original Instructions

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Notices

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Preface

This preface contains the following topics:

- "About this guide" on page vi
- "Reporting problems" on page vii

About this guide

What this guide covers

This guide describes the ActiveX controls for the PlateLoc Thermal Microplate Sealer.

This guide does not provide instructions for setting up and using the PlateLoc Sealer. For these details, see the *PlateLoc Thermal Microplate Sealer User Guide*.

Accessing Agilent Technologies Automation Solutions user guides

You can search the online knowledge base or download the latest version of any PDF file from the Agilent Technologies website at www.agilent.com/lifesciences/automation.

Safety information for the devices appears in the corresponding device user guide. You can also search the knowledge base or the PDF files for safety information.

Related topics

For information about...	See...
How to set up and use the PlateLoc Sealer	*PlateLoc Thermal Microplate Sealer User Guide*
Reporting problems	"Reporting problems" on page vii

Reporting problems

Contacting Automation Solutions Technical Support

If you find a problem with the PlateLoc Sealer, contact Automation Solutions Technical Support at one of the following:

Europe

Phone: +44 (0)1763850230

email: euroservice.automation@agilent.com

US and rest of world

Phone: 1.800.979.4811 (US only) or +1.408.345.8011

email: service.automation@agilent.com

Reporting hardware problems

When contacting Agilent Technologies, make sure you have the serial number of the device ready.

Reporting software problems

When you contact Automation Solutions Technical Support, make sure you provide the following:

- Short description of the problem
- Software version number
- Error message text (or screen capture of the error message dialog box)
- Relevant software files

Reporting user guide problems

If you find a problem with this user guide or have suggestions for improvement, send your comments via an email to documentation.automation@agilent.com.

Related topics

For information about...	See...
How to set up and use the PlateLoc Sealer	*PlateLoc Thermal Microplate Sealer User Guide*
Accessing user information	"Accessing Agilent Technologies Automation Solutions user guides" on page vi

PlateLoc ActiveX control

This chapter gives integrators the ActiveX control information required to integrate the PlateLoc Sealer into another company's lab automation system.

The ActiveX has been verified to work with both Visual Studio 6 and Visual Studio .NET.

This chapter contains the following topics:

- "About ActiveX controls" on page 2
- "Properties" on page 4
- "Methods" on page 6
- "Events" on page 16

About ActiveX controls

What is the PlateLoc ActiveX control

The PlateLoc ActiveX control is the software component that allows the PlateLoc Sealer to interact with a third-party lab automation system.

How the PlateLoc ActiveX control is used

In an Agilent Technologies automation system, the VWorks software runs in standalone mode, and the PlateLoc ActiveX control is not used. The operator uses the VWorks software, which is already configured to control the devices in the system. However, some integrations, such as those with LIMS, require that a third-party application control the PlateLoc Sealer. The PlateLoc ActiveX control enables third-party applications to interface with the PlateLoc Sealer.

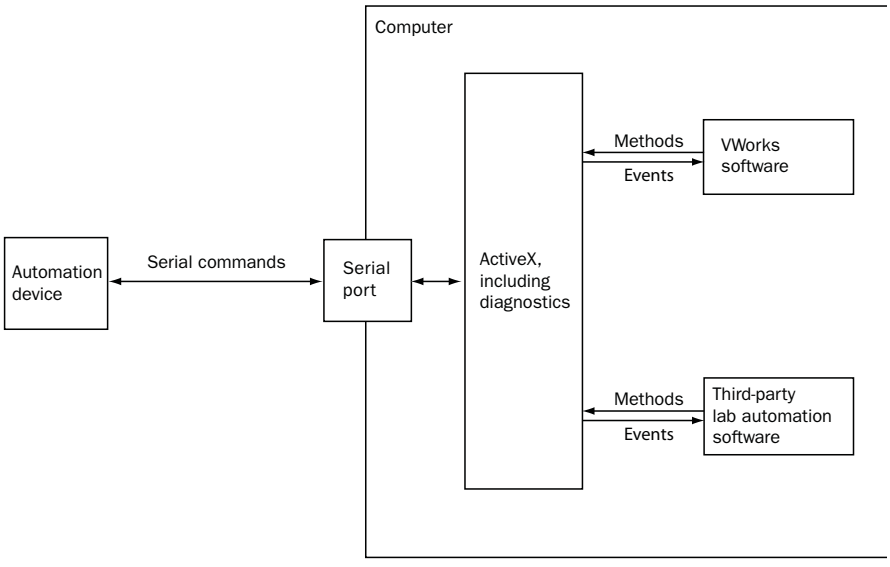
Each ActiveX control consists of a collection of the following:

- *Methods*. Functions that can be called to invoke individual operations
- *Properties*. Attributes or features of the ActiveX control
- *Events*. Notifications that methods have completed or resulted in errors

To ensure proper integration, you must know the available methods and properties for the ActiveX control.

The following diagram illustrates the use of the PlateLoc ActiveX control in a lab automation system environment. Actions you perform are conducted through ActiveX methods. System responses are relayed back through ActiveX events.

Note: Although the PlateLoc ActiveX control generates events, the third-party application must implement handlers for them.



Related topics

For information about...	See...
PlateLoc Sealer ActiveX properties	"Properties" on page 4
PlateLoc Sealer ActiveX methods	"Methods" on page 6
PlateLoc Sealer ActiveX events	"Events" on page 16
How to use the PlateLoc Sealer	*PlateLoc Thermal Microplate Sealer User Guide*
VWorks software	*VWorks Automation Control User Guide*
Reporting problems	"Reporting problems" on page vii

Properties

Blocking

VARIANT_BOOL Blocking;

Type

VARIANT_BOOL

Description

Determines whether methods should block until completion or return immediately for asynchronous operation.

Acceptable values

VARIANT_TRUE or VARIANT_FALSE (C++) or True or False (Visual Basic 6)

If set to VARIANT_TRUE or True, the ActiveX caller is forced to block or wait until a method completes before it returns control to the caller.

If set to VARIANT_FALSE or False, methods return immediately, and the caller should handle events accordingly.

Default value

VARIANT_FALSE or False

Blocking affects some methods differently. See each method's description for the effect. Unless otherwise noted:

- In non-blocking mode (Block = False), a method:
  - Starts another thread of execution to perform the given method, returning control to the application immediately.
  - Returns 0 on launching new thread successfully; otherwise returns nonzero, and an Error event is fired.
  - If the method is successful, an event indicating completion is fired; if unsuccessful, an Error event is fired.
- In blocking mode (Block = True), a method:
  - Is executed.
  - Returns 0 if it completes successfully; returns nonzero otherwise
- Error message can be reviewed by calling GetLastError().

Visual C++ example

```
// set the PlateLoc in blocking mode
sres = m_PlateLoc.SetBlocking(VARIANT_TRUE);
// set the PlateLoc in non-blocking mode
sres = m_PlateLoc.SetBlocking(VARIANT_FALSE);
// user should handle events if non-blocking!
```

Visual Basic 6 example

```
'set PlateLoc in blocking mode
PlateLoc1.Blocking = True
'set PlateLoc in non-blocking mode
PlateLoc1.Blocking = False
'user should handle events if non-blocking!
```

ControlPicture

Type

IPictureDisp

Description

A read-only picture of the PlateLoc that can be used in the container's application.

Parameters

None

Visual C++ example

```
/* the CPicture class will be imported into your project when the ActiveX is installed */
CButton button;
// create a button
CPicture PlateLocPic;
// retrieve the picture
PlateLocPic = m_PlateLoc.GetControlPicture();
// paint the bitmap onto the button
button.SetBitmap( (HBITMAP) PlateLocPic.GetHandle());
```

Visual Basic 6 example

```
'assume that there is a button named Command1 on the current form. You must set the Style property of 'Command1 to "Graphical"
Command1.Picture = PlateLoc1.ControlPicture
```

Related topics

For information about...	See...
PlateLoc Sealer ActiveX methods	"Methods" on page 6
PlateLoc Sealer ActiveX events	"Events" on page 16
Overview of the ActiveX controls	"About ActiveX controls" on page 2
Reporting problems	"Reporting problems" on page vii

Methods

Abort

```
LONG Abort(void)
```

Description

Aborts a current task that is in the error state and clears the error.

Parameters

None

Returns

0 if successful; other value if there was an error

Visual C++ example

```
lres = m_PlateLoc.Abort();
```

Visual Basic 6 example

```
lres = PlateLoc.Abort
```

AboutBox

```
void AboutBox(void)
```

Description

Displays the About Box dialog, which includes the ActiveX version and, if initialized, the firmware version of the currently connected PlateLoc Sealer.

The blocking mode does not affect the behavior of this method.

Parameters

None

Returns

None

Visual C++ example

```
m_PlateLoc.AboutBox();
```

Visual Basic 6 example

```
PlateLoc1.AboutBox
```

ApplySeal

```
LONG ApplySeal(void)
```

Description

Applies the seal to the microplate and keeps the door closed.

Parameters

None

Returns

0 if successful; other value if there was an error

Visual C++ example

```
lres = m_PlateLoc.ApplySeal();
```

Visual Basic 6 example

```
lres = PlateLoc1.ApplySeal
```

Close

```
LONG Close(void)
```

Description

Closes the initialized PlateLoc profile and disconnects from the device.

Parameters

None

Returns

0 if successful; other value if there was an error

Visual C++ example

```
lres = m_PlateLoc.Close();
```

Visual Basic 6 example

```
lres = PlateLoc1.Close
```

EnumerateProfiles

```
VARIANT EnumerateProfiles(void)
```

Description

Retrieves a list of defined profiles. The strings in this array are the profile names that should be used for Initialize.

Parameters

None

Returns

An array of profile names

Visual C++ example

```
VARIANT vPRofiles = m_PlateLoc.EnumerateProfiles();
SAFEARRAY *psa = vProfiles.parray;
BSTR* bstrArray;
if
(FAILED(SafeArrayAccessData(psa,reinterpret_cast<void**>(
&bstrArray))))
{
VariantClear(&vProfiles);
return;
}
for (ULONG i = 0; i < psa->rgsabound[0].cElements; i++)
{
MessageBox(CString(bstrArray[i]));
```

```
}
SafeArrayUnaccessData(psa); VaraintClear(&vProfiles);
```

Visual Basic 6 example

```
profileNames = PlateLoc1.EnumerateProfiles
For i = LBound(profileNames) To UBound(profileNames)
MsgBox profileNames(i)
Next
```

GetActualTemperature

```
LONG GetActualTemperature(SHORT* actual_temperature)
```

Description

Retrieves the current temperature (°C) of the hot plate.

Parameters

Argument Type	Argument Name	Description
SHORT*	actual_temperature	Contains the temperature value after returning from a call

Returns

0 if successful; other value if there was an error

Visual C++ example

```
SHORT actual_temp;
lres = m_PlateLoc.GetActualTemperature
(&actual_temp);
```

Visual Basic 6 example

```
DIM Actual_temp as INTEGER
lres = PlateLoc1.GetActualTemperature Actual_temp
```

GetCycleCount

```
LONG GetCycleCount(LONG* cycle_count)
```

Description

Retrieves the number of seal cycles that have been performed.

Parameters

Argument Type	Argument Name	Range	Description
LONG*	cycle_count	0	Stores the number of seal cycles after returning from the call

Returns

0 if successful; other value if there was an error

Visual C++ example

```
LONG cycle_count;
lres = m_PlateLoc.GetCycleCount(&cycle_count);
```

Visual Basic 6 example

```
DIM cycle_count as INTEGER
lres = PlateLoc1.GetCycleCount cycle_count
```

GetFirmwareVersion

```
BSTR GetFirmwareVersion(void)
```

Description

Retrieves the firmware version of the device.

Parameters

None

Returns

A firmware string

Visual C++ example

```
str = m_PlateLoc.GetFirmwareVersion();
```

Visual Basic 6 example

```
str = PlateLoc1.GetFirmwareVersion
```

GetLastError

```
BSTR GetLastError(void)
```

Description

Returns the last known error condition.

Parameters

None

Returns

An error string

Visual C++ example

```
str = m_PlateLoc.GetLastError();
```

Visual Basic 6 example

```
str = PlateLoc1.GetLastError
```

GetSealingTemperature

```
LONG GetActualTemperature(SHORT* sealing_temperature)
```

Description

Retrieves the current desired sealing temperature (°C) entered by the user.

Parameters

Argument Type	Argument Name	Description
SHORT*	sealing_temperature	Gets the user-defined sealing temperature (°C)

Returns

0 if successful; other value if there was an error

Visual C++ example

```
SHORT sealing_temp;
lres = m_PlateLoc.GetSealingTemperature
(&sealing_temp);
```

Visual Basic 6 example

```
DIM sealing_temp as INTEGER
lres = PlateLoc1.GetSealingTemperature sealing_temp
```

GetSealingTime

```
LONG GetSealingTime(DOUBLE* sealing_time)
```

Description

Retrieves the current desired seal-cycle duration entered by the user.

Parameters

Argument Type	Argument Name	Description
DOUBLE*	sealing_time	Returns the user-defined seal-cycle duration

Returns

0 if successful; other value if there was an error

Visual C++ example

```
DOUBLE sealing_time;
lres = m_PlateLoc.GetSealingTime(&sealing_time);
```

Visual Basic 6 example

```
DIM sealing_time as DOUBLE
lres = PlateLoc1.GetSealingTime sealing_time
```

GetVersion

```
BSTR GetVersion(void)
```

Description

Retrieves the PlateLoc ActiveX Control version number.

Parameters

None

Returns

A version string

Visual C++ example

```
str = m_PlateLoc.GetVersion();
```

Visual Basic 6 example

```
str = PlateLoc1.GetVersion
```

Ignore

```
LONG Ignore(void)
```

Description

Ignores the previously issued error and moves to the next step in the task. This is not a recommended course of action, as the errors are issued for a reason. However, ignoring some errors can be appropriate if the operator understands the implications.

Parameters

None

Returns

0 if successful; other value if there was an error

Visual C++ example

```
lres = m_PlateLoc.Ignore();
```

Visual Basic 6 example

```
lres = PlateLoc1.Ignore
```

Initialize

```
LONG Initialize(BSTR Profile)
```

Description

Initializes the profile and starts communication with the PlateLoc Sealer using the parameters set in the profile. The profile specifies the serial port used to communicate with the PlateLoc Sealer. The parameters for each profile can be adjusted in the Diagnostics dialog box (by a call to the ShowDiagsDialog method) on the Profiles page. Initialize then sets the initial seal time and temperature for the PlateLoc Sealer and, if in the non-blocking mode, will signal its completion.

Parameters

Argument Type	Argument Name	Range	Description
BSTR	profile name	Valid profile name	The name of the profile to be used for initialization

Returns

0 if successful; other value if there was an error

Visual C++ example

```
// connect via serial, using the com port specified in the profile
lres = m_PlateLoc.Initialize( "plateloc profile");
```

Visual Basic 6 example

```
'connect via serial, using the com port specified in the profile
lres = PlateLoc1.Initialize "plateloc profile"
```

MoveStageIn

```
LONG MoveStageIn(void)
```

Description

Moves the plate stage into the sealing chamber.

Parameters

None

Returns

0 if successful; other value if there was an error

Visual C++ example

```
lres = m_PlateLoc.MoveStageIn();
```

Visual Basic 6 example

```
lres = PlateLoc1.MoveStageIn
```

MoveStageOut

```
LONG MoveStageOut(void)
```

Description

Moves the plate stage out of the sealing chamber.

Parameters

None

Returns

0 if successful; other value if there was an error

Visual C++ example

```
lres = m_PlateLoc.MoveStageOut();
```

Visual Basic 6 example

```
lres = PlateLoc1.MoveStageOut
```

Retry

```
LONG Retry(void)
```

Description

Retries the last action after an error occurred.

Parameters

None

Returns

0 if successful; other value if there was an error

Visual C++ example

```
lres =m_PlateLoc.Retry();
```

Visual Basic 6 example

```
lres = PlateLoc1.Retry
```

SetSealingTemperature

```
LONG SetSealingTemperature(SHORT* sealing_temperature)
```

Description

Sets the sealing temperature of the hot plate to the desired value entered by the user.

Parameters

Argument Type	Argument Name	Range	Description
SHORT*	sealing_temperature	20–235	Returns the user-defined sealing temperature (°C)

Returns

0 if successful; other value if there was an error

Visual C++ example

```
SHORT sealing_temp;
lres = m_PlateLoc.SetSealingTemperature(&sealing_temp);
```

Visual Basic 6 example

```
DIM sealing_temp as INTEGER
lres = PlateLoc1.SetSealingTemperature sealing_temp
```

SetSealingTime

```
LONG SetSealingTime(DOUBLE* sealing_time)
```

Description

Sets the seal-cycle duration (seconds) to the desired value entered by the user.

Parameters

Argument Type	Argument Name	Range	Description
DOUBLE*	sealing_time	0.5–12.0	Returns the user-defined seal-cycle duration (s)

Returns

0 if successful; other value if there was an error

Visual C++ example

```
DOUBLE sealing_time;
lres = m_PlateLoc.SetSealingTime(&sealing_time);
```

Visual Basic 6 example

```
DIM sealing_time as DOUBLE
lres = PlateLoc1.SetSealingTime sealing_time
```

ShowDiagsDialog

```
LONG ShowDiagsDialog (VARIANT_BOOL modal, SHORT
security_level)
```

Description

Displays the Diagnostics dialog that allows the user to troubleshoot and correct problems. This method can be called before Initialize to create a profile.

Parameters

Argument Type	Argument Name	Range	Description
VARIANT_BOOL	modal	1/0	Whether the Diagnostics dialog should be shown modally (1) or non-modally (0)

Argument Type	Argument Name	Range	Description
SHORT	security_level	–1 – 3	The security level that the user has to operate the diagnostics: 0 = Administrator 1 = Technician 2 = Operator 3 = Guest –1 - No access

Returns

0 if successful; other value if there was an error

Visual C++ example

```
lres = m_PlateLoc.ShowDiagsDialog( VARIANT_TRUE, 0);
```

Visual Basic 6 example

```
lres = m_PlateLoc1.ShowDiagsDialog True, 0
```

StartCycle

```
LONG StartCycle(void)
```

Description

Starts a PlateLoc seal cycle.

Parameters

None

Returns

0 if successful; other value if there was an error

Visual C++ example

```
lres = m_PlateLoc.StartCycle();
```

Visual Basic 6 example

```
lres = PlateLoc1.StartCycle
```

StopCycle

```
LONG StopCycle(void)
```

Description

Stops the currently running PlateLoc seal cycle.

Parameters

None

Returns

0 if successful; other value if there was an error

Visual C++ example

```
lres = m_PlateLoc.StopCycle();
```

Visual Basic 6 example

```
lres = PlateLoc1.StopCycle
```

Related topics

For information about...	See...
PlateLoc Sealer ActiveX properties	"Properties" on page 4
PlateLoc Sealer ActiveX events	"Events" on page 16
Overview of the ActiveX controls	"About ActiveX controls" on page 2
Reporting problems	"Reporting problems" on page vii

Events

About events

The events listed in this topic occur only if Blocking is set to false or 0 (non-blocking mode).

ApplySealComplete

```
void ApplySealComplete(void)
```

Description

Occurs when the PlateLoc Sealer completes the sealing process.

Parameters

None

Returns

None

CycleComplete

```
void CycleComplete(void)
```

Description

Occurs when the PlateLoc Sealer successfully completes a non-blocking seal cycle.

Parameters

Name	Type
reserved	LONG

Returns

None

Error

Description

Starts when an error occurs during any PlateLoc Sealer operation or initialization.

Parameters

Name	Type	Description
Number	SHORT	Not used.
Description	BSTR*	Description of the error.
Scode	LONG	Not used.
Source	BSTR	Not used.
HelpFile	BSTR	Not used.
HelpContext	LONG	Not used.
CancelDisplay	VARIANT_BOOL*	Set to VARIANT_TRUE (C++) or True (Visual Basic 6) to disable the stock event handler behavior, which is to display a dialog box with the description in it.

Returns

None

GetActualTemperatureComplete

```
void GetActualTemperatureComplete(SHORT actual_temperature)
```

Description

Occurs when the PlateLoc Sealer successfully retrieves the current actual temperature of the hot plate. Current actual temperature is returned in the actual_temperature parameter in the non-blocking mode.

Parameters

Name	Type	Description
actual_temperature	SHORT	Actual temperature (°C) of the hot plate

Returns

None

GetCycleCountComplete

```
void GetCycleCountComplete(LONG cycle_count)
```

Description

Occurs when the PlateLoc Sealer successfully retrieves the odometer value. The odometer value is returned in the cycle-count parameter in the non-blocking mode.

Parameters

Name	Type	Description
cycle_count	LONG	Odometer value

Returns

None

GetSealingTemperatureComplete

```
void GetSealingTemperatureComplete(SHORT
sealing_temperature)
```

Description

Occurs when the PlateLoc Sealer successfully retrieves the sealing temperature of the hot plate. The sealing temperature is returned in the sealing_temperature parameter in the non-blocking mode.

Parameters

Name	Type	Description
sealing_temperature	SHORT	Hot plate temperature (°C) entered by the user

Returns

None

GetSealingTimeComplete

```
void GetSealingTimeComplete(DOUBLE sealing_time)
```

Description

Occurs when the PlateLoc Sealer successfully retrieves the sealing time. The sealing time is returned in the sealing_time parameter in the non-blocking mode.

Parameters

Name	Type	Description
sealing_time	DOUBLE	Time duration (s) entered by the user

Returns

None

InitializeComplete

```
void InitializeComplete(void)
```

Description

Occurs when the PlateLoc Sealer successfully completes non-blocking initialization. This is necessary because devices without a barcode reader take longer to initialize.

Parameters

None

Returns

None

MoveStageInComplete

```
void MoveStageInComplete(void)
```

Description

Occurs when the PlateLoc Sealer successfully moves the plate stage into the sealing chamber.

Parameters

None

Returns

None

MoveStageOutComplete

```
void MoveStageOutComplete(void)
```

Description

Occurs when the PlateLoc Sealer successfully moves the plate stage out of the sealing chamber.

Parameters

None

Returns

None

SetSealingTemperatureComplete

```
void SetSealingTemperatureComplete(SHORT
sealing_temperature)
```

Description

This event occurs when the PlateLoc Sealer successfully modifies the desired sealing temperature of the hot plate in the non-blocking mode. The new desired sealing temperature is returned in the sealing_temperature parameter.

Parameters

Name	Type	Description
sealing_temperature	SHORT	Hot plate temperature (°C) entered by the user

Returns

None

SetSealingTimeComplete

```
void SetSealingTimeComplete(DOUBLE sealing_time)
```

Description

This event occurs when the PlateLoc successfully modifies the desired sealing time duration in the non-blocking mode. The new sealing time duration is returned in the sealing_time parameter.

Parameters

Name	Type	Description
sealing_time	DOUBLE	Time duration (s) entered by the user

Returns

None

Related topics

For information about...	See...
PlateLoc Sealer ActiveX properties	“Properties” on page 4
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