

# System 800xA

## PLC Connect

## Operation

System Version 6.0

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# **System 800xA**

**PLC Connect  
Operation**

**System Version 6.0**

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# About This User Manual

## General



Any security measures described in this User Manual, for example, for user access, password security, network security, firewalls, virus protection, etc., represent possible steps that a user of an 800xA System may want to consider based on a risk assessment for a particular application and installation. This risk assessment, as well as the proper implementation, configuration, installation, operation, administration, and maintenance of all relevant security related equipment, software, and procedures, are the responsibility of the user of the 800xA System.

This user manual describes how to operate PLC Connect functions.

## Document Conventions

Microsoft Windows conventions are normally used for the standard presentation of material when entering text, key sequences, prompts, messages, menu items, screen elements, and so on.

## Warning, Caution, Information, and Tip Icons

This publication includes **Warning**, **Caution**, and **Information** where appropriate to point out safety related or other important information. It also includes **Tip** to point out useful hints to the reader. The corresponding symbols should be interpreted as follows:



Electrical warning icon indicates the presence of a hazard which could result in *electrical shock*.



Warning icon indicates the presence of a hazard which could result in *personal injury*.



Caution icon indicates important information or warning related to the concept discussed in the text. It might indicate the presence of a hazard which could result in *corruption of software or damage to equipment/property*.



Information icon alerts the reader to pertinent facts and conditions.



Tip icon indicates advice on, for example, how to design your project or how to use a certain function

Although **Warning** hazards are related to personal injury, and **Caution** hazards are associated with equipment or property damage, it should be understood that operation of damaged equipment could, under certain operational conditions, result in degraded process performance leading to personal injury or death. Therefore, **fully comply** with all **Warning** and **Caution** notices.

## Terminology

A complete and comprehensive list of Terms is included in the *System 800xA Extended Automation (3BDS100972\*)*. The listing included in Engineering Concepts includes terms and definitions as they that apply to the 800xA system where the usage is different from commonly accepted industry standard definitions and definitions given in standard dictionaries such as *Webster's Dictionary of Computer Terms*.

## Related Documentation

A complete list of all documents applicable to the System 800xA Extended Automation System is provided in *Released User Documents (3BUA000263\*)*. This document lists applicable Release Notes and User Instructions. It is provided in PDF format and is included on the Release Notes/Documentation media provided with your system. Released User Documents are updated with each release and a new file is provided that contains all user documents applicable for that release with



their applicable document number. Whenever a reference to a specific instruction is made, the instruction number is included in the reference.



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# Section 1 Introduction

## Welcome to PLC Connect

PLC Connect is a connectivity option to System 800xA that makes it possible to connect and integrate any type of remote or local installed PLC, RTU or other type of device. The information from the connected unit can be treated in the same way as information from other 800xA System connectivity.

PLC Connect includes the following:

- Object-oriented PLC Server with alarm detection for boolean, integer and real values, data processing and scaling functions. Object types include composite process object types and extended signal types.
- Basic integration of connected PLCs and RTUs.
- Built in protocols for Comli, SattBus, Modbus Serial and Modbus TCP/IP.
- Dialed communication (Option) for Comli and Modbus Serial.
- OPC DA (1.0 and 2.05a) client functionality.
- Upload of OPC server configuration.
- Configuration data stored in Aspect Directory.
- Support for Bulk Data Manager.
- Support for multiple control networks, that is, multiple connectivity servers in separate PCs in one system.
- Support for redundant connectivity servers with PLC/OPC Server communication surveillance.
- Handling of calculated softpoints.
- Open interfaces for calculations, and other client applications.

## **Release Information**

Read the Release Notes for information concerning the specific release of Product\_Name.

---

## Section 2 Process Graphics

Process graphics are used to show a representation of a process, including current states. Via the graphics, it is possible to interact with and control the actual process.

### Warning Levels

The warning levels are shown in [Table 1](#):




If there is more than one warning for a signal, the top priority warning level will be displayed. The same is valid when a summarized warning level is shown for the signals in a process object.

*Table 1. Warning Levels*

Priority	Appearance	Description
1 (Top)	A red square icon with three vertical black bars of varying heights inside, representing a communication error.	Communication error, that is, communication is down between PLC Connect and a connected PLC or OPC server.
2	A yellow square icon with a black question mark inside, representing an uncertain signal status.	The signal status of the value is uncertain. The reason can be, for example: <ul style="list-style-type: none"><li>• Value has not yet been updated from its source.</li><li>• Value has moved outside its configured range.</li></ul>
3	A yellow square icon with a black 'X' inside, representing a disabled signal.	The signal is control disabled.
4	A yellow square icon with a black 'T' inside, representing a forced signal value.	The signal value is forced, that is, it is locked locally in Product_Name.

Table 1. Warning Levels (Continued)

Priority	Appearance	Description
5 (Lowest)		No warning 2 (Invisible, Normal state in run-time when no warning exists)
6		No warning 1 (Used to design-time when no warning exists)

## Configuration of PLC Connect Graphic Elements

This section includes a few examples to illustrate the usage of different PLC Connect Graphic Elements and Controls.

### Creating Graphic Element Aspects

1. Select an object type in the **Object Type Structure** as shown in [Figure 1](#).
2. Right-click and select **New Aspect** from the context menu.
3. Select **Graphic Element PG2** aspect category.
4. Enter a name for the graphic element and click **Create**.

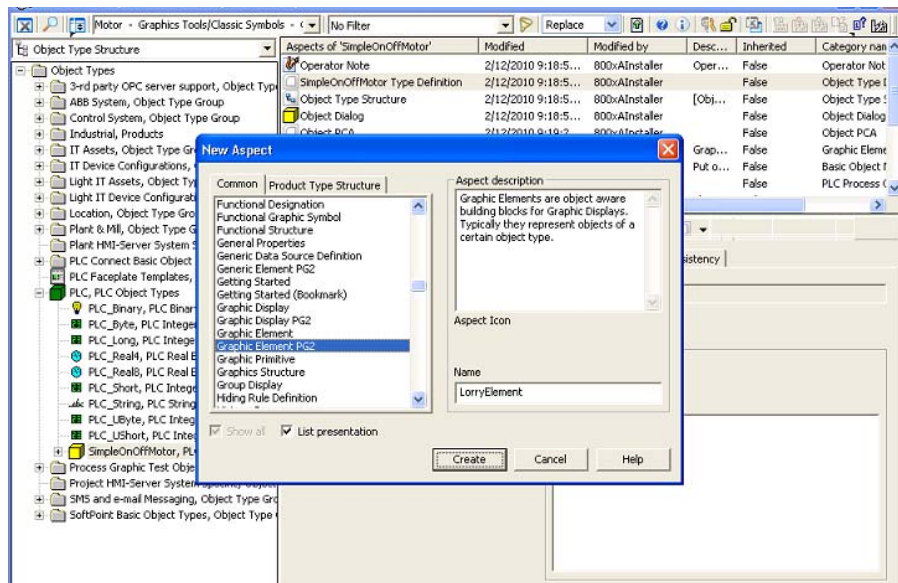


Figure 1. Create Graphic Element Aspect

## Editing a Graphic Element in Graphics Builder

Execute the following steps to add a symbol factory symbol to the graphic aspect.

1. In the **Object Type Structure**, select the *SimpleOnOffMotor* object.
2. Select the newly created graphic element *LorryElement* as shown in [Creating Graphic Element Aspects](#).
3. Right-click this aspect and select **Edit** from the context menu. This opens the Graphics Builder.
4. Drag and drop the **Symbol Factory Symbol (Toolboxes > Special)** into the edit panel of the Graphics Builder.
5. Right-click the symbol and select **Edit** from the context menu as shown in [Figure 2](#).

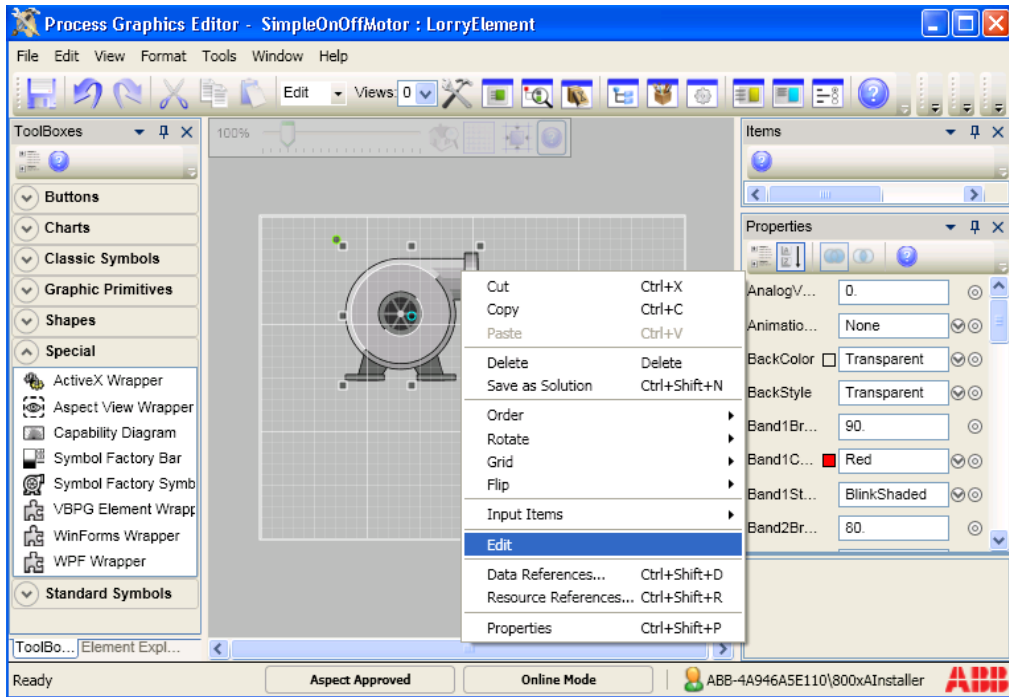


Figure 2. Editing a Symbol Factory Symbol

This displays the **Symbol factory properties** dialog as shown in Figure 3.



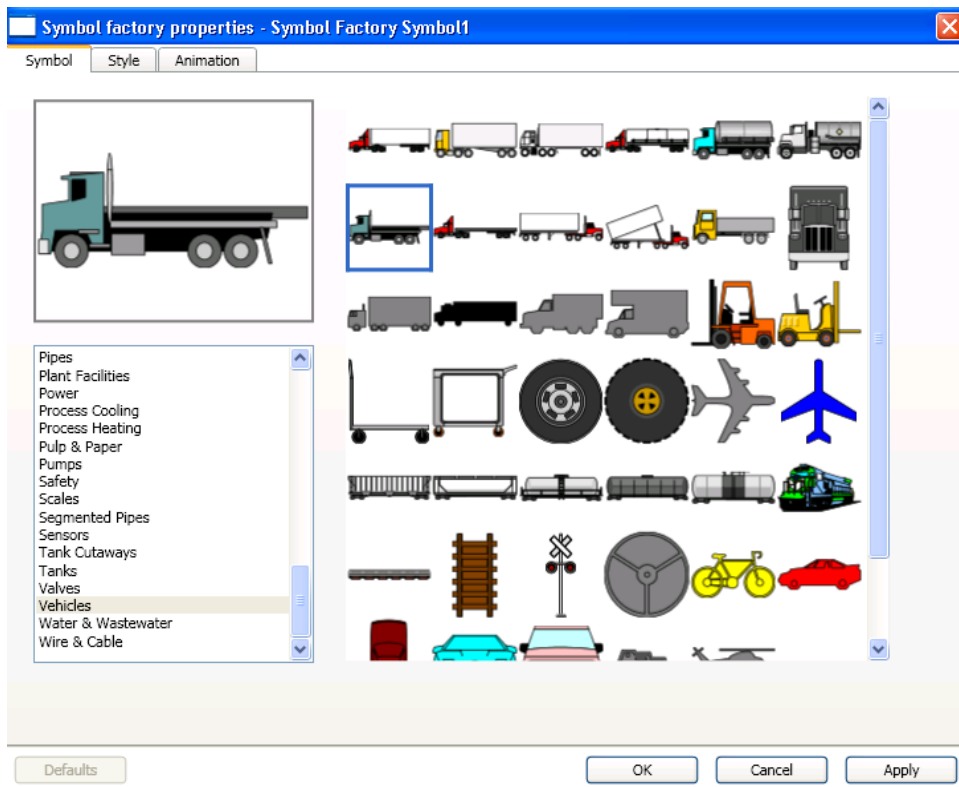


Figure 3. Symbol Factory Properties

6. Select the required symbol. Click **Apply** and then click **OK** to save the changes.
7. In the **Properties** window of this symbol, click  corresponding to the **Visible** property to open the **Expression Editor**.
8. Write the following expression to connect the **Visible** property to the binary process signal. This expression is used to display the symbol only if the signal value is *True*.

```

if Motor_ON:Value then
  True
else
  False

```

For more information on using the Expression Editor, refer to *System 800xA, Engineering, Process Graphics User Guide (3BSE049230\*)*.

9. Click **OK** to save the expression.

### Adding Error Indicator

The ErrorIndicator is used to indicate the quality of subscribed data, when it reaches the limits defined by the OPC. If the ErrorIndicator has any property configured to a dynamic expression value, the runtime mode displays the actual representation. The **DataQuality** property of the ErrorIndicator controls the quality of subscribed data.

Drag and drop the **Error Indicator (Toolboxes > Graphic Primitives)** into the edit panel of the Graphics Builder.

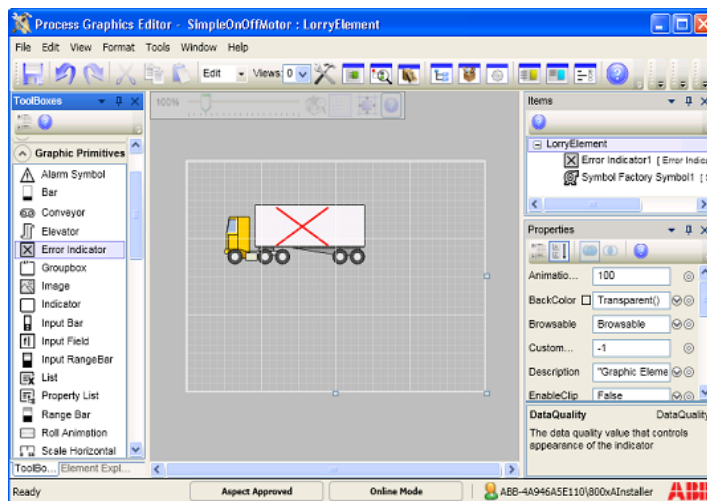


Figure 4. Adding an Error Indicator to the graphic element

10. Write the following expression to connect the **DataQuality** property to the binary process signal. This expression is used to display the data quality based on the signal value.

```
if Motor_ON:LowLimit < 10 then
  Bad
else
  Good
```

For more information on using the Expression Editor, refer to *System 800xA, Engineering, Process Graphics User Guide (3BSE049230\*)*.

11. Click **OK** to save the expression.

## Creating Tank Element

The primitives required for building a tank are available in **Toolboxes > Shapes**. This includes the following primitives:

- **TankBody** - This is used as the body of tank object.
- **TankBottom** - This is used as the bottom of tank object.
- **TankCone** - This is used as the top of tank object.
- **TankNeck** - This is used as the bottom of tank object.
- **TankTop** - This is used as the top of tank object.

Execute the following steps to create a tank element.

1. Open the Graphics Builder. For more information on editing a graphic aspect, refer to [Editing a Graphic Element in Graphics Builder](#).
2. Drag and drop **Tank Body**, **Tank Top**, and **Tank Bottom** primitives (**Toolbox > Shapes**) into the edit panel.
3. Move and resize the primitives as shown in [Figure 5](#).
4. Press **SHIFT** and click **Tank Body**, **Tank Top**, and **Tank Bottom** to select the primitives.
5. Select **Format > Group** to group the primitives.

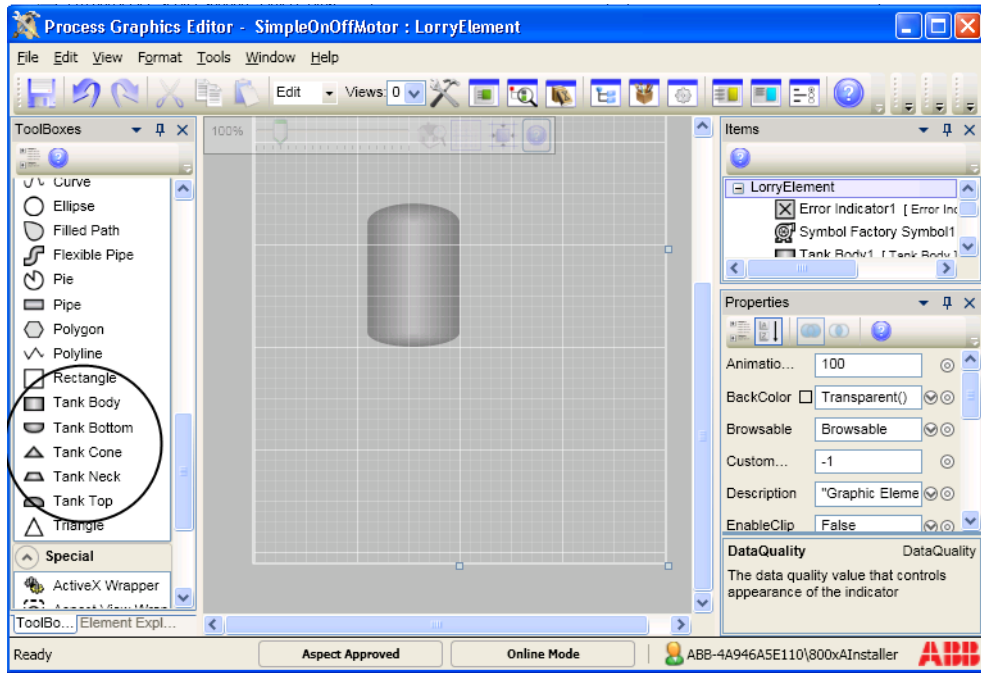


Figure 5. PLC Subelements Tank Element

Use the handles as shown in Figure 6 to resize the tank elements if required. In the **Properties** window, you can also modify the **Height** and **Width** properties to resize the shapes.

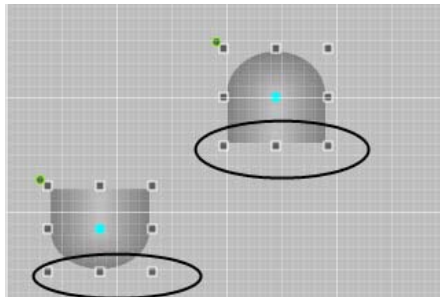


Figure 6. Resizing the tank elements

### Adding a Bar to Tank Element

Drag and drop **Bar** (Toolboxes > Graphic Primitives) into the edit panel of the Graphics Builder.

Place the primitive within the tank element as shown in Figure 7.

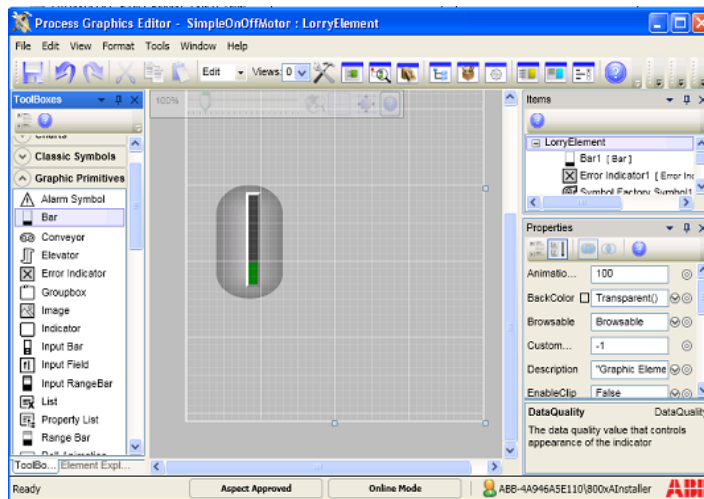



Figure 7. Bar Graph added to Tank Element

### Receiving live data to the Tank Element

1. Select the **Bar** primitive.
2. In the **Properties** window, click  corresponding to the **BarValue** property. This opens the Expression Editor.
3. Write the following expression.

```
Motor_ON:HighLimit
```

The value of the bar will be based on the value of *HighLimit* property of the signal.

### Creating Valve Element

1. In the **Object Type Structure**, select a **Valve** object type from **Plant&Mill > Valves**.
2. Right-click the object type and select **New Aspect** from the context menu.
3. Select **AlarmStatus** aspect category.
4. Click **Create**. The AlarmStatus aspect is required to propagate the alarm information to the object type.



Do not rename the **AlarmStatus** aspect.

5. Right-click this object type and select **New Aspect**.
6. Select **Graphic Element PG2** aspect category.
7. Enter a name for the graphic element (For example, Valve Element) and click **Create**.
8. Right-click the element and select **Edit** from the context menu. This opens the Graphics Builder.
9. Drag and drop the **Valve** primitive (**Toolboxes > Standard Symbols**) and **Alarm Symbol** primitive (**Toolboxes > Graphic Primitives**) into the edit panel of the Graphics Builder.
10. Drag and drop the **Reduced Icon** primitive (**Toolboxes > Standard Symbols**) into the edit panel of the Graphics Builder.

11. In the **Properties** window, set the **OpNote** property to *True* to display the operator message.

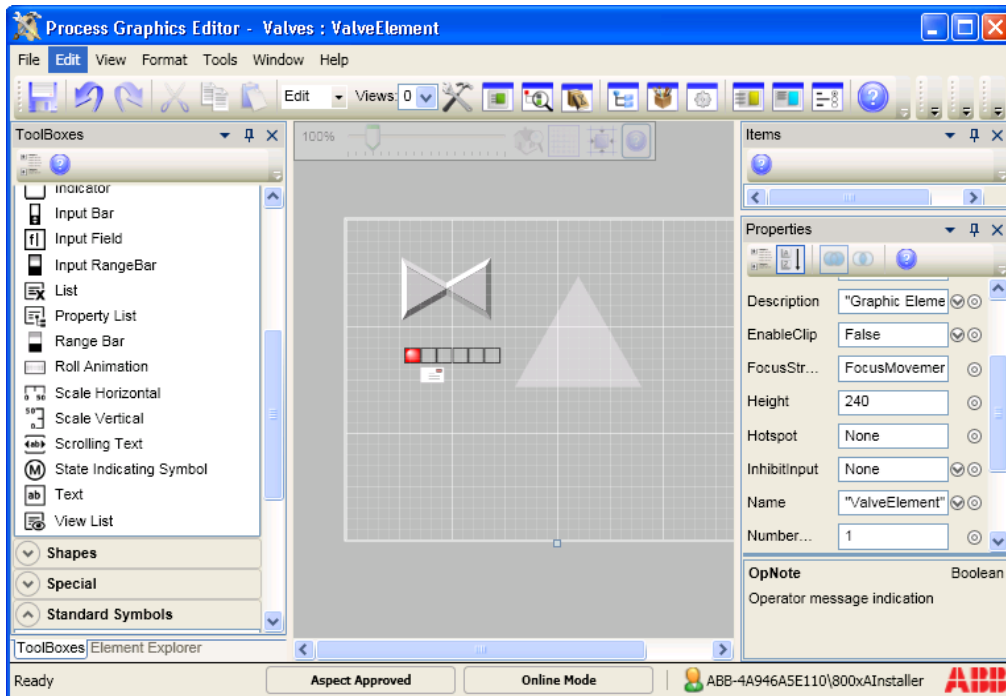



Figure 8. Creating a Valve Element

12. Select the **Valve** primitive.
13. In the **Properties** window, set the **CfgOrientation** to **Vertical** or **Horizontal** to set the direction of the valve.
14. In the **Properties** window, click  corresponding to the **Open** property. This opens the Expression Editor.
15. Write the following expression to connect the **Open** property to the binary process signal. This expression is used to control the opening and closing of this valve.

```
if Motor_ON:HighLimit > 50 then
  True
else
  False
```

16. Click **OK** to save the expression.
17. Select the **AlarmControl** primitive.
18. In the **Properties** window, click  corresponding to the **AlarmState** property. This opens the Expression Editor.
19. Write the following expression to connect the **AlarmState** property to the **AlarmStatus** aspect of the object type.

```
SimpleOnOffMotor:AlarmState
```



For more information on using the Expression Editor, refer to *System 800xA - Engineering, Process Graphics User Guide (3BSE049230\*)*.

20. Click **OK** to save the expression.
21. Select **File > Save** to save the graphic aspect.



Execute the above procedure to configure a motor (**Toolboxes > Classic Symbols**), a three way valve (**Toolboxes > Classic Symbols**) or any other symbol required.

## Adding PLC Connect Graphic Elements to Graphic Displays

1. In the **Functional Structure**, right-click an object and select **New Aspect** from the context menu.
2. Select the **Graphic Display PG2** aspect category.
3. Enter a name for the graphic display (For example, Delivery Overview) and click **Create**.
4. Right-click the graphic display and select **Edit** from the context menu. This opens the Graphics Builder.
5. Select **View > Element Explorer** to open the element explorer.



6. Browse to the required object type and select the PLC Connect Process Object.
7. Double-click the element to add it to the edit panel of the Graphics Builder as shown in [Figure 9](#).
8. Select **File > Save** to save the graphic aspect.

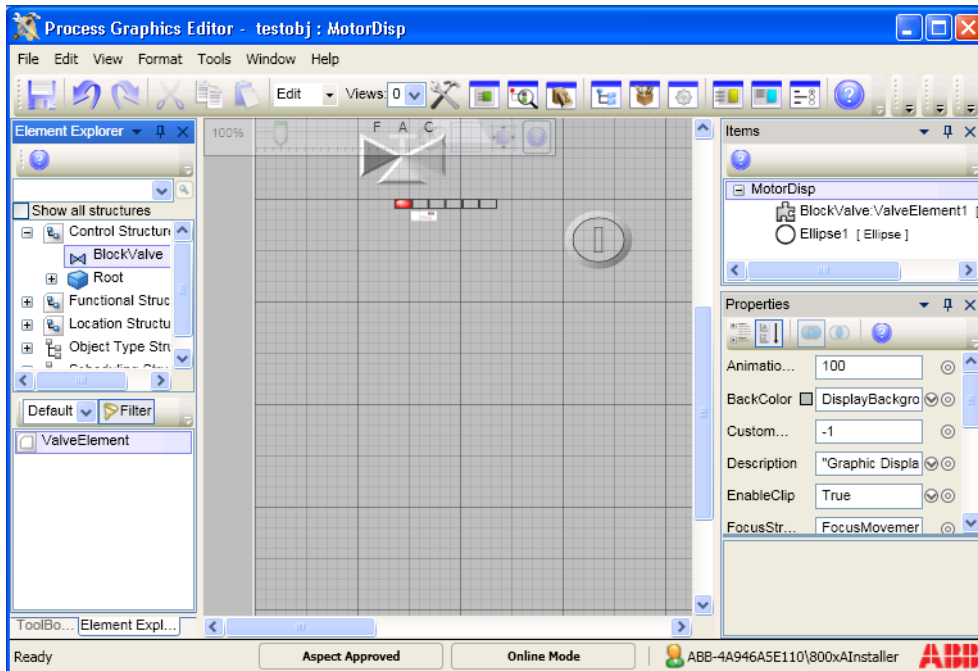


Figure 9. Inserting PLC Connect Element in Graphic Display

## Faceplate

Faceplates are used for monitoring and controlling the process. They are invoked by:

- Clicking on a graphic element placed on a graphic display as shown in [Figure 10](#).

- Right-clicking Faceplate aspect in the Plant Explorer workplace and select one of the required faceplate view from the context menu as shown in [Figure 11](#).

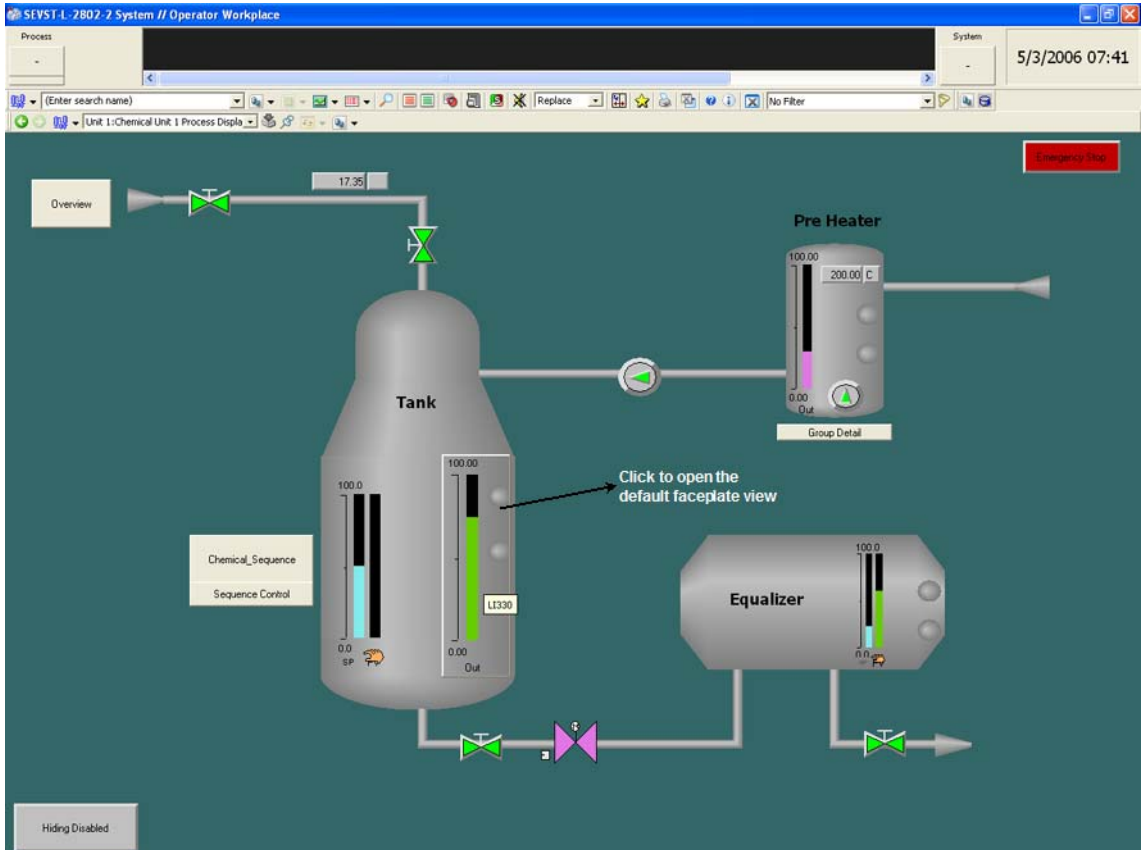


Figure 10. Graphic Display

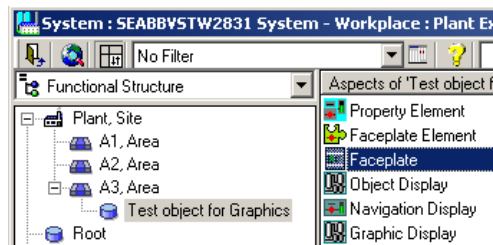


Figure 11. Faceplate aspect available for an object

## User Interface

Faceplate appears as shown in Figure 12.

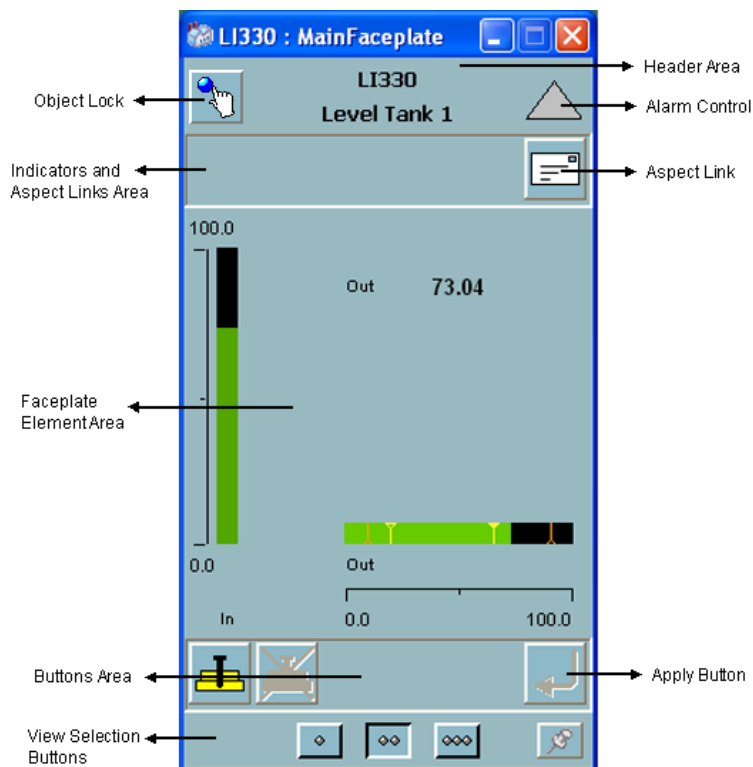


Figure 12. Faceplate view

The visible components of the faceplate interface can be broadly classified into three areas:

- Header Area
- Element Area
- Button Area

Each of these areas contain several operable elements that configure, modify or display aspects of the faceplate.



For more information on Faceplate refer *System 800xA - Engineering, Process Graphics User Guide (3BSE049230\*)*

### Header Area

Header area comprises:

#### Object lock

Object Locking is used in environments where several operator workplaces control the same objects. Only one operator can use the Object Lock function to operate the objects. The **Lock Control** button is optional. The faceplate framework reserves space for it in the header area.

It provides the option to control the function manually or automatically. If Autolock is enabled, the object will be locked after the faceplate is opened. When the faceplate is closed, the Lock Status will revert to unlocked.

If the Object Lock function is controlled manually, you can lock an object by clicking the **Object Lock** button (see [Figure 12](#)). If the lock required option is enabled, all buttons and commands will be disabled till you click **Object Lock** button.

To switch between Autolock and manual lock, change the *FaceplateAutoLockObject* profile value in the *Graphics Profile Values user profile*.

If the object is locked by another operator, operation is not possible until the lock is released. To release an object lock, the operator owning the lock can manually unlock it, or the operator can close the faceplate. The object lock may time out after a default time of four minutes. A privileged user can also break the object lock through the context menu of Lock Control.

### Object Name and Description

This displays the name and description of the object, for example, LI330 - Level Tank 1 (see [Figure 12](#)). Object name and object description is optional because of user profile setting.

### Alarm Control

Alarm Control button indicates the alarm state of the object, and allows acknowledgement of alarms. The alarm control is a graphic element aspect. Alarm Control details are displayed in the header area of the faceplate. Alarm button configuration is done using the AlarmControl aspect.

[Table 2](#) displays the most common alarm indicators.

*Table 2. Alarm Indicators*










Icon	Description
	Alarm is active and acknowledged.
	Alarm is active, but not acknowledged.
	Indicates illegal alarm configuration.
	Alarm is automatically disabled by the system.
	Alarm disabled by a user.
	Alarm is idle, that is there are no alarms.

Table 2. Alarm Indicators (Continued)





Icon	Description
	Alarm is neither active, nor acknowledged.
	Hidden Alarm. A white rectangle covering an alarm symbol, shows that there are hidden alarms for the object.
	Shelved Alarm. A white circle appearing to the right of the alarm symbol shows that there are shelved alarms for the object.

## Configuring Faceplate

Configuration is done using the *Config view*. Only the user having the privileges of an *Application Engineer* is allowed to configure faceplates.



If the faceplate is Inherited, changes can be made only in the object type.

Aspects of 'CP311 Sample'	Modified	Desc...	Inherited	Category name
 Alarm and Event List	2000-11-05 10:5...	Alar...	True	Alarm and Event List
 Circulation Pump Sample Type Ref...	2000-11-05 11:1...	Circul...	False	Circulation Pump Sa...
 Faceplate	2000-11-05 14:3...	Face...	True	Faceplate
 Functional Structure	2001-11-28 14:0...	The ...	False	Functional Structure

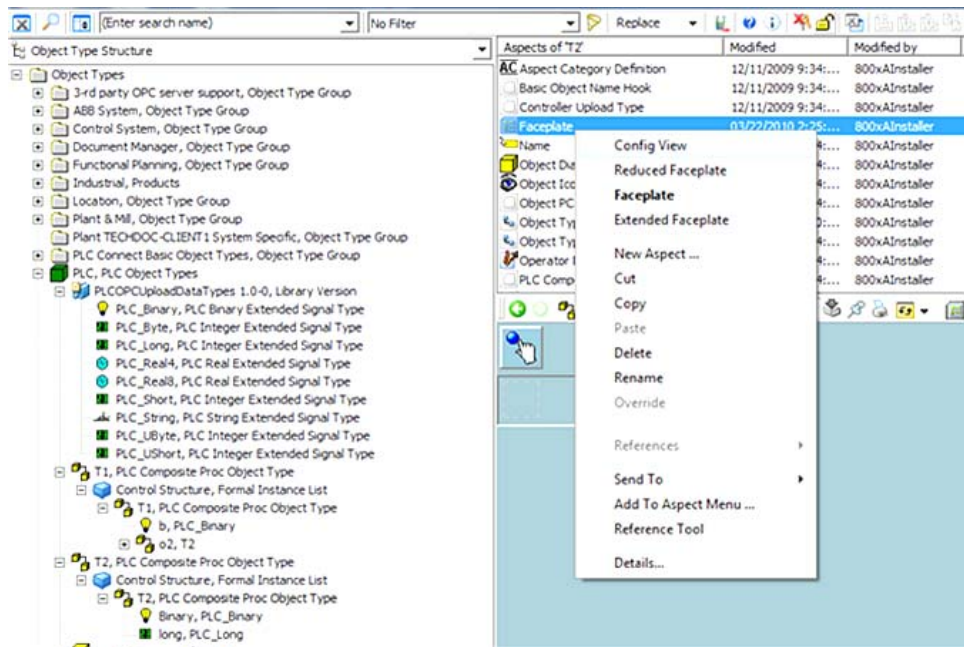


Figure 13. Open Config View

The *Config* view contains the following:

- **Layout Tab** - configuration of the faceplate geometry.
- **Header Tab** - configuration of the object lock control and alarm control.
- **Indicators Tab** - configuration of the Status and Navigation bar.
- **Buttons Tab** - configuration of the Button area.
- **Element Tab** - configuration of the faceplate element area.
- **Online Help Tab** - configuration of the help files.
- Approval or unapproval of faceplates.

## Layout Tab

**Layout** tab contains information on the runtime view that should be displayed and the geometrical layout of the views. The faceplate view is mandatory.



Enable/disable of faceplate views requires a restart of the workplace and Operator Workplace.

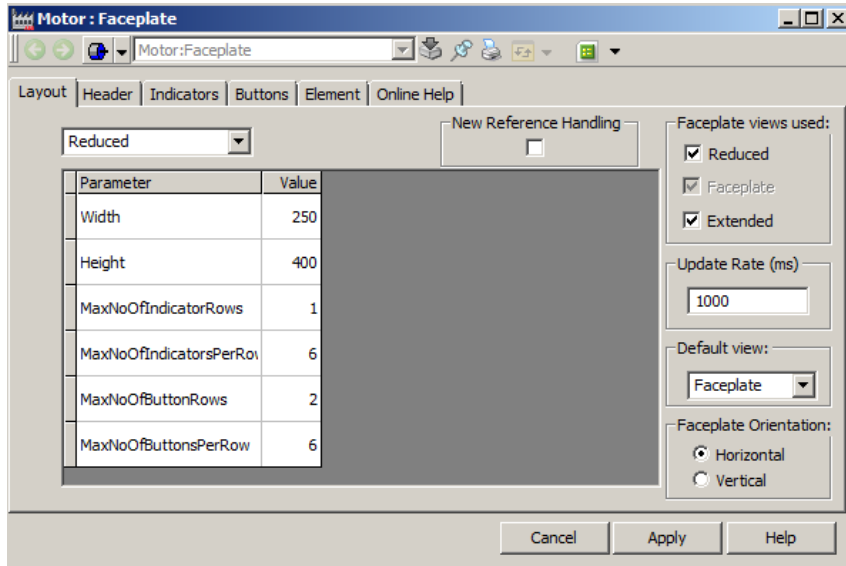


Figure 14. Layout Tab with Default Values

Faceplate view is the default runtime view that is launched when an operator clicks on a graphic element in a graphic display. Once the faceplate is opened this can be changed using the **View selection** buttons.

You can also select the orientation of the faceplate element area.

The default size of the faceplate element aspects are designed using preconfigured values of the faceplate width and height.

Figure 14 shows the configurable parameters in the **Layout** tab.

The update rate for subscribed properties for indicators and buttons are initially set to 1 second. You can configure a new value (in milliseconds) in **Update Rate**.



## Header Tab

**Header** tab is used to configure the settings for Lock button and Alarm button. These configuration settings are also performance related in case of a search required for finding the Alarm Control or Lock Control aspects.

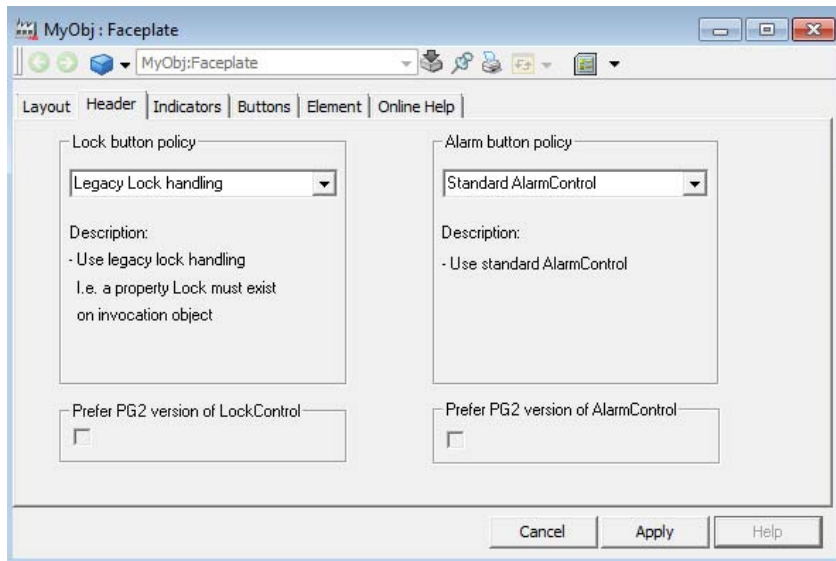


Figure 15. Header Tab

Table 3 describes the fields present in this tab.

Table 3. Header Tab

Field	Description
Lock button policy	This search order is executed sequentially. For example, first the LockControl aspect present on the invocation object is used if it exists. Otherwise, the LOCK property on the invocation object is used if exists, and so on. The Default search order appears by default in the drop-down list.
Lock button policy	Select the following from the drop-down list. Options include: - Override Standard LockControl - Legacy Lock Handling - Standard LockControl - No Lock button
Override Standard LockControl	Uses the LockControl aspect present on invocation object, if it exists.
Legacy Lock Handling	Used if the LOCK property exists on the invocation object.
Standard LockControl	Uses the LockControl aspect in the Graphics Structure > Graphic Tools VB6 > Special.
No Lock button	No lock button is used.
Prefer PG2 version of LockControl	Select to use the PG2 lock control aspect if it exists on the object. This is used only if the object includes both VBPG and PG2 faceplates. This field is enabled when <b>Override Standard LockControl</b> is selected.
Alarm button policy	This search order is executed sequentially. For example, first the AlarmControl aspect present on the invocation object is used if it exists. Otherwise, the no alarm button is used.

Table 3. Header Tab (Continued)

Field	Description
Alarm button policy	Select the following from the drop-down list. Options include: - Override Standard AlarmControl - No Lock button - Standard AlarmControl
Override Standard AlarmControl	Uses the AlarmControl aspect present on the invocation object, if it exists.
No alarm button	No alarm button is used.
Standard AlarmControl	Uses AlarmControl aspect in the Graphics Structure > Graphics Tools > Special.
Prefer PG2 version of AlarmControl	Select this to use the PG2 alarm control aspect if it exists on the object. This is used only if the object includes both VBPG and PG2 faceplates.

## Indicators Tab

**Indicators** tab is used to configure the indicators and aspect links to be displayed in the status and navigation area of the faceplate. You can decide the position to display them, depending on the selected view.

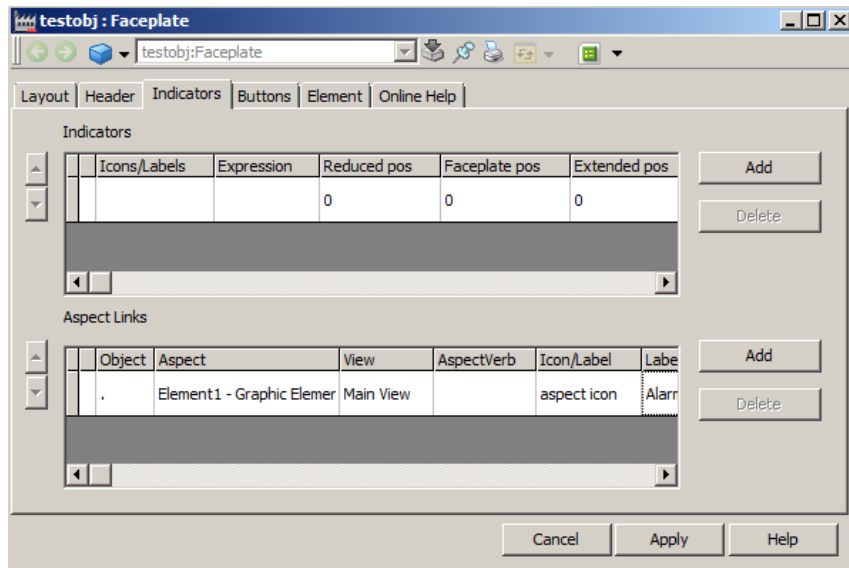


Figure 16. Indicators Tab

**Configuring Indicators**

Table 4 displays the configurable parameters in the **Indicators** tab that affect the Status and Navigation area in the faceplate.

Table 4. Indicators Tab

Parameter	Description
Icons/Labels	Indicates the list of Icons/Labels that represent the result of object properties that are subscribed and specified as expressions.
Expression	Indicates the calculation returning an integer value. The result must be in the range from 0 to number of Icon/Labels configured - 1.

Table 4. Indicators Tab (Continued)

Parameter	Description
Reduced pos	Specify the position of the indicator in the Reduced view. Position starts from 1 and is counted from left to right with increasing numbers. 0 = Not used by this view. The exact position of the indicator depends on <i>No. of indicators per row</i> , and <i>No. of indicator rows</i>
Faceplate pos	Indicates the position within the faceplate view.
Extended pos	Indicates the position within the extended view.

To configure indicators, do the following:

1. Click **Icons/Labels** column. **Labels** dialog box appears as shown in [Figure 17](#).
2. Add the number of icons or labels to be used for each indicator. The values in **Index** is numbered as 0, 1, 2 to N-1.
3. Click the column at the extreme left to select an entire indicator row. You can delete the selected row or order the rows using the spin buttons.

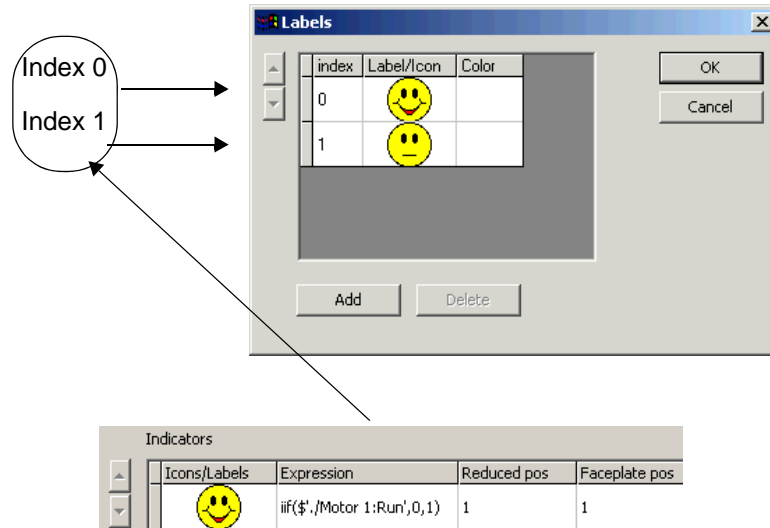


Figure 17. Configuration of Icons/Labels

Indicators are positioned to the left in the **Status** and **Navigation** area.

For example, to configure the first icon/label to be displayed if the value of a property *LIMIT* is below 50, and the second icon/label to be displayed if the value of the same property is above 50, set the expression for the indicator as:

```
iif('$.:Control Connection:LIMIT' < 50,0,1)
```

Figure 18 displays an indicator if the expression for the indicator is wrongly set, or the expression or expression value causes an error condition.



Figure 18. Faceplate with Indicator during an Error Condition

### Configuring Aspect Links

[Table 5](#) displays the configurable parameters for the aspect links. Aspect links are positioned to the right in the **Status** and **Navigation** area. An aspect link is a button used as a shortcut to call up any type of aspect as an overlap window.

*Table 5. Aspect Links*

Parameter	Description
Object	Indicates the object of the aspect to be displayed.
Aspect	Indicates the aspect to be displayed as an overlap window.
View	Indicates the view for the selected aspect. If a view is selected, the link cannot have a verb.
AspectVerb	Indicates the verb connected to the aspect. If a verb is selected the link can have no view.
Icon/Label	Indicates the label, icon or aspect icon to be displayed on the aspect link.
Label color	Indicates the text color used for the label.
Reduced pos	Indicates the position within the Reduced view. Refer <a href="#">Table 4</a> for more information.
Faceplate pos	Indicates the position within the faceplate view.
Extended pos	Indicates the position within the extended view.
FontSize	Indicates the size of the text.

To configure aspect links, do the following:

1. Select **Object** column. **Select Object Dialog** window appears.
2. Select the required object from this screen and click **OK**. If the faceplate is configured in the **Object Type Structure**, you should select only the objects belonging to the same object type.
3. Click **Icon/Label** column, the **Add Label or Icon** screen appears.

4. Select **Use aspect icon** to get the aspect icon as a graphical representation of the button, or select an icon or specify a label to be displayed.

Refer to *System 800xA - Operations, Operator Workplace Configuration (3BSE030322\*)* for more information on Global Verbs.



## Buttons Tab

**Buttons** tab allows you to configure the buttons to be used in the Buttons area of the faceplate. The behavior of the buttons is specified by the **Action** column and the default value is *SystemDefault*.

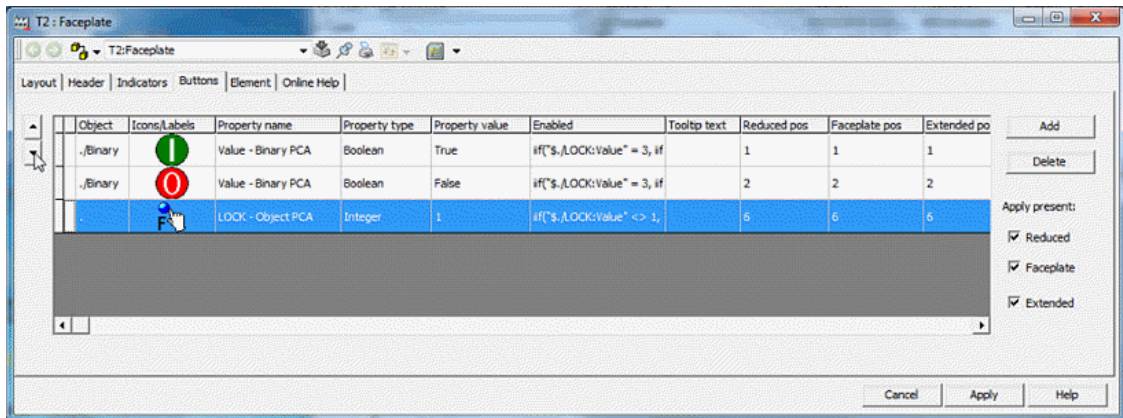



Figure 19. Buttons Tab

Table 6 displays the configurable parameters present in this tab.

Table 6. Buttons Tab

Parameter	Description
Object	Indicates the object of the property to be used, for example, binary.
Icon/Labels	Indicates the label or icon to be used as caption for example,  (stop.icon)
Property name	Indicates the object property to which the value should be written when the button is clicked, for example, Value - Binary PCA
Property type	Indicates the data type of the selected object property (ReadOnly). This field gets populated depending on the Property Name selected.
Property value	Indicates the value to be written to the property while clicking the button, for example, True.
Enabled	Indicates an expression specifying whether the button is enabled, dimmed or invisible. No expression means that the button is always enabled. [0 = dimmed, 1 = enabled, 2 = invisible].  For example, <code>iif("\$./LOCK:Value" = 3, if("\$./Binary:Value:Value, True, False), False)</code>
Tooltip text	Indicates the tooltip to be displayed for the button.
Reduced pos	Indicates the position within the Reduced view. Refer to <a href="#">Table 4</a> for more information.
Faceplate pos	Indicates the position within the faceplate view.
Extended pos	Indicates the position within the extended view.
Action	Sets direct or applied action for the button.

More than one button can have the same position. In this case, only one of the overlapping buttons should be visible (that is, only one button can have the expression value of 1 or 0).

Select **Reduced**, **Faceplate**, or **Extended** in **Apply present**, to activate the Apply button for the different views.



The **Apply** button is always located to the right of the button area and cannot be repositioned.

## Element Tab

**Element** tab is used to configure the faceplate element area. Aspects can be put directly, or can be organized in tab groups.

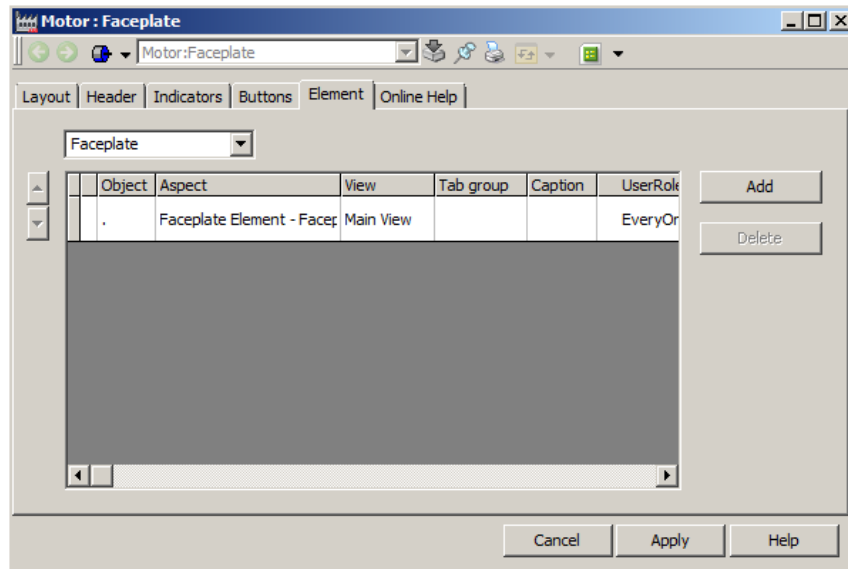


Figure 20. Elements tab

Table 7 describes columns present in this tab.

Table 7. Element Tab

Parameter	Description
Object	Indicates the object of the aspect to be used.
Aspect	Indicates the faceplate element aspect (or other aspect) placed in the faceplate element area.
View	Indicates the aspect view for the selected aspect.
Tab group	Indicates the tab group identity as a string, for example, as a numeric value 0,1, and so on. The group identity is not shown anywhere.
Caption	Indicates the name of the tab.
User Roles	Indicates the user group having access rights for the tab.

To configure faceplate elements, do the following:

1. Faceplate Element aspects are designed to be used here, but any aspect type can be used. A faceplate element aspect has a default size to fit within the faceplate view.
2. Click **Aspect** column to select the aspect to be represented as a tab in the faceplate.

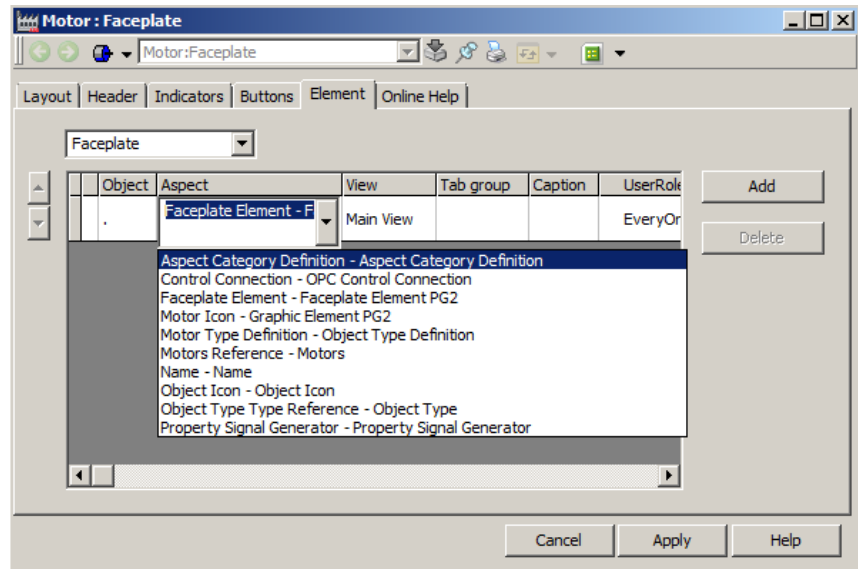


Figure 21. Aspect drop-down menu

3. Select a view to be displayed, in the **View** column.
4. Enter an identifying string representing the identity of a tab group in the **Tab Group** column. A simple number is suitable because the identification string is not visible to any operator. For example, enter 1 for the first tab group, enter 2 for the second and so on. The location of the tabs in a group is defined by the order among them and can be ordered using the spin buttons.

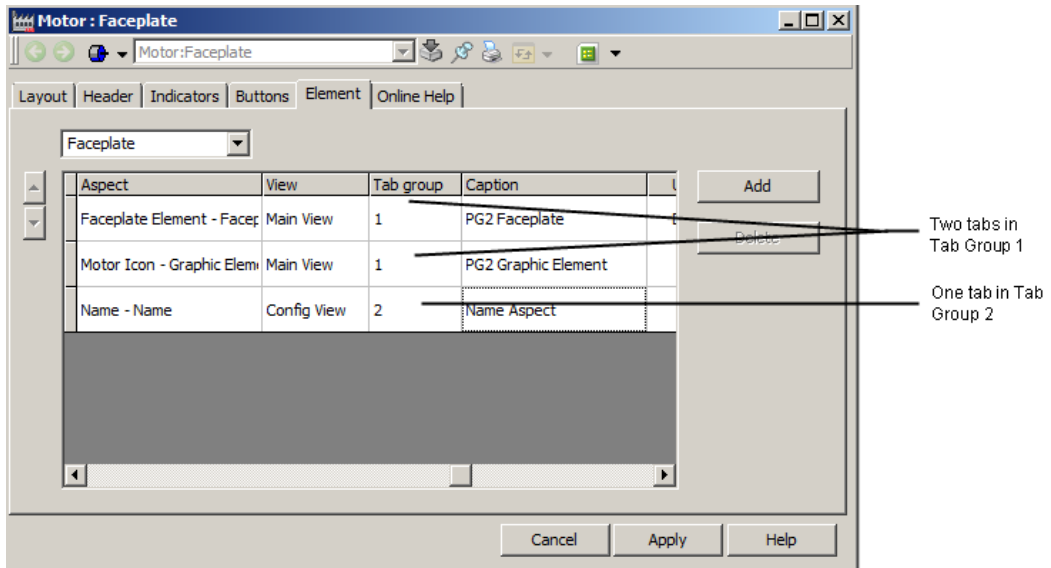


Figure 22. Configuration of Two Tab Groups

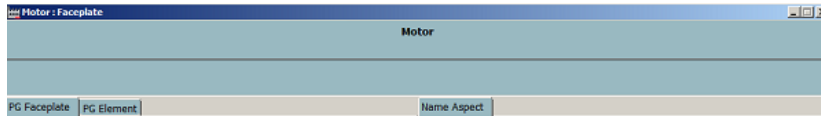


Figure 23. The Two Tabs as Seen in the Faceplate

5. Click **Caption** column. Caption dialog box appears.
6. Type name for the tabs and click **OK**.

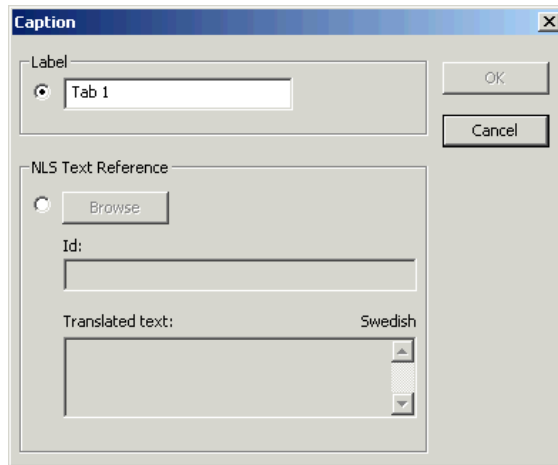


Figure 24. Caption dialog box

- In **User Roles** column, define the user group having the privilege to access the tab. Only the users belonging to the defined group can view the tab.

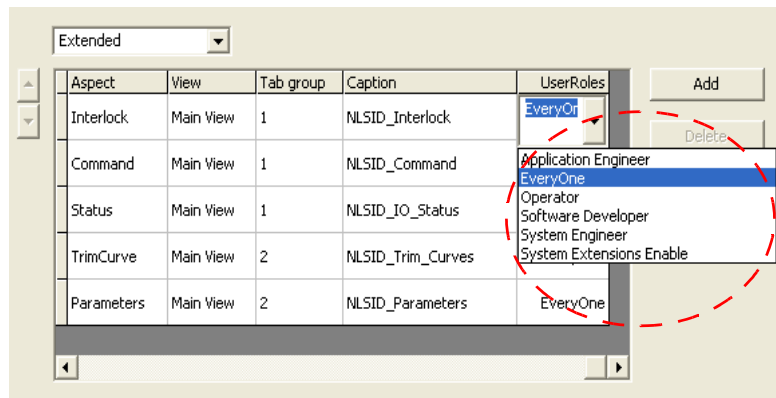


Figure 25. Defining User Role for Faceplate Tabs

## Online Help Tab

**Online Help** tab defines the help text to be displayed on pressing the **F1** key from the faceplate.



---

## Section 3 Alarm and Event Handling

### PLC Connect Specific Alarm and Event Lists

PLC Connect supplies three basic types of alarm and event lists. These lists are filtered lists configured to show a selection of the alarms and events:

- [PLC Alarm List](#)
- [Control Blocked Signals List](#)
- [Forced Signals List](#)



For more information on alarm and event handling, refer to the *System 800xA - System Extended Operation (3BSE036904\*)*.

## PLC Alarm List

This list shows alarms, including alarms disabled by an operator. Figure 26 shows an example.

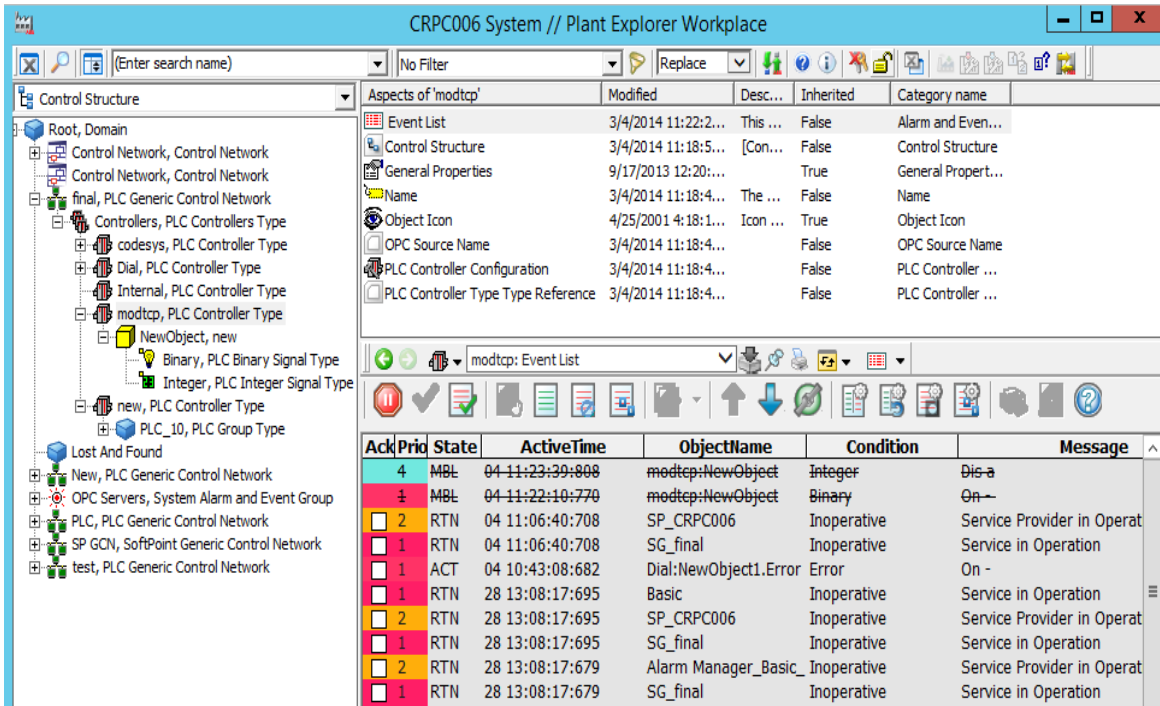


Figure 26. PLC Alarm List with Disabled Alarms

Table 8 describes the columns present in this list.

*Table 8. PLC Alarm List*

<b>Column</b>	<b>Description</b>
Ack	Indicates whether the alarm is acknowledged or not. You can also acknowledge an alarm in this column.
Severity	Indicates the priority of the alarm.
Event Time	Indicates the time when the alarm was generated. If the alarm is disabled, this column displays the time when the alarm was disabled.
Object Name	Indicates the name of the process object and signal.
Condition	Indicates the relative name of the signal. For integer and real signals, the name of the limiter that triggered the alarm is appended.  If the signal's default condition name is overridden with another name then Condition displays the new name instead of relative name.
Message Description	Indicates the event text.
Auto Dis	Indicates whether the alarm is auto disabled or not.
Class	Indicates the class of the alarm

## Control Blocked Signals List

This list shows control blocked signals. These are manually controllable signals that are disabled. The values of a control blocked signal cannot be changed by an

operator. [Figure 27](#) shows an example.

	Event Time	Object Name
1	10/30 08:13:00	AlaObject2-A5
2	10/30 08:08:14	AlaObject2-A1
3	10/30 08:08:14	AlaObject2-A3
4	10/30 08:07:51	AlaObject1-A2
5	10/30 08:07:47	AlaObject1-A1

*Figure 27. List of Control Blocked Signals*

[Table 9](#) describes the columns present in this list.

*Table 9. Control Blocked Signals List*

Column	Description
Event Time	Indicates the time when the control signal was disabled.
Severity	Indicates the name of the process object and signal.

## Forced Signals List

This list shows forced signals. Forced signals are signals whose values are temporarily forced to a certain value, that is, the signal values appear to be constant regardless of the actual process values. [Figure 28](#) shows an example.

	Event Time	Object Name	Current Value
1	10/30 10:27:53	AlaObject2-A9	False
2	10/30 10:27:31	AlaObject2-A4	False
3	10/21 12:51:47	AlaObject1-A2	False
4	10/21 12:46:38	AlaObject1-A1	True

*Figure 28. List of Forced Signals*

Table 10 describes the columns present in this list.

*Table 10. Forced Signals List*

<b>Column</b>	<b>Description</b>
Event Time	Indicates the time when the signal was forced.
Object Name	Indicates the name of the process object and signal.
Current Value	Indicates the value that the signal is forced to.

## Using the Lists

To enable a disabled alarm, enable a control signal, or remove the forcing of a signal value:

1. Right-click the signal row.
2. Select **Enable selected** or **Enable object** from the context menu.



---

## Section 4 Dialed Communication



License information: The dial manager is part of the PLC Connect Dialed communication functionality which requires a separate license to run.

This section describes dialed communication:

- [Dial Panel](#) on page 55 is used to control the communication with a single remote controller.
- [Dial Supervisor](#) on page 58 is used to supervise and control the communication in a whole control network.

### What is Dialed Communication?

Remote controllers can be dialed up and communicated with via Comli or Modbus (Serial), that is, live process data and historic information can be collected to a server. For Comli, time marked events can be collected too. Provided are:

- Manually order calls, with and without a time limit.
- Permanent calls.
- Scheduled (cyclic) calls for collection of historic data.

Incoming connections are also supported, where controllers can call up the server in the case of an alarm and so on.

### Dial Panel

The Dial Panel aspect as shown in [Figure 29](#) is an aspect of Dialed Controller in Control Structure. It contains the basic functions to initiate, monitor and terminate calls to a remote controller.

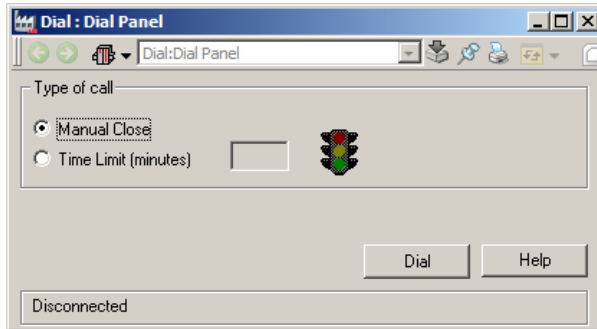


Figure 29. Dial Panel Aspect

To access the aspect:

1. Go to Control Structure and select a dialed controller.
2. In the Aspect List area, select Dial Panel aspect. Use it to initiate, monitor and terminate calls.
3. If desired, repeat above steps for other dialed controller.



There can be aspect links to a Dial Panel aspect in process graphic displays. If present, you can also click such a link to access the aspect.

Table 11 and Table 12 describes the fields and buttons present in this tab.

Table 11. Dial Panel Aspect

Field	Description
Type of call	
Manual Close	Select this type of call to keep the connection open until the call is manually terminated. If an error occurs whereby the connection is terminated, it will remain terminated i.e., the connection will not be automatically re-established.
Time Limit (minutes)	Select this type of call if the connection is to be terminated automatically after a certain amount of time. The call can also be manually disconnected at any time.



Table 12. Dial Panel Aspect - Button

Button	Function
Dial/ Hang up	Dial is labeled when no connection is established. Click to initiate a call Hang up is labeled when connection is established. Click to terminate a call.

## Select the Type of Call

Select the type of call by selecting either:

- Manual Close.
- Time Limit [minutes]. Enter the time limit in minutes in the text box to the right.

## Initiate/Terminate a Call





The button in the Dial Panel will be labeled **Dial** when no connection is established, and **Hang up** when a connection is established:

- When you have selected the type of call, click **Dial** to initiate the call.
- Click **Hang up** to terminate the call.

## View Call Status

A status indication as shown in [Table 13](#) displays the basic status of a manual call, while the status bar of the Dial Panel displays status information for both types of calls, for example: initiating, connected, disconnecting, disconnected, and so on.

*Table 13. Call Status Indication*

Appearance	Description
	The indication is <b>dimmed</b> when no connection is established.
	The indication is <b>red</b> when a connection has failed.
	The indication is <b>yellow</b> when a call is in progress.
	The indication is <b>green</b> when a connection to a controller is established.

## Dial Supervisor

The Dial Supervisor aspect as shown in [Figure 30](#) is an aspect of Generic Control Network in Control Structure. It contains functions to initiate, monitor (supervise) and terminate calls to remote controllers in a specific control network.

To access the aspect:

1. Go to Control Structure and select a relevant Generic Control Network object.
2. In the Aspect List area, select Dial Supervisor aspect as shown in [Figure 30](#).

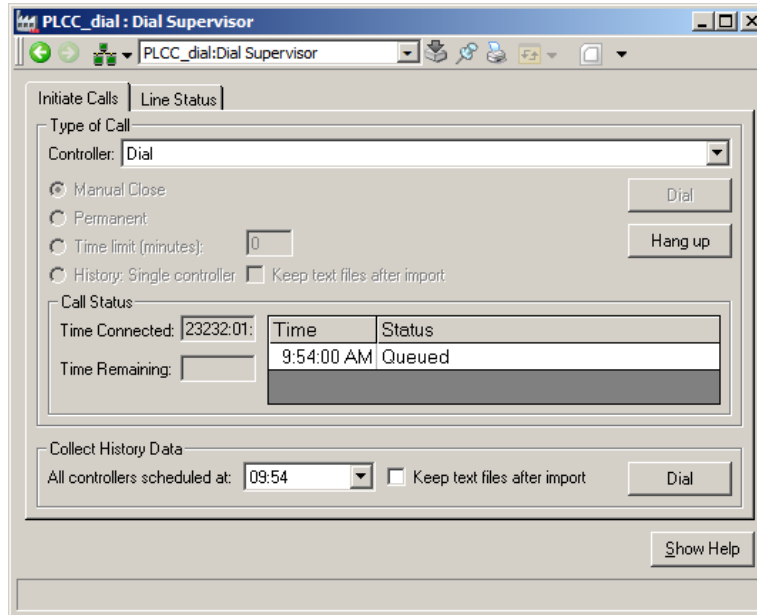


Figure 30. Dial Supervisor Aspect

3. If desired, repeat the above steps for other control network.



There can be aspect links to a Dial Supervisor aspect in process graphic displays. If present, you can also click such a link to access the aspect.

## Initiate Calls Tab

This tab as shown in [Figure 31](#) is used to initiate, monitor and terminate calls to remote controllers.

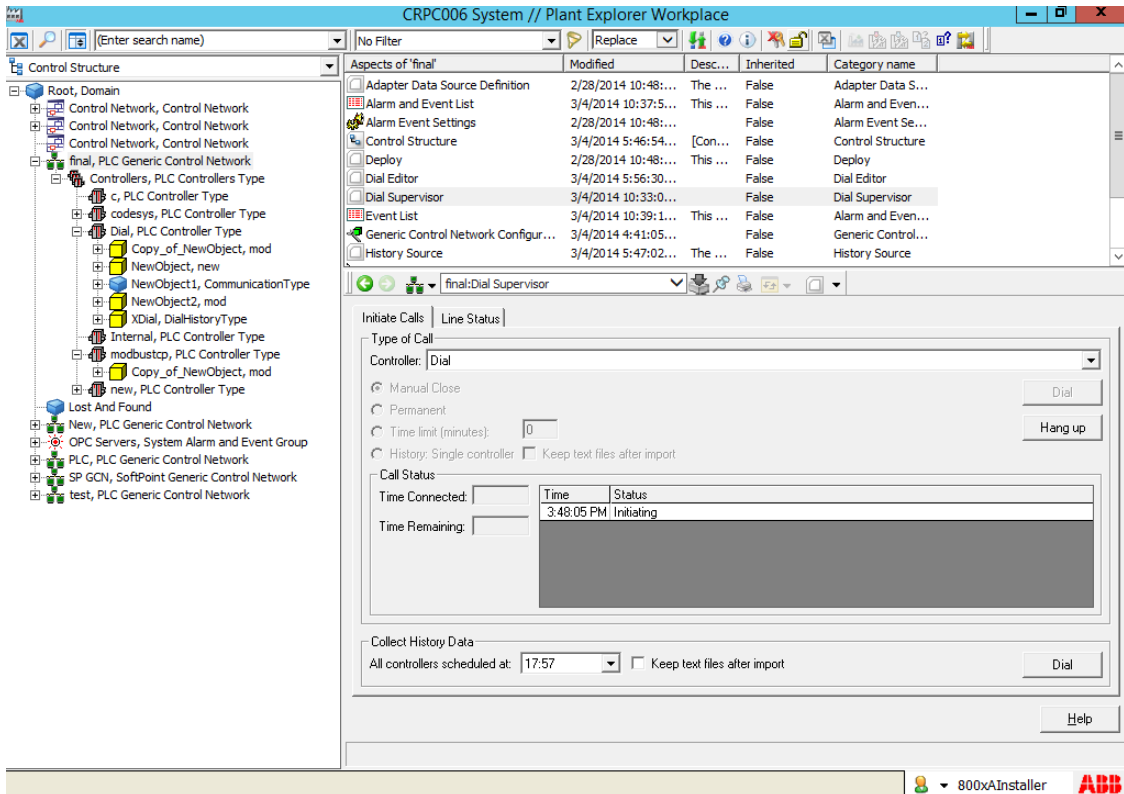


Figure 31. Dial Supervisor aspect - Initiate Calls

Table 14 and Table 15 describes the fields and buttons present in this tab.

Table 14. Initiate Calls

Field	Description
Type of call	
Controller	Select a controller from the drop-down list and select the type of call from the options below.
Manual Close	Select this type of call to keep the connection open until the call is manually terminated. If an error occurs whereby the connection is terminated, it will remain terminated i.e., the connection will not be automatically re-established.
Permanent	Select this type of call to keep the connection open permanently. If an error occurs whereby the connection is terminated, attempts will automatically be made to re-establish the connection. These attempts will continue until the connection is re-established.
Time Limit	Select this type of call if the connection is to be terminated automatically after a certain amount of time. The call can also be manually disconnected at any time. Specify the time limit in minutes.
History: Single Controller	Select this type of call to collect historic data from a single controller. The option to keep text files after import is used for troubleshooting purposes only.
Keep text files after import	Select the check box if you want to retain the text files after import.
Call Status Displays status information when there is an active call to the selected controller.	
Time Connected	Indicates the time (HH:MM:SS) since when the call is active.
Time Remaining	Indicates the time remaining for the call to terminate.
Time Status	Table indicates how the call is progressing.

Table 14. Initiate Calls (Continued)

Field	Description
Collect History Data	
All controllers scheduled at	Select the scheduled call time from the drop-down list. All controllers scheduled to be called at the selected time will be called when the call is initiated.

Table 15. Initiate Calls - Button

Button	Function
Dial (for Type of Call)	Click to initiate call to the selected controller.
Hang Up	Click to terminate an active call to the selected controller.
Dial (for Collect History Data)	Click to initiate the selected cyclic call.

### Cyclic Call

Cyclic calls are used to automatically collect historic data from a number of controllers at scheduled times. For example, at 3 PM the historic data can be scheduled to be collected from controllers A and B, while at 5 PM it can be scheduled to be collected from controllers C and D. Sometimes this collection cannot be done due to errors, for example, if one or more of the controllers scheduled to be called at a certain time are down at the call time. If such an error occurs, you can manually initiate a cyclic call.

In the Collect History Data area, select a scheduled call time from the drop-down list. All controllers scheduled to be called at the selected time will be called when the call is initiated.

The option to keep text files after import is used for troubleshooting purposes only.

### Initiate a Call

When you have specified a call, click the relevant **Dial** button under the Initiate calls tab.

### View Call Status

Under the Initiate calls tab, the Call Status area shows call status information when there is an active call to the controller selected from the Controller drop-down list.

The Time connected box shows the time the call has been active in hours, minutes and seconds, while the Time remaining box shows the time remaining until the call is terminated.

The table to the right shows how the call is proceeding.

Under the Line status tab a table with information on each active call is shown.

### Line Status Tab

This tab as shown in [Figure 33](#) is used to enable, disable, monitor and terminate calls to remote controllers. The Call Status area displays call status information when there is an active call to the controller selected from the **Controller** drop-down list.

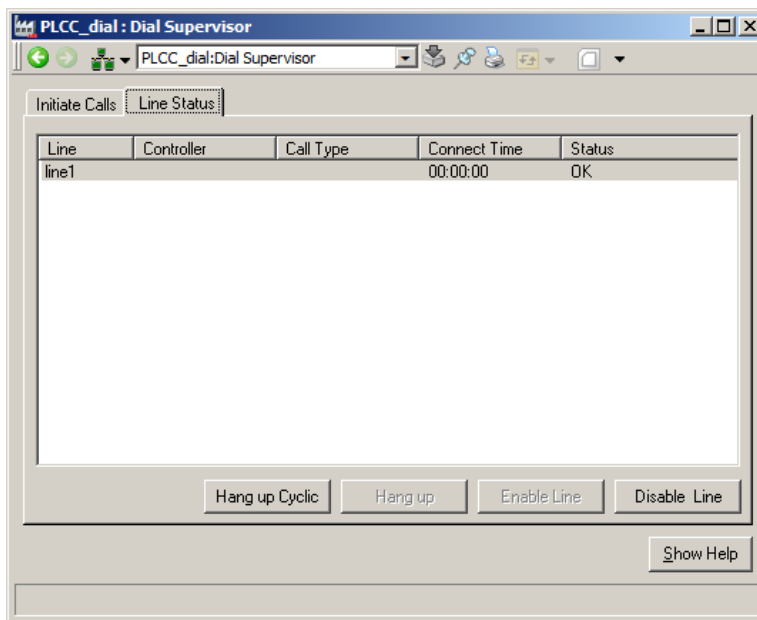


Figure 32. Dial Supervisor aspect - Line Status

Table 16 and Table 17 describes the columns and buttons present in this tab.

Table 16. Line Status

Column	Description
Line	Indicates the line number.
Controller	Indicates the controller selected in Initiate Calls tab.
Call Type	Indicates the call type selected in Initiate Calls tab.
Connect Time	Indicates the time when there is an active call.
Status	Indicates the active call status.

Table 17. Line Status - Buttons

Button	Function
Hang Up Cyclic	Click to terminate a cyclic call i.e., a call for which the Call Type is Cyclic
Hang Up	Click to terminate a normal call.
Disable Line	Click to disable line i.e., to avoid using the line for outgoing calls. For example, when a line behaves badly. Lines can also be disabled by the system.
Enable Line	Click to enable a disabled line.

### Terminate/Disable a Call

Under the Initiate Calls tab, the Call Status area shows call status information when there is an active call to the controller selected from the Controller drop-down list. To terminate that active call, click **Hang up** in the Type of call area.



Under the Line Status tab as shown in [Figure 31](#), a table with information on each active call is listed. Select a connection by selecting its name in the Line column, and:

- Click **Hang up Cyclic** to terminate a cyclic call, that is, a call for which the Call Type column contains the word cyclic.
- Click **Hang up** to terminate a normal call.
- Click **Disable Line** to disable the line, that is, to avoid using the line for outgoing calls, for example, when a line behaves badly. Lines can also be disabled by the system.
- Click **Enable Line** to enable a disabled line.

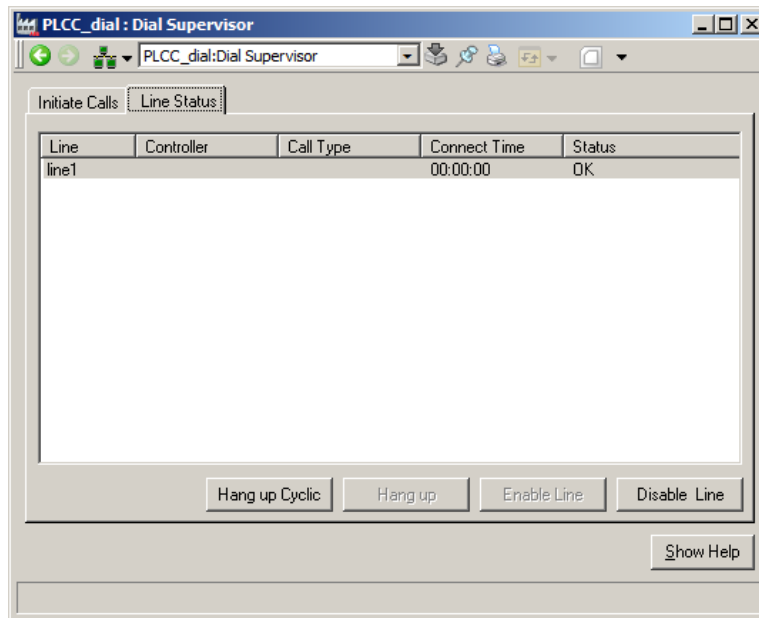


Figure 33. Dial Supervisor aspect - Line Status



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