Part Reference

6

In This Chapter. . . .

Parts

A thorough description of the elements of a part is given in Chapter 3. This chapter provides detailed reference information for parts which operate from a part program (with Operation Parameter *not enabled* and one or more *templates* listed under Operation Parameter). The templates contain variables used by the program.

Numerical Input Displays (Word)
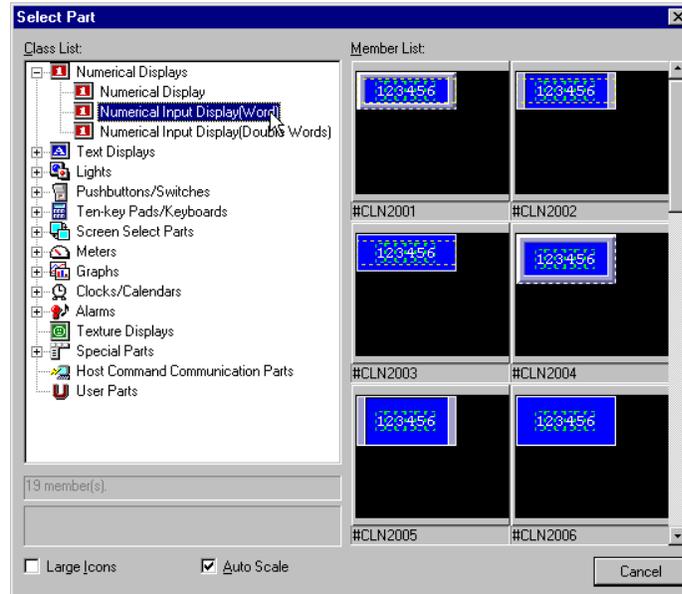
Template 1–8   A Numerical Input Display (Word) part calls a specified ten-key pad allowing the user to input a number to the PLC word address.
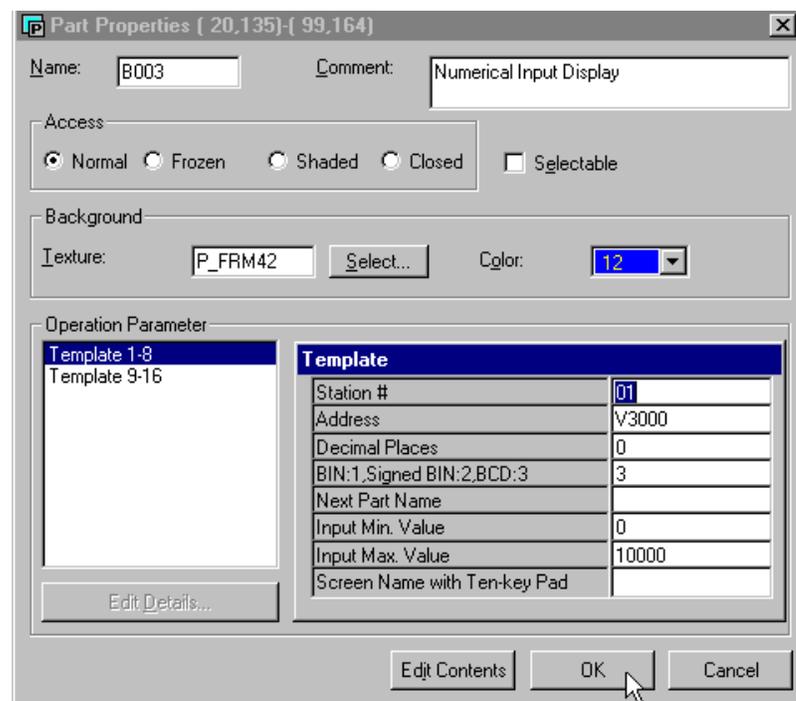
- **Station #**

  is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

- **Address**

  refers to the word address of the PLC of which the control writes to and/or reads from.

- **Decimal Places**

  specifies the number of places to the right of the decimal. The default format is Fixed 2.

- **BIN:1, SignBIN:2, BCD:3 (Data Type)**

  specifies the data type of the PLC address. This must be correct for the panel to display the correct value. Enter 1 for BIN, 2 for SignBIN, and 3 for BCD.

  * BIN is binary, or base 2.

  * SignBIN is signed binary, or base 2 with the 2s complement.

  * BCD is binary-coded decimal.

- **Next Part Name**

  Enter the next part name to which the cursor is to be moved. Leave blank if not needed.

- **Input Min. Value**

  Enter the lower limit value acceptable as input to the display.

- **Input Max. Value**

  Enter the upper limit value acceptable as input to the display.

- **ScreenName with Ten-key Pad**

  Enter the screen name (if one other than the current screen) which has the ten-key pad. See Self screen below.

Template 9–16   When Template 9–16 is selected it appears in place of Template 1–8 above.

Template	
Ten-key Pad Name	
Self-screen:1/Global Screen:None	1

- **Ten-key Pad Name**

  Enter the name of the ten-key pad to be used.

- **Self Screen: 1, Global Screen: None**

  If the ten-key pad is located on the same screen as the Numerical Input Display part itself, enter 1. If it is on the Global Screen, enter nothing. The default is 1.

Numerical Input Displays (Double Word)
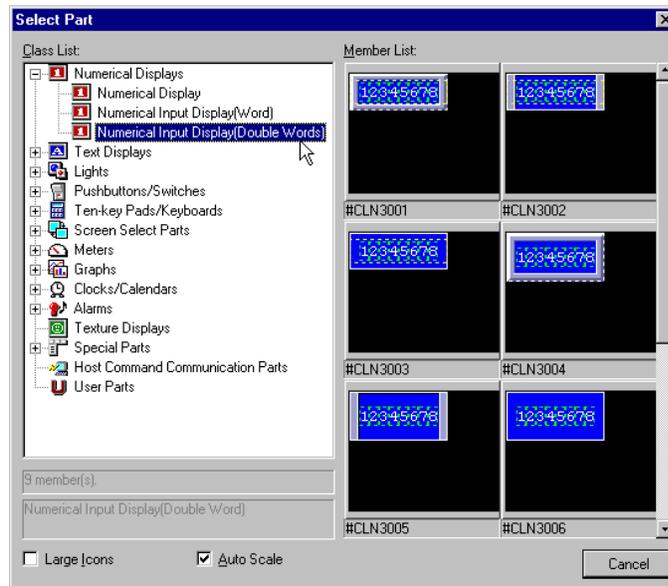
Template 1–8

A Numerical Input Display (Double Word) part calls a specified ten-key pad allowing the user to input a number to the PLC double word address (two consecutive 16 bit words, beginning with the address specified).
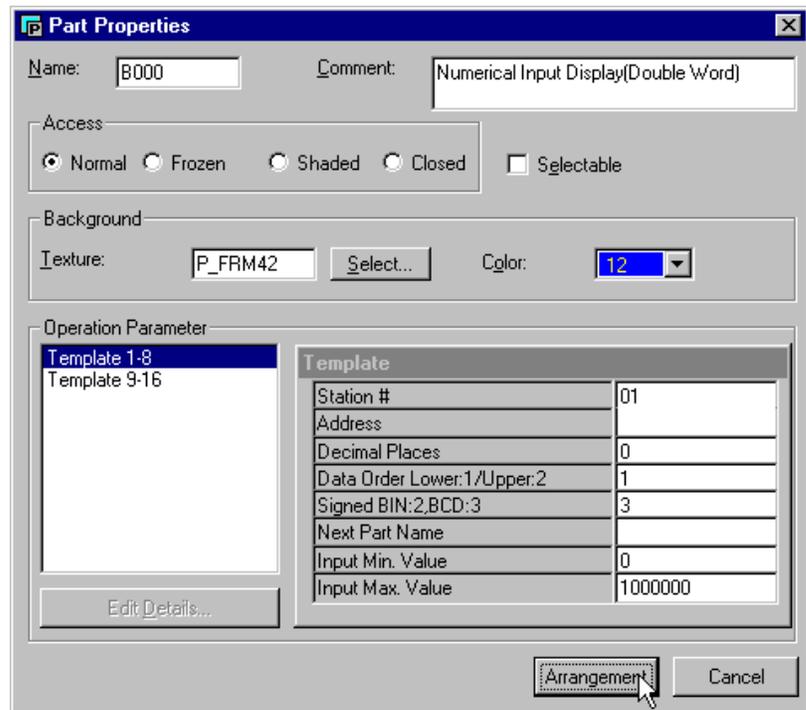
- **Station #**

  is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

- **Address**

  refers to the first word address of the PLC of which the control writes to and/or reads from.

- **Decimal Places**

  specifies the places to the right of the decimal. The default format is Fixed 2 (Use the Test Value feature in the Numerical Display Attributes Tab to see the result.)

- **Data Order**

  specifies the byte order: 1 is for the LSB (Least Significant Byte) first, and 2 is for MSB (Most Significant Byte) first. The default is 1.

- **BIN:1, SignBIN:2, BCD:3 (Data Type)**

  specifies the data type of the PLC address. This must be correct for the panel to communicate with the PLC. Enter 1 for BIN, 2 for SignBIN, and 3 for BCD.

  * BIN is binary, or base 2.

  * SignBIN is signed binary, or base 2 with the 2s complement.

  * BCD is binary-coded decimal.

- **Next Part Name**

  Enter the next part name to which the cursor is to be moved. Leave blank if not needed.

- **Input Min. Value**

  Enter the lower limit value acceptable as input to the display.

- **Input Max. Value**

  Enter the upper limit value acceptable as input to the display.

Template 9–16   When Template 9–16 is selected it appears in place of Template 1–8 above.

Template	
Screen Name with Ten-key Pad	
Ten-key Pad Name	
Self-screen:1/Global Screen:None	1

- **ScreenName with Ten-key Pad**

  Enter the the Global Screen name if it has the ten-key pad. See **Self Screen** below.

- **Ten-key Pad Name**

  Enter the name of the ten-key pad to be used.

- **Self Screen: 1, Global Screen: None**

  If the ten-key pad is located on the same screen as the Numerical Input Display part itself, enter 1. If it is on the Global Screen, enter nothing. The default is 1.

ASCII Text Displays
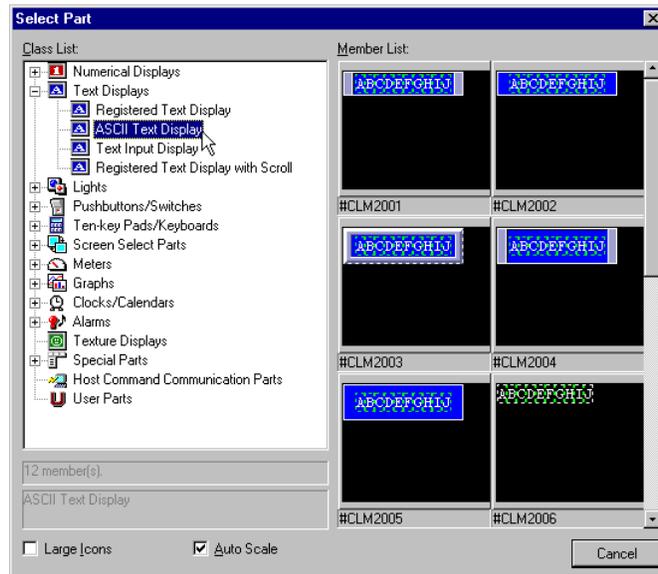
Template 1–8 ASCII Text Display parts display ASCII text as specified below.
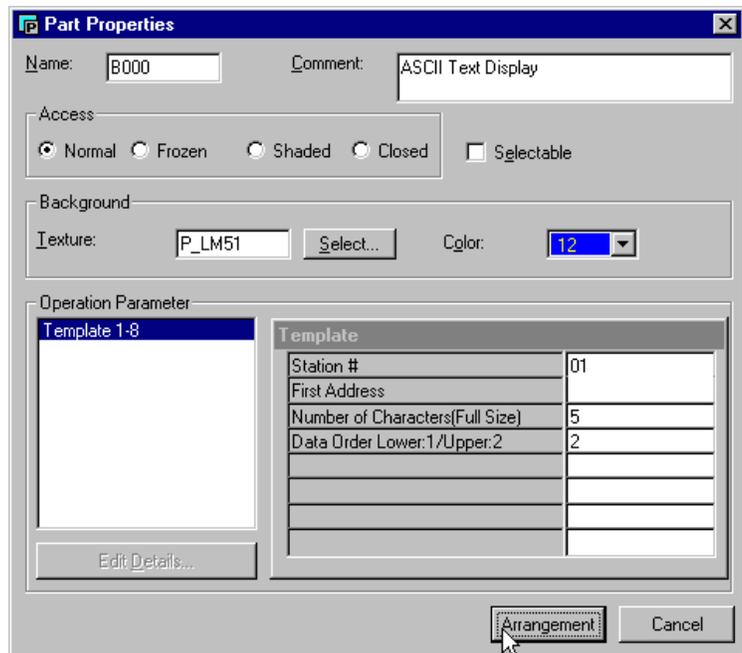
- **Station #**

  is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

- **First Address**

  refers to the word address of the PLC which contains the first of the number of consecutive characters.

- **Number of Characters (Full Size)**

  specifies the number of consecutive word addresses in the PLC which contain the ASCII characters.

- **Data Order**

  specifies the byte order: 1 is for the Lower, or LSB (Least Significant Byte) first, and 2 is for the Upper, or MSB (Most Significant Byte) first. The default is 1.

Text Input Displays

Note: Text Displays display messages from a text table. See Registered Text in the Index.
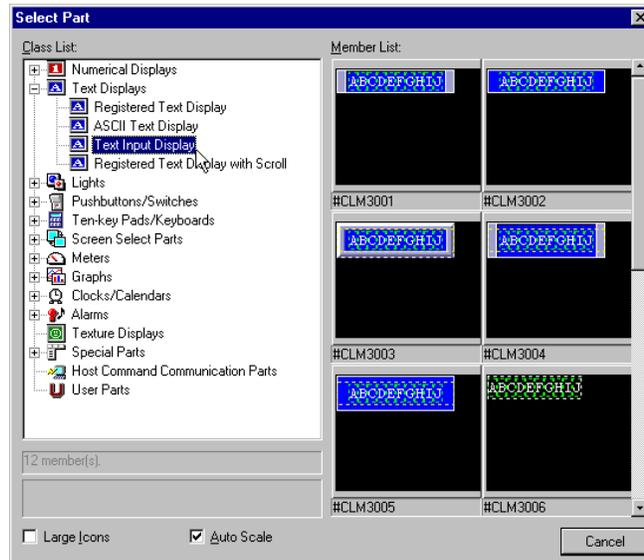
Template 1–8   A Text Input Display part calls a specified keyboard allowing the user to input text to the PLC word address(s).
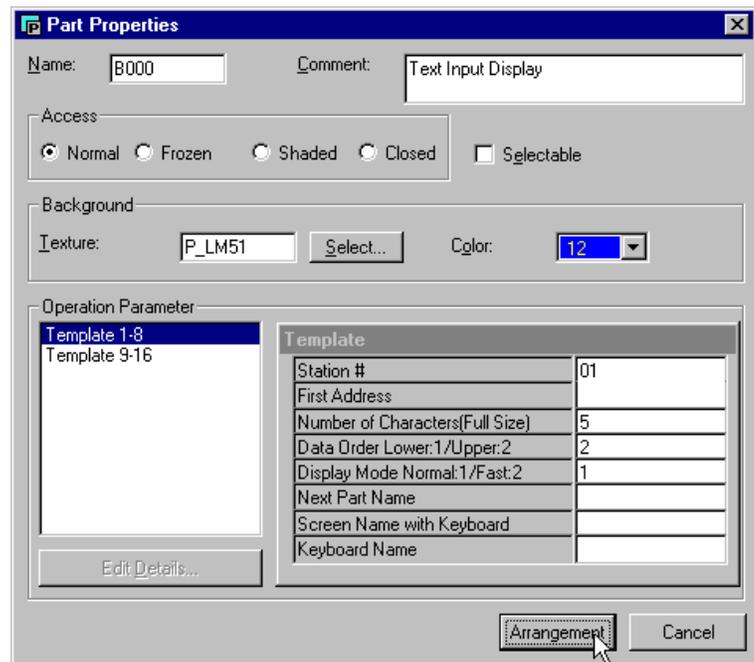
- **Station #**

  is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

- **Address**

  refers to the first word address of the PLC of which the control writes to and/or reads from.

- **Number of Characters (Full Size)**

  specifies the number of consecutive word addresses in the PLC which contain the ASCII characters.

- **Data Order**

  specifies the byte order: 1 is for the LSB (Least Significant Byte) first, and 2 is for MSB (Most Significant Byte) first. The default is 1.

- **Display Mode Normal: 1, Fast: 2**

  specifies the speed of displaying text. Normal (1) confirms the PLC's value before displaying it, much like *Synchronize*, while Fast (2) does not confirm. The default is 1.

- **Next Part Name**

  Enter the next part name to which the cursor is to be moved. Leave blank if not needed.

- **ScreenName with Keyboard**

  Enter the the Global Screen name if it has the keyboard. See **Self Screen** below.

- **Keyboard Name**

  Enter the name of the ten-key pad to be used.

Template 9–16 When Template 9–16 is selected it appears in place of Template 1–8 above.

Template	
Self-screen:1/Global Screen:None	1

- **Self Screen: 1, Global Screen: None**

  If the keyboard is located on the same screen as the Numerical Input Display part itself, enter 1. If it is on the Global Screen, enter nothing. The default is 1.

Registered Text Displays

The Registered Text Display part provides a message display for registered text. **First**, the Registered Text is created using the Project > New Text... menu. **Then,** the Registered Text Display part can be created and placed on a screen. The part itself will display the registered text desired based on either a bit (for bit-level addressing) or the value in a register (word-level addressing).
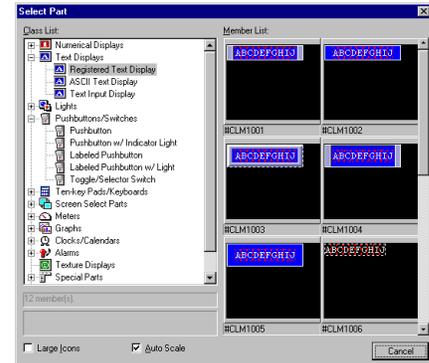
Creating/Editing Registered Text

Follow the steps below to create or edit Registered Text.

Creating or editing Registered Text

Select **Project > New Text...** to open the New Text window.

With the New Text window open, you can begin typing in the new text to be registered. Then click the save tool (floppy disk icon) to save and assign a registration number.

Use the Open tool to open and edit existing registered text, or to view all registered text.

Notice the Open text window initially shows Name in alphabetical order.

Click on the Register Tab, as shown on the right, to list the text by Registration number.
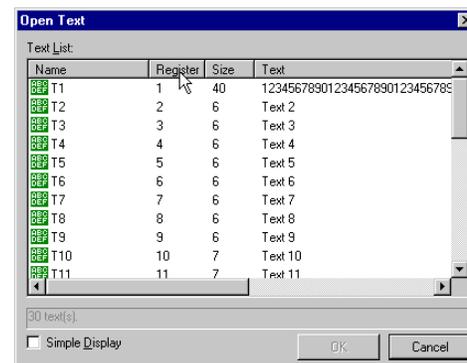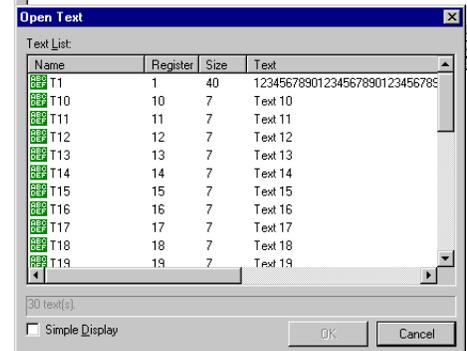
The two ways of addressing in Registered Text Displays

There are two ways to access text in a Registered Text Display. The first is referenced as a PLC bit address (Bit-Level) and the second is as a PLC register or word (Word-Level).

NOTE: The default settings for the Registered Text Display are those for Word-Level Addressing, shown on the right. Continuous Addresses is set to 1 and is not selectable. When a bit address is entered in the Address field, the Continuous Addresses field becomes selectable and the *Text Reg. No. Offset* becomes *Starting Text Reg. No.*
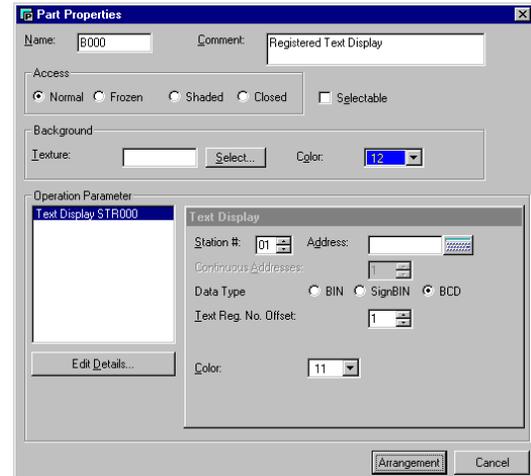
For bit-level addressing, enter the PLC bit address and set Continuous Addresses to the number of bits you need. For example, if you enter C0 as the address and 5 as Continuous Addresses, the display part will monitor bits C0 through C4. But if Continuous Addresses is set to 16, the display part will monitor bits C0 through C7 and C10 through C17 (since there is no C8 or C9 in octal addressing).

Normally, you will enter 1 for the Starting Text Reg. No. **(This refers to the Text displayed when the bit address is OFF.)**
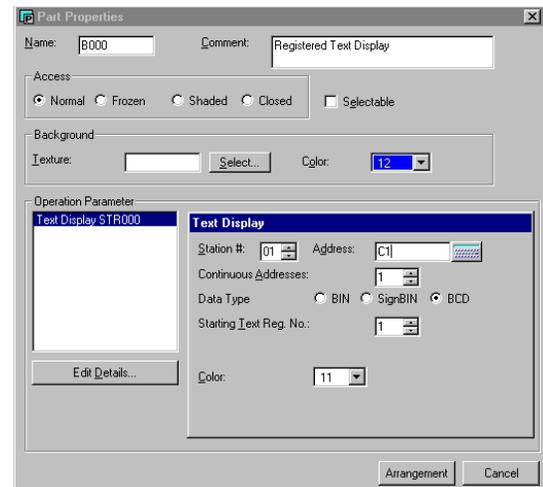
The Starting Text Reg. No. allows you to begin with a higher Registered Text Number. For example, if you set the address to C21 and Starting Text Reg. No. to 21, the Text with Registration number 21 will display when C21 is OFF and the Text with Registration number 22 will display when C21 is ON.

For word-level addressing (V memory with DirectLOGIC PLCs or 16 bit words with Allen–Bradley PLCs), enter the PLC word address, set Data Type to BCD for *Direct*LOGIC and BIN for Allen–Bradley, *and enter 0 for the Text Reg. No. Offset.*

The Text Reg. Offset No. causes the part to display the registered text that equals the value in the PLC register address plus the offset.

For examle, if you wanted Registered Text No. 30 to display when the value 10 is entered in the PLC register, you would set the Offset to 20, since 10 plus 20 is 30.
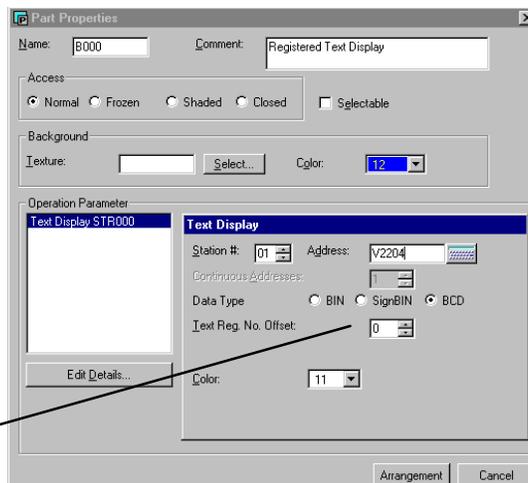
NOTE: To avoid confusion, we recommend leaving the Text Reg. No. Offset as 0 unless it is absolutely necessary to offset the text referenced.

Creating the Registered Text Display for Bit-Level Addressing

After you have created or edited Registered Text, you can create a Registered Text Display part on a screen, which will then display the text based on a bit selected or the value in a register.

Creating a Registered Text Display part on a screen

In this example, we click on the Registered Text Display tool, choose the top right part. Note: any display that is A–J is a ten character display.

Note: It is best to do this example on an existing screen.

Set up the the part as shown for bit–level addressing, **with C1 as the address and 1 as the Starting Text Reg. No.**

Click Arrangement and place the part on the screen.

Next, create two pushbutton parts on the screen, with addresses C1 and C2, so you can enter the number for the Registered Text that you wish to display.

Now, when you press the C1 button on the panel, the Registered Text with Reg. Number 1 is displayed on the Text Display. When you press the C2 button, the Registered Text with Reg. Number 2 is displayed.
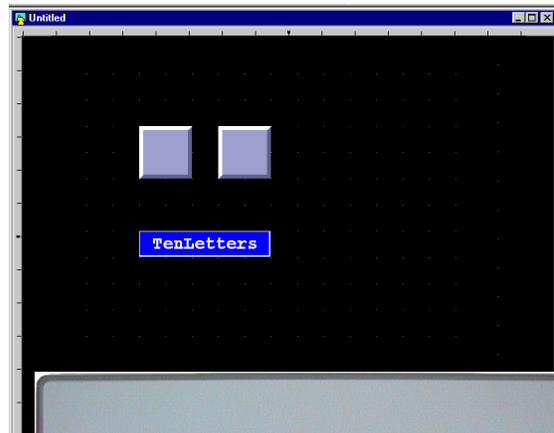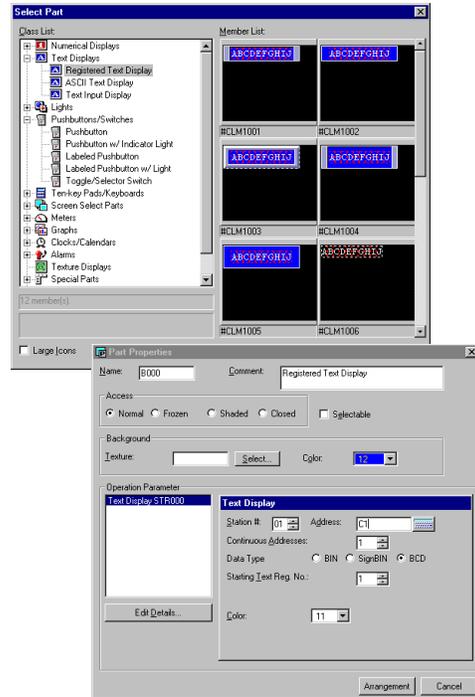
Creating the Registered Text Display for Word-Level Addressing

After you have created or edited Registered Text, you can create a Registered Text Display part on a screen, which will then display the text based on a bit selected or the value in a register.

Creating a Registered Text Display part on a screen

In this example, we click on the Registered Text Display tool, choose the top right part. Note: any display that is A–J is a ten character display.

Note: It is best to do this example on an existing screen.

Set up the the part as shown for word-level addressing, **with the Address set to V2204 and the Text Reg. No. Offset as 0.**

Click Arrangement and place the part on the screen.

Next, create a Numerical Input Display part on the screen and give it the same address, V2204, so you can enter the number for the Registered Text that you wish to display.

See Numerical Input Displays earlier in this chapter for help in setting up the display with a ten key pad, etc.

Now, when you press the Numerical Input part on the panel and enter 1 on the ten key pad, the Registered Text (with Reg. Number 1) is displayed on the Text Display.

Part Reference
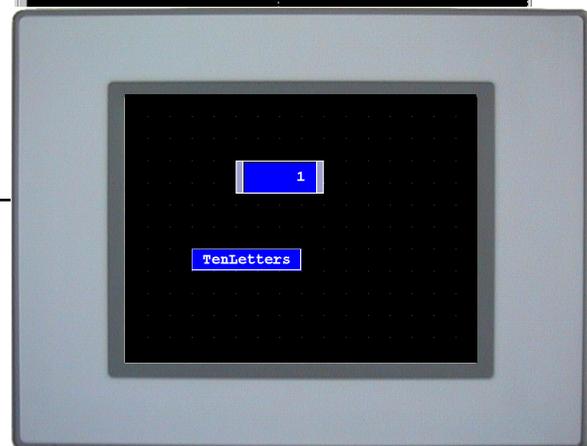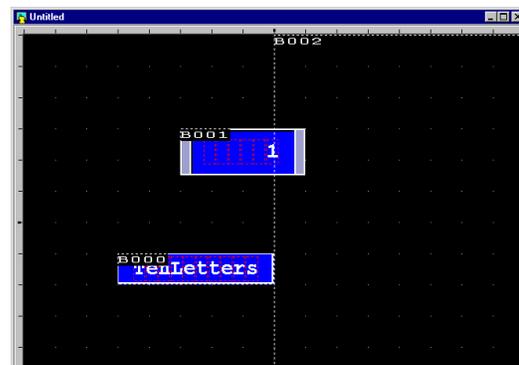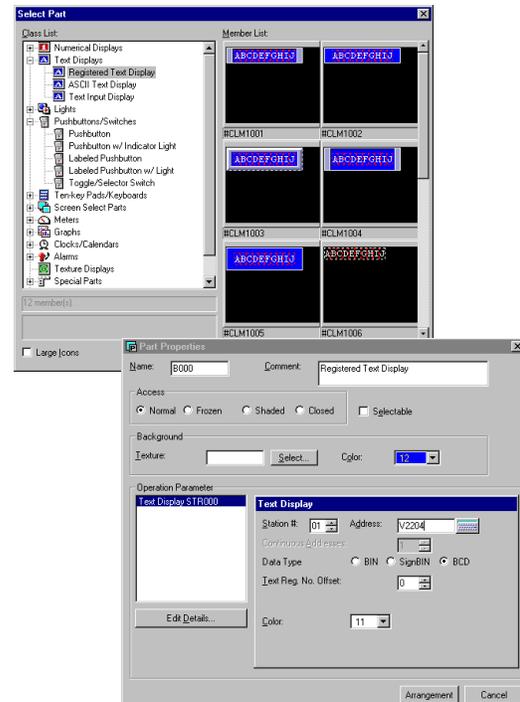
Lights (For Each Bit of a Word Address)
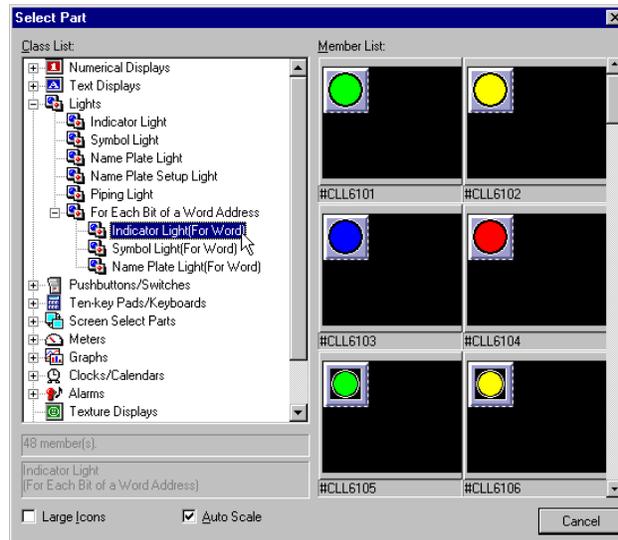
Template 1–8   These lights (whether Indicator, Symbol, or Name Plate) all display the ON/OFF status of the specified bit of the 16 bit word address.

- **Station #**

  is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

- **Address (Word)**

  refers to the word address of the PLC which contains the single bit position, below.

- **Bit Position**

  specifies the status bit (0 to 15). **Note: this part will not work correctly unless the bit is from 0 to 15.**

Toggle Switches

Note: All switches in ScreenCreator are Momentary (not Toggle) as default!

Please change the two pushbutton/switch controls in the Toggle Switch (by editing details/ Browse List from Part Properties).

Each Toggle Switch has one switch for when the bit is ON and one for when the bith is OFF.
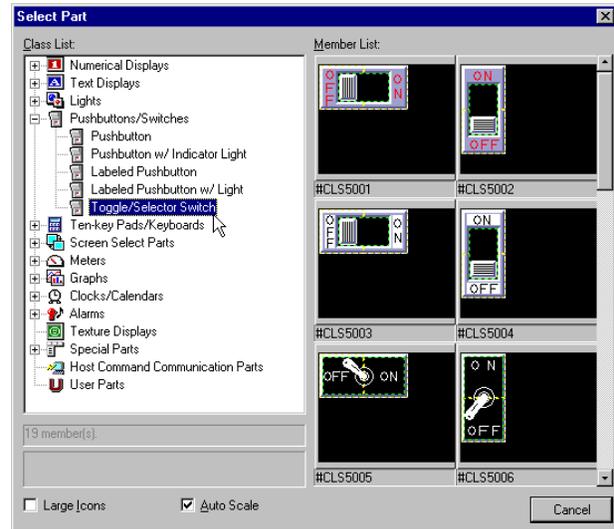
Template 1–8

Toggle Switch parts all have a two-position indicator for ON and OFF, and function just like the other pushbutton w/ light parts.

- **Station #**

  is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

- **Light Address**

  refers to the bit address of the PLC which indicates ON/OFF status.

- **Pushbutton/Switch Address**

  refers to the bit address of the PLC which is turned ON/OFF by touching the switch.

Selector Switch 1 (#CLS5101)

Note: All switches in ScreenCreator are Momentary (not Toggle) as default!
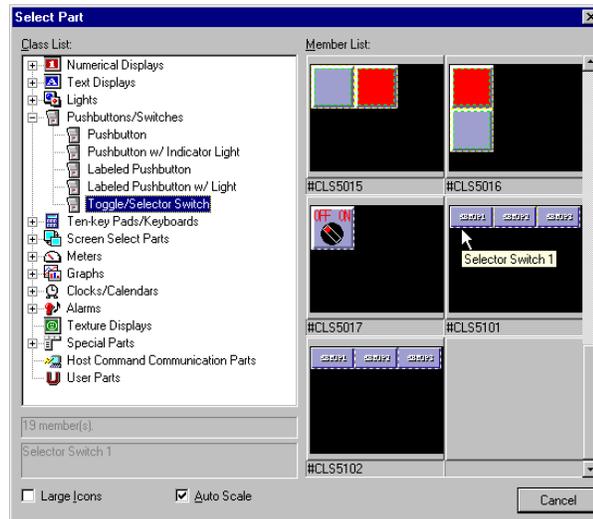
Template 1–8   The Selector Switch 1 has three pushbuttons, of which one, and only one, must be ON. When the first one is pressed (labeled Setup1), a value of 1 is written to the PLC address, when the second (labeled Setup2), a 2, and so on.

If the value of the address is changed by some other means, the switch will indicate the change only if the new value is 1, 2 or 3.

- **Station #**

  is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

- **Pushbutton/Switch Address**

  refers to the word address of the PLC to which a value (of 1,2 or 3) is written by pressing one of the three pushbuttons.

Selector Switch 2 (#CLS5102)
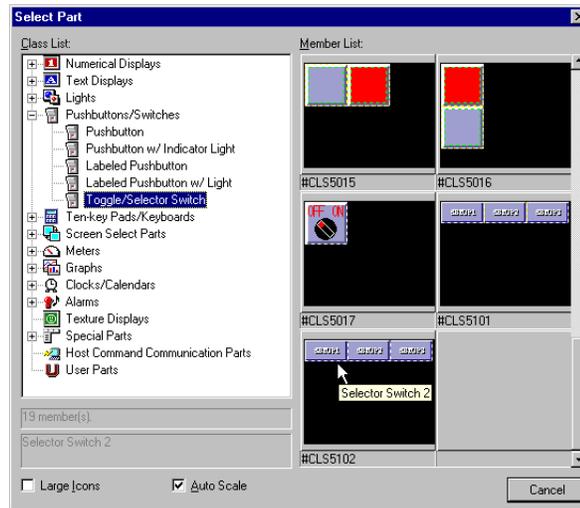
Operation Parameter

The Selector Switch 2 has three pushbuttons, of which only one may be ON at a time. When the first one is pressed (labeled Setup1), a value of 1 is written to the PLC address, when the second (labeled Setup2), a 2, and so on. To turn all buttons OFF, press the one that is ON a second time.

If the value of the address is changed by some other means, the switch will indicate the change only if the new value is 0,1, 2 or 3.
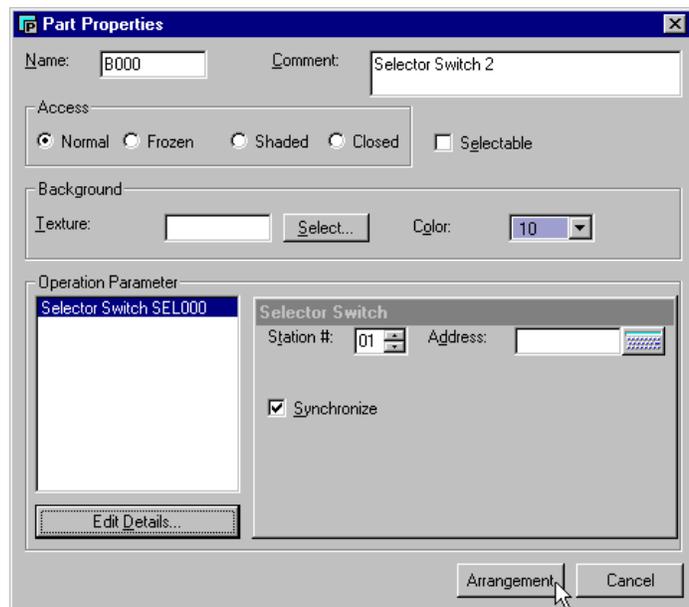
● **Station #**

is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

● **Pushbutton/Switch Address**

refers to the word address of the PLC to which a value (of 0,1,2 or 3) is written by deselecting all or pressing one of the three pushbuttons.

- **Synchronize**

  sets the switch to read from the PLC bit addresses and indicate the status of the bits by the ON or OFF color. If *Synchronize* is disabled, the control simply writes to the bit and indicates the ON or OFF color regardless of the actual state of the bit. (If, for some reason, the bit in the PLC was never changed, the part would not indicate this.) With *Synchronize* enabled, however, the control checks the state of the bit and displays the color accordingly. The difference is really only noticeable when the switch type is Toggle.

Ten-key Pads (For Numerical Input)
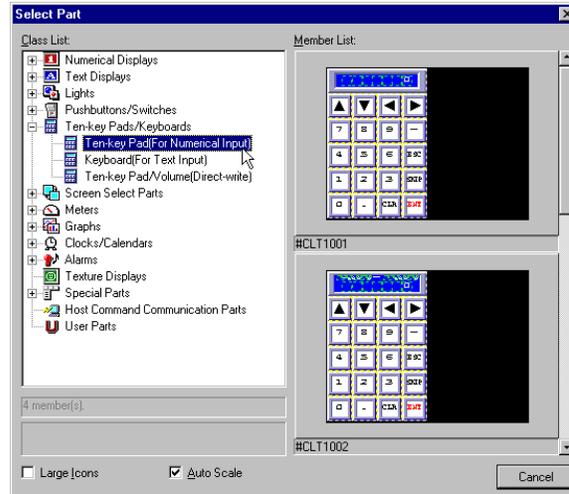
These ten-key pads are called by Numerical Input Display parts for entering a number into the PLC word address of the Numerical Input Display.
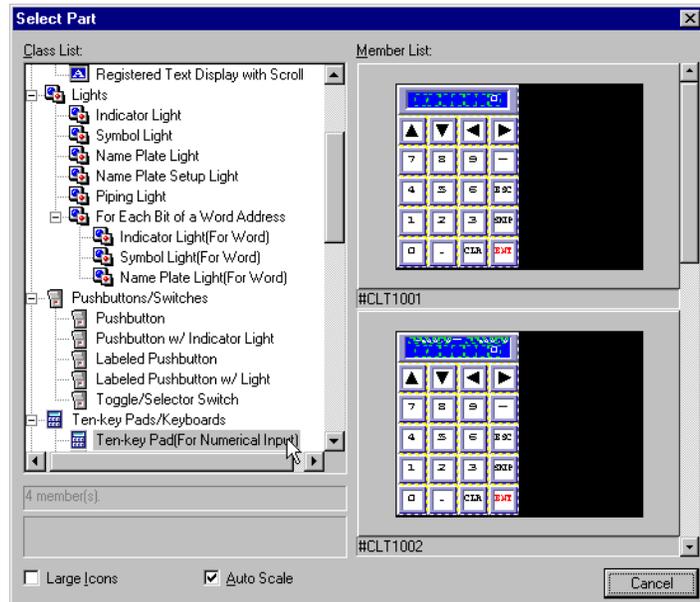
NOTE: Key pads must be Closed and Selectable to be visible only when called by pressing the Numerical Input Display. The same is true for keyboards.

Key Operation

- **ENT** (ENTER) writes the value to the PLC address(es).
- **ESC** (ESCAPE) stops and closes the ten-key pad.
- **CLR** (CLEAR) clears the current value displayed.
- **SKIP** stops input to the current input display part and skips to the next part specified in the current input display part.

Keyboards (For Text Input)
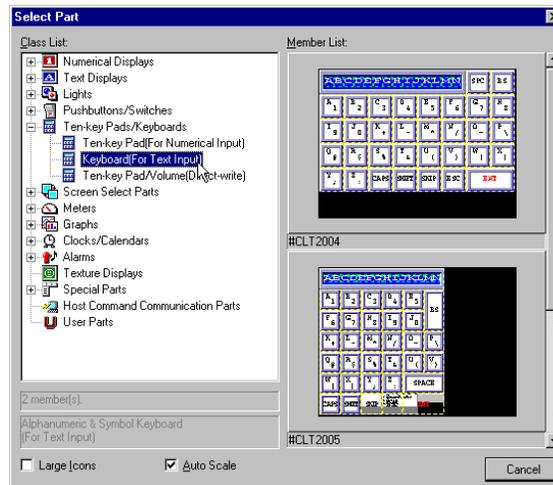
These keyboards are called by Text Input Display parts for entering text into the PLC word address of the Text Input Display. They must be Closed and Selectable to be visible only when called by pressing the Text Input Display.

Key Operation

- **SPC** (SPACE) adds a space to the text.
- **BS** (BACK SPACE) removes the last character or space.
- **CAPS** works like "Caps Lock" on a physical keyboard.
- **SHIFT** causes each key pressed to produce its number or symbol.
- **SKIP** stops input to the current input display part and skips to the next part specified in the current input display part.
- **ESC** (ESCAPE) stops and closes the ten-key pad.
- **ENT** (ENTER) writes the text to the PLC address(es).

NOTE: Keyboards must be Closed and Selectable to be visible only when called by pressing the Text Input Display. The same is true for key pads.

Part Reference

Ten-key Pad/Volume (Direct-write)
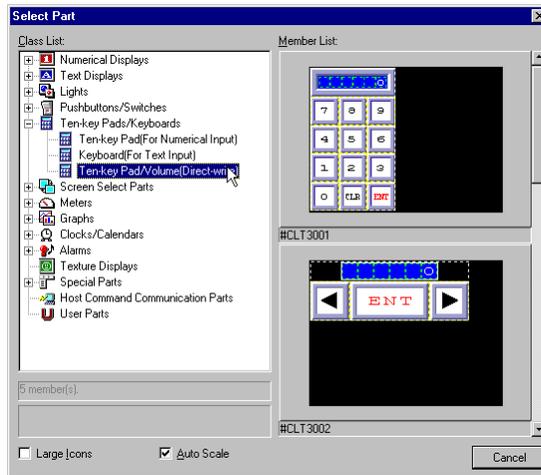
Direct–write (#CLT3001)

Template 1–8   This ten-key pad is a combination ten-key pad and numerical display.

- **Station #**

  is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

- **Address**

  refers to the first word address of the PLC of which the control writes to and reads from.

- **BIN:1, Signed BIN:2, BCD:3 (Data Type)**

  specifies the data type of the PLC address. This must be correct for the panel to display the correct value. Enter 1 for BIN, 2 for SignBIN, and 3 for BCD.

  * BIN is binary, or base 2.

  * SignBIN is signed binary, or base 2 with the 2s complement.

  * BCD is binary-coded decimal.

  Key Operation

- **ENT** (ENTER) writes the value to the PLC address(es).
- **CLR** (CLEAR) clears the current value displayed.

Volume (#CLT3002)

Template 1–8

This "volume key pad" increments the value written to the PLC address.

Note: if correction coefficients (other than the defaults) are used, the number displayed is not the value written to the PLC address!
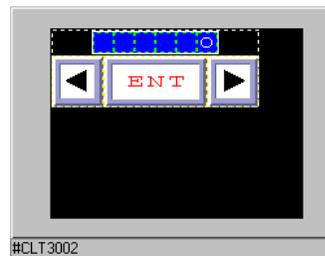
#CLT3002

- **Station #**

  is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

- **Address**

  refers to the first word address of the PLC of which the control writes to and reads from.

- **Input Min. Value**

  Enter the lower limit value acceptable as input to the display.

- **Input Max. Value**

  Enter the upper limit value acceptable as input to the display.

- **Increment Value**

  Enter number to add or subtract for each touch of the increase/decrease button.

- **BIN:1, Signed BIN:2, BCD:3 (Data Type)**

  specifies the data type of the PLC address. This must be correct for the panel to communicate with the PLC. Enter 1 for BIN, 2 for SignBIN, and 3 for BCD.

  * BIN is binary, or base 2.

  * SignBIN is signed binary, or base 2 with the 2s complement.

  * BCD is binary-coded decimal.

- **Correction Coefficient A (Default 1)**
- **Correction Coefficient B (Default 0)**

  Enter the values for the scaling equation: new value written to the PLC address = number displayed – B/A.

  Key Operation

- **ENT** (ENTER) writes the value to the PLC address(es).

Screen Select Parts

All of the Screen Select Parts below cause the panel to display a new screen based on the operation of the part.

Screen Select Pushbuttons (#CAB1001–#CAB1020)
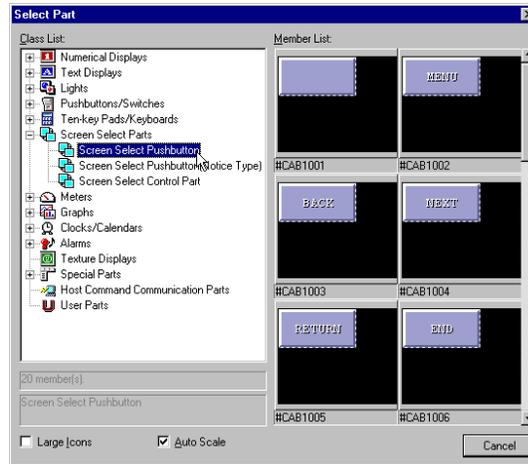
- **Next Screen Name**

  specifies the screen to display (or go to) when pressed.

Screen Select Pushbuttons (Notice Type) (#CAB2001–#CAB2020)
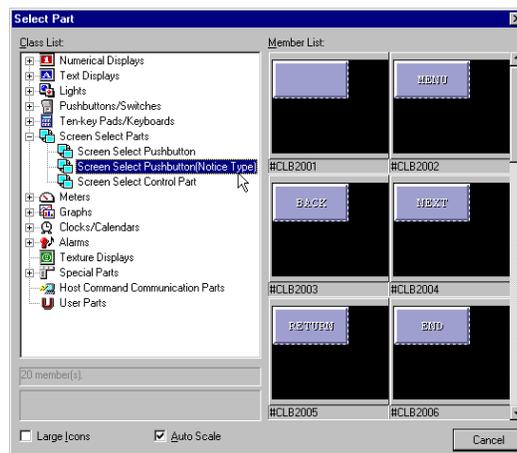
writes the new screen's registration number to the PLC.

- **Next Screen Name**

  specifies the screen to display (or go to) when pressed.

● **BIN:1, Signed BIN:2, BCD:3 (Data Type)**

specifies the data type of the PLC address. This must be correct for the panel to communicate with the PLC. Enter 1 for BIN, 2 for SignBIN, and 3 for BCD.

* **BIN** is binary, or base 2.

* **SignBIN** is signed binary, or base 2 with the 2s complement.

* **BCD** is binary-coded decimal.

● **Station #**

is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

● **Address**

refers to the word address of the PLC of which the control writes the registration number of the Next Screen Name to.

● **Control Part Usage Yes:1/ No:0**

If No (default), then the part calls the Next Screen selected and writes its registration number to the address above. If Yes, it only writes the registration number of the Next Screen Name to the address above. **This part is normally used in the default setting (No:0).**

Screen Select Control Parts (#CLB3001–#CLB3101)
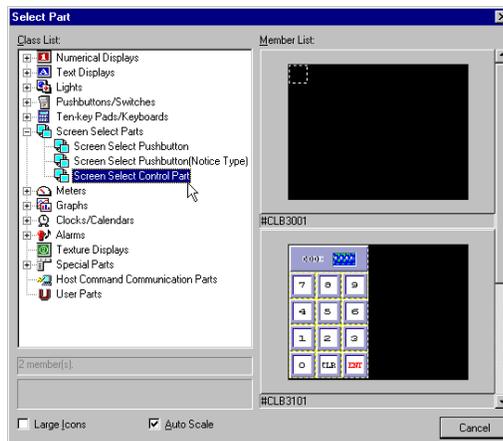
Screen Select Control Part (#CLB3001)

changes screens based on the new screen's registration number read from the specified PLC word address. This part must be placed on the Global Screen, Closed and Selectable, in order to work properly.

NOTE: It is best to only use this method of changing screens if you want the PLC to be "in charge", and only use other screen select parts if you want the panel to change screens based solely on the user's choice.

Part Reference

- **Station #**

  is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

- **Address**

  refers to the word address of the PLC to which the control writes the registration number of the Next Screen Name.

- **BIN:1, Signed BIN:2, BCD:3 (Data Type)**

  specifies the data type of the PLC address. This must be correct for the panel to communicate with the PLC. Enter 1 for BIN, 2 for SignBIN, and 3 for BCD.

  * BIN is binary, or base 2.

  * SignBIN is signed binary, or base 2 with the 2s complement.

  * BCD is binary-coded decimal.

Screen Select Parts with PINs must be made Closed and Selectable and must be called by a Special Part called Parts Control. See Parts Control in Index.

Screen Select part with PIN (#CAB3101) See note in left margin.

goes to the specified screen only after the correct code, or PIN, is entered.

- **PIN (or code)**

  the passcode which must be entered by the user to change to the Next Screen Name.

- **Next Screen Name**

  specifies the screen to display (or go to) when the PIN is entered.

  Key Operation

- **CLR** (CLEAR) clears the current value displayed.
- **ENT** (ENTER) writes the value to the PLC address(es).

Screen Select part with PIN (#CLB3101) See note in left margin.

goes to the Next Screen Name when the user enters the PIN, found in the Address.

- **Station #**

  is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

- **Address**

  the PLC word address containing the PIN. *Example: V2000 containing 3456. The user must enter 3456 in order to display the Next Screen Name.*

- **BIN:1, Signed BIN:2, BCD:3 (Data Type)**

  specifies the data type of the PLC address. This must be correct for the panel to communicate with the PLC. Enter 1 for BIN, 2 for SignBIN, and 3 for BCD.

  * BIN is binary, or base 2.

  * SignBIN is signed binary, or base 2 with the 2s complement.

  * BCD is binary-coded decimal.

- **Next Screen Name**

  specifies the screen to display (or go to) when the PIN is entered by the user.

Trend Graphs (Data Storing)
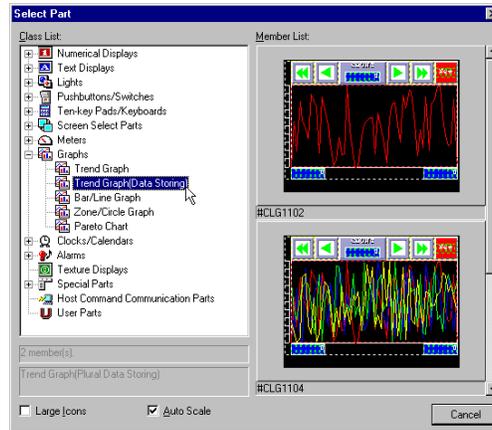
The Trend Graphs below are identical to their counterpart graphs, with the addition of a template for storing trend data.

Line Graph Operation Parameter Tab

- **Enable**

  is only selectable when editing the contents of the part. This enables the Operation Parameter to operate the control (as opposed to the part program doing so). When enabled, the control is listed under *Operation Parameter* in the Part Properties box and *Details Edit* is selectable, which opens the Control dialog box above (with the three tabs). If not enabled, the part must have a program in order to operate properly.

- **Station**

  is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

- **Address**

  refers to the single (or first, if not sampling) PLC word address assigned to the control. If no sampling is used, the value of the address becomes the first bar displayed, the values of the addresses following the first become the second bar, third bar and so on.

- **Data Type**

  specifies the data type of the PLC address. This must be correct for the panel to display the correct value.

  * **BIN** is binary, or base 2.

  * **SignBIN** is signed binary, or base 2 with the 2s complement.

  * **BCD** is binary-coded decimal.

- **Sampling Time**

  specifies the sampling rate in seconds (by multiplying the number entered by 0.5 seconds).

- **Flowing direction**

  is the direction of the plotted line(s). The arrow pointing to the right is left to right and the arrow pointing to the left is right to left.

- **Scale**

  allows the value from the PLC address (represented by 'X') to be scaled by a formula. All numbers (0–9), the following symbols : *, /, +, –, (,), and the decimal point may be used in the calculation. The value resulting from the calculation is then displayed as a bar.

- **Number of Lines**

  specifies the number of sequential PLC addresses to plot as lines.

- **Number of Points**

  specifies the number of points (or readings) each line will have on the graph.

Template 1–8 The template specifies the storing settings for the graph.

- **Number of Data Items (Data Points Stored)**

  Enter the number of data points to be stored. Only the last point of this number is actually stored.

- **Upper Limit Value**

  Enter the upper limit of data points before resetting to zero. It is important to know that the current number of data points (COUNT below) does not stop, but gets reset to 0 when the limit is reached.

- **Number of Plots (Points)**

  Enter the number of sampled data points displayed on each graph. This number must be the same as the Points above.

  Key, Number and Button Operation

- **NEW** displays the current value(s) as sampled data points connected in a line.
- **Rec.** (Recorded) displays the most recent stored data points.
- **Fwd/Fast Fwd** The right arrow and double right arrow buttons move "back in time" if the flow direction is left to right.
- **Rew/Fast Rew** The left arrow and double left arrow buttons move "ahead in time" if the flow direction is left to right.
- **COUNT** is the total number of sampled data points. This number never stops increasing by 1 for each sample, but is reset to 0 when the Upper Limit Value is reached.
- **Bottom Left Number** is the number of the data point on the left of the graph. If NEW is selected, this number will always equal the COUNT and will be the current data point**.** If Rec. is selected, this number varies as the graph is moved foward or backward in viewing stored data. **Note:** *The difference between the bottom left and right numbers will always be one less than the number of points.*
- **Bottom Right Number** is the number of the data point on the right of the graph. If NEW is selected, this number will always equal the current COUNT minus the number of points**.** If Rec. is selected, this number varies as the graph is moved foward or backward in viewing stored data.

External Clocks and Calendars (for both DirectLOGIC and A–B)
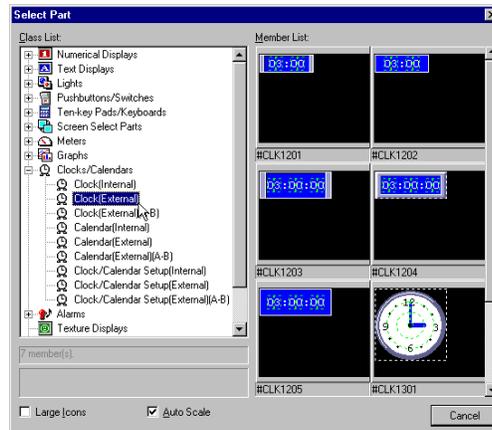
The external clocks and calendars below are numerical displays that display the PLC's current time and date.

- **Station**

  is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

- **Address of Hour**

  refers to the single PLC word address for the hour.

- **Address of Minute**

  refers to the single PLC word address for the minute.

- **Address of Second**

  refers to the single PLC word address for the second.

- **Data Type**

  specifies the data type of the PLC address. This must be correct for the panel to communicate with the PLC.

  * **BIN** is binary, or base 2.

  * **SignBIN** is signed binary, or base 2 with the 2s complement.

  * **BCD** is binary-coded decimal.

NOTE: Use a two digit format for the year (YY) on an Allen–Bradley PLC, although it supports four digits (YYYY). The reason for this is that all clock parts in ScreenCreator use a two digit format.

External Clock/Calendar Setup Parts for DirectLOGIC PLCs

Clock/Calendar Setup (External PLC Direct) (#CLK3002)
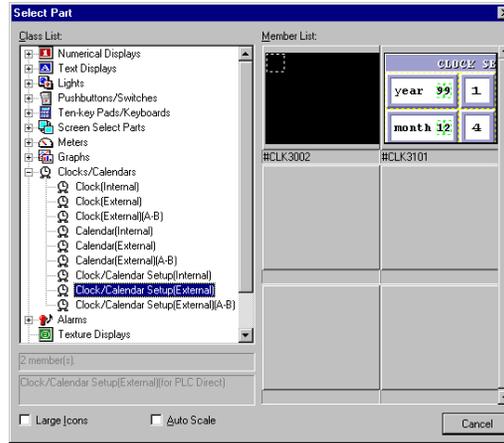
Part #CLK3002 **(when placed on the Global Screen)** synchronizes the Panel's Internal Clock/Calendar to the PLC's current time and date. The next time the Screen containing the internal clock or calendar is displayed, the internal clock or calendar will be updated.
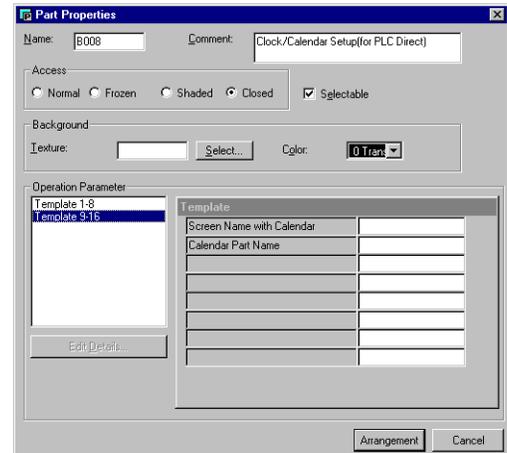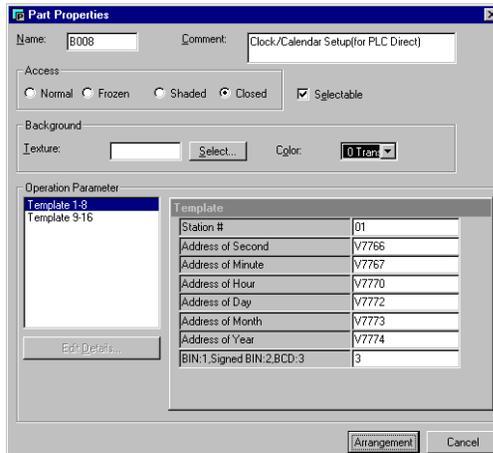
- **Station, Address of Hour/Minute/Second/Month/Day/Year and Data Type are standard.**
- **Screen Name with Calendar**
  refers to the Screen Name which displays the Internal Clock.
- **Calendar Part Name**
  refers to the Internal Calendar Part Name.

External Clock/Calendar Setup Parts for Allen–Bradley PLCs

Clock/Calendar Setup (External A–B) (#CLK3003)
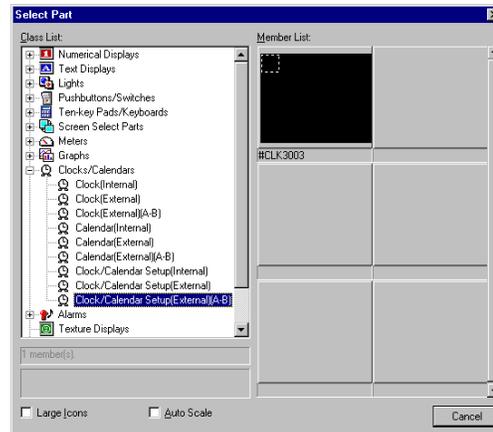
Part #CLK3003 **(when placed on the Global Screen)** synchronizes the Panel's Internal Clock/Calendar to the Allen–Bradley PLC's current time and date. The next time the Screen containing the internal clock or calendar is displayed, the internal clock or calendar will be updated.
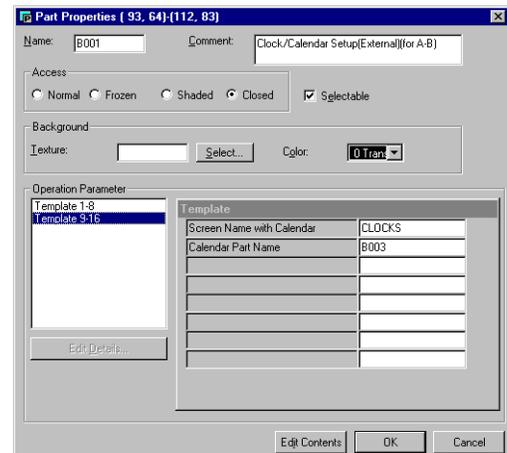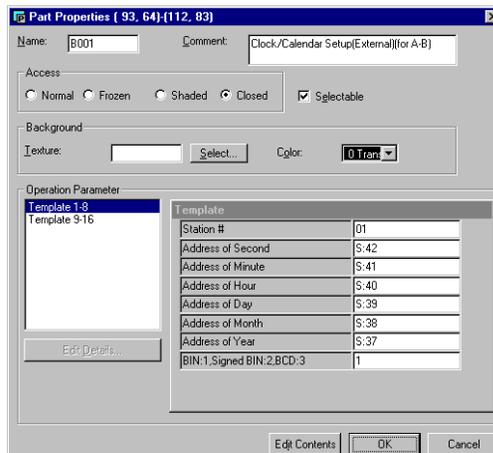
- **Station, Address of Hour/Minute/Second/Month/Day/Year and Data Type are standard.**
- **Screen Name with Calendar**

  refers to the Screen Name which displays the Internal Clock.

- **Calendar Part Name**

  refers to the Internal Calendar Part Name.

NOTE: Use a two digit format for the year (YY) on an Allen–Bradley PLC, although it supports four digits (YYYY). The reason for this is that all clock parts in ScreenCreator use a two digit format.

The Error Display

Error Display The Error Display is created automatically on the Global Screen of a new project, and notifies the user of Alarm or Fault conditions occurring in the PLC program.
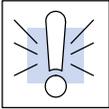
WARNING: Do not use the panel backlight off timer (System Setup > Display Control > Display OFF Time) with any of the Alarm parts, unless you also use the Backlight Control below.

Error Display (ERRPTS) (#CAA1002)
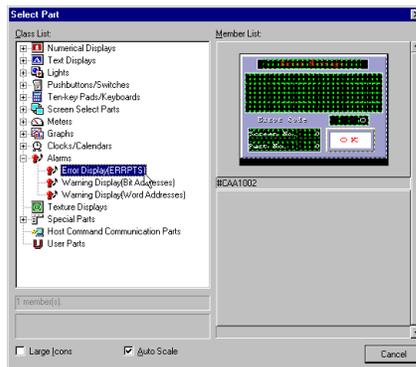
This Error Display is created automatically on the Global Screen of a new project.

NOTE: This Error Display may be displayed one of two ways. On the **Direct**Touch panel, use System Setup > Error Disp Setup to select either the bottom of the screen (Screen Bottom) or full screen (Window Display).

Template 1–8 The template specifies the settings for detecting the errors below.

- **Clock operation error mask**

  0: Detects errors, 1: Does Not Detect errors.

- **Battery voltage drop error mask (Low Battery error)**

  0: Detects errors, 1: Does Not Detect errors.

- **Serial communication error mask**

  0: Detects errors, 1: Does Not Detect errors.

Alarms (Warning Displays)

Warning Displays   **Warning Displays notify the user of Alarm or Fault conditions based on the status of bits in the PLC. Warning Displays simply display Registered Text chosen by the user.** *(Warning Displays operate similar to Registered Text Displays. See page 6–9 for details on how Registered Text works in Registered Text Displays.)*

Creating/Editing Registered Text

Follow the steps below to create or edit Registered Text.

Creating or editing Registered Text

Select **Project > New Text...** to open the New Text window.

With the New Text window open, you can begin typing in the new text to be registered. Then click the save tool (floppy disk icon) to save and assign a registration number.

Use the Open tool to open and edit existing registered text, or to view all registered text.

Notice the Open text window initially shows Name in alphabetical order.

Click on the Register Tab, as shown on the right, to list the text by Registration number.

Warning Display Examples

The Warn1 screen from the *train* project is shown on the right. This project is available from our website at Automationdirect.com > Technical Support > Resources (Software Upgrades) > ScreenCreator, and is called **train.exe (trainab.exe for Allen–Bradley PLCs)**.

The pushbuttons at the top are assigned to bits C0, C1, C2, C4, C5 and C6.

Double-click the Warning Display part B001. Notice C0 is the First Bit Address and the Total Number of Warning Bits monitored is 10— which means C0–C7, C10 and C11. Since the First Registered Text No. is 11, the Registered Text with a registration number of 11 will be displayed when C0 is ON. The Registered Text with a registration number of 12 will be displayed when C1 is ON, and so on.

Try this project out on your PLC to gain an understanding of how Warning Displays work. There are other Warning screens with more Warning Displays to try out, including one with a Clear Bit feature and one with a Record Type display.
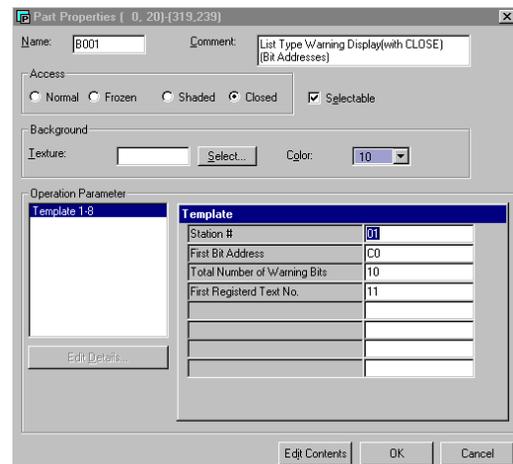
NOTE: The Warning Displays which follow in this chapter have various features and functions. Some have a Close button. Some show Time and Date stamp, etc.

Note: Warning Displays display messages from Registered Text. See page 6–9 and Registered Text in the Index.

Warning Displays (Bit Addresses) (#CLA2001–2201)
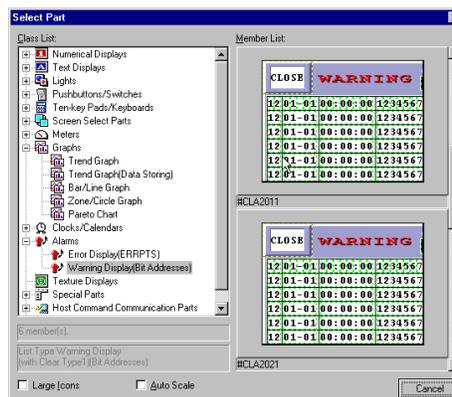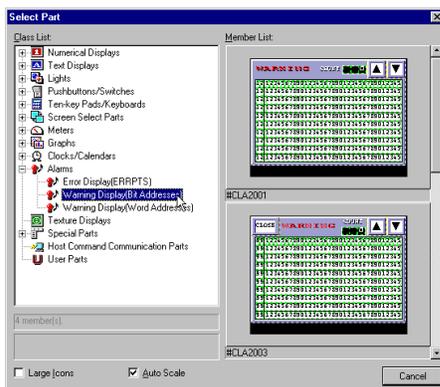
(#CLA2011 and #CLA2021 have Historical logging, with time and date.)

These Warning Displays are mapped to consecutive bit addresses in the PLC.

● **Station**

is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

● **First Bit Address**

refers to the first in a line of consecutive PLC bit addresses which trigger corresponding registered text to display when ON. The First Bit Address is mapped to the First Registered Text Number below.

● **Total Number of Warning Bits**

is the total number of PLC bit address (including the first above) which cause the corresponding registered text to display.

● **First Registered Text No.**

refers to the registered text number mapped to the first bit address. The text with this registration number will be displayed when the first bit address is ON. Be sure to register the proper text for each warning bit.

Number and Button Operation

● *COUNT* is the total number of alarm messages.
● *Scroll Up/Down* The up and down arrow buttons scroll up and down on the warning display
● **CLOSE** closes the display, if the access is Closed and Selectable.
● **Clear the warning** clears the selected warning.
● **Clear all warnings** clears all warnings.

In order to display an alarm condition, the #CLA2011 requires the PLC to latch (or set) the alarm bit, while #CLA2021 does not require PLC latching.
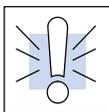
WARNING: For #CLA2011, when a warning is cleared, the latched PLC bit is also un-latched (or reset). So, the ladder program does not require a reset coil. *Note: The #CLA2011 cannot latch X inputs!!*

Note: Warning Displays display messages from Registered Text. See page 6–9 and Registered Text in the Index.

Warning Scroll Display (Bit Addresses) (#CLA2101)
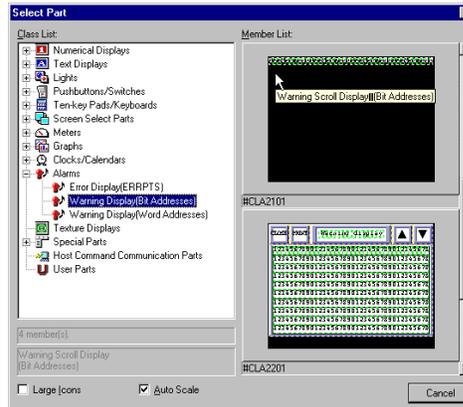
This Warning Display works like a scrolling marque, moving the warning text across the screen from right to left.

● **Station**

is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

● **First Bit Address**

refers to the first in a line of consecutive PLC bit addresses which trigger corresponding registered text to display when ON. The First Bit Address is mapped to the First Registered Text Number below.

● **Total Number of Warning Bits**

is the total number of PLC bit address (including the first above) which cause the corresponding registered text to display.

● **Number of Characters to Display**

is the total number of characters of text across the screen. For DP–320 (and DP–321) panels, this number is 40.

● **Scrolling Speed** The scrolling speed increases as this number *decreases*.

● **Number of Characters to Move**

is the number of characters to move each time the text is scrolled.

● **Display Type (0/1)**

specifies when the display is active— 0: only when any warning bit is ON, 1: when text is visibly scrolling on the screen (even if no bits are ON at that moment). When 1 is selected, the bits must all be OFF long enough for all text to scroll across the screen.

● **First Registered Text No.**

refers to the registered text number mapped to the first bit address. The text with this registration number will be displayed when the first bit address is ON. Be sure to register the proper text for each warning bit.

Note: Warning Displays display messages from Registered Text. See page 6–9 and Registered Text in the Index.

Warning Display (Record Type) (Bit Addresses) (#CLA2201)
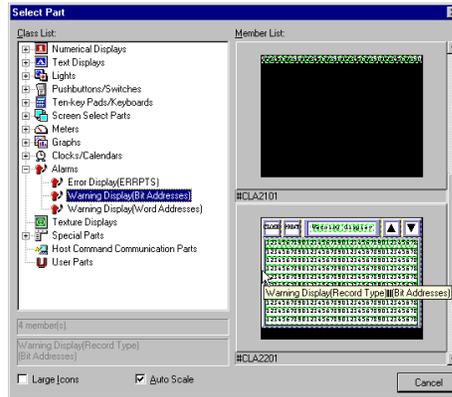
This Warning Display stores and displays the date and time that any warning bit turned ON (or back OFF) with the registered text.

NOTE: To use this warning display, select a printer (Project > Properties > Connect to), even though a printer might not be used.

- **Station**

  is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

- **First Bit Address**

  refers to the first in a line of consecutive PLC bit addresses which trigger corresponding registered text to display when ON. The First Bit Address is mapped to the First Registered Text Number below.

- **Total Number of Warning Bits**

  is the total number of PLC bit address (including the first above) which cause the corresponding registered text to display.

- **Number of Records**

  is the total number of warning lines to store.

- **First Registered Text No.**

  refers to the registered text number mapped to the first bit address. The text with this registration number will be displayed when the first bit address is ON. Be sure to register the proper text for each warning bit.

- **Auto Printing (1:YES, 0:NO)**

  specifies the printing each warning automatically, when detected or reset.

  Number and Button Operation

- **CLOSE** closes the display, if the access is Closed and Selectable.
- **PRINT** sends the data to any printer connected.
- **Warning display** moves to the top of the recorded data.
- *Scroll Up/Down* The up and down arrow buttons scroll up and down on the warning display

Special Parts

Parts Control (#CAZ2001 and #CLZ2001)
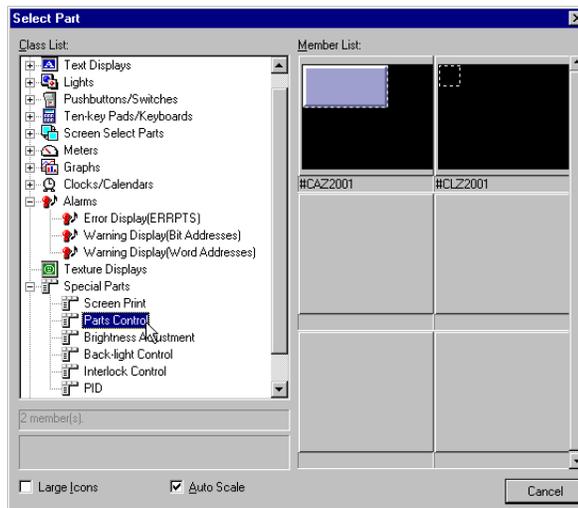
The part control parts open/close the specified part either by pressing the pushbutton (#CAZ2001) or when the value of the word address is 1/0 (#CLZ2001).

- **Station (#CLZ2001 only)**

  is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

- **Address (#CLZ2001 only)**

  refers to the single PLC word address for the hour.

- **Screen Name with Object Part**

  specifies the screen location of the part to be controlled (if not the same screen or the global screen). If a screen name is entered here, it overrides the Sef/Global Screen below.

- **Object Part Name**

  specifies the name of the part to be controlled.

- **Self-Screen: 1/ Global Screen: None**

  specifies the screen location of the part to be controlled. The Self-Screen is the same screen as the control part itself.

Brightness Adjustment (#CAZ3001)

adjusts the brightness of the display (just like on the panel: System Setup > Display Control).
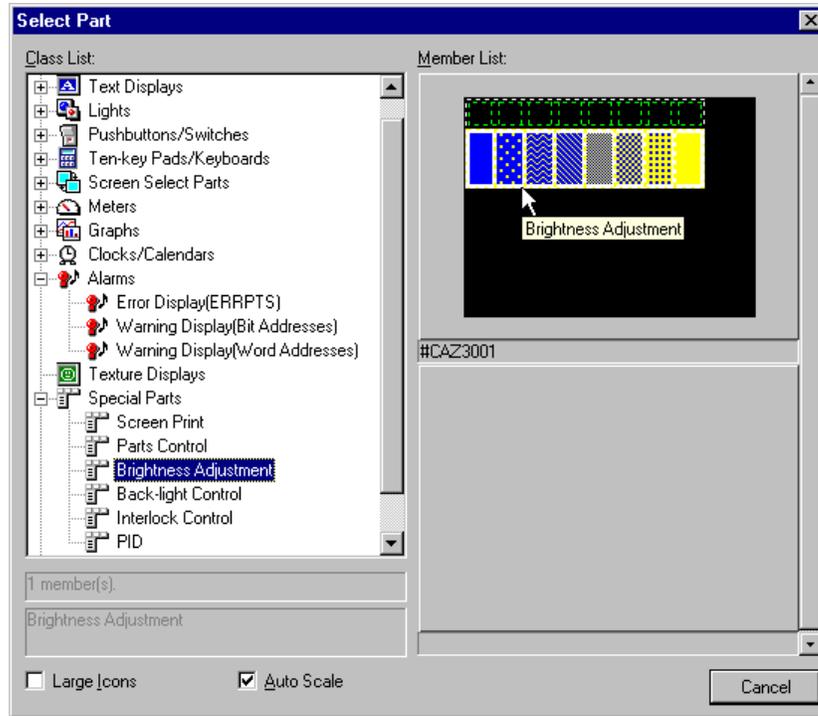
Back-light Controls (#CLZ4001–#CLZ4002)
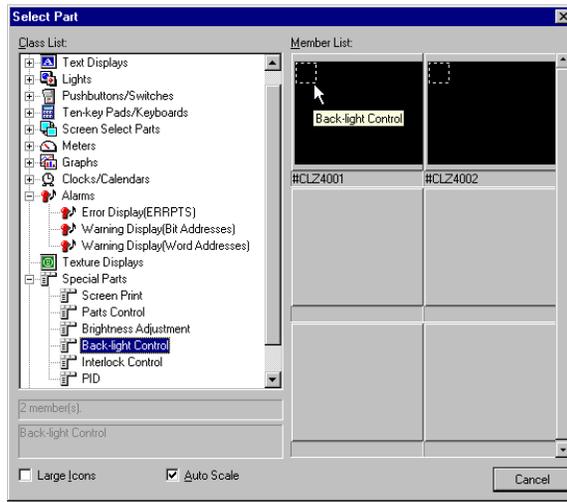
Back-light Control (#CLZ4001)

This Back-light control part turns the panel back-light ON or OFF when the value is 1/0.

● **Station**

is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

● **Address**

refers to the single PLC word address controlling the back-light. A value of 1 turns the back-light ON; a value of 0 turns it OFF.

Back-light Control (Continuous ON) (#CLZ4002)

This Back-light control part resets the display control time when the value is 1.

● **Station**

is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

● **Address**

refers to the single PLC word address controlling the back-light. A value of 1 resets the display control time; a value of 0 allows the display control time to proceed.

Interlock Controls (#CAZ5001–#CAZ5002)
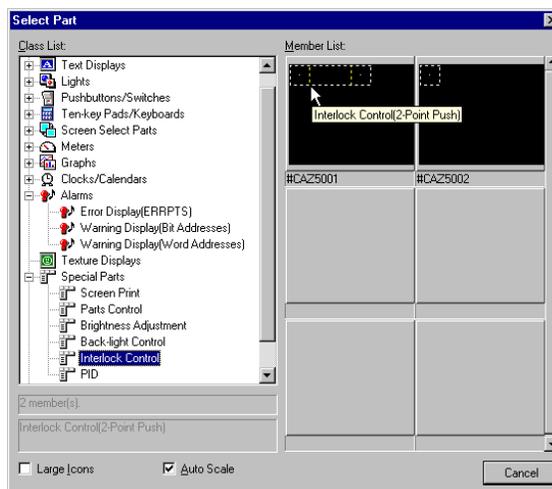
Interlock Control (2 point push) (#CAZ5001)

This part prevents the System Mode Screen from being accessed (normally done by pressing the upper left and lower right corners of the panel). To reset the interlock, press the right side while holding down the left side.
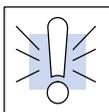
WARNING: This Interlock Control prevents access to any System Mode functions (including downloading), unless the user knows where this part is and how to use it. DO NOT FORGET WHERE THIS PART IS PLACED ON THE SCREEN!

Interlock Control (Reset Time Setting) (#CAZ5002)

This part resets the interlock for the specified time and then turns the interlock back on. During the wait time, the System Mode may be called by pressing the upper left and lower right corners of the panel.

● **Wait Time (sec)**

specifies the time in seconds to wait before interlocking the panel.

PID (#CLZ6001)
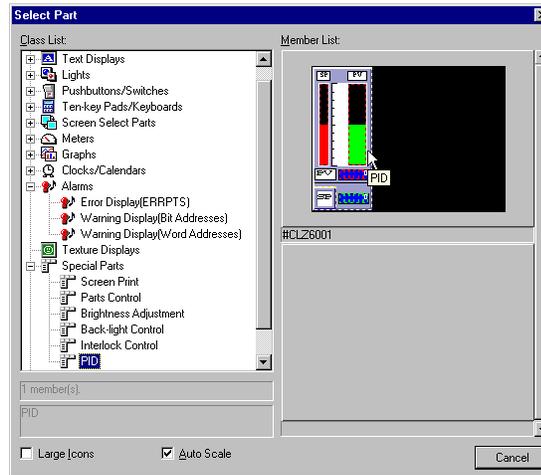
This part functions as a PID (Proportional-Integral-Derivative) control and display. It has a bar graph and numerical display for PV and a bar graph for SP. Also, a ten-key pad must be assigned for entering the SP.

PV (Process Variable): the actual measured value.

SP (Setpoint): the value desired.

Template 1–8   The template specifies the settings for detecting the errors below.

- **Station**

    is used for applications where more than one PLC is connected to the panel. The default is 01. The station # must match the PLC port address.

- **Address (SP)**

    refers to the PLC word address assigned to the SP. This must be the same as that of the Bar graph BAR_SP.

- **Decimal Places**

- **Data Type**

    specifies the data type of the PLC address. This must be correct for the panel to communicate with the PLC.

    * **BIN** is binary, or base 2.

    * **SignBIN** is signed binary, or base 2 with the 2s complement.

    * **BCD** is binary-coded decimal.

- **Next Part Name**

    Enter the next part name to which the cursor is to be moved. Leave blank if not needed.

- **Input Min. Value**

    Enter the lower limit value acceptable as input to the display.

- **Input Max. Value**

  Enter the upper limit value acceptable as input to the display.

- **ScreenName with Ten-key Pad**

  Enter the screen name (if one other than the current screen) which has the ten-key pad. See Self screen below.

Template 9–16

- **Ten-key Pad Name**

  Enter the name of the ten-key pad to be used.

- **Self Screen: 1, Global Screen: None**

  If the ten-key pad is located on the same screen as the Numerical Input Display part itself, enter 1. If it is on the Global Screen, enter nothing. The default is 1.