Chapter 9. Tag Register and Other Functions

9-1. N TAG (Numeric Tag)

Type	PMU-200	PMU-300	PMU-600
Application	O	O	O

■ It will indicate on the screen of the main machine, the value of the system's buffer data at the actual time.

■ When it is in Decimal it will indicate a maximum of 10 places and when it is in BCD or HEX it will indicate a maximum of 8 places.　The two methods of indicating the data are by absolute value and in relative value.

　① When the indication method is of relative value, and the specified buffer data goes beyond the top inch and bottom inch, it will flicker.

　② You will be able to determine the indicated data's decimal point position.

■ For alignment methods, there is Left Alignment, Right Alignment, and by Right Alignment filling the empty spaces by zero.

PMU-200 Numeric Tag Screen
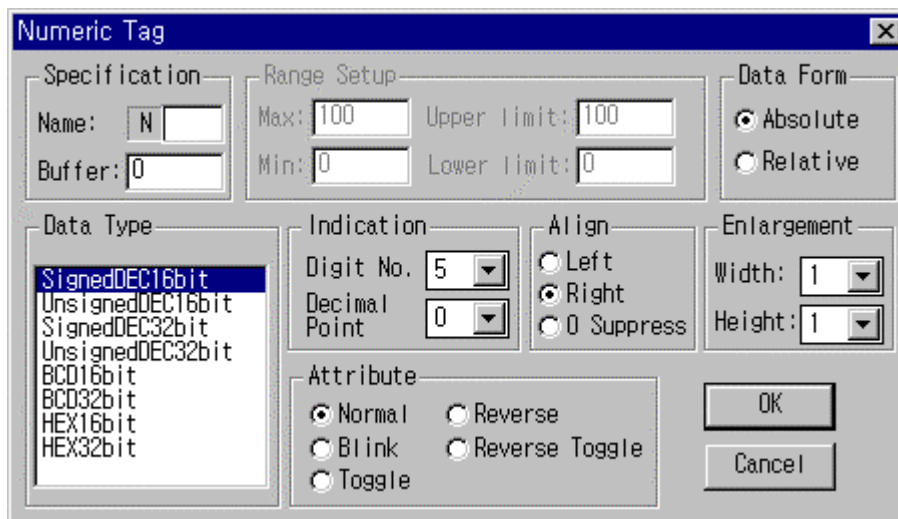
PMU-300/600 Numeric Tag Screen
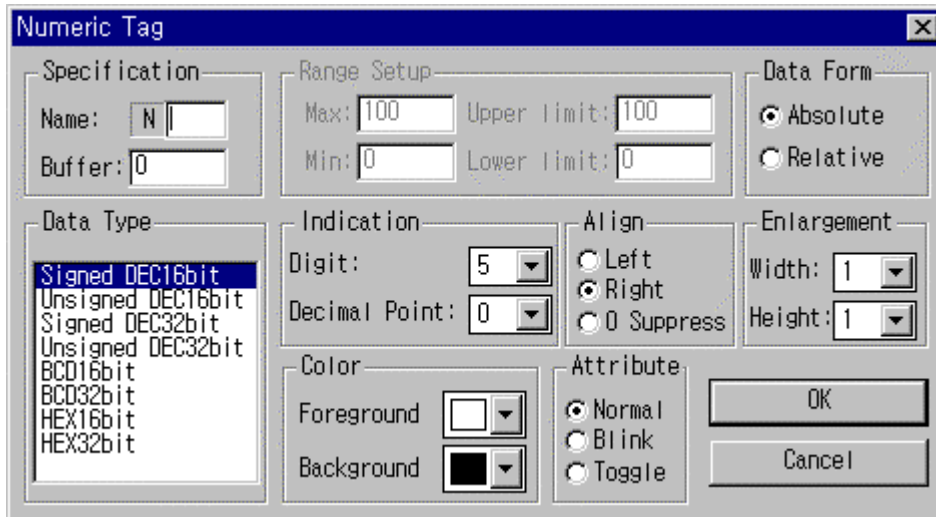
You are able to specify the character color and background color of the data being indicated.

☞Screen Indication Explanation

▶Tag Specification

Name: The head of the name begins with the letter "N", with a maximum of four letters (in   English or numbers).

Buffer: The data that is indicated on screen is the "house" number for the saved system buffer.

▶Data Form

Absolute Value: It shows the specified buffer value as it is.

Relative Value: It shows the specified buffer value's maximum value and minimum value after Scaling.

  Reference: For example, if the data's type is DEC signed 16 bit, maximum value 100,
                minimum value -100 then...

In the case of the DEC signed 16 bit, the smallest value is -32768, and the largest value is 32767.

Like the picture below, if the system's buffer data is 32767 with a maximum value of 100 it will be indicated on screen and the system's buffer data is -32768, on screen it will indicate -100.
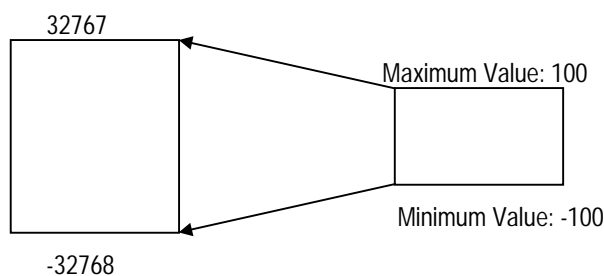
▶Range [The value establishment indication method is only capable when it is in the relative value]

Due to the maximum value and minimum value, the internal system buffer value will be scaled, in which you must specify the maximum value as a bigger value than the minimum value.

When the data type is DEC signed 16 bit, you must enter the maximum value and the minimum value by the decimal, thus you must establish the value between -32768 and 32767.

① If the DEC unsigned 16bit, enter the maximum value and minimum value by decimal and establish the value between 0 and 65535.

② If the HEX 16bit , the enter the maximum value and the minimum value by decimal and establish the value between 0 and FFFF.

▶Upper limit, Lower Limit [the value indication method is only capable when the value is of relative value]

When the interior buffer value is more than the Upper limit and less then the Lower limit, the data indicated on screen will flicker.　You must specify the Upper limit as a bigger value than the Lower limit.

Under the Data Type, the Upper limit and Lower limit's specification is the same as the maximum value and the minimum value.
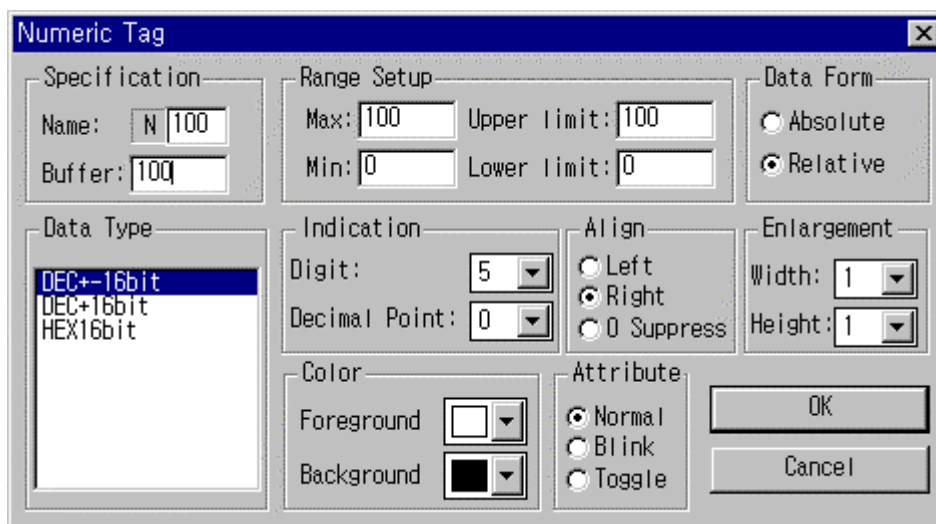
▶Data Type

The Data Form indicated on screen is specified and indicated as the below chart.

DATA FORM	DATA TYPE	NUMBER CATAGORY
Absolute Value	Decimal signed 16bit	－32768 ~ 32767
	Decimal unsigned 16bit	0 ~ 65535
	Decimal signed 32bit	－2147483648 ~ 2147483647
	Decimal unsigned 32bit	0 ~ 4294967295
	BCD 16 bit	0 ~ 9999
	BCD 32 bit	0 ~ 99999999
	Hexa 16 bit	0 ~ FFFF
	Hexa 32 bit	0 ~ FFFFFFFF
Relative Value	Decimal signed 16bit	－32768 ~ 32767
	Decimal unsigned 16bit	0 ~ 65535
	Hexa 16bit	0 ~ FFFF

▶Attribute [Applicable for PMU-200.]

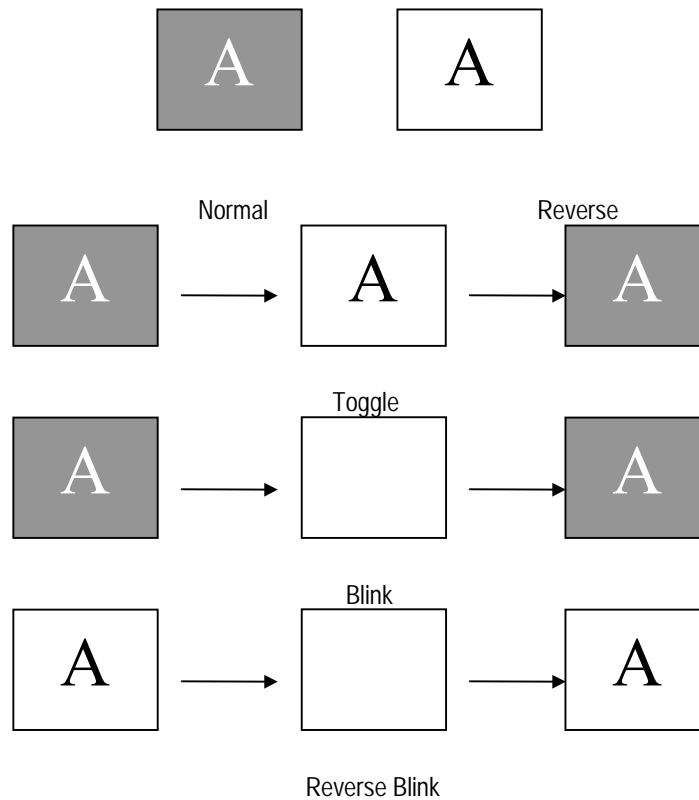It establishes the Attribute of the data being indicated.

Normal: There is no Attribute of indication. (character: white, background color: black)

Blink: The indicated data's character color interchanges from white to black during a certain

interval of time.

Toggle: The indicated data's character color and background color interchanges.

Reverse: The indicated data's character color in reversed from the Normal appearance.   (character:

black, background color: white)

Reverse Blink: While the data is in the Reverse situation, it also blinks.

Normal → Reverse

Toggle

Blink

Reverse Blink

▶ Attribute [Applicable for PMU-300]

It establishes the Attribute of the data being indicated.

Normal: There is no Attribute of indication.

Blink: The indicated data's character color interchanges from white to black during a certain interval of time.

Toggle: The indicated data's character color and background color interchanges during a certain interval of time.

● The Blinking rate and the Toggle rate, can be modified and altered at the system's main frame. (100~9990ms)
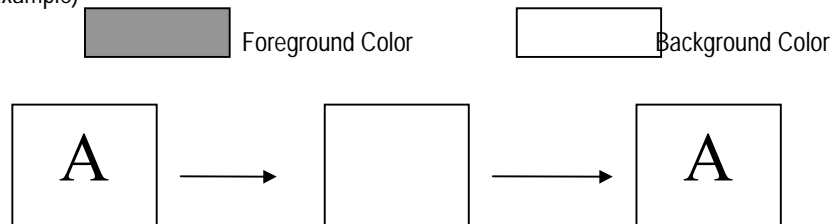
▶ Color [Applicable for PMU-300]

It establishes the color of the data being indicated.

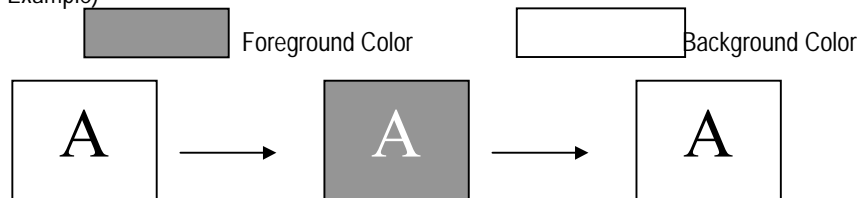Foreground: It is the indicated data's character color.

Background: It is the indicated data's background color.

When the Attribute is Blink, the indicated data's character color becomes interchanged by the foreground color and the background color.   When the Attribute is Toggle, the character color and the background color, both at the same time becomes interchanged by the foreground color and the background color.

Blink Example)

Foreground Color   Background Color

A → ☐ → A

Toggle Example)

Foreground Color   Background Color

A → A → A

▶ Attribute [Applicable for PMU-600]

It establishes the Attribute of the data being indicated.

Normal: There is no Attribute of indication.

Blink: The indicated data's character color interchanges from white to black during a certain interval of time.

Toggle: The indicated data's character color and background color interchanges during a certain interval of time.

● The Blinking rate and the Toggle rate, can be modified and altered at the system's main frame. (100~9990ms)
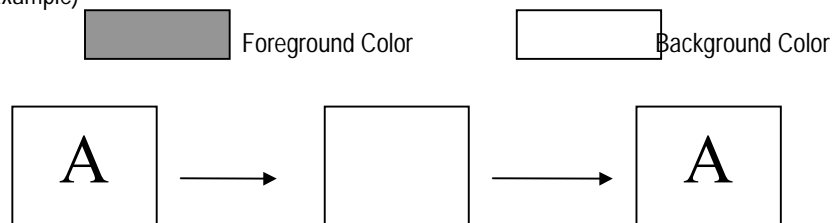
▶ Color [Applicable for PMU-600]

It establishes the color of the data being indicated.

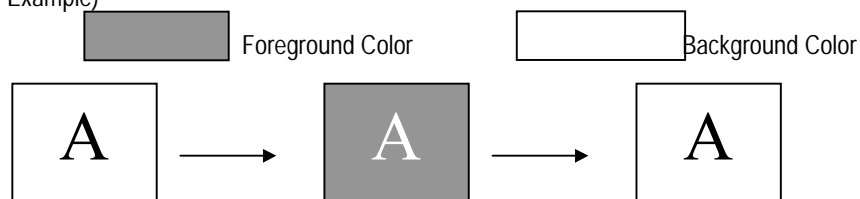Foreground: It is the indicated data's character color.

 Background: It is the indicated data's background color.

When the Attribute is Blink, the indicated data's character color becomes interchanged by the foreground color and the background color.   When the Attribute is Toggle, the character color and the background color, both at the same time becomes interchanged by the foreground color and the background color.

Blink Example)

[ ] Foreground Color   [ ] Background Color

A → [ ] → A

Toggle Example)

[ ] Foreground Color   [ ] Background Color

A → A → A

▶ Indication

The data indicated on screen, of its Digit means the total number of places.

The decimal number is the numbers below the decimal point of the total numbers that you wish to specify.

The data of the interior main frame cannot be decimal point managed.   Merely, the data value indicated on screen can be indicated by a decimal point.

Example)   Data 3456123,   Digit 7, Decimal point 3

3456.123

If the data type is Decimal signed 16bit or Decimal signed 32bit, the total indication place is actually one place more than the Digit number. (Where the code should be inserted)

Example)   Data type Decimal signed 16bit, Digit Number 8

-12345678

▶ Enlargement

Enlargement is the indication number size and you can specify the width and height.

The width and height can be enlarged by a maximum of eight times.

▶ Align

Align Method is the method to indicate the data within the specified place number.

You can align to the left, to the right, and to fulfill by zero.

Left Alignment: It is to assemble the data toward the left, within the specified place number.

123

Right Alignment: It is to assemble the data toward the right, within the specified place number.

123

0 Supperss: It is to align the data toward the right, while filling the blank left places with zero.

0000000123

▶ If the data is bigger than the specified place number, the larger place value with not be shown.

Example)   Data 12345,   Digit 3

345

9-2. T TAG (Touch Tag)

Type	PMU-200	PMU-300	PMU-600
Application	X	O	O

This tag is only applicable for the PMU-300/600 Series

■ Once the touch territory is established on screen, by the touch enter, you may execute Bit or Word manufacture, or Special Functions.

■ Touch Tag ,

Can be used for Momentary Switch, On Switch, Off Switch, Alternate Switch that is used to manufacture a bit.

Can be used as a switch to move the following word data.

Decimal 16 bit, BCD 16bit, Hexa 16bit, Increment Hexa 16 bit, Decrement Hexa 16 bit,

Increment BCD 16 bit, and Decrement BCD 16 bit

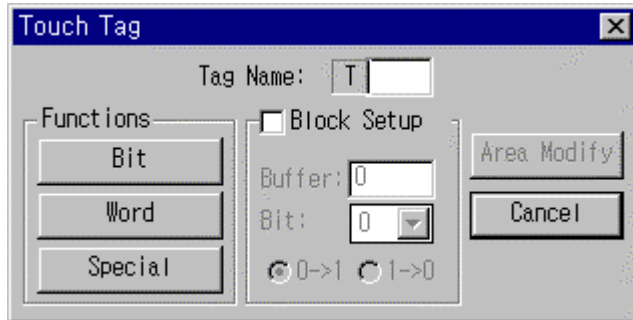Can be carried out as a switch to be used for the following special functions.

Previous Screen Call , Original Screen Call , S/W Reset, Run Quit, Alarm Summary

Printing the screen while Run of Special Functions is only applicable for PMU- 600.

Touch Tag Function Establishment

[PMU-300 Touch Tag Display Screen]
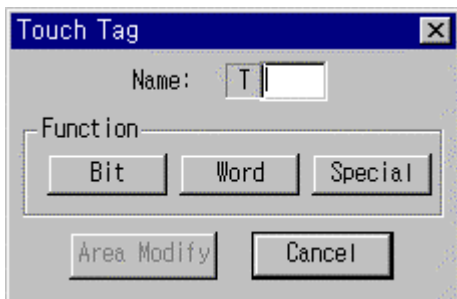
[PMU-600 Touch Tag display Screen]

▶Tag Name

The first letter always starts with a "T" with a maximum of four letters or numbers.

▶Function

The establishment of the Touch Tag can be divided into three major functions.

  Bit Control

  Word Control

  Special Function

▶Block Condition Establishment [Only applicable for PMU-600]

 It has the function to establishing the existence of the Touch motions, which the block condition is established and the block condition is completed, the touch motions can be stopped.

Bit

  Bit Control is to enter the established touch key, which the specified buffer, and specified bit can be manufactured.
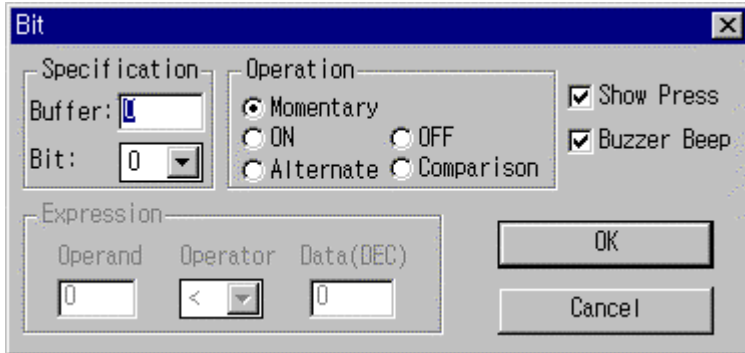
▶ Buffer Specification

Buffer: It is the buffer to be manufactured when the Touch Key is pressed

Bit: It is the bit to be manufactured when the specified buffer's touch key is pressed. (0-15)

▶ Run Method

There are five different ways to establish Run Method

Momentary: ①When the touch key is held down the specified bit will be"1",

when released the bit will be "0".

②The previous value will not be established unless it is pressed.

ON: When the touch key is pressed the specified bit will be "1".

OFF: When the touch key is pressed the specified bit will be "0".

Alternate: Each time the touch key is pressed, the specified bit is alternately set and reset

Comparison: When the touch key is pressed the comparison buffer and the specified value will coincide the condition then the specified bit will be "1".

▶ Expression

Can be established only when the Run Method is Comparison.

When the Run Method is Comparison, the compared buffer and the specified value's relationship will be coincided with the operator and the specified bit will be "1".

There are six types of operator, which are $<, >, =, \neq, \leq, \geq$.

For example, when the specified value of the comparison buffer value is 100 and the specified value is 200, and the operator is ">" the Run result not coincide.   Thus, even though the touch key is entered, the bit will not be manufactured.

The comparison buffer must be over 201 for the result to coincide and the touch key is entered for the bit to be manufactured.

▶ Show Press

While in Run, when the Show Press is selected the corresponding touch territory will be pressed then automatically XOR will be indicated.

▶ Buzzer Beep

While touch enter, a buzzer can be established to be sounded.

The buzzer sound's volume can be changed at the main frame menu of 'System Establish' at the 'First Stage Establishment'.

Word

▶ Specified Buffer

It is the specified value and the buffer value, which the buffer is to be specified when the touch key is entered.
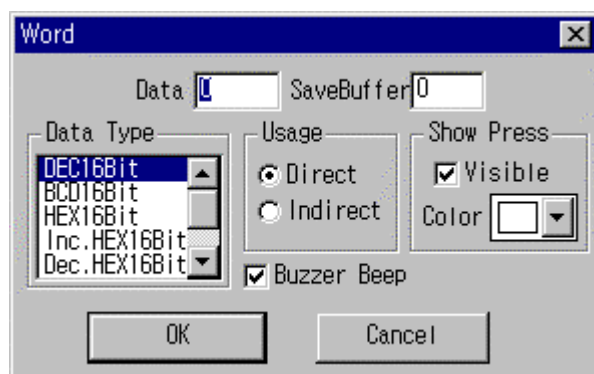
▶ Method of Word Specification

There are two ways to specify a method. They are, Direct and Indirect.

The Direct method uses the specified data's value of the specified buffer when the touch key is entered.

The Indirect method uses the buffer number's data of the specified buffer when the touch key is entered.
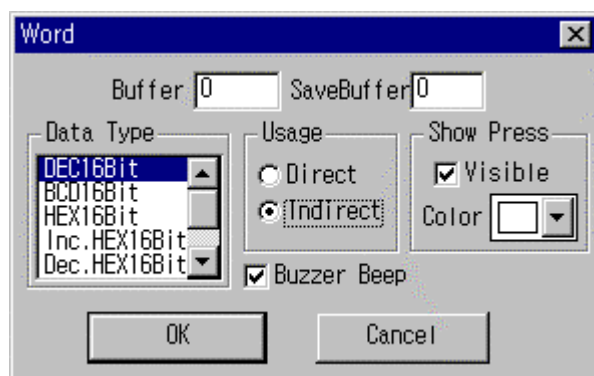
Direct Method (Specified Data)

If the method of specification is Direct, the category to be established of the specified data's value will be used as the touch key is entered.

Indirect Method (Specified Buffer)

If the method of specification is Indirect, the number of the category to be established and the value of the given buffer will be used for the specified buffer as the touch key is entered.

▶ Data Type

The Data Type is the data form that is saved for the specified buffer.

Decimal 16 bit (0～65535)

The specified buffer and the buffer number is recognized as in decimal, which is saved under the specified buffer.

BCD 16 bit (0～9999)

The Direct Method of the specified data or the Indirect Method of the buffer number's data will be recognized as the BCD value and used as the specified buffer.

In this situation the letters A～F cannot be used in the specified data and when the buffer

number points to the data of hexadecimal the letters A～F are included, which cannot be used for the specified buffer.

Hexa 16 bit (0～FFFF)

When the method is the Direct Method, the entered specified data is recognized as hexadecimal and the specified buffer will be used.

When the method is Indirect Method, the specified data of the buffer number will be used as the specified buffer.

In this situation, the conclusion will be the same as Decimal 16 bit.

Increment Hexa 16 bit (0～FFFF)

When the method is Direct Method then the specified data, and when the method is Indirect Method then the specified buffer's pointed data will be added to the specified buffer.

Each data is recognized as hexadecimal.

Decrement Hexa 16 bit (0～FFFF)

When the method is Direct Method then the specified data, and when the method is Indirect Method then the specified buffer's pointed data will be deleted from the specified buffer.

Each data is recognized as hexadecimal.

Increment BCD 16 bit (0～9999)

When the method is Direct Method then the specified data, and when the method is Indirect Method then the specified buffer's pointed data will be added to the specified buffer.

Each data will be recognized as BCD and when the data value is shown the letters A～F will be included the delay will not happen.

Decrement BCD 16 bit (0～9999)

When the method is Direct Method then the specified data, and when the method is Indirect Method then the specified buffer's pointed data will be deleted from the specified buffer.

Each data will be recognized as BCD and when the data value is shown the letters A～F will be included the delay will not happen.
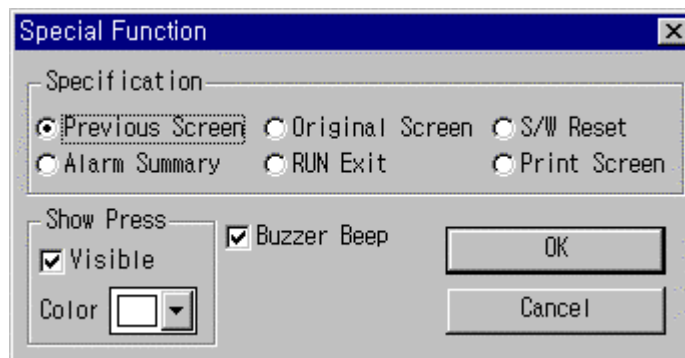
▶ Show Press, Buzzer Beep

The method is the same when buffer is specified.

Special

For Special Functions there are Previous Screen , Original Screen, S/W Reset,

Run Exit, Alarm Summary, and Print Screen.

The functions Show Press, Buzzer Beep, and Press Color are the same.

▶ Previous Screen

While in Run, you can call up and convert to the previous screen.　You may call up a maximum of

10 screens.

To call up previous screens continuously, each paged screen must be touch tag registered.

▶ Original Screen

It is the function to move back to the original screen from the called up previous screen.

The original screen is the very first screen which called up the previous screen.

▶ S/W Reset

It is the function of which the internal system buffer's used value is initialized.

The Clock and Date of the related buffer are not influenced.

▶ Run Exit

It is the function to end the Run mode and enter into the main menu.

▶ Alarm Summary

While in Run if an alarm is sounded, then it will show the saved Alarm Summary Screen.

After reading the alarm, if you press the Cancel Touch Key on screen, then it will go back to the Run mode.

In this situation, you may not select Show Press.

▶ Print Screen (Only applicable for PMU-600)

While in Run, if you press the touch key, the screen in Run will be printed.

Print Screen is also capable when connected it to the key board, by pressing "Print Screen".

The following are cautious you should take heed in when establishing the touch of the PMU-300/600.

① Touch territories should not be over lapped when registered.

If you register the tag as it is over lapping the two touch tags will not operate properly.

② The touch territory's unit should be a minimum of width 20 and height 20.

Thus, when registering the touch, a width, height 20 dot snap shot fixation is the best.

9-3. F TAG (Function Key Tag)

Type	PMU-200	PMU-300	PMU-600
Application	O	O	O

■ The function keys located on the main frame act as Bit or Word Manipulation and Special Functions as entered.

■ Function Key Tag ,

Can be used for Momentary Switch, On Switch, Off Switch, Alternate Switch which is used to manufacture a bit.

    Can be used as a switch to move the following word data.

        Decimal 16 bit, BCD 16bit, Hexa 16bit, Increment Hexa 16 bit, Decrement Hexa 16 bit,

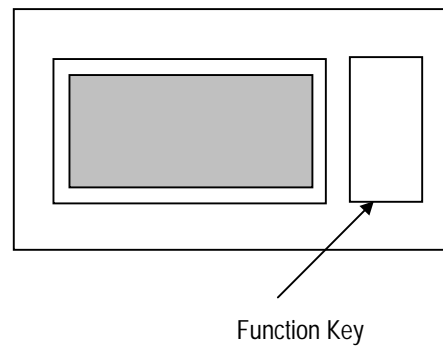   Increment BCD 16 bit, and Decrement BCD 16 bit

    Can be carried out as a switch to be used for the following special functions.

        Previous Screen , Original Screen , S/W Reset, Run Quit, Alarm Summary, and Print Screen
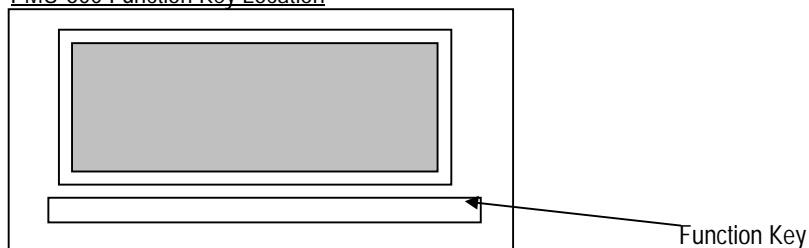
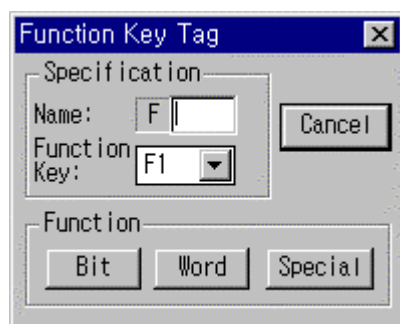PMU-200 Function Key Location   PMU-300 Function Key Location
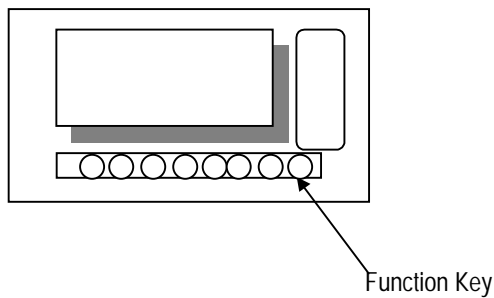
Function Key

Function Key

PMU-600 Function Key Location

Function Key

Function Key Tag's Function Establishment

▶ Tag Specification [Applicable for PMU-200]

Name:

The beginning of the word starts with the letter 'F' automatically and the user may allow up to four letters or numbers (total 5 letters).

Function Key:

① It allows the specification of the function key and there are a total of 15.

② Can choose between F1-F10, ▲,▼,◀,▶, ENTER.

Warnings

① Function Key MENU:

At the main frame, while establishing the menu it enables you to move to the previous menu. While in Run, the Function Keys are the keys located at the bottom, and the F1～F10 keys can be used as TEN KEY or as general function keys.

Thus, when pressed the T/K LED is lighted and the TEN KEY begets the function of the Function Key. When pressing MENU again, the T/K LED light turns off and the function key's function key tag can be specified.

② Function Key SHIFT:

This is used when the TEN KEY is used as the F1～F10 at the bottom.

When you press the bottom function keys, then such as the bottom, it will be used as a TEN KEY.

FUNCTION KEY	GENERAL (TEN KEY MODE)	When pressed with the SHIFT key (TEN KEY MODE)
F1	1	A(HEXA)
F2	2	B(HEXA)
F3	3	C(HEXA)
F4	4	D(HEXA)
F5	5	E(HEXA)
F6	6	F(HEXA)
F7	7	
F8	8	
F9	9	(When entering a negative number)
F10	0	CLEAR (Key Indication Tag Contents)

Function Key Tag's Function Establishment
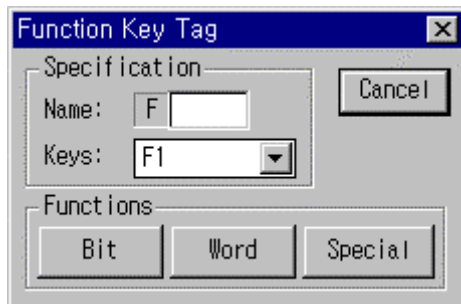
▶Tag Specification [Applicable for PMU-300]

Name:

The beginning of the word starts with the letter 'F' automatically and the user may allow up to four letters or numbers (total 5 letters).

Function Key:

① It allows the specification of the function key and there are a total of 15.

② The Function Key is granted and out of the following 14 you can specify which keys.   The following 14 keys are: F1-F10, ENTER, UP, DOWN, ESC.

▶Function

The establishment of the function key tag has three major roles.

Bit Control Function, Word Control Function, and Special Function

▶Tag Specification [Applicable for PMU-600]

Name:

The beginning of the word starts with the letter 'F' automatically and the user may allow up to four letters or numbers (total 5 letters).
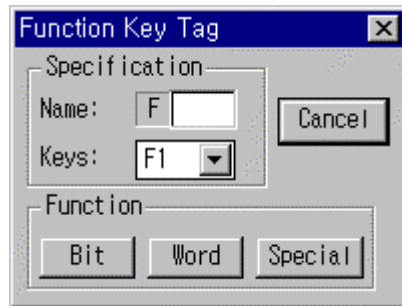
Function Key:

① It allows the specification of the function key and there are a total of 12.

② Can be chosen between F1-F12.

▶Function

The establishment of the function key tag has three major roles.

Bit Control Function, Word Control Function, and Special Function

Bit

Bit Control is to enter the established touch key which the specified buffer and specified bit can be manufactured.

▶Buffer Specification

Buffer: It is the buffer to be manufactured when the Function Key is pressed

Bit: It is the bit to be manufactured when the specified buffer's Function key is pressed. (0-15)

▶Run Method

There are five different ways to establish Run Method

Momentary: ①When the function key is pressed the specified bit will be "1",

when released the bit will be "0".

②The previous value will not be established unless it is pressed.

ON: When the function key is pressed the specified bit will be "1".

OFF: When the function key is pressed the specified bit will be "0".

Alternate: Each time the function key is pressed the specified bit is alternate set and reset.

Comparison: When the function key is pressed the comparison buffer and the specified value will coincide the expression option then the specified bit will be "1".

▶Expression

Can be established only when the Run Method is Comparison.

When the Run Method is Comparison, the compared buffer and the specified value's relationship will be coincided with the operator and the specified bit will be "1".

There are six types of operator, which are <, >, =, $\neq$, $\leq$, $\geq$.

For example, when the specified value of the comparison buffer value is 100 and the specified value is 200, and the operator is ">" the Run result not coincide. Thus, even though the function key is entered, the bit will not be manufactured.

The comparison buffer must be over 201 for the result to coincide and the function key is entered for the bit to be manufactured.

▶Buzzer Beep

While function key enter, a buzzer can be established to be sounded.

The buzzer sound's volume can be changed at the main frame menu of 'System Establish' at the 'First Stage Establishment'.

Word

▶ Specified Buffer

It is the specified value and the buffer value, which the buffer is to be specified when the function key is entered.
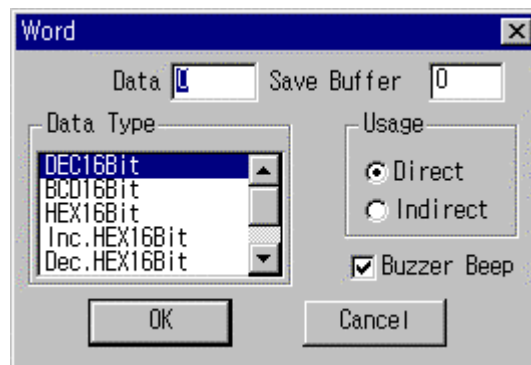
▶ Method of Word Specification

There are two ways to specify a method.   They are direct and indirect.

The Direct method uses the specified data's value of the specified buffer when the function key is entered.

The Indirect method uses the buffer number's data of the specified buffer when the function key is entered.

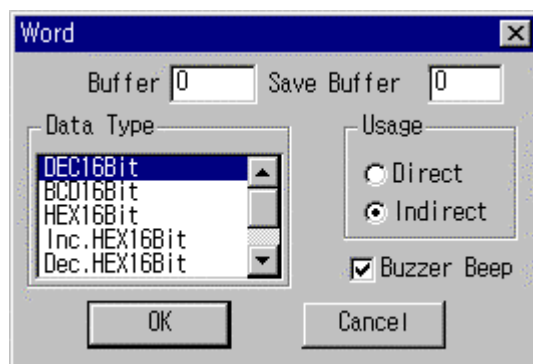Direct Method (Specified Data)

If the method of specification is Direct, the category to be established of the specified data's value will be used as the function key is entered.

Indirect Method (Specified Buffer)

If the method of specification is Indirect, the number of the category to be established and the value of the given buffer will be used for the specified buffer as the function key is entered.

▶Data Type

The Data Type is the data form that is saved for the specified buffer.

Decimal 16 bit (0～65535)

The specified buffer and the buffer number is recognized as in decimal, which is saved under the specified buffer.

BCD 16 bit (0～9999)

The Direct Method of the specified data or the Indirect Method of the buffer number's data will be recognized as the BCD value and used as the specified buffer.

In this situation the letters A～F cannot be used in the specified data and when the buffer number points to the data of hexadecimal the letters A～F are included, which cannot be used for the specified buffer.

Hexa 16 bit (0～FFFF)

When the method is the Direct Method, the entered specified data is recognized as hexadecimal and the specified buffer will be used.

When the method is Indirect Method, the specified data of the buffer number will be used as the specified buffer.

In this situation, the conclusion will be the same as Decimal 16 bit.

Increment Hexa 16 bit (0～FFFF)

When the method is Direct Method then the specified data, and when the method is Indirect

Method then the specified buffer's pointed data will be added to the specified buffer.

Each data is recognized as hexadecimal.

Decrement Hexa 16 bit (0～FFFF)

When the method is Direct Method then the specified data, and when the method is Indirect Method then the specified buffer's pointed data will be deleted from the specified buffer.

Each data is recognized as hexadecimal.

Increment BCD 16 bit (0～9999)

When the method is Direct Method then the specified data, and when the method is Indirect Method then the specified buffer's pointed data will be added to the specified buffer.

Each data will be recognized as BCD and when the data value is shown the letters A～F will be included the result will not happen.

Decrement BCD 16 bit (0～9999)

When the method is Direct Method then the specified data, and when the method is Indirect Method then the specified buffer's pointed data will be deleted from the specified buffer.

Each data will be recognized as BCD and when the data value is shown the letters A～F will be included the result will not happen.
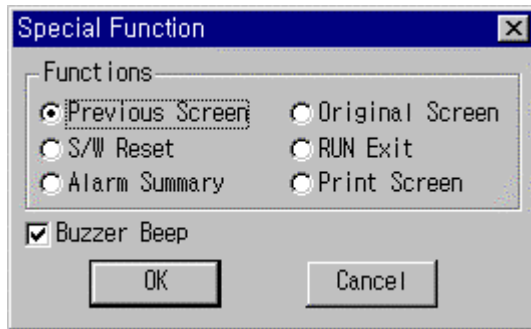

▶ Show Press, Buzzer Beep

The method is the same when buffer is specified.

Special

For Special Functions there are Previous Screen , Original Screen , S/W Reset, Run Exit, Alarm Summary, and Print Screen.

The functions Buzzer Beep is the same.

▶ Previous Screen

While in Run, you can call up and convert to the previous screen.   You may call up a maximum of 10 screens.

To call up previous screens continuously, each paged screen must be Function Key tag registered.

▶ Original Screen

It is the function to move back to the original screen from the called up previous screen.

The original screen is the very first screen which called up the previous screen.

▶ S/W Reset

It is the function of which the internal system buffer's used value is initialized.

The Clock and Date of the related buffer are not influenced.

▶ Run Exit

It is the function to end the operation mode and enter into the main menu.

▶ Alarm Summary

While in Run if an alarm is sounded, then it will show the saved Alarm Summary Screen.

After reading the alarm, if you press the Cancel Touch Key on screen, then it will go back to the Run mode.

In this situation, you may not select Show Press.

▶ Print Screen (Only applicable for PMU-600)

While in Run, if you press the touch key, the screen in operation will be printed.

Print Screen is also capable when connected it to the key board, by pressing "Print Screen".

9-4. W TAG (Buffer Write Tag)

Type	PMU-200	PMU-300	PMU-600
Application	O	O	O

■ According to the condition option, you may write the specified system buffer or operate the specific bit.

■ Keep in mind that when the screen converts, the converted screen's buffer write and tag automatically operates.

■ Buffer Write Tag

You are able to select the condition option.

0 →1:   The specified buffer's bit changes from OFF to ON and operates

1 →0:   The specified buffer's bit changes from ON to OFF and operates

1↔0:   The specified buffer's bit changes and operates

You may create the bit by the following steps.

ON: According to the condition option the bit is ON

OFF: According to the condition option the bit is OFF

Alternate: According to the condition option the bit is reversed

Comparison Set: When the condition option and the comparison option are both satisfied the bit is ON

The type of data that are handled when creating word are the following.

Decimal 16 bit, Hexa 16 bit, BCD 16 bit,

Increment Hexa 16 bit, Decrement Hexa 16 bit, Increment BCD 16 bit, Decrement BCD 16 bit

Buffer Write Tag's Establishment Category

▶ Specification

Name: The first letter always begins with the letter "W" with a maximum of four letters or numbers of the tag name is granted.

Buffer: It is to save the buffer to be used for the condition option.

According to this buffer, the buffer write operates.

Bit: It is to save the bit to be used for the condition option.

When this bit and the condition option coincides with each other then the buffer write   will be accomplished.
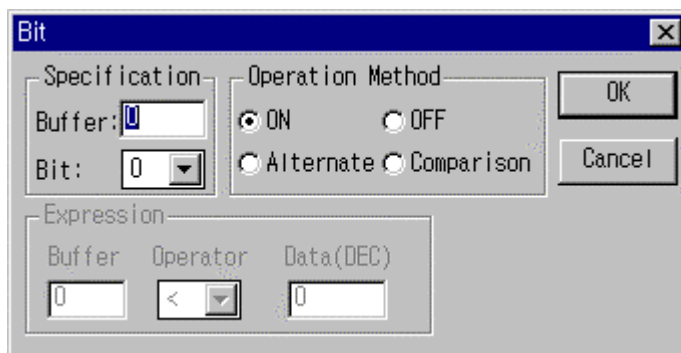
▶ Condition

The buffer write will be executed when the specified buffer's specified bit are in some condition.   There are three conditions and they are:

① 0→1:   The specified buffer's specified bit changes from 0 to 1 to be executed.

② 0←1:   The specified buffer's specified bit changes from 1 to 0 to be executed.

③ 0 ↔1:   The specified buffer's specified bit is changed from 1 to 0 or from 0 to 1 to be executed.

▶ Function

The buffer writing manufacturing method is in the Bit and Word.

Bit manipulation is only manufacturing the optional bit where as word manipulation is writing the buffer value or other buffers onto the optional bit.

Bit

According to the Bit Manipulation the buffer write conditions and the saved buffer's saved bit can be ON, OFF, or Reversed.

▶ Specification

Buffer: A saved buffer is the target for the buffer write, which will be manufactured.

Bit: A saved bit is when the Bit Manipulation is conducted for the buffer write.

▶ Operation Method

The Run method is the method of manufacturing the saved bit.   There are four different methods.

① ON: According to the Run option, it allows the saved buffer's saved bit to turn ON.

② OFF: According to the Run option, it allows the saved buffer's saved bit to turn OFF.

③ Alternate: According to the Run option, it reverses the saved buffer's saved bit.

When the saved bit's value is 0, then it is changed to 1 and vice versa.

④ Comparison Set: When the Run option is operated and the comparison buffer and the saved value's relationship is corresponding with the delay character, the saved buffer's saved bit is turned ON.
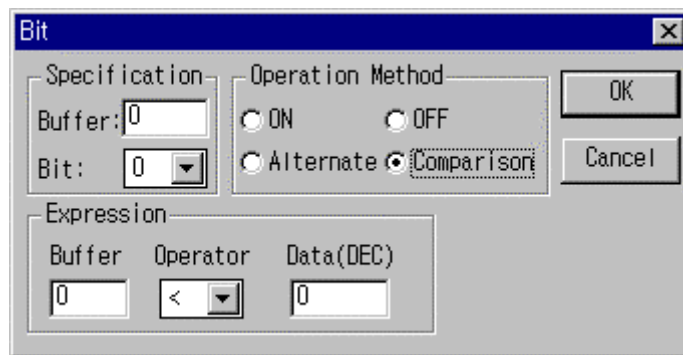
▶ Operator

This establishment is used only when the Run method is in Comparison Set.

When the Run method is Comparison Set, the comparison buffer and the specified value must coincide with the Operator in order for the Run option's Bit Manipulation to happen.

① Comparison Buffer: This is the buffer number to be compared.

② Operator: There are six different types of characters to be compared.   They are <, >, =, ≤, ≥.

③ Specified Value: This is the data value to be compared with the comparison buffer.   This value is in decimal and can be from 0 to 65535.

For Example,

If the comparison buffer is 250 and the specified value is 123, with a operator of >...If the 250 buffer's saved value is 100, "100>123 (False)" happen.   Thus, even though the buffer write does actually operate, the bit manipulation does not happen.   Therefore, the in order for the bit manipulation to operate the 250 buffer 's value must exceed 123.

Word

According to the Run option, when the buffer write begins to operate.   Then when the method of Run is Direct, at the saved data, if the method of Run is Indirect, at the saved buffer, will the specified buffer's number is be written.

▶Usage

For specification method, there are Direct method and Indirect method.

▶Direct (Specification Data)

For this situation, the saved buffer and the specified data must be established in order for the established specific data to be used as the saved buffer.

When there is an Increment or a Decrement, the specific data will be used as the saved buffer and the data to be calculated.
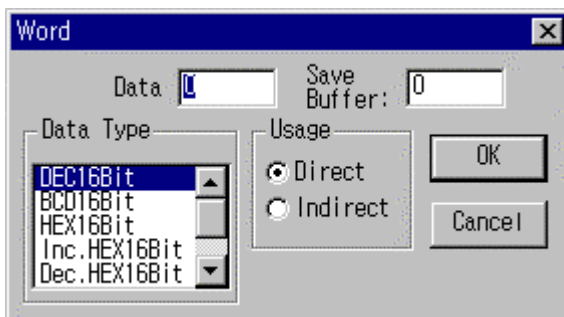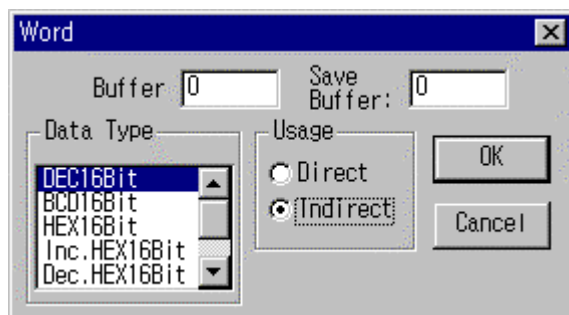

▶Indirect (Specified Buffer)

In this situation the buffer number and the saved buffer must be established for the established buffer

number's data to be used as a saved buffer.

If the data type is Increment or Decrement the saved buffer will be used as the Attribute data.

▶Data Type

It is the type of data which the specified data is written on the saved buffer, or the buffer number is used as the specified buffer's data.

The following are the Data Types used.

Decimal 16 bit (0～65535)

The specified data or the buffer number's data are recognized as decimal, which is saved at the saved buffer.

BCD 16 bit (0～9999)

The Direct Method of the specified data or the Indirect Method of the buffer number's data will be recognized as the BCD value and used as the specified buffer.   In this situation, the letters A～F cannot be used in the specified data and when the buffer number points to the data of hexadecimal the letters A～F are included, which cannot be used for the specified buffer.

Hexa 16 bit (0～FFFF)

When the method is the Direct Method, the entered specified data is recognized as hexadecimal and the specified buffer will be used.

When the method is Indirect Method, the specified data of the buffer number will be used as the specified buffer.

In this situation, the conclusion will be the same as Decimal 16 bit.

Increment Hexa 16 bit (0～FFFF)

When the method is Direct Method then the specified data and when the method is Indirect Method then the specified buffer's pointed data will be added to the specified buffer.

Each data is recognized as hexadecimal.

Decrement Hexa 16 bit (0～FFFF)

When the method is Direct Method then the specified data, and when the method is Indirect Method then the specified buffer's pointed data will be deleted from the specified buffer.

Each data is recognized as hexadecimal.

Increment BCD 16 bit (0～9999)

When the method is Direct Method then the specified data, and when the method is Indirect Method then the specified buffer's pointed data will be added to the specified buffer.

Each data will be recognized as BCD and when the data value is Hexa then the letters A～F will be included which result will not happen.

Decrement BCD 16 bit (0～9999)

When the method is Direct Method then the specified data, and when the method is Indirect Method then the specified buffer's pointed data will be deleted from the specified buffer.

Each data will be recognized as BCD and when the data value is Hexa then the letters A～F will be included which result will not happen.

9-5. A TAG (Auxiliary Tag)

Type	PMU-200	PMU-300	PMU-600
Application	O	O	O

■ It is the function where the user can call up the already created assistant screen onto the standard screen.

■ There are two methods in specifying the assistant screen to be called up in the Assistant Tag.

Direct Method: According to the condition, the specified assistant screen is called up.   There are two ways in drawing the assistant screen, which are REPLACE and XOR.

For the Direct Method, to call up the assistant screen there are two indication choices.

① 0→1:   When the specified buffer's specified bit is turned ON from OFF, the assistant screen will be indicated.

② 1→0:   When the specified buffer's specified bit is turned OFF from ON, the assistant screen will be indicated.

Indirect Method: The assistant screen gets called up according to the specified buffer's data. Therefore, when the data changes so does the assistant screen.

The assistant screen will get over drawn the standard screen. (REPLACE function)

Establishment Category

▶Specification

Name: The first letter of the name automatically begins with the letter "A".   The tag name may be up to four letters or numbers.

▶Tag Usage

There are two methods in calling up the Assistant Tag.

Direct:

When the specified buffer and the specified bit's Condition coincides, then the assistant screen

number corresponding to the assistant screen will be indicated.

When the Condition is canceled, the assistant screen indicated on screen will disappear.

You may use the REPLACE or XOR method to indicate the assistant screen.

① REPLACE:

When the Condition coincides then the picture to be drawn on the background of the assistant screen
will be replaced.

Thus, the picture to drawn on the background will have no affect when the assistant screen is
indicated.

In this method, when the Condition is canceled, the assistant screen will disappear and the original
background screen will reappear.   Therefore, this method is slower than the XOR method.

② XOR:

When the Condition coincides, on the background picture XOR will be indicated on the
assistant screen.

In this method, if there is a colored figure on the background the assistant screen to be indicated
will show a different color than the original color of the user created assistant screen.

However, the positive aspect is that the XOR method is quicker than the REPLACE method in the
assistant screen's Attribute and distribute.

Thus, it is better to use the XOR method if there are lines, squares, circles, or ovals to be colored.
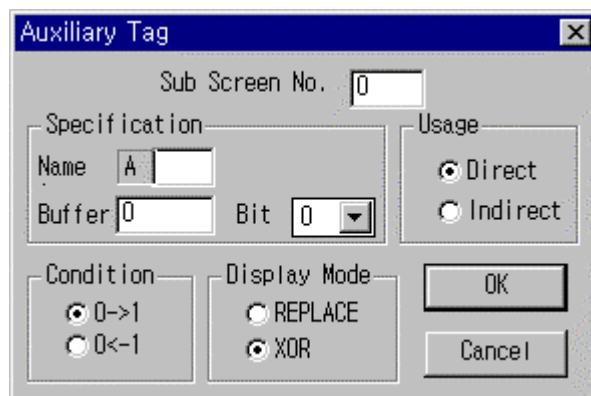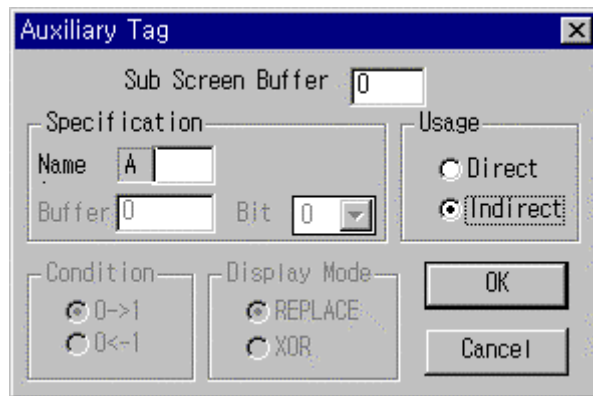
Indirect:

The assistant screen's specified buffer's data becomes the called up assistant screen's number.

The assistant screen is indicated at the same place, then the assistant screen specified buffer's data changes, and then the corresponding assistant screen gets called up.

① If the specified buffer's data does not exist then the assistant screen's number will not change.

② The assistant screen to be called up will continuously be over written on the previous assistant screen.

Therefore, if the previous assistant screen is bigger than the called up assistant screen, then the screen will not be completely erased.

Direct Method

The Direct Method is when the specified bit is changed to 1 from 0 or it is changed to 0 from 1 (Condition), then the established assistant screen will be shown.

▶ Buffer

This is the buffer in which the Condition is to be compared with a bit.

▶ Bit

It is to be compared with the Condition.

▶ Condition

It is the option in which to call up the established assistant screen when the specified buffer's

specified bit is in which condition.

There are two Conditions.

① 0→1:

When the specified bit is changed to 1 from 0 the assistant screen gets called up.

When the specified bit goes back to 0 from 1 then the assistant screen disappears.

(Before the assistant screen is called, the background picture will reappear)

② 0←1:

When the specified bit is changed to 0 from 1 the assistant screen gets called up.

When the specified bit goes back to 1 from 0 then the assistant screen disappears.

(Before the assistant screen is called, the background picture will reappear)

▶Assistant Screen Number

When the method is Direct Method, it is to be the called up assistant screen number.

When the Condition coincides then the screen will appear, and when canceled the screen will disappear.   Therefore the assistant screen will be XOR at the standard screen.

▶Display Mode

There are two methods of indication.

① REPLACE

When the assistant screen is indicated on screen, the background pictures have no relationship.

This method is useful when creating and calling up the Ten Key screen (Assistant Screen 900～999).

② XOR

When the assistant screen is indicated, the background pictures are faced with XOR.

When there is no created assistant screen with the accomplished figures (line, square, circle, oval, pie, and arc) it is best to use this method.

When using the PMU-600 Series, the PAINT function will not be called.

Indirect Method of Establishment

According to the assistant screen specific buffer's data, the called up assistant screen buffer data's value is changed.

Assistant Screen Specification Buffer

It is the buffer in which the assistant screen is to be called upon the standard screen.

This buffer is the data's assistant screen number.

If there is no existing assistant screen, then nothing will appear on the standard screen.

9-6. S TAG (Symbol Tag)

Type	PMU-200	PMU-300	PMU-600
Application	O	O	O

■ It is for the user to call up the desired symbol, already created, onto the standard screen.

■ Symbol Tag is,

According to the specified optional buffer's bit the symbol is called upon the standard screen.

There are two options of indication for the specified bit.

① 0→1: When the specified buffer is changed to ON from OFF the symbol is called.

② 1→0: When the specified buffer is changed to OFF from ON the symbol is called.

To call up the desired symbol, you may use the Direct Method or the Indirect Method to specify your symbol.

The Direct Method is when the specified buffer's specified data coincides with the Condition, then the established symbol corresponds to the symbol's specified number which is called.

The Indirect Method is when the specified buffer's specified bit coincides with the Condition, then the symbol screen specification buffer's saved data and the symbol of the same number is called upon the standard screen.

The indicated symbol can be enlarged from 1 to 8.

The indicated symbol's color can be specified by option and its Attribute can be by Toggle or Blink.

Establishment Category

▶ Tag Specification

The first letter automatically begins with the letter "S" with a maximum of four letters or numbers.

▶ Enlargement Establishment

PMU-200/300/600 Series Establishment Instructions

Decide the width and length of the indicated symbol to be enlarged.

Each can be enlarged up to eight times.

If the symbol's number is over 900 then the image symbol becomes recognized, and the enlargement method does not apply, so be careful.

▶ Color Specification [Only applicable for PMU-300/600 Series]

It establishes the background and foreground color of the symbol to be indicated.

The actual created symbol is white and black, which the foreground color is white and the background color is black.

Here, the established foreground color and background color is to change the established foreground color and background color when calling up the symbol onto the standard screen.

▶ Attribute

It is to change the Attribute of the called up symbol.

There are five types in the PMU-200 Series.

　　Normal, Blink, Toggle, Reverse, and Reverse Blink

There are three types in the PMU-300/600 Series.

　　Normal, Blink, and Toggle

① Normal

It is when the indicated symbol has no Attribute.

PMU-200 Indication Method

It is indicated by a black background and white lines and dots.
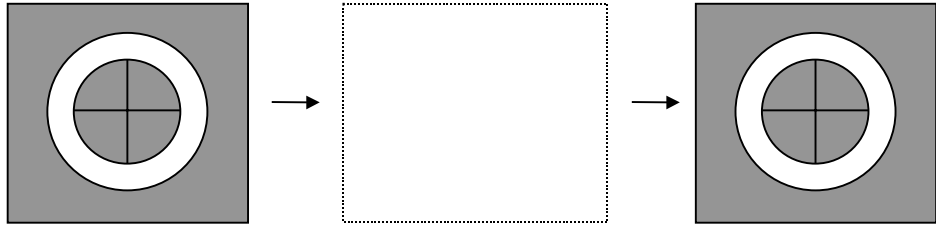
PMU-300/600 Indication Method

When indicated, the color of the established foreground and background are different..

② Blink

It is when the indicated symbol has a blinking Attribute.

PMU-200 Indication Method

Blinking is when the symbols foreground color of white and background color of black interchanges.
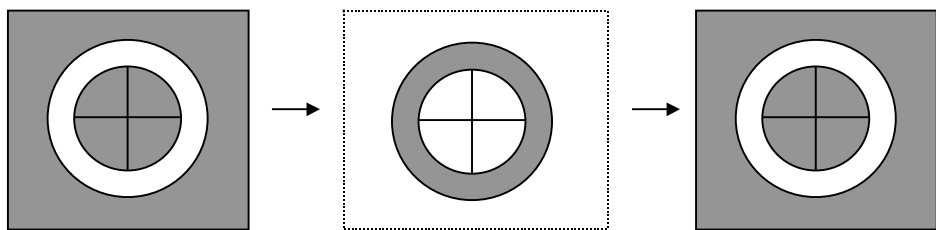

PMU-300/600 Indication Method

Blinking is when the symbols foreground color of white and background color of black interchanges.

Foreground Color   Background Color
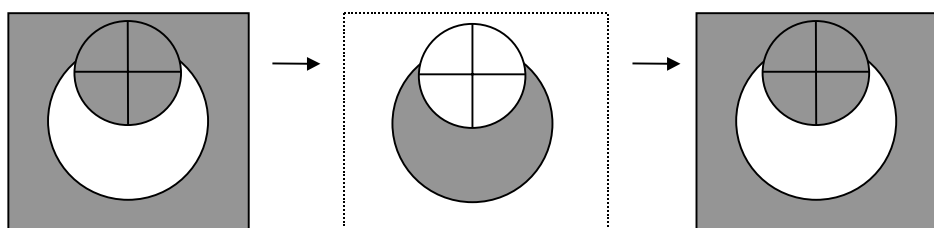

③ Toggle

It is when the indicated symbol has a toggle Attribute.

PMU-200 Indication Method

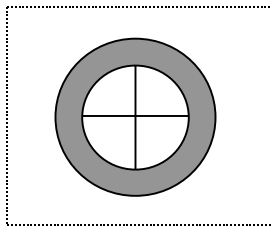PMU-300/600 Indication Method

Toggle is when the symbol's foreground color and background color interchanges.

Foreground Color   Background Color

Reverse (PMU-200 Indication Method)

It is when the called up symbol is reversed from normal.   Thus, from the foreground color of white with the background color of black, the foreground color becomes black and the background color becomes white.

Reverse Blink (PMU-200 Indication Method)

It is the function where the indicated symbol has the character of reverse, but also blinks.

Thus, the white background and black symbol appears and disappears.
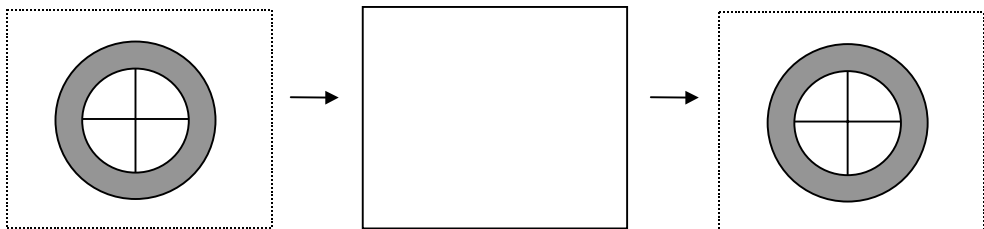
<u>How to Use</u>

It is the method to call up the Symbol Tag.

Here you may use the Direct Method or the Indirect Method.

Direct (Symbol Number Establishment)

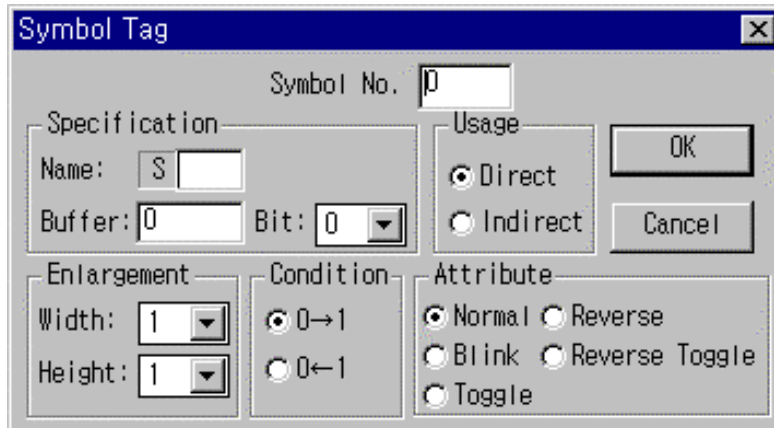When the specified buffer's specified bit coincides, then the symbol corresponding to the established symbol's specification number will be indicated on the standard screen.

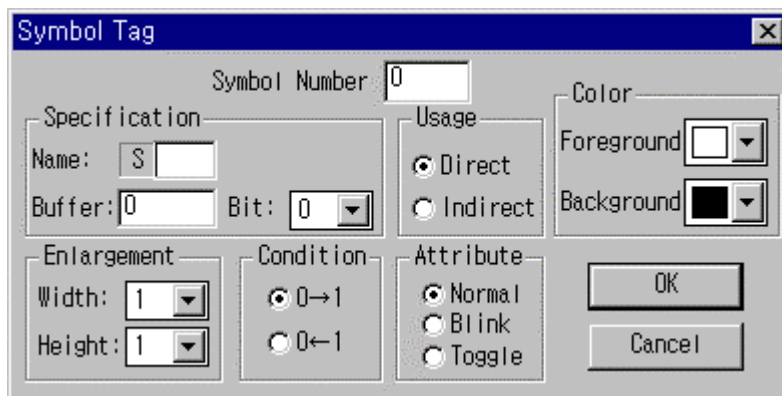The called up symbol screen will disappear when the Condition is canceled.

You must establish the symbol specification number between 1 and 999.

According to the Direct Method, when the symbol is called up, XOR will appear on the symbol screen.

PMU-200 Indication Screen

PMU-300/600 Indication Screen

Indirect (Code Specification Buffer Establishment)

The symbol will be indicated when the symbol specification buffer's number is specified.

When the symbol specification buffer's data is changed, then the changed data's number's symbol will be indicated on screen.

According to the Indirect Method, when the symbol gets called up, the standard screen will be over written.

(The symbol called up on screen may be changed, but will not disappear)

PMU-200 Indication Screen
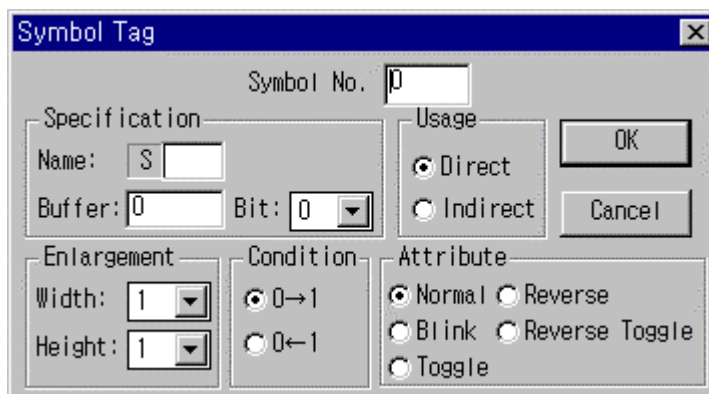
PMU-300/600 Indication Screen
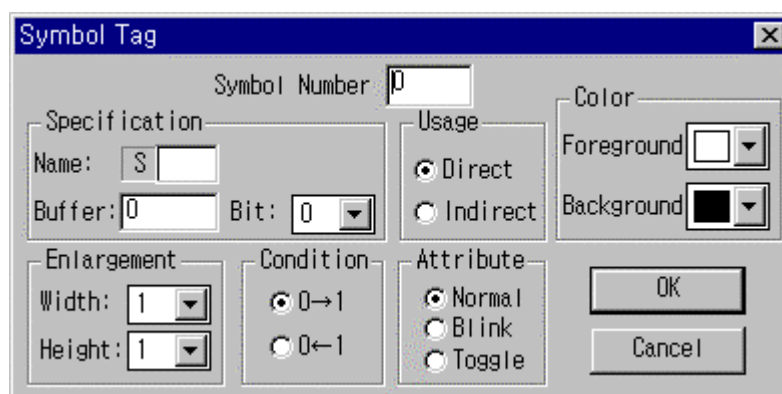
Direct Method of Establishment

▶Buffer

It is the buffer to be used for the symbol's Condition.

▶Bit

It is the bit to be used within the symbol's Condition of the specification buffer.

This bit is called by the ON, OFF actions.

▶Condition

It is to decide when to call the symbol when the specified bit's specified bit is in what state.

There are two methods of Conditions.

① 0→1:

When the specified bit is changed to 1 from 0 then the symbol gets called upon.

When the specified bit is changed back to 0 then the symbol disappears from screen.

② 0←1

When the specified bit is changed to 0 from 1 then the symbol gets called upon.

When the specified bit is changed back to 1 then the symbol disappears from screen.

Symbol Specification Number

It is to specify the symbol number according to the Direct Method of condition option.

Indirect Method of Establishment

▶Symbol Specification Buffer

It is establishing the buffer number which is the indicated symbol number's buffer, when the Indirect Method is used.

Every time this buffer's data is changed the symbol shown on screen also changes.

9-7. B TAG (Block Tag)

Type	PMU-200	PMU-300	PMU-600
Application	X	O	O

Applied to: PMU-300/600 Series

■ According to the condition option's specified bit the specified territory will not operate.

PMU-300/600 main frame touch panel operates the touch Run by 20 × 20.   Therefore, the registration of the block tag should be done by both width, length of the double number of 20.

The block tag can be registered at the standard screen, but only one screen per block tag can be entered.

■ Block Tag,

By establishing the territory, according to the specified bit the condition option will generate, then within that territory the touch key will not operate.

There are two condition options for the specified bit.

① 0→1:   When the specified bit is changed to "1" from "0" the specified territory's touch key will not operate.

② 1→0:   When the specified bit is changed to "0" from "1" the specified territory's touch key will not operate. You may only register one Block Tag.
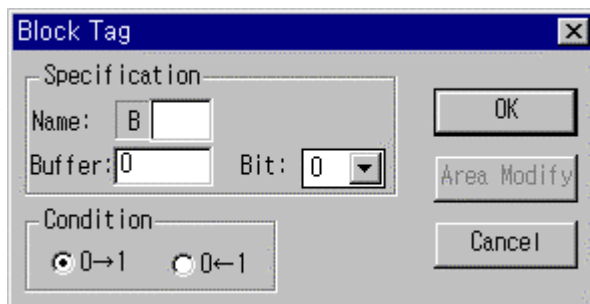
<u>Establishment Category</u>

▶Tag Specification

Name

The head of the tag name will automatically begin with the letter B, with a maximum of four letters or numbers.

▶Buffer

It is the system buffer in which the block tag's condition option is established.

▶Bit

It is the bit to be compared with the condition option.

▶Condition

It is to establish the specified bit when it is in a condition which the block tag effected.

① 0 →1

When the specified bit is changed to "1" from "0" then the specified territory's touch key will not operate.

② 0←1

When the specified bit is changed to "0" from "1" then the specified territory's touch key will not operate.

▶Territory Specification

It is to specify the block tag of which a territory is established.

The point in which you first register the tag is the starting point and after you have established the category of the block tag, the established square is the territory in which the block tag has established.

9-8. D TAG (Delay Tag)

Type	PMU-200	PMU-300	PMU-600
Application	O	O	O

■ When the specified buffer's specified bit is condition option then the value is used for the specified buffer or bit, after a certain delay time has past.

■ Delay Tag

After the condition has began, and before the actual Run begins the delay time can be specified by 500ms.

According to the specified bit there are two methods of condition options.

0→1, and 1→0.

After establishing the delay time, manufacturing targets are Word Manipulation and Bit Manipulation.

    Bit Manipulation: It turns ON the specified bit.

    Word Manipulation: It writes in the value for the saved buffer.

When the manufacturing method is Word Manipulation, there are two ways to write in the value.

    Direct Method: It writes in the specified value into the saved buffer.

    Indirect Method: It writes in the established buffer's data into the saved buffer.

Establishment Category

    ▶Tag Establishment

Name:

The head of the tag name will automatically begin with the letter "D" with a maximum of four letters or numbers.

Buffer:

It is the buffer to be used as the Condition specified bit.

Bit:

It is the bit to be used for the Condition option.

When this bit coincides with the Condition, from that point till the delay time the saved bit or saved buffer will be manufactured.

▶Condition

It is the option for the delay tag to operate.:

0→1

When the specified bit of buffer is changed from "0" to "1" then the amount of established delay time and after the delay the buffer is manufactured or the bit is manufactured.:

0←1

When the specified bit of buffer is changed from "1" to "0" then the amount of established delay time and after the delay the buffer is manufactured or the bit is manufactured.:

After the Condition has been met, and before the delay time has past, when the Condition is canceled then the delay tag will not operate.

For example: Let us look at an example where the Condition is 0→1 and the delay time is 10× 500ms (5 seconds).

When the specified bit is changed to 1 from 0, and three seconds later [3 seconds < 5 seconds (= delay time)] and when the specified bit is back to 0 then the delay tag will not operate.

PMU-200 Delay Tag Screen
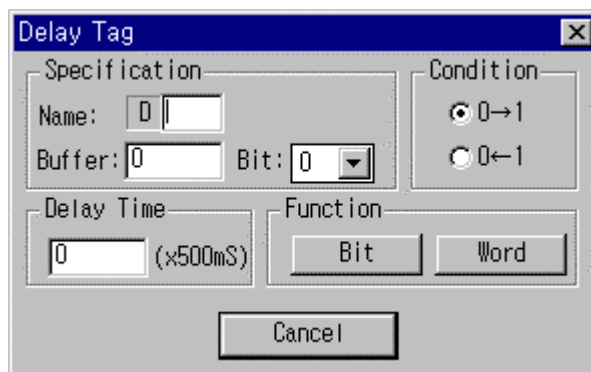
PMU-300 Delay Tag Screen

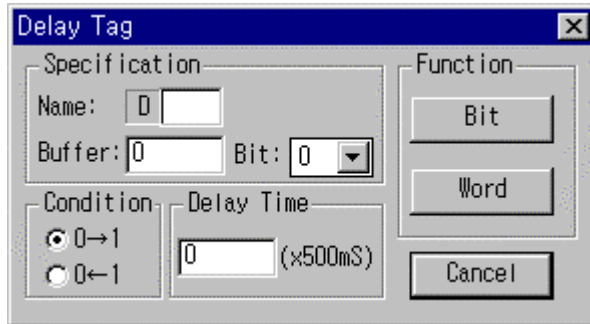PMU-600 Delay Tag Screen
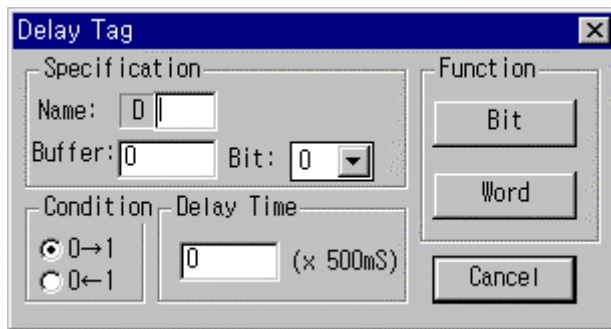
▶Delay Time

Delay time is after the manufacturing option has been developed the Bit Manipulation or the Word Manipulation method will be established.

The time unit is 500ms and can be established up to $65535 \times 500ms$ (32767.5 seconds).

▶Function

The Function option is after the delay time the object to be manufactured will be established.

Here there is the Bit Manipulation Method and the Word Manipulation Method.

Bit

A Bit Manipulation Method is after the delay time the saved buffer's saved bit is set to "1" for it to be manufactured.

▶Buffer Specification

Buffer

The saved bit to be manufactured has the buffer.
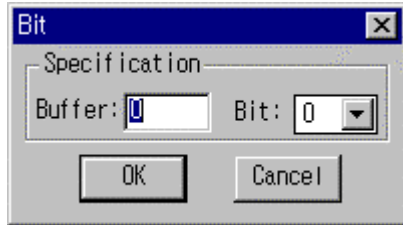
Word

When the method of establishment is Word Manipulation, after the delay time the optional value is written onto the saved buffer.

Direct Method and Indirect Method are two methods in which the saved buffer is manufactured.
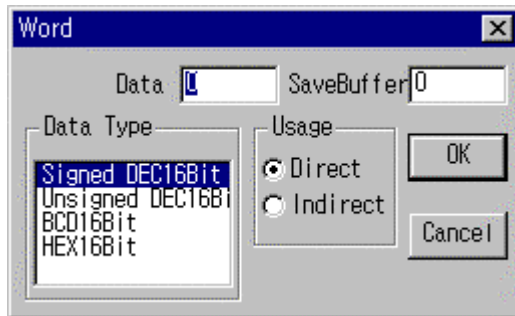
▶Saved Buffer

It is the number of the system buffer in which will be manufactured during the Word Manipulation Method.

▶Use Method

There is the Direct Method and the Indirect Method of specification.

Direct (Specified Data Establishment)

For the Direct Method, the Manufacturing Option must be satisfied in which after the established delay time, the data within the established buffer number's value can be established under the saved buffer.

Thus, you must establish the specified data when using the Direct Method.

The established data has a limit, according to the established number time, under the Data Type.

Indirect Method (Specified Buffer Establishment)

For the Direct Method, the Manufacturing Option must be satisfied in which after the established delay time, the data within the established buffer number can be used.

You must establish the buffer number, when using the Indirect Method.

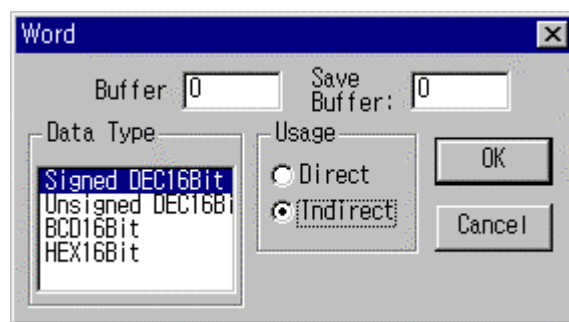The established data has a limit, according to the established number time, under the Data Type.

▶ Data Type

The Data Type are the data type saved under the specified buffer.

Decimal signed 16 bit (-32768～32767)

The specified data or buffer number is recognized as ten core and is saved under the saved buffer.

A negative number may also be entered when the Direct Method is used.

When the Indirect Method is used, it is the same as Hexa 16 bit.

Decimal unsigned 16 bit (0～65535)

The specified data or buffer number is recognized as ten core and is saved under the saved buffer.

Only a positive number can be entered when the Direct Method is used.

When the Indirect Method is used, it is the same as Hexa 16 bit.

BCD 16 bit (0～9999)

When the Direct Method is used then the specified data, when the Indirect Method is used the buffer number's data is recognized as a BCD value and written onto the saved buffer.

In this situation the letters A～F cannot be used in the specified data and when the buffer number points to the data of hexadecimal the letters A～F are included, which cannot be used for the

specified buffer.

Hexa 16 bit (0 ～ FFFF)

When the method is the Direct Method the entered specified data is recognized as hexadecimal and the is used onto the saved buffer.

When the method is the Indirect Method the specified data of the buffer number will be used onto the saved buffer.

In this situation, the result is the same as Decimal 16 bit.

9-9. C TAG(Operation Tag)

Type	PMU-200	PMU-300	PMU-600
Application	0	0	0

■   If the specified bit satisfies the Condition, the Operation is entered into the specified buffer.

■   Operation Tag

- There are 2 types of criteria to operate a change in the specified bit within the specified buffer.

  0->1, 1->0

   - For Operation, there are two types of specification methods depending on the non-Operational buffer and the computable medium.

      Direct Method: The computed value is directly specified as a number in the

      non-operational buffer.

      Indirect Method: The computed value in the non-operational buffer is the data saved in the specified

      operational buffer.

- There are 8 types of operation equations: +, -, x, ÷, and, or, xor, <<, >> (bit shift)

- The operation data has the following 4 number types.

      Decimal Signed 16 bit

      Decimal Unsigned 16 bit

      BCD 16 bit

      Hexa 16 bit

Setup Item   • Tag Specification

                - Name:

                The tag name can be specified with a total of 5 characters, the header is automatically saved as

                C and the user enters at most 4 characters (English, number).

                - Buffer:

                It is the buffer of the specified bit to be used for Condition.

                - Bit:

                It is the bit used for Condition.

● Condition

It is the criteria for operation to occur.   Operation is possible when the criteria for the specified bit is met.

- There are 2 types of Condition.

0 -> 1: Operation begins when the specified bit changes from "0" to "1".

1 -> 0: Operation begins when the specified bit changes from "1" to "0".

● Use Method

Select the non-operational buffer data and the computable medium.   The Direct Method and Indirect method follows.

- Direct (Select Computable Data)

In this case, the non-operational buffer and the computed value is the computable data.

The data is directly entered as a number and the value is limited to the type of data.

- Indirect Method (Select Operational Buffer)

In this case, the non-operational buffer and computable value are the values stored in the operational buffer.   The computable value is not selected directly, instead the buffer number that has that value is selected.

• Data Type

- Decimal Signed 16 bit (-32768 ~ 32767)

Data within the non-operational buffer or the computable data, and data within the operational buffer, all are recognized as multiples of 10, and the computed result is saved in the Saved Buffer. For the Direct Method, a negative number can be entered for computable data. For the Indirect method, the data within the operational buffer is recognized as multiples of 10 with sign.

- Decimal Unsigned 16 bit (0 ~ 65535)

Data within the non-operational buffer or the computable data, and data within the operational buffer, all are recognized as multiples of 10, and the computed result is saved in the Saved Buffer. For the Direct Method, a positive number can only be entered for computable data. For the Indirect method, the data within the operational buffer is recognized as the same as Hexa 16 bit.

- BCD 16 bit (0~9999)

Data within the non-operational buffer or the computable data, and data within the operational buffer, all are recognized as the value of BCD, and the computed result is saved in the Saved Buffer. For the Direct Method, characters A ~ F cannot be entered for computable data. For the Indirect method, the data within the operational buffer is recognized as multiples of 16 and if A ~ F is included operation does not occur. If the value of the computed result is not BCD, then operation does not occur.

- Hexa 16 bit (0 ~ FFFF)

Data within the non-operational buffer or the computable data, and data within the operational buffer, all are recognized as the value of Hexa, and the computed result is used for the Saved Buffer. For the Direct Method, a negative number can be entered for computable data. For the Indirect method, the operation is the same as the decimal unsigned 16 bit.

● Operational Equation

 - Non-operational Buffer

   It is the buffer that holds the computed data when computed.

- Operator

   The following are the types of symbols used for operation.

+: Adds the data within the non-operational buffer and the computed data.

-: Subtracts the data within the non-operational buffer and the computed data.

x: Multiplies the data within the non-operational buffer and the computed data.   The data results are saved over two words.   The bottom word is stored in the Saved Buffer, and the top word is stored in the in the buffer number following the specified saved buffer.

÷: Divides the data within the non-operational buffer and the computed data.   The results are saved over two words. The value is stored in the Saved Buffer and the remainder is stored in the buffer following the Saved Buffer.

and: The logical sum of the data within the non-operational buffer and the computed data.

or: The logical multiple of the data within the non-operational buffer and the computed data.

xor: The logical sum excluding the data within the non-operational buffer and the computed data.

<<: Shifts left the data bits within the non-operational buffer to the computed data.

For example, if the data within the non-operational data is 806(1100100110) and the computed data is 201, the following occurs.

0	0	0	0	0	0	1	1	0	0	1	0	0	1	1	0

0	0	0	0	1	1	0	0	1	0	0	1	1	0	0	0
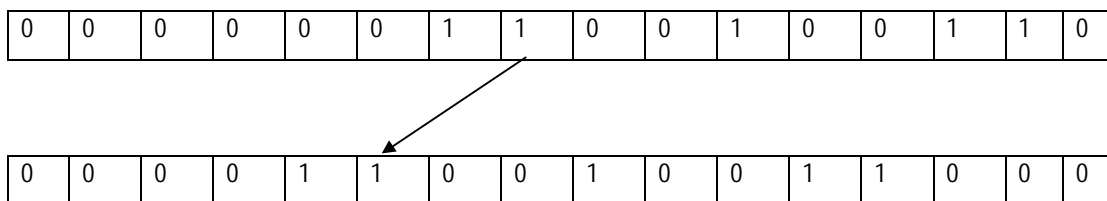
>>: Shifts right the data bits within the non-operational buffer to the computed data.

-Saved Buffer

Select the buffer number to saved the computed results. The data saved also has restrictions depending on the data type. Especially, if the data type is BCD, and the computed results are not BCD, then the results cannot be stored in the Saved Buffer.

For an increase, the resulted value takes up two buffers.

If the number of the Saved Buffer is selected as 200, then the resulted value's bottom word is saved as   200 and the top word as 201.

For a decrease, the resulted value takes up two buffers.

If the number of the Saved Buffer is selected as 200, then the resulted value is saved as 200 and the remainder as 201.

9-10. M TAG (Message Tag)

Type	PMU-200	PMU-300	PMU-600
Application	0	0	0

■ This function calls the desired message from already created message file data to the screen.

■ Message Tag

- When the specified bit agrees with the display criteria, the message appears on the screen in the designated location. Display Criteria is 0->1, 1->0.

- There are two methods of specifying the message number to be displayed.

Direct Method: Directly selecting the Message number.

Indirect Method: Select the buffer number that holds the message number to be displayed. The contents of the message displayed changes with the specified buffer's data.

- The user can record a maximum of 999 messages in the message file. Each message is called upon by its number.

- The background and foreground color of the displayed message can be specified.

- The Attribute and ratio of the displayed message can be specified. Normal, Toggle, Blink are the type of Attributes.

Selected Item   • Tag Select

- Name

The header is automatically saved as M and user specifies a maximum of 4 characters for the tag name. (total 5 characters).

- Color

Selects the foreground(character color) and background color of the called upon message on the screen.

- Attribute

Selects the Attribute of the called upon message.   There are 3 types of styles.

1)   Normal

PMU-200 Style

Displays the message without any type of style.

The message is displayed on the screen as is, with white foreground, and black background.

PMU-300/600 Style

Displays the message without any type of style.

The message is displayed on the screen in the selected foreground and background colors.

2) Blink

PMU-200 Series

The message content blinks.   The term "Blink" refers to the character colors of the message changing back and forth from white to black.

| MESSAGE | ⟶ | | ⟶ | MESSAGE |

PMU-300/600 Series

The contents of the message called upon blinks. The term "Blink" refers to the character colors of the message changing back and forth from the foreground to background color.   The blinking speed can be adjusted in the System Select of the initial Menu Selection.

| MESSAGE | ⟶ | | ⟶ | MESSAGE |

3) Toggle

PMU-200 Series

The contents of the message called upon toggles.   The term "Toggle" refers to the message character color and the background color switching back and forth.

| MESSAGE | ⟶ | MESSAGE | ⟶ | MESSAGE |

PMU-300/600 Series

The contents of the message called upon toggles.   The term "Toggle" refers to the message foreground color and background color switching back and forth. The toggle speed can be adjusted in the System Select of the initial Menu Selection.

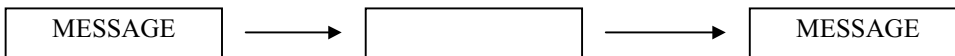| MESSAGE | ⟶ | MESSAGE | ⟶ | MESSAGE |

4) Reverse

Applies only to PMU-200 Series

Displays the contents of the called upon message in black characters on a white background.

MESSAGE

5)   Reverse Blink

Applies only to PMU-200 Series

The contents of the called upon message blinks in reverse.

MESSAGE	⟶		⟶	MESSAGE

6)   Number of Characters

Specifies the number of message characters displayed on the screen.

If the message is longer than the specified number of characters, the latter part of the message does not appear.   Thus, specifications should match the contents of the message created by the user.

PMU-200 Series: Maximum 30 number of characters is possible for selection.

PMU-300 Series: Maximum 40 number of characters is possible for selection.

PMU-600 Series: Maximum 80 number of characters is possible for selection.

- Ratio Select

Specifies the horizontal and vertical ratio of the called upon message.

The ratio of 8 for each is the maximum possible.

- Message Tag Use Method

1)   Direct (Select Message Number)

The Direct Method is direct selection of the message number to be called upon the screen.

There are 999 message numbers possible to select.

There are fixed message numbers that can be called in accordance with the Message Tag in this method.   Thus, depending on the display criteria, the message can be called upon and disappeared on the screen.

PMU-200 Message Tag Screen

PMU-300/600 Message Tag Screen

2) Indirect (Select Message Specific Buffer)

The Indirect method selects the buffer that carries the message number to be displayed on the screen.

The called upon message changes depending on the buffer data in this method.

The displayed message changes in accordance with the data of the specified buffer, but does not disappear.

If it is a message number that does not have already created data in the specified buffer when a change is necessary, then there is no change in the message.

PMU-200 Message Tag Screen
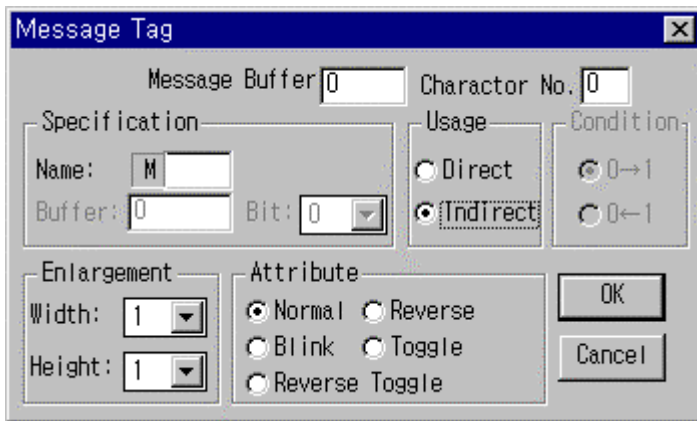
PMU-300/600 Message Tag Screen

Direct Method Selection

• Tag Select

- Buffer

  It is the buffer that holds the specified bit to compare with the display criteria.

- Bit

  It is the bit that compares with the display criteria.

  This operates the message tag.

• Display condition

Selects how the message is displayed under specific bit conditions.

1)   0->1

Displays the message when the specified bit changes from "0" to "1"

When the specified bit becomes "0" again, the displayed message disappears.

2)   0<-1

Displays the message when the specified bit changes from "1" to "0"

When the specified bit becomes "1" again, the displayed message disappears.

• Message Specific Number

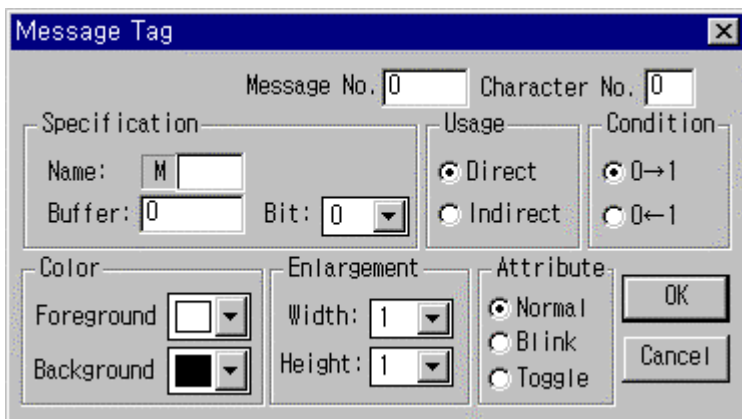Selects the message number to be displayed on the screen.

Indirect Method Selection

• Message Specific Buffer

Selects the buffer that carries the message number to be displayed on the screen.

Whenever the data of the specified buffer changes, the displayed message on the screen changes in accordance.

If a non-existent message number is entered in the buffer, there is no change in the message displayed on the screen.

9-11. I Tag (Precision Adjust Tag)

Type	PMU-200	PMU-300	PMU-600
Application	X	0	0

Applies only to PMU-300/600 Series

- When the touch key is pressed, and the data is sent as AUX, the number digits of the buffer data in the specified system are precisely adjusted.

- I Tag

  - There are two roles of the I Tag.

    1) External Output using AUX

    2) Precisely adjust the system buffer

- For AUX output, there is an adjustment in the bit and byte.

- To adjust the byte for AUX output, depending on the Direct Method and Indirect method, the output data is specified.

- When adjusting the precision of the system buffer, the number of digits can be increased or decreased.

- In the same manner as selecting the touch key tag, the Press and Buzzer Beep is selected.

Setup Items: • Tag Name

The header starts with I and 4 more characters can be recorded.

• Select Adjust

The role of I Tag can be largely divided into AUX output and system buffer adjustment.   One of the two must be selected.

PMU-300 I Tag Screen
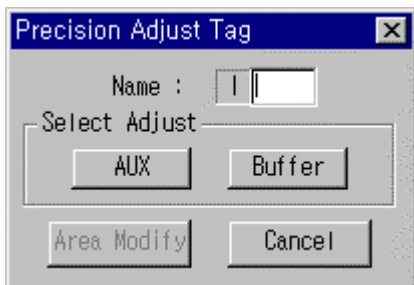
PMU-600 I Tag Screen
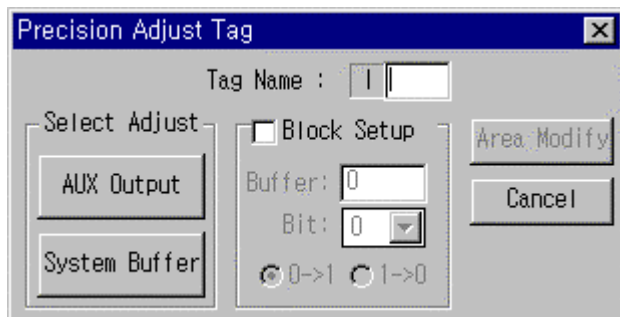
• Block Setup

This turns on and off the Touch operation.   If the block condition is selected and established, then the touch operation is halted.

AUX Output

This function is selected when the data is externally output though AUX.   There are two methods of selection.
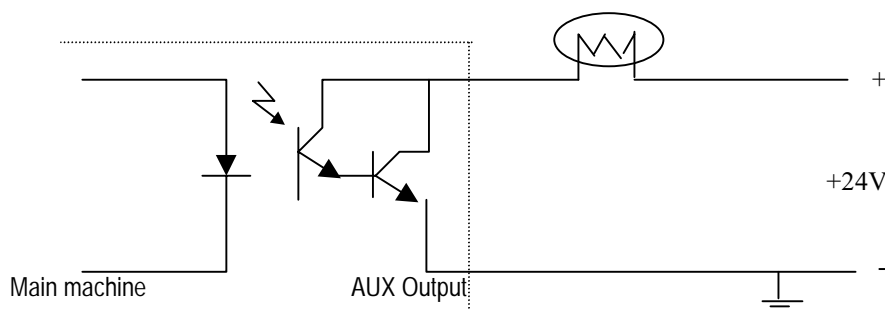
• Selection

If the selection method is in bits, then the AUX output is managed in bit digits.

If the selection method is in bytes, then the AUX (8 points) is read as one byte and managed by bytes.
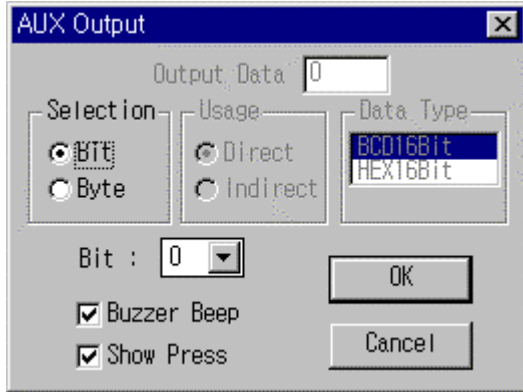
• Select Bit (Bit Selection Method)

This is selected when the selection method is in bits.   Among the 8 points of the AUX, the bit selects the point which output is sent.

• Operation Method Select (Byte Selection Method)

There are 2 types of methods of data output through AUX.

- Direct (Specify Output Value)

It is the method that selects the value of the data for output as a fixed value.   In this case, the selected output value is automatically produced through AUX when touch key is entered.

The selected output value can be restricted depending on the data type.

If BCD is selected as the data type, then A~F cannot be entered.
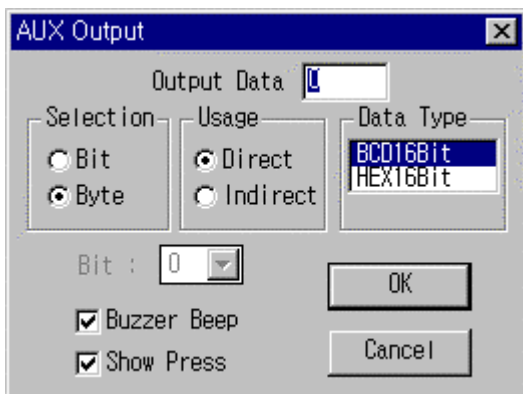
- Indirect (Specific Buffer Selection)

The output data is the data from the selected specified buffer.   With the touch key entered, output is sent.
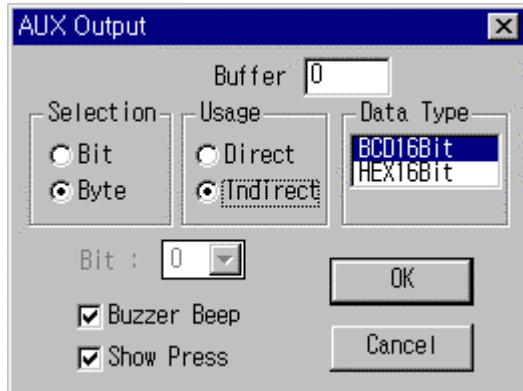
• Data Type

Selects the data type of the specified value for output.

BCD: The output value specified in the Direct Method and the buffer data selected in the Indirect method is handled through BCD.   Therefore, the values can be used as multiples of 16 from A~F.

HEX: The output data value is handled through HEX.   In the Direct Method, the output value can be selected from 0 to FFFF.

• Select Color, Buzzer Beep

Selects the display conditions when the AUX output Condition, the touch key, is entered.

The Press key color appears in the area of the touch key when Show Press is selected.

The Press key color is indicated as xor in the selected area.

Buzzer Beep is selected for the buzzer to ring when the touch key of I Tag is pressed.

<u>System Buffer Adjust Setups:</u>

Buffer Adjust refers to the increase or decrease of the number of digits in the buffer.

For HEX (0~FFFF), BCD (0~9999), an increase or decrease of 4 digits is possible.   For DEC(0~65535), an increase or decrease of 5 digits is possible.

• Select Buffer

- Buffer

It is the system buffer number that will become the buffer adjusted machine.

- Specified Number of Digits

Select the number of digits to be adjusted in the specified buffer.

If the data type is BCD or HEX, then one buffer is composed of 4 digits.

3 digits	2 digits	1 digit	0 digit

If you select 0~3 digits, the number of digits will increase or decrease accordingly.

If the data type is DEC(0~65535), then selection from 5 digits is possible.   Thus, the buffer can be adjusted in units of 10(one, ten, hundred, thousand, ten thousand).

• Use Method

Selects whether the number of digits will increase or decrease by entering the touch key.

If increase is selected, then each time the precision adjusted touch key is pressed, the number of digits of the specified buffer increases by one.   In the case of decrease, it decreases by one each.

• Data Type

Selects the number type of the specified buffer's data.

- BCD 16 bit

The specified buffer data becomes BCD 16 bit.

Thus, even with the selection of an increase or decrease, the value can not change if it is A~F.

- HEX 16 bit

The specified buffer data becomes HEX 16 bit.

With an increase or decrease, each number of digit can change from 0 to F.

- DEC 16 bit

The specified buffer data becomes DEC 16 bit.

With an increase or decrease, 0~9 is possible for every tenth place (one, ten, hundred, thousand).

Note that the maximum value for DEC 16bit is 65535 and if an increase exceeds this value, increase is not possible.
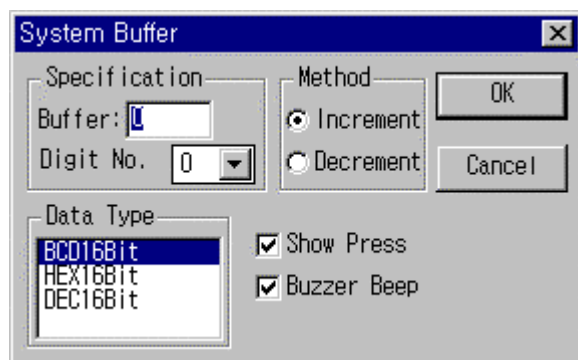
● Show Press, Buzzer Beep

Selects the displayed items when the system buffer precision adjusted operation criteria touch key is entered.

The Press key color appears in the area of the touch key when Show Press is selected.

The Press key color is indicated as xor in the selected area.

Buzzer Beep is selected for the buzzer to ring when the touch key of I Tag is pressed.

9-12. J TAG (Move Tag)

Type	PMU-200	PMU-300	PMU-600
Application	X	0	0

Applies only to PMU-300/600 Series

■ Among the already created symbols, the user is able to display the desired symbol at one of the points of placement specified in the standard screen in accordance with the specified buffer criteria.

■ If the J Tag overlaps when recorded, an afterimage appears in the overlapping area.   Please avoid use when overlapping.

■ J Tag

- The user can specify 50 places the area can be moved, and a maximum of 10 J Tags can be specified on one screen.

- There are two methods for selecting the symbol to be displayed.

1) Direct Method

2) Indirect Method

- The color and Attribute of the displayed symbol can be specified.

J Tag Setup Items

• Tag Select

- The header is automatically selected as J and a maximum of 4 characters (English, numbers) can be used for the Tag name (a total of 5 characters).

- Buffer

Selects the system buffer number that holds the value to be used when moving the symbol.

• Initial Move Value

The minimum value to begin moving the symbol.

When the selected buffer value becomes move initial value, the symbol is displayed at the very first specified place on the screen.

The displayed symbol moves in the order of the specified place each time the selected buffer value increases by one.

When the selected buffer value is less than the move initial value, then the symbol does not appear on the screen.

• Number of Moves

Select the number of places on the screen the J Tag will move.

A maximum of 50 places can be specified.

If the selected buffer value is greater than [move initial value] + [number of moves] than the symbol does not appear on the screen.

Thus, the selected buffer scope for the symbol to be displayed on the screen is

Initial Move Value < Selected Buffer < Initial Move Value + Number of Moves

• Operation Method

Selects the method of calling the Symbol Tag

There are two methods of calling the Symbol Tag.

- Direct (Select the Symbol Specified Number)

Directly selects the symbol number to be displayed on the screen in accordance with the selected buffer value.
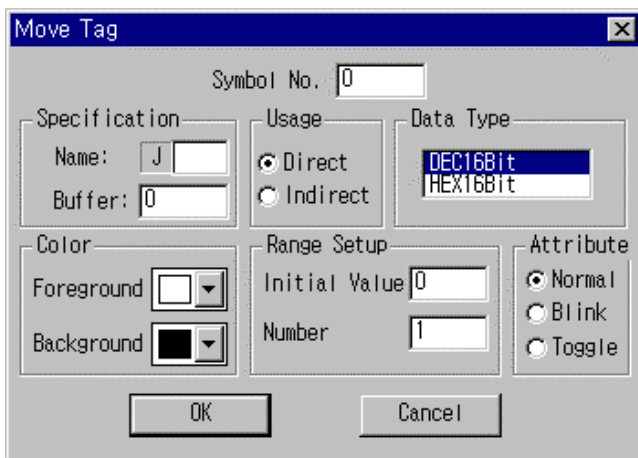
- Indirect (Select Symbol Specified Buffer)

Selects the system buffer that hold the symbol number to be displayed.

If the symbol specified buffer value changes, the symbol according to the value is called to the screen.

Thus, when the symbol is called on screen, the appropriate specified buffer value has changed in accordance with the coordinates.
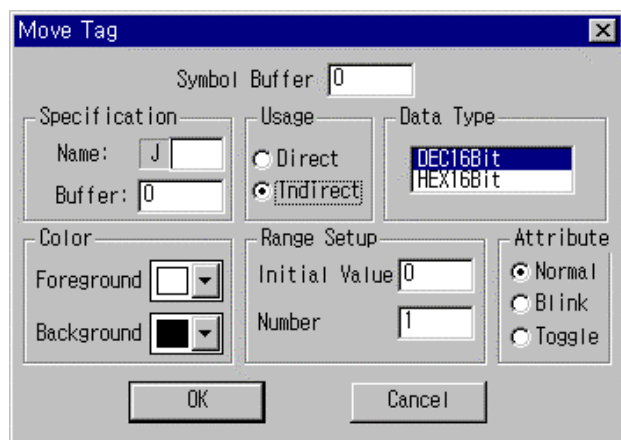
• Data Type

Selects the data format of the initial move value.   For DEC 16 Bit, multiples of 10 is entered, and for HEX 16 Bit, the value is recognized as a Hexa value.

•Select Color

Select the foreground and background color of the displayed symbol.

The originally created symbol is black and white.   The foreground is white and the background is black.

This color selection of the foreground and background changes the foreground and background color of the symbol called on the screen.

• Attribute

Selects the Attribute of the symbol.   There are three types of styles.

- Normal

The symbol appears in no particular Attribute.   It is displayed in the selected foreground and background colors.

- Blink

The symbol appears in a blinking Attribute.

The foreground color of the symbol switches back and forth from the selected foreground and background color.

- Blink

The symbol appears in a blinking Attribute.

The foreground color of the symbol switches back and forth from the selected foreground and background color.

Foreground   Background
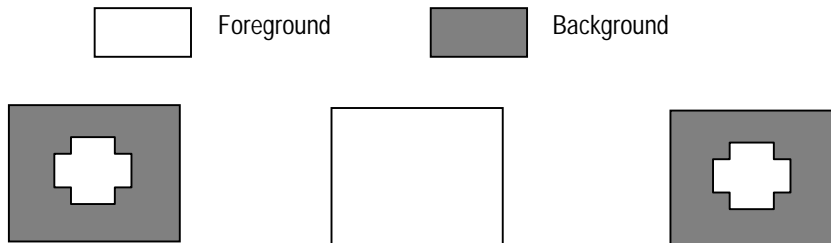
- Toggle

The symbol appears in a toggle Attribute.

The foreground color and background color of the symbol switches back and forth.

Foreground   Background
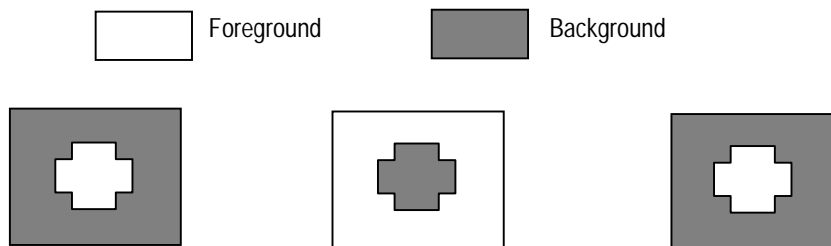
• Select Place

Select the area on the screen the symbol is to be displayed.

After selection of the specified values above, use the mouse and specify the points of placement of the symbol on the standard screen

The possible placement points must match the number of moves.

9-13. R TAG (Territory Move Tag)

Type	PMU-200	PMU-300	PMU-600
Application	X	0	0

Applies only to PMU-300/600 Series

■ Moves the symbol either in the vertical or horizontal direction in accordance to two of the selected buffer data.

■ If the R Tag overlaps when recorded, an afterimage appears in the overlapping Territory. Please avoid use when overlapping.

■ R Tag

- The two system buffers use X coordinate and Y coordinate.

- The system buffer data using the coordinates is recognized by the selected data type.

There are two types of data

1) BCD 16 Bit: 0 ~ 9999

2) DEC 16 Bit: 0 ~ 65535

- The system buffer data is scaled according to the maximum and minimum value.

When the data value is less than the minimum value, the symbol appears in the bottom left side of the selected movement

Territory, and when it is more than the maximum value, the symbol appears in the top right area.

- There are two methods of selecting the number of the symbol to be moved.

1) Direct Method: directly selects the symbol number (symbol number is constant)

2) Indirect Method: selects the buffer number, the buffer data is recognized by the symbol number.

        The buffer data value changes with the displayed symbol.

- Select the attribute(toggle, blink, normal) and displayed color of the symbol

Select Item • Select Tag

    - Name

    The header is automatically specified as R and the user can enter a maximum of 4 characters

    (English, number) for the tag name (A total of 5 characters).

    - X coordinate Buffer, Y coordinate Buffer

    Selects two of the system buffer that holds the X coordinate and Y coordinate to move the

    symbol. If the two coordinates are less than the selected minimum value, the symbol appears

    at the bottom left side of the movement area and if it is greater than the maximum value, it

    appears at the top right of the area. In addition, the buffer data is recognized by the data type

    later selected.

• Select Method

It is the method of selecting the symbol number.

- Direct (Select Symbol Number)

Directly selects the symbol number to be displayed on the screen.

In this case, the symbol number is directly selected and this is the specified symbol number.
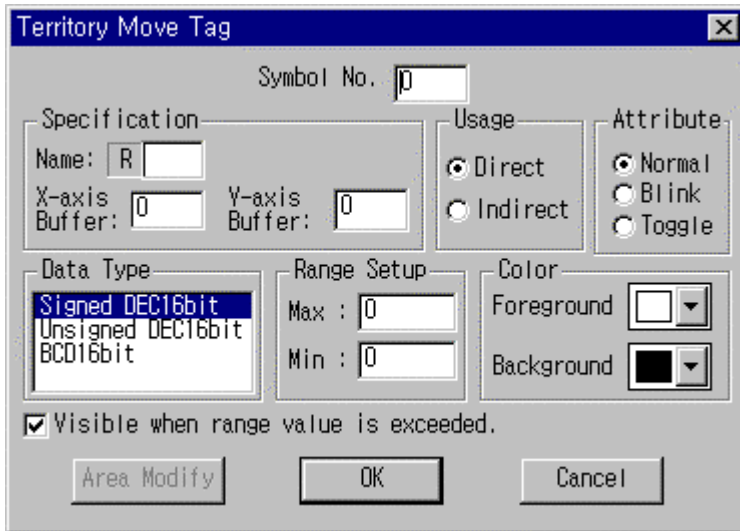
- Indirect Method (Select Symbol Specified Buffer)

Directly selects the symbol number that is to be displayed and moved on the screen.   It is the method of selecting the system buffer that holds the symbol number and uses the symbol number as the system buffer data.   The system buffer is the symbol-specified buffer.
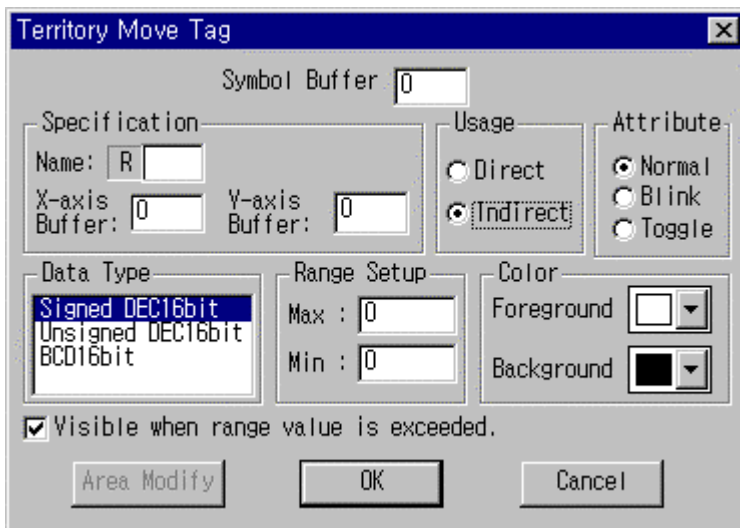
Select Scope (Maximum value, Minimum value)
Selects the maximum and minimum value for the coordinate buffer data to move the symbol within the specified area.

The maximum and minimum value gives a border to the X coordinate and Y coordinate buffer.   If the

X coordinate buffer data is less than the minimum value, the symbol is placed at the left end of the specified area, if more

than the maximum value, then it is placed at the right end.

If the Y coordinate buffer data is less than the minimum value, the symbol appears at the bottom of the specified area, if

more than the maximum value, then appears at the top end.

When selecting the maximum and minimum value, the data format is recognized by the specified data type.   If the

maximum value is specified as less than the minimum value, then after selection it cannot be confirmed.

- Data Type

Selects the coordinate buffer and the maximum, minimum data type.   There are three data types.

1) Decimal signed 16 Bit (-32768 ~ 32767)
The coordinate buffer data is recognized by multiples of ten with a symbol.   The highest bit of the data within the buffer
is recognized as a negative 101.   For maximum and minimum values, negative numbers can be entered.

2)   Decimal unsigned 16 Bit (0 ~ 65535)

The axis buffer data is recognized by multiples of ten without a symbol.

Entering negative numbers for the maximum and minimum value is not possible.   The entered data is recognized as

multiples of ten.

3)   BCD 16 Bit (0 ~ 9999)

The axis buffer data is recognized by BCD.   For the maximum and minimum value, the data is recognized by BCD, thus

A~F cannot be used for selection.

- Select Color

Selects the foreground and background color for the symbol to be displayed.   The originally created symbol is white and

black.   The foreground is white and the background is black.   The selected foreground and background colors indicate

how the foreground and background will change when the symbol is called on the Standard screen.

- Attribute

Selects attribute of the symbol called upon. There are three types of attributes.

1)   Normal

The symbol is displayed with no particular style.

The color displayed is the selected foreground and background colors.

2) Blink

The symbol called upon appears in blink style.

Blink is when the foreground color of the symbol switches back and forth from the foreground color to the background color.

Foreground   Background
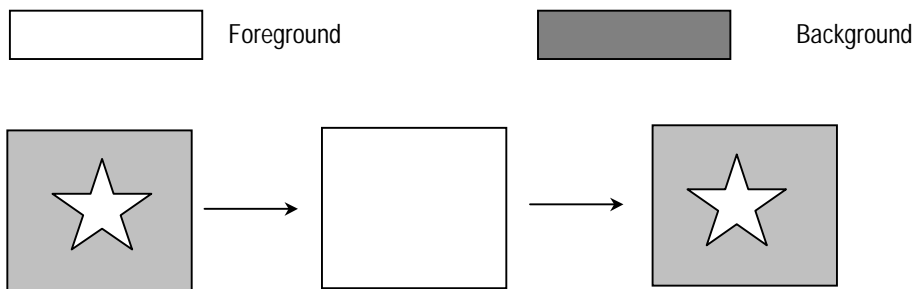
3)   Toggle

The symbol called upon appears in toggle style.

Toggle is when the symbol's foreground color and background color switches back and forth.

Foreground   Background
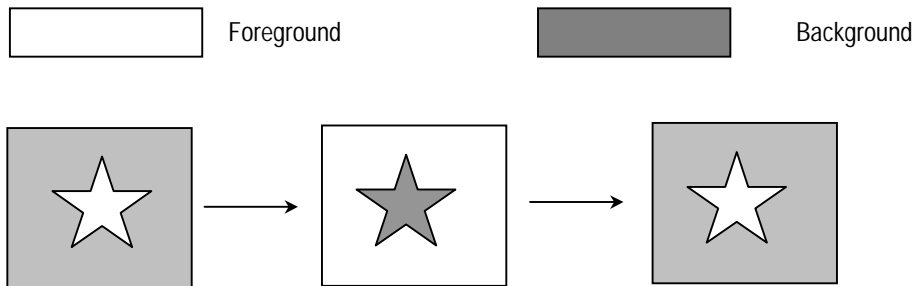
- Show when scope value is exceeded

When the X axis buffer and Y axis buffer value exceeds the maximum and minimum value, select whether the symbol will be shown or not in the specified area.

When selected, and exceeds the maximum value, the symbol appears in the maximum value position, and if less than the minimum value, the symbol appears in the minimum value position on the screen.

When not selected, and maximum and minimum value is exceeded, the symbol disappears from the screen.

- Movement Area

After selection of all of the above values, specify the area to move the original symbol.

The movement area is shown as a square.

When in actual operation, the square is not displayed.

9-14.   P TAG (Pie Graph Tag)

Type	PMU-200	PMU-300	PMU-600
Application	X	0	0

Applies only to PMU-300/600 Series

■　Reads the specified buffer data within the system, and displays it in the style of a meter graph or pie (circle, fan shape) graph in the specified position in the standard screen.

■　Pie Graph Tag

- There are two types of graphs.

   Full circle, semicircle: coloring in the circle or fan shaped graph shows the ratio of the buffer data.
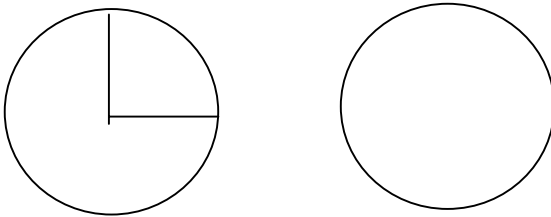
- Meter Graph: the ratio of the buffer data is shown by a needle in the circle or fan shaped graph.
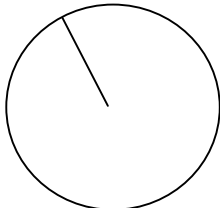
- There are three data types within the buffer.

1)　Decimal signed 16 Bit (-32768 ~ 32767)

2)　Decimal unsigned 16 Bit (0 ~ 65535)

3)　BCD 16 Bit (0 ~ 9999)

- Select the maximum and minimum value for the data scope displayed as a graph.

- For the pie graph, the pattern, foreground and background color can be selected.   For the meter graph, the needle color can be selected.

Select Items:

Before selection of the pie graph tag, the circle or fan shape must be drawn. The tag can be selected only after the mouse is clicked within the shape.

Note) Even if the shape is colored in, please note when operated, it changes to black when started.

Note) When moving, the shape and pie graph tag must be selected as a group. When moved separately, does not operate normally.

Note) when making selections, take note not to record the tag to overlap with the shapes.

• Select Tag

- Name

The header is automatically selected as P and the user enters a maximum of 4 characters (English, numbers) for the tag name (a total of 5 characters).

- Buffer

Select the system buffer number that holds the data when drawing a graph.

The type of the buffer data is decided upon the data type.

• Graph Type

There are 2 types of graphs.

- Pie Graph

It is a graph that colors the inside of the circle or fan shape in accordance with the data value.

The colored in scope value is decided upon the maximum and minimum value.

It is possible to select the colored in direction from clockwise or counterclockwise.

The starting angle to color in the circle can be selected.
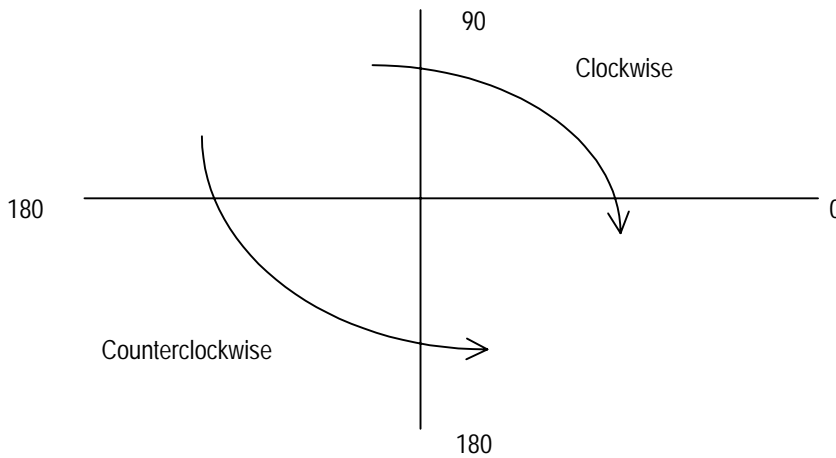
- Meter Graph

It is the graph that displays the specified buffer data using a needle in the circle or fan shape.

The scope value is decided upon the maximum and minimum value.

The direction of the needle can be selected between clockwise and counterclockwise, and in the case of a circle, the starting angle of the needle can be selected.
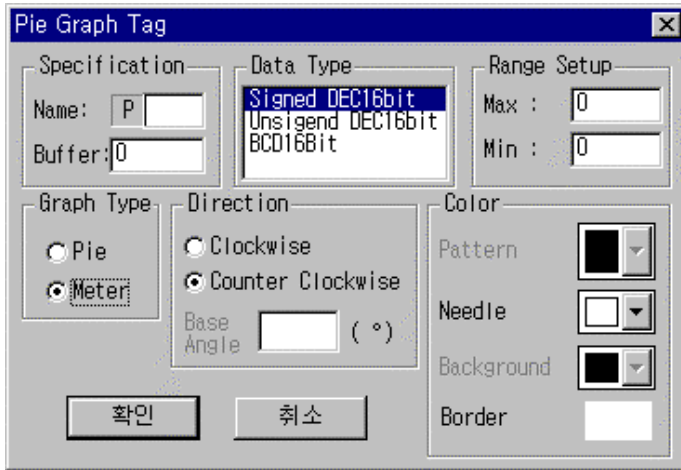
• Range Setup (Maximum value, Minimum value)

Select the specified buffer data scope for the displayed graph.

From the point the specified buffer value is more than the maximum value, the coloring in of the pie graph begins, and for the meter graph, the needle begins to move.

The maximum value is the specified buffer limit for the displayed graph.

For example, let's look at a semicircle pie graph with the display direction as clockwise (Maximum value is 100 and the minimum value is 50)
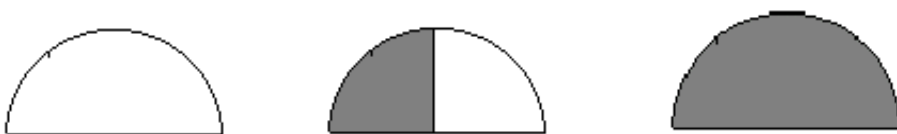
Drawing (a) is when buffer data is less than 50

      (b)   is when data is 75.

      (c)   is when more than 100

• Direction

- Clockwise, Counterclockwise

It is the display direction when the specified buffer value increases.

- Basic Angle

Can be selected when the pie graph is specified in the circle.

For a pie graph, it is the starting angle to color in the circle, and for the meter graph, it is the starting angle of the needle in the case of the buffer value is less than the minimum value.

• Data Type

There are 3 data types.

This selection determines the specified buffer value's maximum and minimum value data type.

- Decimal signed 16 Bit (-32768 ~ 32767)

The buffer data is recognized as multiples of ten with a symbol.

For the maximum and minimum value, the entered data is recognized by BCD, and A~F cannot be used for selection.

• Color Select

- Foreground, Background, Pattern

It is the item selected for pie graph.

The pattern is selected for the colored area of the pie graph.

There are 8 different pattern types.

The foreground and background color are the colors for the pattern.

- Needle Color

For the meter graph, the color of the meter that displays the quantity on the meter graph is selected.

The selected needle color is displayed in XOR in the circle or fan shape.

(Please note that when the shape is already colored in, the needle color may appear different from the selected needle color.)

- Border Color

Displays the border color of the current circle or fan shape.

9-15. E Tag (Statistic graph Tag)

Type	PMU-200	PMU-300	PMU-600
Application	X	0	0

Applies only to PMU-300/600 Series

■ The ratio of the largest 8 continuous data of the system buffer to the sum of the total data from the specified area of the standard screen calculated as 100% is shown as a graph.

■ Statistical graph

- There are two forms of the statistical graph: circle or bar
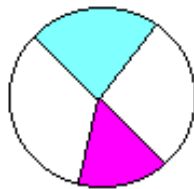
■ The data quantity to be displayed has a maximum of 8.

■ For the bar statistical graph, the displayed direction can be either vertical or horizontal.

■ The sampling time can be selected in 500 ms units.

Select Items   Before selection of the statistical graph tag, a square or circle must be drawn prior.   If the tag is selected in more than 2 shapes, the circle or square drawn first is selected.

To enter the tag, click the mouse in the shape for selection.

Note) To move, the shape and pie graph tag must be selected as a group.   When moved separately, will not operate normally.

• Tag Specification

- Name

The header is automatically selected as E, and the user selects a maximum of 4 characters (English, numbers) for the tag name (a total of 5 characters).

- Buffer

The statistical graph shows the continuous buffer data.

Selects the very first buffer number from the continuous buffers.

• Select Graph

- Sampling Time

Selects the cycle/period to re-draw the graph dependent upon the internal buffer value.

The unit used is 500 ms.

- No. of Graph

Defines the number of data to be displayed in the statistical graph.

One statistical graph displays a maximum of 8 continuous buffer data.

Therefore, the number of graphs can be selected from 2 to 8.

• Select Pattern

Selects the area to be colored to distinguish the statistical graph data.

The number of colors selected must equal the selected number of graphs.

The number before the selected color is the order of the buffer that holds the data to be displayed as a graph.

If the value of the specified buffer is 200, then the color of buffer No. 200 is the No. 1 item, and the color for buffer No. 201 is No. 2 item.

PMU-300 Statistical graph Display Screen

PMU-600 Statistical graph Display Screen

```
Statistic Graph                          [X]
 ┌Specification─┐  ┌Color────────────────┐
 │ Name:  [E  ] │  │ 1: [red] ▼   5: [magenta] ▼ │
 │ Buffer:[0  ] │  │ 2: [yellow] ▼  6: [green] ▼ │
 │┌Direction──┐ │  │ 3: [blue] ▼   7: [dk green] ▼│
 ││ ⦿Horizontal│ │  │ 4: [cyan] ▼   8: [teal] ▼ │
 ││ ○Vertical  │ │  └────────────────────┘
 │└──────────┘ │
 ┌Graph Setup───────────────────────────┐
 │ Type      Circle        Border        │
 │ Sampling Time [1  ]  (500ms)  [   ]   │
 │ Number     [8 ▼]                      │
 └──────────────────────────────────────┘
      [   OK   ]        [  Cancel  ]
```
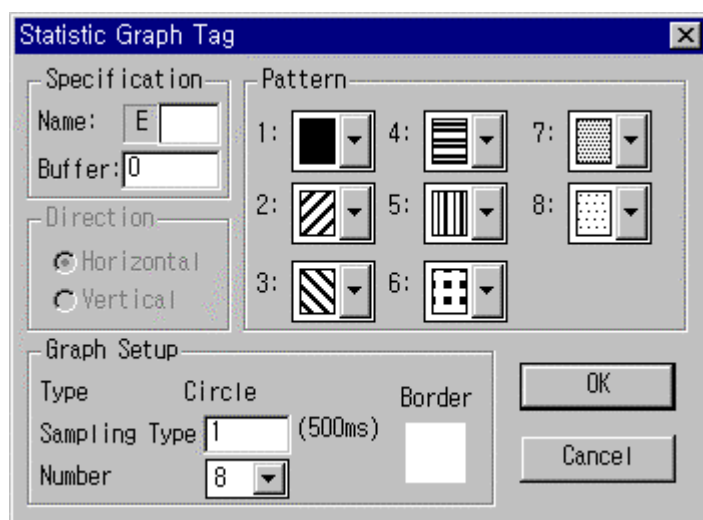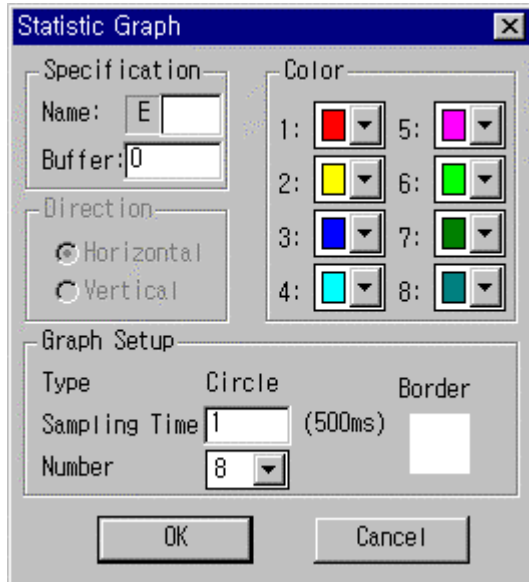
• Display Direction

Selects the display direction only when it is a bar statistical graph.

Horizontal direction displays the data change in the horizontal direction. The vertical direction displays the data changing in the vertical direction.

Note:

For horizontal direction, the graph starts displaying from the left in the order of the buffer value. For vertical direction, the graph is displayed from the bottom in the order of the buffer.

For the vertical direction, if the specified buffer is 400, the bottom area of the graph is 400, and the area above is drawn in the order of the buffer.

• Color

The border color is the line color of the shape(circle, square) to be displayed as a graph.

Please note, if the color of the statistical graph within the shape is selected as the same color as the border color, then when re-drawn, the prior graph will not erase completely.

9-16. G TAG (Level Graph Tag)

Type	PMU-200	PMU-300	PMU-600
Application	O	O	O

Because the operation method of the G Tag is different, the standard for PMU-200 Series G Tag and the standard for PMU-300/500/600 Series G Tag is explained separately.

PMU-200 Series G-Tag Standard

■ The system buffer data is read and displayed as a bar graph in the specified position on the screen.

■ Level Graph Tag

- The progress direction of the bar graph is 4 directions, up, down, left and right.

- By selecting the maximum and minimum value, the entered data scope can be restricted.
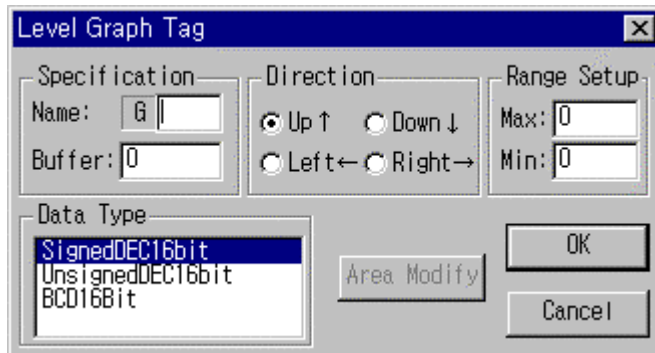

Select Item • Select Tag

- Name

The header is automatically selected as G and the user defines a maximum of 4 characters (English, numbers) for the tag name (a total of 5 characters)

- Buffer

Selects the system buffer number that holds the data to be displayed in the graph

• Select Scope (Maximum value, Minimum value)
When the specified buffer data is displayed, 0% of the graph applies to the minimum value, and 100% applies to the maximum value.
The data type determines the data type of the selected maximum and minimum value.
If the specified buffer data of the bar graph exceeds the maximum value, the bar graph is displayed in blinking form.

• Data Type

Selects the specified buffer data type to be used when drawing the graph.

The data type selected restricts the data type of the selected maximum and minimum value along with the buffer data.

- Decimal signed 16 Bit (-32768 ~ 32767)

The buffer data is recognized as multiples of 10 with a symbol.

The highest bit of the buffer data is recognized as 101 negative number

Entering negative number for maximum and minimum value is possible.

- Decimal unsigned 16 Bit (0 ~ 65535)

The buffer data is recognized as multiples of ten with no symbol.

Entering negative number for maximum and minimum value is not possible, and the entered data is recognized as multiples of ten.

- BCD 16 Bit (0 ~ 9999)

The buffer data is recognized as BCD.

For the maximum and minimum value, the entered data is recognized as BCD, thus A~F cannot be used for selection.

• Display Direction

Selects the direction to color the graph when data increases.

There are 4 display directions, up, down, left and right.

• Select Graph Area

For the bar graph, after selection of the above values, select the area to display the graph.

Select the area with a square.

If the specified buffer data is the maximum value, the selected area is fully colored in.

PMU-300/600 Series G-Tag Standard

■   By reading the system buffer data, the graph in the form of bar or closed line appears in the specified position on screen.

■   Level Graph Tag

- There are two types, bar graph and closed line graph
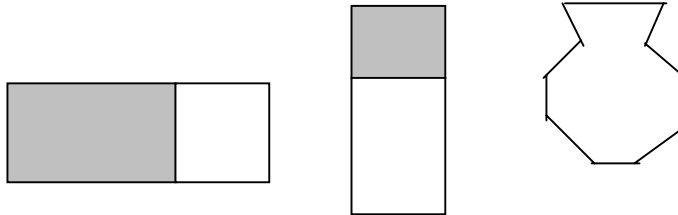
- The graph progress direction has 4 directions, up, down, left and right.

- Select the maximum and minimum value and restrict the entered data scope.

- Select the pattern to be colored in the graph among the 8 pattern types.

Select Item • Select Tag

- Name

The header is automatically selected as G and the user defines a maximum of 4 characters (English, numbers) for the tag name (a total of 5 characters).

- Buffer

Selects the system buffer number that carries the data to be displayed as a graph.
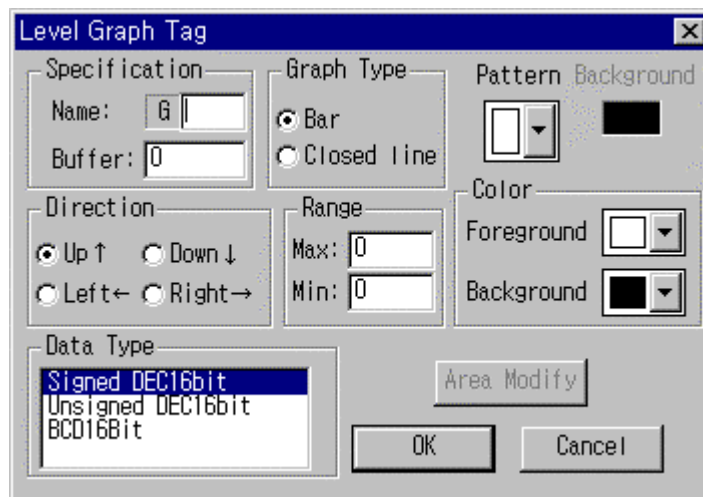
• Select Scope (Maximum value, Minimum value)

When the specified buffer data is displayed, 0% of the graph applies to the minimum value, and 100% applies to the maximum value.

The data type determines the data type of the selected maximum and minimum value.

• Data Type

Selects the specified buffer data type to be used when drawing the graph.

The data type selected restricts the data type of the selected maximum and minimum value along with the buffer data.

- Decimal signed 16 Bit (-32768 ~ 32767)

The buffer data is recognized as multiples of 10 with a symbol.

The highest bit of the buffer data is recognized as 101 negative number

Entering negative number for maximum and minimum value is possible.

- Decimal unsigned 16 Bit (0 ~ 65535)

The buffer data is recognized as multiples of ten with no symbol.

Entering negative number for maximum and minimum value is not possible, and the entered data is recognized as multiples of ten.

- BCD 16 Bit (0 ~ 9999)

The buffer data is recognized as BCD.

For the maximum and minimum value, the entered data is recognized as BCD, thus A~F cannot be used for selection.

• Graph Type

There are 2 types of graph that can be drawn from the Graph Tag.

• Bar Graph

It colors in the specified area of the graph dependent upon the specified buffer data

If the specified buffer value is more than the maximum value, the full square is colored in and blinking form.

There are 4 types of directions (up, down, left and right) to color in the drawing.
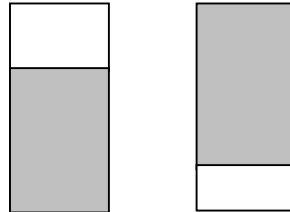
Left, Right   Up   Down

• Closed Line Graph

It colors in the already drawn closed line figure dependent upon the specified buffer data.

Select the standard line to color the closed line graph by a straight line.

Likewise, there are 4 directions to color in the drawing.

The shape to be colored in does not have to be a closed line.

Like the picture, if the area to be colored is closed in, then the graph can be drawn.

When drawing a closed line graph, the straight line to be used as the basis for coloring in the graph must be within the closed line.

Standard Coloring Line

Wrong Selection   Right Selection
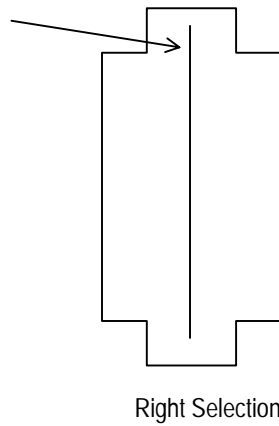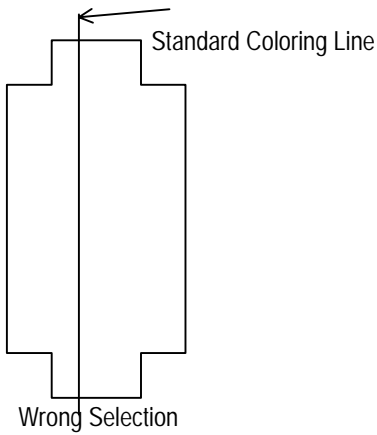
• Display Direction

Selects the direction to color when the data increases in the graph.

There are 4 directions up, down, left and right.

• Pattern

Selects the pattern to color in the area.

This selection is only possible for bar graphs.

For closed line graphs, a pattern cannot be selected (only one color is possible)

• Select Color (Foreground, Background)

For the bar graph, select the foreground and background color of the pattern.

For the closed line graph, a pattern selection is impossible, select only a foreground color.

• Select Graph Area and Standard Coloring Line

For the bar graph, after selection of the above values, select the area to display the graph.

Select the area with a square.

If the specified buffer data equals the maximum value, then the selected area is fully colored in.

For the closed line graph, after selection, one straight line must be selected.

This straight line is drawn either in the horizontal or vertical direction.

If the display direction is selected as up and down, than it is only drawn vertically.   If the display direction is selected as left and right, it is drawn horizontally.

Using the straight line as standard, the inside of the closed line is colored in dependent upon the specified buffer data.

Select Coloring Line

50%   100%
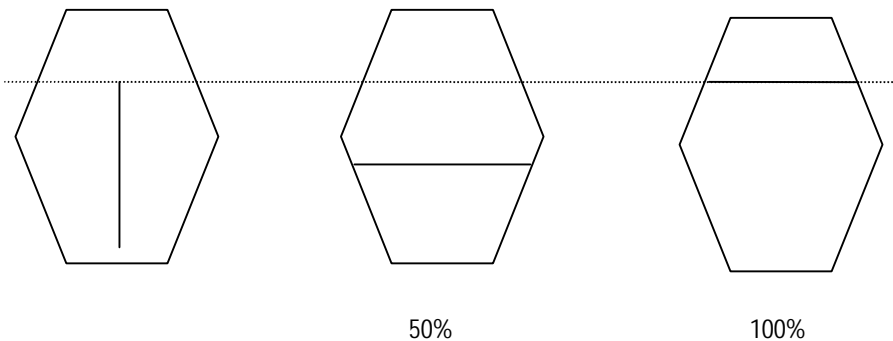
9-17. K Tag (Key Tag)

Type	PMU-200	PMU-300	PMU-600
Application	X	O	O

PMU-300 Series

■ Create a touch key such as a number value key on the subscreen to enter data and to be used with the key display tag.　On the standard screen, it is used as an entering key.

It can be used by calling the subscreen from the standard screen, or called from the window tag.

Note) Even if the key tag is not recorded in the subscreen, external numbers can be entered as a key value by using the Enter button (Use Ten Key Mode to enter)

With one key display tag in the subscreen and recording the Ten Key Enter Key Tag, data can be entered by external numbers and Enter button.

PMU-600 Series

■ Create a touch key such as a number value key for data enter use after subscreen No. 900 and use it with key display tag for key enter use in the standard screen.

■ Key Tag

- Created after subscreen No. 900 and called upon in the standard screen.

- There are 20 types to be defined as key tags, such as Numbers 0~F, symbol -, Enter, Back Space, Clear, etc.

- The entered value dependent upon the key tag is saved in the specified buffer.

Select Items   • Select Tag

- Name

The header is automatically selected as K and the user defines a maximum of 4 characters (English, numbers) for the tag name (a total of 5 characters).

- Buffer

The specified buffer is the buffer that the value from the Enter key is saved in.

The selection of the specified buffer is only possible when the key type is Enter.

For other types, items are limited for selection.

• Select Key Type

There are 21 types of key tags (PMU-300)

There are 21 types of key tags (PMU-600)

Select on type from 0 ~ F(multiples of 16), - (negative symbol), enter, back space, clear, etc.

When used with the key display tag and the key tag in the key display area is pressed, a character is displayed dependent upon that type.

Back space erases the entered number one character at a time.   Clear erases all of the entered numbers.

Enter must be selected with the specified buffer.   When Enter is entered, the entered number value (value displayed on the key display tag) dependent upon the key tag in the specified buffer is saved in the specified buffer.

Select the specified buffer with the Ten Key Enter.   This key saves the entered number value (value displayed in the key display tag) in the specified buffer when the external Enter is pressed. (PMU-300)

PMU-300 Series
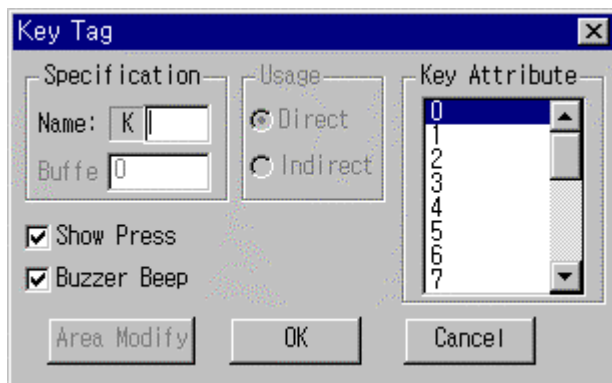
PMU-600 Series
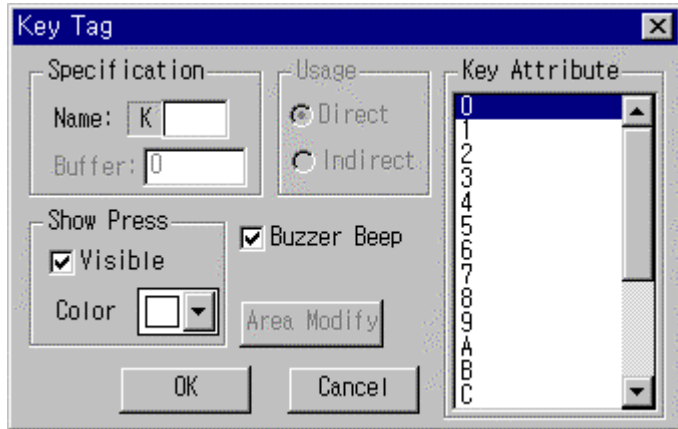
• Operation Method (In the case of Enter Key)

When the key type is Enter, select the buffer that the entered value dependent upon the key tag is saved.

There are 2 methods for selecting the specified buffer.

The Direct method directly selects the Direct specified buffer number.   The Indirect method selects the buffer number that carries the specified buffer number.

When using the Indirect method, use one Enter key and send a number of buffer values.

• Show Press Display, Press Color, Beep Buzzer

The key tag is operated by a touch key.

The type must be selected similar to the touch key.

Show Press selects whether the pressed color is displayed when the selected touch key is pressed dependent upon the key tag.   The color is selected by the pressed color.

Beep Buzzer selects whether the buzzer will ring when the touch key has been pressed.

9-18. V TAG (Key Display Tag)

Type	PMU-200	PMU-300	PMU-600
Application	0	0	0

Because the operation method of the V Tag is different, the standard for PMU-200 Series V Tag and the standard for PMU-300/500/600 Series V Tag is explained separately.

PMU-200 Series V-Tag Standard

■   It displays the entered value dependent upon the key tag on the screen.   Create after the subscreen No. 900 and use by calling to the standard screen.

■   Key Display Tag

- When the key display tag recorded in the subscreen is called to the standard screen, the main machine function key is used for the ten key.

- Key display tag selects the data type entered in the specified buffer dependent upon the Enter of the Ten Key.

Data Type
"Dec Symbol, unsigned 16 Bit, DEC Symbol, unsigned 32 Bit,
BCD 16 Bit, BCD 32 Bit, Hex 16 Bit, Hex 32 Bit"
This selection also effects the specified buffer data displayed on the screen.

- Selects the number of digits and decimals displayed number value.
- Selection of the style and ratio of the key display is possible.

Select Item   The key display tag records the Ten Key.

The key display tag is recorded only after subscreen 900.

If the key display tag recorded in the subscreen is called to the standard screen, the main machine function key takes on the below role of the Ten Key.

To use the Ten key, the menu key must be used.

- Function Key Menu

The main machine has the function in the menu selection to move to the previous menu.   When operated, this key selects whether the bottom function keys F1 ~ F10 Ten key will be used or the general function keys will be used.

If this key is pressed and the top T/F LED turns on, the bottom function keys serve as the Ten Key, and if the menu key is pressed once more and the T/F LED turns off, the function key serves as the defined function.

- Shift Function Key

Used when the bottom F1~F10 used as Ten Key.

When this key is pressed and the bottom function key is pressed, it becomes role of   the following ten keys.

Function Key	General (Ten Key Mode)	Pressed with the Shift
F1	1	A (HEXA)
F2	2	B (HEXA)
F3	3	C (HEXA)
F4	4	D (HEXA)
F5	5	E (HEXA)
F6	6	F (HEXA)
F7	7	
F8	8	- (Enter a negative number)
F9	9	CLEAR (key display tag content)
F10	0	

- Function Key ◀

Runs the Backspace function

- Function Key ▶

During operation, in the Ten Key Mode,   runs as the function key.

- Function Key Enter

When this key is pressed, the data displayed in the key display is used as the specified buffer.

• Tag Name

The header starts with V, and 4 more characters are recorded.

• Data Type

Selects the data type of the entered value displayed on the screen according to the key tag.

This also restricts the data type saved by the Enter of the key tag.

-Decimal signed 16 Bit (-32768 ~ 32767)

The entered value by the key tag is recognized as multiples of ten, thus multiples of 16 from A~F cannot be used.

The maximum number of total digits is 5 digits.

Using key tag   -,   a negative number value can be entered.

- Unsigned Decimal 16 Bit (0~65535)
The entered value by the key tag is recognized as multiples of ten.
In this case, from A~F multiples of 16 cannot be entered.
The maximum number of digits is 5 digits, and negative numbers cannot be entered.
- Decimal signed 16 Bit (-2147483648 ~ 214783647)

The entered value by the key tag is recognized as multiples of ten.

The displayed number value by key tag is the multiple of ten value.

From A~F multiples of 16 cannot be entered.

The maximum number of digits is 10 digits

Using the key tag -, negative numbers can be entered.

- DEC Non-symbol 32 Bit (0~4284867285)

The entered value by the key tag is recognized as multiples of ten.

The displayed number value by key tag is the multiple of ten values.

From A~F multiples of 16 cannot be entered.

The maximum number of digits is 10 digits

- BCD 16 Bit (0~9999)

The entered value by key tag is recognized as BCD.

The displayed value is also BCD

The entered value by key tag is the value entered in each nibble

The maximum number of digits is 4 digits.   Negative numbers cannot be entered.

- BCD 32 Bit (0 ~ 99999999)

The entered value by key tag is recognized as BCD.

The displayed value is also BCD

The entered value by key tag is the value entered in each nibble

The maximum number of digits is 8 digits.   Negative numbers cannot be entered.

- HEX 16 Bit (0 ~ FFFF)

The entered value by key tag is recognized as HEX.

The displayed value is also HEX.

Negative numbers cannot be entered.   One nibble takes up one digit.

The maximum number of digits is 4 digits.

- HEX 32 bit (0 ~ FFFFFFFF)

The entered value by key tag is recognized as HEX.

The displayed value is also HEX.

Negative numbers cannot be entered.   One nibble takes up one digit.

The maximum number of digits is 8 digits

• Displayed Digits

- Total Number

Defines the total number of displayed digits of the displayed data.

It restricts the maximum number of digits that can be selected according to the data type.

Please refer to the data type description for the maximum total number of digits.

- Number of Decimal places

Selects the displayed number of decimal places from the total number of digits.

The maximum number of decimal places must be at least one less than the selected total number of digits.

• Select Ratio

Selects the horizontal and vertical ratio to display the numbers on the screen by key tag.

The maximum is a ratio of 8 for each.

• Style

It is the character style of the key display tag on the screen.

- Normal

No particular style is displayed (Characters: white, Background: black)

- Blink

The displayed data characters change from white to black at a given time interval.

- Toggle

The displayed data character and background color switches back and forth from white to black.

- Reverse

The reverse of the normal displayed character color is displayed. (Character: black, Background: white)

- Reverse Blink

The reversed situation of blink

Normal   Reverse

Toggle

Blink

Reverse Blink
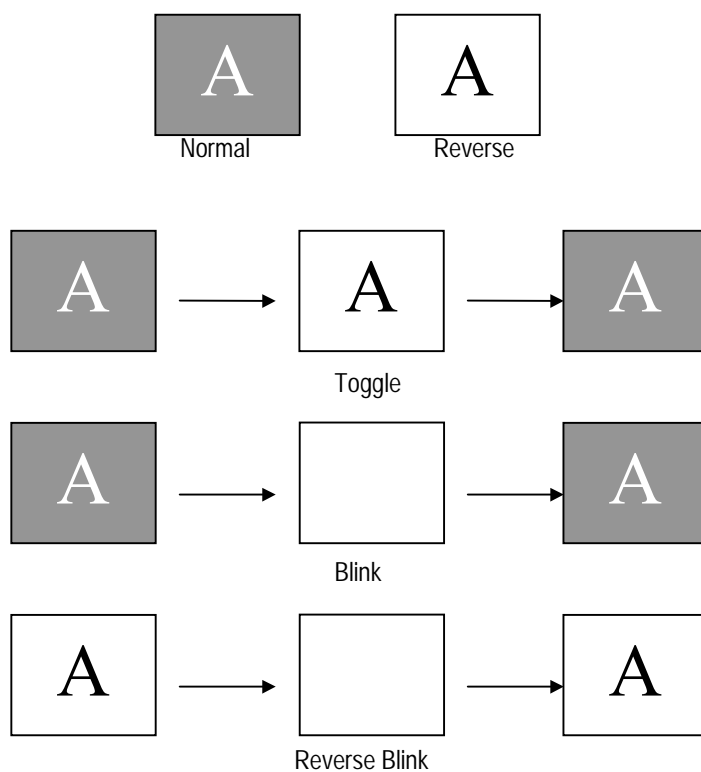
● Select the Save Buffer

It is the buffer that the value displayed in the key display tag is saved when the enter key is pressed.

There is the Direct and indirect method to select the save buffer.

- Direct Method directly selects the save buffer number.

- Indirect Method indirectly selects the buffer that holds the save buffer number.

<u>PMU-300/600 Series V-Tag Standard</u>

- It displays the entered value dependent upon the key tag on the screen.　Create after the subscreen No. 900 and use by calling to the standard screen.

- Key Display Tag

- Key display tag selects the data type entered in the specified buffer dependent upon the Enter of the Ten Key.

As for Data Type, there is Dec Symbol, unsigned 16 Bit, DEC Symbol, unsigned 32 Bit,

BCD 16 Bit, BCD 32 Bit, Hex 16 Bit, Hex 32 Bit.

This selection also effects the specified buffer data displayed on the screen.

- Selects the number of digits and decimals displayed number value.

- Selection of the style and ratio of the key display is possible.

Select Item

• Tag Name

The header starts with V, and 4 more characters are recorded.

• Data Type

Selects the data type of the entered value displayed on the screen according to the key tag.

This also restricts the data type saved by the Enter of the key tag.

-Decimal signed 16 Bit (-32768 ~ 32767)

The entered value by the key tag is recognized as multiples of ten, thus multiples of 16 from A~F cannot be used.

The maximum number of total digits is 5 digits.

Using key tag　-,　a negative number value can be entered.

- Unsigned Decimal 16 Bit (0~65535)

The entered value by the key tag is recognized as multiples of ten.

In this case, from A~F multiples of 16 cannot be entered.

The maximum number of digits is 5 digits, and negative numbers cannot be entered.

- Signed Decimal 16 Bit (-2147483648 ~ 214783647)

The entered value by the key tag is recognized as multiples of ten.

The displayed number value by key tag is the multiple of ten values. From A~F multiples of 16 cannot be entered.

The maximum number of digits is 10 digits
Using the key tag -, negative numbers can be entered.

- DEC Non-symbol 32 Bit (0~4284867285)
The entered value by the key tag is recognized as multiples of ten.

The displayed number value by key tag is the multiple of ten values.

From A~F multiples of 16 cannot be entered.

The maximum number of digits is 10 digits

- BCD 16 Bit (0~9999)

The entered value by key tag is recognized as BCD.

The displayed value is also BCD

The entered value by key tag is the value entered in each nibble

The maximum number of digits is 4 digits.   Negative numbers cannot be entered.

- BCD 32 Bit (0 ~ 99999999)

The entered value by key tag is recognized as BCD.
The displayed value is also BCD
The entered value by key tag is the value entered in each nibble
The maximum number of digits is 8 digits.   Negative numbers cannot be entered.
- HEX 16 Bit (0 ~ FFFF)

The entered value by key tag is recognized as HEX.

The displayed value is also HEX.

Negative numbers cannot be entered.   One nibble takes up one digit.
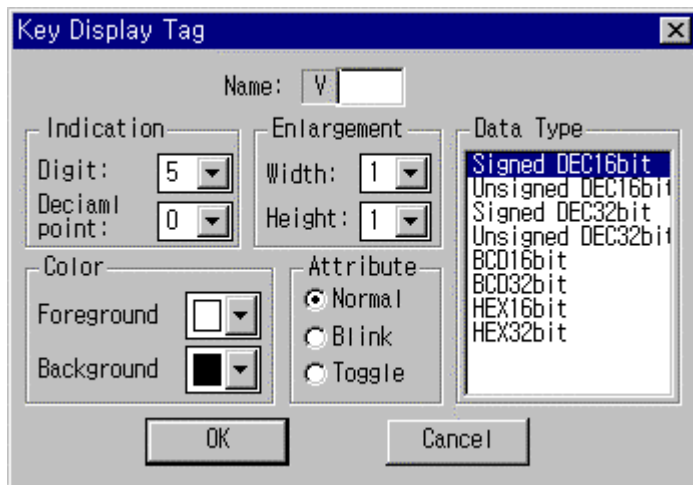
The maximum number of digits is 4 digits.

- HEX 32 bit (0 ~ FFFFFFFF)

The entered value by key tag is recognized as HEX.

The displayed value is also HEX.
Negative numbers cannot be entered.   One nibble takes up one digit.
The maximum number of digits is 8 digits

Key Display Tag

Name: V

Indication
Digit: 5
Deciaml point: 0

Enlargement
Width: 1
Height: 1

Data Type
Signed DEC16bit
Unsigned DEC16bit
Signed DEC32bit
Unsigned DEC32bit
BCD16bit
BCD32bit
HEX16bit
HEX32bit

Color
Foreground
Background

Attribute
◉ Normal
○ Blink
○ Toggle

OK   Cancel

• Displayed Digits

- Total Number

Defines the total number of displayed digits of the displayed data.

It restricts the maximum number of digits that can be selected according to the data type.

Please refer to the data type description for the maximum total number of digits.

- Number of Decimal places

Selects the displayed number of decimal places from the total number of digits.

The maximum number of decimal places must be at least one less than the selected total number of digits.

• Select Ratio

Selects the horizontal and vertical ratio to display the numbers on the screen by key tag.

The maximum is a ratio of 8 for each.

• Select Color (Foreground and Background color)

Selects the displayed color of the character (Foreground) and background of the key display tag on the screen.   The character style selected applies to the foreground and background color.

• Style

It is the character style of the key display tag on the screen.

Normal displays the foreground and background color as is.

Blink displays the character color change back and forth from the foreground color to the background color.

The cycle of the character appearing and disappearing occurs.

Toggle displays the character color continuously switching back and forth from the foreground to the background color and the background color from the background to the foreground color.

Thus, it is the style that continuously reverses the color.

9-19. X TAG (Trend graph Tag)

Type	PMU-200	PMU-300	PMU-600
Application	0	0	0

Only applicable for PMU-300/600 Series

■ When there is a time change, the change of the entered value of the axis can be shown by time.   This is shown by graph, where the X-axis represents time and the Y axis represents the axis value.

■ For the Trend graph Tag,

The shown graph's data is managed by DEC code 16bit, DEC no code 16bit, BCD 16bit.

Establish the graph's data's maximum value and minimum value.   Then you may limit the specified buffer's data value.

For the graph's sampling time, it can be established by 500ms unit.

Establish the number of sampling and scroll for the X-axis and for one screen register up to 20 Trend graph graphs.

Establish the line type and color for the lines to be drawn.

Register up to 20 graphs for one graph territory.

Select Items

▶Tag Name

The first letter of the name begins with the letter X and continuing with four letters can be registered.

▶Trend graph Establishment

Sampling Time

According to the graph's data value it is the time which is re-drawn.

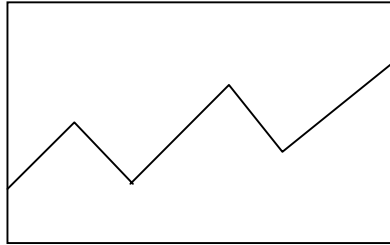Thus, it is the unit in which the Trend graph changes.

The establishment unit is in 500ms, with a maximum of 32767.5 seconds.

Sampling Number

It is the number in which the Trend graph's unit changes, for the X-axis.

The below drawings are examples in which the Sampling Number is applied according to the specified number.
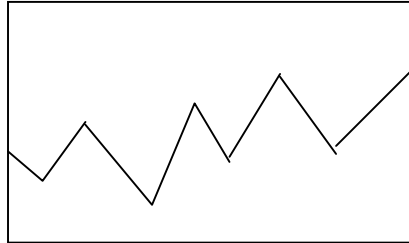
Sampling No. : 5   Sampling No. : 8

According to the Sampling Number and the latter established territory, the X axis's length's unit is decided.

When the Sampling Number increases the X-axis's unit length gets smaller.

Scroll Number

When the Trend graph graph's established territory arrives up to the left and right side, you may establish the number in which the screen will scroll (move).

Thus, you must not establish the Scroll Number as a larger number than the Sampling Number.
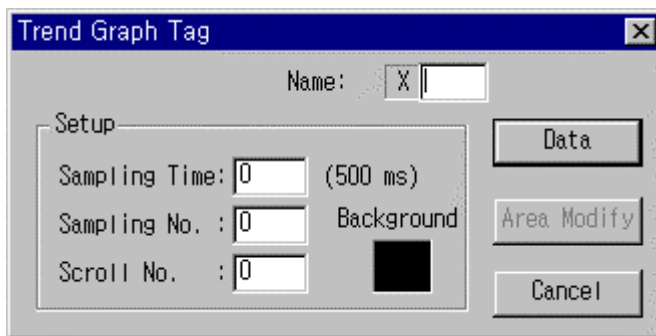
After establishing the Scroll Number, click the data button.

Then, a screen in which you may enter the data will be indicated.

```
Trend Data                                                            ☒
              Maximum 20 data can be registered for each trend tag.
 No.    Buffer    Max      Min      Data Type       Line      Color
   1     100      500       10      Signed DEC16bit   ──────      □
   2     101     1000       20      Signed DEC16bit   ──────      ■
   3     102     1000       40      Unsigned DEC16bit ──────      ■

    Add          Modify       Delete         OK          Cancel
```
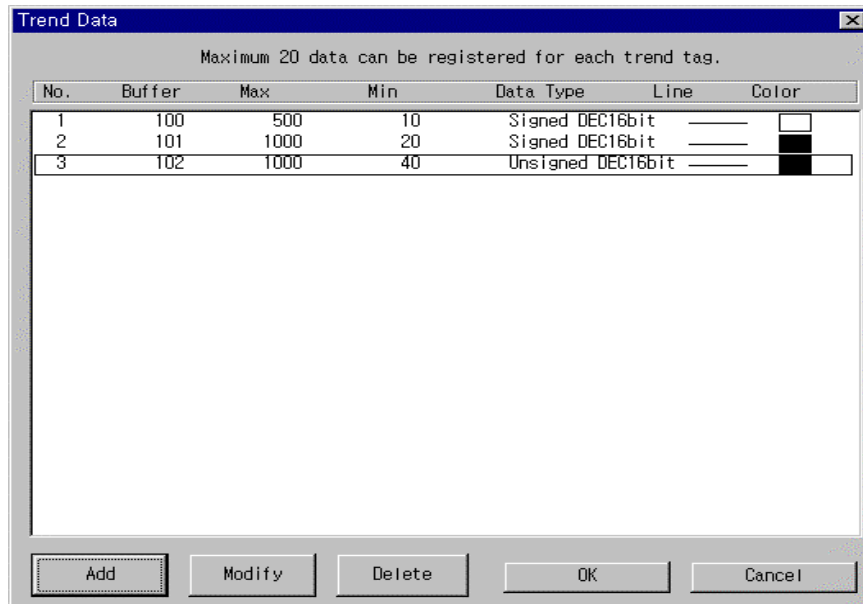
Add

It allows you to enter the new data information of the Trend graph Graph.

Modify

It allows you to correct the already entered data's information of the Trend graph Graph.

After clicking the line in which you wish to correct the information, push this button.

Delete

It allows you to delete the already entered data's information of the Trend graph Graph.

After clicking the line in which you wish to delete the information, push this button.

▶ Buffer Number

It is to specify the system buffer in which it is to be indicated on the Trend graph Graph.
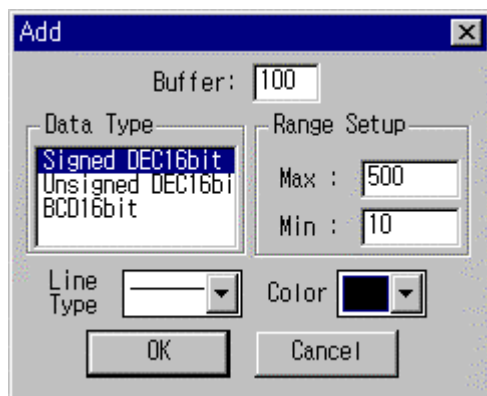
▶ Data Type

It is to decide in which type the specified system buffer's data is to be recognized for the Trend graph Graph.

Signed DEC 16 bit (－32768～32767)

The data code is within the specified buffer, which is recognized as multiples of ten.

Thus, if the data within the specified buffer's MSB (Maximum Senior Buffer) is one, then it is recognized as an odd number.

When establishing the maximum and minimum value, when entering multiples of ten, you may also enter an odd number.

Unsigned DEC 16 bit (0～65535)

The data within the specified buffer is recognized as decimal values from 0 to 65535.

When establishing the maximum and minimum value, when entering multiples of ten, you may also enter an odd number.

BCD 16 bit (0～9999)

The data within the specified buffer is recognized as BCD from 0 to 9999.

If the buffer's data is indicated as multiples of 16, then the numbers A～F will be included

and the graphs previous value will be identical to the level of indication.

▶ Range Establishment (Maximum Value, Minimum Value)

It is the range in which the data can be drawn onto the Trend graph Graph.

The data form is established when the maximum value and the minimum value are established for the data type.

Thus, if the established data type is BCD then the value to be entered must be BCD, and if the established data type is DEC then the value to be entered must be decimal value.

If the specified buffer's data is bigger than the maximum value, the line for the Trend graph Graph is drawn in a certain place.   And if the specified buffer's data is smaller than the minimum value, the line for the Trend graph Graph is drawn in a certain place.
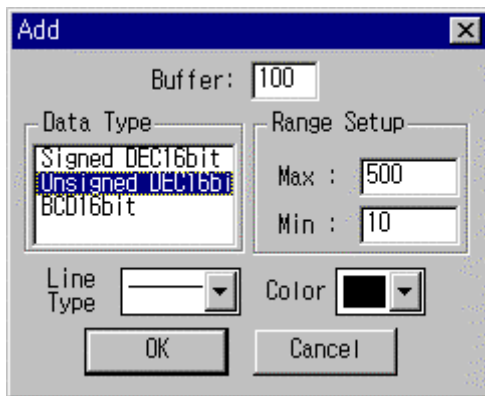
▶ Line Type, Color

It is to establish the Trend graph Graph's type and color.

There are eight different types of line and 16 different colors.

▶ Graph's Territory Establishment

You may register up to 20 Trend graph tags for one screen.

For example, if a graph of seven Trend graphs is registered under one territory under one tag name, you may add 13 Trend graph graphs.

Also, you may register up to 20 Trend graph Graphs under one graph territory.

The method is to first enter a Trend graph graph tag then using the mouse button click the tag name, which is indicated.

Then the Establishing Window will appear, which you may establish.

The Sampling Time, Sampling Number, and Scroll Number will be identical to the values you

have entered before.

The newly registered Trend graph Graph tag will have the identical name of the previous registered Trend

graph Graph tag.

Thus, one Trend graph Graph tag has many registered graphs.

Here also, you may register up to 20 tags under one territory.

9-20. L TAG (Lamp Tag)

Type	PMU-200	PMU-300	PMU-600
Application	0	0	0

The operation method for the Lamp Tag is different.   Therefore, the directions for the "PMU-200 Standard"and the "PMU-300/600 Standard" are done separately.

<u>PMU-200 Series L-TAG Standard</u>

■ According to the specified buffer's specified bit's condition the specified color changes by the lamp.

■ A Lamp Tag

For the territory surrounded by a closed line or the squared territory's color is changed by the specified buffer's specified bit.

   According to the established ON color and OFF color, the color will change when the specified bit is ON and OFF.

<u>Establishing Category</u>

The shape of the lamp can be either a circle, square, or oval which is supported from the main frame.

The operation method is when the lamp's appearance is 0→1, when the specified buffer's bit is 1 then the colored figure is indicated; 1→0, when then the specified buffer's bit is 0 the colored figure is indicated.

   When the lamp's appearance is specified as 0→1, the left side is when the specified bit is 1 and the right side is when the specified bit is 0.
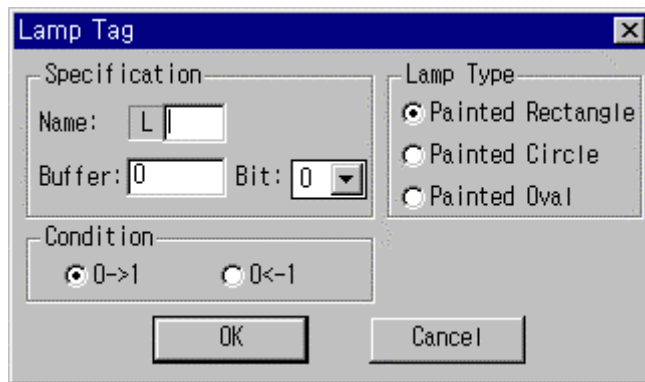
▶Tag Name

The first letter of the tag name automatically begins with the letter L, with a maximum of four letters or numbers.

Buffer

It is to specify the buffer in which it has the bit condition in which it can turn the lamp On and Off.

Bit

It is the specified bit in which the specified buffer is used to operate the lamp.

When the specified bit is on, then the on color colors the closed territory. When the specified bit is off, then the off color colors the closed territory.

▶Lamp Appearance

0→1

When the specified bit is 1, then the lamp indicates the specified figure (painted circle, Painted Rectangle, painted oval).

1→0

When the specified bit is 0, then the lamp indicates the specified figure (painted circle, Painted Square, painted oval).

▶Lamp Type

When the specified bit coincides with the lamp's appearance condition it specifies the shape in which the lamp should be indicated.

For the desired lamp shape there is painted circle, painted square, and painted oval.

PMU-300/600 Series L-TAG Standard

■ According to the specified buffer's specified bit's condition the specified color changes by the lamp.

■ A Lamp Tag is,

  For the territory surrounded by a closed line or the squared territory's color is changed by the specified buffer's specified bit.

  According to the established ON color and OFF color, the color will change when the specified bit is ON and OFF.

Establishing Category

For the Lamp Tag, there are two different kinds.

▶ Closed Line Lamp

It is the tag to color territory in which is surrounded by the closed line, with the ON color when the option is ON and with the OFF color when the option is OFF.

In order to register the lamp tag, a closed line territory must already be drawn on screen.   And then you must establish a lamp tag within that territory.

If you register a lamp tag in an area that is not within the territory, when coloring it will spread out to the whole screen, so you must be careful.

When specifying the color, you should specify the ON color and OFF color differently, or else the lamp will not operate properly.

Note:

If there is writing within the closed line, proper operation might not happen.

The closed line lamp, in the beginning operation, will only confirm the background color of OFF, when the lamp tag is registered.   Therefore, use only one color within the closed line territory.

▶Color Square Lamp
It is the tag in which the On, OFF option will be colored within the specified square territory.
After entering the information on the lamp tag, establish the square territory for where the lamp will be indicated.

The color square lamp which is specified within the square territory will be colored by the ON color and OFF color.

The closed line lame has the merit of being able to register a lamp within the many optional figures.

However, if there is writing inside the territory the lamp will not turn ON or OFF properly.

Thus, if you wish to put writings or figures within the lamp it is useful to use the color square lamp.

However, you should shy away from specifying the ON color and OFF color when using the color square lamp to color the writings or figures.
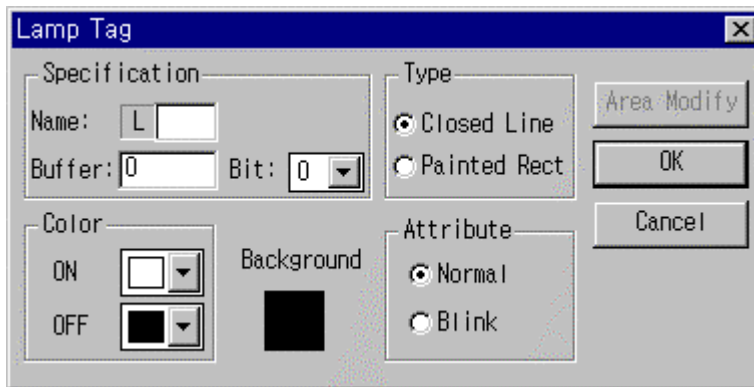
▶Tag Specification
Name
The first letter of the tag name will automatically began with the letter L with a maximum of four letters or numbers.

Buffer
It is to specify the buffer in which it has the bit condition in which it can turn the lamp On and Off.

Bit
It is the specified bit in which the specified buffer is used to operate the lamp.

When the specified bit is On, then the On color colors the closed territory.   When the specified bit is Off, then the Off color colors the closed territory.

▶Color Specification (ON Color, OFF Color)

It is to establish the color of which to color the closed line territory, according to the specified bit's operation.

The ON color is the color in which specified bit is ON, and the OFF color is the color in which the specified bit is OFF.

When you color with the ON and OFF color, it also colors the background color (the area in which the lamp tag is registered) and other colored areas (boarder territory).

For the color square lamp, when there are figures or characters within the territory, you should specify the colors of the ON and OFF colors differently from the figures to be colored.   Or else while the ON, OFF operation is in motion, the figures will disappear.

▶Territory Correction (Painted Square Lamp example)

When the color square lamp is specified, it is to specify the territory of which the corresponding lamp operates.

According to the Condition, the specified territory's interior will be colored by the ON, OFF color.

▶Appearance

After selecting Blink, the lamp type will always blink.

9-21. Q TAG (String Tag)

Type	PMU-200	PMU-300	PMU-600
Application	0	0	0

■   Q Tag displays the ASCII character according to the specified continuing buffer data value by the operating condition.

■   String Tag

- The String is displayed according to the specified buffer's specified bit display criteria, or displayed according to the specified buffer's data change.

The displayed String is the changed characters from recognizing the specified continuing buffer data as ASCII value.

- For the case of display criteria, when the specified buffer's specified bit agrees with the display criteria, the changed characters appears in the specific position on the screen.   For display criteria,   there are 0->1, 1->0, 0<->1.

- For the case of no display criteria, every time the specified buffer contents change the changed character contents appears on screen.

- Selects the style and ratio of the displayed String.   There are normal, toggle, blink, reverse, reverse blink styles.
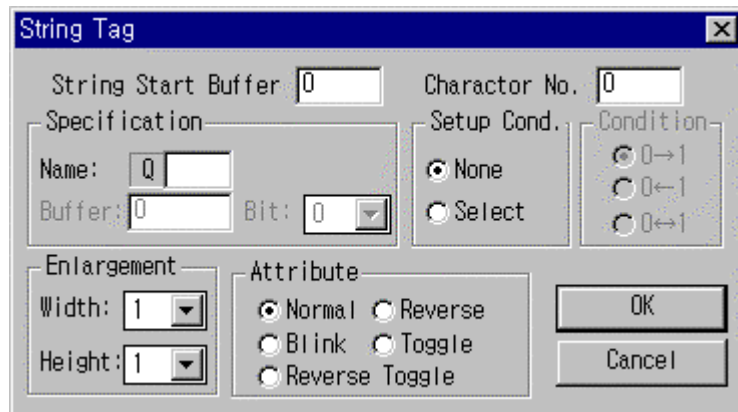
PMU 300/600 Q Tag Screen Display
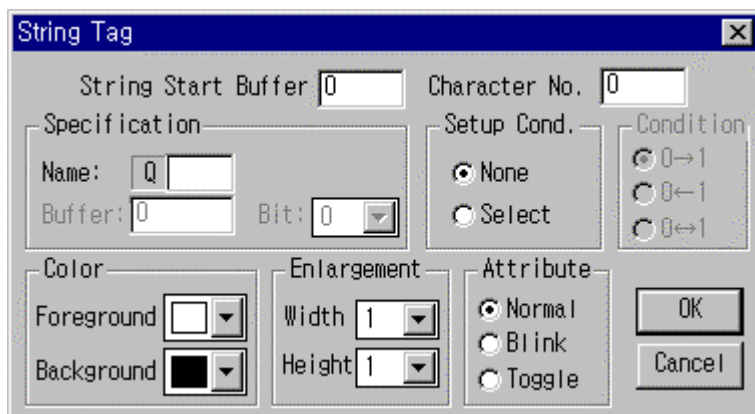
Select Items

• Tag Name

The header is automatically selected as Q and the user defines a maximum of 4 characters (English, numbers) for the tag name (a total of 5 characters).

• String Starting Buffer

Selects the starting number of the buffer that changes the String.

• Number of Strings.

Selects the number of characters of the Strings to be displayed on screen.

The maximum length of the String.

PMU-200

    30 English characters (One Korea character equals two English characters) possible

PMU-300

    40 English characters possible

PMU-600

    80 English characters possible

One system buffer can have data with 2 English characters or one Korean character.

If the number of Strings is set for 20, it reads 10 buffer data from the String starting buffer and displays it on screen. However, if the system buffer data prior to the specified the number of Strings is 0 or null, it displays only the data up to that buffer as strings on the screen.

• Operating condition

Selects the display condition of the String tag.

There is the method of displaying the Q tag according to the optional specified buffer specified bit condition, or the method of displaying the Strings of only the changed buffer data from the String starting buffer to the number of Strings

• No Operating Condition

Specify on the String starting buffer and the number of Strings.   When needed, the String types below are selected.

• Select Ratio

Selects the horizontal and vertical ratio of the displayed String on the screen.

The maximum ratio is 8 for each.

• Style

Selects the style of the displayed String.

There are 5 types for PMU-200.

- Normal

The message is displayed in no particular style.

The message appears on screen as is with the foreground as white and the background as black.

MESSAGE

- Blink

PMU-200 Series

The called message content blinks.

Blink switches the message character color from white to black.

MESSAGE → [   ] → **MESSAGE**

PMU-300/600 Series

The called message content blinks.

Blink switches the message character color from white to black.

The toggle speed can be adjusted in the main machine's initial selection menu's system select.

MESSAGE → [   ] → **MESSAGE**

- Toggle

PMU-200 Series

The called message content is toggled

Toggle switches the message character color back and forth from the background color.

MESSAGE	→	MESSAGE	→	MESSAGE

PMU-300/600 Series

The called message content is toggled.

Toggle switches the message color back and forth from the foreground color to the background color.

The toggle speed can be adjusted in the main machine initial selection menu′ system select.

- Reverse (Applies only to PMU-200 Series)

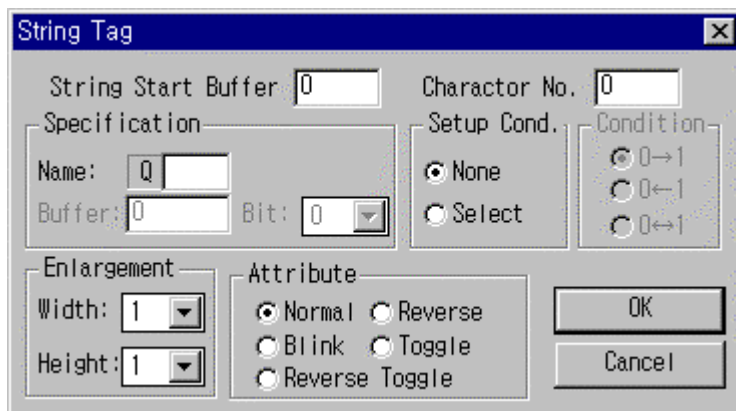The called message character is displayed in black on a white background.

MESSAGE

- Reverse Blink (Applies only to PMU-200 Series)

The called message content blinks in reverse.

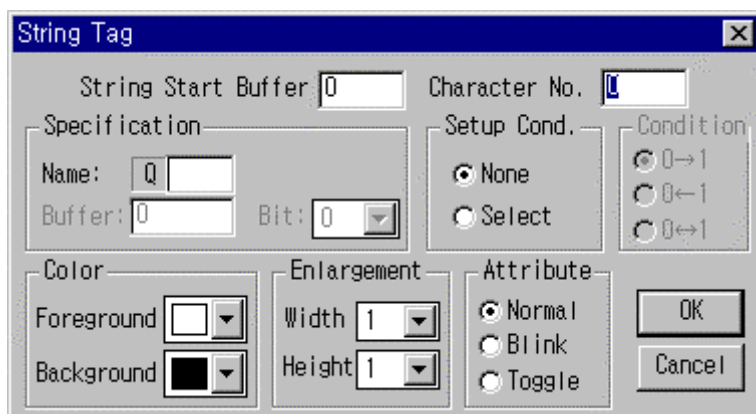| MESSAGE	→		→	MESSAGE

Operating Condition   When there is an operating condition, the following operating condition must be selected.

PMU-200 Series Screen Display

PMU-300/600 Series Screen Display

• Bit

It is the system buffer bit to be used for the operating condition.

Selects which number bit of the specified buffer is used for the operating condition.

• Display Condition

Selects when the specified bit is displayed as a String under certain conditions.

- 0->1

When the specified bit changes from "0" to "1", the buffer content selected for the String is displayed as a String.

The changed content of the buffer specified for the String applies to the screen when the specified bit is changed from "0" to "1".

- 0<-1

The String is displayed when the specified bit changes from "1" to "0".

The changed content of the buffer specified for the String applies to the screen when the specified bit is changed from "1" to "0".

- 0<-> 1

When the specified bit changes from "1" to "0" or "0" to "1", the String is displayed.

9-22. W TAG (Window Tag)

Type	PMU-200	PMU-300	PMU-600
Application	X	0	0

Only applicable for PMU-300/600 Series

■ It has the function in which the user beforehand writes out the support screen and it calls up the support screen onto the standard screen.

However, according to the Window Tag operation, if the tag is registered at the called up support screen, the tag operation will be accomplished.

The support tag is to call up and draw only the objects onto the support screen.

■ A Window Tag

It is the tag in which, according movement option, the registered standard screen corresponding to the support screen (window screen) will be called upon.

Only one window tag will pop up.   Therefore, when the window tag is in operation and the window is   popped up, other window tags will not operate.

The tags to be registered at the support screen (window screen) are 16.

Number, Touch, Function Key, Buffer Write, Delay, Operation, Message, Precision Adjust, Pie Graph, Statistic Graph, Level Graph, Trend graph, Lamp, Character, Key, Key Display Tag (Support, Symbol, Move, Territory Move, Window, Block Tag are excluded)

When the support screen (window screen) is called up, first the corresponding support screen's established territory should be erased by black, then the object and tag registered at the support screen will be called upon.

When the window screen is called up, the next tags at the standard screen will not operate.

Support Tag, Symbol Tag, Movement Tag, Territory Movement Tag and Window Tag

Besides the standard screen's tag, but also the tags that overlap from the corresponding territory window screen territory.

For the block tag, when the territory overlaps, the block function disappears.

However, the Clock, which is not a tag will be indicated at the bottom of the screen and will operate properly.

There are two kinds of Conditions.

0→1:   When the specified buffer's specified bit is turned ON from OFF, then the support screen will be indicated.

1→0:   When the specified buffer's specified bit is turned OFF from ON, then the support screen will be
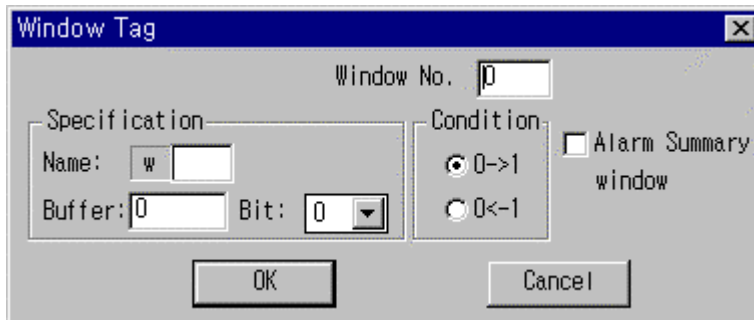
indicated.

Select Items

▶ Tag Name

The header of the tag name will automatically began with the letter W with a maximum of four letters or numbers.

PMU-300

PMU-600

▶ Buffer
It is the buffer in which the Condition will be compared with the bit.
▶ Bit
It is the bit to be compared with the condition.

▶ Condition

The Condition is when the specified buffer's specified bit is in what condition, to call up the support screen.

There are two kinds of Conditions.

0→1:

When the specified bit is changed from 0 to 1, the window screen will be called upon.

When the specified bit is changed back to 0 the called up window screen will disappear.

(The background picture, before the support screen was called up will reappear)

0←1:

When the specified bit is changed from 1 to 0, the window screen will be called upon.

When the specified bit is changed back to 1 the called up window screen will disappear.

(The background picture, before the window screen was called up will reappear)

▶Window Screen Number

It is the number for the called up window screen (support screen).

Note:

For PMU-300/600 you may register more than one window tag, but only one window per screen will operate. Even though while one window is in operation, and the other window tags operate, the latter operating window tags will not operate.

Also, in this situation, even though the preceding operated window disappears the latter operating window is already in operation.   Therefore, the window operation will not happen.   In order for the latter originated window tag to operate, the window must re-satisfy the original option.

Thus, the window original option of 0 →1 and 1→0 when originates, is when there is no preceding window.

Warnings for registering the window screen at the support screen.

When the Trend graph is registered at the standard screen, and at this situation, for the Trend graph tag to operate, each Trend graph tag must be registered under different names.   If the names are the same, the window's Trend graph will not operate properly.

When you register the Window Disappearing Option under the window screen as touch tag, you must let the touch tag press Condition as OFF.

If the press indication is ON, even though the window disappears the press indication will leave an afterimage.

▶When Establishing the Window as Alarm History (Applicable for PMU-600)

By specifying an alarm group, the corresponding group's alarm history only will be seen on the window's (384×240) window screen.

The rest of the operation option will coincide with the other window tag functions.

Execution Method

Allow each alarm to form a group from the alarm edit, then from the window tag the alarm history window will be established and when specifying a group the corresponding window tag will only show the alarm history of the specified group.

If you specify the alarm group as ALL, it will show all the alarm history regardless of the group.

Also, the alarm history from the previous touch tag and function key tag's special functions calling up will show all the alarm history regardless of the whole screen group.