# 7.9 Graph 1(Bar Graph) Tag 📩

Graph 1 tag is Bar/Meter/Closed region Graph tag.

## (1) Type

Bar graph tag

- reads data of controller device or system buffer
- draws bar graph which indicates the data's value
- has 2 kinds of bar shape : 'frameless rectangle' or 'rectangle with frame'
- 4 kinds of bar display direction : left, right, upward and downward
- is capable of limiting input data's range by setting max. and min. value

Meter graph tag

- reads data of controller device or system buffer
- draws meter graph which indicates the data's value by needle
- has 2 kinds of bar shape : 'circle' or 'half circle'
- 2 kinds of bar display direction : clockwise, counterclockwise

Closed region graph tag

- reads data of controller device or system buffer
- draws fill-graph which indicates the data's value inner closed region
- 4 kinds of bar display direction : left, right, upward and downward

## (2) Registration

- 1) Select graph 1 tag in tag menu or Graph 1 icon on Toolbar
- 2) Determine device address or system buffer to read
- 3) Click 'OK'

## 7.9.1 Setting

#### (1) General

1) Scan Period : Determine time period to read data of device's address or system buffer.

Reads the data and displays on bar graph every 'Scan Period x 500ms'.

If scan Period is '0', reads the data and displays the data on bar graph always.

- 2) Address to read : Determine device address or system buffer to read
- 3) Type of Max/Min : 'Constant' or 'System Buffer'. In case of 'System Buffer', the Max. and Min. value should be system buffer address. In this case, real Max/Min value is the value in the system buffer.
- 4) Data Type : Unsigned DEC., Signed DEC., BCD
- 5) Data Range

Data Type	Data Range
Unsigned DEC.	0~65535
Signed DEC.	-32767~32768
BCD	0~9999

- 6) Graph Direction : which direction to fill with an special color inside of graph.
  - Bar or Closed region : Left, Right, Upward and downward
  - Meter : clockwise, counterclockwise

Gr	aph1	×
1	General   Display   Range	
(2)	Description Graph type © Bar C Meter C Closed region Address to Read Scan Period Scan Perio	
(3)	Data Range Type Of Max,/Min. (Constant C System Buffer	4)
5)	Max, Value 65535 Min, Value 0 Display Direction © Up C Down C Left C Right	

## (2) Display

## 1) Option

Click 'Option' button, a dialog box appears to choose tag's shape.

- Bar : Frameless Rectangle or Rectangle with frame
- Meter : Circle or Pie
- Closed region : No shape

## 2) Color

- 1. Frame Color : Frame color of graph. It is no meaning in Closed region graph.
- 2. Background Color : Background color of graph.
- 3. Normal Color : Filled color in case that data is in determined range.
- 4. Out of range Color : Filled color in case that data is out of the range.

Graph1 General Display   Range   Opt,	Frameless Rectangle Rectangle
Display Color Frame Color Bg.Color	Grath Tate
Filled Color On Exceed	Start Angle

## 7.9.2 Examples

## 1. Bar graph

Register a bar graph tag,

- scans 'MW0' every 2 second and draws bar graph from bottom to upward.
- type of Max/Min is 'Constant'
- Data Type is unsigned DEC.
- Data Range 'from 0 to 20000'
- Shape of graph is rectangle with frame
- Frame color is black, background is white, normal color is cyan, out of range color is pink.

1) General

•

- Scan Period : 4
- Address : MW0
- Type of Max./Min. : Constant
- Data Type : Unsigned DEC.
- Data Range : Min. 0, Max. 20000
- Graph Direction : Up

Graph1	×
General Display   Range	
Description Graph type Graph type Grave Consect region Address to Read Grave Scan Period Grave Storms(if '0', 4 - x 500ms(if '0', refresh always) Data Type Grupsianed DEC Constant DEC Constant Grave Storms(if '0', Constant Storms)	
Data Bange Type Of Max,/Min, Constant C System Butter	
Max, Value 20000	
Display Direction	

- 2) Display
  - Graph Shape : Rectangle with frame
  - Frame Color : Black
  - Background Color : White
  - Normal Color : Cyan
  - Out of range Color : Pink

Graphi General Display	2
Display Color	
Big Color Pilled Color On Normal	
Filled Color On Esceed	
OK Cancel	Help

3) Results



## 2. Meter graph

Register a meter graph tag,

- scans 'MW0' every 500ms and draws meter graph by needle.
- type of Max/Min is 'Constant'
- Data Type is unsigned DEC.
- Data Range 'from 0 to 100', increased by anticlockwise.
- Shape of graph is circle, and start angle 0  $^{\circ}$
- Frame color is black, background is white, normal color is cyan, out of range color is pink.

1) General	2) Display
Graph1	K Graphi
General Display Range Description Graph type C Bar Address to Read Address to Read Address to Read Address to Read Scan Period T = x 500ms(if '0', x 500ms(if '0', retresh always) Data Type C Unsigned DEC C Signed DEC C BCD Data Range Type Of Max,/Min, C Constant C System Buffer Max, Value 100 = Min, Value 0 = Display Direction C Clockwise C Anticlockwise	General Display Pange Graph Type Circle Pie Start Angle Display Color Frame Color Frame Color Bg.Color Filled Color On Normal Filled Color On Exceed Filled Color On Exceed

.

3) Result



When MW0's value is 0 When MW0's value is 30 When MW0's value is over 100

## 3. Closed region graph

Register a closed region graph tag inner closed diagram

- scans 'MW0' every 500ms and draws closed graph
- type of Max/Min is 'Constant'
- Data Type is unsigned DEC
- Data Range 'from 0 to 100', increased by UP
- Background is white, normal color is cyan, out of range color is pink
- 1) General

2) Display

Graph1	×	Graph1	×
General Display   Range		General Display Range	
Graph type C Bar C Meter Closed region			
Address to Head Scan Period Scan Period Sc		Display Color	
Deb Decer		Bg.Color	
- Type Of Max./Min. (© Constant C System Butter		Filled Color On Normal	
Max, Value 100 -			
Min, Value			
Display Direction IP Up C Down C Left C Right			

## 3) Result



[Registration of Closed graph tag on PC]



[when MW0's value is 50, RUN]

# 7.1 0 Graph2(Trend Graph) Tag 📕

Graph 2 tag is Trend Graph tag.

## (1) Trend Graph tag

Trend graph tag,

- reads data of controller device or system buffer
- draws trend graph which indicates the data's value along with time various
- Various types of line shape are available
- One trend graph tag can read and display maximum 10 address' data.

#### (2) Registration

Select the Graph2 tag in the menu or Graph 2 icon on Toolbar.

## 7.10.1 Setting

#### (1) General

- Scan Period : Determine time period to read data of device's address or system buffer. Reads and displays the data on trend graph every 'Scan Period x 500ms'. If scan period is '0', reads the data always and displays the data on bar graph.
- 2) Data type : There are 3 kinds of data types, Unsigned DEC., signed DEC., BCD
- 3) Data Range : Determine in the 'Range' tab.

Data type	Data Range
Unsigned DEC.	0~65535
Signed DEC.	-32767~32768
BCD	0~9999

4) Display format

No. of X axis division : Determine number of divisions of X axis(time axis).

Scroll Over No. : After trend graph is drawn to the end of X axis on screen, and then X axis shifts to the opposite side of graph's running direction. Determine the shift size. (Scroll No. should be smaller than X axis division No.)

## 5) Graph direction : Running direction of graph.

Right (left to Right) or Left(Right to Left)

Graph2	×
General Display   Range	
Description	
(1) Scan Period	
0 + x 500mu(if 10' , Scan Usually)	
2) Data Type G Unsigned DEC C Signed DEC C BCD	
Display Format	
4) No. DI X-avis Division   10 -	
(5) Display Direction	
3,	
OK Cancel He	ø

## (2) Display

1) Option

Click 'Option' button, a dialog box appears to choose shape of graph plate. There are two kinds of shape, 'Frameless Rectangle' and 'Rectangle with frame'.

## 2) Color

- 1. Frame Color : Frame color of graph plate
- 2. Background Color : Background color of graph plate

Courb 3	
Car aprila	Select a shape that you want
General Display Range	Frameless Rectangle
(mono)	Cancel Help

#### (3) Range

One trend graph tag is capable of displaying maximum 10 address data with different line and with different color and with different Min/Max limits.

After modifying next properties in 'Range' tab and click 'Add' button. It is registered.

- Address to read
   Determine device address to display
- 2) Range (Min & Max) Determine Min & Max value of 1) Address to read
- 3) Line Color

Determine line color of trend

4) Pattern

Determine one among 8kinds of line pattern

5) Add, Delete, Modify

It is same with the method of Calculation tag or Touch tag's 'Operation' tab.



Click 'OK' without any data in list, next error message appears,



## **7.10.2** Examples

Register a trend tag,

- 5sec scan period, data type is unsigned decimal, X axis division No is 20, scroll over number is 6
- and graph plate shape is rectangle which has black background color and white frame color.
- displays both of MW0's data and MW10's data.
  - MW0's data is displayed with blue (----) line and data range is 'from 0 to 5000' MW10's data is displayed with cyan ( ) line and data range is 'from 5000 to 10000'

## (1) General

- Scan period : 10 (10\*500msec = 5sec)
- Data type : unsigned DEC.
- No of X axis division : 20
- Scroll Over No.: 6
- Graph display direction : Right

Description	-
o o o o o o o o o o o o o o o o o o o	
Scan Period	
10 = x 500ms(# 17 . Scan Usually)	
Data Type	
C Unsigned DEC C Signed DEC C I	BCD
Display Format	
No. 01×axis Division 20-	
Scroll Size	
Display Direction	
- · · · · · · · · · · · · · · · · · · ·	
C Left (* Hight	
C Left (* Hight	

## (2) Display

- Option (Graph plate type): Rectangle with frame
- Background color: Black
- Frame color : White

Graph2	×
General Display Range	
Dipt.	
Calor Bg. Calor	
OK Cancel	Help

## (3) Range

Range 1: Address to read : MW0, Line color : Blue, Pattern : ----, Range(Max/Min) : 0 ~ 5000
Range 2: Address to read : MW10, Line color : Cyan, Pattern : , Range(Max/Min) : 5000 ~ 10000

h2				
menal   Display	Bange			
Adda	ess Io Hea	d		
Norm College	W0010			
	-	_ D	ata Rang	
	-	,	Aax Value	10000
Pattern E			tin Value	5000
			THE YORKS	1 5000
			1d De	Mod I
Device	Max	A	Id De	Mod Patteen
Device D:MW0000	Max	Add Min	Id De Calor	Mod Pattern
Device D:MW0000 D:MW0010	Max 5000 10000	Ac Min 0 5000	Id De Color	Mod Pattern
Device D:MW0000 D:MW0010	Max 5000 10000	Ac Min 0 5000	Id De	Mod Patteen
Device D:MW0000 D:MW0010	Max 5000 10000	Ac Min 0 5000	Id De Color	Mod Pattern
Device D.34w0000 D.34w0010	Mas 5000 10000	Ad Min 0 5000	M De Color	Mod Patesn
Device D 3fw70000 D 3fw70010	Mas 5000 10000	Ac Min D 5000	Id De	Mod Pattern
Device 0.5fw70000 D.3fw70010	Mast 5000 10000	Ac Min 0 5000	Id De	Mod Patteen

## (4) Results



<On PC>

With Numeric tag, it is possible to see variation of the value as both of 'number' and 'graph' at the same time.



< On Panel>

X axis division No. is 20 and Scan period is 5sec, so it takes 100sec to draw graph to the end of X axis. And because scroll over No. is 6, trend graph shifts 6 division to the opposite side of display direction.



proceeds this length in every 5 second

# 7.1 1 Communication Tag

Communication means

- Reads the controller's device data and write the data inner system buffer

or

- reads inner system buffer data and write the data in controller's device.

#### (1) Registration

- 1) Select communication tag in tag menu or communication tag icon.
- 2) Determine 'Condition, Communication type, Station No., Start address, etc'
- 3) Click 'OK'

## 7.11.1 Setting

## (1) General

Determine communication Condition

- 1) Time period
  - period x 500msec is available.
  - Communication is executed every designated time period(scan period).
  - If scan time is 0, reads data always.

nm			
Seneral   Operation			
Description			
- Condition Turns -			
@ Periodic	OBR		
0 + × 500	majir 10°, Sca	en Usually)	
_			
	OK.	Cancel	Help

#### 2) Bit

- Determine condition-address to communicate(read or write).
- Bit Condition : Select one of conditions.
  - Case 1, 'ON' : When the bit is changed from '0' to '1'
  - Case 2, 'OFF' : When the bit is changed from '1' to '0'

General Downsion	
Description Condition Type 〇 Periodic ④ 副	
Cond. Address Total MW0000 0 T Bit Condition O 1017	

#### (2) Operation

1) Read or Write

Select 'Read' or 'Write'

'Read' : reads data of controller device and saves inner system buffer.

'Write' : writes data in controller device from inner system buffer.

2) Station No.

Determine station No. of controller device

3) Start address (of controller device)

Determine controller device address to read or write.

In 'Read' mode, the data of this address is read.

- In 'Write' mode, the data is written in this address
- 4) Start system buffer

Determine system buffer to read or write.

- In 'Read' mode, data of controller is written in this buffer.
- In 'Write' mode, the data of this buffer is read and written in controller.

## 5) Word No.

Determine Word No. to communicate.

Comm	$\bigcirc$	×
General Operation	(2))	
1) Comm, Type () Read(TOP <= PLC) () Write(TOP=> PLC)	Station No.	
3) Start Addr. in PLC	1	
(4) No. Of Word		
(5)		

# 7.11.2 Examples

## (1) In 'Read' mode

Register a communication tag,

- reads 10 word data from MW0 of station No. '0' when bit 0 of MW0 triggers to 1,
- writes(saves) the data in system buffers '100'
  - Communication condition: Bit
  - Address : MW0's 0 bit
  - Bit Condition : ON

General Operation	
Description Condition Type O Periodic O Sec d = Mw00000 0 v BR Condition O YON' O YOFP	

## 7.11-3

- Communiction Type : Read
- Station No. : 0
- Start Address : MW0
- Start System buffer : 100
- Word No. : 10

Comm, Type  General Country  Read(TOP <= PLC)  Write(TOP => PLC)	Station No,	
Start Addr. in PLC  Start System Buffer  100 No. Of Word  10 +	M#000	

## (2) In 'Write' mode

Register a communication tag,

- reads 10 word data of system buffer 200
- writes(saves) the data in MW100 of station No. 10 every 5 second.

- Communication	condition :	Time	period
-----------------	-------------	------	--------

- Scan Period : 10 (10\*500ms = 5sec)

Comm	×
General Operation	
Description	
Condition Type	
Periodic     O Bit	
The strength for the st	
1 to x sound(r o, scar oldaly)	
DK Cancel H	telp

- Communiction Type : Write
- Station No. : 10
- Start Address : MW100
- Start System Buffer : 200
- Word No. : 10

Comm. Type     Read(TOP<=PLC)     Write(TOP=>PLC)	Station No.
Start Addr. in PLC Start System Buffer	200 <u>+</u>
	-

# 7.1 2 Window Tag 🛄

- Calls out a 'Window Screen' which was created already
- Selected 'Window Screen' is Pop-up on 'Base Screen'

## (1) Registration

- 1) Select Window tag in tag menu or click Window tag icon on toolbar.
- Determine 'Window Type, Device Type, Address, Condition, Window No. to display, Base position to display' in 'General' tab.
- 3) In case of bit condition, select window number of 'ON' and 'OFF' case.
- 4) In case of word-range condition, select window number for each range in 'Range' tab.
- 5) In case of word-variable condition, select window number directly.

## <u>Caution</u>

- When more window tags than one are registered, only 1 window can be activated.

If a window is already activated, the other window can not be activated. The other window can be activated after the current window is faded out. But when base windows and auxiliary windows are registered in base screen at the same time, one base window and one auxiliary window can be activated together.

- When window is activated, tags on the back of the window don't operate till the window disappears from screen.
- Max size of window screen is determined by model

## 7.12.1 Setting

#### (1) General

1) Window Type (& Background restoring)

Base(window) : When a window is disappeared from screen, the background is restored. That is, removes traces of window on screen. Auxiliary(window) : When auxiliary window is disappeared from screen, the background is not restored. That is, leaves black traces of window on screen.

# So, never register any diagrams or tags on the area of back side of auxiliary window.

2) Device Type

Bit condition.

- Address to read : Determine address and bit to read
- (Calling)Condition : Determine condition to call out selected window screen
   Case 1, 'ON' : When the bit is changed from 0 to 1

Case 2, 'OFF' : When the bit is changed from 1 to 0

- Window No. : Determine window number to call out when determined condition is satisfied.
- Base position to display : Determine the position to display window.

There are 9 kinds of position,

LT(Left-Top), MT(Middle-Top), RT(Right-Top), RM(Right-Middle),

RB(Right-Bottom), MB(Middle-Bottom), LB(Left-Bottom), LM(Left-Middle), and Center

Window	×
General	
Description	
Window Type @ Base C Auellary	
Device Type @ Bit C Word	
Address Id a 🔤 MW/0000 0 💌	
Condition (* 0N (* 0FF	
Window No. to Display 1 - Base Position to Display	
OK Cancel Help	

7.12-2

## Word Condition

It is possible to call out different window for different range or for different value.

#### - Address Type

Case 1, Range Type : In 'Range' tab, determine each range and window number.

Ge.	neral Range
	Description
	Window Type @ Base @ Aualiasy
	Device Type
	Addr. Type
	Addess d_1  Mw0000
	Range Df Window No.         Barry Position to Display           Max . Window No.         230 ± 21           Mo. Window No.         10

Case 2, Variable Type : the value of specified address corresponds to window As variable-address value is changed, corresponding screen No. window pop-up.

Window	General   Range ]
General General Description Window Type @ Bane @ Aueliany Device Type @ Bane @ Ward Adds:: Adds:: Adds:: Adds:: Adds:: Pang@ Warldow Range Df Window No. Nax: Window No. Nax: Window No. Device Type If window No	General   Range   Description Window Type C Base C Auxiliary Device Type C Bit C Word Addr, Type O Range O Variab Address Address Address MW0000 UnDelete Bg, in case of Same size Window Range Of Window No. Max , Window No. C State Construction C State Cons
[Base window]	[Auxiliary window]

[Auxiliary window]

- Max./ Min. Window No.

Determine maximum and minimum window number to display. If the window No. is not within Min. and Max., it is not displayed.

- Un-Delete Background. In case of registration of same size windows.

In the case of 'Word type' of 'Auxiliary window', 'Un-Delete Background...' check box is enabled.

When all of auxiliary windows used in this tag are created in equal size and this item is checked, it makes the speed of screen conversion fast and protect flickering because it don't remove the window traces.

#### (2) Range

- Determine minimum and maximum value of each range.
- And determine respective window numbers for each ranges .

Window No. a	nd Range Value Se	fing
Window No.	Min.(Decimal)	Max (Decimal)
24	101 c= Bare	He2 (= 200 III
3 - 1	201 c= Rang	pe3 c= 300 🖬
4.1	301 c= Rang	pe4 <= 400 🖬
6 1 2	401 <= Rang	pe5 <= 500 🖬
6 - 1	501 (= Rang	pe6 <= 600 🖬
	601 (= Rang	po7 <= 700 🖬
8 3 8	701 <= Rang	pe8 <=   800 🖬

## 7.12.2 Examples

## (1) Example of Bit condition

Register a base window tag,

- When 0 bit of MW0 is '1', window number 10 is pop-up.
- When 0 bit of MW0 is '0', window number 10 disappeared.
- Displays the window tag on left-top side against registered position.

#### 1) General

- Window Type : Base
- Device Type : Bit
- Address to read : MW0, 0Bit
- -(Calling) Condition : 'ON'
- Window No. to dispaly : 10
- Base position to display : LT

Window 2
General
Description
Window Type @ Base C Aueliary
Central Review Type
Address
Condition CON COFF
Window No. to Display 10 Base Position to Display
OK Cancel Help



# 7.1 3 Calculation Tag

If some condition is satisfied,

- Sets selected bit as '0' or '1',
- or executes arithmetical and logical operation and writes the operation result in a determined device.

## 7.1 3.1 Setting

## (1) General

1) Condition

Bit Condition :

Determine condition address and bit.

Determine bit condition when the calculation will be executed.

- 'ON' : When the bit is changed from 0 to 1.
- 'OFF' : When the bit is changed from 1 to 0.
- 'Reverse' : When the bit is triggered 'from 0 to 1' or 'from 1 to 0'

eneral Opera	ation	
Desception	-	-
- Comre Con	dition Type	
⊙ 8#	O Periodic O Word	
	Court Address	
विव 📼	Mw0000 0 m	
1-12	I HILLING IN T	
Bit Condition	0.000 0.000000	
O UN	O OT O Neverse	

Period Condition : Determine time period. Scanning is executed every designated time period(scan period).

If scan period is 0, scans always.



Word Condition

- Design the expressions.
- Operates calculation when the expression is true
- Determine 'Operand' and 'Operator'

>: when a operand is larger than the other operand

>= : when a operand is larger than or equal to the other operand

< : when a operand is smaller than the other operand

<=: When a operand is smaller than or equal to the other operand

= : When a operand is equal to the other operand

!= : When a operand is not equal to the other operand

& : When the result of logic AND is '1'

|: When the result of logic OR is '1'

^ : When the result of logic XOR is '1'

NA : Not Available

AND : AND operation

OR : OR operation

Comm. Co	ndRon Type	
O Br	O Periodic O Word	
Word Con	dition	
Lat.	Uperandic.decimat) Ope	-
al al		-
ित	MW0001	-
dici		_
Lag - L	,	

## (2) Operation

If condition is satisfied, execute this operation.

1) Calculation type : Select 'Bit' or 'Word' type

Bit

- ON : Triggers address value to '1'
- OFF : Triggers address value to '0'
- Reverse : Reverses address value

alculation
General Operation
Calculation Type G B# C Word 0 + s500ms(delay)
Address To Calculate
Bit Calculation of DA C DFF C Reverse
Add Del Mod
Type         Device         Oper         OPN1         OPR1           8#         D-MW0000-0         ON         ON         OPR1         OPR1
OK. Concel Help

Word

- Data Type : Select one among DEC., HEX., BCD.
- Operand : Select one among Device, System buffer, Constant
- Saving Address : Determine address to save the result of calculation.
- Saving address size : Determine the size of device, 16bit or 32bit.

Calculation 🔀
General Operation
Calculation Type C B# - Word 0 - b × 500nuldelay
Contraction Contraction Contraction
Operand Operator
lient d c = 🖬 100 N/ -
Hers2 d c 1 🖬 0 N/ V
Herat d c a 🔤 D Save Addr. Size
Addess II a MW0000 C 3284
Add Del Mod
Type Device Oper 0PMI 0PFC
L
OK Cancel Help

7.13-3

## Special

There are same function as touch tag except for 'Buzzer Beep'.

Special		
opecial		
Exit	C Alarm Scroll DOWN	
<ul> <li>Previous scr,</li> </ul>	C Alarm Clear	
C Change sc	C Mem Copy	
C Print scr	C Ext Mem Format	
C Print Logging1	C Buzzer Beep	
C Print Logging2		
C Print Alarm		
C Alarm Scroll UP		
C Print Logging3	C Print Logging6	
C Print Logging4	C Print Logging7	
C Print Logging5	C Print Logging8	

- 2) Delay Time : If the condition is satisfied, executes operation after delay time. If it is '0', executes operation immediately without delay.
- 3) Add, Delete, Modify : It is same with the method of Calculation tag or Touch tag.

## 7.13.2 Examples

## (1) Example of Bit Condition

Register a calculation tag,

- When MW0's bit 0 is changed from 0 to 1, add MW10 to MW11 and save the result in 2word from MW12
- Condition type : Bit
- Bit Condition : 'On'
- Condition Address : MW0, bit 0

Calculation	<u>.</u>
General Operation	
Comm. Condition Type	
Cond Address  Cond Address  Cond Condition  Di Condition  O TIN  O TIFF  O Reverse	
DK. Cancel	Help
	Cancel

- Calculation Type : Word
- Data Type : DEC
- Delay Time : 0
- Expression : (MW10) + (MW11) = (MW12)
- Saving Address: MW12
- Saving Address Size : 16bit

Calculation
General Operation Calculation Type C B#  Word
Operand     Operand       Item1     Item2       Item2     Item2       Item3     Item4       Item4     Item2       Save     Address       Address     Item4
Add         Del         Mod           Type         Device         0         OPN1         0         OPN2           Word         D-MW0012         D-MW0010         +         D-MW00
OK Cancel Help

#### => Registration on PC

(It is possible to confirm the result of calculation by use of Numeric tag)

#### (2) Example of Word Condition

Register a calculation tag,

C 0 0 1

- When MW10 is equal to MW0, reverses MW100's bit10
- Condition Type : word
- Condition : MW10==MW0

Celculation	×
General Operation	
Descaption	
Comm. Condition Type O Bit O Periodic O Word	
Word Condition	
d z Mw0010	
des Mw0000 NA -	
■ 1000WM ■ ± 5	
13 c s 🖬 Mw0000	
OK. Cancel H	elp

- Calculation Type : Bit
- Condition Address : MW100, bit 10
- Bit calculation : Reverse

Colculation Type Colculation Type Address To Calculate Address To Calculate Address To Calculate Bit Calculation C Dh C DFF (* Revette	s 500ma(delay)
Address To Calculate	
G a MW0100 11 M Bit Calculation C Dh. C DFF @ Revette	
BR Calculation C DN C DFF @ Revetoe	
C Dh C DFF @ Revette	
bb6	Del Mod
Type Device Operation OF	N1 0
Type Device Operation OF Bit D::Mw0100-10 Revenue	N/1 0
Tape Device Operation OF Bit D:MW0100-10 Revence	101
Type Device Operation OF Bit D:MW0100-10 Revenue	NI (

C002 => Registration on S/W
( Please confirm the result of calculation by use of Numeric tag)

## (3) Example Period Condition

Register a calculation tag.

In every 2 second,

- saves the result of adding MW0 to MW12 in 'MW0'
- reverses bit10 of 'MW100'
- Operation type : Period
- Time Period : 4 (4\*500 ms = 2 sec)

General Operation Description Const. Condition Type O Bit O Periodic O Word	
Description Comm. Condition Type O Bit  Periodic O Word	
Comm. Condition Type O Bit © Pretodic O Word	
O 8#	
a <u></u> s 500ma(07 7?)	
4 x 500nu(07 77)	
OK Cancel Hel	2

- Calculation 1 : Reverse bit 10 of 'MW100' :Calculation Type : 'Bit'
- Calculation 2: (MW0) + (MW12) = (MW0)
  - :Calculation Type : 'Word'
  - :Data Type : DEC
  - :Saving Address : MW0
  - :Saving Address Size : 16BIT

Calculat	on Type		
C 84	Ward		500ms(delay)
Data Ty G DE	pe CCHEXCBC	D.	
		Operand	Operator
Item	t dos 🖬	MW0000	
Item	2 0	MW0012	No -
Item	dos	0	N/ *
Item	4	0	Save Add. Siz
Save	. Ids .	MW0000	(■ 168# C 328#
		Add	Del Mod
Type	Device	Operation OP	N1 0.
Dir.	D:MW0100-10 D:MW0000	Plevense D:N	#w/0000 +
Word			



=> Registration on S/W ( Please confirm the result of calculation by use of Numeric tag)

# 7.1 4 Animation Tag

- Displays a registered bitmap or a sub-screen on base screen when a determined condition is satisfied.
- Effects of motion pictures by displaying several bitmap continuously like cartoon. (Animation effect)

Before registration of animation tag, bitmaps or sub-screens should be created.

## (1) **Registration**

- 1) Select 'Animation tag' on 'Tag' menu or Animation tag icon
- 2) Determine 'Part Type, Group, Device Type, etc' in 'General' tab.
- 3) Determine 'Enlargement, Color, etc' in 'Display' tab.
- 4) In case of 'Word' device type, determine 'Part No. Max range, Min range, Foreground Color, Background color, etc' in 'Range' tab.
- 5) Click 'OK'

## Caution Background color

On 'Bit' condition

- if bitmap No. is '0'
- or if no bitmap is registered
- background is displayed with determined background color.

On 'Word' condition and 'Range' address type

- If value is not within any range,
- background is displayed with determined color of 'Other range'

On 'Word' condition and 'Variable' address type

- if no bitmap is registered for selected address,
- background is displayed with determined background color

## 7.14.1 Setting

## (1) General

- 1) Bitmap type : Select one among Symbol, Image, Sub-screen. Refer to chapter 5.4 'Bitmap' and chapter 3.2 'menu'
- 2) Group : Select symbol group to display, from A to Z
- 3) Device Type
  - Bit condition

Address to read : Determine address and bit which is display condition 'ON' bitmap : Select bitmap number to display when selected bit is '1' 'OFF' bitmap : Select bitmap number to display when selected bit is '0' It there is not registered bitmap, it indicates '0'

Inimation	
General Display	
Description ]	
Pat Type	
@ Symbol C Image C Sub	
Group A 💌	
Device Type	
@ Bit C Word	
Address to Read	
[d]s	
YON' 1	
1000	
OK Cancel	Help

- Word Condition

There are two kinds of 'Address type'. Range and variable.

'Range' Address type Different bitmap is displayed for different range. For example,

if MW0's value is within '0 and 100', bitmap #1 is displayed. if MW0's value is within '101 and 150', bitmap #2 is displayed. And various foreground color and background are available.

nimation	
General Display Range	
Description	
Part Type F Symbol C Image C Sub	
Group A	
C Bit @ Wood	
Address Type	
Address to Read Min Part No. 993	
OK. Cancel	Help

'Variable' Address type

Variable No. corresponds to address' value.

When bitmap number or sub-screen number is not within Max. and Min. No., or selected part number doesn't exist, it doesn't display any bitmap or sub screen.

Description Part Type (* Symbol ⊂ Image ⊂ Sub Group A ▼ Device Type ⊂ B≵ (* Word Address Type Address to Read Max Pert No. 999 ÷ Min Part No. 1 ÷	eral Dipplay	
Pescription Part Type Part Type Part Type Part Type Device Type Bit Part Range Part Range Max Part No. 999 ± Min Part No. 1 ±	I subud t	
Part Type Part Type Part Type Device Type Part Range Address Type Address to Read Max Part No. 999	Description	
Group A      Oevice Type     C Bit      F Word      Address Type     Address to Read     didless to Read     Min Part No.      1	Part Type	
Group A Device Type Bit (* Word Address Type Address to Read Max Part No. 999 Min Part No. 1 Min Part No. 1	( Symbol C Image	C Sub
Address to Read Min Part No. 1997	O evice Type C Bit (F Word Address Type O Range O Manable	Part Range
	Address to Read	Max Part No. 999 + Min Part No. 1 +

5) Bitmap Range

On word condition, if bitmap No. or sub-screen No. is out of this range, no bitmap is displayed.

Maximum No. is 999 and minimum No. is 1.

## (2) Display

1)Enlargement (for only Symbol)

Determine enlargement size.

2) Color (for only Symbol)

On 'Bit' condition

: Determine bitmap's front color & background color of 'ON' bit or 'OFF' bit

On 'Variable' condition

: Determine bitmap's front color and background color

On 'Range' Condition

: Determine Text color and background color of each ranges in 'Range' tab.

General Display (1)	
Enlargement	
Color Drange 'ON' DFF'	
Fg. Color 💌 💌	
Bg. Color	

[Set as bit condition in general tab]

General Display
(1)
Color Dhange
Fg. Color
Bg. Color

[Set word variable in general tab]

#### (3) Range

Determine each range's part No., Foreground color and background color.

Range Val	Le and Color	Setting				
Part No.	Min.(Deci	(lerr	Max.(	(lecireal)	Tend Color	Dg. Color
	0	<= Rang	et ce 🗍	100		
24	101	<= Rang	#2 ca	200		
2	201	<= Plang	e3 (=	200		
14-2	201	<= Rang	et ce 🗍	400 🔛		
<b>「</b> 6 兰	401	<= Rang	et ca 🗍	500		
F = 1	501	<- Rang	eli ce 🗍	600		
7 -	501	<= Plang	e7 <= ∏	700		
8 +	201	<= Flang	e8 ca	800 📰		
_		Other R	ange			

1) Range

Maximum 8 ranges are available.

2) Part number

Determine bitmap number or sub-screen number to display.

- 3) Min. / Max. of range : Determine maximum and minimum value of each ranges.
- 4) Foreground Color and Background Color

For Symbol, foreground color and background color are available. For Image, foreground color is not available but background color is available. For Sub-screen, both of foreground color and background color are not available.

5) Other range : Determine background color when the value is not included in any ranges.

## 7.14.2 Examples

## (1) Example of Bit type

Register a symbol bitmap tag as follows,

When MW0's bit 9 is reversed by use of touch tag, the tag operates.

When MW0's bit 9 is 'ON', bitmap #1 is displayed and front color is blue, background color is white.

When MW0's bit 9 is 'OFF', bitmap #2 is displayed and front color is yellow, background color is blue.

1) Register bitmaps



map load(Image.)	Symbol)	
Load		
Path Criwindows	Wwave, bmp	Browse,
No.	Description	
Symbol use Attributes	Group 🗛 💌	
Colors		
Size		
323.32		

<Project Window>

[Bitmap registration]

- 2) General
  - Bitmap type : Symbol
  - Group : A
  - Device type : Bit
  - Address to read : MW0
  - Bit : 9
  - 'ON' bitmap number : 1 (When bit is 'ON', it displays A group's bitmap #1 )
  - 'OFF' bitmap number : 2 (When it is 'OFF', it displays A group's bitmap #2)

Animation	1
General Display	
Description	
Part Type	
F Symbol C Image C Sub	
Gioup 🗛 💌	
Device Type	
@ Bit C Word	
Address to Read	
[d ± ⊆ MW0000 9 ▼	
NU NU	
10FF* 2 1	
OK Cancel	Help

7.14-6

## 3) Display

- Character size : 1x1
- Foreground color of 'ON' : Blue
- Foreground color of 'OFF' : Yellow
- Background color of 'ON' : White
- Background color of 'OFF' : Blue



- 4) Register touch tag for ON/OFF operation
  - $\Rightarrow$  Setting of touch tag : Device(MW0000), bit(9), reverse

## 5) Results



Touched touch tag (ON)

=> It displays A groups' bitmap #1

Touched touch tag again (OFF)



=> It displays A groups' bitmap #2

## (2) Example of Variable type

Register an animation tag,

- -'Word' device type
- MW0's value means A group's bitmap number.
- Max. bitmap number is 90, Min. bitmap number is 10
- Front color is black, background color is blue.
- 1) At first, register bitmap as like example of 'Bit' type.
- 2) Register animation tag
- Bitmap type : Symbol
- Group : A
- Device type : Word
- Address type : Variable
- Address to read : MW0
- Bitmap No. range : 10~90

Animation	×
General Display	
Description	
Part Type (P Symbol C Image C Sub	
Group A	
Address Type O Range O Variable	
Address to Read       Max Part No.     90 -       Address to Read     Min Part No.     10 -       Id g     Mw0000     10 -	
OK. Cancel He	P

- Character size : 1x1
- foreground color is black and background color is blue

Animation General Display	×
Enlagement	
Fig Calor  Bg Color	
Max. Part Size X-asis Size 22 * Y-asis Size 22 *	
СК	Cancel Help

## 3)Result



## (3) Example of range Type

Register a animation tag,

- 'Word' device type,
- When MW0's value is between 1 and 500, C group's part # 10 is displayed
- When MW0's value is between 501 and 999, C group's part # 20 is displayed
- Background color is yellow, foreground color is black.

1) Register bitmap





[Registered Bitmap]

- 2) General
  - Bitmap Type : Symbol
  - Group : C
  - Device type : Word
  - Address type : Range
  - Address to read : MW0
  - Bitmap No. range : 1~999

Animation	×
General Display Range	
Description	í –
Pat Type	
* Symbol * Image * Sub	
Group C 💌	
C Bit C Word	
Address Type	
Address to Read Max Part No.	999 -
d x 🔤 Mw0000	
DK Cer	vcel Help

- Bitmap # 10 : Min. 1, Max. 500, foreground color is black, background is yellow
- Bitmap # 20 : Min. 501, Max. 999, foreground color is black, background is yellow
- Other Range : Blue

## 3) Result





=> MWO is between 501 and 999, bitmap #20 is displayed If the value is not in the range of 0 ~ 999, nothing appears on screen