



SYNTEC
TECHNOLOGY CO.,LTD.

HMI Customization Manual

匯出日期: 2026-01-23
修改日期: 2026-01-12

1 Preface

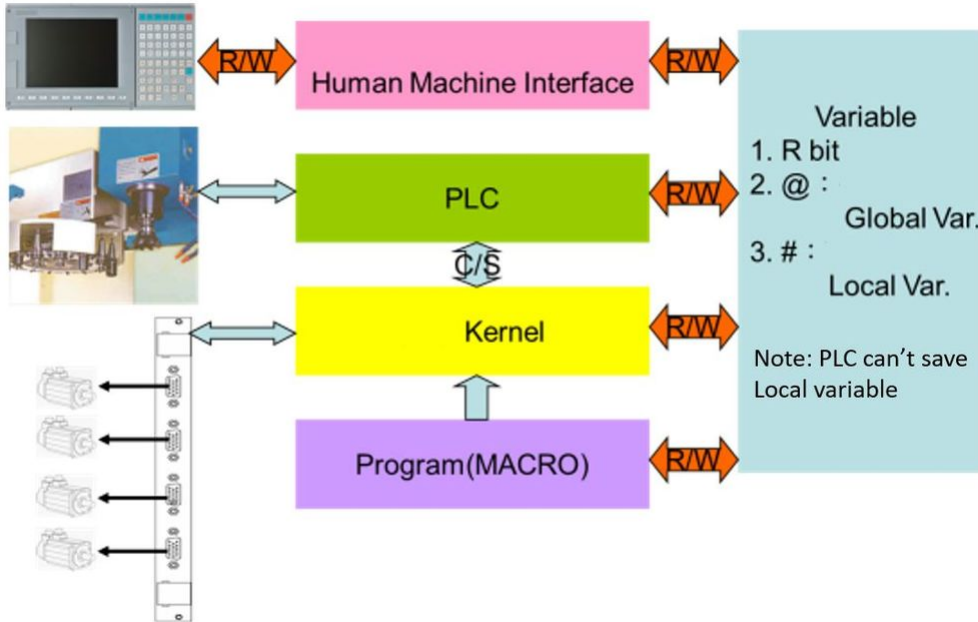
The Syntec CE controller emphasizes an open interface structure. In addition to the standard interface set at the beginning, the controller also provides a comprehensive and convenient customized environment, allowing electronic control developers to meet the various needs of customers through customized tools .



SYNTEC

2 Syntec system structure

2.1 Controller structure



2.2 software panel action

- **kernel:** Inside the controller, which is responsible for interpreting programs, planning motions, interpolation, and axial movement.
- **PLC:** Inside the controller, which leads the state process, connects to external devices, and communicates with the core.
- **human machine interface:** A bridge between the operator and the internal operation of the controller. The operator uses the human machine to input information, and the controller uses a human machine to output status and information.
- **Program:** It may be a machining program or a customized MACRO, which will be interpreted by the core.
- **variable:** Mainly divided into local variables #, global variables @, R Bit. The human machine, PLC, core, and MACRO can read and write these variables together.

The standard beginning interface has completed the above-mentioned basic functions. In addition to the standard part, the Syntec CE controller is also enable for customization for several parts.

2.3 Customization range

The following three parts are valid for customization under the Syntec CE system:

- PLC
- MACRO
- Human machine

The following chapters will list the respective development tools and customizable functions of the above three items.

2.3.1 PLC custom development

The PLC content of each controller is blank in beginning. The machine factory must rewrite the PLC for items such as the operation panel, tool library, I/O wiring and machine special functions, so that the machine can operate normally.

PLC development tools

- tool: Ladder diagram (PLC) editing program
- Download path:
 - a. enter Syntec website
 - b. sign in
 - c. download area->controller software area->Syntec open tools->Ladder diagram (PLC) editing program

PLC placing path

- path: DiskC:\\OpenCNC\\Ladder\\cnc.lad

PLC custom function

- state process design
- operation panel
Refer to App Help/application file/OpenCNC_PLC development tool operation manual/operation panel application example.
- PLC default/custom alarm
 - PLC default alarm
Refer to App Help/application file/OpenCNC_PLC development tool operation manual/how to use PLC to pop up the alarm window/system default alarm
 - PLC custom alarm
Syntec controller provides 96 PLC Alarms, 96 PLC Warnings and 319 PLC Hints for users to define. Refer to App Help/application file/OpenCNC_PLC development tool operation manual/how to use PLC to pop up the alarm window/custom alarm Please refer to 4.4.1 of this chapter for the characters to be displayed on the HMII of the custom alarm.

2.3.2 MACRO custom development

In order to increase the flexibility of controller application, Syntec controller provides MACRO program editing function. When the machining program is declared as MACRO, the file will be same as general programming language and able to define specific mathematical functions. In this way, the machining program will no longer have only movement or compensation command functions, but can also have logical judgments and mathematics calculation function.

MACRO development tools

- Tools: Notepad++, notebook and any other program editing software.

MACRO placing path

- The MACRO file must be placed in the correct file path in order to be executed normally or called as a subprogram. There are two main places where the MACRO file is placed:
 - a. DiskC:\\OpenCNC\\Macro
It is recommended to place this location where the end user cannot directly change the MACRO content, which can prevent users from changing the content by mistake

b. NcFiles

It is easy to use during development, and the content can be edited at any time and verified the correctness of MACRO.

- The priority is NcFiles> DiskC\\OpenCNC\\Macro, so if two folders both have a file name with same name, the system will execute the file in NcFiles first.
- For the NcFile corresponding path, please refer to App Help/Application File/Syntec Parameter Setting Reference Manual/Pr3219.

MACRO custom function

- Custom MACRO
Refer to App Help/Application File/OpenCNC_MACRO Development Tool Operation Manual.
- MACRO custom alarms/reminders
 - MACRO custom alarms
Refer to App Help/Application File/OpenCNC_MACRO Development Tool Operation Manual/MACRO Customized Alarm Method. Please refer to 4.4.2 of this chapter for the string to be displayed on the HMI of the custom alarm.
 - MACRO custom reminders
Refer to App Help/Application File/OpenCNC_MACRO Development Tool Operation Manual/MACRO Customized Reminder Method

2.3.3 HMII custom development

HMII development tools

- tool: eHMI
- download path:
 - a. enter Syntec website
 - b. sign in
 - c. download area->controller software area->Syntec open tools->eHMI
- Installation method:
 - a. First install the CE simulator on the PC, please refer to App Help/Mechatronics/EMC1_Installation, Tutorial, Network Connection/EMC1_C002_How to install the CE simulator on the PC
 - b. Install the eHMI software, follow the steps to complete the installation.

HMII structure

- valid version: after 10.114.46 (inclusive), after 10.116.0 (inclusive)
- valid eHMI version: 2.2.13
- folder categories
Three folders are provided under DiskC:
 - a. standard folder StdMMIRes: Syntec standard HMII, not recommended to modify
 - b. barebones folder PrdMMIRes: Syntec barebones, not recommended to modify
 - c. custom folder OCRes: specific for machinery maker customization
P.S. Priority is OCRes> PrdMMIRes> StdMMIRes
- Folder internal data
Under all the above three folders, there are the following corresponding different language folders:
 - Common: English, including AppData, CanCycle, Help, Image, String and other folders
 - CHT: Traditional Chinese, including Help, String and other folders
 - CHS: Simplified Chinese, including Help, String and other folders

The following takes the OCRes custom folder as an example (the actual custom of the machinery is also based on this folder) to illustrate the path of various information placement:

- English path: DiskC\\OcRes\\Common with the following different functions folders
 - AppData: store custom interfaces
 - CanCycle: store machining cycle interfaces
 - CustomFenu: store custom Fenubars (specific for OCRes)
 - Attachfenu: add Fenubar
 - ModifyFenu: modify Fenubar
 - Help: store English help instructions
 - Image: store the pictures needed for each interface
 - ※Note: It is recommended that the image matches to the size of the displaying component because the image size will affect the loading time for the screen.
(For example, the standard screen size is 800x470 and the USBDisk image size in the device list is 40x40.)
 - String: store the string files required by the English version
- Traditional Chinese path: DiskC\\OcRes\\CHT with the following different functions folders
 - Help: store Traditional Chinese help instructions
 - String: store the string files required by the Traditional Chinese version
- Simplified Chinese path: DiskC\\OcRes\\CHS with the following different functions folders
 - Help: store Simplified Chinese help instructions
 - String: store the string files required by the Simplified Chinese version

P.S. The file name of the browser and the string file are the same (in order to corresponding to each other), and the file name of the string file had been saved by eHMI will be exactly the same as the browser name.



SYNTEC

3 HMI custom function

3.1 Interface display related

3.1.1 Interface color

Provides the function of modifying the color of the specific interface.

- valid version: From 10.114.54/10.116
- configuration file path: DiskC\\OcRes\\Common
- configuration file name: MMIconfig_Customer.xml
- configuration file format:

```
<?xml version="1.0" encoding="UTF-8"?>
<MMIconfig>
<!-- Following settings are for 'Scr_FileMgr.cs' -->
<ScrTxtEditor>
<ForeColor>255,0,0</ForeColor>
<BackColor>255,255,0</BackColor>
</ScrTxtEditor>
</MMIconfig>
```

- configuration file description

interface	parent node	attributes	attributes
program edit	ScrTxtEditor	ForeColor	text color
		BackColor	background color
		TitleForeColor	title color
		TitleBackColor	title background color
file management	Scr_FileMgr	ForeColor	text color
		BackColor	background color
		TitleForeColor	title color
		TitleBackColor	title background color
display part of the profile program which executing machining	Scr_Monitor	ForeColor	text color

		BackColor	background color
		BarColor	Cursor bar color
MDI interface	Scr_MDI	ForeColor	text color
		BackColor	background color
alarm interface	ScrAlarm	ForeColor	text color
		BackColor	background color
		PendingForeColor	existing alarm text color
Ladder interface	CncLadder	ForeColor	text color
		BackColor	background color

- Installation method: Refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.

3.1.2 Adjust HMII structure appearance

- composed of background file(Backgnd.xml)
The size and position of the standard HMII are defined by Backgnd.xml.



- valid version: after 10.116.0 (inclusive)
- Background file installation location: OCRes\\Common\\AppData\\Backgnd.xml
- Background file obtained:

- First time development and customization: Download the upgrade installation package of the corresponding version and unzip it (StdMMIRes\\Common\\AppData\\Backgnd.xml)
- Second time development and customization: refer to the appendix backup function
- Modification method: Use eHMI to open Backgnd.xml to edit the size and position of each Panel to change interface structure.
- The version of Screen after 10.116.0B can select the function of browser zooming, so that users do not need to manually adjust the size of each element in the screen when changing the size of the HMI screen. Please refer to 6.1 HMII browser zoom mode for detailed compatibility changes.
- Panel definition:

Panel name	definition	Version
Pan_Backbone	position & size of screen	
Pan_Fenuabr	position & size of Fenubar	
Pan_Status	position & size of CNC status bar	
Panel	position & size of upper status bar	
Pan_Backgnd	whole position & size of HMII	
Pan_PopupAlarm	position & size of popup alarm (refer to Customize Popup Alarm)	目標版本 找不到議題

- Installation method: refer to the remarks eHMI package installation.

Example

- Customization requirements: Remove the original standard bottom state, and reduce the scope of the customized interface from 800*470 to 708*413. Use the extra space on the right side of the screen to place commonly used buttons and controller status, and place the manufacturer logo at the bottom, as shown in the figure below.



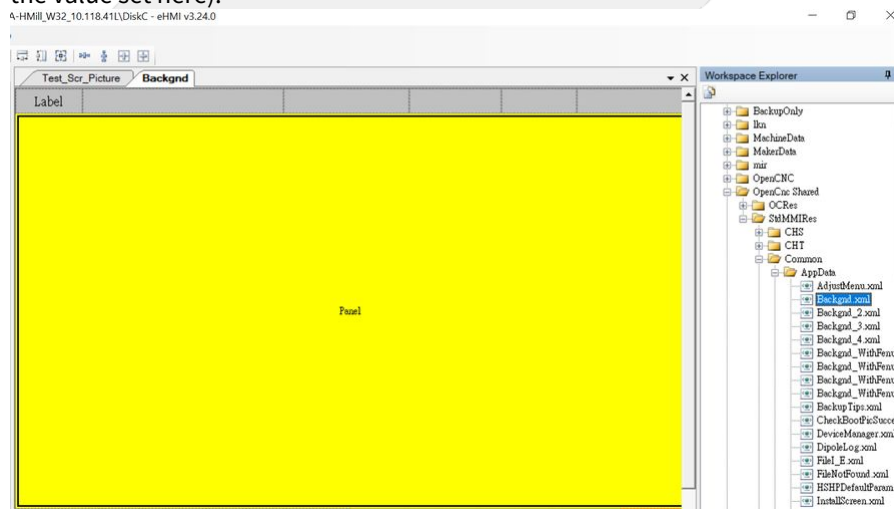
- steps:

i. Edit MMICONFIG_CUSTOMER.xml in OCRes\\Common (if this file doesn't exist, please create one). If you want to enable the automatic zooming function of the HMII, add the following

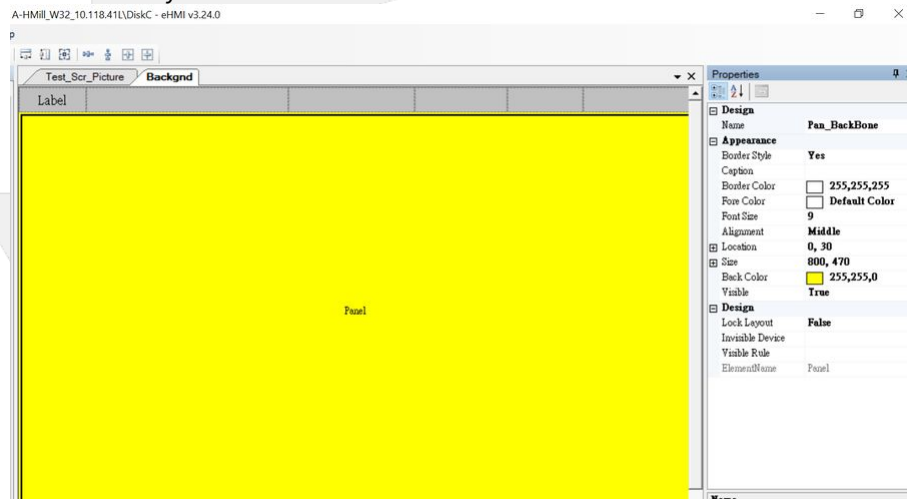
command between the two tags of <Common> </Common>: <ScreenStretchType>**AutoFit**</ScreenStretchType> If you want to turn on automatic zooming, filling in "AutoFit". If you don't want to automatically zoom, filling in "Normal". Fill in EQUALPROP for equal zooming. The example is as follows.

```
<?xml version="1.0" encoding="UTF-8"?>
<MMIConfig>
<Common>
<ScreenStretchType>AutoFit</ScreenStretchType>
</Common>
</MMIConfig>
```

- ii. Open Backgnd.xml in OCREs\\Common\\APPDATA with eHMI (if there is no such file, please go to the standard HMII folder StdMMIRes\\Common\\AppData\\) and copy. After opening the browser, modify the size of Pan_BackBone. In this example, the default value of 800*470 is reduced to 708*413 (all components on the screen will be automatically scaled according to the value set here).



Fill in the size you want to zoom



- iii. Remove unnecessary components below

(If the auto-scaling setting value is "Normal", the HMI screen will not be automatically scaled with the Pan_BackBone's length and width settings, and the screens that exceed the set boundary will not be seen.)



3.1.3 HMI cursor movement order

The cursor movement order of the inputable fields (ex. input field, drop-down menu) on the screen is as follows:

- leftward/rightward: move direction reference to the physical location of each component on the screen
- upward/downward keys:
 - Reference to the order of objects in XML to move
 - Reference to the physical location of each object on the screen to move

There are two ways to move upward or downward for each browser, and the electric controller can decide the way of moving upward or downward on individual pages. For example, the following figure shows the physical location of the objects on the interface and the objects order of XML. Once you enter the interface, press "Down" continuously, and the moving order of the two is:

- Refer to XML objects order: A>D>C>B
- Refer to the physical location of each object on the screen: A>B>C>D



according to the physical order

```

<Name>test555</Name>
<Page>
  <Left>35</Left>
  <Top>30</Top>
  <Width>60</Width>
  <Height>30</Height>
  <Name>A</Name>
  <BorderStyle>0</BorderStyle>
  <Depth>4</Depth>
  <BackColor>128,255,255</BackColor>
</Page>
<input>
  <Left>88</Left>
  <Top>58</Top>
  <Height>15</Height>
  <Width>11</Width>
  <Name>D</Name>
  <BorderStyle>0</BorderStyle>
  <Depth>3</Depth>
</input>
<input>
  <Left>89</Left>
  <Top>260</Top>
  <Height>30</Height>
  <Width>11</Width>
  <Name>C</Name>
  <BorderStyle>0</BorderStyle>
  <Depth>2</Depth>
</input>
<input>
  <Left>88</Left>
  <Top>195</Top>
  <Height>15</Height>
  <Width>11</Width>
  <Name>B</Name>
  <BorderStyle>0</BorderStyle>
    
```

according to the xml objects order



- valid version: From 10.114.52/10.116.0
- configuration file path: Set the path of the xml file which control the upward and downward moving method
- configuration file obtained:
 - First time custom development: add files manually
 - First time custom development: refer to the appendix backup function
- configuration file content:


```
<?xml version="1.0" encoding="UTF-8"?>
<Screen>
<FocusDependOnXml>True</FocusDependOnXml>
<Name>SerialTuning</Name>
<Input>
<Left>0</Left>
<Top>0</Top>
<Width>800</Width>
<Height>470</Height>
</Input>
</Screen>
```
- configuration file description:

The black font is a random example of the xml file content, and <FocusDependOnXml>True</FocusDependOnXml> is the content that needs to be added to set upward and downward moving method.

 - True: When pressing the up and down keys, the moving order of the cursor refers to the object order of XML.
 - False(default): When pressing the up and down keys, the moving order of the cursor refers to the physical location of objects.
- Installation method: refer to the remarks eHMI package installation.

3.1.4 Boot up and directly enter the customized page

If you want to enter the customized page as soon as the HMI is turned on, you only need to change the XML file name or screen name which you want to display.

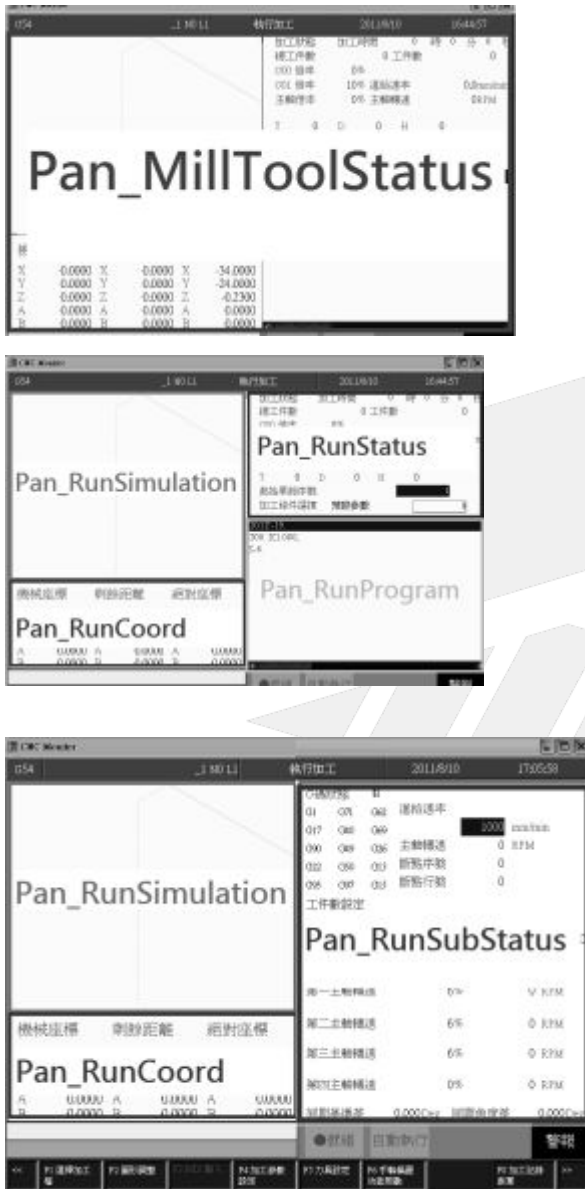
- General Screen: Rename the screen file to "MainF3.xml".
- Screen Template: Rename the screen name to "Main".

3.1.5 Customized standard machining execution page

From the perspective of maintenance, it is not recommended to modify the standard machining page, but if it is necessary to modify, you can refer to the following methods.

- machining page Panel definition

The standard machining execution page is divided into several blocks, and the size of each block is defined by a Panel in a MonSTDData.xml (as shown below)



- The content of Pan_RunSubStatus is defined in MonGData.xml.
- The content of Pan_RunStatus is defined in MonSTDData.xml.
- The content of Pan_RunCoord is defined in MonitorCoord.xml.
- file obtained: Download the upgrade installation package of the corresponding version and unzip it
 - Standard HMI browser path: StdMMIRes\\Common\\AppData
- Modification method
Open the corresponding xml file with eHMI to modify, and the machining execution page will be changed synchronously.
- Installation method: Refer to the appendix eHMI package installation.
- Note: The Syntec standard version software upgrade will overwrite the customized standard HMI page.

3.1.6 Customized standard offset/setting page

Only open to customize the title of this page(red frame).

Note:

This function only affects the appearance, and does not affect the actual coordinate system.

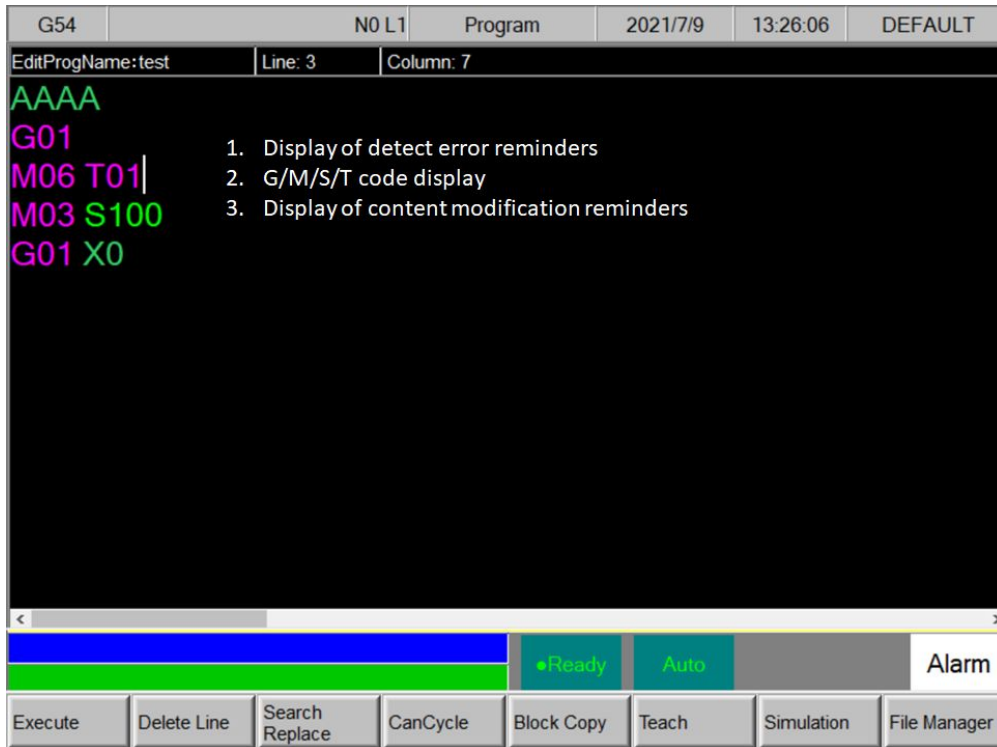
Customizing the title appearance of this page may mislead the user to mistake the coordinate system offset setting and occur the risk of collision. Please be sure that the customized content will not mislead the user.

G54	N0 L1	Offset/ Setting	2021/7/9	13:19:51	DEFAULT
External Shift	G54P1(G54)	G54P2(G55)			Machine
X 0.000	X 0.000	X 0.000			X 0.000
Y 0.000	Y 0.000	Y 0.000			Y 0.000
Z 0.000	Z 0.000	Z 0.000			Z 0.000
C 0.000	C 0.000	C 0.000			C 0.000
					Relative
					X 0.000
					Y 0.000
					Z 0.000
					C 0.000
MPG Shift	G54P3(G56)	G54P4(G57)			Aux. Coord.
X 0.000	X 0.000	X 0.000			X 0.000
Y 0.000	Y 0.000	Y 0.000			Y 0.000
Z 0.000	Z 0.000	Z 0.000			Z 0.000
C 0.000	C 0.000	C 0.000			
			Ready	Auto	Alarm
WorkPiece Coord.	Tool Set	Tool Tip Measure	User Param.	Tilt Work Plane Teach	

- Modification method
 - Open the string browser with eHMI and find the corresponding string to modify:
 - external coordinates offset: MMI:: Machine:: ExternalShift
 - MPG offset: MMI:: Machine:: MPGShift
 - G54P_: MMI:: Machine:: G54P_
- valid version: From 10.118.14G, 10.118.22Q, 10.118.28E, 10.118.32

SYNTEC

3.1.7 Keywords color changing function



Keyword color function provides users with the color changing function of editing specific keywords by themselves. Currently, the following functions are available :

1. The error detection function color changing & display.
2. The G/M/S/T code and other keywords color changing & display.
3. The program modification color changing & display, the modification part will be highlighted.

- The valid version starts at 10.116.16
- configuration file path: DiskC\\OcRes\\Common
- configuration file name: KeywordSetting.xml
- Note: After 10.116.24K (inclusive), the keywords in the machining program note will not change color, and the note writing method includes

- //
- (), single-line notes do not change color, but cross-line notes change color according to keyword settings

- An example of configuration file writing is as follows:

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<OCText>
```

```
<Error>
```

```
<ForeColor>255,0,0</ForeColor>
```

```
</Error>
```

```
<Modify>
```

```
<BackColor>255,255,0</BackColor>
```

```
</Modify>
```

```

<Keyword>
  <ID>
    <Item>G</Item>
  </ID>
  <isPrefix>TRUE</isPrefix>
  <ForeColor>0,0,255</ForeColor>
</Keyword>
<Keyword>
  <ID>
    <Item>M</Item>
    <Item>T</Item>
  </ID>
  <isPrefix>TRUE</isPrefix>
  <ForeColor>0,255,0</ForeColor>
</Keyword>
<Keyword>
  <ID>
    <Item>F</Item>
    <Item>S</Item>
  </ID>
  <isPrefix>TRUE</isPrefix>
  <ForeColor>255,0,255</ForeColor>
</Keyword>
</OCText>

```

- configuration file description:

display content	corresponding code	note
syntax error checking	Error	
program modification	Modify	
keywords	Item	If the format is wrong, it will be treated as 0,0,0
modify row highlight color	BackColor	If the format is wrong, it will be treated as 0,0,0

keywords color	ForeColor	If the format is wrong, it will be treated as 0,0,0
whether the number after the keywords changes color	isPrefix	default: False

- Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.

3.1.8 Page including function

Provide users with the function of including the same sub-page on multiple pages at the same time, which can reduce the development and editing time of repetitive pages.

Just add <IncludePage> to the main screen xml and specify the file name of the sub-page.

Note: The eHMI software is not currently supported, so the users have to edit the screen file manually.

- valid version: From 10.116.24V, 10.116.36B, 10.116.37, 10.117.37
- support the use of coordinate objects in the include page: 10.116.36B (inclusive) and later
- function description:
 - The multiple include page files content can be added to the main screen
 - The settings of the include page file, component base address, display source, size and location will be **consistently** displayed on the main screen
 - The reading priority order of the include page file: OCREs -> PrdMMIRes -> StdMMIRes
- Does not support:
 - Encrypted include page
 - include page in include page
 - Use CycleEditor function in include page
 - The eHMI software does not yet support setting this attribute, it must be manually filled in the browser
- An example of configuration file writing is as follows:

```
<Screen>
  <Panel></Panel>
  <Label></Label>
  <Display></Display>
  <!-->Please manually add the following content to the main page xml
  file<-->
    <IncludePage>
      <PageName>SubPage1.xml</PageName>
      <PageName>SubPage2.xml</PageName>
    </IncludePage>
</Screen>
```

Name	definition
PageName	Include sub-browser name

• **Example:**

a. Customize the content of the main page and reserve space for the include page to be added



b. Customize the content(size and location of the components) of the sub-page, and will be consistent on the main page in final.

- Note that the "locations" of all components in the sub-page have to correspond to the coordinates (x, y) of the main page



c. Use "Notepad" or other text editing software to open the main page file and manually add the content of <IncludePage>

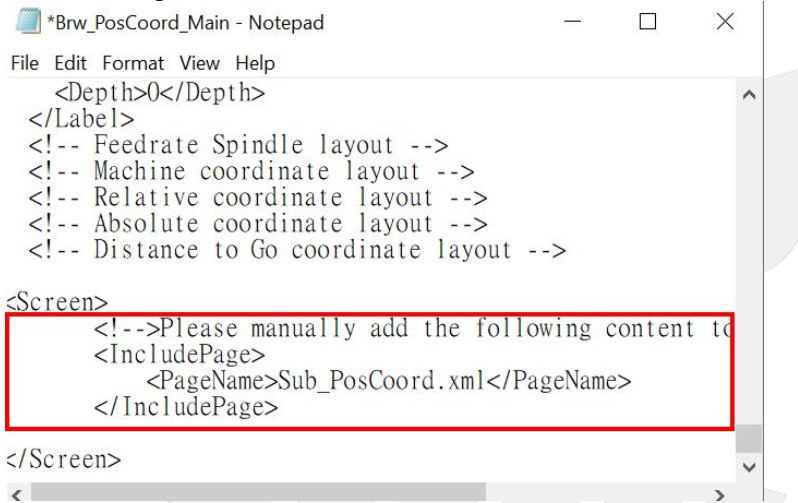
- a. Pull to the bottom after opening
- b. Please add before </Screen>

```
<Screen>
    <!-->Please manually add the following content to the main
page xml file<-->
```

```

<IncludePage>
  <PageName>Sub_PosCoord.xml</PageName>
</IncludePage>
</Screen>
    
```

c. After adding, as shown below, save the file.



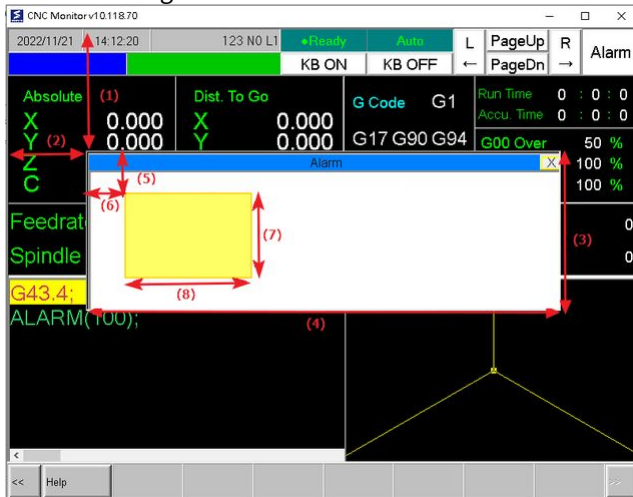
d. Finally, test on the simulator and you can see that the main page has the content of the sub-page been pasted.



3.1.9 Customize popup alarm

目標版本

- 找不到議題
- schematic diagram



- Size and location of popup alarm, preset size is 600*194, preset location at (100, 150)
 - To adjust the popup window display, please add Pan_PopupAlarm in Backgnd.xml as follows

```

<?xml version="1.0" encoding="UTF-8"?>
<!--BROWSER SIZE|H:600|W:800-->
<Screen>
    ...
    <!-- use preset if without Pan_PopupAlarm tag. preset T:150 L:100 W:600
    H:194-->
    <Panel>
        <Name>Pan_PopupAlarm</Name>
        <Top>150</Top>
        <Left>100</Left>
        <Height>600</Height>
        <Width>194</Width>
    </Panel>
    ...
</Screen>
    
```

- Modify screen
 - ref: \StdMMIRes\Screen\PopupAlarm\Brw_PopupAlarm_Main.xml

- The standard pop-up window is preset as follows, consisting of three components



name	type	preset size	description
Pan_AlarmList	Panel	600*174	alarm listbox if Brw_PopupAlarm_Main.xml doesn't define Pan_AlarmList, then popup window show without alarm listbox.
Lab_Title	Label	600*20	Title of popup window
Btn_CloseWindow	Button	30*20	Click Action: DoExitPopup

- Custom xml path: \OCRes\Screen\PopupAlarm\Brw_PopupAlarm_Main.xml
- Support Action: *DoExitPopup*.
Others should append after *DoExitPopup*, such as *ShowMenuParameter*
- Note : The alarm pop-up window can be scaled through MMIconfig parameters, but the result may exceed the display range. Please use with caution. (Refer to MMIconfig Setting Manual)

3.2 Fenubar related

3.2.1 Customized fenubar

It provides functions for modifying the definition of standard man-machine fenubars, which are mainly divided into two ways: adding fenubar and modifying fenubar.

- valid version: From 10.114.46
- add fenubar: add new button row
 - file path: DiskC:\OCRes\Common\CustomFenu\Attachfenu
 - file name: no limit, as long as the file extension is xml.
 - file format: use eHMI to add a new button row.
- modify fenubar: modify the standard man-machine fenubar, or the added button.
 - file path: DiskC:\OCRes\Common\CustomFenu\ModifyFenu
 - file name: no limit, as long as the file extension is xml.
 - file format: If you want to modify the standard man-machine fenubar, it is recommended to refer to CncFenu.xml in DiskC:\StdMMIRes\Common, and extract the corresponding fenu name and button

node description syntax (do not extract the part of the fenubar that is no need to be modified) Come out) and save it to DiskC\\OCRes\\Common\\CustomFenu\\ModifyFenu, and then edit it with eHMI.

- Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.

3.2.2 fenubar font

Provide the function of adjusting the font size of fenubar.

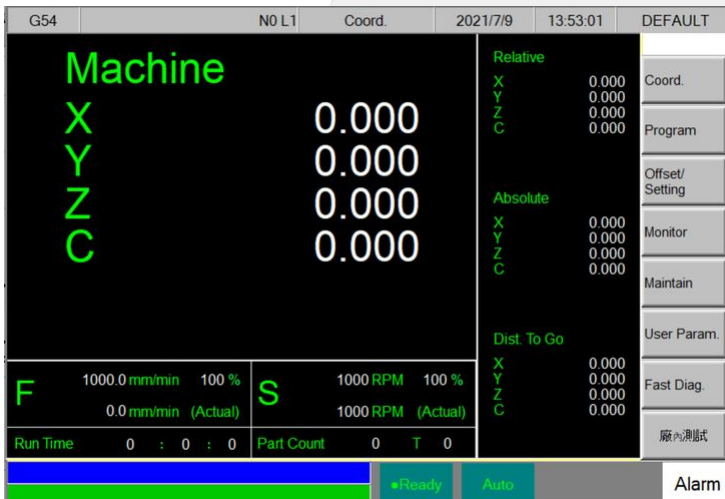
- valid version: From 110.114.41/10.116
- configuration file path: DiskC\\OCRes\\Common
- configuration file name: MMIconfig_Customer.xml
- configuration file format:


```
<?xml version="1.0" encoding="UTF-8"?>
<MMIconfig>
<!-- Following settings are for 'Scr_Monitor.cs' -->
<Common>
<FenubarFontSize>20</FenubarFontSize>
</Common>
</MMIconfig>
```
- configuration file description: The number in <FenubarFontSize>20</FenubarFontSize> (20 in this example) is used to set the text size of the fenubar.
- Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.

3.2.3 fenubar direction

Provides to adjust the horizontal or vertical direction of the fenubar, and the default is horizontal.

The fenubar on the left figure is on the right (vertical), and the fenubar on the right figure is on the bottom (horizontal)





- valid version: From 110.116.16
- configuration file path: DiskC\\StdMMIRes\\Common
- configuration file name: CncFenu.xml or CncFenu5.xml
- configuration file format: <Direction>vertical</Direction>
- configuration file description: used to set the fenubar to be displayed upright, this command needs to be placed under <Root>


```
<Root>
            <Direction>vertical</Direction>
            </Root>
```
- Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.
- Note:
 - This function is only valid for the CncFenu or CncFenu5 customization under the StdMMIRes folder (the corresponding customization in OcRes is invalid)
 - Because the controller defaults Fenubar is horizontal, users who use the vertical direction need to customize Backgnd.xml to leave Fenubar space to the side.

3.3 Parameters related

3.3.1 Customized expansion parameters

It provides the user to change the specific R bit content through the parameter setting on the man-machine fenubar under the power-on state, and then generate the interface that can communicate with the PLC; or change the content of a specific local variable for the use of a custom MACRO. At present, the customized expansion parameters are mainly divided into three groups, and the relationship is shown in the following table.

parameter No.	R Bit	local variable	parameter group
Pr3401 ~ Pr3420	81~100	X	mechanism parameter
Pr3421 ~ Pr3450	801~830	X	mechanism parameter

parameter No.	R Bit	local variable	parameter group
Pr3451 ~ Pr3460	831~840	X	user parameter
Pr5001 ~ Pr5500	X	#5001~#5500	user parameter

Customized extended parameter setting can be divided mainly into two steps: enable setting and string display.

- valid version: From start
- enable setting
 - configuration file path: DiskC: \\OpenCnc\\Res
 - configuration file name: PARAMEXT.PXT
 - configuration file format:
[XXXX]
title = ABC
value = Y
min = 1
max = 30
 - configuration file description:

format content	purpose
[XXXX]	parameter (ex. 3401)
title	display name of HMII
value	initial value
min	allowable minimum
max	allowable maximum

- string display
 - string file path: DiskC\\OCRes\\L\\String, where L is the name of language
 - string file name: ParamEXT_L.Xml, where L is the name of language
 - string file format:

```
<?xml version="1.0" encoding="utf-8" ?>
<ResMap>
<Message ID="ParamXXXX" Content="ABC" />
</ResMap>
```
 - string file description:
 - XXXX is parameter No.。
 - ABC is the display name of the HMII.。
- Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.

3.3.2 Extended parameter byte string file

Provide the user to change the bit content of a specific R value through the PLC parameter bit of the man-machine fenubar under the power-on state, thereby generating an interface that can communicate with the PLC.

G54		NO L1	Offset/ Setting	2021/7/9	13:56:04	DEFAULT												
Index	Item	Value	F	E	D	C	B	A	9	8	7	6	5	4	3	2	1	0
9001	MLC R81	0x0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9002	MLC R82	0x0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9003	MLC R83	0x0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9004	MLC R84	0x0001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
9005	MLC R85	0x0014	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
9006	MLC R86	0x0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9007	MLC R87	0x0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9008	MLC R88	0x0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9009	MLC R89	0x0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9010	MLC R90	0x0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9011	MLC R91	0x0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9012	MLC R92	0x0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9013	MLC R93	0x0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9014	MLC R94	0x0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9015	MLC R95	0x003C	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0
9016	MLC R96	0x0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Extension Parameter Bit R81.1 Be modified only when Pr3401- setting is between 0-65535

Alarm

Alarm Set Kernel Server Fast Diag. PLC Param. Sys. Setting Backup Sys. Use Time Setting

- valid version: From 10.114.38
- Enable settings: same as 4.3.1 description
- Enable extended parameters: refer to "Customized Expansion Parameters" in this manual
- string display
 - string file path: DiskC\\OCRes\\L\\String, where L is the name of language
 - string file name: ParamExt_RBit_L.xml, where L is the name of language
 - string file format:


```
<?xml version="1.0" encoding="utf-8" ?>
<ResMap>
<Message ID="MLCRBitCmt:: Rx.y" Content="bit note content" />
</ResMap>
```
 - string file description:
 - x is the corresponding R value.
 - y is the bit of the R value.
- Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.

3.3.3 Custom parameters display

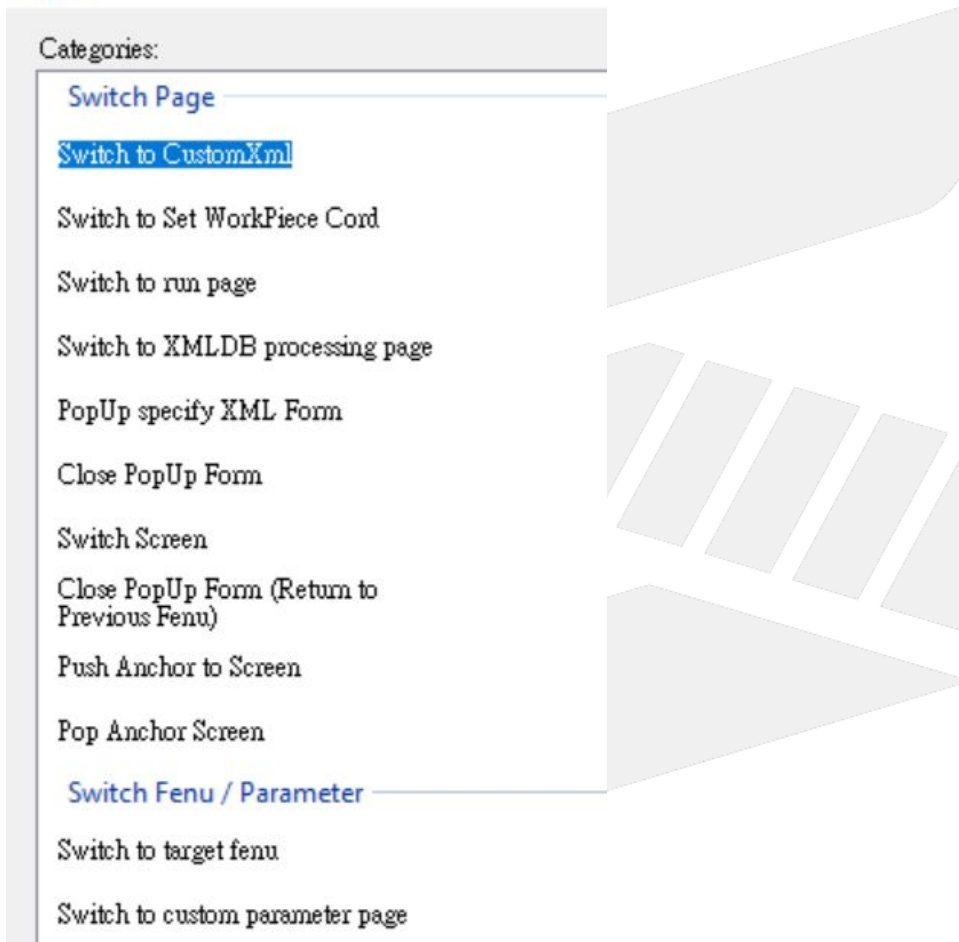
Provides to press a specific button to switch to the displaying page of custom parameters, which can be divided mainly into two steps: defining parameter groups and displaying the custom parameter page.

- valid version: From 10.114.38
- defining parameter groups
 - configuration file path: DiskC\\OcRes\\Common
 - configuration file name: SyntecParam.xml
- configuration file format
 - Use eHMI to add a parameter group file and enter the name of custom parameter group
 - Edit the upper and lower bounds of the displayed parameters



- Display the custom parameter page: with the "Switch to custom parameter page" action of fnumber in eMHI.

Actions



- Notes and restrictions:
 - When customizing DiskC\\OcRes\\Common\\SyntecParam.xml, it is recommended to refer to and keep the parameter group in the standard system DiskC\\StdMMIRes\\Common\\SyntecParam.xml, otherwise the user parameters, application parameters and mechanism parameters of the standard system will not be available to use.
 - This function can only be used in the parameter setting interface.


```

<BorderColor>0,0,0</BorderColor>
<ForeColor>255,255,0</ForeColor>
<BackColor>50,50,50</BackColor>
</Label>
<Input>
<Name>Inp_Param</Name>
<Left>670</Left>
<Top>30</Top>
<Width>110</Width>
<Height>27</Height>
<Alignment>2</Alignment>
<FontSize>12</FontSize>
<BorderStyle>1</BorderStyle>
<BorderColor>128,128,128</BorderColor>
<ForeColor>255,255,255</ForeColor>
<BackColor>0,0,255</BackColor>
<InputFormat>Long</InputFormat>
</Input>
</Grid>

```

- configuration file description:
Modify all the numbers in <FontSize>12</FontSize> in <Grid> (12 in this example) to set the text size of the content displayed on the parameter page.
- Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.

3.4 Alarm related

3.4.1 PLC custom alarm string

The controller provides 96 PLC Alarms, 96 PLC Warnings and 319 PLC Hints for users to define by themselves, and supports variety language systems. The relevant usage rules are explained as follows.

- valid version: From Start
- string file path: DiskC:\OCRes{color: #0000ff}L\String, where L is the name of language, English is COM; traditional Chinese is CHT; simplified Chinese is CHS.
- string file name: AlarmPLC_L.Xml, where L is the name of language, English is COM; traditional Chinese is CHT; simplified Chinese is CHS.
- string file format:

```

<?xml version="1.0" encoding="utf-8" ?>
<ResMap>
<Message ID="AlarmMsg:: MLC:: ID=xxx" Content="alarm content" />
<Message ID="AlarmMsg:: MLCHint:: ID=ooo" Content="alarm content" />
</ResMap>

```
- string file description:
 - xxx corresponds to the PLC Alarm/Warning (R44~R49) number.
 - ooo corresponds to the PLC Hint (R590~R599) number.
- Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.

3.4.2 MACRO custom alarm

The controller provides MACRO custom alarm function and supports variety language systems. The relevant usage rules are explained as follows.

- valid version: From Start
- string file path: DiskC\\OcrRes{color: #0000ff}L\\String, where L is the name of language, English is COM; traditional Chinese is CHT; simplified Chinese is CHS.
- string file name: AlarmMacro_L.xml, where L is the name of language, English is COM; traditional Chinese is CHT; simplified Chinese is CHS.
- string file format:

```
<?xml version="1.0" encoding="utf-8" ?>
<ResMap>
<Message ID="AlarmMsg:: Macro:: ID=xxx" Content="alarm content" />
</ResMap>
```
- string file description: xxx is the alarm number, please select an unused number as the custom alarm number.
- Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.

3.5 Program editing and machining execution interface related

3.5.1 Profile text size

It is used to adjust the text size of the profile content displayed on the program editing and machining execution interface.

- valid version: From 10.114.37/10.116
- configuration file path: DiskC\\OcRes\\Common
- configuration file name: MMIconfig_Customer.xml
- configuration file format:

```
<?xml version="1.0" encoding="UTF-8"?>
<MMIconfig>
<!-- Following settings are for 'Scr_Param.cs' -->
<ScrParam>
<OCB_ParamSet>
<ProgFontSize>12</ProgFontSize>
</OCB_ParamSet>
</ScrParam>
</MMIconfig>
```
- configuration file description:
The number in <ProgFontSize>12</ProgFontSize> (12 in this example) is used to set the text size of the machining file content displayed on the program editing and execution machining interface.
- Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.

3.5.2 Profile extension

Used to modify the selectable profile extension of the system.

- valid version: From 10.114.37/10.116
- configuration file path: DiskC\\OcRes\\Common
- configuration file name: MMIconfig_Customer.xml

- configuration file format:


```
<?xml version="1.0" encoding="UTF-8"?>
<MMIConfig>
<!-- Following settings are for 'Scr_Monitor.cs' -->
<Scr_Monitor>
<Scr_FileSel>
<Filter>.edit;.demo;.bj;.anc;.pim;.tap;.prt;.mpf;.ptp;.cnc;.nc;.</Filter>
</Scr_FileSel>
</Scr_Monitor>
</MMIConfig>
```
- configuration file description:

The extension filename in `<Filter>.edit;.demo;.bj;.anc;.pim;.tap;.prt;.mpf;.ptp;.cnc;.nc;.</Filter>` can set the selectable profile extension.
- Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.

3.5.3 Program editing file extension

Used to modify the editable profile extension of the system

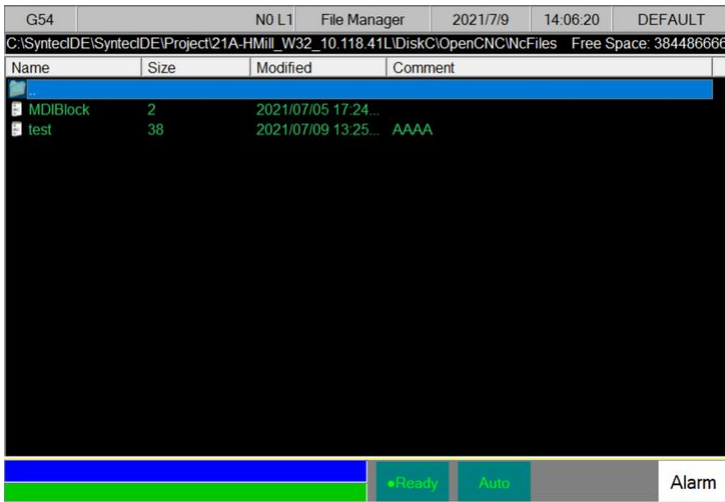
- valid version: From 10.114.37/10.116
- configuration file path: DiskC\\OcRes\\Common
- configuration file name: MMIConfig_Customer.xml
- configuration file format:


```
<?xml version="1.0" encoding="UTF-8"?>
<MMIConfig>
<!-- Following settings are for 'Scr_FileMgr.cs' -->
<Scr_FileMgr>
<OB_FileList>
<Filter>.edit;.demo;.bj;.anc;.pim;.tap;.prt;.mpf;.ptp;.cnc;.nc;.</Filter>
</OB_FileList>
</Scr_FileMgr>
</MMIConfig>
```
- configuration file description:
 - The extension filename in `<Filter>.edit;.demo;.bj;.anc;.pim;.tap;.prt;.mpf;.ptp;.cnc;.nc;.</Filter>`, used to set the editable profile extension of the system.
- Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.

3.5.4 File management display field length modification

In the file management interface of program editing and machining execution, if the display length of the file name is not long enough and cause the program name be cut, the system provides the function of adjusting the length of

each field.



- valid version: From 10.116.4
- configuration file path: DiskC\\OcRes\\Common
- configuration file name: MMIconfig_Customer.xml
- configuration file format:


```
<?xml version="1.0" encoding="UTF-8"?>
<MMIconfig>
<FileList>
<NameColLength>100</NameColLength>
<TimeColLength>100</TimeColLength>
<SizeColLength>100</SizeColLength>
<CommentColLength>100</CommentColLength>
</FileList>
</MMIconfig>
```
- configuration file description: The file name, file size, modification time, and file comment display length all can be adjust according requirements. But it should be noted that if setting is too large, the information on the right will not be displayed normally.

Display content	Corresponding code
File name	NameColLength
File size	SizeColLength
Modification time	TimeColLength
File comment	CommentColLength

- Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.

3.5.5 Use external fonts in machining programs

It is used to modify the font displayed in profile interface content, including program editing, machining execution and graphic simulation interfaces.

- valid version: From 10.114.54/10.116
- System default font: Consolas or Times New Roman
- Modification method:
 - a. Go to the Syntec website to download the plug-in font installation package and unzip the file. The following is to modify the data contained in the file.
 - b. Place the font file ex. Aarcover.ttf to be used (only file extension*.ttf and *.ac3 are supported) under the path DiskC\\Fonts\\Common
 - c. Modify the content of FontInstall.xml as follows

```
<OpenInstaller>
<Install name="Aarcover Font" version="Aarcover font">
<Directory source="DiskC" destination="DiskC" recursive="True" />
</Install>
<WindowsRegistry>
<RegValuename="Aarcover"
key="HKEY_LOCAL_MACHINE"
subkey="\\Software\\Microsoft\\FontLink\\SystemLink"
type="String"
value="\\Windows\\mingliu.ac3,PMingLiu"
action="SetValue"
/>
</WindowsRegistry>
</OpenInstaller>
```

PS: Modify Aarcover to the name of the font to be installed.

Modify DiskC\\OCRes\\Common\\MMIConfig_Customer.xml, the modification method is as follows:

```
<?xml version="1.0" encoding="UTF-8"?>
<MMIConfig>
<Common>
<ExtTxtFont>
<FontName>Aarcover</FontName>
<FontFile>Aarcover.ttf</FontFile>
</ExtTxtFont>
</Common>
</MMIConfig>
```

PS: Aarcover needs to be the same as the font name installed in step 3, and Aarcover.ttf needs to be the same as the font file name used in step 2.

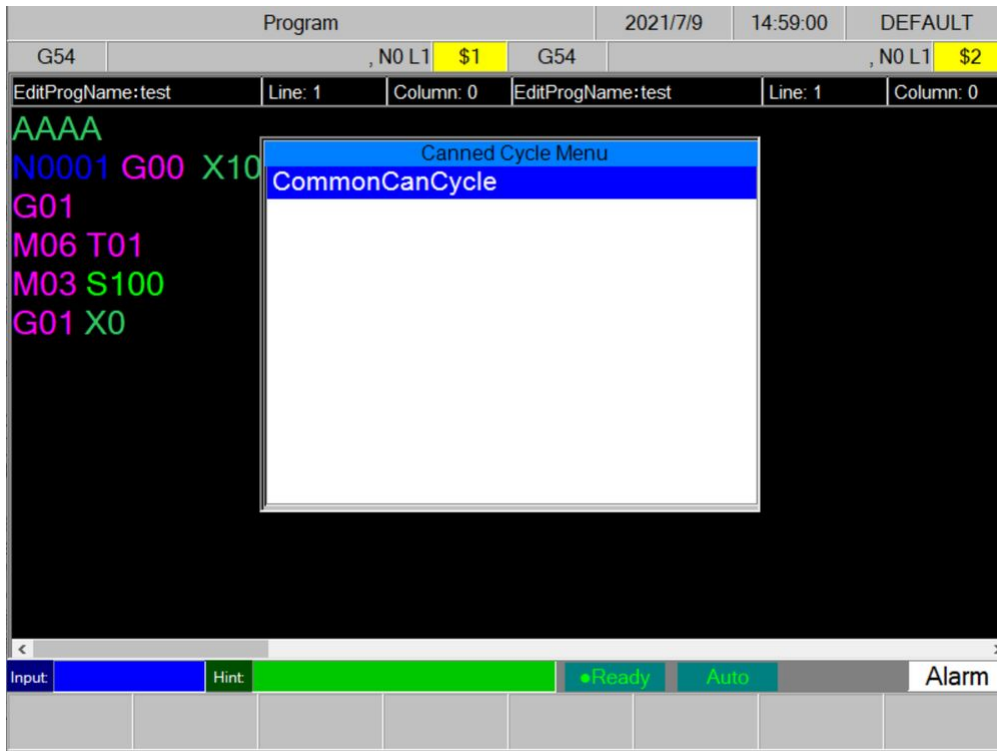
- d. Click Pack.bat, a compressed file will be generated
 - e. Install this compressed file to the controller in the way of software installation.
- Installation method: refer to the appendix eHMI package installation

3.6 Customized cycle machining

For the specific production machine, the MACRO of the standard system is not suitable to use, and it usually be developed separately. Therefore, the cycle function inserted in the derived program is also required for customization. Custom insert cycle setting can be divided into two steps: level setting and interface definition.

The custom hierarchy menu item of the processing cycle is mainly adding under the specified path-fenubar.

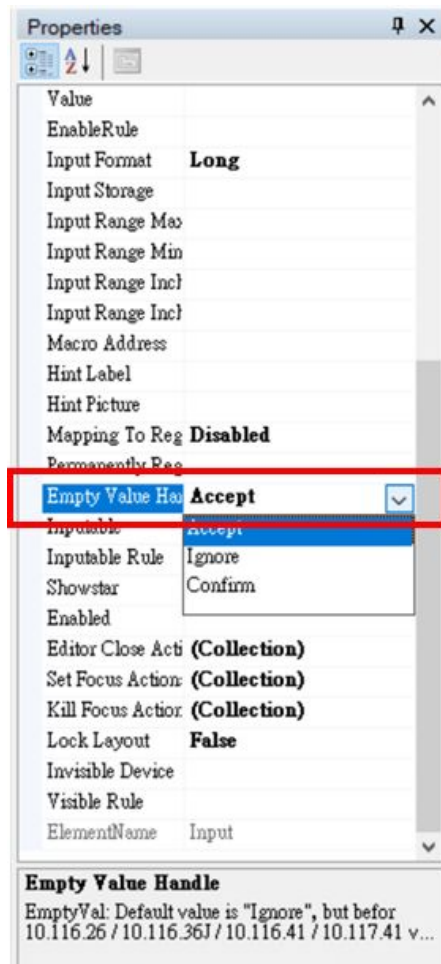
The interface definition of the custom machining cycle also needs to be placed under the specified path, and achieved through the action command in the fenubar which be mentioned above.



3.6.1 Custom insert cycle interface

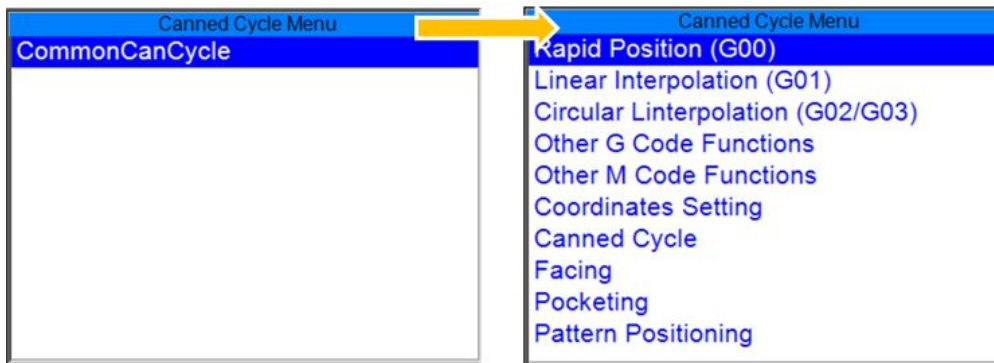
- valid version: From 10.114.22(include)
- interface definition
 - browser path: OCREs\\Common\\CanCycle\\SysCycleXml or the inner subfolder, if there is no SysCycleXml folder, create one.
 - *note: The path of the milling is OCREs\\Common\\CanCycle\\SysCycleXml
 - The path of lathe syntax is OCREs\\Common\\CanCycle\\SysCycleLatheXml
 - browser file name: It must be "an English letter + number", such as G0200. If the format is BBB or DEF, the system will not be able to execute it.
 - The corresponding configuration file button needs to set two attributes: title and action
 - title: the name of the item that can be seen on the menu, ex. quick positioning (G00), custom program (G200). Languages can be set by eHMI.
 - action: Call the browser of the specified cycle machining. Examples are as follows:
 - action command 『Show:: SysCycleXml:: G200』 ,calling the cycle machining browser of OCREs\\Common\\CanCycle\\SysCycleXml\\G200.xml.
 - action command 『Show:: SysCycleXml:: AAA:: G200』 ,calling the cycle machining browser of OCREs\\Common\\CanCycle\\ SysCycleXml \\AAA\\G200.xml
 - browser format:
 - Use eHMI to add a new interface, and customize the layout according requirements.
 - The input box on the screen needs to use MacroAddr to set the variable corresponding to the content of this input box. For example: MacroAddr is X, which means the variable corresponding to the input content is X; MacroAddr is X1, which means the variable corresponding to the input content is X1.

- Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.
- Precautions:
 - In the component settings of the input box, the blank string (EmptyVal) would be accepted in principle, and other setting options are invalid.



- For the same command, the name of the input box cannot be repeated, including the second page, the third page... all should not be repeated to avoid conflicts.
For example: there is an input box named "input1" in G201.xml, then other input boxes in G201.xml cannot be named "input1"; and if there is a next page, there also cannot be input box name in G201_next.xml either input1".

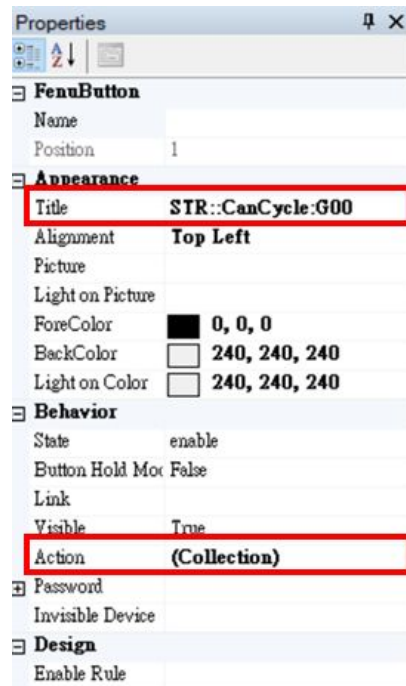
3.6.2 Custom insert cycle level settings



This chapter explains how users can modify or add the content of the inserted cycle form.

- valid version: From 10.116.24(included)
- Hierarchy setting
 - Concept description: The machining cycle menu corresponds to the Fenu name is CanCycleMain, and the fenubar is provided as "standard man-machine cycle machining" and "custom cycle machining"
 - The system provides a standard man-machine cycle machining, the created name is STDMMIRES
 - Customized cycle machining needs to be added and customized manually
- configuration file name: OCREs\\Common\\CanCycle\\CancycleEntry.xml
This file can set the content displayed on the screen after pressing the "Insert Cycle" button. The editing method adopts the concept of fenubar modification , so you only need to add a custom part in the CancycleEntry.xml, and there is no need to write the standard man-machine again.
- CancycleEntry.xml editing specifications:
 - Menufile: Fill in the custom name or existing fenubar XML file name.
 - The storage path of the XML file is OCREs\\Common\\CanCycle
 - Example:
If the specified link fenubar is located in the file CusCycleMenu.xml, fill in
<menufile>CusCycleMenu.xml</menufile>.
 - Link: Specify the Fenu name in the fenubarXML file selected by Menufile.
 - Storage: If you want the fenubar linked to Menufile to change with the specified variables, you can use following syntax to set:
 - Register, Parameter, @, #, L is accepted
 - Register => R
 - Parameter => P
 - L, #, @ please input directly
 - Note that it is only read when booting
 - Filelist: Cooperate with the storage setting, specify which fenubar XML file to use.
 - When using Filelist, you need to set the MenuFile value. When the device specified by Storage is equal to a certain value, select the corresponding MenuFile. An example is shown later.
- Instructions for creating the fenubarXML file selected by Menufile:
 - Use eHMI to add "fenubar", and complete fenubar related settings.
 - Each button only needs to set two attributes: title and action to establish a link with the cycle machining browser, as shown below:
 - title: the name of the item that can be seen on the menu, ex. quick positioning (G00), custom program (G200). Languages can be set by eHMI.
 - action: Define the browser you want to call, with the "self-defined" action in eHMI. The syntax is divided into two types, one is exiting the screen to input parameter values, and the other is

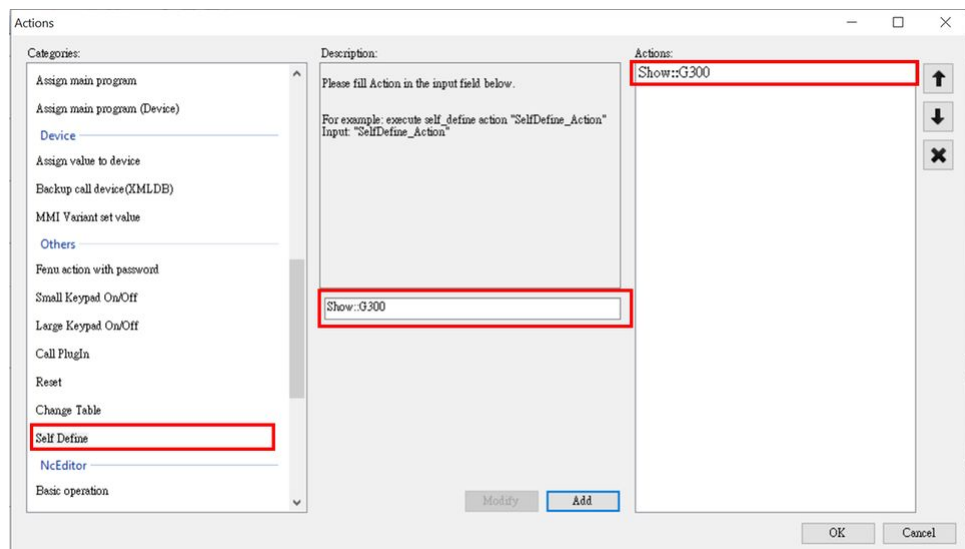
to directly insert into the program without exiting the screen.



- Exiting the screen is required to enter the parameter value. The syntax is Show:: Axxxx
A: Capital English letter.
xxxx: Numbers, at least 1 digit and at most 4 digits.
Ex: Show:: G300,G300 is the file name of the custom interface, and the corresponding insert cycle interface G300 will pop up after triggering.

Note: If the command has no arguments, Show syntax is not supported, please use Insert for customization.

SYNTEC



- The syntax for inserting the program directly without exiting the screen is Insert:: Axxxx
A: Capital English letter.
xxxx: Numbers, at least 1 digit and at most 4 digits.
For example, insert:: G1234, where G1234 is to automatically edit content in the program after pressing the insert cycle, so the screen will not exit after triggering, and directly insert "G1234;" into the program.
- Example
 - Purpose: The insertion cycle function of the loading and unloading of the customized robot arm.
 - a. Because the standard insertion cycle of the turning/milling machine is not required, the standard insertion cycle form is removed and would not displayed on the screen.
 - b. Added a custom "material sorting" insert cycle function to facilitate terminal editing programs.
PS: The order of the custom function form will follow the order of the CanCycleEntry.xml content.
 - c. Because there are two arms with different functions, another custom cycle machining is added, so that the end customer only needs to edit the parameters, and it can automatically switch to the insertion cycle used by other arms.
 - Steps:
 - a. First edit CanCycleEntry.xml, please refer to the following:

SYNTEC

```

<?xml version="1.0" encoding="UTF-8"?>
<Root>
  <Fenu name="CanCycleMain">
    <!--1. Do not display standard cycle-->
    <Button name="StdMMIRes">
      <Visible>false</Visible>
    </Button>
    <!--2. add the first(material sorting)inserted
    custom cycle form-->
    <Button>
      <Title>料盤整理</Title>
      <Menufile>Arrange.xml</Menufile>
      <Link>CustomMain</Link>
    </Button>
    <!--3. add the second selectable inserted custom cycle form-->
    <Button>
      <Storage>
        <type>P</type>
        <index>3401</index>
      </Storage>
      <Filelist>
        <Menufile value="1">robot1.xml</Menufile>
        <Menufile value="2">robot2.xml</Menufile>
      </Filelist>
      <Title>手臂程式</Title>
      <Link>RobotMain</Link>
    </Button>
  </Fenu>
</Root>

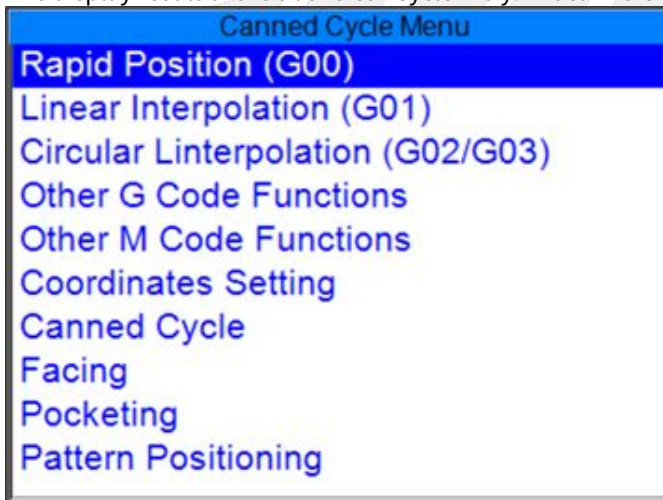
```

The name of standard cycle form is "StdMMIRes". Switch <Visible>into False.

The first Button(form) do not need Button Name: Use CustomMain Fenu name in Arrange.xml fenubar setting file as entrance.

The second Button(form) do not need Button Name: <Storage>use Pr3401 to switch following two<MenuFile>
 1. When Pr3401=1, enable Robot1.xml
 2. When Pr3401=2, enable Robot2.xml
 These two Menufile both use RobotMain Fenu name as entrance.

b. The display result of the above CanCycleEntry.xml can refer to the figure below.



c. Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.

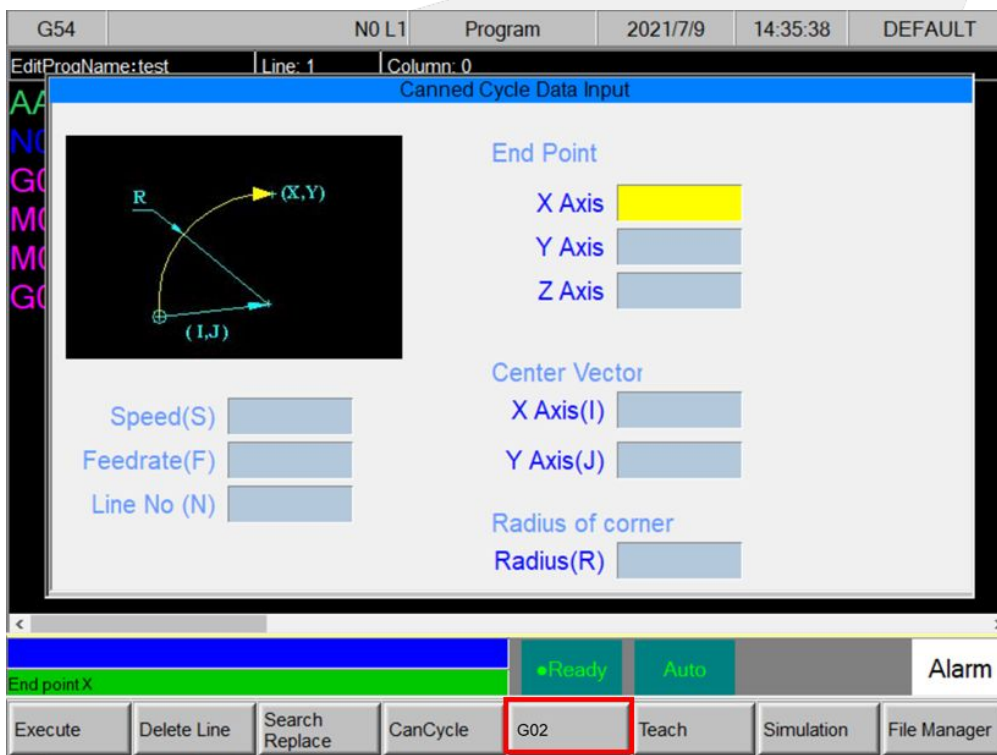
- Compatibility change
 Versions between 10.114.22 (inclusive) and 10.116.24 do not support CanCycleEntry.xml. Please refer to the following instructions for the customization method.
 - fenubar level configuration file path: OCREs\\Common\\CanCycle
 - fenubar level configuration file name: Can only be determined by Pr3201, custom file names are not supported, and the standard insertion cycle display cannot be removed

Pr3201	configuration file name
0-milling	CusCycleMenu.Xml

1-Lathe C	CusCycleMenu_LATHE_C.Xml
2-Lathe A	CusCycleMenu_LATHE_A.Xml
3-Lathe B	CusCycleMenu_LATHE_B.Xml

- configuration file format:
 - Use eHMI to add the "fenubar" function, where the XML file name needs to be CusCycleMenu.xml, and the Fenu name needs to be CustomMain.

3.6.3 Customized fenubar call the insertion cycle screen



- valid version: After 10.116.24 (inclusive)
- Usage restrictions:
 - This custom button needs to be created in the button bar under the program editing screen to be effective.
 - Custom buttons only support Show function(Insert is not supported).
 - This function is the same as the function of inserting a cycle form, the difference is that you can directly call the browser, which is convenient for inserting commonly used cycles.
- Setting method:
 - The user needs to complete the customized insertion cycle screen first, then this button will be enabled.
 - For custom fenubar, please refer to the 4.1.9 custom fenubar description, and set the action of pressing the button to Show:: Axxxx to call the screen.

3.7 Online Help

- Online help is using help file. For htm type, please refer to [Online Help \(using htm type\)](#)
- For how to customize help file, please refer to the manual New Online-Help Application Manual

3.8 Action list for open usage

The following table lists the actions that can be openly used

Because the old action cannot directly determine whether it is open to use from the name itself, and checking the table is very inconvenient .

Therefore, since 10.118.11, actions that are not open externally will all start with "\$\$" as the identification.

Only the actions do not starting with \$\$ have to check this table for confirmation.

※ Note: After the PopupAlarm window pops up, most actions will be restricted. You need to close the PopupAlarm window before executing an action.

Action without argument

This type of Action uses a legacy format where there are either no arguments, or the arguments become part of the Action name itself. For example, for the action "switch to a custom page," if the target page is named `ABC.xml` , the full Action name would be `CUSTOMXML_Abc.xml` .

These Actions are broadly divided into three main categories. The screen support for each is described below (for more details, refer to the screen file introduction):

Category	Description	CustomX ml	ScreenT emplate
General Actions	Actions processed at the system level.	Supporte d	Supporte d
CustomXml-Specific Actions	Actions processed only by CustomXml pages.	Supporte d	Not Supporte d
ScreenTemplate-Specific Actions	Actions supported only by ScreenTemplates. (Listed separately inScreen Template Introduction)	Not Supporte d	Supporte d

General Actions

	Action name	Example	Description	Restriction	Supported version
1	KEYCODE_??	<action>KEYCODE_A</action> Trigger the "A" key of the keyboard	trigger the same key code	special characters: 1. semicolon(;): KEYCODE_SEMICOLON	
2	DOTOUCHADJUST	<action>DoTouchAdjust</action>	trigger touch screen calibration procedure	case must match exactly only valid in CE	
3	CUSTOMFENU_??	<action>CUSTOMFENU_Abc</action> Abc: Fenu Name to be switched	switch the FENU	Fenu Name must be consistent	
4	CUSTOMXML_??	<action>CUSTOMXML_Abc.xml</action> Abc.xml: The browser to be switched	switch the screen	It is strongly recommended that the upper and lower case of the browser names must be consistent.	
5	CUSTOMPLUGIN_??	<action>CUSTOMPLUGIN_Abc</action> Abc: Plugin name	switch to plugin	plugin must be defined in plugin.config file	

SYNTEC

	Action name	Example	Description	Restriction	Supported version
6	POPUPXML_??	<pre><action>POPUP XML_Abc.xml_W =300_H=200_X= 200_Y=200_T=0< /action> <action>POPUP XML_Abc.xml_2 50_400</ action></pre> <p>Abc.xml is the browser of pop-up window W: window width, H: window height, X, Y: window position, T: title display(0 means no display) default(W=400_H=400_X=192_Y=100_T=1)</p> <p>In the second format mode, 250 is the window width, 400 is window height, and the window position is the same as above</p>	pop-up window	It is strongly recommended that the upper and lower case of the browser names must be consistent.	
7	PushAnchorScreen	<pre><action>PushAnchorScreen</ action></pre>	Push the current page to the screen queue	Take screen as the unit, CustomXML customized pages cannot switch through this action. If the similar functions are required, please use the new screen template customization method instead.	10.118.39

	Action name	Example	Description	Restriction	Supported version
8	PopAnchorScreen	<action>PopAnchorScreen</action>	Switch to the top screen of the screen queue	same as above	10.118.39
9	CUSTOMXMLCUSTOMFILESYSTEM		display file management screen (for cycle data)		
10	DoRunSimRefresh	<action>DoRunSimRefresh</action>	force the graphics simulation to redo again	Please pay attention to capitalization	10.116.0R, 10.116.6, 10.117.6
11	CCUSTOMDEV Device control				
12	CUSTOMDEV_??=??	CUSTOMDEV_R5998=10	specify how much the device is equal to	for R/P/@/#/L, only supports integer values.	
13	CUSTOMDEV_??++	CUSTOMDEV_R5998++	specify the device value to plus 1	for R/P/@/#/L	
14	CUSTOMDEV_??--	CUSTOMDEV_R5998--	specify the device value to minus 1	for R/P/@/#/L	

	Action name	Example	Description	Restriction	Supported version
15	CUSTOMDEV_ADD_V_ADD_AX+Y CUSTOMDEV_MINUS_AX-Y	CUSTOMDEV_ADD_R100+3 The effect of use is: R100=R100+3	add and subtract integers to variables where A is a variable, X and Y are positive integers	for R/P/@/#/L	10.116.24U, 10.116.36A, 10.116.37, 10.117.37
16	CUSTOMDEV_BLOCK_U??	CUSTOMDEV_BLOCK_U@12345	convert the integer value stored in the storage to the corresponding value with a decimal point according to the value set by the precision control	for @ only	10.116.5, 10.117.5 (1st), 10.116.6, 10.117.6 (2nd)
17	CUSTOMDEV_ON??	CUSTOMDEV_ON_R200.1		for R/P/@/#/L	
18	CUSTOMDEV_OFF??	CUSTOMDEV_OFF_R200.1		for R/P/@/#/L	
19	CUSTOMDEV_INV??	CUSTOMDEV_INV_R200.1		for R/P/@/#/L	
20	CUSTOMDEVSTR_??=??	CUSTOMDEVSTR_R1000=ABC		for R/P/@/#/L	10.116.3, 10.117.3

	Action name	Example	Description	Restriction	Supported version
21	CUSTOMTABLE Table Series (Legacy mechanism, can only interact with the unique table on a CustomXml page. Not recommended for use.)				
22	CUSTOMTABLE_SAVEFILE	<action>CUSTOMTABLE_SAVEFILE</action>	Save file: Save the content of the currently opened customized table and the related field values set by XMLDB Schema.	The name of the currently opened file is recorded in L3980, and the maximum length is 80 characters.	10.117 .2, 10.116 .2
23	CUSTOMTABLE_LOADFILE	<action>CUSTOMTABLE_LOADFILE</action>	Load file: Load the selected data file on the file system page, including table content and related field values set by XMLDB Schema, and display the corresponding Page Schema.	The files managed by the file system are stored in GNcFiles or its subfolders under the disk designated by Pr3219, and the file extension type is .cyc.	
24	CUSTOMTABLE_RELOADFILE	<action>CUSTOMTABLE_RELOADFILE</action>	Reload file: reload the data file opened by the file system, including table content and related field values set by XMLDB Schema, and display the corresponding Page Schema.	same as above	
25	CUSTOMTABLE_APPENDLINE	<action>CUSTOMTABLE_APPENDLINE</action>	add row: add a row of Template column corresponding to xxx Schema after the table cursor.		

	Action name	Example	Description	Restriction	Supported version
26	CUSTOMTABLE_INSERTLINE	<action>CUSTOMTABLE_INSERTLINE</action>	insert row: insert a row of Template column corresponding to xxx Schema after the table cursor.		
27	CUSTOMTABLE_DELETELINE	<action>CUSTOMTABLE_DELETELINE</action>	delete row: delete the row where the table cursor is located.		
28	CUSTOMTABLE_EDITMODE	<action>CUSTOMTABLE_EDITMODE</action>	edit mode: set the customized table to edit mode. At this time, each field can be focused and the input can be edited.		
29	CUSTOMTABLE_MONITORMODE	<action>CUSTOMTABLE_MONITORMODE</action>	monitor mode: set the customized table to monitor mode. At this time, the value of each field can only be viewed, and cannot be entered or focus.		

SYNTEC

	Action name	Example	Description	Restriction	Supported version
30	CUSTOMTABLE_BROWSEUSERMODE	<action>CUSTOMTABLE_BROWSEUSERMODE</action>	switch the custom page table to "browse mode". The fields on the form can be focused, but cannot be entered		10.116.5, 10.117.5 (1st), 10.116.6, 10.117.6 (2nd)
31	CUSTOMTABLE_NEWFILE=?	<action>CUSTOMTABLE_NEWFILE=xxx</action> add xxx.cyc	add CycleData		
32	CUSTOMTABLE_NEWFILE=_A=??,?	<action>CUSTOMTABLE_NEWFILE=_A=??,?</action> add xxx.cyc, then execute Action1 and Action2 in sequence	add CycleData, and execute Action in sequence		
33	Legacy Custom Function Key Actions (Not recommended for use)				
34	CUSTOMACT_EXEC_HMI_EC_??	CUSTOMACT_EXEC_HMI This example will call HMI.exe	call execution file(exe) The path of the execution file (exe) is stored in DiskC\Shared\dotnet		

	Action name	Example	Description	Restriction	Supported version
35	CUSTOMACT_AS SIGN_MAIN=???	CUSTOMACT_AS SIGN_MAIN=Micro key.cncC	specify profile	<p>This Action does not support loading machining programs located in the Macro folder</p> <p>Version 10.116.26D, 10.116.36P a. before, only the first axis group main program will be specified, b. after, the main program will be specified according to the number of axis groups been opened.</p> <p>Version : 10.118.60M, 10.118.66G, 10.118.70A, 10.118.71</p>	
36	CUSTOMACT_AS SIGN_MAIN_STORAGE=???	CUSTOMACT_AS SIGN_MAIN_STORAGE=L4070	Specify a string stored in the storage and assign it as the main program file name	<p>If the file name is Chinese :</p> <ul style="list-style-type: none"> the value of device must be encoded with ANSI before 10.118.88B, 10.120.18B, 10.120.32I, 10.120.41, 12.0.2 the value of device must be encoded with UTF-8 after 10.118.88B, 10.120.18B, 10.120.32I, 10.120.41, 12.0.2 the value of device must be encoded with ANSI after 10.118.88Q, 10.120.32X, 10.120.42L, 10.120.52, 12.0.8 	10.116 .6E, 10.116 .9, 10.117 .9

SYNTEC

	Action name	Example	Description	Restriction	Supported version
37	CUSTOM_CUSTOM_KEY_PAD_ON		<p>display Syntec keyboard</p> <p>Note: The original name of this action is "open the system small keyboard".</p>	<ul style="list-style-type: none"> The parameter Pr3251 must be set to a touch screen, such as 1 or 2. (For details, please refer to Pr3251 *Touch (screen)) Version 10.120.160, 10.120.24D, 10.120.28A, 10.120.29 (inclusive) support setting EnableKeyBoard in MMISetting to enable the keyboard (For details, please refer to Keyboard Customization Manual) 	<p>Before 10.116.36I, 10.116.42, 10.117.42 versions: Display Windows numeric keypad.</p> <p>After 10.116.36I, 10.116.42, 10.117.42 (inclusive) versions: Display Syntec keyboard.</p>
38	CUSTOM_CUSTOM_KEY_PAD_LG_ON		<p>display Windows keyboard</p> <p>Note: The original name of this action is "open the system large keyboard".</p>		10.116.4, 10.117.4

	Action name	Example	Description	Restriction	Supported version
39	CUSTOM_CUSTOM_KEY_PAD_OFF		hide Syntec keyboard / Windows keyboard		
40	FENUBTNATTR_?	<p>FENUBTNATTR_GCodeDisplaySwitch.Enabled=true</p> <p>--> The string format is "FENUBTNATTR_{0}.{1}={2}", ButtonName, ButtonAttribute, ButtonAttrValue</p> <p>--> Program processing CustomApi.ChangeFenuBtnAttr(ButtonName, ButtonAttribute, ButtonAttrValue);</p>	Modify the key attributes of Fenubar		

SYNTEC

	Action name	Example	Description	Restriction	Supported version
41	BACKGNDATTR_??	<p>BACKGNDATTR_Lab_PendingAlarm.Visible=True</p> <p>--> The string format is "BACKGNDATTR_{0}.{1}={2}", ComponentName, ComponentAttr, ComponentAttrValue</p> <p>--> Program processing OCB_Backgnd.ComponentProperty["ComponentName.ComponentAttr"] = ComponentAttrValue;</p>	Modify OCB_Backgnd object attributes		

CustomXml-Specific Actions

	Action name	Example	Description	Restriction	Supported version
1	DoExitPopupWithoutFenu	<action>DoExitPopupWithoutFenu</action>	close the pop-up window	Used to close the pop-up window called by POPUPXML_??	

	Action name	Example	Description	Restriction	Supported version
2	CUSTOMATTR_??	--> The string format is "CUSTOMATTR_{0}.{1}={2}", CustomComponentName, CustomComponentAttribute, CustomComponentValue --> Program processing OCB_CustomXml.ComponentProperty[CustomComponentName + "." + CustomComponentAttribute] = CustomComponentValue;	Modify object attributes	Only works on custom pages (pages called by customxml_??)	
3	DOIE_EXIT		close the export and import screen		
4	CUSTOMFILE Series				
5	CUSTOMFILE_DIR_??		Modify the data base dir of XMLDB	dosen't support the version after 10.116.14, 10.117.15. ref: MMI-1113 - 标准页面无法触发Action与切换问题 已关闭	
6	LOADCYCFILE_NAME=??	<action>LOADCYCFILE_NAME=Test</action> load in Test.cyc	LOADCYCFILE_NAME=FileName Load the setting file stored in FileName.cyc	According to the definition settings of CycleName= Custom XMLDBData which in the folder of ~/Common/Schema/	10.116.9, 10.117.9

	Action name	Example	Description	Restriction	Supported version
7	LOADCYCFILE_STORAGE=??	<action>LOADCYCFILE_STORAGE=R50</action> If R50 = 1234, load 1234.cyc	LOADCYCFILE_STORAGE=Device Same as above, except that the file name is stored in Device, and Device currently only provides R in digital form	same as above	
8	SAVECYCFILE_NAME=??	<action>SAVECYCFILE_NAME=Test</action> Save the current setting file in Test.cyc	SAVECYCFILE_NAME=FileName will pop up the asking window "whether to save the settings in FileName.cyc" Choose Yes, according to the Schema definition, save the current settings in FileName.cyc Choose No, nothing will happen	same as LOADCYCFILE_NAME	
9	SAVECYCFILE_STORAGE=??	<action>SAVECYCFILE_STORAGE=R50</action> If R50 = 1234, save the setting in 1234.cyc	SAVECYCFILE_STORAGE=Device Same as above, but the file name refers to the value stored in Device	same as LOADCYCFILE_STORAGE	
10	CUSTOMFILE_OPENFILE	LoadXMLDBFile	automatically load the selected XMLDB file in the file list (will save the current file, and then load)		

	Action name	Example	Description	Restriction	Supported version
11	CUSTOMFILE_LOADFILE	CUSTOMFILE_LOADFILE, need to cooperate with defining "CustomXMLDBData"	load the data in the file where the file management cursor is located (will NOT save the current file, and directly load)		
12	CUSTOMFILE_SAVEFILE	CUSTOMFILE_SAVEFILE, need to cooperate with defining "CustomXMLDBData"	save the data currently in use to the file		
13	CUSTOMFILE_SAVEFILETO	CUSTOMFILE_SAVEFILETO, need to cooperate with defining "CustomXMLDBData"	save the data currently in use to the file where the cursor is located		
14	CUSTOMFILE_SAVEFILEAS	CUSTOMFILE_SAVEFILEAS, need to cooperate with defining "CustomXMLDBData"	save the data currently in use to the newly entered file name		
15	CUSTOMFILE_COPYFILE	CUSTOMFILE_COPYFILE	copy the file where the file management cursor is located to another file		
16	CUSTOMFILE_DELETEFILE	CUSTOMFILE_DELETEFILE	delete the file where the file management cursor is located		

	Action name	Example	Description	Restriction	Supported version
17	CUSTOMFILE_RENAME	CUSTOMFILE_RENAME	change the file name which the file management cursor located on to another file name		
18	CUSTOMFILE_IMPORTFILE	<action>CUSTOMFILE_IMPORTFILE</action>	pop up the import screen	in addition to the extension defined in MMIconfig.xml, the default extension *.cyc will be added	<after 10.116.36L, 10.116.43, 10.117.43 version (include)> display *.cyc file by default
19	CUSTOMFILE_EXPORTFILE	<action>CUSTOMFILE_EXPORTFILE</action>	pop up the export screen	in addition to the extension defined in MMIconfig.xml, the default extension *.cyc will be added	<after 10.116.36L, 10.116.43, 10.117.43 version (include)> display *.cyc file by default

	Action name	Example	Description	Restriction	Supported version
20	CUSTOMFILE_CYCLE1	<action>CUSTOMFILE_CYCLE1</action>	<ol style="list-style-type: none"> Specify the existing CycleName as "CustomXMLDBData" Specify the file storage location as "GncFiles" 	<p>a. suitable for using multiple sets of XMLDB cycleName, please specify the corresponding cycleName through action before opening/archiving cyc related files</p> <p>b. The capitalization of CycleName must be consistent</p> <p>c. Before it is specified, the system defaults CycleName is still CustomXMLDBData</p> <p>e. The robot software occupies the first group of CYCLE by default. For robot custom developers, please start with the second group of CYCLE</p> <p>f. CUSTOMTABLE_ related actions also switch the storage location</p> <p>g. Please note that this custom Action will change the file location where the system reads XMLDB, such as DBOPEN/DBLOAD</p>	10.116.360, 10.116.45, 10.117.45
21	CUSTOMFILE_CYCLE2	<action>CUSTOMFILE_CYCLE2</action>	<ol style="list-style-type: none"> Specify the existing CycleName as "CustomXMLDBData2" Specify the file storage location as "GncFiles\CYCLE2" 	<p>b. The capitalization of CycleName must be consistent</p> <p>c. Before it is specified, the system defaults CycleName is still CustomXMLDBData</p> <p>e. The robot software occupies the first group of CYCLE by default.</p>	Function 2 and usage restrictions will be provided after the following versions (inclusive)
22	CUSTOMFILE_CYCLE3	<action>CUSTOMFILE_CYCLE3</action>	<ol style="list-style-type: none"> Specify the existing CycleName as "CustomXMLDBData3" Specify the file storage location as "GncFiles\CYCLE3" 	<p>f. CUSTOMTABLE_ related actions also switch the storage location</p>	10.116.36S, 10.116.47, 10.117.47
23	CUSTOMFILE_CYCLE4	<action>CUSTOMFILE_CYCLE4</action>	<ol style="list-style-type: none"> Specify the existing CycleName as "CustomXMLDBData4" Specify the file storage location as "GncFiles\CYCLE4" 	<p>g. Please note that this custom Action will change the file location where the system reads XMLDB, such as DBOPEN/DBLOAD</p>	

	Action name	Example	Description	Restriction	Supported version
24	CUSTOMFILE_CYCLE5	<action>CUSTOMFILE_CYCLE5</action>	<ol style="list-style-type: none"> Specify the existing CycleName as "CustomXMLDBData5" Specify the file storage location as "GncFiles\CYCLE5" 		
25	CUSTOMFILE_MULTISELECTION		Enable Multiple selection(with checkbox)		10.118.68, 10.118.66D, 10.118.60J
26	CUSTOMFILE_MULTISELECTIONOFF		Disable Multiple selection		
27	CUSTOMFILE_DELETEFILE		delete selected files		
28	CUSTOMFILE_SELECTALL		select all		

	Action name	Example	Description	Restriction	Supported version
29	CUSTOMFILE_CANCELECT		cancel selection		
30	CUSTOMFILE_SELECTFILE		select		
31	CUSTOMFILE_NEWFILE		the CycleData file adding window pops up		
32	CUSTOMFILE_NEWFILE_A=??,??	<action>CUSTOMFILE_NEWFILE_A=Action1,Action2...</action>	the CycleData file adding window pops up and able to execute Actions after successfully adding files		
33	Dynamic table related actions				
34	CTNewFile		Create a new table file When triggered, it will pop up the dialog window for the user to customize the file name		10.116.54K, 10.118.0F, 10.118.6
35	CTLoadFile		Load the table file Load file name: Defined in the table variable "File name variable"	file name variable applicable R/@/L	

	Action name	Example	Description	Restriction	Supported version
36	CTSaveFile		Save table content in data file	file name variable applicable R/@/L	
37	CTInsertFocusLine		Insert a new data in the focused line	focus line number variable applicable R/@	
38	CTInsertLine		Insert a new data in the specific line Specified line number: defined in the table variable "operation line number variable"	operation line number variable applicable R/@	
39	CTDeleteFocusLine		Delete focus data	focus line number variable applicable R/@	
40	CTDeleteLine		Delete specific data Specified line number: defined in the table variable "operation line number variable"	operation line number variable applicable R/@	
41	CTReadFocusLine		Read the focus line data to the value register	focus line number variable applicable R/@	
42	CTReadLine		Read the line data to the value register Specified line number: defined in the table variable "operation line number variable"	operation line number variable applicable R/@	

	Action name	Example	Description	Restriction	Supported version
43	CTWriteFocusLine		Write the register data to the focus line	focus line number variable applicable R/@	
44	CTWriteLine		Write the register data to the specific line Specified line number: defined in the table variable "operation line number variable"	operation line number variable applicable R/@	
45	CTPageUp		turn previous page of table data		
46	CTPageDown		turn next page of table data		

Action with argument

The arguments of this type of action will be stored independently, so the arguments will not be displayed in the action list.

If you want to check the arguments, please click the target action in the action list first, and then you can find the required information in the argument setting area in the middle.

Action Name	Example	Description	Restriction	Supported version
Switch Screen Arg1: ScreenName	<Action name="ShowScreen"> <Arg index="1">EDTOperation</Arg> </Action>	Display the screen with the specified name. If the screen is made in the form of screen template, this action is required to switch screen.		10.118.39

Action Name	Example	Description	Restriction	Supported version
MMI Variant set value Arg1: Variant type (VAR/STR) Arg2: Variant number (ex: 100) Arg3: Variant value (ex: G01)	<pre><Action name="SetVariantValue"> <Arg index="1">STR</ Arg> <Arg index="2">100</ Arg> <Arg index="3">G01</ Arg> </Action></pre>	fill up the value of device	<ul style="list-style-type: none"> Only VAR/STR are supported 	10.118.39
Assign Main Program Start Line No Arg1_type:: Type of Axis Group (VAR/CONSTNUM) Arg1_value:: Axis Group No. (ex: 1) Arg2_type: Type of Line No. (VAR) Arg2_value:: Line No. (ex: 258)	<pre><Action Name="AssignMainProgramStartLineNo"> <Arg Index="1" Type="CONSTNUM">1</Arg> <Arg Index="2" Type="VAR">258</ Arg> </Action></pre>	Assign Line No. of current main program.	<ul style="list-style-type: none"> O888800 is not supported. "Type of Axis Group" only supports VAR/CONSTNUM "Type of Line No." only supports VAR Assign Line No. while machine state is "ready". 	10.118.52H , 10.118.56B , 10.118.57

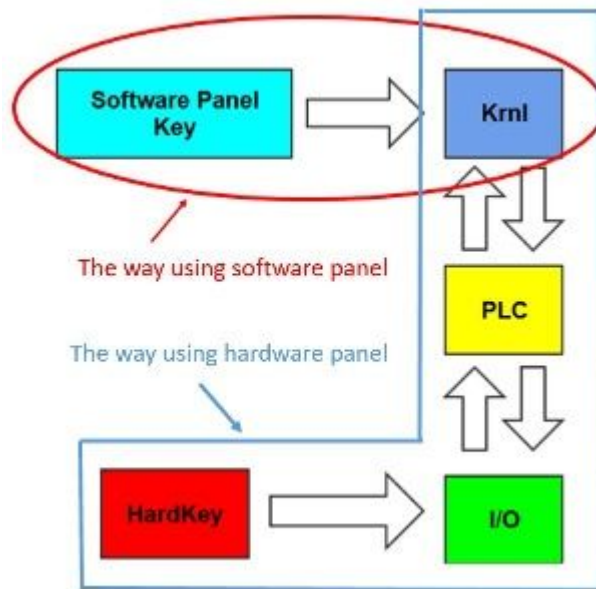
Software panel action

- requirement description

The special machines in some industry (such as automation, woodworking machines, etc.), in order to save costs, ease of operation and other factors, most of the hardware is not **equipped with a hardkey operation panel**.

Syntec provides a solution to replace the traditional physical buttons, and provides a HMI standard software panel dedicated to various industries (this software panel can be customized through eHMI according to different needs), so that the user **only needs to trigger the software button display on the HMI software panel** without using the hardkey operation panel to achieve various machining operations. (Such as: trigger cycle start, pause, JOG, machining mode switching, etc.).

- [function operation framework]



Take the most commonly used **cycle start** as an example. The traditional operation method is to press the cycle start button on the HardKey. This button will trigger a specific I point, so when the PLC scans, it will be based on the logic written by the PLC, detecting whether the I point On. If on, it will trigger C0 On to notify the core, and when the core finds C0 On, it will execute the cycle start action accordingly. However, in the above process, not only a hardware operation panel (HardKey) is required, but also the PLC must cooperate with writing related logic to correctly notify the core to execute the cycle start action.

Using the software panel function to trigger the software buttons displayed on the HMI software panel directly informs the core to execute the cycle start action, instead of notifying the core through the PLC first.

- [corresponding list of Action name and R value of software panel function]

support version number: after 10.116.34, 10.117.34

short description	action name	No.	Name	function description	action type (note)	PLC read & edit rules

machining start	_CycleStart [example] _CycleStart stands for start machining	R16 000	Trigger Software Panel _CycleStart Action	This R value corresponds to the _CycleStart action of the software panel. When the user triggers the software panel _CycleStart , this R value is equal to 1.	On-Shot	read
		R16 001	Disable Direct Cycle Start by Software Panel	If the R value is equal to 0 , the _CycleStart of the software panel is triggered, and the system will directly notify to start machining; If the R value is not 0, the _CycleStart of the software panel is triggered, and the system will not notify to start machining.	-	read/edit
machining pause	_FeedHold [example] _FeedHold stands for pause machining	R16 002	Trigger Software Panel _FeedHold Action	This R value corresponds to the _FeedHold action of the software panel. When the user triggers the _FeedHold of the software panel, the R value is equal to 1.	On-Shot	read
		R16 003	Disable Direct Feed Hold by Software Panel	If the R value is equal to 0 , the _FeedHold of the software panel is triggered, and the system will directly notify to pause machining; If the R value is not 0, the _FeedHold of the software panel is triggered, and the system will not notify to pause machining.	-	read/edit

SYNTEC

specific axis start/end positive JOG specific axis start/end negative JOG	_Jog+Axis_N, _StopJog+Axis_N _Jog-Axis_N, _StopJog-Axis_N [argument] N is the axis ID, only integers 1~16 are accepted [example] _Jog+Axis_2 represents the specified second axis to start positive JOG _StopJog+Axis_2 represents the specified second axis to end positive JOG _Jog-Axis_3 represents the specified third axis to start negative JOG _StopJog-Axis_3 represents the specified third axis to end of the negative JOG	R16004	Trigger Software Panel _Jog+Axis_1, _StopJog+Axis_1 Action	This R value corresponds to the _Jog+Axis_1, _StopJog+Axis_1 actions of the software panel. When the user triggers _Jog+Axis_1 on the software panel, the R value is equal to 1. When the user triggers _StopJog+Axis_1 on the software panel, the R value is equal to 0.	Hold	read
		R16005	Disable Direct X Axis JOG + by Software Panel	If the R value is equal to 0 , the _Jog+Axis_1 of the software panel is triggered, and the system will directly notify the system X Axis JOG +; If the R value is not 0, the _Jog+Axis_1 of the software panel is triggered, and the system will not notify the system X Axis JOG +;	-	read/edit
		R16006	Trigger Software Panel _Jog-Axis_1, _StopJog-Axis_1 Action	This R value corresponds to the _Jog-Axis_1, _StopJog-Axis_1 action of the software panel. When the user triggers _Jog-Axis_1 on the software panel, the R value is equal to 1. When the user triggers _StopJog-Axis_1 on the software panel, the R value is equal to 0.	Hold	read
		R16007	Disable Direct X Axis JOG - by Software Panel	If the R value is equal to 0 , the _Jog-Axis_1 of the software panel is triggered, and will directly notify the system X Axis JOG -; If the R value is not 0 , the _Jog-Axis_1 of the software panel is triggered, and will not notify the system X Axis JOG -;	-	read/edit

R16008	Trigger Software Panel _Jog+Axis_2 , _StopJog+Axis_2 Action	This R value corresponds to _Jog+Axis_2 , _StopJog+Axis_2 action of the software panel. When the user triggers _Jog+Axis_2 on the software panel, the R value is equal to 1. When the user triggers _StopJog+Axis_2 on the software panel, the R value is equal to 0.	Hold	read
R16009	Disable Direct Y Axis JOG + by Software Panel	If the R value is equal to 0 , the _Jog+Axis_2 of the software panel is triggered, and will directly notify the system Y Axis JOG + ; If the R value is not 0 , the _Jog-Axis_1 of the software panel is triggered, _Jog+Axis_2 , and will not notify the system Y Axis JOG + 。	-	read / edit
R16010	Trigger Software Panel _Jog-Axis_2 , _StopJog-Axis_2 Action	This R value corresponds to _Jog-Axis_2 , _StopJog-Axis_2 action of the software panel. When the user triggers _Jog-Axis_2 on the software panel, the R value is equal to 1. When the user triggers _StopJog-Axis_2 on the software panel, the R value is equal to 0.	Hold	read
R16011	Disable Direct Y Axis JOG - by Software Panel	If the R value is equal to 0 , the _Jog-Axis_2 of the software panel is triggered, and will directly notify the system Y Axis JOG - ; If the R value is not 0 , the _Jog-Axis_2 of the software panel is triggered, and will not notify the system Y Axis JOG - 。	-	read / edit

R16012	Trigger Software Panel _Jog+Axis_3 , _StopJog+Axis_3 Action	This R value corresponds to _Jog+Axis_3 , _StopJog+Axis_3 action of the software panel. When the user triggers _Jog+Axis_3 on the software panel, the R value is equal to 1. When the user triggers _StopJog+Axis_3 on the software panel, the R value is equal to 0.	Hold	read
R16013	Disable Direct Z Axis JOG + by Software Panel	If the R value is equal to 0 , the _Jog+Axis_3 of the software panel is triggered, and will directly notify the system Z Axis JOG + ; If the R value is not 0 , the _Jog+Axis_3 of the software panel is triggered, and will not notify the system Z Axis JOG + .	-	read / edit
R16014	Trigger Software Panel _Jog-Axis_3 , _StopJog-Axis_3 Action	This R value corresponds to _Jog-Axis_3 , _StopJog-Axis_3 action of the software panel. When the user triggers _Jog-Axis_3 on the software panel, the R value is equal to 1. When the user triggers _StopJog-Axis_3 on the software panel, the R value is equal to 0.	Hold	read
R16015	Disable Direct Z Axis JOG - by Software Panel	If the R value is equal to 0 , the _Jog-Axis_3 of the software panel is triggered, and will directly notify the system Z Axis JOG - ; If the R value is not 0 , the _Jog-Axis_3 of the software panel is triggered, and will not notify the system Z Axis JOG - .	-	read / edit

		R16016~R16067	Trigger Software Panel _Jog+/-Axis_4~16 , _StopJog+/-Axis_4~16 Action	same as above	Hold	read
			Disable Direct 4th~16th Axis JOG + / - by Software Panel		-	read / edit
MPG simulation	_MPGSimuOn , _MPGSimuOff [example] - _MPGSimuOn represents entering the MPG simulation _MPGSimuOff represents leaving the MPG simulation	R16068	Trigger Software Panel _MPGSimuOn , _MPGSimuOff Action	This R value corresponds to _MPGSimuOn , _MPGSimuOff action of the software panel. When the user triggers _MPGSimuOn on the software panel, the R value is equal to 1. When the user triggers _MPGSimuOff on the software panel, the R value is equal to 0.	Hold	read
		R16069	Disable Direct MPG Simulation by Software Panel	If the R value is equal to 0 , the _MPGSimuOn of the software panel is triggered, and will directly notify the system to enter MPG Simulation ; If the R value is not 0 , the _MPGSimuOn of the software panel is triggered, and will not notify the system to enter MPG Simulation	-	read / edit

Set the machine coordinates of the specified axis (refer to R38)	<p>_SetMachinePosAxis_N</p> <p>[argument] N is the axis ID, only integers 1~16 are accepted</p> <p>[example]</p> <p>_SetMachinePosAxis_16 represents to set the machine coordinate of the sixteenth axis to the value of R38</p>	R16070	Trigger Software Panel	<p>This R value corresponds to _SetMachinePosAxis_1 action of the software panel.</p> <p>When the user triggers _SetMachinePosAxis_1 on the software panel, the R value equal to 1.</p>	On-Shot	read
		R16071	Disable Direct Set X Axis Machine Position by Software Panel	<p>If the R value is equal to 0, the _SetMachinePosAxis_1 of the software panel is triggered and will directly notify the system Set X Axis Machine Position;</p> <p>If the R value is not 0, the _SetMachinePosAxis_1 of the software panel is triggered, and will not notify the system Set X Axis Machine Position.</p>	-	read/edit
		R16072	Trigger Software Panel	<p>This R value corresponds to _SetMachinePosAxis_2 action of the software panel.</p> <p>When the user triggers _SetMachinePosAxis_2 on the software panel, the R value equal to 1.</p>	On-Shot	read
		R16073	Disable Direct Set Y Axis Machine Position by Software Panel	<p>If the R value is equal to 0, the _SetMachinePosAxis_2 of the software panel is triggered, and will directly notify the system Set Y Axis Machine Position;</p> <p>If the R value is not 0, the _SetMachinePosAxis_2 of the software panel is triggered, and will not notify the system Set Y Axis Machine Position.</p>	-	read/edit

		R16074	Trigger Software Panel _SetMachinePosAxis_3 Action	This R value corresponds to _SetMachinePosAxis_3 of the software panel. When the user triggers _SetMachinePosAxis_3 on the software panel, the R value equal to 1.	On-Shot	read
		R16075	Disable Direct Set Z Axis Machine Position by Software Panel	If the R value is equal to 0 , the _SetMachinePosAxis_3 of the software panel is triggered, and will directly notify the system Set Z Axis Machine Position ; If the R value is not 0 , the _SetMachinePosAxis_3 of the software panel is triggered, and will not notify the system Set Z Axis Machine Position .	-	read/edit
		R16076 ~R16101	Trigger Software Panel _SetMachinePosAxis_4~16th Action	same as above	On-Shot	read
	Disable Direct Set 4th~16th Axis Machine Position by Software Panel	-	read/edit			



Enter/exit manual control	<p>_ManualControlOnAxis_N , _ManualControlOffAxis_N</p> <p>[argument] N is the axis ID, only integers 1~16 are accepted</p> <p>[example]</p> <p>_ManualControlOnAxis_1 represents specify the first axis to enter the manual control</p> <p>_ManualControlOffAxis_1 represents specify the first axis to exit the manual control</p>	R16 102	<p>Trigger Software Panel</p> <p>_ManualControlOnAxis_1 , _ManualControlOffAxis_1</p> <p>Action</p>	<p>This R value corresponds to _ManualControlOnAxis_1 , _ManualControlOffAxis_1 action of the software panel.</p> <p>When the user triggers _ManualControlOnAxis_1 on the software panel, the R value is equal to 1.</p> <p>When the user triggers _ManualControlOffAxis_1 on the software panel, the R value is equal to 0.</p>	Hold	read
		R16 103	<p>Disable Direct X Axis MANUAL CONTROL by Software Panel</p>	<p>If the R value is equal to 0, the _ManualControlOnAxis_1 of the software panel is triggered, and will directly notify the system to enter X Axis MANUAL CONTROL ;</p> <p>If the R value is not 0, the _ManualControlOnAxis_1 of the software panel is triggered, , and will not notify the system to enter X Axis MANUAL CONTROL.</p>	-	read / edit
		R16 104	<p>Trigger Software Panel</p> <p>_ManualControlOnAxis_2 , _ManualControlOffAxis_2</p> <p>Action</p>	<p>This R value corresponds to _ManualControlOnAxis_2 , _ManualControlOffAxis_2 action of the software panel.</p> <p>When the user triggers _ManualControlOnAxis_2 on the software panel, the R value is equal to 1.</p> <p>When the user triggers _ManualControlOffAxis_2 on the software panel, the R value is equal to 0.</p>	Hold	read

R16 105	Disable Direct Y Axis MANUAL CONTROL by Software Panel	<p>If the R value is equal to 0, the _ManualControlOnAxis_2 of the software panel is triggered, and will directly notify the system to enter Y Axis MANUAL CONTROL ;</p> <p>If the R value is not 0, the _ManualControlOnAxis_2 of the software panel is triggered, will not notify the system to enter Y Axis MANUAL CONTROL.</p>	-	rea d/ edit
R16 106	Trigger Software Panel _ManualControlOnAxis_3 , _ManualControlOffAxis_3 Action	<p>This R value corresponds to _ManualControlOnAxis_3, _ManualControlOffAxis_3 action of the software panel.</p> <p>When the user triggers _ManualControlOnAxis_3 on the software panel, the R value is equal to 1.</p> <p>When the user triggers _ManualControlOffAxis_3 on the software panel, the R value is equal to 0.</p>	Ho ld	rea d
R16 107	Disable Direct Z Axis MANUAL CONTROL b y Software Panel	<p>If the R value is equal to 0, the _ManualControlOnAxis_3 of the software panel is triggered, and will directly notify the system to enter Z Axis MANUAL CONTROL ;</p> <p>If the R value is not 0, the _ManualControlOnAxis_3 of the software panel is triggered, will not notify the system to enter Z Axis MANUAL CONTROL.</p>	-	rea d/ edit

		R16 108 ~R1 613 3	Trigger Software Panel _ManualControlOnAxis_4~16 , _ManualControlOffAxis_4~16 Action	same as above	Hold	read
			Disable Direct 4th~16th Axis MANUAL CONTROL by Software Panel		-	read / edit
Reset	_Reset [example] _Reset represents reset	R16 134	Trigger Software Panel _Reset Action	This R value corresponds to _Reset action of the software panel. When the user triggers _Reset on the software panel, the R value is equal to 1.	One-Shot	read
		R16 135	Disable Direct Reset by Software Panel	If the R value is equal to 0 , triggers _Reset on the software panel, and will directly notify the system Reset ; If the R value is not 0 , triggers _Reset on the software panel, and will not notify the system Reset .	-	read / edit



Single block execution	_SingleBlockOn, _SingleBlockOff [example] _SingleBlockOn represents enter single block execution _SingleBlockOff represents exit single block execution	R16 136	Trigger Software Panel _SingleBlockOn, _SingleBlockOff Action	This R value corresponds to _SingleBlockOn, _SingleBlockOff action of the software panel. When the user triggers _SingleBlockOn on the software panel, the R value is equal to 1. When the user triggers _SingleBlockOff on the software panel, the R value is equal to 0.	Hold	read
		R16 137	Disable Direct Single Block by Software Panel	If the R value is equal to 0 , the _SingleBlockOn of the software panel is triggered, and will directly notify the system to enter Single Block ; If the R value is not 0 , the _SingleBlockOn of the software panel is triggered, will not notify the system to enter Single Block 。	-	read/edit

SYNTEC

machining mode selection	<p>_Mode_N [argument] N is the mode number, only integers 1~7 are accepted [example] _Mode_1 represents enter the "program editing" mode _Mode_2 represents enter the "automatic execution" mode _Mode_3 represents enter the "MDI" mode _Mode_4 represents enter the "JOG" mode</p>	R16 138	Software Panel Mode Selection	<p>This R value corresponds to the argument value of _Mode_N Action, and corresponds to the machining mode:</p> <p>1: program editing 2: automatic execution 3: MDI 4: JOG 5: INCJOG 6: MPG 7: home searching</p> <p>For example: If _Mode_2 is triggered, the R value is equal to 2 and it represents that the trigger switching machining mode is "automatic execution".</p>	Hold	read
		R16 139	Disable Direct Change Mode Selection by Software Panel	<p>If the R value is equal to 0, the _Mode_N of the software panel is triggered, and will directly notify the system to enter Switch machining mode;</p> <p>If the R value is not 0, the of the software panel is triggered, _Mode_N, and will not notify the system to enter Switch machining mode.</p>	-	read/edit



The gain of the first MPG and JOG settings	<p>_IncrementFeed_N</p> <p>[argument] N is the override, only integers are accepted [example]</p> <p>_IncrementFeed_10 represents the gain of the first MPG and JOG is 1</p>	R16 140	Software Panel Increment Feed	<p>This R value corresponds to the argument value of _IncrementFeed_N Action, and corresponding to the gain of the first MPG and JOG.</p> <p>For example: if _IncrementFeed_10 is triggered, the R value is equal to 10 and represents the the gain of the first MPG and JOG is 10. The movement distance of JOG changes from 0.001 to 0.010.</p>	Hold	read
		R16 141	Disable Direct Change Increment Feed by Software Panel	<p>If the R value is equal to 0, the _IncrementFeed_N of the software panel is triggered, and will directly notify the system to modify the gain of the first MPG and JOG.</p> <p>If the R value is not 0, the _IncrementFeed_N of the software panel is triggered, and will not notify the system to modify the gain of the first MPG and JOG.</p>	-	read/edit
Spindle override settings	<p>_SpindleOverride_N</p> <p>[argument] N is the override, only integers are accepted [example]</p> <p>_SpindleOverride_50 represents spindle override 50%</p>	R16 142	Software Panel Spindle Override	<p>This R value corresponds to the argument value of _SpindleOverride_N Action, and corresponds to the spindle override.</p> <p>For example, If _SpindleOverride_50 is triggered, the R value is equal to 50 and it means that the spindle override have been changed to 50%.</p>	Hold	read

		R16 143	Disable Direct Change Spindle Override by Software Panel	If the R value is equal to 0 , the _SpindleOverride_N of the software panel is triggered, and will directly notify the system to modify spindle override ; If the R value is not 0 , the _SpindleOverride_N of the software panel is triggered, and will not notify the system to modify spindle override	-	read/ edit
G01 override settings	_FeedrateOverride_N [argument] N is the override, only integers are accepted [example] _FeedrateOverride_50 represents G01 override 50%	R16 144	Software Panel Feedrate Override	This R value corresponds to the argument value of _FeedrateOverride_N Action, and corresponding to G01 feedrate override . For example, if _FeedrateOverride_50 is triggered, the R value is equal to 50 and it means that the G01 override is 50% .	Hold	read
		R16 145	Disable Direct Change Feedrate Override by Software Panel	If the R value is equal to 0 , the _FeedrateOverride_N of the software panel is triggered, and will directly notify the system to modify G01 feedrate override ; If the R value is not 0 , the _FeedrateOverride_N of the software panel is triggered, will not notify the system to modify G01 feedrate override .	-	read/ edit
JOG override settings	_JOGOverride_N [argument] N is the override, only integers are accepted [example] _JOGOverride_50 represents JOG override 50%	R16 146	Software Panel JOG Override	This R value corresponds to the argument value of _JOGOverride_N Action, and correspond to JOG override . For example, If _JOGOverride_N is triggered, the R value is equal to 50 and it means that the JOG override is 50% .	Hold	read

		R16 147	Disable Direct Change JOG Override by Software Panel	<p>If the R value is equal to 0, the _JOGOverride_N of the software panel is triggered, and will directly notify the system modify JOG override ;</p> <p>If the R value is not 0, the _JOGOverride_N of the software panel is triggered, will not notify the system to modify JOG override.</p>	-	read/edit
G00 override settings	<p>_RapidTravelOverride_N</p> <p>[argument] N is the override, only integers are accepted</p> <p>[example]</p> <p>_RapidTravelOverride_50 represents G00 override 50%</p>	R16 148	Software Panel Rapid Traverse Override	<p>This R value corresponds to the argument value of _RapidTravelOverride_N Action, and corresponds to G00 override.</p> <p>For example, If _RapidTravelOverride_N is triggered, the R value is equal to 50 and it means that the G00 override is 50%.</p>	Hold	read
		R16 149	Disable Direct Change Rapid Traverse Override by Software Panel	<p>If the R value is equal to 0, the _RapidTravelOverride_N of the software panel is triggered, will directly notify the system modify G00 override;</p> <p>If the R value is not 0, the _RapidTravelOverride_N of the software panel is triggered, will not notify the system to modify G00 override</p>	-	read/edit

Note:

[Action type]

One-Shot: the software panel design needs to be rising edge triggered (ex: cycle start, feedhold, reset, ...)

Hold: the software panel design needs to maintain the state after triggering(ex: Axis JOG +/-, mode selection, Feedrate Override, Rapid Traverse Override, Axis MANUAL CONTROL, ...)

3.9 Precautions

- When there is a need for **customized machining actions**, please use **the R value corresponding to the software button function to close the software button and directly trigger the corresponding machining operation**.
 - At present, for the selection of **machining mode & override, Jog**, this type of regularly used button, if there are **hardware buttons and software buttons both existing, or the software buttons conflict with the logic in the PLC**, please **use the R value corresponding to**

software button function to close the software button and directly trigger the corresponding machining operation.

- When using this function, please first check **whether the function already has a physical key, and whether the PLC has the logic to trigger the same action.** If there is the above situation, please set the corresponding R value equal to 1. Turn off the HMI and directly notify the core to perform various machining actions to avoid unexpected actions.
- The **R value switch** corresponding to the software button function requires some waiting time after being triggered and **cannot take effect immediately.** Therefore, it is recommended to **avoid dynamic switching in the application** to avoid unexpected misoperation due to update timing issues.
- The override of software button function, only supports percentage, not the levels.
- **[When there is requirement for customized machining actions, how to meet it?]**

For example, before Cycle Start, you need to trigger a certain O point to release the brake, or check that the safety door I point must be On before machining can be performed.

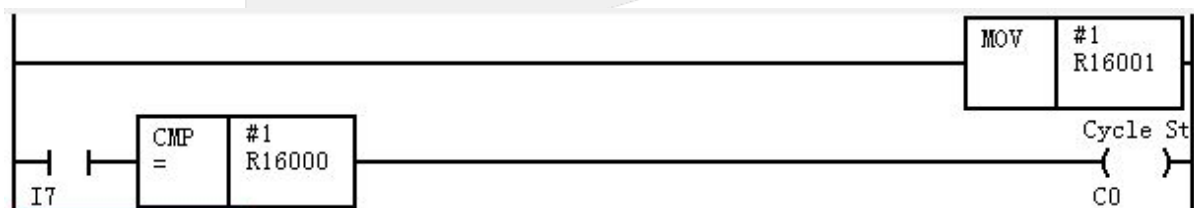
If you press the button on the HMI to directly notify the core Cycle Start, the above protection cannot be provided, which may cause the machine error and cause problems such as collision. Please be careful.

In this application scenario, the user must edit the relevant protection logic through the PLC and set the corresponding R value equal to 1 and turn off the mechanism that HMI directly notify the core start cycle. For details, please refer to the Action name and R value of the software panel function table.

For example, I7 represents the safety door I point. If the requirement is to check the safety door, the I point must be on to start cycle. Then the PLC must be protected as follows. First, R16001 must be set to 1, and the mechanism that the HMI directly notify the core to start cycle must be turned off.

Then judged **R16000 signal that will be filled in when the cycle start API is called and the corresponding safety door I point I7 On are established at the same time, and then C0 can be triggered to notify the core to start cycle.**

If the mechanism that HMI directly notifies the core Cycle Start is not properly turned off, the required protection will not be achieved, which may cause the machine error and cause problems such as collision. Please be careful.



- **[If the hardware button and software button both exist or the software button conflicts with the PLC logic]**

Please be sure to **set the corresponding R value equal to 1, turn off the mechanism that the HMI directly informs the core to perform machining actions.** For details, please refer to the Action name and R value of the software panel function table, **otherwise it may cause the machine error and cause problems such as collision. Please be careful.**

For example, there is a **machining mode selection** in both the hardware button and the software button, or the machining mode selected in the PLC is different from the machining mode set by the software.

Assuming that the hardware buttons or PLC logic is set to automatic mode, and the software buttons are set to MPG mode, there is a conflict between the two modes, and the system will not operate normally.

Therefore, please **select the corresponding R16038 equal to 1 of the machining mode, and turn off the path of software directly notifying the core to switch the machining mode.**

Same as other situations, such as cycle start or JOG, which may cause twice trigger.

All in all, when using this function, please first check whether the function corresponding to the software already has a physical key, and whether the PLC has logic to trigger the same action.

Please be sure to set the corresponding R value equal to 1, turn off the mechanism that the HMI directly informs the core to perform machining actions, avoid unexpected actions happen.

3.10 Others

3.10.1 Standard HMI browser pre-reading

For specific production machines, there is generally no need to use standard man-machines. Through the following settings, the pre-loading function of the standard HMI when booting can be cancelled. It is expected that there will be two advantages of saving boot time and saving memory. .

But it should be noted that if the screen is not pre-loaded when booting, it will be lagged when entering the screen for the first time. After the second time it will return to normal.

- valid version: From 10.114.43/10.116
- configuration file path: OCREs\\Common
- configuration file name: MMIconfig_Customer.xml
- configuration file format:


```
<?xml version="1.0" encoding="UTF-8"?>
<MMIconfig>
<!-- Following PreLoad property settings are for 'Scr_PosCoord' and it's child screen-->
<Scr_PosCoord> browser name
<isPreLoad>>false</isPreLoad> whether pre-loaded
</Scr_PosCoord> browser name
</MMIconfig>
```
- configuration file description:
 - whether pre-load:
 - False: unable to pre-loaded
 - True: pre-loaded(default)
 - The browser name comparison table that can provide settings is as follows

interface name	browser name	interface name	browser name
coordinate home page	<Scr_PosCoord>	simulation parameter settings	<Scr_SimuParam>

workpiece coordinates	<Scr_WorkPie ce>	system time settings	<Scr_SetSysParam >
auto tool presetting & measuring	<Scr_AutoToo l>	work record form	<Scr_WorkRecord>
graphical simulation	<Scr_Simu>	HSHP parameter settings	<Scr_HSHPParame ter>
cycle editing	<Scr_CycleInp ut>	kernel server settings	<Scr_ServerConf>
program editing	<ScrTxtEditor >	serial machine tuning	<Scr_SerialTuning >
cycle insertion	<Scr_CycleMe nu>	data capture	<Scr_DataAcq>
MDI input	<Scr_MDI>	file management	<Scr_FileMgr>
profile selection	<Scr_FileSel>	five-axis teaching	<Scr_FeatureCoord inate>
connection settings	<Scr_ClientCo nf>	milling tool settings	<Scr_ToolMill>
alarm display	<ScrAlarm>	lathe tool settings	<Scr_ToolLathe>
system information	<Scr_SystemI nfo>	machining parameter settings	<Scr_MonSubData>
MPG offset	<ScrPopupMP G>	workpiece coordinate offset setting	<Scr_LatheWorkpie ceShift>
alarm display	<ScrPopupAla rm>	tool management	<Scr_ToolManage ment>
middle function	<Scr_AutoCen ter>	parameter settings	<ScrParam>
internet settings	<Scr_NetSet>	diagnosis page	<ScrDiagnostic>
machining execution	<Scr_Monitor>	file output(input)	<ScrFill_O>

- Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.

3.10.2 Standard HMI panel shortcut keys enable/disable

For a specific customized machine, it has its own operation process, and the shortcut keys have the opportunity to interfere the operation process, so there is a setting to change the activation or deactivation of the shortcut keys on the panel. The default is enabled.

- valid version: From 10.116.24U, 10.116.36A, 10.116.37, 10.117.37
- Setting method: Through the panel shortcut key function in the HMII setting page (refer to MMIconfig Setting Manual)

Item	Value
[PreLoad] History	FALSE
[PreLoad] File Manager	TRUE
[PreLoad] File Input Output	TRUE
[PreLoad] Alarm Hint	TRUE
[PreLoad] MPG Shift Setting	TRUE
[PreLoad] SyntecFileSystem	FALSE
[PreLoad] CycleData	FALSE
SIP Style	LARGEKB
Panel Fast Key Enable	FALSE
Move Sensitivity	3

Value : FALSE
Hint TRUE: Enable FALSE: Disable

Setting Valid After Restart

Modify Set Default Set Default All My Favor F6 My Favor F7 My Favor F8

- configuration file description:
 - whether to enable:
 - False: unable
 - True: enable(default)

3.10.3 Standard HMII panel shortcut key customization instructions

For machines with shortcut keys on the second panel, a customized shortcut key function is provided to change the action performed after pressing the shortcut key.

Specification Description

- add HKConfig file, example file download: HKAction.xml
- file name: HKAction.xml
- file location: OCREs \\ Common \\ HKAction.xml
- file content:

```
<HKActionInfo>
  <POS>CusAction_9</POS> <!--The outside tag is the name of the HK button,
  and the content is the action you want to call-->
  <PROG>CusAction_5</PROG>
  <TEACH>CusAction_2</TEACH>
  <MON></MON>
```

```
<ALARM>CusAction_7</ALARM>
<OFFSET></OFFSET>
</HKActionInfo>
```

- How to call multiple actions
 - a. Separate with semicolons

```
<HKActionInfo>
  <POS>CusAction_1;CusAction_2</POS> <!-- separate the action you want
to call with semicolon -->
</HKActionInfo>
```

- b. Surrounded by <actions> </actions>

```
<HKActionInfo>
  <POS> <!--use Actions-->
    <actions>
      <action>CusAction_1</action>
      <action>CusAction_2</action>
    </actions>
  </POS>
</HKActionInfo>
```

- example:

- a. custom required

Press the POS button, the HMI switches to the alarm page, the fenubar does not switch

Press the PROG button, both HMI and fenubar will switch to the alarm page

Press the MON button, the HMI will switch to the user parameter setting page

Press the OFFSET/SETTING button, both HMI and fenubar will switch to the quick diagnosis page

- b. custom file content

```
<HKActionInfo>
  <POS>ShowMenuAlarm</POS>
  <PROG>ShowMenuAlarm;FENULINKTO_Maintain</PROG>
  <TEACH></TEACH>
  <MON>ShowMenuParameter;DoShowEndUser</MON>
  <ALARM></ALARM>
  <OFFSET>
    <actions>
      <action>ShowMenuDiagnostic</action>
      <action>DoShowFastSysData</action>
      <action>PutMainTitle_STR:: Fenu:: Main:: MenuFastDiagnostic</
action>
      <action>FENULINKTO_FastDiagnostic</action>
    </actions>
  </OFFSET>
</HKActionInfo>
```

Precautions

- valid version: 10.116.36B, 10.116.37, 10.117.37
- The defined tag must be completely defined in accordance with the file content, otherwise the custom action will be invalid.
 - tag is the same as <POS>、<HKActionInfo>、<OFFSET>、<MON>...in xml
- Need to enable the panel shortcut key function in the HMI setting page (refer to MMIconfig Setting Manual)

G54	N0 L1	Parameter	2021/7/9	14:42:35	DEFAULT
		Item			Value 9 / 10
		[PreLoad] History			FALSE
		[PreLoad] File Manager			TRUE
		[PreLoad] File Input Output			TRUE
		[PreLoad] Alarm Hint			TRUE
		[PreLoad] MPG Shift Setting			TRUE
		[PreLoad] SyntecFileSystem			FALSE
		[PreLoad] CycleData			FALSE
		SIP Style			LARGEKB
		Panel Fast Key Enable			TRUE
		Move Sensitivity			3
Value : TRUE					
Hint TRUE: Enable FALSE:Disable					
Setting Valid After Restart					
			Ready	Auto	Alarm
Modify		Set Default	Set Default All	My Favor F6	My Favor F7
				My Favor F8	

- If the XML format is incorrect, the tag name does not comply with the regulations, the call custom actions is invalid, no prompt text will be provided.
- If the same tag is defined twice, the second tag shall prevail .
- Called Action, up to 5 Actions can be called at once.
- The control panel keyboard Type13 (Pr3217 *Control panel type)
Provide compound shortcut keys as follows:

- PROG/FILE: switch between program editing and file management pages, switch to program editing page by default
- OFFSET/SETTING: Switch between workpiece coordinate and tool setting page, switch to workpiece coordinate by default

Composite keys customization method: (Note that after this type of key is customized, there is no composite page switching function)

- PROG/FILE: Please define <PROG></PROG> in the definition file
- OFFSET/SETTING: Please define <OFFSET></OFFSET> in the definition file
- Multi-programs do not support standard Teach shortcut keys, and custom Teach keys have no such limitation.
- The pressed position of the menu button corresponding to the hotkey will not be changed by the customized HKAction. (Pr3217 *Control panel type)
- Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.

3.10.4 Archive/read memory status interface

The user may need to save the several sets of controller memory status , share them with other controllers, or provide itself for future use. This requirement can be achieved by using the memory status backup and installation (XMLDB).

Before using XMLDB, you must first clearly define which memory you want to store or read (this definition file is called the cycle schema), and then call action through eHMI to access the defined memory.

Define archive/read memory(cycle schema)

- - Default path of reading schema file:
 - OCRes\\Common\\Schema*.xml (*.xml custom name)
 - PrdMMIRes\\Products\\Common\\Schema*.xml
 - StdMMIRes\\Products or machine type\\Common\\Schema*.xml
 - Definition file obtained:
 - First time development and customization: add files manually
 - Second time development and customization: refer to the appendix backup function
 - Definition file content:
 - Requirements: store/read R0, R99 and L0

```
<?xml version="1.0" encoding="UTF-8"?>
<Schema>
<Cycle name="CustomXMLDBData"> ->a file can have multiple cycles
<Field>
<Name>AboutR0Comment</Name>
<InputStorage>R0</ InputStorage > -> device location
<InputFormat>Long</InputFormat> ->device type
<DefaultValue>5</DefaultValue> ->when in new cycle, R0=5
</Field>
<Field>
<Name> AboutR99Comment </Name>
<InputStorage>R99</ InputStorage >
<InputFormat> Long </InputFormat>
</Field>
<Field>
<Name> AboutL0Comment </Name>
<InputStorage>L0</ InputStorage >
<InputFormat> String </InputFormat>
</Field>
</Cycle>
</Schema>
```

- - Definition file description:
 - Schema\\ Multiple files can exist under the same folder
 - There can be multiple cycles in the same file
 - Every time use XMLDB, it is accessed in a cycle unit. And pay attention to that the "cycle name" cannot be repeated, otherwise there is no guarantee which one will be prioritized.
 - Installation method: refer to the appendix eHMI package installation。

CycleData Software version 10.116.360, 10.116.45, 10.117.45 and after expand to support five sets of CycleData

- - Instructions for use:

- The Cycle name of each set is "CustomXMLDBData", "CustomXMLDBData2", "CustomXMLDBData3", "CustomXMLDBData4", "CustomXMLDBData5" in order
- Switch groups with ACTION, the ACTION name in order is "CUSTOMFILE_CYCLE1", "CUSTOMFILE_CYCLE2", "CUSTOMFILE_CYCLE3", "CUSTOMFILE_CYCLE4", "CUSTOMFILE_CYCLE5" (eHMI menu is not yet supported, and need to be set manually)
- Please specify the group through ACTION before the XMLDB related functions such as opening/archiving, otherwise the default is still the first group CustomXMLDBData

XMLDB access method provided by eHMI

Through eHMI, actions can be used to achieve the effect of accessing specific memory. For the usage, please refer to App Help->Customized HMI Development->eHMI Instruction Manual->Customized Action Instructions. Data file of memory and value (cyc file)

The file which saved the data of memory and value (hereinafter referred to as the cyc file), store the value of the memory corresponding to the field name defined in the Cycle Schema.

- - cyc file path: store in GNcFiles, for detailed corresponding path, please refer to "App Help->Application File->Syntec Parameter Setting Reference Manual->Parameter List->Pr3219 System configuration"
 - cyc file format:


```
<CycleFile>
<Cycle Name="CycleEdit">
<Field Name=" AboutL0Comment " Value="Complete"/>
<Field Name="AboutR0Comment " Value="100"/>
<Field Name=" AboutR99Comment" Value="10"/>
</Cycle>
</CycleFile>
```
 - cyc file description: In actual storage/reading, there is no need to deal with the content of the cyc file, and the system will automatically write and read values in the specified memory.

3.10.5 When the coordinate object provides multi-path, it is displayed according to the path

In the multi-master system path, \$1 (first path), \$2 (second path), etc. hope to display the coordinate content according to the path setting, for example, the XYZ of \$1 is displayed in the coordinate object of \$1, and the AB of \$2 is displayed in coordinate object of \$2. This display is more matched with user's habit of using the multi-

SYNTEC

master system, and it is also easier to identify which axis belongs to which path.

Coord.			2021/7/9	14:43:59	DEFAULT
G54	, NO L1	\$1	G54	, NO L1	\$2
Machine			Machine		
X	0.000		A	0.000	
Y	0.000		B	0.000	
Z	0.000		C	0.000	
F	1000.0 mm/min	100 %	F	1000.0 mm/min	100 %
	0.0 mm/min	Actual		0.0 mm/min	Actual
S	1000 RPM	100 %	S	1000 RPM	100 %
	1000 RPM	Actual		1000 RPM	Actual
Input:	Hint	Ready	Auto	Alarm	

- valid version: From 10.116.2/10.117.2
- configuration file path: OCREs\\Common\\AppData
- configuration file name: PosCoord.xml
- configuration file obtained:
 - First time development and customization: Download the upgrade installation package of the corresponding version and unzip it(StdMMIRes\\Common\\AppData\\PosCoord.xml)
 - Second time development and customization: refer to the appendix backup function
- configuration file format:

```
<?xml version="1.0" encoding="UTF-8"?>
<Screen Type="DotNetExtension">
```

```
<!-- Machine coordinate layout --> machine coordinate
<CoordBox>
<PageSize>5</PageSize> The number of axes displayed on one page, the default is 5
<AxisGroupSource>1</AxisGroupSource> Set the path number to be displayed, the default is 0
</CoordBox>
<!-- Relative coordinate layout --> relative coordinate
<CoordBox>
<PageSize>5</PageSize> The number of axes displayed on one page, the default is 5
<AxisGroupSource>2</AxisGroupSource> Set the path number to be displayed, the default is 0
</CoordBox>
<!-- Absolute coordinate layout --> absolute coordinate
<CoordBox>
<PageSize>5</PageSize> The number of axes displayed on one page, the default is 5
<AxisGroupSource>0</AxisGroupSource> Set the path number to be displayed, the default is 0
</CoordBox>
<!-- Distance to Go coordinate layout --> remaining distance
```

```

<CoordBox>
<PageSize>5</PageSize>           The number of axes displayed on one page, the default is 5
<AxisGroupSource>0</AxisGroupSource>  Set the path number to be displayed, the default is 0
</CoordBox>
</Screen>

```

- - configuration file description:
 - AxisGroupSource(0~15): set the displayed path
 - 0: default value, show all the paths
 - 1: show the first path only
 - 2: show the second path only
 - 4: show the third path only
 - 8: show the fourth path only
 - 3: display the first and second paths (1+2, if you want to display the combination of different paths, you can do so by analogy)
 - Ex. 1+4= 5: display the first and fourth path
 - PageSize(The default is 5, more than 5 will exceed the screen): set the number of paths displayed on one page
 - If the number of paths to be displayed is greater than PageSize, you can use PageDown and PageUp to switch pages. Since pressing the PageDown key once will trigger all the coordinate objects to change the page, it can be expected that if different coordinate components are set will display a different number of paths. Press the PageDown key will display other path coordinate information, and it will not quickly switch back to the first displayed screen. (You must press the least common multiple of m ($m=\text{AxisGroupSource number}/\text{PageSize}$) - 1 times for all coordinate components to return to the original screen.)
 - When PageDown is pressed, the path content will show which set by AxisGroupSource, ignore the value set by R21 (multi-path CNC main system execution mode).
 - Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.

3.10.6 Group single selection or all selection settings (Radio button/Checkbox/Button)

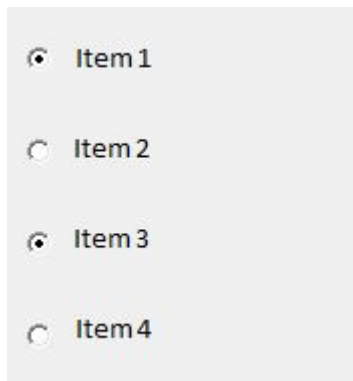
Single selection (mutually exclusive) setting function

- - valid version: 10.116.15, 10.117.16
 - configuration file path: OCRes\\Common\\AppData
 - configuration file name: XML file of the screen

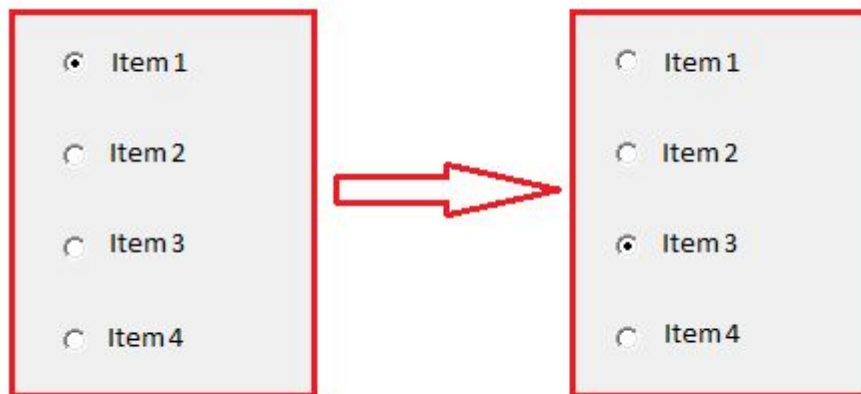
Functional application requirements: when there are multiple radio button objects (or Checkbox objects, Button objects) in the same group, as long as you select one, the other selections will be automatically canceled (mutual exclusion function).

Action description:

1.
 - a. When the single selection function is not set, items 1~4 can be selected independently without restriction



- b. If you set items 1~4 in the same group, with the single selection function, you can only select one option at once. When you select other items, the previous one will be automatically canceled. (Originally, only item 1 was selected. When you press any other item, such as item 3, the original item will be automatically cancelled, and only one item in the group will be selected)

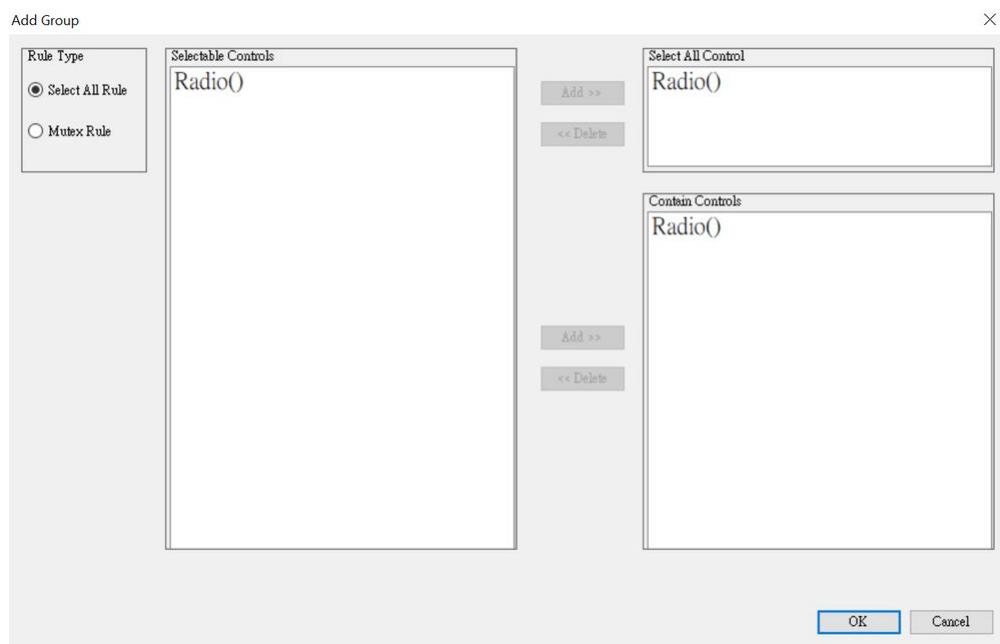


Browser edit example:

1.

- a. Set the objects that need to be considered into the same group, and use the four component groups in this example (red box in the figure below) to enter the names of mutually exclusive groups

SYNTEC



b. Open the XML file of the edit page and add the **<MutexRule>** mutually exclusive condition

```

<Group Name="group name">
  <Radio>
  <Name>Button name 1</Name>
  :
  :
  </Radio>
  <Radio>
  <Name>Button name 2</Name>
  :
  :
  </Radio>
  <Radio>
  <Name>Button name 3</Name>
  :
  :
  </Radio>

```

```

  <MutexRule>
  <Item>
  <Name>Button name 1</Name>
  <Name>Button name 2</Name>
  <Name>Button name 3</Name>
  :
  </Item>
  </MutexRule>
</Group>

```

PS: The example is used for Radio button, but it can also be used for Check box or Button

Precautions:

- 1.

- a. All objects managed by the Group must indicate the group name in the mutually exclusive group in the eHMI object setting
- b. Only one type of Rule can exist in the same Group, SelectAllRule and MutexRule cannot exist in the same time
- c. To use Button in Group, HoldMode must be set to True
- d. To enable MutexRule to cancel all options, please add one more objectsex. "No selection" in MutexRule, then other items will not be selected after this option is checked.

Select all setting function

- - valid version: 10.116.15, 10.117.16
 - configuration file path: OCREs\\Common\\AppData
 - configuration file name: XML file of the screen

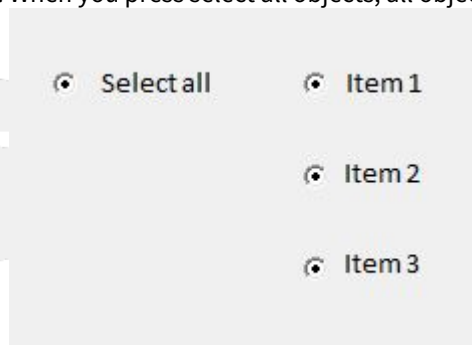
Functional application requirements: When there are multiple Radio button objects (or Checkbox objects, Button objects) in the same group, as long as you select a specific object, the objects in the group will all be automatically selected

Action description:

1.
 - a. When there is not certain object be pressed (for example, select all), items 1~3 can be selected independently

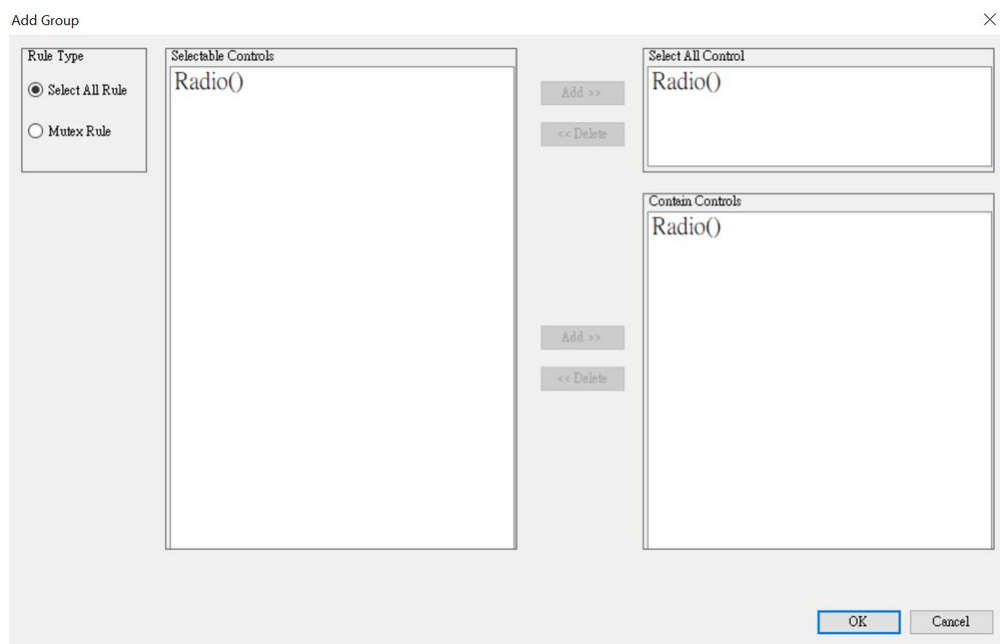


- b. When you press select all objects, all objects in the group will be automatically selected



browser edit example:

1.
 - a. Set the objects that need to be considered into the same group, and use the four component groups in this example (red box in the figure below) to enter the names of mutually exclusive groups



b. Open the XML file of the edit page, and add the **<SelectAllRule> select all condition**

```

<Group Name="group name">
  <Radio>
    <Name>Button name 1</Name>
    :
    :
  </Radio>
  <Radio>
    <Name>Button name 2</Name>
    :
    :
  </Radio>
  <Radio>
    <Name>Button name 3</Name>
    :
    :
  </Radio>
  <Radio>
    <Name>Select all button name</Name>
    :
    :
  </Radio>
  <SelectAllRule>
  <SelectAllItem>
    <Name>Select all button name</Name>
  </SelectAllItem>
  <Item>
    <Name>Button name 1</Name>
    <Name>Button name 2</Name>
    <Name>Button name 3</Name>
  </Item>

```

```
</SelectAllRule>
```

```
</Group>
```

PS: The example is used for Radio button, but it can also be used for Check box or Button

Precautions:

1.
 - a. All objects managed by the Group must indicate the group name in the mutually exclusive group in the eHMI object setting
 - b. Only one type of Rule can exist in the same Group, SelectAllRule and MutexRule cannot exist in the same time
 - c. To use Button in Group, HoldMode must be set to True

3.10.7 File opening specifications

For DOS lathe users who encounter incompatibility with opening files on CE lathes, the system provides two different opening specifications for users to choose.

fenubar name	milling open file type path	lathe open file type path
enter program editor	None	F4 -> F1 or F2 -> F8 -> F4
select profile	F4 -> F1	None
machining execution entering	None	F2 -> F1 or F4 -> F1 -> F1* or F2 -> F8 -> F5
file input	F2 -> F8 -> F4	F2 -> F8 -> F7
file output	F2 -> F8 -> F5	F2 -> F8 -> F8
cycle insert	F2 -> F1	F2 -> F3 -> F1
cycle edit	F2 -> F3	F2 -> F3 -> F2
note		*: F2 (program editor) -> F8 (file management), after selecting any profile, the F1 key becomes machining execution entering(formerly cycle insert), press F1 to switch to the machining execution page, and assign the file in the program editor as profile

- valid version: From 10.114.37
 - configuration file path: DiskC\\OcRes\\Common
 - configuration file name: MMIconfig_Customer.xml
 - configuration file format:


```
<?xml version="1.0" encoding="UTF-8"?>
<MMIconfig>
<Common>
<OpenFileType>0</OpenFileType>
</Common>
</MMIconfig>
```
- configuration file description: The number in <OpenFileType>0</OpenFileType> (0 in this example) is used to set the opening file specification
 - 0: Milling opening type
 - 1: Lathe opening type
 - Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.

3.10.8 R5998 usage method

Under certain application conditions, certain actions can be triggered through PLC. These actions can be standard functions or customized functions.

The PLC part achieves the purpose of triggering action by changing the value of R5998. The value of R5998 changed instantaneously, similar to the concept of upper edge triggering. The usage is explained as follows.

- Copy DiskC\\StdMMIRes\\Common\\AppData\\Backgnd.xml to DiskC\\OcRes\\Common\\AppData\\Backgnd.xml。
 - The Backgnd.xml needs to be selected according to the number of paths in the main system. For example, if the number of paths in the main system is 2, change it to copy Backgnd_2.xml.
 - Open Backgnd.xml, the last line is </Screen>, add the following command above this line.

```
<ActionList>
  <Value>xxx</Value>
  <Actions>
    <Action>xxxxxxx</Action>
    <Action>xxxxxxx</Action>
  </Actions>
</ActionList>
```

- The xxx after Value is the value of R5998, and the xxxxxx after Action is the name of the action. Multiple actions can be executed at the same time. When R5998 changes from a value other than xxx to xxx, the Action in the ActionList will be triggered.
 - Assume that the original value of R5998 is 0, and the attribute value xxx of the Backgnd.xml is 1. At the same time, when the PLC cuts R5998 to 1, the HMI triggers the Action listed in the ActionList.
 - After using R5998 to trigger the corresponding Action, next time if you want to trigger again, please use PLC or HMI to change the value of R5998 to a value other than xxx. The following example using one of the Actions in the ActionList to reset the R5998 with HMI.
- example:

```

<ActionList>
  <Value>1</Value> <!--Trigger Action when R5998=1-->
  <Actions>
    <Action>ShowMenuRun</Action> <!--Switch to the machining execution page-->
    <Action>CUSTOMDEV_R5998=0</Action> <!--Fill R5998 back to 0-->
  </Actions>
</ActionList>
    
```

3.11 Customization of work record table

3.11.1 Comparison of old and new specifications for work records

The work record sheet is separated by 10.118.29z, the old version is maintained by the human-machine group and the new version is maintained by 產一.

- This chapter will introduce the customization method of the old version.
- For the new version of the customization, we do not provide external custom SOP manuals at this time, please contact the SYNTEC product department for discussion if needed.

Old specifications:

- User records are not supported (custom work numbers required)
- Record generation time point
 - There are unrecorded cumulative workpieces that satisfy the following conditions
 - a. Profile change
 - b. The number of required workpieces reaches

序號	程式名稱	開始日期時間	總時間	工件數	程式註解
1	TEST1	1/31/2019 9:44 AM	0:00:16	9	G01 X20. ;
2	-拖尾-				

New specifications:

- Support for user records(permission management, version 10.118.12G and later)
- Record generation time point
 - There are unrecorded cumulative workpieces that satisfy the following conditions
 - a. Profile change
 - b. The number of required workpieces reaches
 - c. Operator change


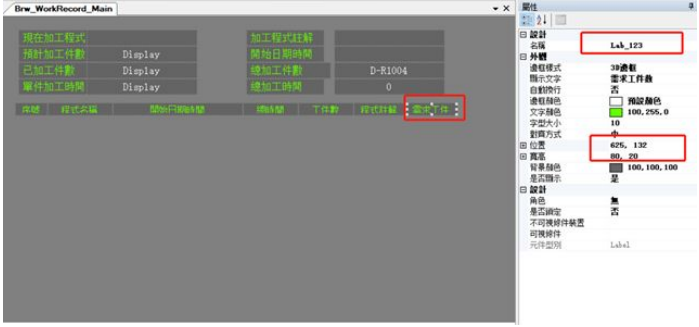
現在加工程式	123	加工程式註解	G01 X100. F10000
預計加工件數	10	開始日期時間	11/20/2018 7:40 PM
已加工件數	10	總加工件數	59
單件加工時間	0:00:01	總加工時間	0:00:09

序號	使用者	程式名稱	開始日期時間	總時間	工件數	程式註解
1	Worker2	123	11/20/2018 7:40 PM	0:00:09	10	G01 X100. F10000
2	Worker1	123	11/20/2018 7:40 PM	0:00:04	4	G01 X100. F10000
3	M	123	11/20/2018 7:37 PM	0:00:06	6	G01 X100. F10000
4	DEFAULT	123	11/20/2018 7:37 PM	0:00:06	6	G01 X100. F10000
5	-檔尾-					

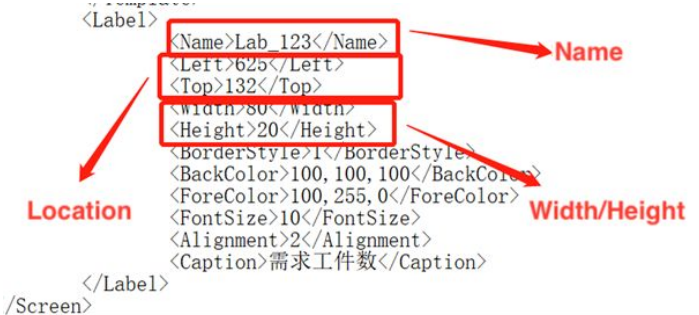

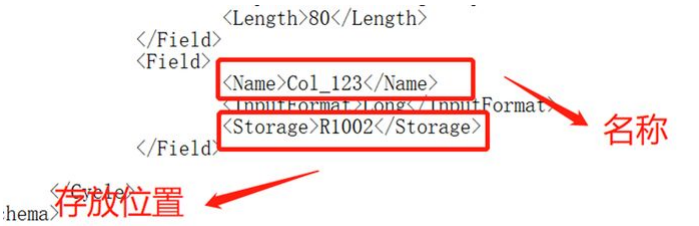
3.11.2 Customized work records

No	Steps specifications	Schematic diagram
1	<p>First prepare the following two XML files (copied from the standard path)</p> <p>Standard path:</p> <p>File 1: Disk\OpenCnc Shared\StdMMIRes\Screen\WorkRecord</p> <p>File 2: Disk\OpenCnc Shared\StdMMIRes\Common\Schema</p>	
2	<p>Put both XML files in the specified folder.</p> <p>Note: The path must be consistent with the diagram.</p>	

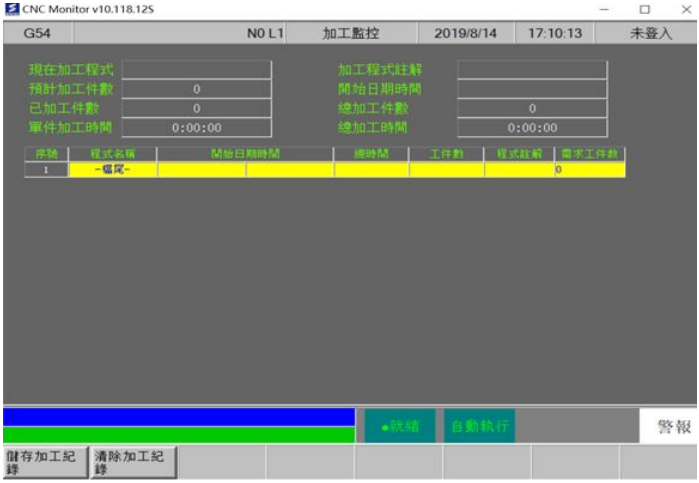


No	Steps specifications	Schematic diagram
3	<p>Open SyntecIDE or EHMI software and enter the standard work record page, as shown in Figure 2.</p> <p>On this page, the operations such as adding, modifying, resizing, positioning, etc. can be performed; for example, creating a number of demanded workpieces.</p> <p>Note: Please be aware of the location, width, height, and name when customizing.</p>	 <p>Figure 1 SyntecIDE Page</p>  <p>Figure 2 Standard work record page</p>

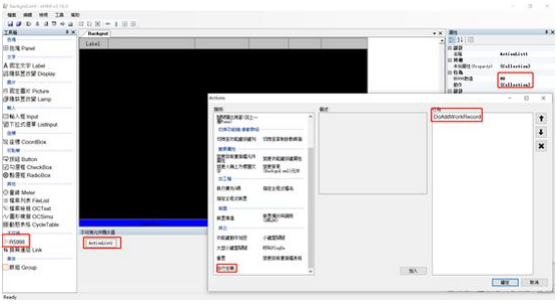


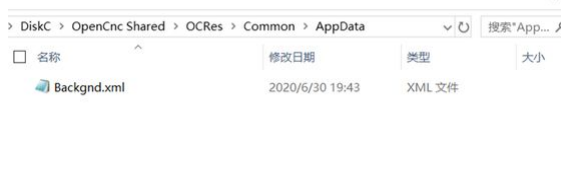


No	Steps specifications	Schematic diagram
4	<p>After the demanded workpiece is created on the work record page, a new column Label will be automatically added in Brw_WorkRecord_Main.xml to display the relevant information as shown in Figure 3. Then a Template file needs to be created inside that XML file (which can be copied and pasted) as in Figure 4, and modified for name, width, and height. Template is where the controller generated processing record data is displayed, and if it is not created, the content will not be displayed.</p>	 <pre> <Label> <Name>Lab_123</Name> <Left>625</Left> <Top>132</Top> <Width>80</Width> <Height>20</Height> <BorderStyle>1</BorderStyle> <BackColor>100, 100, 100</BackColor> <ForeColor>100, 255, 0</ForeColor> <FontSize>10</FontSize> <Alignment>2</Alignment> <Caption>需求工件数</Caption> </Label> /Screen> </pre> <p>Figure 3 Label</p>  <pre> </input> </Template> <Template Name="Col_123"> <input> <Width>80</Width> <Height>20</Height> <BorderStyle>1</BorderStyle> <BorderColor>255, 0, 0</BorderColor> <ForeColor>255, 255, 255</ForeColor> <BackColor>100, 100, 100</BackColor> <FontSize>10</FontSize> <Alignment>0</Alignment> <InputFormat>String</InputFormat> </input> </Template> </pre> <p>Figure 4 Template</p>
5	<p>Then create a <Field> document in OCRes\Common\Schema\Schema_WorkRecord.xml (which can be copied and pasted) as shown in Figure 5, and modify the name and R-value.</p> <p>Note: <Storage>R1002 represents the value of the number of demand workpieces to be stored on the R1002 register.</p>	 <pre> <Length>80</Length> </Field> <Field> <Name>Col_123</Name> <InputFormat>Long</InputFormat> <Storage>R1002</Storage> </Field> </pre> <p>Figure 5 Field</p>



No	Steps specifications	Schematic diagram
6	<p>Finally, turn on the controller and the required number of workpieces for the customization will appear, as shown in Figure 6.</p> <p>Note: (1) The name must be the same throughout the customization process. (2) The XML file modification and work record page cannot be operated at the same time. (3) Do not remove the "start date and time" field in the customization process, otherwise, the data will not be able to be captured by Cloud.</p>	 <p>The screenshot shows the CNC Monitor v10.118.12S interface. At the top, it displays 'G54', 'NO L1', '加工監控', '2019/8/14', '17:10:13', and '未登入'. The main area contains several data fields: '現在加工程式' (Current Program), '預計加工件數' (Estimated Workpieces), '已加工件數' (Completed Workpieces), and '單件加工時間' (Single Piece Processing Time). On the right, there are fields for '加工程式註解' (Program Note), '開始日期時間' (Start Date/Time), '總加工件數' (Total Workpieces), and '總加工時間' (Total Processing Time). Below these fields is a table with columns for '序號' (Serial No.), '程式名稱' (Program Name), '開始日期時間' (Start Date/Time), '總時間' (Total Time), '工件數' (Workpieces), '程式註解' (Program Note), and '需求工件數' (Required Workpieces). The first row shows '1', '一個尺', and '0'. At the bottom, there are buttons for '儲存加工紀錄' (Save Work Record), '清除加工紀錄' (Clear Work Record), '啟動' (Start), '自動執行' (Auto Execute), and '警報' (Alarm).</p> <p>Figure 6 Customized page</p>

3.11.3 Auto-generation of work records

No	Steps specifications	Schematic diagram
1	<p>The action that triggers the work record generation: DoAddWorkRecord</p> <p>Note:</p> <p>(1) This action can be customized.</p> <p>(2) It is recommended to use controller version 10.118.120 and later, the start time/total time after customization of the lower version will be abnormal.</p>	
2	<p>Automatic work record generation method. (For reference only)</p> <p>Use Backgnd.xml component and assign R5998 to trigger the action. As shown in the figure.</p>	 <p>The screenshot shows the HMI customization software interface. It displays a list of components on the left, including 'Label', 'CoordinateBox', 'Button', 'Checkbox', 'RadioBox', 'Slider', 'Text', 'List', 'Link', and 'Group'. The 'Label' component is selected, and its properties are shown in the main area. The 'Action' property is set to 'DoAddWorkRecord'. The 'Background' property is set to 'R5998'. The 'Text' property is set to 'DoAddWorkRecord'.</p>

No	Steps specifications	Schematic diagram
3	Place the set Backgnd.xml component in the specified location. DiskC\OpenCnc Shared\OCRes\Common\AppData	
4	Compile MACRO, such as using G0800 to conduct the value of R5998, where G10 is used. As shown in the figure.	 <pre> *G0800 - 记事本 文件(F) 编辑(E) 格式(O) 查看(V) 帮助(H) %@MACRO G10L1000 P5998 R98; G04 X4.; G10L1000 P5998 R0; G04 X3.; M99; </pre>
5	Place G0800 inside the NC file or other locations, and it will trigger the action of generating work records when G0800 is executed.	
6	<p>Set the controller M code work count, the parameter is Pr3804.</p> <p>Note: The value of Pr3804 should be consistent with the NC program M code, for example, if Pr3804=123, then there should be M123 in the NC program before it carries on counting.</p>	

No	Steps specifications	Schematic diagram
7	When M123 (work count) and G800 (generating work record) are placed in the NC program of the profile, then when this program is executed, a machining record will be generated. As shown in the figure.	

Contents of the old documents

Word record table can be customized by XML
Available version: 10.116.3, 10.116.0D, 10.114.56C

Display content of work record table

Work record table is saved by using Cyle Editor, so it is needed to define other Schema. The standard definition path: StdMMIRes\Common\Schema\Schema_WorkRecord.xml. User can copy that file to OCRES according path (OCRES\Common\Schema\Schema_WorkRecord.xml) for customization purpose.

To meet user demand, the Field in Schema is added <Storage> information that can defined register R as follows:

```
<?xml version="1.0" encoding="UTF-8"?>
<Schema>
  <Cycle name="CycleEdit">
    <Field>
      <Name>Col_User</Name>
      <InputFormat>String</InputFormat>
      <Length>20</Length>
      <Storage>R4010</Storage>
    </Field>
  </Cycle>
</Schema>
```

Once above example is executed, it will automatically write R4010 value in work record table.

Work record table page

Work record table page is defined in "StdMMIRes\Common\AppData\XML_WorkRecord.xml", user can copy this file to OCRES (OCRES\Common\AppData) to customize.

Condition to update work record table

User can set conditions to do ACTION for updating work record table, in which ACTION is "DoAddWorkRecord".

P.S. when part count is 0, this action is invalid.

4 Q&A

• **Q1: When editing the browser, how to select when objects cover each other?**

• A:

• **example:** Brw_PosCoord_2Axes.xml

• **action:**

a.

i. Select the panel you want to display. After selecting it, it is found that the panel is still not on the top of the editing area.

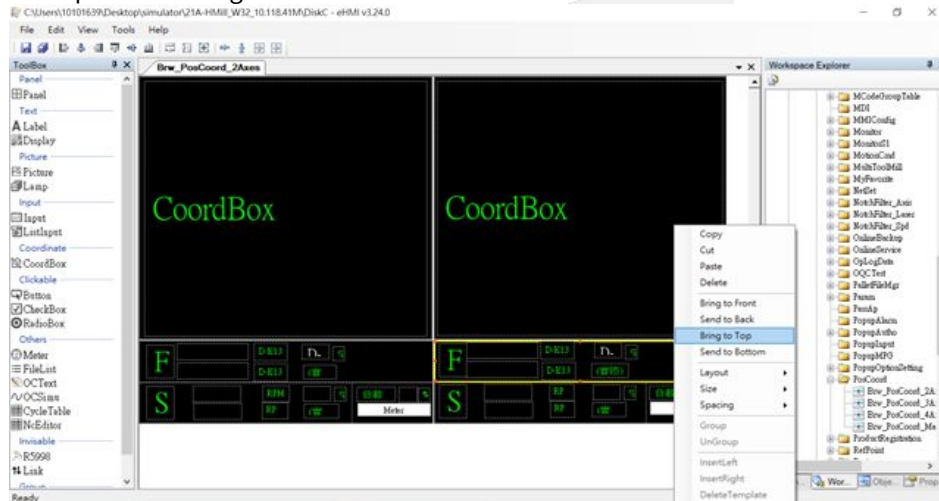


Figure 1. Select Panel

ii. Click "Bring to top ", as shown in the figure below, the objects are now on the top of the screen.



Figure 2. Function: objects front display

• **Q2: The HELP content is too large, causing slow online display**

• A:

• If the content of the HELP file is too large, it may cause slow online display. Suggested measures for conversion are as follows

- Open the alert file *.doc with WORD
- Copy the content to <http://word2cleanhtml.com/> and use clear htm to convert
- Paste the text which you want to convert to the notebook
- Save as *.htm (choose UTF-8 for encoding).

PS: If the image cannot be displayed after conversion, please delete the following string in the image path.

<http://word2cleanhtml.com/s/>

For example, suppose that after conversion, the complete string of the image path is

Now, need to be changed to

• **Q3: There is no MMIconfig.xml in the customized HMI folder**

• A:

- When you customize the HMI for the first time, you will not see the MMIconfig.xml file in the OCRes folder. At this time, you can get it through the following methods
- For versions before 10.116.10A, please use Notepad to add a file and paste the following content:

```
<?xml version="1.0" encoding="UTF-8"?>
<MMIconfig>
</MMIconfig>
```

Then save a new file, change the file extension to .xml, and select UTF-8 as the encoding



- For versions after 10.116.10A, use F5 Maintenance -> F5 Environment Setting -> F8 set HMI parameters, and then you can set the relevant HMI options on the controller. If you want to modify the MMIconfig.xml file directly with the computer, you can also use this function. After changing any HMI option, the controller will generate a MMIconfig_Customer.xml under the OCRes\\Common\\ folder, and export the HMI file to be able to modify the relevant parameters manually.

• **Q4: The CE7 text in custom Help is too small**

• A:

- The text size of the customized HELP file is normal in CE6 system, but it looks small in CE7. Just add the following syntax to Helpxxxxx.html file to display normally
- Open the Help file and add
`<meta name="viewport" content="width=device-width, initial-scale=1.0, user-scalable=no, minimum-scale=1.0, maximum-scale=1.0" />`

- **Q5: Edit and execute the machining page but it doesn't respond**

- A:

- In the page file in StdMMIRes, there is MonSTDData.xml machining execution page file, which belongs to the standard HMI file. It is strongly recommended not to change the original objects in it. If you use eHMI to edit, you will find that the newly added objects will not be displayed or the Action will not work.

- **Q6: Change the attributes of the current browser objects but no response in the machining execution page**

- A:

- Change the current browser objects attribute is specially provided for the custom screen. If it is executed under the standard screen (such as machining execution page), there will be no response.

- **Q7: How to know what the browser file name and button bar name correspond to which screen on the standard HMI?**

- A:

- i. Use the "simulator" to turn to the page you want to know, and then press "Shift + F12"
- ii. A window will pop up showing the browser file name and button bar name, and it will switch to an empty button bar

SYNTEC



1. "browser" shows the file path of the current browser after pressing Shift + F12
If there are multiple browsers at the moment, the one with focus will be displayed
If there is no browser at the moment, this field will be blank
 2. "button bar name" shows the name of the current button bar when pressing Shift + F12
- iii. Click the [Copy browser file name] button, and the file name (without path) will be copied to the scrapbook, as the purple text "Brw_PosCoord_Main.xml" shown in the figure.
 - iv. Click the [Copy button bar name] button, the button bar name will be copied to the scrapbook, as the purple text "main" shown in the figure
 - v. Press [OK] or the [X] button in the upper right corner to close this window and switch the button bar back to the previous layer
 - vi. No button operation is provided, this window is all controlled by clicking the button with the mouse
 - vii. After copying the file name, you can use the file name search function of SI to find the file (Please refer to Syntec IDE Operation Manual.)
 - viii. After copying the name of the button bar, you can use the search function of eHMI to find the button bar (Please refer to eHMI 3 Manual)

5 Compatibility change

5.1 HMI browser scaling mode

version	HMI screen size	Custom screen size automatic scaling
Before 10.116.0 (not included)	according to the setting value of backgnd	No automatic scaling, the screen exceed the boundary cannot be displayed
10.116.0 ~ 10.116.0B	according to the setting value of backgnd	The size of the HMI screen will be automatically scaled to the set length and width
After 10.116.0B (included)	according to the setting value of backgnd	You can choose whether the HMI screen is automatically scaled to the set length and width in MMIconfig_Customer.xml (default: unable automatic scaling)
10.116.53, 10.117.53(included)	according to the setting value of backgnd	<ul style="list-style-type: none"> • Add EQUALPROP, equal scaling • xmlbrowser can attach <Width><Height> tag to identify the size of xml, as a reference for scaling.

- **scaling function settings**

- **configuration file path:** DiskC:\OcRes\Common\MMIconfig_Customer.xml

- **configuration file obtained:**

- **First time development and customization:** add files manually.

- **Second time development and customization:** refer to the appendix backup function

- **configuration file format:**

```
<?xml version="1.0" encoding="UTF-8"?>
<MMIconfig>
<Common>
<ScreenStretchType>AutoFit</ScreenStretchType>
</Common>
</MMIconfig>
```

- **configuration file description:** AutoFit means automatic scaling; Normal means no scaling (default); EQUALPROP means equal scaling.

- **Installation method:** refer to the appendix eHMI package installation.

- **Compatibility change:**

- After 10.116.53, 10.117.53 (inclusive)

- The xmlbrowser can be attached with <Width><Height> tag, and the system will scale this size to the HMI according to NORMAL/AUTOFIT/EQUALPROP.

- For example, Pan_Backbone size is 800x470, xml file Width=400, Height=235. Then the width and height of the browser will be stretched twice.

5.2 HMI folder structure adjustment

fenubar custom method	valid version	usage method
10.114.45 (inclusive) before	OCRes single folder	Standard and customized data are in this folder
10.114.46/ after 10.116.0 (inclusive)	standard folder StdMMIRes	Syntec standard HMI, it is not recommended to modify
	Barebones folder PrdMMIRes	Syntec standard HMI, it is not recommended to modify
	custom folder OCRes	Specific for machine manufacturer custom

- Priority is OCRes> PrdMMIRes> StdMMIRes
- Please refer to "HMI Architecture" in this chapter for the classification of browser in the folder, multi-language and other data.

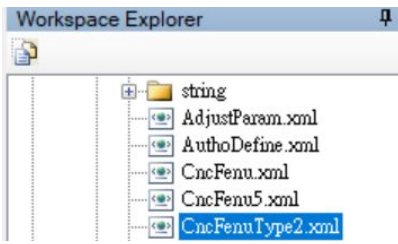
5.3 fenubar custom method

fenubar custom method	valid version	usage method
F3 is displayed as "custom fenubar" Use CusCncFenu.xml	From start	introduce in this section
ModifyFenu, AttachFenu	10.114.46(inclusive)/ after 10.116.0(inclusive)	refer to "custom fenubar" in this article

- Priority is ModifyFenu>AttachFenu>Cuscncfenu

F3 display as "custom fenubar"

- **file path:** OCRes\\Common\\CusCncFenu(5).xml
- **file obtained:**
 - **First time development and customization:** add files manually
 - **Second time development and customization:** refer to the appendix backup function
- **usage method:**
 - If the file exists, the F3 of the standard fenubar will be displayed as "custom fenubar"
 - Edit the button bar with eHMI
 - The eight-button file name is CusCncFenu.xml, and the five-button file is CusCncFenu5.xml
 - The name of the button bar is CusCncFenu (five buttons and eight buttons have the same name), this is the first button bar that appears after pressing F3



- **Installation method:** refer to the appendix eHMI package installation。



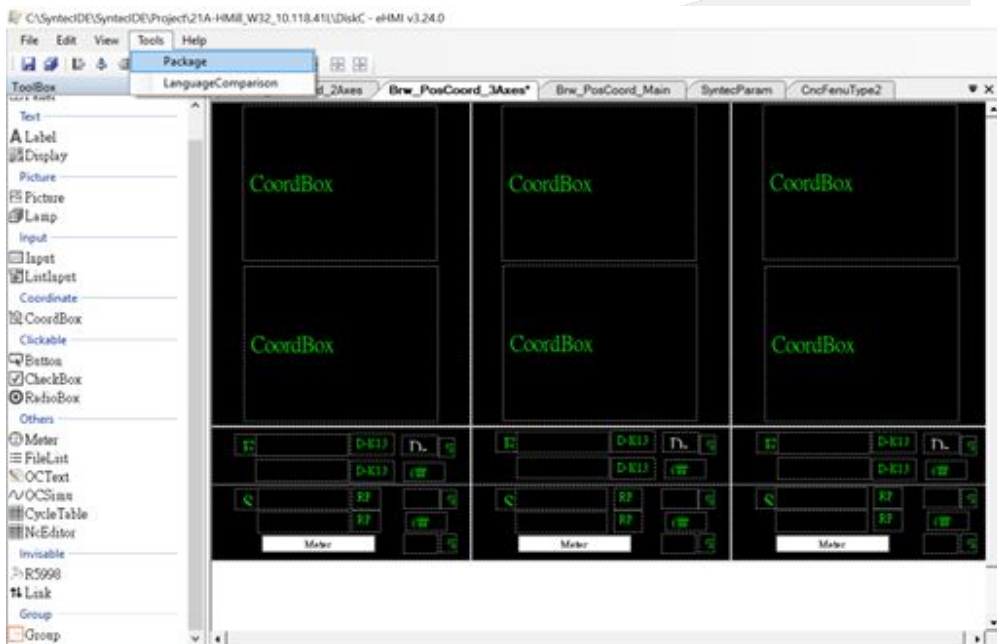
SYNTEC

6 Appendix

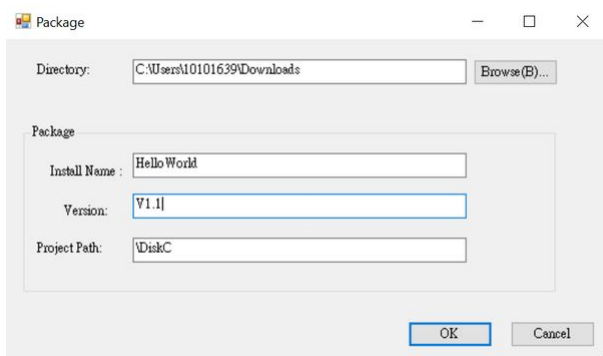
6.1 Assist development functions

6.1.1 eHMI package function

- **tool:** eHMI
- **operating procedures:**
 - path: tool -> create installation file -> package the directory



- enter various information
 - Package the directory: select the head folder to be packaged
 - Installation name: displayed when the software is installed, it is unnecessary to fill in.
 - version number: displayed when the software is installed, it is unnecessary to fill in.
 - Installation destination: The path where the packaged installation file install to the controller.



- Installation file format
 - compressed file
 - create location: Under the root directory at the front end of the package file path

• Example 1

- **requirement:** Package custom folder OCREs (the folder contains all the custom files)

- **action:**

- i. path: tool -> create installation file -> package the directory
- ii. package directory path: C: \\XXX\\YYY\\...\\OCRes
- iii. installation destination: \\DiskC
- iv. Press OK, the installation file is generated in the root directory of Disk C

• Example 2

- **requirement:** Package Ladder files, parameter files and custom folders OCREs

- **action:**

- i. Place the ladder file, parameter file, and customized folder in a folder named DiskC, and the path corresponding to files follows the path specified by each
- ii. eHMI path: tool -> create installation file -> package the directory
- iii. package directory path: D: \\XXX\\YYY\\...\\DiskC
- iv. installation destination: keep blank
- v. Press OK, the installation file is generated in the root directory of Disk D



SYNTEC

7 Online Help (using htm type)

7.1 Online Help

The CE controller can provide a friendly on-line help on the interface, with pictures and text to help the operator to easily understand the operation of the controller.

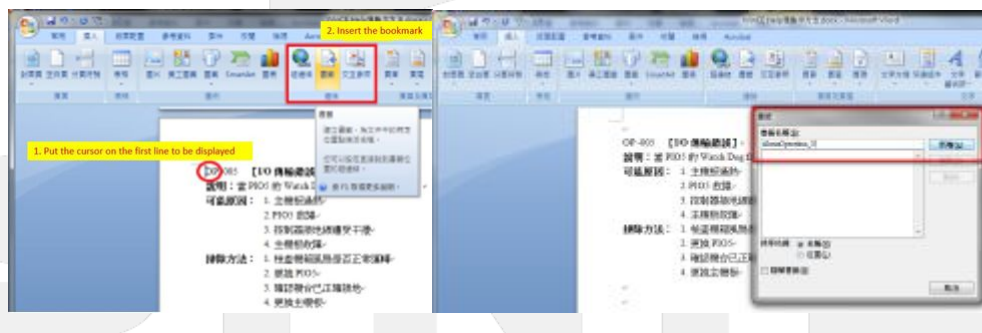
- valid version:
 - standard page: From Start
 - custom page: From 10.116.22, 10.117.22
- file path: DiskC\\OCRes{color: #0000ff}L\\Help, where L is the name of the language
- file name:
 - The file names corresponding to each interface of the standard HMII are shown in the table below. In order to quickly obtain the alarm information, alarm part needs to be used with the Word node setting.
 - The online help is an htm file and it's correspond file name is same as the xml file name of the browser.

Example: If the customized browser is ABC.xml, the online help file name is ABC.htm

interface name	Help file name	interface name	Help file name
machine settings	HelpPosition.htm	diagnostic interface I Bits	HelpDiagIBits.htm
workpiece coordinate settings	HelpWorkPiece.htm	diagnostic interface O Bits	HelpDiagOBits.htm
program editing	HelpProgram.htm	diagnostic interface C Bits	HelpDiagCBits.htm
graphical simulation	HelpSimulation.htm	diagnostic interface S Bits	HelpDiagSBits.htm
graphical simulation parameter settings	HelpSimuParam.htm	diagnostic interface A Bits	HelpDiagABits.htm
file management	HelpFileMgr.htm	diagnostic interface R Bits	HelpDiagRBits.htm
machining execution	HelpRun.htm	diagnostic interface Timer	HelpDiagTimer.htm
profile selection interface	HelpSelectFile.htm	diagnostic interface Counter	HelpDiagCounter.htm
machining execution parameter settings	HelpRunParam.htm	diagnostic interface Ladder	HelpDiagLadder.htm

interface name	Help file name	interface name	Help file name
machining record form	HelpWorkRecord.htm	diagnostic interface system data	HelpDiagSysData.htm
milling tool settings	HelpMillTool.htm	diagnostic interface shared variable	HelpDiagGlobal.htm
lathe tool settings	HelpLatheTool.htm	diagnostic interface program variable	HelpDiagCoord.htm
alarm interface	HelpAlarm.htm	system alarm	HelpSystemAlarm.htm
parameters settings interface	HelpParameter.htm	PLC alarm	HelpPLCArm.htm
		MACRO alarm	HelpMacroAlarm.htm

- file format:
 - Only *.htm format is supported. After editing the Help content in Word, save the new file as "filtered website" format, and name it according to the above table.
 - Due to the large number of alarm description files, in order to quickly obtain the description information of the corresponding alarms, it is recommended to refer to the following descriptions for setting.
 - i. Confirm the alarm to be modified and the corresponding bookmark name
 - ii. Use Word to set bookmarks
 1. Put the cursor on the first line to be displayed
 2. insert=>bookmark=>bookmark name



- Installation method: refer to the appendix eHMI package installation, and place the corresponding file in the corresponding path.