

WEINTEK IIOT LTD.

CODESYS - Recipe Manager

Recipe Manager Function and Usage

Demo Project

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1. Overview

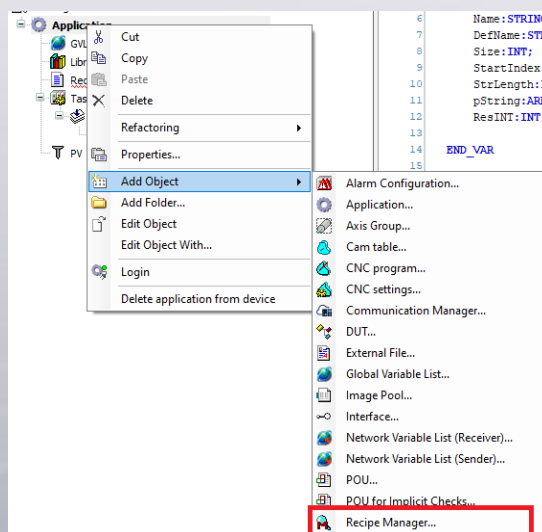
In modern automation systems, it is common for the equipment to produce different products, each with its unique set of parameters. These specific combinations of parameters are known as "Recipes".

Weintek built-in CODESYS offers the Recipe Manager function, enabling users to store recipe data in files that can be accessed and edited on a PC. When needed, the recipe data can be manually imported through the CODESYS interface or loaded using the RecipeManCommand function block.

2. Adding Recipe Manager

Visit the Weintek website's download page at:

<https://www.weintek.com/globalw/Download/Download.aspx> and search for the [cMT+CODESYS Package] to download. Install the package and add Recipe Manager to your application by selecting [Application] » [Add object] » [Recipe Manager].



In Recipe Manager, select [Add Object] » [Add Recipe Definition].

3. Recipe Manager Settings

Storage Type

<Binary> : Recipes stored in Binary format can only save the “Current Value” information.

<Textual> : Recipes stored in Textual format can save various information such as “Current Value”, “Variable”, “Type”, “Name”, “Comment”, “Minimal Value”, and “Maximum Value”.

File Extension

The file extension of the Recipe file. The default filename of a Recipe file follows this format:

<recipe>.<recipedefinition>.<recipeextension>

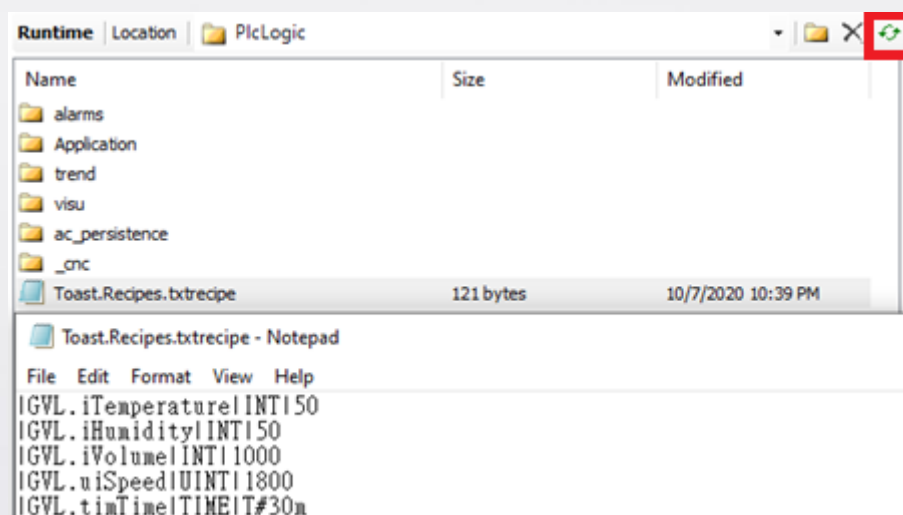
Separator

The Recipe file uses a designated symbol to separate each item.

Separator		
<input type="radio"/> Tab	<input type="radio"/> Semicolon	<input type="radio"/> Comma
<input type="radio"/> Space	<input type="radio"/> :=	<input checked="" type="radio"/>

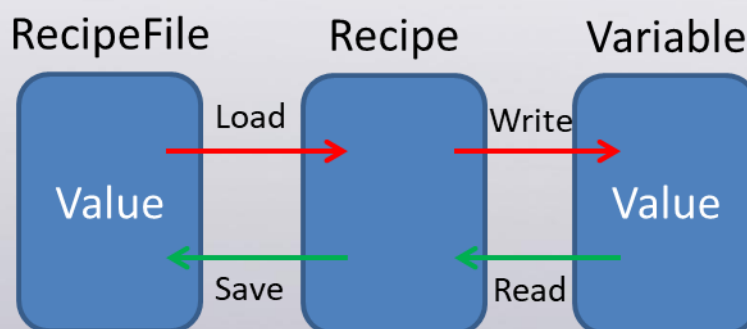
4. Operation

After logging into the demo project, the Recipe file created in CODESYS can be found under the [Device] » [Files] » [PlcLogic] folder. If the Recipe file is not displayed in the folder, click the refresh button.



RecipeManCommand Function Block

The RecipeManCommand function block provides commands to operate Recipe Manager within the program.



Load: Load the Recipe from the Recipe file.

Save: Save the Recipe to the Recipe file.

Write: Write a value from the Recipe to a PLC variable.

Read: Read a value from a PLC variable into the Recipe.

CODESYS Recipe Manager Interface Operations

Load PLC variable to Recipe file

Right-click on the recipe and select “Write Recipe” to write the recipe to the PLC variable.

Variable	Type	Name	Comment	Minimal Value	Maximal Value	Current Value	Toast
GVL.iTemperature	INT					50	50
GVL.iHumidity	INT					50	50
GVL.iVolume	INT					1000	1000
GVL.uiSpeed	UINT					1800	1800
GVL.timTime	TIME					T#30m	T#30m

Save PLC variable to Recipe file

Right-click on the recipe and select “Read Recipe” to read the PLC variable into the recipe.

Add Recipe

Right-click on the recipe and select “Add a New Recipe” to create a new recipe. The parameters in the recipe will be populated with the current values of the PLC variable.

Remove Recipe

Right-click on the recipe and select “Remove Recipe” to delete the recipe.

Modify Recipe

- Step 1.** Double-click on a cell in the Variable field in the Recipe interface to modify the value.
- Step 2.** Edit the values in the Recipe file and click “Load Recipe” in the Recipe interface. To write the values to the variables, click “Load and Write Recipe”.

Variable	Type	Curren...	Toast
GVL.iTemperature	INT	100	50
GVL.iHumidity	INT	500	50
GVL.iVolume	INT	2000	1000
GVL.uiSpeed	UINT	3600	1800
GVL.timTime	TIME	T#1h	T#30m

RecipeManCommand Function Block

Refer to the demo project for operation reference.

Load PLC variable to Recipe file

If the recipe is not loaded, the current values of variables are all 0.

Variable	Type	Curren...	Toast
GVL.iTemperature	INT	0	50
GVL.iHumidity	INT	0	50
GVL.iVolume	INT	0	1000
GVL.uiSpeed	UINT	0	1800
GVL.timTime	TIME	T#0ms	T#30m

Trigger “xRestore_Variable” to load the recipe with the variable values.

Variable	Type	Curren...	Toast
GVL.iTemperature	INT	50	50
GVL.iHumidity	INT	50	50
GVL.iVolume	INT	1000	1000
GVL.uiSpeed	UINT	1800	1800
GVL.timTime	TIME	T#30m	T#30m

*If the source of recipe values is a Recipe file, use the command

“LoadFromAndWriteRecipe”.

Save PLC variable to Recipe file

Modify the current values of variables and trigger “xSave_Variable” to save the variable values to the recipe.

Variable	Type	Current Value	Toast
GVL.iTemperature	INT	100	50
GVL.iHumidity	INT	500	50
GVL.iVolume	INT	2000	1000
GVL.uiSpeed	UINT	3600	1800
GVL.timTime	TIME	T#1h	T#30m

Click “Upload Recipes from Device” to refresh the recipe.

Variable	Type	Curren...	Toast
GVL.iTemperature	INT	100	100
GVL.iHumidity	INT	500	500
GVL.iVolume	INT	2000	2000
GVL.uiSpeed	UINT	3600	3600
GVL.timTime	TIME	T#1h	T#1h

*To read the current values to the recipe, use the command “ReadRecipe”.

*To read the current values to the recipe and save them to a specific Recipe file, use the command “ReadAndSaveRecipeAs”.

Add Recipe

Trigger “xCreate_New_Recipe” to create a new recipe with the current values of variables and save it to the Recipe file.

Click “Upload Recipes from Device” to refresh the recipe.

Variable	Type	Current Value	Toast	Bread
GVL.iTemperature	INT	100	100	100
GVL.iHumidity	INT	500	500	500
GVL.iVolume	INT	2000	2000	2000
GVL.uiSpeed	UINT	3600	3600	3600
GVL.timTime	TIME	T#1h	T#1h	T#1h









*To create a new recipe without saving it to a Recipe file, use the command “CreateRecipeNoSave”.

Delete Recipe









Trigger “xDelete_Recipe” to delete the recipe and its associated Recipe file.

Modify Recipe

Trigger “xEdit_Recipe” to retrieve the values in the recipe, displayed as a string array.

 sEdit_Recipe_Name	STRING	'Toast'
  asVariable_Value	ARRAY [0..Max_Variable_T...	
 asVariable_Value[0]	STRING	'50'
 asVariable_Value[1]	STRING	'50'
 asVariable_Value[2]	STRING	'1000'
 asVariable_Value[3]	STRING	'1800'
 asVariable_Value[4]	STRING	'T#30m'

Modify the values in the string array of the recipe and set “xSet_Recipe_Values” to TRUE. Trigger “xEdit_Recipe” again to write the new values to the recipe.

 sEdit_Recipe_Name	STRING	'Toast'
  asVariable_Value	ARRAY [0..Max_Variable_T...	
 asVariable_Value[0]	STRING	'100'
 asVariable_Value[1]	STRING	'220'
 asVariable_Value[2]	STRING	'2000'
 asVariable_Value[3]	STRING	'3600'
 asVariable_Value[4]	STRING	'T#1h'

*At this point, only the recipe values are modified. To save the values to the Recipe file, use the command “SaveRecipe”.

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