FAQ-APP-01: UA Web UI Function Wizard – APP Message Notify - How to set up APP Message Notify function: IFTTT Condition Trigger (Line, Twitter) ? (Use M-7055D)

The "**IFTTT Condition Trigger (Line, Twitter)**" combines the functions of the **UA and IFTTT cloud platform**. When the modules occur the special events that setting in the UA condition, it will trigger the IFTTT and send the message to the IFTTT-related cloud services (such as Line, Twitter, etc.)

The settings for sending the message to the APP with the "IFTTT Condition Trigger (Line, Twitter)" function includes two parts:

- **IFTTT Cloud Platform Setting: (It must be set before setting up the UA project)**

  In the IFTTT website, set up the "**if**" side service and event (**this**: use **webhooks** for the UA), the "**then**" side service and action (**that**: user can select the service, such as the Line, twitter, etc.). And then fill the "**Event Name**" and "**Key**" getting from the IFTTT website setting into the "**Content Setting**" of the UA We HMI. Please refer **FAQ-app-02:** http://www.icpdas.com/web/product/download/iiot/ua//faq/FAQ-en-app-02.pdf



- **UA Web Interface Setting:** (Set up via Advanced Setting > IFTTT Condition Trigger)

  In the UA Web HMI, set up the UA controller, modules, IFTTT trigger conditions, the condition variable table, and the IFTTT event connection. (Fill the IFTTT **Event Name** and authentication **Key** in the IFTTT step of the project into the "**Content Setting**" of the UA web interface)

[Step Box]:
The Step Box of the [**IFTTT Condition Trigger (Line, Twitter)**] has 6 steps as below. When enabling the Step Box, it auto enters the first step setting page (The step with a bold underline means it is the current step.). The user just needs to follow the "Step Box" step-by-step and then can complete the project.

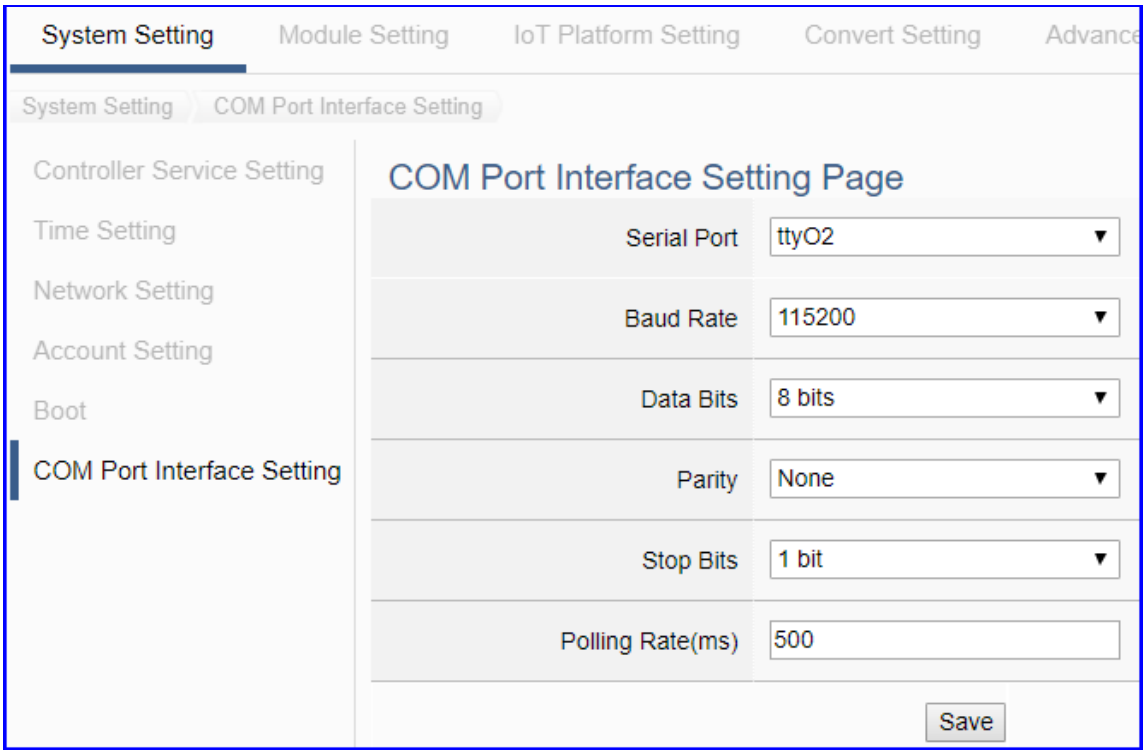


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Step 1. Controller COM Port Setting



This page allows display and set the COM port interface of the controller for the serial communication. The user can find the default communication values of our I/O modules from the module CD, manual or I/O Module website.



COM Port Interface Setting Page	
Serial Port	Choose the serial port of UA controller that links with the I/O module. ttyO2: RS-485 ; ttyO4: RS-232 ; ttyO5: RS-485
Baud Rate	Choose a baud rate to communicate with the module: 1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200. The UA controller and the I/O module need have the same baud rate.
Data Bits	The number of bits used to represent one byte of data: 7 bits or 8 bits. Default: 8 Bits.
Parity	Choose one way for the parity checking. Options: None, Even, and Odd. Default: None.
Stop Bits	Choose the number of stop bit: 1 bit or 2 bits. Default: 1.
Polling Rate(ms)	Set a time interval for the command. Default: 500 ms
Save	Click [Save] button could save the settings of this page.

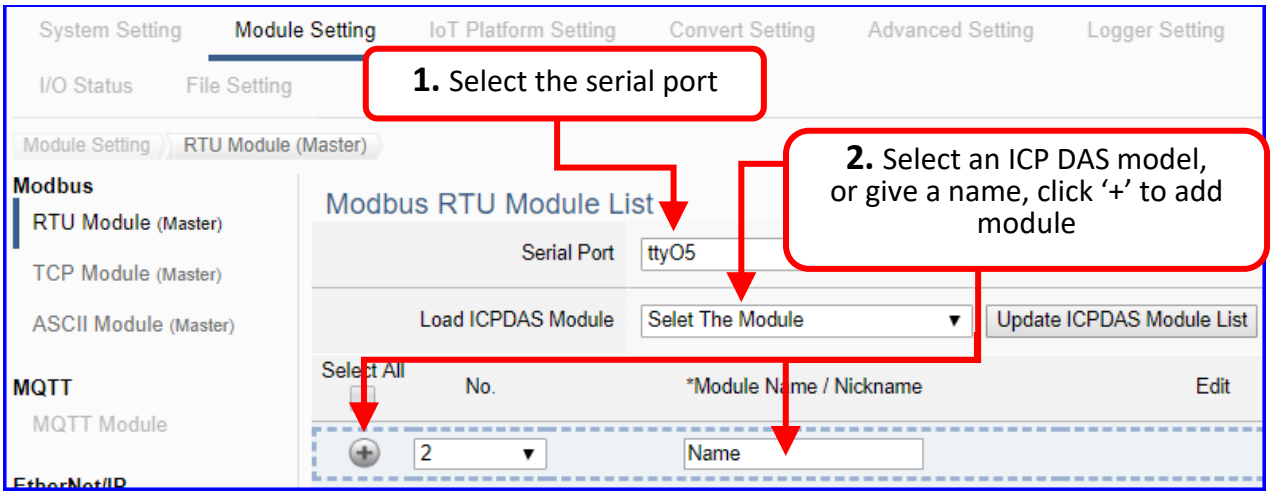
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Step 2. Module Setting

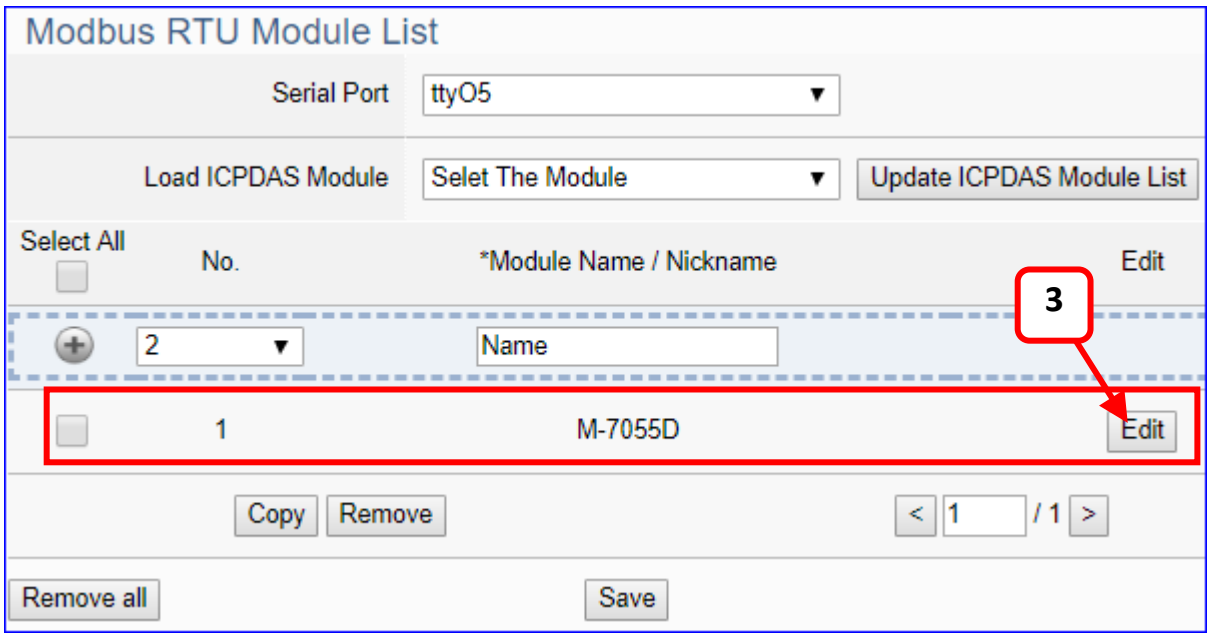


Click the next step, and enter the **Step 2 [Module Setting]** of the UI setting. This page is for setting the communication values with the connected modules.

First, choose the serial port that connected with the module. If use ICP DAS module, select the model to auto load the module setting. If not, give a name (Default: Name), click [⊕] button to add a module.



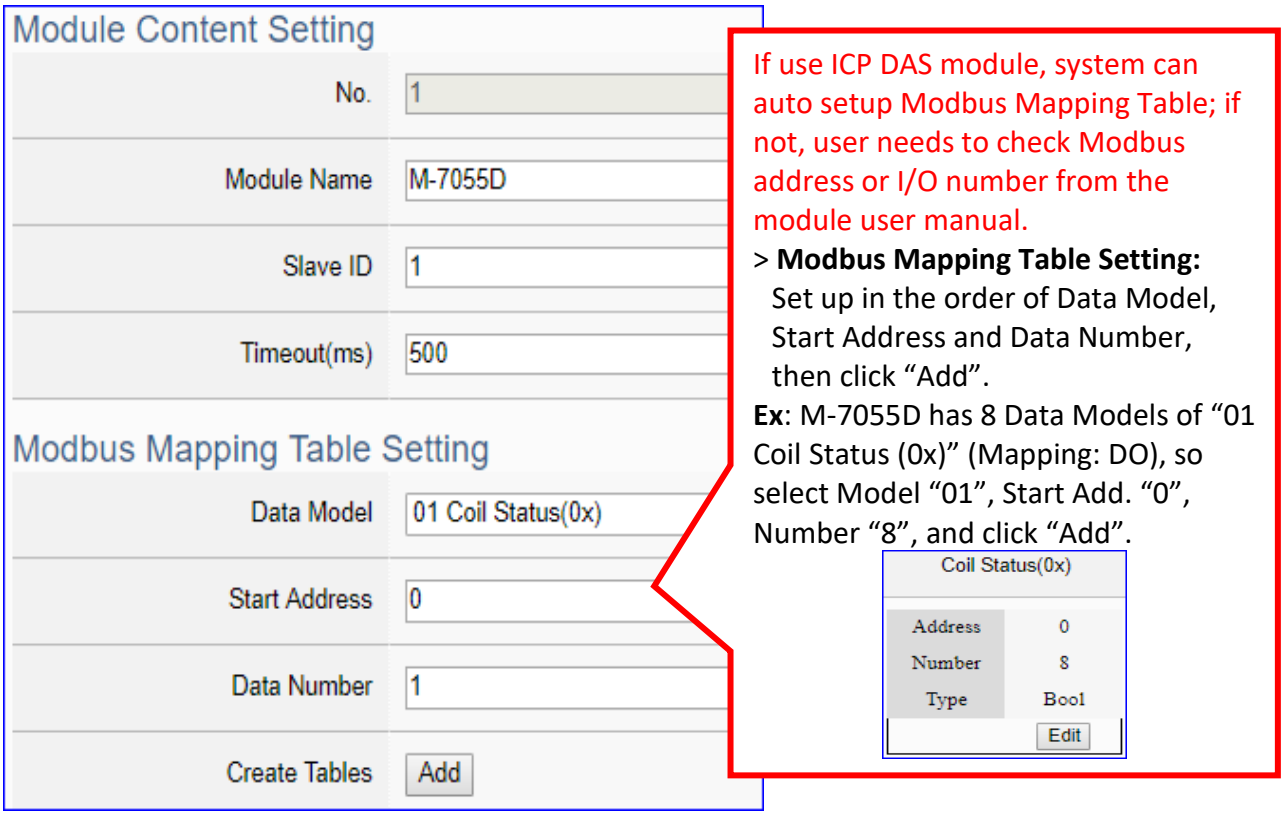
Add a module (Ex: **M-7055D**) as below, and then click [Edit] button to enter the "Module Content Setting" page.



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If set up a wrong module, user can click the box in the left side of the module number and click the [Remove] button to delete the module.

[**Module Content Setting**] page can set up the module and the Modbus address mapping table:

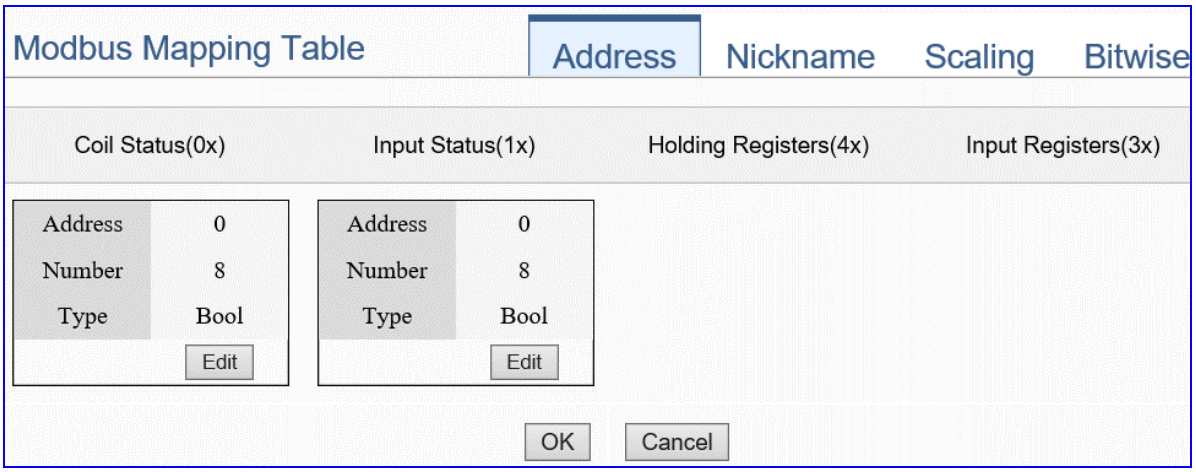


Module Content Setting	
No.	The module number in the module list (Not editable here)
Module Name	Give a name, e.g. model number or name. Default: Name.
Slave ID	Set the module Slave ID of the UA. (Range: 1 ~ 247)
Timeout	Set the timeout value for the module. Default: 500 ms
Modbus Mapping Table Setting	
Data Model	System provides 4 Modbus data models “01” ~ “04” for mapping to address of DO, DI, AO and AI. (ex. 01: DO channels, 02: DI, 03: AO, 04: AI) 01 Coil Status(0x) 02 Input Status(1x) 03 Holding Registers(4x) 04 Input Registers(3x)
Start Address	The start address of the Modbus command. **Note:** the Start Address of UA is bass on 0, even if some modules are bass on 1, here it needs to follow UA to set bass on 0.
Data Number	The number of the Modbus address. Need to give enough number for the DO, DI, AO, AI channels of the module. Default: 1.
Type	This item only when the data model is 03 or 04. Choose the suitable data type: 16-bit Short, 16-bit Unsigned Short, 32-bit Long, 32-bit Unsigned Long, 32-bit Float, 64-bit Double.
Create Tables	Click [Add] button, it will add a table in the Modbus mapping table.

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The finished Modbus Mapping Table as below is in order of DO, DI, AO and AI.

Address:
Display and edit the Modbus Mapping Table.

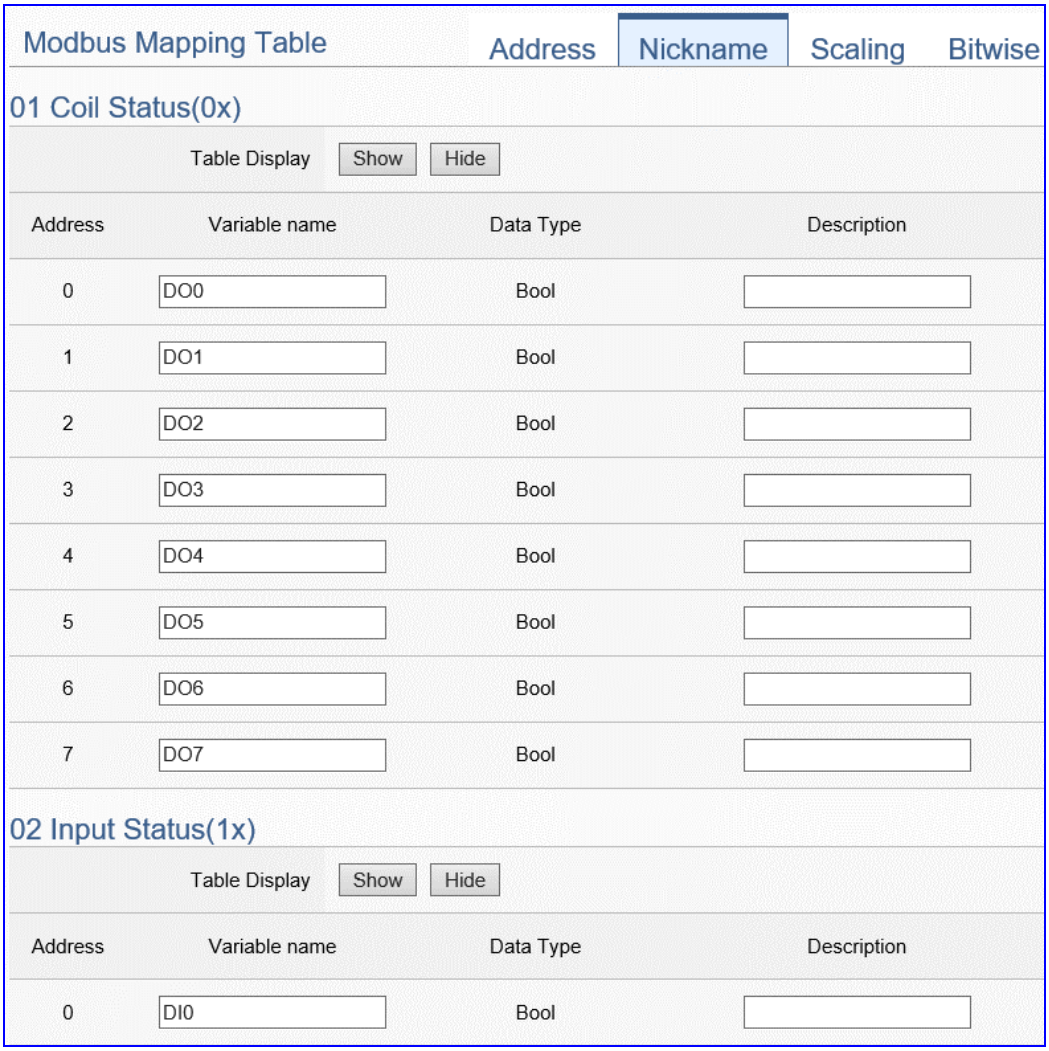


If user selects ICP DAS module, the system will auto set up the Modbus Mapping Table. If not, user needs to check the module Modbus address or I/O number from the module user manual.

Modbus Mapping Table – Address Setting	
Address Setting	The “Address Setting” page of the Modbus Mapping Table
Nickname Setting	Click can switch to the The “Nickname Setting” page of the Modbus Mapping Table. (Next page)
Modbus Mapping Table	Coil Status(0x): Mapping to DO Modbus address Input Status(1x): Mapping to DI Modbus address Holding Registers(4x): Mapping to AO Modbus address Input Registers(3x): Mapping to AI Modbus address
Address	The start address of the Modbus command. Default: 0. **Note:** the Start Address of UA is bass on 0, even if some modules are bass on 1, here it needs to follow UA to set bass on 0.
Number	The number of the Modbus address. Need to give enough number for the DO, DI, AO, AI channels of the module. At least 1.
Type	DO/DI type: Bool (Boolean) AO/AI type: depend on setting of [Modbus Mapping Table Setting]
Edit	Click to change the address and Number.
Delete	Click to delete this address table.
Save	Click to save and exit this table editing.
Cancel	Click to exit without saving and back to the module list page.
OK	Click to save this page settings and back to the module list page.

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Nickname:
Setting the variable nickname and description.



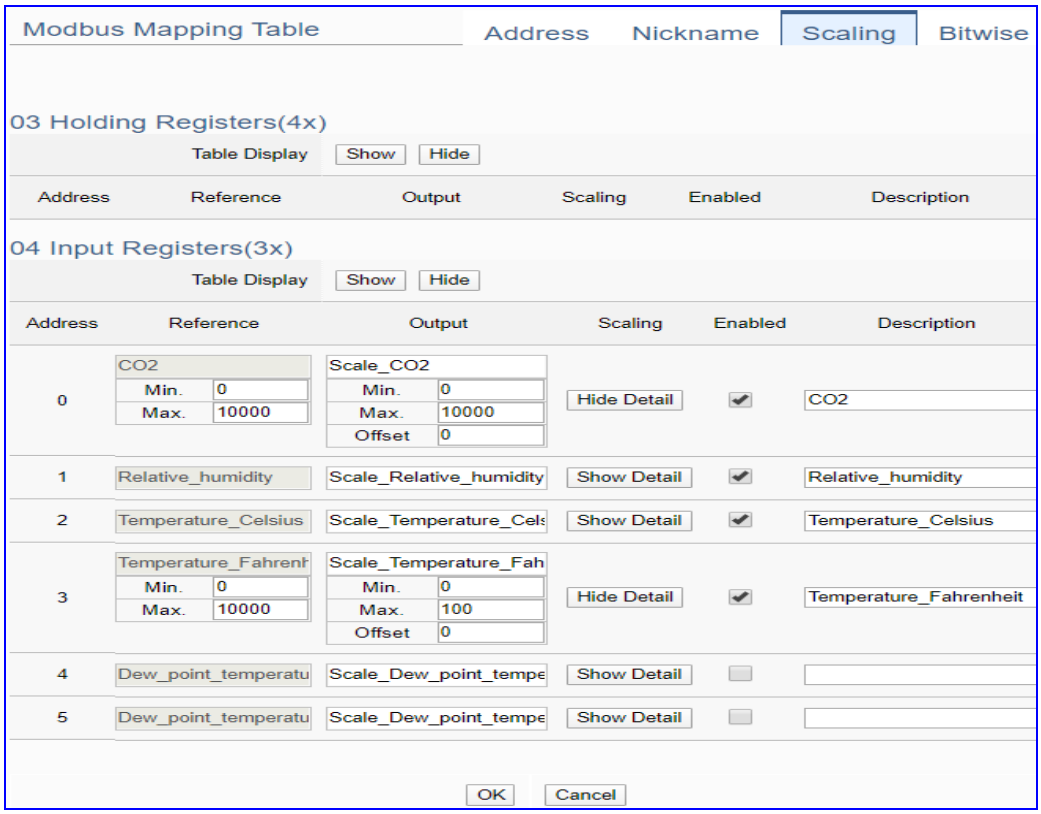
Modbus Mapping Table – Nickname Setting	
Modbus Mapping Table	Coil Status(0x): Mapping to DO Modbus address Input Status(1x): Mapping to DI Modbus address Holding Registers(4x): Mapping to AO Modbus address Input Registers(3x): Mapping to AI Modbus address
Table Display	Click [Show] to display all fields, click [Hide] to hide some fields.
Address	Modbus address. System auto arrange.
Variable name	The variable name of the mapping address. Default: Tag0 and auto arrange the number. User can define the name.
Data Type	Display data type of the variable. (Not editable)
Swap	Check to swap the byte order (Lo-Hi/Hi-Lo) for 4-byte or 8-byte.
Description	Write a note for this variable.
OK	Click to save this page settings and back to the module list page.

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Scaling:

Scaling is only available in the AI/AO settings of Modbus RTU/TCP. When the variable value needs to be scaled or converted before output, click the "**Advanced Setting**" button of the variable on the **Scaling** page, input the **Min**./**Max**./**Offset** of the Reference/Output items, add a description, and check "**Enable**" box, The Scaling conversion function will be activated.

The M-7055D has no AI/AO, so here uses the screen of DL-302 for an example.



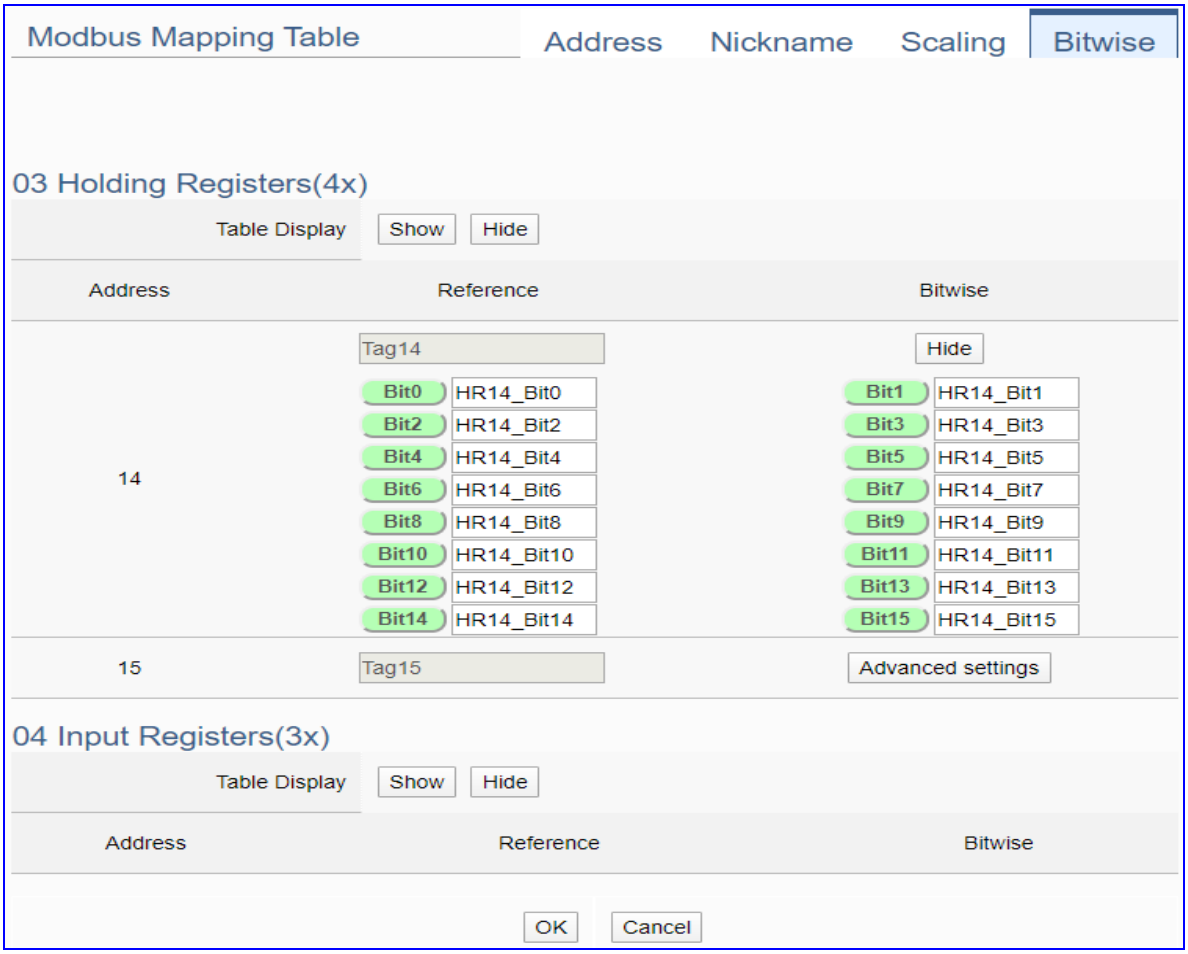
Modbus Mapping Table – Scaling	
Modbus Mapping Table	Holding Registers(4x): Mapping to AO Modbus address Input Registers(3x): Mapping to AI Modbus address **Scaling do not support 01 Coil Status(0x):DO & 02 Input Status(1x):DI**
Table Display	Click [Show] to display all fields, click [Hide] to hide some fields.
Address	Modbus address. System auto arrange.
Reference	The I/O variable of the Modbus address.
Output	The scaling variable for scaling output. User can define the variable name.
Scaling	Click [Show Detail] to set up the Scaling parameters, and click [Hide Detail] to hide the parameters. Fill in the Min/Max range values of the source in the Reference column. Fill in the Min/Max range values after scaling in the Output column. If needs offset, fill the offset value in the Offset item. Remember check “Enable” box.
Enable	Check the box of the variable can enable just that variable for scaling.
Description	Write a note for this variable.
OK	Click to save this page settings and back to the module list page.

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Bitwise:

Bitwise is only available in the AI/AO settings of Modbus RTU/TCP. When the data needed to take out the value of the specified bit, fill in the variable name in the specified Bit# of the required address, and the value of the bit can be output to the filled variable.

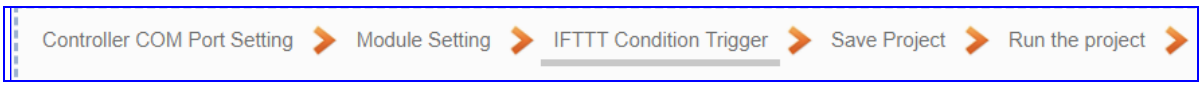
The M-7055D has no AI/AO, so here uses other module's setting screen as an example.



Modbus Mapping Table – Bitwise	
Modbus Mapping Table	Holding Registers(4x): Mapping to AO Modbus address Input Registers(3x): Mapping to AI Modbus address **Bitwise do not support 01 Coil Status(0x):DO & 02 Input Status(1x):DI** **Bitwise do not supports 32-bit Float & 64-bit Double data types.**
Table Display	Click [Show] to display all fields, click [Hide] to hide some fields.
Address	Modbus address. System auto arrange.
Reference	The Bit# variables of the Modbus address.
Bitwise	Set up the variables for Bitwise. Click [Advanced Settings] to set up the Bitwise parameters, and click [Hide] to hide the parameters. Fill in the variable names to the Bit# that wanted to do the Bitwise. The value in the fixed bit number will be assigned into the variable.
OK	Click to save this page settings and back to the module list page.

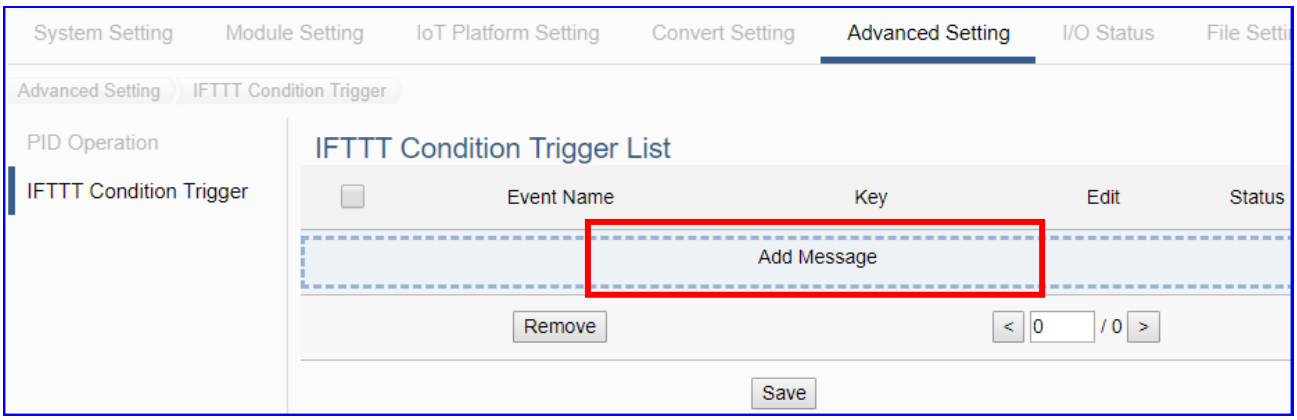
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Step 3. IFTTT Condition Trigger



Click the next step, and enter the **Step 3 [IFTTT Condition Trigger]**.
This page is for the APP message related setting, e.g. IFTTT event name, key, trigger condition, I/O variables ….

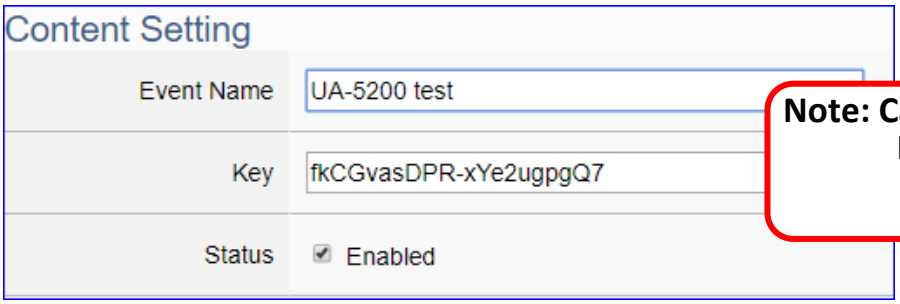
We select the "**IFTTT Condition Trigger (Line, Twitter)**" at the beginning, so this step will auto enter the setting page [**Advanced Setting > IFTTT Condition Trigger**]. The "Step Box" will prevent the user from selecting the wrong platform.



Advanced Setting > IFTTT Condition Trigger > FTTT Condition Trigger List	
Add Message	Click to add a new IFTTT message. After setting, an IFTTT condition trigger list will show on the bottom includes left box, event name, key and status.
☐	Check the box in the left of the list is to select and to delete the list. Check the box on the top will select all lists.
Event Name	Display the "Event Name" setting in the IFTTT website. (FAQ-app-02)
Key	Display the "Key" getting from the IFTTT website. (FAQ-app-02)
Edit	Click [Edit] can set the IFTTT condition trigger content.
Status	Display the enable status of the IFTTT condition trigger list.
Remove	Click the left box and [remove] can delete the IFTTT list.
< 1 / 1 >	The page number of the IFTTT list: Current page / Total pages. Click < or > to go to the previous or next page.
Save	Click to save the setting of this page.

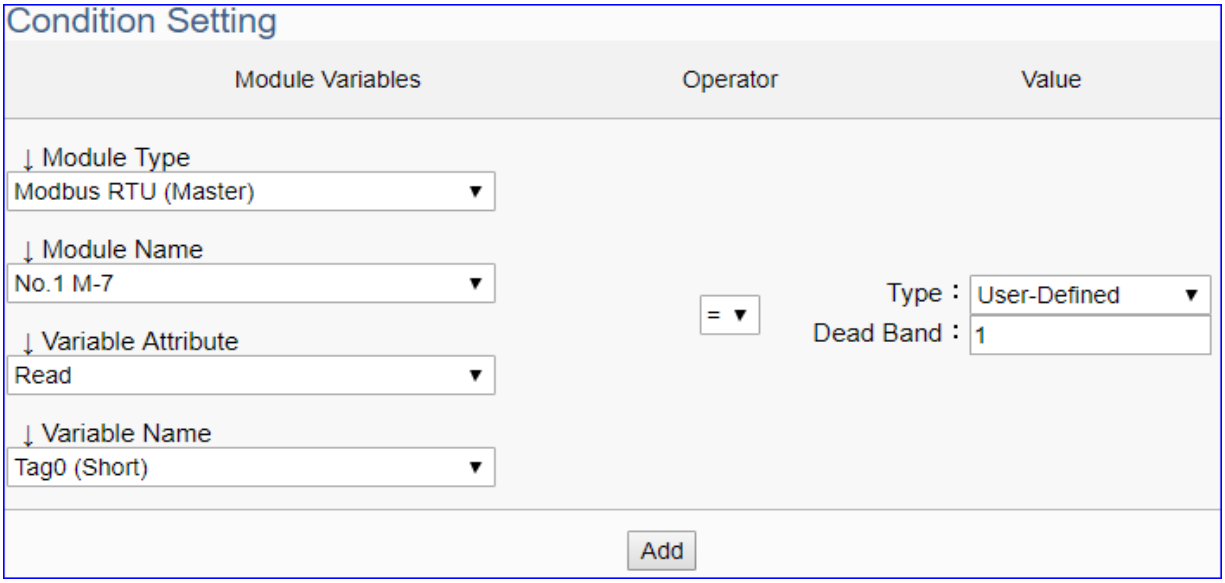
Click [**Add Message**] botton to enter the IFTTT [Content Settings] page:

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Note: The "Event Name" and "Key" are set in the IFTTT website. If you are not familiar with IFTTT, please see the FAQ-005 for the setting introductions.

Advanced Setting > IFTTT Condition Trigger > Content Setting	
Event Name	Input the "Event Name" setting in the IFTTT website. (FAQ-app-02)
Key	Input the "Key" getting from the IFTTT website. (FAQ-app-02)
Status	Check to enable the IFTTT condition trigger event.



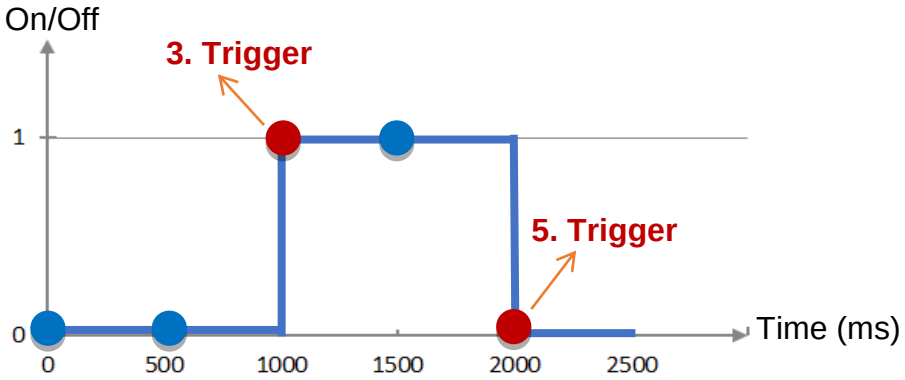
Advanced Setting > IFTTT Condition Trigger > Condition Setting	
Module Variables	Select the module and variable for the condition trigger. Module Type: select the module type, Modbus RTU/TCP/ASCII… Module Name: select the module that set for condition trigger. Variable Attribute: select the variable attribute for condition trigger. Variable Name: select the variable name for condition trigger.
The following condition fields may different depending on the selected variable attribute. The condition trigger method will be descripted after this table.	
Operator	Select the operator for the trigger condition.
Value	Set up the value for the condition, include Type and Dead Band.
Status	Set up the status for the condition. Default: 0.
Add	Click to add a condition trigger list in the Condition Table..

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Condition Trigger Descriptions:

The condition trigger method will different depending on the attribute of the selected variable and the trigger will be different. There are two operation styles: **DIO** and **AIO**.

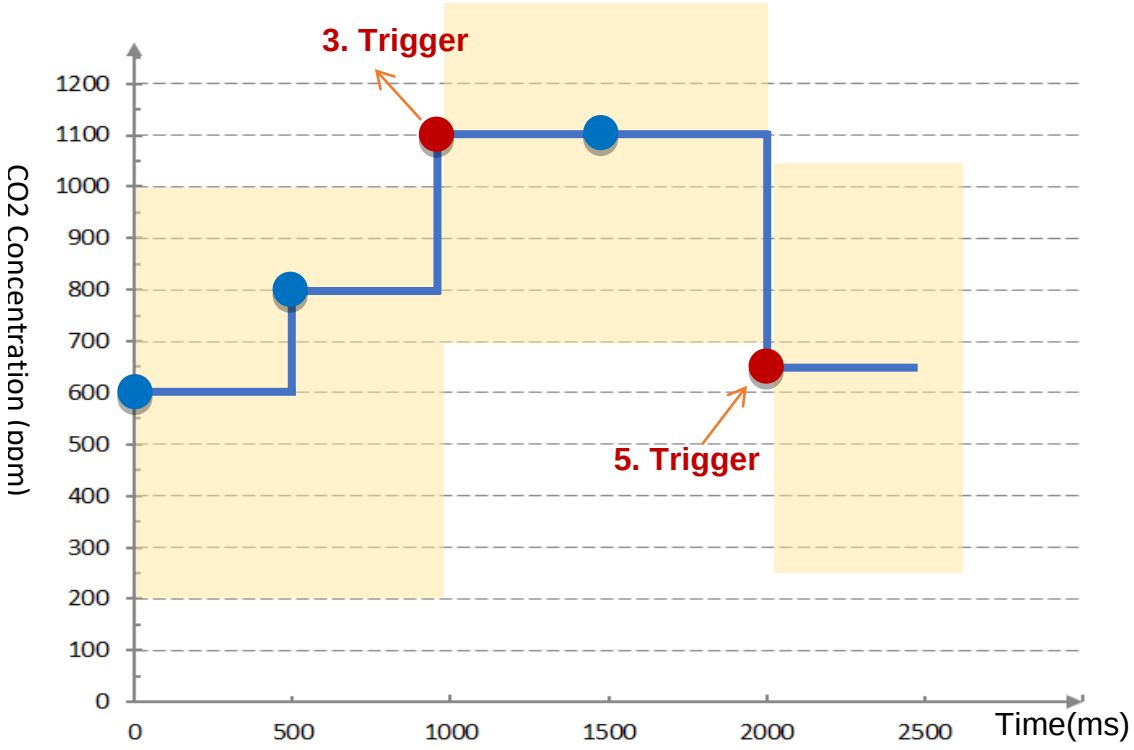
(A) If select **DIO** **variable**, then Condition is “Status Change”. When detecting the status is changed, it will trigger the event and send the assigned message. (Below is a switch detecting example.)



DIO Trigger: (Detect per 500 ms)
1. Detect initial switch status "Off" (status = 0)
2. Detect "Off" (status = 0, status no change), no trigger
3. Detect "On" (status = 1, status changed), **trigger** a message notification
4. Detect "On" (status = 1, status no change), no trigger
5. Detect "Off" (status = 0, status changed), **trigger** a message notification

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(B) If select **AIO variable**, then Condition is “Value” and can set the “Dead Band”. The condition will be triggered and send the message when the detected value exceeds the upper or lower Dead Band. (Below is a CO2 example. Detect per 500 ms)



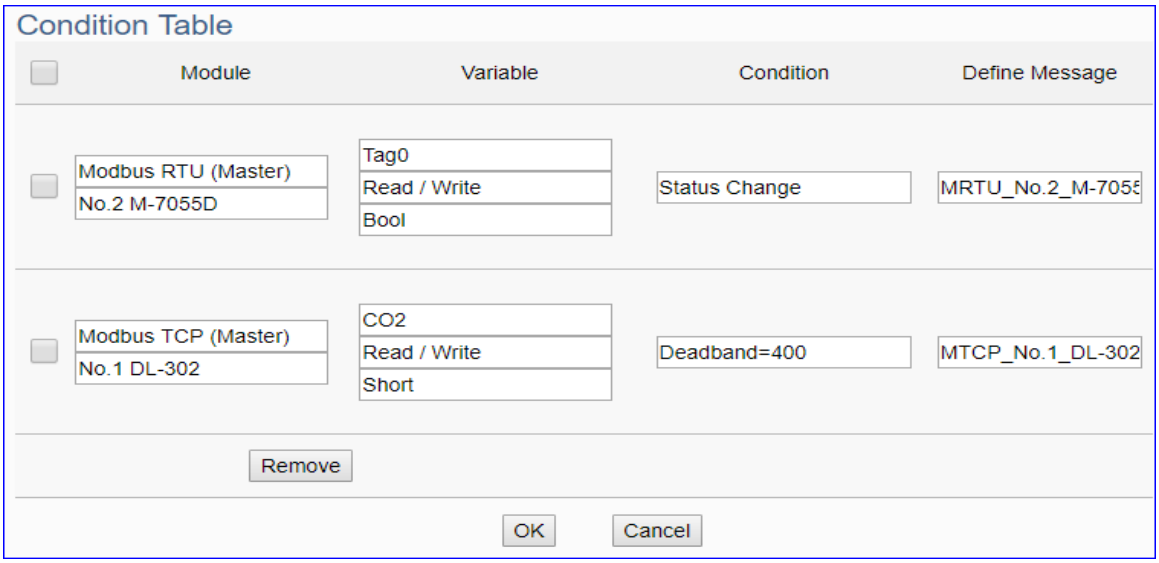
AIO Trigger: (Detect per 500 ms. The yellow block means the Dead Band.)

1. Detect initial CO2 concentration 600 (ppm).
   Set Dead Band=400 (Initial Trigger Condition: **>=** 1000 **or <=** 200)
2. Detect CO2 concentration 800. It is in the range of Dead Band.
3. Detect CO2 concentration 1100. It exceeds the upper value (>= 1000) of Dead Band, so **trigger** a message for danger notification.
4. Detect CO2 concentration 1100. It is in the new range of Dead Band.
   Dead Band=400 (New Trigger Condition: **>=** 1500 **or <=** 700)
5. Detect CO2 concentration 650. It is below the lower value (<= 700) of Dead Band, so **trigger** a message for safety notification.

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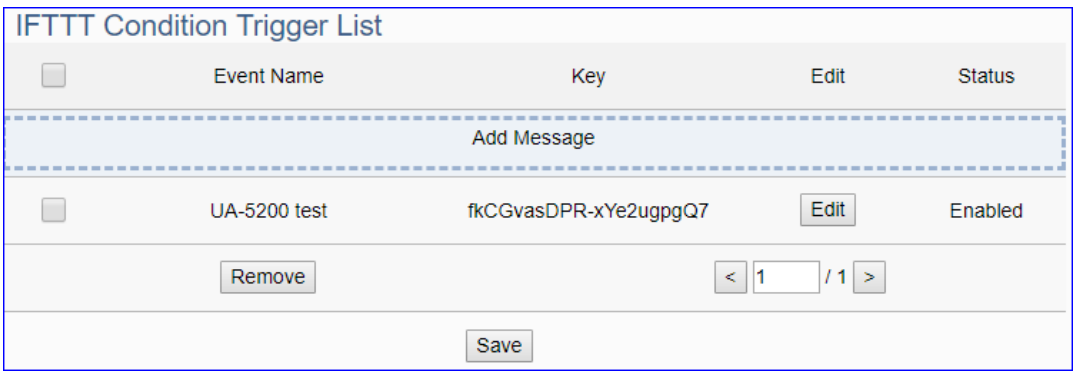
Please refer to the previous Condition Trigger Descriptions to set up your Condition. When complete, click the “Add” button. The setting will show in the Condition Table.

Below Table is setting 2 conditions.



Advanced Setting > IFTTT Condition Trigger > Condition Table	
Module	Display the module type and name of the condition. (Not editable here)
Variable	Display the variable attribute and name of the condition. (Not editable here)
Condition	Display the trigger condition. (Not editable here)
Define Message	Default Message: module code_variable code. The user can define own message in the format of English character, number, general symbol…
Remove	Click the left box and [remove] can delete the IFTTT list.
OK	Click to save this page settings and back to the module list page.
Cancel	Click to exit without saving and back to the module list page.

When back to the IFTTT Condition Trigger List, the condition trigger message will show as below picture. If need more trigger conditions, click the “Add Message” again to combine the IFTTT APP message sending and the UA system. At last, click the Save button.



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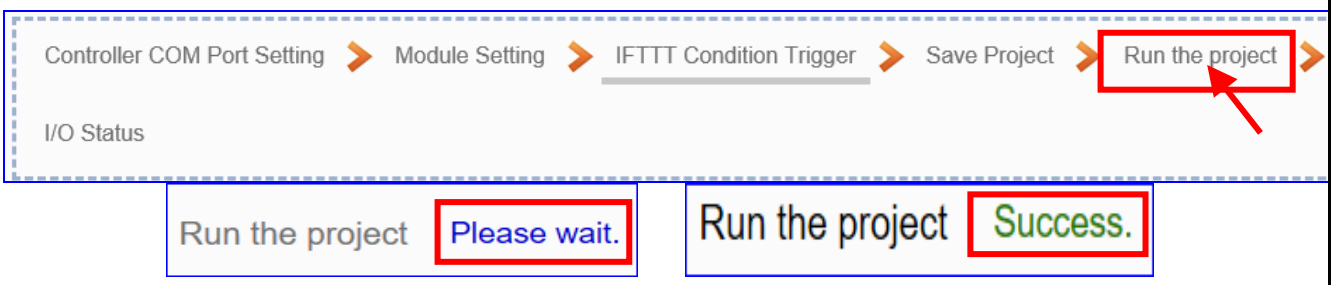
- **Step 4. Save Project**

The setting of this example is finished now. Click the next step **[Save Project],** the Step Box will show an animation as below picture, that means the project is saving. When the animation vanished, the project is saved completely.



- **Step 5. Run the Project**

The project, after saving, needs to be executed. Click the next step **[Run the Project]**. This step can also via the [**System Setting** > **Controller Service Setting** > **Run Project**] to Stop and Run the project.



When the words "**Please wait**" disappears, the new words "**Success**" appears, that means the UA controller is running new project successfully.

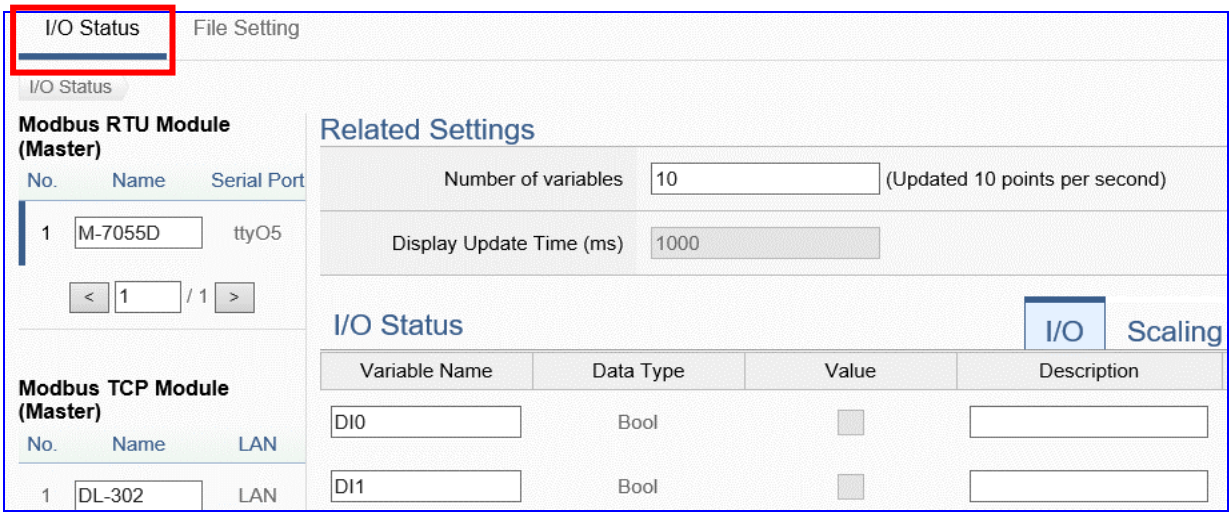
- **Step 6. I/O Status**



This step will go to the Main Menu [I/O Status]. The users can click the setup module to see its real time I/O status.

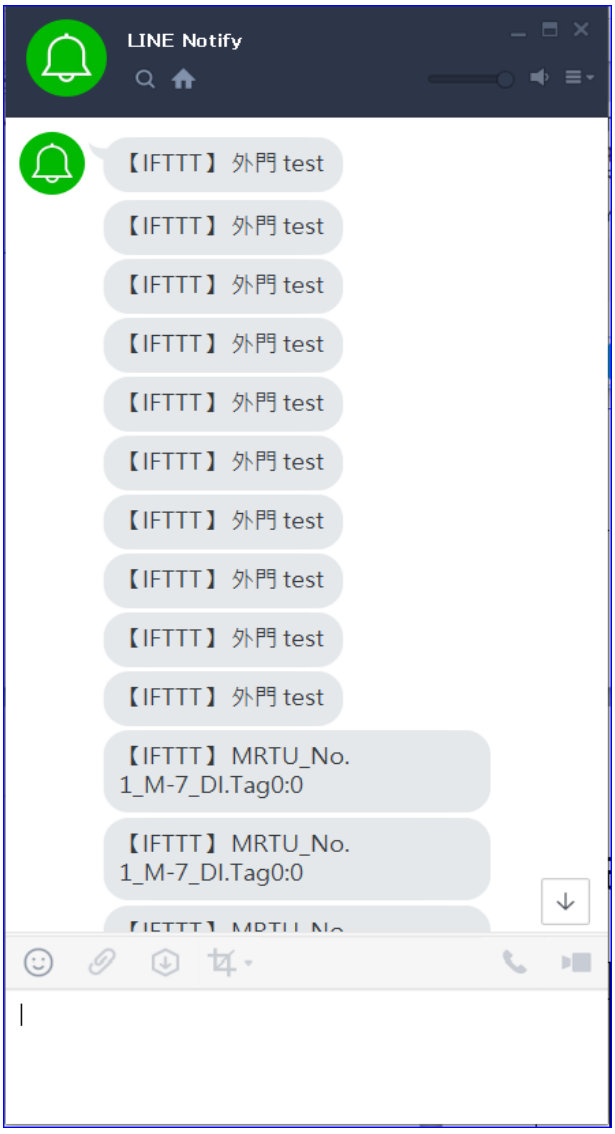
Then the Step Box will disappear automatically now, and back to the first screen view of the Web UI.

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The new project now completes the setting, uploading and running in the UA controller and can process the PID function. Users can see the I/O status from the menu [**I/O Status**]. For more about the Web UI settings, please refer to CH4 and CH5.

The project for APP message notifies via the **IFTTT condition trigger (Line, Twitter)** is now done.



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