

WISE-580x Modbus RTU Master

Application Example



● Scenario :

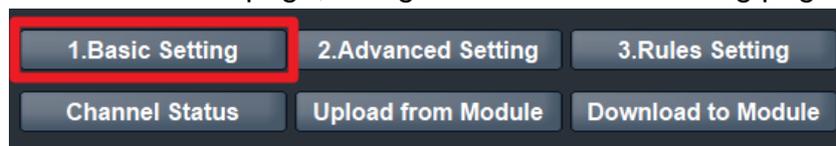
WISE-580x provides Modbus RTU Master function; it allows to connect to I/O modules that support Modbus RTU Slave protocol. Assume a factory requires electricity monitoring over the devices; ICP DAS PM-2134 power meter is used to monitor the instantaneous power (KW) value of the devices; and the KW value will be transmitted to WISE-580x via Modbus RTU protocol. At the same time, the WISE-580x is connected to M-7055 and M-7022 modules. The M-7055 is connected to one warning light and an emergency switch. The M-7022 module is connected to a cooling fan. When the instantaneous power (KW) value exceeds 10KW, WISE-580x will send command to M-7055 to turn on the warning light to notify the related personal for emergency response. At the same time, the M-7022 will start the cooling fan to reduce the heat and send email to related personnel. After the emergency has been taken care of by the related personnel, he/she can push the emergency switch to turn off the warning light and cooling fan, the status of the emergency switch will also be sent to WISE-580x. Meanwhile, the cumulative power(KWh) value of this device will be recorded every 5 minutes, and the logger file will be sent to FTP server at midnight 0 o'clock each day for further administration management and data analysis.



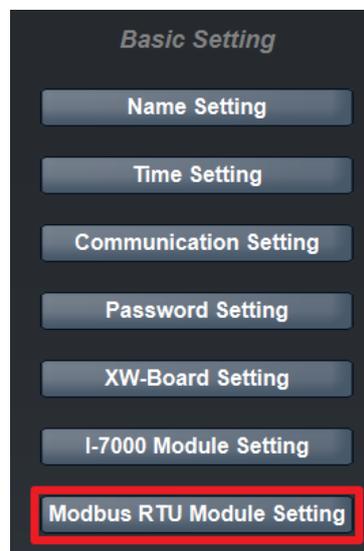
● **Steps :**

0. For Modbus RTU protocol, each Modbus RTU Slave module must have a unique ID address. The way to set up the ID address might be different from different modules. In this case, the ICP DAS PM-213x Power Meter module adopts DIP switch to modify the module's ID address. For M-7000 module, it is required to use DCON Utility to modify the module's ID address. To adequately modify the ID address setting, please refer to the user manual for detailed information for each module. In order to connect with WISE-580x, the module's ID address must be in the range (17~20). In this example, PM-2134's ID address is set as 17, M-7022's ID address is set as 18, and M-7055's ID address is set as 19. And set all module's Baudrate setting to be 38400 bps.

1. Open the WISE WEB page, and get into the Basic Setting page.



2. After getting into the Basic Setting page, click "Modbus RTU Module Setting" to get into the setting page.



3. In "Baudrate(COM2)" field, please select "38400 bps" from the drop down list for the WISE-580x COM2 Baudrate setting. The Baudrate has to be set the same as the Baudrate of Modbus RTU Slave modules connected to WISE-580x. Add the PM-2134 Power Meter modules to the list.

- i. There are two options in the “Mode” field: “4 Modbus RTU Modules + 16 I-7000 Modules” and “10 Modbus RTU Modules”. In this case, please select the “4 Modbus RTU Modules + 16 I-7000 Modules” mode.
- ii. Assign the Address of PM-2134 as 17.
- iii. In the “Name” field, input the module name as PM-2134.
- iv. The “Polling Timeout” indicates the time interval for WISE-580x to send command to the Modbus RTU Slave module and wait for the response. If the Modbus RTU Slave module takes more response time or the loading of RS-485 communication is heavier, it might require longer time interval, please modify the setting to most adequate time interval to meet the requirements. In this case please set the value as “500”ms.
- v. The “Timeout Retry Interval” indicates the time interval for WISE-580x to resend command to Modbus RTU Slave module when it’s in the timeout status when performing communication between WISE-580x and Modbus RTU Slave module. The default value as 5 seconds in this case.

After finish the PM-2134 settings, click “Add” button, the PM-2134 will be added to the Modbus RTU Slave module list as bellow. Click the PM-2134 on the module list and click “Setting” button to get into the Modbus address setting page.

Modbus RTU Module Setting Page

Baudrate(COM2): 38400 bps

Silent Interval: 12 milliseconds

Mode: 4 Modbus RTU Modules + 16 I-7000 Modules
 10 Modbus RTU Modules

Address: 17

Name: PM-2134

Polling Timeout: 500 milliseconds (Range: 1 ~ 10000)

Timeout Retry Interval: 5 seconds (Range: 3 ~ 65535)

Add

Modbus RTU Module List of COM2

	Address	Name	Polling Timeout
<input checked="" type="radio"/>	17	PM-2134	500

Setting Remove Move Up Move Down

Save

4. On the “Modbus RTU Module Setting” page, the user can set up the Modbus Coil Output / Discrete Input / Input Register / Holding Register address of the Modbus RTU module. Please refer to the Modbus Address table for detailed information for each Modbus RTU Slave module data type and the corresponding Modbus address. Follow the description of PM-2134 user manual (as the following figure), the Modbus address of KW data locates at Input Register 0x1104 (decimal value is 4356), and the Modbus address of KWh data locates at Input Register 0x110C (decimal value is 4364). All data types are floating point.

Please note: WISE-580x's Modbus address is in Base 0 format.

Modbus Module #2 Input Register : Voltage, Current, Power, Energy(Float) for PM-2133 · PM-2134

Parameter name	Modbus Register		Len	Data Type	Range	Units	Comment
		Hex					
V_a		0x1100-0x1101	DWord	Float		Volt	Primary
I_a		0x1102-0x1103	DWord	Float		Amp	Primary
kW_a		0x1104-0x1105	DWord	Float		kW	Primary
kvar_a		0x1106-0x1107	DWord	Float		kvar	Primary
PF_a		0x110A-0x110B	DWord	Float			Primary
kWh_a		0x110C-0x110D	DWord	Float			Primary
kvarh_a		0x110E-0x110F	DWord	Float			Primary

Follow the following steps for PM-2134 KW data setting.

- i. In Data Model field, please select "Input Register (3x)" from the dropdown list .
- ii. In Start Address field, input "4356" as the starting address of Input Register (3x) on PM-2134 you would like to retrieve.
- iii. In Continuous Data Number field, input "1" as the continuous Input Register number which you would like to retrieve from the Start Address.
- iv. Select "32-bit Floating Point" in Data Type field.
- v. Click on "Add" button, then a new Input Register address block for KW will be added to the Modbus address mapping table.

Follow the following steps for PM-2134 KWh data setting.

- vi. In Data Model field, please select "Input Register (3x)" from the dropdown list .

- vii. In Start Address field, input “4364” as the starting address of Input Register (3x) on PM-2134 you would like to retrieve.
- viii. In Continuous Data Number field, input “1” as the continuous Input Register number which you would like to retrieve from the Start Address.
- ix. Select “32-bit Floating Point” in Data Type field.
- x. Click on “Add” button, then a new Input Register address block for KWh will be added to the Modbus address mapping table.
- xi. Please check the setting, click “Save” button to save it, and return to the “Modbus RTU Module Setting Page”.

Modbus RTU Module Attribute Setting

Address	17
Name	PM-2134
Polling Timeout	500 milliseconds (Range: 1 ~ 10000)
Timeout Retry Interval	5 seconds (Range: 3 ~ 65535)

Data Model	Input Register (3x)
Start Address	4364
Continuous Data Number	1
Data Type	32-bit Floating Point

Block Setting
Nickname Setting

WISE-5800 Local Address	Coil Output (0x)	Discrete Input (1x)	Input Register (3x)	Holding Register (4x)																
780			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 30%;">Address</td><td>4356</td></tr> <tr><td>Number</td><td>1</td></tr> <tr><td colspan="2" style="text-align: center;">Type</td></tr> <tr><td colspan="2" style="text-align: center;">32-bit Floating Point</td></tr> <tr><td>Address</td><td>4364</td></tr> <tr><td>Number</td><td>1</td></tr> <tr><td colspan="2" style="text-align: center;">Type</td></tr> <tr><td colspan="2" style="text-align: center;">32-bit Floating Point</td></tr> </table>	Address	4356	Number	1	Type		32-bit Floating Point		Address	4364	Number	1	Type		32-bit Floating Point		
Address	4356																			
Number	1																			
Type																				
32-bit Floating Point																				
Address	4364																			
Number	1																			
Type																				
32-bit Floating Point																				
781																				
782																				
783																				

5. On the “Modbus RTU Module Setting Page”, add ICP DAS Modbus RTU module M-7022 to the list.

- i. Make sure the “Baudrate(COM2)” setting is 38400 bps, and select the Address of M-7022 as 18.
- ii. In the “Name” field, input the module name as M-7022.
- iii. In the “Polling Timeout” field, input the value as 300 milliseconds.
- iv. In the “Timeout Retry Interval” field, input the value as 5 seconds.
- v. After finish the M-7022 settings, click “Add” button, then the M-7022 will be added to the Modbus RTU Slave module list as bellow. Click the M-7022 on the module list and click “Setting” button to get into the detail parameter setting page of the Modbus RTU Slave module.

Modbus RTU Module Setting Page

Baudrate(COM2) 38400 bps
Silent Interval 12 milliseconds

Mode 4 Modbus RTU Modules + 16 I-7000 Modules
 10 Modbus RTU Modules

Address 18
Name M-7022
Polling Timeout 300 milliseconds (Range: 1 ~ 10000)
Timeout Retry Interval 5 seconds (Range: 3 ~ 65535)

Add

Modbus RTU Module List of COM2

	Address	Name	Polling Timeout
<input type="radio"/>	17	PM-2134	500
<input checked="" type="radio"/>	18	M-7022	300

Setting Remove Move Up Move Down

Save

6. Follow the description of M-7022 user manual(as the following figure), the Modbus address of AO0 locates at Holding Register 40001(Base 1 format, Decimal data), and the M-7022 AO0 use Hexadecimal as the Data Format. In this case, the real value of AO0 is between 0~10, therefore the mapping Hexadecimal value will be 0000~0FFF.

Address Mapping

Address	Description	Attribute
40001 ~ 40002	Analog output value	R/W
40065 ~ 40066	Analog output read back	R

Output Types

Type Code	Output Range	Data Format	Max	Min
0	0 ~ 20 mA	Engineering	20000	0
		Hexadecimal	0FFFh	0000h
1	4 ~ 20 mA	Engineering	20000	4000
		Hexadecimal	0FFFh	0000h
2	0 ~ 10 V	Engineering	10000	0
		Hexadecimal	0FFFh	0000h
4	0 ~ 5 V	Engineering	5000	0
		Hexadecimal	0FFFh	0000h

Follow the following steps for M-7022 setting.

- i. In Data Model field, please select " Holding Register (4x)" from the dropdown list .
- ii. In Start Address field, input "0" as the starting address of Holding Register (4x) on M-7022 you would like to retrieve.
Please note: WISE-580x's Modbus address is in Base 0 format, and M-7022 is in Base 1 format
- iii. In Continuous Data Number field, input "1" as the continuous Holding Register number which you would like to retrieve from the Start Address.
- iv. Because M-7022 use Hexadecimal as the Data Format, please select "16-bit HEX" in Data Type field, and input the HEX MIN value as 0000, HEX MAX value as 0FFF, Real MIN value as 0, Real MAX value as 10.
- v. Click on "Add" button, then a new Holding Register address block for M-7022's AO0 will be added to the Modbus address mapping table. Make sure the setting is accurate, click "Save" button and return to the "Modbus RTU Module Setting Page".

Modbus RTU Module Setting

Address	18
Name	M-7022
Polling Timeout	300 milliseconds
Timeout Retry Interval	5 seconds

Data Model	Holding Register (4x)	
Start Address	0	
Continuous Data Number	1	
Data Type	16-bit HEX	
HEX Data	HEX	MIN 0000 ~ MAX 0FFF
	Real	MIN 0 ~ MAX 10

Add

WISE-5800 Local Address	Coil Output (0x)	Discrete Input (1x)	Input Register (3x)	Holding Register (4x)																
880				<table border="1"> <tr><td>Address</td><td>0</td></tr> <tr><td>Number</td><td>1</td></tr> <tr><td colspan="2">Type</td></tr> <tr><td colspan="2">16-bit HEX</td></tr> <tr><td>HEX Min</td><td>HEX Max</td></tr> <tr><td>0000</td><td>0FFF</td></tr> <tr><td>Real Min</td><td>Real Max</td></tr> <tr><td>0</td><td>10</td></tr> </table>	Address	0	Number	1	Type		16-bit HEX		HEX Min	HEX Max	0000	0FFF	Real Min	Real Max	0	10
Address	0																			
Number	1																			
Type																				
16-bit HEX																				
HEX Min	HEX Max																			
0000	0FFF																			
Real Min	Real Max																			
0	10																			
881																				

Save

7. Please add ICP DAS Modbus RTU module M-7055 In “Modbus RTU Module Setting Page”.
 - i. Make sure the “Baudrate(COM2)” setting is 38400 bps, and select the Address of M-7055 as 19.
 - ii. In the “Name” field, input the module name as M-7055.
 - iii. In the “Polling Timeout” field, input the value as 300 milliseconds.
 - iv. In the “Timeout Retry Interval” field, input the value as 5 seconds.
 - v. After finish the M-7055 settings, click “Add” button, then the M-7055 will be added to the Modbus RTU Slave module list as bellow. Click the M-7055 on the module list and click “Setting” button to get into the detail parameter setting page of the Modbus RTU Slave module.

Modbus RTU Module Setting Page

Baudrate(COM2)	38400 ▾ bps
Silent Interval	12 milliseconds

Mode	<input checked="" type="radio"/> 4 Modbus RTU Modules + 16 I-7000 Modules <input type="radio"/> 10 Modbus RTU Modules
Address	19 ▾
Name	M-7055
Polling Timeout	300 milliseconds (Range: 1 ~ 10000)
Timeout Retry Interval	5 seconds (Range: 3 ~ 65535)

Modbus RTU Module List of COM2			
	Address	Name	Polling Timeout
<input type="radio"/>	17	PM-2134	500
<input type="radio"/>	18	M-7022	300
<input checked="" type="radio"/>	19	M-7055	300

8. Follow the description of M-7055 user manual (as the following figure), the Modbus address of DI0 locates at Discrete Input 0x0000 (Base 0 format , decimal value is 0), the Modbus address of DO0 locates at Coil Output 0x0000 (Base 0 format, decimal value is 0).

M-7055/M-7055D:

Valid starting channel	0x0000~0x 0007 for DI value
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M-7055/M-7055D:

Valid output channel	0x0000~0x 0007 for DO output 0x0100 to clear the DIO latch value. If setting this channel to ON, the latch value will become 0. 0x0200~0x0207 to clear the DI count value
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Follow the following steps for M-7055 setting.

- i. In Data Model field, please select "Discrete Input(1x)" from the dropdown list .
- ii. In Start Address field, input "0" as the starting address of Discrete Input(1x) on M-7055 you would like to retrieve.

- iii. In Continuous Data Number field, input "1" as the continuous Discrete Input number which you would like to retrieve from the Start Address. Click on "Add" button, then a new Discrete Input address block for DI0 will be added to the Modbus address mapping table.
- iv. In Data Model field, please select "Coil Output (0x)" from the dropdown list .
- v. In Start Address field, input "0" as the starting address of Coil Output (0x) on M-7055 you would like to retrieve.
- vi. In Continuous Data Number field, input "1" as the continuous Coil Output number which you would like to retrieve from the Start Address. Click on "Add" button, then a new Coil Output address block for DO0 will be added to the Modbus address mapping table.
- vii. Click "Save" button to save the settings, and return to the "Modbus RTU ModuleSetting Page".

Modbus RTU Module Setting

Address	19
Name	M-7055
Polling Timeout	300 milliseconds
Timeout Retry Interval	5 seconds

Data Model	Discrete Input (1x)
Start Address	0
Continuous Data Number	1

Add

WISE-5800 Local Address	Coil Output (0x)		Discrete Input (1x)		Input Register (3x)	Holding Register (4x)
	Address	Number	Address	Number		
980	0	1	0	1		

Save

9. After complete all the setting of PM-2134, M-7050 & M-7022, click "Save" button to save the setting.

Modbus RTU Module Setting Page

Baudrate(COM2) bps

Address

Name

Polling Timeout milliseconds

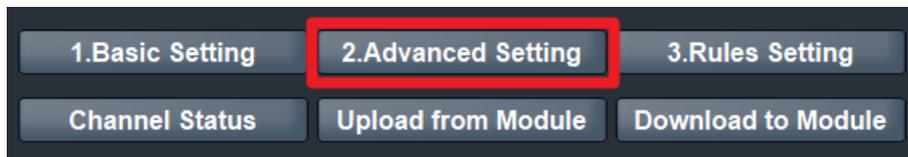
Timeout Retry Interval seconds

Modbus RTU Module List of COM2

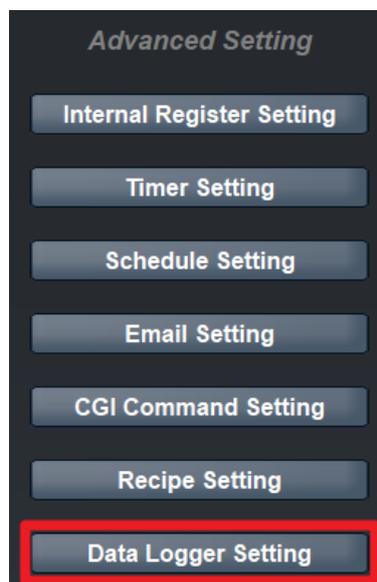
	Address	Name	Polling Timeout
<input type="radio"/>	17	PM-2134	300
<input type="radio"/>	18	M-7022	300
<input checked="" type="radio"/>	19	M-7055	300

L

10. Open the WISE WEB page and get into the “2.Advanced Setting” page.



11. Click on “Data Logger Setting” to get into the setting page.



12. On the “Data Logger Setting” page, check the box in front of the “Enable Data Logger” to start the data logger function and input the following data:
- i. In the “File Name” field, input the data log file name. This name has to be in English or numbers.
 - ii. In the “Data Format” field, , select 『 PM-2134(17) 』、 『 Input Register 』 and address 『 4364 』 from the dropdown list, the “\$n17ri4364” string will appear in the “Data Format” field. The string “\$n17ri4364” indicates the value of KWh data that PM-2134 channel 0 detected. For more detailed information regarding parameter settings, please refer to the manual.
 - iii. Check the box in front of the “Sampling Period” to enable period recording function and select “5 mins” from the dropdown list.
 - iv. Select “1 hour” from the dropdown list to specify time period to close the log file.
 - v. In the “FTP” section, input the following information as indicated: IP, Port, Login ID, Password, FTP Path and Timeout. In the “Time to Upload” field, select Every day at “0” o'clock. And then click “Save” button to save the settings.

Data Logger Setting Page

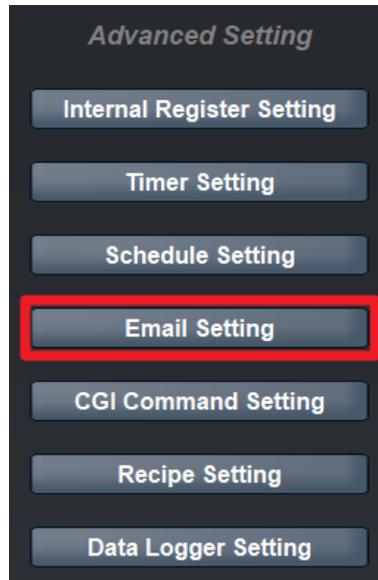
Enable Data Logger

File Name	Log
Data Format	\$n17ri4364,
Sampling Period	<input checked="" type="checkbox"/> Enable 1 min
Close Log File	Every 1 hour(s)

Log File Sending Attribute

<input type="checkbox"/> Email	Index	Setup Email Setting First (Send as attachment when the log file is closed)
<input checked="" type="checkbox"/> FTP	IP	192 . 168 . 100 . 38
	Port	21
	Login ID	wise <input type="checkbox"/> Anonymous
	Password	••••
	FTP Path	/log
	Timeout	3000 (milliseconds)
	Time to Upload	<input type="radio"/> Log file is closed <input checked="" type="radio"/> Every day at 0 o'clock

13. On the Advanced Setting page; click on “Email Setting” to get into the setting page.

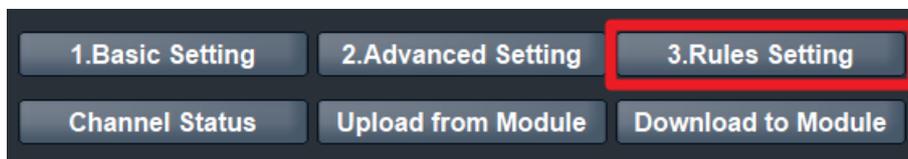


14. On the Email Setting page; specify the Email Amount to be “1”, and input related information for index number 1 Email such as: SMTP Sever IP (If the server requires authentication, please check the box in front of “Authentication” and input the Login ID and Password), Sender Name, Sender Email Address, Receiver Email Address and the Subject title as “The current KW value of the device is too high”. In the Content column, input the content as “The current KW value of the device is \$n17ri4356”. User can use the I/O channel selection interface to insert the Real-Time variable \$n17ri4356 into the email content by select ”PM-2134(17)” 、 “Input Register” and address “4356”, then click “Add” button. The string “\$n17ri4356” indicates the value of KW data that PM-2134 channel 0 detected. When user receives the Email, the \$n17ri4356 string will be replaced by the real KW data of PM-2134 channel 0. Click “Save” button to save all the settings.

Email Setting Page

Email Amount	1
Index	1
SMTP Server IP (IP or Domain Name)	mstp.icpdas.com
<input checked="" type="checkbox"/> Authentication	
Login ID	alan_jhu
Password
Sender Name	Alan Jhu
Sender Email Address	alan_jhu@mstp.icpdas.com
1st Receiver Email Address	service@icpdas.com
2nd Receiver Email Address	
3rd Receiver Email Address	
4th Receiver Email Address	
5th Receiver Email Address	
Subject	Exceed KW value of the device is too high
Content	The current KW value of the device is \$n17ri4356
(Note: The length of the message cannot exceed 160 characters.)	
Insert Real-Time Variable Module: PM-2134(17) Input Register Addr. 4356 Add	
<input type="button" value="Save"/>	

15. Click on "3.Rules Setting" to get into the Rule Setting page.



16. Check the "Rule 1" checkbox to enable "Rule 1", then click "Rule 1" "Edit" button for "Rule 1" editing.

Enable	No.	Edit	Status
<input checked="" type="checkbox"/>	Rule1	Edit	
<input type="checkbox"/>	Rule2	Edit	
<input type="checkbox"/>	Rule3	Edit	

17. On the “Rule1 Setting Page”(on the right side), select “Input Register” as IF Condition for “Rule 1”, and then click on the right side button to get into the “Input Register Condition Setting” page to edit detailed information.

Rule1 Setting Page

Description:

	IF		THEN		ELSE
Condition1	None	Action1	None	Action1	None
Condition2	Discrete Input Coil Output	Action2	None	Action2	None
Condition3	Input Register Holding Register	Action3	None	Action3	None
Operator	None				

Clear Save

18. In the “Module & Address” field, select “PM-2134(17)” and Address “4356”; in the “Operator” field, select “>” and in the “Value” field, select “Assign Value as” from the dropdown list and assign the value as “10”. Click “Save” button to save the settings and get back to the “Rule1 Setting Page”.

Input Register Condition Setting

Module & Address	Operator	Value
PM-2134(17) Address 4356	>	Assign Value as 10

Save

19. In the “THEN” section, in the “Action1” field, select “Holding Register” from the dropdown list; and then click on the right side button to get into the “Holding Register Action Setting” page to edit detailed information.

Rule1 Setting Page

Description

IF	THEN	ELSE
Condition1	Action1	Action1
Condition2	Action2	Action2
Condition3	Action3	Action3
Operator		

Clear Save

20. In the “Module & Address” section, select “M-7022(18)” and address “0” from the dropdown list. In the “Operator” field, select “=” and in the “Value” section, select “Assign Value as” from the dropdown list and assign the value as “5”. Click “Save” button to save the settings and return to Rule 1 Setting Page.

Holding Register Action Setting

Module & Address	Operator	Value
M-7022(18) Address 0	=	Assign Value as 5

Save

21. In the “THEN” section, in the “Action2” field, select “Coil Output” from the dropdown list; and then click on the right side button to get into the “Coil Output Action Setting” page to edit detailed information.

Rule1 Setting Page

Description

IF	THEN	ELSE
Condition1	Action1	Action1
Condition2	Action2	Action2
Condition3	Action3	Action3
Operator		

Clear Save

22. In the “Module & Address” section, select “M-7055(19)” and address “0” from the dropdown list. In the “Address Value” field, select “ON” from the

dropdown list. Click “Save” button to save the settings and return to Rules 1 Setting Page.

Coil Output Action Setting

Module & Address: M-7055(19) Address 0

Address Value: ON

Save

23. In the “THEN” section, in the “Action3” field, select “Email” from the dropdown list; and then click on the right side button to get into the “Email Action Setting” page to edit detailed information.

Rule1 Setting Page

Description: [Text Field]

IF	THEN	ELSE
Condition1: Input Register	Action1: Holding Register (One Time selected)	Action1: None
Condition2: None	Action2: Coil Output (One Time selected)	Action2: None
Condition3: None	Action3: Email (dropdown open)	Action3: None
Operator: None		

24. In the “Index” field, select “1” from the dropdown list, click “Save” button to save the settings and get back to the “Rule 1 Setting Page”.

Email Action Setting

Index: 1

Email Information	
1st Receiver Email Address	service@icpdas.com
2nd Receiver Email Address	
3rd Receiver Email Address	
4th Receiver Email Address	
5th Receiver Email Address	
Subject	The current KW value of the device is too high
Content	The current KW value of the device is \$n7ri4356

Save

25. Make sure all Rule 1 settings are accurate, click “Save” button to save the changes.

	IF		THEN		ELSE
Condition1	Input Register	Action1	Holding Register One Time Repeat	Action1	None
Condition2	None	Action2	Coil Output One Time Repeat	Action2	None
Condition3	None	Action3	Email One Time Repeat	Action3	None
Operator	None				

26. Check the “Rule 2” checkbox to enable “Rule 2”, then click “Rule 2” “Edit” button for “Rule 2” editing.

Enable	No.	Edit	Status
<input checked="" type="checkbox"/>	Rule1	Edit	OK
<input checked="" type="checkbox"/>	Rule2	Edit	
<input type="checkbox"/>	Rule3	Edit	

27. On the “Rule2 Setting Page”(on the right side), select “Discrete Input” as IF Condition for “Rule 2”, and then click on the right side button to get into the “Discrete Input Condition Setting” page to edit detailed information.

	IF		THEN		ELSE
Condition1	None	Action1	None	Action1	None
Condition2	Discrete Input	Action2	None	Action2	None
Condition3	Input Register	Action3	None	Action3	None
Operator	None				

28. In the “Module & Address” section, select “M-7055(19)” and address “0” and in the “Address Value” select “ON” from the dropdown list. Click “Save” button to save the settings and return to Rules 2 Setting Page.

Discrete Input Condition Setting

Module & Address	M-7055(19) Address 0
Address Value	ON

29. In the “THEN” section, in the “Action1” field, select “Holding Register” from the dropdown list; and then click on the right side button to get into the “Holding Register Action Setting” page to edit detailed information.

Rule2 Setting Page

Description:

IF	THEN	ELSE
Condition1: Discrete Input	Action1: None	Action1: None
Condition2: None	Action2: Holding Register	Action2: None
Condition3: None	Action3: None	Action3: None
Operator: None		

30. In the “Module & Address” section, select “M-7022(18)” and address “0” from the dropdown list. In the “Operator” field, select “=”. In the “Value” section, select “Assign Value as” from the dropdown list and assign the value as “0”. Click “Save” button to save the settings and return to Rule 2 Setting Page.

Holding Register Action Setting

Module & Address	Operator	Value
M-7022(18) Address 0	=	Assign Value as 0

31. In the “THEN” section, in the “Action2” field, select “Coil Output” from the dropdown list; and then click on the right side button to get into the “Coil Output Action Setting” page to edit detailed information.

Rule2 Setting Page

Description

	IF		THEN		ELSE
Condition1	Discrete Input	Action1	Holding Register <input checked="" type="radio"/> One Time <input type="radio"/> Repeat	Action1	None
Condition2	None	Action2	None	Action2	None
Condition3	None	Action3	None	Action3	None
Operator	None				

32. In the “Module & Address” section, select “M-7055(19)” and address “0” from the dropdown list. In the “Address Value” field, select “OFF” from the dropdown list. Click “Save” button to save the settings and return to Rules 2 Setting Page.

Coil Output Action Setting

Module & Address	M-7055(19) Address 0
Address Value	OFF

33. Make sure all Rule 2 settings are accurate, click “Save” button to save the changes.

Rule2 Setting Page

Description

	IF		THEN		ELSE
Condition1	Discrete Input	Action1	Holding Register <input checked="" type="radio"/> One Time <input type="radio"/> Repeat	Action1	None
Condition2	None	Action2	Coil Output <input checked="" type="radio"/> One Time <input type="radio"/> Repeat	Action2	None
Condition3	None	Action3	None	Action3	None
Operator	None				

34. Check the “Rule 3” checkbox to enable “Rule 3”, then click “Rule 3” “Edit” button for “Rule 3” editing.

Enable	No.	Edit	Status
<input checked="" type="checkbox"/>	Rule1	Edit	OK
<input checked="" type="checkbox"/>	Rule2	Edit	OK
<input checked="" type="checkbox"/>	Rule3	Edit	

35. On the “Rule3 Setting Page”(on the right side), select “Input Register” as IF Condition for “Rule 3”, and then click on the right side button to get into the “Input Register Condition Setting” page to edit detailed information.

Rule3 Setting Page

Description:

	IF		THEN		ELSE
Condition1	None	Action1	None	Action1	None
Condition2	Discrete Input	Action2	None	Action2	None
Condition3	Input Register	Action3	None	Action3	None
Operator	None				

Clear Save

36. In the “Module & Address” field, select “PM-2134(17)” and Address “4356”; in the “Operator” field, select “>”. In the “Value” field, select “Assign Value as” from the dropdown list and assign the value as “0”. Click “Save” button to save the settings and get back to the “Rule3 Setting Page”.

Input Register Condition Setting

Module & Address	Operator	Value
PM-2134(17) Address 4356	>	Assign Value as 0

Save

37. In the “THEN” section, in the “Action1” field, select “Data Logger” from the dropdown list; and then click on the right side button to get into the “Data Logger Action Setting” page to edit detailed information.

Rule3 Setting Page

Description

	IF		THEN		ELSE
Condition1	Input Register	Action1	None	Action1	None
Condition2	None	Action2	None	Action2	None
Condition3	None	Action3	None	Action3	None
Operator	None				

Clear Save

38. In the “Action” field, select “Start” from the dropdown list. Click “Save” button to save the settings and get back to the “Rule3 Setting Page”.

Data Logger Action Setting

Action

Save

39. In the “ELSE” section, in the “Action1” field, select “Data Logger” from the dropdown list; and then click on the right side button to get into the “Data Logger Action Setting” page to edit detailed information.

Rule3 Setting Page

Description

	IF		THEN		ELSE
Condition1	Input Register	Action1	Data Logger	Action1	None
Condition2	None	Action2	None	Action2	None
Condition3	None	Action3	None	Action3	None
Operator	None				

Clear Save

40. In the “Action” field, select “Stop” from the dropdown list. Click “Save” button to save the settings and get back to the “Rule3 Setting Page”.

Data Logger Action Setting

Action

Save

41. Make sure all Rule 3 settings are accurate, click “Save” button to save the changes.

The screenshot shows the 'Rule3 Setting Page' interface. At the top, there is a 'Description' text input field. Below it is a table with three columns: 'IF', 'THEN', and 'ELSE'. Each column contains three rows for 'Condition1', 'Condition2', and 'Condition3', and an 'Operator' row. The 'IF' column has a dropdown menu set to 'Input Register'. The 'THEN' column has 'Action1' set to 'Data Logger' with 'One Time' selected, and 'Action2' and 'Action3' set to 'None'. The 'ELSE' column has 'Action1' set to 'Data Logger' with 'One Time' selected, and 'Action2' and 'Action3' set to 'None'. At the bottom of the page, there are 'Clear' and 'Save' buttons, with the 'Save' button highlighted by a red box.

42. After finish the rule editing, click the “Download to Module” button and input the password.

The screenshot shows a navigation menu with six buttons: '1.Basic Setting', '2.Advanced Setting', '3.Rules Setting', 'Channel Status', 'Upload from Module', and 'Download to Module'. The 'Download to Module' button is highlighted with a red box.

43. After the download process is completed, click “Reboot” button to make the new updated settings take effect.

The screenshot shows a confirmation dialog box with a blue border. The text 'The download process is completed.' is displayed in red. Below the text is a progress bar showing '100%'. At the bottom of the dialog, there is a 'Reboot' button highlighted with a red box.

● **Rule Overview :**

<i>Rule Overview</i>
<p>Rule1(Enable) Description: < IF > PM-2134(17) Input Register 4356 > 10 < THEN > M-7022(18) Holding Register 0 = 5 (One Time) M-7055(19) Coil Output 0 = ON (One Time) Email 1 Send (One Time)</p>
<p>Rule2(Enable) Description: < IF > M-7055(19) Discrete Input 0 = ON < THEN > M-7022(18) Holding Register 0 = 0 (One Time) M-7055(19) Coil Output 0 = OFF (One Time)</p>
<p>Rule3(Enable) Description: < IF > PM-2134(17) Input Register 4356 > 0 < THEN > Data Logger Start (One Time) < ELSE > Data Logger Stop (One Time)</p>