Instructions of Coolmay HMI

Modbus RTU protocal

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Contents

1. Settings for HMI as master

1.1 HMI as master and connected with only one slave settings:

1.1.1 Communication parameter settings

1) Open "Application --- Setting OP Parameters --- Communication Settings"

2) In the link1 and link2 settings are as below:

Communication port : When the product is HMI, select COM1 means using the RS232 port , and select COM2 means using the RS485 port. When the product is a HMI/PLC all-in-one, whether the RS232 port or the RS485 port is optional on the HMI, select COM2.

Device Type: Modbus RTU Slave

Communication speed, communication timeout, check bit, data bit, stop bit: according to your own communication needs, , the master and salve must be set as the same.
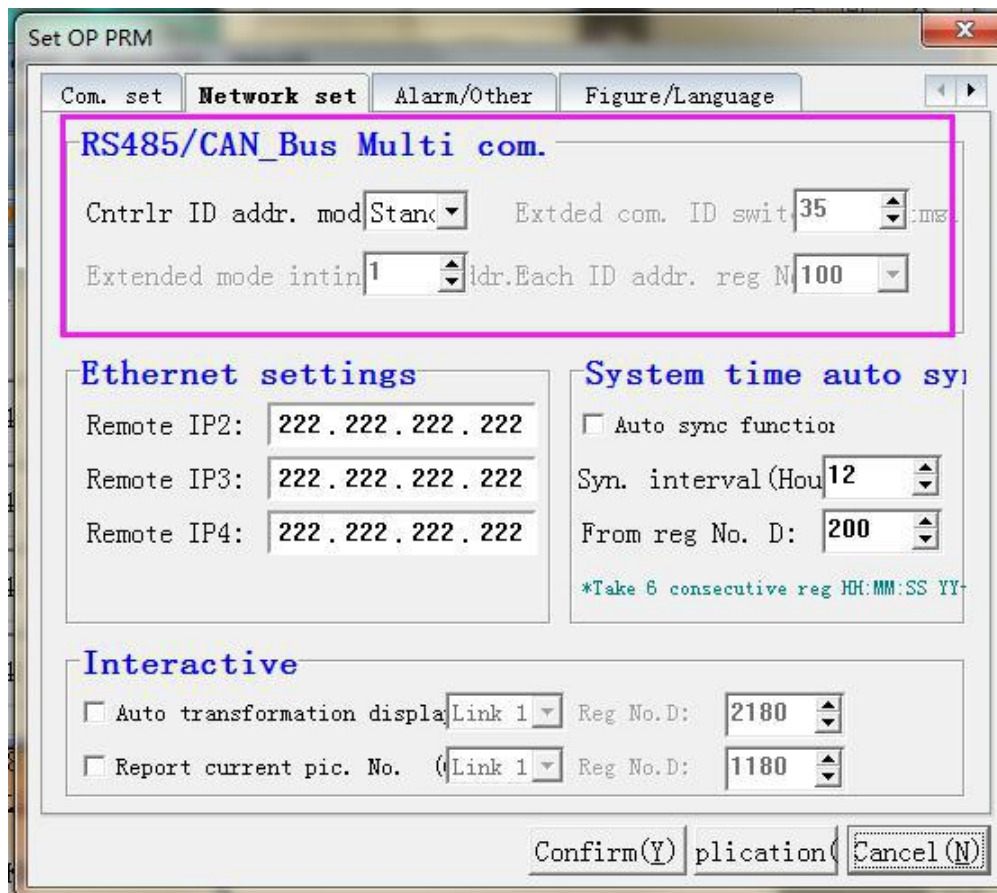
Device ID : The slave number to be read.
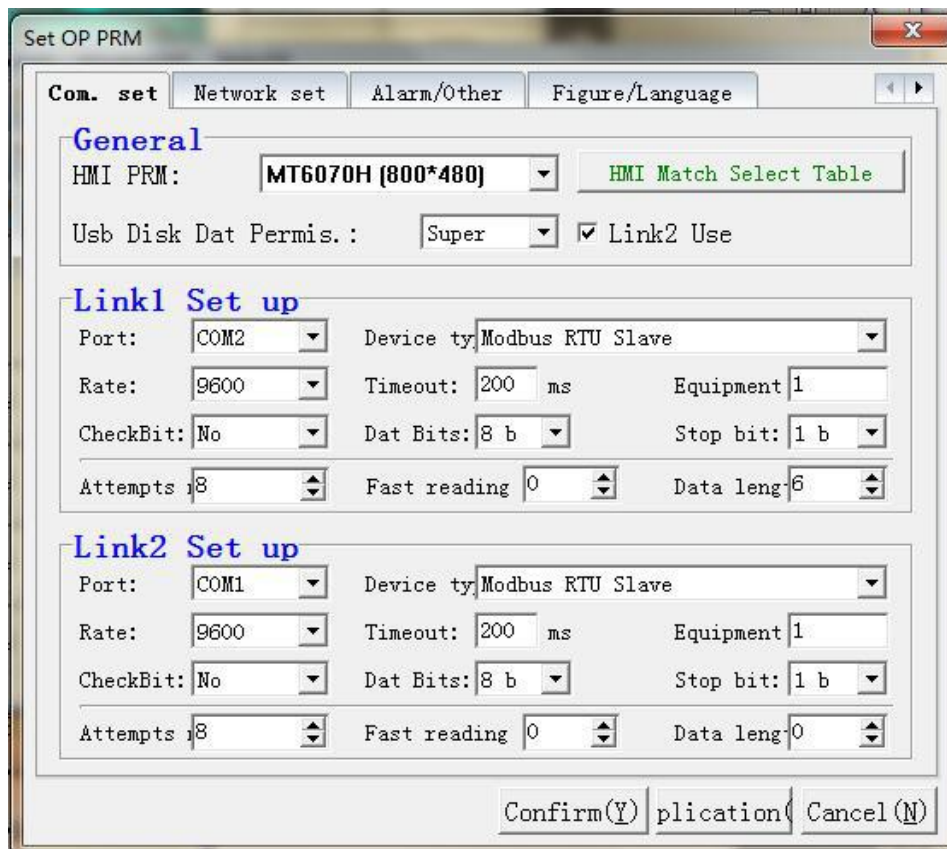
1.1.2 Multi-machine Communication Settings

1) Open "Application --- Setting OP --- Network Settings"

Controller ID Address Mode: Select the default standard mode

1.1.3 Function Codes Supported when the HMI as master

Function No. 01: Read the status of the coil and obtain the current status of a group of logic coils (ON/OFF)

03 function: read the holding register and get the current binary value in one or more holding registers

Function No. 05: Strongly set single coil, forcing a logic coil on/off state (write bit)

Function No. 06: Load specific binary value into a holding register (write register)

Function No. 16: Preset multiple registers to load specific binary values into a series of consecutive holding registers (write multiple registers)

1.2 HMI as mater connect to multi-slaves setting:

Attention:
1. When HMI as master and connects to multi-slaves, HMI or HMI of HMI/PLC all-in-one both must be used RS485 port,and must be set communication port as COM2 in Link1 settings.
2. HMI RS232 can only connect to one salve
3. Link2 setting don't support mode of master connect with multi-slaves

1.2.1 Setting communication parameters

1) Open "Application --- Setting OP parameters --- Communication settings"
2) Settings in the link1 are as follows:
Communication port: COM2.
Device type: Modbus RTU Slave.
Communication speed, communication timeout, check bit, data bit, stop bit: according to their own communication needs, the master and salve must be set as the same.

Number of attempts: The default is 8 and the range is 1-99, that is, the number of times each slave is read. If the number of attempts is 8 times, when any slave is not connected, the host will try to read 8 times, each time is the communication timeout setting (the default is 200ms). After 8 times of reading, if the communication has not been successful, the master no longer accesses the slave of the station number, and it needs to restart the master to access the slave of the station number 8 times again. If the communication failure prompt is marked, communication failure will be prompted.
If the number of trials is changed to 1, the slave will be accessed once every time regardless of whether the slave is connected, and the communication speed of the master will be improved. If the communication failure prompt is marked, the failure connection will not be prompted.

1.2.2 Multi-machine Communication Settings

1) Open "Application --- Set Working Parameters --- Network Settings" .

Controller ID Address Mode: Select Extended Mode.

Extended communication ID switching interval: The default is 35ms, which can be adjusted according to actual communication.

Extended Mode Start ID: The default is 1, which is the first slave station number of the connected slave.

Each ID address register number: 100-30000 range can be set according to the actual register range setting of each slave.

The following figure shows: the HMI is connected with multiple slaves, the first slave station number is from 1. Number of each ID address register set 1000

When 4x0-4x999 indicates the address register of slave 0-999, 4x1000-4x1999 indicates 0-999 of slave 2.The register address, 4x2000-4x2999, represents register address 0-999 of slave 3... and so on.

1.2.3 Function Codes Supported by the HMI as master

Function No. 01: Read the status of the coil and obtain the current status of a group of logic coils (ON/OFF)

03 function: read the holding register and get the current binary value in one or more holding registers

Function No. 05: Strongly set single coil, forcing a logic coil on/off state (write bit)

Function No. 06: Load specific binary value into a holding register (write register)

Function No. 16: Preset multiple registers to load specific binary values into a series of consecutive holding registers (write multiple registers)

2. Settings for HMI as slave

2.1 1   Settings for HMI as slave

2.1.1 Communication parameter settings

1) Open "Application --- Set OP Parameters --- Communication Settings"

2) In the link1 or link2 settings are as below:

Communication port : When the product is HMI, select COM1 means using the RS232 port , and select COM2 means using the RS485 port. When the product is a HMI/PLC all-in-one, whether the RS232 port or the RS485 port is optional on the HMI, select COM2.

Device Type: Modbus RTU Slave

Communication speed, communication timeout, check bit, data bit, stop bit: according to your own communication needs, , the master and salve must be set as the same.

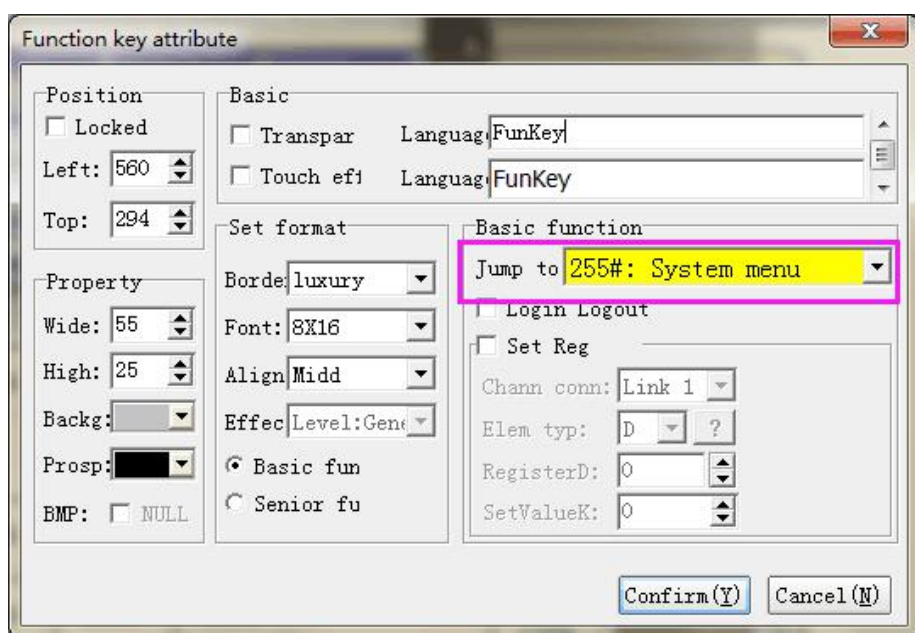Device ID : The slave number to be read.
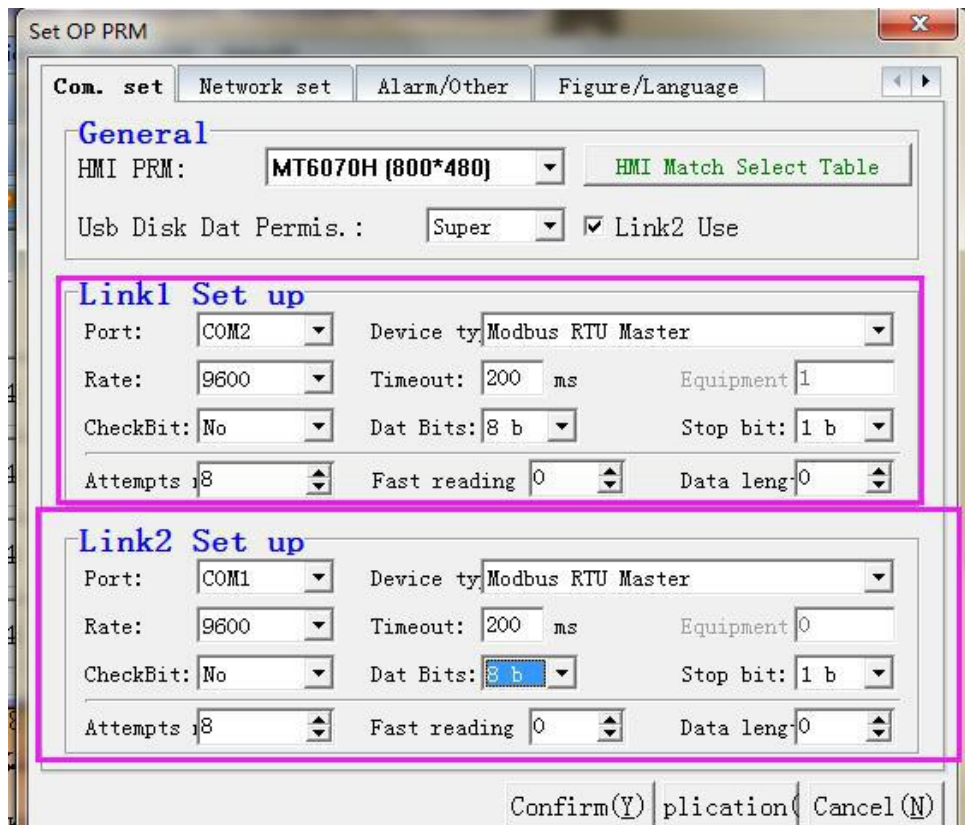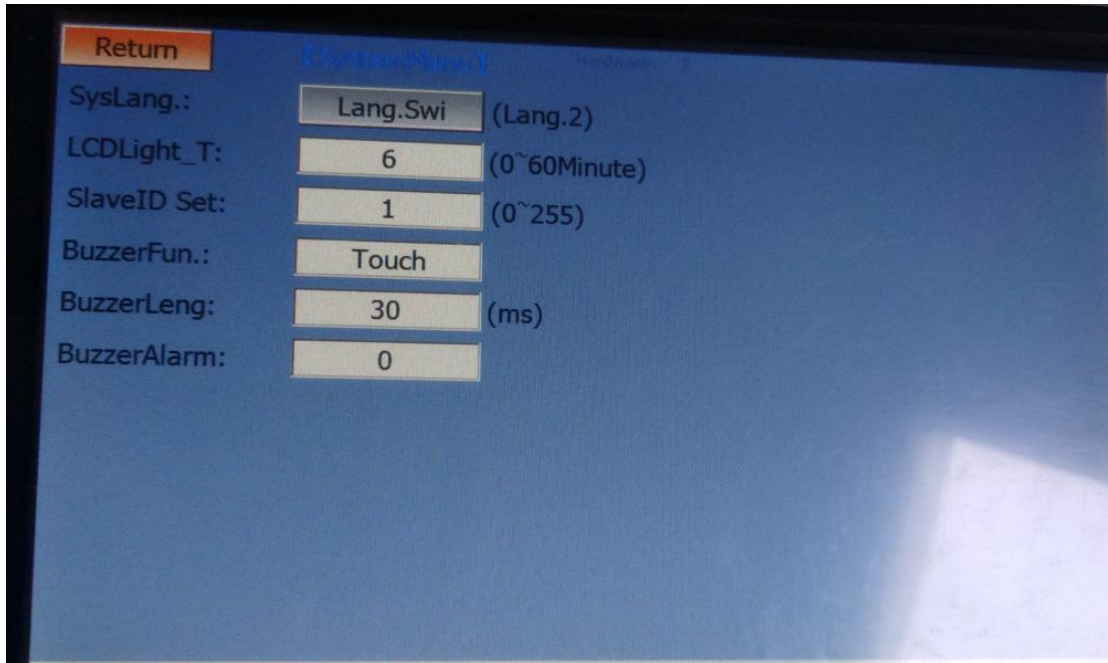
2.1.2 Slave station number setting

Setting method one:
1)   Put a function key on the HMI program and jump to the 255 system menu page, and then compile and download the program to the HMI.
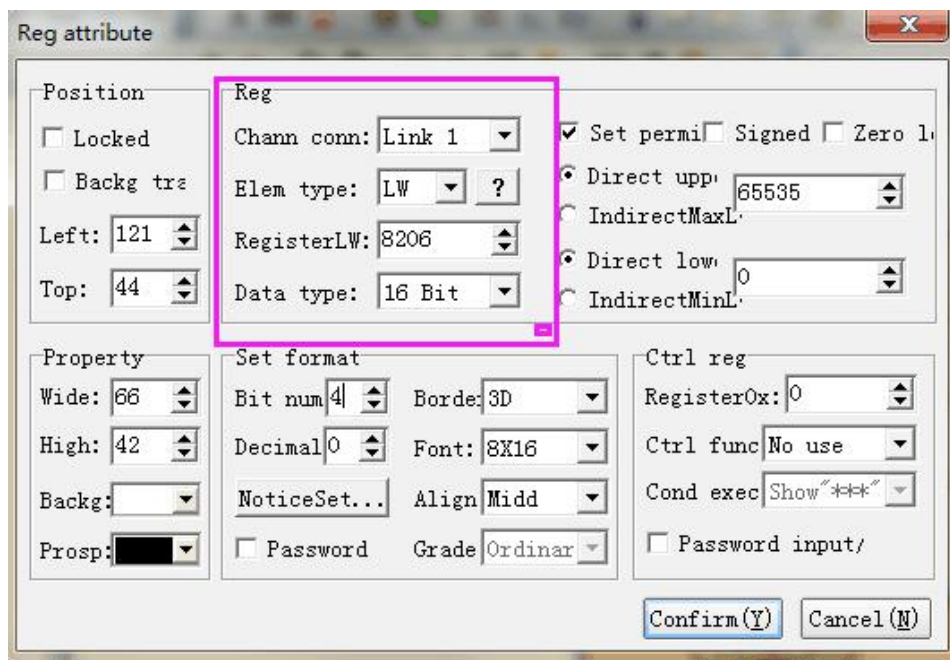As shown below:

2) Click this function key on the HMI to jump to the 255 system menu screen to set the slave station number.

Setting method Two:

Internal register: LW8206 ...... Multi-machine communication interval, that is setting address of slave station, range: 1-255; add this register address on HMI, as shown below:

2.1.3 slave register address range

1) Data Register Address Range: 4x0-4x65000

2) Bit address range: 0x0-0x65000

2.1.4 Function Code Supported when HMI as Slave

Function No. 01: Read the status of the coil and obtain the current status of a group of logic coils (ON/OFF)

03 function: read the holding register and get the current binary value in one or more holding registers

Function No. 05: Strongly set single coil, forcing a logic coil on/off state (write bit)

Function No. 06: Load specific binary value into a holding register (write register)

Function No. 16: Preset multiple registers to load specific binary values into a series of consecutive holding registers (write multiple registers)

3.other special registers

Internal register: LW8246.........Link1 communication timeout counter (used only for ModBus RTU Master)

Internal register: LW8247.........Link2 communication timeout counter (used only for ModBus RTU Master)

Internal register: LW8248...........Link1 communication success counter

Internal register: LW8249...........Link2 communication success counter