

SMS Manual



- ❖ INNOVATIVE & COMPACT
- ❖ EASY TO PROGRAM
- ❖ LOW COST FACTOR



User Manual SMS Module

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The xLogic SuperRelay is an
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manufactured product.

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xLogic SuperRelay-----SMS Module(ELC-SMS-D-R)



General Introduction

ELC-SMS-D-R module is a remote control and messaging system, also is a expansion module connected to ELC-18 CPU module, that's to say you would link it to the CPU module when you want to use it work.

Six digital inputs and four relay outputs with alternating contacts are monitored by means of a SMS (Short Message System) via a mobile telephone network* (SIM card determines the provider). Additional 10 message inputs and 10 message outputs are supplied in software through which you can switch the input status and get alarm messages by SMS .Because it used as expansion module, the function blocks usually used in PLC would be used by ELC-SMS module to realize some complex control function by means of short messages.

The device's own phone book saves up to 5 mobile phone numbers of the receivers. Each status change from "0" to "1" at the message output sends a pre-defined message by SMS to the selected receivers. The receivers are processed cyclically, according to the order chosen. The message inputs can be switched on and off by means of a pre-defined message by SMS. In order to obtain an overview of the state of the installation, the input and output status can also be queried by SMS, but you must special pre-design your program in software because the short message only change the message input status and cannot change the physical input status directly.

The programming of the ELC-SMS is carried out with the xLogicSoft. In this way the settings can be configured conveniently , flexibly and easily.

***GSM network: 850MHz, 900MHz, 1800MHz, 1900MHz (quad-band GSM module inside)**

Notes: Please refer to ELC series products user's manual about the information ELC-18 series CPU module

Naming rule:

ELC-SMS-D-R

① ② ③ ④

- | | | | |
|----------------|--------------|---------------------------|--------------------|
| 1. Series name | 2. Type name | 3. D: DC supply (12V-24V) | 4. R: Relay output |
|----------------|--------------|---------------------------|--------------------|

Short instructions

1. Select a kind of ELC-18 series CPU module (PLC).
2. Link ELC-SMS to CPU module
3. Connect the RS232/USB interface of your PC or Notebook with the programming interface of the CPU module. Use the programming cable (ELC-RS232/ELC-USB)
4. Now switch on the CPU module and ELC-SMS.
5. Choose your prepared file or create a new file with your configuration.
6. Select a free COM port (Menu Configuration – Select port)
7. Select SMS model.(refer to page 15)
8. Download the file to the CPU module ( download)
9. Place the SIM card in the card holder

Note: please note the modules' respective voltage class. The ELC-SMS-D-R is the DC 24V type.

Application-examples



Heating control

Pump control

Irrigation installations

Alarm transmission

Level monitoring

Temperature monitoring

Pressure monitoring

Valve control

Voltage monitoring

Safety instructions

The electrical installation of the ELC-SMS module is the same with the other module of ELC series must be carried out by a competent person.

Please read the complete operating instructions before installation and commissioning.

GSM network failure or power interruptions cannot guarantee a secure monitoring. The use of a prepaid SIM card is possible. It is recommended to use a SIM card with subscription.

This avoids possible credit balance problems. The individual responsibility for protecting the SIM card against abuse lies solely with the card owner.

EASY does not accept any liability for possible damage to persons, buildings and/or machines, which occur due to incorrect use or from not following the details. EASY does not accept any responsibility for the application and use of the ELC-SMS module. In particular EASY cannot guarantee the connection security with the mobile network.

Installation details/ scope of supply

Antenna

The ELC-SMS module comes together with the SMS-ANT small device antenna. The place of installation must be taken into account for the antenna selection.

Caution:

The small device antenna is not suitable for installation in a switch cabinet (shielding).

Here the SMS-ANT-MAG antenna with magnetic feet external signal antenna provides a much better result. Please take this into account when ordering.



SMS-ANT



SMS-ANT-MAG

Install SIM card :



Step I: Take off the cover of SMS module.

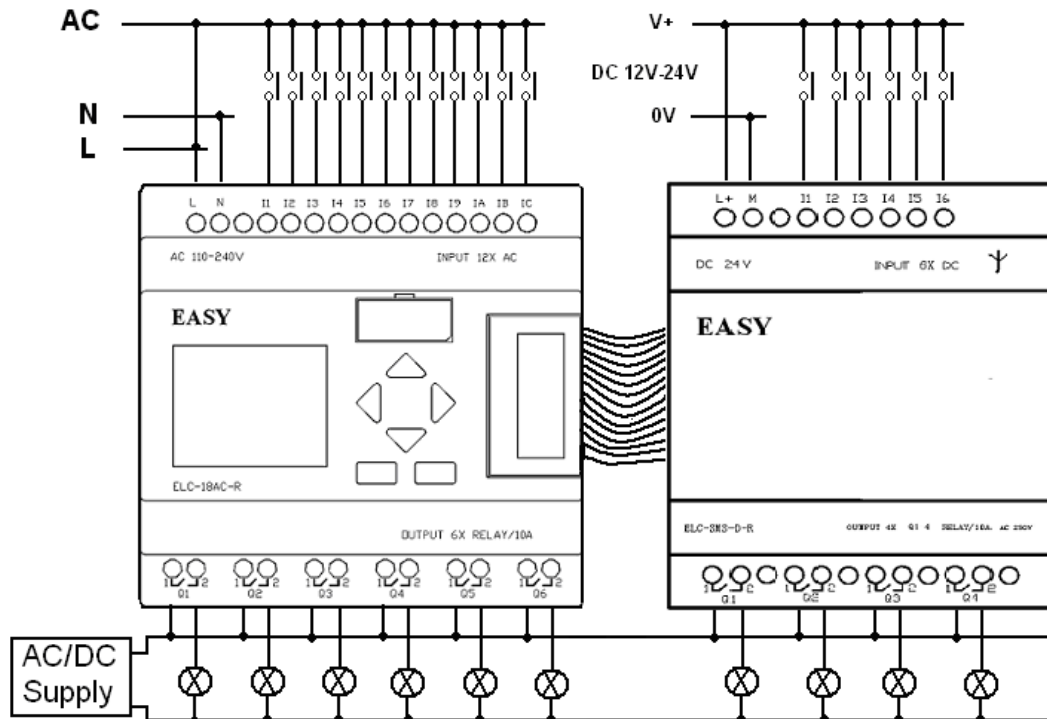


Step II: Insert SIM card



Wiring

The ELC-SMS-D-R must be connected according to the following schematic:



- Notes:**
1. ELC-SMS-D-R can be connected to any voltage class ELC-18 series CPU module.
 2. The regulations and common standards are to be followed for the electrical installation and the installation must be carried out by a competent person

LED status display

The ELC-SMS-D-R has two LED, the GSM LED and the status LED. Both LED can be seen from the outside and are located below the cover. The following states are displayed:

GSM-LED

- flashing regularly (every second)
Module is not registered in the GSM network.
- Short flashing (approx. every three seconds)
Module is registered but there is no communication.
- Continuous lighting
Communication connection is made
- Irregular flashing
Data are transmitted (SMS)

Status-LED (power)

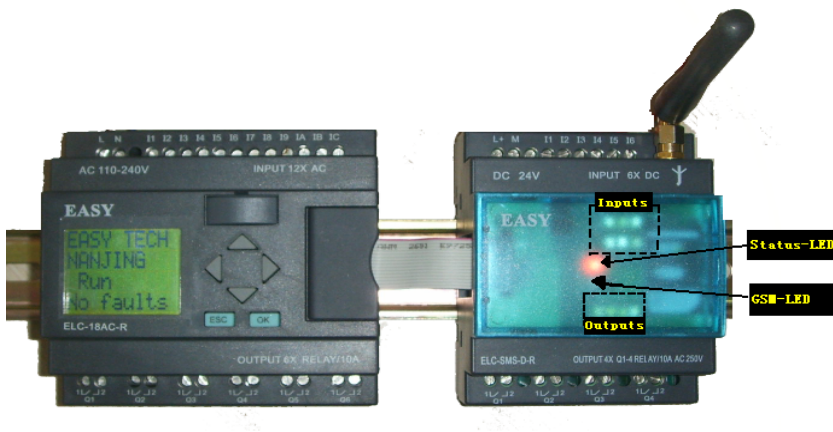
- Dark LED Power is off
- Light LED Power is on

Inputs / Outputs

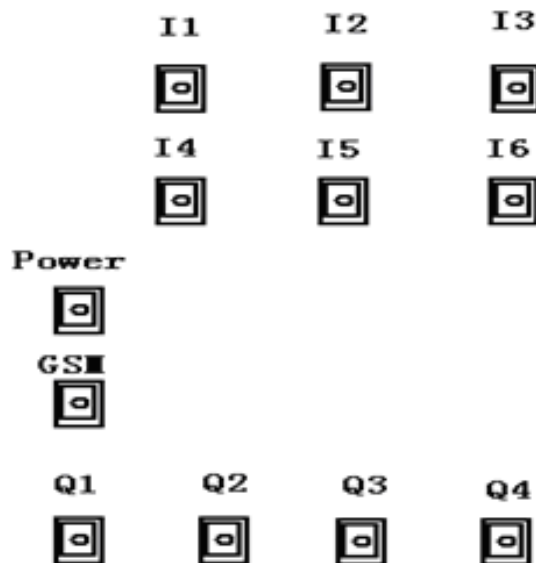
In addition the states of the inputs and outputs are displayed by means of an LED. These LED are designated as follows:

Inputs I1, I2, I3, I4, I5, I6 (LED lighting = input is switched on)

Outputs Q1, Q2, Q3, Q4 (LED lighting = output is switched on)



LED sketch map:



Configuration of the ELC-SMS module with the “xLogicSoft”.

General

The ELC-SMS module is configured and prepared for use with the xLogicSoft. The ELC-SMS module can be prepared before installation i.e. the ELC-SMS configuration (telephone book creation, input messages) can be created without connecting to the device. In order to do this the software is started, a new or existing file opened and edited. The file created needs only to be downloaded to the ELC-18 CPU module with the ELC-RS232/ELC-USB programming cable.

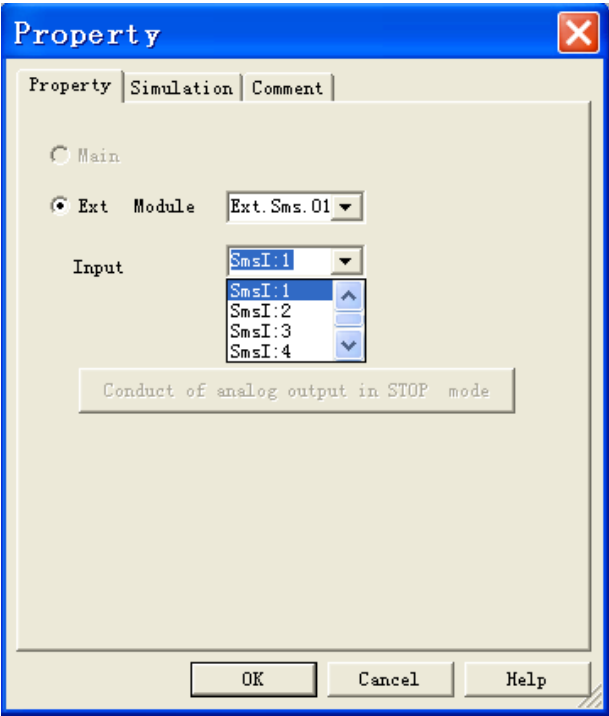
General SMS I/O function

1. SMS input



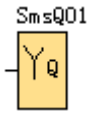
SMS input blocks represent the input terminals of ELC-SMS. Up to 6 digital inputs are available to you.

In your block configuration, you can assign an input block a new input terminal, if this terminal is not already used in the circuit program.



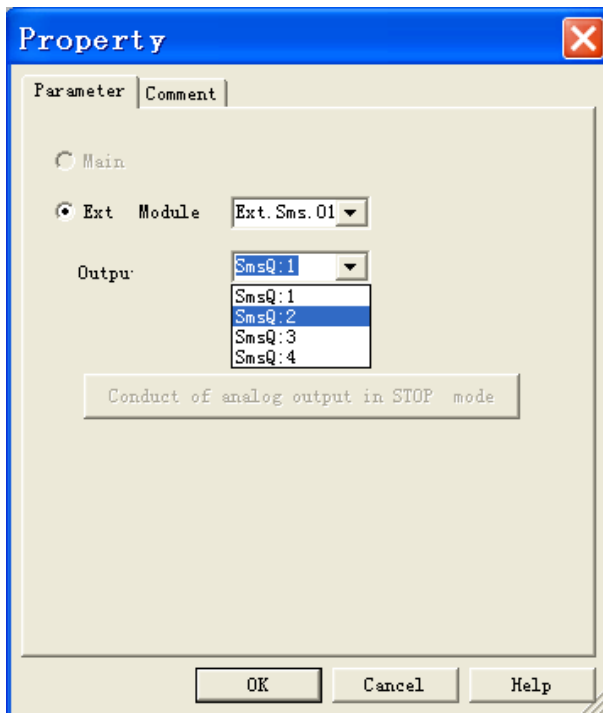
The SMS input used as same as other modules of ELC series. It is a digital input.

2. SMS output



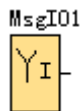
SMS output blocks represent the output terminals of ELC-SMS. You can use up to 4 outputs. In your block configuration, you can assign an output block a new terminal, provided this terminal is not already used in your circuit program.

The output always carries the signal of the previous program cycle. This value does not change within the current program cycle.

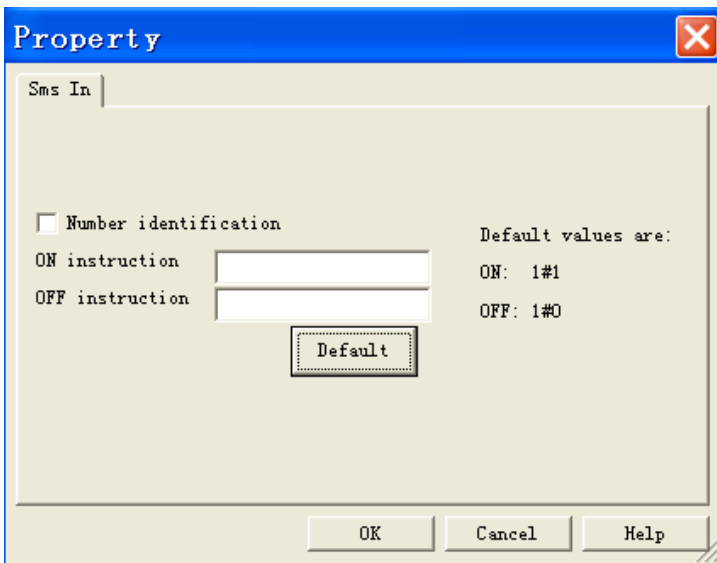


The SMS output is used as same as other modules of xLogic SuperRelay. The ELC-SMS-D-R module is relay output.

3. SMS message input



Up to **10 SMS message inputs** are available to you. SMS message inputs are programmed for the circuit program in the same ways as other inputs. SMS message inputs allow operator control of the circuit program by means of short message by users' handsets. Users send pre-set short message content to change the status of SMS message inputs from "0"/OFF to "1"/ON or "1"/ON to "0"/OFF. So, the program running state would change to realize a certain control function.



The image shows a 'Property' dialog box with a blue title bar and a close button (X) in the top right corner. The dialog has a tab labeled 'Sms In'. Inside the dialog, there is a checkbox labeled 'Number identification' which is currently unchecked. Below this checkbox are two text input fields: 'ON instruction' and 'OFF instruction'. To the right of these fields, the text 'Default values are:' is displayed, followed by 'ON: 1#1' and 'OFF: 1#0'. Below the 'OFF instruction' field is a button labeled 'Default'. At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Help'.

The SMS message inputs can be controlled by an SMS i.e. they can be switched ON and OFF. Each SMS message input can be activated individually. The message text can be chosen with Arabic numerals or English words. However the device only reacts to the exact expression i.e. the message must correspond exactly with the inputted expressions.

Upper and lower cases are ignored, spaces between the words and other characters must be correctly inputted.

Set Method:

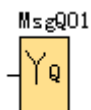
Step 1: You can use the default set by click the label "Default" to select.

The screenshot shows a 'Property' dialog box with a blue title bar and a red close button. The 'Sms In' tab is selected. Inside the dialog, there is a checkbox for 'Number identification' which is unchecked. Below it, there are two text input fields: 'ON instruction' with the value '1#1' and 'OFF instruction' with the value '1#0'. To the right of these fields, the text 'Default values are:' is followed by 'ON: 1#1' and 'OFF: 1#0'. A 'Default' button is located below the input fields. At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Help'.

Step 2: you can set other words what you want:

This screenshot shows the same 'Property' dialog box, but with custom text entered in the instruction fields. The 'ON instruction' field now contains 'please open' and the 'OFF instruction' field contains 'please close'. The 'Default values are:' section still shows 'ON: 1#1' and 'OFF: 1#0'. The 'Default' button remains visible. The 'OK', 'Cancel', and 'Help' buttons are at the bottom.

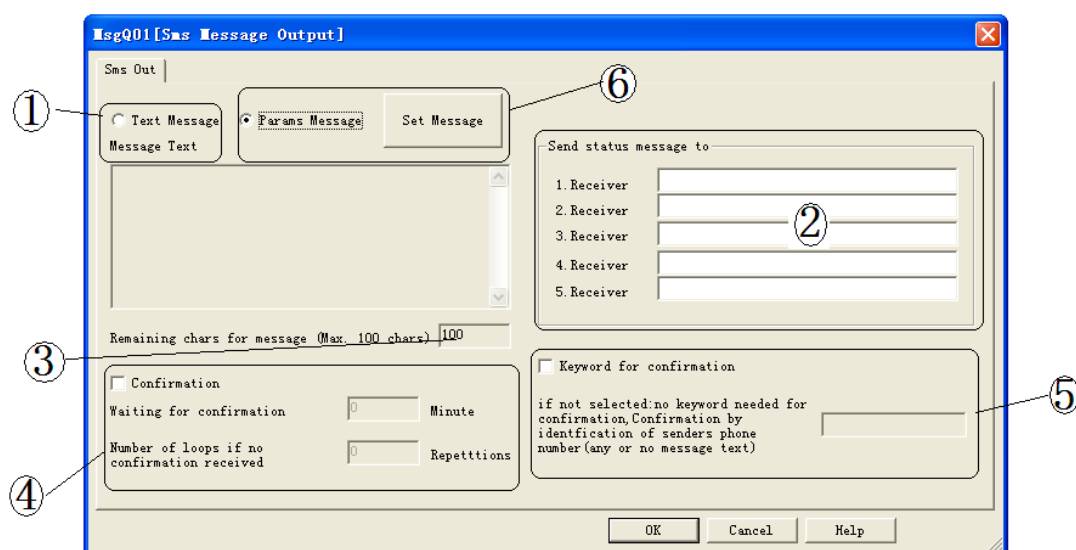
4. SMS message output



The ELC-SMS module has **10 SMS message outputs**. Each one of these message outputs can send an SMS message, which can be chosen with Arabic numerals or English words, to a predefined telephone number either in case of activation the output signal (up to 5 various numbers). Only the change from LOW-to-HIGH can trigger an SMS.

Caution : Please mind every SMS message output needs at least one phone number in his list. The display of special characters in the GSM network can cause problems. Please use only text characters and figures. The programming software identifies special characters and an error messages will occur.

General description of parameter dialog box:



1. Short message content area: Up to 100 characters are available and only Arabic numerals English words can be as SMS message contents.
2. Telephone book area: There are 5 group phone number can be pre-set.
3. Display the number of remaining chars for message .For example, you has input 20 characters, it would display 80.
4. Confirmation parameter set area: Here you can set the confirmation intervals time and numbers of repetition. For

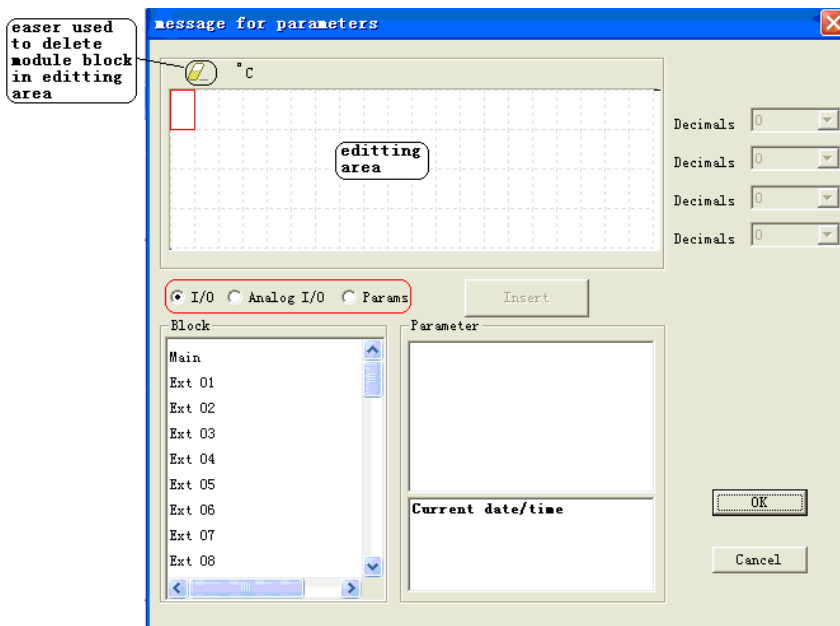
example you set 1 minute in “waiting for confirmation” area and set the 2 repetitions. If the ELC-SMS does not receive an acknowledgement within 1minutes time from the receiver, the event message will be sent to the next receiver. This means that the device runs through the 5 allocated receiver numbers and restarts afterwards with the first number. Such action will last 2 repetitions if no receiver confirm.

5.Confirmation keyword set area: Here you can set the confirmation keyword.

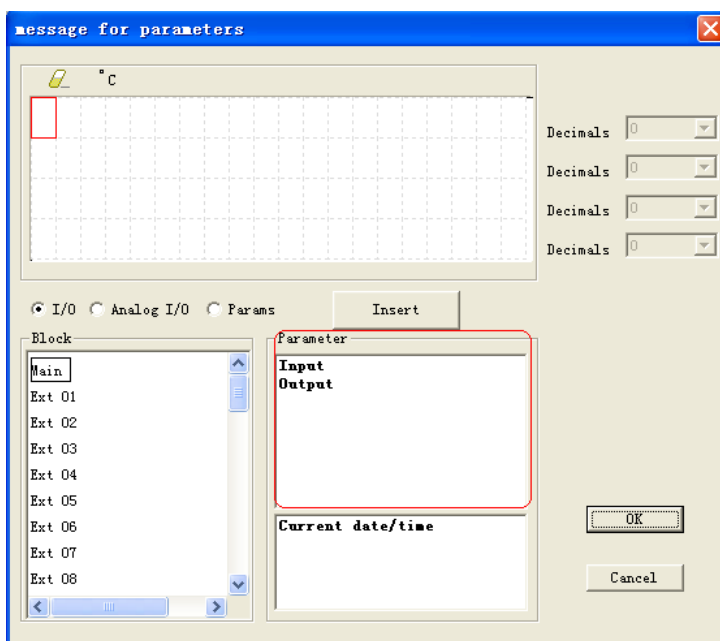
“6” is referring to non-text message configuration sector, in this sector parameters such as all IO status, real-time value of analogue input, current value of blocks(counter, timer &analogue function blocks), system time & system date can be configured as SMS to be sent to preset mobile numbers.

. Usage instruction for “Params Message” sector:

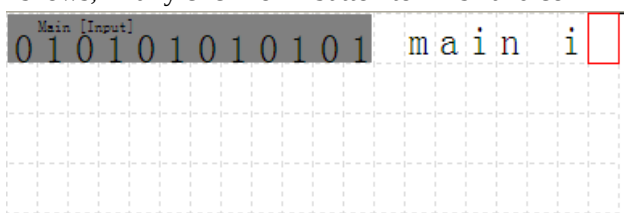
First of all, select “params Message” , then click “Set Message” button, the below config comes out:



- (1) Select “I/O”, hereunder “Block” section consists of “Main CPU”, 31 pieces expansion modules& SMS module’s I/O status blocks, hence any of “Main”, “Ext 01”, “Ext 02”, ... can be selected, as below config shows:

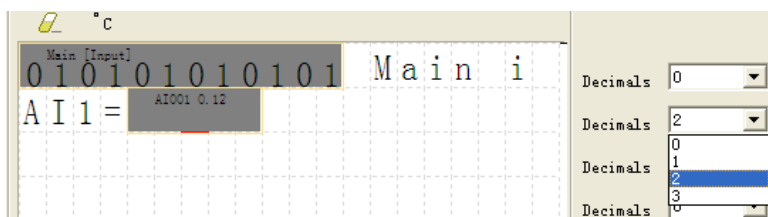


After that, Main CPU's I/O will appear in "Parameter" section, so you can select "Input" or "output", further click "Insert" button, herewith the editing area will display the "input" or "output" as below config shows, finally click "ok" button to finish and confirm your inserting. :



Certainly, you might also add text description at the end of input or output, as above config shows.

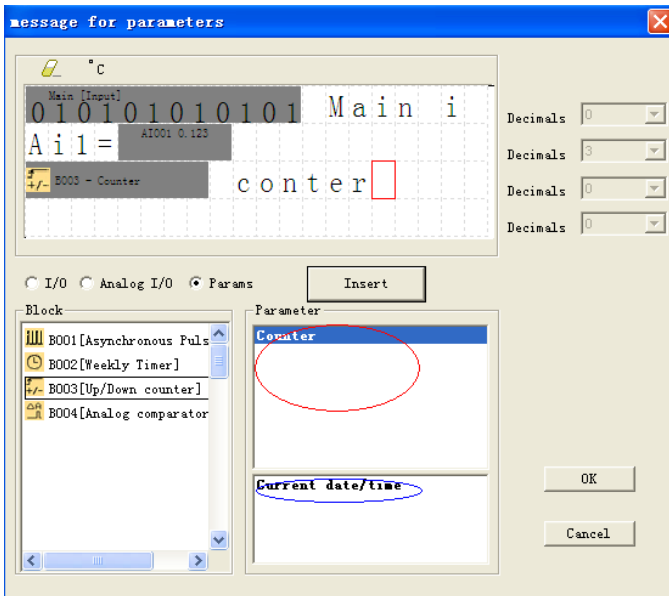
- (2) Select "Analog I/O", hereunder "Block" section consists of "8-route analog inputs of Main CPU", "2-route analog inputs for 31 pieces expansion modules respectively, ... can be selected, "Analog I/O" inserting method is same as you do with "I/O" above, as below config shows:



Notes: a) There are four lines(4*20 characters) totally in editing area, and each line can only be inserted into block's parameter once.

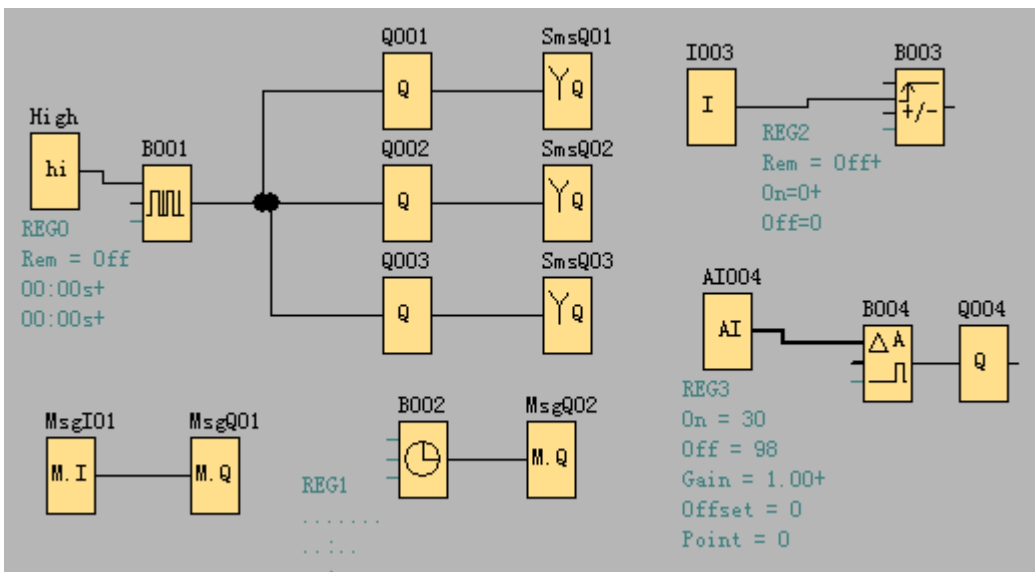
b) Analog values can be configured with 3-digit decimal in maximum as above config shows.

(3) Select "Params", hereunder "Block" section will automatically list out all function blocks in your program which are able to be inserted into "Editing area". Then select a certain block, after that, parameters of that selected block will be displayed under "Parameter" section, hence just select specific parameter you would like, further click "Insert" button, finally click "ok" button to finish and confirm your inserting. As below config shows:



Notes: In case the block you would select is just weekly timer or yearly timer under “block” section, then none of parameters can be displayed under “Parameter” section (area circled in red line). However, if you intend to insert system date and time, then you may just select “Current date/time” in area circled in blue line, then click “Insert” button. finally click “ok “ button to finish and confirm your insert

Example program description:



Set parameter as follows:

MsgIO1: the message content set as follows to realize switch the message input status by SMS.

Property

Sms In

☐ Number identification

ON instruction: Default values are:
OFF instruction: ON: 1#1
OFF: 1#0

MsgQ01:

Set the message content as follows, when the message output is triggered the following content will send to the receiver who with the phone number "13851428396".

MsgQ01 [Sms Message Output]

Sms Out

☒ Text Message ☐ Params Message

Message Text

Remaining chars for message (Max. 100 chars)

☐ Confirmation

Waiting for confirmation Minute

Number of loops if no confirmation received Repettitions

☐ Keyword for confirmation

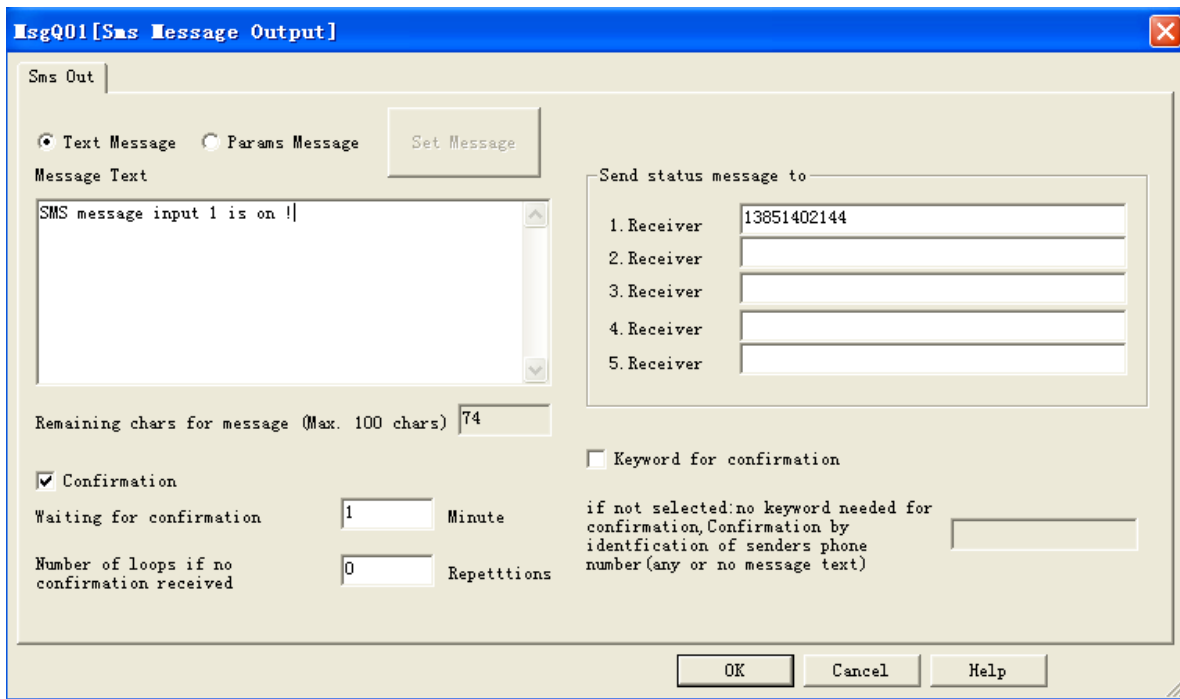
if not selected: no keyword needed for confirmation, Confirmation by identification of senders phone number (any or no message text)

Send status message to

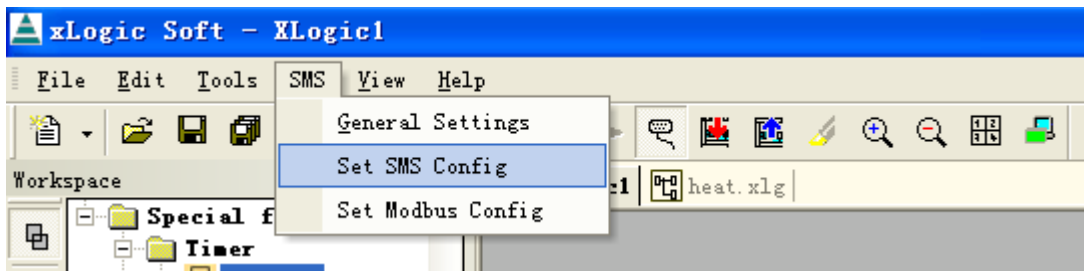
1. Receiver
2. Receiver
3. Receiver
4. Receiver
5. Receiver

MsgQ02

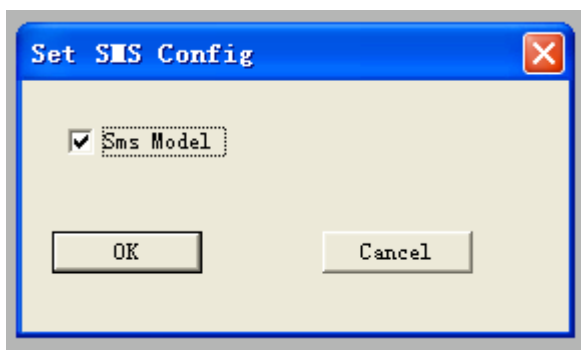
Set the message content as follows. When the MsgI01 is ON, the MsgQ02 will be triggered and at the same time who with the phone number "13851402144" will receive an SMS include the following message contents. In this way you can monitor the message input status.



Note: You must configurate as follows before downloading the program into xLogic.



1. Click the “SMS->Set SMS Config” menu.

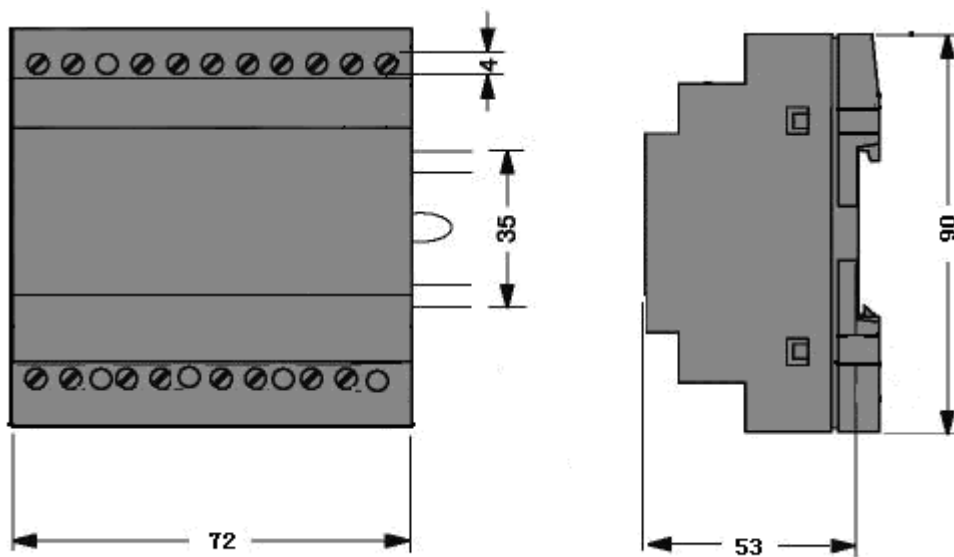


2. Click the “SMS Model” to select it.

3. Download your program

Technical items

Dimension



Technical data:

Operating voltage	DC 24V
Power consumption	3W
Switching capacity	4x 10A 250V
Temperature range	Temp: 0...+55°C Protection: IP 20
Inputs	6 digital inputs; 10 SMS message inputs
Outputs	4 relay outputs; 10 SMS message outputs
Provider (Phone / Network)	User selectable (depending on SIM card)