Zelio Logic + GSM Modem configuration guide
Objective

To configure and program the Zelio Logic smart relay in order to be able to:

• receive text messages/alarm on cell phone, and
• send a cell phone message to activate or to deactivate Zelio Logic output.
• Send a call phone message to get the status of a Zelio Logic variable
Hardware Guide

Following references are required:

1. Zelio Logic smart relay (except SR2A. SR2D)

2. Zelio Com Module (SR2COM01 comes with cable SR2CBL07)

3. Software ZelioSoft 4.3 (can be downloaded from: www.schneider-electric.ca )

4. Zelio Logic Programming Cable (SR2CBL01 Serial cable or SR2USB01 USB cable)

5. Phaseo DC Power supply 1.2 amps. ABL8MEM24012.
Hardware Guide continued..

- **GSM MODEM: SR2COM02** The new Schneider Electric modem SR2COM02 is a new quad band modem which will work in North America as well as Europe. Thus enabling us to give a complete solution for remote monitoring of Zelio Logic including the modem.

- Third party modem can be used for example Multitech MTCBA-G-F2/4; Theoretically any MODEM that works on GSM 850/ 1900 Hertz GPRS Class 10, 115200 Baud rate, 7 data bits, even parity, 1 stop bit. When buying modem take care that the MODEM comes with its antenna and serial cable DB15 to DB9

- Cell phone with possibility of sending and receiving SMS Text messages.

- SIM card to insert in GSM MODEM. Again the SMS text messaging option should be enabled for the SIM card.
Programming and configuring the Zelio Logic

- Open Zelio programming s/w,
- Select **create new program**

- Select Type of Unit, Click **Next**

- Select the communication extension SR2COM01. Click **Add** and then **Next**
- Select type of programming - ladder or FBD click **Next**
Programming and configuring the Zelio Logic

- Click on **Directories => Directory of Remote** stations to configure the phone number of the modem to which the Zelio relay will be connected

![Directory of remote stations](image)

- Select **Create**

![Directory of remote stations](image)
Programming and configuring the Zelio Logic

Name of the SIM card in the MODEM. **Note:** that in order that an e-mail be sent during a preset condition in the Zelio Logic there should be a **space before** the name of the modem.

Phone number of SIM Card

Select the type of MODEM. In this case select SR2MOD02.

Enter the number of the message center of card SIM card operator, for example for Rogers Wireless in Canada we must enter +17057969300.

Enter the SMS e-mail centre number (only if the SIM card supports email service). Again for Rogers Wireless in Canada it is 0000000000 (ten zeros).

Note the 10 zeros have ” on both sides.

Click **OK** =>
Programming and configuring the Zelio Logic

- Click on **Directories => Program Recipients Directory** to configure the cell phone numbers to which the Zelio remote station can send messages.

  ![Program recipients directory](image)

  - Select **Create**
Programming and configuring the Zelio Logic

The type of recipient in this case is selected as Mobile phone,

Enter the Name and number of the mobile telephone.

Number of connection attempts in the event of message send failure (network loss, busy signal etc.)

Insert check if this phone number has the authorization to modify variables in the Zelio Logic remote station.
If not checked, the cell phone will only get messages

Click OK =>
Programming and configuring the Zelio Logic

- Insert the line for transmitting message. We will use the Z1 and Z4 keys to simulate inputs. As per the logic below, to send the message it is necessary to press the 2 keys Z1 and Z4 at the same time. Remember that the Z1 and Z4 are the keys of the Zelio Logic display that are Left arrow and right arrow respectively.

Go to the icon of messages. Select coil T of line 01 and drag to rung 001.
Programming and configuring the Zelio Logic

• Double Click on the coil TS1 created. Following screen will appear.

![Message dialog box with Type tabs]

• It contains 3 tabs:

  **Type:** It can be selected if this block is an alarm, or allows modification of variables or both.

  In this case select only alarm.
Programming and configuring the Zelio Logic

Click on tab **Parameters:** Here enter phone numbers of the message recipient and the message.

This block activates and sends a message each time Z1 and Z4 are pressed at the same time.

Click this icon.
Programming and configuring the Zelio Logic

- Following screen will appear.
- Select the recipients who will receive the message and Click on icon **Send to** =>. It possible to select one or several recipients. Once selected it is possible to remove them from the list using the **Detach** button and to order them by priority by using the + and - buttons. The recipient listed first will have the message first and so on.
- Click **OK**
Programming and configuring the Zelio Logic

The recipients selected will appear in the first table.

In the second table list the I/Os whose state is required to be included in the message. This I/Os can be selected from the list which appears on clicking on this icon.

Table 3 and 4 is where the message is written. It is possible to include the value of the variables associated with the function block in the body of the message. To do this select the variable in the list. Drag and drop the variable into the zone of the message body. Write the message desired. Click OK.

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Programming and configuring the Zelio Logic

This is the program to be able to send a message from a cell phone to activate an output of the Zelio Logic:

- Create line 002 with an input that qualifies a second function block TS2.
- Create line 003 with the contact of the desired output linked to the set coil of that same output.
- Create line 004 with a closed contact of the desired output linked to reset of that same output.
- Double click Block TS2 of line 002.
Programming and configuring the Zelio Logic

Like for block TS1, TS2 has 3 tabs. In **Type** tab - select variable modification this time.
Programming and configuring the Zelio Logic

• Click on **Parameters** tab

![Image of Zelio Logic configuration interface]

• Click on this icon to create the table of people authorized for variable modification
Programming and configuring the Zelio Logic

- Select contact(s) who will be able to activate the output and click **Send to ->**.

Select the contact and double click. This window will appear with properties of the selected recipient. Select **Modification**. This allows this user to modify this output. Repeat if there are other contacts. Click => **OK**.

**Note:** In slide 9 when the contact was created, option to modify variables was qualified. If this is not done at that time, recipient will not be qualified for this option in this step.
Programming and configuring the Zelio Logic

In the second table, select the variables to activate. Click on this icon for a list of variables used in the program.

- Select line Q1-Contact.
- Double click

Select Q1 Contact
Click to OK
Programming and configuring the Zelio Logic

In this screen the “Alias” name of the variable as well as its actual name will appear. The “Alias” is used in the syntax that will be sent to the cell phone. It is suggested not to make it very long. In this case it is changed to Q1

It is necessary to check the Read and modifiable option.
Click **OK**, Repeat if there are other variables.
Modem Connection and Transfer of application

- Select **Transfer=> COMMUNICATION configuration**

- Select the communication port
- Click **OK**

Select **Transfer=> Transfer program**
Modem Connection and Transfer of application

- During the transfer the following window appears

Select the remote station

The recipient access key can be modified and will be used in the command sent from the cell phone to the remote station.
Receiving and Sending SMS

- In order to trigger an alarm from the Zelio Logic relay, press Z1+Z4. An SMS message is sent to the configured cell phone.
- In order to send command from the cell phone to the Zelio Logic in order to change the state of the output Q1, in this case following command needs to be sent:
- The syntax is: Recipient access key!Alias=0 or 1 (without any space)
  - 00000000!Q1=1
  - 00000000!Q1=0
- To read the state of the variable:
  - 00000000!Q1?

**Note:** that if Recipient access key is 00000000, then it can be omitted in the message.

Use:
- !Q1=1
- The state of the contact Q1 will change, and a return message will be sent to the cell phone one notifying the state of that output – Q1.
- If the syntax or command is incorrect (uppercase, lowercase, no spaces) the equipment will respond with an error code.
- It is possible to request and to change dates, to send run or stop commands, to request state of the module, to change to of summer or winter schedule etc.
Function block program

The programming in function block is same as the initial slides 5-9. Choose function block instead of ladder when selecting Type of programming.

Let us start programming in function blocks.

It is required to program the following configuration.
Function block program

Input Z1 which triggers notification to cell phone

Message Block-B01 that sends the cell phone the notification that the Z1 key was pressed.

Input to qualify message block that allows to change output Q1 from the cell phone.

Output – Q1 whose status can be changed using the cell phone.

Message Block-03 that allows to change status of output Q1 from the cell phone.
Function block program

Configuration of the 2 COM message blocks is same as before in the ladder program.

• Double Click on the Message Block B01. Following screen will appear.

- It contains 3 tabs:

Type: It can be selected if this block is an alarm, or allows modification of variables or both.

In this case select only alarm.
Programming and configuring the Zelio Logic

- Click on **Parameters** tab

- Click on this icon to create the table of people authorized for variable modification
Programming and configuring the Zelio Logic

- Select contact(s) who will be able to activate the output and click **Send to - >**.

This window will appear with properties of the selected recipient. Select **Modification**. This allows this user to modify this output. Repeat if there are other contacts. Click => **OK**.

**Note:** In slide 9 when the contact was created, option to modify variables was qualified. If this is not done at that time, recipient will not be qualified for this option in this step.
Programming and configuring the Zelio Logic

In the second table, select the variables to activate. Click on this icon for a list of variables used in the program.

- Select line Q1-Contact.
- Double click

Select Q1 Contact

Click to OK
Programming and configuring the Zelio Logic

In this screen the “Alias” name of the variable as well as its actual name will appear. The “Alias” is used in the syntax that will be sent to the cell phone. It is suggested not to make it very long. In this case it is changed to Q1.

It is necessary to check the Read and modifiable option. Click OK, Repeat if there are other variables.

Transfer program to the Zelio Smart Relay
Receiving and Sending SMS

- In order to trigger an alarm from the Zelio Logic relay, press Z1. An SMS message is sent to the configured cell phone.
- In order to send command from the cell phone to the Zelio Logic in order to change the state of the output Q1, in this case following command needs to be sent:
  - The syntax is: Recipient access key!Alias=0 or 1 (without any space)
    - 00000000!Q1=1
    - 00000000!Q1=0
- To read the state of the variable:
  - 00000000!Q1 ?

  **Note:** that if Recipient access key is 00000000, then it can be omitted in the message. Use:
  - !Q1=1

- The state of the contact Q1 will change, and a return message will be sent to the cell phone one notifying the state of that output – Q1.
- If the syntax or command is incorrect (uppercase, lowercase, no spaces) the equipment will respond with an error code.
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