

ZELIO 2 S2029 vA – ZelioLogic & XBTN

Application example of communication between Zelio Logic and XBTN401 using function SL IN / SL OUT

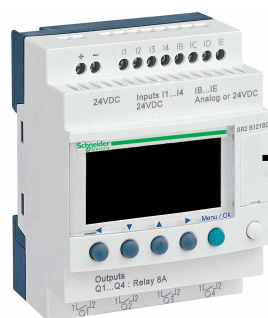
Objective:

The objective of this note is to realise an example of communication between the XBTN401 and the Zelio Logic through Zelio protocol using SLIN and SLOUT function:

Display on the XBTN401 the status of the Zelio outputs.
Modify the preset value of a timer and start it via the XBTN401.
Display a barGraph depending on the Zelio analog value.

Architecture:

Zelio Logic module +
ZelioSoft2 V4.1 (or higher)



XBTN401 + VDL V1.3



Cable SR2CBL08 (SR2 front face port &
XBT 2nd serial Mini-Din port)

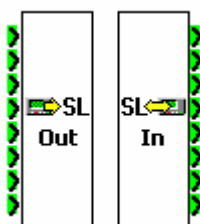
Description:

The communication between Zelio Logic and XBTN401 is done using the function SL IN and SL OUT of ZelioLogic.

Note: These function blocks can only be used in FBD mode.

SL IN and SL OUT I/O data type are words (16 Bits).

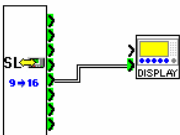
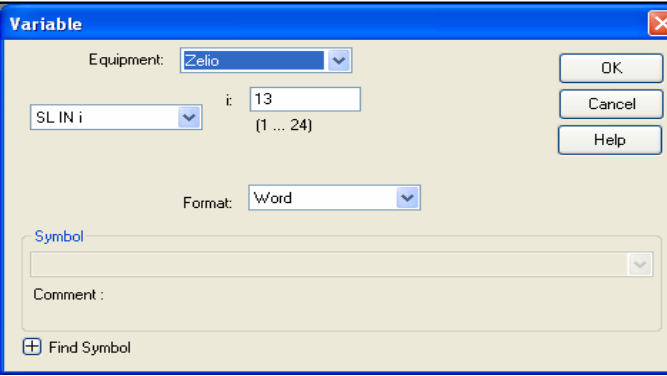
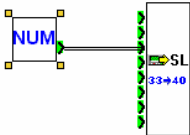
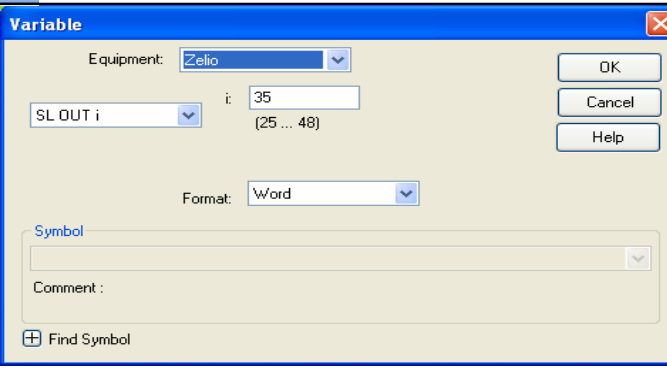
There are 3 SL IN and 3 SL OUT function blocks available. On each SL function block, 8 words can be connected.



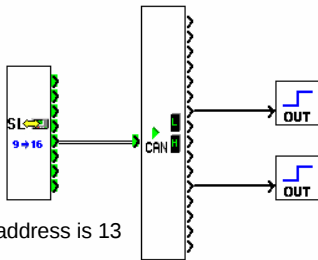
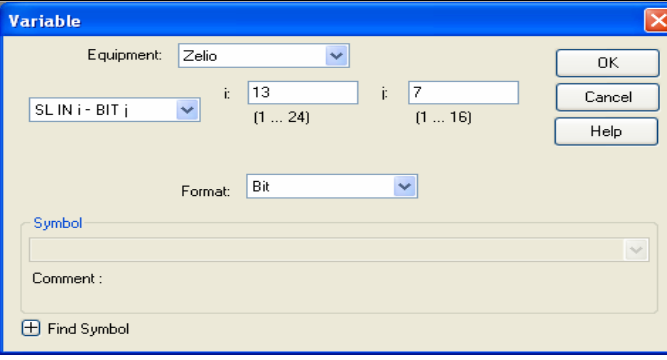
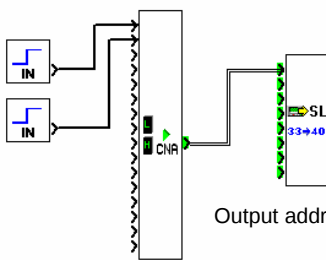
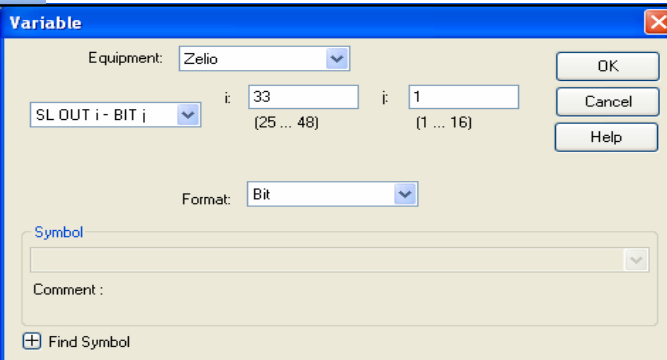
There are 3 SL IN function blocks with the following address range: 1...8; 9...16; 17...24

There are 3 SL OUT function blocks with the following address range: 25...32; 33...40; 41...48

Example to link HMI to ZelioLogic variable at the format Word

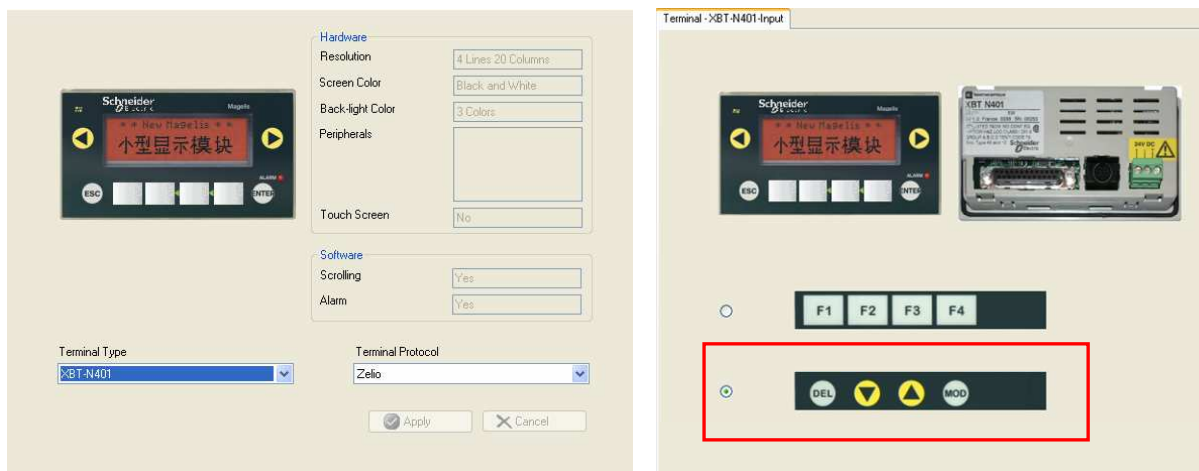
ZelioLogic application	Vijeo Designer Application
Display a word received from the HMI  Input address is 13	 In the variable declaration SL IN i -> i = 13 (format Word) SL IN i -> 1 < i < 24
Send a word to the HMI  Output address is 35	 In the variable declaration SL OUT i -> i = 35 (format Word) SL OUT i -> 25 < i < 48

Example to link HMI to ZelioLogic variable at the format Bit

Receive bits of word from the HMI  Input address is 13 CAN function block allows to convert WORD to BIT	 In the variable declaration SL IN i - BIT j -> (i = 13 & j = 7 (format BIT) SL IN i - BIT j -> 1 < i < 24 and 1 < j < 16
Send bits of word to the HMI  Output address is 33 CAN function block allows to convert BIT to WORDS	 In the variable declaration SL OUT i - BIT j -> i = 33 & j = 1 (format BIT) SL OUT i - BIT j -> 25 < i < 48 and 1 < j < 16

Program example:

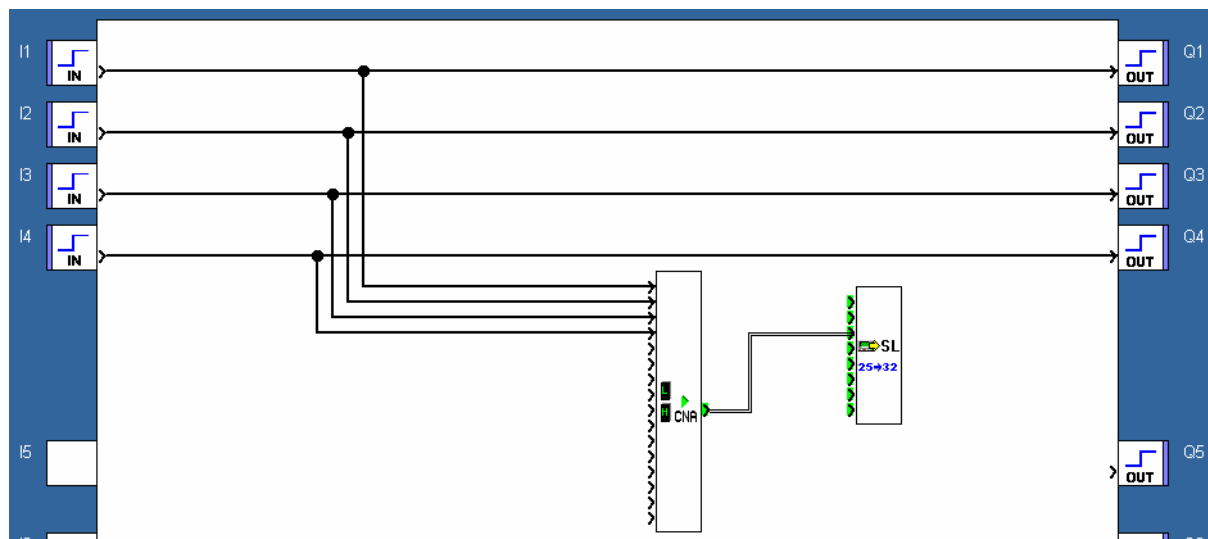
- Start a new VijeoDesigner Lite project and select the type of terminal and the Zelio protocol and start a new ZelioLogic project in FBD mode.



Note: In this application, we use an XBT-N401 type input

- Display on the XBTN401 the status of the ZelioLogic outputs Q1 to Q4

Zelio program:



Zelio outputs Q1 to Q4 are controlled by the ZelioLogic inputs I1 to I4. In this case, we use the CAN function block to convert BIT to WORD in order to be compatible with SL OUT input.

Note: The communication between HMI and Zelio Logic can only be done by words.

Q1 status will be available for the HMI in the variable **SL OUT 27 – Bit 1**
 Q2 status will be available for the HMI in the variable **SL OUT 27 – Bit 2**
 Q3 status will be available for the HMI in the variable **SL OUT 27 – Bit 3**
 Q4 status will be available for the HMI in the variable **SL OUT 27 – Bit 4**

VijeoDesigner program:

In VijeoDesigner, create a new panel using light object and link HMI variables to ZelioLogic Variables:

N°	Type	Setting
1	Light	Zelio SL OUT 27 - BIT 1
2	Light	Zelio SL OUT 27 - BIT 2
4	Light	Zelio SL OUT 27 - BIT 4
5	Light	Zelio SL OUT 27 - BIT 3

Each Light objects are linked to the Zelio Outputs

Variable: ...

State Representation

ON (Any non null value) ...

OFF ...

Affectation of the variable

Variable

Equipment:

i: i:
(25 ... 48) (1 ... 16)

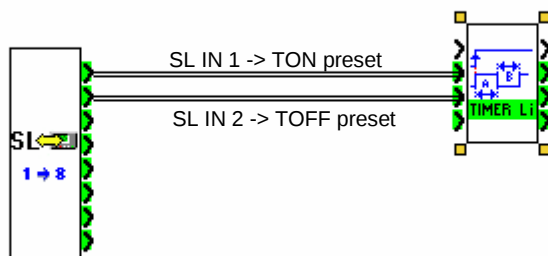
Format:

Symbol:

Comment:

- Modify the preset value of a timer and start the timer via the XBTN401

Zelio program:



VijeoDesigner program:

In VijeoDesigner, create a new panel using Alphanumerical text object and link HMI variables to ZelioLogic Variables:

N°	Type	Setting	Symbol
1	Alphanumerical text	Zelio SL IN 1	
2	Alphanumerical text	Zelio SL IN 2	

Each Alphanumerical text objects are linked to the Timer preset value (TON and TOFF)

Alphanumerical Text - Settings | Thresholds | Visibility | Access Mode And Security

Variable: Zelio :SL IN 1

Font Size: 8 x 100%

Display Type: Decimal

Decimal Place: Automatic

Affectation of the variable

In the menu « Access Mode And Security », select Write access mode at validation to allow variable modification

Alphanumerical Text - Settings | Thresholds | Visibility | Access Mode And Security

Variable: Zelio :SL IN 1

Read Access Mode: Permanent

Write Access Mode: At Validation

Variable

Equipment: Zelio

SL IN i: 1 (1 ... 24)

Format: Word

Symbol:

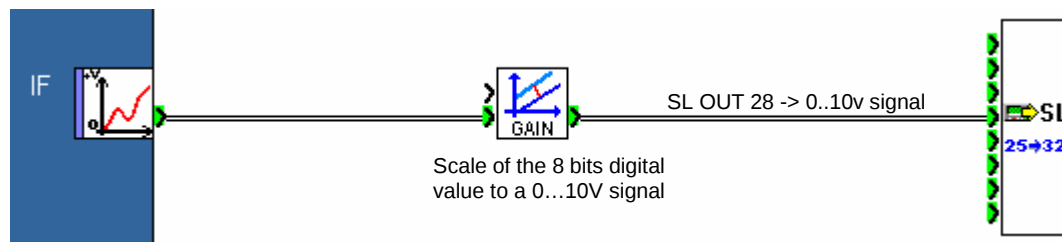
Comment:

Find Symbol

After that, using the MOD menu of the HMI front panel, it is possible to modify the variable.

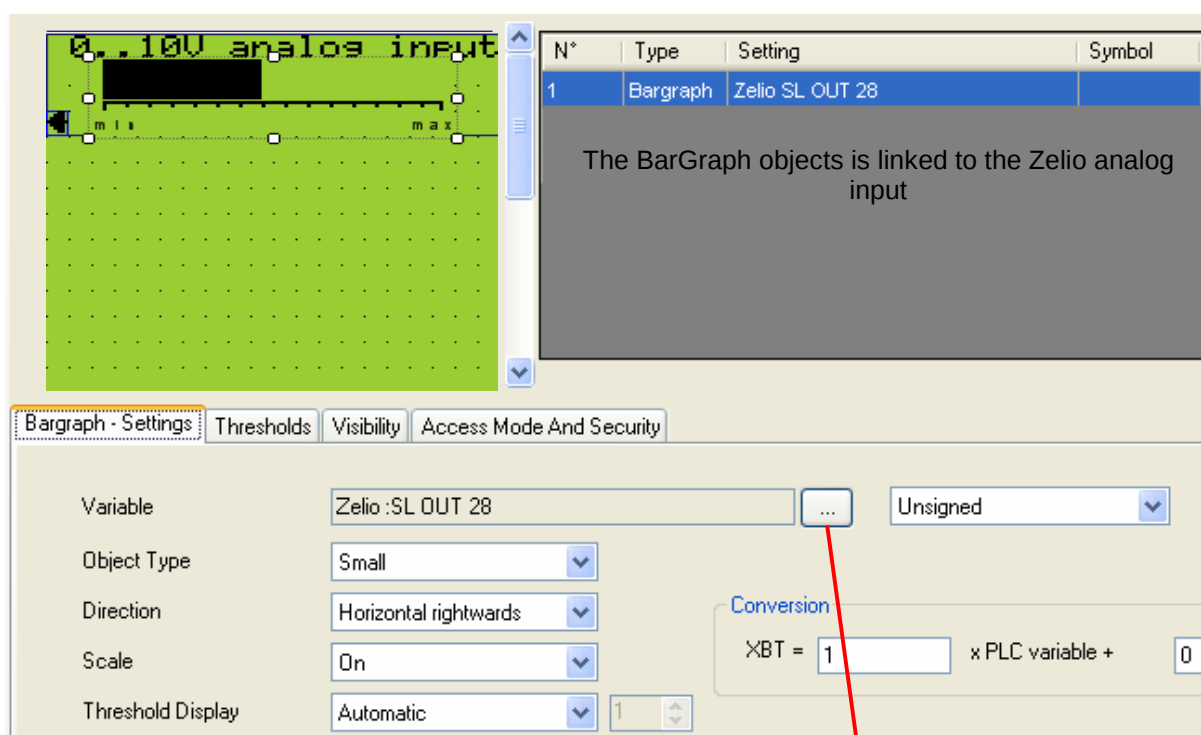
- Display a barGraph on the front panel of the HMI depending on the Zelio analog input value

Zelio program:

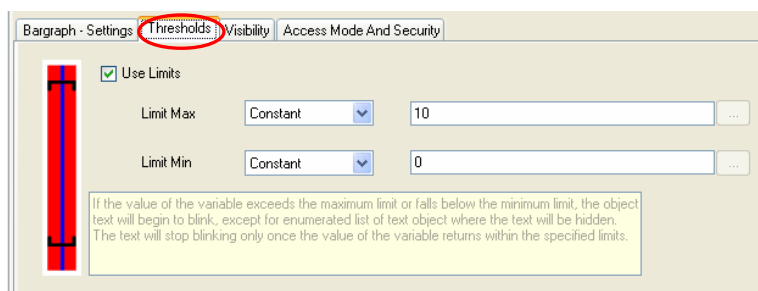


VijeoDesigner program:

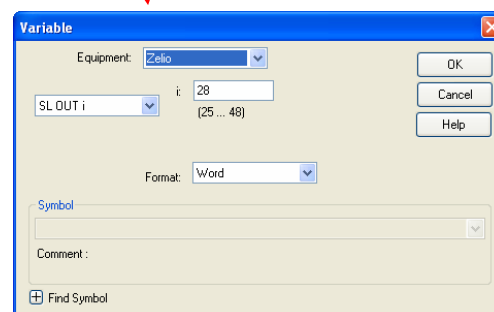
In VijeoDesigner, create a new panel using BarGraph object and link HMI variable to ZelioLogic Variable:



In the menu « Thresholds», select the Min and MAX limit to display the 0...10V signal

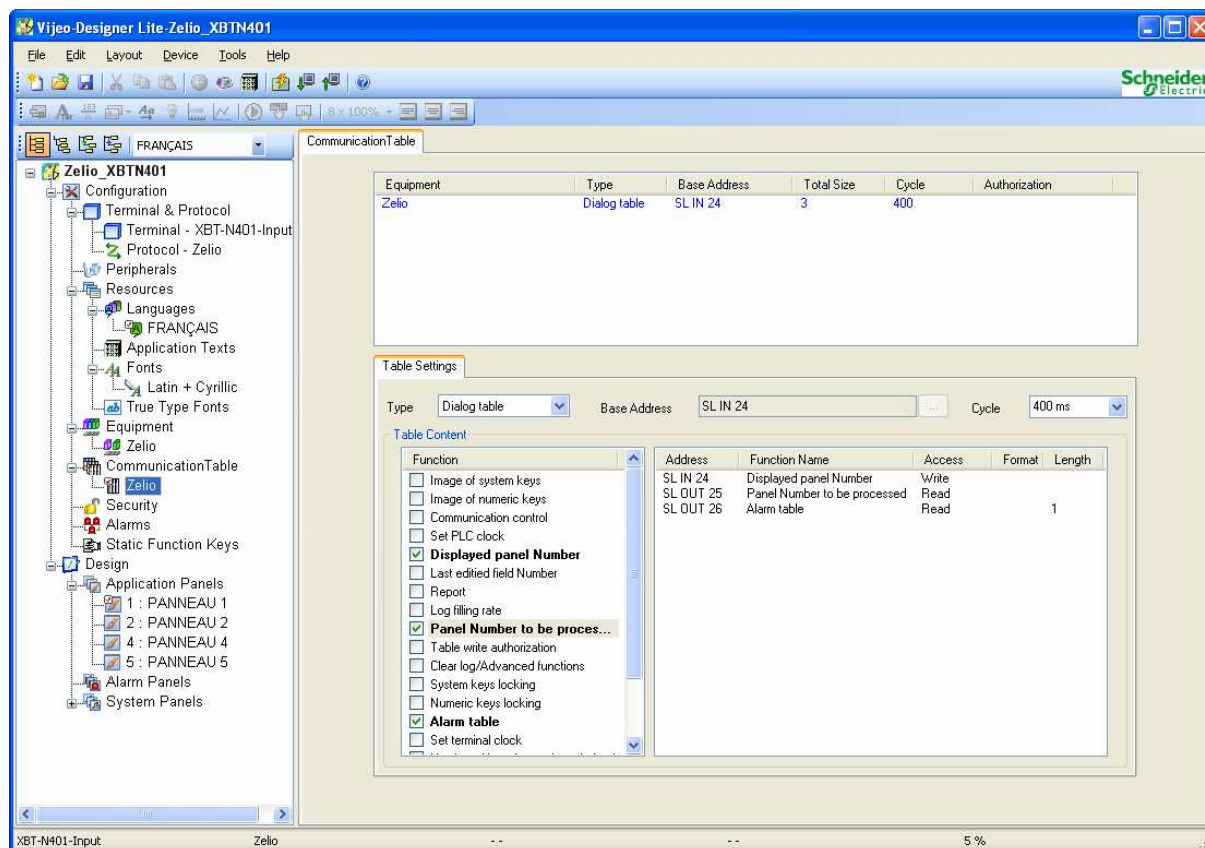


Affection of the variable



- Communication Table:

With Vijeo Designer Lite, it is possible to use dialogue table. In this case, some SL IN and SL OUT variables are automatically linked to SL function blocks. Using the communication table, some SL IN and SL OUT cannot be used in the application.

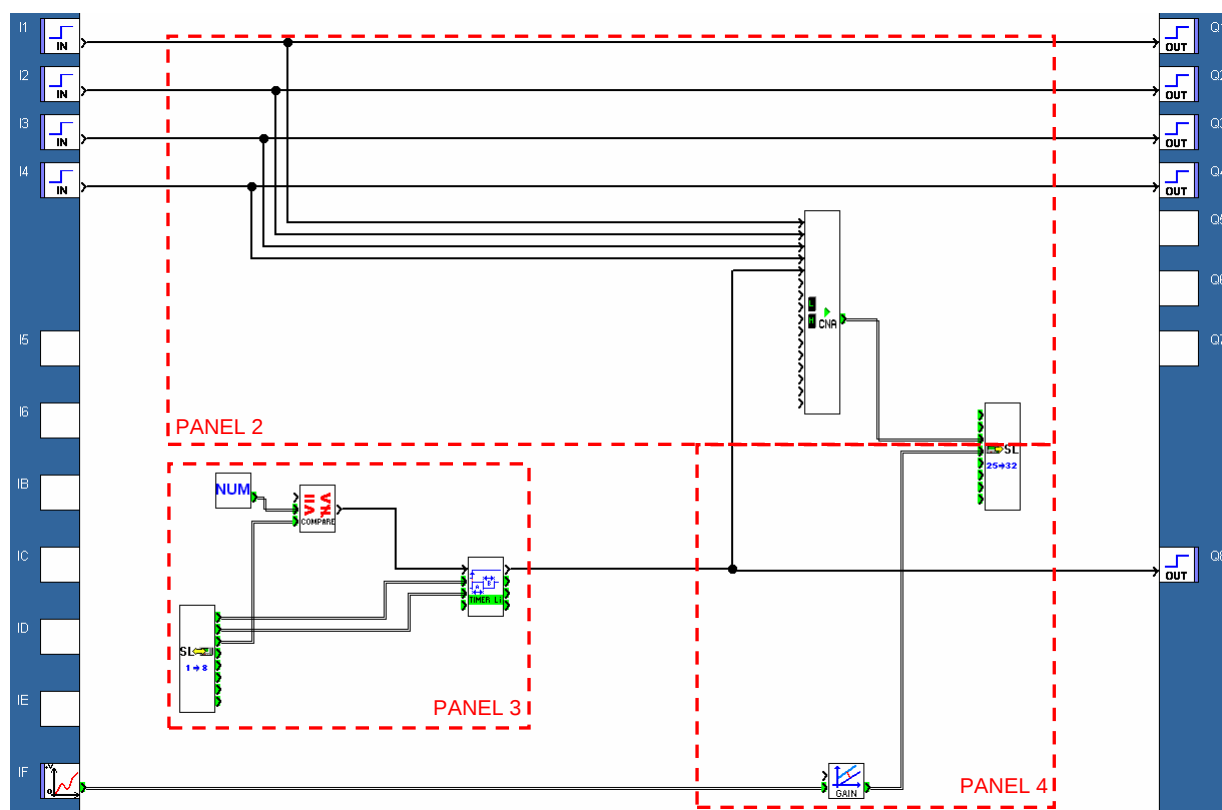


Note: Depending on The HMI type, the function available in the communication table will not be the same.

Simulation of this application example:

Zelio Application : Zelio S2029vA Zelio_XBTN401.ZM2

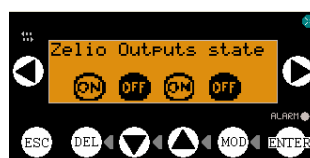
Vijeo Designer application : Zelio S2029 vA XBTN.DOP



PANEL 1



PANEL 2



Display the status of the Zelio Logic outputs Q1 to Q4

PANEL 3



Using MOD button, it is possible to modify Timer preset values and to start the Timer.
The Light object displays the state of the Timer output.

PANEL 4



Bar Graph to display the state of the Zelio Analogue input IF