

SNAP7 CONNECTOR

PLC CONNECTION

CONNECTION TYPE PG S7Basic TSAP Local TSAP 0 0 Remote TSAP 0 0

Rack 0 Slot 0 PLC IP ADDRESS 192.168.2.180 **CONNECT**

AREA CONNECTION

AREA TYPE DB DB 1 Offset (bytes) 0 Dimension (bytes) 50 **READ**

DATA NAME	OFFSET	ABSOLUTE OFFSET	TYPE (click)	RAPP	VALUE	
d1	0		BYTE	HEX	0x1	WRITE
d2	1		BYTE	HEX	0x2	WRITE
d3	2		BYTE	HEX	0x3	WRITE
d4	3		BYTE	HEX	0x0	WRITE
d5	4		BYTE	HEX	0x0	WRITE
d6	5		BYTE	HEX	0x0	WRITE
dt	0		DATETIME		2001/02/03 00:00:00	WRITE
test wr	20		WORD		1234	WRITE
timer	22		TIMER		1550	WRITE
tmr hex	22		WORD	HEX		WRITE
test wr dt	30		DATETIME		2020/05/19 16:30:00	WRITE
test wr str	40		STR(5)		pippo	WRITE

MANAGE PROFILES

PROFILE NAME test **PROFILE LOAD** **PROFILE SAVE** **PROFILE DELETE**

Profile loaded

Snap 7 Connector is a very simple app to connect to a PLC and access data in reading and writing. It can also simulate a PLC, allowing you to test a Step 7 communication from other devices or applications.

1.0.0

SNAP 7 Connector manual

POWER-KI

Demo

DESCRIPTION									
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Document Information

Summary

Purpose

Validity

Relation

POWER-KI programming manuals.

References

- [1] POWER-KI A PROGRAMMING LANGUAGE
Preludio
Cesare A. Perani
2012 - XPLAB
-

Document Change

Terms and Definition

Glossary entry	Entry definition
PWK	POWER-KI

Conventions and Symbol

Text	Description	Example
Courier new	Code or code symbol	U8 s=10;



1

Descrizione

Snap 7 Connector is an application created in Power-KI to connect to Siemens Step 7 PLC and TIA Portal, allowing data to be read and written.

The photo shows the main screen, where you can insert all the settings suitable for connection to a PLC memory area.

The PLC must be equipped with a communication CPU for connection to a LAN, and the PC, from which the Connector is launched, must be on the same network.

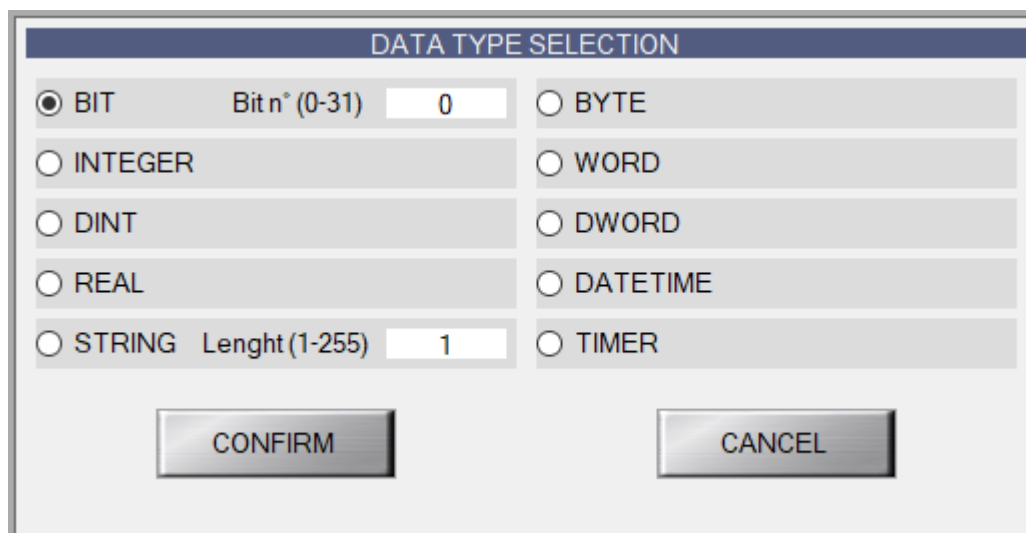
At this point it is sufficient to specify the PLC configuration parameters: the type of communication (PG, OP or Step7 Basic), other data such as S7Basic TSAP, Local TSAP or Remote TSAP, even if the most important are the IP address and the Rack and Slot, which correspond to the number assigned to the rack in which the PLC processor is inserted and the number of the slot it is occupying in it.

By pressing CONNECT it is already possible to test the correctness of the parameters and the validity of the connection: if everything is ok, the LED to the right of the button lights up green. If there is a problem, the LED turns red and an error message is displayed in the dialog box at the bottom right.

Once a valid connection has been established, it is possible to access the data of a memory area: describe the type (Bit memory, Inputs, Outputs, Counter, Timer or a DB.), The number if it is a DB, the offset in bytes from which to start reading the area (starting from 0) and the consecutive bytes to acquire.

In the table below, you have to insert the rows that make up the data mapping. To do this, on the right and in the column there are a whole series of commands to add rows, reorder them or delete them.

Each row corresponds to a variable: it can be baptized, the offset relative to the portion of data read is specified (the column absolute offset then automatically shows the absolute address of the data with respect to the entire area), the type of the data (by clicking the panel in the figure appears with the expected types to choose from), the decimal, binary or hexadecimal representation.



DATA TYPE SELECTION

☒ BIT Bit n° (0-31)
☐ BYTE

☐ INTEGER
 ☐ WORD

☐ DINT
 ☐ DWORD

☐ REAL
 ☐ DATETIME

☐ STRING Lenght (1-255)
☐ TIMER

The last column will host the value read. It is possible to type in the new value to be assigned to the variable. To the right of the cell there is in fact the WRITE button to write the value on the PLC.

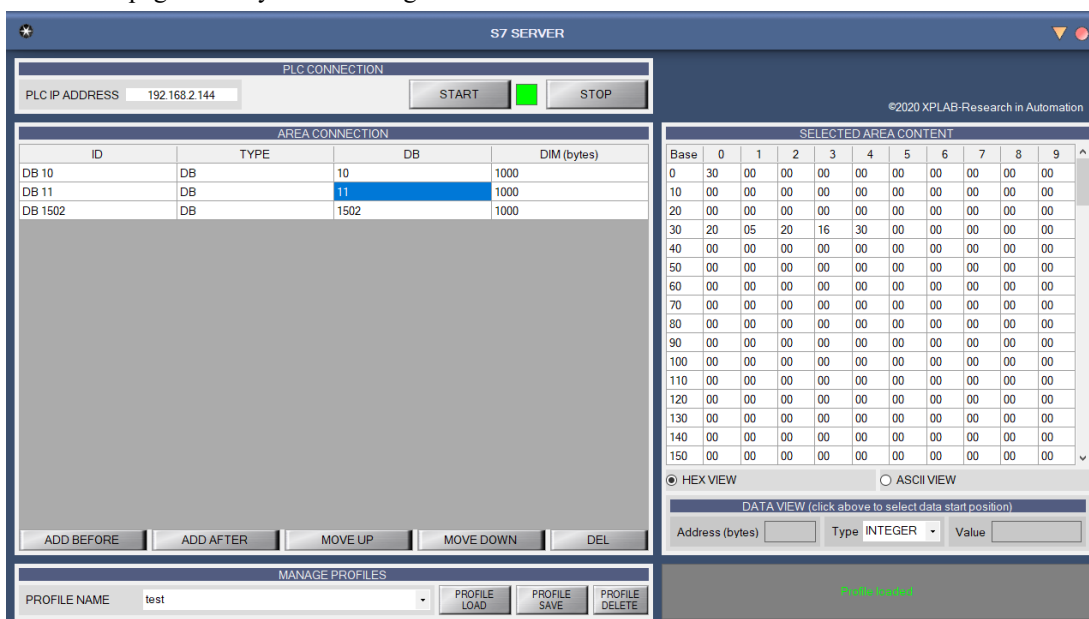
Once the mapping is complete, and if a connection is established, using the READ button you can read the value of the current variables, which can then be modified with the WRITE button described above.

The MANAGE PROFILES panel completes everything where, simply by typing a profile name, it is possible to save the data configuration entered, including connection and mapping parameters. Profile name is a drop-down menu, since it proposes the list of profiles already saved in the system, so that they can be reloaded quickly and easily. There is also a button for deleting profiles that have become obsolete.

The Connector also offers a second functionality: it allows you to create a server with data blocks accessible via the SNAP 7 protocol. In practice, you can simulate the data of a small (or large) PLC.

The function is accessible via the SERVER button on the main screen, which is flanked by a LED that lights up when it is active.

Here is the page where you can configure a server:



S7 SERVER

PLC CONNECTION

PLC IP ADDRESS ☒

AREA CONNECTION

ID	TYPE	DB	DIM (bytes)
DB 10	DB	10	1000
DB 11	DB	11	1000
DB 1502	DB	1502	1000

MANAGE PROFILES

PROFILE NAME

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SELECTED AREA CONTENT

Base	0	1	2	3	4	5	6	7	8	9
0	30	00	00	00	00	00	00	00	00	00
10	00	00	00	00	00	00	00	00	00	00
20	00	00	00	00	00	00	00	00	00	00
30	20	05	20	16	30	00	00	00	00	00
40	00	00	00	00	00	00	00	00	00	00
50	00	00	00	00	00	00	00	00	00	00
60	00	00	00	00	00	00	00	00	00	00
70	00	00	00	00	00	00	00	00	00	00
80	00	00	00	00	00	00	00	00	00	00
90	00	00	00	00	00	00	00	00	00	00
100	00	00	00	00	00	00	00	00	00	00
110	00	00	00	00	00	00	00	00	00	00
120	00	00	00	00	00	00	00	00	00	00
130	00	00	00	00	00	00	00	00	00	00
140	00	00	00	00	00	00	00	00	00	00
150	00	00	00	00	00	00	00	00	00	00

☒ HEX VIEW
 ☐ ASCII VIEW

DATA VIEW (click above to select data start position)

Address (bytes) Type: INTEGER Value

Profile loaded



Activation is quite simple: you specify an IP address, add data areas in the table below (eg DB with the number), each with a dimension, and with the START button you activate the functionality.

By selecting an area, its contents are shown on the right in hex format. By selecting a box in the hex table, in the DATA VIEW panel it is possible to decode the data by specifying the type.

Here too we find a MANAGE PROFILES panel to quickly save SERVER profiles so that they can be reloaded and activated in a few clicks.

The functionality of modifying the contents of the server data areas is missing, since it is possible to do it with the main Connector screen, simply by auto-connecting to the simulated SERVER areas (or you can use a SNAP 7 Connector from another PC).