



***SINECL2 - Driver of PROFIBUS Protocol  
for SIMATIC S5 PLCs  
User's Manual***

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# 1. SINECL2 - Driver of PROFIBUS Protocol for SIMATIC S5 PLCs

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## 1.1. Driver Use

The SINECL2 driver is used for data exchange between **asix** computers and SIEMENS SIMATIC S5 PLCs provided with the CP5430 card, with the aid of the SINEC L2 local network based on the FDL protocol (2-nd level of the PROFIBUS standard). An **asix** system computer must be provided with the CP5412 (A2) or CP5613 communication processor and system software used to support this processor.

The software of the controller dedicated for operation together with the **asix** system must meet the following requirements:

- program in the controller must contain calls of function blocks executing receiving and sending telegrams through the CP5430 according to the FDL protocol;
- number of the node given to the CP5430 must be unique within the local SINEC L2 network;
- parameters of the CP5430 and CP5412(A2) or CP5613 operation must be compatible.

In each transmission channel established between any **asix** system computer and any CP5430 communication processor, it is allowed to use 10 subchannels, multiplying in this way a quantity of transferred information.

## 1.2. Declaration of Transmission Channel

The full syntax of declaration of transmission channel operating according to the SINEC L2 protocol is given below:

*logical\_name=SINECL2,PC\_node,PLC\_node [,subchannel]*

where:

- |                   |  |
|-------------------|--|
| <i>PC_node</i>    | - number of the node assigned to the application computer;   |
| <i>PLC_node</i>   | - number of the node assigned to the CP5430 processor in the controller with which the connection is to be executed in a given transmission channel;   |
| <i>subchannel</i> | - numbers of subchannels which are used in a given transmission channel. An absence of this parameter signifies that all the subchannels (from 1 to 10 inclusive) are used in a given channel. |

### EXAMPLE

Exemplary items declaring transmission channels working according to the SINEC L2 protocol are given below:

```
CHAN2=SINECL2,5,1,1,2,3,4
CHAN3=SINECL2,5,2
```

The transmission channel with the logical name CHAN2 has the following parameters defined:

- SINECL2 protocol using the SINEC L2 local network;
- number of the node assigned to the computer - 5;
- number of the node assigned to the CP5430 communication processor - 1;
- used subchannels with numbers 1, 2, 3 and 4.

The transmission channel with the logical name CHAN3 has the following parameters defined:

- SINECL2 protocol using the SINEC L2 local network;
- number of the node assigned to the computer - 5;
- number of the node assigned to the CP5430 communication processor - 2;
- all the subchannels are used.

### 1.3. Addressing the Process Variables

The rules of creating the symbolic addresses belonging to the SINECL2 type channel are the same ones as for AS512 type channels.

The SINECL2 protocol driver requires installing the CP5412(A2) or CP5613 card and the driver of this card supplied in the DP-5412/Windows NT packet by SIEMENS.

The SINECL2 protocol driver is loaded as a DLL automatically.

### 1.4. Driver Configuration



***ALARM\_LOG = [YES/NO]***

Meaning - declaration of writing to the log file the messages about an arrival of alarm telegrams.  
 Default value - NO.  
 Defining - manual.



***ERROR\_LOG = [YES/NO]***

Meaning - declaration of writing to the log file the messages about transmission errors .  
 Default value - NO.  
 Defining - manual.



***MAX\_NOUMBER\_OF\_NODES = number***

Meaning - declaration of maximal number of nodes in the SINECL2 network.  
 Default value - 16.  
 Defining - manual.



***SAP = id, PC\_SAP, PLC\_SAP***

Meaning - declaration of mapping the SAPs, creating a logical channel named *id*, on the PC and PLC sides;

Default value - by default, 10 pairs of SAPs mapped as follows (id, PC\_SAP, PLC\_SAP) are used:  
 1, 35, 45  
 2, 36, 46  
 3, 37, 47  
 4, 38, 48  
 5, 39, 49  
 6, 40, 50  
 7, 41, 51  
 8, 42, 52  
 9, 43, 53  
 10, 44, 54

Defining - manual.



***STATISTICS = [YES/NO]***

Meaning - transmission statistics writing to the log file every minute.  
 Default value - NO.  
 Defining - manual.



***TIMEOUT = number***

Meaning - timeout for an answer from the controller expressed in ticks of duration time equal to 400 ms.  
 Default value - 3.  
 Defining - manual.



***LOG\_FILE = name***

Meaning - declaration of the log file name with diagnostic messages of the SINECL2 driver.  
 Default value - log file is not created.  
 Defining - manual.



***CP\_TYPE = number***

Meaning - declaration of the communication processor card type used in the **asix** system computer. Two types are allowable:  
 1/ CP5613 identified by the number 5613;  
 2/ CP4512 (A2) identified by the number 5412.  
 Default value - 5412 (CP5412 (A2) communication processor).  
 Defining - manual.



***DELAY = number***

Meaning - timeout declaration (in milliseconds) after an occurrence of SDA telegram sending error.  
 Default value - 0.  
 Defining - manual.



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