MPI - Driver of MPI Protocol for SIMATIC S7 PLCs
User's Manual

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1. MPI - Driver of MPI Protocol for SIMATIC S7 PLCs

1.1. Driver Use

The MPI driver is used for data exchange with SIMATIC S7 PLCs by means of the MPI interface. The transmission is executed by serial interfaces in the V24 (RS232C) standard with use of standard serial ports of an **asix** system computer.

Operation of the **asix** system with the SIMATIC S7 PLCs by using the MPI interface does not require any controller's program adaptation.

1.2. Declaration of Transmission Channel

The full syntax of declaration of transmission channel operating according to the MPI protocol has the following form:

logical_name=MPI,*port[,PCaddress, MPIaddress,baud,character,parity,stop]*

where:

MPI	- name of the MPI interface driver of SIEMATIC S7 PLCs;
port	- name of the serial port;
PCaddress	- PC address;
MPIaddress	- controller address on the MPI bus;
baud	- transmission speed in bauds;
character	- number of bits in a transmitted character;
parity	- parity check type,
stop	- number of stop bits.

The parameters *PCaddress*, *MPIaddress*, *baud*, *character*, *parity*, *stop* are optional parameters. In case of omitting them the default values are taken:

- transmission speed - 19200 Bd,
- number of bits in character - 8,
- type of parity check - odd parity check,
- number of stop bits - 1,
- address of S7 controller - 2,
- address of PC - 0.

EXAMPLE

Examplary items declaring the transmission channel operating according to the MPI protocol are given below:

CHAN2=MPI,COM1,0,2,19200,8,odd,1

or

CHAN2=MPI,COM1

The transmission channel named CHAN2 has the following parameters defined:

- port COM1,

- transmitted character length - 8 bits,
- odd parity check,
- one stop bit.

1.3. Addressing the Process Variables

The syntax of symbolic address which is used for variables belonging to the MPI driver channel is as follows:

VARIABLE_TYPE variable_index

where:
VARIABLE_TYPE - string identifying the variable type in the MPI protocol;
variable_index - variable index within a given type.

The following symbols of process variable types are allowable (the range of variable indexes is specific for different types of controllers):

EA	- output bytes,
EAW	- output words,
EAD	- output double words,
EE	- input bytes,
EEW	- input words ,
EDI	- 16-byte words in INTEL convention,
EDD	- input double words,
EM	- bytes of flags,
EMW	- words of flags,
EMD	- double words of flags,
EZ	- counter word,
ET	- timer word,
ED	- word in a data block,
EL	- double word in a data block,
ER	- floating-point number in a data block.

In case of data in a data block, after having given the type (EL or ED), you should give the data block number ended with a dot and then the word number.

EXAMPLES

EMW15	- word of flags 15
EE0	- input word 0
EAW8	- output word 8
ED5.3	- word DW3 in data block DB5

The MPI driver is loaded as a DLL automatically.

1.4. Driver Configuration

It is possible to set the following item in the **[MPI]** section:

☑ ***DWORD_AS_WORDS=yes/no***

Meaning	- when the value `yes` is declared, transferring 32-byte data from DB is realized as a transfer of two 16-byte words; when the value `no` is declared, transferring 32-byte data from DB is realized as a transfer of one double word.
Default value	- no.