

5.8 S5-AS511 IO Server

5.8.1 Introduction

This IO server is intended for use with Siemens S5 PLCs communicating via the front programming port using AS511 protocol. The AS511 protocol is specific for each Siemens device. This IO Server has been designed to operate with a set range for Siemens equipment. Use of the IO Server on devices other than those listed is not recommended and not supported.

The Siemens S5 PLC family has a unique memory structure. Data within the PLC are not located at fixed locations within the PLC's memory space. This memory space is continuously updated and revised as you create and modify your PLC logic. When these revisions occur the location of key data elements such as flags, timers, counters, I/O, and data blocks can move around in the PLC's memory. The Siemens S5 IO Server has been designed to read the location of these memory elements when the driver first begins operation upon detecting a communication error or after a request (which is not a read or write request) has been transmitted to the PLC. If you change your PLC configuration you must restart the Siemens S5 IO Server or simply unplug/re plug the cable connection. Both of these actions will cause the Siemens S5 IO Server to reacquire the location of all PLC memory elements.

5.8.2 Setup

Figure 81: S5-AS511 IO server setup window

5.8.3 Communication setup

The AS511 link uses a RS-232 Current Loop functioning mode. A specific cable (with electronic) is therefore required (Siemens S5 Cable : ACT'L ref EW40910) The communication parameters are fixed to the following values:

- 9600 Baud (Fixed)
- Even Parity (Fixed)
- 8 Data Bits (Fixed)
- 1 Stop Bit (Fixed)
- Full duplex no handshaking (Fixed)

5.8.3.1 Supported Devices

<ul style="list-style-type: none"> • Siemens S5 - 90U • Siemens S5 - 95U • Siemens S5 - 100U - 100 • Siemens S5 - 100U - 101 • Siemens S5 - 100U - 103 • Siemens S5 - 101U 	<ul style="list-style-type: none"> • Siemens S5 - 115U - 941 • Siemens S5 - 115U - 942 • Siemens S5 - 115U - 943 • Siemens S5 - 115U - 944 • Siemens S5 - 115U - 945
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Table 83: Siemens S5 devices supported by the eWON AS-511 IO server

5.8.4 Tag name convention

IO server Name	S5-AS511	
Topic name	A or B or C	
Item Name	ValueName, ComPortNum	COM port is defined Tag by Tag
	ValueName	Topic COM port is used (or default)

Table 84: S5-AS511 IO server Tag name convention table

ComPortNum: Port number used to access the PLC; if not specified, the default COM port is used.

- If a port address is specified in the topic, it is used and overloads per Tag address.
- If no address is specified, neither in the topic, neither at the Tag level, then the default port is used (Default port is the ECIA Port - COM:1).

5.8.4.1 ValueName

DBxLy	Data block x Word offset y, left byte of word (0 - 255)
DBxRy	Data block x Word offset y, right byte of word (0 - 255)
DBxWy	Data block x Word offset y, full word (0 - 65535)
DBxDy	Data block x DWord offset y (-2147483648->2147483647) (*)
Tx or Kx	Timer x (0-65535)
Cx or Zx	Counter x (0-65535)
MxB or FxB	Memento as Byte
MxW or FxW	Memento as Word
MxD or FxD	Memento as DWord (*)
Ix or Ex	Input
Qx or Ax	Output

Table 85: S5-AS511 IO server value names

(*) Important: See "Tags are stored as Float" on page 62

• Bit access modifier:

In any of the items above, it is possible to access a single bit.
#x must be appended to the Value Name (Bit index goes from 0..31).
The syntax can be used for reading bits and for writing them as well.

Example:

DB1W13#3 represents bit 3 of W13 in DB 1

REM:

Bit index range depends on item referenced (for W, bit index maximum value is 15)

NOTES:

- **For DB the smallest element is a WORD and we count addresses in Word.**
This means that DB1W0 and DB1W1 WILL NOT overlap.
- **Timers and Counters are always Words and addresses are counted in WORD also.**
This means that T0 and T1 WILL NOT overlap.
- **For M, I, Q addresses are counted in BYTES.**
This means that M0W and M1W WILL overlap.
- **Both syntax (German and English) can be used for I, Q, C**
which in German gives: E, A, Z.

• Status register:

The STATUS Tag is a special Tag that returns information about the current state of the communication for a given device. As for other Tags, the status Tag ValueName is composed of:

Status, ComPortNum

- You can define a status Tag for each COM port used.
- If you use the status address, the Tag must be configured as analog.

0	Communication not initialized. Status UNKNOWN. If no Tag is polled on that device address, the communication status is unknown.
1	Communication OK.
2	Communication NOT OK.

Table 86: Tag status meaning