



V19.4.5
Drivers

eScada.Drivers.SiemensTcp

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(S7 Protocol)

OS availability

Windows, Linux, RaspBian

Atomic data type

Bit, Byte oriented protocol.

Hardware and documentation reference

www.siemens.com

Parameters available in every section

Channel: none

Device:	IP address	It can be only IPV4 type Multiple addresses can be expressed separated using , (comma) e.g. 192.168.1.10,192.168.1.11
	TCP Port	A valid TCP port number. Default 102
	Reconnect timeout [ms]	Waiting time before a reconnection after COMM break-down
	Response timeout [ms]	Timeout interval used to wait for a response.
	Protocol type	ISO over TCP - CPs 243, 343 and 443 or VIPA Speed7 with built in Ethernet support
	Rack number	Rack number where the CPU is mounted, default 0
	Slot number	Slot number where the CPU is mounted, default 2
	Communication type	PG, OP, S7Basic

Group: none

Tag: none

Remarks for devices

The following attributes can be expressed for every device.

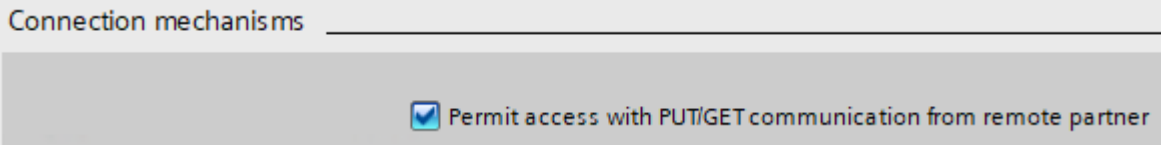
Bytes order actions None, Swap bytes (little endians ↔ big endians adjustment)

String actions None, Swap bytes in words

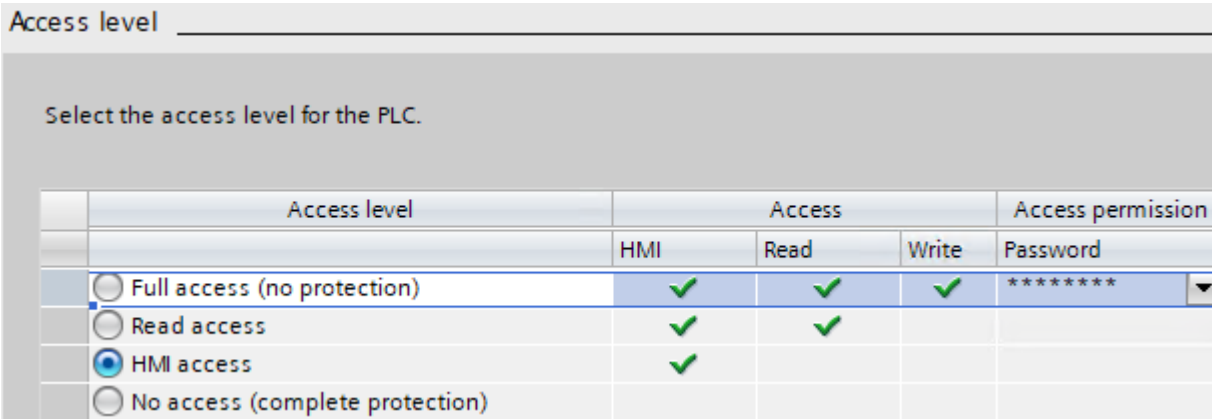
SIEMENS CPUs have got Big Endians bytes order.

Remarks for CPUs belonging to 1200 and 1500 series

- Rack and slot device parameters must be set to zero.
- For DB blocks you want to reach, the optimized flag must be disabled.
- Get and Put functions must be enabled
CPU Properties\Protection & Security\Connection mechanisms



- The access level must be set minimum to HMI access.
A password can be expressed, if you want to protect your CPU from a download or an upload action.
CPU Properties\Protection & Security\Access level



Addressing

Variable type	Type	Address type	Items
Boolean			
Single bit	Bit	Mx.b, Ex.b, Ax.b, DBx.DBXy.b Fx.b, Ix.b, Qx.b	1680
Byte			
Unsigned 8 bit	UInt8	MBx, EBx, ABx, DBx.DBBy FBx, IBx, QBx	210
Signed 8 bit	Int8		
16 bit			
Unsigned integer 16 bit	UInt16	MWx, EWx, AWx, DBx.DBWY FWx, IWx, QWx	105
Signed integer 16 bit	Int16		
32 bit			
Unsigned integer 32 bit	UInt32	MDx, EDx, ADx, DBx.DBBy FDx, IDx, QDx	52
Signed integer 32 bit	Int32		
Single precision 32 bit - (IEEE 754)	Float		
64 bit			
Unsigned integer 64 bit	UInt64	MBx, EBx, ABx, DBx.DBBy	26
Signed integer 64 bit	Int64		
Double precision 64 bit - (IEEE 754)	Double		
Strings String bytes can be interpreted as ASCII, UTF-7, UTF-8, UTF-16 or UTF-32 encoding			
Array of bytes	String	MBx, EBx, ABx, DBx.DBBy FBx, IBx, QBx	(A)
Array of bytes. (Siemens S7) Array of bytes. (AllenBradley style)	S7String ABString	MBx, EBx, ABx, DBx.DBBy FBx, IBx, QBx	(B)
(A) It depends on the strings length: e.g. if you want to read strings with a length of 20 chars each string, you can set a number of items of 210 / 20 = 10 consecutive items.			
(B) It depends on the strings length: e.g. if you want to read strings with a length of 20 chars each string, you can set a number of items of 210 / (20+2) = 9 consecutive items.			

S7 strings format

They have got two bytes at the beginning.

The first byte is for max allowed string length, the second one is for the real string length.

These types of strings can be declared with a length of 255 bytes max.

AB Strings format

They have got one word (16 bit) at the beginning, it contains the string length.

Consecutive items

The number of consecutive read/write items could be different, because it depends on CPU model, protocol and other things. Values expressed below are referred to a CPU315 connected using CP343