



eScada

v24.2.0
Drivers

eScada.Drivers.SiemensLnk

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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 using multiple rows or a comma. e.g. 192.168.1.10,192.168.1.11
	TCP Port	A valid TCP port number. Default 1099
	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	IBH Link S7 (MPI/PPI), NetLink PRO (MPI) to Ethernet The IBH Protocol can be used even for HILSCHER adapter
	Local node	Local adapter MPI/PPI node
	CPU node	Remote CPU MPI/PPI node, default 2
	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:	Chunk mode	None, no chunks System, tries to use a default value for chunks size. Custom, permits to set a custom size for every chunk.
	Bytes per chunk	Only with custom mode Amount of bytes, admitted by the protocol, for each communication frame to get or set data. It depends on the protocol and device you are using, please refer to the protocol documentation. 0=No data chunks used.

Remarks for devices

The following attributes can be expressed for each device.

Bytes order actions	None, Swap bytes order, Swap bytes order in DWords, Swap words order, Swap bytes order in DWords then words order
String actions	None, Swap bytes in words

Addressing

Variable type	Type	Address type	chunks	Items
Boolean				
Single bit	Bit	Mx.b, Ex.b, Ax.b, DBx.DBXy.b Fx.b, Ix.b, Qx.b	NO	1680
Byte				
Unsigned 8 bit	UInt8	MBx, EBx, ABx, DBx.DBBy FBx, IBx, QBx	YES	210
Signed 8 bit	Int8			
16 bit				
Unsigned integer 16 bit	UInt16	MWx, EWx, AWx, DBx.DBWy FWx, IWx, QWx	YES	105
Signed integer 16 bit	Int16			
32 bit				
Unsigned integer 32 bit	UInt32	MDx, EDx, ADx, DBx.DBBy FDx, IDx, QDx	YES	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	YES	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	YES	(A)
Array of bytes. (Siemens S7) Array of bytes. (AllenBradley style)	S7String ABString	MBx, EBx, ABx, DBx.DBBy FBx, IBx, QBx	YES	(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.				

remark:

When using chunks, there are no limits on the amount of 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 contents the string length.

Consecutive items

The number of consecutive read/write items could be different, because it depends on CPU model, protocol, link adapter and other things.

Values expressed below are referred to a CPU315 connected using IBH Link S7 (MPI)