



eScada

v24.2.0
Drivers

eScada.Drivers.OmronFinsCom

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(Host Link Protocol - FINS Commands)

OS availability

Windows, Linux, Raspbian

Atomic data type

bit or 16, 32 bit Word oriented protocol.

Hardware and documentation reference

www.omron.com

Specification W342-E1-16

Parameters available in every section

Channel:	COM Port	Serial port name depending on OS type. e.g. Linux: /dev/ttyS0, /dev/ttyUSB0 e.g. Windows: COM1, COM3
	Baud rate	Communication baud-rate, eg. 9600, 38400, 19200, etc.
	Parity	N for none, E for even, O for odd
	Data bit	Allowed values are 5, 6, 7 and 8
	Data stop bit	Allowed values are 1 and 2
	Reconnect timeout [ms]	Waiting time before a reconnection after COMM break-down
	Response timeout [ms]	Timeout interval used to wait for a response.
Device:	FINS mode	0=CPU unit directly connected (default) 1=CPU unit on a network (*). This mode has not been tested.
	PLC Series	0=CS/CJ/CP/NSJ (default), 1=CVM1/CV
	Unit ID	Unit ID number
	(*) DNA	Destination network hardware (HEX value)
	(*) DA1	Destination node address (HEX value)
	(*) DA2	Destination unit Address
	(*) SNA	Source network hardware (HEX value)
	(*) SA1	Source node address (HEX value)
	(*) SA2	Source unit Address
	Read - Retry value.	Retry value before getting COMM error. (0=no retry)
	Write - Retry value.	Retry value before getting COMM error. (0=no retry)
Group:	none	
Tag:	none	

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

Useful Linux commandsCOM List: `dmesg | grep tty`COM rights: `sudo chmod a+rw /dev/ttyUSB0`COM user info: `ls -l /dev/ttyUSB0`COM add user: `sudo adduser username dialout` - (dialout is the default group)

Implemented I/O memory area

CIO	CIOx, CIOx.b	Read/Write	
WR	Wx, Wx.b	Read/Write	
HR	Hx, Hx.b	Read/Write	
AR	Ax, Ax.b	Read/Write	(From A0 to A447 Read Only)
Timers PV	TPVx	Read/Write	
Timers Status	TSTx	Read only	
Counters PV	CPVx	Read/Write	
Counters Status	CSTx	Read only	
DM	Dx, Dx.b	Read/Write	
EM	Ee.x, Ee.x.b	Read/Write	
Task flag TK	Kx	Read only	
Task flag TK status	KSTx	Read only	
IR	IRx	Read/Write	(32 bit data)
DR	DRx	Read/Write	

Implemented Parameters area

PLC Setup Area	PSAx	Read/Write
I/O Table Registration Area	PTRx	Read/Write
Routing table Area	PRTx	Read/Write
CPU Bus Unit Setup Area	PBUx	Read/Write

x = Address

b = Bit number from 0 to 15

e = EM bank number

Expressed using base 10 numbers

BCD values

If it's necessary to use BCD codification for integers values, please precede the value address with this character @

It is possible to use such kind of character with all integers format from 16 bits to 64 bits.

e.g.

@TPV3 (value using BCD format), TPV3 (value using binary format)

@D3 (value using BCD format), D3 (value using binary format)

Addressing

Variable type	Type	Address type	Items
Boolean			
Single bit	Bit	CIO, W, H, A, TST, CST, D, E, K	(C)
Byte The number of items used declaring TAGs, must be a multiple of 2			
Unsigned 8 bit	UInt8	CIO, W, H, A, D, E, DR, PSA, PTR, PRT, PBU	(C)
Signed 8 bit	Int8		
16 bit			
Unsigned integer 16 bit	UInt16	CIO, W, H, A, TPV, CPV, D, E, DR, PSA, PTR, PRT, PBU	(C)
Signed integer 16 bit	Int16		
32 bit			
Unsigned integer 32 bit	UInt32	CIO, W, H, A, TPV, CPV, D, E, IR, DR, PSA, PTR, PRT, PBU	(C)
Signed integer 32 bit	Int32		
Single precision 32 bit - (IEEE 754)	Float		
64 bit			
Unsigned integer 64 bit	UInt64	CIO, W, H, A, TPV, CPV, D, E, IR, DR, PSA, PTR, PRT, PBU	(C)
Signed integer 64 bit	Int64		
Double precision 64 bit - (IEEE 754)	Double		
Strings The string length used declaring TAGs, must be a multiple of 2 String bytes can be interpreted as ASCII, UTF-7, UTF-8, UTF-16 or UTF-32 encoding			
Array of bytes	String	CIO, W, H, A, D, E	(A, C)
Array of bytes. (Siemens S7) Array of bytes. (AllenBradley style)	S7String ABString	CIO, W, H, A, D, E	(B, C)
(A) It depends on the strings length: e.g. if you want to read strings with a length of 10 chars each string, you can set a number of items of $74 / 10 = 7$ consecutive items.			
(B) It depends on the strings length: e.g. if you want to read strings with a length of 10 chars each string, you can set a number of items of $74 / (10+2) = 6$ consecutive items.			
(C) It depends on PLC model. The best way is to try with the maximum items you need. Please refer to your PLC model documentation and protocol specification W342-E1-16			

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 depends on the PLC model.