2002-03-08

Siemens Simatic TCP/IP VIP

DRIVER TYPES

	ETHERNET
Windows NT	6.00.13
Windows 2000	6.00.13
XP	

SUPPORTED HARDWARE

VIPA CP 143 TCP/IP
VIPA CPU 24x
VIPA CPU 21x
SIEMENS CP 1430 TCP
INAT S5-TCP/IP

PROTOCOL

Ethernet network.
Windows NT/2000 Sockets for TCP/IP communication via standard Ethernet network adapter card.
TCP ports and IP addresses, user definable.

SUPPORTED MESSAGES/DATA AREAS

Hardware	Commands Supported	Used for
All	Read DB	Read data word from data block
All	Write DB	Write data word to data block
AG135U	Read DX	Read data word from extended data block
AG135U	Write DX	Write data word to extended data block
AG150U	Read DE	Read data word from external data block
AG150U	Write DE	Write data word to external data block
All	Read MB	Read data byte from flag area
All	Read EB	Read data byte from input area
All	Read AB	Read data byte from output area
All	Read PB	Read data byte from periphery area
All	Read ZB	Read data word from counter area
All	Read TB	Read data word from timer area
All	Read BS	Read data word from system data area
AG150U	Read QB	Read data byte from periphery area

DATA TYPES

SIGNED	16 Bit Signed Integer
UNSIGNED	16 Bit Unsigned Integer
FLOAT	32 Bit Floating Point Value

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ULONG	32 Bit Unsigned Integer
SLONG	32 Bit Signed Integer
DIGITAL	16 Bit Digital Information
ASCII	8 Bit ASCII Characters

REQUIRED VENDOR SOFTWARE

SIEMENS SIMATIC FUNCTION BLOCKS NEEDED IN PLC:
FB SYNC
FB SEND
FB RECEIVE

SIGNAL CONDITIONING

Signal Condition	Raw Value Range	Description
NONE		No conversion.
LIN UINT	0 – 65535	16 bits. Scaled to EGU range in database block. No range check alarms.
LIN SINT	-32768 – 32767	16 bits, 2's complement. Scaled to EGU range in database block. No range check alarms.
15BN	0 – 32767	15 bits. Ignores the most significant bit. Scaled to EGU range in database block. No range check alarms.
15AL	0 – 32767	15 bits. Ignores the most significant bit. Scaled to EGU range in database block. Range check alarms.
13S1 (11N, 11S)	-4095 – 4095	13 bits, 1's complement. Ignores the three least significant bits. Scaled to EGU range in database block. Range check alarms. Nominal range -2048 - 2048 (UNDER alarm and OVER alarm). Least significant bit signals overflow (RANGE alarm).
13S2 (12S)	-4095 – 4095	13 bits, 2's complement. Ignores the three least significant bits. Scaled to EGU range in database block. Range check alarms. Nominal range -2048 - 2048 (UNDER alarm and OVER alarm). Least significant bit signals overflow (RANGE alarm).
12BN	0 – 4095	12 bits. Ignores the four most significant bits. Scaled to EGU range in database block. No range check alarms.
12AL	0 – 4095	12 bits. Ignores the four most significant bits. Scaled to EGU range in database block. Range check alarms.
12C (11CN, 11CO, 11CT, 11CX)	0 – 4095	12 bits. Ignores the one most significant bit and the three least significant bits. Scaled to EGU range in database block. Range check alarms. Nominal range 512 – 2560 (UNDER alarm and OVER alarm). Least significant bit signals overflow (RANGE alarm).
12R	0 – 4095	12 bits. Ignores the one most significant bit and the three least significant bits. Scaled to EGU range in database block. Range check alarms. Nominal range 0 – 2048 (OVER alarm). Least significant bit signals overflow (RANGE alarm).
12S (12B)	-2048 – 2047	12 bits, 2's complement. Ignores the four most significant bits. Scaled to EGU range in database block. No range check alarms.

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Signal Condition	Raw Value Range	Description
11BN (11B)	0 – 2047	11 bits. Ignores the five most significant bits. Scaled to EGU range in database block. No range check alarms.
8BN (8N)	0 – 255	8 bits. Ignores the eight most significant bits. Scaled to EGU range in database block. No range check alarms.
3BCD	0 – 999	3 digit Binary Coded Decimal. Ignores the four most significant bits. Scaled to EGU range in database block. Range check alarms.
10T	0 – 999	Simatic 3BCD timer, unit 10 seconds. Scaled to EGU range in database block. Range check alarms.
1T	0 – 999	Simatic 3BCD timer, unit 1 second. Scaled to EGU range in database block. Range check alarms.
T1	0 – 999	Simatic 3BCD timer, unit 0.1 second. Scaled to EGU range in database block. Range check alarms.
T01	0 – 999	Simatic 3BCD timer, unit 0.01 second. Scaled to EGU range in database block. Range check alarms.
4BCD	0 – 9999	4 digit Binary Coded Decimal. Scaled to EGU range in database block. Range check alarms.
DL	0 – 255	Left byte of a data word. Not scaled to EGU range in database block. No range check alarms.
DR	0 – 255	Right byte of a data word. Not scaled to EGU range in database block. No range check alarms.
MUL1		Multiply by 10
MUL2		Multiply by 100
MUL3		Multiply by 1000
MUL4		Multiply by 10000
DIV1		Divide by 10
DIV2		Divide by 100
DIV3		Divide by 1000
DIV4		Divide by 10000

COMMUNICATIONS PERFORMANCE

Performance depends on the CPU cycle time. The driver normally reads one poll record per CPU cycle. The maximum driver performance is 100 poll records per second. Typical values in applications are 5 - 50 poll records per second. With a poll record length of 256, that is 1280 - 12800 words per second.

GENERAL LIMITATIONS

MANUAL

VIPDOC.PDF available at www.novotek.com .

DEMO

VIP.ZIP available at www.novotek.com .

COMMENTS

The Microsoft TCP/IP protocol must be installed on Windows NT/2000.

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