



SIPLUS S7-300 CPU313C FOR MEDIAL STRESS -25 ...  
+70 DEGREES C BASED ON 6ES7313-5BG04-0AB0 .  
COMPACT CPU WITH MPI,  
24 DI/16 DO, 4AI, 2AO 1 PT100,  
3 FAST COUNTERS (30 KHZ),  
INTEGRATED 24V DC POWER SUPPLY,  
128 KBYTE WORKING MEMORY,  
FRONT CONNECTOR (2 X 40PIN) AND MICRO MEMORY  
CARD REQUIRED

General information	
Hardware product version	01
Firmware version	V3.3
Engineering with	
Programming package	STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203
Supply voltage	
24 V DC	Yes
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
External protection for supply cables (recommendation)	Miniature circuit breaker, type C; min. 2 A; miniature circuit breaker type B, min. 4 A
Mains buffering	
Mains/voltage failure stored energy time	5 ms
Repeat rate, min.	1 s
Digital inputs	
Load voltage L+	
Rated value (DC)	24 V
Reverse polarity protection	Yes

<b>Digital outputs</b>	
<b>Load voltage L+</b>	
<b>Rated value (DC)</b>	24 V
<b>Reverse polarity protection</b>	No
<b>Input current</b>	
<b>Current consumption (rated value)</b>	650 mA
<b>Current consumption (in no-load operation), typ.</b>	150 mA
<b>Inrush current, typ.</b>	5 A
<b><math>I^2t</math></b>	0.7 A <sup>2</sup> ·s
<b>Digital inputs</b>	
<b>from load voltage L+ (without load), max.</b>	80 mA
<b>Digital outputs</b>	
<b>from load voltage L+, max.</b>	50 mA
<b>Power losses</b>	
<b>Power loss, typ.</b>	12 W
<b>Memory</b>	
<b>Type of memory</b>	other
<b>Work memory</b>	
<b>integrated</b>	128 kbyte
<b>expandable</b>	No
<b>Size of retentive memory for retentive data blocks</b>	64 kbyte
<b>Load memory</b>	
<b>pluggable (MMC)</b>	Yes
<b>pluggable (MMC), max.</b>	8 Mbyte
<b>Data management on MMC (after last programming), min.</b>	10 a
<b>Backup</b>	
<b>present</b>	Yes ; Guaranteed by MMC (maintenance-free)
<b>without battery</b>	Yes ; Program and data
<b>CPU processing times</b>	
<b>for bit operations, typ.</b>	0.07 $\mu$ s
<b>for word operations, typ.</b>	0.15 $\mu$ s
<b>for fixed point arithmetic, typ.</b>	0.2 $\mu$ s
<b>for floating point arithmetic, typ.</b>	0.72 $\mu$ s
<b>CPU-blocks</b>	
<b>Number of blocks (total)</b>	1024 ; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.
<b>DB</b>	
<b>Number, max.</b>	1024 ; Number range: 1 to 16000

<b>Size, max.</b>	64 kbyte
<b>FB</b>	
<b>Number, max.</b>	1024 ; Number range: 0 to 7999
<b>Size, max.</b>	64 kbyte
<b>FC</b>	
<b>Number, max.</b>	1024 ; Number range: 0 to 7999
<b>Size, max.</b>	64 kbyte
<b>OB</b>	
<b>Description</b>	see instruction list
<b>Size, max.</b>	64 kbyte
<b>Number of free cycle OBs</b>	1 ; OB 1
<b>Number of time alarm OBs</b>	1 ; OB 10
<b>Number of delay alarm OBs</b>	2 ; OB 20, 21
<b>Number of time interrupt OBs</b>	4 ; OB 32, 33, 34, 35
<b>Number of process alarm OBs</b>	1 ; OB 40
<b>Number of startup OBs</b>	1 ; OB 100
<b>Number of asynchronous error OBs</b>	4 ; OB 80, 82, 85, 87
<b>Number of synchronous error OBs</b>	2 ; OB 121, 122
<b>Nesting depth</b>	
<b>per priority class</b>	16
<b>additional within an error OB</b>	4
<b>Counters, timers and their retentivity</b>	
<b>S7 counter</b>	
<b>Number</b>	256
<b>Retentivity</b>	
<b>adjustable</b>	Yes
<b>lower limit</b>	0
<b>upper limit</b>	255
<b>preset</b>	Z 0 to Z 7
<b>Counting range</b>	
<b>lower limit</b>	0
<b>upper limit</b>	999
<b>IEC counter</b>	
<b>present</b>	Yes
<b>Type</b>	SFB
<b>Number</b>	Unlimited (limited only by RAM capacity)
<b>S7 times</b>	
<b>Number</b>	256

Retentivity	
<b>adjustable</b>	Yes
<b>lower limit</b>	0
<b>upper limit</b>	255
<b>preset</b>	No retentivity
Time range	
<b>lower limit</b>	10 ms
<b>upper limit</b>	9990 s
IEC timer	
<b>present</b>	Yes
<b>Type</b>	SFB
<b>Number</b>	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
<b>retentive data area, total</b>	All, max. 64 KB
Flag	
<b>Number, max.</b>	256 byte
<b>Retentivity available</b>	Yes ; MB 0 to MB 255
<b>Retentivity preset</b>	MB 0 to MB 15
<b>Number of clock memories</b>	8 ; 1 memory byte
Data blocks	
<b>Number, max.</b>	1024 ; Number range: 1 to 16000
<b>Size, max.</b>	64 kbyte
<b>Retentivity adjustable</b>	Yes ; via non-retain property on DB
<b>Retentivity preset</b>	Yes
Local data	
<b>per priority class, max.</b>	32 kbyte ; Max. 2048 bytes per block
Address area	
I/O address area	
<b>Inputs</b>	1024 byte
<b>Outputs</b>	1024 byte
of which, distributed	
<b>Inputs</b>	none
<b>Outputs</b>	none
Process image	
<b>Inputs</b>	1024 byte
<b>Outputs</b>	1024 byte
<b>Inputs, adjustable</b>	1024 byte
<b>Outputs, adjustable</b>	1024 byte

<b>Inputs, default</b>	128 byte
<b>Outputs, default</b>	128 byte
<b>Default addresses of the integrated channels</b>	
<b>Digital inputs</b>	124.0 to 126.7
<b>Digital outputs</b>	124.0 to 125.7
<b>Analog inputs</b>	752 to 761
<b>Analog outputs</b>	752 to 755
<b>Digital channels</b>	
<b>Inputs</b>	1016
<b>Outputs</b>	1008
<b>Inputs, of which central</b>	1016
<b>Outputs, of which central</b>	1008
<b>Analog channels</b>	
<b>Inputs</b>	253
<b>Outputs</b>	250
<b>Inputs, of which central</b>	253
<b>Outputs, of which central</b>	250
<b>Hardware configuration</b>	
<b>Expansion devices, max.</b>	3
<b>Number of DP masters</b>	
<b>integrated</b>	none
<b>via CP</b>	4
<b>Number of operable FMs and CPs (recommended)</b>	
<b>FM</b>	8
<b>CP, point-to-point</b>	8
<b>CP, LAN</b>	6
<b>Rack</b>	
<b>Racks, max.</b>	4
<b>Modules per rack, max.</b>	8 ; In rack 3 max. 7
<b>Time of day</b>	
<b>Clock</b>	
<b>Hardware clock (real-time clock)</b>	Yes
<b>battery-backed and synchronizable</b>	Yes
<b>Deviation per day, max.</b>	10 s ; Typ.: 2 s
<b>Backup time</b>	6 wk ; At 40 °C ambient temperature
<b>Behavior of the clock following POWER-ON</b>	Clock continues running after POWER OFF
<b>Behavior of the clock following expiry of backup period</b>	Clock continues to run with the time at which the power failure occurred
<b>Operating hours counter</b>	

<b>Number</b>	1
<b>Number/Number range</b>	0
<b>Range of values</b>	0 to 2^31 hours (when using SFC 101)
<b>Granularity</b>	1 hour
<b>retentive</b>	Yes ; Must be restarted at each restart
<b>Clock synchronization</b>	
<b>supported</b>	Yes
<b>to MPI, master</b>	Yes
<b>to MPI, slave</b>	Yes
<b>in AS, master</b>	Yes
<b>in AS, slave</b>	No
<b>Digital inputs</b>	
<b>Number of digital inputs</b>	24
<b>of which, inputs usable for technological functions</b>	12
<b>integrated channels (DI)</b>	24
<b>Input characteristic curve in accordance with IEC 61131, type 1</b>	Yes
<b>Number of simultaneously controllable inputs</b>	
<b>horizontal installation</b>	
<b>up to 40 °C, max.</b>	24
<b>up to 60 °C, max.</b>	12
<b>vertical installation</b>	
<b>up to 40 °C, max.</b>	12
<b>Input voltage</b>	
<b>Rated value, DC</b>	24 V
<b>for signal "0"</b>	-3 to +5 V
<b>for signal "1"</b>	15 to 30 V
<b>Input current</b>	
<b>for signal "1", typ.</b>	8 mA
<b>Input delay (for rated value of input voltage)</b>	
<b>for standard inputs</b>	
<b>Parameterizable</b>	Yes ; 0.1 / 0.3 / 3 / 15 ms (You can reconfigure the input delay of the standard inputs during program runtime. Please note that under certain circumstances your newly set filter time may not be effective until the next filter cycle.)
<b>Rated value</b>	3 ms
<b>for counter/technological functions</b>	
<b>at "0" to "1", max.</b>	16 µs ; Minimum pulse width/minimum pause between pulses at maximum counting frequency
<b>Cable length</b>	
<b>Cable length, shielded, max.</b>	1000 m ; 100 m for technological functions

<b>Cable length unshielded, max.</b>	600 m ; For technological functions: No
<b>Technological functions</b>	
<b>shielded, max.</b>	100 m ; at maximum count frequency
<b>Unshielded, max.</b>	not allowed
<b>Standard DI</b>	
<b>shielded, max.</b>	1000 m
<b>Unshielded, max.</b>	600 m
<b>Digital outputs</b>	
<b>Number of digital outputs</b>	16
<b>of which high-speed outputs</b>	4 ; Notice: You cannot connect the fast outputs of your CPU in parallel
<b>integrated channels (DO)</b>	16
<b>Short-circuit protection</b>	Yes ; Clocked electronically
<b>Response threshold, typ.</b>	1 A
<b>Limitation of inductive shutdown voltage to</b>	L+ (-48 V)
<b>Controlling a digital input</b>	Yes
<b>Switching capacity of the outputs</b>	
<b>Lamp load, max.</b>	5 W
<b>Load resistance range</b>	
<b>lower limit</b>	48 Ω
<b>upper limit</b>	4 kΩ
<b>Output voltage</b>	
<b>for signal "1", min.</b>	L+ (-0.8 V)
<b>Output current</b>	
<b>for signal "1" rated value</b>	500 mA
<b>for signal "1" permissible range, min.</b>	5 mA
<b>for signal "1" permissible range, max.</b>	0.6 A
<b>for signal "1" minimum load current</b>	5 mA
<b>for signal "0" residual current, max.</b>	0.5 mA
<b>Parallel switching of 2 outputs</b>	
<b>for increased power</b>	No
<b>for redundant control of a load</b>	Yes
<b>Switching frequency</b>	
<b>with resistive load, max.</b>	100 Hz
<b>with inductive load, max.</b>	0.5 Hz
<b>on lamp load, max.</b>	100 Hz
<b>of the pulse outputs, with resistive load, max.</b>	2.5 kHz
<b>Aggregate current of outputs (per group)</b>	
<b>horizontal installation</b>	

up to 40 °C, max.	3 A
up to 60 °C, max.	2 A
<b>vertical installation</b>	
up to 40 °C, max.	2 A
<b>Cable length</b>	
Cable length, shielded, max.	1000 m
Cable length unshielded, max.	600 m
<b>Analog inputs</b>	
Integrated channels (AI)	5 ; 4 x current/voltage, 1 x resistance
Number of analog inputs for voltage/current measurement	4
Number of analog inputs for resistance/resistance thermometer measurement	1
permissible input frequency for current input (destruction limit), max.	5 V ; Permanent
permissible input voltage for voltage input (destruction limit), max.	30 V ; Permanent
permissible input current for voltage input (destruction limit), max.	0.5 mA ; Permanent
permissible input current for current input (destruction limit), max.	50 mA ; Permanent
Technical unit for temperature measurement adjustable	Yes ; Degrees Celsius / degrees Fahrenheit / Kelvin
<b>Input ranges</b>	
Voltage	Yes ; $\pm 10$ V / 100 kΩ; 0 V to 10 V / 100 kΩ
Current	Yes ; $\pm 20$ mA / 100 Ω; 0 mA to 20 mA / 100 Ω; 4 mA to 20 mA / 100 Ω
Resistance thermometer	Yes ; Pt 100 / 10 MΩ
Resistance	Yes ; 0 Ω to 600 Ω / 10 MΩ
<b>Input ranges (rated values), voltages</b>	
0 to +10 V	Yes
Input resistance (0 to 10 V)	100 kΩ
<b>Input ranges (rated values), currents</b>	
0 to 20 mA	Yes
Input resistance (0 to 20 mA)	100 Ω
-20 to +20 mA	Yes
Input resistance (-20 to +20 mA)	100 Ω
4 to 20 mA	Yes
Input resistance (4 to 20 mA)	100 Ω
<b>Input ranges (rated values), resistance thermometers</b>	
Pt 100	Yes
Input resistance (Pt 100)	10 MΩ
<b>Input ranges (rated values), resistors</b>	
No-Load voltage, typ.	3.3 V

Measured current, typ.	1,25 mA
0 to 600 ohms	Yes
Input resistance (0 to 600 ohms)	10 MΩ
<b>Thermocouple (TC)</b>	
Temperature compensation	
Parameterizable	No
<b>Resistance thermometer (RTD)</b>	
Characteristic linearization	
for resistance thermometer	Pt 100
<b>Characteristic linearization</b>	
Parameterizable	Yes ; by software
<b>Cable length</b>	
Cable length, shielded, max.	100 m
<b>Analog outputs</b>	
Integrated channels (AO)	2
Number of analog outputs	2
Voltage output, short-circuit protection	Yes
Voltage output, short-circuit current, max.	55 mA
Current output, no-load voltage, max.	14 V
<b>Output ranges, voltage</b>	
0 to 10 V	Yes
-10 to +10 V	Yes
<b>Output ranges, current</b>	
0 to 20 mA	Yes
-20 to +20 mA	Yes
4 to 20 mA	Yes
<b>Connection of actuators</b>	
for voltage output two-wire connection	Yes ; Without compensation of the line resistances
for voltage output four-wire connection	No
for current output two-wire connection	Yes
<b>Load impedance (in rated range of output)</b>	
with voltage outputs, min.	1 kΩ
with voltage outputs, capacitive load, max.	0.1 µF
with current outputs, max.	300 Ω
with current outputs, inductive load, max.	0.1 mH
<b>Destruction limits against externally applied voltages and currents</b>	
Voltages at the outputs towards MANA	16 V ; Permanent
Current, max.	50 mA ; Permanent

<b>Cable length</b>	
<b>Cable length, shielded, max.</b>	200 m
<b>Analog value creation</b>	
<b>Measurement principle</b>	Actual value encryption (successive approximation)
<b>Integrations and conversion time/resolution per channel</b>	
<b>Resolution with overrange (bit including sign), max.</b>	12 bit
<b>Integration time, parameterizable</b>	Yes ; 16.6 / 20 ms
<b>permissible input frequency, max.</b>	400 Hz
<b>Interference voltage suppression for interference frequency f1 in Hz</b>	60 / 50 Hz
<b>Conversion time (per channel)</b>	1 ms
<b>Time constant of the input filter</b>	0.38 ms
<b>Basic execution time of the module (all channels released)</b>	1 ms
<b>Settling time</b>	
<b>for resistive load</b>	0.6 ms
<b>for capacitive load</b>	1 ms
<b>for inductive load</b>	0.5 ms
<b>Encoder</b>	
<b>Connection of signal encoders</b>	
<b>for voltage measurement</b>	Yes
<b>for current measurement as 2-wire transducer</b>	Yes ; with external supply
<b>for current measurement as 4-wire transducer</b>	Yes
<b>for resistance measurement with two-wire connection</b>	Yes ; Without compensation of the line resistances
<b>for resistance measurement with three-wire connection</b>	No
<b>for resistance measurement with four-wire connection</b>	No
<b>Connectable encoders</b>	
<b>2-wire sensor</b>	Yes
<b>Permissible quiescent current (2-wire sensor), max.</b>	1.5 mA
<b>Errors/accuracies</b>	
<b>Temperature error (relative to input range), (+/-)</b>	0.0060 %/K
<b>Crosstalk between the inputs, min.</b>	60 dB
<b>Repeat accuracy in steady state at 25 °C (relative to input area), (+/-)</b>	0.06 %
<b>Output ripple (based on output area, bandwidth 0 to 50 kHz), (+/-)</b>	0.1 %
<b>Linearity error (relative to output range), (+/-)</b>	0.15 %
<b>Temperature error (relative to output range), (+/-)</b>	0.01 %/K
<b>Crosstalk between the outputs, min.</b>	60 dB
<b>Repeat accuracy in steady state at 25 °C (relative to output area), (+/-)</b>	0.06 %

Operational limit in overall temperature range	
<b>Voltage, relative to input area, (+/-)</b>	1 %
<b>Current, relative to input area, (+/-)</b>	1 %
<b>Resistance, relative to input area, (+/-)</b>	1 %
<b>Voltage, relative to output area, (+/-)</b>	1 %
<b>Current, relative to output area, (+/-)</b>	1 %
Basic error limit (operational limit at 25 °C)	
<b>Voltage, relative to input area, (+/-)</b>	0.8 % ; Linearity error +/- 0.06 %
<b>Current, relative to input area, (+/-)</b>	0.8 % ; Linearity error +/- 0.06 %
<b>Resistance, relative to input area, (+/-)</b>	0.8 % ; Linearity error +/- 0.2%
<b>Resistance thermometer, relative to input area, (+/-)</b>	0.8 %
<b>Voltage, relative to output area, (+/-)</b>	0.8 %
<b>Current, relative to output area, (+/-)</b>	0.8 %
Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$ , $f_1$ = interference frequency	
<b>Series mode interference (peak value of interference &lt; rated value of input range), min.</b>	30 dB
<b>Common mode interference, min.</b>	40 dB
Interfaces	
<b>Number of USB interfaces</b>	0
<b>Number of parallel interfaces</b>	0
<b>Number of 20 mA interfaces (TTY)</b>	0
<b>Number of RS 232 interfaces</b>	0
<b>Number of RS 422 interfaces</b>	0
<b>Number of other interfaces</b>	0
1st interface	
<b>Interface type</b>	Integrated RS 485 interface
<b>Physics</b>	RS 485
<b>Isolated</b>	No
<b>Power supply to interface (15 to 30 V DC), max.</b>	200 mA
Functionality	
<b>MPI</b>	Yes
<b>DP master</b>	No
<b>DP slave</b>	No
<b>Point-to-point connection</b>	No
MPI	
<b>Transmission rate, max.</b>	187.5 kbit/s
Services	
<b>PG/OP communication</b>	Yes
<b>Routing</b>	No

<b>Global data communication</b>	Yes
<b>S7 basic communication</b>	Yes
<b>S7 communication</b>	Yes ; Only server, configured on one side
<b>S7 communication, as client</b>	No ; but via CP and loadable FB
<b>S7 communication, as server</b>	Yes
<b>Communication functions</b>	
<b>PG/OP communication</b>	Yes
<b>Data record routing</b>	No
<b>Global data communication</b>	
<b>supported</b>	Yes
<b>Number of GD loops, max.</b>	8
<b>Number of GD packets, max.</b>	8
<b>Number of GD packets, transmitter, max.</b>	8
<b>Number of GD packets, receiver, max.</b>	8
<b>Size of GD packets, max.</b>	22 byte
<b>Size of GD packet (of which consistent), max.</b>	22 byte
<b>S7 basic communication</b>	
<b>supported</b>	Yes
<b>User data per job, max.</b>	76 byte
<b>User data per job (of which consistent), max.</b>	76 byte ; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)
<b>S7 communication</b>	
<b>supported</b>	Yes
<b>as server</b>	Yes
<b>As client</b>	Yes ; Via CP and loadable FB
<b>User data per job, max.</b>	180 byte ; With PUT/GET
<b>User data per job (of which consistent), max.</b>	240 byte ; as server
<b>S5-compatible communication</b>	
<b>supported</b>	Yes ; via CP and loadable FC
<b>Number of connections</b>	
<b>overall</b>	8
<b>usable for PG communication</b>	7
<b>reserved for PG communication</b>	1
<b>Adjustable for PG communication, min.</b>	1
<b>Adjustable for PG communication, max.</b>	7
<b>usable for OP communication</b>	7
<b>reserved for OP communication</b>	1
<b>adjustable for OP communication, min.</b>	1
<b>adjustable for OP communication, max.</b>	7

usable for S7 basic communication	4
Reserved for S7 basic communication	0
adjustable for S7 basic communication, min.	0
adjustable for S7 basic communication, max.	4
<b>S7 message functions</b>	
Number of login stations for message functions, max.	8 ; Depending on the configured connections for PG/OP and S7 basic communication
Process diagnostic messages	Yes
simultaneously active Alarm-S blocks, max.	300
<b>Test commissioning functions</b>	
Status block	Yes ; Up to 2 simultaneously
Single step	Yes
Number of breakpoints	4
<b>Status/control</b>	
Status/control variable	Yes
Variables	Inputs, outputs, memory bits, DB, times, counters
Number of variables, max.	30
of which status variables, max.	30
of which control variables, max.	14
<b>Forcing</b>	
Forcing	Yes
Force, variables	Inputs, outputs
Number of variables, max.	10
<b>Diagnostic buffer</b>	
present	Yes
Number of entries, max.	500
adjustable	No
Of which powerfail-proof	100 ; Only the last 100 entries are retained
Number of entries readable in RUN, max.	499
adjustable	Yes ; From 10 to 499
preset	10
<b>Service data</b>	
Can be read out	Yes
<b>Interrupts/diagnostics/status information</b>	
<b>Diagnostics indication LED</b>	
Status indicator digital output (green)	Yes
Status indicator digital input (green)	Yes
<b>Integrated Functions</b>	
Number of counters	3 ; See "Technological Functions" manual

<b>Counter frequency (counter) max.</b>	30 kHz
<b>Frequency measurement</b>	Yes
<b>Number of frequency meters</b>	3 ; up to 30 kHz (see "Technological Functions" manual)
<b>controlled positioning</b>	No
<b>Integrated function blocks (closed-loop control)</b>	Yes ; PID controller (see "Technological Functions" manual)
<b>PID controller</b>	Yes
<b>Number of pulse outputs</b>	3 ; Pulse width modulation up to 2.5 kHz (see "Technological Functions" Manual)
<b>Limit frequency (pulse)</b>	2.5 kHz
<b>Galvanic isolation</b>	
<b>Galvanic isolation digital inputs</b>	
<b>Galvanic isolation digital inputs</b>	Yes
<b>between the channels</b>	No
<b>between the channels and the backplane bus</b>	Yes
<b>Galvanic isolation digital outputs</b>	
<b>Galvanic isolation digital outputs</b>	Yes
<b>between the channels</b>	Yes
<b>between the channels, in groups of</b>	8
<b>between the channels and the backplane bus</b>	Yes
<b>Galvanic isolation analog inputs</b>	
<b>Galvanic isolation analog inputs</b>	Yes ; common for analog I/O
<b>between the channels</b>	No
<b>between the channels and the backplane bus</b>	Yes
<b>Galvanic isolation analog outputs</b>	
<b>Galvanic isolation analog outputs</b>	Yes ; common for analog I/O
<b>between the channels</b>	No
<b>between the channels and the backplane bus</b>	Yes
<b>Permissible potential difference</b>	
<b>between different circuits</b>	75 VDC / 60 VAC
<b>between inputs and MANA (UCM)</b>	8 V DC
<b>between MANA and M internally (UISO)</b>	75 VDC / 60 VAC
<b>Isolation</b>	
<b>Isolation checked with</b>	600 V DC
<b>Standards, approvals, certificates</b>	
<b>CE mark</b>	Yes
<b>Ambient conditions</b>	
<b>Operating temperature</b>	
<b>Min.</b>	-25 °C ; = Tmin
<b>max.</b>	70 °C ; = Tmax; 60 °C @ UL/cUL, ATEX and FM use

<b>Extended ambient conditions</b>	
<b>Relative to ambient temperature-atmospheric pressure-installation altitude</b>	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m) // Tmin ... (Tmax - 10K) at 795 hPa ... 658 hPa (+2000 m ... +3500 m) // Tmin ... (Tmax - 20K) at 658 hPa ... 540 hPa (+3500 m ... +5000 m)
<b>Relative humidity</b>	
<b>With condensation, tested in accordance with IEC 60068-2-38, maximum</b>	100 % ; RH incl. condensation/frost (no commissioning under condensation conditions)
<b>Resistance</b>	
<b>to biologically active substances/conformity with EN 60721-3-3</b>	Yes ; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!
<b>to chemically active substances/conformity with EN 60721-3-3</b>	Yes ; Class 3C4 (RH < 75%) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!
<b>to mechanically active substances/conformity with EN 60721-3-3</b>	Yes ; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!
<b>Configuration</b>	
<b>Configuration software</b>	
<b>STEP 7</b>	Yes ; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203
<b>STEP 7 Lite</b>	No
<b>programming</b>	
<b>Command set</b>	see instruction list
<b>Nesting levels</b>	8
<b>System functions (SFC)</b>	see instruction list
<b>System function blocks (SFB)</b>	see instruction list
<b>Programming language</b>	
<b>LAD</b>	Yes
<b>FBD</b>	Yes
<b>STL</b>	Yes
<b>SCL</b>	Yes
<b>CFC</b>	Yes
<b>GRAPH</b>	Yes
<b>HiGraph®</b>	Yes
<b>Know-how protection</b>	
<b>User program protection/password protection</b>	Yes
<b>Block encryption</b>	Yes ; With S7 block Privacy
<b>Dimensions</b>	
<b>Width</b>	120 mm
<b>Height</b>	125 mm
<b>Depth</b>	130 mm

## Weights

Weight, approx.	660 g
Status	Jun 28, 2014