

*** SPARE PART*** SIMATIC C7-613, COMPACT UNIT WITH 4 LINE DISPLAY, KEYS AND S7-300 CPU313C WITH 24 DI, 16 DO, 5 AI, 2 AO; MICRO MEMORY CARD AND CONNECTOR SET REQUIRED



Operator control and monitoring	
Password protection	Yes
Info texts	Yes; 128
Graphics object	Yes
Alarms	Yes; with buffer
Process images	
<ul style="list-style-type: none"> Number of process images 	128
<ul style="list-style-type: none"> Number of variables per image, max. 	8
Display	
Design of display	LCD backlit
Line display	
<ul style="list-style-type: none"> Number of lines 	4
<ul style="list-style-type: none"> Number of characters per line 	20
Backlighting	
<ul style="list-style-type: none"> MTBF backlighting (at 25 °C) 	100 000 h
Control elements	
Keyboard fonts	
<ul style="list-style-type: none"> Function keys 	

- Number of function keys
- Number of softkeys

10; Can be used simultaneously as numeric input

4

Supply voltage

Rated value (DC)	
<ul style="list-style-type: none"> • 24 V DC 	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Load voltage L+	
<ul style="list-style-type: none"> • Rated value (DC) 	24 V
<ul style="list-style-type: none"> • permissible range, lower limit (DC) 	20.4 V
<ul style="list-style-type: none"> • permissible range, upper limit (DC) 	28.8 V

Input current

Current consumption, typ.	350 mA; idling
Inrush current, max.	2 A; for 70 ms

Power loss

Power loss, typ.	11 W
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Memory

Micro Memory Card	Yes; All data located on MMC of the CPU
Work memory	
<ul style="list-style-type: none"> • integrated 	32 kbyte; For program and data
<ul style="list-style-type: none"> • expandable 	No
Load memory	
<ul style="list-style-type: none"> • Plug-in (MMC) 	Yes
<ul style="list-style-type: none"> • Plug-in (MMC), max. 	8 Mbyte
Backup	
<ul style="list-style-type: none"> • present 	Yes; Guaranteed by MMC (maintenance-free)
<ul style="list-style-type: none"> • without battery 	Yes; Program and data

CPU processing times

for bit operations, typ.	0.1 μ s
for bit operations, max.	0.2 μ s
for word operations, typ.	0.2 μ s
for fixed point arithmetic, typ.	2 μ s
for floating point arithmetic, typ.	3 μ s

CPU-blocks

DB	
<ul style="list-style-type: none"> • Number, max. 	127; DB 0 reserved
<ul style="list-style-type: none"> • Size, max. 	16 kbyte
FB	
<ul style="list-style-type: none"> • Number, max. 	128
<ul style="list-style-type: none"> • Size, max. 	16 kbyte

FC	
• Number, max.	128
• Size, max.	16 kbyte
OB	
• Size, max.	16 kbyte
• Number of time alarm OBs	1
• Number of delay alarm OBs	1
• Number of cyclic interrupt OBs	1
• Number of process alarm OBs	1
Nesting depth	
• per priority class	6
• additional within an error OB	4
Counters, timers and their retentivity	
S7 counter	
• Number	256
of which retentive without battery	
— can be set	Yes
— lower limit	0
— upper limit	256
Counting range	
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
S7 times	
• Number	256
of which retentive without battery	
— adjustable	Yes
— lower limit	0
— upper limit	256
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
• Type	SFB
Data areas and their retentivity	
Flag	
• Number, max.	256 byte
• Retentivity available	Yes; MB 0 to MB 255

Address area	
I/O address area	
• Inputs	1 kbyte
• Outputs	1 kbyte
Process image	
• Inputs	128 byte
• Outputs	128 byte
Digital channels	
• Inputs	992
• Outputs	992
Analog channels	
• Inputs	248
• Outputs	124
Hardware configuration	
Number of DP masters	
• via CP	1
Number of operable FMs and CPs (recommended)	
• FM	4
• CP, PtP	4
• CP, LAN	4
Expansion modules	
• Number of expansion modules, max.	4; max. 2 flat structure, max. 4 deep structure
Rack	
• Racks, max.	1
• Modules per rack, max.	4
Time of day	
Clock	
• Hardware clock (real-time)	Yes
• retentive and synchronizable	Yes
Operating hours counter	
• Number	1
Clock synchronization	
• supported	Yes
Digital inputs	
Number of digital inputs	24
Input voltage	
• Rated value (DC)	24 V
• for signal "0"	-3 to +5V
• for signal "1"	+15 to +30V
Input current	

• for signal "1", typ.	8 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	Yes; 0.1 / 0.3 / 3 / 15 ms
for counter/technological functions	
— at "0" to "1", max.	16 µs
Cable length	
• shielded, max.	1 000 m; 100 m for technological functions
• unshielded, max.	600 m
Digital outputs	
Number of digital outputs	16
Short-circuit protection	Yes; Clocked electronically
Limitation of inductive shutdown voltage to	L+ (-48 V)
Output voltage	
• for signal "1", min.	L+ (-0.8 V)
Output current	
• for signal "1" permissible range for 0 to 40 °C, max.	0.5 A
• for signal "1" permissible range for 40 to 60 °C, max.	0.5 A
• for signal "1" minimum load current	5 mA
• for signal "0" residual current, max.	0.5 mA
Switching frequency	
• with resistive load, max.	100 Hz
• with inductive load, max.	0.5 Hz
Total current of the outputs (per group)	
all mounting positions	
— up to 40 °C, max.	4 000 mA
— up to 60 °C, max.	2 000 mA
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Analog inputs	
Number of analog inputs	4
• For voltage/current measurement	4
• For resistance/resistance thermometer measurement	1
Input ranges	
• Voltage	Yes
• Current	Yes
• Resistance thermometer	Yes
• Resistance	Yes

Input ranges (rated values), voltages	
• 0 to +10 V	Yes
• -10 V to +10 V	Yes
Input ranges (rated values), currents	
• 0 to 20 mA	Yes
• -20 mA to +20 mA	Yes
• 4 mA to 20 mA	Yes
Input ranges (rated values), resistance thermometer	
• Pt 100	Yes
Input ranges (rated values), resistors	
• 0 to 600 ohms	Yes
Analog outputs	
Number of analog outputs	2
Output ranges, voltage	
• 0 to 10 V	Yes
• -10 V to +10 V	Yes
Output ranges, current	
• 0 to 20 mA	Yes
• -20 mA to +20 mA	Yes
• 4 mA to 20 mA	Yes
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	12 bit
• Integration time, parameterizable	Yes; 2,5 / 16,6 / 20 ms
Analog value generation for the outputs	
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	12 bit
• Conversion time (per channel)	1 ms
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
— permissible quiescent current (2-wire sensor), max.	1.5 mA
Errors/accuracies	
Basic error limit (operational limit at 25 °C)	
• Voltage, relative to input range, (+/-)	0.7 %
• Current, relative to input range, (+/-)	0.7 %
• Resistance, relative to input range, (+/-)	3 %

• Resistance thermometer, relative to input range, (+/-)	3 %
• Voltage, relative to output range, (+/-)	0.7 %
• Current, relative to output range, (+/-)	0.7 %

Interfaces

MPI

• Cable length, max.	50 m; without repeater
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1. Interface

Isolated	No
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Functionality

• MPI	Yes
• PROFIBUS DP master	No
• PROFIBUS DP slave	No

MPI

• Number of connections	8
• Transmission rate, max.	187.5 kbit/s

Services

— PG/OP communication	Yes
— Global data communication	Yes
— S7 basic communication	Yes
— S7 communication	Yes
— S7 communication, as client	No
— S7 communication, as server	Yes

Communication functions

Global data communication

• Number of GD packets, transmitter, max.	4
• Number of GD packets, receiver, max.	4
• Size of GD packets, max.	22 byte

S7 basic communication

• User data per job, max.	76 byte
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S7 communication

• User data per job, max.	64 kbyte
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Number of connections

• overall	8
• usable for PG communication	
— reserved for PG communication	1
— adjustable for PG communication, max.	7
• usable for OP communication	
— reserved for OP communication	1
— adjustable for OP communication, max.	7
• usable for S7 basic communication	

— reserved for S7 basic communication	4
— adjustable for S7 basic communication, max.	4
• Number of logical connections (also in network), max.	1; fixed with integrated CPU

S7 message functions

Number of login stations for message functions, max.	5
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Integrated Functions

Number of counters	3
Counting frequency (counter) max.	30 kHz
Frequency measurement	Yes
PID controller	Yes
Number of pulse outputs	3
Limit frequency (pulse)	2.5 kHz

Potential separation

Potential separation digital inputs

• between the channels	Yes
• between the channels, in groups of	8; 16 and 8

Potential separation digital outputs

• between the channels	Yes
• between the channels, in groups of	8

Potential separation analog inputs

• Potential separation analog inputs	Yes; common for analog I/O
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Potential separation analog outputs

• Potential separation analog outputs	Yes; common for analog I/O
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Isolation

tested with

• 24 V DC circuits	500 V; DC
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EMC

EMC interference immunity	Noise immunity to EN 50082-2, test in accordance with: IEC 801-2, ENV 50140, IEC 801-4, ENV 50141, IEC 801-5
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Emission of radio interference acc. to EN 55 011

• Emission of radio interference	Interference emission to EN 50081-2, testing to EN 55011, Class A, Group 1
• Limit class A, for use in industrial areas	Yes; Group 1

Degree and class of protection

Degree of protection acc. to EN 60529

• IP20	Yes; Housing
• IP65	Yes; Front

Ambient conditions

Environmental conditions	Not suitable for open-air use
Ambient temperature during operation	
• 45 degree installation, min.	0 °C
• 45 degree installation, max.	45 °C
• horizontal installation, min.	0 °C
• horizontal installation, max.	40 °C
• vertical installation, min.	0 °C
• vertical installation, max.	50 °C
Air pressure acc. to IEC 60068-2-13	
• permissible range, lower limit	795 hPa
• permissible range, upper limit	1 080 hPa
Relative humidity	
• Operation, min.	5 %
• Operation, max.	95 %; RH class 2 in accordance with IEC 1131-2
Vibrations	
• Operation, tested according to IEC 60068-2-6	Yes; 10 to 58 Hz: Constant amplitude 0.075 mm; 58 to 500 Hz: Constant acceleration 1 g
• Transport, tested acc. to IEC 60068-2-6	Yes; 5 to 9 Hz: amplitude 3.5 mm; 9 to 500 Hz: acceleration 1 g
Shock test	
• tested according to IEC 60068-2-29	Yes; in operation: Half-sine: Strength of the shock 15 g (peak value), duration 11 ms, 18 shocks; in storage: 25 g, 6 ms, 1000 shocks
Configuration	
Configuration software	
• STEP 7	Yes; V5.1 SP3, STEP 7 Lite
Programming	
• Nesting levels	8
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	Yes
— GRAPH	Yes
— HiGraph®	Yes
Know-how protection	
• User program protection/password protection	Yes
Languages	
Online languages	
• Number of online/runtime languages	3
Mechanics/material	

Service life	
• Number of operating cycles, keys	1 000 000
Dimensions	
Width	215 mm
Height	165 mm
Depth	79 mm
Mounting cutout, width	202 mm
Mounting cutout, height	152 mm
Weights	
Weight, approx.	1 350 g
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