

*** SPARE PART*** SIMATIC C7-633 DP, COMP.STATION WITH
INTEGRATED COMPONENTS: S7-300 CPU 315-2DP, SIMATIC
OP7 AND IM 360, WITH INTEGRATED PROFIBUS DP INTERFACE

Operator control and monitoring	
Password protection	Yes
Password levels	9
Graphics object	
• Character graphics	Yes; As part of the character set
Process images	
• Number of process images	99
• Number of variables in message text, max.	8
• Entries per process image	99
Operating-/fault messages	
• Number of operating messages, max.	499
• Scroll operating messages, max.	256
• Number of entries in operational log, max.	256
• Number of fault message, max.	499
• Number of entries in fault message buffer, max.	256
• Number of symbol/character sets	1
Recipes	
• Number of recipes, max.	99
• Data records per recipe, max.	99
• Entries per data record, max.	99
• Recipe data memory, max.	4 kbyte
Display	
Design of display	LCD backlit
dynamic objects	Input, output, input/output fields, date/time fields, symbolic input/output fields
Line display	
• Number of lines	4
• Number of characters per line	20
• Character size	8 mm
Backlighting	
• MTBF backlighting (at 25 °C)	100 000 h; about 11 years
Control elements	
Keyboard fonts	
• Function keys	

— Number of function keys	16
— Number of softkeys	4

Supply voltage

Rated value (DC)	
• 24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	30.2 V
Load voltage L+	
• Rated value (DC)	24 V
• permissible range, lower limit (DC)	20.4 V
• permissible range, upper limit (DC)	28.8 V

Input current

Current consumption, typ.	550 mA
Current consumption, max.	1 A

Power loss

Power loss, typ.	12 W
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Memory

Work memory	
• integrated	64 kbyte; 20 K instructions RAM
Load memory	
• expandable FEPRM	Yes
• expandable FEPRM, max.	512 kbyte
• integrated RAM, max.	96 kbyte
Backup	
• present	Yes
• with battery	Yes; all data
• without battery	Yes; 4736 Byte: parameterizable for memory bits, times, counters, data

CPU processing times

for bit operations, typ.	0.3 µs
for bit operations, max.	0.6 µs
for word operations, typ.	1 µs
for fixed point arithmetic, typ.	2 µs
for floating point arithmetic, typ.	50 µs
for timer/counter operations, typ.	12 µs

CPU-blocks

DB	
• Number, max.	255; DB 0 reserved
FB	
• Number, max.	192; see instruction list

FC	
• Number, max.	192; see instruction list
OB	
• Number, max.	see instruction list
• Number of free cycle OBs	1; OB 1
• Number of time alarm OBs	1; OB 10
• Number of cyclic interrupt OBs	1; OB 35
• Number of process alarm OBs	1; OB 40
• Number of startup OBs	1; OB 100
• Number of asynchronous error OBs	8; OB 80, 81, 82, 85, 86, 87, 121, 122
Nesting depth	
• per priority class	8
Counters, timers and their retentivity	
S7 counter	
• Number	64
of which retentive with battery	
— can be set	Yes
— lower limit	0
— upper limit	63
of which retentive without battery	
— can be set	Yes
— lower limit	0
— upper limit	63
Counting range	
— lower limit	0
— upper limit	999
S7 times	
• Number	128
of which retentive with battery	
— adjustable	Yes
— lower limit	0
— upper limit	127
of which retentive without battery	
— adjustable	Yes
— lower limit	0
— upper limit	127
Time range	
— lower limit	10 ms
— upper limit	9 990 s
Data areas and their retentivity	
Flag	

- Number, max. 256 byte
- Retentivity available Yes
- of which retentive with battery 0 to 2047
- of which retentive without battery 0 to 2047

Address area

I/O address area

- Inputs 1 kbyte
- Outputs 1 kbyte

Process image

- Inputs 128 byte
- Outputs 128 byte

Hardware configuration

- connectable programming devices/PCs SIMATIC PG/PC, standard PC
- Number of modules per system, max. 8
- Number of modules per DP slave interface, max. 32; 122 byte address space per DP station

Interface modules

- Interface module IM 360 integrated Yes

Number of DP masters

- integrated 1
- via CP 1; CP 342-5

Number of operable FMs and CPs (recommended)

- FM 8
- CP, PtP 4
- CP, LAN 2

Expansion modules

- Analog inputs/outputs, max. 192
- Digital inputs/outputs, max. 768
- Number of expansion modules, max. 24

Rack

- Modules per rack, max. 8
- Number of lines, max. 3

Time of day

Clock

- Hardware clock (real-time) Yes; CPU
- Software clock Yes; OP

Interfaces

- Number of printer interfaces 1; RS 232

MPI

- Cable length, max. 9 100 m; without repeaters 50 m; with 2 repeaters: 1100 m; with 10 repeaters in series: 9100 m; via fiber optic cable: 23.8 km (with star hubs or OLMs)

1. Interface	
Functionality	
• MPI	Yes; occupies 2 nodes per device (1 x CPU, 1 x OP)
• PROFIBUS DP master	Yes
• PROFIBUS DP slave	Yes
MPI	
• Number of nodes, max.	32; PG/PC, OP, C7, S7-300/400, M7
• Transmission rate, max.	187.5 kbit/s
DP master	
• Transmission rate, max.	12 Mbit/s
• Number of DP slaves, max.	64
User data per DP slave	
— User data per DP slave, max.	122 byte
2. Interface	
Functionality	
• PROFIBUS DP master	Yes
• PROFIBUS DP slave	Yes
DP master	
• Transmission rate, max.	12 Mbit/s
• Number of DP slaves, max.	64
User data per DP slave	
— User data per DP slave, max.	122 byte
Communication functions	
S7 communication	
• S7 extended communication	Yes; Server
S5 compatible communication	
• supported	Yes
Standard communication (FMS)	
• supported	Yes
Number of connections	
• overall	
— of which dynamic	8
— of which static	4
Isolation	
Isolation tested with	500 V DC
EMC	
EMC interference immunity	Noise immunity: IEC 1000-4-2, IEC 1000-4-3, IEC 1000-4-4, IEC 1000-4-6, EN 50140
Emission of radio interference acc. to EN 55 022	

- Interference emission acc. to EN 55022, class A

Yes; Noise emission: Class A / EN 55022; conducted interference: IEC 1000-4-4, IEC 1000-4-5

Degree and class of protection

Degree of protection acc. to EN 60529

- IP20
- IP65

Yes; Housing

Yes; Front

Standards, approvals, certificates

CSA approval

Yes; to Standard C22.2 number 142

UL approval

Yes; UL 508

FM approval

Yes; FM-Standards No. 3611, 3600, 3810 Class I, Division 2, Group A, B, C, D

developed in accordance with IEC 61131

Yes; EN 61131-2 (IEC 1131-2)

DIN/ISO 9001

Yes

Ambient conditions

Ambient temperature during operation

- 45 degree installation, min.
- 45 degree installation, max.
- vertical installation, min.
- vertical installation, max.

0 °C

45 °C

0 °C

50 °C

Air pressure acc. to IEC 60068-2-13

- permissible range, lower limit
- permissible range, upper limit

795 hPa

1 080 hPa

Relative humidity

- Operation, min.
- Operation, max.

5 %

95 %; no condensation

Vibrations

- Operation, tested according to IEC 60068-2-6

Yes; IEC 60068-2-6; 10 Hz to 58 Hz; (constant amplitude 0.075 mm); 58 Hz to 500 Hz; (constant acceleration 9.8 m/s²)

Shock test

- tested according to IEC 60068-2-29

Yes; IEC 68, Part 2-29 half-sine: 100 m/s² (10 g), 16 ms, 100 shocks

Configuration

Configuration software

- STEP 7
- STEP 7 Lite
- ProTool
- ProTool/Lite
- ProTool/Pro

Yes

Yes

Yes

Yes

Yes

Programming

- Command set
- Nesting levels

see instruction list

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• Program organization	Linear, structured
• System functions (SFC)	see instruction list
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	Yes
— GRAPH	Yes
— HiGraph®	Yes
Software libraries	
— Process diagnostics	Yes; C7-CPU
— Software controller	Yes; 16 circles
Know-how protection	
• User program protection/password protection	Yes
Cycle time monitoring	
• lower limit	1 ms
• upper limit	6 000 ms
• adjustable	Yes
• preset	150 ms
Languages	
Online languages	
• Number of online/runtime languages	3
Dimensions	
Width	240 mm
Height	203.5 mm
Depth	74.4 mm
Mounting cutout, width	231 mm
Mounting cutout, height	159 mm
Weights	
Weight, approx.	1 600 g
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