SIEMENS

Data sheet



SIMATIC S7-300, CPU 313C-2 DP Compact CPU with MPI, 16 DI/16 DO, 3 high-speed counters (30 kHz), integrated DP interface, Integr. power supply 24 V DC, work memory 128 KB, Front connector (1x 40-pole) and Micro Memory Card required

General information	
HW functional status	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	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
external protection for power supply lines (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
Load voltage L+	
Digital inputs	
— load voltage / at digital input / at DC / rated value	24 V
 Reverse polarity protection 	Yes
Digital outputs	
— Rated value (DC)	24 V
 Reverse polarity protection 	No
nput current	
Current consumption (rated value)	800 mA
Current consumption (in no-load operation), typ.	110 mA
Inrush current, typ.	5 A
l²t	0.7 A²-s
Digital inputs	
 from load voltage L+ (without load), max. 	80 mA
Digital outputs	
 from load voltage L+, max. 	50 mA
Power loss	
Power loss, typ.	9 W
Memory	
Work memory	
• integrated	128 kbyte
expandable	No
Load memory	
• Plug-in (MMC)	Yes
Plug-in (MMC), max.	8 Mbyte
 Data management on MMC (after last programming), min. 	10 a

Backup	
• present	Yes; Guaranteed by MMC (maintenance-free)
without battery	Yes; Program and data
CPU processing times	
for bit operations, typ.	0.07 μs
for word operations, typ.	0.15 µs
for fixed point arithmetic, typ.	0.2 μs
for floating point arithmetic, typ.	0.72 μs
CPU-blocks	
Number of blocks (total)	1 024; (DBs, FCs, FBs); the maximum number of loadable blocks can be
	reduced by the MMC used.
DB	
Number, max.	1 024; Number range: 1 to 16000
• Size, max.	64 kbyte
FB Number resu	1 024; Number range: 0 to 7999
Number, max.Size, max.	64 kbyte
FC	04 KDyle
Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	,
Number, max.	see instruction list
• Size, max.	64 kbyte
Number of free cycle OBs	1; OB 1
Number of time alarm OBs	1; OB 10
Number of delay alarm OBs	2; OB 20, 21
 Number of cyclic interrupt OBs 	4; OB 32, 33, 34, 35
 Number of process alarm OBs 	1; OB 40
 Number of DPV1 alarm OBs 	3; OB 55, 56, 57
 Number of startup OBs 	1; OB 100
 Number of asynchronous error OBs 	5; OB 80, 82, 85, 86, 87
Number of synchronous error OBs	2; OB 121, 122
Nesting depth	
 per priority class 	16
additional within an error OB	4
Counters, timers and their retentivity	
S7 counter	
Number	256
Retentivity	
— adjustable	Yes
— preset	Z 0 to Z 7
Counting range	0
— lower limit	0 999
— upper limit IEC counter	333
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
S7 times	Committee only by to an outputty)
• Number	256
Retentivity	
— adjustable	Yes
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	



Retentive data area (incl. timers, counters, flags), max.	64 kbyte
	1.4
Flag	
• Size, max.	256 byte
Retentivity available	Yes; MB 0 to MB 255
Retentivity preset	MB 0 to MB 15
Number of clock memories	8; 1 memory byte
Data blocks	
Retentivity adjustable	Yes; via non-retain property on DB
Retentivity preset	Yes
Local data	0011 1 14 00101 1 1 1
per priority class, max.	32 kbyte; Max. 2048 bytes per block
Address area	
I/O address area	2.040 h. to
• Inputs	2 048 byte
Outputs of which distributed	2 048 byte
— Inputs	2 030 byte
— Outputs	2 030 byte
Process image	2 000 byte
• Inputs	2 048 byte
• Outputs	2 048 byte
Inputs, adjustable	2 048 byte
Outputs, adjustable	2 048 byte
Inputs, default	128 byte
Outputs, default	128 byte
Default addresses of the integrated channels	
— Digital inputs	124.0 to 125.7
Digital outputs	124.0 to 125.7
Digital channels	
• Inputs	16 256
— of which central	1 008
Outputs	16 256
— of which central	1 008
Analog channels	
• Inputs	1 015
— of which central	248
Outputs	1 015
— of which central	248
Hardware configuration	
Number of expansion units, max.	3
Number of DP masters	
• integrated	1
• via CP	4
Number of operable FMs and CPs (recommended)	
• FM	8
• CP, PtP	8
• CP, LAN	6
Rack	
• Racks, max.	4
Modules per rack, max. Time of day.	8; In rack 3 max. 7
Time of day	
Clock	Von
Hardware clock (real-time) retentive and events principle	Yes
retentive and synchronizable Realize time	Yes
Backup time Deviation per day, may	6 wk; At 40 °C ambient temperature
Deviation per day, max. Palacijas of the glask fellowing POWER ON.	10 s; Typ.: 2 s
Behavior of the clock following POWER-ON Pobavior of the clock following expire of backup period	Clock continues running after POWER OFF
Behavior of the clock following expiry of backup period Operating bours country.	the clock continues at the time of day it had when power was switched off
Operating hours counter	1
Number	1



Number/Number range	0
Number/Number range Paggs of values	0 0 to 2021 hours (when using SEC 101)
Range of values	0 to 2^31 hours (when using SFC 101)
Granularity	1h
• retentive	Yes; Must be restarted at each restart
Clock synchronization	v
• supported	Yes
• to MPI, master	Yes
• to MPI, slave	Yes
• to DP, master	Yes; With DP slave only slave clock
• to DP, slave	Yes
● in AS, master	Yes
• in AS, slave	No
Digital inputs	
Number of digital inputs	16
of which inputs usable for technological functions	12
integrated channels (DI)	16
Input characteristic curve in accordance with IEC 61131, type 1	Yes
Number of simultaneously controllable inputs	
horizontal installation	
— up to 40 °C, max.	16
— up to 60 °C, max.	8
vertical installation	
— up to 40 °C, max.	8
Input voltage	
Rated value (DC)	24 V
● for signal "0"	-3 to +5V
● for signal "1"	+15 to +30 V
Input current	
	8 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	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.)
— Rated value	3 ms
for technological functions	
— at "0" to "1", max.	16 μs; Minimum pulse width/minimum pause between pulses at maximum
	counting frequency
Cable length	
shielded, max.	1 000 m; 100 m for technological functions
unshielded, max.	600 m; for technological functions: No
for technological functions	
— shielded, max.	100 m; at maximum count frequency
— unshielded, max.	not allowed
Digital outputs	
Number of digital outputs	16
of which high-speed outputs	4; Notice: You cannot connect the fast outputs of your CPU in parallel
integrated channels (DO)	16
Short-circuit protection	Yes; Clocked electronically
Response threshold, typ.	1 A
Limitation of inductive shutdown voltage to	L+ (-48 V)
Controlling a digital input	Yes
Switching capacity of the outputs	
• on lamp load, max.	5 W
Load resistance range	
• lower limit	48 Ω
	46 Ω 4 kΩ
upper limit Output voltage	4 V77
Output voltage	1.70000
• for signal "1", min.	L+ (-0.8 V)
Output current	F00 A
• for signal "1" rated value	500 mA



for signal "1" permissible range, min.	5 mA
for signal "1" permissible range, max.	0.6 A
for signal "1" minimum load current	5 mA
for signal "0" residual current, max.	0.5 mA
Parallel switching of two outputs	
• for uprating	No
for redundant control of a load	Yes
Switching frequency	
 with resistive load, max. 	100 Hz
 with inductive load, max. 	0.5 Hz
on lamp load, max.	100 Hz
of the pulse outputs, with resistive load, max.	2.5 kHz
Total current of the outputs (per group)	
horizontal installation	
— up to 40 °C, max.	3 A
— up to 60 °C, max.	2 A
vertical installation	
— up to 40 °C, max.	2 A
Cable length	
• shielded, max.	1 000 m
unshielded, max.	600 m
Analog inputs	
Number of analog inputs	0
integrated channels (AI)	0
Analog outputs	
Number of analog outputs	0
integrated channels (AO)	0
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
- permissible quiescent current (2-wire sensor), max.	1.5 mA
Interfaces	
	0
Number of industrial Ethernet interfaces	0
Number of industrial Ethernet interfaces Number of PROFINET interfaces	0
Number of PROFINET interfaces	0
Number of PROFINET interfaces Number of RS 485 interfaces	0 2; MPI and PROFIBUS DP
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces 1. Interface	0 2; MPI and PROFIBUS DP 0
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Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces 1. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max.	0 2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces 1. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols	0 2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces 1. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI	0 2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces 1. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave	0 2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA Yes No
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces 1. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master	0 2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA Yes No No
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces 1. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI	0 2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA Yes No No
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces 1. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection	0 2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA Yes No No No
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces 1. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max.	0 2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA Yes No No No
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces 1. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services — PG/OP communication	0 2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA Yes No No No No No
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces 1. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services	0 2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA Yes No No No No Yes
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces 1. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services — PG/OP communication — Routing	0 2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA Yes No No No No Yes Yes Yes
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces 1. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication	0 2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA Yes No No No No Yes Yes Yes Yes Yes Yes
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces 1. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication	0 2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA Yes No No No No Yes
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces 1. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication, as client	0 2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA Yes No No No No Yes
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Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces 1. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication, as client S7 communication, as server	0 2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA Yes No No No No 187.5 kbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yos; Only server, configured on one side No; but via CP and loadable FB



late of any house	
Interface types	V
• RS 485	Yes
Output current of the interface, max.	200 mA
Protocols	
• MPI	No
PROFINET IO Controller	No
PROFINET IO Device	No
PROFINET CBA	No
PROFIBUS DP master	Yes
PROFIBUS DP slave	Yes
PROFIBUS DP master	
Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	124
Services	
— PG/OP communication	Yes
— Routing	Yes
 Global data communication 	No
— S7 basic communication	Yes; I blocks only
— S7 communication	Yes; Yes (only server; connection configured at one end)
 S7 communication, as client 	No
 S7 communication, as server 	Yes
— Equidistance	Yes
— Isochronous mode	No
— SYNC/FREEZE	Yes
 Activation/deactivation of DP slaves 	Yes
 Number of DP slaves that can be simultaneously activated/deactivated, max. 	8
Direct data exchange (slave-to-slave	Yes; as subscriber
communication)	V
— DPV1	Yes
Address area	2 kbyte
— Inputs, max.	· ·
— Outputs, max.	2 kbyte
User data per DP slave	244 byte
— Inputs, max.— Outputs, max.	244 byte
	244 byte
PROFIBUS DP slave	The latest CCD file is available on the Internet
GSD file Transmission rate, max.	The latest GSD file is available on the Internet (http://www.siemens.com/profibus-gsd) 12 Mbit/s
automatic baud rate search	
Address area, max.	Yes; only with passive interface 32
Address area, max.User data per address area, max.	32 byte
	32 byte
Services — PG/OP communication	Yes
— Routing	Yes; Only with active interface
— Global data communication	No No
— S7 basic communication	No
— S7 communication	Yes; Yes (only server; connection configured at one end)
— S7 communication, as client	No Yee
— S7 communication, as server	Yes
 — Direct data exchange (slave-to-slave communication) 	Yes
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
Protocols	2110,10
PROFIsafe	No
	INU
communication functions / header	Yes
PG/OP communication Data record routing	Yes



Clobal data communication	
Global data communication	Yes
supported Number of GD loops, max	Yes 8
Number of GD packets, max.	
Number of GD packets, max. Number of GD packets, transmitter, max.	8
Number of GD packets, transmitter, max. Number of GD packets, receiver, max.	8
Number of GD packets, receiver, max. Size of GD packets, max.	
Size of GD packets, max. Size of GD packet (of which consistent), max.	22 byte
Size of GD packet (of which consistent), max. S7 basic communication	22 byte
communication function / S7 basic communication	Yes
User data per job, max.	76 byte
User data per job (of which consistent), max. User data per job (of which consistent), max.	76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET
• Oser data per job (or which consistent), max.	as server)
S7 communication	
supported	Yes
• as server	Yes
• as client	Yes; Via CP and loadable FB
• User data per job, max.	180 kbyte; With PUT/GET
 User data per job (of which consistent), max. 	240 byte; as server
S5 compatible communication	
• supported	Yes; via CP and loadable FC
Number of connections	
• overall	8
 usable for PG communication 	7
 reserved for PG communication 	1
 adjustable for PG communication, min. 	1
 adjustable for PG communication, max. 	7
 usable for OP communication 	7
 reserved for OP communication 	1
 adjustable for OP communication, min. 	1
 adjustable for OP communication, max. 	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
usable for routing	4; max.
S7 message functions	
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
Test commissioning functions	
Status block	Yes; Up to 2 simultaneously
Single step	Yes
Number of breakpoints	4
Status/control	
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
Forcing	
• Forcing	Yes
 Forcing, variables 	Inputs, outputs
	10
Number of variables, max.	10
Number of variables, max. Diagnostic buffer	
	Yes
Diagnostic buffer	
Diagnostic buffer • present	Yes
Diagnostic buffer • present • Number of entries, max.	Yes 500



adjustable protect 10 Service data protect 10 Service data can be read out Yes Interrupts/diagnostics/status information Decignostics indicate (piglial output (green) Yes Status (green) Yes	— aujusianie	Ves: From 10 to 400
- can be read out	•	
each be read out Transplation information Transplation Transpla		10
Dispressize indicator LED		Yes
Despressive indicator LED - Satus indicator digital output (green) - Status indicator digital output (green) - Status indicator digital output (green) - Ves - Status indicator digital output (green) - Number of counters - Counter - Number of counters - Counting requercy, max. - Sale **Technological Functions* manual - Number of trougency metes - Sale vision to thought (green) - Number of trougency metes - Sale vision to thought (green) - Number of trougency metes - Sale vision to thought (green) - Number of trougency metes - Sale vision to thought (green) - Number of trougency metes - Sale vision to thought (green) - Yes - Number of pulse outputs - Number of pulse outputs - Number of pulse outputs - Sale vision to the despression of the sale vision to the sale		160
Status indicator digital output (green) Status indicator digital output (green) Ves Integrated Functions Countre Number of counters Countres Co		
Satus incland right autyrut (green) Morranted Functions Counter *Unurber of counters *Counting frequency, max. *See "Technological Functions" manual *Counting frequency, max. *Su bit 2 Frequency measurement *Yes *Number of frequency meles *Su by to 30 kHz (see "Technological Functions" manual) *Pricontroller of frequency meles *Su by to 50 kHz (see "Technological Functions" manual) *Pricontroller of frequency function blocks (closed-loop control) *Pricontroller *Yes *Number of pulse outputs *See Trechnological Functions" manual) *Pricontroller *Yes *Number of pulse outputs *See Trechnological Functions" manual) *Pricontroller *Yes *Number of pulse outputs *See Trechnological Functions" manual) *Pricontroller *Yes *Protential separation digital inputs *Protential separation digital outputs *Protential separati	-	Vas
Integrated Functions		
Countre Number of counters Counting frequency, max. So M+z Frequency measurement Number of frequency meters Suy by 30 kHz (see "Technological Functions" manual) No Interest of frequency meters Suy by 30 kHz (see "Technological Functions" manual) Programming frequency (pulse) Programming / Programmin		165
Number of counters Counting frequency, max. Frequency measurement Ves Number of frequency meters Number of pulse outputs No No No Number of pulse outputs No		
- Counting frequency, max. Frequency measurement Number of frequency melers Number of frequency melers Number of pulse outputs Number of pulse outputs Name o		3: See "Technological Functions" manual
Frequency measurement Number of frequency meters outrolled positioning No integrated function blocks (closed-loop control) Yes; PID controller Yes Number of pulse outputs Nanual) Limit frequency (pulse) Potential separation digital inputs Potential separation digital outputs Potential separat		
Number of frequency meters Controlled positioning No No Number of foreign blocks (closed-loop control) PID controller Yes Number of pulse outputs Sypties width modulation up to 2.5 kHz (see "Technological Functions" manual) PID controller Yes Number of pulse outputs Sypties width modulation up to 2.5 kHz (see "Technological Functions" Manual) Limit frequency (pulse) 2.5 kHz Potential separation digital inputs Potential separation digital outputs Potenti		
controlled positioning No Integrated function blocks (closed-loop control) Yes. PID controller (see "Technological Functions" manual) PID controller Yes Number of pulse outputs 3, Pulse width modulation up to 2.5 kHz (see "Technological Functions" Manual) Limit frequency (pulse) 2.5 kHz 25 kHz Potential separation digital inputs Yes Potential separation digital pulse Yes Potential separation digital pulse Yes Potential separation digital outputs Yes Potential separation Yes Potential separation digital outputs Yes Potential separation Yes Potential		
Integrated function blocks (closed-loop control) Pilo controller Piss Spulse width modulation up to 2.5 kHz (see "Technological Functions" Manual) Limit frequency (pulse) 2.5 kHz Potential separation Potential separation digital inputs Potential separation digital outputs Potential separation	·	
PID controller Number of pulse outputs 3: Pulse width modulation up to 2.5 kHz (see "Technological Functions" Nanual) Limit frequency (pulse) Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels and backplane bus • between the channels and backplane bus Potential separation digital outputs • Potential separation digital outputs		
Number of pulse outputs Limit frequency (pulse) Limit frequency (pulse) Potential separation Potential separation digital inputs Potential separation digital outputs Potential separa		
Limit frequency (pulse) 2.5 kHz		
Potential separation digital injusts Potential separation digital injusts Potential separation digital injusts Potential separation digital outputs Potential separation digital out		
Potential separation digital inputs Potential separation digital inputs between the channels between the channels between the channels Potential separation digital outputs between the channels Potential separation digital outputs Potential separation d	Limit frequency (pulse)	2.5 kHz
Potential separation digital inputs between the channels and backplane bus Potential separation digital outputs Pes Pes Pes Petween the channels in groups of 8 Petween the channels in groups of 8 Petween the channels and backplane bus Pes Potential separation digital outputs Pes Potential separation digital outputs Pes Pes Potential separation digital outputs Pes Pes Potential separation digital outputs Pes Potential separati	Potential separation	
between the channels between the channels and backplane bus Potential separation digital outputs Potential separation digital outputs Potential separation digital outputs between the channels	Potential separation digital inputs	
e between the channels and backplane bus Potential separation digital outputs ● Potential separation digital outputs ● between the channels ● between the channels ● between the channels in groups of ● between the channels and backplane bus Selection	 Potential separation digital inputs 	Yes
Potential separation digital outputs	 between the channels 	No
Potential separation digital outputs • between the channels • between the channels, in groups of • between the channels and backplane bus * between the channels and backplane bus * Yes * Solution Isolation tested with * Ambient conditions * Ambient conditions * Ambient temperature during operation • min. • max. • 60 °C * Configuration / header * STEP 7 * Yes: STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 • STEP 7 Lite * No * Configuration / programming / header • Command set • Nesting levels • Nesting levels • System functions (SFC) • System function blocks (SFB) * System function blocks (SFB) * Programming language - LAD - FBD - STL - SCL - CFC - GRAPH - HiGraph® * Yes * Know-how protection • Use; program protection/password protection • Block encryption Dimensions Width * B0 mm Height * B0 mm Height * 125 mm ** ** Born ** B0 mm * B0 mm ** Bisside the channels of the service of th	 between the channels and backplane bus 	Yes
between the channels	Potential separation digital outputs	
between the channels, in groups of between the channels and backplane bus Solation	 Potential separation digital outputs 	Yes
between the channels and backplane bus solation	 between the channels 	Yes
Isolation Iso	 between the channels, in groups of 	8
Isolation tested with Ambient conditions Ambient temperature during operation • min. • max. • 60 °C configuration / header Configuration software • STEP 7 • STEP 7 Ves; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 • STEP 7 Lite configuration / programming / header • Command set • Nesting levels • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph® Know-how protection • User program protection/password protection • User program protection/password protection • User program protection/password protection • Ves; With S7 block Privacy Dimensions Width 80 mm Height 125 mm	between the channels and backplane bus	Yes
Ambient conditions Ambient temperature during operation • min. • min. • max. • 60 °C configuration / header Configuration software • STEP 7 STEP 7 Ves; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 • STEP 7 Lite No configuration / programming / header • Command set • Nesting levels • Nesting levels • System functions (SFC) • System functions (SFC) • System function blocks (SFB) Programming language — LAD — FBD — FBD — STL — SCL — CFC — GRAPH — HiGraph® Know-how protection • User program protection/password protection • User program protection/password protection • User program protection/password protection • User program protection/password protection • User program protection/password protection • User program protection/password protection • User program protection/password protection • User program protection/password protection • User program protection/password protection • User program protection/password protection • User program protection/password protection • User program protection/password protection • User program protection/password protection • Width 80 mm Height	Isolation	
Ambient temperature during operation • min. • max. • 60 °C configuration / header Configuration software • STEP 7 • STEP 7 Ves: STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 • STEP 7 Lite No configuration / programming / header • Command set • Nesting levels • Nesting levels • System functions (SFC) • see instruction list • Nesting language - LAD - FBD - STL - SCL - SCL - CFC - GRAPH - HiGraph® Know-how protection • User program protection/password protection • User program protection/password protection • User program protection/password protection • Block encryption Width - Height More 60 °C C 60 °C Ves: STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 Ves: instruction list 8 einstruction list 9 ese instruction list 9 ese instruc		600 V DC
	Ambient temperature during operation	
configuration / header Configuration software Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 • STEP 7 Lite No configuration / programming / header see instruction list • Command set see instruction list • Nesting levels 8 • System function blocks (SFD) see instruction list Programming language Yes — LAD Yes — STL Yes — STL Yes — SCL Yes — CFC Yes — GRAPH Yes — HiGraph® Yes Know-how protection Yes • Block encryption Yes; With S7 block Privacy Dimensions Width Height 125 mm	• min	0.00
Configuration software Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 ● STEP 7 Lite No configuration / programming / header ● Command set see instruction list ● Nesting levels 8 ● System function blocks (SFC) see instruction list ● System function blocks (SFB) see instruction list Programming language — LAD — FBD Yes — STL Yes — SCL Yes — CFC Yes — GRAPH Yes — HiGraph® Yes Know-how protection Yes ● User program protection/password protection Yes; With S7 block Privacy Dimensions Width 80 mm Height 125 mm	▼ IIIII.	
	• max.	
• STEP 7 Lite configuration / programming / header • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language - LAD - FBD - STL - SCL - SCL - CFC - GRAPH - HiGraph® Know-how protection • User program protection/password protection • Block encryption Pick of the see instruction list Yes Yes Yes Yes Yes Yes Yes Y	max. configuration / header	
STEP 7 Lite Configuration / programming / header Command set See instruction list Nesting levels System functions (SFC) System function blocks (SFB) See instruction list System function blocks (SFB) See instruction list Programming language LAD Yes FBD Yes STL Yes STL Yes SCL Yes CFC GRAPH HiGraph® Yes Know-how protection User program protection/password protection See With S7 block Privacy Dimensions Width Height 125 mm	max. configuration / header Configuration software	60 °C
configuration / programming / header Command set See instruction list System functions (SFC) See instruction list System function blocks (SFB) See instruction list Programming language LAD Yes FBD Yes STL Yes SCL Yes CFC GRAPH HiGraph® Yes Know-how protection User program protection/password protection Block encryption Piggramming / header See instruction list Yes	max. configuration / header Configuration software	60 °C Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP
	max. configuration / header Configuration software STEP 7	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203
Nesting levels System functions (SFC) see instruction list System function blocks (SFB) Programming language	max. configuration / header Configuration software STEP 7 STEP 7 Lite	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203
 System functions (SFC) System function blocks (SFB) See instruction list System function blocks (SFB) See instruction list Programming language — LAD — FBD — FBD — STL — SCL — SCL — CFC — GRAPH — HiGraph® Know-how protection — User program protection/password protection — Block encryption Pimensions Width Height 80 mm Height 125 mm 	max. configuration / header Configuration software STEP 7 STEP 7 Lite configuration / programming / header	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No
System function blocks (SFB) Programming language — LAD — FBD — FBD — STL — SCL — SCL — CFC — GRAPH — HiGraph® Know-how protection — User program protection/password protection — Block encryption Pimensions Width Height Syes see instruction list Yes Yes Yes Yes Yes Yes Yes Y	max. configuration / header Configuration software STEP 7 STEP 7 Lite configuration / programming / header Command set	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No see instruction list
Programming language Yes — FBD Yes — STL Yes — SCL Yes — CFC Yes — GRAPH Yes — HiGraph® Yes Know-how protection Yes • User program protection/password protection Yes; With S7 block Privacy Dimensions Yes; With S7 block Privacy Width 80 mm Height 125 mm	max. configuration / header Configuration software	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No see instruction list 8
— LAD Yes — FBD Yes — STL Yes — SCL Yes — CFC Yes — GRAPH Yes — HiGraph® Yes Know-how protection Yes • User program protection/password protection Yes • Block encryption Yes; With S7 block Privacy Dimensions 80 mm Height 125 mm	max. configuration / header Configuration software	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No see instruction list 8 see instruction list
— FBD Yes — STL Yes — SCL Yes — CFC Yes — GRAPH Yes — HiGraph® Yes Know-how protection Yes • User program protection/password protection Yes • Block encryption Yes; With S7 block Privacy Dimensions Width 80 mm Height 125 mm	 max. configuration / header Configuration software STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels System functions (SFC) System function blocks (SFB) 	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No see instruction list 8 see instruction list
— STL Yes — SCL Yes — CFC Yes — GRAPH Yes — HiGraph® Yes Know-how protection Yes • User program protection/password protection Yes; With S7 block Privacy • Block encryption Yes; With S7 block Privacy Dimensions 80 mm Height 125 mm	max. configuration / header Configuration software STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No see instruction list 8 see instruction list see instruction list
- SCL Yes - CFC Yes - GRAPH Yes - HiGraph® Yes Know-how protection • User program protection/password protection Yes - Block encryption Yes; With S7 block Privacy Dimensions Width 80 mm Height 125 mm	max. configuration / header Configuration software	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No see instruction list 8 see instruction list see instruction list
— GRAPH — HiGraph® Yes Know-how protection	max. configuration / header Configuration software	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No see instruction list 8 see instruction list see instruction list Yes Yes
— HiGraph® Yes Know-how protection ● User program protection/password protection ● Block encryption Yes; With S7 block Privacy Dimensions Width 80 mm Height 125 mm	max. configuration / header Configuration software	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No see instruction list 8 see instruction list see instruction list Yes Yes Yes
Know-how protection User program protection/password protection Block encryption Yes; With S7 block Privacy Dimensions Width B0 mm Height 125 mm	 max. configuration / header Configuration software STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL 	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No see instruction list 8 see instruction list see instruction list Yes Yes Yes Yes
User program protection/password protection Block encryption Yes; With S7 block Privacy Dimensions Width 80 mm Height 125 mm	 max. configuration / header Configuration software STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC 	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No see instruction list 8 see instruction list see instruction list Yes Yes Yes Yes Yes
● Block encryption Yes; With S7 block Privacy Dimensions Width 80 mm Height 125 mm	 max. configuration / header Configuration software STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH 	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No see instruction list 8 see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes
Dimensions Width 80 mm Height 125 mm	 max. configuration / header Configuration software STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH HiGraph® 	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No see instruction list 8 see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes
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Height 125 mm	 max. configuration / header Configuration software STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH HiGraph® Know-how protection User program protection/password protection 	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No see instruction list 8 see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes
	 max. configuration / header Configuration software STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH HiGraph® Know-how protection Block encryption 	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No see instruction list 8 see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes
Depth 130 mm	 ● max. configuration / header Configuration software ● STEP 7 ● STEP 7 Lite configuration / programming / header ● Command set ● Nesting levels ● System functions (SFC) ● System function blocks (SFB) Programming language — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph® Know-how protection ● User program protection/password protection ● Block encryption Dimensions 	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No see instruction list 8 see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
	 max. configuration / header Configuration software STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH HiGraph® Know-how protection User program protection/password protection Block encryption Dimensions Width 	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No see instruction list 8 see instruction list yes Y



Weights
Weight, approx. 500 g

last modified: 9/7/2023 🖸

