SIEMENS

Data sheet

6ES7314-6CH04-0AB0



SIMATIC S7-300, CPU 314C-2 DP Compact CPU with MPI, 24 DI/16 DO, 4 AI, 2 AO, 1 Pt100, 4 high-speed counters (60 kHz), integrated DP interface, Integr. power supply 24 V DC, work memory 192 KB, Front connector (2x 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 DC	Yes
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	
— Rated value (DC)	24 V

— Reverse polarity protection	Yes
Digital outputs	
— Rated value (DC)	24 V
— Reverse polarity protection	No
Input current	
Current consumption (rated value)	880 mA
Current consumption (in no-load operation), typ.	150 mA
Inrush current, typ.	5 A
l ² t	0.7 A ^{2.} s
Digital inputs	00 4
• from load voltage L+ (without load), max.	80 mA
Digital outputs	50 4
 from load voltage L+, max. 	50 mA
Power loss	
Power loss, typ.	13 W
Memory	
Work memory	
• integrated	192 kbyte
• expandable	No
 Size of retentive memory for retentive data 	64 kbyte
blocks	
Load memory	
• Plug-in (MMC)	Yes
• Plug-in (MMC), max.	8 Mbyte
 Data management on MMC (after last programming), min. 	10 y
Backup	
● present	Yes; Guaranteed by MMC (maintenance-free)
• without battery	Yes; Program and data
CPU processing times	
for bit operations, typ.	0.06 μs
for word operations, typ.	0.12 µs
for fixed point arithmetic, typ.	0.16 μs
for floating point arithmetic, typ.	0.59 µs
CPU-blocks	1 024: (DRo ECo ERo); the maximum number of loadable blacks
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 mey	1 024; Number range: 0 to 7999
• Number, max.	
• Size, max. FC	64 kbyte
Number, max.	1 024; Number range: 0 to 7999
	64 kbyte
• Size, max. OB	
Description	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	
• Number	256
	250
Retentivity	Yes
— adjustable — lower limit	0
	255
— upper limit — preset	Z 0 to Z 7
Counting range	
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	256
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	255
- F.F	

— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
• Туре	SFB
• Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
retentive data area in total	All, max. 64 KB
Flag	
• Number, 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	
• per priority class, max.	32 kbyte; Max. 2048 bytes per block
Address area	
I/O address area	2.049 hite
• Inputs	2 048 byte
• Outputs	2 048 byte
of which distributed	0.000 h. ta
— Inputs	2 003 byte
— Outputs	2 010 byte
Process image	2.049 hite
• 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 126.7
— Digital outputs	124.0 to 125.7
— Analog inputs	752 to 761
— Analog outputs	752 to 755
Digital channels	
 Inputs 	16 048

— of which central	1 016
Outputs	16 096
— of which central	1 008
Analog channels	
Inputs	1 006
— of which central	253
Outputs	1 007
— of which central	250
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	10
Rack	
• Racks, max.	4
 Modules per rack, max. 	8; In rack 3 max. 7

Time of day Clock • Hardware clock (real-time) Yes • retentive and synchronizable Yes 6 wk; At 40 °C ambient temperature · Backup time • Deviation per day, max. 10 s; Typ.: 2 s Clock continues running after POWER OFF Behavior of the clock following POWER-ON Clock continues to run with the time at which the power failure • Behavior of the clock following expiry of backup occurred period Operating hours counter • Number 1 • Number/Number range 0 • Range of values 0 to 2^31 hours (when using SFC 101) 1 h Granularity Yes; Must be restarted at each restart retentive **Clock synchronization** Yes supported Yes • to MPI, master Yes • to MPI, slave • to DP, master Yes; With DP slave only slave clock Yes • to DP, slave

● in AS, master	Yes
● in AS, slave	No
Digital inputs Number of digital inputs	24
 of which inputs usable for technological functions 	16
integrated channels (DI)	24
Input characteristic curve in accordance with IEC 61131, type 1	Yes
Number of simultaneously controllable inputs	
horizontal installation	
— up to 40 °C, max.	24
— up to 60 °C, max.	12
vertical installation	
— up to 40 °C, max.	12
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 (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.	8 μs; Minimum pulse width/minimum pause between pulses at maximum counting frequency
Cable length	
• shielded, max.	1 000 m; 50 m for technological functions
• unshielded, max.	600 m; For technological functions: No
for technological functions	
— shielded, max.	50 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.	
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
• upper limit	4 kΩ
Output voltage	
● for signal "1", min.	L+ (-0.8 V)
Output current	
 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
	600 m
• unshielded, max.	
Analog inputs	
Number of analog inputs	5
 For voltage/current measurement 	4
 For resistance/resistance thermometer measurement 	1
integrated channels (AI)	5; 4x current/voltage, 1x resistance
permissible input voltage for current input (destruction limit), max.	5 V; Permanent

permissible input voltage for voltage input (destruction limit), max. 30 ½ Permanent permissible input current for voltage input (destruction limit), max. 50 mA; Permanent permissible input current for current input (destruction limit), max. 50 mA; Permanent No-load voltage for resistance-type transmitter, typ. 3.3 V Constant measurement current for resistance-type transmitter, typ. 3.3 V Technical unit for temperature measurement adjustable 125 mA input ranges Ves; ±10 V / 100 kQ; 0 V to 10 V / 100 kQ e Current Ves; ±20 mA / 100 Q; 0 mA to 20 mA / 100 Q; 4 es; ±20 mA / 100 Q; 0 mA to 20 mA / 100 Q; 4 es; ±0 Q to 500 Q / 10 MQ e Resistance thermometer Yes; ±10 V / 100 kQ; 0 V to 10 V / 100 kQ e Notage (rated values), voltages Ves; ±0 Q to 500 Q / 10 MQ e Resistance (0 to 10 V) 100 kQ input resistance (0 to 10 V) 100 kQ input resistance (0 to 20 mA) Yes e Input resistance (10 for 00 mA) Yes e Input resistanc		
(destruction limit), max. 50 mA; Permanent permissible input current for current input (destruction inn), max. 50 mA; Permanent No-load voltage for resistance-type transmitter, typ. 3.3 V Constant measurement current for resistance-type transmitter, typ. 1.25 mA Technical unit for temperature measurement adjustable Ves; Degrees Celsius / degrees Fahrenheit / Kelvin adjustable Input ranges Ves; ±10 V / 100 kΩ; 0 V to 10 V / 100 kΩ • Voltage Yes; ±20 mA / 100 Ω; 0 mA to 20 mA / 100 Ω; 4 mA to 20 mA / 100 Ω • Resistance thermometer Yes; ±10 V / 100 kΩ; 0 V to 10 V / 100 kΩ • Current Yes; ±10 V / 100 kΩ; 0 V to 10 V / 100 kΩ • Current Yes; ±20 mA / 100 Ω; 0 mA to 20 mA / 100 Ω; 4 mA to 20 mA / 100 Ω • Resistance thermometer Yes; ±100 / 10 MΩ • Lot +10 V Yes • Lot +01 V Yes • Lot 20 mA Yes • Input resistance (A mA to 20 mA) Yes • Lot 20 mA Yes • Lot 20 mA Yes	permissible input voltage for voltage input (destruction limit), max.	30 V; Permanent
limit), max. image No-load voltage for resistance-type transmitter, typ. 3.3 V Constant measurement current for resistance-type transmitter, typ. 1.25 mA Technical unit for temperature measurement adjustable Yes; Degrees Celsius / degrees Fahrenheit / Kelvin Input ranges Yes; ±10 V / 100 kΩ; 0 V to 10 V / 100 kΩ • Current Yes; ±10 V / 100 kΩ; 0 v to 10 V / 100 kΩ • Current Yes; ±20 mA / 100 Ω; 0 mA to 20 mA / 100 Ω; 4 mA to 20 mA / 100 Ω • Resistance thermometer Yes; 0 to 600 Ω / 10 MΩ • Resistance Yes; 0 to 600 Ω / 10 MΩ • Resistance (0 to 10 V) Yes • 0 to +10 V Yes • 0 to 20 mA Yes • 10 put resistance (0 to 20 mA) 100 Ω • 10 put resistance (1 mA to 20 mA) Yes • 10 put resistance (1 mA to 20 mA) Yes • 10 put resistance (1 mA to 20 mA) 100 Ω • 10 put resistance (Pt 100) Yes • 10 put resistance (Pt 100) Yes • 10 to 600 ms Yes		0.5 mA; Permanent
Constant measurement current for resistance-type transmitter, typ. 1.25 mA Technical unit for temperature measurement adjustable Yes; Degrees Celsius / degrees Fahrenheit / Kelvin Input ranges Yes; ±10 V / 100 kQ; 0 V to 10 V / 100 kQ • Voltage Yes; ±10 V / 100 kQ; 0 V to 10 V / 100 kQ • Current Yes; ±20 mA / 100 Q; 0 mA to 20 mA / 100 Q; 4 mA to 20 mA / Yes; ±20 mA / 100 Q • Resistance thermometer Yes; ±10 V / 100 kQ; 0 V to 10 V / 100 kQ • Resistance Yes; ±20 mA / 100 Q • Resistance (freed values), voltages Yes; ±20 mA / 100 MQ • Input ranges (rated values), voltages Yes; ±20 mA / 100 MQ • Input resistance (0 to 10 V) Yes • 10 to 20 mA Yes • 10 put resistance (P1 100) 100 Ω Input ranges (rated values), resistance Yes • 10 to 6000 hms Ye		50 mA; Permanent
transmitter, typ. Accession of degrees Fahrenheit / Kelvin adjustable Technical unit for temperature measurement adjustable Yes; Degrees Celsius / degrees Fahrenheit / Kelvin adjustable Input ranges Yes; ±10 V / 100 kD; 0 V to 10 V / 100 kD • Voltage Yes; ±10 V / 100 kD; 0 V to 10 V / 100 kD • Current Yes; ±20 mA / 100 Ω; 0 mA to 20 mA / 100 Ω; 4 mA to 20 mA / 100 Ω • Resistance thermometer Yes; ±20 mA / 100 Ω; 0 mA to 20 mA / 100 Ω; 4 mA to 20 mA / 100 Ω • Resistance thermometer Yes; ±20 mA / 100 Ω; 0 mA to 20 mA / 100 Ω; 4 mA to 20 mA • Toput ranges (rated values), voltages Yes; 0 to 10 MΩ • Toput resistance (0 to 10 V) Yes • 10 to 20 mA Yes • 10 to 00 colms Yes <t< td=""><td>No-load voltage for resistance-type transmitter, typ.</td><td>3.3 V</td></t<>	No-load voltage for resistance-type transmitter, typ.	3.3 V
adjustable initianges Input ranges Yes; ±10 V / 100 kΩ; 0 V to 10 V / 100 kΩ • Voltage Yes; ±20 mA / 100 Ω; 0 mA to 20 mA / 100 Ω; 4 mA to 20 mA / 100 Ω; • Resistance thermometer Yes; ±20 mA / 100 Ω; 0 mA to 20 mA / 100 Ω; 4 mA to 20 mA / 100 Ω; • Resistance thermometer Yes; ±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 (100 V) Yes; Pt 100 / 10 MΩ • Input resistance (0 to 10 V) Yes • Input resistance (0 to 20 mA) Yes • Input resistance (0 to 20 mA) Yes • Input resistance (0 to 20 mA) Yes • Input resistance (-20 mA to +20 mA) Yes • Input resistance (-20 mA to +20 mA) Yes • Input resistance (4 mA to 20 mA) Yes • Input resistance (4 mA to 20 mA) Yes • Input resistance (Pt 100) Yes • Input resistance (Pt 100) Yes • Input resistance (Pt 100) Yes • Input resistance (0 to 600 ohms) Yes • Input resistance (0 to 600 ohms) Yes • Inparemeterizable No		1.25 mA
• VoltageYes; ±10 V / 100 kΩ; 0 V to 10 V / 100 kΩ• CurrentYes; ±20 mA / 100 Ω; 0 mA to 20 mA / 100 Ω; 4 mA to 20 mA / 100 Ω• Resistance thermometerYes; Pt 100 / 10 MΩ• ResistanceYes; 0 0 to 600 Ω / 10 MΩInput ranges (rated values), voltages100 kΩ• 0 to +10 VYes• 10 to +10 VYes• 10 put resistance (0 to 10 V)100 kΩInput resistance (0 to 20 mA)Yes• 10 to +20 mAYes• 10 to 20 mAYes• 10 to 600 ohmsYes• 10 to 600 ohmsYes by software• param	•	Yes; Degrees Celsius / degrees Fahrenheit / Kelvin
• Current Yes; ±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 Input ranges (rated values), voltages Yes; 0 Ω to 600 Ω / 10 MΩ • Input resistance (0 to 10 V) Yes • 0 to +10 V Yes • 0 to 20 mA Yes • 10 to 800 ohms Yes • 10 to 600 ohms Yes • 10 to 600 ohms Yes • 10 to 600 ohms Yes • 10	Input ranges	
Action100 Ω• Resistance thermometerYes; Pt 100 / 10 MΩ• ResistanceYes; 0 Ω to 600 Ω / 10 MΩInput ranges (rated values), voltages• 0 to +10 VYes• 0 to +10 VYes• 1 nput resistance (0 to 10 V)100 kΩInput resistance (0 to 20 mAYes• 1 nput resistance (0 to 20 mA)100 Ω• 1 nput resistance (0 to 20 mA)Yes• 1 nput resistance (1 to 20 mA)Yes• 1 nput resistance (20 mA to +20 mA)100 Ω• 1 nput resistance (4 mA to 20 mA)Yes• 1 nput resistance (1 to 00 QYes• 1 nput resistance (1 to 00 QY	Voltage	Yes; ±10 V / 100 kΩ; 0 V to 10 V / 100 kΩ
• ResistanceΥες; 0 Ω to 600 Ω / 10 MΩInput ranges (rated values), voltagesYes• 0 to +10 V100 kΩInput resistance (0 to 10 V)100 kΩInput ranges (rated values), currentsYes• 0 to 20 mAYes• 10 put resistance (0 to 20 mA)100 Ω• 20 mA to +20 mAYes• 10 put resistance (-20 mA to +20 mA)100 Ω• 10 put resistance (-20 mA to +20 mA)100 Ω• 10 put resistance (4 mA to 20 mA)Yes• 10 put resistance (4 mA to 20 mA)100 Ω• 10 put resistance (4 mA to 20 mA)100 Ω• 10 put resistance (4 mA to 20 mA)100 Ω• 10 put resistance (4 mA to 20 mA)100 Ω• 10 put resistance (4 mA to 20 mA)100 Ω• 10 put resistance (4 mA to 20 mA)100 Ω• 10 put resistance (4 mA to 20 mA)100 Ω• 10 put resistance (10 to 600 ohms)10 MΩ• 10 to 600 ohmsYes• 10 to 600 ohms10 MΩ• 10 to 600 ohmsNo• 10 parameterizableNo• 10 parameterizableNo• 10 parameterizableYes; by software• 10 parameterizable<	• Current	
Input ranges (rated values), voltages • 0 to +10 V Yes • Input resistance (0 to 10 V) 100 kΩ Input ranges (rated values), currents • 0 to 20 mA Yes • 1nput resistance (0 to 20 mA) 100 Ω • 1nput resistance (-20 mA to +20 mA) Yes • 1nput resistance (-20 mA to +20 mA) 100 Ω • 4 mA to 20 mA Yes • 1nput resistance (4 mA to 20 mA) 100 Ω Input ranges (rated values), resistance thermometer Yes • Pt 100 Yes • 1nput resistance (Pt 100) Yes • 1nput resistance (0 to 600 ohms) 100 MΩ Input resistance (0 to 600 ohms) Yes • 1nput resistance (0 to 600 ohms) Yes • 1nput resistance (0 to 600 ohms) Yes • 1nput resistance (0 to 600 ohms) 10 MΩ Thermocouple (TC) Yes Temperature compensation Yes - parameterizable No Characteristic linearization Yes; by software - for resistance thermometer Pt 100	Resistance thermometer	Yes; Pt 100 / 10 MΩ
• 0 to +10 VYes• Input resistance (0 to 10 V)100 kΩInput ranges (rated values), currentsYes• 0 to 20 mAYes• Input resistance (0 to 20 mA)100 Ω• -20 mA to +20 mAYes• Input resistance (-20 mA to +20 mA)100 Ω• A mA to 20 mAYes• Input resistance (4 mA to 20 mA)Yes• Input resistance (4 mA to 20 mA)00 Ω• Input resistance (Pt 100)Yes• D to 600 ohms10 MΩ• Input resistance (Pt 100)10 MΩInput ranges (rated values), resistors• 0 to 600 ohmsYes• 1 nput resistance (0 to 600 ohms)10 MΩThermocouple (TC)Temperature compensation- parameterizableNoCharacteristic linearization• parameterizableYes; by software- for resistance thermometerPt 100	Resistance	Yes; 0 Ω to 600 Ω / 10 $M\Omega$
input resistance (0 to 10 V) 100 kΩ Input ranges (rated values), currents Yes 0 to 20 mA Yes input resistance (0 to 20 mA) 100 Ω - 20 mA to +20 mA Yes input resistance (-20 mA to +20 mA) 100 Ω 4 mA to 20 mA Yes input resistance (4 mA to 20 mA) 100 Ω Input resistance (4 mA to 20 mA) 100 Ω Input resistance (4 mA to 20 mA) 100 Ω Input resistance (4 mA to 20 mA) 100 Ω Input resistance (4 mA to 20 mA) 100 Ω Input resistance (10 to 600 ohms) 10 MΩ Input resistance (Pt 100) 10 MΩ Input resistance (0 to 600 ohms) 10 MΩ Input resistance (0 to 600 ohms) 10 MΩ Thermocouple (TC) Temperature compensation — parameterizable No Characteristic linearization Yes; by software — for resistance thermometer Pt 100	Input ranges (rated values), voltages	
Input ranges (rated values), currents Yes • 0 to 20 mA Yes • 1nput resistance (0 to 20 mA) 100 Ω • 20 mA to +20 mA Yes • 1nput resistance (-20 mA to +20 mA) 100 Ω • 4 mA to 20 mA Yes • 1nput resistance (-20 mA to +20 mA) 100 Ω • 4 mA to 20 mA Yes • 1nput resistance (-20 mA to +20 mA) 100 Ω • 1nput resistance (4 mA to 20 mA) 100 Ω • 1nput resistance (4 mA to 20 mA) 100 Ω • 1nput resistance (4 mA to 20 mA) 100 Ω • 1nput resistance (4 mA to 20 mA) 100 Ω • 1nput resistance (7 to 0) Yes • 1nput resistance (Pt 100) 10 MΩ Input resistance (0 to 600 ohms) 10 MΩ • 1nput resistance (0 to 600 ohms) Yes • 1nput resistance (0 to 600 ohms) 10 MΩ Thermocouple (TC) Temperature compensation - parameterizable No • parameterizable Yes; by software • for resistance thermometer Pt 100 Cable length Yes; by software	• 0 to +10 V	Yes
• 0 to 20 mAYes• Input resistance (0 to 20 mA)100 Ω• -20 mA to +20 mAYes• Input resistance (-20 mA to +20 mA)100 Ω• 4 mA to 20 mAYes• Input resistance (4 mA to 20 mA)100 Ω• Pt 100Yes• Pt 10010 MΩ• Input resistance (Pt 100)10 MΩ• Input resistance (0 to 600 ohms)10 MΩ• Input resistance (0 to 600 ohms) <t< td=""><td> Input resistance (0 to 10 V) </td><td>100 kΩ</td></t<>	 Input resistance (0 to 10 V) 	100 kΩ
• Input resistance (0 to 20 mA)100 Ω• -20 mA to +20 mAYes• Input resistance (-20 mA to +20 mA)100 Ω• 4 mA to 20 mAYes• Input resistance (4 mA to 20 mA)100 ΩInput resistance (4 mA to 20 mA)100 ΩInput ranges (rated values), resistance thermometer100 Ω• Pt 100Yes• Input resistance (Pt 100)10 MΩInput ranges (rated values), resistors10 MΩ• Input resistance (0 to 600 ohms)10 MΩ• Input resistance (0 to 600 ohms)Pi MO• Oto 600 ohmsPi Pi P	Input ranges (rated values), currents	
• -20 mA to +20 mAYes• Input resistance (-20 mA to +20 mA)100 Ω• 4 mA to 20 mAYes• Input resistance (4 mA to 20 mA)100 ΩInput resistance (10 to 20 mA)10 MΩInput resistance (Pt 100)Yes• 0 to 600 ohmsYes• 0 to 600 ohms10 MΩ• Input resistance (0 to 600 ohms)10 MΩThermocouple (TC)Temperature compensation- parameterizableNo• 0 parameterizableNo• 0 parameterizableYes; by software• 0 for resistance thermometerPt 100	• 0 to 20 mA	Yes
• Input resistance (-20 mA to +20 mA) 100 Ω • 4 mA to 20 mA Yes • Input resistance (4 mA to 20 mA) 100 Ω Input resistance (4 mA to 20 mA) 100 Ω Input resistance (4 mA to 20 mA) 100 Ω Input resistance (4 mA to 20 mA) 100 Ω Input resistance (7 to 0) 100 Ω Input resistance (Pt 100) Yes • Input resistance (Pt 100) 10 MΩ Input resistance (0 to 600 ohms) Yes • Input resistance (0 to 600 ohms) 10 MΩ Thermocouple (TC) Yes Temperature compensation No - parameterizable No Characteristic linearization Yes; by software - for resistance thermometer Pt 100	 Input resistance (0 to 20 mA) 	100 Ω
• 4 mA to 20 mAYes• 1nput resistance (4 mA to 20 mA)100 ΩInput ranges (rated values), resistance thermometer• Pt 100Yes• Input resistance (Pt 100)10 MΩInput ranges (rated values), resistors• 0 to 600 ohmsYes• 1nput resistance (0 to 600 ohms)10 MΩThermocouple (TC)Temperature compensation— parameterizableNoCharacteristic linearization• parameterizableYes; by software— for resistance thermometerPt 100	• -20 mA to +20 mA	Yes
• Input resistance (4 mA to 20 mA) 100 Ω Input ranges (rated values), resistance thermometer • Pt 100 • Pt 100 Yes • Input resistance (Pt 100) 10 MΩ Input ranges (rated values), resistors • 0 to 600 ohms • 0 to 600 ohms Yes • Input resistance (0 to 600 ohms) 10 MΩ • Input resistance (0 to 600 ohms) 10 MΩ • Thermocouple (TC) 10 MΩ Temperature compensation - parameterizable • parameterizable No • parameterizable Yes; by software - for resistance thermometer Pt 100	 Input resistance (-20 mA to +20 mA) 	100 Ω
Input ranges (rated values), resistance thermometer • Pt 100 Yes • Input resistance (Pt 100) 10 MΩ Input ranges (rated values), resistors 7 • 0 to 600 ohms Yes • 1nput resistance (0 to 600 ohms) 10 MΩ Thermocouple (TC) 10 MΩ Temperature compensation 10 MΩ - parameterizable No Characteristic linearization Yes; by software - for resistance thermometer Pt 100	• 4 mA to 20 mA	Yes
• Pt 100Yes• Input resistance (Pt 100)10 MΩInput ranges (rated values), resistorsYes• 0 to 600 ohmsYes• Input resistance (0 to 600 ohms)10 MΩThermocouple (TC)Temperature compensation- parameterizableNoCharacteristic linearizationYes; by software- for resistance thermometerPt 100Cable lengthYes; by software	 Input resistance (4 mA to 20 mA) 	100 Ω
• Input resistance (Pt 100)10 MΩInput ranges (rated values), resistors• 0 to 600 ohmsYes• Input resistance (0 to 600 ohms)10 MΩThermocouple (TC)Temperature compensation- parameterizableNoCharacteristic linearization• parameterizableYes; by software- for resistance thermometerPt 100Cable length	Input ranges (rated values), resistance thermometer	
Input ranges (rated values), resistors • 0 to 600 ohms Yes • Input resistance (0 to 600 ohms) 10 MΩ Thermocouple (TC) Temperature compensation - parameterizable No Characteristic linearization Yes; by software - for resistance thermometer Pt 100 Cable length Yes; by software	• Pt 100	Yes
• 0 to 600 ohmsYes• Input resistance (0 to 600 ohms)10 MΩThermocouple (TC)Temperature compensation parameterizableNoCharacteristic linearizationYes; by software- for resistance thermometerPt 100Cable length	 Input resistance (Pt 100) 	10 MΩ
• Input resistance (0 to 600 ohms) 10 MΩ Thermocouple (TC) Temperature compensation - parameterizable No Characteristic linearization Yes; by software - for resistance thermometer Pt 100 Cable length Yes	Input ranges (rated values), resistors	
Thermocouple (TC) Temperature compensation - parameterizable No Characteristic linearization • parameterizable Yes; by software - for resistance thermometer Pt 100 Cable length	• 0 to 600 ohms	Yes
Temperature compensation - parameterizable No Characteristic linearization • parameterizable Yes; by software - for resistance thermometer Pt 100 Cable length Yes	 Input resistance (0 to 600 ohms) 	10 MΩ
	Thermocouple (TC)	
Characteristic linearization • parameterizable Yes; by software - for resistance thermometer Pt 100 Cable length Yes	Temperature compensation	
• parameterizable - for resistance thermometer Cable length	— parameterizable	No
- for resistance thermometer Pt 100 Cable length	Characteristic linearization	
Cable length	parameterizable	Yes; by software
	— for resistance thermometer	Pt 100
• shielded, max. 100 m	Cable length	
	• shielded, max.	100 m
Analog outputs	Analog outputs	
Number of analog outputs 2	Number of analog outputs	2

integrated channels (AO)	2
Voltage output, short-circuit protection	Yes
Voltage output, short-circuit current, max.	55 mA
Current output, no-load voltage, max.	14 V
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
Connection of actuators	
 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
Load impedance (in rated range of output)	
 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
Destruction limits against externally applied voltages an	d currents
 Voltages at the outputs towards MANA 	16 V; Permanent
• Current, max.	50 mA; Permanent
Cable length	
• shielded, max.	200 m
Analog value generation for the inputs	
Measurement principle	Actual value encryption (successive approximation)
Integration and conversion time/resolution per channel	
 Resolution with overrange (bit including sign), max. 	12 bit
 Integration time, parameterizable 	Yes; 16.6 / 20 ms
 Interference voltage suppression for interference frequency f1 in Hz 	50 / 60 Hz
 permissible input frequency, max. 	400 Hz
• Time constant of the input filter	0.38 ms
Basic execution time of the module (all	1 ms
channels released)	
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

Settling time	
 for resistive load 	0.6 ms
 for capacitive load 	1 ms
 for inductive load 	0.5 ms

Encoder	
Connection of signal encoders	
 for voltage measurement 	Yes
 for current measurement as 2-wire transducer 	Yes; with external supply
 for current measurement as 4-wire transducer 	Yes
 for resistance measurement with two-wire connection 	Yes; Without compensation of the line resistances
 for resistance measurement with three-wire connection 	No
 for resistance measurement with four-wire connection 	No
Connectable encoders	
• 2-wire sensor	Yes
 permissible quiescent current (2-wire sensor), max. 	1.5 mA
Errors/accuracies	
Temperature error (relative to input range), (+/-)	0.006 %/K
Crosstalk between the inputs, min.	60 dB
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.06 %
Output ripple (relative to output range, bandwidth 0 to 50 kHz), (+/-)	0.1 %
Linearity error (relative to output range), (+/-)	0.15 %
Temperature error (relative to output range), (+/-)	0.01 %/K
Crosstalk between the outputs, min.	60 dB
Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)	0.06 %
Operational error limit in overall temperature range	
 Voltage, relative to input range, (+/-) 	1 %
 Current, relative to input range, (+/-) 	1 %
 Resistance, relative to input range, (+/-) 	1 %
 Voltage, relative to output range, (+/-) 	1 %
• Current, relative to output range, (+/-)	1 %
Basic error limit (operational limit at 25 °C)	
 Voltage, relative to input range, (+/-) 	0.8 %; Linearity error ±0.06 %
• Current, relative to input range, (+/-)	0.8 %; Linearity error ±0.06 %
• Resistance, relative to input range, (+/-)	0.8 %; Linearity error ±0.2 %
• Resistance thermometer, relative to input range, (+/-)	0.8 %

	0.8 %
• Voltage, relative to output range, (+/-)	0.8 %
• Current, relative to output range, (+/-)	
Interference voltage suppression for $f = n x (f1 + /-1 \%)$,	
Series mode interference (peak value of	30 dB
interference < rated value of input range), min.	
Common mode interference, min.	40 dB
Interfaces	
Number of industrial Ethernet interfaces	0
Number of PROFINET interfaces	0
Number of RS 485 interfaces	2; MPI and PROFIBUS DP
Number of RS 422 interfaces	0
1. Interface	
Interface type	Integrated RS 485 interface
Physics	RS 485
Isolated	No
Power supply to interface (15 to 30 V DC), max.	200 mA
Protocols	
• MPI	Yes
PROFIBUS DP master	No
PROFIBUS DP slave	No
 Point-to-point connection 	No
MPI	
• Transmission rate, max.	187.5 kbit/s
Services	
— PG/OP communication	Yes
— Routing	Yes
— Global data communication	Yes
— S7 basic communication	Yes
- S7 communication	Yes; Only server, configured on one side
— S7 communication, as client	No; but via CP and loadable FB
— S7 communication, as server	Yes
2. Interface	
Interface type	Integrated RS 485 interface
Physics	RS 485
Isolated	Yes
Power supply to interface (15 to 30 V DC), 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
Point-to-point connection	No
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; Only server, configured on one side
— S7 communication — S7 communication, as client	No
— S7 communication, as server	Yes
	Yes
 — Equidistance — Isochronous mode 	No
— SYNC/FREEZE	Yes
 — STNC/FREEZE — Activation/deactivation of DP slaves 	Yes
 Activation/deactivation of DP slaves Number of DP slaves that can be 	8
simultaneously activated/deactivated, max.	0
— Direct data exchange (slave-to-slave	Yes; As subscriber
communication)	
— DPV1	Yes
Address area	
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	
• GSD file	The latest GSD file is available on the Internet
	(http://www.siemens.com/profibus-gsd)
• Transmission rate, max.	12 Mbit/s
 automatic baud rate search 	Yes; only with passive interface
 Address area, max. 	32
• User data per address area, max.	32 byte
Services	
— PG/OP communication	Yes
— Routing	Yes; Only with active interface
— Global data communication	No
— S7 basic communication	No
— S7 communication	Yes; Only server, configured on one side

	— S7 communication, as client	No
Direct data exchange (slave-to-slave communication)Yes DPV1NoTransfer memory244 byte Outputs244 byte Outputs244 byteCommunication functionsYesPG/OP communicationYesData record routingYesGlobal data communicationYesSupportedYesNumber of GD loops, max.8Number of GD packets, max.8Number of GD packets, transmitter, max.8Number of GD packets, treasiver, max.8Size of GD packets, treasiver, max.22 byteSize of GD packets, max.22 byteSize of GD packets, max.76 byteSize of GD packet (of which consistent), max.76 byteSize of GD packets, max.76 byteSize of GD packet, foresiver, max.76 byteSize of GD packet, foresiver, max.76 byteSize of GD packet, max.76 byteSize of GD packet, max.76 byteSize of GD packet, foresiver, max.76 byteSize of GD packet, max.76 byteSize of GD packet, foresiver, max.76 byteSize of GD packet, foresiver, max.76 byteSize of GD packet, max.76 byteSize of GD packet, foresiver, max.76 byteSize of GD packet, foresiver, max.76 byteSize of GD packet, foresiver, max.76 byteSize of GD packet,		Yes
communication No - DPV1 No Transfer memory 244 byte - Outputs 244 byte Communication functions 244 byte PG/OP communication Yes Data record routing Yes Global data communication Yes Supported Yes Number of GD lops, max. 8 Number of GD packets, max. 8 Number of GD packets, max. 8 Number of GD packets, max. 8 Size of GD packets, max. 22 byte Size of GD packets, max. 76 byte User data per job, max. 76 byte VU For X_GET as server) 57 Size of GD packets, max. 24 byte Size of GD packets, max. 24 byte User data per job (of which consistent), max. 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_SEND or X_RCV); 64 bytes (with X_SEND or X_RCV); 64 bytes (Yes
Transfer memory - Inputs 244 byte - Outputs 244 byte Communication functions Yes Data record routing Yes Global data communication Yes Supported Yes Number of GD loops, max. 8 Number of GD packets, max. 8 Number of GD packets, transmitter, max. 8 Size of GD packets, receiver, max. 8 Size of GD packets, receiver, max. 22 byte Size of GD packets, max. 22 byte Size of GD packets, max. 22 byte Size of GD packets, max. 76 byte Supported Yes User data per job, max. 76 byte Stas server Yes as server Yes as server 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 scient Yes; via CP and loadable FB User data per job (of which consistent), max. 240 byte; as server Scompatible communication 240 byte; as server usel		
Inputs 244 byte Outputs 244 byte Communication functions Yes Data record routing Yes Global data communication Yes Supported Yes Number of GD lops, max. 8 Number of GD packets, max. 8 Number of GD packets, max. 8 Number of GD packets, receiver, max. 8 Size of GD packets, receiver, max. 8 Size of GD packets, receiver, max. 22 byte Size of GD packet (of which consistent), max. 22 byte Size of GD packet (of which consistent), max. 76 byte Supported Yes Supported Yes Solar data per job (of which consistent), max. 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_VEV); 64 bytes (with	— DPV1	No
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Data record routing Yes Global data communication * • supported Yes • Number of GD loops, max. 8 • Number of GD packets, max. 8 • Number of GD packets, transmitter, max. 8 • Number of GD packets, transmitter, max. 8 • Number of GD packets, receiver, max. 8 • Size of GD packets, max. 22 byte • Size of GD packets, max. 22 byte • Size of GD packet (of which consistent), max. 22 byte • Size of GD packet (of which consistent), max. 76 byte • User data per job, max. 76 byte • 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 as server) SZ communication Yes • user data per job (of which consistent), max. 76 byte; 76 bytes (with PUT/GET • user data per job, max. 180 kbyte; With PUT/GET • user data per job, max. 240 byte; as server SZ compatible communication 420 byte; as server • User data per job (of which consistent), max. 240 byte; as server SZ compatible communication 1	Communication functions	
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Number of GD packets, receiver, max.8• Number of GD packets, receiver, max.22 byte• Size of GD packet (of which consistent), max.22 byteS7 basic communication22 byte• supportedYes• User data per job, max.76 byte• User data per job (of which consistent), max.76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes	 Number of GD packets, max. 	8
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X_PUT or X_GET as server)S7 communication• supportedYes• as serverYes• as clientYes; 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 serverS5 compatible communicationYes; via CP and loadable FC• Number of connections12• overall12• usable for PG communication11- reserved for PG communication1	 User data per job, max. 	76 byte
• supportedYes• as serverYes; Via CP and loadable FB• as clientYes; 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 serverS5 compatible communication240 byte; as server• supportedYes; via CP and loadable FC• number of connections12• overall12• usable for PG communication11- reserved for PG communication1	 User data per job (of which consistent), max. 	
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Number of connections • overall 12 • usable for PG communication 11 - reserved for PG communication 1	S5 compatible communication	
• overall 12 • usable for PG communication 11 — reserved for PG communication 1	• supported	Yes; via CP and loadable FC
usable for PG communication — reserved for PG communication 1	Number of connections	
- reserved for PG communication 1	• overall	12
	 usable for PG communication 	11
- adjustable for PG communication, min. 1	— reserved for PG communication	1
	— adjustable for PG communication, min.	1
— adjustable for PG communication, max. 11	— adjustable for PG communication, max.	11
usable for OP communication 11	 usable for OP communication 	11
— reserved for OP communication 1	— reserved for OP communication	1
- adjustable for OP communication, min. 1	— adjustable for OP communication, min.	1

— adjustable for OP communication, max.	11
 usable for S7 basic communication 	8
- reserved for S7 basic communication	0
 — adjustable for S7 basic communication, min. 	0
 — adjustable for S7 basic communication, max. 	8
 usable for routing 	4; max.

S7 message functions		
Number of login stations for message functions, max.	12; 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	
 Number of variables, max. 	10	
Diagnostic buffer		
• 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	
Service data		
• can be read out	Yes	
Interrupts/diagnostics/status information		
Diagnostics indication LED		
 Status indicator digital input (green) 	Yes	
 Status indicator digital output (green) 	Yes	

Number of counters 4: See "Technological Functions" manual Counting frequency (counter) max. 60 kHz Frequency measurement Yes Number of frequency meters 4: up to 80 kHz (see "Technological Functions" manual) controlled positioning Yes Integrated function blocks (closed-loop control) Yes; PID controller (see "Technological Functions" manual) PID controller Yes Number of pulse outputs 4: Pulse 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 inputs Yes • Detential separation digital outputs Yes • Detween the channels and backplane bus Yes • Detween the channels in groups of 8 • Detween the channels in groups of 8 • Detween the channels in and backplane bus Yes Potential separation analog inputs Yes: Common for analog I/O <th>Integrated Functions</th> <th></th>	Integrated Functions	
Frequency measurement Yes Number of frequency meters 4: up to 60 kHz (see "Technological Functions" manual) controlled positioning Yes Integrated function blocks (closed-loop control) Yes: PID controller (see "Technological Functions" manual) PID controller Yes Number of pulse outputs 4: Pulse width modulation up to 2.5 kHz (see "Technological Functions" manual) Limit frequency (pulse) 2.5 kHz Potential separation Yes Potential separation digital inputs Yes • Potential separation digital outputs Yes • Detential separation analog inputs Yes: common for analog I/O • between the channels and backplane bus Yes: Potential separation analog inputs Yes: common for analog I/O • between the channels and backplane bus Yes Potential separation analog outputs Yes: common for analog I/O • between the channels and backplane bus Yes Potential separation analog outputs Yes: common for analog I/O • between the chann	Number of counters	4; See "Technological Functions" manual
Number of frequency meters 4: up to 60 kHz (see "Technological Functions" manual) controlled positioning Yes Integrated function blocks (closed-loop control) Yes; PID controller (see "Technological Functions" manual) PID controller Yes Number of pulse outputs 4; Pulse width modulation up to 2.5 kHz (see "Technological Functions" Manual) Limit frequency (pulse) 2.5 kHz Potential separation digital inputs Yes • Potential separation digital inputs Yes • Detential separation digital outputs Yes • Detential separation analog inputs Yes; common for analog I/O • Detential separation analog inputs Yes; common for analog I/O • Detential separation analog outputs Yes; common for analog I/O • Detential separation analog outputs Yes; common for analog I/O • Detential separation analog outputs Yes; common for analog I/O • Detential separation analog outputs Yes; common for analog I/O • Detential separation analo	Counting frequency (counter) max.	60 kHz
controlled positioning Yes Integrated function blocks (closed-loop control) Yes, PID controller (see "Technological Functions" manual) PID controller Yes Number of pulse outputs 4: Pulse width modulation up to 2.5 kHz (see "Technological Functions" Manual) Limit frequency (pulse) 2.5 kHz Potential separation digital inputs Yes • Potential separation digital inputs Yes • between the channels No • between the channels and backplane bus Yes • botential separation digital outputs Yes • between the channels No	Frequency measurement	Yes
Integrated function blocks (closed-loop control) Yes; PID controller (see "Technological Functions" manual) PID controller Yes Number of pulse outputs 4; Pulse width modulation up to 2.5 kHz (see "Technological Functions" Manual) Limit frequency (pulse) 2.5 kHz Potential separation digital inputs Yes • Potential separation digital inputs Yes • between the channels and backplane bus Yes; common for analog I/O • between the channels and backplane bus Yes; Potential separation analog uputs Yes; common for analog I/O • between the channels and backplane bus Yes Potential separation analog outputs Yes; common for analog I/O • between the channels and backplane bus Yes Potential separation analog outputs Yes; common for analog I/O	Number of frequency meters	4; up to 60 kHz (see "Technological Functions" manual)
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Number of pulse outputs 4; Pulse width modulation up to 2.5 kHz (see "Technological Functions" Manual) Limit frequency (pulse) 2.5 kHz Potential separation 2.5 kHz Potential separation digital inputs Yes • Potential separation digital inputs Yes • between the channels No • between the channels and backplane bus Yes • Potential separation digital outputs Yes • between the channels, in groups of 8 • between the channels, in groups of 8 • between the channels and backplane bus Yes • between the channels and backplane bus Yes • between the channels in groups of 8 • between the channels Yes: common for analog I/O • between the channels and backplane bus Yes Potential separation analog outputs Yes; common for analog I/O • between the channels and backplane bus Yes Potential separation analog outputs Yes; common for analog I/O • between the channels and backplane bus Yes Potential separation analog outputs Yes; common for analog I/O • between the channels and backplane bus Yes P	integrated function blocks (closed-loop control)	Yes; PID controller (see "Technological Functions" manual)
Functions" Manual) Limit frequency (pulse) 2.5 kHz Potential separation digital inputs Yes • Potential separation digital inputs Yes • between the channels and backplane bus Yes • Potential separation digital outputs Yes • between the channels, in groups of 8 • between the channels Yes: common for analog I/O • between the channels and backplane bus Yes: • Potential separation analog outputs Yes: common for analog I/O • between the channels and backplane bus Yes: • Dotential separation analog outputs Yes: common for analog I/O • between the channels and backplane bus Yes • Dotential differenco: VDC/60 V AC	PID controller	Yes
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between MANA and M internally (UISO) 75 V DC/60 V AC Isolation 600 V DC Ambient conditions 600 V DC Ambient temperature during operation 0 °C • min. 60 °C	Between the inputs and MANA (UCM)	8 V DC
Isolation tested with 600 V DC Ambient conditions Ambient temperature during operation • min. 0 °C • max. 60 °C		75 V DC/60 V AC
Isolation tested with 600 V DC Ambient conditions Ambient temperature during operation • min. 0 °C • max. 60 °C	Isolation	
Ambient temperature during operation • min. 0 °C • max. 60 °C		600 V DC
• min. 0 °C • max. 60 °C	Ambient conditions	
• max. 60 °C	Ambient temperature during operation	
	• min.	0°0
Configuration	● max.	60 °C
	Configuration	

Configuration software	
• 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
Programming	
Command set	see instruction list
Nesting levels	8
 System functions (SFC) 	see instruction list
 System function blocks (SFB) 	see instruction list
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
 Block encryption 	Yes; With S7 block Privacy
Dimensions	
Width	120 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	680 g
last modified:	12/08/2018