SIEMENS

Data sheet

6ES7211-1BE40-0XB0



SIMATIC S7-1200, CPU 1211C, compact CPU, AC/DC/relay, onboard I/O: 6 DI 24 V DC; 4 DO relay 2A; 2 AI 0-10 V DC, Power supply: AC 85-264 V AC at 47-63 Hz, Program/data memory 50 KB

General information	
Product type designation	CPU 1211C AC/DC/relay
Firmware version	V4.5
Engineering with	
 Programming package 	STEP 7 V17 or higher
Supply voltage	
Rated value (AC)	
• 120 V AC	Yes
• 230 V AC	Yes
permissible range, lower limit (AC)	85 V
permissible range, upper limit (AC)	264 V
Line frequency	
 permissible range, lower limit 	47 Hz
 permissible range, upper limit 	63 Hz
Input current	
Current consumption (rated value)	60 mA at 120 V AC; 30 mA at 240 V AC
Current consumption, max.	180 mA at 120 V AC; 90 mA at 240 V AC
Inrush current, max.	20 A; at 264 V
² t	0.8 A ² ·s
Output current	
for backplane bus (5 V DC), max.	750 mA; Max. 5 V DC for CM
Encoder supply	
24 V encoder supply	
• 24 V	20.4 to 28.8V
Power loss	
Power loss, typ.	10 W
Memory	
Work memory	
 integrated 	50 kbyte
• expandable	No
Load memory	
 integrated 	1 Mbyte
 Plug-in (SIMATIC Memory Card), max. 	with SIMATIC memory card
Backup	
• present	Yes
 maintenance-free 	Yes
 without battery 	Yes
CPU processing times	
for bit operations, typ.	0.08 µs: / instruction

for word operations, typ. 1.7 Jis / Instruction CPU advances 2.3 jis / Instruction CPU advaces 2.3 jis / Instruction CPU advaces 2.3 jis / Instruction CPU advaces DBs. FCS, FBs. counters and timesr. The maximum number of advacessable blocks ranges from 1 to 6535. There is no restriction, the entite working memory con be used CPU advaces Limited only by RAM for code Data areas and their retentivity Peteritive data area (and, fineers, counters, flags), max. Pateritive data area (and, fineers, counters, flags), max. 14 byte Pateritive data area (and, fineers, counters, flags), max. 14 byte Pateritive data area (and, fineers, counters, flags), max. 14 byte Proteinty class, max. 14 byte Proteinty class, max. 14 byte Proteinty class, dijustable 1 byte • Outputs, dijustable 1 byte • Indiverse configuration Number of fourial board • Outputs, dijustable 1 byte • Indiverse configuration 2 orginal board • Outputs, dijustable 6 Integrated • Outputs, dijustable 6 Integrated • Orginal mortits 6 Int		
GPLD.Books DBA: FCS, FB3, counters and times. The maximum number of addressable blocks ranges from 1 to 6555. There is no restriction, the entire working memory can be used GB • Number, max. Limited only by RAM for code Data area (incl. times, counters, flags), max. Sets, max. 14 kbyte. Coal data • Number, max. Limited only by RAM for code Data area (incl. times, counters, flags), max. • Restrictive data area (incl. times, counters, flags), max. 14 kbyte. • Port priority class, max. 14 kbyte. Priority class 1 (program cycle): 16 KB, priority class 2 to 26; 6 KB Addressa area • Process image • Inputs, adjustable 1 kbyte. • Orgona, adjustable 1 kbyte. • Corgona, adjustable 1 kbyte. • Baddware clock (real-tim		1.7 μs; / instruction
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addressable blocks ranges from 1 to 6553. There is no restriction, the entire working memory can be used OB • Number, max. Limited only by RAM for code Data areas and thar redentily(y If k byte Relentive data area (incl. timers, counters, flags), max. If k byte • Size, max. 4 kbyte; Size of bit memory address area Local data If kbyte • per priority class, max. If kbyte Address area Forcess Process insop • Couputs, adjustable • Inputs, adjustable 1 kbyte • Inputs, adjustable 1 kbyte • There of angle • Kayte • There of angle • Kayte • There of angle • Kayte • Inter of angle • Kayte • Deviation per day, max. ±80 simonth at 25 °C Optical inputs • 6, integrated • of which inputs • 6, integrated • of which inputs • 6, integrated • For any max 6 • For any max 6 • For signal °C 5 V UC at 1 mA • or signal °C 5 V UC at 1 mA	CPU-blocks	
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Data area (ncl. timers, counters, flags), max. 14 kbyte Flag 14 kbyte Size, max. 4 kbyte; Size of bit memory address area Local data 16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 28: 6 KB Address area 16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 28: 6 KB Address area 1 kbyte; Process image 1 kbyte • inputs, adjustable 1 kbyte Hardware configuration 1 Number of modules per system, max. 3 communication modules, 1 signal board Time of day Clock Clock 480 h: Trypical • Deviation per day, max. 400 h: Trypical • Deviation per day, max. 400 h: Trypical • Or which inputs usable for technological functions 6 Surroe/sink input Yes • and or digital inputs 6 Number of simultaneously controllable inputs 6 Input voltage 6 Input voltage 6 Input voltage 6 Input cas refer value (DC) 24 V • for signal °1*, typ. </td <td>OB</td> <td></td>	OB	
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Fig 4 kbyte; Size of bit memory address area Local data 4 kbyte; Size of bit memory address area • per priority class, max. KB Address area Fercess image • Inputs, adjustable 1 kbyte • Input data reclock (real-time) Yes • Backup time 480 h; Typical • Or which inputs usable for technological functions 6; Integrated • Or which input usable for technological functions 6; Integrated • Or which input Yes Number of signal "0" 5 V DC at 1 mA • For signal "1" 15 V DC at 2,5 mA Input data y for rate value of input voltage) 0 zms, 0 4 ms, 0 8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable • for signal "1", typ. 1 mA; nominal		14 khyte
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Process image • Inputs, adjustable 1 kbyte • Cutputs, adjustable 1 kbyte Hardware configuration 3 communication modules, 1 signal board Time of day 1 Clock • Hardware colock (real-time) • Backup time 480 h; Typical • Deviation per day, max. ±60 s/month at 25 °C • Optical inputs 6: Integrated • Or which inputs usable for technological functions 6: Integrated • of which inputs usable for technological functions 6: Integrated • of which inputs usable for technological functions 6 • Or which inputs usable for technological functions 6 • or of which inputs usable for technological functions 6 • or of which inputs usable for technological functions 6 • or of which inputs usable for technological functions 6 • or of signal '0'' 5 V DC at 1 mA • for signal '0'' 5 V DC at 2.5 mA Input duale (DC) 24 V • for signal '1'', typ. 4 mA: nominal Input dualy (for rated value of input voltage) for signal '1'', max. • for interrupt inputs - parameterizable -		
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Outputs, adjustable Integration Interface	Process image	
Hardware configuration Number of modules per system, max. 3 communication modules, 1 signal board Time of day Clock Hardware clock (real-lime) Yes Backup time 480 h; Typical beviation per day, max. 460 s/month at 25 °C Digital inputs 6; Integrated of which inputs usable for technological functions 6; Integrated of which inputs usable for technological functions 6; HSC (High Speed Counting) Yes Number of simultaneously controllable inputs 6 all mounting positions - - up to 40 °C, max. 6 SUDC at 2.5 mA Input delag 15 V DC at 2.5 mA Input delay (for rated value of input voltage) 15 V DC at 2.5 mA for signal "1". 15 V DC at 2.5 mA Input delay (for rated value of input voltage) 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four - parameterizable O to "1", max. - parameterizable Yes for technological functions - us 10" to "1", max.	Inputs, adjustable	1 kbyte
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Time of day Clock • Hardware clock (real-time) Yes • Backup time 480 h; Typical • Deviation per day, max. ±80 s/month at 25 °C Digital inputs 6; Integrated • of which inputs usable for technological functions 6; HSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs 6; HSC (High Speed Counting) all mounting positions	Hardware configuration	
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• Hardware clock (real-time) Yes • Backup time 480 h; Typical • Deviation per day, max. ±60 s/month at 25 °C Digital inputs 6; Integrated • of which inputs usable for technological functions 6; Integrated • of which inputs 6; Integrated Source/sink input Yes Number of simultaneously controllable inputs 6 all mounting positions 6 — up to 40 °C, max. 6 Input voltage 5 V DC at 1 mA • for signal °1° 5 V DC at 1 mA • for signal °1° 5 V DC at 2.5 mA Input current 6 • for signal °1°, typ. 4 mA; nominal Input durrent 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four — parameterizable 0.2 ms — at °0° to °1°, max. 12.8 ms for technological functions - — parameterizable Yes for technological functions 300 m; for technological functions: No — parameterizable Single phase : 3 @ 100 kHz, differentia: 3 @ 80 kHz Cable length • shielded, max. 500 m; 50 m for technological		
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• Deviation per day, max. ±60 s/month at 25 °C Digital inputs 6; Integrated • of which inputs usable for technological functions 6; HSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs 8 all mounting positions - - up to 40 °C, max. 6 Input voltage 5 V DC at 1 mA • for signal °0° 5 V DC at 1 mA • for signal °1°, typ. 4 mA; nominal Input delay (for rated value (DC) 24 V • for signal °1°, typ. 4 mA; nominal Input delay (for rated value of input voltage) for signal °1°, typ. for standard inputs 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four - at °0° to °1°, min. 0.2 ms - at °0° to °1°, max. 12.8 ms for interrupt inputs - - parameterizable Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz Cable length 500 m; 50 m for technological functions - parameterizable Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz Cable length 500 m; 50 m for technological functions • unshielded, max.		
Digital inputs 6; Integrated • of which inputs usable for technological functions 6; INtegrated • of which inputs usable for technological functions 6; INtegrated Source/sink input Yes Number of simultaneously controllable inputs 8 all mounting positions 6 — up to 40 °C, max. 6 Input voltage 7 • Rated value (DC) 24 V • for signal °0° 5 V DC at 1 mA • for signal °1° 15 V DC at 2.5 mA Input voltage 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four - parameterizable 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four - at °0° to °1°, max. 12.8 ms for interrupt inputs 0.2 ms - at °0° to °1°, max. 12.8 ms for interrupt inputs 9 - parameterizable Yes for technological functions 9 - parameterizable 500 m; 50 m for technological functions • shielded, max. 500 m; for technological functions: • unshielded, max. 500 m; for technological functions: No Digital o		
Number of digital inputs 6; Integrated • of which inputs usable for technological functions 6; HSC (High Speed Counting) Yes Yes Number of simultaneously controllable inputs 6 all mounting positions		
• of which inputs usable for technological functions 6; HSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs all mounting positions -up to 40 °C, max. 6 Input voltage 6 Input voltage 9 • for signal "0" 5 V DC at 1 mA • for signal "1" 15 V DC at 2.5 mA Input durrent 4 mA; nominal • for signal "1", typ. 4 mA; nominal Input delay (for rated value of input voltage) 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four - parameterizable 0.2 ms 0.4 ms. - at "0" to "1", min. 0.2 ms 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four - at "0" to "1", max. 1.2.8 ms 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable for interrupt inputs - - parameterizable Yes for technological functions - - parameterizable Yes for technological functions - - parameterizable Solo m; 50 m for technological functions. • shielded, max. 500 m; 50 m for technological functions. No Dif at outp		6; Integrated
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Number of simultaneously controllable inputs all mounting positions up to 40 °C, max. 6 Input voltage • Rated value (DC) 24 V • for signal "0" 5 V DC at 1 mA • for signal "1", typ. 15 V DC at 2.5 mA Input current - • for signal "1", typ. 4 mA; nominal Input delay (for rated value of input voltage) 6 for standard inputs 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four - at "0" to "1", min. 0.2 ms - at "0" to "1", max. 12.8 ms for interrupt inputs - - parameterizable Yes for interrupt inputs - - parameterizable Yes Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz Cable length - • shielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions: No Digital outputs 4; Relays Switching capacity of the outputs 2 A • with resistive load - • 0" to "1", max. 10 ms; max. <td></td> <td></td>		
all mounting positions	· ·	
up to 40 °C, max. 6 Input voltage 24 V • Rated value (DC) 24 V • for signal "0" 5 V DC at 1 mA • for signal "1" 15 V DC at 2.5 mA Input current 4 mA; nominal • for signal "1", typ. 4 mA; nominal Input delay (for rated value of input voltage) 6 for standard inputs • for standard inputs 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four		
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• for signal "1" 15 V DC at 2.5 mA Input current • for signal "1", typ. • for signal "1", typ. 4 mA; nominal Input delay (for rated value of input voltage) • for standard inputs • or standard inputs 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four - at "0" to "1", min. 0.2 ms - at "0" to "1", max. 12.8 ms for interrupt inputs • parameterizable - parameterizable Yes for technological functions • parameterizable - parameterizable Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz Cable length • shielded, max. • shielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions: No Digital outputs Number of digital outputs 4; Relays Switching capacity of the outputs 2 A • on lamp load, max. 20 W with DC, 200 W with AC Output delay with resistive load • 0" to "1", max.		
Input current • for signal "1", typ. 4 mA; nominal Input delay (for rated value of input voltage) for standard inputs - parameterizable 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four - at "0" to "1", min. 0.2 ms - at "0" to "1", max. 12.8 ms for interrupt inputs - parameterizable Yes for technological functions - parameterizable Yes for technological functions - parameterizable Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz Cable length • shielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions: No Digital outputs Number of digital outputs • with resistive load, max. • on lamp load, max. 2 A • on lamp load, max. 2 A • on lamp load, max. 10 ms; max.	-	
• for signal "1", typ. 4 mA; nominal Input delay (for rated value of input voltage) for standard inputs parameterizable 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four at "0" to "1", min. at "0" to "1", max. 12.8 ms for interrupt inputs parameterizable Yes for technological functions parameterizable Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz Cable length • shielded, max. shielded, max. 300 m; for technological functions • unshielded, max. 300 m; for technological functions with resistive load, max. 0 light a outputs 4 ; Relays Switching capacity of the outputs • with resistive load, max. 0 unpul delay with resistive load • "0" to "1", max.		
Input delay (for rated value of input voltage) for standard inputs	•	4 mA; nominal
for standard inputs 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four at "0" to "1", min. 0.2 ms at "0" to "1", max. 12.8 ms for interrupt inputs ar "0" to "1", max. parameterizable Yes for technological functions parameterizable parameterizable Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz Cable length shielded, max. • shielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions Number of digital outputs 4; Relays Switching capacity of the outputs 2 A • with resistive load, max. 2 A • on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load "0" to "1", max.		
— parameterizable0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four— at "0" to "1", min.0.2 ms— at "0" to "1", max.12.8 msfor interrupt inputs		
at "0" to "1", max.12.8 msfor interrupt inputsYes parameterizableYesfor technological functionsSingle phase : 3 @ 100 kHz, differential: 3 @ 80 kHzCable lengthSingle phase : 3 @ 100 kHz, differential: 3 @ 80 kHz6 shielded, max.500 m; 50 m for technological functions• unshielded, max.500 m; for technological functions• unshielded, max.300 m; for technological functions• unshielded, max.4; RelaysSwitching capacity of the outputs4; Relays• with resistive load, max.2 A• on lamp load, max.30 W with DC, 200 W with ACOutput delay with resistive load10 ms; max.	— parameterizable	in groups of four
for interrupt inputs Yes — parameterizable Yes for technological functions Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz Cable length Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz Cable length 500 m; 50 m for technological functions • shielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions: No Digital outputs 4; Relays Number of digital outputs 4; Relays Switching capacity of the outputs 2 A • with resistive load, max. 30 W with DC, 200 W with AC Output delay with resistive load 10 ms; max.		
— parameterizableYesfor technological functionsSingle phase : 3 @ 100 kHz, differential: 3 @ 80 kHz— parameterizableSingle phase : 3 @ 100 kHz, differential: 3 @ 80 kHzCable length• shielded, max.500 m; 50 m for technological functions• unshielded, max.300 m; for technological functions: NoDigital outputsNumber of digital outputs4; RelaysSwitching capacity of the outputs2 A• with resistive load, max.300 W with DC, 200 W with ACOutput delay with resistive load10 ms; max.		12.8 ms
for technological functions		N .
— parameterizableSingle phase : 3 @ 100 kHz, differential: 3 @ 80 kHzCable length• shielded, max.• unshielded, max.• unshielded, max.300 m; for technological functions: NoDigital outputsNumber of digital outputsSwitching capacity of the outputs• with resistive load, max.• on lamp load, max.Output delay with resistive load• "0" to "1", max.10 ms; max.	· ·	Yes
Cable length • shielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions: No Digital outputs 4; Relays Number of digital outputs 4; Relays Switching capacity of the outputs 2 A • with resistive load, max. 30 W with DC, 200 W with AC Output delay with resistive load 10 ms; max.		
 shielded, max. unshielded, max. unshielded, max. 300 m; 50 m for technological functions 300 m; for technological functions: No Digital outputs Digital outputs 4; Relays Switching capacity of the outputs 4; Relays • with resistive load, max. 2 A • on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load 10 ms; max.		Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz
• unshielded, max. 300 m; for technological functions: No Digital outputs 4; Relays Number of digital outputs 4; Relays Switching capacity of the outputs 2 A • with resistive load, max. 2 A • on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load 10 ms; max.		
Digital outputs 4; Relays Number of digital outputs 4; Relays Switching capacity of the outputs 4; Relays • with resistive load, max. 2 A • on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load 10 ms; max.		-
Number of digital outputs 4; Relays Switching capacity of the outputs • • with resistive load, max. 2 A • on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load • • "0" to "1", max. 10 ms; max.		300 m; for technological functions: No
Switching capacity of the outputs • with resistive load, max. • on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load • "0" to "1", max. 10 ms; max.		
 with resistive load, max. on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load "0" to "1", max. 10 ms; max. 		4; Relays
• on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load - "0" to "1", max. 10 ms; max. 10 ms; max.		
Output delay with resistive load • "0" to "1", max. 10 ms; max.		
• "0" to "1", max. 10 ms; max.		30 W with DC, 200 W with AC
• "1" to "U", max. 10 ms; max.		
	• "1" to "0", max.	10 ms; max.

Relay outputs	
Relay outputs Number of relay outputs	4
Number of operating cycles, max.	mechanically 10 million, at rated load voltage 100 000
Cable length	
• shielded, max.	500 m
• unshielded, max.	150 m
Analog inputs	
Number of analog inputs	2
	2
Input ranges • Voltage	Yes
Input ranges (rated values), voltages	103
• 0 to +10 V	Yes
— Input resistance (0 to 10 V)	≥100k ohms
Cable length	
• shielded, max.	100 m; twisted and shielded
Analog outputs	
Number of analog outputs	0
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
Resolution with overrange (bit including sign), max.	10 bit
 Integration time, parameterizable 	Yes
Conversion time (per channel)	625 µs
Encoder	
Connectable encoders	
2-wire sensor	Yes
1. Interface	
Interface type	PROFINET
Isolated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
Interface types	
RJ 45 (Ethernet)	Yes
Number of ports	1
integrated switch	No
Protocols	
PROFINET IO Controller	Yes
PROFINET IO Device	Yes
 SIMATIC communication 	Yes
 Open IE communication 	Yes; Optionally also encrypted
Web server	Yes
Media redundancy	No
PROFINET IO Controller	
Transmission rate, max.	100 Mbit/s
Services	
— PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
— Isochronous mode	No
	No
— PROFlenergy	No
— Prioritized startup	Yes
 — Number of IO devices with prioritized startup, max. 	16
— Number of connectable IO Devices, max.	16
— Number of connectable IO Devices for RT,	16
max.	
— of which in line, max.	16
- Activation/deactivation of IO Devices	Yes
- Number of IO Devices that can be	8
simultaneously activated/deactivated, max.	
— Updating time	The minimum value of the update time also depends on the

communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.

	devices and the quantity of configured user data.
PROFINET IO Device	
Services	
— PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
 — Isochronous mode 	No
— IRT	No
— PROFlenergy	Yes
— Shared device	Yes
 — Number of IO Controllers with shared device, 	2
max.	
Protocols	
Supports protocol for PROFINET IO	Yes
PROFIsafe	No
PROFIBUS	Yes; CM 1243-5 (master) or CM 1242-5 (slave) required
OPC UA	Yes; OPC UA Server
AS-Interface	Yes; CM 1243-2 required
Protocols (Ethernet)	
• TCP/IP	Yes
• DHCP	No
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
Redundancy mode	
Media redundancy	
— MRP	No
— MRPD	No
SIMATIC communication	
S7 routing	Yes
Open IE communication	
• TCP/IP	Yes
— Data length, max.	8 kbyte
 several passive connections per port, supported 	Yes
 ISO-on-TCP (RFC1006) 	Yes
— Data length, max.	8 kbyte
• UDP	Yes
— Data length, max.	1 472 byte
Web server	
supported	Yes
User-defined websites	Yes
OPC UA	
Runtime license required	Yes; "Basic" license required
OPC UA Server	Yes; data access (read, write, subscribe), method call, runtime license required
- Application authentication	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256
— User authentication	"anonymous" or by user name & password
— Number of sessions, max.	10
 — Number of subscriptions per session, max. 	5
— Sampling interval, min.	100 ms
— Publishing interval, min.	200 ms
— Number of server methods, max.	20
— Number of monitored items, max.	1 000
- Number of server interfaces, max.	2
 — Number of nodes for user-defined server interfaces, max. 	2 000
Further protocols	
MODBUS	Yes
communication functions / header	
S7 communication	

- automated	Vaa
• supported	Yes
	Yes
• as client	Yes
User data per job, max.	See online help (S7 communication, user data size)
overall	PG Connections: 4 reserved / 4 max; HMI Connections: 12 reserved / 18 max; S7 Connections: 8 reserved / 14 max; Open User Connections: 8 reserved / 14 max; Web Connections: 2 reserved / 30 max; OPC UA Connections: 0 reserved / 10 max; Total Connections: 34 reserved / 64 max
Test commissioning functions	
Status/control	
Status/control variable	Yes
Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	
Forcing	Yes
Diagnostic buffer	
• present	Yes
Traces	
 Number of configurable Traces 	2
 Memory size per trace, max. 	512 kbyte
Interrupts/diagnostics/status information	
Diagnostics indication LED	
RUN/STOP LED	Yes
• ERROR LED	Yes
MAINT LED	Yes
Integrated Functions	
Frequency measurement	Yes
controlled positioning	Yes
Number of position-controlled positioning axes, max.	8
Number of positioning axes via pulse-direction interface	Up to 4 with SB 1222
PID controller	Yes
Number of alarm inputs	4
Potential separation	
Potential separation digital inputs	
 Potential separation digital inputs 	500V AC for 1 minute
 between the channels, in groups of 	1
Potential separation digital outputs	
 Potential separation digital outputs 	Relays
 between the channels 	No
 between the channels, in groups of 	1
EMC	
Interference immunity against discharge of static electricity	
 Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 	Yes
— Test voltage at air discharge	8 kV
— Test voltage at contact discharge	6 kV
Interference immunity to cable-borne interference	N .
Interference immunity on supply lines acc. to IEC 61000-4-4	Yes
 Interference immunity on signal cables acc. to IEC 61000-4-4 	Yes
Interference immunity against voltage surge	
 Interference immunity on supply lines acc. to IEC 61000-4-5 	Yes
Interference immunity against conducted variable disturbance	e induced by high-frequency fields
 Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 	Yes
Emission of radio interference acc. to EN 55 011	
 Limit class A, for use in industrial areas 	Yes; Group 1
• Limit class B, for use in residential areas	Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011

Degree and class of protection	
IP degree of protection	IP20
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
Marine approval	Yes
Ambient conditions	
Free fall	
 Fall height, max. 	0.3 m; five times, in product package
Ambient temperature during operation	
● min.	-20 °C
• max.	60 °C
 horizontal installation, min. 	-20 °C
 horizontal installation, max. 	60 °C
• vertical installation, min.	-20 °C
vertical installation, max.	50 °C
Ambient temperature during storage/transportation	10.10
• min.	-40 °C
	70 °C
Air pressure acc. to IEC 60068-2-13	705 hDa
Operation, min.	795 hPa
Operation, max. Starsage/transport.min	1 080 hPa
Storage/transport, min.Storage/transport, max.	660 hPa 1 080 hPa
Altitude during operation relating to sea level	I VOU IIFa
Installation altitude, min.	-1 000 m
Installation altitude, max.	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Relative humidity	
• Operation, max.	95 %; no condensation
Vibrations	
 Vibration resistance during operation acc. to IEC 60068-2-6 	2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail
 Operation, tested according to IEC 60068-2-6 	Yes
Shock testing	
• tested according to IEC 60068-2-27	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms
Pollutant concentrations	
 SO2 at RH < 60% without condensation 	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
configuration / header	
configuration / programming / header	
Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
Know-how protection	
 User program protection/password protection 	Yes
Copy protection	Yes
Block protection	Yes
Access protection	N .
 protection of confidential configuration data 	Yes
Protection level: Write protection	Yes
Protection level: Read/write protection	Yes
Protection level: Complete protection	Yes
programming / cycle time monitoring / header	Van
adjustable	Yes
Dimensions	

Width	90 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	420 g

last modified:

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