SIEMENS

Data sheet

6ES7211-1HE40-0XB0



SIMATIC S7-1200, CPU 1211C, compact CPU, DC/DC/relay, onboard I/O: 6 DI 24 V DC; 4 DO relay 2 A; 2 AI 0-10 V DC, power supply: DC 20.4-28.8 V DC, program/data memory 75 KB

Figure similar

General information		
Product type designation	CPU 1211C DC/DC/relay	
Firmware version	V4.7	
Engineering with		
 Programming package 	STEP 7 V20 or higher	
Supply voltage		
Rated value (DC)		
• 24 V DC	Yes	
permissible range, lower limit (DC)	20.4 V	
permissible range, upper limit (DC)	28.8 V	
Reverse polarity protection	Yes	
Load voltage L+		
Rated value (DC)	24 V	
 permissible range, lower limit (DC) 	20.4 V	
permissible range, upper limit (DC)	28.8 V	
Input current		
Current consumption (rated value)	300 mA; CPU only	
Current consumption, max.	900 mA; CPU with all expansion modules	
Inrush current, max.	12 A; at 28.8 V DC	
l²t	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	L+ minus 4 V DC min.	
Power loss		
Power loss, typ.	8 W	
Memory		
Work memory		
• integrated	75 kbyte	
Load memory		
• integrated	1 Mbyte	
 Plug-in (SIMATIC Memory Card), max. 	with SIMATIC memory card	
Backup		
present	Yes	
maintenance-free	Yes	

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• Hardware clock (real-time) Yes • Backup time 400 h; Typical • Deviation per day, max. 400 simonth at 25 °C Digital inputs 6; Integrated • of which inputs usable for technological functions 6; Integrated • of which inputs usable for technological functions 6; IHSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs all mounting positions	Time of day		
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Number of 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 all mounting positions	 Deviation per day, max. 	±60 s/month at 25 °C	
• 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 • Arated 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 • • for signal "1", typ. 4 mA; nominal Input delay (for rated value of input voltage) 5 V DC at 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10	Digital inputs		
Source/sink input Yes Number of simultaneously controllable inputs all mounting positions -up to 40 °C, max. 6 Input voltage 6 • 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 Input delay (for rated value of input voltage) 6 for signal *1°, typ. 4 mA; nominal Input delay (for rated value of input voltage) 6 for standard inputs 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4	Number of digital inputs	6; Integrated	
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. 4 mA; nominal Input delay (for rated value of input voltage) for standard inputs - parameterizable 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 µs; 0.2 @	 of which inputs usable for technological functions 	6; HSC (High Speed Counting)	
all mounting positions 6 Input voltage 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 durrent 6 • for signal "1", typ. 4 mA; nominal Input delay (for rated value of input voltage) 6 for standard inputs 0.1/0.2/0.4/0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/ - parameterizable 0.8/1.6/3.2/6.4/10.0/12.8/20.0 ms - 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 for interrupt inputs - - parameterizable Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz Cable length - • nushielded, max. 300 m; 50 m for technological functions • unshielded, max. 300 m; 50 m for technological functions • unshielded, max. 2 A • on lamp load, max. 30W with DC, 200 W with AC Ou	Source/sink input	Yes	
	Number of simultaneously controllable inputs		
Input voltage • 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 • for signal "1", typ. • for signal "1", typ. 4 mA; nominal Input delay (for rated value of input voltage) • for signal "1", min. • or infor interrupt inputs 0.1/0.2/0.4/0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/ • at "0" to "1", max. 12.8 ms for interrupt inputs - • parameterizable 0.1/0.2/0.4/0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/ 0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/ 0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/ • 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. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions: No Digital outputs 4; Relays Switching capacity of the outputs -	all mounting positions		
• 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 or standard inputs • parameterizable 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 20.0 µs; 0.05 / 0.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 20.0 µs; 0.5 / 0.0	— up to 40 °C, max.	6	
 for signal "0" for signal "1" 15 V DC at 1 mA for signal "1" 15 V DC at 2.5 mA Input current for signal "1", typ. 4 mA; nominal Input delay (for rated value of input voltage) for standard inputs - parameterizable 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 ms - at "0" to "1", max. 1.2 8 ms for interrupt inputs - at "0" to "1", max. 1.2 8 ms for interrupt inputs - parameterizable Yes for technological functions - parameterizable Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz Cable length shielded, max. solo m; 50 m for technological functions unshielded, max. 300 m; for technological functions: No Digital outputs with resistive load, max. on lamp load, max. Output delay with resistive load Yes 	Input voltage		
• for signal "1" 15 V DC at 2.5 mA Input current 4 mA; nominal Input delay (for rated value of input voltage) 6 for signal "1", typ. for standard inputs 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µ	Rated value (DC)	24 V	
Input current 4 mA; nominal Input delay (for rated value of input voltage) 4 mA; nominal for standard inputs 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 10.6 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 10.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 2.8 ms for interrupt inputs	• for signal "0"	5 V DC at 1 mA	
• for signal "1", typ. 4 mA; nominal Input delay (for rated value of input voltage) for standard inputs parameterizable 0.1/0.2/0.4/0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/ at "0" to "1", min. 0.2 ms at "0" to "1", max. 0.2 ms 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. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions: No 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 -	• for signal "1"	15 V DC at 2.5 mA	
Input delay (for rated value of input voltage) for standard inputs	Input current		
for standard inputs 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.02 / 0.4 / 20.0 µs; 0.0 W with AC Output delay with resistive load 2 A 30 W with DC, 200 W with AC	 for signal "1", typ. 	4 mA; nominal	
parameterizable0.1/0.2/0.4/0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/ 0.8/1.6/3.2/6.4/10.0/12.8/20.0 ms at "0" to "1", min.0.2 ms at "0" to "1", max.12.8 msfor interrupt inputs12.8 ms parameterizableYesfor technological functions	Input delay (for rated value of input voltage)		
0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 ms at "0" to "1", min.0.2 ms at "0" to "1", max.12.8 msfor interrupt inputs parameterizable parameterizableYesfor technological functions parameterizable parameterizableSingle phase : 3 @ 100 kHz, differential: 3 @ 80 kHzCable length shielded, max shielded, max.500 m; 50 m for technological functions unshielded, max.300 m; for technological functions: NoDigital outputs4; RelaysSwitching capacity of the outputs2 A with resistive load, max.2 A on lamp load, max.300 W with DC, 200 W with ACOutput delay with resistive load	for standard inputs		
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 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	— parameterizable	0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 ms	
for interrupt inputs			
— parameterizable Yes for technological functions	— at "0" to "1", max.	12.8 ms	
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 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 4	for interrupt inputs		
— 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 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	·	Yes	
Cable length 500 m; 50 m for technological functions • shielded, max. 300 m; for technological functions: No Digital outputs 300 m; for technological functions: No 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 4			
• shielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions: No Digital outputs 300 m; for technological functions: No 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 4	· ·	Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz	
• unshielded, max. 300 m; for technological functions: No Digital outputs Vertice Number of digital outputs 4; Relays Switching capacity of the outputs Vertice • with resistive load, max. 2 A • on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load Vertice			
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 4		-	
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 •		300 m; for technological functions: No	
Switching capacity of the outputs • with resistive load, max. • on lamp load, max. Output delay with resistive load			
with resistive load, max. on lamp load, max. Output delay with resistive load		4; Relays	
on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load	Switching capacity of the outputs		
Output delay with resistive load	 with resistive load, max. 	2 A	
	• on lamp load, max.	30 W with DC, 200 W with AC	
• "0" to "1", max. 10 ms; max.	Output delay with resistive load		
	• "0" to "1", max.	10 ms; max.	

	10
• "1" to "0", max.	10 ms; max.
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
Input ranges	
Voltage	Yes
Input ranges (rated values), voltages	
• 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
	Yes
Autoregotiation	Yes
Autocrossing	res
Interface types	Vec
RJ 45 (Ethernet)	Yes
Number of portsintegrated switch	1
	No
Protocols	N/
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
— IRT	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, max.	16
— of which in line, max.	16
- Activation/deactivation of IO Devices	Yes
 Number of IO Devices that can be simultaneously activated/deactivated, max. 	8
— 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.

PROFINET IO Device	
Services	
— PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
— Isochronous mode	No
— ISCENTOROUS MIDDE — IRT	No
— PROFlenergy	Yes
— Shared device	Yes
 — Number of IO Controllers with shared device, max. 	2
Protocols	2
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)	165, ONI 1240-2 Tequired
• TCP/IP	Yes
• DHCP	No
• SNMP	Yes
• SNMP • DCP	Yes
• DCP • LLDP	Yes
Redundancy mode	
Media redundancy — MRP	No
	No
MRPD SIMATIC communication	No
	Vec
• S7 routing	Yes
Open IE communication	Vec
• 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	N .
• 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 server methods, max. Number of monitored items, recommended max. 	1 000
 Number of monitored items, recommended max. Number of server interfaces, max. 	2
 Number of server interfaces, max. Number of nodes for user-defined server interfaces, 	2 000
max.	
Further protocols	
MODBUS	Yes
communication functions / header	
S7 communication	
• supported	Yes
• as server	Yes
• as client	Yes
User data per job, max.	See online help (S7 communication, user data size)
• Oser data per job, max. Number of connections	

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 / 68 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	
Counter	6
Number of counters	6
Counting frequency, max.	100 kHz
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 	500 V 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	
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 indu	ced 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	
Siemens Eco Profile (SEP)	Siemens EcoTech

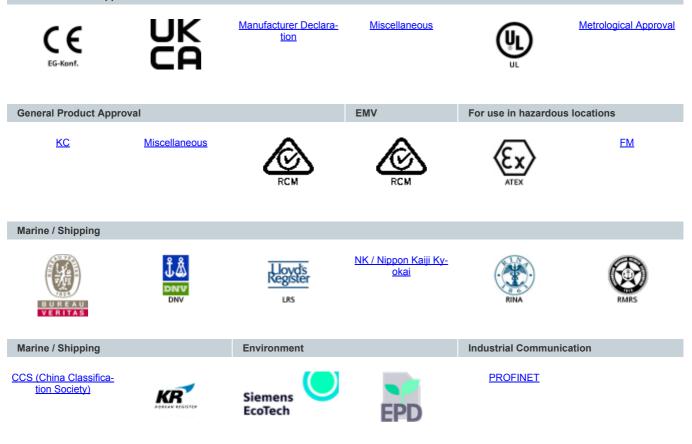
CE mark	Yes
UL approval	Yes
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
Marine approval	Yes
Ecological footprint	
 environmental product declaration 	Yes; type II acc. to ISO 14021
Global warming potential	
 global warming potential, (total) [CO2 eq] 	69.5 kg
 global warming potential, (during production) [CO2 	12.6 kg
eq]	
 global warming potential, (during operation) [CO2 	57.9 kg
eq]	-1 kg
 global warming potential, (after end of life cycle) [CO2 eq] 	- i kg
Ambient conditions	
Free fall	
• Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
min.	-20 °C
	60 °C
 max. horizontal installation, min. 	-20 °C
	-20°C
horizontal installation, max.	
vertical installation, min.	-20 °C
vertical installation, max.	50 °C
Ambient temperature during storage/transportation	(0.20
● min.	-40 °C
• max.	70 °C
Air pressure acc. to IEC 60068-2-13	
• Operation, min.	795 hPa
• Operation, max.	1 080 hPa
Storage/transport, min.	660 hPa
Storage/transport, max.	1 080 hPa
Altitude during operation relating to sea level	
 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 g (m/s²) wall mounting, 1 g (m/s²) DIN rail
2-6	
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	ουτ. στο μριή, π.20. στο πρητή, τη στο 70 τοπαστισαιτοιπησο
configuration / programming / header	
Programming language	Voc
LAD	Yes
— FBD	Yes
— SCL	Yes
Know-how protection	Vee
User program protection/password protection	Yes
Copy protection	Yes
Block protection	Yes
Access protection	
protection of confidential configuration data	Yes
 Protection level: Write protection 	Yes

 Protection level: Read/write protection 	Yes
 Protection level: Complete protection 	Yes
User administration	Yes; device-wide
Number of users	42
Number of groups	14
Number of roles	20
programming / cycle time monitoring / header	
adjustable	Yes
Dimensions	
Width	90 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	380 g
Classifications	

	Version	Classification
eClass	14	27-24-22-07
eClass	12	27-24-22-07
eClass	9.1	27-24-22-07
eClass	9	27-24-22-07
eClass	8	27-24-22-07
eClass	7.1	27-24-22-07
eClass	6	27-24-22-07
ETIM	9	EC000236
ETIM	8	EC000236
ETIM	7	EC000236
IDEA	4	3565
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval



last modified:

5/16/2025 🖸