SIEMENS

Data sheet

6ES7212-1HG50-0XB0



SIMATIC S7-1200 G2: compact CPU 1212C DC/DC/RLY; power supply: DC 20.4-28.8 V DC; onboard I/O: 8x DI 24 V DC; 6 DO relay 2 A; memory: program 150 KB data: 500 KB, retentivity: 20 KB

Figure similar

General information	
Product type designation	CPU 1212C DC/DC/Relay
Firmware version	V1.0
 FW update possible 	Yes
Product function	
• I&M data	Yes; I&M0 to I&M3
• SysLog	Yes
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
Input current	
Current consumption (rated value)	185 mA; CPU only
Current consumption, max.	765 mA; CPU with all expansion modules
Inrush current, max.	12 A; at 28.8 V DC
l²t	0.5 A ² ·s
Output current	
for backplane bus (5 V DC), max.	1 000 mA; Max. 5 V DC for SM and CM
Encoder supply	
24 V encoder supply	
• 24 V	Yes; L+ minus 4 V DC min.
Short-circuit protection	Yes
Output current, max.	300 mA
Power loss	
Power loss, typ.	3 W
Memory	
Work memory	
integrated	650 kbyte
• integrated (for program)	150 kbyte
 integrated (for data) 	500 kbyte
Load memory	
integrated	8 Mbyte
Plug-in (SIMATIC Memory Card), max.	32 Gbyte; with SIMATIC memory card
Backup	
• present	Yes



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Time of day Clock • Hardware clock (real-time) Yes • Backup time 480 h; Typical • Deviation per day, max. 2 s; at 25 °C Digital inputs 8; Integrated • of which inputs usable for technological functions 8; HSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs 8 all mounting positions	Hardware configuration	
Clock • Hardware clock (real-time) Yes • Backup time 480 h; Typical • Deviation per day, max. 2 s; at 25 °C Digital inputs 8; Integrated • of which inputs usable for technological functions 8; INSC (High Speed Counting) Source/sink input Yes Number of signal rol Yes Number of signal rol Yes Number of signal rol 8 - up to 40 °C, max. 8 Input voltage 8 • Rated value (DC) 24 V • for signal "1" 15 V DC or 0.5 mA • for signal "1" 15 V DC or 0.5 mA • for signal "1" 15 V DC at 2.5 mA Input delay (for rated value of input voltage) 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 ms - 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 ms for interrupt inputs - - parameterizable Yes for interrupt inputs - - parameterizable Yes for technological functions		
• Hardware clock (real-time) Yes • Backup time 480 h; Typical • Deviation per day, max. 2 s; at 25 °C Digital inputs Number of digital inputs 8; Integrated • of which inputs usable for technological functions 8; HSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs all mounting positions - up to 40 °C, max. 8 Input voltage • Rated value (DC) 24 V • for signal °0" 5 V DC or 0.5 mA • for signal *1" 15 V DC at 2.5 mA Input voltage - 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
• Backup time 480 h; Typical • Deviation per day, max. 2 s; at 25 °C Digital inputs 8; Integrated • of which inputs usable for technological functions 8; HSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs all mounting positions - up to 40 °C, max. 8 Rated value (DC) 24 V • for signal "0" 5 V DC or 0.5 mA • for signal "1" 15 V DC at 2.5 mA Input delay (for rated value of input voltage) 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 / 10.0 / 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.	Number of modules per system, max.	6
• Deviation per day, max. 2 s; at 25 °C Digital inputs 8; Integrated • of which inputs usable for technological functions 8; HSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs 8 all mounting positions	Number of modules per system, max. Time of day	6
Digital inputs 8; Integrated • of which inputs usable for technological functions 8; HSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs all mounting positions	Number of modules per system, max. Time of day Clock	
Number of digital inputs 8; Integrated • of which inputs usable for technological functions 8; HSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs all mounting positions	Number of modules per system, max. Time of day Clock • Hardware clock (real-time)	Yes
• of which inputs usable for technological functions 8; HSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs all mounting positions	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time	Yes 480 h; Typical
Source/sink input Yes Number of simultaneously controllable inputs all mounting positions — up to 40 °C, max. 8 Input voltage 8 • Rated value (DC) 24 V • for signal "0" 5 V DC or 0.5 mA • for signal "1" 15 V DC at 2.5 mA 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 / 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	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max.	Yes 480 h; Typical
Number of simultaneously controllable inputs all mounting positions up to 40 °C, max. 8 Input voltage • Rated value (DC) 24 V • for signal "0" 5 V DC or 0.5 mA • for signal "1" 15 V DC at 2.5 mA Input delay (for rated value of input voltage) 5 V DC or 0.5 mA 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 0.1/0.2/0.4/0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/ at "0" to "1", min. 0.1 µs at "0" to "1", max. 20 ms for interrupt inputs parameterizable Yes for technological functions parameterizable Yes Cable length Single phase: 6 HSCs @ 100 kHz & 2 standard @ 30 kHz, quadrature phase: 6 HSCs @ 80 kHz & 2 standard @ 20 kHz	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs	Yes 480 h; Typical 2 s; at 25 °C
all mounting positions8-up to 40 °C, max.8Input voltage24 V• Rated value (DC)24 V• for signal "0"5 V DC or 0.5 mA• for signal "1"15 V DC at 2.5 mAInput delay (for rated value of input voltage)15 V DC at 2.5 mAfor standard inputs0.1 / 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 / 10.0 / 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 / 3.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.0 µs; 0.05 / 0.4 / 0.8 / 0.	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs Number of digital inputs	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated
up to 40 °C, max.8Input voltage• Rated value (DC)24 V• for signal "0"5 V DC or 0.5 mA• for signal "1"15 V DC at 2.5 mAInput delay (for rated value of input voltage)for standard inputs 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/ at "0" to "1", min.0.1 µs at "0" to "1", max.20 msfor interrupt inputs parameterizableYesfor technological functions parameterizableYesCable length	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs Number of digital inputs • of which inputs usable for technological functions	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting)
Input voltage • Rated value (DC) 24 V • for signal "0" 5 V DC or 0.5 mA • for signal "1" 15 V DC at 2.5 mA Input delay (for rated value of input voltage) 15 V DC at 2.5 mA 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 0.1/0.2/0.4/0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/ - at "0" to "1", min. 0.1 µs - at "0" to "1", max. 20 ms for interrupt inputs - - parameterizable Yes for technological functions - - parameterizable Yes Cable length Single phase: 6 HSCs @ 100 kHz & 2 standard @ 30 kHz, quadrature phase: 6 HSCs @ 80 kHz & 2 standard @ 20 kHz	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs Number of digital inputs • of which inputs usable for technological functions Source/sink input	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting)
• Rated value (DC)24 V• for signal "0"5 V DC or 0.5 mA• for signal "1"15 V DC at 2.5 mAInput delay (for rated value of input voltage)for standard inputs- 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 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 / 3.0 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.0 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.0 / 6.4 / 0.0 / 12.8 / 20.0 µs; 0.05 / 0.0 µs; 0.0	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs • of which inputs usable for technological functions Source/sink input Number of simultaneously controllable inputs	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting)
 for signal "0" for signal "1" 15 V DC or 0.5 mA for signal "1" 15 V DC at 2.5 mA 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 / 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 / 10.8 / 20 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 10.8 / 20 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 10.8 / 20 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 10.8 /	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs Number of digital inputs • of which inputs usable for technological functions Source/sink input Number of simultaneously controllable inputs all mounting positions	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting) Yes
• for signal "1"15 V DC at 2.5 mAInput delay (for rated value of input voltage)for standard inputs- 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 at "0" to "1", max.20 msfor interrupt inputs- parameterizable- parameterizable- at "0" to "1", max.20 msfor interrupt inputs- parameterizableYesfor technological functions- parameterizableSingle phase: 6 HSCs @ 100 kHz & 2 standard @ 30 kHz, quadrature phase: 6 HSCs @ 30 kHz & 2 standard @ 20 kHzCable length	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs Number of digital inputs • of which inputs usable for technological functions Source/sink input Number of simultaneously controllable inputs all mounting positions — up to 40 °C, max.	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting) Yes
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. 0.1 µs — at "0" to "1", max. 20 ms for interrupt inputs — — parameterizable Yes for technological functions — — parameterizable Single phase: 6 HSCs @ 100 kHz & 2 standard @ 30 kHz, quadrature phase: 6 HSCs @ 80 kHz & 2 standard @ 20 kHz	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs Number of digital inputs • of which inputs usable for technological functions Source/sink input Number of simultaneously controllable inputs all mounting positions — up to 40 °C, max. Input voltage	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting) Yes 8
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 ms — at "0" to "1", min. 0.1 μs — at "0" to "1", max. 20 ms for interrupt inputs — — parameterizable Yes for technological functions — — parameterizable Single phase: 6 HSCs @ 100 kHz & 2 standard @ 30 kHz, quadrature phase: 6 HSCs @ 80 kHz & 2 standard @ 20 kHz Cable length —	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs Number of digital inputs • of which inputs usable for technological functions Source/sink input Number of simultaneously controllable inputs all mounting positions — up to 40 °C, max. Input voltage • Rated value (DC)	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting) Yes 8 8
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 ms — at "0" to "1", min. 0.1 μs — at "0" to "1", max. 20 ms for interrupt inputs — — parameterizable Yes for technological functions — — parameterizable Single phase: 6 HSCs @ 100 kHz & 2 standard @ 30 kHz, quadrature phase: 6 HSCs @ 80 kHz & 2 standard @ 20 kHz Cable length —	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs Number of digital inputs • of which inputs usable for technological functions Source/sink input Number of simultaneously controllable inputs all mounting positions — up to 40 °C, max. Input voltage • Rated value (DC) • for signal "0"	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting) Yes 8 24 V 5 V DC or 0.5 mA
	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs Number of digital inputs • of which inputs usable for technological functions Source/sink input Number of simultaneously controllable inputs all mounting positions — up to 40 °C, max. Input voltage • Rated value (DC) • for signal "0" • for signal "1"	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting) Yes 8 24 V 5 V DC or 0.5 mA
0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 ms - at "0" to "1", min. - at "0" to "1", max. 20 ms for interrupt inputs - parameterizable Yes for technological functions - parameterizable Single phase: 6 HSCs @ 100 kHz & 2 standard @ 30 kHz, quadrature phase: 6 HSCs @ 80 kHz & 2 standard @ 20 kHz Cable length	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs • of which inputs usable for technological functions Source/sink input Number of simultaneously controllable inputs all mounting positions — up to 40 °C, max. Input voltage • Rated value (DC) • for signal "0" • for signal "1" Input delay (for rated value of input voltage)	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting) Yes 8 24 V 5 V DC or 0.5 mA
	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs • of which inputs usable for technological functions Source/sink input Number of simultaneously controllable inputs all mounting positions — up to 40 °C, max. Input voltage • for signal "0" • for signal "1" Input delay (for rated value of input voltage) for standard inputs	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting) Yes 8 8 24 V 5 V DC or 0.5 mA 15 V DC at 2.5 mA
for interrupt inputs — parameterizable Yes for technological functions — parameterizable single phase: 6 HSCs @ 100 kHz & 2 standard @ 30 kHz, quadrature phase: 6 HSCs @ 80 kHz & 2 standard @ 20 kHz Cable length	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs • of which inputs usable for technological functions Source/sink input Number of simultaneously controllable inputs all mounting positions — up to 40 °C, max. Input voltage • for signal "0" • for signal "1" Input delay (for rated value of input voltage) for standard inputs	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting) Yes 8 8 24 V 5 V DC or 0.5 mA 15 V DC at 2.5 mA 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 /
— parameterizable Yes for technological functions	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs • of which inputs usable for technological functions Source/sink input Number of simultaneously controllable inputs all mounting positions — up to 40 °C, max. Input voltage • for signal "0" • for signal "1" Input delay (for rated value of input voltage) for standard inputs — parameterizable	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting) Yes 8 8 24 V 5 V DC or 0.5 mA 15 V DC at 2.5 mA 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 /
for technological functions — parameterizable single phase: 6 HSCs @ 100 kHz & 2 standard @ 30 kHz, quadrature phase: 6 HSCs @ 80 kHz & 2 standard @ 20 kHz Cable length	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs • of which inputs usable for technological functions Source/sink input Number of simultaneously controllable inputs all mounting positions - up to 40 °C, max. Input voltage • for signal "0" • for signal "1" Input delay (for rated value of input voltage) for standard inputs - parameterizable - at "0" to "1", min.	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting) Yes 8 24 V 5 V DC or 0.5 mA 15 V DC at 2.5 mA 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 ms 0.1 μs
	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs Number of digital inputs • of which inputs usable for technological functions Source/sink input Number of simultaneously controllable inputs all mounting positions — up to 40 °C, max. Input voltage • Rated value (DC) • for signal "0" • for signal "1" Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max.	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting) Yes 8 24 V 5 V DC or 0.5 mA 15 V DC at 2.5 mA 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 ms 0.1 μs
HSCs @ 80 kHz & 2 standard @ 20 kHz	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs • of which inputs usable for technological functions Source/sink input Number of simultaneously controllable inputs all mounting positions	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting) Yes 8 8 24 V 5 V DC or 0.5 mA 15 V DC at 2.5 mA 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/ 0.1 μs 20 ms
Cable length	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs Number of digital inputs • of which inputs usable for technological functions Source/sink input Number of simultaneously controllable inputs all mounting positions — up to 40 °C, max. Input voltage • Rated value (DC) • for signal "0" • for signal "1" Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", max. for interrupt inputs — parameterizable	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting) Yes 8 8 24 V 5 V DC or 0.5 mA 15 V DC at 2.5 mA 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/ 0.1 μs 20 ms
	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs Number of digital inputs • of which inputs usable for technological functions Source/sink input Number of simultaneously controllable inputs all mounting positions — up to 40 °C, max. Input voltage • Rated value (DC) • for signal "0" • for signal "1" Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", max. for interrupt inputs — parameterizable for technological functions	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting) Yes 8 8 24 V 5 V DC or 0.5 mA 15 V DC at 2.5 mA 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 ms 0.1 μs 20 ms Yes single phase: 6 HSCs @ 100 kHz & 2 standard @ 30 kHz, quadrature phase: 6
shielded, max. 500 m; 50 m for technological functions	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs • of which inputs usable for technological functions Source/sink input Number of simultaneously controllable inputs all mounting positions - up to 40 °C, max. Input voltage • Rated value (DC) • for signal "0" • for signal "1" Input delay (for rated value of input voltage) for standard inputs - parameterizable - at "0" to "1", max. for interrupt inputs - parameterizable for technological functions - parameterizable for technological functions - parameterizable	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting) Yes 8 8 24 V 5 V DC or 0.5 mA 15 V DC at 2.5 mA 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 ms 0.1 μs 20 ms Yes single phase: 6 HSCs @ 100 kHz & 2 standard @ 30 kHz, quadrature phase: 6
	Number of modules per system, max. Time of day Clock • Hardware clock (real-time) • Backup time • Deviation per day, max. Digital inputs • of which inputs usable for technological functions Source/sink input Number of simultaneously controllable inputs all mounting positions - up to 40 °C, max. Input voltage • Rated value (DC) • for signal "0" • for signal "1" Input delay (for rated value of input voltage) for standard inputs - parameterizable - at "0" to "1", min. - parameterizable for interrupt inputs - parameterizable for technological functions - parameterizable	Yes 480 h; Typical 2 s; at 25 °C 8; Integrated 8; HSC (High Speed Counting) Yes 8 8 24 V 5 V DC or 0.5 mA 15 V DC at 2.5 mA 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 ms 0.1 μs 20 ms Yes single phase: 6 HSCs @ 100 kHz & 2 standard @ 30 kHz, quadrature phase: 6 HSCs @ 80 kHz & 2 standard @ 20 kHz



• unshielded, max.	300 m; for technological functions: No
• unsineided, max. Digital outputs	
Number of digital outputs	6; Relays
Switching capacity of the outputs	o, roid/o
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.
• "1" to "0", max.	10 ms; max.
Switching frequency	
 of the pulse outputs, with resistive load, max. 	Not recommended
Relay outputs	
Number of relay outputs	6
 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	0
Analog outputs	
Number of analog outputs	0
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	2
integrated switch	Yes
Protocols	
IP protocol	Yes; IPv4
PROFINET IO Controller	Yes
PROFINET IO Device	Yes
SIMATIC communication	Yes
Open IE communication	Yes; Optionally also encrypted
Web server	Yes
Media redundancy	Yes
PROFINET IO Controller	
• Transmission rate, max.	100 Mbit/s
Services	Voci approximation with TLC V/4.2 are extended
- PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
— Isochronous mode	Yes
- IRT	Yes
 — PROFlenergy — Prioritized startup 	Yes; per user program Yes
 Prioritized startup Number of IO devices with prioritized startup, max. 	16
 Number of IO devices with prioritized startup, max. Number of connectable IO Devices, max. 	31
 — Number of connectable to Devices, max. — Of which IO devices with IRT, max. 	31
— Of which to devices with R1, max. — Number of connectable IO Devices for RT, max.	31
 — Number of connectable to Devices for RT, max. — of which in line, max. 	31
 — of which in line, max. — Activation/deactivation of IO Devices 	Yes
— Activation/deactivation of 10 Devices — Number of IO Devices that can be simultaneously	8
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.



Update time for IRT	
— for send cycle of 1 ms	1 ms to 16 ms
— for send cycle of 2 ms	2 ms to 32 ms
— for send cycle of 4 ms	4 ms to 64 ms
Update time for RT	
— for send cycle of 1 ms	1 ms to 512 ms
— for send cycle of 2 ms	2 ms to 512 ms
— for send cycle of 4 ms	4 ms to 512 ms
PROFINET IO Device	
Services	
— PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
— Isochronous mode	No
— IRT	Yes
— PROFlenergy	Yes; per user program
— Shared device	Yes
 Number of IO Controllers with shared device, max. 	2
Protocols	
Supports protocol for PROFINET IO	Yes
PROFIsafe	No
PROFIBUS	No
OPC UA	No
AS-Interface	No
Protocols (Ethernet)	
• TCP/IP	Yes
• DHCP	Yes
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
Number of connections	
	128; via integrated interfaces of the CPU and connected CPs / CMs
Number of connections, max.	-
Number of connections reserved for ES/HMI/web	10
Number of connections via integrated interfaces	88
Redundancy mode	
Media redundancy	
— MRP	Yes; as MRP redundancy manager and/or MRP client
— MRPD	Yes
SIMATIC communication	
S7 routing	No
 S7 communication, as server 	Yes
 S7 communication, as client 	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.	2 kbyte; 1 472 bytes for UDP broadcast
-	
• DHCP	Yes
• DNS	Yes
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
Encryption	Yes; Optional
Web server	
supported	Yes
• HTTPS	Yes
• web API	Yes
- Number of sessions, max.	30
User-defined websites	Yes
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)
Number of connections	
overall	PG Connections: 4 reserved; HMI Connections: 4 reserved / 82 max; S7 Connections: 78 max; Open User Connections: 78 max; Web Connections: 2 reserved / 80 max; Total Connections: 10 reserved / 88 max
S7 message functions	
Number of login stations for message functions, max.	32
Program alarms	Yes
Number of configurable program messages, max.	5 000
Number of loadable program messages in RUN, max.	2 500
Test commissioning functions	
Status/control	
Status/control variable	Yes
Variables	
	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	Vee
• Forcing	Yes
Diagnostic buffer	
• present	Yes
Traces	
 Number of configurable Traces 	4
Memory size per trace, max.	512 kbyte
Interrupts/diagnostics/status information	
Diagnostics indication LED	
RUN/STOP LED	Yes
• ERROR LED	Yes
MAINT LED	Yes
Supported technology objects	
Motion Control	Yes
 Number of available Motion Control resources for technology objects 	800
 Number of available Extended Motion Control resources for technology objects 	40
Integrated Functions	
Counter	Yes
Number of counters	8
Counting frequency, max.	100 kHz; Ia.0 to Ia.5: 100 kHz (80 kHz in quadrature mode), Ia.6 to Ia.7: 30 kHz (20 kHz in quadrature mode)
Frequency measurement	Yes
PID controller	Yes
Number of pulse outputs	8; individually assigned to CPU and Signal Board
Limit frequency (pulse)	100 kHz
Potential separation	
Potential separation digital inputs	
Potential separation digital inputs	Yes; field side to logic: 707 V DC (type test)
between the channels	No
Number of potential groups	1
Potential separation digital outputs	
Potential separation digital outputs	Relays
between the channels	No
Number of potential groups	1
Number of potential groups 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	
CE mark	Yes
UL approval	Yes
cULus	Yes
FM approval	No
RCM (formerly C-TICK)	Yes
KC approval	No
Marine approval	No
product functions / security / header	
	Vaa
signed firmware update	Yes
Secure Boot	Yes
safely removing data	No
Ambient conditions	
Free fall	
 Fall height, max. 	0.3 m; five times, in product package
Ambient temperature during operation	
• min.	-20 °C; No condensation
• max.	40 °C; 40 °C horizontal or 30 °C vertical at max. voltages and max. specifications
 horizontal installation, min. 	-20 °C; No condensation
 horizontal installation, max. 	60 °C; at rated voltages, 50 % of max. specification and alternate IO active
 vertical installation, min. 	-20 °C; No condensation
 vertical installation, max. 	50 °C; at rated voltages, 50 % of max. specification and alternate IO active
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Air pressure acc. to IEC 60068-2-13	
Operation, min.	540 hPa
• Operation, max.	1 140 hPa
Storage/transport, min.	540 hPa
Storage/transport, max.	1 140 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- 2-6	3.5 mm from 5 - 8.4 Hz, 1g from 8.4 - 150 Hz
 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
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	100
Number of groups	100
Number of roles	50
programming / cycle time monitoring / header	
adjustable	Yes
Dimensions	
Width	70 mm
Height	125 mm
Depth	100 mm
Neights	
Weight, approx.	333 g

last modified:

1/22/2025 🖸

