SIEMENS

Data sheet

6AG1212-1BE40-2XB0

SIPLUS S7-1200 CPU 1212C AC/DC/relay -40...+70°C with conformal coating based on 6ES7212-1BE40-0XB0 . compact CPU, AC/DC/relay, onboard I/O: 8 DI 24 V DC 6 DO relay 2 A 2 AI 0-10 V DC, Power supply: 85-264 V AC at 47-63 Hz, Program/data memory 75 KB

General information	
Product type designation	CPU 1212C AC/DC/relay
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, max.	240 mA at 120 V AC; 120 mA at 240 V AC
Inrush current, max.	20 A; at 264 V
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	20.4 to 28.8V
Power loss	
Power loss, typ.	11 W
Memory	
Work memory	
• integrated	75 kbyte
• expandable	No
Load memory	
integrated	1 Mbyte
 Plug-in (SIMATIC Memory Card), max. 	with SIMATIC memory card
Backup	
• present	Yes; maintenance-free
 without battery 	Yes
CPU processing times	
for bit operations, typ.	0.085 μs; / Operation
for word operations, typ.	1.7 µs; / Operation
for floating point arithmetic, typ.	2.3 µs; / Operation
CPU-blocks	
Number of blocks (total)	DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used
OB	
Number, max.	Limited only by RAM for code
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	10 kbyte
Flag	
Number, max.	4 kbyte; Size of bit memory address area
Local data	

Address area Process image Process image 1 kkyte • Inpus, adjustable 1 kkyte Hardware cock (real-lime) 3 com, modules, no signal board can be used, 2 signal modules Time of day Time of day • Flank Avane cock (real-lime) 480 ft; Typical Clock • Hardware cock (real-lime) • Hardware cock (real-lime) 480 ft; Typical Objets Inputs 8; Integrated • Which inputs usable for technological functions 4; HSC (High Speed Counting) • Or digital positions • up to 40 °C, max. • Provide P * • Provide P 1 mod magnetization of the state value (ICC) • Or ariginal 1°: 5 V DC at 1 AA • for signal 1°: 1 mA Input tostage 0 2 ms, 0 4 ms, 0 8 ms, 1 6 ms, 3 2 ms, 6 4 ms and 12 8 ms, selectable • for signal 1°: 0 2 ms, 0 4 ms, 0 8 ms, 1 6 ms, 3 2 ms, 6 4 ms and 12 8 ms, selectable • or signal 1°: 0 2 ms, 0 4 ms, 0 8 ms, 1 6 ms, 3 2 ms, 6 4 ms and 12 8 ms, selectable • for technological functions 1 was • at 0° to 1°:, min. 0 2 ms • at 0° to 1°:, min. 0 2 ms • at 10 to 1°:, min. 1 8 ms </th <th>• per priority class, max.</th> <th>16 kbyte</th>	• per priority class, max.	16 kbyte
Process image I kbyte • Inputs, adjustable I kbyte • Ourputs, adjustable I kbyte • Number of modules per system, max. 3 com. modules, no signal board can be used, 2 signal modules Clock • Hardware clock (real-time) • Backup time 480 h; Typical Optical inputs • Integrated Number of faultal inputs • Integrated • of which inputs usable for technological functions 4; HSC (Hgh Speed Counting) Surrectaink input Yes Number of multianeously controllable inputs 8 • for signal "1" 15 V DC at 1 mA • for signal "1" 15 V DC at 2.5 mA Input cleage • 4 v • for signal "1" 15 V DC at 2.5 mA Input cleage • 4 v • for signal "1" 15 V DC at 2.5 mA Input cleage for the "1", max. 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 • a try to "1", min. 0.2 ms 0.4 ms do 0.4 ms do 12.8 ms • a try to "1", min. 0.2 ms 0.4 ms do 12.8 ms • parameterizable 1 groups of four 0.2		
• Inputs, adjustable 1 kbyle • Outputs, adjustable 1 kbyle Hardware configuration 3 com. modules, no signal board can be used, 2 signal modules Time of dy - Clock - • Hardware cock (real-time) Yes • Backup time 40 h; Typical Digital inputs 8; Integrated • Or vinch inputs subit for technological functions 4; ISC (High Speed Counting) • Or vinch inputs Yes Bardware of simultaneously controllable inputs 8 • Individue (ICC) 24 V • for signal "1" 16 V DC at 1 mA • for signal "1" 16 V DC at 2.5 mA • for signal "1", typ. 1 mA • for infarrupt inputs 2 ms • or a signal "1", typ. 1 mA • parameterizable 0 ms, 0.4 ms, 0.8 ms, 1.6 ms		
 Outputs. adjustable I kbyle Vardware configuration Number of modules per system, max. 3 com. modules, no signal board can be used, 2 signal modules Time of day Clock Hardware clock (real-time) Yes Backup bine 40 b): Typical Digital inputs of which inputs usable for technological functions All field reads All field reads All field reads All field reads Instantianeously controllable linputs All field value (DC) Yes Number of animalianeously controllable linputs all mounting positions all read value (DC) Yes Vander of animalianeously controllable linputs Total value (DC) Y V C at 1 mA for signal "0" SV DC at 2 mA for signal "1" for signal "1", typ. for tack value of linput voltage) for signal "1", typ. for tack value of linput voltage) for signal "1", typ. for tack value of linput voltage) for tack name of linput voltage) for tack name of linput voltage) for tack name of linput voltage) for tacknowice of linput voltage) for tachnological functions: No for tacknowice of linp	5	1 khyte
Hardware configuration 3 com. modules, no signal board can be used, 2 signal modules Time of dy ************************************		
Number of modules per system, max. 3 com. modules, no signal board can be used, 2 signal modules Time of day Clock Oldek Yes • Hardware clock (real-time) Yes • Backup time 490 h; Typical Digital inputs 8: Integrated • of which inputs usable for technological functions 4: HSC (High Speed Counting) Sourcebink input Yes Number of situatineously controllable inputs 8 all mounting positions - - or b of 0°, Tax. 8 Poput voltage 24 V • for signal °0° 5 V DC at 1 mA • for signal °1° 1 mA • for signal °1° 1 mA • for signal °1°, typ. 1 mA • for technological functions 2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable • or signal *1°, typ. 1 mA • for technological functions 2 ms		i kuyic
Time of day Clock • Hardware dock (real-time) Yes • Backup time 480 h; Typical Digital inputs 8: Integrated • of which inputs usable for technological functions 8: Integrated • of which inputs 8: Integrated • of which inputs Yes Number of simultaneously controllable inputs 8: Integrated atl mounting positions 8 • up to 40 °C, max. 8 Plopt oblage 8 • for signal °T 5 V DC at 1 mA • for signal °T 1 mA Input oblage 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable • for signal °T, typ. 1 mA Input oblage 0.2 ms 2.4 ms • at '0' to 'T', min. 0.2 ms 3 at 30 kHz • at '0' to 'T', max. 12.8 ms 10 kHz & 3 at 30 kHz Clabe length • sole (den max. 50 m; 50 m for technological functions • usheleded, max. 50 m; 50 m for technological functions 10 ms; max. • with resistive load, max. 2 A 30 W with DC, 200 W wit		
Clock Yes Backup time 480 h; Typical Digital inputs Backup time Origital inputs Backup time Origital inputs Backup time Origital inputs Backup time Sourcelsink input Backup time Number of simultaneously controllable inputs Backup time all mounting positions B		3 com. modules, no signal board can be used, 2 signal modules
Hardware clock (real-time) Seckup time Hardware clock (real-time) AB0 h: Typical A00 h:	Time of day	
• Backup time 440 h; Typical Digital inputs 8; Integrated • of which input subble for technological functions 4; HSC (Hgh Speed Counting) Source/ainki fuput Yes Number of simulaneously controllable inputs 8 all mounting positions - - up to 40 °C, max. 8 Fingut vortage 24 V • for signal °C* 5 V DC at 1 mA • for signal °C* 5 V DC at 2.5 mA Input vortage 1 mA Input correct 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable • for signal °C* 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable • no rinterrupt inputs - a 1°0* for °1*, min. 0.2 ms a at °0* for °1*, max. 12.8 ms for interrupt inputs - - parameterizable Yes	Clock	
Digital inputs B: Integrated • of which inputs usable for technological functions B: Integrated • Surve/sink input Yas Number of simulaneously controllable inputs B al mounting positions B - up to 40°C, max. B Input voltage Surveyssion • for signal 10° 24 V • for signal 10° 5 V Dc at 1 mA • for signal 11°. 15 V Dc at 25 mA Input delay (for rated value of input voltage) 1 mA • for signal 11°. 1 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 • or signal 11°. 0.2 ms • at 10° to 11°, min. 0.2 ms • at 10° to 11°, max. 12.8 ms • or input plots Yes • parameterizable Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz • at 10° to 11°, max. 500 m; 50 m for technological functions • unshielded, max. 500 m; 50 m for technological functions • unshielded, max. 2.4 • on lamp load, max. 300 W with DC, 200 W with AC Output delay wit resistive lo	 Hardware clock (real-time) 	Yes
Number of digital inputs 8; Integrated • of which input usable for technological functions 4; HSC (High Speed Counting) Sourcestaink input Yes Number of simultaneously controllable inputs 4; HSC (High Speed Counting) all mounting positions	Backup time	480 h; Typical
• of which inputs usable for technological functions 4: HSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs 8 Input voltage 8	Digital inputs	
Sourcexistik input Yes Number of simultaneously controllable inputs all mouting positions up to 40 °C, max. 8 Input voltage 24 V • for signal °C 5 V DC at 1 mA • for signal °T 5 V DC at 2.5 mA Input delay (for rated value of input voltage) 1 mA • for signal °T, typ. 1 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 - at °T to °T, min. 0.2 ms - at °T to °T, °T, max. 1.2.8 ms for interrupt inputs Yes - parameterizable Yes. Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz Cable length 500 m; 50 m for technological functions - parameterizable Yes. Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz e shelded, max. 300 m; for technological functions: No Digital outputs 6; Relays Switching capacity of the outputs 6; Relays Switching requency 0 ms; max. • "0" to "1", max. 10 ms; max. • "0" to "1", max. 10 ms; max. • "0" to "1", max. 10 ms; max. • Switching capacity of the outputs 6 • "0 the nut, max. 10 ms; m	Number of digital inputs	8; Integrated
Number of simultaneously controllable inputs all mounting positions	 of which inputs usable for technological functions 	4; HSC (High Speed Counting)
all mounting positions up to 40 °C, max. 8 up to 40 °C, max. 8 Input voltage	Source/sink input	Yes
up to 40 °C, max. 8 Input voltage • • Rated value (DC) 24 V • for signal °C 5 V DC at 1 mA • for signal °T* 15 V DC at 2.5 mA Input current • • for signal °T*, typ. 1 mA Input delay (for rated value of input voltage) in rated value of input voltage) • for signal °T*, max. 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 "t*, min. 0.2 ms - at °0* to "t*, max. 12.8 ms • for technological functions - - parameterizable Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz. • or technological functions - - parameterizable Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz. • shielded, max. 300 m; 50 m for technological functions • unshielded, max. 500 m; 50 m for technological functions • unshielded, max. 2 A • on Iamp load, max. 2 A • on Iamp load, max. 2 A • on Iamp load, max. 10 ms; max. • "0" to ",", max. 10 ms; max. <t< td=""><td>Number of simultaneously controllable inputs</td><td></td></t<>	Number of simultaneously controllable inputs	
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 deiay (for rated value of input voltage) 1 mA • for signal "1", typ. 1 mA Input deiay (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 - at "0" to "1", max. 12.8 ms - at "0" to "1", max. 12.8 ms for interrupt inputs - - parameterizable Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz cable length • So m, 50 m for technological functions - parameterizable Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz Cable length • So m, 50 m for technological functions • unshielded, max. 500 m; 50 m for technological functions; No Digital outputs 6 Switching capacity of the outputs 6 • with resistive load 0 • 0" to "1", max. 10 ms; max. • 0" to "1", max. 10 ms; max. • 0" to "1", max. 10 ms; max.	all mounting positions	
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 deiay (for rated value of input voltage) 1 mA • for signal "1", typ. 1 mA Input deiay (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 - at "0" to "1", max. 12.8 ms - at "0" to "1", max. 12.8 ms for interrupt inputs - - parameterizable Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz cable length • So m, 50 m for technological functions - parameterizable Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz Cable length • So m, 50 m for technological functions • unshielded, max. 500 m; 50 m for technological functions; No Digital outputs 6 Switching capacity of the outputs 6 • with resistive load 0 • 0" to "1", max. 10 ms; max. • 0" to "1", max. 10 ms; max. • 0" to "1", max. 10 ms; max.		8
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. 1 mA Input claurent for standard inputs O.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.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. O.2 ms O.2 m		
for signal "0" 5 V DC at 1 mA tor signal "1" 15 V DC at 2.5 mA Input current tor signal "1", typ. 1 mA Input delay (for rated value of input voltage) for signal "1", typ. 1 mA Input delay (for rated value of input voltage) for signal "1", typ. 1 mA Input delay (for rated value of input voltage) for signal "1", typ. 1 mA Input delay (for rated value of input voltage) for signal "1", typ. 1 mA Input delay (for rated value of input voltage) for signal "1", typ. arameterizable parameterizable at "0" to "1", max. 12.8 ms for interrupt inputs arameterizable - parameterizable - shielded, max. 500 m; 50 m for technological functions unshielded, max. 300 m; for more trachnological functions unshielded, max. 300 with DC, 200 W with AC 0Uptut delay with resistive load - 0" to "1", max. 10 ms; max. 300 W with DC, 200 W with AC 0Uptut delay with resistive load - 0" to "1", max. 10 ms; max. 10 ms; max. 10 ms; max. 1 Hz Relay outputs - 0" to "1", max. 1 Hz Relay outputs - 0" to "1", max. 1 for 0", max. 1 for m wurber of operating cycles, max. 1 for m wurber of operating cycles, max. 1 for m		24 V
• for signal "1" 15 V DC at 2.5 mA Input current • for signal "1", typ. 1 mA Input delay (for rated value of input voltage) for standard inputs — parameterizable — parameterizable — at "0" to "1", min. Q.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. Q.2 ms — at "0" to "1", max. 12.8 ms for interrupt inputs — parameterizable Yes for interrupt inputs — parameterizable Yes for technological functions — parameterizable ves; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz (afferential: 3 at 80 kHz (bfferential: 3 at 80 kHz (bf		5 V DC at 1 mA
Input current 1 mA Input delay (for rated value of input voltage) 1 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	-	15 V DC at 2.5 mA
• for signal "1", typ. 1 mA Input delay (for rated value of input voltage) for standard inputs — parameterizable … at "0" to "1", min. — at "0" to "1", max. — arameterizable — parameterizable Set at 30 kHz Cable length • shielded, max. s00 m; 50 m for technological functions — unshielded, max. s00 m; for technological functions: with resistive load, max. s00 W with DC, 200 W with AC Outputs • with resistive load, max. s0 W with DC, 200 W with AC Output delay with resistive load, max. s0 W with DC, 200 W with AC Output delay with resistive load, max. sol W with DC, 200 W with AC Output delay with resistive load, max. sol W with DC, 200 W with AC Output delay with resistive load, max. sol W with DC, 200 W with AC Output delay with resistive load, max. sol W with DC, 200 W with AC Output delay with resistive load, max. sol W mis max. sol W mis frequency e of the pulse outputs, with resistive load, max. sol Hz e. Number of relay outputs e. Inshielded, max. sol The pulse outputs e. Inshielded, max. sol The pulse outputs e. Number of relange outputs e. Inshielded, max. fon manue of relange outputs for max. sol The pu		
Input delay (for rated value of input voltage) for standard inputs	· ·	1 mA
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		
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 interrupt inputs parameterizable Yes for technological functions parameterizable Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz 2 Sat 20 kHz Sol m; 50 m for technological functions • unshielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions: No Digital outputs 6; Relays Switching capacity of the outputs 6; With DC, 200 W with AC Output delay with resistive load, max. 10 ms; max. • 0" to "1", max. 10 ms; max. • 1" to "0", max. 10 ms; max. • 1" to "0", max. 1 Hz Relay outputs 6 • Number of relay outputs 6 • Number of operating cycles, max. 1 Hz Relay outputs 6 • Number of operating cycles, max. 100 m • shielded, max. 500 m • unshielded, max. 500 m • unshielded, max. 500 m<		
in groups of four - at "0" to "1", min. - at "0" to "1", max. for interrupt inputs - parameterizable Parameterizable Pers: Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz Cable length • shielded, max. • unshielded, max.		0.2 ms 0.4 ms 0.8 ms 1.6 ms 3.2 ms 6.4 ms and 12.8 ms selectable
	parameterizable	
for interrupt inputs - parameterizable Yes for technological functions - parameterizable Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz Cable length • shielded, max. 500 m; 50 m for technological functions • shielded, max. 300 m; for technological functions: No Digital outputs 6; Relays Number of digital outputs 6; Relays Switching capacity of the outputs 9 With DC, 200 W with AC Output delay with resistive load, max. 2 A • on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load 0 ms; max. • "0" to "1", max. 10 ms; max. • "1" to "0", max. 10 ms; max. • O'to "1", max. 10 ms; max. • Of the pulse outputs, with resistive load, max. 1 Hz Relay outputs 6 • Number of relay outputs 6 • Number of operating cycles, max. 500 m • shielded, max. 500 m • shielded, max. 150 m • shielded, max. 150 m • shielded, max. 150 m • Shielded, max. 2	— at "0" to "1", min.	0.2 ms
	— at "0" to "1", max.	12.8 ms
for technological functions Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz Cable length • shielded, max. • shielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions: No Digital outputs 6; Relays Number of digital outputs 6; Relays Switching capacity of the outputs 0 with resistive load, max. • on lamp load, max. 2 A • on lamp load, max. 10 ms; max. • "0" to "1", max. 10 ms; max. • "1" to "0", max. 10 ms; max. • "1" to "0", max. 1 Hz Relay outputs 6 • Number of relay outputs 6 • Number of relay outputs 6 • Number of operating cycles, max. 1 Hz Relay outputs 6 • Number of operating cycles, max. 100 m • shielded, max. 500 m • unshielded, max. 500 m • shielded, max. 500 m • shielded, max. 500 m • unshielded, max. 500 m • unshielded, max. 150 m <	for interrupt inputs	
— parameterizable Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz Cable length 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions • unshielded, max. 300 m; for technological functions Digital outputs 6; Relays Number of digital outputs 6; Relays Switching capacity of the outputs 30 W with DC, 200 W with AC Output delay with resistive load - • on lamp load, max. 2 A • on lamp load, max. 10 ms; max. • "0" to "1", max. 10 ms; max. • "1" to "0", max. 10 ms; max. • of the pulse outputs, with resistive load, max. 1 Hz Relay outputs 6 • Number of relay outputs 6 • Number of prelay outputs 6 • Number of operating cycles, max. mechanically 10 million, at rated load voltage 100 000 Cable length 500 m • shielded, max. 500 m • unshielded, max. 500 m	— parameterizable	Yes
& 3 at 30 kHz Cable length • shielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions: No Digital outputs 6; Relays Switching capacity of the outputs 6; Relays • with resistive load, max. 2 A • on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load 0 ms; max. • "0" to "1", max. 10 ms; max. • of the pulse outputs, with resistive load, max. 10 ms; max. • of the pulse outputs, with resistive load, max. 1 Hz Relay outputs 6 • Number of relay outputs 6 • Number of relay outputs 6 • Number of prelay outputs 6 • Number of relay outputs 6 • Number of relay outputs 6 • Number of prelay outputs 6 • shielded, max. 500 m • unshielded, max. 150 m Analog inputs 2 Number of analog inputs 2 Input ranges 2	for technological functions	
Cable length 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions: No Digital outputs 300 m; for technological functions: No Digital outputs 6; Relays Switching capacity of the outputs 6; Relays • with resistive load, max. 2 A • on lamp load, max. 300 W with DC, 200 W with AC Output delay with resistive load	— parameterizable	
• shielded, max.500 m; 50 m for technological functions• unshielded, max.300 m; for technological functions: NoDigital outputs6; RelaysNumber of digital outputs6; RelaysSwitching capacity of the outputs2 A• with resistive load, max.20 W with DC, 200 W with ACOutput delay with resistive load	Cable length	
• unshielded, max. 300 m; for technological functions: No Digital outputs 6; Relays Switching capacity of the outputs 6; 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. • "0" to "1", max. 10 ms; max. • "1" to "0", max. 10 ms; max. • of the pulse outputs, with resistive load, max. 1 Hz Relay outputs 6 • Number of relay outputs 6 • Number of poerating cycles, max. 500 m • shielded, max. 150 m Analog inputs 2 Number of analog inputs 2		500 m; 50 m for technological functions
Digital outputs 6; Relays Number of digital outputs 6; 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		-
Number of digital outputs 6; 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		
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. • "0" to "1", max. 10 ms; max. • "1" to "0", max. 10 ms; max. Switching frequency 10 ms; max. • of the pulse outputs, with resistive load, max. 1 Hz Relay outputs 6 • Number of relay outputs 6 • Number of operating cycles, max. 500 m • unshielded, max. 150 m Analog inputs 2 Number of analog inputs 2 Input ranges 2		C. Deleve
• 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. • "0" to "1", max. 10 ms; max. • "1" to "0", max. 10 ms; max. Switching frequency 0 the pulse outputs, with resistive load, max. • of the pulse outputs, with resistive load, max. 1 Hz Relay outputs 6 • Number of relay outputs 6 • Number of operating cycles, max. mechanically 10 million, at rated load voltage 100 000 Cable length 500 m • unshielded, max. 150 m Analog inputs 2 Input ranges 2		o, Relays
• on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load 10 ms; max. • "0" to "1", max. 10 ms; max. • "1" to "0", max. 10 ms; max. Switching frequency 0 the pulse outputs, with resistive load, max. • of the pulse outputs, with resistive load, max. 1 Hz Relay outputs 6 • Number of relay outputs 6 • Number of operating cycles, max. mechanically 10 million, at rated load voltage 100 000 Cable length 500 m • unshielded, max. 150 m Analog inputs 2 Input ranges 2		2.4
Output delay with resistive load • "0" to "1", max. • "1" to "0", max. 10 ms; max. Switching frequency • of the pulse outputs, with resistive load, max. 1 Hz Relay outputs • Number of relay outputs • Number of operating cycles, max. mechanically 10 million, at rated load voltage 100 000 Cable length • shielded, max. • unshielded, max. 150 m Analog inputs Number of analog inputs 12		
• "0" to "1", max. 10 ms; max. • "1" to "0", max. 10 ms; max. Switching frequency 10 ms; max. • of the pulse outputs, with resistive load, max. 1 Hz Relay outputs 6 • Number of relay outputs 6 • Number of operating cycles, max. mechanically 10 million, at rated load voltage 100 000 Cable length 500 m • unshielded, max. 150 m Analog inputs 2 Number of analog inputs 2		
• "1" to "0", max. 10 ms; max. Switching frequency • of the pulse outputs, with resistive load, max. 1 Hz Relay outputs 6 • Number of relay outputs 6 • Number of operating cycles, max. mechanically 10 million, at rated load voltage 100 000 Cable length 500 m • shielded, max. 500 m • unshielded, max. 150 m Number of analog inputs 2 Number of analog inputs 2		10
Switching frequency 0 • of the pulse outputs, with resistive load, max. 1 Hz Relay outputs 6 • Number of relay outputs 6 • Number of operating cycles, max. mechanically 10 million, at rated load voltage 100 000 Cable length 500 m • unshielded, max. 500 m • unshielded, max. 150 m Analog inputs 2 Number of analog inputs 2		
• of the pulse outputs, with resistive load, max. 1 Hz Relay outputs 6 • Number of relay outputs 6 • Number of operating cycles, max. mechanically 10 million, at rated load voltage 100 000 Cable length 500 m • unshielded, max. 150 m Analog inputs 2 Number of analog inputs 2		iu ms; max.
Relay outputs 6 • 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 2 Number of analog inputs 2		
• 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 2 Number of analog inputs 2		1 HZ
• 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 2 Number of analog inputs 2 Input ranges 2		
Cable length • shielded, max. • unshielded, max. 150 m Analog inputs Number of analog inputs 2 Input ranges		
		mechanically 10 million, at rated load voltage 100 000
• unshielded, max. 150 m Analog inputs Number of analog inputs 2 Input ranges	-	500
Analog inputs Number of analog inputs Input ranges		
Number of analog inputs 2 Input ranges 2		150 m
Input ranges	Analog inputs	
	Number of analog inputs	2
Voltage Yes	Input ranges	
	Voltage	Yes

Input ranges (rated values), voltages	Ver
• 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	
	Vee
Isolated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
Interface types	
• RJ 45 (Ethernet)	Yes
Protocols	
PROFINET IO Controller	Yes
PROFINET IO Device	Yes
 Open IE communication 	Yes
Web server	Yes
PROFINET IO Controller	
 Transmission rate, max. 	100 Mbit/s
Services	
— Number of connectable IO Devices, max.	16
PROFINET IO Device	
Services	
— Shared device	Yes
 Number of IO Controllers with shared device, 	2
max.	
Protocols	
Supports protocol for PROFINET IO	Yes
PROFIBUS	Yes; CM 1243-5 required
AS-Interface	Yes
Protocols (Ethernet)	
• TCP/IP	Yes
Open IE communication	
• TCP/IP	Yes
 ISO-on-TCP (RFC1006) 	Yes
• UDP	Yes
Web server	
 supported 	Yes
User-defined websites	Yes
Further protocols	
MODBUS	Yes
Communication functions	
S7 communication	
supported	Yes
• as server	Yes
• as client	Yes
Number of connections	
• overall	16; dynamically

Test commissioning functions	
Test commissioning functions	
Status/control	Ver
Status/control variable	Yes
Variables Forcing	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	Yes
Diagnostic buffer	
present	Yes
Traces	100
Number of configurable Traces	2; Up to 512 KB of data per trace are possible
Integrated Functions	
Number of counters	4
Counting frequency (counter) max.	100 kHz
Frequency measurement	Yes
controlled positioning	Yes
Number of position-controlled positioning axes, max.	8
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 	2
EMC	
Interference immunity against discharge of static electricity	
Interference immunity against discharge of static	Yes
electricity acc. to IEC 61000-4-2	
 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	, , ,
 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
Ambient conditions	
Free fall	
• Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• min. • max.	-40 °C; = Tmin; Startup @ -25 °C 70 °C; = Tmax; Tmax > +55 °C number of simultaneously switched-on digital inputs 4, digital outputs 3, analog inputs 2 (no adjacent points) with horizontal mounting position; Tmax > +60 °C number of simultaneously switched-on digital inputs 3, digital outputs 2, analog inputs 0 (no adjacent points) with horizontal mounting position
 vertical installation, min. 	-40 °C; = Tmin; Startup @ -25 °C
 vertical installation, max. 	50 °C; = Tmax
• At cold restart, min.	-25 °C

Ambient temperature during storage/transportation	
min.	-40 °C
• max.	-40 °C
Altitude during operation relating to sea level	
Installation altitude above sea level, max.	2 000 m
 Ambient air temperature-barometric pressure- altitude 	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m); above 2 000 m max. 132 V AC
Relative humidity	
 With condensation, tested in accordance with IEC 60068-2-38, max. 	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
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
Resistance	
Coolants and lubricants	
 Resistant to commercially available coolants and lubricants 	Yes; Incl. diesel and oil droplets in the air
Use in stationary industrial systems	
 — to biologically active substances according to EN 60721-3-3 	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
 to chemically active substances according to EN 60721-3-3 	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
 — to mechanically active substances according to EN 60721-3-3 	Yes; Class 3S4 incl. sand, dust, *
Use on ships/at sea	
 — to biologically active substances according to EN 60721-3-6 	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
 to chemically active substances according to EN 60721-3-6 	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
 — to mechanically active substances according to EN 60721-3-6 	Yes; Class 6S3 incl. sand, dust; *
Usage in industrial process technology	
 — Against chemically active substances acc. to EN 60654-4 	Yes; Class 3 (excluding trichlorethylene)
 Environmental conditions for process, measuring and control systems acc. to ANSI/ISA- 71.04 	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)
Remark	
 — Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 	* The supplied plug covers must remain in place over the unused interfaces during operation!
Conformal coating	
Coatings for printed circuit board assemblies acc. to EN 61086	Yes; Class 2 for high reliability
 Protection against fouling acc. to EN 60664-3 	Yes; Type 1 protection
Military testing according to MIL-I-46058C, Amendment 7	Yes; Discoloration of coating possible during service life
 Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A 	Yes; Conformal coating, Class A
Configuration	
Programming	
Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
Cycle time monitoring	
adjustable	Yes

Dimensions	
Width	90 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	425 g
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