SIEMENS

Data sheet

6ES7211-1HD30-0XB0



*** SPARE PART*** SIMATIC S7-1200, CPU 1211C, COMPACT CPU, DC/DC/RELAY, ONBOARD I/O: 6 DI 24V DC; 4 DO RELAY 2A; 2 AI 0 - 10V DC, POWER SUPPLY: AC 20.4 - 28.8 V DC, PROGRAM/DATA MEMORY: 25 KB

General information	
Product type designation	CPU 1211C DC/DC/Relay
Engineering with	
 Programming package 	STEP 7 V10.5 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
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; Typical
Current consumption, max.	0.9 A; 24 V DC
Inrush current, max.	12 A; at 28.8 V DC

Output current for backplane bus (5 V DC), max. 750 mA; Max. 5 V DC for SM and CM Encoder supply 24 V encoder supply • 24 V Permissible range: 20.4V to 28.8V Power loss Power loss, typ. 8 W Memory • integrated 25 kbyte • expandable No
24 V encoder supply • 24 V Permissible range: 20.4V to 28.8V Power loss Power loss, typ. 8 W Memory 8 W W Work memory • integrated 25 kbyte • expandable No No
24 V encoder supply • 24 V Permissible range: 20.4V to 28.8V Power loss Power loss, typ. 8 W Memory 8 W W Work memory • integrated 25 kbyte • expandable No No
 24 V Permissible range: 20.4V to 28.8V Power loss Power loss, typ. 8 W Memory Work memory integrated expandable No
Power loss Power loss, typ. 8 W Memory Work memory • integrated 25 kbyte • expandable No
Power loss, typ. 8 W Memory Work memory • integrated • expandable No
Memory Work memory • integrated • expandable No
Work memory 25 kbyte • integrated 25 kbyte • expandable No
Work memory 25 kbyte • integrated 25 kbyte • expandable No
• expandable No
Load memory
integrated 1 Mbyte
Plug-in (SIMATIC Memory Card), max. 24 Mbyte; with SIMATIC memory card
Backup
present Yes; Entire project maintenance-free in the integral EEPROM
• without battery Yes
CPU processing times for bit operations, typ. 0.1 µs; / Operation
for word operations, typ. 12 µs; / Operation
for floating point arithmetic, typ. 18 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), 2 048 byte max.
Flag
Number, max. 4 kbyte; Size of bit memory address area
Address area
I/O address area
Inputs 1 024 byte
Outputs 1 024 byte
Process image
Inputs, adjustable 1 kbyte
Outputs, adjustable 1 kbyte

Number of modules per system, max. 3 communication modules, 1 signal board Time of day Clock • Hardware clock (real-time) Yes • Backup time 240 h; Typical • Deviation per day, max. +/- 60 s/month at 25 °C Digital inputs 6: Integrated • of which input suble for technological functions 3; HSC (High Speed Counting) Source/sink input Yes 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 delay (for rated value of input voltage) for signal "1, typ. for signal "1", typ. 1 mA Input delay (for rated value of input voltage) for standard inputs - parameterizable 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four - at "0" to "1", min. 0.2 ms - at "0" to "1", max. 12.8 ms for interrupt liputs - - parameterizable Yes for counter/technological functions 300 m; 50 m for technological functions. No Digital outputs 4; Relays <t< th=""><th>Hardware configuration</th><th></th></t<>	Hardware configuration	
Clock + Hardware clock (real-time) Yes + Backup time 240 h; Typical + Deviation per day, max. + 60 s/month at 25 °C Digital inputs 6: Integrated • of which inputs usable for technological functions 3: HSC (High Speed Counting) Source/sink input Yes 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 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) - of signal "1", min. 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 Yes for counter/technological functions - - parameterizable Yes for counter/technological functions - - parameterizable Solo m; 50 m for technological functions • or on trit/technological functions 300 m; 50 m for technological functions shielded, max.		3 communication modules, 1 signal board
Clock + Hardware clock (real-time) Yes + Backup time 240 h; Typical + Deviation per day, max. + 60 s/month at 25 °C Digital inputs 6: Integrated • of which inputs usable for technological functions 3: HSC (High Speed Counting) Source/sink input Yes 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 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) - of signal "1", min. 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 Yes for counter/technological functions - - parameterizable Yes for counter/technological functions - - parameterizable Solo m; 50 m for technological functions • or on trit/technological functions 300 m; 50 m for technological functions shielded, max.	Time of day	
Backup time 240 h; Typical • Backup time 4/- 60 s/month at 25 °C Digital inputs 6: Integrated • of which inputs usable for technological functions 3; HSC (High Speed Counting) Source/sink input Yes Input voltage 7 • Rated value (DC) 24 V • for signal "0" 5 V DC at 1 mA • for signal "1", typ. 1 mA Input current 5 V DC at 2.5 mA Input datage for traced value of input voltage) 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four - parameterizable 0.2 ms 0.4 ms, 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 0.2 ms - at "0" to "1", max. 12.8 ms for interrupt inputs - - parameterizable Yes for counter/technological functions - - parameterizable Single phase : 3 at 100 kHz, differential: 3 at 80 kHz Cable length - - shielded, max. 300 m; 50 m for technological functions: No Digital outputs -		
Backup time240 h; Typical• Deviation per day, max.+/- 60 s/month at 25 °CDigital inputs6: Integrated• of which inputs usable for technological functions6: Integrated• Source/sink inputYes• Facted value (DC)24 V• for signal °0°5 ∨ DC at 1 mA• for signal °1°15 ∨ DC at 2.5 mA• for signal °1°, tor signal °1°, top to 100, top	 Hardware clock (real-time) 	Yes
• Deviation per day, max. +/- 60 s/month at 25 °C Digital inputs 6: Integrated • of which inputs usable for technological functions 3: HSC (High Speed Counting) • Source/sink input Yes Input voitage - • Rated value (DC) 24 V • for signal °0° 5 V DC at 1 mA • for signal °1° 5 V DC at 2.5 mA Input voitage - • for signal °1°, typ. 1 mA • for signal °1°, typ. 1 mA Input delay (for rated value of input voltage) - for standard inputs 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four - at °0° to °1°, max. 0.2 ms - at °0° to °1°, max. 12.8 ms for interrupt inputs - - parameterizable Ves for counter/technological functions Single phase : 3 at 100 kHz, differential: 3 at 80 kHz Cable length - • shielded, max. 500 m; 50 m for technological functions: No Digital outputs 4; Relays Short -ircuit protection No; to be provided externally Switching capacity of the outputs 4; Relays		240 h; Typical
Digital inputs 6: Integrated • of which inputs usable for technological functions 3: HSC (High Speed Counting) Source/sink input Yes Input voltage Yes • Rated value (DC) 24 V • for signal "0" 5 V DC at 1 mA • for signal "1", top. 1 mA • for signal "1", top. 1 mA • for signal "1", top. 1 mA Input delay (for rated value of input voltage) 0.2 ms, 0.4 ms, 0.8 ms, 1.8 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four - at "0" to "1", max. 0.2 ms - at "0" to "1", max. 12.8 ms for interrupt inputs Yes - parameterizable Yes for counter/technological functions 1.2 ms - parameterizable Yes for counter/technological functions 300 m; For technological functions: No Digital outputs 4: Relays Number of digital outputs 4: Relays Short -icruit protection No; to be provided externally Switching capacity of the outputs 2A on lamp load, max. 2A on lamp	•	
Number of digital inputs 6; Integrated • of which inputs usable for technological functions 3; HSC (High Speed Counting) Source/sink input Yes Input voltage 7 • Rated value (DC) 24 V • for signal "0" 5 V DC at 1 mA • for signal "1", typ. 1 mA Input delay (for rated value of input voltage) 1 mA for signal "1", 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 "0" to "1", max. 0.2 ms - at "0" to "1", max. 12.8 ms for counter/technological functions - - parameterizable Yes for counter/technological functions 500 m; 50 m for technological functions: - parameterizable Yes for counter/technological functions 500 m; 50 m for technological functions: • shielded, max. 500 m; 50 m for technological functions: • shielded, max. 500 m; 50 m for technological functions: 0 myther of digital outputs 4; Relays Short-circuit protection No; to be provided externally Switching capacity of the		
• of which inputs usable for technological functions3; HSC (High Speed Counting)Source/sink inputYesInput voltage5 V DC at 1 mA• for signal "0"5 V DC at 2 mA• for signal "1"16 V DC at 2.5 mAInput current1 mA• 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 0.2 ms- at "0" to "1", max.0.2 ms- at "0" to "1", max.2.8 msfor counter/technological functions 		
functionsYesSource/sink inputYesInput voltage24 Vfor signal "0"5 V DC at 1 mAfor signal "1"15 V DC at 2.5 mAInput current1 mAInput delay (for rated value of input voltage)1 mAfor signal "1", typ.1 mAInput 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- parameterizable0.2 ms- at "0" to "1", min.0.2 ms- at "0" to "1", max.12.8 msfor interrupt inputs2.8 msfor counter/technological functionsSingle phase : 3 at 100 kHz, differential: 3 at 80 kHzCable lengthSingle phase : 3 at 100 kHz, differential: 3 at 80 kHzSingle phase : 3 at 100 kHz, differential: 3 at 80 kHzSingle phase : 3 at 100 kHz, differential: 3 at 80 kHzCable lengthSingle phase : 3 at 100 kHz, differential: 3 at 80 kHzSingle phase : 3 at 100 kHz, differential: 3 at 80 kHzSingle phase : 3 at 100 kHz, differential: 3 at 80 kHzto mshielded, max.Single phase : 3 at 100 kHz, differential: 3 at 80 kHzshielded, max.Single phase : 3 at 100 kHz, differential: 3 at 80 kHzwith resistive load, max.Single phase : 3 at 100 kHz, differential: 3 at 80 kHzwith resistive load, max.Single phase : 3 at 100 kHz, differential: 3 at 80 kHzwith resistive load, max.Single phase : 3 at 100 kHz, differential: 3 at 80 kHzwith resistive load, max.Single phase : 3 at 100 kHz, differential: 3 at 80 kHzwith resistive load, max.Single phase : 3 a		
Input voitage • 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. 1 mA Input delay (for rated value of input voltage) • mA • for signal "1", 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 "0" to "1", max. 0.2 ms - at "0" to "1", max. 2.8 ms for counter/technological functions • parameterizable - parameterizable Yes Cable length • Single phase : 3 at 100 kHz, differential: 3 at 80 kHz • unshielded, max. 500 m; 50 m for technological functions. No Digital outputs 4; Relays Number of digital o		3; HSC (High Speed Counting)
• 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 1 mA • for signal "1", 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 - parameterizable 0.2 ms - at "0" to "1", max. 0.2 ms - at "0" to "1", max. 12.8 ms for counter/technological functions ves - parameterizable Yes for counter/technological functions single phase : 3 at 100 kHz, differential: 3 at 80 kHz Cable length Single phase : 3 at 100 kHz, differential: 3 at 80 kHz Cable length Single phase : 3 at 100 kHz, differential: 3 at 80 kHz Cable length Single phase : 3 at 100 kHz, differential: 3 at 80 kHz Cable length Single phase : 3 at 100 kHz, differential: 3 at 80 kHz Cable length Single phase : 3 at 100 kHz, differential: 3 at 80 kHz Cable length Single phase : 3 at 100 kHz, differential: 3 at 80 kHz Cable length Single phase : 3 at 100 kHz, differential: 3 at 80 kHz Number of digital outputs 4; Relays Nort-circuit	Source/sink input	Yes
• for signal "0" 5 V DC at 1 mA • for signal "1" 15 V DC at 2.5 mA Input current 1 mA • for signal "1", 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	Input voltage	
it of resignal "1"15 V DC at 2.5 mAInput current• for signal "1", typ.1 mAInput delay (for rated value of input voltage)for standard inputs0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four- at "0" to "1", min.0.2 ms- at "0" to "1", max.12.8 msfor interrupt inputs parameterizableYesfor counter/technological functions- parameterizableSingle phase : 3 at 100 kHz, differential: 3 at 80 kHzCable lengthS00 m; 50 m for technological functions• shielded, max.500 m; 50 m for technological functions• unshielded, max.500 m; 50 m for technological functionsShort-circuit protectionNo; be provided externallySwitching capacity of the outputs4; Relays• with resistive load, max.2 A• on lamp load, max.2 A• "0" to "1", max.10 ms; max.• "1" to "0", max.10 ms; max.	• Rated value (DC)	24 V
Input current • for signal "1", typ. 1 mA Input delay (for rated value of input voltage) for standard inputs - parameterizable 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four - at "0" to "1", min. 0.2 ms - at "0" to "1", max. 12.8 ms for interrupt inputs - parameterizable - parameterizable Yes for counter/technological functions - parameterizable - parameterizable Single phase : 3 at 100 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 Number of digital outputs 4; Relays Number of digital 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 - on 'n'', max. • "0" to "1", max. 10 ms; max. • "1" to "0", max. 10 ms; max.	● for signal "0"	5 V DC at 1 mA
• for signal "1", typ. 1 mA Input delay (for rated value of input voltage) for standard inputs parameterizable 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four at "0" to "1", min. 0.2 ms at "0" to "1", max. 12.8 ms for interrupt inputs	● for signal "1"	15 V DC at 2.5 mA
Input delay (for rated value of input voltage) for standard inputs - parameterizable arrow to "1", min. - at "0" to "1", max. - parameterizable - parameterizable Yes for counter/technological functions - parameterizable Yes for counter/technological functions - parameterizable Single phase : 3 at 100 kHz, differential: 3 at 80 kHz Cable length • shielded, max. • unshielded, max. 500 m; 50 m for technological functions • unshielded, max. 500 m; For technological functions • unshielded, max. Solo m; For technological functions • unshielded, max. 00 m; For technological functions • unshielded, max. 00 m; For technological functions 00 m; For technological functions 00 m; For technological functions 00 m; For technological functions • unshielded, max. 2 A • on lamp load, max. 0 W with DC, 200 W with AC Output delay with resistive load • "0" to "1", max. • "1" to "0", max. 10 ms; max. • "1" to "0", max. 10 ms; max.	Input current	
for standard inputs — parameterizable 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four — at "0" to "1", min. 0.2 ms — at "0" to "1", max. 12.8 ms for interrupt inputs 12.8 ms — parameterizable Yes for counter/technological functions — — parameterizable Single phase : 3 at 100 kHz, differential: 3 at 80 kHz Cable length Single phase : 3 at 100 kHz, differential: 3 at 80 kHz Cable length 500 m; 50 m for technological functions • unshielded, max. 300 m; For technological functions: No Digital outputs 4; Relays Number of digital outputs 4; Relays Short-circuit protection No; to be provided externally Switching capacity of the outputs 2 A • with resistive load, max. 2 A • on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load 10 ms; max. • "0" to "1", max. 10 ms; max. • "1" to "0", max. 10 ms; max.	● for signal "1", typ.	1 mA
parameterizable0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four at "0" to "1", min.0.2 ms at "0" to "1", max.12.8 msfor interrupt inputs parameterizable parameterizableYesfor counter/technological functions parameterizableSingle phase : 3 at 100 kHz, differential: 3 at 80 kHzCable length• shielded, max.500 m; 50 m for technological functions• unshielded, max.300 m; For technological functions: NoDigital outputs4; RelaysNumber of digital outputs4; RelaysSwitching capacity of the outputs2 A• with resistive load, max.2 A• on lamp load, max.30 W with DC, 200 W with ACOutput delay with resistive load10 ms; max.• "1" to "0", max.10 ms; max.• "1" to "0", max.10 ms; max.	Input delay (for rated value of input voltage)	
selectable in groups of four- at "0" to "1", min.0.2 ms- at "0" to "1", max.12.8 msfor interrupt inputsYes- parameterizableYesfor counter/technological functionsSingle phase : 3 at 100 kHz, differential: 3 at 80 kHzCable lengthS00 m; 50 m for technological functions• unshielded, max.500 m; 50 m for technological functions: NoDigital outputsNo; to be provided externallyNumber of digital outputs4; RelaysShort-circuit protectionNo; to be provided externallySwitching capacity of the outputs2 A• with resistive 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.	for standard inputs	
Late of etc is if i, max.12.8 ms at "0" to "1", max.12.8 msfor interrupt inputsYes parameterizableYesfor counter/technological functions parameterizableSingle phase : 3 at 100 kHz, differential: 3 at 80 kHzCable length• shielded, max.500 m; 50 m for technological functions• unshielded, max.500 m; 50 m for technological functions• unshielded, max.300 m; For technological functions: NoDigital outputsNumber of digital outputsShort-circuit protectionNo; to be provided externallySwitching capacity of the outputs2 A• on lamp load, max.2 AOutput delay with resistive load10 ms; max.• "1" to "0", max.10 ms; max.• "1" to "0", max.10 ms; max.	— parameterizable	
for interrupt inputs Yes parameterizable Yes for counter/technological functions Single phase : 3 at 100 kHz, differential: 3 at 80 kHz Cable length 500 m; 50 m for technological functions • shielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; For technological functions: No Digital outputs 4; Relays Number of digital outputs 4; Relays Short-circuit protection No; to be provided externally Switching capacity of the outputs 2 A • with resistive load, max. 2 A • on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load 10 ms; max. • "0" to "1", max. 10 ms; max.	— at "0" to "1", min.	0.2 ms
— parameterizableYesfor counter/technological functions— parameterizableSingle phase : 3 at 100 kHz, differential: 3 at 80 kHzCable length• shielded, max.500 m; 50 m for technological functions• unshielded, max.300 m; For technological functions: NoDigital outputsNumber of digital outputs4; RelaysShort-circuit protectionNo; to be provided externallySwitching capacity of the outputs2 A• with resistive load, max.2 A• on lamp load, max.30 W with DC, 200 W with ACOutput delay with resistive load10 ms; max.• "0" to "1", max.10 ms; max.• "1" to "0", max.10 ms; max.	— at "0" to "1", max.	12.8 ms
for counter/technological functions — parameterizable Single phase : 3 at 100 kHz, differential: 3 at 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 Number of digital outputs 4; Relays Short-circuit protection No; to be provided externally Switching capacity of the outputs 2 A • with resistive load, max. 2 A • on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load 10 ms; max. • "0" to "1", max. 10 ms; max.	for interrupt inputs	
— parameterizableSingle phase : 3 at 100 kHz, differential: 3 at 80 kHzCable length500 m; 50 m for technological functions• shielded, max.500 m; For technological functions: No• unshielded, max.300 m; For technological functions: NoDigital outputs4; RelaysNumber of digital outputs4; RelaysShort-circuit protectionNo; to be provided externallySwitching capacity of the outputs2 A• with resistive load, max.2 A• on lamp load, max.30 W with DC, 200 W with ACOutput delay with resistive load10 ms; max.• "1" to "0", max.10 ms; max.• "1" to "0", max.10 ms; max.	— parameterizable	Yes
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 Number of digital outputs 4; Relays Short-circuit protection No; to be provided externally Switching capacity of the outputs 2 A • with resistive load, max. 2 A • on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load 10 ms; max. • "0" to "1", max. 10 ms; max.	for counter/technological functions	
• shielded, max.500 m; 50 m for technological functions• unshielded, max.300 m; For technological functions: NoDigital outputs4; RelaysNumber of digital outputs4; RelaysShort-circuit protectionNo; to be provided externallySwitching capacity of the outputs2 A• with resistive load, max.30 W with DC, 200 W with ACOutput delay with resistive load10 ms; max.• "0" to "1", max.10 ms; max.• "1" to "0", max.10 ms; max.	— parameterizable	Single phase : 3 at 100 kHz, differential: 3 at 80 kHz
• unshielded, max. 300 m; For technological functions: No Digital outputs 4; Relays Number of digital outputs 4; Relays Short-circuit protection No; to be provided externally 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. • "1" to "0", max. 10 ms; max.	Cable length	
• unshielded, max.300 m; For technological functions: NoDigital outputs4; RelaysNumber of digital outputs4; RelaysShort-circuit protectionNo; to be provided externallySwitching capacity of the outputs2 A• with resistive load, max.2 A• on lamp load, max.30 W with DC, 200 W with ACOutput delay with resistive load10 ms; max.• "0" to "1", max.10 ms; max.• "1" to "0", max.10 ms; max.	 shielded, max. 	500 m; 50 m for technological functions
Number of digital outputs 4; Relays Short-circuit protection No; to be provided externally Switching capacity of the outputs 2 A • with resistive load, max. 2 A • on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load 10 ms; max. • "0" to "1", max. 10 ms; max. • "1" to "0", max. 10 ms; max.	• unshielded, max.	300 m; For technological functions: No
Number of digital outputs 4; Relays Short-circuit protection No; to be provided externally Switching capacity of the outputs 2 A • with resistive load, max. 2 A • on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load 10 ms; max. • "0" to "1", max. 10 ms; max. • "1" to "0", max. 10 ms; max.	Diaital outputs	
Short-circuit protectionNo; to be provided externallySwitching capacity of the outputs• with resistive load, max.2 A• on lamp load, max.30 W with DC, 200 W with ACOutput delay with resistive load• "0" to "1", max.10 ms; max.• "1" to "0", max.10 ms; max.		4: Relays
Switching capacity of the outputs • with resistive load, max. • on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load • "0" to "1", max. • "1" to "0", max. 10 ms; max. 10 ms; max.		
• with resistive load, max.2 A• on lamp load, max.30 W with DC, 200 W with ACOutput delay with resistive load10 ms; max.• "0" to "1", max.10 ms; max.• "1" to "0", max.10 ms; max.	•	
• 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.		2 A
Output delay with resistive load • "0" to "1", max. • "1" to "0", max. 10 ms; max. 10 ms; max.		30 W with DC, 200 W with AC
• "0" to "1", max. 10 ms; max. • "1" to "0", max. 10 ms; max.		
• "1" to "0", max. 10 ms; max.		10 ms; max.

 for uprating 	No
Switching frequency	
· · ·	1 Hz
• of the pulse outputs, with resistive load, max.	1112
Relay outputs	4
 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
 For voltage/current measurement 	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
Cable length	
● shielded, max.	100 m; shielded, twisted pair
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
Physics	Ethernet
Isolated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
Functionality	

PROFINET IO Controller	Yes
Protocols	
Supports protocol for PROFINET IO	No
PROFIBUS	No
AS-Interface	No
Protocols (Ethernet)	
• TCP/IP	Yes
Further protocols	
• MODBUS	No
Communication functions	
S7 communication	
• supported	Yes
• as server	Yes
Open IE communication	
• TCP/IP	Yes
• ISO-on-TCP (RFC1006)	Yes
Web server	
• supported	Yes
 User-defined websites 	Yes
Number of connections	
• overall	15; dynamically
Test commissioning functions	
Status/control	
Status/control variable	Yes
• Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	
Forcing	Yes
Integrated Functions	
Number of counters	3
Counting frequency (counter) max.	100 kHz
Frequency meter	Yes
controlled positioning	Yes
PID controller	Yes
Number of alarm inputs	4
Potential separation	
Potential separation digital inputs	No
Potential separation digital inputs	
• between the channels, in groups of	1
Potential separation digital outputs	Delava
 Potential separation digital outputs 	Relays

•	between	the	channels	
---	---------	-----	----------	--

No

• between the channels, in groups of

1

Permissible potential difference

between different circuits

500 V DC between 24 V DC and 5 V DC

EMC	-14
Interference immunity against discharge of static electric	
 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	
 on the supply lines acc. to IEC 61000-4-5 	Yes
Interference immunity against conducted variable distur	bance induced by high-frequency fields
 Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 	Yes
Emission of radio interference acc. to EN 55 011	
 Limit class A, for use in industrial areas 	Yes; Group 1
• Limit class B, for use in residential areas	Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011
Degree and class of protection	
Degree of protection acc. to EN 60529	
• IP20	Yes
Standards, approvals, certificates	
CE mark	Yes
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes
Ambient conditions	
Free fall	
• Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
● min.	0°0
• max.	55 °C
 horizontal installation, min. 	0°0
 horizontal installation, max. 	55 °C
• vertical installation, min.	0 °C

	45 °C		
vertical installation, max.	45 °C 5°C to 55°C, 3°C / minute		
permissible temperature change			
Ambient temperature during storage/transportation	-40 °C		
• min.	-40 °C 70 °C		
• max.	70 C		
Air pressure acc. to IEC 60068-2-13	705 h D -		
• Operation, min.	795 hPa		
• Operation, max.	1 080 hPa		
Storage/transport, min.	660 hPa		
 Storage/transport, max. 	1 080 hPa		
permissible operating height	-1000 to 2000 m		
Relative humidity			
 permissible range (without condensation) at 25 °C 	95 %		
 Operation, max. 	95 %; no condensation		
Vibrations			
Vibrations	2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail		
 Operation, tested according to IEC 60068-2-6 	Yes		
Shock test			
 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		
Extended ambient conditions			
Pollutant concentrations			
— SO2 at RH < 60% without condensation	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free		
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.	380 g		
last modified:	03/16/2017		