SIEMENS

Data sheet

6AG1215-1AG40-4XB0



SIPLUS S7-1200 CPU 1215C DC/DC/DC based on 6ES7215-1AG40-0XB0 with conformal coating, -20...+60 °C, compact CPU, DC/DC/DC, 2 PROFINET ports, onboard I/O: 14 DI 24 V DC 10 DQ 24 V DC 0.5 A 2 AI 0-10 V DC, 2 AQ 0-20 mA DC, power supply: DC 20.4-28.8 V DC, program/data memory 125 KB

General information	
Product type designation	CPU 1215C DC/DC/DC
Firmware version	V4.1
Engineering with	
 STEP 7 TIA Portal configurable/integrated from version 	see entry ID: 109746275
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) 	5 V
 permissible range, upper limit (DC) 	250 V
Input current	
Current consumption (rated value)	500 mA; CPU only
Current consumption, max.	1 500 mA; CPU with all expansion modules
Inrush current, max.	12 A; at 28.8 V DC
Output current	
for backplane bus (5 V DC), max.	1 600 mA; Max. 5 V DC for SM and CM
Encoder supply	
24 V encoder supply	
• 24 V	L+ minus 4 V DC min.
Power loss	
Power loss, typ.	12 W
Memory	
Work memory	
 integrated 	125 kbyte
expandable	No
Load memory	
 integrated 	4 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; / instruction
for word operations, typ.	1.5 µs; / instruction

Torice of an anomale, type: 2 a js.7 instruction OPU-blocks DB - FCs. FBs. counters and timers. The maximum number of addressate blocks ingregs from 1 to 65335. There is no restriction, the entire working memory can be used OB Limited only by RAM for code OB at anosa and their retentivity Imited only by RAM for code OB at anosa and their retentivity Imited only by RAM for code OB at anosa and their retentivity Imited only by RAM for code OB at anosa and their retentivity Imited only by RAM for code OB at anosa and their retentivity Imited only by RAM for code OB at anosa and their retentivity Imited only by RAM for code OB at anosa and their retentivity Imited only by RAM for code OB at anosa and their retentivity Imited only by RAM for code OB at anosa and their retentivity Imited only by RAM for code Ob address area Imited only by RAM for code Imputs Imited only by RAM for code Outputs Imputs Imited only by RAM for code Imputs only imputs Imputs Imputs Imputs only imputs Imputs Imputs Imputs only imputs Imputs Imputs <th>for floating point arithmatic tur</th> <th>2.5 up; / instruction</th>	for floating point arithmatic tur	2.5 up; / instruction
Number of blocks (total) DB, FCs. FBs, counters and tenses. The maximum number of addressable books range from to 65333. There is no restriction, the entitie working memory can be used • Number, max. Limited only by RAM for code • Size, max. 8 kbyle; Size of bit memory address area • Addressable addressable 10 kbyle • Size, max. 8 kbyle; Size of bit memory address area • Address area 0 24 byle • Ouguis 10 24 byle • Ouguis 10 24 byle • Process image • Ouguis • Ouguis, adjustable 1 kbyle • Andress configuration Number of day Clock Yes • Hardware clock (real-lime) Yes • Backup time 480 it; Typical • Ouguis 20 With of dayle Clock Yes • Hardware clock (real-lime) Yes • Backup time 480 it; Typical • Ouguis 10 24 byle • Devision per day, max. 280 imonth at 28 °C Digital inputs 14 (Integrated • Or signal "0" 5 V DC at 1 MA • for signal "0"	for floating point arithmetic, typ.	2.5 µs; / instruction
oB addressable blocks ranges from 110 66355. There is no restriction, the entire working memory can be used OB . Number, max. Limited only by RAM for code Data areas and their releanvily Reterive data rea (inct timers, counters, flags), max. 10 kbyte Fiag 8 kbyte; Size of bit memory address area Address i area 10 kbyte Vib address area 10 kbyte • Inputs. 1024 byte • Inputs. 1024 byte • Outputs. 3 comm. modules per system, max. Time of day 10 kbyte Clock Yes • Barkup time 480 h; Typical • Barkup time 50 stmoth at 25 °C Digital inputs 14: Integrated • Or which inputs. 540 State • Or which inputs. 14: Integrated • Or which inputs. 14: Integrated • Or signal To 540 Cb C at 1 mA • Or signal To 540 Cb C at 1 mA • Or signal To 540 Cb C at 1 mA • Or signal To 540 Cb C at 1 mA • Or signal To 540 Cb C at 1 mA • Or signal		
• Number, max. Limited only by RAM for code Data areas and their retentivity Referive data area (ind: threes, counters, flags), max. 10 kByte Referive data area (and: threes, counters, flags), max. 8 kbyte; Size of bit memory address area Address area 1024 byte I/O address area 1024 byte • Inputs, adjustable 1 024 byte • Outputs, adjustable 1 kbyte • Outputs 3 comm. modules, 1 signal board, 8 signal modules Time of adgustable 1 kbyte • Backup time 480 h; Typical • Backup time 490 h; Typical • Backup time 490 h; Typical • Backup time 490 h; Typical • Backup time data liquits 14. Integratiatd • Or divitin inputs usable for technological functions 6, HSC (High Speed Counting) Sourceshink input	Number of blocks (total)	addressable blocks ranges from 1 to 65535. There is no restriction, the
Data areas and their retentivity ID kByte Retentive data area (nct timens, counters, flags), max. 10 kByte Flag 8 kbyte; Size of bit memory address area Address area 1024 byte • Inputs 1 024 byte • Inputs 1 024 byte • Updatdress area 1 024 byte • Updats, adjustable 1 kbyte • Inputs, adjustable 1 kbyte • Colputs, adjustable 1 kbyte • Indextors configuration 7 ks • Glock • Address area • Interview of day 6 kbyte; Tsize all • Or day 5 comparise, insput • Or day 7 ks • Backup time 4 80 h; Typical • Or which inputs usable for technological functions 6; HSC (High Speed Counting) • Storewink input Yes • Reter value (OC) 24 V • For signal '1* 15 V DC at 1 mA • for signal '1* 15 V DC at 2.5 mA	OB	
Reference data area (incl. timers, counters, flags), max. 10 kbyte Flag Size, max. 8 kbyte; Size of bit memory address area Address area 1024 byte (IV) address area 1024 byte • Inputs 1 024 byte • Outputs 1 024 byte • Outputs 1 024 byte • Outputs 1 024 byte • Outputs, adjustable 1 kbyte • Andress area 3 comm. modules, 1 signal board, 8 signal modules • Number of modules per system, max. 3 comm. modules, 1 signal board, 8 signal modules • Ind day 480 h; Typical • Backup time 480 h; Typical • Devision per day, max. 480 h; Typical • Outputs of digital inputs 14 integrated • of which input subsite for technological functions Yes • of which input subsite for technological functions Yes • or signal 10° 5 V DC at 1 mA • for signal 10° 5 V DC at 1 mA • for signal 10° 5 V DC at 1 mA • for signal 10° 0.2 ms • autored value of input voltage) 0 site in groups of four • at 10° tor 1°, min. 0.2 ms <	Number, max.	Limited only by RAM for code
Fig. 8 kbyte: Size of bit memory address area Address area 8 kbyte: Size of bit memory address area Address area 1024 byte • Inputs 1 024 byte • Inputs 1 024 byte • Outputs 1 024 byte • Inputs, adjustable 1 kbyte • Inputs, adjustable 1 kbyte • Inputs, adjustable 1 kbyte • Induces of signal modules 1 signal board, 8 signal modules • Inte of day Clock • Outputs, adjustable, on the day in Typical 480 in Typical • Backup time 490 in Typical • Backup time 490 in Typical • O which inputs usable for technological functions 6, HSC (High Speed Counting) • O which inputs usable for technological functions 14, Integrated • O for signal *O* + up to 40° c, max. • Input delay 5 V DC at 1 mA • for signal *O* 5 V DC at 2 mA • Input delay for reter value of input voltage) 6 re signal *O* • re 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 • parameterizable	Data areas and their retentivity	
Address area B kbyte: Size of bit memory address area Address area 1024 byte Inputs 1024 byte Inputs, adjustable 1024 byte Process image 1 kbyte Inputs, adjustable 1 kbyte Hardware configuration xomme of modules per system, max. Number of modules per system, max. 3 comm. modules, 1 signal board, 8 signal modules Time of day Yes Backup time 480 h; Typical Object of the transform Yes Backup time 480 h; Typical Object of the transform 480 h; Typical Object of the transform 480 h; Typical Sourceshick input Yes Number of digital inputs 6.HSC (High Speed Counting) Sourceshick input Yes Number of digital inputs outclable inputs 14 Input value outco controllable inputs 14 Input value outco 24 V of signal '0" 5 V DC at 1 mA of signal '0" 5 V DC at 1 mA of signal '0" 5 V DC at 1 mA of signal '0" 5 V DC at 1 mA of signal '0" 5 V DC at 1 mA of signal '0" 5 V DC at 1 mA of signal '0" 5 V DC at 1 mA of signal '0"	Retentive data area (incl. timers, counters, flags), max.	10 kbyte
Address area I/O address area • Inputs 1 024 byte • Uputs 1 024 byte • Uputs 1 024 byte • Process image • • Inputs adjustable 1 kbyte • Outputs adjustable 1 kbyte • Uputs adjustable 1 kbyte • Inac or adjustable 1 kbyte • Outputs adjustable 1 kbyte • Outputs adjustable 1 kbyte • Outputs adjustable 3 comm. modules, 1 signal board, 8 signal modules • Outputs adjustable 4 signal board, 8 signal modules • Outputs adjustable 4 signal board, 8 signal modules • Outputs adjustable 4 signal board, 8 signal modules • Outputs adjustable 1 (integrated • Outputs adjustable for technological functions 6 · HSC (High Speed Counting) Source/ank input Yes Number of simultaneously controllable inputs 14 Input value 14 Input value 14 Input value 02 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable ingus offur - parameterizable 02 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectabl	Flag	
I/O address area 1 024 byte • Inputs 1 024 byte • Outputs 1 024 byte • Inputs, adjustable 1 kbyte • Inputs, adjustable 1 kbyte Hardware configuration Number of modules per system, max. Oldok • Barkup time • Deviation per day, max. 480 h; Typical • Odition per day, max. 480 h; Typical • Odition per day, max. 60 s/month at 25 °C Oldital inputs 14; Integrated • of which input suble for technological functions 6; HSC (High Speed Counting) Source/sink input Yes Number of simultaneous(controllable inputs 14 all mounting positions 14 - up to 40 °C, max. 14 Input voltage 24 V • for signal °C* 5 V DC at 1 mA • for signal °C* 5 V DC at 2.5 mA Input delay for arted 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. • for signal °C* 0.2 ms. 0.2 ms. arameterizable Yes for interrupt inputs 0.2 ms. 0.4 ms. 0.8 ms. 1.8 ms. 3.0 kHz. 3 at 30 kHz &	• Size, max.	8 kbyte; Size of bit memory address area
 Inputs 1024 byte Outputs 1024 byte Process image Inputs. adjustable 1 kbyte Advara configuration Number of modules per system, max. 3 comm. modules, 1 signal board, 8 signal modules Itime of agy Clock Hardware clock (real-time) Backup time 480 h; Typical 480 h; Typical 9 beviation per day, max. 9 beviation per day, max. 160 simonth at 25 °C Opinal inputs Number of digital inputs 44; Integrated 6; HSC (High Speed Counting) 5 ource/sink input Yes Number of simultaneously controllable inputs 14; Integrated 6; HSC (High Speed Counting) 5 ource a sink input Yes Number of simultaneously controllable inputs all mounting positions — up to 40 °C, max. 14 Input deay (for rated value of input voltage) for standard inputs — parameterizable for interrupt inputs — parameterizable Yes for interrupt inputs — parameterizable Single phase: 3 at 100 kHz & 3 at 30 kHz &	Address area	
• Outputs 1 024 byte Process image • • Inputs, adjustable 1 kbyte • Outputs, adjustable 1 kbyte Vardware configuration 3 comm: modules, 1 signal board, 8 signal modules Time of day - Clock - • Hardware clock (real-time) Yes • Backup time 480 h; Typical • Deviation per day, max. 480 h; Typical • Order of digital inputs 14; Integrated • of which inputs usable for technological functions 6; HSC (High Speed Counting) Sourcevisitik input Yes Number of digital inputs 14; Integrated • of which inputs usable for technological functions 6; HSC (High Speed Counting) Sourcevisitik input Yes Number of digital inputs 14 Input voltage - • For signal Y0* 5 V D cat 1 mA • for signal Y0* 5 V D cat 1 mA • for signal Y1* 15 V D cat 25 mA Input delay (for rated value of input voltage) - for technological functions -	I/O address area	
Process image 1 • Inputs, adjustable 1 • Outputs, adjustable 1 Number of modules per system, max. 3 Time of day Clock • Hardware configuration Water of modules per system, max. 3 Clock • Hardware clock (real-time) Yes • Backup time 480 h; Typical • Deviation per day, max. 260 s/month at 25 °C Origital inputs 14; Integrated • of which inputs usable for technological functions 6; HSC (High Speed Counting) Source/sink input Yes Number of signal modules of technological functions 6; HSC (High Speed Counting) • of which inputs usable for technological functions 6; HSC (High Speed Counting) • or of which inputs usable for technological functions 6; HSC (High Speed Counting) • or of signal "0" 5 V DC at 1 mA • for signal "0" 5 V DC at 2 5 mA Input voltage 0, 2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four - at "0" to "1", min. 0.2 ms - at "0" to "1", min. 0.2 ms - parameterizable 0.2 ms, 1.4 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 - parameteri	Inputs	1 024 byte
• Inputs, adjustable • Outputs, adjustable • Outputs, adjustable • Number of modules per system, max. 3 comm. modules, 1 signal board, 8 signal modules Time of day Clicke • Hardware clock (real-lime) • Backup time • Backup time • Backup time • Deviation per day, max. • Bob Simonth at 25 °C Objectal inputs • Or which imputs usable for technological functions • of which imputs usable for technological functions • Girking to the day outputs • Or of digital inputs • of which imputs usable for technological functions • Girking to the day output controllable inputs • of which imputs usable for technological functions • Girking to the day output controllable inputs • of which imputs usable for technological functions • JAB C (High Speed Counting) Sourcevisink input • Or of C, max. • Day • Or of C, max. • Or of C, max. • Or of the day output collable inputs • or or signal °C • Or or (max. • Or or (max) • Or	Outputs	1 024 byte
• Outputs, adjustable Hardware configuration Hardware configuration Number of modules per system, max. 3 comm. modules, 1 signal board, 8 signal modules Time of day Clock • Hardware clock (real-lime) • Fated value (DC) • Cask. • Hardware clock (real-lime) • Fated value (DC) • Cask. • Parameterizable • parameterizable	Process image	
Hardware configuration Number of modules per system, max. 3 comm. modules, 1 signal board, 8 signal modules Time of day Clock • • Backup time 480 h; Typical • Backup time 480 h; Typical • Deviation per day, max. ±60 s/month at 25 °C Digital inputs 14: Integrated • of which inputs usable for technological functions 6: HSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs 14 all mounting positions • HAC (High Speed Counting)	 Inputs, adjustable 	1 kbyte
Number of modules per system, max. 3 comm. modules, 1 signal board, 8 signal modules Time of day Clock Hardware clock (real-lime) Ves 480 s/month at 25 °C Digital inputs 14; Integrated of which inputs usable for technological functions Source/sink input Yes HSC (High Speed Counting) Yes Number of simultaneously controllable inputs 14; Integrated Input oblage 6 6 Parameterizable For signal °0° Store (*or signal °0° Store of the 1*, max. for signal °1* for signal °1* for signal °1* for standard inputs - parameterizable Yes Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz Single phase : 3 at 100 kHz & 3 at 30 kHz differential: 3 at 80 kHz & 3 at 30 kHz - parameterizable Single phase : 3 at 100 kHz & 3 at 30 kHz differential: 3 at 80 kHz & 3 at 30 kHz - parameterizable -	Outputs, adjustable	1 kbyte
Time of day Clock • Hardware clock (real-time) Yes • Backup time 480 h; Typical • Deviation per day, max. ±80 smonth at 25 °C Digital inputs 14; Integrated • of which inputs usable for technological functions 6; HSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs 14 all mounting positions	Hardware configuration	
Clock Hardware clock (real-time) Yes Backup time AB0 h; Typical Edeviation per day, max. Digital inputs Edeviation per digital inputs of which inputs usable for technological functions Scirce/sink input Yes Number of digital inputs I4; Integrated 6; HSC (High Speed Counting) Source/sink input Yes Number of simultaneous/y controllable inputs all mounting positions -up to 40°C, max. Input values Parameterizable For standard inputs of signal °C* SV DC at 1 mA for signal °C* parameterizable of or signal °C* 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 °C* to *1*, min. - parameterizable Yes for interrupt inputs - parameterizable Yes Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz State length shielded, max. 300 m; for technological functions: No State length with resistive load with resistive load with resistive load, max.<td>Number of modules per system, max.</td><td>3 comm. modules, 1 signal board, 8 signal modules</td>	Number of modules per system, max.	3 comm. modules, 1 signal board, 8 signal modules
• Hardware clock (real-time) Yes • Backup time 480 h; Typical • Deviation per day, max. ±60 s/month at 25 °C Digital inputs 14; Integrated • of which inputs usable for technological functions 6; HSC (High Speed Counting) Source/sink input Yes all mounting positions	Time of day	
• Backup time 480 h; Typical • Deviation per day, max. ±60 s/month at 25 °C Digital inputs 14; Integrated • of which inputs usable for technological functions 6; HSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs 14; all mounting positions	Clock	
• Deviation per day, max. ±60 s/month at 25 °C Pigital inputs 14; Integrated • of which inputs usable for technological functions 6; HSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs 14 all mounting positions - - up to 40 °C, max. 14 Input voltage 6; VDC at 1 mA • Facted value (DC) 24 V • for signal °0° 5 V DC at 1 mA • for signal °10° 5 V DC at 2.5 mA Input delay (for rated value of input voltage) 15 V DC at 2.5 mA 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", max. 12.8 ms - at "0" to "1", max. 12.8 ms for itechnological functions single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz Cable length • of which high-speed outputs • which high-speed outputs 10 • of which high-speed outputs 4; 100 kHz Pulse Train Output Switching capacity of the outputs 4; 100 kHz Pulse Train Output • which high-speed outpu	 Hardware clock (real-time) 	Yes
Digital inputs 14: Integrated • of which inputs usable for technological functions 6; HSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs all mounting positions all mounting positions 14 Input voltage • Arated value (DC) • Fated 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) 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. 12.8 ms for interrupt inputs - parameterizable - parameterizable Yes for interrupt inputs - parameterizable - parameterizable Yes for interrupt inputs - parameterizable - parameterizable Yes for interrupt inputs - parameterizable - parameterizable Xes for interrupt inputs - parameterizable - parameterizable Xes Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz ourshielded, max. 500 m; 50 m	Backup time	480 h; Typical
Number of digital inputs 14; Integrated • of which inputs usable for technological functions 6; HSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs 14 all mounting positions	 Deviation per day, max. 	±60 s/month at 25 °C
• of which inputs usable for technological functions 6; HSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs all mounting positions -up to 40 °C, max. 14 Input voltage 5 V DC at 1 mA • Retad 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) 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four - at "0" to "1", min. 0.2 ms - at "0" to "1", max. 12.8 ms for interrupt inputs - - parameterizable Yes for technological functions - - parameterizable Yes for technological functions - - parameterizable Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz • shielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions • unshielded, max. 0.5 A Output delay with resistive load - • with resistive load - • "0	Digital inputs	
Source/sink input Yes Number of simultaneously controllable inputs all mounting positions all mounting positions up to 40°C, max. 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 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", min. 0.2 ms - at "0" to "1", max. 12.8 ms - parameterizable Yes for iterrupt inputs - - parameterizable Yes for technological functions - - parameterizable Yes for technological functions - - parameterizable Single phase : 3 at 100 kHz & 3 at 30 kHz & 500 m; 50 m for technological functions: No Digital outputs 10 . of which high-speed outputs 4; 100 kHz Pulse Train Output	Number of digital inputs	14; Integrated
Number of simultaneously controllable inputs all mounting positions	 of which inputs usable for technological functions 	6; HSC (High Speed Counting)
all mounting positions 14 Input voltage 9 Rated value (DC) 24 V i for signal "0" 5 V DC at 1 mA i for signal "1" 15 V DC at 2.5 mA Input delay (for rated value of input voltage) 10 of rot 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", main. 0.2 ms - at "0" to "1", max. 12.8 ms for interrupt inputs Yes - parameterizable Yes for technological functions - - parameterizable 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. 300 m; for technological functions • unshielded, max. 300 m; for technological functions • of which high-speed outputs 4; 100 kHz Pulse Train Output Switching capacity of the outputs 4; 100 kHz Pulse Train Output • with resistive load, max. 0.5 A Output delay with resistive load 1 µs • """ to "1", max.	Source/sink input	Yes
	Number of simultaneously controllable inputs	
Input voltage • Rated value (DC) 24 V • for signal "0" 5 V DC at 1 mA • for signal "1" 15 V DC at 2.5 mA Input delay (for rated value of input voltage) for standard inputs - parameterizable 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four - at "0" to "1", min. 0.2 ms - at "0" to "1", max. 12.8 ms for interrupt inputs - - parameterizable Yes for technological functions - - parameterizable Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz 6 shielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions • unshielded, max. 300 m; for technological functions • unshielded, max. 300 m; for technological functions • of which high-speed outputs 4; 100 kHz Pulse Train Output Switching capacity of the outputs 0.5 A Output delay with resistive load 0.5 A Output delay with resistive load 1 µs • "i" to "0", max. 5 µs Relay outputs 5 µs <td>all mounting positions</td> <td></td>	all mounting positions	
• Rated value (DC) 24 V • for signal "0" 5 V DC at 1 mA • for signal "1" 15 V DC at 2,5 mA Input 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", min. 0.2 ms at "0" to "1", max. 12.8 ms for interrupt inputs parameterizable parameterizable Yes for interrupt inputs parameterizable parameterizable Yes for technological functions parameterizable parameterizable Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz Cable length solow mice technological functions • unshielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions: No Digital outputs 10 • of which high-speed outputs 4; 100 kHz Pulse Train Output Switching capacity of the outputs 0.5 A Output delay with resistive load 1 μs • "1" to "0", max. 5 μs Relay outputs 1 μs	— up to 40 °C, max.	14
• 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 standard inputs • parameterizable 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four - at "0" to "1", min. 0.2 ms - at "0" to "1", max. 12.8 ms for interrupt inputs - - parameterizable Yes for technological functions - - parameterizable Yes for technological functions - - parameterizable Yes for technological functions - - parameterizable Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz Cable length 500 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 10 • of which high-speed outputs 4; 100 kHz Pulse Train Output Switching capacity of the outputs 0.5 A Output delay with resistive load 0.5 A Output delay with resistive load 5 µs		
• for signal "1" 15 V DC at 2.5 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 Yes for interrupt inputs - • parameterizable Yes for technological functions - • parameterizable Yes for technological functions - • parameterizable Yes shielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions • unshielded, max. 300 m; for technological functions: No Digital outputs 10 Number of digital outputs 10 • of which high-speed outputs 4; 100 kHz Pulse Train Output Switching capacity of the outputs 0.5 A Output delay with resistive load 1 μs • "1" to "0", max. 5 μs Relay outputs 5 μs		24 V
Input delay (for rated value of input voltage) for standard inputs	5	
for standard inputs - - parameterizable 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four - at "0" to "1", min. 0.2 ms - at "0" to "1", max. 12.8 ms for interrupt inputs - - parameterizable Yes for technological functions - - parameterizable Yes for technological functions - - parameterizable Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz, differential: 40 kmz & 40 kmz & 50 kmz & 300 m; for technological functions • unshielded, max. 500 m; 50 m for technological functions: No		15 V DC at 2.5 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		
in groups of four 		
	— parameterizable	
for interrupt inputs Yes — parameterizable Yes for technological functions	— at "0" to "1", min.	0.2 ms
— parameterizable Yes for technological functions	— at "0" to "1", max.	12.8 ms
for technological functions — parameterizable 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 10 • of which high-speed outputs 4; 100 kHz Pulse Train Output Switching capacity of the outputs 0.5 A Output delay with resistive load 1 μs • "0" to "1", max. 1 μs • "1" to "0", max. 5 μs Relay outputs 5 μs	for interrupt inputs	
— parameterizable 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 • unshielded, max. 300 m; for technological functions • unshielded, max. 300 m; for technological functions • unshielded, max. 10 • of which high-speed outputs 4; 100 kHz Pulse Train Output Switching capacity of the outputs 0.5 A Output delay with resistive load 1 μs • "0" to "1", max. 1 μs • "1" to "0", max. 5 μs Relay outputs 1 μs		Yes
at 30 kHz Cable length • shielded, max. • unshielded, max. 300 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions: No Digital outputs Number of digital outputs • of which high-speed outputs 4; 100 kHz Pulse Train Output Switching capacity of the outputs • with resistive load, max. 0.5 A Output delay with resistive load • "0" to "1", max. • "1" to "0", max. Relay outputs	for technological functions	
• shielded, max.500 m; 50 m for technological functions• unshielded, max.300 m; for technological functions: NoDigital outputs10Number of digital outputs4; 100 kHz Pulse Train Output• of which high-speed outputs4; 100 kHz Pulse Train OutputSwitching capacity of the outputs0.5 AOutput delay with resistive load1 μs• "0" to "1", max.1 μs• "1" to "0", max.5 μsRelay outputs500 kHz	— parameterizable	
• unshielded, max.300 m; for technological functions: NoDigital outputsNumber of digital outputs10• of which high-speed outputs4; 100 kHz Pulse Train OutputSwitching capacity of the outputs0.5 A• with resistive load, max.0.5 AOutput delay with resistive load1 μs• "0" to "1", max.1 μs• "1" to "0", max.5 μsRelay outputs1	Cable length	
Digital outputs 10 • of which high-speed outputs 4; 100 kHz Pulse Train Output Switching capacity of the outputs 4; 100 kHz Pulse Train Output • with resistive load, max. 0.5 A Output delay with resistive load 1 µs • "0" to "1", max. 1 µs • "1" to "0", max. 5 µs Relay outputs 1	• shielded, max.	500 m; 50 m for technological functions
Number of digital outputs 10 • of which high-speed outputs 4; 100 kHz Pulse Train Output Switching capacity of the outputs 0.5 A • with resistive load, max. 0.5 A Output delay with resistive load 1 μs • "0" to "1", max. 5 μs Relay outputs 1	• unshielded, max.	
• of which high-speed outputs 4; 100 kHz Pulse Train Output Switching capacity of the outputs 0.5 A • with resistive load, max. 0.5 A Output delay with resistive load 1 μs • "0" to "1", max. 5 μs Relay outputs	Digital outputs	
• of which high-speed outputs 4; 100 kHz Pulse Train Output Switching capacity of the outputs 0.5 A • with resistive load, max. 0.5 A Output delay with resistive load 1 μs • "0" to "1", max. 5 μs Relay outputs	Number of digital outputs	10
Switching capacity of the outputs • with resistive load, max. 0.5 A Output delay with resistive load • "0" to "1", max. 1 µs • "1" to "0", max. 5 µs Relay outputs		4; 100 kHz Pulse Train Output
Output delay with resistive load • "0" to "1", max. • "1" to "0", max. 5 µs		
• "0" to "1", max. 1 μs • "1" to "0", max. 5 μs Relay outputs		0.5 A
• "1" to "0", max. 5 µs Relay outputs	Output delay with resistive load	
Relay outputs	• "0" to "1", max.	1 µs
	• "1" to "0", max.	5 µs
Number of relay outputs	Relay outputs	
	 Number of relay outputs 	0

Cable length	
 shielded, max. 	500 m
 unshielded, max. 	150 m
Analog inputs	
Number of analog inputs	2
Input ranges	
Voltage	Yes
Input ranges (rated values), voltages	
• 0 to +10 V	Yes
— Input resistance (0 to 10 V)	≥100k ohms
Cable length	
 shielded, max. 	100 m; twisted and shielded
Analog outputs	
Number of analog outputs	2
Output ranges, current	-
• 0 to 20 mA	Yes
Analog value generation for the inputs	100
Integration and conversion time/resolution per channel	
Resolution with overrange (bit including sign), max.	10 bit
	Yes
 Integration time, parameterizable Conversion time (per channel) 	res 625 µs
	625 μs
Analog value generation for the outputs	
Integration and conversion time/resolution per channel	
 Resolution with overrange (bit including sign), max. 	10 bit
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
Protocols	
PROFINET IO Controller	Yes
PROFINET IO Device	Yes; Also simultaneously with IO-Device functionality
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
PROFIsafe	No
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	

	Ver
• supported	Yes
User-defined websites	Yes
Further protocols	N.
MODBUS	Yes
communication functions / header	
S7 communication	
 supported 	Yes
• as server	Yes
as client	Yes
Number of connections	
• overall	16; dynamically
Test commissioning functions	
Status/control	
 Status/control variable 	Yes
Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	
Forcing	Yes
Diagnostic buffer	
• present	Yes
Integrated Functions	
Frequency measurement	Yes
controlled positioning	Yes
Number of position-controlled positioning axes, max.	8
Number of positioning axes via pulse-direction interface	4; With integrated outputs
PID controller	Yes
Number of alarm inputs	4
Number of pulse outputs	4
Limit frequency (pulse)	100 kHz
Potential separation	
Potential separation digital inputs	
 Potential separation digital inputs 	No
 between the channels, in groups of 	1
Potential separation digital outputs	
 between the channels 	No
 between the channels, in groups of 	1
EMC	
Interference immunity against discharge of static electricity	
Interference immunity against discharge of static electricity acc. to IEC 61000-4-2	Yes
— Test voltage at air discharge	8 kV
— Test voltage at contact discharge	6 kV
Interference immunity to cable-borne interference	
Interference immunity on supply lines acc. to IEC 61000-4-4	Yes
 Interference immunity on signal cables acc. to IEC 61000-4-4 	Yes
Interference immunity against voltage surge	
Interference immunity on supply lines acc. to IEC 61000-4-5	Yes
Interference immunity against conducted variable disturbance	e induced by high-frequency fields
 Interference immunity against high-frequency 	Yes
radiation acc. to IEC 61000-4-6	
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
Ambient conditions	
Free fall	
● Fall height, max.	0.3 m; five times, in product package

Ambient temperature during operation	
• min.	-20 °C; = Tmin (incl. condensation/frost); start-up @ 0 °C
• max.	60 °C; Number of simultaneously activated inputs or outputs 7 or 5 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 14 or 10 at 55 °C horizontal or 45 °C vertical
• At cold restart, min.	O°C
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Altitude during operation relating to sea level	
Installation altitude above sea level, max.	5 000 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)
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/s ²) wall mounting, 1 g (m/s ²) DIN rail
Operation, tested according to IEC 60068-2-6	Yes
Shock testing	Voc: IEC 60. Dort 2.27 holf since strength of the shark 45 - /see
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
Resistance	
Coolants and lubricants	Many local discrete and all developer in the said
 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 / header	
configuration / programming / header	
Programming language — LAD	Yes

— FBD	Yes
— SCL	Yes
programming / cycle time monitoring / header	
adjustable	Yes
Dimensions	
Width	130 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	500 g

last modified:

4/1/2022 🖸