# SIEMENS

## Data sheet

## 6ES7211-1HE40-0XB0



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

Figure similar

General information	
Product type designation	CPU 1211C DC/DC/relay
Firmware version	V4.7
Engineering with	
<ul> <li>Programming package</li> </ul>	STEP 7 V20 or higher
Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Load voltage L+	
<ul> <li>Rated value (DC)</li> </ul>	24 V
<ul> <li>permissible range, lower limit (DC)</li> </ul>	20.4 V
• permissible range, upper limit (DC)	28.8 V
Input current	
Current consumption (rated value)	300 mA; CPU only
Current consumption, max.	900 mA; CPU with all expansion modules
Inrush current, max.	12 A; at 28.8 V DC
l²t	0.8 A <sup>2</sup> .s
Output current	
for backplane bus (5 V DC), max.	750 mA; Max. 5 V DC for CM
Encoder supply	
24 V encoder supply	
• 24 V	L+ minus 4 V DC min.
Power loss	
Power loss, typ.	8 W
Memory	
Work memory	
• integrated	75 kbyte
Load memory	
integrated	1 Mbyte
<ul> <li>Plug-in (SIMATIC Memory Card), max.</li> </ul>	with SIMATIC memory card
Backup	
• present	Yes
maintenance-free	Yes

Twistor         Tes           For Micro Juncal Juncal         0.00 pc/stable Juncal           For Micro Juncal Juncal         0.00 pc/stable Juncal           For Micro Juncal Juncal         17 july / Instruction           For Micro Juncal Juncal         17 july / Instruction           For Micro Juncal         2.3 july / Instruction           Column Juncal         2.4 july / Instruction           Column Juncal         4 ktyle           Files         4 ktyle           Column Juncal         4 ktyle           Files         4 ktyle           Column Juncal         4 ktyle           Files         4 ktyle           Process Image         1 ktyle           Procestimage         4 ktyle<	without battery	Yes
for bit operations, typ:         0.00 μs/. / instruction           for word operations, typ:         1.7 ms/. instruction           CPL biologing paint attimute(i, typ:         2.3 μs/. / instruction           CPL biologing paint attimute(i, typ:         2.3 μs/. / instruction           CPL biologing paint attimute(i, typ:         2.3 μs/. / instruction           CPL biologing paint attimute(i, typ:         2.3 μs/. / instruction           CPL biologing paint attimute(i, typ:         2.3 μs/. / instruction           CPL biologing paint attimute(i, typ:         2.3 μs/. / instruction           CPL biologing paint attimute(i, typ:         2.3 μs/. / instruction           CPL biologing paint attimute(i, typ:         2.3 μs/. / instruction           CPL biologing paint attimute(i, typ:         2.3 μs/. / instruction           CPL biologing paint attimute(i, typ:         2.3 μs/. / instruction           CPL biologing paint attimute(i, typ:         2.3 μs/. / instruction           CPL biologing paint attimute(i, typ:         4.4 ko/et           CPL biologing paint attimute(i, typ:         4.4 ko/et           CPL biologing paint attimute(i, typ:         14.4 ko/et           Process image         14 ko/et           Process image         14 ko/et           Process image         14 ko/et           Process image         14 ko/et		
for social genetics: hp:       1.7 ms; instruction         for facting point anithmetic, typ:       2.3 µs; / instruction         for facting point anithmetic, typ:       2.3 µs; / instruction         Rumber of blocks (tota)       DBs, FCs, FBs, countiers and (inters; The maximum number of addressable between years here used interventing)         OB       •         • Number, ranz:       Limited only by RAM for code         Data arcsas and their reference; counters, flagb, max.       14 kbyte         Bigs       •         • Number, ranz:       19 kbyte; Pitority class, max.       4 kbyte         • Bigs       •         • Stay, adjustable       1 kbyte         • Ingrids, adjustable       480 kbyte; Tyteral         • Objection per day, max.       3 communication modules, 1 signal board         Objection per day, max.       480 kbyte; Tyteral         • Objection per day, max.       90 shronth at 25 °C         Objection per day, max.       6         • or signal 1°*		
for finding point antimetic, typ.     2.3 µp; / instruction       CPU-blocks     DBs FCB; FBs counters and times. The maximum member of addressable memory can be used       Number of blocks (total)     DBs FCB; FBs counters and times. The maximum member of addressable memory can be used       • Aurobas and their referentiation, the entire working     Imited only by RAM for code       • Address and their referentiation, the entire working     Imited only by RAM for code       • Coal data areas and their referentiation, the entire working     Imited only by RAM for code       • Coal data areas and their referentiation, the entire working     Imited only by RAM for code       • Coal data     • Coal data       • or printly datas, max.     14 kbyte. Priority datas 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB       Address area     • Coal data       • Portprintly datas, max.     14 kbyte.       Process mage     • hardware conk (real-time)       • Individue cork (real-time)     Yes       Number of digital inputs     6. Integrated       • Portprint datas, max.     6. Integrated       • Orapidas print data meas     6. Integrated       • Orapidas print for data     6. Integrated       • Orapidas print data meas     6. Integrated       • Orapidas print data for the therehological functions     6. Integrated       • Orage of digital inputs     6. Integrated       • Orage of digital inputs		
CPUEAbods         DBs. FCS, FBs. counters and times. The maximum number of addressable books ranges from 1 to 5555 There is no restriction, the entire working memory can be used           OB         Constrained only by RAM for code           Data areas and their rebentive (intermet, counters, flags), max.         14 Hoyle           Field         Counters, flags, max.         4 Hoyle           Process image         1 Hoyle         1 Hoyle           Process image         1 Hoyle         2 Howles area           Coold         1 Hoyle         2 Howles area         2 Howles area           Coold data         2 Howles and their rebentive of their Howles         4 Howles           Process image         1 Hoyle         2 Howles and their Howles         4 Howles           Process image         1 Hoyle         2 Howles         2 Howles           Process image		
Number of blocks (total)         DBs. F.G.s. F.B.s. counters and times. The maximum number of addressable blocks increases from 10 6553. There is no restriction, the entire working memory can be used           OB         Limited only by RAM for code           • Number, max.         Limited only by RAM for code           • Size, max.         Limited only by RAM for code           • Size, max.         4 kbyte           • Size, max.         4 kbyte           • Size, max.         4 kbyte           • Size, max.         16 kbyte. Priority class a reas           • Decidination         • Per priority class, max.           • Per priority class, max.         16 kbyte. Priority class 1 (program cycle): 16 KB, priority class 2 to 26.5 KB           Addresse area         • Per priority class, priority class 2 to 26.5 KB           Process image         • thyte           • Outputs, adjustable         1 kbyte           • Outputs, adjustable         1 kbyte           • Code (real-time)         Yes           • Backup time         3 communication modules, 1 signal board           • Time of ady         • Entity for the signal board           • Mardware cock (real-time)         Yes           • Mardware cock (real-time)         6 integrated           • Flack day the problematic text contrological functions         6 integrated		
Austral and shall be an end of the set		blocks ranges from 1 to 65535. There is no restriction, the entire working
Plate area (ind. times, counters, flugs), max.         14 kbyte           Reterive data area (ind. times, counters, flugs), max.         14 kbyte; Size of bit memory address area           • Size, max.         4 kbyte; Size of bit memory address area           • Local data         -           • oper priority class, max.         16 kbyte; Size of bit memory address area           • Process image         -           • Inputs, adjustable         1 kbyte           • Ordputs, adjustable         1 kbyte           • Ordputs, adjustable         1 kbyte           • Ordputs, adjustable         1 kbyte           • Mardware configuration         -           • Number of modules per system, max.         30 communication modules, 1 signal board           • Time of day         -           • Backup time         480 h; Trybial           • Devision per day, max.         ±60 simonth at 25 °C           Dipital inputs         6: Integrated           • of which inputs usable for technological functions         6: Regrated           • Jor signal 'Tryp.         4 mA; nominal           • For signal 'Tryp.         4 mA; nominal	OB	
Retentive data area (incl. timers, counters, flags), max.     14 kbyte       Flag <ul> <li>Size, max.</li> <li>Local data</li> <li>Per profity class, max.</li> <li>Kbyte; Size of bit memory address area</li> <li>Per profity class, max.</li> <li>Kbyte; Size of bit memory address area</li> <li>Per profity class, max.</li> <li>Kbyte; Size of bit memory address area</li> <li>Per profity class, max.</li> <li>Kbyte; Size of bit memory address area</li> <li>Per profity class, max.</li> <li>Kbyte; Size of bit memory address area</li> <li>Per profity class, max.</li> <li>Kbyte; Size of bit memory address area</li> <li>I kbyte; Size of bit memory address area</li> <li>I address area</li> <li>I address area</li> <li>I address area<td>• Number, max.</td><td>Limited only by RAM for code</td></li></ul>	• Number, max.	Limited only by RAM for code
Flag       4 kbyte; Size of bit memory address area         Local data       9 ber priority class, max.         • per priority class, max.       16 kbyte; Priority class 1 (program cycle); 16 KB, priority class 2 to 26; 6 KB         Address area       16 kbyte; Priority class 1 (program cycle); 16 KB, priority class 2 to 26; 6 KB         Address area       16 kbyte; Priority class 1 (program cycle); 16 KB, priority class 2 to 26; 6 KB         Address area       16 kbyte; Priority class 1 (program cycle); 16 KB, priority class 2 to 26; 6 KB         Address area       3 communication modules, 1 signal board         Number of choldes per system; max.       3 communication modules, 1 signal board         Clock       • Hardware clock (real-time)       Yes         • Backup line       490 h; Typical         • Digital inputs       6 integrated         Number of digital inputs       6; Integrated         • of which inputs usable for technological functions       6; ISC (High Speed Counting)         Sourcebank input       Yes         • and which inputs usable for technological functions       6; Integrated         • of or signal '0'       5 V D C at 1 mA         • for signal '0'       5 V D C at 1 mA         • for signal '1'       15 V D C at 2.5 mA         Input voltage       • or signal '1', typ.         • for signal '1', typ.<	Data areas and their retentivity	
<ul> <li>Size, max.</li> <li>Size, max.</li> <li>Size, max.</li> <li>Per profity class, max.</li> <li>Address area</li> <li>Per profity class, max.</li> <li>Address area</li> <li>Process image</li> <li>Inputs, adjustable</li> <li>1 kbyte</li> <li>Culputs, adjustable</li> <li>1 kbyte</li> <li>Culputs, adjustable</li> <li>1 kbyte</li> <li>Number of modules per system, max.</li> <li>3 communication modules, 1 signal board</li> <li>Time of day</li> <li>Clock</li> <li>Clock</li> <li>Backup time</li> <li>480 %; Typical</li> <li>Deviation per day, max.</li> <li>abl stable for technological functions</li> <li>Gist Statistic et al.</li> <li>Clock for signal '0", max.</li> <li>Clock for signal '0", max.</li> <li>Gist Statistic et al.</li> <li>Clock for signal '0", max.</li> <li>Source/sink input</li> <li>Gist Statistic et al.</li> <li>Source/sink input</li> <li>Gist Statistic et al.</li> <li>Source/sink input</li> <li>Gist Statistic et al.</li> <li>Source/sink input</li> <li>Source/sink input</li></ul>	Retentive data area (incl. timers, counters, flags), max.	14 kbyte
Local data         16 kbyts; Priority class 1 (program cycle): 16 KB, priority class 2 to 26; 6 KB           Address area         ************************************	Flag	
• per priority class, max.     16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Addess area Process mage      • Inputs, adjustable     1 kbyte Process mage     • Outputs, adjustable     1 kbyte Hardware configuration      Number of modules per system, max.     3 communication modules, 1 signal board      Hardware clock (real-line)     * Backup time     * Backup time	• Size, max.	4 kbyte; Size of bit memory address area
Address area       Process image            Process image        I kbyte             Indust, adjustable        1 kbyte          Variance configuration           Number of modules per system, max.        3 communication modules, 1 signal board          Clock               Hardware clock (real-time)           480 h; Typical             Bokup time           480 h; Typical             Bokup time           480 h; Typical             Bow of the input set system, max.           Bow of the input set system             Number of sinutaneously controllable inputs           G; Integrated             of wind input sets           G; Integrated             all mounting positions               - up to 40°C; max:             for signal "0°             for signal "1"             for signal "1"              of andard inputs             or signal "1"             for signal "1"             for signal "1"             for signal "1"	Local data	
Process image       1 kbyte         • Inputs, adjustable       1 kbyte         • Outputs, adjustable       1 kbyte <b>Hardware configuration</b> 3 communication modules, 1 signal board         Time of day	<ul> <li>per priority class, max.</li> </ul>	16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB
Inputs, adjustable     Inputs, adjustable, adjustor, adjustable, adjustable, adjustable, adjustable, adjustable, a	Address area	
• Outputs, adjustable         1 kbyte           Hardware configuration         3 communication modules, 1 signal board           Time of day         3 communication modules, 1 signal board           Clock         480 h; Typical           • Hardware clock (real-time)         Yes           • Backup time         480 h; Typical           • Deviation per day, max.         ±60 simonth at 25 °C           Optical inputs         • (Integrated)           • of which inputs usable for technological functions         6; HSC (High Speed Counting)           • Source/sink input         Yes           Number of simultaneously controllable inputs         6           Input voltage         6           Input voltage         70 b 40 °C, max.           • for signal °C         5 V DC at 1 mA           • for signal °C         5 V DC at 25 mA           Input voltage         70 b 40 °C, max.           • for signal °C         5 V DC at 25 mA           Input voltage         0 1 (0 2 / 0 4 / 0 8 / 16 / 3 2 / 6 4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0 2 / 0.4 / 0 / 0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0 2 / 0.4 / 0 / 0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0 2 / 0.4 / 0 / 0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0 2 / 0.4 / 0 / 0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0 2 / 0.4 / 0 / 0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0 2 / 0.4 / 0 / 0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0 2 / 0.4 / 0 / 0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0 2 / 0.4 / 0 / 0 / 12.8 / 20.0 µs; 0.05	Process image	
Hardware configuration       3 communication modules, 1 signal board         Time of day       3 communication modules, 1 signal board         Clock       • Hardware clock (real-line)         • Backup time       480 h; Typical         • Deviation per day, max.       460 simonth at 25 °C         Digital inputs       • integrated         • of which inputs usable for technological functions       • 6; Integrated         • of which inputs usable for technological functions       • 6; HSC (High Speed Counting)         Sources/nik input       Yes         Number of modules per day, max.       6         Input voltage       • of which inputs usable for technological functions         • of which inputs usable for technological functions       • 6         Input voltage       • of which inputs usable for technological functions         • for signal "0"       5 UDC at 1 mA         • for signal "1", typ.       4 mA; nominal         Input cellag (for rated value of input voltage)       for signal "1", typ.         • for signal "1", typ.       4 mA; nominal         Input cellag (for trated value of input voltage)       0.1/0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1	<ul> <li>Inputs, adjustable</li> </ul>	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     480 K; Typical       • Deviation per day, max.     ±60 s/month at 25 °C       Digital inputs     6; Integrated       • of which inputs uselifier technological functions     6; Integrated       • of which inputs uselifier technological functions     6; Integrated       • of which inputs uselifier technological functions     6       Imput outing positions     •       • up to 40 °C, max.     6       Input voltage     •       • for signal °T     5 V DC at 1 mA       • for signal °T     5 V DC at 2.5 mA       Input voltage     •       • for signal °T     5 V DC at 2.5 mA       Input voltage     •       • for signal °T, typ.     4 mA; nominal       Input delay (for rated value of input voltage)     •       for sindard inputs     •       • parameterizable     0.1/0.2/0.4/0.8/1.8/3.2/6.4/10.0/12.8/2.00 µs; 0.05/0.1/0.2/0.4/0       • at °0* to °1*, min.     0.2 ms       • at °0* to °1*, max.     12.8 ms       for itechnological functions     •       • parameterizable     Single phase : 3 @ 100 kHz, differential: 3 @ 20 kHz       Cable length </td <td>Outputs, adjustable</td> <td>1 kbyte</td>	Outputs, adjustable	1 kbyte
Time of day         Clock         • Hardware clock (real-lime)       Yes         • Backup time       480 h; Typical         • Deviation per day, max.       490 s/month at 25 °C         Digital inputs       6; Integrated         • of which inputs usable for technological functions       6; HSC (High Speed Counting)         Source/sink input       Yes         Number of digital inputs       6         Input voltage       6         • of which inputs usable for technological functions       6         Input voltage       6         • for signal °C*       54 V         • for signal °C*       52 V C at 1 mA         • for signal °C*       52 V C at 25 mA         Input current       6         • for signal °C*       50 C at 25 mA         Input current       01/02/04/08/16/32/64/100/128/200 µs; 0.05/0.1/02/0.4/         • for signal °C*       0.1/02/0.4/0.8/16/32/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/         • at °C* to °T*, min.       0.2 ms         - at °C* to °T*, min.       0.2 ms         - at °C* to °T*, max.       12.8 ms         for interrupt inputs       -         - parameterizable       Yes         for interrupt inputs       Yes         - param	Hardware configuration	
Clock <ul> <li>Hardware clock (real-time)</li> <li>Yes</li> <li>Backup time</li> <li>Bockup time</li> <li>Deviation per day, max.</li> <li>480 h; Typical</li> <li>460 stmonth at 25 °C</li> <li>Digital inputs</li> <li>of which inputs usable for technological functions</li> <li>6; Integrated</li> <li>6; Integrated</li> <li>6; Hist (High Speed Counting)</li> <li>Source/sink input</li> <li>Yes</li> <li>Number of simultaneously controllable inputs</li> <li>all mounting positions</li> <li>— up to 40 °C, max.</li> <li>6</li> <li>Input voltage</li> <li>• Fated value (PC)</li> <li>24 V</li> <li>• for signal °1°</li> <li>• for signal °1°, typ.</li> <li>4 mA; nominal</li> <li>Input delay (for rated value of input voltage)</li> <li>for standard inputs</li> <li>— parameterizable</li> <li>0.1/0.2/0.4/0.8/16/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/0.8/16/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/0.8/1.8/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1</li></ul>	Number of modules per system, max.	3 communication modules, 1 signal board
• Hardware clock (real-time)     Yes       • Backup time     400 h; Typical       • Deviation per day, max.     400 simonth at 25 °C       Digital inputs     6; Integrated       • of which inputs usable for technological functions     6; Integrated       • of which inputs usable for technological functions     6; IHSC (High Speed Counting)       Source/sink input     Yes       Number of simultaneously controllable inputs     all mounting positions	Time of day	
• Backup time     480 h; Typical       • Deviation per day, max.     480 s/month at 25 °C       Digital inputs     6; Integrated       • of which inputs usable for technological functions     6; IHSC (High Speed Counting)       Source/sink input     Yes       Number of simultaneously controllable inputs     6       all mounting positions	Clock	
Deviation per day, max.     ±80 s/month at 25 °C      Digital inputs      Number of digital inputs         e.f which inputs usable for technological functions         6; IHSC (High Speed Counting)      Source/sink input     Yes  Number of simultaneously controllable inputs     all mounting positions	Hardware clock (real-time)	Yes
Digital inputs       6: Integrated         • of which inputs usable for technological functions       6; HSC (High Speed Counting)         Source/sink input       Yes         Number of simultaneously controllable inputs       all mounting positions        up to 40°C, max.       6         Input voltage       6         • Rated value (DC)       24 V         • for signal *0°       5 V DC at 1 mA         • for signal *1°, typ.       4 mA; nominal         Input current       0.1/0.2/0.4/0.8/1.8/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/         • for signal *1°, typ.       4 mA; nominal         Input delay (for rated value of input voltage)       1.16/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/         • for signal *1°, typ.       4 mA; nominal         Input delay (for rated value of input voltage)       1.16/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/         • at *0° to *1°, min.       0.2 ms        at *0° to *1°, max.       1.28 ms         for interrupt inputs       -        parameterizable       Yes         for technological functions       -        parameterizable       Yes         for technological functions       -        parameterizable       Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz         Ca	Backup time	480 h; Typical
Number of digital inputs       6; Integrated         • of which inputs usable for technological functions       6; HSC (High Speed Counting)         Source/sink input       Yes         Number of simultaneously controllable inputs       all mounting positions	<ul> <li>Deviation per day, max.</li> </ul>	±60 s/month at 25 °C
• of which inputs usable for technological functions       6; HSC (High Speed Counting)         Source/sink input       Yes         Number of simultaneously controllable inputs       all mounting positions         -up to 40°C, max.       6         Input voltage       6         • Arated value (DC)       24 V         • for signal "0"       5 V DC at 1 mA         • for signal "1"       15 V DC at 2.5 mA         Input current       •         • for signal "1", typ.       4 mA; nominal         Input delay (for rated value of input voltage)       5 V DC at 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10	Digital inputs	
Source/sink input       Yes         Number of simultaneously controllable inputs       all mounting positions         -up to 40 °C, max.       6         Input voltage       6         • Rated value (DC)       24 V         • for signal *0°       5 V DC at 1 mA         • for signal *1°       15 V DC at 2.5 mA         Input current       4 mA; nominal         Input delay (for rated value of input voltage)       6         for signal *1°, typ.       4 mA; nominal         Input delay (for rated value of input voltage)       6         for standard inputs       0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4	Number of digital inputs	6; Integrated
Number of simultaneously controllable inputs         all mounting positions         -up to 40 °C, max.         6         Input voltage         • Rated value (DC)       24 V         • for signal "0"       5 V DC at 1 mA         • for signal "1", typ.       4 mA; nominal         Input delay (for rated value of input voltage)         for standard inputs         - parameterizable         0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 µs; 0.2 @	<ul> <li>of which inputs usable for technological functions</li> </ul>	6; HSC (High Speed Counting)
all mounting positions       6         Input voltage       6         Input voltage       24 V         • Rated value (DC)       24 V         • for signal "0"       5 V DC at 1 mA         • for signal "1"       15 V DC at 2.5 mA         Input durrent       6         • for signal "1", typ.       4 mA; nominal         Input delay (for rated value of input voltage)       6         for standard inputs       0.1/0.2/0.4/0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/         - parameterizable       0.8/1.6/3.2/6.4/10.0/12.8/20.0 ms         - at "0" to "1", min.       0.2 ms         - at "0" to "1", max.       12.8 ms         for interrupt inputs       -         - parameterizable       Yes         for interrupt inputs       -         - parameterizable       Yes         for interrupt inputs       -         - parameterizable       Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz         Cable length       -         • nushielded, max.       300 m; 50 m for technological functions         • unshielded, max.       300 m; 50 m for technological functions         • unshielded, max.       2 A         • on lamp load, max.       30W with DC, 200 W with AC         Ou	Source/sink input	Yes
	Number of simultaneously controllable inputs	
Input voltage         • Rated value (DC)       24 V         • for signal "0"       5 V DC at 1 mA         • for signal "1"       15 V DC at 2.5 mA         Input current       • for signal "1", typ.         • for signal "1", typ.       4 mA; nominal         Input delay (for rated value of input voltage)       • for signal "1", min.         • or infor interrupt inputs       0.1/0.2/0.4/0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/         • at "0" to "1", max.       12.8 ms         for interrupt inputs       -         • parameterizable       0.1/0.2/0.4/0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/         0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/       0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/         • at "0" to "1", max.       12.8 ms         for interrupt inputs       -         • parameterizable       Yes         for technological functions       -         • parameterizable       Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz         Cable length       -         • shielded, max.       500 m; 50 m for technological functions         • unshielded, max.       300 m; for technological functions: No         Digital outputs       4; Relays         Switching capacity of the outputs       -	all mounting positions	
• Rated value (DC)       24 V         • for signal "0"       5 V DC at 1 mA         • for signal "1"       15 V DC at 2.5 mA         Input current       4 mA; nominal         • for signal "1", typ.       4 mA; nominal         Input delay (for rated value of input voltage)       6 or standard inputs         • parameterizable       0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 20.0 µs; 0.05 / 0.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 20.0 µs; 0.5 / 0.0	— up to 40 °C, max.	6
<ul> <li>for signal "0"</li> <li>for signal "1"</li> <li>15 V DC at 1 mA</li> <li>for signal "1"</li> <li>15 V DC at 2.5 mA</li> <li>Input current</li> <li>for signal "1", typ.</li> <li>4 mA; nominal</li> <li>Input delay (for rated value of input voltage)</li> <li>for standard inputs</li> <li>- parameterizable</li> <li>0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 ms</li> <li>- at "0" to "1", max.</li> <li>1.2 8 ms</li> <li>for interrupt inputs</li> <li>- at "0" to "1", max.</li> <li>1.2 8 ms</li> <li>for interrupt inputs</li> <li>- parameterizable</li> <li>Yes</li> <li>for technological functions</li> <li>- parameterizable</li> <li>Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz</li> <li>Cable length</li> <li>shielded, max.</li> <li>solo m; 50 m for technological functions</li> <li>unshielded, max.</li> <li>300 m; for technological functions: No</li> <li>Digital outputs</li> <li>with resistive load, max.</li> <li>on lamp load, max.</li> <li>Output delay with resistive load</li> <li>Yes</li> </ul>	Input voltage	
• for signal "1"       15 V DC at 2.5 mA         Input current       4 mA; nominal         Input delay (for rated value of input voltage)       6 for signal "1", typ.         for standard inputs       0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µ	Rated value (DC)	24 V
Input current       4 mA; nominal         Input delay (for rated value of input voltage)       4 mA; nominal         for standard inputs       0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 16.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 10.6 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 10.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 2.8 ms         for interrupt inputs	• for signal "0"	5 V DC at 1 mA
• for signal "1", typ.       4 mA; nominal         Input delay (for rated value of input voltage)         for standard inputs         parameterizable       0.1/0.2/0.4/0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/         at "0" to "1", min.       0.2 ms         at "0" to "1", max.       0.2 ms         at "0" to "1", max.       12.8 ms         for interrupt inputs       -         parameterizable       Yes         for technological functions       -         parameterizable       Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz         Cable length       -         • shielded, max.       500 m; 50 m for technological functions         • unshielded, max.       300 m; for technological functions: No         Digital outputs       4; Relays         Switching capacity of the outputs       4; Relays         • with resistive load, max.       2 A         • on lamp load, max.       30 W with DC, 200 W with AC         Output delay with resistive load       -	• for signal "1"	15 V DC at 2.5 mA
Input delay (for rated value of input voltage)         for standard inputs	Input current	
for standard inputs       0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 20.0 µs; 0.02 / 0.4 / 20.0 µs; 0.0 W with AC         Output delay with resistive load       2 A       30 W with DC, 200 W with AC	<ul> <li>for signal "1", typ.</li> </ul>	4 mA; nominal
parameterizable0.1/0.2/0.4/0.8/1.6/3.2/6.4/10.0/12.8/20.0 µs; 0.05/0.1/0.2/0.4/ 0.8/1.6/3.2/6.4/10.0/12.8/20.0 ms at "0" to "1", min.0.2 ms at "0" to "1", max.12.8 msfor interrupt inputs12.8 ms parameterizableYesfor technological functions	Input delay (for rated value of input voltage)	
0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 ms at "0" to "1", min.0.2 ms at "0" to "1", max.12.8 msfor interrupt inputs parameterizable parameterizableYesfor technological functions parameterizable parameterizableSingle phase : 3 @ 100 kHz, differential: 3 @ 80 kHzCable length shielded, max shielded, max.500 m; 50 m for technological functions unshielded, max.300 m; for technological functions: NoDigital outputs4; RelaysSwitching capacity of the outputs2 A with resistive load, max.2 A on lamp load, max.300 W with DC, 200 W with ACOutput delay with resistive load	for standard inputs	
at "0" to "1", max.       12.8 ms         for interrupt inputs       parameterizable         parameterizable       Yes         for technological functions       parameterizable         parameterizable       Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz         Cable length       shielded, max.         • shielded, max.       500 m; 50 m for technological functions         • unshielded, max.       300 m; for technological functions: No         Digital outputs       4; Relays         Switching capacity of the outputs       2 A         • with resistive load, max.       30 W with DC, 200 W with AC         Output delay with resistive load	— parameterizable	0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 ms
for interrupt inputs		
— parameterizable       Yes         for technological functions	— at "0" to "1", max.	12.8 ms
for technological functions         — parameterizable       Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz         Cable length         • shielded, max.       500 m; 50 m for technological functions         • unshielded, max.       300 m; for technological functions: No         Digital outputs       4; Relays         Switching capacity of the outputs       4; Relays         • with resistive load, max.       2 A         • on lamp load, max.       30 W with DC, 200 W with AC         Output delay with resistive load       4	for interrupt inputs	
— parameterizable       Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz         Cable length       • shielded, max.         • shielded, max.       500 m; 50 m for technological functions         • unshielded, max.       300 m; for technological functions: No         Digital outputs       4; Relays         Switching capacity of the outputs       4; Relays         • with resistive load, max.       2 A         • on lamp load, max.       30 W with DC, 200 W with AC         Output delay with resistive load	·	Yes
Cable length       500 m; 50 m for technological functions         • shielded, max.       300 m; for technological functions: No         Digital outputs       300 m; for technological functions: No         Number of digital outputs       4; Relays         Switching capacity of the outputs       4; Relays         • with resistive load, max.       2 A         • on lamp load, max.       30 W with DC, 200 W with AC         Output delay with resistive load       4		
• shielded, max.       500 m; 50 m for technological functions         • unshielded, max.       300 m; for technological functions: No         Digital outputs       300 m; for technological functions: No         Number of digital outputs       4; Relays         Switching capacity of the outputs       4; Relays         • with resistive load, max.       2 A         • on lamp load, max.       30 W with DC, 200 W with AC         Output delay with resistive load       4	· ·	Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz
• unshielded, max.       300 m; for technological functions: No         Digital outputs       Vertice         Number of digital outputs       4; Relays         Switching capacity of the outputs       Vertice         • with resistive load, max.       2 A         • on lamp load, max.       30 W with DC, 200 W with AC         Output delay with resistive load       Vertice		
Digital outputs       4; Relays         Number of digital outputs       4; Relays         Switching capacity of the outputs       4; Relays         • with resistive load, max.       2 A         • on lamp load, max.       30 W with DC, 200 W with AC         Output delay with resistive load       4		-
Number of digital outputs       4; Relays         Switching capacity of the outputs       •         • with resistive load, max.       2 A         • on lamp load, max.       30 W with DC, 200 W with AC         Output delay with resistive load       •		300 m; for technological functions: No
Switching capacity of the outputs         • with resistive load, max.         • on lamp load, max.         Output delay with resistive load		
with resistive load, max.     on lamp load, max.     Output delay with resistive load		4; Relays
on lamp load, max. 30 W with DC, 200 W with AC Output delay with resistive load	Switching capacity of the outputs	
Output delay with resistive load	<ul> <li>with resistive load, max.</li> </ul>	2 A
	• on lamp load, max.	30 W with DC, 200 W with AC
• "0" to "1", max. 10 ms; max.	Output delay with resistive load	
	• "0" to "1", max.	10 ms; max.

	10
• "1" to "0", max.	10 ms; max.
Relay outputs	
Number of relay outputs	4
<ul> <li>Number of operating cycles, max.</li> </ul>	mechanically 10 million, at rated load voltage 100 000
Cable length	
<ul> <li>shielded, max.</li> </ul>	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	
<ul> <li>shielded, max.</li> </ul>	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	
<ul> <li>Resolution with overrange (bit including sign), max.</li> </ul>	10 bit
Integration time, parameterizable	Yes
Conversion time (per channel)	625 µs
Encoder	
Connectable encoders	
2-wire sensor	Yes
1. Interface	
Interface type	PROFINET
Isolated	Yes
automatic detection of transmission rate	Yes
	Yes
Autoregotiation	Yes
Autocrossing	res
Interface types	Vec
RJ 45 (Ethernet)	Yes
<ul><li>Number of ports</li><li>integrated switch</li></ul>	1
	No
Protocols	N/
PROFINET IO Controller	Yes
PROFINET IO Device	Yes
SIMATIC communication	Yes
Open IE communication	Yes; Optionally also encrypted
Web server	Yes
Media redundancy	No
PROFINET IO Controller	
Transmission rate, max.	100 Mbit/s
Services	
— PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
<ul> <li>— Isochronous mode</li> </ul>	No
— IRT	No
— PROFlenergy	No
— Prioritized startup	Yes
<ul> <li>Number of IO devices with prioritized startup, max.</li> </ul>	16
<ul> <li>Number of connectable IO Devices, max.</li> </ul>	16
- Number of connectable IO Devices for RT, max.	16
— of which in line, max.	16
- Activation/deactivation of IO Devices	Yes
<ul> <li>Number of IO Devices that can be simultaneously activated/deactivated, max.</li> </ul>	8
— Updating time	The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.

PROFINET IO Device	
Services	
— PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
— Isochronous mode	No
— ISCENTOROUS MIDDE — IRT	No
— PROFlenergy	Yes
— Shared device	Yes
<ul> <li>— Number of IO Controllers with shared device, max.</li> </ul>	2
Protocols	2
Supports protocol for PROFINET IO	Yes
PROFIsafe	No
PROFIBUS	Yes; CM 1243-5 (master) or CM 1242-5 (slave) required
OPC UA	Yes; OPC UA Server
AS-Interface	Yes; CM 1243-2 required
Protocols (Ethernet)	165, ONI 1240-2 Tequired
• TCP/IP	Yes
• DHCP	No
• SNMP	Yes
• SNMP • DCP	Yes
• DCP • LLDP	Yes
Redundancy mode	
Media redundancy — MRP	No
	No
MRPD SIMATIC communication	No
	Vec
• S7 routing	Yes
Open IE communication	Vec
• TCP/IP	Yes
— Data length, max.	8 kbyte
— several passive connections per port, supported	Yes
• ISO-on-TCP (RFC1006)	Yes
— Data length, max.	8 kbyte
• UDP	Yes
— Data length, max.	1 472 byte
Web server	N .
• supported	Yes
User-defined websites	Yes
OPC UA	
Runtime license required	Yes; "Basic" license required
OPC UA Server	Yes; data access (read, write, subscribe), method call, runtime license required
<ul> <li>Application authentication</li> </ul>	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256
- User authentication	"anonymous" or by user name & password
- Number of sessions, max.	10
<ul> <li>Number of subscriptions per session, max.</li> </ul>	5
— Sampling interval, min.	100 ms
— Publishing interval, min.	200 ms
<ul> <li>— Number of server methods, max.</li> </ul>	20
<ul> <li>Number of server methods, max.</li> <li>Number of monitored items, recommended max.</li> </ul>	1 000
<ul> <li>Number of monitored items, recommended max.</li> <li>Number of server interfaces, max.</li> </ul>	2
<ul> <li>Number of server interfaces, max.</li> <li>Number of nodes for user-defined server interfaces,</li> </ul>	2 000
max.	
Further protocols	
MODBUS	Yes
communication functions / header	
S7 communication	
• supported	Yes
• as server	Yes
• as client	Yes
User data per job, max.	See online help (S7 communication, user data size)
• Oser data per job, max. Number of connections	

PG Connections: 4 reserved / 4 max; HMI Connections: 12 reserved / 18 max; S7 Connections: 8 reserved / 14 max; Open User Connections: 8 reserved / 14 max; Web Connections: 2 reserved / 30 max; OPC UA Connections: 0 reserved / 10 max; Total Connections: 34 reserved / 68 max

Test commissioning functions	
Status/control	
Status/control variable	Yes
Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	
Forcing	Yes
Diagnostic buffer	
• present	Yes
Traces	
Number of configurable Traces	2
Memory size per trace, max.	512 kbyte
•	512 kbyle
Interrupts/diagnostics/status information	
Diagnostics indication LED	
RUN/STOP LED	Yes
• ERROR LED	Yes
MAINT LED	Yes
Integrated Functions	
Counter	
Number of counters	6
<ul> <li>Counting frequency, max.</li> </ul>	100 kHz
Frequency measurement	Yes
controlled positioning	Yes
Number of position-controlled positioning axes, max.	8
Number of positioning axes via pulse-direction interface	Up to 4 with SB 1222
PID controller	Yes
Number of alarm inputs	4
Potential separation	7
Potential separation digital inputs	
Potential separation digital inputs	500 V AC for 1 minute
<ul> <li>between the channels, in groups of</li> </ul>	1
Potential separation digital outputs	
<ul> <li>Potential separation digital outputs</li> </ul>	Relays
<ul> <li>between the channels</li> </ul>	No
<ul> <li>between the channels, in groups of</li> </ul>	1
EMC	
Interference immunity against discharge of static electricity	
<ul> <li>Interference immunity against discharge of static electricity acc. to IEC 61000-4-2</li> </ul>	Yes
— Test voltage at air discharge	8 kV
Test voltage at contact discharge	6 kV
Interference immunity to cable-borne interference	
<ul> <li>Interference immunity on supply lines acc. to IEC 61000- 4-4</li> </ul>	Yes
<ul> <li>Interference immunity on signal cables acc. to IEC 61000- 4-4</li> </ul>	Yes
Interference immunity against voltage surge	
<ul> <li>Interference immunity on supply lines acc. to IEC 61000- 4-5</li> </ul>	Yes
Interference immunity against conducted variable disturbance indu	ced by high-frequency fields
<ul> <li>Interference immunity against high-frequency radiation acc. to IEC 61000-4-6</li> </ul>	Yes
Emission of radio interference acc. to EN 55 011	
Limit class A, for use in industrial areas	Yes; Group 1
Limit class A, for use in residential areas	Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011
Degree and class of protection	
IP degree of protection	IP20
Standards, approvals, certificates	
Siemens Eco Profile (SEP)	Siemens EcoTech

CE mark	Yes
UL approval	Yes
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
Marine approval	Yes
Ecological footprint	
<ul> <li>environmental product declaration</li> </ul>	Yes; type II acc. to ISO 14021
Global warming potential	
<ul> <li>global warming potential, (total) [CO2 eq]</li> </ul>	69.5 kg
<ul> <li>global warming potential, (during production) [CO2</li> </ul>	12.6 kg
eq]	
— global warming potential, (during operation) [CO2 eq]	57.9 kg
— global warming potential, (after end of life cycle)	-1 kg
[CO2 eq]	i ky
Ambient conditions	
Free fall	
Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• min.	-20 °C
• max.	60 °C
<ul> <li>horizontal installation, min.</li> </ul>	-20 °C
horizontal installation, max.	60 °C
vertical installation, min.	-20 °C
vertical installation, max.	50 °C
Ambient temperature during storage/transportation	
min.	-40 °C
• max.	70 °C
	10 C
Air pressure acc. to IEC 60068-2-13	705 hDa
Operation, min.	795 hPa
Operation, max.	1 080 hPa
Storage/transport, min.	660 hPa
Storage/transport, max.	1 080 hPa
Altitude during operation relating to sea level	4 000
Installation altitude, min.	-1 000 m
Installation altitude, max.	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Relative humidity	
• Operation, max.	95 %; no condensation
Vibrations	
<ul> <li>Vibration resistance during operation acc. to IEC 60068- 2-6</li> </ul>	2 g (m/s <sup>2</sup> ) wall mounting, 1 g (m/s <sup>2</sup> ) DIN rail
	Vec
Operation, tested according to IEC 60068-2-6      Shock testing	Yes
shock testing	Vec: IEC 68, Part 2, 27 half since strength of the sheek 15 a (pack value)
• tested according to IEC 60068-2-27	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms
Pollutant concentrations	
<ul> <li>SO2 at RH &lt; 60% without condensation</li> </ul>	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
configuration / header	
configuration / programming / header	
Programming language	
— LAD	Yes
— FBD	Yes
— FBD — SCL	Yes
Know-how protection	
	Voc
User program protection/password protection	Yes
Copy protection	Yes
Block protection	Yes
Access protection	
protection of confidential configuration data	Yes
<ul> <li>Protection level: Write protection</li> </ul>	Yes

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

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

### Approvals / Certificates

#### General Product Approval

CE EG-Konf.	UK CA	<u>Manufacturer Declara-</u> <u>tion</u>	<u>Miscellaneous</u>		Metrological Approval
General Product Appro	val		EMV	For use in hazardous	locations
KC	<u>Miscellaneous</u>	RCM	RCM	KEX ATEX	<u>EM</u>
Marine / Shipping					
BUREAU VERITAS		Llovd's Register uis	<u>NK / Nippon Kaiji Ky-</u> <u>okai</u>	RINA	RMRS
Marine / Shipping		Environment		Industrial Communic	ation
CCS (China Classifica- tion Society)	KR	Siemens EcoTech	EPD	<u>PROFINET</u>	

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