## SIEMENS

## Data sheet

## 6ES7215-1HF40-0XB0



SIMATIC S7-1200F, CPU 1215 FC, compact CPU, DC/DC/relay, 2 PROFINET ports, onboard I/O: 14 DI 24 V DC; 10 DO relay 2 A, 2 AI 0-10 V DC, 2 AO 0-20 mA DC, power supply: DC 20.4-28.8 V DC, program/data memory 250 KB



Figuresimilar

General information	
Product type designation	CPU 1215FC DC/DC/relay
Firmware version	V4.6
Engineering with	
<ul> <li>Programming package</li> </ul>	STEP 7 V18 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
<ul> <li>permissible range, upper limit (DC)</li> </ul>	28.8 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
l²t	0.5 A <sup>2</sup> ·s
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	250 kbyte
Load memory	
integrated	4 Mbyte
<ul> <li>Plug-in (SIMATIC Memory Card), max.</li> </ul>	with SIMATIC memory card
Backup	
• present	Yes
maintenance-free	Yes

CPU processing times         Constraints           for bit operations, typ.         0.0 kp, / instruction           for found operations, typ.         1.7 µs, / instruction           for found operations, typ.         2.3 µs, / instruction           CPU blocks         Environmental types           Other types         2.3 µs, / instruction           CB         United only by RAM for code           CB         Elemental their restentions           Felder CB         Bit byte:           CB         Elemental their restentions           CD stopic adjusted         1 kbyte           Process image         1 kbyte           Import, adjusted         1 kbyte           Cock         The of day           Cock         Cock           Verther of digit inputs         4// integrated           - Indivi	without battery	Yes
Tor Dispectations, typ.         0.08 jpc/instruction           for Processions, typ.         0.08 jpc/statution           for Moding point anthmetic, typ.         2.3 jpc/instruction           CPU2-blocks, (0.04)         DBs, PCA, FBs, counters and times. The maximum number of addressable terminary can be used.           CPU2-blocks, (0.04)         DBs, PCA, FBs, counters and times. The maximum number of addressable terminary can be used.           CPU2-blocks, (0.04)         DBs, PCA, FBs, counters and times. The maximum number of addressable terminary can be used.           CPU2-blocks, (0.04)         DBs, PCA, FBs, counters and times. The maximum number of addressable terminary can be used.           CPU2-blocks, max.         DBs, PCA, FBs, counters and times. The maximum number of addressable terminary can be used.           CPU2-blocks, max.         DBs, PCA, FBs, counters and times. The maximum number of addressable terminary can be used.           CPU2-blocks, max.         DBs, PCA, FBs, counters and times. The maximum number of addressable terminary can be used.           CPU2-blocks, max.         DBs, PCA, FBs, counters and times. The maximum number of addressable terminary can be used.           CPU2-blocks, max.         DBs, PCA, FBs, counters, Bay, FBA, FBA, FBA, FBA, FBA, FBA, FBA, FBA		
Interventions, typ.         1.1 µs./ Hathurdion           Or floating point arithmetic, typ.         2.3 µs./ Hathurdion           OPU-Backats         DBs, FCR, FEB, counters and times; The maximum number of addressable braining can be used.           ON         DBs, FCR, FEB, counters and times; The maximum number of addressable braining can be used.           ON         DBs, FCR, FEB, counters and times; The maximum number of addressable braining can be used.           ON         Number of backs (total)           ON         Extended only by RAM for code           Data arcas and their related with?         FRein Web Code           Number of backs, total         16 ktyle; Stee of bit memory address area           Local dati         10 kkyle; Plointy class. Tak.           Outputs, adjustable         1 ktyle           Process image         10 kkyle; Plointy class. 1 (program cycle): 10 KB, priority class 2 to 26.0 KB           Address area         10 kkyle; Plointy class. 1 (program cycle): 10 KB, priority class 2 to 26.0 KB           Address area         10 kkyle; Plointy class. 1 (program cycle): 10 KB, priority class. 2 to 26.0 KB           Address area         10 kkyle; Plointy class. 1 (program cycle): 10 KB, priority class. 2 to 26.0 KB           Address area         10 kkyle; Plointy class. 1 (program cycle): 10 KB, priority class. 2 to 26.0 KB           Address area         10 ktyle; Plointy class. 1 (program cycle): 10 KB,		0.08 us: / instruction
for foculty paint aritimetic, typ.       2.3 µc / instruction         CPU-blocks       DBs, FCs, FBs, contracts and times in an endition, the dational stability of the s		
CPUENDAY         Control           Number of blocks (lotal)         DB, FCA, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to \$535. There is no restriction, the entire working memory can be used           OB         Number, max.         Limited only by RAM for code           State areas and their retentivity         Bkyte: Size of bit memory address area           Icolat areas         Bkyte: Size of bit memory address area           Locat area         Bkyte: Size of bit memory address area           Locat area         The kit with the origin of the size of bit memory address area           Locat area         The vite of address area           Process image         1 kkyte: Photty class 1 (grogram cycle): 16 KB, priotity class 2 to 26. 6 KB           Address area         The of address area           Clock         1 kkyte:           Hardware clock (real-time)         3 comm. modules, 1 signal board, 8 signal modules           Time of aly         Clock           Clock         4 brites priotitic           Hardware clock (real-time)         4 brites priotitic           Boktyte priotitic         3 comm. modules, 1 signal board, 8 signal modules           Time of aly         Clock           Vest         4 brites priotitic           Number of algoin loputa         6 it ISC (High Speed Counting)		
Number of blocks (total)         DBs. FCs. FBs. counters and smess. The maximum number of addressable blocks may form to block stages from 1.06 s353. There is no restriction, the online working memory can be used           OB         • Number, max.         United only by RAM for code           Obs. FCs. FBs. counters and smess. The maximum number of addressable blocks may form the used         • Earl profile data area and their retention of the online working           Obs. FCs. FBs. counters, max.         14 kbyte         • Earl profile data area and their retention of the online working           • Sis, naz.         3 kbyte: Size of bit memory address area         • Earl profile data area and their retention of the online working           • Per profile data.         16 kbyte: Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB           Address area         • Per profile data.         16 kbyte: Size of bit memory address area           • Process mage.         • Involts, adjustable         1 kbyte           • Outputs, adjustable         1 kbyte         1 kbyte           • Outputs, adjustable         1 kbyte         1 kbyte           • Backup line         480 h; Typical         480 h; Typical           • Backup line         49 h; Typical         1 kbyte           • Backup line         49 h; Typical         1 kbyte           • Or angla input         Yes         Number of adjustable activatin the output of therubologica		2.3 µs; / instruction
block ranges from 1 to 6535. There is no restriction, the antire working memory on 1 to used  • Number, max. Limited only by RAM for code  Otat areas and their referencing (a second se		
Image         Limited only by RAM for code           Data areas and their reservicity         Extensive data are (Incl. times, counters, flags), max.         14 ktyle           Flag         •         Size, max.         8 ktyle; Size of bit memory address area           Local data         •         16 ktyle; Priority class i (program cycle): 16 KB, priority class 2 to 26: 6 KB           Address area         •         16 ktyle; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB           Address area         •         16 ktyle; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB           Address area         •         16 ktyle; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB           Address area         •         16 ktyle; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB           Address area         •         16 ktyle; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB           Address area         •         16 ktyle; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB           Address area         •         16 ktyle; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB           Address area         •         16 ktyle; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB           Class area         •         16 ktyle; Priority class 1 (program cycle): 16 KB, priority class 2 (program cycle): 16 KB,	Number of blocks (total)	blocks ranges from 1 to 65535. There is no restriction, the entire working
Optimized at a rate (incl. threes, counters, flags), max.         14 kbyte           Fileg         14 kbyte           • Size, max.         8 kbyte; Size of bit memory address area           Local data         • per priority class, max.           • Address, area         16 kbyte; Priority class 1 (program cycle); 16 KB, priority class 2 to 28; 6 KB           Address, area         • Process image           • Inputs, adjustable         1 kbyte           • Outputs, adjustable         1 kbyte           • Bidd Inputs         • Signal Modules           • Bidd Inputs         14 (integrated           • Outputs, adjustable         14 (integrated           • outputs outputs         14 (integrated <t< td=""><td>OB</td><td></td></t<>	OB	
Retentive data area (incl. timers, counters, flags), max.     14 kbyte       Flag <ul> <li>Size, max.</li> <li>b kbyte, Size of bit memory address area</li> <li>per priority class, max.</li> <li>10 kbyte, Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB</li> <li>Address area</li> <li>Process image</li> <li>inputs, adjustable</li> <li>1 kbyte</li> <li>1 kbyte</li> <li>Address area</li> <li>Process image</li> <li>inputs, adjustable</li> <li>1 kbyte</li> <li>1 kbyte<td>Number, max.</td><td>Limited only by RAM for code</td></li></ul>	Number, max.	Limited only by RAM for code
Flag <ul> <li>Bize, max.</li> <li>B kbyte: Size of bit memory address area</li> <li>Local data</li> <li>per priority class, max.</li> <li>B kbyte: Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB</li> <li>Address area</li> </ul> Process image <ul> <li>It kbyte: Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB</li> <li>Address area</li> </ul> Process image <ul> <li>It kbyte</li> <li>Clock adjustable</li> <li>I kbyte</li> </ul> Vers data distable <ul> <li>Kbyte</li> </ul> Vers data distable <ul> <li>Kbyte</li> <li>Hardware dock (real-time)</li> <li>Yes</li> <li>Backup time</li> <li>48 bit Typical</li> <li>Adb thy Typical</li> <li>Borkup time</li> <li>Adb thy Typical</li> <li>Orgetal inputs</li> <li>Advitable for technological functions</li> <li>FiRSC (High Speed Counting)</li> </ul> Sourcevalue, input         Yes           Number of anitianeously controllable inputs <ul> <li>Hardware dock (real-time)</li> <li>Yes</li> <li>Clock</li> <li>Adv 'Go, max.</li> <li>Input delay (for rated value (DC)</li> <li>Yes</li> <li>For signal '1"</li> <li>How to 'Co, max.</li> <li>For sindord input voltage)</li> <li>for interrupt inputs<td>Data areas and their retentivity</td><td></td></li></ul>	Data areas and their retentivity	
• Size, max.       8 kbyle; Size of bit memory address area         Local data       • per priority class, max.       16 kbyle; Priority class 1 (program cycle); 16 KB, priority class 2 to 26; 6 KB         Address area       • Percoss image         • Inputs, adjustable       1 kbyle         • Unputs, adjustable       1 kbyle         • Inputs, adjustable       1 kbyle         • Inputs, adjustable       1 kbyle         • Markara configuration       • Class         • Inputs, adjustable       1 kbyle         • Hardware clock (real-line)       Yes         • Backup the me       460 h. Typical         • Deviation per day, max.       ±60 smonth at 25 °C         Objetal inputs       14, Integrated         • of which inputs usable for technological functions       6, HSC (High Speed Counting)         Source sink, input       Yes         Number of isinultaneously controllable inputs       14         • for signal "O"       5 V DC at 1 mA         • for signal "O"       5 V DC at 1 mA         • for signal "O"       5 V DC at 2 sm         • for signal "O"       5 V DC at 2 sm         • for signal "O"       5 V DC at 2 sm         • for signal "O"       5 V DC at 2 sm         • for signal "O"       5 V DC at 2 sm </td <td>Retentive data area (incl. timers, counters, flags), max.</td> <td>14 kbyte</td>	Retentive data area (incl. timers, counters, flags), max.	14 kbyte
Load data      Process image      Inputs, adjustable     Introver configuration     Inputs, adjustable     Interviewer configuration     Inputs, adjustable     Interviewer configuration     Inputs, adjustable     Interviewer configuration     Input delay (for rated value of input voltage)     Input delay (for rated value of input v	Flag	
• per priority class, max.     16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB Address area  Process image      • Inputs. adjustable     • I kbyte     • Outputs, adjustable     • Outputs, a	• Size, max.	8 kbyte; Size of bit memory address area
Address area         Process image         • Inputs, adjustable         • Inputs, adjustable         Number of modules per system, max.         3 comm. modules, 1 signal board, 8 signal modules         Time of day         Clock         • Backup time         • Devision per day, max.         2 clock         • Division per day, max.         2 clock         • Orgetal inputs         Number of digital inputs         • Orgetal inputs         Number of simulaneously controllable inputs         • of which inputs suble for technological functions         • Input voltage         • Clock         • or signal "0"         • or signal "1"         Input voltage         • or signal "1"         • or signal "1"         • or signal "1", min,         • or signal "1", min,         • or at signal of there on the size and siz	Local data	
Process image         • Inputs, adjustable         • Inputs, adjustable         • Addres per system, max.         • Outputs, adjustable         Marker of modules per system, max.         • Ordputs, adjustable         • Inter of dag         • Outputs, adjustable         • Outputs	<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     Ikbyte     Outputs, adjustable     Ikbyte     Outputs, adjustable     Ikbyte     I	Address area	
<ul> <li>Inputs, adjustable</li> <li>I kbyte</li> <li>Outputs, adjustable</li> <li>I kbyte</li> <li>Hardware colock (real-size)</li> <li>Backup time</li> <li>Backup time time</li> <li>Backup time</li> <li>Backu</li></ul>		
Outputs, adjustable     Ikbyte     Hardware configuration     Number of modules per system, max.     Somen, modules, 1 signal board, 8 signal modules     Time of day     Clock     Idardware clock (real-time)     Ves     Backup time     Backup time     480 h; Typical     Boardware dock (real-time)     Ves     Backup time     Backup time     480 h; Typical     Backup time     Backup time     Abo h; Typical     Boardware dock (real-time)     Ves     Backup time     Backup time     Abo h; Typical     Backup time     Backup time     Abo h; Typical     Backup time     Backup time     Backup time     Abo h; Typical     Backup time     Backup time     Abo h; Typical     Backup time     Abo h; Typical     Backup time     Backup time     Abo h; Typical     Source/sink (nput     Ves     Number of digital inputs     If (integrated     Source/sink (nput     Ves     Number of simultaneously controllable inputs     all mounting positions     - up to 40 °C, max.     Input voltage     for signal °C     So VDC at 1 mA     input voltage     for signal °C     for signal °C     for signal °C     for tradet value of input voltage)     for signal °C     for tradet value of input voltage)     for signal °C     for tradet value of input voltage)     for tradet value of input voltage     for tradet value of input vo		1 kbyte
Hardware configuration         Number of modules per system, max.       3 comm. modules, 1 signal board, 8 signal modules         Time of day         Clock       480 hr. Typical <ul> <li>Eacky prime</li> <li>Source and the system</li> <li>Eacky prime</li> <li>Source and the system</li> <li>Eacky prime</li> <li>Source and the system</li> <li>Source and the system</li></ul>		
Number of modules per system, max.       3 comm. modules, 1 signal board, 8 signal modules         Time of day         Clock         • Hardware clock (real-time)       Yes         • Beakup time       480 h; Typical         • elvalidion per day, max.       ±00 simonth 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		
Time of day         Clock         • Hardware clock (real-time)       Yes         • Backup time       480 h; Typical         • Deviation per day, max.       480 h; Typical         • Objital 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 mouning positions		3 comm modules 1 signal board 8 signal modules
Clock <ul> <li>Hardware clock (real-time)</li> <li>Yes</li> <li>Backup time</li> <li>Deviation per day, max.</li> <li>Deviation per day, max.</li> <li>Swmoth at 25 °C</li> </ul> Digital inputs <ul> <li>Hardware clock (real-time)</li> <li>Swmoth at 25 °C</li> </ul> Digital inputs <ul> <li>Attorn the positions</li> <li>It (integrated</li> <li>Swmoth's truth input suble for technological functions</li> <li>Swmoth's input voltage</li> <li>Partice Value (DC)</li> <li>Ves</li> </ul> Number of signal °C <ul> <li>Attact value (DC)</li> <li>Ves: 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</li> <li>Or interrupt inputs</li> <li>— parameterizable</li> <li>Yes</li> <li>Ves</li> <li>Or interrupt inputs</li> <li>— parameterizable</li> <li>Yes</li> <li>Ves</li> <li>Or interrupt inputs</li> <li>— parameterizable</li> <li>Yes</li> <li>Solo m; 50 m for technological functions</li> <li>— parameterizable</li> <li>Yes</li> <li>Solo m; 50 m for technological functions</li> <li>— parameterizable</li> <li>Yes</li> <li>Solo m; 50 m for technological functions</li> <li>— parameterizable</li> <li>Yes</li> <li>Solo m; 50 m for technological functions</li> <li>Solo m; 50 m for technological functions</li> <li>Number of digital outputs</li> <li< td=""><td>· ·</td><td>o comm. moduloo, ir oignar bourd, o oignar moduloo</td></li<></ul>	· ·	o comm. moduloo, ir oignar bourd, o oignar moduloo
• Hardware clock (real-time)     Yes       • Backup time     480 h; Typical       • Deviation per day, max.     480 h; Typical       • Digital inputs     14; Integrated       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		
<ul> <li>Backup time</li> <li>Backup time</li> <li>Deviation per day, max.</li> <li>480 s/month at 25 °C</li> <li>Digital inputs</li> <li>of which inputs usable for technological functions</li> <li>Starter digital inputs</li> <li>of which inputs usable for technological functions</li> <li>HSC (High Speed Counting)</li> <li>Source/sink input</li> <li>Yes</li> <li>Number of signal °0°</li> <li>r- up to 40 °C, max.</li> <li>Input voltage</li> <li>Rated value (DC)</li> <li>24 V</li> <li>for signal °0°</li> <li>so V DC at 1 mA</li> <li>for signal °1°</li> <li>parameterizable</li> <li>- parameterizable</li> <li>- parameterizable</li> <li>Yes</li> <li>for itechnological functions</li> <li>- at °0° to °1°, max.</li> <li>12.8 ms</li> <li>for itechnological functions</li> <li>- parameterizable</li> <li>Yes</li> <li>Sole functions</li> <li>- parameterizable</li> <li>Yes</li> <li>Sole functions</li> <li>- parameterizable</li> <li>Single phase: 3 @ 100 kHz &amp; 3 @ 30 kHz, differential: 3 @ 80 kHz &amp; 3 @ 30 kHz</li> <li>Cable length</li> <li>shielded, max.</li> <li>solo m; 50 m for technological functions</li> <li>unshielded, max.</li> <li>solo m; 50 m for technological functions</li> <li>with resistive load, max.</li> <li>300 m; for technological functions: No</li> <li>Digital outputs</li> <li>with presistive load, max.</li> <li>30 W with DC, 200 W with AC</li> <li>Output delay with resistive load</li> <li>o° r or "1", max.</li> <li>10 m; max.</li> </ul>		Vac
• Deviation per day, max.        ±60 s/month at 25 °C             Pigfical inputs           • deviation input suable for technological functions         6; HSC (High Speed Counting)             Source/sink input        Yes             Number of simultaneously controllable inputs           Heritation             all mounting positions           -up to 40 °C, max.             -up to 40 °C, max.           14             Input voltage           -up to 40 °C, max.             • Rated value (DC)           24 V             for signal °1°           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           Yes; 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           Single phase: 3 @		
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         14           • Reted 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         Yes; 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           - parameterizable         Yes           of to technological functions         12.8 ms           for interrupt inputs         -           - parameterizable         Yes           of to technological functions         -           - parameterizable         Yes           for interrupt inputs         -           - parameterizable         Yes           for technological functions         -           - parameterizable         Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz		
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       all mounting positions	· · ·	±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       14         Input voltage       5 V DC at 1 mA         • for signal "0"       5 V DC at 2.5 mA         Input delay (for rated value of input voltage)       50 V DC at 2.5 mA         Input delay (for rated value of input voltage)       res (0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four         - parameterizable       Yes; 0.2 ms       0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four         - at "0" to "1", min.       0.2 ms       0.2 ms         - at "0" to "1", max.       12.8 ms       12.8 ms         for interrupt inputs       -       -         - parameterizable       Yes       Yes         for technological functions       Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz         • shielded, max.       500 m; 50 m for technological functions       30 m; 50 m for technological functions         • unshielded, max.       500 m; 50 m for technological functions       30 m; 50 m for technological functions         • with resistive load, max.       2 A <td< td=""><td></td><td></td></td<>		
Source/sink input       Yes         Number of simultaneously controllable inputs       all mounting positions         all mounting positions       14         Input voltage       Rated value (DC)       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)       for standard inputs         - parameterizable       Yes; 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       Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz         e shielded, max.       500 m; 50 m for technological functions         • unshielded, max.       500 m; 50 m for technological functions         • unshielded, max.       300 m; 50 m for technological functions         • unshielded, max.       2 A         Switching capacity of the outputs       10; Relays         Switching capacity of the outputs       2 A         • with resistive load, max.       2 A         • on lamp load, max.		-
Number of simultaneously controllable inputs         all mounting positions        up to 40 °C, max.         Input voltage         Rated value (DC)       24 V         if for signal "0"       5 V DC at 1 mA         if or signal "1"       15 V DC at 2.5 mA         Input delay (for rated value of input voltage)		
all mounting positions      up to 40 °C, max.       14         Input voltage      up to 40 °C, max.       14         Input voltage		Yes
up to 40 °C, max.       14         Input voltage		
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)       5 or standard inputs         - parameterizable       Yes; 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         Cable length       Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz         • shielded, max.       500 m; 50 m for technological functions         • unshielded, max.       300 m; for technological functions: No         Digital outputs       10; Relays         Switching capacity of the outputs       2 A         • on lamp load, max.       30 W with DC, 200 W with AC         Output delay with resistive load       10 ms; max.		
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         — 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 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30         kHz         Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30         kHz         Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30         kHz         Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30         kHz         shielded, max.         300 m; for technological functions         unshielded, max.         300 m; for technological functions         with resistive load, max.         2 A         on lamp load, max.         30 W with DC, 200 W with AC         Output delay with resistive load         wit		14
• for signal "0"5 V DC at 1 mA• for signal "1"15 V DC at 2.5 mAInput delay (for rated value of input voltage)15 V DC at 2.5 mAfor standard inputs- parameterizable- parameterizableYes; 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 msfor interrupt inputs- at "0" to "1", max parameterizableYesfor interrupt inputs- parameterizable- parameterizableYesfor technological functions- at 3@ 30 kHz, differential: 3@ 80 kHz & 3@ 30 kHz- parameterizableSingle phase: 3@ 100 kHz & 3@ 30 kHz, differential: 3@ 80 kHz & 3@ 30 kHzCable length- shielded, max.• shielded, max.500 m; 50 m for technological functions• unshielded, max.300 m; for technological functions: NoDigital outputs10; RelaysSwitching capacity of the outputs2 A• on lamp load, max.2 A• 0" to "1", max.10 ms; max.		
• for signal "1"       15 V DC at 2.5 mA         Input delay (for rated value of input voltage)       for standard inputs         • parameterizable       Yes; 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 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz         Cable length       -         • shielded, max.       500 m; 50 m for technological functions         • unshielded, max.       300 m; for technological functions: No         Digital outputs       -         Number of digital outputs       10; Relays         Switching capacity of the outputs       2 A         • on lamp load, max.       2 A         • on lamp load, max.       30 W with DC, 200 W with AC         Output delay	<ul> <li>Rated value (DC)</li> </ul>	24 V
Input delay (for rated value of input voltage)         for standard inputs	0	5 V DC at 1 mA
for standard inputs       Yes; 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         or parameterizable       Yes         or parameterizable       Yes         or technological functions          parameterizable       Yes         or parameterizable       Yes         or technological functions          parameterizable       Yes         Output delay, max.       500 m; 50 m for technological functions         or unshielded, max.       500 m; 50 m for technological functions         ourshielded, max.       300 m; for technological functions         ourshielded, max.       300 m; for technological functions         with resistive load, max.       10; Relays         Switching capacity of the outputs       2 A         on lamp load, max.       2 A         our lamp load, max.       30 W with DC, 200 W with AC         Output delay with resistive load		15 V DC at 2.5 mA
— parameterizable       Yes; 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	Input delay (for rated value of input voltage)	
groups of four at "0" to "1", min.0.2 ms at "0" to "1", max.12.8 msfor interrupt inputs12.8 ms parameterizableYesfor technological functionsSingle phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz parameterizableSingle phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHzCable length500 m; 50 m for technological functions• shielded, max.500 m; 50 m for technological functions• unshielded, max.300 m; for technological functions: NoDigital outputs10; RelaysSwitching capacity of the outputs2 A• with resistive load, max.30 W with DC, 200 W with ACOutput delay with resistive load10 ms; max.	for standard inputs	
- at "0" to "1", min.0.2 ms- at "0" to "1", max.12.8 msfor interrupt inputs parameterizableYesfor technological functions parameterizableSingle phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHzCable lengthSingle phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz• shielded, max.500 m; 50 m for technological functions• unshielded, max.300 m; for technological functions: NoDigital outputs10; RelaysSwitching capacity of the outputs2 A• with resistive load, max.30 W with DC, 200 W with ACOutput delay with resistive load10 ms; max.	— parameterizable	Yes; 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in
at "0" to "1", max.12.8 msfor interrupt inputsYes parameterizableYesfor technological functionsSingle phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz parameterizableSingle phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHzCable lengthKHz• shielded, max.500 m; 50 m for technological functions• unshielded, max.300 m; for technological functions: NoDigital outputs10; RelaysSwitching capacity of the outputs2 A• with resistive load, max.30 W with DC, 200 W with ACOutput delay with resistive load10 ms; max.		
for interrupt inputs         — parameterizable       Yes         for technological functions         — parameterizable       Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz         Cable length         • shielded, max.       500 m; 50 m for technological functions         • unshielded, max.       300 m; for technological functions: No         Digital outputs       10; 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       10 ms; max.		
— parameterizableYesfor technological functions— parameterizableSingle phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHzCable length• 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.300 m; for technological functions.• unshielded, max.300 m; for technological functions.• unshielded, max.10; RelaysNumber of digital outputs2 A• with resistive load, max.2 A• on lamp load, max.30 W with DC, 200 W with ACOutput delay with resistive load10 ms; max.• "0" to "1", max.10 ms; max.		12.8 ms
for technological functions         — parameterizable       Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz         Cable length         • shielded, max.       500 m; 50 m for technological functions         • unshielded, max.       300 m; for technological functions: No         Digital outputs       10; Relays         Number of digital outputs       10; Relays         • with resistive load, max.       2 A         • on lamp load, max.       30 W with DC, 200 W with AC         Output delay with resistive load       10 ms; max.		
— parameterizableSingle phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHzCable length• shielded, max.• shielded, max.500 m; 50 m for technological functions• unshielded, max.300 m; for technological functions: NoDigital outputsNumber of digital outputs10; RelaysSwitching capacity of the outputs2 A• with resistive load, max.30 W with DC, 200 W with ACOutput delay with resistive load10 ms; max.	· · · ·	Yes
kHz         Cable length         • shielded, max.         500 m; 50 m for technological functions         • unshielded, max.         300 m; for technological functions: No         Digital outputs         Number of digital outputs         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         • "0" to "1", max.		
Cable length         • shielded, max.         • unshielded, max.         300 m; for technological functions         Number of digital outputs         Number of digital outputs         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         • "0" to "1", max.	— parameterizable	
<ul> <li>shielded, max.</li> <li>unshielded, max.</li> <li>unshielded, max.</li> <li>300 m; 50 m for technological functions</li> <li>300 m; for technological functions: No</li> </ul> Digital outputs Number of digital outputs 10; Relays Switching capacity of the outputs <ul> <li>with resistive load, max.</li> <li>on lamp load, max.</li> <li>Output delay with resistive load</li> <li>"0" to "1", max.</li> </ul> 10 ms; max.	Cable length	
• unshielded, max.300 m; for technological functions: NoDigital outputs10; RelaysNumber of digital outputs10; RelaysSwitching capacity of the outputs2 A• with resistive load, max.30 W with DC, 200 W with ACOutput delay with resistive load10 ms; max.• "0" to "1", max.10 ms; max.	, , , , , , , , , , , , , , , , , , ,	500 m; 50 m for technological functions
Digital outputs       10; Relays         Number of digital outputs       10; Relays         Switching capacity of the outputs       2 A         • with resistive load, max.       2 A         • on lamp load, max.       30 W with DC, 200 W with AC         Output delay with resistive load       10 ms; max.		-
Number of digital outputs       10; 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         • "0" to "1", max.       10 ms; max.		555 m, for teenhological functions. 190
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         • "0" to "1", max.       10 ms; max.		
• with resistive load, max.       2 A         • on lamp load, max.       30 W with DC, 200 W with AC         Output delay with resistive load		IU, Reidys
• on lamp load, max.     30 W with DC, 200 W with AC       Output delay with resistive load     10 ms; max.		
Output delay with resistive load       • "0" to "1", max.       10 ms; max.		
• "0" to "1", max. 10 ms; max.		30 W with DC, 200 W with AC
• "1" to "0" may		
• 1 to 0, max.	• "1" to "0", max.	10 ms; max.

Delau autorita	
Relay outputs	10
Number of relay outputs	
Number of operating cycles, max.	mechanically 10 million, at rated load voltage 100 000
Cable length	
• shielded, max.	500 m
• unshielded, max.	150 m
Analog inputs	
Number of analog inputs	2
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	
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
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
• 2-wire sensor 1. Interface	
	PROFINET
1. Interface	
1. Interface Interface type	PROFINET
1. Interface Interface type Isolated	PROFINET Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate	PROFINET Yes Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation	PROFINET Yes Yes Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing	PROFINET Yes Yes Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types	PROFINET Yes Yes Yes Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)	PROFINET Yes Yes Yes Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports	PROFINET Yes Yes Yes Yes Yes 2
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch	PROFINET Yes Yes Yes Yes Yes 2
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols	PROFINET Yes Yes Yes Yes Yes 2 Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • PROFINET IO Controller	PROFINET Yes Yes Yes Yes 2 Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • PROFINET IO Controller         • SIMATIC communication	PROFINET Yes Yes Yes Yes Yes Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • PROFINET IO Controller         • PROFINET IO Device	PROFINET Yes Yes Yes Yes 2 Yes Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • PROFINET IO Controller         • SIMATIC communication         • Open IE communication         • Web server	PROFINET Yes Yes Yes Yes Yes 2 Yes Yes Yes Yes Yes Yes Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • PROFINET IO Controller         • PROFINET IO Device         • SIMATIC communication         • Open IE communication         • Web server         • Media redundancy	PROFINET Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • PROFINET IO Controller         • SIMATIC communication         • Open IE communication         • Web server         • Media redundancy         PROFINET IO Controller	PROFINET Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • PROFINET IO Controller         • PROFINET IO Device         • SIMATIC communication         • Open IE communication         • Web server         • Media redundancy	PROFINET Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • PROFINET IO Controller         • SIMATIC communication         • Open IE communication         • Web server         • Media redundancy         PROFINET IO Controller         • Transmission rate, max.	PROFINET Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • PROFINET IO Controller         • PROFINET IO Device         • SIMATIC communication         • Web server         • Media redundancy         PROFINET IO Controller         • Transmission rate, max.         Services	PROFINET Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • PROFINET IO Controller         • PROFINET IO Device         • SIMATIC communication         • Open IE communication         • Web server         • Media redundancy         PROFINET IO Controller         • Transmission rate, max.         Services         - PG/OP communication	PROFINET Yes Yes Yes Yes Yes 2 Yes Yes Yes Yes Yes Yes; Optionally also encrypted Yes Yes Yes Yes Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • PROFINET IO Controller         • PROFINET IO Device         • SIMATIC communication         • Open IE communication         • Web server         • Media redundancy         PROFINET IO Controller         • Transmission rate, max.         Services         - PG/OP communication         - Isochronous mode         - IRT	PROFINET Yes Yes Yes Yes Yes Yes Yes Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • PROFINET IO Controller         • PROFINET IO Device         • SIMATIC communication         • Open IE communication         • Web server         • Media redundancy         PROFINET IO Controller         • Transmission rate, max.         Services         - PG/OP communication         - IRT         - PROFIenergy	PROFINET Yes Yes Yes Yes Yes 2 Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • PROFINET IO Controller         • PROFINET IO Device         • SIMATIC communication         • Open IE communication         • Web server         • Media redundancy         PROFINET IO Controller         • Transmission rate, max.         Services         - PG/OP communication         - Isochronous mode         - IRT         - PROFIenergy         - Prioritized startup	PROFINET Yes Yes Yes Yes Yes 2 Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • PROFINET IO Controller         • PROFINET IO Device         • SIMATIC communication         • Open IE communication         • Web server         • Media redundancy         PROFINET IO Controller         • Transmission rate, max.         Services         - PG/OP communication         - Isochronous mode         - IRT         - PROFlenergy         - Prioritized startup         - Number of IO devices with prioritized startup, max.	PROFINET   Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • PROFINET IO Controller         • PROFINET IO Device         • SIMATIC communication         • Open IE communication         • Web server         • Media redundancy         PROFINET IO Controller         • Transmission rate, max.         Services         - PG/OP communication         - IRT         - PROFIenergy         - Prioritized startup         - Number of IO devices with prioritized startup, max.         - Number of connectable IO Devices, max.	PROFINET           Yes           Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • PROFINET IO Controller         • PROFINET IO Device         • SIMATIC communication         • Open IE communication         • Web server         • Media redundancy         PROFINET IO Controller         • Transmission rate, max.         Services         - PG/OP communication         - IRT         - PROFIenergy         - Prioritized startup         - Number of IO devices with prioritized startup, max.         - Number of connectable IO Devices, max.         - Number of connectable IO Devices for RT, max.	PROFINET           Yes           100 Mbit/s           Yes; encryption with TLS V1.3 pre-selected           No           No           No           No           Yes           16           16           16
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • PROFINET IO Controller         • PROFINET IO Device         • SIMATIC communication         • Open IE communication         • Web server         • Media redundancy         PROFINET IO Controller         • Transmission rate, max.         Services         - PG/OP communication         - IRT         - PROFIenergy         - Prioritized startup         - Number of IO devices with prioritized startup, max.         - Number of connectable IO Devices, max.	PROFINET           Yes           Yes

<ul> <li>Number of IO Devices that can be simultaneously activated departmented may</li> </ul>	8
activated/deactivated, max. — Updating time	The minimum value of the update time also depends on the communication
	component set for PROFINET IO, on the number of IO devices and the quantity
	of configured user data.
PROFINET IO Device	
Services — PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
— Isochronous mode	No
— IRT	No
— PROFlenergy	Yes
— Shared device	Yes
— Number of IO Controllers with shared device, max.	2
Protocols	-
Supports protocol for PROFINET IO	Yes
PROFIsafe	Yes
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)	
• TCP/IP	Yes
• DHCP	No
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
Redundancy mode	
Media redundancy	
— MRP	Yes; as MRP redundancy manager and/or MRP client
— MRPD	No
SIMATIC communication	
S7 routing	Yes
Open IE communication	
• TCP/IP	Yes
— Data length, max.	8 kbyte
ISO-on-TCP (RFC1006)	Yes
— Data length, max.	8 kbyte
• UDP	Yes
— Data length, max.	1 472 byte
Web server	Yes
<ul> <li>supported</li> <li>User-defined websites</li> </ul>	Yes
OPC UA	105
Runtime license required	Yes; "Basic" license required
OPC UA Server	Yes; data access (read, write, subscribe), method call, runtime license required
— Application authentication	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
- Number of server methods, max.	20
<ul> <li>Number of monitored items, recommended max.</li> </ul>	1 000
- Number of server interfaces, max.	2
<ul> <li>Number of nodes for user-defined server interfaces, max.</li> </ul>	2 000
Further protocols	
MODBUS	Yes
communication functions / header	
S7 communication	
supported	Yes
• as server	Yes

• as client	Yes
<ul> <li>User data per job, max.</li> </ul>	See online help (S7 communication, user data size)
Number of connections	
• overall	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 / 64 max
Test commissioning functions	
Status/control	
Status/control variable	Yes
Variables	inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters
Forcing	
• Forcing	Yes; peripheral inputs/outputs (without fail-safe)
Diagnostic buffer	
• present	Yes
Traces	
<ul> <li>Number of configurable Traces</li> </ul>	2
Memory size per trace, max.	512 kbyte
Interrupts/diagnostics/status information	
Diagnostics indication LED	
RUN/STOP LED	Yes
ERROR LED	Yes
MAINT LED	Yes
Integrated Functions	
Counter	
Number of counters	6
Counting frequency, max.	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	
Potential separation digital inputs	
<ul> <li>Potential separation digital inputs</li> </ul>	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>	2
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 induc	ced by high-frequency fields
<ul> <li>Interference immunity against high-frequency radiation</li> </ul>	Yes
acc. to IEC 61000-4-6	
Emission of radio interference acc. to EN 55 011	
<ul> <li>Limit class A, for use in industrial areas</li> </ul>	Yes; Group 1
• Limit class B, for use in residential areas	Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011

Degree and class of protection	
IP degree of protection	IP20
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
cULus	Yes
	Yes
FM approval	
RCM (formerly C-TICK)	Yes
KC approval	Yes
Marine approval	Yes
Ecological footprint	
environmental product declaration	Yes
Global warming potential	
— global warming potential, (total) [CO2 eq]	106 kg
— global warming potential, (during production) [CO2	18.5 kg
eq] — global warming potential, (during operation) [CO2	88.2 kg
eq]	
<ul> <li>global warming potential, (after end of life cycle)</li> <li>[CO2 eq]</li> </ul>	-1.12 kg
Highest safety class achievable in safety mode	
<ul> <li>Performance level according to ISO 13849-1</li> </ul>	PLe
SIL acc. to IEC 61508	SIL 3
Ambient conditions	
Free fall	
<ul> <li>Fall height, max.</li> </ul>	0.3 m; five times, in product package
Ambient temperature during operation	
● min.	0°C
• max.	55 °C; Number of simultaneously activated inputs or outputs 4 or 3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 45 °C vertical
<ul> <li>horizontal installation, min.</li> </ul>	0 °C
<ul> <li>horizontal installation, max.</li> </ul>	55 °C
• vertical installation, min.	0 °C
vertical installation, max.	45 °C
Ambient temperature during storage/transportation	
min.	-40 °C
	70 °C
max.     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	
<ul> <li>Installation altitude, min.</li> </ul>	-1 000 m
Installation altitude, max.	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Relative humidity	
Operation, max.	95 %; no condensation
Vibrations	
• Vibration resistance during operation acc. to IEC 60068- 2-6	2 g (m/s <sup>2</sup> ) wall mounting, 1 g (m/s <sup>2</sup> ) DIN rail
<ul> <li>Operation, tested according to IEC 60068-2-6</li> </ul>	Yes
Shock testing	
tested according to IEC 60068-2-27	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms
Pollutant concentrations	
• SO2 at RH < 60% without condensation	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
configuration / header	
configuration / programming / header	
Programming language	
— LAD	Yes; incl. failsafe
— FBD	Yes; incl. failsafe
— SCL	Yes

Know-how protection	
<ul> <li>User program protection/password protection</li> </ul>	Yes
Copy protection	Yes
Block protection	Yes
Access protection	
<ul> <li>protection of confidential configuration data</li> </ul>	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
programming / cycle time monitoring / header	
adjustable	Yes
Dimensions	
Width	130 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	585 g

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