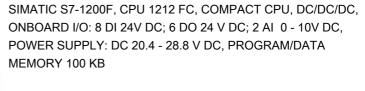
## **SIEMENS**

## Data sheet

6ES7212-1AF40-0XB0





General information	
Product type designation	CPU 1212FC DC/DC/DC
Firmware version	V4.2
Engineering with	
Programming package	STEP 7 V14 or higher
Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Load voltage L+	
Rated value (DC)	24 V
<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)	375 mA; Typical
Inrush current, max.	12 A; at 28.8 V DC
l²t	0.5 A <sup>2</sup> ·s

Tor backplane bus (5 V DC), max.  1 000 mA; Max. 5 V DC for SM and CM  Encoder supply 24 V encoder supply 24 V Permissible range: 20.4V to 28.8V  Power loss Power loss, typ.  9 W  Memory  Work memory  • integrated • expandable Load memory • integrated • Plug-in (SIMATIC Memory Card), max.  Backup • present • maintenance-free • without battery  CPU processing times for bit operations, typ. for word operations, typ.  1.7 µs; / instruction for floating point arithmetic, typ.  2.5 µs; / instruction  CPU-blocks  Number of blocks (total)  DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  DB • Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag • Number, max.  Local data • per priority class, max.  10 Address area • Inputs • Outputs • Outputs • Outputs • Outputs	Output current	
Encoder supply  24 V encoder supply  24 V encoder supply  24 V permissible range: 20.4V to 28.8V  Power loss.  Power loss, typ. 9 W  Memory  Work memory  integrated 100 kbyte expandable No  Load memory  integrated 2 Mbyte Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card  Backup present Yes emaintenance-free Yes without battery Yes  CPU processing times  for bit operations, typ. 0.08 µs; /instruction for word operations, typ. 1.7 µs; / instruction for word operations, typ. 2.5 µs; / instruction  CPU-blocks  Number of blocks (total) DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB  Number, max. Limited only by RAM for code  Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max.  Flag Number, max. 4 kbyte; Size of bit memory address area  Local data per priority class, max. 16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area Inputs 1024 byte		1 000 mA; Max. 5 V DC for SM and CM
24 V encoder supply 24 V Permissible range: 20.4V to 28.8V  Power loss Power loss, typ. 9 W  Memory  Work memory  integrated expandable No  Load memory  integrated Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card  Backup present present real real real real real real real real		
Power loss Power loss, typ.  Memory  Work memory  integrated expandable No  Load memory  integrated Plug-in (SIMATIC Memory Card), max.  Backup present without battery  CPU processing times for bit operations, typ.  for word operations, typ.  for word operations, typ.  To floating point arithmetic, typ.  CPU-blocks  Number of blocks (total)  Bas, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  Bata areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag Number, max.  Limited only by RAM for code  Address area  No address area  I floaty by the first priority class 1 (program cycle): 16 KB, priority class 2 to 26. 6 KB  Address area  I float by the first priority class 1 (program cycle): 16 KB, priority class 2 to 26. 6 KB	117	
Power loss Power loss, typ. 9 W  Memory  Work memory  integrated 100 kbyte expandable No Load memory integrated 2 Mbyte e-Plug-in (SIMATIC Memory Card), max. With SIMATIC memory card  Backup e-present Yes e-maintenance-free Yes e-without battery Yes  CPU processing times for bit operations, typ. 0.08 µs; / instruction for word operations, typ. 1.7 µs; / instruction  CPU-blocks Number of blocks (total) DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB e-Number, max. Limited only by RAM for code  Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max.  Local data e-per priority class, max. 4 kbyte; Size of bit memory address area  I 6 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I 1024 byte	•••	D : "II
Power loss, typ. 9 W  Memory  Work memory  integrated 100 kbyte expandable  Load memory  integrated 2 Mbyte Plug-in (SIMATIC Memory Card), max. With SIMATIC memory card  Backup erpresent Yes maintenance-free Yes ewithout battery Yes  CPU processing times for bit operations, typ. 0.08 µs; / instruction for word operations, typ. 1.7 µs; / instruction  for floating point arithmetic, typ. 2.5 µs; / instruction  CPU-blocks  Number of blocks (total) DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB  Number, max. Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag Number, max. 4 kbyte; Size of bit memory address area  Local data e per priority class, max. 16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O address area	• 24 V	Permissible range: 20.4V to 28.8V
Memory  Work memory  integrated expandable  No  Load memory  integrated Pulug-in (SIMATIC Memory Card), max.  Backup  present present emaintenance-free without battery  CPU processing times for bit operations, typ. for bit operations, typ. for floating point arithmetic, typ.  CPU-blocks  Number of blocks (total)  DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Local data per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area I/O address area	Power loss	
Work memory  integrated expandable  Load memory  integrated Pulug-in (SIMATIC Memory Card), max.  Backup  present yes with SIMATIC memory card  maintenance-free with object of the obje	Power loss, typ.	9 W
integrated expandable No  Load memory integrated Plug-in (SIMATIC Memory Card), max.  Backup present present emaintenance-free without battery  CPU processing times for bit operations, typ. for word operations, typ. for floating point arithmetic, typ.  CPU-blocks Number of blocks (total)  DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB eNumber, max.  Limited only by RAM for code  Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max.  Flag eNumber, max.  4 kbyte; Size of bit memory address area Local data e per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area l/O address area e Inputs	Memory	
expandable  Load memory  integrated Plug-in (SIMATIC Memory Card), max.  Backup  present present mintenance-free without battery  CPU processing times for bit operations, typ. for word operations, typ. for floating point arithmetic, typ.  CPU-blocks  Number of blocks (total)  DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag Number, max.  Lid kbyte; Size of bit memory address area  Per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area I/O address area	Work memory	
Load memory  integrated Plug-in (SIMATIC Memory Card), max.  Backup  present Present Press maintenance-free Without battery  CPU processing times for bit operations, typ. for word operations, typ. for floating point arithmetic, typ.  CPU-blocks Number of blocks (total)  DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB Number, max.  Limited only by RAM for code  Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max.  Flag Number, max.  4 kbyte; Size of bit memory address area  Per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area I/O address area	• integrated	100 kbyte
integrated Plug-in (SIMATIC Memory Card), max.  Backup  present present maintenance-free without battery  Pes without battery  Pes without battery  O.08 µs; / instruction for word operations, typ. for word operations, typ. for floating point arithmetic, typ.  DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks (total)  BBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB Number, max.  Limited only by RAM for code  Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max.  Flag Number, max.  4 kbyte; Size of bit memory address area  Local data per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O patch sink sink sink sink sink sink sink sink	• expandable	No
Plug-in (SIMATIC Memory Card), max.  Backup  present present maintenance-free without battery  Pes  for bit operations, typ. for word operations, typ. for floating point arithmetic, typ.  CPU-blocks  Number of blocks (total)  DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB Number, max.  Limited only by RAM for code  Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max.  Flag Number, max.  4 kbyte; Size of bit memory address area  Local data per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O address area	Load memory	
Backup  • present • maintenance-free • without battery  CPU processing times for bit operations, typ. for word operations, typ. for floating point arithmetic, typ.  CPU-blocks  Number of blocks (total)  DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB • Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag • Number, max.  4 kbyte; Size of bit memory address area  Local data • per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O address area  • Inputs  1 024 byte	• integrated	2 Mbyte
present     maintenance-free     without battery  CPU processing times for bit operations, typ. for word operations, typ.     1.7 µs; / instruction  CPU-blocks  Number of blocks (total)  DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB     Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag     Number, max.  4 kbyte; Size of bit memory address area  Poer priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  VO address area  I/O address area	<ul> <li>Plug-in (SIMATIC Memory Card), max.</li> </ul>	with SIMATIC memory card
• maintenance-free • without battery  CPU processing times for bit operations, typ. for word operations, typ. for floating point arithmetic, typ.  CPU-blocks  Number of blocks (total)  • Number, max.  DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB • Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag • Number, max.  4 kbyte; Size of bit memory address area  Local data • per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O address area  • Inputs  1 024 byte		
without battery  Pes  CPU processing times  for bit operations, typ.  0.08 µs; / instruction  1.7 µs; / instruction  for floating point arithmetic, typ.  2.5 µs; / instruction  CPU-blocks  Number of blocks (total)  DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB  Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag  Number, max.  4 kbyte; Size of bit memory address area  Local data  per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O address area	• present	Yes
for bit operations, typ.  for word operations, typ.  for word operations, typ.  for floating point arithmetic, typ.  CPU-blocks  Number of blocks (total)  DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB  Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag  Number, max.  4 kbyte; Size of bit memory address area  Local data  per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O address area  I/O address area  I/O address area  I D24 byte	• maintenance-free	Yes
for bit operations, typ.  for word operations, typ.  for word operations, typ.  for floating point arithmetic, typ.  CPU-blocks  Number of blocks (total)  BBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB  Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag  Number, max.  4 kbyte; Size of bit memory address area  Local data  per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O address area  I/O address area	<ul><li>without battery</li></ul>	Yes
for bit operations, typ.  for word operations, typ.  for word operations, typ.  for floating point arithmetic, typ.  CPU-blocks  Number of blocks (total)  BBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB  Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag  Number, max.  4 kbyte; Size of bit memory address area  Local data  per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O address area  I/O address area  I/O address area	CPU processing times	
for floating point arithmetic, typ.  2.5 µs; / instruction  CPU-blocks  Number of blocks (total)  DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB  Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag  Number, max.  4 kbyte; Size of bit memory address area  Local data  per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O address area  I/O address area  I/O address area		0.08 μs; / instruction
for floating point arithmetic, typ.  2.5 µs; / instruction  CPU-blocks  Number of blocks (total)  DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB  Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag  Number, max.  4 kbyte; Size of bit memory address area  Local data  per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O address area  I/O address area  I/O address area	for word operations, typ.	1.7 µs; / instruction
Number of blocks (total)  DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB  Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag  Number, max.  4 kbyte; Size of bit memory address area  Local data  per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O address area  I/O address area	for floating point arithmetic, typ.	2.5 µs; / instruction
Number of blocks (total)  DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB  Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag  Number, max.  4 kbyte; Size of bit memory address area  Local data  per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O address area  I/O address area	CDI I bleske	
addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  OB  • Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag  • Number, max.  4 kbyte; Size of bit memory address area  Local data  • per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O address area  • Inputs  1 024 byte		DRs ECs ERs counters and timers. The maximum number of
restriction, the entire working memory can be used  OB  Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag  Number, max.  4 kbyte; Size of bit memory address area  Local data  per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O address area  I/O address area  I 024 byte	Number of blocks (total)	
OB  ● Number, max.  Limited only by RAM for code  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag  ● Number, max.  4 kbyte; Size of bit memory address area  Local data  ● per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O address area  ● Inputs  1 024 byte		•
Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag  • Number, max.  Local data  • per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O address area  • Inputs  1 024 byte	ОВ	
Retentive data area (incl. timers, counters, flags), max.  Flag  • Number, max.  4 kbyte; Size of bit memory address area  Local data  • per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB   Address area  I/O address area  • Inputs  1 024 byte	• Number, max.	Limited only by RAM for code
Retentive data area (incl. timers, counters, flags), max.  Flag  • Number, max.  4 kbyte; Size of bit memory address area  Local data  • per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB   Address area  I/O address area  • Inputs  1 024 byte	Data areas and their retentivity	
Flag  Number, max.  4 kbyte; Size of bit memory address area  Local data  • per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O address area  • Inputs  1 024 byte		10 kbyte
<ul> <li>Number, max.</li> <li>Local data</li> <li>per priority class, max.</li> <li>Address area</li> <li>I/O address area</li> <li>Inputs</li> <li>4 kbyte; Size of bit memory address area</li> <li>16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB</li> </ul>		
Local data  • per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O address area  • Inputs  1 024 byte	Flag	
Per priority class, max.  16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB  Address area  I/O address area  Inputs  1 024 byte	Number, max.	4 kbyte; Size of bit memory address area
Address area  I/O address area  • Inputs  1 024 byte	Local data	
I/O address area  • Inputs  1 024 byte	• per priority class, max.	
• Inputs 1 024 byte	Address area	
	I/O address area	
• Outputs 1 024 byte	• Inputs	1 024 byte
	• Outputs	1 024 byte

Inputs, adjustable Outputs, adjustable It kbyte  It kby	Process image	
+ Outputs, adjustable  Hardware configuration  Number of modules per system, max.  3 comm. modules, 1 signal board, 2 signal modules  Time of day  Clock  • Hardware clock (real-time) • Backup time • Deviation per day, max.  • Or which inputs usable for technological functions  Number of simultaneously controllable inputs all mounting positions — up to 40 °C, max.  8 Input voltage • Rated value (DC) • for signal "0" • for signal "1" • for signal "1" • for signal "1", typ.  Input delay (for rated value of input voltage)  for standard inputs — parameterizable — at "0" to "1", max.  for interrupt inputs — parameterizable  • parameterizable  • parameterizable  • sheided, max. • unshielded, max. • unshielded, max. • unshielded, max.  • of which high-speed outputs  • of which high-speed outputs  • of which high-speed outputs  • (100 kHz Pulse Train Output  • of which high-speed outputs  • the speed outputs  • of which high-speed outputs  • of which high-speed outputs  • the speed output the speed outputs  •		1 khyto
Number of modules per system, max. 3 comm. modules, 1 signal board, 2 signal modules  Time of day  Clock  • Hardware clock (real-time) Yes • Backup time 480 h; Typical • Obeviation per day, max. 60 s/month at 25 °C  Digital inputs  • Of which inputs usable for technological functions  Number of signal '1" Is MA • of or signal '0" SV DC at 1 mA • for signal '1" Is MA  Input voltage  • Rated value (DC) 24 V • for signal '1" Is MA  Input voltage  • For signal "1" Is MA  Input delay (for rated value of input voltage)  for standard inputs  — parameterizable — at "0" to "1", max. 12.8 ms  for interrupt inputs  — parameterizable for counter/technological functions — parameterizable  • parameterizable for counter/technological functions — parameterizable  • hielded, max. 500 m; 50 m for technological functions • on which high-speed outputs  Number of digital outputs  • of which high-speed outputs  6 signal Prain Output  6 which high-speed outputs  6 signal Prain Output  6 of which high-speed outputs  6 signal Prain Output  8 comm. modules, 1 signal baca, 2 signal modules  1 signal baca, 2 signal modules  4 integral and 25 °C  8 lintegrated 4 is HSC (High Speed Counting)  4 is HSC (High Speed Counting)  8 integrated 4 is HSC (High Speed Counting)  8 integrated 4 is HSC (High Speed Counting)  1 in MA  1 in		
Number of modules per system, max.  Time of day  Clock  • Hardware clock (real-time) • Deviation per day, max.  Digital inputs  Number of digital inputs • of which inputs usable for technological functions  All mounting positions — up to 40 °C, max.  Input voltage • Rated value (DC) • for signal "0" • for signal "1" • for signal "1" • or signal "1" • parameterizable — at "0" to "1", min. — at "0" to "1", max.  for interrupt inputs  — parameterizable — parameterizable  For counter/technological functions — parameterizable  For signale functions — parameterizable  • Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 30 kHz Pulse Train Outputs  Number of digital outputs  • of which high-speed outputs  Number of digital outputs  • of which high-speed outputs  All mounting positions — parameter izable  • Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 30 kHz.  Polital outputs  Number of digital outputs  • of which high-speed outputs  Number of digital outputs  • of which high-speed outputs  Ago m. For technological functions:  Number of digital outputs  • of which high-speed outputs  Ago m. For technological functions: No	Outputs, adjustable	i kbyte
Time of day  Clock  • Hardware clock (real-time) • Backup time • Deviation per day, max.  Digital inputs  Number of digital inputs • of which inputs usable for technological functions  Number of simultaneously controllable inputs all mounting positions — up to 40 °C, max.  Input voltage • Rated value (DC) • for signal "1" • for signal "1"  Input current • for signal "1", typ.  Input delay (for rated value of input voltage)  For standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max.  Input current • for interrupt inputs — parameterizable  For counter/technological functions — parameterizable  For counter/technological functions — parameterizable  For counter/technological functions — parameterizable  • shielded, max. • unshielded, max. • unshielded, max. • unshielded, max. • of which high-speed outputs  Number of digital outputs • of which high-speed outputs  Ves  For which high-speed outputs  6  4; 100 kHz Pulse Train Output	Hardware configuration	
Alardware clock (real-time)   Yes	Number of modules per system, max.	3 comm. modules, 1 signal board, 2 signal modules
Hardware clock (real-time)     Backup time     Deviation per day, max.  Digital inputs  Number of digital inputs     of which inputs usable for technological functions  Number of signal "O"     of signal "1"     of signal "1", typ.     of signal "1", typ.     of signal "1", typ.     of ro signal "2", typ.     of ro signal "3", typ.     of the signal "4", typ.     of which high-speed outputs  Number of digital outputs     of which high-speed outputs      of which high-speed outputs	Time of day	
Backup time Deviation per day, max.  Biglial inputs  Number of digital inputs usable for technological functions  Number of simultaneously controllable inputs all mounting positions  — up to 40 °C, max.  Bell mounting positions  — up to 40 °C, max.  Input voltage  • Rated value (DC) • for signal "1"	Clock	
Digital inputs  Number of digital inputs  of which inputs usable for technological functions  Number of simultaneously controllable inputs  all mounting positions  — up to 40 °C, max.  8 Input voltage  • Rated value (DC) • for signal "0" • for signal "1" • for signal "1", typ.  Input delay (for rated value of input voltage)  for standard inputs  — parameterizable  — at "0" to "1", max.  for interrupt inputs  — parameterizable  • shielded, max. • unshielded, max. • unshielded, max. • of which high-speed outputs  Number of digital outputs  Number of digital outputs  • of which high-speed outputs  6 (High Speed Counting)  A; HSC (	<ul><li>Hardware clock (real-time)</li></ul>	Yes
Number of digital inputs  • of which inputs usable for technological functions  Number of simultaneously controllable inputs  all mounting positions  — up to 40 °C, max.  Input voltage  • Rated value (DC) • for signal "0" • for signal "1" • for signal "1" • for signal "1" • for signal "1", typ.  Input delay (for rated value of input voltage)  for standard inputs  — parameterizable — at "0" to "1", max.  for interrupt inputs  — parameterizable for counter/technological functions — parameterizable  for counter/technological functions — parameterizable  • shielded, max. • unshielded, max. • of which high-speed outputs  Number of digital outputs  • of which high-speed outputs  8 Integrated 4; HSC (High Speed Counting)  8 Integrated  4; HSC (High Speed Counting)  4; HSC (High Speed Counting)  4; HSC (High Speed Counting)  8 Integrated  4; HSC (High Speed Counting)  4; HSC (High Speed Counting)  8 Integrated  9 Integrated	Backup time	480 h; Typical
Number of digital inputs  of which inputs usable for technological functions  Number of simultaneously controllable inputs  all mounting positions  — up to 40 °C, max.  Input voltage  of signal "0"  of ro signal "0"  of ro signal "1"  Input current  of ro signal "1", typ.  Input delay (for rated value of input voltage)  for standard inputs  — parameterizable  — at "0" to "1", max.  for interrupt inputs  — parameterizable  for counter/technological functions  At (a) 30 kHz & 1 (a) 30 kHz & 1 (a) 30 kHz, differential: 3 (a) 80 kHz & 1 (a) 30 kHz, differential: 3 (a) 80 kHz & 1 (a) 30 kHz, differential: 3 (a) 80 kHz & 1 (a) 30 kHz & 1	<ul><li>Deviation per day, max.</li></ul>	60 s/month at 25 °C
of which inputs usable for technological functions  Number of simultaneously controllable inputs  all mounting positions      — up to 40 °C, max.      Rated value (DC)     of ro signal "0"     of ro signal "1"     of ro signal "1"     of ro signal "1", typ.  Input delay (for rated value of input voltage)  for standard inputs      — parameterizable     — at "0" to "1", min.     — at "0" to "1", max.  for interrupt inputs      — parameterizable      for counter/technological functions      — parameterizable      for ounter/technological functions      — parameterizable      for interrupt inputs      — parameterizable      for counter/technological functions      — parameterizable      for counter/technological functions      — parameterizable      for counter/technological functions      — parameterizable      of which high-speed outputs      Number of digital outputs      of which high-speed outputs      4; HSC (High Speed Counting)  4; HSC (High Speed Counting)  4; HSC (High Speed Counting)  8  Input volues  8  Input voltage  8  8  8  8  Input voltage  9  1 mA  1 m	Digital inputs	
functions  Number of simultaneously controllable inputs  all mounting positions  — up to 40 °C, max.  8 Input voltage  • Rated value (DC) • for signal "0" • for signal "1" • for signal "1"  • for signal "1"  • for signal "1"  • for signal "1", typ.  Input delay (for rated value of input voltage)  for standard inputs  — parameterizable  — at "0" to "1", min. — at "0" to "1", max.  for interrupt inputs  — parameterizable  for counter/technological functions — parameterizable  \$\text{Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 30 kHz.  \$\text{Cable length}\$  • shielded, max. • unshielded, max.  • unshielded, max.  • of which high-speed outputs  \$\text{Number of digital outputs}  • of which high-speed outputs  \$\text{A 1 00 kHz Pulse Train Output}  \$\text{V}  \$\text{Do Digital outputs}  \$\text{O}  \$\text{W}  \$\text{V}  \$\text{Do Whz Pulse Train Output}		8; Integrated
Number of simultaneously controllable inputs  all mounting positions  — up to 40 °C, max.    Input voltage	<ul> <li>of which inputs usable for technological</li> </ul>	4; HSC (High Speed Counting)
all mounting positions  — up to 40 °C, max.  Input voltage  • Rated value (DC) • for signal "0" • for signal "1"  15 V DC at 1 mA  • for signal "1", typ.  Input current  • for signal "1", typ.  Input delay (for rated value of input voltage)  for standard inputs  — parameterizable — at "0" to "1", min. — at "0" to "1", max.  Input derivation of counter/technological functions  — parameterizable  Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 30 kHz.  Cable length  • shielded, max. • unshielded, max.  Number of digital outputs  Number of digital outputs  P to V DC at 2.5 mA  1	functions	
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. 1 mA  Input delay (for rated value of input voltage)  for standard inputs  - parameterizable 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four  - at "0" to "1", min. 0.2 ms  - at "0" to "1", max. 12.8 ms  for interrupt inputs  - parameterizable Yes  for counter/technological functions  - parameterizable Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 30 kHz  Cable length  shielded, max. 500 m; 50 m for technological functions: No  Digital outputs  Number of digital outputs  Number of digital outputs  of which high-speed outputs 6  of which high-speed outputs  4; 100 kHz Pulse Train Output	Number of simultaneously controllable inputs	
Input voltage  Rated value (DC) 24 V  for signal "0" 5 V DC at 1 mA  15 V DC at 2.5 mA  Input current  for signal "1", typ. 1 mA  Input delay (for rated value of input voltage)  for standard inputs  parameterizable 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 counter/technological functions  parameterizable Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 30 kHz  Cable length  shielded, max. 500 m; 50 m for technological functions: No  Digital outputs  Number of digital outputs  of which high-speed outputs 4; 100 kHz Pulse Train Output	all mounting positions	
<ul> <li>Rated value (DC)</li> <li>for signal "0"</li> <li>for signal "1"</li> <li>15 V DC at 1 mA</li> <li>for signal "1", typ.</li> <li>Input current</li> <li>for signal "1", typ.</li> <li>Input delay (for rated value of input voltage)</li> <li>for standard inputs</li> <li>— parameterizable</li> <li>— at "0" to "1", min.</li> <li>— at "0" to "1", max.</li> <li>for interrupt inputs</li> <li>— parameterizable</li> <li>Yes</li> <li>for counter/technological functions</li> <li>— parameterizable</li> <li>Single phase: 3 @ 100 kHz &amp; 1 @ 30 kHz, differential: 3 @ 80 kHz &amp; 1 @ 30 kHz</li> <li>Eable length</li> <li>shielded, max.</li> <li>unshielded, max.</li> <li>unshielded, max.</li> <li>of which high-speed outputs</li> <li>6</li> <li>of which high-speed outputs</li> <li>1 mA</li> <li>1 mA</li></ul>	— up to 40 °C, max.	8
for signal "0" 5 V DC at 1 mA     for signal "1" 15 V DC at 2.5 mA  Input current      for signal "1", typ. 1 mA  Input delay (for rated value of input voltage)  for standard inputs      — parameterizable 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four      — at "0" to "1", min. 0.2 ms      — at "0" to "1", max. 12.8 ms  for interrupt inputs      — parameterizable Yes  for counter/technological functions      — parameterizable Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 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 6      • of which high-speed outputs 4; 100 kHz Pulse Train Output	Input voltage	
● for signal "1" 15 ∨ DC at 2.5 mA  Input current  ● for signal "1", typ. 1 mA  Input delay (for rated value of input voltage)  for standard inputs  — parameterizable 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 counter/technological functions  — parameterizable Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 30 kHz  Cable length  ● shielded, max. 500 m; 50 m for technological functions: No  Digital outputs  Number of digital outputs 6 ● of which high-speed outputs 4; 100 kHz Pulse Train Output	<ul><li>Rated value (DC)</li></ul>	24 V
Input current  • for signal "1", typ.	• for signal "0"	5 V DC at 1 mA
• for signal "1", typ. 1 mA  Input delay (for rated value of input voltage)  for standard inputs  — parameterizable 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four  — at "0" to "1", min. 0.2 ms  — at "0" to "1", max. 12.8 ms  for interrupt inputs  — parameterizable Yes  for counter/technological functions  — parameterizable Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 30 kHz  Cable length  • shielded, max. 500 m; 50 m for technological functions: No  Digital outputs  Number of digital outputs  • of which high-speed outputs 4; 100 kHz Pulse Train Output	• 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. — at "0" to "1", max.  12.8 ms  for interrupt inputs  — parameterizable  Yes  for counter/technological functions — parameterizable  Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 30 kHz  Cable length  • shielded, max. • unshielded, max.  100 m; 50 m for technological functions: No  Digital outputs  Number of digital outputs  6 4; 100 kHz Pulse Train Output	Input current	
for standard inputs	● for signal "1", typ.	1 mA
<ul> <li>— parameterizable</li> <li>— at "0" to "1", min.</li> <li>— at "0" to "1", max.</li> <li>— at "0" to "1", max.</li> <li>— parameterizable</li> <li>— parameterizable</li> <li>— parameterizable</li> <li>— parameterizable</li> <li>— parameterizable</li> <li>— parameterizable</li> <li>Single phase: 3 @ 100 kHz &amp; 1 @ 30 kHz, differential: 3 @ 80 kHz &amp; 1 @ 30 kHz</li> <li>Cable length</li> <li>● shielded, max.</li> <li>● unshielded, max.</li> <li>500 m; 50 m for technological functions: No</li> <li>Digital outputs</li> <li>Number of digital outputs</li> <li>● of which high-speed outputs</li> <li>4; 100 kHz Pulse Train Output</li> </ul>	Input delay (for rated value of input voltage)	
selectable in groups of four	for standard inputs	
- at "0" to "1", max.  for interrupt inputs  - parameterizable  for counter/technological functions  - parameterizable  Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 30 kHz  Cable length  shielded, max.  shielded, max.  unshielded, max.  unshielded, max.  for interrupt inputs  500 m; 50 m for technological functions 300 m; For technological functions: No  Digital outputs  Number of digital outputs  for which high-speed outputs  4; 100 kHz Pulse Train Output	— parameterizable	
for interrupt inputs  — parameterizable Yes  for counter/technological functions  — parameterizable Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 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  • of which high-speed outputs  4; 100 kHz Pulse Train Output	— at "0" to "1", min.	0.2 ms
<ul> <li>— parameterizable Yes</li> <li>for counter/technological functions</li> <li>— parameterizable Single phase: 3 @ 100 kHz &amp; 1 @ 30 kHz, differential: 3 @ 80 kHz &amp; 1 @ 30 kHz</li> <li>Cable length         <ul> <li>• shielded, max.</li> <li>• unshielded, max.</li> </ul> </li> <li>Digital outputs</li> <li>Number of digital outputs</li> <li>• of which high-speed outputs</li> <li>4; 100 kHz Pulse Train Output</li> </ul>	— at "0" to "1", max.	12.8 ms
for counter/technological functions  — parameterizable  Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 30 kHz  Cable length  • shielded, max.  • unshielded, max.  Digital outputs  Number of digital outputs  • of which high-speed outputs  4; 100 kHz Pulse Train Output	for interrupt inputs	
— parameterizable  Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 30 kHz  Cable length  • shielded, max.  • unshielded, max.  Digital outputs  Number of digital outputs  • of which high-speed outputs  Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 30 kHz  Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 30 kHz  Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 30 kHz  Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 30 k	— parameterizable	Yes
kHz & 1 @ 30 kHz  Cable length  ● shielded, max.  • unshielded, max.  Digital outputs  Number of digital outputs  • of which high-speed outputs  kHz & 1 @ 30 kHz  500 m; 50 m for technological functions 300 m; For technological functions: No	for counter/technological functions	
<ul> <li>shielded, max.</li> <li>unshielded, max.</li> <li>300 m; 50 m for technological functions</li> <li>300 m; For technological functions: No</li> <li>Digital outputs</li> <li>Number of digital outputs</li> <li>of which high-speed outputs</li> <li>4; 100 kHz Pulse Train Output</li> </ul>	— parameterizable	
<ul> <li>unshielded, max.</li> <li>300 m; For technological functions: No</li> <li>Digital outputs</li> <li>Number of digital outputs</li> <li>of which high-speed outputs</li> <li>4; 100 kHz Pulse Train Output</li> </ul>	Cable length	
Digital outputs  Number of digital outputs  ● of which high-speed outputs  6  4; 100 kHz Pulse Train Output	• shielded, max.	500 m; 50 m for technological functions
Number of digital outputs 6  ● of which high-speed outputs 4; 100 kHz Pulse Train Output	• unshielded, max.	300 m; For technological functions: No
• of which high-speed outputs  4; 100 kHz Pulse Train Output	Digital outputs	
		6
Short-circuit protection No; to be provided externally	<ul> <li>of which high-speed outputs</li> </ul>	4; 100 kHz Pulse Train Output
	Short-circuit protection	No; to be provided externally

Limitation of inductive shutdown voltage to	L+ (-48 V)
Switching capacity of the outputs	, ,
with resistive load, max.	0.5 A
• on lamp load, max.	5 W
Output voltage	
• for signal "0", max.	0.1 V; with 10 kOhm load
• for signal "1", min.	20 V
Output current	
• for signal "1" rated value	0.5 A
• for signal "0" residual current, max.	0.1 mA
Output delay with resistive load	
• "0" to "1", max.	1 µs
• "1" to "0", max.	5 μs
Cable length	
• shielded, max.	500 m
• unshielded, max.	150 m
- distilling day, max.	755 117
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	0
Analog value generation for the inputs  Integration and conversion time/resolution per channel	
	10 bit
<ul> <li>Resolution with overrange (bit including sign), max.</li> </ul>	TO DIL
<ul> <li>Integration time, parameterizable</li> </ul>	Yes
<ul> <li>Conversion time (per channel)</li> </ul>	625 µs
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
1. Interface	
Interface type	PROFINET
Physics	Ethernet
Isolated	Yes

automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
nterface types	4
Number of ports	1
• integrated switch	Yes
Functionality	V
PROFINET IO Controller	Yes
PROFINET IO Device	Yes
SIMATIC communication	Yes
Open IE communication	Yes
Web server	Yes
PROFINET IO Controller	
• Transmission rate, max.	100 Mbit/s
Services	
— PG/OP communication	Yes
— S7 routing	Yes
— Isochronous mode	No
<ul> <li>Open IE communication</li> </ul>	Yes
— IRT	No
— MRP	No
— MRPD	No
— PROFlenergy	No
<ul> <li>Prioritized startup</li> </ul>	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
<ul> <li>Number of connectable IO Devices for RT, max.</li> </ul>	16
— of which in line, max.	16
<ul> <li>Activation/deactivation of IO Devices</li> </ul>	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
— S7 routing	Yes

— IRT	No
— MRP	No
— MRPD	No
— PROFlenergy	Yes
— Shared device	Yes
<ul> <li>Number of IO Controllers with shared device, max.</li> </ul>	2

Protocols		
Supports protocol for PROFINET IO	Yes	
PROFIBUS	Yes; CM 1243-5 required	
AS-Interface	Yes; CM 1243-2 required	
Protocols (Ethernet)		
• TCP/IP	Yes	
• DHCP	No	
• SNMP	Yes	
• DCP	Yes	
• LLDP	Yes	
Open IE communication		
• TCP/IP		
<ul><li>Data length, max.</li></ul>	8 kbyte	
• ISO-on-TCP (RFC1006)	Yes	
— Data length, max.	8 kbyte	
• UDP		
— Data length, max.	1 472 byte	
Further protocols		
• MODBUS	Yes	

Communication functions	
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)
Web server	
• supported	Yes

Test commissioning functions Status/control		
Status/control variable	Yes	
Forcing		
• Forcing	Yes	
Diagnostic buffer		
• present	Yes	

Traces		
Number of configurable Traces	2	
<ul> <li>Memory size per trace, max.</li> </ul>	512 kbyte	
Integrated Functions		
Number of counters	4	
Counting frequency (counter) max.	100 kHz	
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	
Number of pulse outputs	4	
Limit frequency (pulse)	100 kHz	
Potential separation		
Potential separation digital inputs		
<ul> <li>Potential separation digital inputs</li> </ul>	500V AC for 1 minute	
<ul><li>between the channels, in groups of</li></ul>	1	
Potential separation digital outputs		
Potential separation digital outputs	Yes	
• between the channels	No	
<ul><li>between the channels, in groups of</li></ul>	1	
Permissible potential difference		
between different circuits	500 V DC between 24 V DC and 5 V DC	
· · · · · · · · · · · · · · · · · · ·	500 V DC between 24 V DC and 5 V DC	
between different circuits	icity	
between different circuits  EMC		
between different circuits  EMC  Interference immunity against discharge of static electric limits against discharge of	icity	
between different circuits  EMC  Interference immunity against discharge of static electricity acc. to IEC 61000-4-2	icity Yes	
between different circuits  EMC  Interference immunity against discharge of static electric of the static electric of the static electricity acc. to IEC 61000-4-2  — Test voltage at air discharge	icity Yes 8 kV	
between different circuits  EMC  Interference immunity against discharge of static electric of static electric electricity acc. to IEC 61000-4-2  — Test voltage at air discharge  — Test voltage at contact discharge	icity Yes 8 kV	
between different circuits  EMC  Interference immunity against discharge of static electric of the static electric of static electricity acc. to IEC 61000-4-2  — Test voltage at air discharge  — Test voltage at contact discharge  Interference immunity to cable-borne interference  Interference immunity on supply lines acc. to	icity Yes  8 kV 6 kV	
between different circuits  EMC  Interference immunity against discharge of static electric of the Interference immunity against discharge of static electricity acc. to IEC 61000-4-2  — Test voltage at air discharge  — Test voltage at contact discharge  Interference immunity to cable-borne interference  Interference immunity on supply lines acc. to IEC 61000-4-4  Interference immunity on signal cables acc. to	yes  8 kV 6 kV  Yes	
between different circuits  EMC  Interference immunity against discharge of static electric of the Interference immunity against discharge of static electricity acc. to IEC 61000-4-2  — Test voltage at air discharge  — Test voltage at contact discharge  Interference immunity to cable-borne interference  Interference immunity on supply lines acc. to IEC 61000-4-4  Interference immunity on signal cables acc. to IEC 61000-4-4	icity Yes  8 kV 6 kV  Yes	
between different circuits  EMC  Interference immunity against discharge of static electric Interference immunity against discharge of static electricity acc. to IEC 61000-4-2  — Test voltage at air discharge  — Test voltage at contact discharge  Interference immunity to cable-borne interference  Interference immunity on supply lines acc. to IEC 61000-4-4  Interference immunity on signal cables acc. to IEC 61000-4-4  Interference immunity against voltage surge	icity Yes  8 kV 6 kV  Yes  Yes	
between different circuits  EMC  Interference immunity against discharge of static electric of the Interference immunity against discharge of static electricity acc. to IEC 61000-4-2  — Test voltage at air discharge  — Test voltage at contact discharge  Interference immunity to cable-borne interference  Interference immunity on supply lines acc. to IEC 61000-4-4  Interference immunity on signal cables acc. to IEC 61000-4-4  Interference immunity against voltage surge  on the supply lines acc. to IEC 61000-4-5	icity Yes  8 kV 6 kV  Yes  Yes	
between different circuits  EMC  Interference immunity against discharge of static electric of the Interference immunity against discharge of static electricity acc. to IEC 61000-4-2  — Test voltage at air discharge  — Test voltage at contact discharge  Interference immunity to cable-borne interference  Interference immunity on supply lines acc. to IEC 61000-4-4  Interference immunity on signal cables acc. to IEC 61000-4-4  Interference immunity against voltage surge  on the supply lines acc. to IEC 61000-4-5  Interference immunity against conducted variable disturbations.	icity Yes  8 kV 6 kV  Yes  Yes  Yes  Yes  rbance induced by high-frequency fields	
between different circuits  EMC  Interference immunity against discharge of static electric of the Interference immunity against discharge of static electricity acc. to IEC 61000-4-2  — Test voltage at air discharge  — Test voltage at contact discharge  Interference immunity to cable-borne interference  Interference immunity on supply lines acc. to IEC 61000-4-4  Interference immunity on signal cables acc. to IEC 61000-4-4  Interference immunity against voltage surge  on the supply lines acc. to IEC 61000-4-5  Interference immunity against conducted variable disture.  Interference immunity against high-frequency	icity Yes  8 kV 6 kV  Yes  Yes  Yes  Yes  rbance induced by high-frequency fields	

• Limit class B, for use in residential areas

Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011

Degree and class of protection	
Degree of protection acc. to EN 60529	
• IP20	Yes
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
Marine approval	Yes
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	
Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• min.	0 °C
• max.	55 °C
<ul> <li>horizontal installation, min.</li> </ul>	0 °C
<ul> <li>horizontal installation, max.</li> </ul>	55 °C
<ul> <li>vertical installation, min.</li> </ul>	0 °C
<ul> <li>vertical installation, max.</li> </ul>	45 °C
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Air pressure acc. to IEC 60068-2-13	
Storage/transport, min.	660 hPa
• Storage/transport, max.	1 139 hPa
• permissible operating height	-1000 to 2000 m
Relative humidity	
Operation, max.	95 %; no condensation
Vibrations	
Operation, tested according to IEC 60068-2-6	Yes
Pollutant concentrations	
SO2 at RH < 60% without condensation	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
Configuration	
Programming	

Programming language	
— LAD	Yes; incl. failsafe
— FBD	Yes; incl. failsafe
— SCL	Yes
Know-how protection	
User program protection/password protection	Yes
<ul> <li>Copy protection</li> </ul>	Yes
Block protection	Yes
Cycle time monitoring	
adjustable	Yes
Dimensions	
Width	90 mm
Height	100 mm
Depth	75 mm
last modified:	10/13/2017