## **SIEMENS**

## Data sheet

## 6ES7214-1AG40-0XB0



SIMATIC S7-1200, CPU 1214C, COMPACT CPU, DC/DC/DC, ONBOARD I/O: 14 DI 24V DC; 10 DO 24 V DC; 2 AI  $\,$  0 - 10V DC, POWER SUPPLY: DC 20.4 - 28.8 V DC, PROGRAM/DATA

MEMORY: 100 KB

General information	
Firmware version	V4.1
Engineering with	
Programming package	STEP 7 V13 SP1 or higher
Display	
with display	No
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)	500 mA; CPU only
Current consumption, max.	1 500 mA; CPU with all expansion modules
Inrush current, max.	12 A; at 28.8 V
Encoder supply	
24 V encoder supply	
• 24 V	L+ minus 4 V DC min.
Output current	

Power losses Power loss, typ. 12 W    Memory	for backplane bus (5 V DC), max.	1 600 mA; Max. 5 V DC for SM and CM
Power loss, typ. 12 W  Memory  Work memory  Integrated  expandable  No  Load memory  Integrated  Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card  Backup  present  vithout battery  Processing times  for bit operations, typ. 0.085 µs; / instruction  for bit operations, typ. 1.7 µs; / instruction  for lot 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 in total (incl. times, counters, flags), max.  Flag  Number, max. 8 kbyte, Size of bit memory address area  Local data  per priority class, max.  Process image  inputs, adjustable  1 kbyte  Lardware configuration  Number of modules per system, max. 3 comm. modules, 1 signal board, 8 signal modules  Time of day  Clock  Hardware clock (real-time clock)  Pass divined at 25 °C  Yes  Outputs, adjustable  Para dray  Processimas  Hardware clock (real-time clock)  Pass divined at 25 °C	Power losses	
Integrated		12 W
Integrated		
Integrated expandable  Load memory Integrated Plug-in (SIMATIC Memory Card), max.  Backup  present ves; maintenance-free vithout battery  Processing times for bit operations, typ. for bit operations, typ. for floating point arithmetic, typ.  CPU processing times  The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  Backup  Plug-in (SIMATIC Memory Card), max.  Descriptions  Tor bit operations, typ.  1.7 µs; / instruction  CPU-brocess  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  B  Number, max.  Limited only by RAM for code  Data areas and their retentivity retentive data area in total (incl. times, counters, flags), max.  Flag  Number, max.  S kbyte, Size of bit memory address area  Local data  Per priority class, max.  16 kbyte  Process image  Inputs, adjustable Vigual adjustable Vigua		
expandable     load memory     eIntegrated     ePlug-in (SIMATIC Memory Card), max.     Backup     epresent     epresent     evithout battery     error diperations, typ.     for word operations, typ.     for floating point arithmetic, typ.		100 khyte
Load memory  Integrated Plug-in (SIMATIC Memory Card), max.  Plug-in (SIMATIC Memory Card), max.  Processing times  In the parations, typ.  In the parations, typ.  O.085 µs; / instruction  O.085 µs; / instruction  In the parations, typ.  O.085 µs; / instruction  Or word operations, typ.  In the parations  OPU-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 in total (incl. times, counters, flags), max.  Flag  Number, max.  Local data  Per priority class, max.  In kbyte  Inputs, adjustable  Inputs, adjustable  Inputs, adjustable  Versions  In kbyte  Outputs, adjustable  I kbyte  Outputs, adjustable  Outputs, adjustable  I kbyte  Outputs, adjustable  Output		
Integrated Plug-in (SIMATIC Memory Card), max.  Backup  present present without battery  Present without battery  Present processing times  for bit operations, typ. for word operations, typ.  O.085 µs; / instruction  1.7 µs; / instruction  OB 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 in total (incl. times, counters, flags), max.  Flag Number, max.  B kbyte; Size of bit memory address area  Local data per priority class, max.  16 kbyte  Process image Inputs, adjustable It kbyte  Hardware configuration  Number of modules per system, max.  3 comm. modules, 1 signal board, 8 signal modules  Time of day Clock Hardware clock (real-time clock) Peviation per day, max.  60 s/month at 25 °C	·	140
Plug-in (SIMATIC Memory Card), max.  Backup  present present print (Yes; maintenance-free present print (Yes; maintenance-free present provided perations, typ.  CPU processing times 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 in total (incl. times, counters, flags), max.  Flag  Number, max.  8 kbyte; Size of bit memory address area  Local data per priority class, max.  16 kbyte  Process image Inputs, adjustable provess image Inputs, adjustable Outputs, adjustable Vulputs, adjusta		4 Mhyta
Backup  present present without battery  Pes  CPU processing times  for bit operations, typ. 0.085 µs; / instruction  for word operations, typ. 1.7 µs; / instruction  for floating point arithmetic, typ. 2.3 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  Limited only by RAM for code  Data areas and their retentivity  retentive data area in total (incl. times, counters, flags), max.  Flag  Number, max.  8 kbyte; Size of bit memory address area  Local data  per priority class, max.  16 kbyte  Outputs, adjustable 1 kbyte  Outputs, adjustable 1 kbyte  Hardware configuration  Number of modules per system, max. 3 comm. modules, 1 signal board, 8 signal modules  Time of day  Clock Hardware clock (real-time clock) Peviation per day, max. 60 s/month at 25 °C	-	
Present Without battery  Yes; maintenance-free Yes  CPU processing times  for bit operations, typ.  0.085 µs; / instruction  for word operations, typ.  1.7 µs; / instruction  To floating point arithmetic, typ.  2.3 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 in total (incl. times, counters, flags), max.  Flag Number, max.  Local data Per priority class, max.  16 kbyte  Process image  Inputs, adjustable Ikbyte  Hardware configuration  Number of modules per system, max.  3 comm. modules, 1 signal board, 8 signal modules  Time of day  Clock Hardware clock (real-time clock) Poeviation per day, max.  60 s/month at 25 °C		with diviante memory card
• without battery  CPU processing times  for bit 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 in total (incl. times, counters, flags), max.  Flag  • Number, max.  Local data  • per priority class, max.  Process image  • Inputs, adjustable  • Outputs, adjustable  • Outputs, adjustable  • Outputs, adjustable  Hardware configuration  Number of modules per system, max.  Time of day  Clock  • Hardware clock (real-time clock)  • Deviation per day, max.  60 s/month at 25 °C		Voc: maintanance froe
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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 in total (incl. times, counters, flags), max.  Flag  Number, max.  8 kbyte; Size of bit memory address area  Local data  per priority class, max.  16 kbyte  Process image  Inputs, adjustable  I kbyte  Outputs, adjustable  Vertical data  1 kbyte  Hardware configuration  Number of modules per system, max.  3 comm. modules, 1 signal board, 8 signal modules  Time of day  Clock  Hardware clock (real-time clock)  Pes  Outpution per day, max.  60 s/month at 25 °C	without battery	Yes
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for floating point arithmetic, typ.  2.3 μs; / instruction  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 in total (incl. times, counters, flags), max.  Flag  Number, max.  S kbyte; Size of bit memory address area  Local data  per priority class, max.  16 kbyte  Process image  I hputs, adjustable  Outputs, adjustable  Number of modules per system, max.  3 comm. modules, 1 signal board, 8 signal modules  Time of day  Clock  Hardware clock (real-time clock)  Hardware clock (real-time clock)  Per book in the maximum number of address area address area  2.3 μs; / instruction  Addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used  10 kbyte  10 kbyte  11 kbyte  12.3 μs; / instruction  13 kbyte is size of bit memory and dress area  10 kbyte  11 kbyte  12.3 μs; / instruction  13 kbyte  14 kbyte  15 kbyte  16 kbyte  17 kbyte  17 kbyte  18 kbyte  18 kbyte  19 kbyte  19 kbyte  10 kbyte  10 kbyte  10 kbyte  10 kbyte  11 kbyte  11 kbyte  11 kbyte  12 kbyte  13 kbyte  14 kbyte  14 kbyte  15 kbyte  16 kbyte	for bit operations, typ.	0.085 μs; / instruction
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 in total (incl. times, counters, flags), max.  Flag  • Number, max.  Local data  • per priority class, max.  Process image  • Inputs, adjustable  • Outputs, adjustable  • Outputs, adjustable  1 kbyte  Hardware configuration  Number of modules per system, max.  10 kbyte  1 kbyte  Hardware clock (real-time clock)  • Hardware clock (real-time clock)  • Deviation per day, max.  10 kbyte	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 in total (incl. times, counters, flags), max.  Flag  Number, max.  8 kbyte; Size of bit memory address area  Local data  per priority class, max.  16 kbyte  Process image  Inputs, adjustable  Ikbyte  Outputs, adjustable  Kbyte  Hardware configuration  Number of modules per system, max.  3 comm. modules, 1 signal board, 8 signal modules  Time of day  Clock  Hardware clock (real-time clock)  Pes  Overlation per day, max.  60 s/month at 25 °C	for floating point arithmetic, typ.	2.3 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 in total (incl. times, counters, flags), max.  Flag  Number, max.  8 kbyte; Size of bit memory address area  Local data  per priority class, max.  16 kbyte  Process image  Inputs, adjustable  Ikbyte  Outputs, adjustable  Ikbyte  Outputs, adjustable  Abyte  Hardware configuration  Number of modules per system, max.  3 comm. modules, 1 signal board, 8 signal modules  Time of day  Clock  Hardware clock (real-time clock)  Pes  Overlation per day, max.  OB  Pass  Process image  Abyte  Abyte  Number of modules per system, max.  According to the maximum number of address and the signal modules  Process image  Abyte  Aby	CPI I-blacks	
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 in total (incl. times, counters, flags), max.  Flag  • Number, max.  8 kbyte; Size of bit memory address area  Local data  • per priority class, max.  16 kbyte  Process image  • Inputs, adjustable  • Outputs, adjustable  • Outputs, adjustable  1 kbyte  Hardware configuration  Number of modules per system, max.  3 comm. modules, 1 signal board, 8 signal modules  Time of day  Clock  • Hardware clock (real-time clock)  • Deviation per day, max.  60 s/month at 25 °C		DBs, FCs, FBs, counters and timers. The maximum number of
OB  • Number, max.  Limited only by RAM for code  Data areas and their retentivity  retentive data area in total (incl. times, counters, flags), max.  Flag  • Number, max.  Local data  • per priority class, max.  Process image  • Inputs, adjustable  • Outputs, adjustable  • Outputs, adjustable  1 kbyte  Hardware configuration  Number of modules per system, max.  3 comm. modules, 1 signal board, 8 signal modules  Time of day  Clock  • Hardware clock (real-time clock)  • Deviation per day, max.  Limited only by RAM for code  10 kbyte  10 kbyte  11 kbyte  12 kbyte  13 comm. modules, 1 signal board, 8 signal modules  13 comm. modules, 1 signal board, 8 signal modules	, <i>,</i>	
Number, max.  Limited only by RAM for code  Data areas and their retentivity retentive data area in total (incl. times, counters, flags), max.  Flag  Number, max.  Local data  per priority class, max.  Process image  Inputs, adjustable  Outputs, adjustable  Outputs, adjustable  Hardware configuration  Number of modules per system, max.  Time of day  Clock  Hardware clock (real-time clock)  Hardware clock (real-time clock)  Pes  Mumber of may, max.  Limited only by RAM for code  It kbyte  Number of bit memory address area  It kbyte  Number of bit memory address area  It kbyte  It kbyte  Number of modules per system, max.  It kbyte  Hardware configuration  Number of modules per system, max.  It is gnal board, 8 signal modules  Time of day  Clock  Hardware clock (real-time clock)  Ses  May are configuration  Number of modules per system, max.  Outputs, adjustable  It kbyte  Hardware clock (real-time clock)  Ses  May are configuration  Number of modules per system, max.  Outputs, adjustable  In kbyte  May are configuration  Number of modules per system, max.  Outputs, adjustable  It kbyte  May are configuration  Number of modules per system, max.  Outputs, adjustable  It kbyte  May are configuration  Number of modules per system, max.  Outputs, adjustable  May are configuration  Number of modules per system, max.  Outputs, adjustable  May are configuration  Number of modules per system, max.  Outputs, adjustable  May are configuration  Number of modules per system, max.  Outputs, adjustable  May are configuration  Number of modules per system, max.  Outputs, adjustable  May are configuration  Number of modules per system, max.  Outputs, adjustable  May are configuration  Number of modules per system, max.  Outputs, adjustable  May are configuration  Number of modules per system, max.  Outputs, adjustable  May are configuration  Number of modules per system, max.  Outputs, adjustable  May are configuration  Number of modules per system, max.  Outputs, adjustable  May are configuration  Number of modules per system,		restriction, the entire working memory can be used
Data areas and their retentivity  retentive data area in total (incl. times, counters, flags), max.  Flag  • Number, max.  Local data  • per priority class, max.  Process image  • Inputs, adjustable  • Outputs, adjustable  • Outputs, adjustable  1 kbyte  Hardware configuration  Number of modules per system, max.  13 comm. modules, 1 signal board, 8 signal modules  Time of day  Clock  • Hardware clock (real-time clock)  • Deviation per day, max.  10 kbyte  10 kbyte  1 kbyte	ОВ	
retentive data area in total (incl. times, counters, flags), max.  Flag  Number, max.  8 kbyte; Size of bit memory address area  Local data  per priority class, max.  16 kbyte  Process image  Inputs, adjustable  Number, adjustable  tkbyte  Utputs, adjustable  Time of day  Clock  Hardware clock (real-time clock)  Pes  A counters, flags  10 kbyte  10 kbyte  10 kbyte  11 kbyte  12 kbyte  13 comm. modules, 1 signal board, 8 signal modules  15 comm.  Yes  Outputs, adjustable  Period day  Clock  Hardware clock (real-time clock)  Outputs, adjustable  Period day  Clock  Outputs, adjustable  A comm. modules, 1 signal board, 8 signal modules  Time of day  Clock  Outputs, adjustable  Outputs, adjustable  A comm. modules, 1 signal board, 8 signal modules  Time of day  Clock  Outputs, adjustable  A comm. modules, 1 signal board, 8 signal modules	• Number, max.	Limited only by RAM for code
flags), max.  Flag  Number, max.  8 kbyte; Size of bit memory address area  Local data  per priority class, max.  16 kbyte  Process image  Inputs, adjustable  Outputs, adjustable  1 kbyte  Hardware configuration  Number of modules per system, max.  3 comm. modules, 1 signal board, 8 signal modules  Time of day  Clock  Hardware clock (real-time clock)  Hardware clock (real-time clock)  Poeviation per day, max.  60 s/month at 25 °C	Data areas and their retentivity	
Flag  ● Number, max.  8 kbyte; Size of bit memory address area  Local data  ● per priority class, max.  16 kbyte  Process image  ● Inputs, adjustable  ● Outputs, adjustable  ● Outputs, adjustable  1 kbyte  Hardware configuration  Number of modules per system, max.  3 comm. modules, 1 signal board, 8 signal modules  Time of day  Clock  ● Hardware clock (real-time clock)  ● Hardware clock (real-time clock)  ● Deviation per day, max.  60 s/month at 25 °C	·	10 kbyte
<ul> <li>Number, max.</li> <li>Local data</li> <li>per priority class, max.</li> <li>Process image</li> <li>Inputs, adjustable</li> <li>Outputs, adjustable</li> <li>1 kbyte</li> <li>Outputs, adjustable</li> <li>1 kbyte</li> </ul> Hardware configuration Number of modules per system, max. <ul> <li>3 comm. modules, 1 signal board, 8 signal modules</li> </ul> Time of day Clock <ul> <li>Hardware clock (real-time clock)</li> <li>Period of the period of</li></ul>		
Local data  • per priority class, max.  16 kbyte  Process image  • Inputs, adjustable  • Outputs, adjustable  1 kbyte  Hardware configuration  Number of modules per system, max.  3 comm. modules, 1 signal board, 8 signal modules  Time of day  Clock  • Hardware clock (real-time clock)  • Deviation per day, max.  16 kbyte  1 kbyte		
per priority class, max.  Process image  Inputs, adjustable  Outputs, adjustable  I kbyte  Hardware configuration  Number of modules per system, max.  3 comm. modules, 1 signal board, 8 signal modules  Time of day  Clock  Hardware clock (real-time clock)  Hardware clock (real-time clock)  Deviation per day, max.  16 kbyte  1 kbyte		8 kbyte; Size of bit memory address area
Process image  Inputs, adjustable  Outputs, adjustable  I kbyte  Hardware configuration  Number of modules per system, max.  3 comm. modules, 1 signal board, 8 signal modules  Time of day  Clock  Hardware clock (real-time clock)  Pes  Outputs, adjustable  1 kbyte		
<ul> <li>Inputs, adjustable</li> <li>Outputs, adjustable</li> <li>Hardware configuration</li> <li>Number of modules per system, max.</li> <li>3 comm. modules, 1 signal board, 8 signal modules</li> <li>Time of day</li> <li>Clock</li> <li>Hardware clock (real-time clock)</li> <li>Peviation per day, max.</li> <li>1 kbyte</li> <li>2 kyte</li> <li>2 kyte</li> <li>3 comm. modules, 1 signal board, 8 signal modules</li> <li>9 comm. modules, 1 signal board, 8 signal modules</li> <li>6 comm. modules, 1 signal board, 8 signal modules</li> <li>6 comm. modules, 1 signal board, 8 signal modules</li> <li>6 comm. modules, 1 signal board, 8 signal modules</li> <li>6 comm. modules, 1 signal board, 8 signal modules</li> <li>6 comm. modules, 1 signal board, 8 signal modules</li> <li>6 comm. modules, 1 signal board, 8 signal modules</li> <li>6 comm. modules, 1 sign</li></ul>	· · · ·	16 kbyte
● Outputs, adjustable  Hardware configuration  Number of modules per system, max.  3 comm. modules, 1 signal board, 8 signal modules  Time of day  Clock  ● Hardware clock (real-time clock)  ● Deviation per day, max.  1 kbyte  1 kbyte  1 kbyte  1 kbyte  1 kbyte  1 kbyte  6 os/month at 25 °C		
Hardware configuration  Number of modules per system, max.  3 comm. modules, 1 signal board, 8 signal modules  Time of day  Clock  • Hardware clock (real-time clock)  • Deviation per day, max.  Yes  60 s/month at 25 °C	<ul><li>Inputs, adjustable</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 clock)  Deviation per day, max.  3 comm. modules, 1 signal board, 8 signal modules  Yes  60 s/month at 25 °C	<ul> <li>Outputs, adjustable</li> </ul>	1 kbyte
Number of modules per system, max.  3 comm. modules, 1 signal board, 8 signal modules  Time of day  Clock  Hardware clock (real-time clock)  Deviation per day, max.  3 comm. modules, 1 signal board, 8 signal modules  Yes  60 s/month at 25 °C	Hardware configuration	
Clock  ● Hardware clock (real-time clock)  • Deviation per day, max.  Yes  60 s/month at 25 °C		3 comm. modules, 1 signal board, 8 signal modules
Clock  ● Hardware clock (real-time clock)  • Deviation per day, max.  Yes  60 s/month at 25 °C	Time of day	
<ul> <li>Deviation per day, max.</li> <li>60 s/month at 25 °C</li> </ul>		
	Hardware clock (real-time clock)	Yes
	Deviation per day, max.	60 s/month at 25 °C
. • .	Backup time	480 h; Typical

Digital inputs  Number of digital inputs	14; Integrated
	6; HSC (High Speed Counting)
<ul> <li>of which, inputs usable for technological functions</li> </ul>	o, nsc (nigh speed counting)
integrated channels (DI)	14
m/p-reading	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	14
Input voltage	
• Rated value (DC)	24 V
• for signal "0"	5 V DC at 1 mA
• for signal "1"	15 VDC at 2.5 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— Parameterizable	0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four
— at "0" to "1", min.	0.2 ms
— at "0" to "1", max.	12.8 ms
for interrupt inputs	
— Parameterizable	Yes
for counter/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
<ul> <li>of which high-speed outputs</li> </ul>	4; 100 kHz Pulse Train Output
integrated channels (DO)	10
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

• "0" to "1", max.	1 µs
• "1" to "0", max.	5 μs
Switching frequency	
• of the pulse outputs, with resistive load, max.	100 kHz
Cable length	
• shielded, max.	500 m
• Unshielded, max.	150 m
Analas innuta	
Analog inputs  Number of analog inputs	2
Integrated channels (AI)	2; 0 to 10V
Input ranges	2,0 to 100
• Voltage	Yes
Input ranges (rated values), voltages	1.00
• 0 to +10 V	Yes
	≥100k ohms
• Input resistance (0 to 10 V)	2 TOOK OTHINS
Cable length	400 materiate described
• shielded, max.	100 m; twisted and shielded
Analog value creation	
Integration and conversion time/resolution per channel	
<ul> <li>Resolution with overrange (bit including sign),</li> </ul>	10 bit
max.	
<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
1st interface	PROFINET
Interface type	PROFINET
Physics	Ethernet
Isolated	Yes
Automatic detection of transmission speed	Yes
Autonogotiation	Yes
Autocrossing	Yes
Functionality	
PROFINET IO Device	Yes; Also simultaneously with IO-Device functionality
	Yes
PROFINET IO Controller	
PROFINET IO Controller	
	100 Mbit/s
PROFINET IO Controller	100 Mbit/s 16
PROFINET IO Controller  • Transmission rate, max.	
PROFINET IO Controller  Transmission rate, max.  Number of connectable IO devices, max.	

— Shared device	Yes
<ul> <li>Number of IO controllers with shared</li> </ul>	2
device, max.	
Communication functions	
S7 communication	
• supported	Yes
• as server	Yes
• As client	Yes
Open IE communication	
• TCP/IP	Yes
• ISO-on-TCP (RFC1006)	Yes
• UDP	Yes
Web server	
• supported	Yes
<ul> <li>User-defined websites</li> </ul>	Yes
Number of connections	
• overall	16; dynamically
Test commissioning functions	
Status/control	
<ul> <li>Status/control variable</li> </ul>	Yes
Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	
• Forcing	Yes
Diagnostic buffer	
• present	Yes
Traces	
<ul><li>Number of configurable Traces</li></ul>	2; Up to 512 KB of data per trace are possible
Integrated Functions	
Number of counters	6
Counter frequency (counter) max.	100 kHz
Frequency meter	Yes

Number of counters	6
Counter frequency (counter) max.	100 kHz
Frequency meter	Yes
controlled positioning	Yes
Number of position-controlled positioning axes, max.	8
Number of positioning axes via pulse-direction interface	4
PID controller	Yes
Number of alarm inputs	4
Number of pulse outputs	4
Limit frequency (pulse)	100 kHz

## Potential separation

Calvania inalation disital inscrita	
Galvanic isolation digital inputs	500/40/
<ul> <li>Potential separation digital inputs</li> </ul>	500V AC for 1 minute
between the channels, in groups of	1
Potential separation digital outputs	
<ul> <li>Potential separation digital outputs</li> </ul>	Yes
<ul><li>between the channels</li></ul>	No
<ul><li>between the channels, in groups of</li></ul>	1
EMC	
Interference immunity against discharge of static electric	city
<ul> <li>Interference immunity against discharge of static electricity acc. to IEC 61000-4-2</li> </ul>	Yes
<ul> <li>Test voltage at air discharge</li> </ul>	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 lines acc. to IEC 61000-4-4</li> </ul>	Yes
Surge immunity	
• on the supply lines acc. to IEC 61000-4-5	Yes
Immunity against conducted interference induced by hig	gh-frequency fields
<ul> <li>Interference immunity against high-frequency radiation acc. to IEC 61000-4-6</li> </ul>	Yes
Emission of radio interference acc. to EN 55 011	
Limit class A, for use in industrial areas	Yes; Group 1
• Limit class 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 to EN 60529	
• IP20	Yes
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes
Marine approval	
Marine approval	Yes
Ambient conditions	
Free fall	
<ul><li>Drop height, max. (in packaging)</li></ul>	0.3 m; five times, in dispatch package

Ambient temperature in operation	
• Min.	-20 °C
● max.	60 °C; Number of simultaneously activated inputs or outputs 7 or 5 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 14 or 10 at 55 °C horizontal or 45 °C vertical
<ul> <li>horizontal installation, min.</li> </ul>	-20 °C
<ul> <li>horizontal installation, max.</li> </ul>	60 °C
<ul> <li>vertical installation, min.</li> </ul>	-20 °C
<ul> <li>vertical installation, max.</li> </ul>	50 °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.	1 080 hPa
<ul> <li>Permissible operating height</li> </ul>	-1000 to 2000 m
Relative humidity	
<ul> <li>Permissible range (without condensation) at 25</li> <li>°C</li> </ul>	95 %
Vibrations	
<ul><li>Vibrations</li></ul>	2G wall mounting, 1G DIN rail
<ul> <li>Operation, checked according to IEC 60068-2-</li> </ul>	Yes
Shock test	
<ul> <li>checked according to IEC 60068-2-27</li> </ul>	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
programming	
Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
Cycle time monitoring	
• can be set	Yes
Dimensions	
Width	110 mm
	400
Height	100 mm
Height Depth	75 mm

**last modified:** 17.04.2015