## **SIEMENS**

## Data sheet

## 6ES7214-1HE30-0XB0

\*\*\* SPARE PART\*\*\* SIMATIC S7-1200, CPU 1214C, COMPACT CPU, DC/DC/RELAY, ONBOARD I/O: 14 DI 24V DC; 10 DO RELAY 2A; 2 AI 0 - 10V DC, POWER SUPPLY: AC 20.4 - 28.8 V DC, PROGRAM/DATA MEMORY: 50 KB



General information	
Product type designation	CPU 1214C DC/DC/Relay
Engineering with	
<ul> <li>Programming package</li> </ul>	STEP 7 V10.5 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>	5 V
• permissible range, upper limit (DC)	250 V
Input current	
Current consumption (rated value)	500 mA; Typical
Current consumption, max.	1.2 A; 24 V DC
Inrush current, max.	12 A; at 28.8 V DC

Output current	
for backplane bus (5 V DC), max.	1 600 mA; Max. 5 V DC for SM and CM
Encoder supply	
24 V encoder supply	
• 24 V	Permissible range: 20.4V to 28.8V
Power loss	
Power loss, typ.	12 W
1 6461 1666, typ.	12 11
Memory	
Work memory	
• integrated	50 kbyte
• expandable	No
Load memory	
• integrated	2 Mbyte
<ul> <li>Plug-in (SIMATIC Memory Card), max.</li> </ul>	24 Mbyte; with SIMATIC memory card
Backup	
• present	Yes; Entire project maintenance-free in the integral EEPROM
without battery	Yes
ODII : "	
CPU processing times	0.4 up. / Operation
for bit operations, typ.	0.1 μs; / Operation
for word operations, typ.	12 µs; / Operation
for floating point arithmetic, typ.	18 μs; / Operation
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
OB	restriction, the entire working memory can be used
ОВ	Limited and the DAM for and
Number, max.	Limited only by RAM for code
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags),	2 048 byte
max.	
Flag	
● Number, max.	8 kbyte; Size of bit memory address area
Address area	
I/O address area	
• Inputs	1 024 byte
Outputs	1 024 byte
Process image	
Inputs, adjustable	1 kbyte
Outputs, adjustable	1 kbyte
1 , ,	

Time of day  Clock  Hardware clock (real-time) Backup time Deviation per day, max.  14: Integrated Gigtal inputs  Number of digital inputs Outricions Source/sink input Input voltage Rated value (DC) of or signal "0" of signal "1" Input cerent of or signal "1" 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  Single phase: 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kl & 3 at 30 kHz  Cable length  • shielded, max. • unshielded, max.  • unshielded, max.  • on lamp load, max.  • on lamp load, max.  • on lamp load, max.  • output delay with resistive load • "0" to "1", max.  10; Relays  Not to be provided externally  Switching capacity of the outputs  • with resistive load, max.  • on lamp load, max.  Output delay with resistive load • "0" to "1", max.  10 ms; max.	Hardware configuration	
Clock  • Hardware clock (real-time) • Backup time • Deviation per day, max.  Pigital inputs  Number of digital inputs • Of which inputs usable for technological functions  Source/sink input  • Rated value (DC) • 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. • shielded, max. • unshielded, max. • und residual cutputs  Number of digital outputs  Number of digital outputs  Number of digital outputs  Number of digital outputs  No; to be provided externally  Switching capacity of the outputs • with resistive load, max. • on lamp load, max. • 10 ms; max.	Number of modules per system, max.	3 comm. modules, 1 signal board, 8 signal modules
Hardware clock (real-time) Backup time Deviation per day, max.  240 h; Typical +/- 60 s/month at 25 °C  Digital inputs  Number of digital inputs of which inputs usable for technological functions functions  Source/sink input Input voltage Rated value (DC) of or signal "0" of or signal "1" Input certain of signal "1" of or sign	Time of day	
Backup time Deviation per day, max.  240 h; Typical +/- 60 s/month at 25 °C  Digital inputs  Number of digital inputs  Source/sink input input voltage  Rated value (DC) of or signal "0" of or signal "1" input current of or signal "1", typ. Imput 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  Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kl & 3 at 30 kHz  Cable length  • shielded, max.  • unshielded,	Clock	
Digital inputs  Number of digital inputs  of which inputs usable for technological functions  Source/sink input  Pasted value (DC)  of or signal "0"  of or signal "1"  Input voltage  Rated value (DC)  of or signal "1"  Input delay (for rated value of input voltage)  for standard inputs  — parameterizable — at "0" to "1", max.  for interrupt inputs — parameterizable — sheleded, max. — on lamp load, max.  on lamp load, max.  on lamp load, max.  10 ms; max.  10 ms; max.	<ul> <li>Hardware clock (real-time)</li> </ul>	Yes
Number of digital inputs  • of which inputs usable for technological functions  Source/sink input  • 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  for counter/technological functions — parameterizable  \$\text{Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kl & 3 at 30 kHz  \$\text{Cable length}\$  • shielded, max. • unshielded, max. • unshielded, max.  • unshielded, max. • unshielded, max. • unshielded, max. • unshielded, max. • on lamp load, max. • '0" to "1", max.  10 ms; max.  14; Integrated 6; HSC (High Speed Counting)  *Yes    HSC (High Speed Counting)  * LS (HSC (High Speed Counting)  * HSC (HSC (High Speed Counting)  * HSC (HSC (HSC (HSC (HSC (HSC (HSC (HSC	Backup time	240 h; Typical
Number of digital inputs  of which inputs usable for technological functions  Source/sink input  Pas  Input voltage  Rated value (DC)  of or signal "0"  of or signal "1"  of or signal "1", typ.  Input delay (for rated value of input voltage)  for standard inputs  — parameterizable  — at "0" to "1", max.  for interrupt inputs  — parameterizable  Single phase: 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 klz  Cable length  • shielded, max.  • unshielded, max.  • unshielded, max.  • unshielded, max.  • unshielded, max.  • of digital outputs  Nor the esistive load, max.  • with resistive load, max.  • on lamp load, max.  • v"0" to "1", max.  2 A  or lamp load, max.  • v"0" to "1", max.  10 ms; max.  10 ms; max.  10 ms; max.  10 ms; max.	<ul><li>Deviation per day, max.</li></ul>	+/- 60 s/month at 25 °C
of which inputs usable for technological functions  Source/sink input Input voltage      Rated value (DC)     of or signal "0"     of or signal "1"     input current      for signal "1", typ. Input delay (for rated value of input voltage)  for standard inputs	Digital inputs	
functions  Source/sink input Input voltage  Rated value (DC) 24 V  for signal "0" 5 V DC at 1 mA  for signal "1", typ. 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 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kl & 3 at 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  Short-circuit protection No; to be provided externally  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 "4", max. 10 ms; max.	Number of digital inputs	14; Integrated
Input voltage  Rated value (DC) for signal "0" for signal "1" The value of the signal "1"  For signal "1" For signal "1" For signal "1", typ.  Input current  Input current  Input delay (for rated value of input voltage)  For standard inputs  Input delay (for rated value of input voltage)  For standard inputs  Input delay (for rated value of input voltage)  For standard inputs  Input delay (for rated value of input voltage)  For standard inputs  Input delay (for rated value of input voltage)  For standard inputs  Input delay (for rated value of input voltage)  For standard inputs  Input delay (for rated value of input voltage)  For standard inputs  Input delay (for rated value of input voltage)  For to "1", max.  Input delay (for rated value of input voltage)  Input delay (for rated value	-	6; HSC (High Speed Counting)
Rated value (DC)  for signal "0"  for signal "1"  15 V DC at 1 mA  15 V DC at 2.5 mA  Input current  for signal "1", typ.  Input delay (for rated value of input voltage)  for standard inputs  parameterizable  parameterizable  o.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four  at "0" to "1", max.  12.8 ms  for interrupt inputs  parameterizable  for counter/technological functions  parameterizable  Single phase: 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kf & 3 at 30 kHz  Cable length  shielded, max.  unshielded, max.  ounshielded, max.  10; Relays  Sourt-circuit protection  No; to be provided externally  Switching capacity of the outputs  with resistive load, max.  on lamp sistive load  o"0" to "1", max.  10 ms; max.	Source/sink input	Yes
for signal "0"	Input voltage	
for signal "1"	Rated value (DC)	24 V
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.  — or interrupt inputs  — parameterizable  for counter/technological functions — parameterizable  • shielded, max.  • unshielded, max.  Digital outputs  Number of digital outputs  • with resistive load, max. • un lamp load, max. • un lam	• for signal "0"	5 V DC at 1 mA
• 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    Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kl & 3 at 30 kHz  Cable length  • shielded, max.   • unshielded, max.    Soo m; 50 m for technological functions    Digital outputs  Number of digital outputs    with resistive load, max.   • with resistive load, max.   • with resistive load, max.   • on lamp load, max.    • "0" to "1", max.    10 ms; max.    10 ms; 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  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  0.2 ms  — at "0" to "1", min. — at "0" to "1", max.  12.8 ms  for interrupt inputs  — parameterizable  for counter/technological functions — parameterizable  Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz  Cable length  • shielded, max. • unshielded, max.  • unshielded, max.  10; Relays  Short-circuit protection  No; to be provided externally  Switching capacity of the outputs  • with resistive load, max. • on lamp load, max.  • und max.  2 A  • on lamp load, max.  10 ms; max.	Input current	
for standard inputs  — parameterizable  — at "0" to "1", min. — at "0" to "1", max.  — at "0" to "4", max.  for interrupt inputs — parameterizable  — parameterizable  for counter/technological functions — parameterizable  — parameterizable  Single phase: 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kl & 3 at 30 kHz  Cable length  • shielded, max. • unshielded, max.  • unshielded, max.  Digital outputs  Number of digital outputs  Short-circuit protection  Switching capacity of the outputs  • with resistive load, max.  • on lamp load, max.  • "0" to "1", max.  10 ms; max.  10 ms; max.	● for signal "1", typ.	1 mA
- parameterizable  - at "0" to "1", min at "0" to "1", max.  for interrupt inputs - parameterizable  Yes  for counter/technological functions - parameterizable  Single phase: 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kf & 3 at 30 kHz  Cable length  • shielded, max. • unshielded, max.  Single phase: 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kf & 3 at 30 kHz  Cable length  • shielded, max.  Soo m; 50 m for technological functions: No  Digital outputs  Number of digital outputs  No; to be provided externally  Switching capacity of the outputs  • with resistive load, max.  • on lamp load, max.  Output delay with resistive load • "0" to "1", max.  10 ms; max.	Input delay (for rated value of input voltage)	
selectable in groups of four  - at "0" to "1", min at "0" to "1", max.  12.8 ms  for interrupt inputs  - parameterizable  for counter/technological functions  - parameterizable  Single phase: 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kf & 3 at 30 kHz  Cable length  • shielded, max. • unshielded, max.  100 m; 50 m for technological functions  Nomber of digital outputs  Number of digital outputs  No; to be provided externally  Switching capacity of the outputs  • with resistive load, max.  • on lamp load, max.  Output delay with resistive load  • "0" to "1", max.  10 ms; max.	for standard inputs	
- at "0" to "1", max.  for interrupt inputs  - parameterizable  for counter/technological functions  - parameterizable  Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz, differential: 3 at 80 kHz  Cable length  • shielded, max.  • unshielded, max.  • unshielded, max.  Soo m; 50 m for technological functions: No  Digital outputs  Number of digital outputs  Number of digital outputs  Short-circuit protection  No; to be provided externally  Switching capacity of the outputs  • with resistive load, max.  • on lamp load, max.  • on lamp load, max.  Output delay with resistive load  • "0" to "1", max.  10 ms; max.	— parameterizable	
for interrupt inputs  — parameterizable  for counter/technological functions  — parameterizable  Single phase: 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kl & 3 at 30 kHz  Cable length  • shielded, max.  • unshielded, max.  Digital outputs  Number of digital outputs  Number of digital outputs  Short-circuit protection  No; to be provided externally  Switching capacity of the outputs  • with resistive load, max.  • on lamp load, max.  Output delay with resistive load  • "0" to "1", max.  10 ms; max.	— at "0" to "1", min.	0.2 ms
or counter/technological functions  or parameterizable  Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kl & 3 at 30 kHz  Cable length  • shielded, max.  • unshielded, max.  500 m; 50 m for technological functions  300 m; For technological functions: No  Digital outputs  Number of digital outputs  Short-circuit protection  No; to be provided externally  Switching capacity of the outputs  • with resistive load, max.  • on lamp load, max.  30 W with DC, 200 W with AC  Output delay with resistive load  • "0" to "1", max.  10 ms; max.	— at "0" to "1", max.	12.8 ms
for counter/technological functions  — parameterizable  Single phase: 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kH & 3 at 30 kHz  Cable length  • shielded, max.  • unshielded, max.  10; Relays  Number of digital outputs  No; to be provided externally  Switching capacity of the outputs  • with resistive load, max.  • on lamp load, max.  Output delay with resistive load  • "0" to "1", max.  Single phase: 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz  8 at 30 kHz  10; Relays  10; Relays  2 A  30 W with DC, 200 W with AC	for interrupt inputs	
— parameterizable  Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kH & 3 at 30 kHz  Eable length  ■ shielded, max.  500 m; 50 m for technological functions 300 m; For technological functions: No  Digital outputs  Number of digital outputs  Short-circuit protection  No; to be provided externally  Switching capacity of the outputs  ■ with resistive load, max.  ■ on lamp load, max.  ■ on lamp load, max.  Output delay with resistive load  ■ "0" to "1", max.  Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz  & 3 at 30 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz & 3 at 30 kHz & 3 at 30 kHz & 4 at 30 kHz & 5	— parameterizable	Yes
& 3 at 30 kHz  Cable length  • shielded, max.  • unshielded, max.  500 m; 50 m for technological functions 300 m; For technological functions: No  Digital outputs  Number of digital outputs  Short-circuit protection  Switching capacity of the outputs  • with resistive load, max.  • on lamp load, max.  Output delay with resistive load  • "0" to "1", max.  \$00 m; For technological functions: No  10; Relays  No; to be provided externally  2 A  30 W with DC, 200 W with AC	for counter/technological functions	
<ul> <li>shielded, max.</li> <li>unshielded, max.</li> <li>300 m; For technological functions: No</li> </ul> Digital outputs <ul> <li>Number of digital outputs</li> <li>Short-circuit protection</li> <li>Switching capacity of the outputs</li> <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> 500 m; 50 m for technological functions No 10; Relays No; to be provided externally 2 A 30 W with DC, 200 W with AC Output delay with resistive load • "0" to "1", max. 10 ms; max. 10 ms; max.	— parameterizable	Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz
<ul> <li>unshielded, max.</li> <li>Digital outputs</li> <li>Number of digital outputs</li> <li>Short-circuit protection</li> <li>Switching capacity of the outputs</li> <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> <li>300 m; For technological functions: No</li> <li>Relays</li> <li>No; to be provided externally</li> <li>2 A</li> <li>30 W with DC, 200 W with AC</li> <li>10 ms; max.</li> </ul>	Cable length	
Digital outputs  Number of digital outputs  Short-circuit protection  Switching capacity of the outputs  • with resistive load, max.  • on lamp load, max.  Output delay with resistive load  • "0" to "1", max.  10; Relays  No; to be provided externally  2 A  30 W with DC, 200 W with AC	• shielded, max.	500 m; 50 m for technological functions
Number of digital outputs  Short-circuit protection  No; to be provided externally  Switching capacity of the outputs  with resistive load, max.  on lamp load, max.  Output delay with resistive load  "0" to "1", max.  10 ms; max.	• unshielded, max.	300 m; For technological functions: No
Short-circuit protection  No; to be provided externally  Switching capacity of the outputs  with resistive load, max.  on lamp load, max.  Output delay with resistive load  "0" to "1", max.  No; to be provided externally  2 A  30 W with DC, 200 W with AC		
Switching capacity of the outputs  • with resistive load, max.  • on lamp load, max.  Output delay with resistive load  • "0" to "1", max.  2 A  30 W with DC, 200 W with AC  10 ms; max.	Number of digital outputs	10; Relays
<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> <li>10 ms; max.</li> </ul>	•	No; to be provided externally
<ul> <li>on lamp load, max.</li> <li>Output delay with resistive load</li> <li>"0" to "1", max.</li> <li>10 ms; max.</li> </ul>	Switching capacity of the outputs	
Output delay with resistive load  • "0" to "1", max.  10 ms; max.	<ul><li>with resistive load, max.</li></ul>	
• "0" to "1", max. 10 ms; max.	• on lamp load, max.	30 W with DC, 200 W with AC
	Output delay with resistive load	
• "1" to "0", max.	• "0" to "1", max.	10 ms; max.
	• "1" to "0", max.	10 ms; max.

Relay outputs  Number of relay outputs  Number of operating cycles, max.  Sable length  shielded, max.  unshielded, max.  nalog inputs  Number of analog inputs  nput ranges  Voltage  nput ranges (rated values), voltages  o to +10 V  Input resistance (0 to 10 V)  Cable length  shielded, max.	1 Hz  10  mechanically 10 million, at rated load voltage 100 000  500 m  150 m  2
Number of relay outputs  Number of operating cycles, max.  Dable length  shielded, max.  unshielded, max.  nalog inputs  Number of analog inputs  nput ranges  Voltage  nput ranges (rated values), voltages  o to +10 V  Input resistance (0 to 10 V)  Cable length  shielded, max.  nalog outputs  Number of analog outputs  Cable length  Cable length  Cable length	mechanically 10 million, at rated load voltage 100 000  500 m  150 m  2
Number of operating cycles, max.  Dable length  shielded, max.  unshielded, max.  nalog inputs  Number of analog inputs  nput ranges  Voltage  nput ranges (rated values), voltages  o to +10 V  Input resistance (0 to 10 V)  Cable length  shielded, max.  nalog outputs  Number of analog outputs  Cable length  Cable length	mechanically 10 million, at rated load voltage 100 000  500 m  150 m  2
Cable length  • shielded, max.  • unshielded, max.  nalog inputs  Number of analog inputs  nput ranges  • Voltage  nput ranges (rated values), voltages  • 0 to +10 V  • Input resistance (0 to 10 V)  Cable length  • shielded, max.  nalog outputs  Number of analog outputs  Cable length	500 m 150 m 2 Yes
shielded, max.     unshielded, max.  Inalog inputs  Number of analog inputs  Input ranges     Voltage  Input ranges (rated values), voltages  Input resistance (0 to 10 V)  Cable length     shielded, max.  Inalog outputs  Number of analog outputs  Cable length  Cable length  Cable length  Cable length	150 m 2 Yes
unshielded, max.  Inalog inputs  Number of analog inputs  Input ranges  Voltage  Input ranges (rated values), voltages  Input resistance (0 to 10 V)  Cable length  Input resistance (0 to 10 V)  Cable length  Inalog outputs  Number of analog outputs  Cable length  Cable length  Cable length	150 m  2  Yes
nalog inputs  Number of analog inputs  nput ranges  • Voltage  nput ranges (rated values), voltages  • 0 to +10 V  • Input resistance (0 to 10 V)  Cable length  • shielded, max.  nalog outputs  Number of analog outputs  Cable length	2 Yes
Number of analog inputs  nput ranges  • Voltage  nput ranges (rated values), voltages  • 0 to +10 V  • Input resistance (0 to 10 V)  Cable length  • shielded, max.  nalog outputs  Number of analog outputs  Cable length	Yes
Number of analog inputs  nput ranges  • Voltage  nput ranges (rated values), voltages  • 0 to +10 V  • Input resistance (0 to 10 V)  Cable length  • shielded, max.  nalog outputs  Number of analog outputs  Cable length	Yes
Voltage  nput ranges (rated values), voltages      0 to +10 V      Input resistance (0 to 10 V)  Cable length     shielded, max.  nalog outputs  Number of analog outputs  Cable length  Cable length	
Voltage  nput ranges (rated values), voltages      0 to +10 V      Input resistance (0 to 10 V)  Cable length     shielded, max.  nalog outputs  Number of analog outputs  Cable length  Cable length	
• 0 to +10 V     • Input resistance (0 to 10 V)  Cable length     • shielded, max.  nalog outputs  Number of analog outputs  Cable length  Cable length	
O to +10 V      Input resistance (0 to 10 V)  Cable length     shielded, max.  nalog outputs  Number of analog outputs  Cable length	
Cable length  • shielded, max.  nalog outputs  Number of analog outputs  Cable length	Yes
Cable length  • shielded, max.  nalog outputs  Number of analog outputs  Cable length	≥100k ohms
shielded, max.  nalog outputs  Number of analog outputs  Cable length	
Number of analog outputs  Cable length	100 m; twisted and shielded
Number of analog outputs  Cable length	
Cable length	0
	100 m; shielded, twisted pair
nalog value generation for the inputs	
ntegration and conversion time/resolution per channel	
Resolution with overrange (bit including sign),	10 bit
max.	
Integration time, parameterizable	Yes
• Conversion time (per channel)	625 µs
ncoder	
Connectable encoders	
• 2-wire sensor	Yes
Interface	
nterface type	PROFINET
Physics	Ethernet
solated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	
Functionality	Yes
PROFINET IO Controller	Yes
rotocols	Yes Yes

Supports protocol for PROFINET IO No PROFIBUS No No AS-Interface No Protocols (Ethernet)  • TCP-IIP Yes Purther protocols  • MODBUS No No Protocols (Ethernet)  • TCP-IIP Yes Purther protocols  • MODBUS No Protocols  • MODBUS No Protocols  • Supported Yes Yes Pes Personal Protocols  • ISO-On-TOP (RFC1006) Yes Pes Pes Pes Pes Pes Pes Pes Pes Pes P		
AS-Interface No Protocols (Ethernet)  • TCP/IP Yes  Further protocols  • MODBUS No  Communication functions  57 communication  • supported Yes  • as server Yes  Open IE communication  • TCP/IP Yes  • ISC-on-TCP (RFC1006) Yes  Web server  • supported Yes  • usproted Yes  • User-defined websites Yes  Number of connections  • overall 15; dynamically  Test commissioning functions  Status/control variable  • Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters  Forcing  • Forcing Yes  Integrated Functions  Number of counters 6  Counting frequency (counter) max. Frequency meter Yes  controlled positioning Yes  PID controller  Ves  Potential separation digital inputs  • Potential separation digital outputs  • Potential separation digital outputs  • between the channels in groups of  Potential separation digital outputs  • between the channels  Potential separation digital outputs  • between the channels  Relays  • between the channels	Supports protocol for PROFINET IO	No
Protocols (Ethernet)  • TCPIP  Further protocols  • MODBUS  No  Communication functions  S7 communication  • supported  • sa server  Open IE communication  • TCP/IP  • ISO-on-TCP (RFC1006)  Web server  • supported  • User-defined websites  • ves  Number of connections  • Overall  • Status/control variable  • Variables  Forcing  • Forcing  • Forcing  Integrated Functions  Number of counters  Counting frequency (counter) max.  Frequency meter  controlled positioning  Potential separation digital inputs  • Potential separation digital outputs  • Determine Separation digital outputs  • Potential separation digital outputs	PROFIBUS	No
• TCP/IP   Yes   Further protocols  • MODBUS	AS-Interface	No
Further protocols  • MODBUS  No  Communication functions  S7 communication  • supported Yes • as server Yes  Open IE communication  • TCP/IP • (SO-on-TCP (RFC1006) Yes  Web server  • supported Yes • User-defined websites Yes  Number of connections  • overall 15, dynamically  Test commissioning functions  Status/control • Status/control variable Yes • Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters  Forcing  • Forcing Yes  Counting frequency (counter) max. 100 kHz  Frequency meter Yes  Number of alarm inputs 4  Potential separation  Potential separation digital inputs  • Potential separation digital outputs • Determine Agency American Agency American Agency American Agency American Agency American Agency Agency American Agency American Agency A	Protocols (Ethernet)	
MODBUS  No  Communication functions  S7 communication  • supported Yes  • as server Yes  Open IE communication  • TCP/IP • ISO-on-TCP (RFC1006)  Web server  • supported Yes  • supported Yes  • supported Yes  • supported Yes  • user-defined websites Yes  Number of connections  • overall 15; dynamically  Test commissioning functions  Status/control variable • Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters  Forcing  • Forcing  Number of counters  6 Counting frequency (counter) max. 100 kHz  Frequency meter Yes  Controller Yes  Number of alarm inputs  4  Potential separation digital inputs • Potential separation digital outputs	• TCP/IP	Yes
S7 communication functions S7 communication  • supported • as server  Open IE communication  • TCP/IP • ISO-on-TCP (RFC1006)  Web server  • supported • User-defined websites  Ves  Number of connections • overall  • Status/control variable • Variables  Forcing • Forcing  • Forcing  Number of counters  Counting frequency (counter) max.  Frequency meter  Counting frequency (counter) max.  Frequency meter  Counting frequency (counter) max.  Frequency meter  Number of alarm inputs  Potential separation digital inputs • between the channels • Potential separation digital outputs	Further protocols	
S7 communication  • supported • as server  Poen IE communication  • TCP/IP • ISO-on-TCP (RFC1006)  Web server  • supported • User-defined websites  Number of connections  Forcing  • Forcing  Number of counters  Countring frequency (counter) max.  Frequency meter  Controlled positioning  P1D controller  P2S  Number of alarm inputs  P2S  P1D controller  P2S  P2S  P3S  P4S  P3S  P4S  P3S  P4S  P3S  P4S  P5S  P5S  P6S  P6S  P6S  P7S  P6S  P7S  P7S  P7	• MODBUS	No
supported     as server     Yes  Open IE communication      TCP/IP	Communication functions	
• as server  Open IE communication  • TCP/IP • ISO-on-TCP (RFC1006)  Web server  • supported • User-defined websites  • overall  Test commissioning functions  Status/control • Status/control variable • Variables  • Variables  Forcing • Forcing  • Forcing  • Forcing  Number of counters  Counting frequency (counter) max.  Frequency meter  controlled positioning  Yes  Number of alarm inputs  4  Potential separation digital inputs • Potential separation digital outputs	S7 communication	
Open IE communication  TCP/IP  ISO-on-TCP (RFC1006)  Ves  Web server  supported User-defined websites  Number of connections overall  Status/control  Status/control  Status/control variable Variables  Forcing Forcing Forcing  Forcing  Forcing  Forcing  Forcing  Ves  Counting frequency (counter) max.  100 kHz  Frequency meter Controlled positioning Yes  Number of alarm inputs  Potential separation  Potential separation digital inputs Detween the channels, in groups of Potential separation digital outputs Potential separation	<ul><li>supported</li></ul>	Yes
TCP/IP  ISO-on-TCP (RFC1006)  Web server  Supported  User-defined websites  Ves  Number of connections  Status/control variable  Variables  Forcing  Forcing  Forcing  Forcing  Forcing  Potential separation digital inputs  Potential separation digital outputs	• as server	Yes
Iso-on-TCP (RFC1006)  Web server  supported Supported User-defined websites Yes  Number of connections overall 15; dynamically  Test commissioning functions  Status/control Status/control Status/control variable Variables Forcing Forcing Yes  Integrated Functions  Number of counters  Counting frequency (counter) max. Frequency meter Controlled positioning Yes  PiD controller  Ves Number of alarm inputs  4  Potential separation digital inputs Detween the channels, in groups of Potential separation digital outputs Potential	Open IE communication	
Web server  • supported • User-defined websites  • overall  15; dynamically  Test commissioning functions  Status/control  • Status/control variable • Variables  • Forcing • Forcing  • Forcing  • Forcing  • Forcing  • Forcing  • Forcing  • Forcing  • Forcing  • Forcing  • Forcing  • Forcing  • Forcing  • Forcing  • Potential separation digital inputs  • Potential separation digital outputs • Determine the channels	• TCP/IP	Yes
supported         User-defined websites         Yes  Number of connections	• ISO-on-TCP (RFC1006)	Yes
● User-defined websites  Number of connections  ● overall  15; dynamically  Test commissioning functions  Status/control  ● Status/control variable  ● Variables  Forcing  ● Forcing  ● Forcing  Number of counters  Counting frequency (counter) max.  Frequency meter  controlled positioning  PID controller  Number of alarm inputs  4  Potential separation digital inputs  ● Potential separation digital outputs	Web server	
Number of connections  overall 15; dynamically  Test commissioning functions  Status/control  Status/control variable Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters  Forcing  Forcing Yes  Integrated Functions  Number of counters 6 Counting frequency (counter) max. 100 kHz  Frequency meter Yes controlled positioning Yes  PID controller Yes  Number of alarm inputs 4  Potential separation digital inputs  Potential separation digital inputs  Potential separation digital outputs	• supported	Yes
overall	<ul> <li>User-defined websites</li> </ul>	Yes
Test commissioning functions  Status/control  Status/control variable  Ves Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters  Forcing  Forcing  Forcing  Forcing  Number of counters  Counting frequency (counter) max.  Frequency meter  Controlled positioning  Yes  PID controller  Number of alarm inputs  4  Potential separation digital inputs  Potential separation digital inputs  Potential separation digital outputs	Number of connections	
Status/control  Status/control variable Variables  Porcing Forcing Forcing  Forcing  Forcing  Forcing  Forcing  Forcing  Forcing  Forcing  Status/control variable  Forcing  F	• overall	15; dynamically
• Status/control variable  • Variables  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters  Forcing  • Forcing  Yes  Integrated Functions  Number of counters  Counting frequency (counter) max.  Frequency meter  controlled positioning  Yes  PID controller  Number of alarm inputs  4  Potential separation digital inputs  • Potential separation digital inputs  • Detential separation digital outputs  • Potential separation digital outputs	Test commissioning functions	
Variables     Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters  Forcing     Yes  Integrated Functions  Number of counters     Counting frequency (counter) max.     100 kHz  Frequency meter     Yes     controlled positioning     Yes  PID controller     Yes  Number of alarm inputs  4  Potential separation  Potential separation digital inputs     • Potential separation digital outputs	Status/control	
Forcing  Forcing  Forcing  Forcing  Yes  Integrated Functions  Number of counters  6  Counting frequency (counter) max.  Frequency meter  controlled positioning  Yes  PID controller  Number of alarm inputs  4  Potential separation  Potential separation digital inputs  Potential separation digital inputs  Potential separation digital outputs	<ul> <li>Status/control variable</li> </ul>	Yes
● Forcing  Integrated Functions  Number of counters 6 Counting frequency (counter) max. 100 kHz  Frequency meter Yes controlled positioning Yes  PID controller Yes Number of alarm inputs 4  Potential separation  Potential separation digital inputs ● Potential separation digital inputs ● between the channels, in groups of  Potential separation digital outputs ● Potential separation digital outputs ● Potential separation digital outputs ● Potential separation digital outputs  ● Potential separation digital outputs  ● Potential separation digital outputs  ● Potential separation digital outputs  ● Potential separation digital outputs  No	<ul><li>Variables</li></ul>	
Integrated Functions  Number of counters  Counting frequency (counter) max.  Frequency meter  Controlled positioning  PID controller  Number of alarm inputs  Potential separation  Potential separation digital inputs  Potential separation digital inputs  Potential separation digital inputs  Potential separation digital outputs  No	Forcing	
Number of counters  Counting frequency (counter) max.  Frequency meter  Controlled positioning  Yes  PID controller  Number of alarm inputs  Potential separation  Potential separation digital inputs  Potential separation digital outputs  No	<ul><li>Forcing</li></ul>	Yes
Counting frequency (counter) max.  Frequency meter  Controlled positioning  Yes  PID controller  Yes  Number of alarm inputs  Potential separation  Potential separation digital inputs  Potential separation digital inputs  Potential separation digital inputs  Potential separation digital inputs  Potential separation digital outputs  No	Integrated Functions	
Frequency meter  controlled positioning  Yes  PID controller  Yes  Number of alarm inputs  4  Potential separation  Potential separation digital inputs  • Potential separation digital inputs  • between the channels, in groups of  Potential separation digital outputs  • No		
controlled positioning  PID controller  Yes  Number of alarm inputs  4  Potential separation  Potential separation digital inputs  • Potential separation digital inputs  • between the channels, in groups of  Potential separation digital outputs  • No		
PID controller  Number of alarm inputs  4  Potential separation  Potential separation digital inputs  • Potential separation digital inputs  • between the channels, in groups of  Potential separation digital outputs  • Potential separation digital outputs  • Potential separation digital outputs  • between the channels  No		
Number of alarm inputs  Potential separation  Potential separation digital inputs  Potential separation digital inputs  Potential separation digital inputs  between the channels, in groups of  Potential separation digital outputs  Potential separation digital outputs  Potential separation digital outputs  No  Relays  between the channels  No		
Potential separation  Potential separation digital inputs  • Potential separation digital inputs  • between the channels, in groups of  Potential separation digital outputs  • Potential separation digital outputs  • Potential separation digital outputs  • between the channels  No		
Potential separation digital inputs  • Potential separation digital inputs  • between the channels, in groups of  Potential separation digital outputs  • Potential separation digital outputs  • between the channels  No	Number of alarm inputs	4
<ul> <li>Potential separation digital inputs</li> <li>between the channels, in groups of</li> <li>Potential separation digital outputs</li> <li>Potential separation digital outputs</li> <li>Belays</li> <li>Between the channels</li> <li>No</li> </ul>		
<ul> <li>between the channels, in groups of</li> <li>Potential separation digital outputs</li> <li>Potential separation digital outputs</li> <li>Between the channels</li> <li>No</li> </ul>		Mi
Potential separation digital outputs  • Potential separation digital outputs  • between the channels  No		
<ul> <li>Potential separation digital outputs</li> <li>between the channels</li> <li>No</li> </ul>		1
● between the channels No		
	<ul> <li>Potential separation digital outputs</li> </ul>	
<ul><li>between the channels, in groups of</li></ul>	<ul> <li>between the channels</li> </ul>	NI -
		NO

Permissible potential difference	
between different circuits	500 V DC between 24 V DC and 5 V DC
EMC	
Interference immunity against discharge of static electric	city
Interference immunity against discharge of	Yes
static electricity acc. to IEC 61000-4-2	
<ul> <li>Test voltage at air discharge</li> </ul>	8 kV
<ul> <li>Test voltage at contact discharge</li> </ul>	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	
• on the supply lines acc. to IEC 61000-4-5	Yes
Interference immunity against conducted variable distur	bance induced by high-frequency fields
<ul> <li>Interference immunity against high-frequency radiation acc. to IEC 61000-4-6</li> </ul>	Yes
Emission of radio interference acc. to EN 55 011	
Limit class A, for use in industrial areas	Yes; Group 1
• Limit class 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
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes
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
• vertical installation, min.	0 °C
<ul> <li>vertical installation, max.</li> </ul>	45 °C
• permissible temperature change	5°C to 55°C, 3°C / minute

• min.	-40 °C
	70 °C
• max.	70 C
Air pressure acc. to IEC 60068-2-13	705   0
Operation, min.	795 hPa
Operation, max.	1 080 hPa
Storage/transport, min.	660 hPa
<ul> <li>Storage/transport, max.</li> </ul>	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 %
<ul><li>Operation, max.</li></ul>	95 %; no condensation
Vibrations	
Vibrations	2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail
Operation, tested according to IEC 60068-2-6	Yes
Shock test	
• tested according to IEC 60068-2-27	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (pear value), duration 11 ms
Extended ambient conditions	
Pollutant concentrations	
— SO2 at RH < 60% without condensation	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
onfiguration	
Programming	
Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
Cycle time monitoring	
adjustable	Yes
imensions	
Width	110 mm
Height	100 mm
Depth	75 mm
/eights	105
Weight, approx.	435 g
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