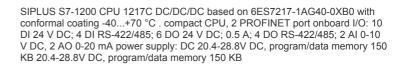
## **SIEMENS**

## **Data sheet**





General information	
Product type designation	CPU 1217C DC/DC/DC
based on	6ES7217-1AG40-0XB0
Engineering with	
Programming package	STEP 7 V17 or higher
<ul> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul>	see entry ID: 109746275
Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Load voltage L+	
• Rated value (DC)	24 V
<ul> <li>permissible range, lower limit (DC)</li> </ul>	20.4 V
<ul> <li>permissible range, upper limit (DC)</li> </ul>	28.8 V
Input current	
Current consumption (rated value)	600 mA; CPU only
Current consumption, max.	1 600 mA; CPU with all expansion modules
Inrush current, max.	12 A; at 28.8 V DC
l²t	0.5 A²·s
Output current	
for backplane bus (5 V DC), max.	1 600 mA; Max. 5 V DC for SM and CM
Encoder supply	
24 V encoder supply	
• 24 V	L+ minus 4 V DC min.
Power loss	
Power loss, typ.	12 W
Memory	
Work memory	
• integrated	150 kbyte
Load memory	
• integrated	4 Mbyte
<ul> <li>Plug-in (SIMATIC Memory Card), max.</li> </ul>	with SIMATIC memory card
Backup	
• present	Yes
maintenance-free	Yes
<ul><li>without battery</li></ul>	Yes
CPU processing times	
for bit operations, typ.	0.08 μs; / instruction

for word energians, type	1.7 vo. / instruction
for word operations, typ.	1.7 μs; / instruction
for floating point arithmetic, typ.	2.3 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 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.	14 kbyte
Flag	
• Size, max.	8 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	
Process image	
Inputs, adjustable	1 kbyte
Outputs, adjustable	1 kbyte
Hardware configuration	· imple
Number of modules per system, max.	3 comm. modules, 1 signal board, 8 signal modules
Time of day	5 comm. modulos, i olymai bodiu, o olymai modulos
Clock	
Hardware clock (real-time)	Yes
,	
Backup time     Deviation per day, may	480 h; Typical ±60 s/month at 25 °C
Deviation per day, max.  Digital inputs	±00 S/IIIOIItii at 25 C
Digital inputs	
Number of digital inputs	14; Integrated
of which inputs usable for technological functions	6; HSC (High Speed Counting)
Source/sink input	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— 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 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
— at "0" to "1", min.	0.2 ms
— at "0" to "1", max.	12.8 ms
·	12.0 1115
for interrupt inputs	Voc
— parameterizable	Yes
for technological functions	Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30
— 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
of which high-speed outputs	4; 100 kHz Pulse Train Output
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	0.1 V: with 10 kOhm load
<ul><li>for signal "0", max.</li></ul>	0.1 V; with 10 kOhm load
• for signal "1", min.	20 V

• for signal "1" rated value or na.		
Cutrus delay with recision load  - ""th ""th ""y", max.  - ""th o""y", max.  - """th o""y", max.  - """th		
e-"15 to "7", max.   1 µs   -"15 to "7", max.   5 µs    Switching frequency   - of the puber outguts, with resistive load, max.   - 100 Mbz   - Resign outguts   - Number of resign outguts   - Number of resign outguts   - Shielded, max.   500 m   - shielded, max.   150 m   - Annitog inputs   - Number of readog pubs   2   - Input ranges   - Voltage   Yes   - Input resistance (0 to 10 V)   2   - Input ranges carted values), voltages   - Shielded, max.   100 m; to visited and shielded   - Input resistance (0 to 10 V)   2   - Input ranges carted values), voltages   - Voltage   Yes   - Input resistance (0 to 10 V)   2   - Input ranges carted values), voltages   - Shielded, max.   100 m; to visited and shielded   - Insulation of the languts   - Shielded, max.   100 m; to visited and shielded   - Annitog outguts   - O to 20 mA   Yes   - Outgut ranges, current   - O to 20 mA   Yes   - Annitog value generation for the languts   - Integration time, par characterizable   Yes   - Convertion time (per characterizable   Yes   - Convertion with overrange (bit including sign), max.   - Integration and conversion time-residuation per characterizable   Yes   - Convertion with overrange (bit including sign), max.   - PROFINET (conversion   Yes   - Number of ports   Yes   - PROFINET (conversion   Yes   - PR	• for signal "0" residual current, max.	0.1 mA
* "It for "Or," max. * of the pulse outputs, with resistive load, max. * of the pulse outputs. * of the pulse outputs. * Number of relay outputs. * of the pulse outputs. * Number of analog inputs. * of the pulse outputs. *	Output delay with resistive load	
- **I** to 70°, max **of the pulse outputs, with resistive load, max.  **Ratisy outputs - **Number of raley outputs - **shelded, max **unshelded, max **unshelded, max **unshelded, max **unshelded, max **unshelded, max **unshelded, max **Iso m  **Anatiog inputs - **Number of analog inputs - **Voltage **Voltage **Voltage **Voltage **Voltage **Input resistance (0 to 10 V) - **Input resista	• "0" to "1", max.	1 μs
Switching frequency  of the pulse outputs, with residive load, max.  Relay outputs  Number of relay outputs  o harded, max.  shaleded, max.  shaleded, max.  150 m  Anatog inputs  Number of analog inputs  o voltage  o voltage  o voltage  o to the Ho V  mport residence (0 to 10 V)  The pulse outputs  o to the Ho V  mport residence (0 to 10 V)  Anatog outputs  o to the Ho V  mport residence (10 to 10 V)  Anatog outputs  o the Ho V  mport residence (10 to 10 V)  Anatog outputs  o the Ho V  shaleded, max.  100 m; twisted and shielded  Anatog outputs  O to 20 mA  Anatog value generation for the inputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  integration time, personnel (25 g is  Conversion time (per channel)  Resolution with overrange (bit including sign), max.  Integration time, personnel (10 to the public linearing)  Resolution with overrange (bit including sign), max.  Persolution with overrange (bit including sign), max.  Integration and conversion time-tension per channel  Resolution with overrange (bit including sign), max.  Proceeding  Conversion time (per channel)  Anatog value generation for the outputs  Integration and conversion interferenciation per channel  Resolution with overrange (bit including sign), max.  Proceeding  Conversion time (per channel)  Resolution with overrange (bit including sign), max.  Proceeding  Conversion time (per channel)  Resolution with overrange (bit including sign), max.  Proceeding  Conversion time (per channel)  Resolution with overrange (bit including sign), max.  Proceeding  Conversion time (per channel)  Resolution with overrange (bit including sign), max.  Proceeding  Conversion time (per channel)  Resolution with overrange (bit including sign), max.  Proceeding  Conversion time (per channel)  Resolution with overrange (bit including sign), max.  Proceeding  Conversion time (per channel)  Resolution with overrange (bit including sign), max.  Proceeding  Resolution with overrange (bit including sign),	• "1" to "0", max.	5 µs
Religious culpulas outputs, with resistive load, max.  Number of relay outputs  a sheleded, max.  unshelded, max.  150 m  Analog inputs    Vestage   Vestage   Vestage		
Relay outputs  Number of rolay outputs  Number of rolay outputs  Number of analog inputs  Input ranges  Voltage  Input ranges (relet values), voltages  O to *10 V  Input resistance (0 to 10 V)  Thing outputs  Number of analog outputs  Analog outputs  Number of analog outputs  O to *10 V  Thing outputs  Analog outputs  O to 20 mA  Ves  Analog value generation for the inputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Number of analog acoust interfesolution per channel  Resolution with overrange (bit including sign), max.  Number of manalog acoust interfesolution per channel  Resolution with overrange (bit including sign), max.  Number of manalog outputs  Number of manalog outputs  Per output		100 kHz
Anilog routputs		TOO KI IZ
Cable length  • shielded, max.  • unshielded, max.  • unshielded, max.  • unshielded, max.  * Uniterianges  • Votage    Ves   Input ranges (rated values), votages  • Un + 10 V   Yes   Input ranges (rated values), votages  • Un + 10 V   How	•	
* whilelded, max.     * unaheleded, max.     * unaheleded, max.     * store of manbo, inputs Number of analog inputs Input ranges     * Voltage     * V	• •	U
Analog value personal time resolution per channel  - Resolution with overrange (bit including sign), max Integration and conversion time resolution per channel - Resolution with overrange (bit including sign), max Presolution with overrange (bit in	Cable length	
Number of analog inputs   2	<ul><li>shielded, max.</li></ul>	500 m
Number of analog inputs    Input ranges (rated values), voltages   Yes	<ul><li>unshielded, max.</li></ul>	150 m
voltages   voltages   Ves   Input ranges (rated values), voltages   Ves   Input ranges (rated values), voltages   Ves	Analog inputs	
• Voltage  Input ranges (rated values), voltages  • 0 to +10 V  — Input resistance (0 to 10 V)  Eable length • Shelded, max.  Analog outputs  Oto 20 mA  Pesolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integration and conversion time (per channel) • Conversion time (per channel)  Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integrated encoders • 2-wire sensor • 2-wire sensor • Yes  Integrated sylve • Rod (Ethernet) • Ness (Ethernet) • Resolution (Pes ) • Resolution (P	Number of analog inputs	2
• Voltage  Input ranges (rated values), voltages  • 0 to +10 V  — Input resistance (0 to 10 V)  Eable length • Shelded, max.  Analog outputs  Oto 20 mA  Pesolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integration and conversion time (per channel) • Conversion time (per channel)  Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integrated encoders • 2-wire sensor • 2-wire sensor • Yes  Integrated sylve • Rod (Ethernet) • Ness (Ethernet) • Resolution (Pes ) • Resolution (P	Input ranges	
Input ranges (rated values), voltages  • 10 + 10 V Yes — Input resistance (0 to 10 V) \$2100k ohms  Cable length • shielded, max.  Analog outputs  Number of analog outputs 2 Otop 20 mA  Analog value generation for the Inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parametrizable Yes • Conversion time (per channel) 625 µs  Analog value generation for the outputs Integration do conversion for the outputs Integration and conversion time (per channel) 625 µs  Analog value generation for the outputs Integration and conversion time (per channel) 90 µs • Resolution with overrange (bit including sign), max.  Integration and conversion time (per channel) 90 µs • Resolution with overrange (bit including sign), max.  Integration and conversion time (per channel) 90 µs • Resolution with overrange (bit including sign), max.  Integration and conversion time (per channel) 90 µs • PROFINET Isolated 90 PROFINET  Isolated 90 PROFINET  PROFINET (O Controller 90 PROFINET (O Controller 90 PROFINET) 90 PROFINET (O Controller 90 PRO		Yes
- 0 to +10 V Yes   - Input resistance (0 to 10 V) ≥100k ohms  Cable length  • shielded, max.		
— Input resistance (0 to 10 V)  Cable length		Von
Cable length  • shicked, max.  100 m; twisted and shielded  Analog outputs  Number of analog outputs  0 to 20 mA  Yes  Analog value generation for the inputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  • Integration since, parameterizable  • Conversion time (per channel)  • Resolution with overrange (bit including sign), max.  • Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  • Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  Encoder:  Connectable encoders  • 2-wire sensor  1. Interface  Interface type  PROFINET  Isolated  Yes  automatic detection of transmission rate  Autoreosation  • Yes  Autoreosation  • Fas Autoreosation  • Yes  integrated witch  • Number of ports  • PROFINET IO Controller  • PROFINET IO Device  • PROFINET IO Device  • Media redundancy  Yes  PROFINET IO Controller  • Media redundancy  Yes  PROFINET IO Controller  • Media redundancy  Yes  PROFINET IO Communication  • Yes; encryption with TLS V1.3 pre-selected  — Isochronous mode  — IRT  No		
e-shielded, max.  Analog outputs  Number of analog outputs  2 Output ranges, current  • 0 to 20 mA  Yes  Analog value generation for the inputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel)  • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel)  • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  • 2-wire sensor  • 1 interface  Interface type    PROFINET   Isolated   automatic detection of transmission rate   Yes   Autocrossing   Yes   Autocrossing   Yes   Interface type  • R. 14 5 (Ethernet) • Resolution • PROFINET (D Controller • Yes • Middlar edundancy • Yes • Media redundancy • Yes  PROFINET (D Controller • Transmission rate, max.  Services  — PG/OP communication — Isochronous mode — IRT  No		≥ TOUK UTITIS
Analog outputs  Number of analog outputs  0 to 20 mA  Pes  Analog vatue generation for the inputs  Integration and conversion time/resolution per channel  Resolution with overange (bit including sign), max. Integration interparameterizable Conversion time (per channel)  Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution time/resolution per channel Resoluti	· · · · · · · · · · · · · · · · · · ·	
Number of analog outputs Output ranges, current  • 0 to 20 mA Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) • Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overange (bit including sign), max.  Integration  Integration and conversion time/resolution per channel • Resolution with overange (bit including sign), max.  Integration Integrate signes  Interface type  Interface type • PROFINET  Integrate  Interface type  • RJ 45 (Ethernet) • Yes  Integrate types • RJ 45 (Ethernet) • Yes • Number of ports • Integrated switch  Protocols • PROFINET IO Controller • PROFINET IO Controller • PROFINET IO Controller • PROFINET IO Controller • Yes • Media redundancy • Yes  PROFINET IO Controller • Transmission rate, max.  Iou Mbit/s  Services  — PG/OP communication • Yes, encryption with TLS V1.3 pre-selected  — Isorhronous mode — IRT		100 m; twisted and shielded
Output ranges, current  • 0 to 20 mA  Analog value generation for the inputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel)  • Conversion time (per channel)  • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  Integrated • Resolution with overrange (bit including sign), max.  Integrated • Resolution with overrange (bit including sign), max.  Integrated • PROFINET  Integrated • PROFINET • Runger • Run	Analog outputs	
• 0 to 20 mA  Analog value generation for the inputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel)  Analog value generation for the outputs  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  10 bit  Resolution and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  10 bit  Connectable encoders  • 2-wire sensor  Yes  Interface type  PROFINET  Isolated  automatic detection of transmission rate  Autoerossing  Yes  Interface types  • RJ 45 (Ethernet) • Number of ports • 1 with the controller • PROFINET IO Controller • PROFINET IO Controller • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Web server • Media redundancy  PROFINET IO Controller • Transmission rate, max.  100 Mbit/s  Services  — PG/OP communication  Yes; encryption with TLS V1.3 pre-selected  No — Isochronous mode  No — IRT	Number of analog outputs	2
Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel  Conversion time (per channel)  Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Integrate type  PROFINET  Isolated  Interface type  Interface type  Interface type  Resolution of transmission rate  Automatic detection of transmission rate  Automatic detection of transmission rate  Resolution of transmission rate  Resolution of transmission rate  Resolution of transmission rate  Profice type  Resolution of transmission rate  Resolution of transmission rate  Profice type  Resolution of transmission rate  Resolution of transmission rate  Resolution of transmission rate  Resolution of transmission rate  Presolution of transmission rate  Resolution of the output  Resolutio	Output ranges, current	
Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max. Integration time, parameterizable Conversion time (per channel) E25 µs  Analog value generation for the outputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max.  Integration Integration Interface type Interface type Interface type RA J45 (Ethernet) Number of ports RA J45 (Ethernet) Number of ports RA J45 (Ethernet) Nes RA J45 (Ethernet) RA J4	• 0 to 20 mA	Yes
Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max. Integration time, parameterizable Conversion time (per channel) E25 µs  Analog value generation for the outputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max.  Integration Integration Interface type Interface type Interface type RA J45 (Ethernet) Number of ports RA J45 (Ethernet) Number of ports RA J45 (Ethernet) Nes RA J45 (Ethernet) RA J4	Analog value generation for the inputs	
Resolution with overrange (bit including sign), max. Integration time, parameterizable Conversion time (per channel)  Analog value generation for the outputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max.  Integration  Onnectable encoders  2-wire sensor  Yes  Interface  Interface  Interface type  PROFINET  Isolated Yes  automatic detection of transmission rate Yes  Autoregotiation Yes  Autocrossing Nes  RJ 45 (Ethernet) Yes Number of ports Integrated switch Yes  PROFINET IO Controller PROFINET IO Controller PROFINET IO Device Yes  SIMATIC communication Yes  Media redundancy Yes  Media redundancy Yes  PROFINET IO Controller  Transmission rate, max.  100 Mbit/s  Services  PROFINET IO Controller  Transmission rate, max.  100 Mbit/s  Services  PROFINET IO Controller  Transmission rate, max.  100 Mbit/s  Prosperition with TLS V1.3 pre-selected  No No		
Integration time, parameterizable Conversion time (per channel)  Analog value generation for the outputs  Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max.  Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max.  Integrated name of the outputs  PROFINET  Interface Interface type PROFINET  Isolated Autonegotiation Pes Autoreosing Presolution  Autoreosing Presolution Presolution Presolution Presolution Presolution Presolution Presolution Presolution Protocols PROFINET IO Controller PROFINET IO Device PROFINET IO Device SIMATIC communication Presolution Presoluti		40 64
• Conversion time (per channel)  Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  • 2-wire sensor  Interface type  Interface type  Interface type  Interface type  Interface type  Automatic detection of transmission rate  Autonegotiation  Autocrossing  Yes  Interface types  • RJ 45 (Ethernet)  • Number of ports  • Integrated switch  Protocols  • PROFINET IO Controller  • PROFINET IO Device  • SIMATIC communication  • Yes  • Media redundancy  PROFINET IO Controller  • Web server  • Media redundancy  PROFINET IO Controller  • Transmission rate, max.  100 Mbit/s  Services  — PG/OP communication  Yes; encryption with TLS V1.3 pre-selected  — ISOthronous mode  No  No		
Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max. 10 bit  Encoder  Connectable encoders  2-wire sensor Yes  Interface type Interface type Isolated Yes automatic detection of transmission rate Yes Autonegoliation Yes  RJ 45 (Ethernet) Yes Integrated switch Yes  Integrated switch Yes  PROFINET IO Controller  PROFINET IO Controller  Wes SiMATIC communication Yes PROFINET IO Controller  Wes Sylvandandary  Prosonal Simple Simpl		
Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Intercoder  Connectable encoders  2-wire sensor  PROFINET  Interface  Interface type Interface type Interface type Autonegotiation Autocrossing Integrated switch  Number of ports Integrated switch  PROFINET Yes  PROFINET IO Controller PROFINET IO Device SIMATIC communication Yes  PROFINET IO Device Web server Media redundancy PROFINET IO Controller Transmission rate, max.  PROFONET IO Communication Yes  PROFINET IO Controller Transmission rate, max.  100 Mbit/s  Services  PGOFO communication Yes; encryption with TLS V1.3 pre-selected No No		
Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  • 2-wire sensor  Interface  Interface type  Interface type  Interface type  PROFINET  Isolated  Automatic detection of transmission rate  Autorossing  Fes  RJ 45 (Ethernet)  • Number of ports  • Interface types  • PROFINET IO Controller  • PROFINET IO Communication  • Web server  • Media redundancy  PROFINET IO Controller  • Transmission rate, max.  Services  — PG/OP communication  - Isochronous mode  — IRT  No		625 μs
Encoder  Connectable encoders  • 2-wire sensor  1. Interface  Interface type Isolated  Autonegotiation Autocrossing Interface types  • RJ 45 (Ethernet) • Number of ports • Number of ports  • PROFINET IO Controller • PROFINET IO Controller • SIMATIC communication • Wes • Wes • Open IE communication • Wes • Media redundancy  PROFINET IO Controller • Transmission rate, max.  Services  - PG/OP communication - Isochronous mode - IRT  Yes  Yes  Yes  PROFINET IO Six 2  Yes  PROFINET IO Controller  Yes • Simanum Six 2  Yes  Yes  Yes  PROFINET IO Controller  Yes • Simanum Six 3  Yes  PROFINET IO Controller  Yes • Six 3  Yes  PROFINET IO Controller  Yes • Media redundancy Yes  PROFINET IO Controller  • Transmission rate, max.  100 Mbit/s  Services  - PG/OP communication Yes; encryption with TLS V1.3 pre-selected - Isochronous mode - IRT		625 µs
Connectable encoders  • 2-wire sensor  1. Interface  Interface type Interface type Isolated Isolated Isolated Isolated Interface type Autonegotiation Interface types  • RJ 45 (Ethernet) • Number of ports • Number of ports Interface witch Interface witch Interface types  • RJ 7 45 (Ethernet) • Number of ports Interface types  • PROFINET IO Controller • PROFINET IO Device • PROFINET IO Device • SIMATIC communication • Ves • SIMATIC communication • Web server • Media redundancy PROFINET IO Controller • Transmission rate, max.  Interface types  • PROFINET IO Controller • Transmission rate, max.  Interface types  PROFINET IO Controller • Transmission rate, max.  Interface types  Yes  PROFINET IO Controller • Transmission rate, max.  Interface types  Yes  PROFINET IO Controller • Transmission rate, max.  Interface types  Yes  PROFINET IO Controller  • Transmission rate, max.  Interface types  Yes  PROFINET IO Controller  • Transmission rate, max.  Interface types  Yes  PROFINET IO Controller  • Transmission rate, max.  Interface types  Yes  PROFINET IO Controller  • Transmission rate, max.  Interface types  Yes  PROFINET IO Controller  • Transmission rate, max.  Interface types  Yes  PROFINET IO Controller  • Transmission rate, max.  Interface types  Yes  PROFINET IO Controller  • Transmission rate, max.  Interface types  Yes  PROFINET IO Controller  • Transmission rate, max.  Interface types  Yes  PROFINET IO Controller  • Transmission rate, max.  Interface types  Yes  PROFINET IO Controller  • Transmission rate, max.  Interface types  Yes  PROFINET IO Controller  No	Analog value generation for the outputs	625 µs
Interface type     Interface types     Autorossing     Interface types     Interface typ	Analog value generation for the outputs  Integration and conversion time/resolution per channel	
Interface type     Interface types     Autorossing     Interface types     Interface typ	Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.	
Interface type Isolated Interface type Isolated Automatic detection of transmission rate Autonegotiation Yes Autocrossing Interface types  • RJ 45 (Ethernet) • Number of ports • Number of ports • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Open IE communication • Web server • Media redundancy PROFINET IO Controller • Web server • Media redundancy PROFINET IO Controller • Transmission rate, max.  Services  - PG/OP communication - Isochronous mode - IRT  Prose  PROFINET Wes  PROFINET IO Controller  PROFINET IO Controller  • Transmission rate, max.  No	Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  Encoder	
Interface type Isolated Isolated Yes  automatic detection of transmission rate Yes  Autonegotiation Autocrossing Yes  Interface types  • RJ 45 (Ethernet) • Number of ports • Number of ports • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Open IE communication • Web server • Media redundancy PROFINET IO Controller • Transmission rate, max.  100 Mbit/s  Services  - PG/OP communication Yes; encryption with TLS V1.3 pre-selected No - IRT	Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders	10 bit
Isolated Yes automatic detection of transmission rate Yes  Autonegotiation Yes Autocrossing Yes Interface types  • RJ 45 (Ethernet) Yes • Number of ports 2 • integrated switch Yes  Protocols  • PROFINET IO Controller Yes • SIMATIC communication Yes • Open IE communication Yes • Media redundancy Yes • Media redundancy Yes  PROFINET IO Controller • Transmission rate, max. 100 Mbit/s  Services  - PG/OP communication Yes; encryption with TLS V1.3 pre-selected - Isochronous mode - IRT	Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  • 2-wire sensor	10 bit
automatic detection of transmission rate  Autonegotiation  Yes  Autocrossing  Yes  Interface types  • RJ 45 (Ethernet) • Number of ports • Number of ports • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Web server • Media redundancy  PROFINET IO Controller • Transmission rate, max.  Services  - PG/OP communication - Isochronous mode - IRT  No	Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  • 2-wire sensor  1. Interface	10 bit Yes
Autorossing Yes  Interface types  RJ 45 (Ethernet) Yes Number of ports 2 Integrated switch Yes  Protocols  PROFINET IO Controller Yes SIMATIC communication Yes; Optionally also encrypted Web server Yes Media redundancy Yes  PROFINET IO Controller  Transmission rate, max. 100 Mbit/s  Services  PG/OP communication Yes; encryption with TLS V1.3 pre-selected No Integrated Switch Yes	Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  • 2-wire sensor  1. Interface Interface type	10 bit  Yes  PROFINET
Autocrossing Yes  Interface types  PJ 45 (Ethernet) Yes Integrated switch Yes  Protocols  PROFINET IO Controller Yes SIMATIC communication Yes; Optionally also encrypted Web server Yes Media redundancy Yes Media redundancy Yes PROFINET IO Controller  Transmission rate, max. 100 Mbit/s  Services  PG/OP communication Yes; encryption with TLS V1.3 pre-selected No Interface types Yes No Integrated switch Yes Yes Protocols  Yes PROFINET IO Controller  Transmission rate, max. 100 Mbit/s Services  PG/OP communication Yes; encryption with TLS V1.3 pre-selected No Interface types No	Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  • 2-wire sensor  1. Interface Interface type	10 bit  Yes  PROFINET Yes
Interface types  • RJ 45 (Ethernet) • Number of ports • Number of ports • integrated switch  Protocols  • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Open IE communication • Web server • Media redundancy  PROFINET IO Controller • Transmission rate, max.  Services  - PG/OP communication - Isochronous mode - IRT  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye	Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  • 2-wire sensor  1. Interface  Interface type  Isolated	10 bit  Yes  PROFINET Yes
<ul> <li>RJ 45 (Ethernet)</li> <li>Number of ports</li> <li>Integrated switch</li> <li>Yes</li> </ul> Protocols <ul> <li>PROFINET IO Controller</li> <li>PROFINET IO Device</li> <li>SIMATIC communication</li> <li>Open IE communication</li> <li>Web server</li> <li>Media redundancy</li> <li>Media redundancy</li> <li>Transmission rate, max.</li> <li>Transmission rate, max.</li> <li>Services</li> <li>PG/OP communication</li> <li>Yes; encryption with TLS V1.3 pre-selected</li> <li>No</li> </ul>	Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  • 2-wire sensor  1. Interface Interface type Isolated automatic detection of transmission rate	10 bit  Yes  PROFINET  Yes  Yes
<ul> <li>RJ 45 (Ethernet)</li> <li>Number of ports</li> <li>Integrated switch</li> <li>Yes</li> </ul> Protocols <ul> <li>PROFINET IO Controller</li> <li>PROFINET IO Device</li> <li>SIMATIC communication</li> <li>Open IE communication</li> <li>Web server</li> <li>Media redundancy</li> <li>Media redundancy</li> <li>Transmission rate, max.</li> <li>Transmission rate, max.</li> <li>Services</li> <li>PG/OP communication</li> <li>Yes; encryption with TLS V1.3 pre-selected</li> <li>No</li> </ul>	Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  • 2-wire sensor  1. Interface  Interface type Isolated  automatic detection of transmission rate  Autonegotiation	10 bit  Yes  PROFINET  Yes  Yes  Yes
<ul> <li>Number of ports</li> <li>integrated switch</li> <li>Yes</li> </ul> Protocols <ul> <li>PROFINET IO Controller</li> <li>PROFINET IO Device</li> <li>SIMATIC communication</li> <li>Open IE communication</li> <li>Wes; Optionally also encrypted</li> <li>Web server</li> <li>Media redundancy</li> <li>Media redundancy</li> <li>PROFINET IO Controller</li> </ul> Transmission rate, max. <ul> <li>100 Mbit/s</li> </ul> Services <ul> <li>PG/OP communication</li> <li>Isochronous mode</li> <li>INO</li> </ul> No <ul> <li>No</li> </ul>	Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  • 2-wire sensor  1. Interface  Interface type  Isolated  automatic detection of transmission rate  Autonegotiation  Autocrossing	10 bit  Yes  PROFINET  Yes  Yes  Yes
<ul> <li>integrated switch</li> <li>Protocols</li> <li>PROFINET IO Controller</li> <li>PROFINET IO Device</li> <li>SIMATIC communication</li> <li>Open IE communication</li> <li>Web server</li> <li>Media redundancy</li> <li>PROFINET IO Controller</li> <li>Transmission rate, max.</li> <li>Services</li> <li>PG/OP communication</li> <li>Yes; encryption with TLS V1.3 pre-selected</li> <li>No</li> </ul>	Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  • 2-wire sensor  1. Interface  Interface type  Isolated  automatic detection of transmission rate  Autonegotiation  Autocrossing  Interface types	10 bit  Yes  PROFINET  Yes  Yes  Yes  Yes
Protocols  PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller Transmission rate, max. Services  — PG/OP communication Yes; Optionally also encrypted Yes Yes Yes Yes PROFINET IO Controller Transmission rate, max. 100 Mbit/s Services  — PG/OP communication Yes; encryption with TLS V1.3 pre-selected No No	Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  • 2-wire sensor  1. Interface  Interface  Interface type  Isolated  automatic detection of transmission rate  Autonegotiation  Autocrossing  Interface types  • RJ 45 (Ethernet)	10 bit  Yes  PROFINET  Yes  Yes  Yes  Yes  Yes  Yes
<ul> <li>PROFINET IO Controller</li> <li>PROFINET IO Device</li> <li>Yes</li> <li>SIMATIC communication</li> <li>Open IE communication</li> <li>Web server</li> <li>Media redundancy</li> <li>PROFINET IO Controller</li> <li>Transmission rate, max.</li> <li>Services</li> <li>PG/OP communication</li> <li>Yes; encryption with TLS V1.3 pre-selected</li> <li>No</li> <li>IRT</li> <li>No</li> </ul>	Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  • 2-wire sensor  1. Interface  Interface  Interface type  Isolated  automatic detection of transmission rate  Autonegotiation  Autocrossing  Interface types  • RJ 45 (Ethernet)  • Number of ports	10 bit  Yes  PROFINET  Yes  Yes  Yes  Yes  Yes  Yes
<ul> <li>PROFINET IO Device</li> <li>SIMATIC communication</li> <li>Open IE communication</li> <li>Web server</li> <li>Media redundancy</li> <li>PROFINET IO Controller</li> <li>Transmission rate, max.</li> <li>Services</li> <li>PG/OP communication</li> <li>Isochronous mode</li> <li>No</li> </ul>	Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  2-wire sensor  Interface  Interface  Interface type  Isolated  automatic detection of transmission rate  Autonegotiation  Autocrossing  Interface types  RJ 45 (Ethernet)  Number of ports  integrated switch	10 bit  Yes  PROFINET  Yes  Yes  Yes  Yes  Yes  Yes
<ul> <li>SIMATIC communication</li> <li>Open IE communication</li> <li>Web server</li> <li>Media redundancy</li> <li>PROFINET IO Controller</li> <li>Transmission rate, max.</li> <li>Services</li> <li>— PG/OP communication</li> <li>— Isochronous mode</li> <li>— IRT</li> <li>No</li> </ul> Yes Yes Yes Yes Yes Yes Yes Pes <td>Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  2-wire sensor  Interface  Interface  Interface type  Isolated  automatic detection of transmission rate  Autonegotiation  Autocrossing  Interface types  RJ 45 (Ethernet)  Number of ports  integrated switch  Protocols</td> <td>10 bit  Yes  PROFINET  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye</td>	Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  2-wire sensor  Interface  Interface  Interface type  Isolated  automatic detection of transmission rate  Autonegotiation  Autocrossing  Interface types  RJ 45 (Ethernet)  Number of ports  integrated switch  Protocols	10 bit  Yes  PROFINET  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye
<ul> <li>Open IE communication</li> <li>Web server</li> <li>Media redundancy</li> <li>PROFINET IO Controller</li> <li>Transmission rate, max.</li> <li>Services</li> <li>PG/OP communication</li> <li>Isochronous mode</li> <li>IRT</li> <li>No</li> </ul>	Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  2-wire sensor  1. Interface  Interface type  Isolated  automatic detection of transmission rate  Autonegotiation  Autocrossing  Interface types  RJ 45 (Ethernet)  Number of ports  integrated switch  Protocols  PROFINET IO Controller	Yes  PROFINET  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye
Web server  Media redundancy  Yes  PROFINET IO Controller  Transmission rate, max.  100 Mbit/s  Services  — PG/OP communication — Isochronous mode — IRT  No  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye	Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  2-wire sensor  1. Interface  Interface  Interface type  Isolated  automatic detection of transmission rate  Autonegotiation  Autocrossing  Interface types  RJ 45 (Ethernet)  Number of ports  integrated switch  Protocols  PROFINET IO Controller  PROFINET IO Device	10 bit  Yes  PROFINET  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye
Media redundancy PROFINET IO Controller      Transmission rate, max. 100 Mbit/s  Services      PG/OP communication     Isochronous mode     IRT No  Yes  Yes  100 Mbit/s  No  No  No  No  No  No  No  No  No  N	Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  2-wire sensor  Interface  Interface  Interface type  Isolated  automatic detection of transmission rate  Autonegotiation  Autocrossing  Interface types  RJ 45 (Ethernet)  Number of ports  integrated switch  Protocols  PROFINET IO Controller  PROFINET IO Device  SIMATIC communication	10 bit  Yes  PROFINET  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye
PROFINET IO Controller  • Transmission rate, max.  Services  — PG/OP communication — Isochronous mode — IRT  No  100 Mbit/s  Yes; encryption with TLS V1.3 pre-selected No	Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  2-wire sensor  Interface  Interface  Interface type  Isolated  automatic detection of transmission rate  Autonegotiation  Autocrossing  Interface types  RJ 45 (Ethernet)  Number of ports  integrated switch  Protocols  PROFINET IO Controller  PROFINET IO Device  SIMATIC communication	10 bit  Yes  PROFINET  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye
<ul> <li>Transmission rate, max.</li> <li>Services</li> <li>— PG/OP communication</li> <li>— Isochronous mode</li> <li>— IRT</li> <li>100 Mbit/s</li> <li>Yes; encryption with TLS V1.3 pre-selected</li> <li>No</li> <li>No</li> </ul>	Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  2-wire sensor  Interface  Interface  Interface type  Isolated  automatic detection of transmission rate  Autonegotiation  Autocrossing  Interface types  RJ 45 (Ethernet)  Number of ports  integrated switch  Protocols  PROFINET IO Controller  PROFINET IO Device  SIMATIC communication  Open IE communication	PROFINET Yes
<ul> <li>Transmission rate, max.</li> <li>Services</li> <li>— PG/OP communication</li> <li>— Isochronous mode</li> <li>— IRT</li> <li>100 Mbit/s</li> <li>Yes; encryption with TLS V1.3 pre-selected</li> <li>No</li> <li>No</li> </ul>	Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  2-wire sensor  Interface  Interface  Interface type  Isolated  automatic detection of transmission rate  Autonegotiation  Autocrossing  Interface types  RJ 45 (Ethernet)  Number of ports  integrated switch  Protocols  PROFINET IO Controller  PROFINET IO Device  SIMATIC communication  Open IE communication  Web server	Yes  PROFINET Yes
Services  - PG/OP communication - Isochronous mode - IRT  Yes; encryption with TLS V1.3 pre-selected  No  No	Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  2-wire sensor  Interface  Interface  Interface type  Isolated  automatic detection of transmission rate  Autonegotiation  Autocrossing  Interface types  RJ 45 (Ethernet)  Number of ports  integrated switch  Protocols  PROFINET IO Controller  PROFINET IO Device  SIMATIC communication  Open IE communication  Web server  Media redundancy	Yes  PROFINET Yes
<ul> <li>— PG/OP communication</li> <li>— Isochronous mode</li> <li>— IRT</li> <li>Yes; encryption with TLS V1.3 pre-selected</li> <li>No</li> <li>No</li> </ul>	Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  2-wire sensor  Interface  Interface  Interface type  Isolated  automatic detection of transmission rate  Autonegotiation  Autocrossing  Interface types  RJ 45 (Ethernet)  Number of ports  integrated switch  Protocols  PROFINET IO Controller  PROFINET IO Device  SIMATIC communication  Open IE communication  Web server  Media redundancy  PROFINET IO Controller	Yes  PROFINET Yes
<ul><li>— Isochronous mode</li><li>— IRT</li><li>No</li></ul>	Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  2-wire sensor  Interface Interface type Isolated automatic detection of transmission rate Autonegotiation  Autocrossing Interface types  RJ 45 (Ethernet)  Number of ports  integrated switch  Protocols  PROFINET IO Controller  PROFINET IO Device  SIMATIC communication  Open IE communication  Web server  Media redundancy  PROFINET IO Controller  Transmission rate, max.	Yes  PROFINET Yes
— IRT No	Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  2-wire sensor  Interface Interface type Isolated automatic detection of transmission rate Autonegotiation  Autocrossing Interface types  RJ 45 (Ethernet)  Number of ports  integrated switch  Protocols  PROFINET IO Controller  PROFINET IO Device  SIMATIC communication  Open IE communication  Web server  Media redundancy  PROFINET IO Controller  Transmission rate, max.  Services	Yes  PROFINET Yes
	Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  2-wire sensor  Interface Interface Interface type Isolated automatic detection of transmission rate  Autonegotiation  Autocrossing Interface types  RJ 45 (Ethernet)  Number of ports  integrated switch  Protocols  PROFINET IO Controller  PROFINET IO Device  SIMATIC communication  Open IE communication  Web server  Media redundancy  PROFINET IO Controller  Transmission rate, max.  Services  — PG/OP communication	Yes  PROFINET Yes Yes Yes Yes Yes Yes Yes Yes  Yes 100 Mbit/s  Yes; encryption with TLS V1.3 pre-selected
DDOE lenergy No.	Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  2-wire sensor  I. Interface  Interface type  Isolated  automatic detection of transmission rate  Autonegotiation  Autocrossing  Interface types  RJ 45 (Ethernet)  Number of ports  integrated switch  Protocols  PROFINET IO Controller  PROFINET IO Device  SIMATIC communication  Open IE communication  Web server  Media redundancy  PROFINET IO Controller  Transmission rate, max.  Services  — PG/OP communication  Isochronous mode	Yes  PROFINET Yes Yes Yes Yes Yes Yes Yes  Yes  Yes
— PROFlenergy No	Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Encoder  Connectable encoders  2-wire sensor  Interface  Interface  Interface type  Isolated  automatic detection of transmission rate  Autonegotiation  Autocrossing  Interface types  RJ 45 (Ethernet)  Number of ports  integrated switch  Protocols  PROFINET IO Controller  PROFINET IO Device  SIMATIC communication  Open IE communication  Web server  Media redundancy  PROFINET IO Controller  Transmission rate, max.  Services  — PG/OP communication  — Isochronous mode  — IRT	Yes  PROFINET Yes Yes Yes Yes Yes Yes  Yes  Yes  Yes

<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</li> </ul>	8
activated/deactivated, max.	
— Updating time	The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.
PROFINET IO Device	Ŭ
Services	
— PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
— Isochronous mode	No
— IRT	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
PROFIsafe	No
PROFIBUS	Yes; CM 1243-5 (master) or CM 1242-5 (slave) required
OPC UA	Yes; OPC UA Server
AS-Interface	Yes; CM 1243-2 required
Protocols (Ethernet)	.,,
• TCP/IP	Yes
• DHCP	No
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
Redundancy mode	100
Media redundancy	
— MRP	Yes; as MRP redundancy manager and/or MRP client
— MRPD	No
SIMATIC communication	110
• S7 routing	Yes
Open IE communication	100
• TCP/IP	Yes
— Data length, max.	8 kbyte
• ISO-on-TCP (RFC1006)	Yes
— Data length, max.	8 kbyte
Data length, max.      UDP	Yes
■ Data length, max.	1 472 byte
— Data length, max.  Web server	1 712 DYC
	Yes
<ul><li>supported</li><li>User-defined websites</li></ul>	Yes
User-defined websites  OPC UA	1 00
	Voc: "Pacie" licence required
Runtime license required     ODC HA Server	Yes; "Basic" license required
OPC UA Server  Application outbontiestics	Yes; data access (read, write, subscribe), method call, runtime license required
— Application authentication	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256
— User authentication	"anonymous" or by user name & password
<ul><li>Number of sessions, max.</li></ul>	10
<ul> <li>Number of subscriptions per session, max.</li> </ul>	5
<ul><li>— Sampling interval, min.</li></ul>	100 ms
— Publishing interval, min.	200 ms
<ul> <li>Number of server methods, max.</li> </ul>	20
<ul> <li>Number of monitored items, recommended max.</li> </ul>	1 000
<ul> <li>Number of server interfaces, max.</li> </ul>	2
<ul> <li>Number of nodes for user-defined server interfaces,</li> </ul>	2 000
max.	

Cush or protocols	
Further protocols	Vee
MODBUS	Yes
communication functions / header	
S7 communication	
<ul><li>supported</li></ul>	Yes
• as server	Yes
• as client	Yes
User data per job, max.	See online help (S7 communication, user data size)
Number of connections	
overall	PG Connections: 4 reserved / 4 max; HMI Connections: 12 reserved / 18 max; S7 Connections: 8 reserved / 14 max; Open User Connections: 8 reserved / 14 max; Web Connections: 2 reserved / 30 max; OPC UA Connections: 0 reserved / 10 max; Total Connections: 34 reserved / 64 max
Test commissioning functions	
Status/control	
<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	
Number of configurable Traces	2
<ul> <li>Memory size per trace, max.</li> </ul>	512 kbyte
Interrupts/diagnostics/status information	
Diagnostics indication LED	
RUN/STOP LED	Yes
• ERROR LED	Yes
MAINT LED	Yes
Integrated Functions	
Counter	
Number of counters	6
<ul> <li>Counting frequency, max.</li> </ul>	1 MHz
Frequency measurement	Yes
controlled positioning	Yes
Number of position-controlled positioning axes, max.	8
Number of positioning axes via pulse-direction interface	4; With integrated outputs
PID controller	Yes
Number of alarm inputs	4
Number of pulse outputs	4
Limit frequency (pulse)	1 MHz
Potential separation	
Potential separation digital inputs	
Potential separation digital inputs	No
between the channels, in groups of	1
Potential separation digital outputs	
Potential separation digital outputs	Yes
between the channels	No
between the channels, in groups of	1
EMC	
Interference immunity against discharge of static electricity	
Interference immunity against discharge of static electricity acc. to IEC 61000-4-2	Yes
Test voltage at air discharge	8 kV
Test voltage at contact discharge	6 kV
Interference immunity to cable-borne interference	
Interference immunity on supply lines acc. to IEC 61000-4-4	Yes
<ul> <li>Interference immunity on signal cables acc. to IEC 61000- 4-4</li> </ul>	Yes
Interference immunity against voltage surge	
Interference immunity on supply lines acc. to IEC 61000-	Yes

4-5	
Interference immunity against conducted variable disturbance ind	uced 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	
<ul> <li>Limit class A, for use in industrial areas</li> </ul>	Yes; Group 1
• Limit class B, for use in residential areas	Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011
egree and class of protection	
IP degree of protection	IP20
tandards, approvals, certificates	
CE mark	Yes
mbient conditions	
Free fall	
• Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• min.	-40 °C; = Tmin; Startup @ -25 °C
• max.	70 °C; = Tmax; Tmax > 55 °C number of simultaneously switched-on digital inputs 5, current sinking/current sourcing (no adjacent points) and 4 differential inputs with horizontal mounting position; Tmax > 55 °C number of simultaneously switched-on digital inputs 3, current sinking (no adjacent points) and 4 differential outputs with horizontal mounting position
horizontal installation, min.	-40 °C; = Tmin; Startup @ -25 °C
horizontal installation, max.	60 °C
<ul> <li>vertical installation, min.</li> </ul>	-40 °C; = Tmin; Startup @ -25 °C
vertical installation, max.	50 °C
Ambient temperature during storage/transportation	40.00
• 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
Altitude during operation relating to sea level	
Installation altitude, min.	-1 000 m
<ul><li>Installation altitude, max.</li><li>Ambient air temperature-barometric pressure-altitude</li></ul>	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual Tmin Tmax at 1 080 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax - 20 K)
	at 658 hPa 540 hPa (+3 500 m +5 000 m)
Relative humidity	
<ul> <li>With condensation, tested in accordance with IEC 60068- 2-38, max.</li> </ul>	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Vibrations	
<ul> <li>Vibration resistance during operation acc. to IEC 60068- 2-6</li> </ul>	2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail
Operation, tested according to IEC 60068-2-6	Yes
Shock testing	
tested according to IEC 60068-2-27	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms
Resistance	
Coolants and lubricants	
Resistant to commercially available coolants and lubricants	Yes; Incl. diesel and oil droplets in the air
Use in stationary industrial systems	
<ul> <li>to biologically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
<ul> <li>to chemically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3C4 (RH < 75%) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!
<ul> <li>to mechanically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain or the unused interfaces during operation!
Use on ships/at sea	
<ul> <li>to biologically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6B2 mold, fungal and dry rot spores (excluding fauna)
<ul> <li>to chemically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); $^{\star}$
— to mechanically active substances according to EN	Yes; Class 6S3 incl. sand, dust; *

60721-3-6	
Usage in industrial process technology	
Against chemically active substances acc. to EN 60654-4	Yes; Class 3 (excluding trichlorethylene)
<ul> <li>Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04</li> </ul>	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)
Remark	
<ul> <li>Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04</li> </ul>	* The supplied plug covers must remain in place over the unused interfaces during operation!
Pollutant concentrations	
<ul> <li>SO2 at RH &lt; 60% without condensation</li> </ul>	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
Conformal coating	
<ul> <li>Coatings for printed circuit board assemblies acc. to EN 61086</li> </ul>	Yes; Class 2 for high reliability
<ul> <li>Protection against fouling acc. to EN 60664-3</li> </ul>	Yes; Type 1 protection
<ul> <li>Military testing according to MIL-I-46058C, Amendment 7</li> </ul>	Yes; Discoloration of coating possible during service life
<ul> <li>Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC- CC-830A</li> </ul>	Yes; Conformal coating, Class A
configuration / header	
configuration / programming / header	
Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
Know-how protection	
<ul> <li>User program protection/password protection</li> </ul>	Yes
<ul> <li>Copy protection</li> </ul>	Yes
Block protection	Yes
Access protection	
<ul> <li>protection of confidential configuration data</li> </ul>	Yes
<ul> <li>Protection level: Write protection</li> </ul>	Yes
<ul> <li>Protection level: Read/write protection</li> </ul>	Yes
Protection level: Complete protection	Yes
programming / cycle time monitoring / header	
adjustable	Yes
Dimensions	
Width	150 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	530 g

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