6ES7214-1AG40-0XB0

Data sheet



SIMATIC S7-1200, CPU 1214C, compact CPU, DC/DC/DC, onboard I/O: 14 DI 24 V DC; 10 DO 24 V DC; 2 AI 0-10 V DC, Power supply: DC 20.4-28.8V DC, Program/data memory 100 KB

Figure similar

Product type designation CPU 1214C DC/DC/DC Firmware version V4.5 Engineering with ● Programming package STEP 7 V17 or higher Supply voltage Rated value (DC) • 24 V DC Yes permissible range, lower limit (DC) 28.8 V Reverse polarity protection Yes Load voltage L+ • Rated value (DC) • permissible range, lower limit (DC) 24 V • permissible range, lower limit (DC) 26 V • permissible range, lower limit (DC) 27 V • permissible range, lower limit (DC) 28.8 V Input current Current consumption, max. 1500 mA; CPU only Current consumption, max. 1500 mA; CPU with all expansion modules land limit all expansion land limit all exp	General information	
Programming package STEP 7 V17 or higher Supply votage Rated value (DC) • 24 V DC Yes permissible range, lower limit (DC) 28.8 V Reverse polarity protection Yes • Rated value (DC) • Parmissible range, lower limit (DC) 28.8 V Reverse polarity protection Yes • Rated value (DC) 24 V • permissible range, lower limit (DC) 20.4 V • permissible range, upper limit (DC) 20.4 V • perm	Product type designation	CPU 1214C DC/DC/DC
Programming package Supply voltage Rated value (DC)	Firmware version	V4.5
Rated value (DC) • 24 V DC permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Reverse polarity protection Yes Load voltage L+ • Rated value (DC) • permissible range, lower limit (DC) permissible range, upper limit (DC) pe	Engineering with	
Rated value (DC) • 24 V DC permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Rated value (DC) • 28.8 V Reverse polarity protection Load voltage L+ • Rated value (DC) • permissible range, lower limit (DC) • permissible range, lower limit (DC) • permissible range, lower limit (DC) • permissible range, upper limit (DC) • 28.8 V Input current Current consumption (rated value) Current consumption, max. 1 500 mA; CPU only Current consumption, max. 1 2 A; at 28.8 V it 0.5 A²s 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 4 Wencoder loss Power loss Power loss Power loss, typ. 12 W Memory Work memory • integrated • expandable No Load memory • integrated • Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card Backup • present • paintanance-free • without battery Yes • without battery • without battery Yes	 Programming package 	STEP 7 V17 or higher
e 24 V DC permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Yes Load voltage L+ • Rated value (DC) • permissible range, lower limit (DC) • permissible range, upper limit (DC) • permissible range, upper limit (DC) • permissible range, upper limit (DC) • permissible range, upper limit (DC) • permissible range, upper limit (DC) • permissible range, lower limit (DC) • permissible range, upper limit (DC) • 24 V • permit consumption (rated value) • Do mA; CPU only • Do mA; CPU with all expansion modules Inrush current, max. • 12 A; at 28.8 V It 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 • L+ minus 4 V DC min. Power loss Power loss, typ. • 12 W Memory wintegrated • expandable • expandable • No Load memory • integrated • Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card Backup • present • maintenance-free • without battery • Yes • without battery	Supply voltage	
permissible range, lower limit (DC) permissible range, upper limit (DC) Permissible range, upper limit (DC) Permissible range, upper limit (DC) Permissible range, lower limit (DC) Permissible range, upper limit	Rated value (DC)	
permissible range, upper limit (DC) Reverse polarity protection Load voltage L+ Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Input current Current consumption (rated value) Current consumption (rated value) Current consumption, max. 1 500 mA; CPU only Current capansion modules Inrush current, max. 12 A; at 28.8 V Pt 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	• 24 V DC	Yes
Reverse polarity protection Load voltage L+ • Rated value (DC) • permissible range, lower limit (DC) • permissible range, lower limit (DC) • permissible range, upper limit (DC) • permissible range, upper limit (DC) 28.8 V Input current Current consumption (rated value) Current consumption, max.	permissible range, lower limit (DC)	20.4 V
e Rated value (DC) 24 V e permissible range, lower limit (DC) 28.8 V Input current Current consumption (rated value) 500 mA; CPU only Current consumption, max. 1500 mA; CPU with all expansion modules Inrush current, max. 12 A; at 28.8 V Pt 0.5 A²²s Output current for backplane bus (5 V DC), max. 1600 mA; Max. 5 V DC for SM and CM Encoder supply 24 V L+ minus 4 V DC min. Power loss Power loss, typ. 12 W Memory Work memory • integrated 100 kbyte • expandable No Load memory • integrated 4 Mbyte • Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card Backup • present Yes • without battery Yes	permissible range, upper limit (DC)	28.8 V
Rated value (DC)	Reverse polarity protection	Yes
permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) 28.8 V Input current Current consumption (rated value) Current consumption, max. 1 500 mA; CPU only Current consumption, max. 1 2 A; at 28.8 V 0.5 A²-s Cutput current for backplane bus (5 V DC), max. Incush current supply 24 V encoder supply 24 V encoder supply 24 V	Load voltage L+	
permissible range, upper limit (DC) Input current Current consumption (rated value) Current consumption, max. 1 500 mA; CPU only 1 500 mA; CPU with all expansion modules Inrush current, max. 1 2 A; at 28.8 V 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 • 24 V L+ minus 4 V DC min. Power loss Power loss Power loss, typ. 12 W Memory Work memory • integrated • expandable Load memory • integrated • Plug-in (SIMATIC Memory Card), max. Backup • present • present • maintenance-free • without battery Yes	Rated value (DC)	24 V
Input current Current consumption (rated value) Current consumption, max. Inrush current, max. If t	 permissible range, lower limit (DC) 	20.4 V
Current consumption (rated value) Current consumption, max. Inrush current, max. It is a current was. It is a current. It	 permissible range, upper limit (DC) 	28.8 V
Current consumption, max. Inrush current, max. It is at 28.8 V It is at 28.8 V Output current for backplane bus (5 V DC), max. Inrush current for backplane bus (5 V DC), max. Inrush current for backplane bus (5 V DC), max. Inrush current Inrus	Input current	
Inrush current, max. I²t 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	Current consumption (rated value)	500 mA; CPU only
Pt	Current consumption, max.	1 500 mA; CPU with all expansion modules
Output current for backplane bus (5 V DC), max. I 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 • expandable Load memory • integrated • Plug-in (SIMATIC Memory Card), max. Backup • present • present • maintenance-free • without battery Yes	Inrush current, max.	12 A; at 28.8 V
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 • expandable • expandable Load memory • integrated • Plug-in (SIMATIC Memory Card), max. Backup • present • maintenance-free • without battery 1 600 mA; Max. 5 V DC for SM and CM L+ minus 4 V DC min. Power loss L+ minus 4 V DC min. Power loss 4 V DC min. Power loss 100 kbyte 4 Mbyte 9 Present 9 Yes 9 Yes 9 without battery	l²t	0.5 A ² ·s
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 expandable No Load memory integrated Plug-in (SIMATIC Memory Card), max. Backup present present maintenance-free without battery Yes	Output current	
24 V encoder supply • 24 V L+ minus 4 V DC min. Power loss Power loss, typ. 12 W Memory Work memory • integrated • expandable No Load memory • integrated • Plug-in (SIMATIC Memory Card), max. Backup • present • maintenance-free • without battery Ves	for backplane bus (5 V DC), max.	1 600 mA; Max. 5 V DC for SM and CM
L+ minus 4 V DC min. Power loss Power loss, typ. 12 W Memory Work memory integrated expandable No Load memory integrated Plug-in (SIMATIC Memory Card), max. Backup present maintenance-free without battery L+ minus 4 V DC min. L2 W Memory 12 W Memory 100 kbyte No 4 Mbyte With SIMATIC memory card With SIMATIC memory card Yes Yes Without battery Yes	Encoder supply	
Power loss Power loss, typ. 12 W Memory Work memory integrated expandable No Load memory integrated Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card Backup present maintenance-free without battery 100 kbyte No 100 kbyte	24 V encoder supply	
Power loss, typ. Memory Work memory integrated expandable Load memory integrated Plug-in (SIMATIC Memory Card), max. Backup present maintenance-free without battery 12 W 12 W Memory 100 kbyte No 4 Mbyte No 4 Mbyte with SIMATIC memory card Yes	• 24 V	L+ minus 4 V DC min.
Memory Work memory integrated expandable Load memory integrated Plug-in (SIMATIC Memory Card), max. Backup present maintenance-free without battery Work memory 100 kbyte No 4 Mbyte No Ves Yes Yes Yes	Power loss	
Work memory integrated expandable No Load memory integrated Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card Backup present maintenance-free without battery Yes	Power loss, typ.	12 W
 integrated expandable No Load memory integrated Plug-in (SIMATIC Memory Card), max. Backup present maintenance-free with Old Market Yes without battery 100 kbyte No 4 Mbyte with SIMATIC memory card Yes without battery Yes without battery 	Memory	
 expandable Load memory integrated Plug-in (SIMATIC Memory Card), max. Backup present maintenance-free with SIMATIC memory card Yes without battery 	Work memory	
Load memory • integrated	integrated	100 kbyte
 integrated Plug-in (SIMATIC Memory Card), max. Backup present maintenance-free with SIMATIC memory card Yes without battery 	expandable	No
 Plug-in (SIMATIC Memory Card), max. Backup present maintenance-free without battery with SIMATIC memory card Yes Yes Yes 	Load memory	
Backup • present • maintenance-free • without battery Yes Yes	· · · · · · · · · · · · · · · · · · ·	4 Mbyte
 present maintenance-free without battery Yes Yes 	Plug-in (SIMATIC Memory Card), max.	with SIMATIC memory card
 maintenance-free without battery Yes 	Backup	
• without battery Yes	• present	Yes
	 maintenance-free 	Yes
CPU processing times	without battery	Yes
	CPU processing times	

for bit operations, typ.	0.08 μs; / instruction
for word operations, typ.	1.7 µs; / instruction
for floating point arithmetic, typ.	2.3 µs; / instruction
CPU-blocks	
Number of blocks (total)	DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used
OB	
Number, max.	Limited only by RAM for code
Data areas and their retentivity	
Retentive data area (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	ND
Process image	1 khyta
Inputs, adjustable Outputs, adjustable	1 kbyte
Outputs, adjustable	1 kbyte
Hardware configuration	O commo modulos designado de la composição de la composiç
Number of modules per system, max.	3 comm. modules, 1 signal board, 8 signal modules
Time of day	
Clock	
 Hardware clock (real-time) 	Yes
Backup time	480 h; Typical
Deviation per day, max.	±60 s/month 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
— at "0" to "1", min.	in groups of four 0.2 ms
— at "0" to "1", min. — at "0" to "1", max.	0.2 ms 12.8 ms
for interrupt inputs	12.0 1113
— parameterizable	Yes
for technological functions	100
— parameterizable	Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3
parameter industry	@ 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	
• for signal "0", max.	0.1 V; with 10 kOhm load
• for signal "1", min.	20 V
Output current	

• for signal "1" rated value	0.5 A
for signal "0" residual current, max.	0.1 mA
Output delay with resistive load	U. I IIIA
• "0" to "1", max.	1 μs
• "1" to "0", max.	5 μs
Switching frequency	
 of the pulse outputs, with resistive load, max. 	100 kHz
Relay outputs	
Number of relay outputs	0
Cable length	
• shielded, max.	500 m
• unshielded, max.	150 m
Analog inputs	
Number of analog inputs	2
Input ranges	
Voltage	Yes
Input ranges (rated values), voltages	
• 0 to +10 V	Yes
— Input resistance (0 to 10 V)	≥100k ohms
Cable length	
• shielded, max.	100 m; twisted and shielded
Analog outputs	
Number of analog outputs	0
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
Resolution with overrange (bit including sign), max.	10 bit
 Integration time, parameterizable 	Yes
Conversion time (per channel)	625 µs
Encoder	020 po
Connectable encoders	
• 2-wire sensor	Yes
Z-Wile Selisoi	163
4 Interfere	
1. Interface	PROFINET
Interface type	PROFINET
Interface type Isolated	Yes
Interface type Isolated automatic detection of transmission rate	Yes Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation	Yes Yes Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing	Yes Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types	Yes Yes Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet)	Yes Yes Yes Yes Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types RJ 45 (Ethernet) Number of ports	Yes Yes Yes Yes Yes 1
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch	Yes Yes Yes Yes Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols	Yes Yes Yes Yes Yes 1 No
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch	Yes Yes Yes Yes Yes 1
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	Yes Yes Yes Yes Yes Yes 1 No Yes Yes
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	Yes Yes Yes Yes Yes Yes 1 No Yes Yes Yes Yes
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	Yes Yes Yes Yes Yes Yes 1 No Yes Yes
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 Yes Yes Yes Yes Yes Yes Yes Ye
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	Yes Yes Yes Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes Yes Yes Yes Yes; Optionally also encrypted Yes
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 Yes Yes Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes Yes Yes Yes Yes; Optionally also encrypted Yes
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 Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
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 Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
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 Yes Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes Yes Yes No 100 Mbit/s
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 Yes Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes Yes Yes Yes Yes; Optionally also encrypted Yes No 100 Mbit/s Yes; encryption with TLS V1.3 pre-selected
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 Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
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 Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Open IE communication • Web server • Media redundancy PROFINET IO Controller • Transmission rate, max. Services — PG/OP communication — Isochronous mode — IRT — PROFIenergy — Prioritized startup — Number of IO devices with prioritized startup,	Yes Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes Yes Yes Yes; Optionally also encrypted Yes No 100 Mbit/s Yes; encryption with TLS V1.3 pre-selected No No
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Open IE communication • Web server • Media redundancy PROFINET IO Controller • Transmission rate, max. Services — PG/OP communication — Isochronous mode — IRT — PROFIenergy — Prioritized startup — Number of IO devices with prioritized startup, max.	Yes Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes Yes Yes Yes Yes; Optionally also encrypted Yes No 100 Mbit/s Yes; encryption with TLS V1.3 pre-selected No No No No No Yes 16
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Open IE communication • Web server • Media redundancy PROFINET IO Controller • Transmission rate, max. Services — PG/OP communication — Isochronous mode — IRT — PROFlenergy — Prioritized startup — Number of IO devices with prioritized startup, max. — Number of connectable IO Devices, max.	Yes Yes Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes Yes Yes Yes; Optionally also encrypted Yes No 100 Mbit/s Yes; encryption with TLS V1.3 pre-selected No No No Yes 16
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Open IE communication • Web server • Media redundancy PROFINET IO Controller • Transmission rate, max. Services — PG/OP communication — Isochronous mode — IRT — PROFlenergy — Prioritized startup — Number of IO devices with prioritized startup, max. — Number of connectable IO Devices, max. — Number of connectable IO Devices for RT,	Yes Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes Yes Yes Yes Yes; Optionally also encrypted Yes No 100 Mbit/s Yes; encryption with TLS V1.3 pre-selected No No No No No Yes 16
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Open IE communication • Web server • Media redundancy PROFINET IO Controller • Transmission rate, max. Services — PG/OP communication — Isochronous mode — IRT — PROFIenergy — Prioritized startup — Number of IO devices with prioritized startup, max. — Number of connectable IO Devices, max. — Number of connectable IO Devices for RT, max.	Yes Yes Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes Yes Yes; Optionally also encrypted Yes No 100 Mbit/s Yes; encryption with TLS V1.3 pre-selected No No No No Yes 16 16 16
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Open IE communication • Web server • Media redundancy PROFINET IO Controller • Transmission rate, max. Services — PG/OP communication — Isochronous mode — IRT — PROFlenergy — Prioritized startup — Number of IO devices with prioritized startup, max. — Number of connectable IO Devices, max. — Number of connectable IO Devices for RT,	Yes Yes Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes Yes Yes Yes; Optionally also encrypted Yes No 100 Mbit/s Yes; encryption with TLS V1.3 pre-selected No No No Yes 16

Number of IO Devices that can be	8
simultaneously activated/deactivated, max.	O
 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	devices and the quantity of configured door data.
Services	
— PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
 Isochronous mode 	No
— IRT	No
— PROFlenergy	Yes
— Shared device	Yes
 Number of IO Controllers with shared device, 	2
max. Protocols	
Supports protocol for PROFINET IO	Yes
PROFIsafe	No
PROFIBUS	
OPC UA	Yes; CM 1243-5 (master) or CM 1242-5 (slave) required Yes; OPC UA Server
	•
AS-Interface Protocols (Ethernet)	Yes; CM 1243-2 required
Protocols (Ethernet) • TCP/IP	Yes
TCP/IP DHCP	Yes No
SNMP	
SNMP DCP	Yes
• DCP • LLDP	Yes Yes
Redundancy mode	1 53
Media redundancy	
— MRP	No
— MRPD	No
SIMATIC communication	INO
• S7 routing	Yes
Open IE communication	165
TCP/IP	Yes
— Data length, max.	8 kbyte
ISO-on-TCP (RFC1006)	Yes
— Data length, max.	8 kbyte
■ Data length, max.	Yes
— Data length, max.	1 472 byte
Web server	1 +12 byte
• supported	Yes
User-defined websites	Yes
OPC UA	100
Runtime license required	Yes; "Basic" license required
OPC UA Server	Yes; data access (read, write, subscribe), method call, runtime license
5.0.00.00.00	required
 Application authentication 	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256
 User authentication 	"anonymous" or by user name & password
Number of sessions, max.	10
 Number of subscriptions per session, max. 	5
— Sampling interval, min.	100 ms
— Publishing interval, min.	200 ms
 Number of server methods, max. 	20
 number of monitored items, recommended 	1 000
max.	
 Number of server interfaces, max. 	2
 Number of nodes for user-defined server 	2 000
interfaces, max.	
Further protocols	
Further protocols • MODBUS	Yes
Further protocols	Yes
Further protocols • MODBUS	Yes
Further protocols • MODBUS communication functions / header	Yes
Further protocols • MODBUS communication functions / header S7 communication	

as client	Yes
as clientUser data per job, max.	Yes See online help (S7 communication, user data size)
Number of connections	coo stanto noip (or communication, door data size)
• overall	PG Connections: 4 reserved / 4 max; HMI Connections: 12 reserved / 18 max; S7 Connections: 8 reserved / 14 max; Open User Connections: 8 reserved / 14 max; Web Connections: 2 reserved / 30 max; OPC UA Connections: 0 reserved / 10 max; Total Connections: 34 reserved / 64 max
Test commissioning functions	
Status/control	
 Status/control variable 	Yes
• Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	V
Forcing Diagnostic buffer	Yes
present	Yes
Traces	165
Number of configurable Traces	2
Memory size per trace, max.	512 kbyte
Interrupts/diagnostics/status information	
Diagnostics indication LED	
RUN/STOP LED	Yes
• ERROR LED	Yes
MAINT LED	Yes
Integrated Functions	
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)	100 kHz
Potential separation	
Potential separation digital inputs	N
Potential separation digital inputs	No
between the channels, in groups of Petential constrain digital outputs	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 all discharge 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
 Interference immunity on signal cables acc. to IEC 61000-4-4 	Yes
Interference immunity against voltage surge	
 Interference immunity on supply lines acc. to IEC 	Yes
61000-4-5	
Interference immunity against conducted variable disturbance	
 Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 	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	
IP degree of protection	IP20

Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
Marine approval	Yes
Ambient conditions	163
Free fall	0.2 m; five times, in product package
Fall height, max. Ambient temperature during eneration.	0.3 m; five times, in product package
Ambient temperature during operation	-20 °C
• min.	
● max.	60 °C; Number of simultaneously activated inputs or outputs 7 or 5 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 14 or 10 at 55 °C horizontal or 45 °C vertical
 horizontal installation, min. 	-20 °C
 horizontal installation, max. 	60 °C
 vertical installation, min. 	-20 °C
vertical installation, max.	50 °C
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Air pressure acc. to IEC 60068-2-13	
 Operation, min. 	795 hPa
 Operation, max. 	1 080 hPa
 Storage/transport, min. 	660 hPa
Storage/transport, max.	1 080 hPa
Altitude during operation relating to sea level	
Installation altitude, min.	-1 000 m
 Installation altitude, max. 	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Relative humidity	
Operation, max.	95 %; no condensation
Vibrations	
 Vibration resistance during operation acc. to IEC 60068-2-6 	2 g (m/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
Pollutant concentrations	
SO2 at RH < 60% without condensation	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
configuration / header	
configuration / programming / header	
Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
Know-how protection	
 User program protection/password protection 	Yes
 Copy protection 	Yes
Block protection	Yes
Access protection	
 protection of confidential configuration data 	Yes
 Protection level: Write protection 	Yes
 Protection level: Read/write protection 	Yes
Protection level: Complete protection	Yes
programming / cycle time monitoring / header	
programming / cycle time monitoring / header • adjustable	Yes
	Yes
adjustable	Yes 110 mm
adjustable Dimensions	
adjustable Dimensions Width	110 mm

Weights 415 g Weight, approx. 7/19/2022

last modified: