SIEMENS

Data sheet

6ES7215-1AF40-0XB0

SIMATIC S7-1200F, CPU 1215 FC, COMPACT CPU, DC/DC/DC, 2 PROFINET PORT, ONBOARD I/O: 14 DI 24VDC; 10 DO 24V DC 0.5A; 2 AI 0-10V DC, 2 AO 0-20MA DC, POWER SUPPLY: DC 20.4 - 28.8 V DC, PROGRAM/DATA MEMORY 150 KB



General information	
	OBU 404550 DO/DO/DO
Product type designation	CPU 1215FC DC/DC/DC
Firmware version	V4.2
Engineering with	
Programming package	STEP 7 V14 or higher
Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Load voltage L+	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
• permissible range, upper limit (DC)	28.8 V
Input current	
Current consumption (rated value)	500 mA; CPU only
Current consumption, max.	1 500 mA; CPU with all expansion modules

Inrush current, max.	12 A; at 28.8 V DC
	0.5 A ² ·s
Output current for backplane bus (5 V DC), max.	1 600 mA: May 5 V DC for SM and CM
ior 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
N.	
Memory Work memory	
• integrated	150 kbyte
expandable	No
Load memory	
• integrated	4 Mbyte
 Plug-in (SIMATIC Memory Card), max. 	with SIMATIC memory card
Backup	man emilitine memory care
• present	Yes
maintenance-free	Yes
without battery	Yes
- William Ballery	
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
OB	restriction, the entire working memory can be used
	Limited only by RAM for code
Number, max.	Entitled Only by IV-NVI for Code
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags),	10 kbyte
max.	
Flag	9 kbyte: Size of hit memory address area
Number, max. Local data	8 kbyte; Size of bit memory address area
	16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2
● per priority class, max.	to 26: 6 KB
Address area	
Process image	

Inputs, adjustable	1 kbyte
Outputs, adjustable	1 kbyte
11. 1	
Hardware configuration Number of modules per system, max.	3 comm. modules, 1 signal board, 8 signal modules
Humber of modules per system, max.	o comm. modules, i signal board, o 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	Yes; 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four
— at "0" to "1", min.	0.2 ms
— at "0" to "1", max.	12.8 ms
for interrupt inputs	
— parameterizable	Yes
for counter/technological functions	
— parameterizable	Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz
Cable length	
• shielded, max.	500 m; 50 m for technological functions
• unshielded, max.	300 m; For technological functions: No
Digital outputs	
Number of digital outputs	10
• 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	
• "0" to "1", max.	1 µs
• "1" to "0", max.	5 μs
Switching frequency	
• of the pulse outputs, with resistive load, max.	100 kHz
Cable length	
• shielded, max.	500 m
• unshielded, max.	150 m
Analog innuts	
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	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), 	10 bit
max.	
 Integration time, parameterizable 	Yes
 Conversion time (per channel) 	625 µs
Analog value generation for the outputs	
Integration and conversion time/resolution per channel	
 Resolution with overrange (bit including sign), max. 	10 bit
Encoder	
Connectable encoders	

• 2-wire sensor	Yes
1. Interface	
Interface type	PROFINET
Physics	Ethernet

1 11,0100	Ethomot
Isolated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes

Yes

Interface types

2 • Number of ports • integrated switch Yes

Functionality

Yes PROFINET IO Controller Yes • PROFINET IO Device Yes • SIMATIC communication • Open IE communication Yes

• Web server Yes; as MRP client Media redundancy

PROFINET IO Controller

100 Mbit/s • Transmission rate, max.

Services

Yes - PG/OP communication Yes - S7 routing No - Isochronous mode Yes - Open IE communication No — IRT

- MRP Yes; as MRP client

No - MRPD No - PROFlenergy - Prioritized startup 16

- Number of IO devices with prioritized startup, max.

- Number of connectable IO Devices, max.

- Number of connectable IO Devices for RT, max.

- of which in line, max. - Activation/deactivation of IO Devices

- Number of IO Devices that can be simultaneously activated/deactivated, max.

- Updating time

Yes

16

16

16

Yes 8

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.

PGIOP communication	PROFINET IO Device	
— S7 routing Yes — Isochronous mode No — Open IE communication Yes — IRT No — MRP Yes, as MRP client — MRPD No — PROFlenergy Yes — Shared device Yes — Number of IO Controllers with shared device, max. 2 PROFIBUS Yes Supports protocol for PROFINET IO Yes PROFIBUS Yes, CM 1243-5 required AS-Interface Yes, CM 1243-2 required Protocols (Ethernet) Yes • TCP/IP Yes • DHCP No • SNMP Yes • DCP Yes • LLDP Yes Open IE communication *TCP/IP — Data length, max. 8 kbyte • ISO-on-TCP (RFC1008) Yes — Data length, max. 1 472 byte Further protocols *MOBUS Yes • MODBUS Yes * Sommunication functions *Srommunication • Syes conline help (S7	Services	
Isochronous mode	— PG/OP communication	Yes
Open IE communication	— S7 routing	Yes
— IRT No — MRP Yes; as MRP client — MRPD No — PROFlenergy Yes — Shared device Yes — Number of IO Controllers with shared device, max. 2 Protocols Supports protocol for PROFINET IO Yes PROFIBUS Yes; CM 1243-5 required AS-Interface Yes; CM 1243-2 required Protocols (Ethernet) Yes • TCP/IP Yes • DHCP No • SNMP Yes • DCP Yes • LLDP Yes Open IE communication Yes • ICP/IP Yes — Data length, max. 8 kbyte • ISO-on-TCP (RFC1006) Yes — Data length, max. 8 kbyte • MODBUS Yes Communication functions S7 communication functions S7 communication functions S7 communication functions See online help (S7 communication, user data size)	— Isochronous mode	No
− MRP Yes; as MRP client − MRPD No − PROFlenergy Yes − Shared device Yes − Number of IO Controllers with shared device, max. 2 Protocols Supports protocol for PROFINET IO Yes PROFIBUS Yes; CM 1243-5 required AS-Interface Yes; CM 1243-2 required Protocols (Ethemet) • TCP/IP Yes • DHCP No • SNMP Yes • DCP Yes • LLDP Yes Open IE communication * TCP/IP - Data length, max. 8 kbyte • ISO-on-TCP (RFC1006) Yes - Data length, max. 1 472 byte Further protocols • MODBUS Yes Communication functions S7 communication • supported Yes • as server Yes • as server Yes • as server Yes • supported Yes <	 Open IE communication 	Yes
— MRPD No — PROFlenergy Yes — Shared device Yes — Number of IO Controllers with shared device, max. 2 Protocols Supports protocol for PROFINET IO Yes Yes, CM 1243-5 required PROFIBUS Yes, CM 1243-2 required AS-Interface Yes, CM 1243-2 required Protocols (Ethernet) Yes • TCP/IP Yes • DHCP No • SNMP Yes • DCP Yes • LLDP Yes Open IE communication * TCP/IP — Data length, max. 8 kbyte • ISO-on-TCP (RFC1006) Yes — Data length, max. 1 472 byte Further protocols * MODBUS • MODBUS Yes Communication functions * S7 communication • supported Yes • as client Yes • as client Yes • Supported Yes • as client Yes <	— IRT	No
— PROFlenergy — Shared device — Number of IO Controllers with shared device, max. Protocols Supports protocol for PROFINET IO PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP • DHCP • DCP • LLDP Open IE communication • TCP/IP — Data length, max. • ISO-on-TCP (RFC1006) — Data length, max. • UDP — Data length, max. • WPODBUS Further protocols • MODBUS Communication • supported •	— MRP	Yes; as MRP client
— Shared device — Number of IO Controllers with shared device, max. Protocols Supports protocol for PROFINET IO PROFIBUS AS-Interface Yes; CM 1243-5 required Protocols (Ethernet) • TCP/IP • DHCP • DHCP • SNMP • DCP • LLDP Open IE communication • TCP/IP — Data length, max. • ISO-on-TCP (RFC1006) — Data length, max. • UDP — Data length, max. • UDP — Data length, max. • Wes Further protocols • MODBUS Yes Communication • supported • as server • as client • User data per job, max. Open IE communication, user data size) Open IE communication • TCP/IP	— MRPD	No
Number of IO Controllers with shared device, max. Protocols Supports protocol for PROFINET IO PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP • DHCP • DHCP • DCP • LLDP Open IE communication • TCP/IP Data length, max. • UDP Data length, max. • UDP Data length, max. • WoDBUS Further protocols • MODBUS Yes Open IE communication • Yes Communication • Yes Communication • Yes Open IE communication • Yes Communication • Yes Communication • Yes Open IE communication • Yes Communication • So communication • So communication • So communication • Supported • As server • As client • User data per job, max. See online help (S7 communication, user data size) Open IE communication • TCP/IP Yes	— PROFlenergy	Yes
Protocols	— Shared device	Yes
Protocols	 Number of IO Controllers with shared 	2
Supports protocol for PROFINET IO PROFIBUS Yes; CM 1243-5 required AS-Interface Protocols (Ethernet) • TCP/IP • DHCP • DHCP • DHCP • SNMP • DCP • LLDP Open IE communication • TCP/IP — Data length, max. • ISO-on-TCP (RFC1006) — Data length, max. • UDP — Data length, max. • UDP — Data length, max. • Yes • MODBUS Communication functions S7 communication • supported • as server • as client • User data per job, max. Quentle Communication • TCP/IP • Skbyte Yes Yes See online help (S7 communication, user data size) Open IE communication • TCP/IP Yes	device, max.	
PROFIBUS Yes; CM 1243-5 required AS-Interface Yes; CM 1243-2 required Protocols (Ethernet) Yes • TCP/IP Yes • DHCP No • SNMP Yes • DCP Yes • LLDP Yes Open IE communication TCP/IP — Data length, max. 8 kbyte • ISO-on-TCP (RFC1006) Yes — Data length, max. 8 kbyte • UDP — Data length, max. • UDP — Data length, max. • MODBUS Yes Communication functions Yes S7 communication functions Yes S7 communication Yes • as server Yes • as client Yes • User data per job, max. See online help (S7 communication, user data size) Open IE communication TCP/IP	Protocols	
AS-Interface Yes; CM 1243-2 required	Supports protocol for PROFINET IO	Yes
Protocols (Ethernet)		Yes; CM 1243-5 required
		Yes; CM 1243-2 required
	• TCP/IP	
DCP LLDP Yes Open IE communication TCP/IP Data length, max. ISO-on-TCP (RFC1006) Data length, max. UDP Data length, max. 1 472 byte Further protocols MODBUS Communication functions 7 communication supported as server as client Ves See online help (S7 communication, user data size) Open IE communication TCP/IP Yes	• DHCP	
● LLDP Yes Open IE communication ● TCP/IP — Data length, max. 8 kbyte ● ISO-on-TCP (RFC1006) Yes — Data length, max. 8 kbyte ● UDP — Data length, max. 1 472 byte Further protocols ● MODBUS Yes Communication functions \$7 communication ● supported ● as server ● as client ● User data per job, max. See online help (S7 communication, user data size) Open IE communication ● TCP/IP Yes	• SNMP	
Open IE communication TCP/IP Data length, max. Iso-on-TCP (RFC1006) Data length, max. UDP Data length, max. I 472 byte Further protocols MODBUS Yes Communication functions S7 communication supported supported supported as server as client User data per job, max. Yes Yes Yes See online help (S7 communication, user data size) Open IE communication TCP/IP Yes	• DCP	
TCP/IP Data length, max. IsO-on-TCP (RFC1006) Data length, max. Iso-on-TCP (RFC100		Yes
Data length, max. ■ ISO-on-TCP (RFC1006) Data length, max. ■ UDP Data length, max. ■ UDP Data length, max. ■ MODBUS Communication functions S7 communication ■ supported ■ as server ■ as client ■ User data per job, max. Open IE communication ■ TCP/IP Yes Yes 8 kbyte Yes 9 kbyte Yes 1 472 byte Yes Yes Yes See online help (S7 communication, user data size) Yes Yes Yes		
ISO-on-TCP (RFC1006) — Data length, max. Idia UDP — Data length, max. Idia Upy tess Further protocols In MODBUS Yes Communication functions S7 communication Idia server Idia as server Idia as server Idia as client Idia upy tess Yes Ves Idia upy tess See online help (S7 communication, user data size) Open IE communication Idia Upy tess Yes See online help (S7 communication, user data size) Open IE communication Idia Upy tess Yes		
- Data length, max. ● UDP - Data length, max. 1 472 byte Further protocols ● MODBUS Yes Communication functions \$7 communication ● supported ● as server ● as client ● User data per job, max. Open IE communication • TCP/IP Yes Yes Yes Yes Yes Yes Yes See online help (S7 communication, user data size)		
UDP — Data length, max. Further protocols MODBUS Yes Communication functions S7 communication supported sas server as server as client User data per job, max. Open IE communication TCP/IP Yes 1 472 byte 1 472 byte 1 472 byte 1 472 byte Yes Yes Yes See online help (S7 communication, user data size)	,	
— Data length, max. Further protocols • MODBUS Yes Communication functions S7 communication • supported • as server • as client • User data per job, max. Open IE communication • TCP/IP Yes 1 472 byte 1 472 byte 1 472 byte 1 472 byte		8 kbyte
Further protocols • MODBUS Yes Communication functions S7 communication • supported • as server • as client • User data per job, max. Open IE communication • TCP/IP Yes Yes Yes See online help (S7 communication, user data size)		
 MODBUS Yes Communication functions S7 communication • supported • as server • as client • User data per job, max. Open IE communication • TCP/IP Yes Yes Yes		1 472 byte
Communication functions S7 communication • supported • as server • as client • User data per job, max. Open IE communication • TCP/IP Yes Yes See online help (S7 communication, user data size)		
S7 communication • supported • as server • as client • User data per job, max. Open IE communication • TCP/IP Yes Yes See online help (S7 communication, user data size) Yes	• MODBUS	Yes
 supported as server as client User data per job, max. Open IE communication TCP/IP Yes See online help (S7 communication, user data size) 	Communication functions	
 as server as client User data per job, max. Open IE communication TCP/IP Yes See online help (S7 communication, user data size) Yes 	S7 communication	
 as client User data per job, max. Open IE communication TCP/IP Yes See online help (S7 communication, user data size) Yes 	supported	
 User data per job, max. Open IE communication TCP/IP Yes 	• as server	
Open IE communication ● TCP/IP Yes	• as client	
• TCP/IP Yes		See online help (S7 communication, user data size)
• UDP Yes		
	• UDP	Yes

1M I	
Web server	
• supported	Yes
 User-defined websites 	Yes
Number of connections	
• overall	16; dynamically
Test commissioning functions	
Status/control	
Status/control variable	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
Memory size per trace, max.	512 kbyte
Interrupts/diagnostics/status information	
Diagnostics indication LED	V
• RUN/STOP LED	Yes
• ERROR LED	Yes
MAINT LED	Yes
Integrated Functions	
Number of counters	6
Counting frequency (counter) max.	100 kHz
Frequency meter	Yes
controlled positioning	Yes
Number of position-controlled positioning axes, max.	8
Number of positioning axes via pulse-direction interface	4; 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	
 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
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1

EMC	
Interference immunity against discharge of static electri	city
Interference immunity against discharge of	Yes
static electricity acc. to IEC 61000-4-2	
 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
 Interference immunity on signal cables acc. to IEC 61000-4-4 	Yes
Interference immunity against voltage surge	
• on the supply lines acc. to IEC 61000-4-5	Yes
Interference immunity against conducted variable distur	bance induced by high-frequency fields
 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	
Degree of protection acc. to EN 60529	
	Yes
Degree of protection acc. to EN 60529 • IP20	Yes
Degree of protection acc. to EN 60529	Yes
Degree of protection acc. to EN 60529 • IP20 Standards, approvals, certificates	
Degree of protection acc. to EN 60529 • IP20 Standards, approvals, certificates CE mark	Yes
Degree of protection acc. to EN 60529 • IP20 Standards, approvals, certificates CE mark UL approval	Yes Yes
Degree of protection acc. to EN 60529 • IP20 Standards, approvals, certificates CE mark UL approval cULus	Yes Yes Yes
Degree of protection acc. to EN 60529 • IP20 Standards, approvals, certificates CE mark UL approval cULus FM approval	Yes Yes Yes Yes Yes
Degree of protection acc. to EN 60529 • IP20 Standards, approvals, certificates CE mark UL approval cULus FM approval RCM (formerly C-TICK)	Yes Yes Yes Yes Yes Yes
Degree of protection acc. to EN 60529 • IP20 Standards, approvals, certificates CE mark UL approval cULus FM approval RCM (formerly C-TICK) KC approval	Yes Yes Yes Yes Yes Yes Yes Yes
Degree of protection acc. to EN 60529 • IP20 Standards, approvals, certificates CE mark UL approval cULus FM approval RCM (formerly C-TICK) KC approval Marine approval	Yes Yes Yes Yes Yes Yes Yes Yes
Degree of protection acc. to EN 60529 • IP20 Standards, approvals, certificates CE mark UL approval cULus FM approval RCM (formerly C-TICK) KC approval Marine approval Highest safety class achievable in safety mode	Yes Yes Yes Yes Yes Yes Yes Yes Yes
Degree of protection acc. to EN 60529 • IP20 Standards, approvals, certificates CE mark UL approval cULus FM approval RCM (formerly C-TICK) KC approval Marine approval Highest safety class achievable in safety mode • Performance level according to ISO 13849-1	Yes Yes Yes Yes Yes Yes Yes Yes Yes PLe
Degree of protection acc. to EN 60529 • IP20 Standards, approvals, certificates CE mark UL approval cULus FM approval RCM (formerly C-TICK) KC approval Marine approval Highest safety class achievable in safety mode • Performance level according to ISO 13849-1 • SIL acc. to IEC 61508	Yes Yes Yes Yes Yes Yes Yes Yes Yes SIL 3
Degree of protection acc. to EN 60529 • IP20 Standards, approvals, certificates CE mark UL approval cULus FM approval RCM (formerly C-TICK) KC approval Marine approval Highest safety class achievable in safety mode • Performance level according to ISO 13849-1 • SIL acc. to IEC 61508 Ambient conditions	Yes Yes Yes Yes Yes Yes Yes Yes Yes PLe
Degree of protection acc. to EN 60529 • IP20 Standards, approvals, certificates CE mark UL approval cULus FM approval RCM (formerly C-TICK) KC approval Marine approval Highest safety class achievable in safety mode • Performance level according to ISO 13849-1 • SIL acc. to IEC 61508 Ambient conditions Free fall	Yes Yes Yes Yes Yes Yes Yes Yes Yes SIL 3
Degree of protection acc. to EN 60529 • IP20 Standards, approvals, certificates CE mark UL approval cULus FM approval RCM (formerly C-TICK) KC approval Marine approval Highest safety class achievable in safety mode • Performance level according to ISO 13849-1 • SIL acc. to IEC 61508 Ambient conditions Free fall • Fall height, max.	Yes

 • horizontal installation, min. • horizontal installation, max. • vertical installation, max. • vertical installation, max. 45 °C Ambient temperature during storage/transportation • min. • max. 70 °C Air pressure acc. to IEC 60068-2-13 • Operation, min. • Operation, max. • Operation, max. • Storage/transport, min. • Storage/transport, min. • Storage/transport, max. • permissible operating height • 1000 to 2000 m Relative humidity • Operation, max. • Operation, max. • Vibrations • Vitrations • Operation, tested according to IEC 60068-2-6 • Stock test • tested according to IEC 60068-2-27 • Tested according to IEC 60068-2-27 • Stock test • Configuration • SO2 at RN < 60% without condensation SO2 * < 0.5 ppm; H2S; < 0.1 ppm; RN < 60% condensation-free Configuration • Programming Programming Programming Inguage • LAD • FBD • SCL Yes SCL So2 So3 SO4 pp protection • So4 • Protection level: Write protection • Protection level: Write protection • Protection level: Complete protection • Prote		
vertical installation, min. vertical installation, max. Ambient temperature during storage/transportation imin. imax. Air pressure acc. to IEC 60068-2-13 Operation, min. Operation, max. Operation, max. Storage/transport, min. Storage/transport, min. Storage/transport, max. I 080 hPa Storage/transport, max. Operation, max. Storage/transport, max. Operation, prin. Storage/transport, max. Operation, prin. Storage/transport, max. Storage/transport, max. Operation, prin. Storage/transport, max. Operation, prin. Storage/transport, max. Operation, prin. Storage/transport, max. Operation, prin. Storage/transport, max. Operation, prin. O	horizontal installation, min.	0 °C
• vertical installation, max.	horizontal installation, max.	55 °C
Ambient temperature during storage/transportation • min. • max. • 70 °C Air pressure acc. to IEC 60068-2-13 • Operation, min. • Operation, max. • Storage/transport, min. • Storage/transport, min. • Storage/transport, min. • Storage/transport, max. • Storage/transport, max. • Storage/transport, max. • Permissible operating height • 1080 hPa • Storage/transport, max. • Permissible operating height • Operation, max. **Vibrations • Vibrations • Operation, tested according to IEC 60068-2-6 **Shock test • 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 **SO2 at RH < 60% without condensation **Configuration **Programming **Programming language - LAD - FBD - SCL - Yes; incl. failsafe - Yes; incl. failsafe - Yes; incl. failsafe - Yes **Rnow-how protection • User program protection/password protection • User program protection/password protection • User program protection Yes **Rnow-how protection • User program protection Yes **Protection level: Write protection • Protection level: Read/write protection • Protection level: Complete protection	 vertical installation, min. 	0 °C
min. max. max. 70 °C Air pressure acc. to IEC 60088-2-13 Operation, min. Operation, max. 1 080 hPa Storage/transport, max. 1 080 hPa Permissible operating height Poperation, max. 1 080 hPa	 vertical installation, max. 	45 °C
Nax. 70 °C Air pressure acc. to IEC 60068-2-13 Operation, min. 795 hPa Operation, max. 1080 hPa Storage/transport, min. 660 hPa Storage/transport, min. 1080 hPa Storage/transport, max. 1080 hPa Permissible operating height -1000 to 2000 m Relative humidity Operation, max. 95 %; no condensation Vibrations Vibrations Vibrations Vibrations Vibrations 2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail Yes Shock test Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms Pollutant concentrations S02 at RH < 60% without condensation S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free Configuration Programming language —LAD Yes; incl. failsafe —FBD Yes; incl. failsafe —SCL Know-how protection User program protection/password protection User program protection/password protection Plock protection Protection level: Write protection Protection level: Write protection Protection level: Write protection Protection level: Write protection Protection level: Complete protection	Ambient temperature during storage/transportation	
Air pressure acc. to IEC 60068-2-13 • Operation, min. • Operation, max. • Storage/transport, min. • Storage/transport, max. • permissible operating height • Operation, max. • permissible operating height • Operation, max. • Storage/transport, max. • permissible operating height • Operation, max. • Vibrations • Vibrations • Vibrations • Vibrations • Vibrations • Vibrations • Verbrations • Verbrations • Verbrations • Vessets • tested according to IEC 60068-2-6 Shock test • 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 SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free Configuration Programming Programming Programming Programming Programming language — LAD — FBD — FSCL Know-how protection • User program protection/password protection • User program protection/password protection • User program protection • User program protection • Block protection • Protection level: Write protection • Protection level: Write protection • Protection level: Read/write protection • Protection level: Read/write protection • Protection level: Complete protection	• min.	-40 °C
Operation, min. Operation, max. Operation, max. Storage/transport, min. Ostorage/transport, min. Ostorage/transport, max. Operation, max. Operation, max. Operation, max. Operation, max. Operation, max. Operation, max. Operation, max. Operation, max. Operation, tested according to IEC 60068-2-6 Shock test Operation, tested according to IEC 60068-2-7 Ves IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms Pollutant concentrations OSQ at RH < 60% without condensation SQ2 < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free Configuration Programming Programming Programming language — LAD — FBD — SCL Know-how protection Outside the strength of the shock 15 g (peak value), duration 11 ms Pollutant concentrations Yes; incl. failsafe Yes; incl. failsafe Yes; incl. failsafe Yes Access protection Outside the strength of the shock 15 g (peak value), duration 11 ms Programming Programming Programming Programming Programming Programming Programming language — LAD — FBD — SCL Know-how protection Outside the strength of the shock 15 g (peak value), duration 11 ms Pollutant concentrations Yes; incl. failsafe Yes; incl. failsafe Yes Yes Access protection Protection level: Write protection Yes Protection level: Write protection Yes Protection level: Write protection Yes Protection level: Complete protection Yes Cycle time monitoring Outside the strength of the shock 15 g (peak value), duration 11 ms Pollutant concentrations 1 080 hPa 2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail Pros	• max.	70 °C
Operation, max. Storage/transport, min. Storage/transport, min. Operation, max. Operation operation operation operation operation operation operation operation operation operation. Operation Oper	Air pressure acc. to IEC 60068-2-13	
Storage/transport, min. Storage/transport, max. permissible operating height Operation, max. Vibrations Vibrations Operation, tested according to IEC 60068-2-6 Shock test tested according to IEC 60068-2-7 Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms Pollutant concentrations SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free Configuration Programming Programming language LAD SCL FBD SCL Know-how protection User program protection/password protection User program protection So2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free Know-how protection Proses protection So3: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free Copy protection Ves Know-how protection Protection level: Write protection Protection level: Write protection Protection level: Write protection Protection level: Complete protection	Operation, min.	795 hPa
Storage/transport, max. permissible operating height -1000 to 2000 m Relative humidity Operation, max. 95 %; no condensation Vibrations Vibrations Vibrations Operation, tested according to IEC 60068-2-6 Shock test tested according to IEC 60068-2-7 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 Programming Programming language — LAD — FBD — SCL Xnow-how protection User program protection/password protection Ves Copy protection Block protection Protection level: Write protection Protection level: Complete protection Piper adjustable Piper adjustable Piper adjustable Preservation Protection level: Complete protection	Operation, max.	1 080 hPa
permissible operating height	• Storage/transport, min.	660 hPa
Relative humidity Operation, max. Vibrations Vibrations Operation, tested according to IEC 60068-2-6 Shock test Otested according to IEC 60068-2-7 Shock test Otested according to IEC 60068-2-7 Pollutant concentrations So2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free Configuration Programming Programming language — LAD — FBD — SCL Know-how protection Ocopy protection Ocopy protection Block protection Block protection Protection level: Write protection Protection level: Read/write protection Protection level: Complete protection P	• Storage/transport, max.	1 080 hPa
Operation, max. Vibrations Vibrations Vibrations Operation, tested according to IEC 60068-2-6 Shock test tested according to IEC 60068-2-27 Pollutant concentrations SO2 at RH < 60% without condensation SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free Configuration Programming Programming language LAD FBD SCL Yes; incl. failsafe Yes; incl. failsafe Yes; incl. failsafe Yes; incl. failsafe Yes Know-how protection User program protection/password protection Ocopy protection Protection level: Write protection Protection level: Read/write protection Protection level: Complete protection	 permissible operating height 	-1000 to 2000 m
Vibrations • Vibrations • Vibrations • Operation, tested according to IEC 60068-2-6 Shock test • tested according to IEC 60068-2-7 Pollutant concentrations • SO2 at RH < 60% without condensation Frogramming Programming Programming Ianguage — LAD — FBD — SCL Know-how protection • User program protection/password protection • Copy protection • Block protection • Protection level: Write protection • Protection level: Read/write protection • Protection level: Complete protection	Relative humidity	
Vibrations • Vibrations • Operation, tested according to IEC 60068-2-6 Shock test • tested according to IEC 60068-2-7 Pollutant concentrations • SO2 at RH < 60% without condensation Frogramming Programming Programming Ianguage — LAD — FBD — SCL Know-how protection • User program protection/password protection • Copy protection • Block protection • Protection level: Write protection • Protection level: Read/write protection • Protection level: Complete protection	Operation, max.	95 %; no condensation
Operation, tested according to IEC 60068-2-6 Shock test • tested according to IEC 60068-2-27 Ves; 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 SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free Configuration Programming Programming language — LAD — FBD — Yes; incl. failsafe — SCL — Yes Know-how protection • User program protection/password protection • Copy protection • Block protection • Block protection • Protection level: Write protection • Protection level: Write protection • Protection level: Read/write protection • Protection level: Complete protection	Vibrations	
Shock test • tested according to IEC 60068-2-27 • tested according to IEC 60068-2-27 Pollutant concentrations • SO2 at RH < 60% without condensation SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free Configuration Programming Programming language — LAD — FBD — SCL — Yes; incl. failsafe — SCL — Yes Know-how protection • User program protection/password protection • Copy protection • User program protection/password protection • Protection level: Write protection • Protection level: Write protection • Protection level: Read/write protection • Protection level: Complete protection	Vibrations	2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail
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 SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free Configuration Programming Programming language — LAD — FBD — Yes; incl. failsafe — SCL Yes Know-how protection • User program protection/password protection • Copy protection • Block protection • Block protection • Protection level: Write protection • Protection level: Read/write protection • Protection level: Read/write protection • Protection level: Complete protection • Protection level: Complete protection • Access protection • Protection level: Complete protection	Operation, tested according to IEC 60068-2-6	Yes
value), duration 11 ms Pollutant concentrations • SO2 at RH < 60% without condensation SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free Configuration Programming Programming language — LAD — FBD — Yes; incl. failsafe — FBD — SCL — Yes Know-how protection • User program protection/password protection • Copy protection • Block protection • Block protection • Protection level: Write protection • Protection level: Read/write protection • Protection level: Complete protection	Shock test	
SO2 at RH < 60% without condensation SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free Configuration Programming Programming language — LAD — FBD — FBD — SCL Know-how protection • User program protection/password protection • Copy protection • Block protection Protection level: Write protection • Protection level: Read/write protection • Protection level: Complete protection	• tested according to IEC 60068-2-27	
Configuration Programming Programming language — LAD Yes; incl. failsafe — FBD Yes; incl. failsafe — SCL Yes Know-how protection • User program protection/password protection Yes • Copy protection Yes • Block protection • Protection level: Write protection Yes • Protection level: Read/write protection Yes • Protection level: Complete protection Yes Cycle time monitoring • adjustable Yes Dimensions	Pollutant concentrations	
Programming Programming language — LAD — FBD — Yes; incl. failsafe — SCL Yes Know-how protection • User program protection/password protection • Copy protection • Block protection • Block protection • Protection level: Write protection • Protection level: Read/write protection • Protection level: Complete protection • Protection level: Complete protection • Protection level: Complete protection • Protection level: Yes Cycle time monitoring • adjustable Pies Dimensions	• SO2 at RH < 60% without condensation	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
Programming language — LAD — FBD — FBD — SCL Yes; incl. failsafe — SCL Yes Know-how protection • User program protection/password protection • Copy protection • Block protection • Block protection • Protection level: Write protection • Protection level: Read/write protection • Protection level: Complete protection • Protection level: Complete protection • Protection level: Complete protection • Protection level: Yes Cycle time monitoring • adjustable Point failsafe Yes	Configuration	
- LAD Yes; incl. failsafe - FBD Yes; incl. failsafe - SCL Yes Know-how protection • User program protection/password protection • Copy protection Yes • Block protection • Protection level: Write protection • Protection level: Read/write protection • Protection level: Complete protection • Protection level: Complete protection • Protection level: Complete protection • Protection level: Yes • Protection level: Ves Cycle time monitoring • adjustable Pimensions	Programming	
— FBD — SCL Yes Know-how protection • User program protection/password protection • Copy protection • Block protection • Block protection • Protection level: Write protection • Protection level: Read/write protection • Protection level: Complete protection • Protection level: Complete protection • Protection level: Complete protection • Protection level: Yes Cycle time monitoring • adjustable Pimensions	Programming language	
— SCL Yes Know-how protection Yes • User program protection/password protection Yes • Copy protection Yes • Block protection Yes Access protection Yes • Protection level: Write protection Yes • Protection level: Read/write protection Yes • Protection level: Complete protection Yes Cycle time monitoring Yes Dimensions	— LAD	Yes; incl. failsafe
Know-how protection User program protection/password protection Copy protection Block protection Protection Protection level: Write protection Protection level: Read/write protection Protection level: Complete protection Protection level: Complete protection Protection level: Yes Protection level: Tead/write protection	— FBD	Yes; incl. failsafe
 User program protection/password protection Copy protection Block protection Yes Access protection Protection level: Write protection Protection level: Read/write protection Protection level: Complete protection Protection level: Complete protection Yes Cycle time monitoring adjustable Yes Dimensions Dimensions	— SCL	Yes
Copy protection Block protection Yes Access protection Protection level: Write protection Protection level: Read/write protection Protection level: Complete protection Protection level: Complete protection Yes Cycle time monitoring adjustable Dimensions	Know-how protection	
Block protection Access protection Protection level: Write protection Yes Protection level: Read/write protection Yes Protection level: Complete protection Yes Cycle time monitoring adjustable Yes Dimensions	 User program protection/password protection 	Yes
Access protection Protection level: Write protection Protection level: Read/write protection Protection level: Complete protection Protection level: Complete protection Yes Cycle time monitoring adjustable Yes Dimensions	Copy protection	Yes
 Protection level: Write protection Protection level: Read/write protection Protection level: Complete protection Cycle time monitoring adjustable Protection level: Yes Cycle time monitoring adjustable Yes Dimensions	Block protection	Yes
 Protection level: Read/write protection Protection level: Complete protection Cycle time monitoring adjustable Yes Dimensions 	Access protection	
Protection level: Complete protection Cycle time monitoring adjustable Yes Dimensions	Protection level: Write protection	Yes
Cycle time monitoring • adjustable Yes Dimensions	 Protection level: Read/write protection 	Yes
• adjustable Yes Dimensions	 Protection level: Complete protection 	Yes
Dimensions	Cycle time monitoring	
	adjustable	Yes
Width 130 mm	Dimensions	
	Width	130 mm

Height	100 mm	
Depth	75 mm	
Weights		
Weight, approx.	585 g	
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