SIEMENS

Data sheet

6ES7212-1BG50-0XB0



SIMATIC S7-1200 G2: compact CPU 1212C AC/DC/RLY; power supply: AC 85-264 V AC at 47-63 Hz; onboard I/O: 8x DI 24 V DC; 6 DO relay 2 A; memory: program 150 KB data: 500 KB, retentivity: 20 KB

General information	
Product type designation	CPU 1212C AC/DC/relay
Firmware version	V1.0
 FW update possible 	Yes
Product function	
■ I&M data	Yes; I&M0 to I&M3
SysLog	Yes
Engineering with	
 Programming package 	STEP 7 V20 or higher
Supply voltage	
Rated value (AC)	
• 120 V AC	Yes
• 230 V AC	Yes
permissible range, lower limit (AC)	85 V
permissible range, upper limit (AC)	264 V
Line frequency	
• permissible range, lower limit	47 Hz
 permissible range, upper limit 	63 Hz
Input current	
Current consumption (rated value)	70 mA at 120 V AC; 38 mA at 240 V AC
Current consumption, max.	330 mA at 120 V AC; 200 mA at 240 V AC
Inrush current, max.	20 A; at 264 V
l²t	0.8 A ² ·s
Output current	
for backplane bus (5 V DC), max.	1 000 mA; Max. 5 V DC for SM and CM
Encoder supply	
24 V encoder supply	
• 24 V	Yes; 20.4 to 28.8V
Short-circuit protection	Yes
Output current, max.	300 mA
Power loss	
Power loss, typ.	4 W
Memory	
Work memory	
integrated	650 kbyte
• integrated (for program)	150 kbyte
• integrated (for data)	500 kbyte
Load memory	
• integrated	8 Mbyte
 Plug-in (SIMATIC Memory Card), max. 	32 Gbyte; with SIMATIC memory card

Backup	
• present	Yes
maintenance-free	Yes
without battery	Yes
CPU processing times	
for bit operations, typ.	37 ns; / instruction
for word operations, typ.	30 ns; / instruction
for floating point arithmetic, typ.	74 ns; / instruction
CPU-blocks	
Number of elements (total)	4 000; Blocks (OB, FB, FC, DB) and UDTs
OB	
 Number of free cycle OBs 	100
 Number of time alarm OBs 	20
 Number of delay alarm OBs 	20
 Number of cyclic interrupt OBs 	20; with minimum OB 3x cycle of 1 ms
 Number of process alarm OBs 	50
 Number of DPV1 alarm OBs 	3
 Number of isochronous mode OBs 	1
 Number of startup OBs 	100
 Number of asynchronous error OBs 	4
 Number of synchronous error OBs 	2
 Number of diagnostic alarm OBs 	1
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	20 kbyte
Flag	
• Size, max.	8 kbyte; Size of bit memory address area
Local data	
per priority class, max.	64 kbyte; max. 16 KB per block
Address area	
Process image	
Inputs, adjustable	1 kbyte
 Outputs, adjustable 	1 kbyte
Hardware configuration	
Number of modules per system, max.	6
Time of day	
Clock	
Hardware clock (real-time)	Yes
Backup time	480 h; Typical
 Deviation per day, max. 	2 s; at 25 °C
Digital inputs	
Number of digital inputs	8; Integrated
 of which inputs usable for technological functions 	8; HSC (High Speed Counting)
Source/sink input	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	8
Input voltage	
Rated value (DC)	24 V
• for signal "0"	5 V DC or 0.5 mA
• for signal "1"	15 V DC at 2.5 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 μs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 ms
— at "0" to "1", min.	0.1 µs
— at "0" to "1", max.	20 ms
for interrupt inputs	
— parameterizable	Yes
for technological functions	
— parameterizable	single phase: 6 HSCs @ 100 kHz & 2 standard @ 30 kHz, quadrature phase: 6 HSCs @ 80 kHz & 2 standard @ 20 kHz

Only land on the	
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	6; Relays
Switching capacity of the outputs	
with resistive load, max.	2 A
• on lamp load, max.	30 W with DC, 200 W with AC
Output delay with resistive load	
• "0" to "1", max.	10 ms; max.
• "1" to "0", max.	10 ms; max.
Switching frequency	
of the pulse outputs, with resistive load, max.	Not recommended
Relay outputs	
 Number of relay outputs 	6
 Number of operating cycles, max. 	mechanically 10 million, at rated load voltage 100 000
Cable length	
• shielded, max.	500 m
• unshielded, max.	150 m
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
1. Interface	
Interface type	PROFINET
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	
IP protocol	Yes; IPv4
PROFINET IO Controller	Yes
PROFINET IO Device	Yes
SIMATIC communication	Yes
Open IE communication	Yes; Optionally also encrypted
Web server	Yes
Media redundancy	Yes
PROFINET IO Controller	- 100
Transmission rate, max.	100 Mbit/s
Services	
— PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
Isochronous mode	Yes
— IRT	Yes
— PROFlenergy	Yes; per user program
Prioritized startup	Yes
Number of IO devices with prioritized startup, max.	16
Number of 10 devices with phontized startup, max. Number of connectable IO Devices, max.	31
Of which IO devices with IRT, max.	31
Number of connectable IO Devices for RT, max.	31
— Number of connectable to Devices for RT, max. — of which in line, max.	31
Of which in line, max. Activation/deactivation of IO Devices	Yes
Activation/deactivation of IO Devices Number of IO Devices that can be simultaneously activated/deactivated, max.	Yes 8
— 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.
Update time for IRT	
— for send cycle of 1 ms	1 ms to 16 ms

— for send cycle of 2 ms	2 ms to 32 ms
— for send cycle of 4 ms	4 ms to 64 ms
Update time for RT	
— for send cycle of 1 ms	1 ms to 512 ms
— for send cycle of 2 ms	2 ms to 512 ms
— for send cycle of 4 ms	4 ms to 512 ms
PROFINET IO Device	
Services	
— PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
 Isochronous mode 	No
— IRT	Yes
— PROFlenergy	Yes; per user program
— Shared device	Yes
 Number of IO Controllers with shared device, max. 	2
Protocols	
Supports protocol for PROFINET IO	Yes
PROFIsafe	No
PROFIBUS	No
OPC UA	No
AS-Interface	No
Protocols (Ethernet)	
• TCP/IP	Yes
• DHCP	Yes
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
	i tës
Number of connections	400, via integrated interfered of the CDU and connected CDs / CMs
Number of connections, max. Number of connections are a second for EQUINATION.	128; via integrated interfaces of the CPU and connected CPs / CMs
Number of connections reserved for ES/HMI/web	10
Number of connections via integrated interfaces	88
Redundancy mode	
Media redundancy	V MDD I I I I I I I I I I I I I I I I I I
— MRP	Yes; as MRP redundancy manager and/or MRP client
— MRPD	Yes
SIMATIC communication	
 S7 routing 	No
 S7 communication, as server 	Yes
S7 communication, as client	Yes
Open IE communication	
• TCP/IP	Yes
— Data length, max.	8 kbyte
 several passive connections per port, supported 	Yes
• ISO-on-TCP (RFC1006)	Yes
— Data length, max.	8 kbyte
• UDP	Yes
— Data length, max.	2 kbyte; 1 472 bytes for UDP broadcast
• DHCP	Yes
• DNS	Yes
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
• Encryption	Yes; Optional
Web server	
• supported	Yes
- Supportor	Yes
• HTTPS	100
HTTPS web API	
• web API	Yes
web API — Number of sessions, max.	Yes 30
• web API	Yes

communication functions / header	
S7 communication	
• supported	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; HMI Connections: 4 reserved / 82 max; S7 Connections: 78 max; Open User Connections: 78 max; Web Connections: 2 reserved / 80 max; Total Connections: 10 reserved / 88 max
S7 message functions	
Number of login stations for message functions, max.	32
Program alarms	Yes
Number of configurable program messages, max.	5 000
Number of loadable program messages in RUN, max.	2 500
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	103
Number of configurable Traces	4
-	
Memory size per trace, max. Intermediate of the control of t	512 kbyte
Interrupts/diagnostics/status information	
Diagnostics indication LED	v
• RUN/STOP LED	Yes
• ERROR LED	Yes
MAINT LED	Yes
Supported technology objects	
Motion Control	Yes
 Number of available Motion Control resources for technology objects 	800
 Number of available Extended Motion Control resources for technology objects 	40
Integrated Functions	
Counter	Yes
Number of counters	8
Counting frequency, max.	100 kHz; la.0 to la.5: 100 kHz (80 kHz in quadrature mode), la.6 to la.7: 30 kHz (20 kHz in quadrature mode)
Frequency measurement	Yes
PID controller	Yes
Number of pulse outputs	8; individually assigned to CPU and Signal Board
Limit frequency (pulse)	100 kHz
Potential separation	
Potential separation digital inputs	
Potential separation digital inputs	Yes; field side to logic: 707 V DC (type test)
between the channels	No
Number of potential groups	1
Potential separation digital outputs	
Potential separation digital outputs Potential separation digital outputs	Relays
between the channels	No
Number of potential groups	1
Number of potential groups EMC	
Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity against discharge of static electricity.	Yes
 Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 	
Interference immunity against discharge of static	Yes 8 kV 6 kV

Interference immunity on signal cables act to IEC 61000- 4.4 Interference immunity against violage sarge		
Interference immunity on signal cables act, to IEC 61000- 4-8 Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against opinious act, to IEC 61000- 4-5 Interference immunity against opinious act, to IEC 61000- 4-6 Emission of radio interferences act, to EN 65 011 Interference immunity against opinious act, to IEC 61000- 4-7 Interference immunity against opinious act, to IEC 61000- 4-8 Emission of radio interferences act, to EN 65 011 Interference immunity against light-frequency radiation act, to IEC 61000-4- Interference immunity against light-frequency radiation act, to IEC 61000-4- Interference immunity against light-frequency radiation act, to IEC 61000-4- Interference immunity against light-frequency radiation act, to IEC 61000-4- Interference immunity against light-frequency radiation act, to IEC 61000-4- Interference immunity against light-frequency radiation act, to IEC 61000-4- Interference immunity against light-frequency radiation act, to IEC 61000-4- Interference immunity against light-frequency radiation act, to IEC 61000-4- Yes, Unapproval Interference immunity against light-frequency fields Yes, Unapproval Interference act, to IEC 61000-8-2-18 Yes, Unapproval Interference immunity against light frequency fields Yes, Unapproval Interference act, to IEC 61000-8-2-18 Interference immunity against light frequency fields Yes, Unapproval Yes, Unapproval Interference act, to IEC 61000-8-2-18 Interference immunity against light frequency fields Yes, Unapproval		Yes
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	Interference immunity against voltage surge	
e-Interference immunity against high-frequency radiation act. to EC 60004-6 Emission of andio interference acc. to EM 56 011 • Limit class B, for use in residential areas Ves. (Group 1 Ves. (When appropriate measures are used to ensure compliance with the limits for Class B according to EM 55011 Polymen appropriate measures are used to ensure compliance with the limits for Class B according to EM 55011 Polymen appropriate measures are used to ensure compliance with the limits for Class B according to EM 55011 Polymen appropriate measures are used to ensure compliance with the limits for Class B according to EM 55011 Polymen appropriate measures are used to ensure compliance with the limits for Class B according to EM 55011 Polymen appropriate measures are used to ensure compliance with the limits for Class B according to EM 55011 Polymen appropriate measures are used to ensure compliance with the limits for Class B according to EM 55011 Polymen appropriate measures are used to ensure compliance with the limits for Class B according to EM 55011 Polymen appropriate measures are used to ensure compliance with the limits for Class B according to EM 55011 Polymen appropriate measures are used to ensure compliance with the limits for Class B according to EM 55011 Polymen appropriate measures are used to ensure compliance with the limits for Class B according to EM 55011 Polymen appropriate measures are used to ensure compliance with the limits for Class B according to EM 55011 Polymen appropriate measures are used to ensure compliance with the limits for Class B according to EM 55011 Polymen appropriate measures are used to ensure compliance with the limits for Class B according to EM 55011 Polymen appropriate measures are used to ensure compliance with the limits for Class B according to EM 55011 Polymen appropriate and the ensure are used to ensure compliance with the limits for Class B according to EM 50011 Polymen appropriate and class B according to EM 50011	, , , ,	Yes
acc. to IEC 61000.4.6 i Emission for addit instriterance acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas Pegree and class of protection IP degree of protection of the second of the limits and the limits and the limits of the limit	Interference immunity against conducted variable disturbance indu	iced by high-frequency fields
Emission of radio interference acc. to EN 55011 • Limit class 8, for use in industrial areas • Limit class 8, for use in industrial areas • Limit class 8, for use in residential areas • Limit class 8, for use in residential areas Yes: When appropriate measures are used to ensure compliance with the limits for Class 8 according to EN 56011 Degree and class of protection IP degree of protection		Yes
Per productions are used to ensure compliance with the limits for Class B according to EN 55011 Per depree and class of protection IP depree and class of protection IP depree of protection of the prote		
Begins and class of protection	Limit class A, for use in industrial areas	Yes; Group 1
Degree and class of protection IP degree of protection IP degree of protection IP degree of protection Standards, agrovals, certificates CE mark Yes UL approval UL approval CE mark Yes FM approval RCM (formery C-TiCK) Yes RCM approval No RCM (formery C-TiCK) Yes Secure Boot No product functions / security / header signed firmware update Secure Boot Yes Secure Boot Yes Secure Boot Yes safely removing data No Ambient conditions Firet Sall Fall height, max. Antibient cemperature during operation • min. • ranx. 40 °C, No condensation • horizontal installation, min. • horizontal installation, min. • horizontal installation, min. • vertical installation, min. • vertical installation, min. • vertical installation, min. • vertical installation, max. Antibient cemperature during storage/transportation • min. • vertical installation, min. • vertical	• Limit class B, for use in residential areas	Yes; When appropriate measures are used to ensure compliance with the limits
IP degree of protection IP20 Standards, approvals, certificates CE mark Yes UL approval Yes CULus Yes FM approval No RCM (formerly C-TICK) Yes KC approval No Marine approval No Ambient conditions Free fail Fall height, max. 0.3 m; five times, in product package Ambient temperature during operation min. 20 °C; No condensation min. 40 °C; 40 °C horizontal or 30 °C vertical at max. voltages and max. specifications and alternate IO active horizontal installation, min. 20 °C; No condensation horizontal installation, min. 20 °C; A rated voltages, 50 % of max. specification and alternate IO active Ambient temperature during storage/transportation min. 20 °C; No condensation horizontal installation, min. 20 °C; A rated voltages, 50 % of max. specification and alternate IO active Ambient temperature during storage/transportation min. 20 °C; No condensation horizontal installation and alternate IO active Ambient temperature during storage/transport min. 20 °C; A rated voltages, 50 % of max. specification and alternate IO active Ambient temperature during storage/transport, min. 20 °C; A rated voltages, 50 % of max. specification and alternate IO active Ambient temperature during storage/transport mix. 1140 hPa 1140 hPa 1140 hPa 40 °C Poperation, mix. 500 Ppa 1140 hPa 4150 Ppa 4160 Ppa 4175 Ppa 4175 Ppa 4175 Ppa 4175 Ppa 4175 Ppa 4186 Ppa 4196 P		for Class B according to EN 55011
Standards, approvals, certificates CE mark Ut approval Ut approval Ves CLLus Yes FM approval No RCM (formerly C-TiCK) Yes KC approval No Romain approval No product functions / security / header signed firmware update Yes Secure Boot Secure Boot Secure Boot Secure Boot Secure Boot Free fall Fall height, max Ambient conditions Free fall Fall height, max Anbient temperature during operation In horizontal installation, min. Province of the stallation, min. Province of the stallation and alternate IO active Ambient temperature during storage fransportation Province of the stallation and alternate IO active Ambient temperature during storage fransportation Province of the stallation and alternate IO active Ambient temperature during storage fransportation Province of the stallation and alternate IO active Ambient temperature during storage fransportation Province of the stallation and alternate IO active Ambient temperature during storage fransportation Province of the stallation and alternate IO active Ambient temperature during storage fransportation Province of the stallation and alternate IO active Province of the st		
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KC approval No Marine approval No Product functions / security / header signed firmware update Yes Secure Boot Yes Secure Boot Yes Secure Boot Yes Ambient conditions Free fall Fall height, max. O. 3 m; five times, in product package Ambient temperature during operation min. O'C; No condensation horizontal installation, min. O'C; No condensation horizontal installation, min. O'C; No condensation O'C; at rated voltages, 50 % of max. specification and alternate IO active vertical installation, max. O'C; No condensation O'C; at rated voltages, 50 % of max. specification and alternate IO active vertical installation, max. O'C; No condensation O'C; at rated voltages, 50 % of max. specification and alternate IO active vertical installation, max. O'C; No condensation O'C; at rated voltages, 50 % of max. specification and alternate IO active vertical installation, min. O'C; No condensation O'C; At rated voltages, 50 % of max. specification and alternate IO active Vertical installation, min. O'C; No condensation O'C; At rated voltages, 50 % of max. specification and alternate IO active Vertical installation, min. O'C; No condensation O'C; At rated voltages, 50 % of max. specification and alternate IO active Vertical installation, min. O'C; No condensation O'C; At rated voltages, 50 % of max. specification and alternate IO active Vertical installation, min. O'C; No condensation O'C; At rated voltages, 50 % of max. specification and alternate IO active Vertical installation, min. O'C; No condensation O'C; At rated voltages, 50 % of max. specification and alternate IO active Vertical installation, min. O'C; No condensation O'C; At rated voltages, 50 % of max. specification and alternate IO active Vertical installation, min. O'C; No condensation O'C; At rated voltages, 50 % of max. specification and alternate IO active O'C; No condensation O'C; At rated voltages, 50 % of max. specification and alternate IO active O'C; No condensation O'C; At rated voltages, 50 % of max. specification and alternate IO active O'C; No condensat		
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safely removing data Ambient conditions Free fall Free fall Fall height, max. O.3 m; five times, in product package Ambient temperature during operation max. And "C; 40 "C; No condensation horizontal installation, min. No "C; at rated voltages, 50 % of max. specification and alternate IO active vertical installation, max. Vertical installation, max. No "C; No condensation vertical installation, max. Ambient temperature during storage/transportation min. Vertical installation, max. Ambient temperature during storage/transportation min. No "C at rated voltages, 50 % of max. specification and alternate IO active Ambient temperature during storage/transportation min. No "C Air pressure acc. to IEC 60068-2-13 Operation, min. Operation, max. 1140 hPa Storage/transport, min. Storage/transport, min. Storage/transport, min. Storage/transport, min. Installation altitude, min. Installation altitude, min. No min testallation altitude, max. Storage/transport, max. To "C Altitude during operation relating to sea level Installation altitude, max. Storage/transport, max. Storage/transport, max. To "O" No "C Storage/transport, min. No "C Storage/transport, min. Storage/tran	signed firmware update	Yes
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Free fall Fall height, max. Ambient temperature during operation imin. imax. horizontal installation, min. horizontal installation, min. vertical installation, max. vertical installation, max. vertical installation, max. imax. im	safely removing data	No
Fall height, max. Ambient temperature during operation inin. max. horizontal installation, min. horizontal installation, min. vertical installation, max. 50 °C; at rated voltages, 50 % of max. specification and alternate IO active vertical installation, max. 50 °C; at rated voltages, 50 % of max. specification and alternate IO active vertical installation, max. 70 °C Ambient temperature during storage/transportation inin. inin. operation, min. Operation, min. Operation, min. Storage/transport, min. Storage/transport, min. Storage/transport, max. 1140 hPa Altitude during operation relating to sea level installation altitude, min. installation altitude, min. installation altitude, min. viorations vibrations vibrations vibrations operation, tested according to IEC 60068-2-6 Operation, 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 oS02 at RRI < 60% without condensation S02: < 0.5 ppm; H2S: < 0.1 ppm; RRI < 60% condensation-free configuration / header	Ambient conditions	
Ambient temperature during operation • min. • max. • max. • horizontal installation, min. • vertical installation, max. 60 °C; at rated voltages, 50 % of max. specification and alternate IO active • vertical installation, max. 50 °C; at rated voltages, 50 % of max. specification and alternate IO active Ambient temperature during storage/transportation • min. • 40 °C • 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. 1 140 hPa Altitude during operation relating to sea level • Installation altitude, min. • Installation altitude, min. • Installation altitude, max. Relative humidity • Operation, max. 95 %; no condensation Vibration resistance during operation acc. to IEC 60068-2-6 • Operation, tested according to IEC 60068-2-6 • Operation, 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 • SO2 at RH < 60% without condensation • SO2 at RH < 60% without condensation	Free fall	
 min. max. 40 °C; 40 °C; No condensation 40 °C; 40 °C; No condensation 40 °C; 40 °C; No condensation horizontal installation, min. 20 °C; No condensation horizontal installation, max. 60 °C; at rated voltages, 50 % of max. specification and alternate IO active vertical installation, max. vertical installation, max. 50 °C; at rated voltages, 50 % of max. specification and alternate IO active Ambient temperature during storage/transportation min. 40 °C max. 70 °C Air pressure acc. to IEC 60068-2-13 Operation, min. Storage/transport, min. Storage/transport, max. 1140 hPa Altitude during operation relating to sea level installation altitude, min. lnstallation altitude, min. operation, max. 5000 m; Restrictions for installation altitudes > 2 000 m, see manual Relative humidity Operation, max. Vibration resistance during operation acc. to IEC 60068-2-6 Operation, tested according to IEC 60068-2-6 Operation, tested according to IEC 60068-2-6 Yes Shock testing 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 	Fall height, max.	0.3 m; five times, in product package
max.	Ambient temperature during operation	
specifications • horizontal installation, min. • horizontal installation, max. • horizontal installation, max. • vertical installation, min. • vertical installation, max. • vertical installation, max. • vertical installation, max. 50 °C; at rated voltages, 50 % of max. specification and alternate IO active 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. 1 140 hPa Altitude during operation relating to sea level • Installation altitude, min. • Installation altitude, max. Relative humidity • Operation, max. • Operation, max. • Operation, max. • Operation, max. 95 %; no condensation Vibration resistance during operation acc. to IEC 60068-2-6 • Operation, tested according to IEC 60068-2-6 • Operation, tested according to IEC 60068-2-7 Yes Shock testing • Itested 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 • SO2 at RH - 60% without condensation SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free configuration / header	• min.	-20 °C; No condensation
horizontal installation, max. vertical installation, min. vertical installation, max. vertical installation, max. So "C; at rated voltages, 50 % of max. specification and alternate IO active -20 °C; No condensation vertical installation, max. Ambient temperature during storage/transportation • min. • 40 °C • max. Apressure acc. to IEC 60068-2-13 • Operation, min. • Operation, max. • Storage/transport, min. • Storage/transport, max. • I 140 hPa • Storage/transport, max. • I 140 hPa Altitude during operation relating to sea level • Installation altitude, min. • Installation altitude, max. Relative humidity • Operation, max. Vibrations • Vibration resistance during operation acc. to IEC 60068-2-6 • Operation, tested according to IEC 60068-2-6 Shock testing • tested according to IEC 60068-2-7 Pollutant concentrations • SO2 at RH < 60% without condensation SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free configuration / header	• max.	
vertical installation, min. vertical installation, max. Ambient temperature during storage/transportation min.	 horizontal installation, min. 	-20 °C; No condensation
vertical installation, max. So °C; at rated voltages, 50 % of max. specification and alternate IO active 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, max. 1 140 hPa Altitude during operation relating to sea level • Installation altitude, min. • Installation altitude, max. Relative humidity • Operation, max. Vibrations • Vibration resistance during operation acc. to IEC 60068-2-6 • Operation, tested according to IEC 60068-2-6 Shock testing • tested according to IEC 60068-2-7 Pollutant concentrations • SO2 at RH < 60% without condensation S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free configuration / header	 horizontal installation, max. 	60 °C; at rated voltages, 50 % of max. specification and alternate IO active
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, max. Altitude during operation relating to sea level • Installation altitude, min. • Installation altitude, max. Relative humidity • Operation, max. • Vibrations • Vibration resistance during operation acc. to IEC 60068-2-6 • Operation, tested according to IEC 60068-2-6 Shock testing • 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	 vertical installation, min. 	-20 °C; No condensation
 min. max. max. 70 °C Air pressure acc. to IEC 60068-2-13 Operation, min. Operation, max. Storage/transport, min. Storage/transport, max. 1 140 hPa Storage/transport, max. 1 140 hPa Altitude during operation relating to sea level Installation altitude, min. Installation altitude, max. 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual Relative humidity Operation, max. Vibrations Vibration resistance during operation acc. to IEC 60068-2-6 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 	 vertical installation, max. 	50 °C; at rated voltages, 50 % of max. specification and alternate IO active
Name and the state of the	Ambient temperature during storage/transportation	
Air pressure acc. to IEC 60068-2-13 • Operation, min. • Operation, max. • Storage/transport, min. • Storage/transport, max. Altitude during operation relating to sea level • Installation altitude, min. • Installation altitude, max. Relative humidity • Operation, max. Vibrations • Vibration resistance during operation acc. to IEC 60068-2-6 • Operation, tested according to IEC 60068-2-7 Shock testing • tested according to IEC 60068-2-7 Pollutant concentrations • SO2 at RH < 60% without condensation 540 hPa 1140 hPa 1440 hPa 1440 hPa 1450 hPa 1460 hPa	• min.	-40 °C
Operation, min. Operation, max. Operation, max. Storage/transport, min. Storage/transport, max. Altitude during operation relating to sea level Installation altitude, min. Installation altitude, max. Source the foliation altitude in the foliation in the foliation altitude in the foliation altitude in the foliation altitude in the foliation altitude in the foliation in the foliation altitude in the foli	• max.	70 °C
Operation, max. Storage/transport, min. Storage/transport, max. Altitude during operation relating to sea level Installation altitude, min. Installation altitude, max. Felative humidity Operation, max. Operation, max. Vibrations Vibrations Operation, tested according to IEC 60068-2-6 Operation, tested according to IEC 60068-2-6 Shock testing Other 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 1 140 hPa 540 hPa 1 140 hPa 1 140 hPa 540 hPa 540 m minumed altitude, min. 500 m; Restrictions for installation altitudes > 2 000 m, see manual 8 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual 8 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual 9 5 %; no condensation 9 5 %; no condensation Yes 1 140 hPa 1 140	Air pressure acc. to IEC 60068-2-13	
Storage/transport, min. Storage/transport, max. Altitude during operation relating to sea level Installation altitude, min. Installation altitude, max. Felative humidity Operation, max. Vibrations Vibrations Vibration resistance during operation acc. to IEC 60068-2-6 Operation, tested according to IEC 60068-2-6 Operation, tested according to IEC 60068-2-7 Shock testing 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 540 hPa 1140 hPa	Operation, min.	540 hPa
Storage/transport, min. Storage/transport, max. Altitude during operation relating to sea level Installation altitude, min. Installation altitude, max. Source of the storage of the s	Operation, max.	1 140 hPa
Altitude during operation relating to sea level Installation altitude, min. Installation altitude, max. Felative humidity Operation, max. Vibrations Vibrations Vibration resistance during operation acc. to IEC 60068-2-6 Operation, tested according to IEC 60068-2-6 Shock testing Item 1000 m 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual 95 %; no condensation 3.5 mm from 5 - 8.4 Hz, 1g from 8.4 - 150 Hz Yes Shock testing Item 20068-2-27 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	Storage/transport, min.	540 hPa
Altitude during operation relating to sea level Installation altitude, min. Installation altitude, max. Felative humidity Operation, max. Vibrations Vibrations Vibration resistance during operation acc. to IEC 60068-2-6 Operation, tested according to IEC 60068-2-6 Shock testing Item 1000 m 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual 95 %; no condensation 3.5 mm from 5 - 8.4 Hz, 1g from 8.4 - 150 Hz Yes Shock testing Item 20068-2-27 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		1 140 hPa
 Installation altitude, min. Installation altitude, max. In		
 Installation altitude, max. Relative humidity Operation, max. Vibrations Vibration resistance during operation acc. to IEC 60068-2-6 Operation, tested according to IEC 60068-2-6 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 	· · · · · · · · · · · · · · · · · · ·	-1 000 m
Relative humidity Operation, max. 95 %; no condensation Vibrations Vibration resistance during operation acc. to IEC 60068-2-6 Operation, tested according to IEC 60068-2-6 Shock testing Item 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 SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free configuration / header	 Installation altitude, max. 	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
 Operation, max. Vibrations Vibration resistance during operation acc. to IEC 60068-2-6 Operation, tested according to IEC 60068-2-6 Shock testing 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 		
Vibrations ■ Vibration resistance during operation acc. to IEC 60068- 2-6 ■ Operation, tested according to IEC 60068-2-6 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	•	95 %; no condensation
2-6		
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		3.5 mm from 5 - 8.4 Hz, 1g from 8.4 - 150 Hz
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		Yes
 tested according to IEC 60068-2-27		
Pollutant concentrations ■ SO2 at RH < 60% without condensation S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free configuration / header	<u> </u>	
SO2 at RH < 60% without condensation S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free configuration / header	Pollutant concentrations	
		S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
configuration / programming / header	configuration / header	

Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
Know-how protection	
 User program protection/password 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
 User administration 	Yes; device-wide
 Number of users 	100
 Number of groups 	100
Number of roles	50
programming / cycle time monitoring / header	
 adjustable 	Yes
Dimensions	
Width	70 mm
Height	125 mm
Depth	100 mm
Weights	
Weight, approx.	373 g

last modified:

1/22/2025