SIEMENS

Data sheet

6ES7212-1BE40-0XB0

SIMATIC S7-1200, CPU 1212C, COMPACT CPU, AC/DC/RLY, ONBOARD I/O: 8 DI 24V DC; 6 DO RELAY 2A; 2 AI 0 - 10V DC, POWER SUPPLY: AC 85 - 264 V AC AT 47 - 63 HZ, PROGRAM/DATA MEMORY: 75 KB



General information	
Product type designation	CPU 1212C AC/DC/Relay
Firmware version	V4.2
Engineering with	
 Programming package 	STEP 7 V14 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)	80 mA at 120 V AC; 40 mA at 240 V AC
Current consumption, max.	240 mA at 120 V AC; 120 mA at 240 V AC
Inrush current, max.	20 A; at 264 V

²t	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
Freedowersky	
Encoder supply 24 V encoder supply	
• 24 V	20.4 to 28.8V
- 27 V	20.110 20.01
Power loss	
Power loss, typ.	11 W
Memory	
Work memory	
• integrated	75 kbyte
• expandable	No
Load memory	
• integrated	2 Mbyte
 Plug-in (SIMATIC Memory Card), max. 	with SIMATIC memory card
Backup	
• present	Yes
maintenance-free	Yes
• without battery	Yes
CPU processing times	
for bit operations, typ.	
	0.08 μs; / instruction
for word operations, typ.	0.08 μs; / instruction 1.7 μs; / instruction
for word operations, typ. for floating point arithmetic, typ.	1.7 μs; / instruction
for word operations, typ.	1.7 μs; / instruction
for word operations, typ. for floating point arithmetic, typ. CPU-blocks	 1.7 μs; / instruction 2.3 μs; / instruction DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no
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for word operations, typ. for floating point arithmetic, typ. CPU-blocks Number of blocks (total)	 1.7 μs; / instruction 2.3 μs; / instruction DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no
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for word operations, typ. for floating point arithmetic, typ. CPU-blocks Number of blocks (total) OB • Number, max. Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max.	 1.7 μs; / instruction 2.3 μs; / instruction 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 Limited only by RAM for code
for word operations, typ. for floating point arithmetic, typ. CPU-blocks Number of blocks (total) OB • Number, max. Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag	 1.7 μs; / instruction 2.3 μs; / instruction 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 Limited only by RAM for code 10 kbyte
for word operations, typ. for floating point arithmetic, typ. CPU-blocks Number of blocks (total) OB • Number, max. Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag • Number, max.	 1.7 μs; / instruction 2.3 μs; / instruction 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 Limited only by RAM for code
for word operations, typ. for floating point arithmetic, typ. CPU-blocks Number of blocks (total) OB • Number, max. Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag • Number, max. Local data	 1.7 μs; / instruction 2.3 μs; / instruction 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 Limited only by RAM for code 10 kbyte 4 kbyte; Size of bit memory address area
for word operations, typ. for floating point arithmetic, typ. CPU-blocks Number of blocks (total) OB • Number, max. Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag • Number, max.	 1.7 μs; / instruction 2.3 μs; / instruction 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 Limited only by RAM for code 10 kbyte
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for word operations, typ. for floating point arithmetic, typ. CPU-blocks Number of blocks (total) OB • Number, max. Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag • Number, max. Local data • per priority class, max.	 1.7 μs; / instruction 2.3 μs; / instruction 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 Limited only by RAM for code 10 kbyte 4 kbyte; Size of bit memory address area 16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2
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٠	Outputs,	adjustable
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1 kbyte

Hardware configuration	
Number of modules per system, max.	3 comm. modules, 1 signal board, 2 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	8; Integrated
 of which inputs usable for technological functions 	4; 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 at 1 mA
● for signal "1"	15 V DC at 2.5 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four
— at "0" to "1", min.	0.2 ms
— at "0" to "1", max.	12.8 ms
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	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.

Relay outputs mechanically 10 million, at rated load voltage 100 000 Cable length • • shielded, max. 500 m • unshielded, max. 150 m Analog inputs 2 Number of analog inputs 2 • Voltage Yes • Voltage (sted values), voltages • • Voltage (sted values), voltages • • Input ranges (sted values), voltages • • Oto +10 V Yes • Input resistance (0 to 10 V) 2100k ohms Cable length • • shielded, max. 100 m; twisted and shielded Analog outputs 0 Analog outputs 0 Analog value generation for the inputs • Resolution with overrange (bit including sign), max. 10 bit • Integration time, parameterizable Yes • Conversion time (resolution per channel) 625 µs Encoder Encoder Interface Yes • Linterface Yes Autorogotiation Yes Autorossing Yes	• "1" to "0", max.	10 ms; max.
Cable length • shielded, max. 500 m • unshielded, max. 150 m Analog inputs 2 Input ranges 2 • Voltage Yes • O to +10 V Yes • Input ranges (rated values), voltages • • 0 to +10 V 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 0 Analog outputs 0 Analog outputs 0 Analog cutputs 0 Number of analog outputs 0 • Resolution with overnage (bit including sign), max. 10 bit • Integration time, parameterizable Qes yas • Conversion time (per channel) 625 µs Encoder Conversion time (per channel) • Conversion time (per channel) E25 µs Encoders • • 2-wire sensor Yes 1 1 • Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes	Relay outputs	
• shielded, max. 500 m • unshielded, max. 150 m Analog inputs 2 Number of analog inputs 2 Input ranges Ves • Voltage Yes Input ranges (rated values), voltages • • 0 to +10 V Yes • Input resistance (of to 10 V) ≥ 100k ohms Cable length • • shielded, max. 100 m; twisted and shielded Analog outputs 0 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. • Integration time, parameterizable Yes • Conversion time (per channel) 625 µs Encoder Connectable encoders • 2-wire sensor • 2-wire sensor Yes 1 Interface type PROFINET Physics Ethernet Isolated Yes Autonegotation Yes Autoregotation Yes Number of ports 1 • Number of ports 1 <	 Number of operating cycles, max. 	mechanically 10 million, at rated load voltage 100 000
• unshielded, max. 160 m Analog inputs 2 Number of analog inputs 2 Input ranges Yes • Voltage Yes Input ranges (rated values), voltages • • 0 to +10 V Yes • Input resistance (0 to 10 V) 2100k ohms Cable length • • shielded, max. 100 m; twisted and shielded Analog outputs 0 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 • Connectable encoders Yes • 2-wire sensor Yes 1 11erface Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autorossing Yes Autorossing Yes Number of ports 1 • Interface type PROFINET Physics 1 • Number of ports 1 <	Cable length	
Analog inputs 2 Number of analog inputs 2 Input ranges Yes • Voitage Yes Input ranges (rated values), voitages 2100k ohms Cable length 2100k ohms Cable length 2100k ohms Analog outputs 0 Number of analog outputs 0 Analog outputs 0 Analog value generation for the inputs 100 m; twisted and shielded Analog value generation for the inputs 0 Analog value generation for the inputs 0 Analog value generation for the inputs 10 bit • Resolution with overrange (bit including sign), max. 10 bit • Integration time, parameterizable Yes • Conversion time (per channel) 625 µs Encoder 2 Onectable encoders Yes • 2-wire sensor Yes 1 Interface PROFINET Physics Ethernet Isolated Yes Autoropotation Yes Autoropotation Yes Autoropotation Yes No	 shielded, max. 	500 m
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 0 Number of analog outputs 0 Analog outputs 0 Analog value generation for the inputs 1 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 Connectable encoders • 2-wire sensor Yes 1. Interface Interface Interface type PROFINET Physics Ethernet Isolated Yes Autoregoliation Yes Autoregoliation Yes • Number of ports 1 • integrated switch No Functionality Yes	• unshielded, max.	150 m
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 0 Number of analog outputs 0 Analog outputs 0 Analog value generation for the inputs 1 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 Connectable encoders • 2-wire sensor Yes 1. Interface Interface Interface type PROFINET Physics Ethernet Isolated Yes Autoregoliation Yes Autoregoliation Yes • Number of ports 1 • integrated switch No Functionality Yes	Anglenissute	
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• 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 0 Number of analog outputs 0 Analog value generation for the inputs • Integration and conversion time/resolution per channet • • Resolution with overrange (bit including sign), max. 10 bit • Integration time, parameterizable Yes • Conversion time (per channel) 625 μs Encoder Connectable encoders • 2-wire sensor Yes 1 Interface PROFINET Physics Ethernet Isolated Yes Autoregolation Yes Autoregolation Yes Autocrossing Yes • Number of ports 1 • integrate switch No • PROFINET IO Controller Yes • PROFINET IO Controller Yes		2
Input rages (rated values), voltages No • 0 to +10 V Yes • Input resistance (0 to 10 V) ≥100k ohms Cable length 100 m; twisted and shielded • shielded, max. 100 m; twisted and shielded Analog outputs 0 Analog outputs 0 Analog value generation for the inputs 10 bit • Resolution with overrange (bit including sign), max. 10 bit • Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable Yes • Conversion time (per channel) 625 μs Encoder Connectable encoders • 2-wire sensor Yes Interface PROFINET Interface type PROFINET Physics Ethernet Isolated Yes Autoerossing Yes Autoerossing Yes • Number of ports 1 • integrated switch No • PROFINET IO Controller Yes • PROFINET IO Device Yes		Yes
• 0 to +10 V Yes • Input resistance (0 to 10 V) ≥100k ohms Cable length		
Input resistance (0 to 10 V) ≥100k ohms Cable length		Yes
Cable length I00 m; twisted and shielded Analog outputs 0 Analog value generation for the inputs 0 Integration and conversion time/resolution per channel 0 • Resolution with overrange (bit including sign), max. 10 bit • Integration time, parameterizable Yes • Conversion time (per channel) 625 µs Encoder Connectable encoders • 2-wire sensor Yes Interface PROFINET Physics Ethernet Isolated Yes Autonegotiation Yes Autonegotiation Yes Interface type PROFINET Physics Ethernet Isolated Yes Autonegotiation Yes Interface types Yes • Number of ports 1 • integrated switch No Functionality Yes • PROFINET IO Controller Yes		
• shielded, max. 100 m; twisted and shielded Analog outputs 0 Analog value generation for the inputs 0 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 Connectable encoders • 2-wire sensor Yes 1. Interface Interface type PROFINET Physics Ethernet Isolated Isolated Yes Autonegotiation Yes Autonegotiation Yes Interface types Yes • Number of ports 1 • Number of ports 1 • integrated switch No • PROFINET IO Controller Yes • PROFINET IO Device Yes		
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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 Connectable encoders • 2-wire sensor Yes 1 Interface PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autocrossing Yes Interface types • • Number of ports 1 • integrated switch No Functionality • • PROFINET IO Controller Yes		
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 Connectable encoders • 2-wire sensor Yes Interface Yes Interface type PROFINET Physics Ethermet Isolated Yes automatic detection of transmission rate Yes Autorcossing Yes Interface types Yes Number of ports 1 • Number of ports 1 • integrated switch No Functionality PROFINET IO Controller • PROFINET IO Device Yes		
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 Connectable encoders • 2-wire sensor Yes 1. Interface Yes Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autorogotiation Yes Interface types Yes Physics Ethernet Isolated Yes Automogotiation Yes Autocrossing Yes Interface types 1 • Number of ports 1 • integrated switch No Functionality Yes • PROFINET IO Controller Yes • PROFINET IO Device Yes	Number of analog outputs	0
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 Connectable encoders • 2-wire sensor Yes 1. Interface Yes Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autorogotiation Yes Interface types Yes Physics Ethernet Isolated Yes Automogotiation Yes Autocrossing Yes Interface types 1 • Number of ports 1 • integrated switch No Functionality Yes • PROFINET IO Controller Yes • PROFINET IO Device Yes	Analog value generation for the inputs	
max.Yes• Integration time, parameterizableYes• Conversion time (per channel)625 μsEncoderConnectable encoders• 2-wire sensorYes1.InterfaceInterface typePROFINETPhysicsEthernetIsolatedYesautomatic detection of transmission rateYesAutoregotiationYesAutoregotiationYesInterface typesYes• Number of ports1• Number of portsNo• integrated switchNo• PROFINET IO ControllerYes• PROFINET IO DeviceYes		
• Integration time, parameterizable • Conversion time (per channel)Yes 625 μsEncoderConnectable encoders• 2-wire sensorYes1. InterfaceInterface typePROFINETPhysicsEthernetIsolated automatic detection of transmission rateYesAutonegotiation 	 Resolution with overrange (bit including sign), 	10 bit
• Conversion time (per channel) 625 μs Encoder Connectable encoders • 2-wire sensor Yes 1. Interface PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autonegotiation Yes Autoressing Yes Interface types Yes • Number of ports 1 • integrated switch No Functionality Yes • PROFINET IO Controller Yes • PROFINET IO Device Yes	max.	
Encoder Connectable encoders • 2-wire sensor Yes 1. Interface Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autonegotiation Yes Autocrossing Yes Interface types 1 • Number of ports 1 • integrated switch No Functionality Yes • PROFINET IO Controller Yes • PROFINET IO Device Yes	 Integration time, parameterizable 	Yes
Connectable encoders • 2-wire sensor Yes 1. Interface PROFINET Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autonegotiation Yes Autocrossing Yes Interface types 1 • Number of ports 1 • integrated switch No Functionality PROFINET IO Controller • PROFINET IO Controller Yes	 Conversion time (per channel) 	625 µs
• 2-wire sensorYes1. InterfaceInterface typePROFINETPhysicsEthernetIsolatedYesautomatic detection of transmission rateYesAutonegotiationYesAutocrossingYesInterface types1• Number of ports1• integrated switchNoFunctionalityYes• PROFINET IO ControllerYes• PROFINET IO DeviceYes	Encoder	
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Interface typePROFINETPhysicsEthernetIsolatedYesautomatic detection of transmission rateYesAutonegotiationYesAutocrossingYesInterface types1• Number of ports1• integrated switchNoFunctionalityYes• PROFINET IO ControllerYes• PROFINET IO DeviceYes	• 2-wire sensor	Yes
Interface typePROFINETPhysicsEthernetIsolatedYesautomatic detection of transmission rateYesAutonegotiationYesAutocrossingYesInterface types1• Number of ports1• integrated switchNoFunctionalityYes• PROFINET IO ControllerYes• PROFINET IO DeviceYes	1. Interface	
IsolatedYesautomatic detection of transmission rateYesAutonegotiationYesAutocrossingYesInterface types1• Number of ports1• integrated switchNoFunctionalityYes• PROFINET IO ControllerYes• PROFINET IO DeviceYes		PROFINET
automatic detection of transmission rateYesAutonegotiationYesAutocrossingYesInterface types1• Number of ports1• integrated switchNoFunctionalityYes• PROFINET IO ControllerYes• PROFINET IO DeviceYes	Physics	Ethernet
AutonegotiationYesAutocrossingYesInterface types1• Number of ports1• integrated switchNoFunctionalityYes• PROFINET IO ControllerYes• PROFINET IO DeviceYes	Isolated	Yes
AutocrossingYesInterface types1• Number of ports1• integrated switchNoFunctionality-• PROFINET IO ControllerYes• PROFINET IO DeviceYes	automatic detection of transmission rate	Yes
Interface types • Number of ports 1 • integrated switch No Functionality • PROFINET IO Controller Yes • PROFINET IO Device Yes	Autonegotiation	Yes
• Number of ports 1 • integrated switch No Functionality • PROFINET IO Controller Yes • PROFINET IO Device Yes	Autocrossing	Yes
• integrated switch No Functionality • PROFINET IO Controller • PROFINET IO Device Yes	Interface types	
Functionality Yes • PROFINET IO Controller Yes • PROFINET IO Device Yes	Number of ports	1
PROFINET IO Controller Yes PROFINET IO Device Yes	 integrated switch 	No
PROFINET IO Device Yes	Functionality	
	PROFINET IO Controller	Yes
SIMATIC communication Yes	PROFINET IO Device	Yes
	SIMATIC communication	Yes

Open IE communication	Yes
Web server	Yes
Media redundancy	No
PROFINET IO Controller	
 Transmission rate, max. 	100 Mbit/s
Services	
— PG/OP communication	Yes
— S7 routing	Yes
— Isochronous mode	No
— Open IE communication	Yes
— IRT	No
— MRP	No
— MRPD	No
— PROFlenergy	No
— Prioritized startup	Yes
- Number of IO devices with prioritized	16
startup, max.	
 Number of connectable IO Devices, max. 	16
 — Number of connectable IO Devices for RT, 	16
max.	
— of which in line, max.	16
 Activation/deactivation of IO Devices 	Yes
— Number of IO Devices that can be	8
simultaneously activated/deactivated, max.	
— Updating time	The minimum value of the update time also depends on the

communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.

PROFINET IO Device

Services	
— PG/OP communication	Yes
— S7 routing	Yes
— Isochronous mode	No
— Open IE communication	Yes
— IRT	No
— MRP	No
— MRPD	No
— PROFlenergy	Yes
— Shared device	Yes
— Number of IO Controllers with shared	2
device, max.	
Protocols	
Supports protocol for PROFINET IO	Yes

AS-InterfaceYes; CM 1243-2 requiredProtocols (Ethernet)TCP/IPYes• DHCPNo• DHCPNo• DHCPYes• DCPYes• DCPYes• DCPYes• LLDPYesOpen IE communicationYes• TCP/IPYes- Data length, max.8 kbyte• ISO-on-TCP (RFC1006)Yes- Data length, max.8 kbyte• UDPYes- Data length, max.9 kbyte• DBAUYes• MODBUSYesFurther protocolsYesStormmunicationYes• SupportedYes• supportedYes• supportedYes• as clientYes• USer data per job, max.Yes• UDPYes• UDPYes• SupportedYes• supportedYes• SupportedYes• SupportedYes• USer defined websitesYes• User-defined websitesYes• US	PROFIBUS	Yes; CM 1243-5 required
Protocols (Ethernet)Yes• CP/IPYes• DCPNo• SNMPYes• DCPYes• DCPYes• DCPYes• DCPSNMP• DCPYes• DCPYes• Data length, max.8 kbyte• ISO-on-CP (REC1006)Yes• Data length, max.4 kbyte• UDP1472 byte• Data length, max.1472 byte• Data length, max.Yes• UDP1472 byte• Data length, max.Yes• MODBUSYes• MODBUSYes• MODBUSYes• MODBUSYes• MODBUSYes• SupportedYes• SupportedYes• UDPYes• Status/control variableYes• Status/control variableYes• VariablesYes• VariablesYes• VariablesYes• Diagnostic buffer• ProteinForcing• Protein </td <td></td> <td></td>		
• TCP/IPYes• DHCPNo• DCPYes• DCPYes• DCPYes• DCPYes• DTPYes• Data length, max.8 kbyte• UDPYes• Data length, max.8 kbyte• UDPYes• Data length, max.1472 byte• Dup Intervention1472 byte• Dup InterventionYes• UDPYes• UDPYes• Dup InterventionYes• UDPYes• Dup InterventionYes• UDPYes• Dup InterventionYes• UDPYes• Dup InterventionYes• Dup InterventionYes• Dup InterventionYes• Dup InterventionYes• User data per job, max.See online help (S7 communication, user data size)Open IE communicationYes• User data per job, max.See online help (S7 communication, user data size)Open IE communicationYes• UDPYes• UDPYesWeb serverYes• upportedYes• upportedYes• stutiscontrol variableYes• stutiscontrol variableYes• VariablesYes• VariablesYes• VariablesYes• Data bendiffYes• VariablesYes• Data bendiffYes• Data bendiffYes• Data bendiffYes <t< td=""><td>Protocols (Ethernet)</td><td></td></t<>	Protocols (Ethernet)	
SNMPYes• DCPYes• LDPYesOpen Ecommunication*********************************	• TCP/IP	Yes
obdYesobdPYesOpen IE communicationYesopen IE communication8 kbyteobd length, max.8 kbyteobd length, max.8 kbyteobd length, max.8 kbyteobd length, max.1472 byteobd length, max.1472 byteobd length, max.Yesobd length, max.1472 byteobd length, max.Yesobd length, max.YesobserverSecontine help (S7 communication, user data size)open IE communicationYesobserverSecontine help (S7 communication, user data size)observerYesobserverYesoverallYesoverallYesoverallYesoverallYesStatus/control variableYesoverallYesoverallYesoverallYesoverallYesoverallYesoverallYesoverallYesoverallYesoverallYesoverallYesoverallYesoverallYesoverallYesoverallYes <td>• DHCP</td> <td>No</td>	• DHCP	No
Left 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. 1472 byte • Data length, max. Yes • MODBUS Yes • Statusconton Yes • Loromunication Yes • Loromunication	• SNMP	Yes
Open IE communication • TCP/IP - Data length, max. 8 kbyte • ISO-on-TCP (RFC1006) Yes • Data length, max. 8 kbyte • Data length, max. 1472 byte • UDP - - Data length, max. 1472 byte Further protocols Yes • MODBUS Yes Communication functions Yes Softminunication Yes • supported Yes • supported Yes • as server Yes • as server Yes • UDP Yes • UDP Yes • UDS of tall aper job, max. See online help (S7 communication, user data size) Open IE communication Yes • UDP Yes • UDP Yes • UDP Yes • UDP Yes • Ver and websites Yes • Overall Yes • Overall Yes • Status/control variable Yes	• DCP	Yes
• TCP/IP8 kbyte- Data length, max.8 kbyte• ISO-on-TCP (RFC1006)Yes- Data length, max.8 kbyte• UDP1472 byte- Data length, max.1472 byteFurther protocolsYesCommunication functionsYesS7 communicationYessupportedYes• supportedYes• as serverYes• data per job, max.See online help (S7 communication, user data size)Open El communicationYes• USP // PYes• USP // PYes• USP // PYes• USP // SYes• Verall16; dynamicatly• VerallYes• Status/control variableYes• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, controrsForcingYes• ForcingYesDiagnostic bufferYes• presentYes• YesYes• PresentYes	• LLDP	Yes
- Data length, max.8 kbyte• ISD-on-TCP (RFC1006)Yes- Data length, max.8 kbyte• UDP- Data length, max.1472 byte- Data length, max.1472 byte• Duba length, max.Yes• MDBUSYes• Communication functionsYes• So communication functionsYes• supportedYes• supportedYes• as serverYes• as clientYes• UDPYes• UDPYes• UDPYes• UDPYes• UDPYes• UDPYes• UDPYes• UDPYes• vorallYes• vorallYes• vorallYes• vorallYes• Status/control variableYes• Status/control variableYes• foringYes• ForingYes• ForingYes• ForingYes• presentYes	Open IE communication	
• ISO-on-TCP (RC 1006)Yes- Data length, max.8 kbyte• UDP Data length, max.1472 byteFurther protocolsFurther protocolsVesCommunication functionsS7 communicationVese sa clientVesSatisfieldVessa clientVesSatisfieldVesVesVesVesVesVesVesVesVesVesVesVesVesVesVesVesVesVerVerVesVer <td< td=""><td>• TCP/IP</td><td></td></td<>	• TCP/IP	
• ISO-on-TCP (RFC1006)Yes- Data length, max.8 kbyte• UDP1- Data length, max.1472 byteFurther protocolsYes Communication functions YesSoftmunicationYesSoftmunicationYes(as server)Yes• as server)Yes• data per job, max.See online help (S7 communication, user data size)Open IE communicationYes• UDPYes• VerallYes• Status/control variableYes• VariablesYes• VariablesYes• ForcingYes• Data Status/control variableYes• ForcingYes• ForcingYes• Data Status/control variableYes• PresentYes	— Data length, max.	8 kbyte
- Data length, max.8 kbyte• UDP- Data length, max.1472 byteFurther protocolsFurther protocols• MODBUSYesCommunication functionsS7 communication• supportedYes• supportedYes• as clientYes• buser data per job, max.YesOpen IE communicationYes• UDPYes• UDPYes• UDPYes• UDPYes• UDPYes• buser defined websitesYes• buser defined websitesYes• overallYes• overallYes• Status/control variableYes• VariablesYes• VariablesYes• buser defined websitesYes• forcingYes• forcingYes• forcingYes• protocol bufferYes• presentYes		Yes
• UDP1472 byteFurther protocolsYesFurther protocolsYescommunicationYesS7 communicationYes• supportedYes• as serverYes• as clientYes• as clientYes• User data per job, max.See online help (S7 communication, user data size)Open IE communicationYes• UDPYes• UDPYes• UDPYes• UDPYes• USP deterYes• supportedYes• user-defined websitesYes• USPYesNumber of connectionsYes• overall16: dynamicallyTest communication functionsStatus/control• Status/control variableYes• VariablesYes• CoringYes• ForcingYes• ForcingYes• presentYes• present <t< td=""><td></td><td>8 kbyte</td></t<>		8 kbyte
Further protocols Yes • MODBUS Yes Communication * • supported Yes • as server Yes • as dient Yes • User data per job, max. See online help (S7 communication, user data size) Open IE communication * • TCP/IP Yes • UDP Yes Veb server * • supported Yes Number of connections Yes • overall 16; dynamically Test commissioning functions * Status/control Yes Status/control variable Yes • Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing Yes • Forcing Yes • present Yes	-	
Further protocols Yes • MODBUS Yes Communication * • supported Yes • as server Yes • as dient Yes • User data per job, max. See online help (S7 communication, user data size) Open IE communication * • TCP/IP Yes • UDP Yes Veb server * • supported Yes Number of connections Yes • overall 16; dynamically Test commissioning functions * Status/control Yes Status/control variable Yes • Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing Yes • Forcing Yes • present Yes		1 472 byte
Communication functions S7 communication • supported Yes • as server Yes • as client Yes • as client Yes • User data per job, max. See online help (S7 communication, user data size) Open IE communication FOP/IP • User data per job, max. See online help (S7 communication, user data size) Open IE communication TCP/IP • User data per job, max. Yes • UDP Yes • UDP Yes Veb server Yes • supported Yes • User-defined websites Yes • User-defined websites Yes • overall 16; dynamically Test commissioning functions Status/control Status/control variable Yes • Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing Yes Diagnostic buffer Yes • present 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 Yes • TCP/IP Yes • UDP Yes • UDP Yes • User-defined websites Yes • User-defined websites Yes • overall Yes • overall 16; dynamically Test commissioning functions Status/control Yes • Status/control variable Yes • Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing • Forcing Yes • Diagnostic buffer Yes • present Yes	• MODBUS	Yes
• supportedYes• as serverYes• as clientYes• User data per job, max.See online help (S7 communication, user data size)Open IE communicationYes• TCP/IPYes• UDPYes• UDPYes• UDPYes• User-defined websitesYes• User-defined websitesYes• overall16; dynamically• overall16; dynamically• Status/control variableYes• Status/control variableYes• CoringYes• ForcingYes• ForcingYes• ForcingYes• presentYes• presentYes	Communication functions	
ease serverYes• as serverYes• User data per job, max.See online help (S7 communication, user data size)Open IE communicationYes• TCP/IPYes• UDPYesWeb serverYes• supportedYes• supportedYes• User defined websitesYesNumber of connectionsYes• overall16; dynamicallyTest commissioning functionsYesStatus/control variableYes• Status/control variableYes• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, countersForcingYes• ForcingYesDiagnostic bufferYes• presentYes	S7 communication	
AccordYes• User data per job, max.See online help (S7 communication, user data size)Open IE communicationYes• TCP/IPYes• UDPYes• UDPYes• SupportedYes• SupportedYes• User-defined websitesYes• Number of connectionsYes• overall16; dynamically• Status/control variableYes• Status/control variableYes• Status/control variableYes• ForcingYes• ForcingYes• ForcingYes• ForcingYes• presentYes• presentYes	 supported 	Yes
• User data per job, max. See online help (S7 communication, user data size) Open IE communication • TCP/IP Yes • UDP Yes Web server Yes • supported Yes • User-defined websites Yes Number of connections Yes • overall 16; dynamically Test commissioning functions Status/control variable Yes • Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing Yes Forcing Yes • present Yes	• as server	Yes
Open IE communication• TCP/IPYes• UDPYesWeb serverYes• supportedYes• User-defined websitesYesNumber of connectionsYes• overall16; dynamically• overallYes• status/control variableYes• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, countersForcingYes• ForcingYes•	● as client	Yes
• TCP/IPYes• UDPYesWeb serverYes• supportedYes• User-defined websitesYesNumber of connectionsYes• overall16; dynamically• overallYesStatus/controlYes• Status/control variableYes• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, countersForcingYes• ForcingYes• presentYes	 User data per job, max. 	See online help (S7 communication, user data size)
• UDPYesWeb serverYes• supportedYes• User-defined websitesYesNumber of connections16; dynamically• overall16; dynamicallyTest commissioning functionsStatus/control• Status/controlYes• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, countersForcing• ForcingYes• ForcingYesDiagnostic bufferYes• presentYes	Open IE communication	
Web server • supported Yes • User-defined websites Yes Number of connections 16; dynamically • overall 16; dynamically Test commissioning functions Status/control • Status/control variable Yes • Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing Yes • Forcing Yes Diagnostic buffer Yes	• TCP/IP	Yes
• supportedYes• User-defined websitesYesNumber of connections16; dynamically• overall16; dynamicallyTest commissioning functionsStatus/control• Status/control variableYes• Status/control variableInputs/outputs, memory bits, DBs, distributed I/Os, timers, countersForcingYes• ForcingYes• ForcingYes• presentYes• presentYes• presentYes• PorcingYes• presentYes• PorcingYes• presentYes• PorcingYes• presentYes	• UDP	Yes
• User-defined websites Yes Number of connections 16; dynamically • overall 16; dynamically Test commissioning functions Status/control Yes • Status/control variable Yes • Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing Yes • Forcing Yes Diagnostic buffer Yes	Web server	
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 Yes • present Yes	 supported 	Yes
• overall 16; dynamically Test commissioning functions Status/control • Status/control variable Yes • Status/control variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters • Forcing Yes	 User-defined websites 	Yes
Test commissioning functions Status/control • Status/control variable Yes • Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing Yes • Forcing Yes Diagnostic buffer Yes	Number of connections	
Status/control Yes • Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing Ves • Forcing Yes • present Yes	• overall	16; dynamically
• Status/control variableYes• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, countersForcingForcing• ForcingYesDiagnostic bufferYes• presentYes	Test commissioning functions	
 Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing Forcing Yes Diagnostic buffer Present Yes 		
counters Forcing Yes Diagnostic buffer Yes		
• Forcing Yes Diagnostic buffer Yes • present Yes	Variables	
Diagnostic buffer • present Yes	Forcing	
• present Yes		Yes
	Diagnostic buffer	
Traces	● present	Yes
	Traces	

 Number of configurable Traces 	2
Memory size per trace, max.	- 512 kbyte
· ·	
Interrupts/diagnostics/status information	
Diagnostics indication LED	Ver
RUN/STOP LED	Yes
• ERROR LED	Yes
MAINT LED	Yes
Integrated Functions	
Number of counters	4
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	Up to 4 with SB 1222
interface	
PID controller	Yes
Number of alarm inputs	4
Potential separation	
Potential separation digital inputs	
 Potential separation digital inputs 	500V AC for 1 minute
 between the channels, in groups of 	1
Potential separation digital outputs	
 Potential separation digital outputs 	Relays
 between the channels 	No
 between the channels, in groups of 	2
EMC	
Interference immunity against discharge of static electric	city
 Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 	Yes
— Test voltage at air discharge	8 kV
— Test voltage at contact discharge	6 kV
Interference immunity to cable-borne interference	
 Interference immunity on supply lines acc. to IEC 61000-4-4 	Yes
 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

Eimit class A, for use in industrial areas Yes; Group 1 Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011 Pegree and class of protection Degree of protection acc. to EN 60529 iP20 Yes Standards, approvals, certificates CE mark Yes UL approval Yes CE mark Yes UL approval Yes CE mark Yes UL approval Yes CE mark Yes CE approval Yes CE approve Yes CE approval	Emission of radio interference acc. to EN 55 011	
with the limits for Class B according to EN 55011 Degree of protection acc. to EN 60529 IP20 Standards, approvals, certificates CE mark Yes CE mark Yes UL approval Yes UL approval Yes CE mark Yes CE mark Yes CE mark Yes CE mark Yes Colspan="2">Colspan="2" Colspan="2" Colspan="2" Colspan="2" Colspan="2"	 Limit class A, for use in industrial areas 	Yes; Group 1
Degree of protection acc. to EN 60529 Yes Standards, approvals, certificates Yes CE mark Yes UL approval Yes CULus Yes CM (formerly C-TICK) Yes RCA poproval Yes Ambient conditions Yes Free fall 0.3 m; five times, in product package Ambient temperature during operation -0.3 m; five times, in product package Ambient temperature during operation -0.3 m; five times, in product package Ambient temperature during operation -0.3 m; five times, in product package Ambient temperature during operation -20 °C • max. -20 °C • horizontal installation, min. -20 °C • horizontal installation, min. -20 °C • horizontal installation, max. 60 °C • wertical installation, max. 50 °C Ambient temperature during storage/transportation -00 °C • min. -40 °C • min. -40 °C • Operation, min. -40 °C • Operation, max. 1000 hPa • Operation, max. 60 °C • Storag	• Limit class B, for use in residential areas	
• IP20 Yes Standards, approvals, certificates Yes CE mark Yes UL approval Yes dUlus Yes dUlus Yes CM (formerly C-TICK) Yes RCM (formerly C-TICK) Yes Marine approval Yes Marine approval Yes Anbient conditions - Free fall - • Fall height, max. 0.3 m; five times, in product package Ambient temperature during operation - • max. 60 °C; Number of simultaneously activated inputs or outputs 4 or 3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 45 °C vertical • horizontal installation, min. -20 °C • vertical installation, max. 50 °C Nument -20 °C • vertical installation, max. 50 °C • vertical installation, min. -20 °C • vertical installation, min. -20 °C • vertical installation, min. -20 °C • Norizontal installation, min. -20 °C • Operation, max. 1080 hPa • Operation, max. 1080 h	Degree and class of protection	
Standards, approvals, certificates CE mark Yes UL approval Yes ULus Yes CULus Yes FM approval Yes RCM (formerly C-TICK) Yes KC approval Yes Marine approval Yes Ambient conditions Yes Free fall • Fall height, max. 0.3 m; five times, in product package Ambient temperature during operation • min. -20 °C • max. 60 °C, Number of simultaneously activated inputs or outputs 4 or 3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 45 °C vertical • horizontal installation, min. -20 °C • horizontal installation, max. 60 °C • vertical installation, max. 60 °C • vertical installation, max. -20 °C • horizontal installation, max. -20 °C • permistrue during storage/transportation - • min. -20 °C • Operation, min. -95 hP	Degree of protection acc. to EN 60529	
CE mark Yes UL approval Yes CULus Yes FM approval Yes RCM (formerly C-TICK) Yes KC approval Yes Marine approval Yes Ambient conditions Yes Free fall 0.3 m; five times, in product package Ambient temperature during operation • min. • max. 0.0 °C, Number of simultaneously activated inputs or outputs 4 or 3 (no adjacent points) at 60 °C chorizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 50 °C vertical, 8 or 6 or C • horizontal installation, min. -20 °C • horizontal installation, max. 60 °C • vertical installation, max. 50 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation • min. • vertical installation, max. 50 °C Arbient temperature during storage/transportation • Or °C • Storage/transport, min. -40 °C • Operation, max. 1080 hPa • Storage/transport, min. 660 hPa • Storage/transport, max. 1080 hPa • Storage/transport, max.	• IP20	Yes
UL approval Yes GULus Yes FM approval Yes RCM (formerly C-TICK) Yes RCM (formerly C-TICK) Yes Marine approval Yes Ambient conditions Yes Free fall 0.3 m; five times, in product package Ambient temperature during operation -20 °C • min. -20 °C • max. 60 °C; Number of simultaneously activated inputs or outputs 4 or 3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 50 °C vertical, 8 or 6 or C • horizontal installation, min. -20 °C • horizontal installation, max. 60 °C • vertical installation, max. 60 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C • max. 70 °C Air pressure acc. to IEC 60068-2-13 -40 °C • Operation, max. 1080 hPa • Operation, max. 1080 hPa • Operation, max. 1080 hPa • Storage/transport, max. 1080 hPa • permissible operating height -1000 to 2000 m	Standards, approvals, certificates	
cULus Yes FM approval Yes RCM (formerly C-TICK) Yes RCA approval Yes Marine approval Yes Ambient conditions Free fall • Free fall 0.3 m; five times, in product package Ambient temperature during operation -20 °C • min. -20 °C • max. 60 °C; Number of simultaneously activated inputs or outputs 4 or 3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 45 °C vertical • horizontal installation, min. -20 °C • horizontal installation, min. -20 °C • horizontal installation, max. 60 °C. • vertical installation, max. 50 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation -00 °C • min. -40 °C • max. 70 °C Air pressure act. to IEC 60068-2-13 -1000 to 2000 m • Operation, min. 660 hPa • Operation, max. 1080 hPa • Operation, max. 1080 hPa	CE mark	Yes
FM approval Yes RCM (formerly C-TICK) Yes KC approval Yes Marine approval Yes Ambient conditions Yes Free fall 0.3 m; five times, in product package Ambient temperature during operation -20 °C • min. -20 °C • max. 60 °C; Number of simultaneously activated inputs or outputs 4 or 3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 45 °C vertical • horizontal installation, min. -20 °C • horizontal installation, min. -20 °C • horizontal installation, max. 60 °C • vertical installation, max. 60 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C Ambient temperature during storage/transportation -20 °C • vertical installation, max. 50 °C • operation, max. 50 °C • operation, max. 50 °C • Operation, max. 1080 hPa • Operation, max. 1080 hPa • Operation, max. 1080 hPa • Storage/transport, max. 1080 hPa	UL approval	Yes
RCM (formerly C-TICK) Yes KC approval Yes Marine approval Yes Ambient conditions Yes Free fall 0.3 m; five times, in product package Ambient temperature during operation 0.3 m; five times, in product package Ambient temperature during operation -20 °C • min. -20 °C • max. 60 °C; Number of simultaneously activated inputs or outputs 4 or 3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 45 °C vertical • horizontal installation, min. -20 °C • horizontal installation, min. -20 °C • vertical installation, min. -20 °C • vertical installation, max. 60 °C • vertical installation, max. 50 °C • vertical installation, max. 50 °C • Ambient temperature during storage/transportation -40 °C • min. -20 °C • min. -20 °C • Ambient temperature during storage/transportation -40 °C • pressure acc. to IEC 60068-2-13 -40 °C • Operation, max. 1080 hPa • Operation, max. 1080 hPa • Storage/transport, min. <td>cULus</td> <td>Yes</td>	cULus	Yes
KC approval Yes Marine approval Yes Ambient conditions Free fall • Fall height, max. 0.3 m; five times, in product package Ambient temperature during operation • 20 °C • min. -20 °C • max. 60 °C; Number of simultaneously activated inputs or outputs 4 or 3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 45 °C vertical • horizontal installation, min. -20 °C • horizontal installation, min. -20 °C • horizontal installation, max. 60 °C • vertical installation, max. 50 °C • Ado °C	FM approval	Yes
Marine approval Yes Ambient conditions Free fall • Fall height, max. 0.3 m; five times, in product package Ambient temperature during operation -20 °C • min. -20 °C • max. 60 °C; Number of simultaneously activated inputs or outputs 4 or 3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 45 °C vertical • horizontal installation, min. -20 °C • horizontal installation, max. 60 °C • vertical installation, max. 60 °C • vertical installation, max. 50 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C • min. -40 °C • max. 70 °C Air pressure acc. to IEC 60068-2-13 -40 °C • Operation, min. 795 hPa • Operation, max. 1080 hPa • Storage/transport, min. 660 °Pa • Storage/transport, max. 1080 hPa • permissible operating height -1000 to 2000 m Relative humidity • Operation, max. 95 %; no condensation • Vibratio	RCM (formerly C-TICK)	Yes
Ambient conditions Free fall 0.3 m; five times, in product package Ambient temperature during operation • min. • min. -20 °C • max. 60 °C; Number of simultaneously activated inputs or outputs 4 or 3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 45 °C vertical • horizontal installation, min. -20 °C • horizontal installation, max. 60 °C • vertical installation, max. 50 °C • vertical installation, max. 50 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation -40 °C • min. -40 °C • max. 70 °C Ambient temperature during storage/transportation -40 °C • max. 70 °C Ari pressure acc. to IEC 60068-2-13 -00 °C • Operation, min. -95 hPa • Operation, max. 1080 hPa • Storage/transport, min. 660 hPa • Storage/transport, max. 1080 hPa • permissible operating height -1000 to 2000 m Relative humidity -00 condensation • Operation, max. 95 %; no condensation	KC approval	Yes
Free fall 0.3 m; five times, in product package Ambient temperature during operation -20 °C • min. -20 °C • max. 60 °C; Number of simultaneously activated inputs or outputs 4 or 3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 45 °C vertical • horizontal installation, min. -20 °C • horizontal installation, min. -20 °C • vertical installation, max. 60 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C • min. -20 °C • at pressure acc. to IEC 60068-2-13 -20 °C • Operation, max. 70 °C Air pressure acc. to IEC 60068-2-13 -20 °C • Operation, min. 795 hPa • Operation, max. 1080 hPa • Storage/transport, min. 660 hPa • Storage/transport, max. 1080 hPa • permissible operating height -1000 to 2000 m Relative humidity 95 %; no condensation • Vibrations 2 g (m/s ²) wall mounting, 1 g (m/s ²) DIN rail • Operation, tested according to IEC 60068-2-6 Yes	Marine approval	Yes
Free fall 0.3 m; five times, in product package Ambient temperature during operation -20 °C • min. -20 °C • max. 60 °C; Number of simultaneously activated inputs or outputs 4 or 3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 45 °C vertical • horizontal installation, min. -20 °C • horizontal installation, min. -20 °C • vertical installation, max. 60 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C • min. -20 °C • at pressure acc. to IEC 60068-2-13 -20 °C • Operation, max. 70 °C Air pressure acc. to IEC 60068-2-13 -20 °C • Operation, min. 795 hPa • Operation, max. 1080 hPa • Storage/transport, min. 660 hPa • Storage/transport, max. 1080 hPa • permissible operating height -1000 to 2000 m Relative humidity 95 %; no condensation • Vibrations 2 g (m/s ²) wall mounting, 1 g (m/s ²) DIN rail • Operation, tested according to IEC 60068-2-6 Yes	Ambient conditions	
Ambient temperature during operation -20 °C • max. 60 °C; Number of simultaneously activated inputs or outputs 4 or 3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 45 °C vertical • horizontal installation, min. -20 °C • horizontal installation, max. 60 °C • vertical installation, max. 60 °C • vertical installation, max. 50 °C • vertical installation, max. 50 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C • min. -20 °C • min. -20 °C • max. 70 °C Ambient temperature during storage/transportation - • min. -40 °C • max. 70 °C Air pressure acc. to IEC 60068-2-13 - • Operation, min. 1080 hPa • Operation, max. 1080 hPa • Storage/transport, max. 1080 hPa • permissible operating height -1000 to 2000 m Relative humidity - • Operation, max. 95 %; no condensation Vibrations 2 g (m/s ^o) wall mounting, 1 g (m/s ^o) DIN rail		
• min. -20 °C • max. 60 °C; Number of simultaneously activated inputs or outputs 4 or 3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 45 °C vertical • horizontal installation, min. -20 °C • horizontal installation, max. 60 °C • vertical installation, max. 60 °C • vertical installation, max. 50 °C • vertical installation, max. 50 °C • vertical installation, max. 50 °C • Ambient temperature during storage/transportation -20 °C • min. -20 °C • max. 70 °C Atr pressure acc. to IEC 60068-2-13 -0 °C • Operation, min. 795 hPa • Operation, max. 1080 hPa • Storage/transport, min. 660 hPa • permissible operating height -1000 to 2000 m Relative humidity -00 operation, max. • Operation, max. 95 %; no condensation Vibrations 2 g (m/s ^a) wall mounting, 1 g (m/s ^a) DIN rail • Operation, tested according to IEC 60068-2-6 Yes	● Fall height, max.	0.3 m; five times, in product package
• max.60 °C; Number of simultaneously activated inputs or outputs 4 or 3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 45 °C vertical• horizontal installation, min20 °C• horizontal installation, max.60 °C; Outputs 20 °C• vertical installation, max.50 °C• vertical installation, max.50 °C• vertical installation, max.50 °C• vertical installation, max.70 °C• min40 °C• max.70 °CAmbient temperature during storage/transportation• operation, min.1080 hPa• Operation, min.660 hPa• Operation, max.1080 hPa• Storage/transport, min.660 hPa• Storage/transport, max.1080 hPa• Storage/transport, max.1080 hPa• Operation, max.95 %; no condensation• Operation, max.2 g (m/s ²) wall mounting, 1 g (m/s ²) DIN rail• Operation, tested according to IEC 60068-2-6Yes	Ambient temperature during operation	
3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 45 °C vertical• horizontal installation, min20 °C• vertical installation, max.60 °C• vertical installation, max20 °C• vertical installation, max.50 °C• vertical installation, max.50 °C• vertical installation, max.50 °C• min40 °C• max.70 °C• max.70 °C• Operation, min.1080 hPa• Operation, max.660 hPa• Storage/transport, min.660 hPa• Storage/transport, max.1080 hPa• Storage/transport, max.1080 hPa• Deperation, max.1080 hPa• Operation, max.95 %; no condensationVibrations95 %; no condensation• Operation, max.95 %; no condensation• Operation, tested according to IEC 60068-2-6Yes	• min.	-20 °C
Induction matrix60 °C• horizontal installation, max.60 °C• vertical installation, max20 °C• vertical installation, max.50 °CAmbient temperature during storage/transportation-40 °C• min40 °C• max.70 °CAir pressure acc. to IEC 60068-2-13-40 °C• Operation, min.795 hPa• Operation, max.1080 hPa• Storage/transport, min.660 hPa• Storage/transport, max.1 080 hPa• Storage/transport, max.1 080 hPa• Operation, max.95 %; no condensationVibrations2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6Yes	• max.	3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6
• vertical installation, min20 °C• vertical installation, max.50 °CAmbient temperature during storage/transportation	 horizontal installation, min. 	-20 °C
• vertical installation, max.50 °CAmbient temperature during storage/transportation-40 °C• min40 °C• max.70 °CAir pressure acc. to IEC 60068-2-13-40 °C• Operation, min.795 hPa• Operation, max.1 080 hPa• Operation, max.660 hPa• Storage/transport, min.660 hPa• Storage/transport, max.1 080 hPa• Operation, max.1 080 hPa• Operation, max.1 080 hPa• Operation, max.1 080 hPa• Operation, max.95 %; no condensation• Operation, max.95 %; no condensation• Operation, max.95 %; no condensation• Operation, max.2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6Yes	 horizontal installation, max. 	60 °C
Ambient temperature during storage/transportation• min40 °C• max.70 °CAir pressure acc. to IEC 60068-2-13• Operation, min.795 hPa• Operation, max.1 080 hPa• Operation, max.660 hPa• Storage/transport, min.660 hPa• Storage/transport, max.1 080 hPa• permissible operating height-1000 to 2000 mRelative humidity• Operation, max.95 %; no condensationVibrations• Vibrations2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6Yes	 vertical installation, min. 	-20 °C
• min40 °C• max.70 °CAir pressure acc. to IEC 60068-2-13795 hPa• Operation, min.795 hPa• Operation, max.1 080 hPa• Storage/transport, min.660 hPa• Storage/transport, max.1 080 hPa• Storage/transport, max.1 080 hPa• Operation, max.95 %; no condensationRelative humidity• Operation, max.95 %; no condensationVibrations2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6Yes	 vertical installation, max. 	50 °C
· max.70 °CAir pressure acc. to IEC 60068-2-13795 hPa• Operation, min.795 hPa• Operation, max.1 080 hPa• Storage/transport, min.660 hPa• Storage/transport, max.1 080 hPa• permissible operating height-1000 to 2000 m• permissible operating height95 %; no condensation• Operation, max.95 %; no condensation• Operation, max.2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6Yes	Ambient temperature during storage/transportation	
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• permissible operating height-1000 to 2000 m• Relative humidity95 %; no condensation• Operation, max.95 %; no condensationVibrations2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6Yes	• min.	-40 °C
• Operation, min.795 hPa• Operation, max.1 080 hPa• Storage/transport, min.660 hPa• Storage/transport, max.1 080 hPa• permissible operating height-1000 to 2000 m• Relative humidity-1000 to 2000 m• Operation, max.95 %; no condensationVibrations2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6Yes	• max.	70 °C
• Operation, max.1 080 hPa• Storage/transport, min.660 hPa• Storage/transport, max.1 080 hPa• permissible operating height-1000 to 2000 mRelative humidity-1000 to 2000 m• Operation, max.95 %; no condensationVibrations2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6Yes	Air pressure acc. to IEC 60068-2-13	
• Operation, max.1 080 hPa• Storage/transport, min.660 hPa• Storage/transport, max.1 080 hPa• permissible operating height-1000 to 2000 mRelative humidity-• Operation, max.95 %; no condensationVibrations2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6Yes	• Operation, min.	795 hPa
• Storage/transport, min.660 hPa• Storage/transport, max.1 080 hPa• permissible operating height-1000 to 2000 mRelative humidity• Operation, max.95 %; no condensation• Vibrations2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6Yes		1 080 hPa
• Storage/transport, max.1 080 hPa• permissible operating height-1000 to 2000 mRelative humidity-• Operation, max.95 %; no condensationVibrations2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6Yes	 Storage/transport, min. 	660 hPa
• permissible operating height-1000 to 2000 mRelative humidity95 %; no condensation• Operation, max.95 %; no condensationVibrations2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6Yes		1 080 hPa
Relative humidity • Operation, max. 95 %; no condensation Vibrations • Vibrations 2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail • Operation, tested according to IEC 60068-2-6 Yes		-1000 to 2000 m
• Operation, max. 95 %; no condensation Vibrations 2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail • Operation, tested according to IEC 60068-2-6 Yes		
Vibrations 2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail • Operation, tested according to IEC 60068-2-6 Yes		95 %; no condensation
Operation, tested according to IEC 60068-2-6 Yes	·	
	Vibrations	2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail
	 Operation, tested according to IEC 60068-2-6 	Yes
	· · · · · · · · · · · · · · · · · · ·	

• 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

Extended ambient conditions

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	Yes
— FBD	Yes
— SCL	Yes
Know-how protection	
 User program protection/password protection 	Yes
Copy protection	Yes
Block protection	Yes
Access protection	
Protection level: Write protection	Yes
 Protection level: Read/write protection 	Yes
Protection level: Complete protection	Yes
Cycle time monitoring	
adjustable	Yes
-	
Dimensions	
Width	90 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	425 g
last modified:	08/12/2017