SIEMENS

Data sheet

6ES7410-5HX08-0AB0



SIMATIC PCS 7, CPU 410-5H Process Automation, central processing unit for S7-400 and S7-400H/F/FH, 5 interfaces: 2x PN, 1x DP, 2x for sync modules for using as spare part, without System Expansion Card

General information	
Product type designation	CPU 410-5H
HW functional status	2
Firmware version	V8.2
Design of PLC basic unit	With Conformal Coating (ISA-S71.04 severity level G1; G2; G3) and operating temperature to 70 °C
Product function	
● SysLog	Yes; via TCP; up to 4 receivers can be parameterized; buffer capacity max. 3 200 entries
 Field interface security 	Yes
Engineering with	
Programming package	SIMATIC PCS 7 V9.0 or higher
CiR – Configuration in RUN	
CiR synchronization time, basic load	60 ms
CiR synchronization time, time per I/O byte	0 µs
Input current	
from backplane bus 5 V DC, typ.	2 A
from backplane bus 5 V DC, max.	2.4 A

from backplane bus 24 V DC, max.	150 mA; DP interface
from interface 5 V DC, max.	90 mA; At the DP interface
Power loss	
Power loss, typ.	10 W
Dragogar	
Processor CPU speed	450 MHz; Multi-processor system
·	
Memory	400 commercial 2,000 editorstelete with Sustem European Cond
PCS 7 process objects	100 approx. 2 600, adjustable with System Expansion Card
Work memory	22 Mbyte: may dependent on the System Expansion Card used
• integrated	32 Mbyte; max., dependent on the System Expansion Card used
• integrated (for program)	Dependent on the System Expansion Card used
 integrated (for data) 	Dependent on the System Expansion Card used
• expandable	Dependent on the System Expansion Card used
Load memory	
 integrated RAM, max. 	48 Mbyte
• expandable RAM	No
Backup	
● present	Yes
 with battery 	Yes; all data
 without battery 	Yes; Program and data of the load memory
-	
Battery Backup battery	
Battery	370 μA; Valid up to 40°C
Battery Backup battery	370 μA; Valid up to 40°C 2.1 mA
Battery Backup battery • Backup current, typ. • Backup current, max.	
Battery Backup battery • Backup current, typ.	2.1 mA
Battery Backup battery • Backup current, typ. • Backup current, max.	2.1 mA Dealt with in the module data manual with the secondary
Battery Backup battery • Backup current, typ. • Backup current, max. • Backup time, max. • Feeding of external backup voltage to CPU	2.1 mA Dealt with in the module data manual with the secondary conditions and the factors of influence
Battery Backup battery • Backup current, typ. • Backup current, max. • Backup time, max.	2.1 mA Dealt with in the module data manual with the secondary conditions and the factors of influence
Battery Backup battery • Backup current, typ. • Backup current, max. • Backup time, max. • Feeding of external backup voltage to CPU CPU processing times	2.1 mA Dealt with in the module data manual with the secondary conditions and the factors of influence No
Battery Backup battery • Backup current, typ. • Backup current, max. • Backup time, max. • Feeding of external backup voltage to CPU CPU processing times for bit operations, typ.	 2.1 mA Dealt with in the module data manual with the secondary conditions and the factors of influence No 7.5 ns
Battery Backup battery • Backup current, typ. • Backup current, max. • Backup time, max. • Feeding of external backup voltage to CPU CPU processing times for bit operations, typ. for word operations, typ.	 2.1 mA Dealt with in the module data manual with the secondary conditions and the factors of influence No 7.5 ns 7.5 ns 7.5 ns
Battery Backup battery • Backup current, typ. • Backup current, max. • Backup time, max. • Feeding of external backup voltage to CPU CPU processing times for bit operations, typ. for word operations, typ. for fixed point arithmetic, typ.	 2.1 mA Dealt with in the module data manual with the secondary conditions and the factors of influence No 7.5 ns 7.5 ns 7.5 ns 7.5 ns
Battery Backup battery • Backup current, typ. • Backup current, max. • Backup time, max. • Feeding of external backup voltage to CPU CPU processing times for bit operations, typ. for word operations, typ. for fixed point arithmetic, typ. for floating point arithmetic, typ.	 2.1 mA Dealt with in the module data manual with the secondary conditions and the factors of influence No 7.5 ns 7.5 ns 7.5 ns 15 ns
Battery Backup battery • Backup current, typ. • Backup current, max. • Backup time, max. • Feeding of external backup voltage to CPU CPU processing times for bit operations, typ. for fixed point arithmetic, typ. for floating point arithmetic, typ. average processing time of PCS 7 typicals Process tasks, max.	 2.1 mA Dealt with in the module data manual with the secondary conditions and the factors of influence No 7.5 ns 7.5 ns 7.5 ns 15 ns 110 μs; with APL Typicals
Battery Backup battery • Backup current, typ. • Backup current, max. • Backup time, max. • Feeding of external backup voltage to CPU CPU processing times for bit operations, typ. for fixed point arithmetic, typ. for floating point arithmetic, typ. average processing time of PCS 7 typicals	 2.1 mA Dealt with in the module data manual with the secondary conditions and the factors of influence No 7.5 ns 7.5 ns 7.5 ns 15 ns 110 μs; with APL Typicals
Battery Backup battery Backup current, typ. Backup current, max. Backup time, max. Beeding of external backup voltage to CPU CPU processing times for bit operations, typ. for fixed point arithmetic, typ. for floating point arithmetic, typ. average processing time of PCS 7 typicals Process tasks, max. CPU-blocks	 2.1 mA Dealt with in the module data manual with the secondary conditions and the factors of influence No 7.5 ns 7.5 ns 7.5 ns 15 ns 110 μs; with APL Typicals
Battery Backup battery Backup current, typ. Backup current, max. Backup time, max. Backup of external backup voltage to CPU CPU processing times for bit operations, typ. for for word operations, typ. for floating point arithmetic, typ. average processing time of PCS 7 typicals Process tasks, max. CPU-blocks DB • Number, max.	 2.1 mA Dealt with in the module data manual with the secondary conditions and the factors of influence No 7.5 ns 7.5 ns 7.5 ns 7.5 ns 15 ns 110 µs; with APL Typicals 9; Individually adjustable from 10 ms to 5 s
Battery Backup battery • Backup current, typ. • Backup current, max. • Backup time, max. • Feeding of external backup voltage to CPU CPU processing times for bit operations, typ. for fixed point arithmetic, typ. for floating point arithmetic, typ. average processing time of PCS 7 typicals Process tasks, max. CPU-blocks DB	 2.1 mA Dealt with in the module data manual with the secondary conditions and the factors of influence No 7.5 ns 7.5 ns 7.5 ns 7.5 ns 15 ns 110 µs; with APL Typicals 9; Individually adjustable from 10 ms to 5 s 16 000; Number range: 1 to 16 000 (= Instances)
Battery Backup battery Backup current, typ. Backup current, max. Backup time, max. Backup of external backup voltage to CPU CPU processing times for bit operations, typ. for fixed point arithmetic, typ. for floating point arithmetic, typ. for floating point arithmetic, typ. Process tasks, max. CPU-blocks DB Number, max. Size, max. 	 2.1 mA Dealt with in the module data manual with the secondary conditions and the factors of influence No 7.5 ns 7.5 ns 7.5 ns 7.5 ns 15 ns 110 µs; with APL Typicals 9; Individually adjustable from 10 ms to 5 s 16 000; Number range: 1 to 16 000 (= Instances)

• Size, max.	64 kbyte
FC	
• Number, max.	8 000; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	
• Number, max.	see instruction list
• Size, max.	64 kbyte
 Number of free cycle OBs 	1; OB 1
 Number of time alarm OBs 	8; OB 10-17
 Number of delay alarm OBs 	4; OB 20-23
 Number of cyclic interrupt OBs 	9; OB 30-38 (= Process Tasks)
 Number of process alarm OBs 	8; OB 40-47
 Number of DPV1 alarm OBs 	3; OB 55-57
 Number of startup OBs 	2; OB 100, 102
 Number of asynchronous error OBs 	9; OB 80-88
 Number of synchronous error OBs 	2; OB 121, 122
Nesting depth	
 per priority class 	24
 additional within an error OB 	2
Counters, timers and their retentivity	
S7 counter	
Number	2 048
Retentivity	
— adjustable	Yes
Counting range	
— lower limit	0
— upper limit	999
IEC counter	
Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	2 048
Retentivity	
— adjustable	Yes
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
• Туре	SFB
• Number	Unlimited (limited only by RAM capacity)

retentive data area in total Flag	Total working and load memory (with backup battery)
Flag	
	10 0041
• Number, max.	16 384 byte
Retentivity available	Yes
Number of clock memories	8; in 1 memory byte
Local data	
• adjustable, max.	64 kbyte
• preset	64 kbyte
ddress area	
I/O address area	
Inputs	16 kbyte; max., dependent on the System Expansion Card used
Outputs	16 kbyte; max., dependent on the System Expansion Card used
of which distributed	
— DP interface, inputs	6 kbyte; max., dependent on the System Expansion Card used
— DP interface, outputs	6 kbyte; max., dependent on the System Expansion Card used
— PROFINET interface, inputs	8 kbyte; max., dependent on the System Expansion Card used
— PROFINET interface, outputs	8 kbyte; max., dependent on the System Expansion Card used
Process image	
 Inputs, adjustable 	16 kbyte
• Outputs, adjustable	16 kbyte
● Inputs, default	16 kbyte; Total peripheral address range, cannot be changed
• Outputs, default	16 kbyte; Total peripheral address range, cannot be changed
• consistent data, max.	244 byte
 Access to consistent data in process image 	Yes
Subprocess images	
 Number of subprocess images, max. 	15
Digital channels	
Inputs	131 072; max., dependent on the System Expansion Card used
— of which central	131 072; max., dependent on the System Expansion Card used
Outputs	131 072; max., dependent on the System Expansion Card used
— of which central	131 072; max., dependent on the System Expansion Card used
Analog channels	
Inputs	8 192; max., dependent on the System Expansion Card used
— of which central	8 192; max., dependent on the System Expansion Card used
Outputs	8 192; max., dependent on the System Expansion Card used
— of which central	8 192; max., dependent on the System Expansion Card used
lardware configuration	
Number of expansion units, max.	21; S7-400 expansion devices
connectable OPs	119
Multicomputing	No

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Number of connectable IMs (total), max.	6
• Number of connectable IM 460s, max.	6
 Number of connectable IM 463s, max. 	4; Single mode only
Number of DP masters	
 integrated 	1
• via CP	10; CP 443-5 Extended
Number of IO Controllers	
 integrated 	2
● via CP	0
Number of operable FMs and CPs (recommended)	
 PROFIBUS and Ethernet CPs 	11; Of which max. 10 CP as DP master
Slots	
required slots	2
Time of day	
Clock	
 Hardware clock (real-time) 	Yes
 retentive and synchronizable 	Yes
Resolution	1 ms
 Deviation per day (buffered), max. 	1.7 s; Power off
 Deviation per day (unbuffered), max. 	8.6 s; Power on
Operating hours counter	
• Number	16
 Number/Number range 	0 to 15
 Range of values 	SFCs 2, 3 and 4: 0 to 32767 hours SFC 101: 0 to 2^31 - 1 hours
retentive	Yes
Clock synchronization	
supported	Yes
• to DP, master	Yes
● to DP, slave	Yes
• in AS, master	Yes
• in AS, slave	Yes
 on Ethernet via NTP 	Possible as client and master/slave via SIMATIC process
Interfaces	
Number of PROFINET interfaces	2
Number of RS 485 interfaces	1; PROFIBUS DP
Number of other interfaces	2; 2x synchronization
1. Interface	
Interface type	Integrated
Physics	RS 485 / PROFIBUS
Isolated	Yes
Power supply to interface (15 to 30 V DC), max.	150 mA

Number of connection resources	16
Functionality	10
•	Yes
PROFIBUS DP master	No
PROFIBUS DP slave	NO
DP master	10
Number of connections, max.	16
• Transmission rate, max.	12 Mbit/s
 Number of DP slaves, max. 	96
 Number of slots per interface, max. 	1 632
Services	
— PG/OP communication	Yes
— Routing	Yes; S7 routing
— Global data communication	No
— S7 basic communication	No
— S7 communication	Yes
— S7 communication, as client	Yes
— S7 communication, as server	Yes
— Equidistance	No
— Isochronous mode	No
— SYNC/FREEZE	No
— Activation/deactivation of DP slaves	Yes; Approved for stand-alone operation only, not in conjunction with CiR (Configuration in Run)
— Direct data exchange (slave-to-slave communication)	No
— DPV1	Yes
Address area	
— Inputs, max.	6 kbyte; up to 2 800 IOs (channels)
— Outputs, max.	6 kbyte; up to 2 800 IOs (channels)
User data per DP slave	
— User data per DP slave, max.	244 byte
— Inputs, max.	244 byte
— Outputs, max.	244 byte
— Slots, max.	244
— per slot, max.	128 byte
2. Interface	PROFINET
Interface type Physics	Ethernet RJ45
Isolated	Yes
automatic detection of transmission rate	Yes; Autosensing
Autonegotiation	Yes
Autorossing	Yes
System redundancy	Yes

Redundant subnetworks	Yes
Change of IP address at runtime, supported	No
Number of connection resources	120
Interface types	
Number of ports	2
• integrated switch	Yes
Media redundancy	
supported	Yes
 Switchover time on line break, typ. 	< 200 ms
 Number of stations in the ring, max. 	50
Functionality	
PROFINET IO Controller	Yes
PROFINET IO Device	No
• PROFINET CBA	No
Open IE communication	Yes
• Web server	No
PROFINET IO Controller	
Transmission rate, max.	100 Mbit/s
Services	
— PG/OP communication	Yes
— S7 routing	Yes
— S7 communication	Yes
— Open IE communication	Yes
— Shared device	No; however, usable as part of S7
- Prioritized startup	No
— Number of connectable IO Devices, max.	250
— Number of connectable IO Devices for RT,	250
max.	
— of which in line, max.	250
— Activation/deactivation of IO Devices	Yes; Approved for stand-alone operation only, not in conjunction with CiR (Configuration in Run)
 — IO Devices changing during operation (partner ports), supported 	No
— Device replacement without swap medium	Yes
— Send cycles	250 μs, 500 μs, 1 ms, 2 ms, 4 ms
— Updating time	$250\ \mu s$ to $512\ m s,$ minimum value depends on the number of configured user data and the configured single or redundant mode
Address area	
— Inputs, max.	8 kbyte; up to 3 800 IOs (channels)
— Outputs, max.	8 kbyte; up to 3 800 IOs (channels)
— User data consistency, max.	1 024 byte
Open IE communication	

- Number of connections, max.
- Local port numbers used at the system end
- Keep-alive function, supported

0, 20, 21, 25, 102, 135, 161, 34962, 34963, 34964, 65532, 65533, 65534, 65535 Yes

3. Interface	
Interface type	PROFINET
Physics	Ethernet RJ45
Isolated	Yes
automatic detection of transmission rate	Yes; Autosensing
Autonegotiation	Yes
Autocrossing	Yes
System redundancy	Yes
Redundant subnetworks	Yes
Number of connection resources	120
Interface types	
 Number of ports 	2
 integrated switch 	Yes
Media redundancy	
• supported	Yes
 Switchover time on line break, typ. 	< 200 ms
 Number of stations in the ring, max. 	50
Functionality	
PROFINET IO Controller	Yes
PROFINET IO Device	No
PROFINET CBA	No
Open IE communication	Yes
Web server	No
PROFINET IO Controller	
• Transmission rate, max.	100 Mbit/s
Services	
— PG/OP communication	Yes
— S7 routing	Yes
— S7 communication	Yes
— Open IE communication	Yes
— Shared device	No; however, usable as part of S7
— Prioritized startup	No
— Number of connectable IO Devices, max.	250
 — Number of connectable IO Devices, max. — Number of connectable IO Devices for RT, 	250
max.	
— of which in line, max.	250
 Activation/deactivation of IO Devices 	Yes; Approved for stand-alone operation only, not in conjunction with CiR (Configuration in Run)

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 — IO Devices changing during operation (partner ports), supported 	No
— Device replacement without swap medium	Yes
— Send cycles	250 μs, 500 μs, 1 ms, 2 ms, 4 ms
— Updating time	250 μs to 512 ms, minimum value depends on the number of
	configured user data and the configured single or redundant mode
Address area	
— Inputs, max.	8 kbyte; up to 3 800 IOs (channels)
— Outputs, max.	8 kbyte; up to 3 800 IOs (channels)
— User data consistency, max.	1 024 byte
Open IE communication	
 Number of connections, max. 	118
 Local port numbers used at the system end 	0, 20, 21, 25, 102, 135, 161, 34962, 34963, 34964, 65532, 65533, 65534, 65535
 Keep-alive function, supported 	Yes
4. Interface	
4. Interface Interface type	Pluggable synchronization submodule (FO)
Plug-in interface modules	Synchronization module 6ES7960-1AA06-0XA0, 6ES7960-
	1AB06-0XA0 or 6ES7960-1AA08-0XA0
5. Interface	
Interface type	Pluggable synchronization submodule (FO)
Plug-in interface modules	Synchronization module 6ES7960-1AA06-0XA0, 6ES7960-
	1AB06-0XA0 or 6ES7960-1AA08-0XA0
Protocols	•
Protocols Supports protocol for PROFINET IO	•
	1AB06-0XA0 or 6ES7960-1AA08-0XA0
Supports protocol for PROFINET IO	1AB06-0XA0 or 6ES7960-1AA08-0XA0 Yes
Supports protocol for PROFINET IO PROFINET CBA	1AB06-0XA0 or 6ES7960-1AA08-0XA0 Yes No
Supports protocol for PROFINET IO PROFINET CBA PROFIsafe	1AB06-0XA0 or 6ES7960-1AA08-0XA0 Yes No Yes
Supports protocol for PROFINET IO PROFINET CBA PROFIsafe PROFIBUS	1AB06-0XA0 or 6ES7960-1AA08-0XA0 Yes No Yes Yes
Supports protocol for PROFINET IO PROFINET CBA PROFIsafe PROFIBUS AS-Interface	1AB06-0XA0 or 6ES7960-1AA08-0XA0 Yes No Yes Yes
Supports protocol for PROFINET IO PROFINET CBA PROFIsafe PROFIBUS AS-Interface SIMATIC communication	1AB06-0XA0 or 6ES7960-1AA08-0XA0 Yes No Yes Yes Yes; Via add-on
Supports protocol for PROFINET IO PROFINET CBA PROFIsafe PROFIBUS AS-Interface SIMATIC communication • S7 routing	1AB06-0XA0 or 6ES7960-1AA08-0XA0 Yes No Yes Yes Yes; Via add-on
Supports protocol for PROFINET IO PROFINET CBA PROFIsafe PROFIBUS AS-Interface SIMATIC communication • S7 routing Open IE communication	1AB06-0XA0 or 6ES7960-1AA08-0XA0 Yes No Yes Yes Yes Yes; Via add-on Yes
Supports protocol for PROFINET IO PROFINET CBA PROFIsafe PROFIBUS AS-Interface SIMATIC communication • S7 routing Open IE communication • TCP/IP	1AB06-0XA0 or 6ES7960-1AA08-0XA0 Yes No Yes Yes Yes; Via add-on Yes; via integrated PROFINET interface and loadable FBs
Supports protocol for PROFINET IO PROFINET CBA PROFIsafe PROFIBUS AS-Interface SIMATIC communication • S7 routing Open IE communication • TCP/IP — Data length, max.	1AB06-0XA0 or 6ES7960-1AA08-0XA0 Yes Yes No Yes Yes Yes; Via add-on Yes; via integrated PROFINET interface and loadable FBs 32 kbyte
Supports protocol for PROFINET IO PROFINET CBA PROFIsafe PROFIBUS AS-Interface SIMATIC communication • S7 routing Open IE communication • TCP/IP — Data length, max. — several passive connections per port,	1AB06-0XA0 or 6ES7960-1AA08-0XA0 Yes Yes No Yes Yes Yes; Via add-on Yes; via integrated PROFINET interface and loadable FBs 32 kbyte
Supports protocol for PROFINET IO PROFINET CBA PROFIsafe PROFIBUS AS-Interface SIMATIC communication • S7 routing Open IE communication • TCP/IP — Data length, max. — several passive connections per port, supported	1AB06-0XA0 or 6ES7960-1AA08-0XA0 Yes No Yes Yes Yes; Via add-on Yes; via integrated PROFINET interface and loadable FBs 32 kbyte Yes Yes; Via integrated PROFINET interface or CP 443-1 and
Supports protocol for PROFINET IO PROFINET CBA PROFIsafe PROFIBUS AS-Interface SIMATIC communication • S7 routing Open IE communication • TCP/IP — Data length, max. — several passive connections per port, supported • ISO-on-TCP (RFC1006)	1AB06-0XA0 or 6ES7960-1AA08-0XA0 Yes No Yes Yes Yes; Via add-on Yes Yes; via integrated PROFINET interface and loadable FBs 32 kbyte Yes Yes; Via integrated PROFINET interface or CP 443-1 and loadable FBs
Supports protocol for PROFINET IO PROFINET CBA PROFIsafe PROFIBUS AS-Interface SIMATIC communication • S7 routing Open IE communication • TCP/IP — Data length, max. — several passive connections per port, supported • ISO-on-TCP (RFC1006) — Data length, max.	1AB06-0XA0 or 6ES7960-1AA08-0XA0 Yes No Yes No Yes Yes Yes Yes; Via add-on Yes Yes Yes Yes Yes Yes Yes Yes Yes; via integrated PROFINET interface and loadable FBs 32 kbyte Yes; Yes; Via integrated PROFINET interface or CP 443-1 and loadable FBs 32 kbyte; 1452 bytes via CP 443-1 Adv.
Supports protocol for PROFINET IO PROFINET CBA PROFIsafe PROFIBUS AS-Interface SIMATIC communication • S7 routing Open IE communication • TCP/IP — Data length, max. — several passive connections per port, supported • ISO-on-TCP (RFC1006) — Data length, max. • UDP	1AB06-0XA0 or 6ES7960-1AA08-0XA0 Yes No Yes Yes Yes Yes; Via add-on Yes Yes Yes Yes Yes Yes; Via integrated PROFINET interface and loadable FBs 32 kbyte Yes; Via integrated PROFINET interface or CP 443-1 and loadable FBs 32 kbyte; 1452 bytes via CP 443-1 Adv. Yes; via integrated PROFINET interface and loadable FBs

Further protocols	
 Foundation Fieldbus 	Yes; via DP/FF Link
• MODBUS	Yes; Via add-on
Communication functions	
PG/OP communication	Yes
 Number of connectable OPs without message processing 	119
 Number of connectable OPs with message processing 	119; When using Alarm_S/SQ and Alarm_D/DQ
Data record routing	Yes
S7 communication	
 supported 	Yes
• as server	Yes
• as client	Yes
 User data per job, max. 	64 kbyte
 User data per job (of which consistent), max. 	462 byte; 1 variable
S5 compatible communication	
• supported	Yes; via CP and FC AG_SEND and FC AG_RECV
• User data per job, max.	8 kbyte
 User data per job (of which consistent), max. 	240 byte
 Number of simultaneous AG-SEND/AG-RECV orders per CPU, max. 	64/64
Standard communication (FMS)	
• supported	Yes; Via CP and loadable FB
Number of connections	
• overall	120
 usable for PG communication 	
— reserved for PG communication	1
 usable for OP communication 	
— reserved for OP communication	1
S7 message functions	
Number of login stations for message functions, max.	119; Max. 119 with Alarm_S and Alarm_D (OPs); max. 12 with Alarm_8 and Alarm_P (e.g. WinCC)
Program alarms	Yes
Process diagnostic messages	Yes
simultaneously active Alarm-S blocks, max.	1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks
Alarm 8-blocks	Yes
 Number of instances for alarm 8 and S7 communication blocks, max. 	10 000
● preset, max.	10 000
Process control messages	Yes

Status block Yes Single step Yes Number of breakpoints 4 Status/control * • Status/control variable Yes • Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters • Number of variables, max. 70 Diagnostic buffer * • present Yes • Number of entries, max. 3 200 Service data * • can be read out Yes Stadards, approvals, certificates * CE mark Yes CSA approval Yes UL approval Yes GULus Yes FM approval Yes RCM (formerly C-TICK) Yes KC approval Yes Laporoval Yes EAC (formerly Gost-R) Yes Us in hazardous areas * • ATEX ATEX II 3G Ex nA IIC T4 Gc Ambient temperature during operation o "C • min. 0 "C • max. 0 "C	Number of archives that can log on simultaneously (SFB 37 AR_SEND)	64
Single stepYesNumber of breakpoints4Status/control variableYesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters70Diagnostic buffer7• Number of variables, max.3200Stervice data7• number of entries, max.3200Service data7• Can be read outYesCE markYesCSA approvals, certificatesYesCC markYesUL approvalYesCSA approvalYesUL approvalYesCRM (formerly C-TICK)YesKC approvalYesEAC (formerly Gost-R)YesEAC (formerly Gost-R)YesUse in hazardous areas• nin.0 °C• nax.See instruction list• nin.see instruction list• Nesting levels7• Access to consistent data in process imageSee instruction list• Nesting levels7• Access to consistent data in process imageSee instruction list• System functions (SFC)see instruction list• System function locks (SFB)see instruction list• System function locks (SFB)see instruction list• System function lextsee instruction list• System function locks (SFB)see	Test commissioning functions	
Number of breakpoints 4 Status/control * Status/control variable Yes • Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters • Variables 70 Diagnostic buffer Yes • present Yes • Number of variables, max. 3 200 Service data 3 200 Service data Yes • an be read out Yes Standards, approvals, certificates Yes CE mark Yes CE mark Yes CLus Yes UL approval Yes CLus Yes RCM (ormerly C-TICK) Yes RCM (ormerly C-TICK) Yes RCM (ormerly C-TICK) Yes Note to contitions ATEX II 3G Ex nA IIC T4 Gc Antient temperature during operation 0 °C • ATEX 0 °C • nax, 0 °C • nax, 70 Configuration See instruction list • Nesting levels	Status block	Yes
Status/control Yes • Status/control variable Yes • Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters • Number of variables, max. 70 Diagnostic buffer Yes • present Yes • Number of entries, max. 3200 Standards, approvals, certificates Yes CE mark Yes CLapproval Yes Oldus Yes CLapproval Yes FM approval Yes RCM (formerly C-TICK) Yes KC approval Yes ACC (formerly Cost-R) Yes LAC (formerly Cost-R) Yes ATEX ATEX II 3G Ex nA IIC T4 Gc Antext 70 °C Configuration See instruction list • ATEX ATEX II 3G Ex nA IIC T4 Gc Antext II approv	Single step	Yes
• Status/control variable Yes • Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters • Number of variables, max. 70 Diagnostic buffer 90 • number of entries, max. 3200 Service data 90 • can be read out Yes • CE mark Yes CE mark Yes CE mark Yes CLus Yes UL approval Yes UL approval Yes CUlus Yes CE mark Yes CLus Yes UL approval Yes CUlus Yes CE data Yes CUlus Yes RCM (formerly C-TICK) Yes KC approval Yes EAC (formerly Gost-R) Yes Use in hazardous areas Imin. • ATEX ATEX II 3G Ex nA IIC T4 Gc Ambient temperature during operation o°C • min. 0°C • max. 70°C Programming See instruction list • Nesting levels 7 • Access to consistent data in process image Yes • System function bicks (SFB) see instruction list <	Number of breakpoints	4
• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max.70Diagnostic bufferYes• present3200Service data3200• can be read outYes• can be read outYesCE markYesCE markYesCL approvalYescUL approvalYescommer y Gost-R)YestSc approvalYesEAC (formerly Gost-R)YestSter to min.0 °C• ATEXATEX II 3G Ex nA IIC T4 GcAntient conditions70 °CProgrammingSee instruction list• Nesting levels7• Access to consistent data in process imageYes• System function bicks (SFB)see instruction list• System functin bicks (S	Status/control	
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• present Yes • Number of entries, max. 3 200 Service data Yes • can be read out Yes Standards, approvals, certificates Yes CE mark Yes CE mark Yes CSA approval Yes UL approval Yes cULus Yes FM approval Yes RCM (formerly C-TICK) Yes KC approval Yes RCM (formerly C-TICK) Yes KC approval Yes EAC (formerly Gost-R) Yes Use in hazardous areas	 Number of variables, max. 	70
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- SCL Yes	 System function blocks (SFB) 	see instruction list
	Programming language	
- CFC Yes	— SCL	Yes
	— CFC	Yes

Number of simultaneously active SFCs	
- RD_REC	8; SFC 59; per interface
— WR_REC	8; SFC 58; per interface
— WR_PARM	8; SFC 55; per interface
— PARM_MOD	1; SFC 57; per interface
WR_DPARM	2; SFC 56; per interface
— DPNRM_DG	8; SFC 13; per interface
— RDSYSST	8; SFC 51
- DP_TOPOL	1; SFC 103; per interface
Number of simultaneously active SFBs	
— RDREC	8; SFB 52; per interface, but not more than 32 across all external interfaces
— WRREC	8; SFB 53; per interface, but not more than 32 across all external interfaces
Know-how protection	
 User program protection/password protection 	Yes
Block encryption	Yes; With S7 block Privacy
Dimensions	
Width	50 mm
Height	290 mm
Depth	219 mm
Weights	
Weight, approx.	1.1 kg
last modified:	04/06/2018