Data sheet

6ES7414-3FM07-0AB0



SIMATIC S7-400, CPU414F-3 PN/DP Central processing unit with: Work memory 4 MB, (2 MB code, 2 MB data), interfaces 1st interface MPI/DP 12 Mbit/s, (X1), 2nd interface Ethernet/PROFINET (X5) 3rd interface IF 964-DP plug-in (IF1)

General information		
Product type designation	CPU 414F-3 PN/DP	
HW functional status	01	
Firmware version	V7.0	
Product function		
 Isochronous mode 	Yes; Via PROFIBUS DP or PROFINET interface	
Engineering with		
 Programming package 	STEP 7 V5.5 or higher with HSP 262	
CiR - Configuration in RUN		
CiR synchronization time, basic load	100 ms	
CiR synchronization time, time per I/O byte	15 µs	
Supply voltage		
Rated value (DC)	Power supply via system power supply	
Input current		
from backplane bus 5 V DC, typ.	1.3 A	
from backplane bus 5 V DC, max.	1.6 A	
from backplane bus 24 V DC, max.	300 mA; 150 mA per DP interface	
from interface 5 V DC, max.	90 mA; At each DP interface	
Power loss		
Power loss, typ.	6.5 W	
Memory		
Type of memory	RAM	
Work memory		
integrated	4 Mbyte	
integrated (for program)	2 Mbyte	
integrated (for data)	2 Mbyte	
expandable	No	
Load memory		
 expandable FEPROM 	Yes; with Memory Card (FLASH)	
 expandable FEPROM, max. 	64 Mbyte	
integrated RAM, max.	512 kbyte	
 expandable RAM 	Yes; with Memory Card (RAM)	
expandable RAM, max.	64 Mbyte	
Backup		
• present	Yes	
• with battery	Yes; all data	
without battery	No	
Battery		
Backup battery		
Backup current, typ.	180 μA; up to 40 °C	

 Backup current, max. 	850 μA	
 Backup time, max. 	Dealt with in the module data manual with the secondary conditions and the factors of influence	
 Feeding of external backup voltage to CPU 	5 V DC to 15 V DC	
CPU processing times	3 V DC 10 13 V DC	
for bit operations, typ.	18.75 ns	
	18.75 ns	
for fived point arithmetic by:	18.75 ns	
for fixed point arithmetic, typ.		
for floating point arithmetic, typ. CPU-blocks	37.5 ns	
DB	0.000 Niverban 2000 A to 40000	
Number, max.	6 000; Number range: 1 to 16000	
• Size, max.	64 kbyte	
FB	2 000; Number reases: 0 to 7000	
Number, max.	3 000; Number range: 0 to 7999	
• Size, max.	64 kbyte	
FC	0.000 M. J. 7000	
• Number, max.	3 000; Number range: 0 to 7999	
• Size, max.	64 kbyte	
OB	Section Heat	
Number, max.	see instruction list	
• Size, max.	64 kbyte	
 Number of free cycle OBs 	1; OB 1	
Number of time alarm OBs	4; OB 10-13	
 Number of delay alarm OBs 	4; OB 20-23	
 Number of cyclic interrupt OBs 	4; OB 32, 33, 34, 35 (shortest cycle that can be set = 500 μs)	
 Number of process alarm OBs 	4; OB 40-43	
 Number of DPV1 alarm OBs 	3; OB 55-57	
 Number of isochronous mode OBs 	3; OB 61-63	
 Number of multicomputing OBs 	1; OB 60	
 Number of background OBs 	1; OB 90	
 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	1	
Counters, timers and their retentivity		
S7 counter		
• Number	2 048	
Retentivity	2 040	
— adjustable	Yes	
— preset	Z 0 to Z 7	
— preset Counting range	201021	
— lower limit	0	
	999	
— upper limit	555	
IEC counter	Vec	
• present	Yes	
• Type	SFB	
Number	Unlimited (limited only by RAM capacity)	
S7 times		
• Number	2 048	
Retentivity		
— adjustable	Yes	
— preset	No times retentive	
Time range		
— lower limit	10 ms	
— upper limit	9 990 s	
IEC timer		
IEC timer ◆ present	Yes	

Number	Unlimited (limited only by RAM capacity)	
Data areas and their retentivity		
Retentive data area (incl. timers, counters, flags), max.	Total working and load memory (with backup battery)	
Flag		
• Size, max.	8 kbyte; Size of bit memory address area	
Retentivity available	Yes	
Retentivity preset	MB 0 to MB 15	
Number of clock memories	8; in 1 memory byte	
Local data		
 adjustable, max. 	16 kbyte	
• preset	8 kbyte	
Address area		
I/O address area		
Inputs	8 kbyte	
Outputs	8 kbyte	
Process image		
 Inputs, adjustable 	8 kbyte	
 Outputs, adjustable 	8 kbyte	
 Inputs, default 	256 byte	
 Outputs, default 	256 byte	
• consistent data, max.	244 byte	
Access to consistent data in process image	Yes	
Subprocess images		
 Number of subprocess images, max. 	15	
Digital channels		
• Inputs	65 536	
— of which central	65 536	
Outputs	65 536	
— of which central	65 536	
Analog channels		
• Inputs	4 096	
— of which central	4 096	
Outputs	4 096	
— of which central	4 096	
Hardware configuration		
Number of expansion units, max.	21	
connectable OPs	63	
Multicomputing	Yes; 4 CPUs max. (with UR1 or UR2)	
Interface modules		
 Number of connectable IMs (total), max. 	6	
 Number of connectable IM 460s, max. 	6	
Number of connectable IM 463s, max.	4; IM 463-2	
Number of DP masters		
• integrated	1	
• via CP	10; CP 443-5 Extended	
● via IM 467	4	
Mixed mode IM + CP permitted	No; IM 467 cannot be used jointly with CP 443-5 Ext. or CP 443-1 in PROFINET IO mode	
via interface module	1; IF 964-DP	
Number of pluggable S5 modules (via adapter capsule in central device), max.	6	
Number of IO Controllers		
• integrated	1	
• via CP	4; Max. 4 in the central controller; no mixed operation of different CP 443-1 types in PROFINET IO mode	
Number of operable FMs and CPs (recommended)	17 POO II TO THOU	
• FM	Limited by number of slots and number of connections	
• CP, PtP	CP 440: Limited by number of slots; CP 441: Limited by number of slots and number of connections	
PROFIBUS and Ethernet CPs	14; In total max. 10 CPs as DP master and PROFINET controller, of which up	
Slote	to 10 IMs or CPs as DP master and up to 4 CPs as PROFINET controller	
Slots		

• required slots	2
• 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; For 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
 Granularity 	1 h
retentive	Yes
Clock synchronization	
supported	Yes
to MPI, master	Yes
• on MPI, device	Yes
• to DP, master	Yes
• on DP, device	Yes
• in AS, master	Yes
• in AS, device	Yes
 on Ethernet via NTP 	Yes; As client
• to IF 964 DP	Yes
Time difference in system when synchronizing via	
Ethernet, max.	10 ms
• MPI, max.	200 ms
Interfaces	
Interfaces/bus type	1 x MPI/PROFIBUS DP, 1 x PROFINET (2 ports), 1 x PROFIBUS DP
	(optionally pluggable)
Number of RS 485 interfaces	1; Combined MPI / PROFIBUS DP
Number of other interfaces	1; PROFIBUS DP with IF 964-DP (plug-in option; MLFB: 6ES7964-2AA04-
1. Interface	OABO)
	MPI/PROFIBUS DP
Interface type	
Isolated	Yes
Interface types	Von
• RS 485	Yes 150 mA
Output current of the interface, max.	150 IIIA
Protocols	V
• MPI	Yes
PROFIBUS DP master	Yes
PROFIBUS DP device	Yes
MPI	20. If a discussion was a facility of a state of the life of
 Number of connections 	32; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1
Transmission rate, max.	12 Mbit/s
Services	
— PG/OP communication	Yes
— Routing	Yes
Global data communication	Yes
S7 basic communication	Yes
— S7 basic communication — S7 communication	Yes
— S7 communication — S7 communication, as client	Yes
— S7 communication, as server	Yes
PROFIBUS DP master	16: If a diagnostice repeater is used as the list the sure has a
 Number of connections, max. 	16; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1
Transmission rate, max.	12 Mbit/s
	.=
	32
• max. number of DP devices	32
	32 Yes

— Routing	Yes; S7 routing	
 Global data communication 	No	
 S7 basic communication 	Yes	
— S7 communication	Yes	
 S7 communication, as client 	Yes	
 S7 communication, as server 	Yes	
— Equidistance	Yes	
— Isochronous mode	Yes	
— SYNC/FREEZE	Yes	
activation/deactivation of DP devices	Yes	
Direct data exchange (slave-to-slave)	Yes	
communication)	163	
— DPV1	Yes	
Address area		
— Inputs, max.	2 kbyte	
— Outputs, max.	2 kbyte	
User data per DP device	=	
user data per DP device, max.	244 byte	
— Inputs, max.	244 byte	
— Outputs, max.	244 byte	
— Slots, max.	244	
— Siots, max. — per slot, max.	128 byte	
— per siot, max. 1st interface / PROFIBUS DP device / header	120 Dyle	
Number of connections	16	
Number of connections GSD file	16 http://support.automation.siemens.com/WW/view/en/113652	
Transmission rate, max.	12 Mbit/s	
automatic baud rate search	No	
Address area, max.	32; Virtual slots	
User data per address area, max.	32 byte	
— of which consistent, max.	32 byte	
Services		
— PG/OP communication	Yes; with interface active	
— Routing	Yes; with interface active	
 Global data communication 	No	
— S7 basic communication	No	
— S7 communication	Yes	
 S7 communication, as client 	Yes	
 S7 communication, as server 	Yes	
 Direct data exchange (slave-to-slave 	No	
communication)		
— DPV1	No	
Transfer memory		
— Inputs	244 byte	
— Outputs	244 byte	
2. Interface		
Interface type	PROFINET	
Isolated	Yes	
automatic detection of transmission rate	Yes; Autosensing	
Autonegotiation	Yes	
Autocrossing	Yes	
Change of IP address at runtime, supported	Yes; Assignment by higher-level IO-Controller or by the user program with SFB104 "IP_CONF"	
Interface types		
RJ 45 (Ethernet)	Yes	
Number of ports	2	
• integrated switch	Yes	
Protocols		
PROFINET IO Controller	Yes	
PROFINET IO Device	Yes	
PROFINET CBA	Yes	
PROFIBUS DP master	No	
PROFIBUS DP device	No	
TIME INVENTED WORK		

Open IE communication	Yes
Web server	Yes
Point-to-point connection	No
Media redundancy	Yes
PROFINET IO Controller	
Transmission rate, max.	100 Mbit/s
Services	
— PG/OP communication	Yes
— S7 communication	Yes
— Isochronous mode	Yes; Only with IRT and the High Performance option
— Shared device	Yes
— Prioritized startup	Yes
Number of IO devices with prioritized startup, max.	32
Number of connectable IO Devices, max.	256
Of which IO devices with IRT, max.	64
— of which in line, max.	64
 Number of IO Devices with IRT and the option "high flexibility" 	256
— of which in line, max.	61
Number of connectable IO Devices for RT, max.	256
— of which in line, max.	256
Activation/deactivation of IO Devices	Yes
 Number of IO Devices that can be simultaneously activated/deactivated, max. 	8
 IO Devices changing during operation (partner ports), supported 	Yes
 Number of IO Devices per tool, max. 	8; 8 parallel calls of the SFC 12 "D_ACT_DP" possible per line. Max. 32 IO Devices changing during operation (partner ports) are supported
 Device replacement without swap medium 	Yes
— Send cycles	$250~\mu s,500~\mu s,1$ ms, 2 ms, 4 ms additionally with IRT with high performance: $250~\mu s$ to 4 ms in 125 μs frame
— Updating time	250 µs to 512 ms; minimum value depends on preset communication share for PROFINET IO, on the number of IO Devices and on the amount of configured user data, see PROFINET system description
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
— User data consistency, max.	1 024 byte
PROFINET IO Device	
Services	
— PG/OP communication	Yes
— S7 communication	Yes
— Isochronous mode	No
— IRT	Yes
— Prioritized startup	Yes
— Shared device	Yes
Number of IO Controllers with shared device, max. Transfer memory.	2
Transfer memory	1 440 byte; Per IO Controller with shared device
— Inputs, max.— Outputs, max.	1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device
— Outputs, max. Submodules	1 770 byte, I of 10 dollitolici with shared device
— Number, max.	64
User data per submodule, max.	1 024 byte
PROFINET CBA	
acyclic transmission	Yes
cyclic transmission	Yes
Open IE communication	
Number of connections, max.	62
Local port numbers used at the system end	0, 20, 21, 25, 80, 102, 135, 161, 34962, 34963, 34964, 65532, 65533, 65534, 65535
Keep-alive function, supported	Yes
3. Interface	
Interface type	Pluggable interface module (IF)
• •	

Plus in interface modules	IF 964-DP (MLFB: 6ES7964-2AA04-0AB0)
Plug-in interface modules Isolated	Yes
automatic detection of transmission rate	No
Interface types	
• RS 485	Yes
Output current of the interface, max.	150 mA
Protocols	
• MPI	No
PROFIBUS DP master	Yes
PROFIBUS DP device	Yes
PROFIBUS DP master	
Number of connections, max.	16
Transmission rate, max.	12 Mbit/s
• max. number of DP devices	96
Services	
— PG/OP communication	Yes
— Routing	Yes; S7 routing
Global data communication	No
— S7 basic communication	Yes
— S7 communication	Yes
— S7 communication, as client	Yes
— S7 communication, as server	Yes
— Equidistance	Yes
— Isochronous mode	Yes
— SYNC/FREEZE	Yes
 activation/deactivation of DP devices 	Yes
 Direct data exchange (slave-to-slave communication) 	Yes
— DPV0	Yes
— DPV1	Yes
Address area	
— Inputs, max.	6 kbyte
— Outputs, max.	6 kbyte
User data per DP device	
— user data per DP device, max.	244 byte
— Inputs, max.	244 byte
— Outputs, max.	244 byte
— Slots, max.	244
— per slot, max.	128 byte
3rd interface / PROFIBUS DP device / header	40
Number of connections CCD file	16
• GSD file	http://support.automation.siemens.com/WW/view/en/113652
transfer rate / at the 3rd interface / as DP slave / maximum	12 Mbit/s No
automatic baud rate search Address area, may	32; Virtual slots
Address area, max.User data per address area, max.	32 byte
of which consistent, max.	32 byte
— or which consistent, max. Services	JZ DYIG
— PG/OP communication	Yes
— Routing	Yes; with interface active
Global data communication	No
Global data communication S7 basic communication	No
— S7 basic communication — S7 communication	Yes
S7 communication S7 communication, as client	Yes
S7 communication, as server S7 communication, as server	Yes
Direct data exchange (slave-to-slave)	No No
communication)	
— DPV1	No
·	
— DPV1	

Protocols	
Redundancy mode	
Media redundancy	
 Switchover time on line break, typ. 	200 ms
 Number of stations in the ring, max. 	50
SIMATIC communication	
S7 routing	Yes
Open IE communication	
• TCP/IP	Yes; via integrated PROFINET interface and loadable FBs
 Number of connections, max. 	62
— Data length, max.	32 kbyte
several passive connections per port, supported	Yes
• ISO-on-TCP (RFC1006)	Yes; Via integrated PROFINET interface or CP 443-1 Adv. and loadable FBs
 Number of connections, max. 	62
— Data length, max.	32 kbyte; 1 452 bytes via CP 443-1 Adv.
• UDP	Yes; via integrated PROFINET interface and loadable FBs
 Number of connections, max. 	62
— Data length, max.	1 472 byte
Web server	
• supported	Yes
User-defined websites	Yes
Number of HTTP clients	5
Isochronous mode	
Equidistance	Yes
Number of DP masters with isochronous mode	2
User data per isochronous slave, max.	244 byte
shortest clock pulse	1 ms; 0.5 ms without use of SFC 126, 127
max. cycle	32 ms
communication functions / header	
PG/OP communication	Yes
Number of connectable OPs with message processing	63; When using Alarm S/SQ and Alarm D/DQ
Number of connectable OPs without message processing	63
Data record routing	Yes
Global data communication	
• supported	Yes
Number of GD loops, max.	8
Number of GD packets, transmitter, max.	8
Number of GD packets, receiver, max.	16
Size of GD packets, max.	54 byte
Size of GD packet (of which consistent), max.	1 variable
S7 basic communication	
supported	Yes
User data per job, max.	76 byte
 User data per job (of which consistent), max. 	1 variable
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 FC AG_SEND and AG_RECV, max. via 10 CP 443-1 or 443-5
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.	24/24
Standard communication (FMS)	
• supported	Yes; Via CP and loadable FB
communication functions / PROFINET CBA (with set target commu	
Setpoint for the CPU communication load	20 %
Number of remote interconnection partners	32
Professional Profe	

 number of master/device functions 	150	
 total of all master/device connections 	4 500	
 data length of all incoming master/device connections, max. 	45 000 byte	
 data length of all outgoing master/device connections, max. 	45 000 byte	
 Number of device-internal and PROFIBUS interconnections 	1 000	
 Data length of device-internal und PROFIBUS interconnections, max. 	16 000 byte	
Data length per connection, max.	2 000 byte	
performance data / PROFINET CBA / remote interconnection /	with acyclic transfer / header	
— Sampling interval, min.	200 ms; Depending on preset communication load, number of interconnections	
Number of incoming interconnections	and data length used 250	
Number of outgoing interconnections	250	
Data length of all incoming interconnections, max.	8 000 byte	
Data length of all incoming interconnections, max. Data length of all outgoing interconnections, max.		
	8 000 byte	
— Data length per connection, max.	2 000 byte	
performance data / PROFINET CBA / remote interconnection /	•	
— Transmission frequency: Transmission interval, min.	1 ms; Depending on preset communication load, number of interconnections and data length used	
Number of incoming interconnections	300	
 Number of outgoing interconnections 	300	
 Data length of all incoming interconnections, max. 	4 800 byte	
 Data length of all outgoing interconnections, max. 	4 800 byte	
 Data length per connection, max. 	450 byte	
performance data / PROFINET CBA / HMI variables via PROFI	INET / acyclic / header	
 Number of stations that can log on for HMI variables (PN OPC/iMap) 	2x PN OPC/1x iMap	
HMI variable updating	500 ms	
 Number of HMI variables 	1 000	
 Data length of all HMI variables, max. 	32 000 byte	
performance data / PROFINET CBA / PROFIBUS proxy function	onality / header	
— supported	Yes; 32 PROFIBUS slaves max. connectable	
 Data length per connection, max. 	240 byte; Slave-dependent	
Number of connections		
• overall	64	
 usable for PG communication 	63	
 reserved for PG communication 	1	
 adjustable for PG communication, max. 	0	
 usable for OP communication 	63	
 reserved for OP communication 	1	
 adjustable for OP communication, max. 	0	
 usable for S7 basic communication 	62	
 reserved for S7 basic communication 	0	
— adjustable for S7 basic communication, max.	0	
usable for S7 communication	62	
 reserved for S7 communication 	0	
— adjustable for S7 communication, max.	0	
usable for routing	31	
— reserved for routing	0	
— adjustable for routing, max.	0	
S7 message functions		
Number of login stations for message functions, max.	63; Max. 63 with Alarm_S/SQ and Alarm_D/DQ (OPs); max. 8 with Alarm, Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)	
Symbol-related messages	Yes	
SCAN procedure	100	
OOMI DIOCEGUIE	Ves	
·	Yes Ves	
Program alarms	Yes	
Program alarms Process diagnostic messages	Yes Yes	
Program alarms Process diagnostic messages simultaneously active Alarm_S blocks, max.	Yes Yes 400; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks	
Program alarms Process diagnostic messages	Yes Yes	

# - proset rax. 300		
Process control messages	blocks, max.	
Number of archives that can log on simultaneously (SFB 37 R. S.R. S. D.		
AR SEND) Number of messages • overall, max • in 500 ms grid, max • with 500, 1000 ms grid, max • with 500 ms grid, max • Ves, Up to 16 simultaneously Single step Yes Number of treatpoints • Status-footnets • Number of variables • Number of variables, max • Forcing • Forcing, variables • Number of variables, max • Souther of variables, max • Prosent • Number of variables, max • Souther of variables, max • Conding, variables • Number of entries, max • Jacksobsection • Number of entries, max • Jacksobsection • Conding, variables • Ves Service data • Can be read out • Ves EAC (formery C-TICK) • Ves • CALULE • Pas • ATEX • ATEX • ATEX ATEX ATEX ATEX ATEX ATEX ATEX ATEX		
		16
In 100 ms grid, max	Number of messages	
• in 500 ms grid, max. 256	overall, max.	512
• in 1000 ms grid, max	• in 100 ms grid, max.	128
Number of variables, max. 1	• in 500 ms grid, max.	256
• with 100 ms grid, max.	 • in 1000 ms grid, max. 	512
Number of variables, max. 10	Number of additional values	
Tost commissioning functions	• with 100 ms grid, max.	1
Status block	 with 500, 1000 ms grid, max. 	10
Single step	Test commissioning functions	
Single step	Status block	Yes; Up to 16 simultaneously
Number of breakpoints Siabus/control variable Variables Variables Number of variables, max. Forcing Forcing Forcing, variables Number of variables, max. Forcing Forcing, variables Number of variables, max. 256 Diagnostic buffer Unumber of variables, max. 256 Diagnostic buffer Ves Ves Ves Ves Ves Santaras, approvals, cortificates CSA approval UL approval UL approval UL approval CULUs Yes FM approval PKS KC (Cormetry C-TICK) Yes ATEX ATEX ATEX ATEX ATEX ATEX Ambient conditions Ambient consistent data in process image Nesting lavauge Ves Ves Cystem function blocks (FE) Ves See instruction list Ves Ves Ves Ves On 'C Configuration / header Ocupage Programming / header Ocupage Ves Ves Ves Ves Ves See instruction list Ves See instruction list Ves Ves Programming / beader Ocupage Ves Ves Ves Ves Ves Ves See instruction list Programming / beader Ocupage Ocupage Ves Ves Ves Ves Ves See instruction list Programming language — LAD Pes FN 4ps Ves PVes P		
Status/control variable Yes; Up to 16 variable tables Variables Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters		
Status/control variable Vas: Up to 16 variables inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Number of variables, max. 70; Status/control Forcing Forcing Forcing Forcing, variables Number of variables, max. 256 Number of entries, max. 3 200 — adjustable — preset 120 Service data — adjustable — preset 120 Service data — and proval — and provals, certificates CE mark Yes CSA approval Ves Ves CULus Yes CLUs FM approval Ves RCM (formerly C-TICK) Yes RCM (formerly G-SLR) Ves RCM (formerly Gost-R) Use in hazardous areas		
• Variables		Yes: Up to 16 variable tables
■ Number of variables, max.		
Forcing		
Forcing, variables Forcing, variables Number of variables, max. 256 Diagnostic buffer Present Number of entries, max. — adjustable — proset — proset — proset — proset — adjustable — proset — service data — can be read out Yes Standards, approvals, contificates CE mark CSA approval UL approval UL approval ULus Pes RCM (formerly C-TICK) Yes RCM (formerly C-TICK) Yes RCM (formerly C-TICK) Yes LSE (namerly Gost-R) Ves LSE (namerly Gost-R) Ves LSE (namerly Gost-R) Ves ATEX ATEX ATEX I 3G Ex nA IIC T4 GC Ambient conditions Ambient temperature during operation • min. • max. 60 °C Configuration / header Configuration / header Configuration / programming / header • Command set Nesting levels 7 • Access to consistent data in process image • System functions (SFC) System function signer — LAD — FBD — STL Yes Yes 200 Yes 120 Yes 920 Yes 920 120 Yes 920 920 920 920 920 920 920 92		ro, otatuo/control
		Vec
● Number of variables, max. Diagnostic buffer ● present ● Number of entries, max. — adjustable — preset ② 20 Service data ● can be read out ● can be read out Standards, approvals, certificates CE mark CSA approval UL approval UL approval Ves EM approval Yes EM (formerly C-TICK) Yes EAC (formerly Gost-R) Use in hazardous areas ● ATEX ATEX ATEX ATEX ATEX I 3G Ex nA IIC T4 Gc Ambient conditions Ambient temperature durling operation ● min. ● see instruction list ● Nesting levels ● STEP 7 Ves Configuration / programming / header ● STEP 7 Command set ● See instruction list ● Access to consistent data in process image ● System functions (SPC) See instruction list Programming language — LAD — FBD — PSD — PSD — PSD — PSD — Yes Yes Yes Yes Yes — FBD — PYEs — STL		
Disgnostic buffer	-	
		200
Number of entries, max.		
adjustable — preset 120 Service data	·	
— preset 120		
Service data Yes Standards, approvals, certificates CE mark Yes CSA approval Yes UL approval Yes CULus Yes FM approval Yes RCM (formerly C-TICK) Yes KC approval Yes EAC (formerly Gost-R) Yes Use in hazardous areas Yes ◆ ATEX ATEX II 3G Ex nA IIC T4 Gc Ambient conditions Ambient conditions Ambient temperature during operation O °C • max 60 °C configuration / header STEP 7 Yes configuration of programming / header • Command set see instruction list • Nesting levels 7 Yes • System functions (SFC) see instruction list • System function blocks (SFB) see instruction list Programming language — LAD Yes — FBD Yes — FBD Yes — FBD Yes — FBD Yes	•	
can be read out Standards, approvals, certificates CE mark Yes CSA approval Yes UL approval Yes UL approval Yes FM approval Yes EAC (formerly C-TICK) Yes EAC (approval Yes EAC (approval Yes EAC (approval Yes ATEX ATEX I 3G Ex nA IIC T4 Gc Ambient conditions Ambient temperature during operation • min.		120
Standards, approvals, certificates CE mark CSA approval Yes CUL approval Ves CULus Yes FM approval Yes ATEX II 3G Ex nA IIC T4 GC Ambient conditions Ambient temperature during operation • min. • max. • 0°C • max. • 0°C configuration / header Configuration / header • STEP 7 Configuration / programming / header • Command set • Nesting levels • Access to consistent data in process image • System functions (SFC) • System function blocks (SFB) Programming language — LAD — FBD — STL Yes		
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FM approval RCM (formerly C-TICK) Yes KC approval Yes EAC (formerly Gost-R) Use in hazardous areas • ATEX ATEX II 3G Ex nA IIC T4 Gc Ambient conditions Ambient temperature during operation • min. • max. 60 °C configuration / header Configuration / programming / header • STEP 7 configuration / programming / header • Command set • Nesting levels • Access to consistent data in process image • System functions (SFC) • System function blocks (SFB) Programming language — LAD — FBD — STL Yes Yes Yes Yes Yes Yes Yes Ye	UL approval	Yes
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Use in hazardous areas ATEX ATEX II 3G Ex nA IIC T4 Gc Ambient conditions Ambient temperature during operation min. min. max. max. max. max. max. max. max. max	EAC (formerly Gost-R)	Yes
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● System function blocks (SFB) Programming language — LAD — FBD — FBD — STL yes Yes Yes		
Programming language — LAD Yes — FBD Yes — STL Yes	•	
— LAD Yes — FBD Yes — STL Yes		see instruction list
FBDSTLYesYes	· · · · · · · · · · · · · · · · · · ·	
— STL Yes		Yes
	— FBD	Yes
— SCL Yes	— STL	Yes
	— SCL	Yes

— CFC Yes — GRAPH Yes — HiGraph® Yes	
— HiGraph®	
·	
configuration / programming / number of simultaneously active SFC / header	
— DPSYC_FR 2; SFC 11; per interface	
— D_ACT_DP 8; SFC 12; per interface	
— 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	
configuration / programming / number of simultaneously active SFB / header	
— RDREC 8; SFB 52; per interface, but not more than 32 across all external in	iterfaces
— WRREC 8; SFB 53; per interface, but not more than 32 across all external in	iterfaces
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. 900 g	

	Version	Classification
eClass	14	27-24-22-07
eClass	12	27-24-22-07
eClass	9.1	27-24-22-07
eClass	9	27-24-22-07
eClass	8	27-24-22-07
eClass	7.1	27-24-22-07
eClass	6	27-24-22-07
ETIM	9	EC000236
ETIM	8	EC000236
ETIM	7	EC000236
IDEA	4	3565
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval

EMV

Miscellaneous





Manufacturer Declaration





Environment



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