## **SIEMENS**

## Data sheet

## 6ES7416-2FN05-0AB0

SIMATIC S7-400, CPU 416F-2, Central processing unit with: Work memory 5.6 MB, (2.8 MB code, 2.8 MB data), 1st interface MPI/DP 12 Mbit/s, 2nd interface PROFIBUS DP, Can be used with software package Distributed Safety as of V5.2+SP2



Figure similar

General information	
Product type designation	CPU 416F-2
HW functional status	03
Firmware version	V5.3
Engineering with	
<ul> <li>Programming package</li> </ul>	STEP 7 V5.3 SP2 or higher with hardware update, Distributed Safety V5.2 SP2 or higher
CiR – Configuration in RUN	
CiR synchronization time, basic load	100 ms
CiR synchronization time, time per I/O byte	10 µs
Supply voltage	
Rated value (DC)	
• 24 V DC	No; Power supply via system power supply
Input current	
from backplane bus 5 V DC, typ.	0.9 A
from backplane bus 5 V DC, max.	1.1 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.	4.5 W
Power loss, max.	5 W
Memory	
Type of memory	other
Work memory	
• integrated	5.6 Mbyte
<ul> <li>integrated (for program)</li> </ul>	2.8 Mbyte
• integrated (for data)	2.8 Mbyte
• expandable	No
Load memory	
expandable FEPROM	Yes; with Memory Card (FLASH)
• expandable FEPROM, max.	64 Mbyte
• integrated RAM, max.	1 Mbyte
• 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	
<ul> <li>Backup current, typ.</li> </ul>	125 μA; up to 40 °C
<ul> <li>Backup current, max.</li> </ul>	550 μΑ
• Backup time, max.	See reference manual, module data, Chapter 3.3
<ul> <li>Feeding of external backup voltage to CPU</li> </ul>	5 V DC to 15 V DC
CPU processing times	
for bit operations, typ.	30 ns
for word operations, typ.	30 ns
for fixed point arithmetic, typ.	30 ns
for floating point arithmetic, typ.	90 ns
CPU-blocks	
DB	
• Number, max.	10 000; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	
• Number, max.	5 000; Number range: 0 to 7999
• Size, max.	64 kbyte

FC	
<ul> <li>Number, max.</li> </ul>	5 000; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	
<ul> <li>Number, max.</li> </ul>	see instruction list
• Size, max.	64 kbyte
<ul> <li>Number of free cycle OBs</li> </ul>	1; OB 1
<ul> <li>Number of time alarm OBs</li> </ul>	8; OB 10-17
<ul> <li>Number of delay alarm OBs</li> </ul>	4; OB 20-23
<ul> <li>Number of cyclic interrupt OBs</li> </ul>	9; OB 30-38 (shortest cycle that can be set = 500 $\mu$ s)
<ul> <li>Number of process alarm OBs</li> </ul>	8; OB 40-47
<ul> <li>Number of DPV1 alarm OBs</li> </ul>	3; OB 55-57
<ul> <li>Number of isochronous mode OBs</li> </ul>	4; OB 61-64
<ul> <li>Number of multicomputing OBs</li> </ul>	1; OB 60
<ul> <li>Number of background OBs</li> </ul>	1; OB 90
<ul> <li>Number of startup OBs</li> </ul>	2; OB 100, 102
<ul> <li>Number of asynchronous error OBs</li> </ul>	9; OB 80-88
<ul> <li>Number of synchronous error OBs</li> </ul>	2; OB 121, 122
Nesting depth	
<ul> <li>per priority class</li> </ul>	24
<ul> <li>additional within an error OB</li> </ul>	2
Counters, timers and their retentivity	
S7 counter	
Number	2 048
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	2 047
— preset	Z 0 to Z 7
Counting range	
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Туре	SFB
• Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	2 048
Retentivity	
— adjustable	Yes
— lower limit	0
	0

— upper limit	2 047
— preset	No times retentive
•	
Time range	10 ms
— lower limit	9 990 s
— upper limit IEC timer	9 990 2
	Yes
• present	
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
retentive data area in total	Total working and load memory (with backup battery)
Flag	
• Number, max.	16 kbyte; Size of bit memory address area
<ul> <li>Retentivity available</li> </ul>	Yes
Retentivity preset	MB 0 to MB 15
<ul> <li>Number of clock memories</li> </ul>	8; in 1 memory byte
Local data	
• adjustable, max.	32 kbyte
• preset	16 kbyte
Address area	
I/O address area	
Inputs	16 kbyte
Outputs	16 kbyte
of which distributed	
— MPI/DP interface, inputs	2 kbyte
	· <b>J</b> · -
— MPI/DP interface outputs	2 kbyte
— MPI/DP interface, outputs	2 kbyte 8 kbyte
— DP interface, inputs	8 kbyte
<ul> <li>DP interface, inputs</li> <li>DP interface, outputs</li> </ul>	
— DP interface, inputs — DP interface, outputs Process image	8 kbyte 8 kbyte
<ul> <li>DP interface, inputs</li> <li>DP interface, outputs</li> <li>Process image</li> <li>Inputs, adjustable</li> </ul>	8 kbyte 8 kbyte 16 kbyte
<ul> <li>DP interface, inputs</li> <li>DP interface, outputs</li> <li>Process image</li> <li>Inputs, adjustable</li> <li>Outputs, adjustable</li> </ul>	8 kbyte 8 kbyte 16 kbyte 16 kbyte
<ul> <li>— DP interface, inputs</li> <li>— DP interface, outputs</li> <li>Process image</li> <li>Inputs, adjustable</li> <li>Outputs, adjustable</li> <li>Inputs, default</li> </ul>	8 kbyte 8 kbyte 16 kbyte 16 kbyte 512 byte
<ul> <li>DP interface, inputs</li> <li>DP interface, outputs</li> </ul> Process image <ul> <li>Inputs, adjustable</li> <li>Outputs, adjustable</li> <li>Inputs, default</li> <li>Outputs, default</li> </ul>	8 kbyte 8 kbyte 16 kbyte 16 kbyte 512 byte 512 byte
<ul> <li>DP interface, inputs</li> <li>DP interface, outputs</li> </ul> Process image <ul> <li>Inputs, adjustable</li> <li>Outputs, adjustable</li> <li>Inputs, default</li> <li>Outputs, default</li> <li>consistent data, max.</li> </ul>	8 kbyte 8 kbyte 16 kbyte 16 kbyte 512 byte 512 byte 244 byte
<ul> <li>DP interface, inputs</li> <li>DP interface, outputs</li> </ul> Process image <ul> <li>Inputs, adjustable</li> <li>Outputs, adjustable</li> <li>Inputs, default</li> <li>Outputs, default</li> <li>consistent data, max.</li> <li>Access to consistent data in process image</li> </ul>	8 kbyte 8 kbyte 16 kbyte 16 kbyte 512 byte 512 byte
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<ul> <li>DP interface, inputs</li> <li>DP interface, outputs</li> </ul> Process image <ul> <li>Inputs, adjustable</li> <li>Outputs, adjustable</li> <li>Inputs, default</li> <li>Outputs, default</li> <li>consistent data, max.</li> <li>Access to consistent data in process image</li> </ul> Subprocess images <ul> <li>Number of subprocess images, max.</li> </ul>	8 kbyte 8 kbyte 16 kbyte 16 kbyte 512 byte 512 byte 244 byte
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<ul> <li>DP interface, inputs</li> <li>DP interface, outputs</li> </ul> Process image <ul> <li>Inputs, adjustable</li> <li>Outputs, adjustable</li> <li>Inputs, default</li> <li>Outputs, default</li> <li>consistent data, max.</li> <li>Access to consistent data in process image</li> </ul> Subprocess images <ul> <li>Number of subprocess images, max.</li> </ul> Digital channels <ul> <li>Inputs</li> </ul>	8 kbyte 8 kbyte 16 kbyte 16 kbyte 512 byte 512 byte 244 byte Yes 15 131 072
<ul> <li>DP interface, inputs</li> <li>DP interface, outputs</li> </ul> Process image <ul> <li>Inputs, adjustable</li> <li>Outputs, adjustable</li> <li>Inputs, default</li> <li>Outputs, default</li> <li>consistent data, max.</li> <li>Access to consistent data in process image</li> </ul> Subprocess images <ul> <li>Number of subprocess images, max.</li> </ul>	8 kbyte 8 kbyte 16 kbyte 16 kbyte 512 byte 512 byte 244 byte Yes 15

— of which central	131 072
Analog channels	
Inputs	8 192
— of which central	8 192
Outputs	8 192
— of which central	8 192
Hardware configuration	
Number of expansion units, max.	21
connectable OPs	63
Multicomputing	Yes; 4 CPUs max. (with UR1 or UR2)
Interface modules	
<ul> <li>Number of connectable IMs (total), max.</li> </ul>	6
<ul> <li>Number of connectable IM 460s, max.</li> </ul>	6
Number of connectable IM 463s, max.	4; IM 463-2
Number of DP masters	
• integrated	2
• via CP	10; CP 443-5 Extended
● via IM 467	4
<ul> <li>Mixed mode IM + CP permitted</li> </ul>	No; IM 467 not suitable for use with CP 443-5 Ext. and CP 443-1 EX4x, EX20, GX20 (in PROFINET IO mode)
• via interface module	0
<ul> <li>Number of pluggable S5 modules (via adapter capsule in central device), max.</li> </ul>	6
Number of IO Controllers	
integrated	0
• via CP	4; No mixed operation of CP443-1 EX40 and CP443-1 EX 41/EX20/GX20, max. 4 in central controller
Number of operable FMs and CPs (recommended)	
• 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 connections
<ul> <li>PROFIBUS and Ethernet CPs</li> </ul>	14; Of which 10 CPs max. or IMs as DP master, 4 PROFINET controller maximum
Slots	
• required slots	1
Time of day	
Clock	
<ul> <li>Hardware clock (real-time)</li> </ul>	Yes
<ul> <li>retentive and synchronizable</li> </ul>	Yes
Resolution	1 ms
<ul> <li>Deviation per day (buffered), max.</li> </ul>	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
• to MPI, slave	Yes
• to DP, master	Yes
• to DP, slave	Yes
• in AS, master	Yes
• in AS, slave	Yes
<ul> <li>on Ethernet via NTP</li> </ul>	No; Via CP
• to IF 964 DP	No
Time difference in system when synchronizing via	
• MPI, max.	200 ms
1.1. 6	
Interfaces Number of RS 485 interfaces	2; Combined MPI / PROFIBUS DP and PROFIBUS DP
1. Interface	
Interface type	Integrated
Physics	RS 485 / PROFIBUS + MPI
Isolated	Yes
Isolated Power supply to interface (15 to 30 V DC), max.	Yes 150 mA
Isolated Power supply to interface (15 to 30 V DC), max. Number of connection resources	Yes
Isolated Power supply to interface (15 to 30 V DC), max. Number of connection resources Protocols	Yes 150 mA MPI: 44, DP: 32
Isolated Power supply to interface (15 to 30 V DC), max. Number of connection resources Protocols • MPI	Yes 150 mA MPI: 44, DP: 32 Yes
Isolated Power supply to interface (15 to 30 V DC), max. Number of connection resources Protocols • MPI • PROFIBUS DP master	Yes 150 mA MPI: 44, DP: 32 Yes Yes
Isolated Power supply to interface (15 to 30 V DC), max. Number of connection resources Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave	Yes 150 mA MPI: 44, DP: 32 Yes
Isolated Power supply to interface (15 to 30 V DC), max. Number of connection resources Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave MPI	Yes 150 mA MPI: 44, DP: 32 Yes Yes Yes
Isolated Power supply to interface (15 to 30 V DC), max. Number of connection resources Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave	Yes 150 mA MPI: 44, DP: 32 Yes Yes
Isolated Power supply to interface (15 to 30 V DC), max. Number of connection resources Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave MPI	Yes 150 mA MPI: 44, DP: 32 Yes Yes Yes Yes
Isolated Power supply to interface (15 to 30 V DC), max. Number of connection resources Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave MPI • Number of connections	Yes 150 mA MPI: 44, DP: 32 Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1
Isolated Power supply to interface (15 to 30 V DC), max. Number of connection resources Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave MPI • Number of connections • Transmission rate, max.	Yes 150 mA MPI: 44, DP: 32 Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1
Isolated Power supply to interface (15 to 30 V DC), max. Number of connection resources Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave MPI • Number of connections • Transmission rate, max. Services	Yes 150 mA MPI: 44, DP: 32 Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s
Isolated Power supply to interface (15 to 30 V DC), max. Number of connection resources Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave MPI • Number of connections • Transmission rate, max. Services — PG/OP communication	Yes 150 mA MPI: 44, DP: 32 Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes
Isolated Power supply to interface (15 to 30 V DC), max. Number of connection resources Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave MPI • Number of connections • Transmission rate, max. Services — PG/OP communication — Routing	Yes 150 mA MPI: 44, DP: 32 Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes
Isolated Power supply to interface (15 to 30 V DC), max. Number of connection resources Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave MPI • Number of connections • Transmission rate, max. Services — PG/OP communication — Routing — Global data communication	Yes 150 mA MPI: 44, DP: 32 Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes Yes Yes
Isolated Power supply to interface (15 to 30 V DC), max. Number of connection resources Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave MPI • Number of connections • Transmission rate, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication	Yes 150 mA MPI: 44, DP: 32 Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes Yes Yes Yes Yes

— S7 communication, as server	Yes
PROFIBUS DP master	
<ul> <li>Number of connections, max.</li> </ul>	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
<ul> <li>Number of DP slaves, max.</li> </ul>	32
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 slaves	Yes
<ul> <li>— Direct data exchange (slave-to-slave communication)</li> </ul>	Yes
— DPV1	Yes
Address area	
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
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
PROFIBUS DP slave	
Number of connections	32
• GSD file	http://support.automation.siemens.com/WW/view/en/113652
• Transmission rate, max.	12 Mbit/s
<ul> <li>automatic baud rate search</li> </ul>	No
<ul> <li>Address area, max.</li> </ul>	32; Virtual slots
<ul> <li>User data per address area, max.</li> </ul>	32 byte
— of which consistent, max.	32 byte
Services	
— PG/OP communication	Yes; with interface active
— S7 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
<ul> <li>— Direct data exchange (slave-to-slave communication)</li> </ul>	No
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte

2. 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	32		
Protocols			
<ul> <li>PROFIBUS DP master</li> </ul>	Yes		
<ul> <li>PROFIBUS DP slave</li> </ul>	Yes		
PROFIBUS DP master			
<ul> <li>Number of connections, max.</li> </ul>	32		
• Transmission rate, max.	12 Mbit/s		
<ul> <li>Number of DP slaves, max.</li> </ul>	125		
Services	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 slaves	Yes		
— Direct data exchange (slave-to-slave	Yes		
communication)			
— DPV1	Yes		
Address area			
— Inputs, max.	8 kbyte		
— Outputs, max.	8 kbyte		

User data per DP slave	
— User data per DP slave, max.	244 byte
·	244 byte
— Inputs, max.	244 byte
— Outputs, max.	•
— Slots, max.	244
— per slot, max.	128 byte
PROFIBUS DP slave	
Number of connections	32
• GSD file	http://support.automation.siemens.com/WW/view/en/113652
<ul> <li>Transmission rate, max.</li> </ul>	12 Mbit/s
<ul> <li>Address area, max.</li> </ul>	32
• User data per address area, max.	32 byte
— of which consistent, max.	32 byte
Services	
— Routing	Yes; with interface active
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
Protocols	
Open IE communication	
	Via CP 443-1 and loadable FB
• ISO-on-TCP (RFC1006)	
<ul> <li>ISO-on-TCP (RFC1006)</li> <li>— Data length, max.</li> </ul>	1452 bytes via CP 443-1 Adv.
— Data length, max.	
— Data length, max. Isochronous mode	1452 bytes via CP 443-1 Adv.
<ul> <li>— Data length, max.</li> <li>Isochronous mode</li> <li>Isochronous operation (application synchronized up</li> </ul>	1452 bytes via CP 443-1 Adv.
<ul> <li>— Data length, max.</li> <li>Isochronous mode</li> <li>Isochronous operation (application synchronized up to terminal)</li> </ul>	1452 bytes via CP 443-1 Adv. Yes; For PROFIBUS only
<ul> <li>— Data length, max.</li> <li><u>Isochronous mode</u></li> <li>Isochronous operation (application synchronized up to terminal)</li> <li>Equidistance</li> </ul>	1452 bytes via CP 443-1 Adv. Yes; For PROFIBUS only Yes
<ul> <li>— Data length, max.</li> <li><u>Isochronous mode</u></li> <li>Isochronous operation (application synchronized up to terminal)</li> <li>Equidistance</li> <li>Number of DP masters with isochronous mode</li> </ul>	1452 bytes via CP 443-1 Adv. Yes; For PROFIBUS only Yes 2
<ul> <li>— Data length, max.</li> <li>Isochronous mode</li> <li>Isochronous operation (application synchronized up to terminal)</li> <li>Equidistance</li> <li>Number of DP masters with isochronous mode</li> <li>User data per isochronous slave, max.</li> </ul>	1452 bytes via CP 443-1 Adv. Yes; For PROFIBUS only Yes 2 244 byte
<ul> <li>— Data length, max.</li> <li><u>Isochronous mode</u></li> <li>Isochronous operation (application synchronized up to terminal)</li> <li>Equidistance</li> <li>Number of DP masters with isochronous mode</li> <li>User data per isochronous slave, max.</li> <li>shortest clock pulse</li> <li>max. cycle</li> </ul>	1452 bytes via CP 443-1 Adv.         Yes; For PROFIBUS only         Yes         2         244 byte         1 ms; 0.5 ms without use of SFC 126, 127
<ul> <li>Data length, max.</li> <li>Isochronous mode</li> <li>Isochronous operation (application synchronized up to terminal)</li> <li>Equidistance</li> <li>Number of DP masters with isochronous mode</li> <li>User data per isochronous slave, max.</li> <li>shortest clock pulse</li> </ul>	1452 bytes via CP 443-1 Adv.         Yes; For PROFIBUS only         Yes         2         244 byte         1 ms; 0.5 ms without use of SFC 126, 127
<ul> <li>— Data length, max.</li> <li>Isochronous mode         <ul> <li>Isochronous operation (application synchronized up to terminal)</li> <li>Equidistance</li> <li>Number of DP masters with isochronous mode</li> <li>User data per isochronous slave, max.</li> <li>shortest clock pulse</li> <li>max. cycle</li> </ul> </li> <li>Communication functions</li> <li>PG/OP communication</li> </ul>	1452 bytes via CP 443-1 Adv. Yes; For PROFIBUS only Yes 2 244 byte 1 ms; 0.5 ms without use of SFC 126, 127 32 ms
<ul> <li>— Data length, max.</li> <li><u>Isochronous mode</u></li> <li>Isochronous operation (application synchronized up to terminal)</li> <li>Equidistance</li> <li>Number of DP masters with isochronous mode</li> <li>User data per isochronous slave, max.</li> <li>shortest clock pulse</li> <li>max. cycle</li> <li>Communication functions</li> </ul>	1452 bytes via CP 443-1 Adv.         Yes; For PROFIBUS only         Yes         2         244 byte         1 ms; 0.5 ms without use of SFC 126, 127         32 ms
<ul> <li>— Data length, max.</li> <li><u>Isochronous mode</u></li> <li>Isochronous operation (application synchronized up to terminal)</li> <li>Equidistance</li> <li>Number of DP masters with isochronous mode</li> <li>User data per isochronous slave, max.</li> <li>shortest clock pulse</li> <li>max. cycle</li> <li><u>Communication functions</u></li> <li>PG/OP communication</li> <li>Number of connectable OPs without message</li> </ul>	1452 bytes via CP 443-1 Adv.         Yes; For PROFIBUS only         Yes         2         244 byte         1 ms; 0.5 ms without use of SFC 126, 127         32 ms
<ul> <li>Data length, max.</li> <li>Isochronous mode         <ul> <li>Isochronous operation (application synchronized up to terminal)</li> <li>Equidistance</li> <li>Number of DP masters with isochronous mode</li> <li>User data per isochronous slave, max.</li> <li>shortest clock pulse</li> <li>max. cycle</li> </ul> </li> <li>Communication functions</li> <li>PG/OP communication         <ul> <li>Number of connectable OPs without message processing</li> </ul> </li> </ul>	1452 bytes via CP 443-1 Adv.         Yes; For PROFIBUS only         Yes         2         244 byte         1 ms; 0.5 ms without use of SFC 126, 127         32 ms
<ul> <li>— Data length, max.</li> <li><u>Isochronous mode</u> <ul> <li>Isochronous operation (application synchronized up to terminal)</li> <li>Equidistance</li> <li>Number of DP masters with isochronous mode</li> <li>User data per isochronous slave, max.</li> <li>shortest clock pulse</li> <li>max. cycle</li> </ul> </li> <li>Communication functions</li> <li>PG/OP communication         <ul> <li>Number of connectable OPs without message processing</li> <li>Number of connectable OPs with message</li> </ul> </li> </ul>	1452 bytes via CP 443-1 Adv.         Yes; For PROFIBUS only         Yes         2         244 byte         1 ms; 0.5 ms without use of SFC 126, 127         32 ms
<ul> <li>— Data length, max.</li> <li>Isochronous mode         <ul> <li>Isochronous operation (application synchronized up to terminal)</li> <li>Equidistance</li> <li>Number of DP masters with isochronous mode</li> <li>User data per isochronous slave, max.</li> <li>shortest clock pulse</li> <li>max. cycle</li> </ul> </li> <li>Communication functions</li> <li>PG/OP communication         <ul> <li>Number of connectable OPs without message processing</li> <li>Number of connectable OPs with message processing</li> </ul> </li> </ul>	1452 bytes via CP 443-1 Adv.         Yes; For PROFIBUS only         Yes         2         244 byte         1 ms; 0.5 ms without use of SFC 126, 127         32 ms         Yes         63         63; When using Alarm_S/SQ and Alarm_D/DQ
<ul> <li>— Data length, max.</li> <li><u>Isochronous mode</u></li> <li>Isochronous operation (application synchronized up to terminal)</li> <li>Equidistance</li> <li>Number of DP masters with isochronous mode</li> <li>User data per isochronous slave, max.</li> <li>shortest clock pulse</li> <li>max. cycle</li> <li><u>Communication functions</u></li> <li>PG/OP communication         <ul> <li>Number of connectable OPs without message processing</li> <li>Number of connectable OPs with message processing</li> </ul> </li> </ul>	1452 bytes via CP 443-1 Adv.         Yes; For PROFIBUS only         Yes         2         244 byte         1 ms; 0.5 ms without use of SFC 126, 127         32 ms         Yes         63         63; When using Alarm_S/SQ and Alarm_D/DQ
<ul> <li>— Data length, max.</li> <li>Isochronous mode         <ul> <li>Isochronous operation (application synchronized up to terminal)</li> <li>Equidistance</li> <li>Number of DP masters with isochronous mode</li> <li>User data per isochronous slave, max.</li> <li>shortest clock pulse</li> <li>max. cycle</li> </ul> </li> <li>Communication functions         <ul> <li>PG/OP communication</li> <li>Number of connectable OPs without message processing</li> <li>Number of connectable OPs with message processing</li> <li>Data record routing</li> <li>Global data communication</li> </ul> </li> </ul>	1452 bytes via CP 443-1 Adv.         Yes; For PROFIBUS only         Yes         2         244 byte         1 ms; 0.5 ms without use of SFC 126, 127         32 ms         Yes         63         63; When using Alarm_S/SQ and Alarm_D/DQ         Yes
<ul> <li>Data length, max.</li> <li><u>Isochronous mode</u> <ul> <li>Isochronous operation (application synchronized up to terminal)</li> <li>Equidistance</li> <li>Number of DP masters with isochronous mode</li> <li>User data per isochronous slave, max.</li> <li>shortest clock pulse</li> <li>max. cycle</li> </ul> </li> <li>Communication functions         <ul> <li>PG/OP communication</li> <li>Number of connectable OPs without message processing</li> <li>Number of connectable OPs with message processing</li> </ul> </li> <li>Data record routing</li> <li>Global data communication         <ul> <li>supported</li> </ul> </li> </ul>	1452 bytes via CP 443-1 Adv.         Yes; For PROFIBUS only         Yes         2         244 byte         1 ms; 0.5 ms without use of SFC 126, 127         32 ms         Yes         63         63; When using Alarm_S/SQ and Alarm_D/DQ         Yes         Yes

<ul> <li>Number of GD packets, receiver, max.</li> </ul>	32
<ul> <li>Size of GD packets, max.</li> </ul>	54 byte
<ul> <li>Size of GD packet (of which consistent), max.</li> </ul>	1 variable
S7 basic communication	
• supported	Yes
<ul> <li>User data per job, max.</li> </ul>	76 byte
<ul> <li>User data per job (of which consistent), max.</li> </ul>	1 variable
S7 communication	
<ul> <li>supported</li> </ul>	Yes
• as server	Yes
• as client	Yes
<ul> <li>User data per job, max.</li> </ul>	64 kbyte
<ul> <li>User data per job (of which consistent), max.</li> </ul>	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
<ul> <li>User data per job, max.</li> </ul>	8 kbyte
<ul> <li>User data per job (of which consistent), max.</li> </ul>	240 byte
<ul> <li>Number of simultaneous AG-SEND/AG-RECV orders per CPU, max.</li> </ul>	64/64
Standard communication (FMS)	
• supported	Yes; Via CP and loadable FB
Web server	
• supported	No
Number of connections	
• overall	64
<ul> <li>usable for PG communication</li> </ul>	63
- reserved for PG communication	1
— adjustable for PG communication, max.	0
<ul> <li>usable for OP communication</li> </ul>	63
— reserved for OP communication	1
— adjustable for OP communication, max.	0
<ul> <li>usable for S7 basic communication</li> </ul>	62
— reserved for S7 basic communication	0
<ul> <li>adjustable for S7 basic communication,</li> </ul>	0
max.	
<ul> <li>usable for S7 communication</li> </ul>	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

Number of login stations for message functions, max.     63; Max, 63 with Alarm, SKSQ and Alarm_DDQ. (OPs); max, 8       with Alarm, Alarm, 8, Natri, 8, Notify and Notify_8 (e.g. WinCC)       Symbol-related messages     Yes       SCAN procedure     Yes       Process diagnostic messages     Yes       simultaneously active Alarm-S blocks, max.     1000; Simultaneously active alarm_S/SQ blocks or alarm_DIDQ       Aarm 8-blocks     Yes       • Number of instances for alarm 8 and S7     600       ormunication blocks, max.     600       • preset, max.     600       Process diagnostic messages     Yes       • Number of instances for alarm 8 and S7     600       ormunication blocks, max.     600       • preset, max.     600       Process dignas.     1024       Number of archives that can log on simultaneously     32       SFB 37 AR_SEND)     32       Number of archives that can log on simultaneously     1024       Number of additional values     1024       • in 000 ms grid, max.     1024       • with 100 ms grid, max.     10       Status block     Yes; Up to 2 simultaneously       Single step     Yes       Number of breakpoints     4       Status/control variable     Inputs/outputs, memory bits, DBs, distributed I/Os, timers, countrers       • Number	S7 message functions																																																																																														
SCAN procedureYesProgram alarmsYesProcess diagnostic messagesYesSimultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks1000 Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocksAlarm 8-blocksYes• Number of instances for alarm 8 and S7 communication blocks, max.600• Process control messagesYes• Number of instances for alarm 8 and S7 communication blocks, max.600• Process control messagesYes• Number of anchives that can log on simultaneously (SFB 37 AR, SEND)32Number of nessagesYes• overall, max.1024• in 100 ms grid, max.1024• with 100 ms grid, max.1024• with 100 ms grid, max.1024• with 100 ms grid, max.10• with 500, 1000 ms grid, max.10• with 500, 1000 ms grid, max.10• Status/control variableYes• Number of variables, max.70; Status/control• Status/control variableYes• Number of variables, max.70; Status/control• Number of variables, max.512• Number of variables, max.512• Status/control variables, max.512• Number of variables, max.512• Forcing, variablesYes• Number of entries, max.3200• Procesic bufferYes• preseti700 <td< td=""><td>Number of login stations for message functions, max.</td><td></td></td<>	Number of login stations for message functions, max.																																																																																														
Program alarms         Yes           Process diagnostic messages         Yes           simultaneously active Alarm-S blocks, max.         1000; 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.         600           • preset, max.         600           Process control messages         Yes           Number of archives that can log on simultaneously (SFB 37 AR SEND)         32           Number of messages         Yes           • overall, max.         1024           • in 100 ms grid, max.         1024           • with 100 ms grid, max.         1024           • with 100 ms grid, max.         10           • with 100 ms grid, max.         10           • with 500, 1000 ms grid, max.         10           • Status block         Yes; Up to 2 simultaneously           Single step         Yes; Up to 16 variable tables           • Variables         Iputs/outputs, memory bits, DBs, distributed I/Os, timers, counters           • Number of variables, max.         70; Status/control           F	Symbol-related messages	Yes																																																																																													
Process diagnostic messages         Yes           simultaneously active Alarm-S blocks, max.         1000; 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.         4000           • preset, max.         600           Process control messages         Yes           Number of archives that can log on simultaneously (SFB 37 AR_SEND)         32           • overall, max.         1024           • in 100 ms grid, max.         128           • in 100 ms grid, max.         1024           • in 100 ms grid, max.         1024           • in 100 ms grid, max.         1024           • with 500, 1000 ms grid, max.         10           • with 500, 1000 ms grid, max.         10           • with 500, 1000 ms grid, max.         10           • Status/control variable         Yes Up to 2 simultaneously           Single step         Yes           • Number of variables, max.         10           • Status/control variable         Yes Up to 16 variable tables           • Variables         Yes Up to 16 variable tables           • Number of variables, max.         70; Status/control           • Status/control         Yes           • Numbe	SCAN procedure	Yes																																																																																													
simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocksAlarm 8-blocksYesAlarm 8-blocksYesNumber of instances for alarm 8 and S7 communication blocks, max.600Process control messagesYesNumber of archives that can log on simultaneously (SFB 37 AR_SEND)22Number of messagesYesNumber of messages1024in 100 ms grid, max.1024in 100 ms grid, max.512in 100 ms grid, max.1024with 100 ms grid, max.1024with 500 no grid, max.10with 500 no grid, max.10with 500 no grid, max.10with 500 no grid, max.10with 500 no grid, max.10Status JochYesNumber of breakpoints4Status JochYesNumber of variables, max.YesNumber of variables, max.YesProcingYesNumber of variables, max.SituForcingYesNumber of entries, max.Situ- ProsentYesNumber of entries, max.3200- adjustableYes- mesetYes- mesetYes- mesetYes- preset120	Program alarms	Yes																																																																																													
Alern A-blocksVesAlarn A-blocksYes• Number of instances for alarn 8 and S7 comunication blocks, max.600• preset, max.600Process control messagesYesNumber of archives that can log on simultaneously (SFB 37 AR_SEND)32Number of messages1024• overall, max.1024• in 100 ms grid, max.512• in 100 ms grid, max.512• in 100 ms grid, max.1• with 500, ng srid, max.10• status control variablesYes• Status control variableYes• Status control variableYes• Number of breakpoints4• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max.512• ForcingYes• Forcing, variables, max.512• Forcing, variables, max.512• Forcing, variables, max.512• Number of variables, max.512• Forcing, variables, max.512• Number of variables, max.512• Forcing, variables, max.512• Number of entries, max.320• Number of entries, max.3200• AlgustableYes <t< td=""><td>Process diagnostic messages</td><td>Yes</td></t<>	Process diagnostic messages	Yes																																																																																													
• Number of instances for alarm 8 and S7 communication blocks, max.4000• preset, max.600• Process control messagesYes• Number of archives that can log on simultaneously (SFB 37 AR_SEND)Yes• Number of messages1024• overall, max.1024• in 100 ms grid, max.128• in 100 ms grid, max.1024• in 100 ms grid, max.1024• with 100 ms grid, max.1024• with 500, floor sgrid, max.10• Status blockYes; Up to 2 simultaneouslySingle stepYes; Up to 2 simultaneously• Number of breakpoints4• Status/control variableYes; Up to 16 variable tables• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max.70; Status/control• ForcingYes• Forcing, variables, max.70; Status/control• Forcing, variables, max.512• Forcing, variables, max.512• Forcing, variables, max.512• Forcing, variables, max.3200• Number of variables, max.3200• Number of entries, max.3200• adjustableYes• number of entries, max.3200• adjustableYes• matus of entries, max.3200 <tr <tr="">• adjustableYes<!--</td--><td>simultaneously active Alarm-S blocks, max.</td><td>· · · · · · · · · · · · · · · · · · ·</td></tr> <tr><td>Induction blocks, max.600Process control messagesYesNumber of archives that can log on simultaneously (SFB 37 AR, SEND)32Number of messages1024• overall, max.1024• in 100 ms grid, max.128• in 500 ms grid, max.1024• in 100 ms grid, max.1024• with 500, ms grid, max.1024• with 500, ms grid, max.10• with 500, ms grid, max.10• with 500, noor sgrid, max.10• status blockYes: Up to 2 simultaneouslyStatus blockYes: Up to 2 simultaneouslySingle stepYes• Number of breakpoints4• Variablesrouters• Number of variables, max.70: Status/control• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max.512• ForcingYes• Number of variables, max.512• Diagnostic bufferYes• Prorcing, variables, max.3200• Number of entries, max.3200• Number of entries, max.3200• adjustableYes• nagustableYes• Number of entries, max.3200• adjustableYes• adjustableYes• nagustableYes• nagustableYes• nagustableYes• nagustableYes• nagustableYes• nagustableYes• nagustableYes• nagus</td><td>Alarm 8-blocks</td><td>Yes</td></tr> <tr><td>Process control messages         Yes           Number of archives that can log on simultaneously (SFB 37 AR_SEND)         32           Number of messages         1024           • overall, max.         1024           • in 100 ms grid, max.         512           • in 100 ms grid, max.         1024           • in 100 ms grid, max.         1024           • with 100 ms grid, max.         1024           • with 500, 1000 ms grid, max.         1024           • with 500, 1000 ms grid, max.         10           • with 500, 1000 ms grid, max.         10           • status block         Yes; Up to 2 simultaneously           Single step         Yes           Status block         Yes; Up to 16 variable tables           • Variables         Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters           • Number of variables, max.         70; Status/control           Forcing         Yes           • Number of variables, max.         122           • Number of variables, max.         1512           • Number of variables, max.         512           • Number of variables, max.         512           • Number of variables, max.         3200           • Number of entries, max.         3200           • adjust</td><td></td><td>4 000</td></tr> <tr><td>Number of archives that can log on simultaneously (SFB 37 AR_SEND)32Number of messages1024• overall, max.1024• in 100 ms grid, max.512• in 100 ms grid, max.1024• in 100 ms grid, max.1024• with 100 ms grid, max.1• with 500, 1000 ms grid, max.1• with 500, 1000 ms grid, max.10• with 500, 1000 ms grid, max.10• status blockYes; Up to 2 simultaneouslyStatus blockYes; Up to 2 simultaneouslySingle stepYes• Number of breakpoints4• Status/controlYes; Up to 16 variable tables• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max.70; Status/controlForcingYes• Forcing, variables, max.122• Number of variables, max.122• Diagnostic bufferYes• presentYes• Number of ariables, max.3200• Number of entries, max.3200• adjustableYes• adjustableYes• adjustableYes• adjus</td><td>• preset, max.</td><td>600</td></tr> <tr><td>(SFB 37 AR_SEND)Number of messages• overall, max.1024• in 100 ms grid, max.128• in 500 ms grid, max.512• in 1000 ms grid, max.1024Number of additional values• with 100 ms grid, max.1• with 500, 1000 ms grid, max.10• with 500, 1000 ms grid, max.10Status blockYes; Up to 2 simultaneouslySingle stepYeesNumber of breakpoints4Status/control1• Status/control variableYes; Up to 16 variable tables• Number of variables, max.70; Status/controlForcingYes• Forcing, variables, max.512• Forcing, variables, max.512• Number of variables, max.512• Number of variables, max.512• Status/control1- Forcing, variables, max.512• Number of variables, max.512• Number of variables, max.512• Number of variables, max.512• Status/control1- presentYes• presentYes• number of variables, max.512• Diagnostic buffer1• presentYes• presentYes• number of entries, max.3200• adjustableYes• present120</td><td>Process control messages</td><td>Yes</td></tr> <tr><td>• overall, max.1 024• in 100 ms grid, max.128• in 500 ms grid, max.512• in 1000 ms grid, max.1 024Number of additional values1• with 100 ms grid, max.1• with 500, 1000 ms grid, max.10Test commissioning functionsStatus blockYes; Up to 2 simultaneouslySingle stepYesNumber of breakpoints4Status/control• Status/control1• Status/controlves; Up to 16 variable tables• Number of variables, max.70; Status/control• Number of variables, max.70; Status/control• Number of variables, max.512• Number of variables, max.512Diagnostic bufferYes• presentYes• Number of entries, max.512Diagnostic bufferYes- adjustableYes- negetYes- neget120</td><td></td><td>32</td></tr> <tr><td>• in 100 ms grid, max.128• in 500 ms grid, max.512• in 1000 ms grid, max.1 024Number of additional values1• with 100 ms grid, max.1• with 500, 1000 ms grid, max.10Test commissioning functionsYes; Up to 2 simultaneouslyStatus blockYes; Up to 2 simultaneouslySingle stepYesNumber of breakpoints4Status/controlYes; Up to 16 variable tables• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max.70; Status/controlForcingYes• Number of variables, max.512Diagnostic bulferStatus, outputs, bit memories, peripheral inputs, peripheral outputs• Number of variables, max.512Diagnostic bulferYes• presentYes• Number of entries, max.3200- adjustableYes• presentYes• presentYes</td><td>Number of messages</td><td></td></tr> <tr><td>in rooms grid, max.512• in 1000 ms grid, max.1024Number of additional values1• with 100 ms grid, max.1• with 500, 1000 ms grid, max.10Test commissioning functionsYes; Up to 2 simultaneouslyStatus blockYes; Up to 2 simultaneouslySingle stepYesNumber of breakpoints4Status/controlYes; Up to 16 variable tables• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max.70; Status/controlForcingYes• Forcing, variablesInputs, outputs, bit memories, peripheral inputs, peripheral outputs• Number of variables, max.512Diagnostic bufferYes• presentYes• Number of entries, max.3200- adjustableYes- preset120</td><td>• overall, max.</td><td>1 024</td></tr> <tr><td>in root root grint, markI 024Number of additional values1• with 100 ms grid, max.1• with 500, 1000 ms grid, max.10Test commissioning functionsStatus blockYes; Up to 2 simultaneouslySingle stepYesNumber of breakpoints4Status/controlYes: Up to 16 variable tables• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max.70; Status/controlForcing• ForcingYes• ForcingYes• Number of variables, max.512Diagnostic buffer• presentYes• Number of entries, max.3 200- adjustableYes- adjustableYes- preset120</td><td>• in 100 ms grid, max.</td><td>128</td></tr> <tr><td>Number of additional values         1           • with 100 ms grid, max.         10           Test commissioning functions         10           Status block         Yes; Up to 2 simultaneously           Single step         Yes           Number of breakpoints         4           Status/control         Yes; Up to 16 variable tables           • Variables         Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters           • Number of variables, max.         70; Status/control           Forcing         Yes           • Forcing         Yes           • Forcing         Yes           • Number of variables, max.         512           Diagnostic buffer         Yes           • present         Yes           • Number of entries, max.         3 200           - adjustable         Yes           • present         Yes           • present         Yes           • Number of entries, max.         3 200           • preset         120</td><td>● in 500 ms grid, max.</td><td>512</td></tr> <tr><td>• with 100 ms grid, max.1• with 500, 1000 ms grid, max.10Test commissioning functionsStatus blockYes; Up to 2 simultaneouslySingle stepYesNumber of breakpoints4Status/controlYes; Up to 16 variable tables• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max.70; Status/controlForcingYes• Forcing, variables, max.512• Number of variables, max.512Diagnostic bufferYes• number of variables, max.3 200- adjustableYes• Number of entries, max.120</td><td>• in 1000 ms grid, max.</td><td>1 024</td></tr> <tr><td>• with 500, 1000 ms grid, max.10Test commissioning functionsYes; Up to 2 simultaneouslyStatus blockYes; Up to 2 simultaneouslySingle stepYesNumber of breakpoints4Status/controlForcing• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max.70; Status/controlForcingYes• Forcing, variables, max.10• Forcing, variables, max.512Diagnostic bufferYes• number of variables, max.3 200- adjustableYes- preset120</td><td>Number of additional values</td><td></td></tr> <tr><td>Test commissioning functions         Status block       Yes; Up to 2 simultaneously         Single step       Yes         Number of breakpoints       4         Status/control       Yes; Up to 16 variable tables         • Status/control variable       Yes; Up to 16 variable tables         • Variables       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         • Number of variables, max.       70; Status/control         Forcing       Yes         • Forcing, variables, max.       512         Diagnostic buffer       Yes         • present       Yes         • Number of entries, max.       3 200         - adjustable       Yes         - preset       120</td><td>• with 100 ms grid, max.</td><td>1</td></tr> <tr><td>Status block       Yes; Up to 2 simultaneously         Single step       Yes         Number of breakpoints       4         Status/control       4         Status/control variable       Yes; Up to 16 variable tables         • Status/control variable       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         • Number of variables, max.       70; Status/control         Forcing       Yes         • Forcing, variables, max.       70; Status/control         • Forcing, variables, max.       512         Diagnostic buffer       9         • present       Yes         • Number of entries, max.       3 200         - adjustable       Yes         - preset       120</td><td>• with 500, 1000 ms grid, max.</td><td>10</td></tr> <tr><td>Single stepYesNumber of breakpoints4Status/controlStatus/control• Status/control variableYes; Up to 16 variable tables• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max.70; Status/controlForcingYes• Forcing, variablesInputs, outputs, bit memories, peripheral inputs, peripheral outputs• Number of variables, max.512Diagnostic bufferYes• presentYes• Number of entries, max.3 200- adjustableYes- preset120</td><td></td><td></td></tr> <tr><td>Number of breakpoints4Status/controlYes; Up to 16 variable tables• Status/control variableYes; Up to 16 variable tables• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max.70; Status/controlForcingYes• Forcing, variablesInputs, outputs, bit memories, peripheral inputs, peripheral outputs• Number of variables, max.512Diagnostic bufferYes• presentYes• number of entries, max.3 200- adjustableYes- preset120</td><td></td><td></td></tr> <tr><td>Status/control• Status/control variableYes; Up to 16 variable tables• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max.70; Status/controlForcing• ForcingYes• Forcing, variablesInputs, outputs, bit memories, peripheral inputs, peripheral outputs• Number of variables, max.512Diagnostic buffer• presentYes• Number of entries, max.3 200- adjustableYes- preset120</td><td></td><td></td></tr> <tr><td>• Status/control variableYes; Up to 16 variable tables• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max.70; Status/controlForcing• ForcingYes• Forcing, variablesInputs, outputs, bit memories, peripheral inputs, peripheral outputs• Number of variables, max.512Diagnostic buffer• presentYes• Number of entries, max.3 200- adjustableYes- preset120</td><td>·</td><td>4</td></tr> <tr><td>• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max.70; Status/controlForcingYes• Forcing, variablesInputs, outputs, bit memories, peripheral inputs, peripheral outputs• Number of variables, max.512• presentYes• number of entries, max.3200- adjustableYes- adjustableYes• number of entries, max.3200- adjustableYes• presentYes• Number of entries, max.3200- adjustableYes• number of entries, max.Yes• Number of entries, max.120</td><td>Status/control</td><td></td></tr> <tr><td>counters• Number of variables, max.70; Status/controlForcing70; Status/control• Forcing, variablesYes• Number of variables, max.512Diagnostic bufferYes• presentYes• Number of entries, max.3 200- adjustableYes- preset120</td><td></td><td></td></tr> <tr><td>ForcingYes• Forcing, variablesInputs, outputs, bit memories, peripheral inputs, peripheral outputs• Number of variables, max.512Diagnostic bufferYes• presentYes• Number of entries, max.3 200- adjustableYes- preset120</td><td>Variables</td><td></td></tr> <tr><td>• ForcingYes• Forcing, variablesInputs, outputs, bit memories, peripheral inputs, peripheral outputs• Number of variables, max.512Diagnostic buffer• presentYes• Number of entries, max.3 200- adjustableYes- preset120</td><td><ul> <li>Number of variables, max.</li> </ul></td><td>70; Status/control</td></tr> <tr><td>• Forcing, variablesInputs, outputs, bit memories, peripheral inputs, peripheral outputs• Number of variables, max.512Diagnostic bufferYes• presentYes• Number of entries, max.3 200- adjustableYes- preset120</td><td>Forcing</td><td></td></tr> <tr><td>• Number of variables, max.     512       Diagnostic buffer     Yes       • present     Yes       • Number of entries, max.     3 200       - adjustable     Yes       - preset     120</td><td>• Forcing</td><td>Yes</td></tr> <tr><td>Diagnostic buffer       • present     Yes       • Number of entries, max.     3 200       - adjustable     Yes       - preset     120</td><td><ul> <li>Forcing, variables</li> </ul></td><td>Inputs, outputs, bit memories, peripheral inputs, peripheral outputs</td></tr> <tr><td>• present     Yes       • Number of entries, max.     3 200       - adjustable     Yes       - preset     120</td><td><ul> <li>Number of variables, max.</li> </ul></td><td>512</td></tr> <tr><td><ul> <li>Number of entries, max.</li> <li>adjustable</li> <li>preset</li> <li>120</li> </ul></td><td>Diagnostic buffer</td><td></td></tr> <tr><td>— adjustable     Yes       — preset     120</td><td>• present</td><td>Yes</td></tr> <tr><td>— preset 120</td><td>Number of entries, max.</td><td>3 200</td></tr> <tr><td>P. T. T.</td><td>— adjustable</td><td>Yes</td></tr> <tr><td>Service data</td><td>— preset</td><td>120</td></tr> <tr><td></td><td>Service data</td><td></td></tr>	simultaneously active Alarm-S blocks, max.	· · · · · · · · · · · · · · · · · · ·	Induction blocks, max.600Process control messagesYesNumber of archives that can log on simultaneously (SFB 37 AR, SEND)32Number of messages1024• overall, max.1024• in 100 ms grid, max.128• in 500 ms grid, max.1024• in 100 ms grid, max.1024• with 500, ms grid, max.1024• with 500, ms grid, max.10• with 500, ms grid, max.10• with 500, noor sgrid, max.10• status blockYes: Up to 2 simultaneouslyStatus blockYes: Up to 2 simultaneouslySingle stepYes• Number of breakpoints4• Variablesrouters• Number of variables, max.70: Status/control• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max.512• ForcingYes• Number of variables, max.512• Diagnostic bufferYes• Prorcing, variables, max.3200• Number of entries, max.3200• Number of entries, max.3200• adjustableYes• nagustableYes• Number of entries, max.3200• adjustableYes• adjustableYes• nagustableYes• nagustableYes• nagustableYes• nagustableYes• nagustableYes• nagustableYes• nagustableYes• nagus	Alarm 8-blocks	Yes	Process control messages         Yes           Number of archives that can log on simultaneously (SFB 37 AR_SEND)         32           Number of messages         1024           • overall, max.         1024           • in 100 ms grid, max.         512           • in 100 ms grid, max.         1024           • in 100 ms grid, max.         1024           • with 100 ms grid, max.         1024           • with 500, 1000 ms grid, max.         1024           • with 500, 1000 ms grid, max.         10           • with 500, 1000 ms grid, max.         10           • status block         Yes; Up to 2 simultaneously           Single step         Yes           Status block         Yes; Up to 16 variable tables           • Variables         Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters           • Number of variables, max.         70; Status/control           Forcing         Yes           • Number of variables, max.         122           • Number of variables, max.         1512           • Number of variables, max.         512           • Number of variables, max.         512           • Number of variables, max.         3200           • Number of entries, max.         3200           • adjust		4 000	Number of archives that can log on simultaneously (SFB 37 AR_SEND)32Number of messages1024• overall, max.1024• in 100 ms grid, max.512• in 100 ms grid, max.1024• in 100 ms grid, max.1024• with 100 ms grid, max.1• with 500, 1000 ms grid, max.1• with 500, 1000 ms grid, max.10• with 500, 1000 ms grid, max.10• status blockYes; Up to 2 simultaneouslyStatus blockYes; 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• can be read out	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	
• ATEX	ATEX II 3G Ex nA IIC T4 Gc
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	60 °C
Configuration	
Configuration software	
• STEP 7	Yes
Programming	
Command set	see instruction list
Nesting levels	7
<ul> <li>Access to consistent data in process image</li> </ul>	Yes
<ul> <li>System functions (SFC)</li> </ul>	see instruction list
<ul> <li>System function blocks (SFB)</li> </ul>	see instruction list
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	Yes
— GRAPH	Yes
— HiGraph®	Yes
Number of simultaneously active SFCs	
— 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
	1; SFC 57; per interface
	2; SFC 56; per interface
— WR_DPARM	

— DPNRM_DG	8; SFC 13; per interface
— RDSYSST	8
- 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	
<ul> <li>User program protection/password protection</li> </ul>	Yes
Dimensions	
Width	25 mm
Width Height	25 mm 290 mm
Height	290 mm
Height Depth	290 mm