## **SIEMENS**

## **Data sheet**

## 6ES7414-4HM14-0AB0



\*\*\*\*\*\*\*\*\*\*\* Replacement part \*\*\*\*\*\*\*\*\* SIMATIC S7-400H, CPU 414H Central processing unit for S7-400H and S7-400F/FH, 4 interfaces: 1 MPI/DP, 1 DP and 2 for sync modules, 2.8 MB memory (1.4 MB data/1.4 MB program)

Figure similar

Product type designation	rigure silina	
HW functional status 1 Firmware version V4.5 Engineering with  • Programming package STEP 7 V5.3 SP2 or higher with HW update  CIR - Configuration in RUN  CIR synchronization time, basic load 100 ms  CiR synchronization time, time per I/O byte 25 µs  Supply voltage  Rated value (DC) Power supply via system power supply  Input current  from backplane bus 5 V DC, typ. 1.4 A from backplane bus 5 V DC, max. 1.7 A from backplane bus 5 V DC, max. 150 mA; Per DP interface  from interface 5 V DC, max. 90 mA; At each DP interface  Power loss, typ. 6 W  Memory  Type of memory RAM  Work memory  • integrated (for program) 1.4 Mbyte • integrated (for data) 1.4 Mbyte • integrated (for data) 1.4 Mbyte • expandable FEPROM Yes • expandable FEPROM, max. 256 kbyte • expandable FEPROM, max. 266 kbyte • expandable FEPROM, max. 266 kbyte • expandable RAM, max. 256 kbyte • expandable RAM, max. 64 Mbyte	General information	
Firmware version V4.5  Engineering with  Programming package CIR - Configuration in RUN  CIR synchronization time, basic load 100 ms CIR synchronization time, time per I/O byte 25 µs  Supply voltage Rated value (DC) Power supply via system power supply  Input current  from backplane bus 5 V DC, typ. 1.4 A from backplane bus 5 V DC, max. 1.7 A from backplane bus 24 V DC, max. 150 mA; Per DP interface from interface 5 V DC, max. 90 mA; At each DP interface  Power loss Power loss, typ. 6 W  Memory  Type of memory RAM  Work memory  integrated 2.8 Mbyte  integrated (for program) 1.4 Mbyte  integrated (for data) 1.4 Mbyte  e xpandable (FPROM, max. 64 Mbyte  integrated RAM, max. 256 kbyte  e xpandable FEPROM, max. 256 kbyte  integrated RAM, max. 64 Mbyte	Product type designation	CPU 414-4H
Engineering with  Programming package STEP 7 V5.3 SP2 or higher with HW update  CiR - Configuration in RUN  CiR synchronization time, basic load 100 ms CiR synchronization time, time per I/O byte Supply voltage Rated value (DC) Power supply via system power supply  Input current  from backplane bus 5 V DC, typ. 1.4 A from backplane bus 5 V DC, max. 1.7 A from backplane bus 5 V DC, max. from backplane bus 24 V DC, max. 90 mA; At each DP interface  Power loss Power loss Power loss Power loss Power formony  AMM  Work memory  integrated integrated (for program) integrated (for data) e expandable e expandable FEPROM e expandable FEPROM, max. e expandable FEPROM, max. e expandable FEPROM, max. e expandable RAM, max. e expandable RAM.	HW functional status	1
Programming package STEP 7 V5.3 SP2 or higher with HW update  CIR - Configuration in RUN  CIR synchronization time, basic load 100 ms CIR synchronization time, time per I/O byte 25 µs  Supply voltage  Rated value (DC) Power supply via system power supply  Input current from backplane bus 5 V DC, typ. 1.4 A from backplane bus 5 V DC, max. 1.7 A from backplane bus 24 V DC, max. 150 mA; Per DP interface from interface 5 V DC, max. 90 mA; At each DP interface  Power loss Power loss, typ. 6 W  Memory  Type of memory  integrated integrated (for program) integrated (for data) integrated (for data) e expandable FEPROM e expandable FEPROM, max. integrated RAM, max. e expandable FEPROM, max.  64 Mbyte e expandable RAM, max. e expandable RAM, max.  64 Mbyte e expandable RAM, max. 64 Mbyte e expandable RAM, max. 64 Mbyte	Firmware version	V4.5
CiR - Configuration in RUN  CiR synchronization time, basic load CiR synchronization time, time per I/O byte  Supply voltage  Rated value (DC) Power supply via system power supply  Input current  from backplane bus 5 V DC, typ. 1.4 A from backplane bus 5 V DC, max. from backplane bus 24 V DC, max. 1.7 A from backplane bus 24 V DC, max. 90 mA; At each DP interface  Power loss  Power loss  Power loss, typ. 6 W  Memory  Type of memory  ARAM  Work memory  integrated (for program) integrated (for data) integrated (FPROM expandable FPROM expandable FPROM expandable FPROM, max. integrated RAM, max. 256 kbyte expandable RAM, max. expandable RAM expandable RAM, max. 64 Mbyte	Engineering with	
CIR synchronization time, basic load  CIR synchronization time, time per I/O byte  25 µs  Supply voltage  Rated value (DC)  Input current  from backplane bus 5 V DC, typ. from backplane bus 5 V DC, max. from backplane bus 5 V DC, max. from backplane bus 24 V DC, max. from backplane bus 24 V DC, max. from interface 5 V DC, max. 90 mA; At each DP interface  Power loss. Power loss, typ.  Memory  Type of memory  Nork memory  integrated integrated (for program) integrated (for program) integrated (for data) integrated (for data) integrated (for data) expandable FEPROM expandable FEPROM, max. integrated RAM, max. expandable RAM expandable RAM, max.  expandable RAM expandable RAM, max.  expandable RAM expandable RAM, max.	<ul> <li>Programming package</li> </ul>	STEP 7 V5.3 SP2 or higher with HW update
CIR synchronization time, time per I/O byte  Supply voltage  Rated value (DC) Power supply via system power supply  Input current  from backplane bus 5 V DC, typ. 1.4 A  from backplane bus 5 V DC, max. 150 mA; Per DP interface  from interface 5 V DC, max. 90 mA; At each DP interface  Power loss.  Power loss, typ. 6 W  Memory  Type of memory RAM  Work memory  • integrated (for program) 1.4 Mbyte • integrated (for program) 1.4 Mbyte • integrated (for data) 1.4 Mbyte • expandable FEPROM Yes • expandable FEPROM, max. 64 Mbyte • integrated RAM, max. 256 kbyte • expandable RAM Yes • expandable RAM Yes • expandable RAM, max. 64 Mbyte	CiR - Configuration in RUN	
Rated value (DC) Power supply via system power supply  Input current  from backplane bus 5 V DC, typ. 1.4 A  from backplane bus 5 V DC, max. 1.7 A  from backplane bus 24 V DC, max. 150 mA; Per DP interface  from interface 5 V DC, max. 90 mA; At each DP interface  Power loss  Power loss, typ. 6 W  Memory  Type of memory RAM  Work memory    integrated 2.8 Mbyte  integrated (for program) 1.4 Mbyte  integrated (for data) 1.4 Mbyte  expandable No  Load memory  expandable FEPROM expandable FEPROM, max. 64 Mbyte  integrated RAM, max. 256 kbyte expandable RAM expandable RAM expandable RAM expandable RAM Yes expandable RAM, max. 64 Mbyte	CiR synchronization time, basic load	100 ms
Rated value (DC) Input current  from backplane bus 5 V DC, typ. from backplane bus 5 V DC, max. from backplane bus 24 V DC, max. from backplane bus 24 V DC, max. from interface 5 V DC, max.  Power loss  Power loss, typ.  Type of memory  integrated integrated (for program)  integrated (for data)  integrated (for data)  expandable FEPROM expandable FEPROM, max.  expandable RAM, max.  integrated RAM, max.  expandable RAM, max.  from integrated pus 5 V DC, max.  1.4 A A from backplane bus 5 V DC, max.  1.50 mA; Per DP interface  90 mA; At each DP interface  90 mA; At each DP interface  80 W Memory  1.4 M  1.4 M  1.4 M  1.4 M  1.5 W  1.5 W  1.6 W  1.6 W  1.7 W  1.7 A  1.8 W  1.	CiR synchronization time, time per I/O byte	25 μs
Input current from backplane bus 5 V DC, typ. from backplane bus 5 V DC, max. from backplane bus 24 V DC, max. from backplane bus 24 V DC, max. from backplane bus 24 V DC, max.  from interface 5 V DC, max.  Power loss  Power loss  Power loss, typ.  6 W  Memory  Type of memory  integrated integrated (for program) integrated (for data) expandable  Load memory  expandable FEPROM expandable FEPROM, max. expandable RAM, max. expandable RAM expandable RAM, max.  64 Mbyte  64 Mbyte	Supply voltage	
from backplane bus 5 V DC, typ.  from backplane bus 5 V DC, max.  from backplane bus 24 V DC, max.  from backplane bus 24 V DC, max.  from interface 5 V DC, max.  90 mA; At each DP interface  Power loss  Power loss, typ.  6 W  Memory  Type of memory  eintegrated integrated (for program) integrated (for data) expandable  Load memory  expandable FEPROM expandable FEPROM, max.  expandable RAM, max. expandable RAM expandable RAM, max.  64 Mbyte	Rated value (DC)	Power supply via system power supply
from backplane bus 5 V DC, max.  from backplane bus 24 V DC, max.  from interface 5 V DC, max.  Power loss  Power loss, typ.  6 W  Memory  Type of memory  integrated  integrated (for program)  integrated (for data)  expandable FEPROM  expandable FEPROM, max.  integrated RAM, max.  integrated RAM, max.  expandable RAM  expandable RAM  expandable RAM  expandable RAM, max.  from backplane bus 5 V DC, max.  150 mA; Per DP interface  90 mA; At each DP	Input current	
from backplane bus 24 V DC, max.  from interface 5 V DC, max.  Power loss  Power loss, typ.  6 W  Memory  Type of memory  integrated  integrated (for program)  integrated (for data)  expandable FEPROM  expandable FEPROM, max.  expandable FEPROM, max.  integrated RAM, max.  expandable RAM  expandable RAM  expandable RAM  expandable RAM  expandable RAM  expandable RAM  expandable RAM, max.  from A; Per DP interface  90 mA; At each DP interface  80 W  Mowar, At each DP interface  14 W  Mowar, At each DP interface  150 mA; Per DP interf	from backplane bus 5 V DC, typ.	1.4 A
from interface 5 V DC, max.  Power loss  Power loss, typ.  6 W  Memory  Type of memory  integrated  integrated (for program)  integrated (for data)  expandable  expandable FEPROM  expandable FEPROM, max.  integrated RAM, max.  expandable RAM  expandable RAM  expandable RAM  expandable RAM  expandable RAM  expandable RAM  expandable RAM, max.  64 Mbyte	from backplane bus 5 V DC, max.	1.7 A
Power loss Power loss, typ.  Memory  Type of memory  Work memory  integrated integrated (for program) integrated (for data)  eintegrated (for data)  expandable  Expandable  Expandable FEPROM  expandable FEPROM, max.  integrated RAM, max.  expandable RAM  expandable RAM  expandable RAM, max.  64 Mbyte  64 Mbyte	from backplane bus 24 V DC, max.	150 mA; Per DP interface
Power loss, typ.  Memory  Type of memory  integrated  integrated (for program)  integrated (for data)  integrated (for data)  expandable  No  Load memory  expandable FEPROM  expandable FEPROM, max.  integrated RAM, max.  expandable RAM  expandable RAM  expandable RAM, max.  64 Mbyte  64 Mbyte  64 Mbyte	from interface 5 V DC, max.	90 mA; At each DP interface
Type of memory  Type of memory  integrated integrated (for program) integrated (for data) integrated (for data	Power loss	
Type of memory  Work memory  integrated  integrated (for program)  integrated (for data)  expandable  No  Load memory  expandable FEPROM  expandable FEPROM, max.  integrated RAM, max.  expandable RAM  expandable RAM  expandable RAM, max.  64 Mbyte	Power loss, typ.	6 W
Work memory  integrated integrated (for program)  integrated (for data)  integrated (for data)  expandable  No  Load memory  expandable FEPROM  expandable FEPROM, max.  integrated RAM, max.  expandable RAM  expandable RAM, max.  64 Mbyte  Yes  64 Mbyte	Memory	
<ul> <li>integrated</li> <li>integrated (for program)</li> <li>integrated (for data)</li> <li>expandable</li> <li>No</li> </ul> Load memory <ul> <li>expandable FEPROM</li> <li>expandable FEPROM, max.</li> <li>integrated RAM, max.</li> <li>expandable RAM</li> <li>expandable RAM, max.</li> </ul> Yes <ul> <li>64 Mbyte</li> </ul> expandable RAM <ul> <li>expandable RAM</li> <li>expandable RAM, max.</li> <li>64 Mbyte</li> </ul>	Type of memory	RAM
<ul> <li>integrated (for program)</li> <li>integrated (for data)</li> <li>expandable</li> <li>No</li> </ul> Load memory <ul> <li>expandable FEPROM</li> <li>expandable FEPROM, max.</li> <li>integrated RAM, max.</li> <li>expandable RAM</li> <li>expandable RAM</li> <li>expandable RAM, max.</li> </ul> Yes <ul> <li>64 Mbyte</li> </ul> Yes <ul> <li>64 Mbyte</li> </ul> <li>expandable RAM</li> <li>expandable RAM, max.</li> <li>64 Mbyte</li>	Work memory	
<ul> <li>integrated (for data)</li> <li>expandable</li> <li>No</li> </ul> Load memory <ul> <li>expandable FEPROM</li> <li>expandable FEPROM, max.</li> <li>integrated RAM, max.</li> <li>expandable RAM</li> <li>expandable RAM, max.</li> </ul> Yes <ul> <li>expandable RAM</li> <li>expandable RAM, max.</li> <li>64 Mbyte</li> </ul>	• integrated	2.8 Mbyte
<ul> <li>expandable</li> <li>Load memory</li> <li>expandable FEPROM</li> <li>expandable FEPROM, max.</li> <li>integrated RAM, max.</li> <li>expandable RAM</li> <li>expandable RAM</li> <li>expandable RAM, max.</li> <li>64 Mbyte</li> <li>64 Mbyte</li> <li>64 Mbyte</li> <li>64 Mbyte</li> <li>64 Mbyte</li> </ul>	<ul><li>integrated (for program)</li></ul>	1.4 Mbyte
Load memory  • expandable FEPROM • expandable FEPROM, max. • integrated RAM, max. • expandable RAM • expandable RAM • expandable RAM, max. • capandable RAM, max. • capandable RAM, max. • capandable RAM, max. • capandable RAM, max.	• integrated (for data)	1.4 Mbyte
<ul> <li>expandable FEPROM</li> <li>expandable FEPROM, max.</li> <li>integrated RAM, max.</li> <li>expandable RAM</li> <li>expandable RAM</li> <li>expandable RAM, max.</li> <li>64 Mbyte</li> </ul>	expandable	No
<ul> <li>expandable FEPROM, max.</li> <li>integrated RAM, max.</li> <li>expandable RAM</li> <li>expandable RAM, max.</li> <li>expandable RAM, max.</li> <li>64 Mbyte</li> </ul>	Load memory	
<ul> <li>integrated RAM, max.</li> <li>expandable RAM</li> <li>expandable RAM, max.</li> <li>64 Mbyte</li> </ul>	<ul> <li>expandable FEPROM</li> </ul>	Yes
<ul> <li>expandable RAM</li> <li>expandable RAM, max.</li> </ul> Yes 64 Mbyte	<ul> <li>expandable FEPROM, max.</li> </ul>	64 Mbyte
• expandable RAM, max. 64 Mbyte	• integrated RAM, max.	256 kbyte
	expandable RAM	Yes
Backup	expandable RAM, max.	64 Mbyte
200.00	Backup	
• present Yes	• present	Yes
• with battery Yes; all data	• with battery	Yes; all data
• without battery No	<u> </u>	No
Battery	Battery	
Backup battery		
• Backup current, typ. 190 μA; Valid up to 40°C	<ul> <li>Backup current, typ.</li> </ul>	190 μA; Valid up to 40°C
• Backup current, max. 660 μA	Backup current, max.	660 µA

Backup time, max.	Dealt with in the module data manual with the secondary conditions and the factors of influence
<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.	0.045 µs
for word operations, typ.	0.045 µs
for fixed point arithmetic, typ.	0.045 µs
for floating point arithmetic, typ.	0.135 µs
CPU-blocks	
DB	
Number, max.	4 095; Number range: 1 to 4095
• Size, max.	64 kbyte
FB	
Number, max.	2 048; Number range: 0 to 2047
• Size, max.	64 kbyte
FC	of hayte
Number, max.	2 048; Number range: 0 to 2047
• Size, max.	64 kbyte
• Size, max.	OT NUMBER
	64 khyta
Size, max.      Number of time clarm OPs	64 kbyte
Number of time alarm OBs  Number of delay clarm OBs	4
Number of delay alarm OBs	4
Number of cyclic interrupt OBs	4
Number of process alarm OBs	4
Nesting depth	
• per priority class	24
additional within an error OB	1
Counters, timers and their retentivity	
S7 counter	
Number	2 048
Retentivity	
— adjustable	Yes
— preset	Z 0 to Z 7
Counting range	
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
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	
• present	Yes
• Type	SFB
Data areas and their retentivity	0.0
	Total working and load more and with health health health
Retentive data area (incl. timers, counters, flags), max.	Total working and load memory (with backup battery)
Flag	Olderda
• Size, max.	8 kbyte
Retentivity available	Yes
Retentivity preset	MB 0 to MB 15
Number of clock memories	8; in 1 memory byte
Local data	
<ul><li>adjustable, max.</li></ul>	16 kbyte
• preset	8 kbyte
Address area	

I/O address area	
I/O address area	8 khyta
<ul><li>Inputs</li><li>Outputs</li></ul>	8 kbyte 8 kbyte
	o kbyte
Process image  • Inputs, adjustable	9 khuto
	8 kbyte
Outputs, adjustable     Inputs, default	8 kbyte
Inputs, default     Outputs, default	256 byte
Outputs, default	256 byte
consistent data, max.	244 byte
Access to consistent data in process image     Subprocess images.	Yes
Subprocess images	A.F.
Number of subprocess images, max.  Digital abangala	15
Digital channels	05 500
• Inputs	65 536
— of which central	65 536
• Outputs	65 536
— of which central	65 536
Analog channels	4.006
• Inputs	4 096
— of which central	4 096
Outputs	4 096
— of which central	4 096
Hardware configuration	24
Number of expansion units, max.	21
connectable OPs	31 without message processing, 8 with message processing
Multicomputing	No
Interface modules	
<ul> <li>Number of connectable IMs (total), max.</li> </ul>	6
Number of connectable IM 460s, max.	6
Number of connectable IM 463s, max.	4; Single mode only
Number of DP masters	
• integrated	2
• via CP	10
Mixed mode IM + CP permitted	No
Number of operable FMs and CPs (recommended)	
• FM	See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections
● CP, PtP	See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections
PROFIBUS and Ethernet CPs	14; Of which max. 10 CP as DP master
Slots	
required slots	2
Time of day	
Clock	
Hardware clock (real-time)	Yes
<ul> <li>retentive and synchronizable</li> </ul>	Yes
<ul> <li>Resolution</li> </ul>	1 ms
<ul> <li>Deviation per day (buffered), max.</li> </ul>	1.7 s; Power off
Deviation per day (unbuffered), max.	-,
	8.6 s; Power on
Operating hours counter	
Operating hours counter  • Number	
· · · ·	8.6 s; Power on
Number	8.6 s; Power on
Number     Number/Number range	8.6 s; Power on  8 0 to 7
<ul><li>Number</li><li>Number/Number range</li><li>Range of values</li></ul>	8.6 s; Power on  8 0 to 7 0 to 32767 hours
<ul><li>Number</li><li>Number/Number range</li><li>Range of values</li><li>Granularity</li></ul>	8 0 to 7 0 to 32767 hours 1 h
<ul> <li>Number</li> <li>Number/Number range</li> <li>Range of values</li> <li>Granularity</li> <li>retentive</li> </ul>	8 0 to 7 0 to 32767 hours 1 h
<ul> <li>Number</li> <li>Number/Number range</li> <li>Range of values</li> <li>Granularity</li> <li>retentive</li> <li>Clock synchronization</li> </ul>	8.6 s; Power on  8 0 to 7 0 to 32767 hours 1 h Yes
<ul> <li>Number</li> <li>Number/Number range</li> <li>Range of values</li> <li>Granularity</li> <li>retentive</li> <li>Clock synchronization</li> <li>supported</li> </ul>	8.6 s; Power on  8 0 to 7 0 to 32767 hours 1 h Yes
<ul> <li>Number</li> <li>Number/Number range</li> <li>Range of values</li> <li>Granularity</li> <li>retentive</li> <li>Clock synchronization</li> <li>supported</li> <li>to MPI, master</li> </ul>	8.6 s; Power on  8 0 to 7 0 to 32767 hours 1 h Yes  Yes

● in AS, master	Yes
• in AS, device	Yes
Time difference in system when synchronizing via	
MPI, max.	200 ms
Interfaces	
Number of RS 485 interfaces	2
Number of other interfaces	0
Optical interface	No
1. Interface	
Interface type	MPI/PROFIBUS DP
Isolated	Yes
Interface types	
• RS 485	Yes
Output current of the interface, max.	150 mA
Protocols	
• MPI	Yes
PROFIBUS DP master	Yes
PROFIBUS DP device	No
MPI	
<ul> <li>Number of connections</li> </ul>	32
Transmission rate, max.	12 Mbit/s
Services	
— PG/OP communication	Yes
— Routing	Yes
<ul> <li>Global data communication</li> </ul>	No
<ul> <li>S7 basic communication</li> </ul>	No
— S7 communication	Yes
PROFIBUS DP master	
<ul> <li>Number of connections, max.</li> </ul>	16
Transmission rate, max.	12 Mbit/s
max. number of DP devices	32
Services	
— PG/OP communication	Yes
— Routing	Yes
— Global data communication	No
<ul> <li>S7 basic communication</li> </ul>	No
— S7 communication	Yes
— Equidistance	No
— SYNC/FREEZE	No
<ul> <li>activation/deactivation of DP devices</li> </ul>	No
Direct data exchange (slave-to-slave communication)	No
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
— per slot, max.	128 byte
2. Interface	
Interface type	PROFIBUS DP
Isolated	Yes
Interface types	
• RS 485	Yes
Output current of the interface, max.	150 mA
Protocols	
PROFIBUS DP master	Yes
PROFIBUS DP device	No
PROFIBUS DP master	

- Number of constant	40
Number of connections, max.	16
Transmission rate, max.	12 Mbit/s
max. number of DP devices	96
Services	
— PG/OP communication	Yes
— Routing	Yes
<ul> <li>Global data communication</li> </ul>	No
<ul> <li>— S7 basic communication</li> </ul>	No
— S7 communication	Yes
— Equidistance	No
— SYNC/FREEZE	No
<ul> <li>activation/deactivation of DP devices</li> </ul>	No
Direct data exchange (slave-to-slave)	No
communication)	
Address area	
— Inputs, max.	6 kbyte
— Outputs, max.	6 kbyte
User data per DP device	04414
user data per DP device, max.	244 byte
— Inputs, max.	244 byte
— Outputs, max.	244 byte
— Slots, max.	244
— per slot, max.	128 byte
3. Interface	
Interface type	Pluggable synchronization submodule (FO)
Plug-in interface modules	Synchronization submodule IF 960 6ES7960-1AA04-0XA0 or 6ES7960-1AB04-0XA0
4. Interface	0XA0
	Pl. 11 (50)
Interface type	Pluggable synchronization submodule (FO)
Plug-in interface modules	Synchronization submodule IF 960 6ES7960-1AA04-0XA0 or 6ES7960-1AB04-0XA0
Durto colo	
Protocols	
Protocols  SIMATIC communication	
SIMATIC communication	Yes
SIMATIC communication  • S7 routing	Yes
SIMATIC communication  • S7 routing  communication functions / header	
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication	Yes
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing	Yes 8
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing	Yes
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing  Global data communication	Yes 8 31
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing  Global data communication  • supported	Yes 8
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing  Global data communication  • supported  S7 basic communication	Yes 8 31 No
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing  Global data communication  • supported  S7 basic communication  • supported	Yes 8 31
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing  Global data communication  • supported  S7 basic communication  • supported  S7 communication	Yes 8 31 No No
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing  Global data communication  • supported  S7 basic communication  • supported  S7 communication  • supported	Yes 8 31 No No Yes
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing  Global data communication  • supported  S7 basic communication  • supported  S7 communication  • supported  S7 communication  • supported  sas server	Yes 8 31 No No Yes Yes
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing  Global data communication  • supported  S7 basic communication  • supported  S7 communication  • supported  S7 communication  • supported  sa server  • as client	Yes 8 31 No No Yes Yes Yes Yes
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing  Global data communication  • supported  S7 basic communication  • supported  S7 communication  • supported  S7 communication  • supported  • as server  • as client  • User data per job, max.	Yes 8 31 No No Yes Yes Yes Yes Yes Yes Yes
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing  Global data communication  • supported  S7 basic communication  • supported  S7 communication  • supported  S7 communication  • supported  • as server  • as client  • User data per job, max.  • User data per job (of which consistent), max.	Yes 8 31 No No Yes Yes Yes Yes
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing  Global data communication  • supported  S7 basic communication  • supported  S7 communication  • supported  S7 communication  • supported  • as server  • as client  • User data per job, max.  • User data per job (of which consistent), max.  S5 compatible communication	Yes 8 31 No No Yes Yes Yes Yes 462 byte; 1 variable
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing  Global data communication  • supported  S7 basic communication  • supported  S7 communication  • supported  S7 communication  • supported  • as server  • as client  • User data per job, max.  • User data per job (of which consistent), max.  S5 compatible communication  • supported	Yes 8 31  No  No  Yes Yes Yes Yes 64 kbyte 462 byte; 1 variable  Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV)
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing  Global data communication  • supported  S7 basic communication  • supported  S7 communication  • supported  S7 communication  • supported  • as server  • as client  • User data per job, max.  • User data per job (of which consistent), max.  S5 compatible communication  • supported  • user data per job, max.	Yes 8 31  No  No  Yes Yes Yes 462 byte; 1 variable  Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing  Global data communication  • supported  S7 basic communication  • supported  S7 communication  • supported  S7 communication  • supported  • as server  • as client  • User data per job, max.  • User data per job (of which consistent), max.  S5 compatible communication  • supported  • user data per job, max.  • User data per job (of which consistent), max.	Yes 8 31  No  No  Yes Yes Yes 464 kbyte 462 byte; 1 variable  Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte 240 byte
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing  Global data communication  • supported  S7 basic communication  • supported  S7 communication  • supported  • as server  • as client  • User data per job, max.  • User data per job (of which consistent), max.  S5 compatible communication  • supported  • user data per job, max.  • User data per job (of which consistent), max.  • User data per job (of which consistent), max.  • User data per job (of which consistent), max.	Yes 8 31  No  No  Yes Yes Yes 462 byte; 1 variable  Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing  Global data communication  • supported  S7 basic communication  • supported  S7 communication  • supported  S7 communication  • supported  • as server  • as client  • User data per job, max.  • User data per job (of which consistent), max.  S5 compatible communication  • supported  • User data per job, max.  • User data per job (of which consistent), max.  • Number of simultaneous AG-SEND/AG-RECV orders per CPU, max.	Yes 8 31  No  No  Yes Yes Yes 464 kbyte 462 byte; 1 variable  Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte 240 byte
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing  Global data communication  • supported  S7 basic communication  • supported  S7 communication  • supported  • as server  • as client  • User data per job, max.  • User data per job (of which consistent), max.  S5 compatible communication  • supported  • User data per job (of which consistent), max.  S5 compatible communication  • supported  • User data per job (of which consistent), max.  • Number of simultaneous AG-SEND/AG-RECV orders per CPU, max.  Standard communication (FMS)	Yes 8 31  No  No  Yes Yes Yes Yes 64 kbyte 462 byte; 1 variable  Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte 240 byte 24/24
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing  Global data communication  • supported  S7 basic communication  • supported  S7 communication  • supported  • as server  • as client  • User data per job, max.  • User data per job (of which consistent), max.  S5 compatible communication  • supported  • User data per job (of which consistent), max.  Standard communication (FMS)  • supported	Yes 8 31  No  No  Yes Yes Yes 464 kbyte 462 byte; 1 variable  Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte 240 byte
SIMATIC communication  • S7 routing  communication functions / header  PG/OP communication  • Number of connectable OPs with message processing  • Number of connectable OPs without message processing  Global data communication  • supported  S7 basic communication  • supported  S7 communication  • supported  S7 communication  • supported  • as server  • as client  • User data per job, max.  • User data per job (of which consistent), max.  S5 compatible communication  • supported  • User data per job, max.  • User data per job (of which consistent), max.  Standard communication (FMS)  • supported  Number of connections	Yes 8 31  No  No  Yes Yes Yes 64 kbyte 462 byte; 1 variable  Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte 240 byte 24/24  Yes; Via CP and loadable FB
SIMATIC communication  Soluting  communication functions / header  PG/OP communication  Number of connectable OPs with message processing  Number of connectable OPs without message processing  Global data communication  supported  7 basic communication  supported  7 communication  supported  8 communication  supported  as server  as client  User data per job, max.  User data per job (of which consistent), max.  Solution  supported  User data per job, max.  User data per job (of which consistent), max.  Solution  supported  User data per job (of which consistent), max.  Supported  User data per job (of which consistent), max.  Supported  Solution  Supported  Solution  Supported  Number of simultaneous AG-SEND/AG-RECV orders per CPU, max.  Standard communication (FMS)  supported  Number of connections  overall	Yes 8 31  No  No  Yes Yes Yes Yes 64 kbyte 462 byte; 1 variable  Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte 240 byte 24/24
SIMATIC communication  Solvential Standard Processing  Simatic communication  Solvential Standard Processing  Simatic communication  Supported  Solvential Standard per job, max.  User data per job, max.  User data per job, max.  Solvential So	Yes 8 31  No  No  Yes Yes Yes 64 kbyte 462 byte; 1 variable  Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte 240 byte 24/24  Yes; Via CP and loadable FB
SIMATIC communication  Solvential Standard Processing  Simatic communication  Solvential Standard Processing  Simatic communication  Supported  Solvential Standard Processing  Solvential Standard Communication  Supported  Solvential Standard Processing  Solvential Standard Processing  Simatic Communication  Supported  Solvential Standard Processing  Solvential Process	Yes 8 31  No  No  Yes Yes Yes Yes 64 kbyte 462 byte; 1 variable  Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte 240 byte 24/24  Yes; Via CP and loadable FB  32 1
SIMATIC communication  Solvential Standard Processing  Simatic communication  Solvential Standard Processing  Simatic communication  Supported  Solvential Standard per job, max.  User data per job, max.  User data per job, max.  Solvential So	Yes 8 31  No  No  Yes Yes Yes 64 kbyte 462 byte; 1 variable  Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte 240 byte 24/24  Yes; Via CP and loadable FB

— reserved for OP communication	1
	0
<ul> <li>— adjustable for OP communication, max.</li> <li>• usable for S7 basic communication</li> </ul>	O
reserved for S7 basic communication	0
	0
— adjustable for S7 basic communication, max.	0
usable for S7 communication	
— reserved for S7 communication	0
— adjustable for S7 communication, max.	0
usable for routing	
— reserved for routing	0
— adjustable for routing, max.	0
S7 message functions	
Number of login stations for message functions, max.	8
Symbol-related messages	No
Program alarms	Yes
simultaneously active Alarm_S blocks, max.	100
Alarm 8-blocks	Yes
<ul> <li>Number of instances for alarm 8 and S7 communication blocks, max.</li> </ul>	1 200
• preset, max.	900
Process control messages	Yes
Number of archives that can log on simultaneously (SFB 37 AR_SEND)	16
Test commissioning functions	
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
Forcing	
Ÿ	Yes
• Forcing	
Ÿ	Yes Inputs/outputs, bit memories, distributed I/Os 256
<ul><li>Forcing</li><li>Forcing, variables</li><li>Number of variables, max.</li></ul>	Inputs/outputs, bit memories, distributed I/Os
<ul> <li>Forcing</li> <li>Forcing, variables</li> <li>Number of variables, max.</li> </ul> Diagnostic buffer	Inputs/outputs, bit memories, distributed I/Os 256
<ul> <li>Forcing</li> <li>Forcing, variables</li> <li>Number of variables, max.</li> </ul> Diagnostic buffer <ul> <li>present</li> </ul>	Inputs/outputs, bit memories, distributed I/Os 256 Yes
<ul> <li>Forcing</li> <li>Forcing, variables</li> <li>Number of variables, max.</li> </ul> Diagnostic buffer <ul> <li>present</li> <li>Number of entries, max.</li> </ul>	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200
<ul> <li>Forcing</li> <li>Forcing, variables</li> <li>Number of variables, max.</li> </ul> Diagnostic buffer <ul> <li>present</li> <li>Number of entries, max.</li> <li>— adjustable</li> </ul>	Inputs/outputs, bit memories, distributed I/Os 256  Yes
<ul> <li>Forcing</li> <li>Forcing, variables</li> <li>Number of variables, max.</li> </ul> Diagnostic buffer <ul> <li>present</li> <li>Number of entries, max.</li> <li>— adjustable</li> <li>— preset</li> </ul>	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes
<ul> <li>Forcing</li> <li>Forcing, variables</li> <li>Number of variables, max.</li> </ul> Diagnostic buffer <ul> <li>present</li> <li>Number of entries, max.</li> <li>— adjustable</li> <li>— preset</li> </ul> configuration / header	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes
Forcing Forcing, variables  Number of variables, max.  Diagnostic buffer  present  Number of entries, max.  adjustable  preset  configuration / header  Configuration software	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes 120
Forcing Forcing, variables  Number of variables, max.  Diagnostic buffer  present  Number of entries, max.  adjustable  preset  configuration / header  Configuration software  STEP 7	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes
Forcing Forcing, variables  Number of variables, max.  Diagnostic buffer  present  Number of entries, max.  adjustable preset  configuration / header  STEP 7  configuration / programming / header	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes 120  Yes
Forcing Forcing, variables Number of variables, max.  Diagnostic buffer  present Number of entries, max.  adjustable preset  configuration / header  Configuration software STEP 7  configuration / programming / header Command set	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes 120  Yes see instruction list
Forcing Forcing, variables Number of variables, max.  Diagnostic buffer  present Number of entries, max. — adjustable — preset  configuration / header  Configuration software  STEP 7  configuration / programming / header  Command set Nesting levels	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes 120  Yes see instruction list 8
Forcing Forcing, variables Number of variables, max.  Diagnostic buffer  present Number of entries, max. — adjustable — preset  configuration / header  Configuration software  STEP 7  configuration / programming / header  Command set Nesting levels Access to consistent data in process image	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes 120  Yes see instruction list 8 Yes
Forcing Forcing, variables Number of variables, max.  Diagnostic buffer  present Number of entries, max. — adjustable — preset  configuration / header  Configuration software  STEP 7  configuration / programming / header  Command set Nesting levels Access to consistent data in process image System functions (SFC)	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes 120  Yes see instruction list 8 Yes see instruction list
Forcing Forcing, variables Number of variables, max.  Diagnostic buffer  present Number of entries, max.  adjustable preset  configuration / header  Configuration software  STEP 7  configuration / programming / header  Command set Nesting levels Access to consistent data in process image System functions (SFC) System function blocks (SFB)	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes 120  Yes see instruction list 8 Yes
Forcing Forcing, variables Number of variables, max.  Diagnostic buffer  present Number of entries, max.  adjustable preset  configuration / header  Configuration software  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	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes 120  Yes see instruction list 8 Yes see instruction list see instruction list
Forcing Forcing, variables Number of variables, max.  Diagnostic buffer  present Number of entries, max.  adjustable preset  configuration / header  Configuration / header  Configuration / programming / header  Command set Nesting levels Access to consistent data in process image System functions (SFC) System function blocks (SFB)  Programming language  LAD	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes 120  Yes see instruction list 8 Yes see instruction list see instruction list see instruction list
Forcing Forcing, variables Number of variables, max.  Diagnostic buffer  present Number of entries, max. — adjustable — preset  configuration / header  Configuration software  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	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes 120  Yes  see instruction list 8 Yes see instruction list see instruction list yes Yes
Forcing Forcing, variables Number of variables, max.  Diagnostic buffer  present Number of entries, max. — adjustable — preset  configuration / header  Configuration software  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	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes 120  Yes  see instruction list 8 Yes see instruction list see instruction list Yes Yes Yes Yes
Forcing Forcing, variables Number of variables, max.  Diagnostic buffer  present Number of entries, max. — adjustable — preset  configuration / header  Configuration / header  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 — SCL	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes 120  Yes see instruction list 8 Yes see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes
<ul> <li>Forcing</li> <li>Forcing, variables</li> <li>Number of variables, max.</li> <li>Diagnostic buffer</li> <li>present</li> <li>Number of entries, max.</li> <li>— adjustable</li> <li>— preset</li> <li>Configuration / header</li> <li>Configuration software</li> <li>STEP 7</li> <li>configuration / programming / header</li> <li>Command set</li> <li>Nesting levels</li> <li>Access to consistent data in process image</li> <li>System functions (SFC)</li> <li>System function blocks (SFB)</li> <li>Programming language</li> <li>— LAD</li> <li>— FBD</li> <li>— STL</li> <li>— SCL</li> <li>— CFC</li> </ul>	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes 120  Yes see instruction list 8 Yes see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes
<ul> <li>Forcing</li> <li>Forcing, variables</li> <li>Number of variables, max.</li> <li>Diagnostic buffer</li> <li>present</li> <li>Number of entries, max.</li> <li>— adjustable</li> <li>— preset</li> <li>Configuration / header</li> <li>Configuration software</li> <li>STEP 7</li> <li>configuration / programming / header</li> <li>Command set</li> <li>Nesting levels</li> <li>Access to consistent data in process image</li> <li>System functions (SFC)</li> <li>System function blocks (SFB)</li> <li>Programming language</li> <li>— LAD</li> <li>— FBD</li> <li>— STL</li> <li>— SCL</li> <li>— CFC</li> <li>— GRAPH</li> </ul>	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes 120  Yes see instruction list 8 Yes see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes
<ul> <li>Forcing</li> <li>Forcing, variables</li> <li>Number of variables, max.</li> <li>Diagnostic buffer</li> <li>present</li> <li>Number of entries, max.</li> <li>— adjustable</li> <li>— preset</li> <li>Configuration / header</li> <li>Configuration software</li> <li>STEP 7</li> <li>configuration / programming / header</li> <li>Command set</li> <li>Nesting levels</li> <li>Access to consistent data in process image</li> <li>System functions (SFC)</li> <li>System function blocks (SFB)</li> <li>Programming language</li> <li>— LAD</li> <li>— FBD</li> <li>— STL</li> <li>— SCL</li> <li>— CFC</li> <li>— GRAPH</li> <li>— HiGraph®</li> </ul>	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes 120  Yes see instruction list 8 Yes see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
• Forcing • Forcing, variables • Number of variables, max.  Diagnostic buffer • present • Number of entries, max. — adjustable — preset  configuration / header  Configuration software • 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 — SCL — CFC — GRAPH — HiGraph® configuration / programming / number of simultaneously actives	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes 120  Yes see instruction list 8 Yes see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
• Forcing • Forcing, variables • Number of variables, max.  Diagnostic buffer • present • Number of entries, max. — adjustable — preset  configuration / header  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 — SCL — CFC — GRAPH — HiGraph®  configuration / programming / number of simultaneously actives — RD_REC	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes 120  Yes see instruction list 8 Yes see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
• Forcing • Forcing, variables • Number of variables, max.  Diagnostic buffer • present • Number of entries, max. — adjustable — preset  configuration / header  Configuration software • 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 — SCL — CFC — GRAPH — HiGraph® configuration / programming / number of simultaneously actives	Inputs/outputs, bit memories, distributed I/Os 256  Yes 3 200 Yes 120  Yes see instruction list 8 Yes see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye

— PARM_MOD	1	
— WR_DPARM	2	
— DPNRM_DG	8	
— RDSYSST	8	
— DP_TOPOL	1	
configuration / programming / number of simultaneously active	SFB / header	
— RDREC	8	
— WRREC	8	
Know-how protection		
<ul> <li>User program protection/password protection</li> </ul>	Yes	
Dimensions		
Width	50 mm	
Height	290 mm	
Depth	219 mm	
Weights		
Weight, approx.	995 g	

last modified: 12/8/2024 🖸