SIEMENS

Data sheet

6ES7416-2XN05-0AB0



********* Replacement part ******** SIMATIC S7-400, CPU 416-2 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

Figure similar

General information	
Product type designation	CPU 416-2
HW functional status	04
Firmware version	V5.3
Product function	
Isochronous mode	Yes; For PROFIBUS only
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	10 µs
Supply voltage	
Rated value (DC)	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	RAM
Work memory	
 integrated 	5.6 Mbyte
 integrated (for program) 	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	
 Backup current, typ. 	125 µA; up to 40 °C
 Backup current, max. 	550 µA
 Backup time, max. 	See reference manual, module data, Chapter 3.3
 Feeding of external backup voltage to CPU 	5 V DC to 15 V DC
CPU processing times	
	20.22
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	
Number, max.	5 000; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	
• Number, max.	see instruction list
• Size, max.	64 kbyte
Number of free cycle OBs	1; OB 1
Number of time alarm OBs	8; OB 10-17
Number of delay alarm OBs	4; OB 20-23
-	
Number of cyclic interrupt OBs	9; OB 30-38 (shortest cycle that can be set = $500 \ \mu s$)
 Number of process alarm OBs 	8; OB 40-47
 Number of DPV1 alarm OBs 	3; OB 55-57
 Number of isochronous mode OBs 	4; OB 61-64
 Number of multicomputing OBs 	1; OB 60
 Number of background OBs 	1; OB 90
Number of startup OBs	3; OB 100-102
Number of asynchronous error OBs	9; OB 80-88
Number of synchronous error OBs	2; OB 121, 122
· · · · · · · · · · · · · · · · · · ·	2, 00 121, 122
Nesting depth	24
per priority class	24
 additional within an error OB 	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
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	2 048
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	2 047
— preset	No times retentive
L	

Time range	
— lower limit	10 ms
— upper limit	9 990 s
	3 330 2
IEC timer	Vac
• present	Yes
•Туре	SFB
• Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	Total working and load memory (with backup battery)
Flag	
• Size, max.	16 kbyte; Size of bit memory address area
Retentivity available	Yes
Retentivity preset	MB 0 to MB 15
Number of clock memories	8; in 1 memory byte
Local data	
 adjustable, max. 	32 kbyte
• preset	16 kbyte
Address area	
I/O address area	
Inputs	16 kbyte
Outputs	16 kbyte
Process image	
Inputs, adjustable	16 kbyte
 Outputs, adjustable 	16 kbyte
Inputs, default	512 byte
Outputs, default	512 byte
consistent data, max.	244 byte
 Access to consistent data in process image 	Yes
Subprocess images	
Number of subprocess images, max.	15
Digital channels	
Inputs	131 072
— of which central	131 072
Outputs	131 072
	131 072
— of which central	131 072
Analog channels	0.400
Inputs	8 192
— of which central	8 192
Outputs	8 192
— of which central	8 192
Hardware configuration	
Integrated power supply	No
Number of expansion units, max.	21
connectable OPs	63
Multicomputing	Yes; 4 CPUs max. (with UR1 or UR2)
Interface modules	
 Number of connectable IMs (total), max. 	6
 Number of connectable IM 460s, max. 	6
Number of connectable IM 463s, max.	4; IM 463-2
Number of DP masters	
integrated	2
• via CP	10; CP 443-5 Extended
• via IM 467	4
Mixed mode IM + CP permitted	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
Number of pluggable S5 modules (via adapter capsule in	6
central device), max.	
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
 PROFIBUS and Ethernet CPs 	14; Of which 10 CPs max. or IMs as DP master, 4 PROFINET controller
	maximum
Slots	
required slots	1
Time of day	
Clock	
Hardware clock (real-time)	Yes
retentive and synchronizable	Yes
 Resolution Deviation per day (buffered), max. 	1 ms 1.7 s; Power off
 Deviation per day (unbuffered), max. 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
 on Ethernet via NTP 	No; Via CP
• to IF 964 DP	No
Time difference in system when synchronizing via	
• MPI, max.	200 ms
Interfaces	
Interfaces/bus type	1 x MPI/PROFIBUS DP, 1 x PROFIBUS DP
Number of RS 485 interfaces	2; Combined MPI / PROFIBUS DP and PROFIBUS DP
Optical interface	No
1. Interface	
Interface type	MPI/PROFIBUS DP
Isolated	Yes
Interface types	Van
 RS 485 Output current of the interface, max. 	Yes 150 mA
Output current of the interface, max. Protocols	100 TIIA
• MPI	Yes
PROFIBUS DP master	Yes
PROFIBUS DP slave	Yes
MPI	
Number of connections	44; If a diagnostics repeater is used on the line, the number of connection
	resources on the line is reduced by 1
 Transmission rate, max. 	12 Mbit/s
Services	
— PG/OP communication	Yes
— Routing	Yes
— Global data communication	Yes
— S7 basic communication	Yes
— S7 communication	Yes
— S7 communication, as client	Yes
 — S7 communication, as server 	Yes
	Tes
PROFIBUS DP master Number of connections, max.	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
Number of DP slaves, max.	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
	Yes
— Equidistance	Yes
- Isochronous mode	
- SYNC/FREEZE	Yes
Activation/deactivation of DP slaves	Yes
 Direct data exchange (slave-to-slave communication) 	Yes
— DPV1	Yes
Address area	
— Inputs, max.	2 kbyte
— Inputs, max. — Outputs, max.	2 kbyte
•	2 ruyit
User data per DP slave	244 hito
— 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
 automatic baud rate search 	No
 Address area, max. 	32; Virtual slots
 User data per address area, max. 	32 byte
— of which consistent, max.	32 byte
Services	
— PG/OP communication	Yes; with interface active
— Routing	Yes; with interface active
— Global data communication	No
— S7 basic communication	No
— S7 communication	Yes
- S7 communication, as client	Yes
- S7 communication, as server	Yes
Direct data exchange (slave-to-slave	No
communication)	
— DPV1	No
Transfer memory	
— Inputs	244 byte
- Outputs	244 byte
2. Interface	
Interface type	PROFIBUS DP
Isolated	Yes
Number of connection resources	32
Interface types	
• RS 485	Yes
Output current of the interface, max.	150 mA
Protocols	
PROFIBUS DP master	Yes
PROFIBUS DP slave	Yes
PROFIBUS DP master	00
 Number of connections, max. 	32

• Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	125
Services	120
— PG/OP communication	Yes
- Routing	Yes; S7 routing
Global data communication	No
— S7 basic communication	Yes
— S7 basic communication	Yes
	Yes
— S7 communication, as client	
— 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 communication) 	Yes
— DPV1	Yes
Address area	
— Inputs, max.	8 kbyte
— Inputs, max. — Outputs, max.	8 kbyte
· · · ·	
User data per DP slave	244 hito
— 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
Address area, max.	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	
SIMATIC communication	
S7 routing	Yes
Open IE communication	
ISO-on-TCP (RFC1006)	Via CP 443-1 and loadable FB
— Data length, max.	1 452 bytes via CP 443-1 Adv.
Web server	
• supported	No
Isochronous mode	
Equidistance	Yes
Number of DP masters with isochronous mode	2
User data per isochronous slave, max.	244 byte
shortest clock pulse	1 ms; 0.5 ms without use of SFC 126, 127
max. cycle	32 ms
communication functions / header	
PG/OP communication	Yes
Number of connectable OPs without message processing	63
Number of connectable OFs without message processing Number of connectable OPs with message processing	63; When using Alarm_S/SQ and Alarm_D/DQ
Data record routing	Yes
Global data communication	
	Voc
supported	Yes
Number of GD loops, max.	16
 Number of GD packets, transmitter, max. 	16

Number of GD packets, receiver, max.	32
 Size of GD packets, max. 	54 byte
 Size of GD packet (of which consistent), max. 	1 variable
S7 basic communication	
 communication function / S7 basic communication 	Yes
 User data per job, max. 	76 byte
 User data per job (of which consistent), max. 	1 variable
S7 communication	
supported	Yes
• as server	Yes
• as client	Yes
• User data per job, max.	64 kbyte
 User data per job (of which consistent), max. 	462 byte; 1 variable
S5 compatible communication	
supported	Yes; Via FC AG_SEND and AG_RECV, max. via 10 CP 443-1 or 443-5
• User data per job, max.	8 kbyte
 User data per job (of which consistent), max. 	240 byte
Number of simultaneous AG-SEND/AG-RECV orders per	64/64
CPU, max.	
Standard communication (FMS)	
supported	Yes; Via CP and loadable FB
Number of connections	
• overall	64
 usable for PG communication 	63
 reserved for PG communication 	1
 adjustable for PG communication, max. 	0
 usable for OP communication 	63
 reserved for OP communication 	1
 adjustable for OP communication, max. 	0
 usable for S7 basic communication 	62
- reserved for S7 basic communication	0
 — adjustable for S7 basic communication, max. 	0
 usable for S7 communication 	62
 reserved for S7 communication 	0
— adjustable for S7 communication, max.	0
usable for routing	31
— reserved for routing	0
— adjustable for routing, max.	0
S7 message functions	
Number of login stations for message functions, max.	63; Max. 63 with Alarm_S/SQ and Alarm_D/DQ (OPs); max. 8 with Alarm, Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)
Symbol-related messages	Yes
SCAN procedure	Yes
Program alarms	Yes
Process diagnostic messages	Yes
simultaneously active Alarm-S blocks, max.	1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks
Alarm 8-blocks	Yes
Number of instances for alarm 8 and S7 communication	4 000
blocks, max.	
• preset, max.	600
Process control messages	Yes
Number of archives that can log on simultaneously (SFB 37 AR_SEND)	32
Number of messages	
• overall, max.	1 024
● in 100 ms grid, max.	128
• in 500 ms grid, max.	512
• in 1000 ms grid, max.	1 024
Number of additional values	
• with 100 ms grid, max.	1
• with 500, 1000 ms grid, max.	10
Test commissioning functions	

Single step Yes Number of breakpoints 4 Status/control variable Yes; Up to 16 variable tables • Status/control variables, max. Torsitables, memory bits, DBs, distributed I/Os, timers, counters • Number of variables, max. Torsitables, memory bits, DBs, distributed I/Os, timers, counters • Forcing Yes • Forcing, variables, max. Torsitables, memories, peripheral inputs, peripheral outputs • Number of variables, max. 512 Diagnostic buffer • present Yes • Number of entries, max. 3 200 - adjustable Yes - adjustable Yes - adjustable Yes - preset 120 Standards, approvals, certificates Yes CE mark Yes CSA approval Yes CULus Yes RCM (formerly C-TICK) Yes RCM (formerly C-TICK) Yes RCM (formerly C-TICK) Yes LSe in hazardous areas Yes eATEX ATEX II 3G Ex nA IIC T4 Gc <t< th=""><th>Status block</th><th>Yes; Up to 2 simultaneously</th></t<>	Status block	Yes; Up to 2 simultaneously
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CSA approval Yes UL approval Yes EMULS Yes FM approval Yes FM approval Yes EAC (formerly C-TICK) Yes KCA (formerly Gost-R) Yes EAC (formerly Gost-R) Yes •ATEX ATEX II 3G Ex nA IIC T4 Gc Ambient temperature during operation • ATEX II 3G Ex nA IIC T4 Gc Ambient temperature during operation 0 °C • min. 0 °C • max. 60 °C configuration / header Configuration software • STEP 7 Yes • Command set see instruction list • Nesting levels 7 • Access to consistent data in process image see instruction list • Nesting levels 7 • Access to consistent data in process image see instruction list • Nesting levels 7 • Access to consistent data in process image see instruction list • System function blocks (SFB) see instruction list • System function blocks (SFB) see instruction list • System function blocks (SFB) Yes - CAD Yes - GRAPH Yes - GRAPH Yes - GRAPH Yes	Standards, approvals, certificates	
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FM approval Yes RCM (formerly C-TICK) Yes RCM (formerly C-TICK) Yes KC approval Yes RCM (formerly Cost-R) Yes LSe in hazardous areas ************************************		Yes
RCM (formerly C-TICK) Yes EAC (formerly Gost-R) Yes EAC (formerly Gost-R) Yes Use in hazardous areas ATEX • ATEX ATEX II 3G Ex nA IIC T4 Ge Ambient temperature during operation - • min. 0 °C • min. 0 °C • ordiguration / header - Configuration / header - • STEP 7 Yes • STEP 7 Yes configuration / programming / header - • Command set see instruction list • Nesting levels 7 • Acccess to consistent data in process image Yes • System function blocks (SFB) see instruction list • System function blocks (SFB) see instruction list Programming language - - FBD Yes - SCL Yes - GRAPH Yes - GRAPH Yes - HiGraph® Yes - DPSYC_FR 2 SFC 11; per interface - DPSYC_FR 2 SFC 5; per interface <td>cULus</td> <td>Yes</td>	cULus	Yes
KC approvalYesEAC (formerly Gost-R)YesUse in hazardous areasATEX• ATEXATEX II 3G Ex nA IIC T4 GcAmbient conditions0 °C• min.0 °C• max.60 °C• min.0 °C• max.60 °CConfiguration software-• STEP 7Yes• configuration software-• STEP 7Yes• STEP 7Yes• Configuration software-• Configuration software-• STEP 7Yes• Access to consistent data in process imageYes• Access to consistent data in process imageYes• System functions (SFC)see instruction list• System function bocks (SFB)see instruction list• System function bocks (SFB)see instruction list• System function bocks (SFB)see instruction list• System function bocks (SFE)Yes- CFCYes- CFCYes- ORAPHYes- DFSYC_FR2, SFC 11; per interface- DFSYC_FR2, SFC 12; per interface- DPSYC_FR2, SFC 12; per interface- DPSYC_FR8, SFC 55; per interface- DPSYC_FR8, SFC 55; per interface- MR_REC8, SFC 55; per interface- WR_PARM8, SFC 55; per interface- WR_PARM8	FM approval	Yes
EAC (formerly Gost-R)YesUse in hazardous areas• ATEXATEX II 3G Ex nA IIC T4 GcAnbient conditionsAmbient temperature during operation• min.0 °C• max.60 °Cconfiguration software• STEP 7Yes• STEP 7Yes• Command setsee instruction list• Nesting levels7• Access to consistent data in process imageYes• System function blocks (SFB)see instruction list• System function blocks (SFB)Yes- SCLYes- SCLYes- SCLYes- SCLYes- DPSYC_FR2; SFC 11; per interface- DPSYC_FR2; SFC 12; per interface- DPSYC_FR8; SFC 56; per interface- WR_PARM8; SFC 56; per interface- WR_PARM8; SFC 56; per interface- WR_PARM2; SFC 56; per interface- WR_PARM2; SFC 56; per interface- WR_PARM2; SFC 56;	RCM (formerly C-TICK)	Yes
Use in hazardous areasATEXATEX II 3G Ex nA IIC 74 GcAmbient conditionsAmbient condition genationmin.0 °Cmax.60 °Cconfiguration / beaderConfiguration softwareSTEP 7Yesconfiguration / programming / header <command set<="" td=""/> see instruction listNesting levels7Access to consistent data in process imageYesSystem functions (SFC)see instruction listSystem function blocks (SFB)see instruction listProgramming languageYes- LADYes- STLYes- SCLYes- SCLYes- GRAPHYes- GRAPHYes- DPSYC_FR2; SFC 11; per interface- DPSYC_FR8; SFC 56; per interface- NR_REC8; SFC 56; per interface- WR_PARM8; SFC 56; per interface- WR_PARM2; SFC 10; per interface- WR_NDARDM2; SFC 56; per interface- WR_NDARDM2; SFC 56; per interface- PNR_DOS8; SFC 56; per interface </td <td>KC approval</td> <td>Yes</td>	KC approval	Yes
• ATEXATEX II 3G Ex nA IIC 74 GcAmbient conditionsAmbient temperature during operation0 °C• min.0 °C• max.0 °Cconfiguration / headerConfiguration software• STEP 7Yes• Command setsee instruction list• Nesting levels7• Nesting levels9• System functions (SFC)see instruction list• System functions (SFC)see instruction list• System functions (SFC)see instruction list• System function blocks (SFB)see instruction list• FRDYes- LADYes- STLYes- SCLYes- GRAPHYes- HiGraph@Yes• DPSYC_FR2; SFC 11; per interface- DPSYC_FR2; SFC 53; per interface- DPSYC_FR2; SFC 55; per interface- MR_REC8; SFC 55; per interface- WR_REC8; SFC 55; per interface- WR_PARM8; SFC 55; per interface- WR_DARM8; SFC 55; per interface- WR_DARM8; SFC 55; per interface- PNR_MOD1; SFC 57; per interface- WR_NDARD8; SFC 55; per interface- DPNR_DG8; SFC 51; per interface	EAC (formerly Gost-R)	Yes
Ambient conditions Ambient temperature during operation • min. 0 °C • max. 60 °C configuration / header Configuration software • STEP 7 Ves configuration software see instruction list • Command set see instruction list • Nesting levels 7 • Access to consistent data in process image Yes • System functions (SFC) see instruction list • System functions locks (SFB) see instruction list Programming language Yes - LAD Yes - FBD Yes - SCL Yes - SCL Yes - GRAPH Yes - GRAPH Yes - GRAPH Yes - DPSYC_FR 2, SFC 11; per interface - DPSYC_FR 2, SFC 51; per interface - WR_REC 8, SFC 52; per interface - WR_REC 8, SFC 55; per interface - WR_PARM 8; SFC 55; per interface - WR_PARM	Use in hazardous areas	
Ambient temperature during operation • min. 0 °C • max. 60 °C configuration / header 60 °C configuration / header 60 °C configuration / programming / header Ves configuration / programming / header 7 • Nesting levels 7 • Access to consistent data in process image Yes • System function blocks (SFB) see instruction list • System function blocks (SFB) see instruction list • System function blocks (SFB) see instruction list • Programming language Yes - LAD Yes - STL Yes - SCL Yes - SCL Yes - GRAPH Yes - HiGraph® Yes configuration / programming / number of simultaneously acture FC / header - DPSYC_FR 2; SFC 11; per interface - M_R_ARM 8; SFC 59; per interface - WR_PARM 8; SFC 59; per interface - WR_PARM 8; SFC 59; per interface - WR_PARAM 8; SFC		ATEX II 3G Ex nA IIC T4 Gc
• min. 0 °C • max. 60 °C configuration / header Configuration software • STE P 7 Yes configuration / programming / header see instruction list Command set see instruction list • Nesting levels 7 • Access to consistent data in process image Yes • System function blocks (SFB) see instruction list • System function blocks (SFB) see instruction list • System function blocks (SFB) see instruction list • FBD Yes - FBD Yes - STL Yes - SCL Yes - SCR Yes - GRAPH Yes - HiGraph® Yes - DPSYC_FR 2, SFC 11; per interface - DPSYC_FR 2, SFC 12; per interface - WR_RARM 8, SFC 58; per interface - WR_RARM 8, SFC 58; per interface - WR_PARAM 8, SFC 58; per interface - WR_PARAM 8, SFC 56; per interface - WR_	Ambient conditions	
• max. 60 °C configuration / header configuration software • STEP 7 Yes configuration / programming / header see instruction list • Command set see instruction list • Nesting levels 7 • Access to consistent data in process image Yes • System function (SFC) see instruction list • System function blocks (SFB) see instruction list • System function blocks (SFB) see instruction list • System function blocks (SFB) see instruction list • FBD Yes - FBD Yes - SCL Yes - SCL Yes - GRAPH Yes - HiGraptN® Yes configuration / programming / number of simultaneously active FC / header - DPSYC_FR 2; SFC 11; per interface - D_ACT_DP 8; SFC 59; per interface - RD_REC 8; SFC 59; per interface - WR_PARM 8; SFC 59; per interface - WR_PARM_MOD 1; SFC 57; per interface - WR_DPAR	Ambient temperature during operation	
Configuration / header Ves command set See instruction list Nesting levels 7 Access to consistent data in process image Yes System functions (SFC) see instruction list System function blocks (SFB) see instruction list Programming language Yes - LAD Yes - FBD Yes - SCL Yes - SCL Yes - GRAPH Yes - GRAPH Yes - HiGraph® Yes configuration / programming / number of simultaneously active FC / header - D_SYC_FR 2; SFC 11; per interface - RD_REC 8; SFC 59; per interface - WR_PARM 8; SFC 59; per interface - WR_PARM 8; SFC 55; per interface - WR_PARM 2; SFC 55; per interface - WR_PARM_DD 1; SFC 57; per interface - PARM_DDS 1; SFC 55; per interface - PARM_DDS 1; SFC 55; per interface - PARM_DDS 1; SFC 55; per interface - PARM_DDS <t< td=""><td>• min.</td><td>0 °C</td></t<>	• min.	0 °C
Configuration software Yes configuration / programming / header see instruction list Command set see instruction list Nesting levels 7 Access to consistent data in process image Yes System functions (SFC) see instruction list System function blocks (SFB) see instruction list Programming language Yes - LAD Yes - FBD Yes - SCL Yes - SCL Yes - CFC Yes - GRAPH Yes - HiGraph® Yes configuration / programming / number of simultaneously active SFC / header - DPSYC_FR 2; SFC 11; per interface - D_ACT_DP 8; SFC 29; per interface - WR_REC 8; SFC 59; per interface - WR_PARM 8; SFC 55; per interface - WR_DPARM 2; SFC 56; per interface - PARM_MOD 1; SFC 57; per interface - PARM_MOD 4; SFC 56; per interface - PARM_MOD 5; SFC 3; per interface - PARM_MOD 4; SFC 57; per interface - PARM_MOD 5; SFC	• max.	60 °C
• STEP 7 Yes configuration / programming / header see instruction list • Command set see instruction list • Nesting levels 7 • Access to consistent data in process image Yes • System functions (SFC) see instruction list • System function blocks (SFB) see instruction list • System function blocks (SFB) see instruction list - LAD Yes - FBD Yes - SCL Yes - SCL Yes - SCL Yes - GRAPH Yes - HIGraph® Yes - 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 56; per interface - WR_DPARM 2;	configuration / header	
configuration / programming / header• Command setsee instruction list• Nesting levels7• Access to consistent data in process imageYes• System functions (SFC)see instruction list• System function blocks (SFB)see instruction list• System function blocks (SFB)see instruction list- LADYes- FBDYes- STLYes- SCLYes- CFCYes- GRAPHYes- HiGraph®Yes- DPSYC_FR2; SFC 11; per interface- DPSYC_FR2; SFC 53; per interface- RD_REC% SFC 55; per interface- WR_REC% SFC 55; per interface- WR_PARM1; SFC 57; per interface- WR_DPARM2; SFC 56; per interface- WR_DPARM2; SFC 56; per interface- WR_DPARM_DG1; SFC 57; per interface- DPNR_DG8; SFC 13; per interface	Configuration software	
• Command setsee instruction list• Nesting levels7• Access to consistent data in process imageYes• System functions (SFC)see instruction list• System function blocks (SFB)see instruction list• Programming language LADYes- STLYes- STLYes- SCLYes- CFCYes- GRAPHYes- HiGraph®Yes- HiGraph®Yes- DPSYC_FR2; SFC 11; per interface- DPSYC_FR8; SFC 59; per interface- WR_REC8; SFC 59; per interface- WR_PARM8; SFC 59; per interface- WR_PARM1; SFC 57; per interface- PARM_MOD1; SFC 56; per interface- WR_DPARM2; SFC 51; per interface- WR_DPARM2; SFC 56; per interface- DPNR_DG8; SFC 55; per interface	• STEP 7	Yes
• Nesting levels7• Access to consistent data in process imageYes• System functions (SFC)see instruction list• System function blocks (SFB)see instruction list• LADYes- LADYes- STLYes- STLYes- SCLYes- CFCYes- GRAPHYes- HiGraph®Yes- HiGraph®Yes- DPSYC_FRStC 12; per interface- DPSYC_FRStC 11; per interface- SRLStSC 59; per interface- RD_RECStSC 59; per interface- WR_PARMStSC 59; per interface- WR_PARMStSC 59; per interface- WR_DARMStSC 59; per interface	configuration / programming / header	
Access to consistent data in process imageYesSystem functions (SFC)see instruction listSystem function blocks (SFB)see instruction listProgramming language- LADYes- FBDYes- STLYes- SCLYes- CFCYes- CFCYes- GRAPHYes- HiGraph®Yes- DPSYC_FR2; SFC 11; per interface- DPSYC_FR8; SFC 59; per interface- RD_REC8; SFC 59; per interface- WR_REC8; SFC 59; per interface- WR_PARM8; SFC 59; per interface- WR_DARM1; SFC 57; per interface- WR_DARM2; SFC 13; per interface- WR_DARM2; SFC 59; per interface- WR_DARM3; SFC 59; per interfa	Command set	see instruction list
• System functions (SFC)see instruction list• System function blocks (SFB)see instruction listProgramming language LADYes- FBDYes- STLYes- SCLYes- CFCYes- GRAPHYes- HiGraph®Yes- DPSYC_FR2; SFC 11; per interface- DPSYC_FR2; SFC 12; per interface- RD_REC8; SFC 59; per interface- WR_PARM8; SFC 59; per interface- WR_PARM2; SFC 51; per interface- PNRM_MOD1; SFC 57; per interface- WR_DPARM2; SFC 66; per interface- WR_DPARM2; SFC 51; per interface- DPNRM_DG8; SFC 51; per interface	 Nesting levels 	7
• System function blocks (SFB)see instruction listProgramming languageYes- LADYes- FBDYes- STLYes- SCLYes- CFCYes- GRAPHYes- HiGraph®Yes- DPSYC_FR2; SFC 11; per interface- DPSYC_FR8; SFC 29; per interface- RD_REC8; SFC 59; per interface- WR_REC8; SFC 59; per interface- WR_PARM5; SFC 59; per interface- WR_DARM1; SFC 57; per interface- WR_DARM5; SFC 59; per interface- WR_DPARM5;		
Programming language- LADYes- FBDYes- STLYes- SCLYes- CFCYes- GRAPHYes- HiGraph®Yesconfiguration / programming / number of simultaneously activFC / header- DPSYC_FR2; SFC 11; per interface- DPSYC_FR8; SFC 12; per interface- RD_REC8; SFC 59; per interface- WR_REC8; SFC 59; per interface- WR_PARM8; SFC 55; per interface- PARM_MOD1; SFC 57; per interface- WR_DPARM2; SFC 66; per interface- WR_DPARM2; SFC 56; per interface- WR_DPARM3; SFC 51; per interface- WR_DPARM3; SFC 51; per interface- WR_DPARM2; SFC 56; per interface- WR_DPARM3; SFC 51; per interface- WR_DPARM3; SFC 56; per interface- WR_DPARM3; SFC 56; per interface- WR_DPARM3; SFC 56; per interface- WR_DPARM3; SFC 51; per interface- WR_DPARM3; SFC 56; per interface- WR_DPARM3; SFC 51; per interface<		see instruction list
LADYes-FBDYes-STLYes-SCLYes-CFCYes-GRAPHYes-HiGraph®Yesconfiguration / programming / number of simultaneously active SFC / header-DPSYC_FR2; SFC 11; per interface-DPSYC_FR8; SFC 29; per interface-RD_REC8; SFC 59; per interface-WR_REC8; SFC 56; per interface-WR_PARM8; SFC 55; per interface-WR_DPARM1; SFC 57; per interface-WR_DPARM2; SFC 56; per interface-WR_DPARM5; SFC 56; per interface-WR_DPARM5		see instruction list
FBDYesSTLYesSCLYesCFCYesGRAPHYesHiGraph®Yesconfiguration / programming / number of simultaneously active / beaderDPSYC_FR2; SFC 11; per interfaceDPSYC_FR8; SFC 12; per interfaceDP_REC8; SFC 59; per interfaceWR_REC8; SFC 59; per interfaceWR_PARM8; SFC 55; per interfaceWR_DPARM1; SFC 57; per interfaceWR_DPARM2; SFC 61; per interfaceWR_DPARM6; SFC 56; per interfaceWR_DPARM6; SFC 57; per interfaceWR_DPARM6; SFC 56; per interfaceWR_DPARM <td></td> <td></td>		
- STLYes- SCLYes- CFCYes- GRAPHYes- HiGraph®Yesconfiguration / programming / number of simultaneously active / headerYes- DPSYC_FR2; SFC 11; per interface- DPSYC_FR8; SFC 12; per interface- D_ACT_DP8; SFC 59; per interface- RD_REC8; SFC 59; per interface- WR_REC8; SFC 55; per interface- WR_DARM1; SFC 57; per interface- WR_DPARM_MOD1; SFC 57; per interface- WR_DPARM2; SFC 56; per interface- WR_DPARM8; SFC 51; per interface- DPNRM_DG8; SFC 51; per interface		
- SCLYes- CFCYes- GRAPHYes- HiGraph®Yesconfiguration / programming / number of simultaneously active / For Acting programming / number of simultaneously active / For Acting programming / number of simultaneously active / SC 11; per interface- DPSYC_FR2; SFC 11; per interface- DPSYC_FR8; SFC 59; per interface- RD_REC8; SFC 59; per interface- WR_REC8; SFC 59; per interface- WR_PARM8; SFC 55; per interface- WR_DPARM_MOD1; SFC 57; per interface- WR_DPARM2; SFC 56; per interface- DPNRM_DG8; SFC 13; per interface		
- CFCYes- GRAPHYes- HiGraph®Yesconfiguration / programming / number of simultaneously act:Yes- DPSYC_FR2; SFC 11; per interface- DPSYC_FR8; SFC 12; per interface- RD_REC8; SFC 59; per interface- WR_REC8; SFC 59; per interface- WR_PARM8; SFC 55; per interface- PARM_MOD1; SFC 57; per interface- WR_DPARM2; SFC 56; per interface- WR_DPARM8; SFC 12; per interface- WR_DPARM8; SFC 57; per interface- WR_DPARM8; SFC 56; per interface- WR_DPARM2; SFC 56; per interface- DPNRM_DG8; SFC 13; per interface		
- GRAPHYes- HiGraph®Yesconfiguration / programming / number of simultaneously activFC / header- DPSYC_FR2; SFC 11; per interface- D_ACT_DP8; SFC 12; per interface- RD_REC8; SFC 59; per interface- WR_REC8; SFC 58; per interface- WR_PARM8; SFC 55; per interface- PARM_MOD1; SFC 57; per interface- WR_DPARM2; SFC 56; per interface- DPNRM_DG8; SFC 13; per interface		
HiGraph®Yesconfiguration / programming / number of simultaneously activFC / header- DPSYC_FR2; SFC 11; per interface- D_ACT_DP8; SFC 12; per interface- RD_REC8; SFC 59; per interface- WR_REC8; SFC 59; per interface- WR_PARM8; SFC 55; per interface- PARM_MOD1; SFC 57; per interface- WR_DPARM2; SFC 56; per interface- DPNRM_DG8; SFC 13; per interface		
onfiguration / programming / number of simultaneously activeSFC / header DPSYC_FR2; SFC 11; per interface D_ACT_DP8; SFC 12; per interface RD_REC8; SFC 59; per interface WR_REC8; SFC 58; per interface WR_PARM8; SFC 55; per interface PARM_MOD1; SFC 57; per interface WR_DPARM2; SFC 56; per interface WR_DPARM8; SFC 13; per interface		
DPSYC_FR2; SFC 11; per interface D_ACT_DP8; SFC 12; per interface RD_REC8; SFC 59; per interface WR_REC8; SFC 58; per interface WR_PARM8; SFC 55; per interface PARM_MOD1; SFC 57; per interface WR_DPARM2; SFC 56; per interface WR_DPARM8; SFC 13; per interface	· ·	
D_ACT_DP8; SFC 12; per interface RD_REC8; SFC 59; per interface WR_REC8; SFC 58; per interface WR_PARM8; SFC 55; per interface PARM_MOD1; SFC 57; per interface WR_DPARM2; SFC 56; per interface DPNRM_DG8; SFC 13; per interface		
- RD_REC8; SFC 59; per interface- WR_REC8; SFC 58; per interface- WR_PARM8; SFC 55; per interface- PARM_MOD1; SFC 57; per interface- WR_DPARM2; SFC 56; per interface- DPNRM_DG8; SFC 13; per interface		
WR_REC8; SFC 58; per interface WR_PARM8; SFC 55; per interface PARM_MOD1; SFC 57; per interface WR_DPARM2; SFC 56; per interface DPNRM_DG8; SFC 13; per interface		
WR_PARM8; SFC 55; per interface PARM_MOD1; SFC 57; per interface WR_DPARM2; SFC 56; per interface DPNRM_DG8; SFC 13; per interface		
PARM_MOD1; SFC 57; per interface WR_DPARM2; SFC 56; per interface DPNRM_DG8; SFC 13; per interface		
WR_DPARM 2; SFC 56; per interface DPNRM_DG 8; SFC 13; per interface		8; SFC 55; per interface
- DPNRM_DG 8; SFC 13; per interface	— PARM_MOD	1; SFC 57; per interface
	- WR_DPARM	2; SFC 56; per interface
- RDSYSST 8	— DPNRM_DG	8; SFC 13; per interface
	- RDSYSST	8

- DP_TOPOL	1; SFC 103; per interface
configuration / programming / number of simultaneously active	SFB / header
- RDREC	8; SFB 52; per interface, but not more than 32 across all external interfaces
- WRREC	8; SFB 53; per interface, but not more than 32 across all external interfaces
Know-how protection	
 User program protection/password protection 	Yes
Dimensions	
Width	25 mm
Height	290 mm
Depth	219 mm
Weights	
Weight, approx.	720 g

last modified:

9/11/2023 🖸