## 6AG1313-6CG04-2AY0

## **Data sheet**



\*\*\*spare part\*\*\* SIPLUS S7-300 CPU 313C-2DP based on 6ES7313-6CG04-0AB0 with conformal coating, -25...+60 °C, compact CPU with MPI, 16 DI/16 DQ, 3 high-speed counters (30 kHz), integrated DP interface, integrated power supply 24 V DC, work memory 128 KB, front connector (1x 40-pole) and Micro Memory Card required

Figure similar

General information	
Product type designation	CPU 313C-2 DP
Engineering with	
<ul> <li>Programming package</li> </ul>	STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203
Supply voltage	
Rated value (DC)	24 V; A power supply according to EN 50155 shall be used
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
external protection for power supply lines (recommendation)	Miniature circuit breaker, type C; min. 2 A; miniature circuit breaker type B, min. 4 A
Mains buffering	
<ul> <li>Mains/voltage failure stored energy time</li> </ul>	5 ms
Repeat rate, min.	1 s
Load voltage L+	
Digital inputs	
— load voltage / at digital input / at DC / rated value	24 V
<ul> <li>Reverse polarity protection</li> </ul>	Yes
Digital outputs	
— Rated value (DC)	24 V
<ul> <li>Reverse polarity protection</li> </ul>	No
Input current	
Current consumption (rated value)	650 mA
Current consumption (in no-load operation), typ.	150 mA
Inrush current, typ.	5 A
l²t	0.7 A <sup>2</sup> ·s
Digital inputs	
<ul> <li>from load voltage L+ (without load), max.</li> </ul>	80 mA
Digital outputs	
<ul> <li>from load voltage L+, max.</li> </ul>	50 mA
Power loss	
Power loss, typ.	12 W
Memory	
Work memory	
• integrated	128 kbyte
expandable	No
Load memory	
• Plug-in (MMC)	Yes
<ul><li>Plug-in (MMC), max.</li></ul>	8 Mbyte
<ul> <li>Data management on MMC (after last programming), min.</li> </ul>	10 a

Backup	
• present	Yes; Guaranteed by MMC (maintenance-free)
without battery	Yes; Program and data
PU processing times	
for bit operations, typ.	0.07 μs
for word operations, typ.	0.15 μs
for fixed point arithmetic, typ.	0.2 µs
for floating point arithmetic, typ.	0.72 μs
CPU-blocks	0.12 po
Number of blocks (total)	1 024; (DBs, FCs, FBs); the maximum number of loadable blocks can be
Trainibol of blooks (total)	reduced by the MMC used.
DB	
<ul> <li>Number, max.</li> </ul>	1 024; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	
<ul> <li>Number, max.</li> </ul>	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
<ul><li>Number, max.</li></ul>	1 024; 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>	1; OB 10
<ul> <li>Number of delay alarm OBs</li> </ul>	2; OB 20, 21
<ul> <li>Number of cyclic interrupt OBs</li> </ul>	4; OB 32, 33, 34, 35
<ul> <li>Number of process alarm OBs</li> </ul>	1; OB 40
<ul> <li>Number of startup OBs</li> </ul>	1; OB 100
<ul> <li>Number of asynchronous error OBs</li> </ul>	4; OB 80, 82, 85, 87
Number of synchronous error OBs	2; OB 121, 122
Nesting depth	
<ul><li>per priority class</li></ul>	16
additional within an error OB	4
Counters, timers and their retentivity	
S7 counter	
Number	256
	256
Number	256 Yes
Number Retentivity	
Number     Retentivity     — adjustable     — preset Counting range	Yes Z 0 to Z 7
<ul> <li>Number</li> <li>Retentivity</li> <li>— adjustable</li> <li>— preset</li> <li>Counting range</li> <li>— lower limit</li> </ul>	Yes Z 0 to Z 7
<ul> <li>Number</li> <li>Retentivity</li> <li>— adjustable</li> <li>— preset</li> <li>Counting range</li> <li>— lower limit</li> <li>— upper limit</li> </ul>	Yes Z 0 to Z 7
<ul> <li>Number</li> <li>Retentivity</li> <li>— adjustable</li> <li>— preset</li> <li>Counting range</li> <li>— lower limit</li> </ul>	Yes Z 0 to Z 7  0 999
Number Retentivity  — adjustable — preset  Counting range — lower limit — upper limit  IEC counter  • present	Yes Z 0 to Z 7  0 999  Yes
Number Retentivity  — adjustable — preset Counting range — lower limit — upper limit  IEC counter  • present • Type	Yes Z 0 to Z 7  0 999  Yes SFB
Number Retentivity  — adjustable — preset Counting range — lower limit — upper limit  IEC counter  • present • Type • Number	Yes Z 0 to Z 7  0 999  Yes
Number Retentivity  — adjustable — preset  Counting range — lower limit — upper limit  IEC counter  • present • Type • Number  S7 times	Yes Z 0 to Z 7  0 999  Yes SFB Unlimited (limited only by RAM capacity)
Number Retentivity  — adjustable — preset  Counting range — lower limit — upper limit  IEC counter  • present • Type • Number  S7 times • Number	Yes Z 0 to Z 7  0 999  Yes SFB
Number Retentivity  — adjustable — preset  Counting range — lower limit — upper limit  IEC counter  • present • Type • Number  S7 times • Number  Retentivity	Yes Z 0 to Z 7  0 999  Yes SFB Unlimited (limited only by RAM capacity)
Number Retentivity  — adjustable — preset  Counting range — lower limit — upper limit  IEC counter  • present • Type • Number  S7 times • Number  Retentivity — adjustable	Yes Z 0 to Z 7  0 999  Yes SFB Unlimited (limited only by RAM capacity)  256  Yes
Number Retentivity  — adjustable — preset  Counting range — lower limit — upper limit  IEC counter  • present • Type • Number  S7 times • Number  Retentivity — adjustable — preset	Yes Z 0 to Z 7  0 999  Yes SFB Unlimited (limited only by RAM capacity)
Number Retentivity  — adjustable — preset  Counting range — lower limit — upper limit  IEC counter  • present • Type • Number  S7 times • Number  Retentivity — adjustable — preset Time range	Yes Z 0 to Z 7  O 999  Yes SFB Unlimited (limited only by RAM capacity)  256  Yes No retentivity
Number Retentivity  — adjustable — preset  Counting range — lower limit — upper limit  IEC counter  • present • Type • Number  S7 times • Number  Retentivity — adjustable — preset  Time range — lower limit	Yes Z 0 to Z 7  O 999  Yes SFB Unlimited (limited only by RAM capacity)  256  Yes No retentivity
Number Retentivity  — adjustable — preset  Counting range — lower limit — upper limit  IEC counter  • present • Type • Number  S7 times • Number  Retentivity — adjustable — preset  Time range — lower limit — upper limit	Yes Z 0 to Z 7  O 999  Yes SFB Unlimited (limited only by RAM capacity)  256  Yes No retentivity
Number Retentivity  — adjustable — preset  Counting range — lower limit — upper limit  IEC counter  • present • Type • Number  S7 times • Number  Retentivity — adjustable — preset  Time range — lower limit	Yes Z 0 to Z 7  0 999  Yes SFB Unlimited (limited only by RAM capacity)  256  Yes No retentivity  10 ms 9 990 s
Number Retentivity  — adjustable — preset  Counting range — lower limit — upper limit  IEC counter  • present • Type • Number  S7 times • Number  Retentivity — adjustable — preset  Time range — lower limit — upper limit  IEC timer • present	Yes Z 0 to Z 7  0 999  Yes SFB Unlimited (limited only by RAM capacity)  256  Yes No retentivity  10 ms 9 990 s  Yes
Number Retentivity  — adjustable — preset  Counting range — lower limit — upper limit  IEC counter  • present • Type • Number  S7 times • Number  Retentivity — adjustable — preset  Time range — lower limit — upper limit  IEC timer • present • present • Type	Yes Z 0 to Z 7  0 999  Yes SFB Unlimited (limited only by RAM capacity)  256  Yes No retentivity  10 ms 9 990 s  Yes SFB
Number Retentivity  — adjustable — preset  Counting range — lower limit — upper limit  IEC counter  • present • Type • Number  S7 times • Number  Retentivity — adjustable — preset  Time range — lower limit — upper limit  IEC timer • present	Yes Z 0 to Z 7  0 999  Yes SFB Unlimited (limited only by RAM capacity)  256  Yes No retentivity  10 ms 9 990 s  Yes

Flor	
Flag	256 byte
Size, max.      Detactivity evallable	256 byte
Retentivity available	Yes; MB 0 to MB 255
Retentivity preset     Number of clock managing	MB 0 to MB 15
Number of clock memories	8; 1 memory byte
Data blocks	V 1
Retentivity adjustable	Yes; via non-retain property on DB
Retentivity preset	Yes
Local data	
per priority class, max.	32 kbyte; Max. 2048 bytes per block
Address area	
I/O address area	40044
• Inputs	1 024 byte
Outputs	1 024 byte
of which distributed	
— Inputs	2 030 byte
— Outputs	2 030 byte
Process image	
• Inputs	2 048 byte
• Outputs	2 048 byte
<ul><li>Inputs, adjustable</li></ul>	2 048 byte
<ul> <li>Outputs, adjustable</li> </ul>	2 048 byte
<ul><li>Inputs, default</li></ul>	128 byte
Outputs, default	128 byte
Default addresses of the integrated channels	
— Digital inputs	124.0 to 125.7
— Digital outputs	124.0 to 125.7
Digital channels	
• Inputs	1 016
— of which central	1 016
<ul><li>Outputs</li></ul>	1 008
— of which central	1 008
Analog channels	
• Inputs	253
— of which central	253
<ul><li>Outputs</li></ul>	250
— of which central	250
Hardware configuration	
Number of expansion units, max.	3
Number of DP masters	
• integrated	1
• via CP	4
Number of operable FMs and CPs (recommended)	
• FM	8
• CP, PtP	8
• CP, LAN	6
Rack	
• Racks, max.	4
<ul> <li>Modules per rack, max.</li> </ul>	8; In rack 3 max. 7
Time of day	
Clock	
Hardware clock (real-time)	Yes
<ul> <li>retentive and synchronizable</li> </ul>	Yes
Backup time	6 wk; At 40 °C ambient temperature
<ul> <li>Deviation per day, max.</li> </ul>	10 s; Typ.: 2 s
Behavior of the clock following POWER-ON	Clock continues running after POWER OFF
Behavior of the clock following expiry of backup period	the clock continues at the time of day it had when power was switched off
Operating hours counter	
• Number	1
Number/Number range	0
<u> </u>	

Pange of values	0 to 2/31 hours (when using SEC 404)
Range of values     Cranularity	0 to 2 <sup>3</sup> 1 hours (when using SFC 101)
Granularity     rotontive	1 h
retentive  Clock synchronization	Yes; Must be restarted at each restart
· ·	Yes
• supported	Yes
• to MPI, master	Yes
on MPI, device     to DP, master	
• to DP, master	Yes; With DP slave only slave clock Yes
• on DP, device	Yes
• in AS, master	No
• in AS, device Digital inputs	NO
Number of digital inputs	16
	12
of which inputs usable for technological functions     integrated channels (DI)	16
	Yes
Input characteristic curve in accordance with IEC 61131, type 1	res
Number of simultaneously controllable inputs	
horizontal installation	16
— up to 40 °C, max.	16 8
— up to 60 °C, max.	0
vertical installation	0
— up to 40 °C, max.	8
Input voltage	24 V
Rated value (DC)     faccional IIOII	
• for signal "0"	-3 to +5V
• for signal "1"	+15 to +30 V
Input current	8 mA
for signal "1", typ.  Input delay (for rated value of input voltage)	O IIIA
for standard inputs	
— parameterizable	Yes; 0.1 / 0.3 / 3 / 15 ms (You can reconfigure the input delay of the standard inputs during program runtime. Please note that under certain circumstances your newly set filter time may not be effective until the next filter cycle.)
— Rated value	3 ms
for technological functions	
— at "0" to "1", max.	16 $\mu$ s; Minimum pulse width/minimum pause between pulses at maximum counting frequency
Cable length	
• shielded, max.	1 000 m; 100 m for technological functions
• unshielded, max.	600 m; for technological functions: No
for technological functions	
— shielded, max.	100 m; at maximum count frequency
— unshielded, max.	not allowed
Digital outputs	
Number of digital outputs	16
of which high-speed outputs	4; Notice: You cannot connect the fast outputs of your CPU in parallel
integrated channels (DO)	16
Short-circuit protection	Yes; Clocked electronically
Response threshold, typ.	1 A
Limitation of inductive shutdown voltage to	L+ (-48 V)
Controlling a digital input	Yes
Switching capacity of the outputs	
on lamp load, max.	5 W
Load resistance range	
• lower limit	48 Ω
upper limit	4 kΩ
Output voltage	
● for signal "1", min.	L+ (-0.8 V)
Output current	
<ul><li>for signal "1" rated value</li></ul>	500 mA
• for signal "1" permissible range, min.	

<ul><li>for signal "1" permissible range, max.</li></ul>	0.6 A
<ul><li>for signal "1" minimum load current</li></ul>	5 mA
for signal "0" residual current, max.	0.5 mA
Parallel switching of two outputs	
<ul><li>for uprating</li></ul>	No
for redundant control of a load	Yes
Switching frequency	
<ul> <li>with resistive load, max.</li> </ul>	100 Hz
<ul> <li>with inductive load, max.</li> </ul>	0.5 Hz
<ul> <li>on lamp load, max.</li> </ul>	100 Hz
of the pulse outputs, with resistive load, max.	2.5 kHz
Total current of the outputs (per group)	
horizontal installation	
— up to 40 °C, max.	3 A
— up to 60 °C, max.	2 A
vertical installation	
— up to 40 °C, max.	2 A
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Analog inputs	
Number of analog inputs	0
integrated channels (AI)	0
Analog outputs	
integrated channels (AO)	0
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
- permissible quiescent current (2-wire sensor), max.	1.5 mA
Interfaces	
Interfaces  Number of PROFINET interfaces	0
	0 2; MPI and PROFIBUS DP
Number of PROFINET interfaces	
Number of PROFINET interfaces Number of RS 485 interfaces	2; MPI and PROFIBUS DP
Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces	2; MPI and PROFIBUS DP
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces 1. Interface	2; MPI and PROFIBUS DP 0
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types  • RS 485	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types  • RS 485 • Output current of the interface, max.	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types  • RS 485 • Output current of the interface, max. Protocols	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types  RS 485 Output current of the interface, max.  Protocols MPI	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI  • PROFIBUS DP master	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA Yes No
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI  • PROFIBUS DP master  • PROFIBUS DP device	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA Yes No No
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI  • PROFIBUS DP master  • PROFIBUS DP device  • Point-to-point connection	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA Yes No No
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types  RS 485 Output current of the interface, max.  Protocols  MPI PROFIBUS DP master PROFIBUS DP device Point-to-point connection  MPI	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA Yes No No No
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types  RS 485  Output current of the interface, max.  Protocols  MPI PROFIBUS DP master PROFIBUS DP device Point-to-point connection MPI Transmission rate, max.	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA Yes No No No
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI  • PROFIBUS DP master  • PROFIBUS DP device  • Point-to-point connection  MPI  • Transmission rate, max.  Services	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA  Yes No No No No
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI  • PROFIBUS DP master  • PROFIBUS DP device  • Point-to-point connection  MPI  • Transmission rate, max.  Services  — PG/OP communication	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA  Yes No No No No Yes Yes
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI  • PROFIBUS DP master  • PROFIBUS DP device  • Point-to-point connection  MPI  • Transmission rate, max.  Services  — PG/OP communication  — Routing	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA  Yes No No No No No No No No
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types  RS 485 Output current of the interface, max.  Protocols MPI PROFIBUS DP master PROFIBUS DP device Point-to-point connection MPI  Transmission rate, max.  Services — PG/OP communication — Routing — Global data communication	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA  Yes No No No No No No Yes No Yes
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types  RS 485  Output current of the interface, max.  Protocols  MPI  PROFIBUS DP master PROFIBUS DP device Point-to-point connection  MPI  Transmission rate, max.  Services  — PG/OP communication — Routing — Global data communication — S7 basic communication	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA  Yes No No No No 187.5 kbit/s  Yes No Yes Yes
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types  RS 485  Output current of the interface, max.  Protocols  MPI  PROFIBUS DP master PROFIBUS DP device Point-to-point connection  MPI  Transmission rate, max.  Services  PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication, as client	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA  Yes No No No No Yes Yes Yes Yes Yes Yes; Only server, configured on one side
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types  RS 485  Output current of the interface, max.  Protocols  MPI  PROFIBUS DP master  PROFIBUS DP device  Point-to-point connection  MPI  Transmission rate, max.  Services  PG/OP communication  Routing  Global data communication  S7 basic communication  S7 communication, as client  S7 communication, as server	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA  Yes No No No No Yes Yes Yes Yes No yes No yes No yes No yes No yes Y
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types  RS 485 Output current of the interface, max.  Protocols  MPI PROFIBUS DP master PROFIBUS DP device Point-to-point connection  MPI  Transmission rate, max.  Services  PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA  Yes No No No No Yes Yes Yes No No to Yes No yes No yes No yes Y
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Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types  RS 485 Output current of the interface, max.  Protocols  MPI PROFIBUS DP master PROFIBUS DP device Point-to-point connection  MPI  Transmission rate, max.  Services  PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication, as client S7 communication, as server  2. Interface Interface type Isolated Interface types	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA  Yes No No No No No So 187.5 kbit/s  Yes Yes Yes Yes Yes Yes Yes Yes Yes Y
Number of PROFINET interfaces Number of RS 485 interfaces Number of RS 422 interfaces  1. Interface Interface type Isolated Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI  • PROFIBUS DP master  • PROFIBUS DP device  • Point-to-point connection  MPI  • Transmission rate, max.  Services  — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server  2. Interface Interface type Isolated	2; MPI and PROFIBUS DP 0 Integrated RS 485 interface No Yes 200 mA  Yes No No No No Ves Yes No No No I87.5 kbit/s  Yes No Yes

MP    PROFINET IO Controller   No     PROFINET IO Device   No     PROFINET CBA   No     PROFINED Promater   Yes     PROFISE DP master   Yes     Paster Development Development DP     Profise DP master   Profit DP     Profit DP master   Profit DP     Profit DP master   Profit DP     Profit DP     Profit DP     Profit DP     Profit DP     Profice DP master   Profit DP     Profit DP     Profice DP     Profit DP     Profit DP     Profice DP     Profice DP     Profice DP     Profit DP     Profice DP     Profit DP     Pr		
	Protocols	
PROFINES DP master PROFINES DP master Transmission rate, max.  PROFINES DP master PROFINES DP master PROFICE OP Communication PROFICE OF COMMUNIC		
PROFIBUS DP master PROFIBUS DP device PROFIBUS DP device PROFIBUS DP device PROFIBUS DP device PROFIBUS DP master  * Transmission rate, max.  12 Mbb/s  Services  - PG/OP communication PS communication PS communication PS communication PS communication PS communication, as client PS communication, as server PEquidistance PS communication, as server PEquidistance PS communication, as server PS communication PD cell data exchange (slave-to-slave communication) PDPV1 PS Address area Ploputs, max. PS Abyte Paddress area Ploputs, max. PS Abyte Polyputs, max. PS Abyte PS		
PROFIBUS DP device PROFIBUS DP master  I Transmission rate, max.  Services  - PGOP communication - Rouling - Global data communication - S7 basic communication - S7 basic communication - S7 communication, as client - S7 communication, as server - Equidistance - Isochronous mode - SYNC/FREEZE - SVC/FREEZE - SVC/FREEZ		
PROFIBUS DP-master  Inframission rate, max.  I 2 Mibits Services  — PGVOP communication Ruiting — Ruiting — Global data communication — S7 basic communication — S7 communication — Direct data exchange (slave-to-slave communication) — DPV1 — Yes — S8 subscriber — Inputs, max. — Outputs, max. — 2 kbyte — Inputs, max. — 2 kbyte — Inputs, max. — 2 kbyte — Outputs, max. — Outputs, max. — 24 byte — Inputs, max. — S7 communication — S7 communication — FROFIBUS DP device / header — Inputs, max. — 12 Mibits — 12 Mibits — S8 D file — (thtp://www.siemans.com/profibus-gad) — Transmission rate, max. — 12 Mibits — Ruiting — Global data communication — Ruiting — Global data communication — S7 basic communication — S7 communication — S8 communication — S7 communication — S7 communication — S7 communication — S8 communication — S7 communication — S8 communication — S7 communication — S8 communication — S9 com		
Transmission rate, max.  Services  - PG/OP communication Yes - Routing Yes - Clobal data communication No - S7 basic communication Yes; Ves (only server; connection configured at one end) - S7 communication, as client No - S7NCPREEZE Yes - Isochronous mode No - S7NCPREEZE Yes - and valuation deactivation of DP devices Yes - max, number of DP devices hat can be activated/deactivated at the same time - Direct data exchange (slave-to-slave communication) - DPV1 Yes - Addess area - Inputs, max. 2 kbyte - Uniquis, max. 2 kbyte - Uniquis, max. 244 byte - Uniquis, max. 244 byte - Outputs, max. 244 byte - Transmission rate, max. 12 kbuts - Transmission rate, max. 12 kbuts - Transmission rate, max. 12 kbuts - Transmission rate, max. 32 byte - Routing Yes; only with passive interface - Routing Yes; only with active interface - S7 communication No - S7 back communication No - S7 communication, as client No - S7 communication, as server Yes - Direct data exchange (slave-to-slave communication No - S7 communication, as client No - S7 communication, as server Yes - Direct data exchange (slave-to-slave communication No - S7 communication, as server Yes - Direct data exchange (slave-to-slave communication) - S7 communication, as server Yes - Direct data exchange (slave-to-slave communication) - S7 communication, as server Yes - Direct data exchange (slave-to-slave communication) - S7 communication, as server Yes - Direct data exchange (slave-to-slave communication) - S7 communication, as server Yes - Direct data exchange (slave-to-slave communication) - S7 communication No - S7 pommunication No - S7 communication No - S7 commu		Yes
PGIOP communication		
- PG/OP communication Yes - Routing - Rout		12 Mbit/s
- Routing - Global data communication - No No - Stabsic communication - Yes; Iblocks only - Stabsic communication - Yes; Iblocks only - St. (Display server; connection configured at one end) - St. Communication, as client - St. Communication, as server - Yes - Equidistance - Yes - Equidistance - Yes - Iblocks only - Yes - Equidistance - Island - No - St. (No. No No No St. (No. No N		
Global data communication  - 57 basic communication  - 57 communication  - 57 communication, as client  - 58 communication of DP devices  - 150 communication  - 150 co	— PG/OP communication	
	-	
- S7 communication, as client No - S7 communication, as client No - S7 communication, as server Yes - Equidistance Yes - Isochronous mode No - SYNC/FREEZE Yes - activation/deactivation of DP devices Yes - max number of DP devices that can be activated/deactivated at the same time - Direct data exchange (slave-to-slave communication) - DPV1 Yes  Address area - Inputs, max. 2 kbyte - Uniputs, max. 2 kbyte - Uniputs, max. 24 byte - Uniputs, max. 244 byte - Uniputs, max. 244 byte - Uniputs, max. 244 byte - Uniputs, max. 32 the search Yes; only with passive interface - GSD file (The latest GSD file is available on the Internet (http://www.siemens.com/profibus-gsd)) - Transmission rate, max. 12 kb/tils - automatic baud rate search Yes; only with passive interface - Address area, max. 32 byte - Services - PG/OP communication Yes - Routing Yes; Only with active interface - S7 communication No - S7 basic communication Yes; Only with active interface - S7 communication, as client No - S7 communication, as server Yes - Direct data exchange (slave-to-slave communication) - S7 communication, as server Yes - Dref data exchange (slave-to-slave communication) - S7 communication, as server Yes - Dref data exchange (slave-to-slave communication) - FRO/OP communication No - Optivity Protocols - PRO/Plaste - Outputs - PRO/OP communication No - Communication Interface No - Communication Interface No - Communication No - Communicat	Global data communication	
- S7 communication, as server Yes - Equidistance Yes - Equidistance Yes - Indicator - Indicator Yes - Indicator - Indicato		Yes; Yes (only server; connection configured at one end)
- Equidistance Yes  - Isochronous mode No  - SYNG/FREEZE Yes  - activation/deactivation of DP devices Yes  - max. number of DP devices that can be 8  activated/deactivated at the same time  - Direct data exchange (slave-to-slave communication) - DPV1 Yes   Address area  - Inputs, max. 2 kbyte  - Outputs, max. 2 kbyte  - Inputs, max. 24 byte  - Inputs, max. 244 byte  - Outputs, max. 32	— S7 communication, as client	No
Isochronous mode SYNO/FREEZE activation/deactivation of DP devices activation/deactivation of DP devices max. number of DP devices that can be activate/deactivated at the same time Direct data exchange (slave-to-slave communication) DPV1	— S7 communication, as server	
- SYNC/FREEZE - activation/deactivation of DP devices Yes - activation/deactivation of DP devices that can be activated/deactivated at the same time - Direct data exchange (slave-to-slave communication) - DPV1 Yes - Address area - Inputs, max. 2 kbyte - Outputs, max. 2 kbyte - Inputs, max. 24 byte - Inputs, max. 244 byte - Outputs, max. 244 byte - Inputs, max. 34 byte - Inputs, max. 35 byte - Inputs Address area, max. 32 byte - Services - PG/OP communication Yes - Routing Yes; Only with active interface - Routing Yes; Only with active interface - S7 communication No - S7 basic communication No - S7 communication Yes; Yes (only server; connection configured at one end) - S7 communication, as client No - S7 communication, as server Yes - Direct data exchange (slave-to-slave communication) - DPV1 No - Transfer memory - Inputs 244 byte - Outputs 244 byte - Protocols - PROFIsafe No - Communication / header - PG/OP communication / Yes	·	
- max. number of DP devices that can be activated/deactivated at the same time  - Direct data exchange (slave-to-slave communication)  - DPV1  Yes  Address area  - Inputs, max, 2 kbyte - Outputs, max, 2 kbyte  - Inputs, max, 244 byte - Outputs, max, 244 byte  - Inputs, max, 244 byte  - Outputs, max, 244 byte  - Outputs  - ST communication, as client No  - ST communication, as server Yes  - Direct data exchange (slave-to-slave communication)  - DPV1  No  - Transfer memory  - Inputs - Outputs  - Outputs  - PROFIEse  No  - Outputs - PROFIEse  - PROFIEse - Outputs - PROFIEse - PROF		
activated/deactivated at the same time  — Direct data exchange (slave-to-slave communication)  — DPV1  Address area  — Inputs, max. — Outputs, max. — 124 byte  274 byte  274 byte  274 byte  275 file is available on the Internet (http://www.slemens.com/profibus-gsd)  176 file is available on the Internet (http://www.slemens.com/profibus-gsd)  177 file atest GSD file is available on the Internet (http://www.slemens.com/profibus-gsd)  178 file is available on the Internet (http://www.slemens.com/profibus-gsd)  179 file is available on the Internet (http://www.slemens.com/profibus-gsd)  170 file is available on the Internet (http://www.slemens.com/profibus-gsd)  171 file atest GSD file is available on the Internet (http://www.slemens.com/profibus-gsd)  172 file is available on the Internet (http://www.slemens.com/profibus-gsd)  173 file atest GSD file is available on the Internet (http://www.slemens.com/profibus-gsd)  174 byte  175 for available on the Internet  175 for avail	<ul> <li>activation/deactivation of DP devices</li> </ul>	Yes
Direct data exchange (slave-to-slave communication) DPV1 PDV1 PDV1 PDV1 PDV1 PDV1 PV1 PV2  Address area Inputs, max Outputs, max		8
Address area  Inputs, max Outputs, max Outputs, max. 2 kbyte 2 kbyte  2nd interface / DP master / payload data per DP Device / header Inputs, max. 244 byte 2- Outputs, max. 244 byte 2nd interface / PROFIBUS DP device / header  GSD file Transmission rate, max. 12 Mbit/s 12 Mbit/s 12 Mbit/s 13 Address area, max. 12 Mbit/s 14 Services PG/OP communication Routing Global data communication S7 basic communication S7 communication, as client S7 communication, as server Direct data exchange (slave-to-slave communication) DPV1 Inputs Outputs Outputs PROFISATe Outputs PROFISATe No Communication / No S7 communication / Yes Outputs Outputs Outputs Outputs PROFISATe Outputs / Pes Outputs / Pes PROFISATe Outputs / Pes PROFISATe One munication / No PROFISATe Outputs / Pes	— Direct data exchange (slave-to-slave	Yes; as subscriber
Address area  Inputs, max Outputs, max Outputs Output	•	Yes
Inputs, max. 2 kbyte 2 kbyte 2nd interface / DP master / payload data per DP Device / header Inputs, max. 244 byte Outputs, max. 244 byte 2nd interface / PROFIBUS DP device / header  Inputs, max. 244 byte 2nd interface / PROFIBUS DP device / header  GSD file The latest GSD file is available on the Internet (http://www.siemens.com/profibus-gsd)  Transmission rate, max. 12 Mbit/s  automatic baud rate search Yes; only with passive interface Address area, max. 32  User data per address area, max. 32 byte  Services PG/OP communication Yes Routing Yes; Only with active interface Global data communication No S7 basic communication No S7 basic communication No S7 communication Yes; Yes (only server; connection configured at one end) S7 communication, as client No S7 communication, as server Yes Direct data exchange (slave-to-slave communication) DPV1 No  Transfer memory Inputs 244 byte Outputs PROFIsafe No Outputs No PROFIsafe No Outputs No PROFIsafe No PROFIsafe No Outputs No PROFIsafe No PROFIsafe No PROFIsafe No PROFIsafe No PROFIsafe No PROFISATE PROFISATE PROFISATE PROFISATE PROFISATE PROFISATE PROFISATE PROFISATE PROFISATE PROFISA		100
- Outputs, max.  2 kbyte  2nd interface / I/D master / payload data per DP Device / header  - Inputs, max.  - Outputs, max.  244 byte  2nd interface / PROFIBUS DP device / header  • GSD file  The latest GSD file is available on the Internet (http://www.siemens.com/profibus-gsd)  • Transmission rate, max.  • 12 Mbit/s  • Address area, max.  • Automatic baud rate search  • Address area, max.  • User data per address area, max.  Services  - PG/OP communication  - Routing  - Global data communication  - S7 basic communication  - S7 communication  - S7 communication  - S7 communication, as client  - S7 communication, as server  - Direct data exchange (slave-to-slave communication)  - DPV1  Transfer memory  - Inputs  - Outputs  PROFisafe  No  communication functions / header  PROFOsmemunication functions / header  PROFOsmemunication functions / header  PROFO communication functions / header  PG/OP communication functions / header  PG/OP communication functions / header		2 khyte
2nd interface / DP master / payload data per DP Device / header	·	
Inputs, max Outputs, max Outputs	• •	•
Outputs, max.  244 byte  2nd interface / PROFIBUS DP device / header  • GSD file  The latest GSD file is available on the Internet (http://www.siemens.com/profibus-gsd)  • Transmission rate, max.  • automatic baud rate search  • Address area, max.  • User data per address area, max.  22  • User data per address area, max.  32  - PG/OP communication  Routing  - Global data communication  - S7 basic communication  - S7 communication  - S7 communication  - S7 communication, as client  - S7 communication, as server  - Direct data exchange (slave-to-slave communication)  - DPV1  Transfer memory  - Inputs  - Outputs  PROFISAfe  No  No  PROFISAfe  No  Communication functions / header  PG/OP communication  No  - S7 communication  - S7 co		
2nd interface / PROFIBUS DP device / header  • GSD file  The latest GSD file is available on the Internet (http://www.siemens.com/profibus-gsd)  • Transmission rate, max.  • automatic baud rate search  • Address area, max.  • User data per address area, max.  22  • User data per address area, max.  32 byte  Services  — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1  Transfer memory — Inputs — Outputs  Protocols  PROFIsafe  No  Communication functions / header  PG/OP communication  Yes  Transfer memory  PG/OP communication  No  Tensfer Mono  No  Tensfer Mono  No  PROFIsafe No  Communication functions / header	·	
GSD file  The latest GSD file is available on the Internet (http://www.siemens.com/profibus-gsd)  Transmission rate, max.  automatic baud rate search Address area, max.  User data per address area, max.  Folior Communication  Frotocols  POVD communication  Transfer memory  POVD communication  Transfer memory  POVD communication  POVD communica	·	7
<ul> <li>Transmission rate, max.</li> <li>automatic baud rate search</li> <li>Address area, max.</li> <li>User data per address area, max.</li> <li>PG/OP communication</li> <li>Services</li> <li>PG/OP communication</li> <li>Sophical data exchange (slave-to-slave communication)</li> <li>DPV1</li> <li>No</li> <li>Transfer memory</li> <li>Inputs</li> <li>Outputs</li> <li>Protocols</li> <li>PROFIsafe</li> <li>No</li> <li>Communication functions / header</li> <li>PG/OP communication</li> <li>Yes</li> </ul>		
automatic baud rate search     Address area, max.     32     User data per address area, max. 32 byte  Services  - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication, as client - S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 No  Transfer memory - Inputs - Outputs  Protocols  PROFIsafe No  communication / header  PG/OP communication / header  PG/OP communication - Yes; only with passive interface 32 32 32 byte 32 48 59  Pes; Only with passive interface 48 32 32 32 byte 32 49 59 49 59  No  Transfer memory - Inputs - Outputs - Outputs - No  Communication functions / header  PG/OP communication - Yes; Only with active interface - No - Routing - Yes; Only with passive interface - 32 49 59 59 59 69 69 69 69 69 69 69 69 69 69 69 69 69	Transmission rate. max.	
Address area, max.  User data per address area, max.  Services  - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication, as client - S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 No  Transfer memory - Inputs - Outputs  Protocols  PROFIsafe No  No  32  32  32  32  32  32  32  32  34  35  Yes  Conlly server; connection configured at one end)  No  Yes; Yes (only server; connection configured at one end)  No  Yes  Yes - Direct data exchange (slave-to-slave communication) - DPV1 No  Transfer memory - Inputs - Outputs  244 byte  Protocols  PROFIsafe No  Communication functions / header  PG/OP communication  Yes	•	
User data per address area, max.  Services  - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication, as client - S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 No  Transfer memory - Inputs - Outputs  Protocols  PROFIsafe No  No  Services  Yes Only with active interface No No No No No No No Server; connection configured at one end) No Yes; Yes (only server; connection configured at one end) No Yes  Yes - Direct data exchange (slave-to-slave communication) - DPV1 No  Transfer memory - Inputs - Outputs - Outputs - Yes  PROFIsafe No  No  Communication functions / header  PG/OP communication - Yes		
Services  - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 No  Transfer memory - Inputs - Outputs  PROFIsafe No  Communication / No  Yes; Yes (only server; connection configured at one end) No  Yes  Yes  Yes  Yes  244 byte  244 byte  Protocols  PROFIsafe No  No  Yes	·	
- PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 No  Transfer memory - Inputs - Outputs  PROFIsafe No  Communication / header PG/OP communication - Routing Yes; Yes (only server; connection configured at one end) No Yes; Yes (only server; connection configured at one end) No  Ves; Yes (only server; connection configured at one end) No  Ves  Yes - Outputs data exchange (slave-to-slave yes - Direct data exchange (slave-to-slave yes - Yes - Direct data exchange (slave-to-slave yes - Direct data exchange		
- Routing Yes; Only with active interface - Global data communication No - S7 basic communication No - S7 communication Yes; Yes (only server; connection configured at one end) - S7 communication, as client No - S7 communication, as server Yes - Direct data exchange (slave-to-slave communication) - DPV1 No  Transfer memory - Inputs 244 byte - Outputs 244 byte  Protocols  PROFIsafe No  communication functions / header  PG/OP communication  Yes		Yes
- Global data communication No - S7 basic communication No - S7 communication Yes; Yes (only server; connection configured at one end) - S7 communication, as client No - S7 communication, as server Yes - Direct data exchange (slave-to-slave communication) - DPV1 No  Transfer memory - Inputs 244 byte - Outputs 244 byte  Protocols  PROFIsafe No  Communication functions / header  PG/OP communication Yes		
- S7 basic communication No - S7 communication Yes; Yes (only server; connection configured at one end) - S7 communication, as client No - S7 communication, as server Yes - Direct data exchange (slave-to-slave communication) - DPV1 No  Transfer memory - Inputs 244 byte - Outputs 244 byte  Protocols  PROFIsafe No  communication functions / header  PG/OP communication Yes	S	
- S7 communication Yes; Yes (only server; connection configured at one end) - S7 communication, as client No - S7 communication, as server Yes - Direct data exchange (slave-to-slave communication) - DPV1 No  Transfer memory - Inputs 244 byte - Outputs 244 byte  Protocols  PROFIsafe No  communication functions / header PG/OP communication Yes		
- S7 communication, as client - S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 No  Transfer memory - Inputs - Outputs  Protocols  PROFIsafe No  communication functions / header  PG/OP communication  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye		
- S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 No  Transfer memory - Inputs - Outputs 244 byte  Protocols  PROFIsafe No  communication functions / header  PG/OP communication Yes		
— Direct data exchange (slave-to-slave communication)  — DPV1  No  Transfer memory  — Inputs — Outputs  Protocols  PROFIsafe  No  communication functions / header  PG/OP communication  Yes  Yes  Yes		
communication)         No           — DPV1         No           Transfer memory         244 byte           — Outputs         244 byte           Protocols         PROFIsafe           PROFIsafe         No           communication functions / header         Yes		
Transfer memory           — Inputs         244 byte           — Outputs         244 byte           Protocols           PROFIsafe         No           communication functions / header           PG/OP communication         Yes		
— Inputs         244 byte           — Outputs         244 byte           Protocols           PROFIsafe         No           communication functions / header           PG/OP communication         Yes	— DPV1	No
— Outputs 244 byte  Protocols  PROFIsafe No  communication functions / header  PG/OP communication Yes	Transfer memory	
Protocols PROFIsafe No communication functions / header PG/OP communication Yes	— Inputs	244 byte
PROFIsafe No communication functions / header PG/OP communication Yes	— Outputs	244 byte
communication functions / header PG/OP communication Yes	Protocols	
PG/OP communication Yes	PROFIsafe	No
	communication functions / header	
	PG/OP communication	Yes
Data record routing No	Data record routing	No
Global data communication	Global data communication	
• supported Yes		
Number of GD loops, max.  8	• supported	Yes
Number of GD packets, max.  8	• •	

Number of GD packets, reserver, max. Number of DD packets, cereiver, max. Size of GD packets (of which consistent), max.  Size of GD packets (of which consistent), max.  Size of GD packets (of which consistent), max.  Size of GD packets (of which consistent), max.  Size of GD packets (of which consistent)  Size of GD pack
Size of GD packets, max. Size of CD packet (of which consistent), max. Size of CD packet (of which consistent), max.  Size of CD packet (of which consistent), max.  Size of CD packet (of which consistent), max.  Size of CD packet (of which consistent), max.  Size of CD packet (of which consistent), max.  Size of CD packet (of which consistent), max.  Size of CD packet (of which consistent), max.  Size of CD packet (of which consistent), max.  Size of CD packet (of which consistent), max.  Size of CD packet (of which consistent), max.  Size of CD packet (of which consistent), max.  Size of CD packet (of which consistent), max.  Size of CD packet (of which consistent), max.  Size of CD packet (of which consistent), max.  Size of CD packet (of which consistent), max.  Size of CD packet (of Which consistent), max.  Size of CD packet (of Which consistent), max.  Size of CD packet (of which consistent), max.  Size of CD packet (of Which consistent), max.  Size of CD packet (of Which consistent), max.  Size of CD packet (of Which consistent), max.  Size of CD packet (of Which consistent), max.  Size of CD packet (of Which consistent), max.  Size of CD packet (of Which consistent), max.  Size of CD packet (of Which consistent), max.  Size of CD packet (of CD packet (of Which consistent), max.  Size of CD packet (of Which consi
Size of GD packet (of which consistent), max.  78 bytes  Supported  User data per job, max.  User data per job (of which consistent), max.  So bytes 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET asserted)  For communication  Supported
S7 basic communication  • supported  • User data per job, max. • User data per job (of which consistent), max.  • Store described the server of bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  • Supported  • Sa server • Sa client • User data per job, max. • User data per job (of which consistent), max.  • User data per job (of
Supported User data per job, max. User data per job (of which consistent), max.  76 byte 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  77 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  78 communication  **Supported **Supported **Supported **Supported **Supported **User data per job (of which consistent), max.  **User data per job (of which consistent), max.  **Stoempatible communication  **Supported **Suppo
User data per job, max.  User data per job (of which consistent), max.  76 byte 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  77 communication  ST communication  ST communication  ST communication  ST communication  User data per job, max.  User data per job, max.  User data per job (of which consistent), max.  ST compatible communication  ST compatible communication  ST compatible communication  ST compatible communication  ST coverall  ST communication  Overall  Overall  Overall  ST communication  Overall  Overall  Overall  Overall  ST communication  Overall  Overall  Overall  Overall  ST communication  Overall
User data per job (of which consistent), max.  76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Strommunication  Supported Supported Supported Supported Supported Super data per job, max. Supported Suppor
as server)  Strommunication  supported as server as client User data per job, max. User data per job (of which consistent), max.  Strompatible communication supported versivia CP and loadable FB  180 byte; With PUT/GET  240 byte; as server  Strompatible communication supported versivia CP and loadable FC  Number of connections  versali subsile for PG communication - reserved for PG communication, min adjustable for PG communication, min adjustable for PG communication, max usable for OP communication - reserved for OP communication, min adjustable for OP saic communication - reserved for ST basic communication - reserved for ST basic communication - adjustable for OP saic communication - adjustable for ST basic communication, min adjus
S7 communication  • supported • as server • as client • User data per job, max. • User data per job (of which consistent), max.  240 byte; with PUT/GET  240 byte; as server  S5 compatible communication • supported • usable for PG communication • usable for PG communication • usable for PG communication • adjustable for PG communication • adjustable for PG communication • adjustable for PG communication • reserved for PG communication • adjustable for PG communication • adjustable for PG communication • reserved for PG communication • adjustable for PG communication • adjustable for OP communication • reserved for PG communication • reserved for PG communication • adjustable for OP communication, min. • adjustable for OP communication, min. • adjustable for S7 basic communication • reserved for PG shasic communication • reserved for PG shasic communication, min. • adjustable for S7 basic communication, max. • usable for routing  S7 message functions  Number of login stations for message functions, max.  8; Depending on the configured connections for PG/OP and S7 basic communication  reserved for PG status for max.  9; User of person for the configured connections for PG/OP and S7 basic communication.  10 communication  11 communication  12 commissioning functions  Status block  13 yes; Up to 2 simultaneously  Single step  Yes  Ves  Variables  Number of tovariables  1 liputs, outputs, memory bits, DB, times, counters  1 liputs, outputs, memory bits, DB, times, counters
supported     as server     as client     User data per job, max.     User data per job (of which consistent), max.     240 byte; as server  Stompatible communication     supported     Yes; via CP and loadable FB  180 byte; With PUT/GET  240 byte; as server  Stompatible communication  version of PG communication  version of PG communication  reserved for PG communication  adjustable for PG communication, min.  adjustable for PG communication, max.  usable for OP communication  reserved for OP communication  adjustable for OP communication, min.  adjustable for ST basic communication  adjustable for ST basic communication, min.  adjustable for stable for ST basic communication, min.  adjustable for stable for ST basic communication, min.  4  4  4  4  4  5  6  6  7  7  8  8  8  8  8  8  8  8  8  8  8
as server as client User data per job, max. User data per job (of which consistent), max.  240 byte; as server  S5 compatible communication  • supported  • overall  • usable for PG communication  — reserved for PG communication  — adjustable for PC communication  — reserved for PC communication  — adjustable for S7 basic communication, min.  —
as client User data per job, max. User data per job (of which consistent), max.  User data per job (of which consistent), max.  240 byte; as server  St compatible communication  supported Yes; via CP and loadable FC  Number of connections  overall  subable for PG communication  - reserved for PG communication  - adjustable for PG communication  - adjustable for PG communication, mix.  - usable for PC communication  - reserved for OP communication, max.  ousable for OP communication  - reserved for OP communication  - adjustable for OP communication  - adjustable for OP communication, mix.  - usable for ST basic communication, mix.  - usable for ST basic communication  - adjustable for ST basic communication, mix.  - usable for ST basic communication, mix.  - usable for ST basic communication, mix.  - usable for ST basic communication, mix.  - wusable for ST basic communication, max.  • usable for Total stations for ST basic communication, max.  • usable for Total stations for message functions, max.  • usable for Total stations for message functions, max.  St message functions  Number of login stations for message functions, max.  8: Depending on the configured connections for PG/OP and ST basic communication  reserved for maximum stations for message simultaneously active Alarm-S blocks, max.  300  Test commissioning functions  Status/control  • Status/control  • Status/control variable  • Variables  • Number of variables, max.  30
User data per job (of which consistent), max. 240 byte; as server  Scompatible communication  * supported  * overall  * overall  * usable for PG communication  — reserved for PG communication, max.  * usable for PC communication, min. — adjustable for PG communication, min. — adjustable for PC communication, min. — adjustable for PC communication — reserved for OP communication, max.  * usable for PC communication — reserved for OP communication, min. — adjustable for PC communication, min. — adjustable for OP communication, min. — adjustable for OP communication, min. — adjustable for OP communication, min. — adjustable for S7 basic communication — reserved for S7 basic communication — adjustable for S7 basic communication, min.  * usable for S7 basic communication, min.  * usable for S7 basic communication, min.  * usable for S7 basic communication, min.  * adjustable for S7 basic communication, min.  * usable for s7 basic communication, min.  * Usable for S7 basic communication, min.  * adjustable for S7 basic communication, min.  * Usable for S7 basic communication, min.  * Usab
User data per job (of which consistent), max.  240 byte; as server  Scompatible communication  * supported  Number of connections  * overall  * usable for PG communication  - reserved for PG communication  - adjustable for PG communication, min.  - adjustable for PG communication  - reserved for OP communication  - reserved for OP communication  - adjustable for OP communication  - reserved for OP communication  - adjustable for S7 basic communication, min.  - adjustable for S7 basic communication, max.  * usable for routing  **T message functions  Number of login stations for message functions, max.  **S7 message functions  Number of login stations for message functions, max.  **Status block  Status block  Status block  Status block  Status/control variable  **Ves; Up to 2 simultaneously  Status/control variable  **Ves  Number of variables, max.  **Jupus, outputs, memory bits, DB, times, counters  **Number of variables, max.  **Jupus, outputs, memory bits, DB, times, counters  **Number of variables, max.  **Jupus, outputs, memory bits, DB, times, counters
supported Yes; via CP and loadable FC  Number of connections  • usable for PG communication 7  — reserved for PG communication 1 — adjustable for PG communication 7  — reserved for PG communication 1 — adjustable for PG communication 7  • usable for PO communication 7  — reserved for OP communication 7 — reserved for OP communication 1 — adjustable for OP communication 7 — reserved for OP communication 1 — adjustable for OP communication 1 — adjustable for OP communication, min. 1 — adjustable for OP communication 4 — reserved for S7 basic communication 4 — reserved for S7 basic communication 0 — adjustable for S7 basic communication, min. 0 — adjustable for S7 basic communication, min. 4  • usable for routing 4; max.  S7 message functions  Number of login stations for message functions, max. 8; Depending on the configured connections for PG/OP and S7 basic communication 300  Process diagnostic messages Yes simultaneously active Alarm-S blocks, max. 300  Test commissioning functions  Status block Yes; Up to 2 simultaneously Single step Yes Number of breakpoints 4  Status/control variable Yes Number of variables, max. 30
supported     Number of connections      overall
Number of connections
overall     usable for PG communication         — reserved for PG communication         — adjustable for PG communication, min.         — adjustable for PG communication, max.         • usable for OP communication, max.         • usable for OP communication         — adjustable for OP communication         — adjustable for OP communication, min.         — adjustable for OP communication, min.         — adjustable for OP communication, max.         • usable for S7 basic communication, max.         • usable for S7 basic communication         — adjustable for S7 basic communication, min.         — adjustable for S7 basic communication, max.         4
usable for PG communication  reserved for PG communication  adjustable for PG communication, min.  adjustable for PG communication, max.  usable for OP communication  reserved for OP communication  adjustable for OP communication  adjustable for OP communication  adjustable for OP communication, min.  adjustable for OP communication, max.  usable for S7 basic communication, max.  usable for S7 basic communication  adjustable for S7 basic communication, min.  adjustable for S7 basic communication, max.  usable for routing  S7 message functions  Number of login stations for message functions, max.  S8: Depending on the configured connections for PG/OP and S7 basic communication  Process diagnostic messages  Yes  simultaneously active Alarm-S blocks, max.  300  Test commissioning functions  Status block  Yes; Up to 2 simultaneously  Single step  Yes  Number of breakpoints  4  Status/control variable  Status/control variable  Ves  Inputs, outputs, memory bits, DB, times, counters  Number of variables, max.  30
- reserved for PG communication 1 - adjustable for PG communication, min. 1 - adjustable for PG communication, max. 7  • usable for OP communication 7 - reserved for OP communication 1 - adjustable for OP communication 1 - adjustable for OP communication, min. 1 - adjustable for OP communication, min. 1 - adjustable for OP communication, max. 7 • usable for S7 basic communication 4 - reserved for S7 basic communication 0 - adjustable for S7 basic communication 0 - adjustable for S7 basic communication 4 - reserved for S7 basic communication  0 - adjustable for S7 basic communication, min. 0 - adjustable for S7 basic communication, max. 4 • usable for routing 4; max.  S7 message functions  Number of login stations for message functions, max. 8; Depending on the configured connections for PG/OP and S7 basic communication reseases
- adjustable for PG communication, min adjustable for PG communication, max.  • usable for OP communication - reserved for OP communication 1 - adjustable for OP communication, min adjustable for OP communication, max.  • usable for S7 basic communication - adjustable for S7 basic communication, min adjustable for S7 basic communication, min adjustable for s7 basic communication, min adjustable for s7 basic communication, max.  • usable for routing  S7 message functions  Number of login stations for message functions, max.  8; Depending on the configured connections for PG/OP and S7 basic communication  Process diagnostic messages Yes simultaneously active Alarm-S blocks, max.  300  Test commissioning functions  Status block Yes; Up to 2 simultaneously Single step Yes Number of breakpoints 4  Status/control  • Status/control  • Status/control variable • Variables • Number of variables, max.  30
- adjustable for PG communication, max.  • usable for OP communication  - reserved for OP communication  - adjustable for OP communication, min.  - adjustable for OP communication, min.  - adjustable for OP communication, max.  • usable for S7 basic communication  - reserved for S7 basic communication  - adjustable for S7 basic communication  - adjustable for S7 basic communication, min.  - adjustable for S7 basic communication, min.  - adjustable for S7 basic communication, max.  • usable for routing  S7 message functions  Number of login stations for message functions, max.  8; Depending on the configured connections for PG/OP and S7 basic communication  Process diagnostic messages  Yes  simultaneously active Alarm-S blocks, max.  300  Test commissioning functions  Status block  Yes; Up to 2 simultaneously  Single step  Yes  Number of breakpoints  4  Status/control  • Status/control  • Status/control variable  • Variables  • Number of variables, max.  30
usable for OP communication  reserved for OP communication  adjustable for OP communication, min.  adjustable for OP communication, min.  adjustable for OP communication, max.  usable for S7 basic communication  reserved for S7 basic communication  adjustable for S7 basic communication  adjustable for S7 basic communication, min.  adjustable for S7 basic communication, min.  adjustable for S7 basic communication, min.  adjustable for S7 basic communication, max.  usable for routing  status for routing  status for message functions, max.  8; Depending on the configured connections for PG/OP and S7 basic communication  reserved for S7 basic communication, max.  8; Depending on the configured connections for PG/OP and S7 basic communication  reserved for S7 basic communication  reserved for S7 basic communication, max.  8; Depending on the configured connections for PG/OP and S7 basic communication  reserved for S7 basic communication  reserved for S7 basic communication, max.  8; Depending on the configured connections for PG/OP and S7 basic communication  reserved for S7 basic communication  reserved for S7 basic communication, min.  4; max.  status block status/control place for sex particular sex par
- reserved for OP communication 1 - adjustable for OP communication, min. 1 - adjustable for OP communication, max. 7  • usable for S7 basic communication 4 - reserved for S7 basic communication 0 - adjustable for S7 basic communication 10 - adjustable for S7 basic communication, min. 0 - adjustable for S7 basic communication, min. 0 - adjustable for S7 basic communication, max. 4 • usable for routing 4; max.  S7 message functions  Number of login stations for message functions, max. 8; Depending on the configured connections for PG/OP and S7 basic communication  Process diagnostic messages Yes simultaneously active Alarm-S blocks, max. 300  Test commissioning functions  Status block Yes; Up to 2 simultaneously Single step Yes  Number of breakpoints 4  Status/control  • Status/control  • Status/control variable Yes • Variables Inputs, outputs, memory bits, DB, times, counters  • Number of variables, max. 30
- adjustable for OP communication, min adjustable for OP communication, max.  • usable for S7 basic communication - reserved for S7 basic communication 0 - adjustable for S7 basic communication 0 - adjustable for S7 basic communication, min adjustable for S7 basic communication, min. 0 - adjustable for S7 basic communication, max. 4; max.  S7 message functions  Number of login stations for message functions, max. 8; Depending on the configured connections for PG/OP and S7 basic communication  Process diagnostic messages simultaneously active Alarm-S blocks, max. 300  Test commissioning functions  Status block Yes; Up to 2 simultaneously Single step Yes  Number of breakpoints 4  Status/control  • Status/control  • Status/control variable • Variables • Number of variables, max. 30
- adjustable for OP communication, max.  ■ usable for S7 basic communication  - reserved for S7 basic communication  0 - adjustable for S7 basic communication, min.  - adjustable for S7 basic communication, min.  - adjustable for S7 basic communication, max.  ■ usable for routing  S7 message functions  Number of login stations for message functions, max.  Process diagnostic messages  simultaneously active Alarm-S blocks, max.  Status block  Yes  simultaneously active Alarm-S blocks, max.  Status block  Yes; Up to 2 simultaneously  Single step  Number of breakpoints  4  Status/control  ■ Status/control  ■ Status/control variable  ■ Variables  ■ Number of variables, max.  300
<ul> <li>usable for S7 basic communication</li> <li>reserved for S7 basic communication</li> <li>adjustable for S7 basic communication, min.</li> <li>adjustable for S7 basic communication, min.</li> <li>adjustable for S7 basic communication, max.</li> <li>usable for routing</li> <li>4; max.</li> </ul> S7 message functions Number of login stations for message functions, max. <ul> <li>8; Depending on the configured connections for PG/OP and S7 basic communication</li> </ul> Process diagnostic messages <ul> <li>yes</li> <li>simultaneously active Alarm-S blocks, max.</li> <li>300</li> </ul> Test commissioning functions Status block <ul> <li>Yes; Up to 2 simultaneously</li> </ul> Single step <ul> <li>Yes</li> </ul> Number of breakpoints <ul> <li>4</li> </ul> Status/control <ul> <li>Status/control variable</li> <li>Variables</li> <li>Number of variables, max.</li> </ul> Suppose the properties of the
- reserved for S7 basic communication - adjustable for S7 basic communication, min adjustable for S7 basic communication, min adjustable for S7 basic communication, max.  • usable for routing  S7 message functions  Number of login stations for message functions, max.  8; Depending on the configured connections for PG/OP and S7 basic communication  Process diagnostic messages simultaneously active Alarm-S blocks, max.  300  Test commissioning functions  Status block Status block Yes; Up to 2 simultaneously Single step Yes Number of breakpoints 4  Status/control  • Status/control variable • Variables • Number of variables, max. 30
- adjustable for S7 basic communication, min adjustable for S7 basic communication, max.  ● usable for routing  S7 message functions  Number of login stations for message functions, max.  Process diagnostic messages simultaneously active Alarm-S blocks, max.  Status block Status block Single step Number of breakpoints  Status/control  ● Status/control  ● Status/control variable ● Variables ● Number of variables, max.  0  4  4  4; max.  8; Depending on the configured connections for PG/OP and S7 basic communication  8; Depending on the configured connections for PG/OP and S7 basic communication  9  8; Depending on the configured connections for PG/OP and S7 basic communication  9  9  9  9  9  9  9  9  9  9  9  9  9
- adjustable for S7 basic communication, max.  ● usable for routing  4; max.  S7 message functions  Number of login stations for message functions, max.  8; Depending on the configured connections for PG/OP and S7 basic communication  Process diagnostic messages  yes  simultaneously active Alarm-S blocks, max.  300  Test commissioning functions  Status block  Yes; Up to 2 simultaneously  Single step  Yes  Number of breakpoints  4  Status/control  ● Status/control variable  ● Variables  ● Number of variables, max.  30
• usable for routing     S7 message functions  Number of login stations for message functions, max.  8; Depending on the configured connections for PG/OP and S7 basic communication  Process diagnostic messages     yes simultaneously active Alarm-S blocks, max.  300  Test commissioning functions  Status block     Yes; Up to 2 simultaneously Single step     Yes Number of breakpoints     4  Status/control  Status/control  Status/control variable     Variables     Inputs, outputs, memory bits, DB, times, counters  Number of variables, max.  30
Number of login stations for message functions, max.  8; Depending on the configured connections for PG/OP and S7 basic communication  Process diagnostic messages  simultaneously active Alarm-S blocks, max.  300  Test commissioning functions  Status block  Yes; Up to 2 simultaneously  Single step  Yes  Number of breakpoints  4  Status/control  • Status/control variable  • Variables  • Number of variables, max.  300
Number of login stations for message functions, max.  8; Depending on the configured connections for PG/OP and S7 basic communication  Yes simultaneously active Alarm-S blocks, max.  300  Test commissioning functions  Status block  Yes; Up to 2 simultaneously  Single step  Yes  Number of breakpoints  4  Status/control  • Status/control variable  • Variables  • Number of variables, max.  300
communication  Process diagnostic messages  simultaneously active Alarm-S blocks, max.  300  Test commissioning functions  Status block  Yes; Up to 2 simultaneously  Single step  Yes  Number of breakpoints  4  Status/control  • Status/control variable  • Variables  • Number of variables, max.  30
Process diagnostic messages simultaneously active Alarm-S blocks, max. 300  Test commissioning functions  Status block Yes; Up to 2 simultaneously Single step Yes Number of breakpoints 4  Status/control  • Status/control variable • Variables • Number of variables, max. 30
simultaneously active Alarm-S blocks, max.  Test commissioning functions  Status block Yes; Up to 2 simultaneously Single step Yes Number of breakpoints 4 Status/control  Status/control  Status/control variable Variables Number of variables, max.  Number of variables, max.
Test commissioning functions  Status block Yes; Up to 2 simultaneously Single step Yes  Number of breakpoints 4  Status/control  • Status/control variable • Variables • Number of variables, max. 30
Status block  Yes; Up to 2 simultaneously  Single step  Yes  Number of breakpoints  4  Status/control  • Status/control variable  • Variables  • Number of variables, max.  30
Single step  Yes  Number of breakpoints  4  Status/control  • Status/control variable  • Variables  • Number of variables, max.  30
Number of breakpoints 4  Status/control  Status/control variable  Variables  Number of variables, max.  Variables  Number of variables, max.
Status/control  Status/control variable  Status/control variable  Variables  Inputs, outputs, memory bits, DB, times, counters  Number of variables, max.
<ul> <li>Status/control variable</li> <li>Variables</li> <li>Number of variables, max.</li> <li>Yes</li> <li>Inputs, outputs, memory bits, DB, times, counters</li> <li>30</li> </ul>
<ul> <li>Variables</li> <li>Number of variables, max.</li> <li>Inputs, outputs, memory bits, DB, times, counters</li> <li>30</li> </ul>
• Number of variables, max. 30
— or which status variables, max.
,
— of which control variables, max.
Forcing
• Forcing Yes
• Forcing, variables Inputs, outputs
Number of variables, max.  10
Diagnostic buffer
• present Yes
• Number of entries, max. 500
— adjustable No
— of which powerfail-proof 100; Only the last 100 entries are retained
Number of entries readable in RUN, max.  499
— adjustable Yes; From 10 to 499
— preset 10

Interrupts/diagnostics/status information	
Diagnostics indication LED	
Status indicator digital input (green)	Yes
Status indicator digital output (green)	Yes
Integrated Functions	165
Frequency measurement	Yes
Number of frequency meters	3; up to 30 kHz (see "Technological Functions" manual)
controlled positioning	No
integrated function blocks (closed-loop control) PID controller	Yes; PID controller (see "Technological Functions" manual) Yes
Number of pulse outputs	3; Pulse width modulation up to 2.5 kHz (see "Technological Functions" Manual)
Limit frequency (pulse)	2.5 kHz
Potential separation	
Potential separation digital inputs	
Potential separation digital inputs	Yes
between the channels	No
<ul> <li>between the channels and backplane bus</li> </ul>	Yes
Potential separation digital outputs	
Potential separation digital outputs	Yes
between the channels	Yes
<ul> <li>between the channels, in groups of</li> </ul>	8
between the channels and backplane bus	Yes
solation	
Isolation tested with	600 V DC
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
Use in hazardous areas	
• ATEX	No
Railway application	
• EN 50155	Yes; Sections 4, 5 and 12; no further agreements apply; T1, Category 1, Class
	A/B, EN 50155:2007
Ambient conditions	
Ambient temperature during operation	
• min.	-25 °C; = Tmin
• max.	70 °C; = Tmax; the rated temperature range of -25 +55 °C (T1) applies for the use on railway vehicles according to EN50155
Ambient temperature during storage/transportation	and and a second line to the sec
• min.	-40 °C
• max.	70 °C
Altitude during operation relating to sea level	
Installation altitude above sea level, max.	5 000 m
Ambient air temperature-barometric pressure-altitude	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax
	- 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K)
	at 658 hPa 540 hPa (+3 500 m +5 000 m)
Relative humidity	
<ul> <li>With condensation, tested in accordance with IEC 60068- 2-38, max.</li> </ul>	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
- 11	
Resistance	
Use in stationary industrial systems	
	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
Use in stationary industrial systems  — to biologically active substances according to EN	
Use in stationary industrial systems  — to biologically active substances according to EN 60721-3-3  — to chemically active substances according to EN	Class 3B3 on request Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity
Use in stationary industrial systems  — to biologically active substances according to EN 60721-3-3  — to chemically active substances according to EN 60721-3-3  — to mechanically active substances according to EN	Class 3B3 on request Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *

<ul> <li>to chemically active substances according to EN 60721-3-5</li> </ul>	Yes; Class 5C3 (RH < 75 %) incl. salt spray acc. to EN 50155 (ST2); *
<ul> <li>to mechanically active substances according to EN 60721-3-5</li> </ul>	Yes; Class 5S3 incl. sand, dust; *
Remark	
<ul> <li>Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04</li> </ul>	* The supplied plug covers must remain in place over the unused interfaces during operation!
configuration / header	
Configuration software	
• STEP 7	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203
STEP 7 Lite	No
configuration / programming / header	
<ul> <li>Command set</li> </ul>	see instruction list
<ul> <li>Nesting levels</li> </ul>	8
<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
Know-how protection	
<ul> <li>User program protection/password protection</li> </ul>	Yes
<ul> <li>Block encryption</li> </ul>	Yes; With S7 block Privacy
Dimensions	
Width	80 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	500 g

last modified: 5/13/2024 🖸