## **SIEMENS**

## **Data sheet**

6ES7315-2FJ14-0AB0



SIMATIC S7-300 CPU315F-2 PN/DP, Central processing unit with 512 KB work memory, 1st interface MPI/DP 12 Mbit/s, 2nd interface Ethernet PROFINET, with 2-port switch, Micro Memory Card required

Figure simila

Winding latitus   01		
Firmware version V3.2  Product function  I sockronous mode Programming package  Engineering with Programming package  Supply voltage  Rated value (DC) Permissible range, lower limit (DC) Permissible range, lower limit (DC) Permissible range, lower supply lines (recommendation)  Mains buffering Mains buffering Mains voltage failure stored energy time Repeat rate, min. Programmition (rated value) Current consumption (rated value) Current consumption (in no-load operation), typ. Inrush current, typ. A A Inrush current, typ. A A Pr A A Pr A B Power loss Power loss Power loss, typ. A 4.65 W  Memory  Work memory  I negrated Pug-in (MMC) Plug-in (MMC) Present Porsent Porsent Porsent Porses Porgramming), min.  Backup Present Programming For bit operations, typ. 0.05 µs	General information	
Product function  Isochronous mode Engineering with  Programming package STEP 7 V5.5 or higher, Distributed Safety V5.4 SP4  Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) 28.8 V external protection for power supply lines (recommendation) Mains buffering  Nains buffering Nains for limit (DC) Subject rate, min.  Is Input current Current consumption (rated value) Current consumption (in no-load operation), typ. Insus current, typ.  Power loss Power loss, typ.  Memory Work memory Integrated Expandable Expandable No Load memory Plug-in (MMC) Plug-in (MMC) Plug-in (MMC) Pressent Poresent Poresent Poresent Poresent Poss Poresent Poss Poresent Pug-in (MMC) Pressent Poss Poresent Poss Poresent Poss Poresent Poss Poresent Pug-in (MMC) Press Poss Poresent Poss Poresent Poss Poresent Pug-in (MMC) Press Poresent Pressent Poss Poregramming), min.  Pressent Poss Poregram and data Pressent Poss Poregram and data Pressent Poss Poregram and data Press Poregram and data Press Poregram and data Press Poss Poss Poss Poregramines		
● Isochronous mode Engineering with  ● Programming package STEP 7 V5.5 or higher, Distributed Safety V5.4 SP4  Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, lower limit (DC) external protection for power supply lines (recommendation)  Mains buffering  ● Mains/voltage failure stored energy time • Repeat rate, min.  Input current Current consumption (rated value)  Current consumption (in no-load operation), typ. Inush current, typ.  It		V3.2
Engineering with  Programming package  STEP 7 V5.5 or higher, Distributed Safety V5.4 SP4  Supply voltage  Rated value (DC)  permissible range, lower limit (DC)  external protection for power supply lines (recommendation)  Mains buffering  Mains/voltage failure stored energy time Repeat rate, min.  Is  Input current  Current consumption (rated value)  Current consumption (in no-load operation), typ.  Inrush current, typ.  Power loss  Power loss, typ.  Memory  Work memory  Integrated  Explain (MMC)  Explain (MMC)  Plug-in (MMC)  Plug-in (MMC)  Pressent  Poresent  Poresent  Poresent  Pressent  Pressert  Presser		
Programming package  Supply voltage  Rated value (DC)  permissible range, lower limit (DC)  external protection for power supply lines (recommendation)  Mains buffering  Mains/voltage failure stored energy time Repeat rate, min.  Input current  Current consumption (rated value)  Current consumption (in no-load operation), typ.  Inrush current, typ.  Power loss  Power loss, typ.  Memory  Work memory  Integrated  expandable  Load memory  Plug-in (MMC), max.  Data management on MMC (after last programming), min.  Backup  Pore standard stan	Isochronous mode	Yes; Via PROFIBUS DP or PROFINET interface
Rated value (DC) 24 V permissible range, lower limit (DC) 28.8 V external protection for power supply lines (recommendation)  Mains buffering • Mains/voltage failure stored energy time • Repeat rate, min. 1 s  Input current  Current consumption (rated value) 750 mA  Current consumption (in no-load operation), typ. 150 mA  Inrush current, typ. 4 A  IPt 1 A²-s  Power loss Power loss, typ.  Memory  Work memory  • integrated 512 kbyte • expandable Load memory • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min.  Backup • present yes, Forgram and data  CPU processing times for bit operations, typ.  2 A min.  20.4 V 20		
Rated value (DC)  permissible range, lower limit (DC)  permissible range, upper limit (DC)  external protection for power supply lines (recommendation)  Mains buffering  • Mains/voltage failure stored energy time • Repeat rate, min.  Input current  Current consumption (rated value)  Current consumption (in no-load operation), typ.  Inrush current, typ.  It 1 A²-s  Power loss  Power loss, typ.  Memory  Work memory  • integrated • expandable  Load memory  • Plug-in (MMC), max. • Data management on MMC (after last programming), min.  Backup  • present • without battery  for bit operations, typ.  2 A win.  2 A min.  1 s  5 ms  5 ms  6 ms  7 50 mA  Current consumption (in no-load operation), typ.  150 mA  1 1 A²-s  Power loss  Power loss, typ.  4.65 W  Memory  Work memory  • plug-in (MMC)  • expandable  10 y  Pressent • without battery  Yes; Guaranteed by MMC (maintenance-free) • without battery  CPU processing times  for bit operations, typ.  0.05 µs	Programming package	STEP 7 V5.5 or higher, Distributed Safety V5.4 SP4
permissible range, lower limit (DC) permissible range, upper limit (DC) external protection for power supply lines (recommendation)  Mains buffering  • Mains/voltage failure stored energy time • Repeat rate, min.  Input current  Current consumption (rated value) Current consumption (in no-load operation), typ. Inrush current, typ. If 1A²s  Power loss Power loss, typ.  4.65 W  Memory  Work memory  • integrated • expandable  Cuad memory  • Plug-in (MMC), max. • Data management on MMC (after last programming), min.  Backup  • present • yes; Program and data  CPU processing times for bit operations, typ.  2 A min.  2 A min. 2 A min. 2 A min. 2 A min. 3 Exakup  • yes; Program and data  CPU processing times for bit operations, typ.  2 A min. 3 Exakup  • programming, min.  Each of the power supply lines (vectors) and incompanies (main time).  2 A min. 3 Exakup  • programming, min.  Each of the power supply lines (vectors) and incompanies (main time).  2 A min. 3 Exakup  • programming, min.  Each of the power supply lines (vectors) and incompanies (main time).  Each of the power supply lines (vectors) and incompanies (main time).  Each of the power loss and incompanies (main time).  Each of the power loss are the power loss and incompanies (main time).  Each of the power loss are the power loss and incompanies (main time).  Each of the power loss are the power loss and incompanies (main time).  Each of the power loss are t	Supply voltage	
permissible range, upper limit (DC) external protection for power supply lines (recommendation)  Mains buffering  • Mains/voltage failure stored energy time • Repeat rate, min.  Input current  Current consumption (rated value)  Current consumption (in no-load operation), typ.  Inrush current, typ.  It is 1 A² s  Power loss  Power loss, typ.  Memory  Work memory  • integrated • expandable  Load memory  • Plug-in (MMC) • Plug-in (MMC), max. • Data management on MMC (after last programming), min.  Backup  • present • without battery  CPU processing times for bit operations, typ.  2 A min.  5 ms  2 A min.  4 A min.  5 ms  5 to mA  Current consumption (rated value)  7 50 mA  4 A  4 A  18 to ma  1 8 W  Plug-in (MMC)  9 Plug-in (MMC)  9 Plug-in (MMC)  9 Plug-in (MMC) (after last programming), min.  Backup  9 present 9 yes; Guaranteed by MMC (maintenance-free) 7 yes; Program and data  CPU processing times for bit operations, typ.	Rated value (DC)	24 V
external protection for power supply lines (recommendation)  Mains buffering  • Mains/voltage failure stored energy time • Repeat rate, min.  Input current  Current consumption (rated value)  Current consumption (in no-load operation), typ.  Incush current, typ.  It 1 A² s  Power loss  Power loss, typ.  Memory  Work memory  • integrated • expandable • expandable  Load memory  • Plug-in (MMC) • Plug-in (MMC) • Plug-in (MMC), max. • Data management on MMC (after last programming), min.  Backup • present • without battery  CPU processing times for bit operations, typ.  5 ms  6 ms  5 mA  1 s  1 s  1 s  1 s  1 s  1 s  1 s  1	permissible range, lower limit (DC)	20.4 V
(recommendation)  Mains buffering  • Mains/voltage failure stored energy time • Repeat rate, min.  Input current  Current consumption (rated value)  Current consumption (in no-load operation), typ.  Inrush current, typ.  If 1 A2 s  Power loss  Power loss  Power loss, typ.  Work memory  • integrated • expandable  Load memory  • Plug-in (MMC) • Plug-in (MMC), max. • Data management on MMC (after last programming), min.  Backup  • present • without battery  CPU processing times for bit operations, typ.  5 ms  7 50 mA  1 50 mA  1 4 A  4 A  4 A  7 50 mA  4 A  7 7 50 mA  4 A  7 8  8 M  9 Power loss  8 W  9 without battery  4 (65 W)  9 Wig-in (MMC)  9 Plug-in (MMC)  9 Plug-in (MMC)  9 Present 9 Yes; Guaranteed by MMC (maintenance-free) 9 Yes; Program and data  CPU processing times for bit operations, typ.	permissible range, upper limit (DC)	28.8 V
Mains/voltage failure stored energy time     Repeat rate, min.     1 s  Input current  Current consumption (rated value) Current consumption (in no-load operation), typ. 150 mA  Inrush current, typ. 4 A  I²t 1 A²⋅s  Power loss  Power loss, typ.  Work memory  Work memory  integrated integrated expandable Load memory  Plug-in (MMC) Plug-in (MMC), max. Data management on MMC (after last programming), min.  Backup  present eyithout battery  Yes; Guaranteed by MMC (maintenance-free) eyithout operations, typ.  CPU processing times for bit operations, typ.  750 mA  4 A  1 A²⋅s  750 mA  4 A  1 A²⋅s  Power loss  Power loss  A A  1 D A		2 A min.
Repeat rate, min.  Input current  Current consumption (rated value)  Current consumption (in no-load operation), typ.  Inrush current, typ.  Ift  1 A²·s  Power loss  Power loss, typ.  Wemory  integrated  expandable  No  Load memory  Plug-in (MMC)  Plug-in (MMC), max.  Data management on MMC (after last programming), min.  Backup  e present  present  yes; Guaranteed by MMC (maintenance-free)  without battery  Program and data  CPU processing times  for bit operations, typ.  750 mA  750 mA  750 mA  750 mA  150 mA  161 MP  162 W  4 A  173 W  4 A  184 W  185 W  4 .65 W  Memory  4 .65 W  6 .70 Local careal care	Mains buffering	
Input current Current consumption (rated value) Current consumption (in no-load operation), typ.  Inrush current, typ. If 1 A²-s  Power loss Power loss, typ.  Wemory Work memory  integrated expandable No  Load memory  Plug-in (MMC), max. Plug-in (MMC), max. Data management on MMC (after last programming), min.  Backup e present e present e without battery  Yes; Guaranteed by MMC (maintenance-free) e without battery  CPU processing times for bit operations, typ.  750 mA 750 mA 150 mA 160	<ul> <li>Mains/voltage failure stored energy time</li> </ul>	5 ms
Current consumption (rated value)  Current consumption (in no-load operation), typ.  Inrush current, typ.  It 150 mA  Inrush current, typ.  It 1A2-s  Power loss  Power loss, typ.  Work memory  Integrated  Expandable  Integrated  Integrated  Expandable  Integrated  Expandable  Integrated  Integrated  Expandable  Integrated  Integrated  Expandable  Integrated  Integ	Repeat rate, min.	1 s
Current consumption (in no-load operation), typ.  Inrush current, typ.  I*t  1 A² s  Power loss  Power loss, typ.  4.65 W  Memory  Work memory  • integrated • expandable  Load memory  • Plug-in (MMC), max. • Data management on MMC (after last programming), min.  Backup  • present • without battery  For bit operations, typ.  150 mA  4 A  1 A² s  4 A  1 A² s  Power loss  4.65 W   4.65 W   4.65 W   4.65 W	Input current	
Inrush current, typ.  If t 1 A²-s  Power loss  Power loss, typ. 4.65 W  Memory  Work memory  • integrated • expandable  Load memory  • Plug-in (MMC) • Plug-in (MMC), max. • Data management on MMC (after last programming), min.  Backup • present • without battery  Fug-in tit operations, typ. 0.05 µs	Current consumption (rated value)	750 mA
I²t 1 A²-s  Power loss  Power loss, typ. 4.65 W  Memory  Work memory  • integrated • expandable  Load memory  • Plug-in (MMC) • Plug-in (MMC), max. • Data management on MMC (after last programming), min.  Backup • present • without battery  For bit operations, typ.  1 A²-s  1 A²-s  1 A²-s  1 A²-s  1 A²-s  10 W  Wes  4.65 W   4.65 W	Current consumption (in no-load operation), typ.	150 mA
Power loss Power loss, typ. 4.65 W  Memory  Work memory  integrated expandable No  Load memory  Plug-in (MMC) Plug-in (MMC), max. Data management on MMC (after last programming), min.  Backup  present present ves; Guaranteed by MMC (maintenance-free) without battery  CPU processing times  for bit operations, typ.	Inrush current, typ.	4 A
Power loss, typ.  Memory  Work memory  integrated expandable No  Load memory  Plug-in (MMC) Plug-in (MMC), max. Data management on MMC (after last programming), min.  Backup  present expresent existed without battery  Yes; Guaranteed by MMC (maintenance-free) Yes; Program and data  CPU processing times for bit operations, typ.	l²t	1 A <sup>2</sup> ·s
Memory   Work memory   • integrated 512 kbyte   • expandable No   Load memory   • Plug-in (MMC) Yes   • Plug-in (MMC), max. 8 Mbyte   • Data management on MMC (after last programming), min. 10 y   Backup Yes; Guaranteed by MMC (maintenance-free)   • without battery Yes; Program and data   CPU processing times   for bit operations, typ. 0.05 μs	Power loss	
Work memory  integrated  expandable  No  Load memory  Plug-in (MMC) Plug-in (MMC), max.  Data management on MMC (after last programming), min.  Backup  present expresent expre	Power loss, typ.	4.65 W
<ul> <li>integrated</li> <li>expandable</li> <li>No</li> </ul> Load memory <ul> <li>Plug-in (MMC)</li> <li>Plug-in (MMC), max.</li> <li>Data management on MMC (after last programming), min.</li> </ul> Backup <ul> <li>present</li> <li>without battery</li> </ul> CPU processing times <ul> <li>for bit operations, typ.</li> </ul> 512 kbyte <ul> <li>No</li> </ul> Yes <ul> <li>Subyte</li> <li>Quaranteed by MMC (maintenance-free)</li> <li>Yes; Program and data</li> </ul> CPU processing times <ul> <li>O.05 µs</li> </ul> 0.05 µs	Memory	
<ul> <li>expandable</li> <li>Load memory</li> <li>Plug-in (MMC)</li> <li>Plug-in (MMC), max.</li> <li>Data management on MMC (after last programming), min.</li> <li>Backup</li> <li>present</li> <li>without battery</li> <li>Program and data</li> <li>CPU processing times</li> <li>for bit operations, typ.</li> <li>No</li> <li>Yes</li> <li>Sudaranteed by MMC (maintenance-free)</li> <li>Yes; Program and data</li> <li>0.05 μs</li> </ul>	Work memory	
Load memory  Plug-in (MMC) Plug-in (MMC), max. Backup programming), min.  Backup present without battery  Processing times for bit operations, typ.  Yes Yes Yes Yes Suaranteed by MMC (maintenance-free) Yes; Program and data  O.05 µs	• integrated	512 kbyte
<ul> <li>Plug-in (MMC)         <ul> <li>Plug-in (MMC), max.</li> <li>Data management on MMC (after last programming), min.</li> </ul> </li> <li>Backup         <ul> <li>present</li> <li>without battery</li> </ul> </li> <li>CPU processing times         <ul> <li>for bit operations, typ.</li> </ul> </li> <li>Yes         <ul> <li>Guaranteed by MMC (maintenance-free)</li> <li>Yes; Program and data</li> </ul> </li> <li>CPU processing times</li> <li>0.05 µs</li> </ul>	<ul><li>expandable</li></ul>	No
<ul> <li>Plug-in (MMC), max.</li> <li>Data management on MMC (after last programming), min.</li> <li>Backup</li> <li>present</li> <li>without battery</li> <li>CPU processing times</li> <li>for bit operations, typ.</li> <li>8 Mbyte</li> <li>10 y</li> <li>Yes; Guaranteed by MMC (maintenance-free)</li> <li>Yes; Program and data</li> <li>0.05 µs</li> </ul>	Load memory	
<ul> <li>Data management on MMC (after last programming), min.</li> <li>Backup</li> <li>present</li> <li>without battery</li> <li>CPU processing times</li> <li>for bit operations, typ.</li> <li>10 y</li> <li>Yes; Guaranteed by MMC (maintenance-free)</li> <li>Yes; Program and data</li> <li>0.05 μs</li> </ul>	<ul><li>Plug-in (MMC)</li></ul>	Yes
programming), min.  Backup  ● present  ● without battery  CPU processing times for bit operations, typ.  Yes; Guaranteed by MMC (maintenance-free) Yes; Program and data	<ul><li>Plug-in (MMC), max.</li></ul>	8 Mbyte
<ul> <li>present         <ul> <li>without battery</li> </ul> </li> <li>CPU processing times         <ul> <li>for bit operations, typ.</li> </ul> </li> <li>Yes; Guaranteed by MMC (maintenance-free)         <ul> <li>Yes; Program and data</li> </ul> </li> <li>0.05 μs</li> </ul>		10 y
<ul> <li>without battery</li> <li>CPU processing times</li> <li>for bit operations, typ.</li> <li>0.05 μs</li> </ul>	Backup	
CPU processing times for bit operations, typ.  0.05 μs	• present	Yes; Guaranteed by MMC (maintenance-free)
for bit operations, typ. 0.05 μs	<ul><li>without battery</li></ul>	Yes; Program and data
· · · · · · · · · · · · · · · · · · ·	CPU processing times	
for word operations, typ. 0.09 µs	for bit operations, typ.	0.05 μs
	for word operations, typ.	0.09 µs

	2.42
for fixed point arithmetic, typ.	0.12 μs
for floating point arithmetic, typ.	0.45 µs
CPU-blocks	
Number of blocks (total)	1 024; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.
DB	be reduced by the MINIC used.
Number, max.	1 024; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	OH HUYEO
Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	•
Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
ОВ	
• 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 DPV1 alarm OBs</li> </ul>	3; OB 55, 56, 57
<ul> <li>Number of isochronous mode OBs</li> </ul>	1; OB 61
<ul> <li>Number of startup OBs</li> </ul>	1; OB 100
<ul> <li>Number of asynchronous error OBs</li> </ul>	6; OB 80, 82, 83, 85, 86, 87 (OB83 only for PROFINET IO)
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
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	255
— preset	Z 0 to Z 7
Counting range	· ·
— adjustable	Yes
— lower limit	0
— upper limit	999
IEC counter	Voc
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
S7 times  • Number	256
	ZJU
Retentivity	Vos
Retentivity — adjustable	Yes
Retentivity — adjustable — lower limit	0
Retentivity  — adjustable — lower limit — upper limit	0 255
Retentivity — adjustable — lower limit — upper limit — preset	0
Retentivity — adjustable — lower limit — upper limit — preset Time range	0 255 No retentivity
Retentivity  — adjustable  — lower limit  — upper limit  — preset  Time range  — lower limit	0 255 No retentivity
Retentivity  — adjustable  — lower limit  — upper limit  — preset  Time range  — lower limit  — upper limit  — upper limit	0 255 No retentivity
Retentivity  — adjustable — lower limit — upper limit — preset  Time range — lower limit — upper limit — upper limit	0 255 No retentivity  10 ms 9 990 s
Retentivity  — adjustable — lower limit — upper limit — preset  Time range — lower limit — upper limit  — upper limit  IEC timer  • present	0 255 No retentivity  10 ms 9 990 s  Yes
Retentivity  — adjustable — lower limit — upper limit — preset  Time range — lower limit — upper limit  IEC timer  • present • Type	0 255 No retentivity  10 ms 9 990 s  Yes SFB
Retentivity  — adjustable — lower limit — upper limit — preset  Time range — lower limit — upper limit  — upper limit  — upper sent	0 255 No retentivity  10 ms 9 990 s  Yes

Potentivo data area (incl. timera countera flaga), may	120 khyta
Retentive data area (incl. timers, counters, flags), max.	128 kbyte
Flag	2.049 byto
<ul><li>Size, max.</li><li>Retentivity available</li></ul>	2 048 byte Yes; MB 0 to MB 2 047
•	
Retentivity preset	MB 0 to MB 15
Number of clock memories	8; 1 memory byte
Data blocks	
Retentivity adjustable	Yes; via non-retain property on DB
Retentivity preset	Yes
Local data	
per priority class, max.	32 768 byte; Max. 2048 bytes per block
Address area	
I/O address area	
• Inputs	2 048 byte
<ul> <li>Outputs</li> </ul>	2 048 byte
of which distributed	
— Inputs	2 048 byte
— Outputs	2 048 byte
Process image	
• Inputs	2 048 byte
Outputs	2 048 byte
Inputs, adjustable	2 048 byte
Outputs, adjustable	2 048 byte
Inputs, default	128 byte
Outputs, default	128 byte
Subprocess images	120 byte
Number of subprocess images, max.	1; With PROFINET IO, the length of the user data is limited to 1600
• Number of Subprocess images, max.	bytes
Digital channels	·
• Inputs	16 384
of which central	1 024
Outputs	16 384
— of which central	1 024
Analog channels	
• Inputs	1 024
— of which central	256
Outputs	1 024
— of which central	256
	230
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	10
Rack	
• Racks, max.	4
<ul> <li>Modules per rack, max.</li> </ul>	8
Time of day	
Clock	
Hardware clock (real-time)	Yes
retentive and synchronizable	Yes
Backup time	6 wk; At 40 °C ambient temperature
Deviation per day, max.     Pobavier of the clock following POWER ON.	10 s; Typ.: 2 s
Behavior of the clock following POWER-ON     Pobovior of the clock following expire of backup	Clock continues running after POWER OFF
<ul> <li>Behavior of the clock following expiry of backup period</li> </ul>	the clock continues at the time of day it had when power was switched off
Operating hours counter	
Operating hours counter	

<ul><li>Number</li></ul>	1
<ul> <li>Number/Number range</li> </ul>	0
Range of values	0 to 2^31 hours (when using SFC 101)
Granularity	1 h
• retentive	Yes; Must be restarted at each restart
Clock synchronization	V
• supported	Yes
• to MPI, master	Yes
• to MPI, slave	Yes
• to DP, master	Yes; With DP slave only slave clock
• to DP, slave	Yes
• in AS, master	Yes
• in AS, slave	Yes
on Ethernet via NTP	Yes; As client
Digital inputs	
Number of digital inputs	0
Digital outputs	
Number of digital outputs	0
Analog inputs	
Number of analog inputs	0
Analog outputs	
Number of analog outputs	0
Interfaces	
Number of industrial Ethernet interfaces	1
Number of PROFINET interfaces	1
Number of RS 485 interfaces	1
Number of RS 422 interfaces	0
1. Interface	
Interface type	Integrated RS 485 interface
Isolated	Yes
Interface types	
• RS 485	Yes
<ul> <li>Output current of the interface, max.</li> </ul>	200 mA
Protocols	
• MPI	Yes
<ul> <li>PROFIBUS DP master</li> </ul>	Yes
<ul> <li>PROFIBUS DP slave</li> </ul>	Yes
<ul> <li>Point-to-point connection</li> </ul>	No
MPI	
Transmission rate, max.	12 Mbit/s
Services	
— PG/OP communication	Yes
— Routing	Yes
<ul> <li>Global data communication</li> </ul>	Yes
<ul> <li>S7 basic communication</li> </ul>	Yes
— S7 communication	Yes
<ul> <li>S7 communication, as client</li> </ul>	No; but via CP and loadable FB
— S7 communication, as server	Yes
PROFIBUS DP master	
<ul> <li>Transmission rate, max.</li> </ul>	12 Mbit/s
Number of DP slaves, max.	124
Services	
<ul><li>— PG/OP communication</li></ul>	Yes
— Routing	Yes
<ul> <li>Global data communication</li> </ul>	No
<ul> <li>S7 basic communication</li> </ul>	Yes; I blocks only
— S7 communication	Yes
<ul><li>— S7 communication, as client</li><li>— S7 communication, as server</li></ul>	No Yes

Fauldistance	Voc
— Equidistance	Yes
— Isochronous mode	Yes; OB 61; isochronous mode can only be used alternatively on PROFIBUS DP or PROFINET IO
— SYNC/FREEZE	Yes
Activation/deactivation of DP slaves	Yes
Number of DP slaves that can be	8
simultaneously activated/deactivated, max.	0
Direct data exchange (slave-to-slave)	Yes; as subscriber
communication)	
— DPV1	Yes
Address area	
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	
<ul> <li>Transmission rate, max.</li> </ul>	12 Mbit/s
<ul> <li>automatic baud rate search</li> </ul>	Yes; only with passive interface
<ul> <li>Address area, max.</li> </ul>	32
<ul> <li>User data per address area, max.</li> </ul>	32 byte
Services	
— PG/OP communication	Yes
— Routing	Yes; Only with active interface
<ul> <li>Global data communication</li> </ul>	No
<ul> <li>S7 basic communication</li> </ul>	No
— S7 communication	Yes
<ul> <li>— S7 communication, as client</li> </ul>	No
<ul> <li>S7 communication, as server</li> </ul>	Yes; Connection configured on one side only
<ul> <li>Direct data exchange (slave-to-slave</li> </ul>	Yes
communication)	
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
2. Interface	
Interface type	PROFINET
Isolated	Yes
automatic detection of transmission rate	Yes; 10/100 Mbit/s
Autonegotiation	Yes
Autocrossing	Yes
Change of IP address at runtime, supported	Yes
Interface types	
• RJ 45 (Ethernet)	Yes
<ul> <li>Number of ports</li> </ul>	2
• integrated switch	Yes
Protocols	
• MPI	No
PROFINET IO Controller	Yes; Also simultaneously with IO-Device functionality
PROFINET IO Device	Yes; Also simultaneously with IO Controller functionality
PROFINET CBA	Yes
PROFIBUS DP master	No
PROFIBUS DP slave	No
Open IE communication	Yes; Via TCP/IP, ISO on TCP, and UDP
Web server	Yes; only read function
Media redundancy	Yes
PROFINET IO Controller	
Transmission rate, max.	100 Mbit/s
Services	
— PG/OP communication	Yes
— Routing	Yes

— S7 communication	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32
— Isochronous mode	Yes; OB 61; isochronous mode can only be used alternatively on PROFIBUS DP or PROFINET IO
— IRT	Yes
— Shared device	Yes
Prioritized startup	Yes
Number of IO devices with prioritized startup,	32
max.	<del>-</del>
<ul> <li>Number of connectable IO Devices, max.</li> </ul>	128
— Of which IO devices with IRT, max.	64
— of which in line, max.	64
Number of IO Devices with IRT and the option	128
"high flexibility"	
— of which in line, max.	61
<ul> <li>Number of connectable IO Devices for RT,</li> </ul>	128
max.	400
— of which in line, max.	128
Activation/deactivation of IO Devices	Yes
<ul> <li>Number of IO Devices that can be simultaneously activated/deactivated, max.</li> </ul>	8
<ul> <li>IO Devices changing during operation (partner ports), supported</li> </ul>	Yes
Number of IO Devices per tool, max.	8
Device replacement without swap medium	Yes
— Send cycles	250 μs, 500 μs,1 ms; 2 ms, 4 ms (not in the case of IRT with "high
— Updating time	flexibility" option) 250 µs to 512 ms (depending on the operating mode, see Manual "S7-
A ! !	300 CPU 31xC and CPU 31x, technical Data" for more details)
Address area	014-4-
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
— User data consistency, max.	1 024 byte
DDOFINITIO Davisa	
PROFINET IO Device	
Services	Vos
Services — PG/OP communication	Yes
Services  — PG/OP communication  — Routing	Yes
Services  — PG/OP communication  — Routing  — S7 communication	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode	Yes Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT	Yes Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode	Yes Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT	Yes Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device, max.	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device, max.  Transfer memory	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device, max.  Transfer memory  — Inputs, max.	Yes Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2  1 440 byte; Per IO Controller with shared device
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device, max.  Transfer memory  — Inputs, max.  — Outputs, max.	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device, max.  Transfer memory  — Inputs, max.  — Outputs, max.  Submodules	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2  1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device, max.  Transfer memory  — Inputs, max.  — Outputs, max.  Submodules  — Number, max.	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2  1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device, max.  Transfer memory  — Inputs, max.  — Outputs, max.  Submodules  — Number, max.  — User data per submodule, max.	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2  1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device, max.  Transfer memory  — Inputs, max.  — Outputs, max.  Submodules  — Number, max.  — User data per submodule, max.	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2  1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device 64 1 024 byte
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device, max.  Transfer memory  — Inputs, max.  — Outputs, max.  Submodules  — Number, max.  — User data per submodule, max.  PROFINET CBA  • acyclic transmission	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2  1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device 64 1 024 byte
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device, max.  Transfer memory  — Inputs, max.  — Outputs, max.  Submodules  — Number, max.  — User data per submodule, max.  PROFINET CBA  • acyclic transmission  • cyclic transmission	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2  1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device 64 1 024 byte
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device, max.  Transfer memory  — Inputs, max.  — Outputs, max.  Submodules  — Number, max.  — User data per submodule, max.  PROFINET CBA  • acyclic transmission  • cyclic transmission  Open IE communication	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2  1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device 64 1 024 byte  Yes Yes
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device, max.  Transfer memory  — Inputs, max.  — Outputs, max.  — Outputs, max.  Submodules  — Number, max.  — User data per submodule, max.  PROFINET CBA  • acyclic transmission  • cyclic transmission  Open IE communication  • Number of connections, max.	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2  1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device 64 1 024 byte  Yes Yes Yes
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device, max.  Transfer memory  — Inputs, max.  — Outputs, max.  Submodules  — Number, max.  — User data per submodule, max.  PROFINET CBA  • acyclic transmission  • cyclic transmission  Open IE communication	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2  1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device 64 1 024 byte  Yes Yes
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device, max.  Transfer memory  — Inputs, max.  — Outputs, max.  — Outputs, max.  Submodules  — Number, max.  — User data per submodule, max.  PROFINET CBA  • acyclic transmission  • cyclic transmission  Open IE communication  • Number of connections, max.	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2  1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device 64 1 024 byte  Yes Yes Yes  8 0, 20, 21, 23, 25, 80, 102, 135, 161, 443, 8080, 34962, 34963, 34964,
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device, max.  Transfer memory  — Inputs, max.  — Outputs, max.  Submodules  — Number, max.  — User data per submodule, max.  PROFINET CBA  • acyclic transmission  • cyclic transmission  Open IE communication  • Number of connections, max.  • Local port numbers used at the system end	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2  1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device 64 1 024 byte  Yes Yes Yes Yes Yes Yes
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device, max.  Transfer memory  — Inputs, max.  — Outputs, max.  — Outputs, max.  — User data per submodule, max.  PROFINET CBA  • acyclic transmission  • cyclic transmission  • cyclic transmission  • Number of connections, max.  • Local port numbers used at the system end  • Keep-alive function, supported	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2  1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device 64 1 024 byte  Yes Yes Yes Yes Yes Yes
Services  — PG/OP communication — Routing — S7 communication  — Isochronous mode — IRT — PROFlenergy  — Shared device — Number of IO Controllers with shared device, max.  Transfer memory — Inputs, max. — Outputs, max. Submodules — Number, max. — User data per submodule, max.  PROFINET CBA  • acyclic transmission • cyclic transmission  • cyclic transmission  • Number of connections, max. • Local port numbers used at the system end  • Keep-alive function, supported  Protocols	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2  1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device  64 1 024 byte  Yes Yes Yes Yes  8 0, 20, 21, 23, 25, 80, 102, 135, 161, 443, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535 Yes

Media redundanay	
Media redundancy  — Switchover time on line break, typ	200 ms; PROFINET MRP
<ul><li>— Switchover time on line break, typ.</li><li>— Number of stations in the ring, max.</li></ul>	200 ms; PROFINET MRP 50
Open IE communication	30
• TCP/IP	Yes; via integrated PROFINET interface and loadable FBs
Number of connections, max.	8
Data length for connection type 01H, max.	1 460 byte
Data length for connection type 11H, max.	32 768 byte
<ul> <li>several passive connections per port, supported</li> </ul>	Yes
• ISO-on-TCP (RFC1006)	Yes; via integrated PROFINET interface and loadable FBs
<ul> <li>Number of connections, max.</li> </ul>	8
— Data length, max.	32 768 byte
• UDP	Yes; via integrated PROFINET interface and loadable FBs
<ul> <li>Number of connections, max.</li> </ul>	8
— Data length, max.	1 472 byte
Web server	
<ul><li>supported</li></ul>	Yes; only read function
<ul> <li>User-defined websites</li> </ul>	Yes
Number of HTTP clients	5
communication functions / header	
PG/OP communication	Yes
Data record routing	Yes
Global data communication	
<ul><li>supported</li></ul>	Yes
<ul> <li>Number of GD loops, max.</li> </ul>	8
<ul> <li>Number of GD packets, max.</li> </ul>	8
<ul> <li>Number of GD packets, transmitter, max.</li> </ul>	8
<ul> <li>Number of GD packets, receiver, max.</li> </ul>	8
<ul> <li>Size of GD packets, max.</li> </ul>	22 byte
Size of GD packet (of which consistent), max.	22 byte
S7 basic communication	
<ul><li>supported</li></ul>	Yes
<ul><li>supported</li><li>User data per job, max.</li></ul>	Yes 76 byte
• •	
<ul> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> </ul>	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or
<ul><li>User data per job, max.</li><li>User data per job (of which consistent), max.</li></ul>	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Yes
<ul> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> </ul>	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)
<ul> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> <li>S7 communication</li> <li>supported</li> <li>as server</li> <li>as client</li> </ul>	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Yes Yes Yes; via integrated PROFINET interface and loadable FB or via CP and loadable FB
<ul> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> </ul> S7 communication <ul> <li>supported</li> <li>as server</li> <li>as client</li> </ul> User data per job, max.	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Yes Yes Yes; via integrated PROFINET interface and loadable FB or via CP and
User data per job, max.  User data per job (of which consistent), max.  S7 communication  supported as server as client  User data per job, max.  S5 compatible communication	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Yes Yes Yes; via integrated PROFINET interface and loadable FB or via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)
<ul> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> </ul> S7 communication <ul> <li>supported</li> <li>as server</li> <li>as client</li> </ul> User data per job, max. S5 compatible communication <ul> <li>supported</li> </ul>	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Yes Yes Yes; via integrated PROFINET interface and loadable FB or via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)  Yes; via CP and loadable FC
User data per job, max.  User data per job (of which consistent), max.  S7 communication  supported  as server  as client  User data per job, max.  S5 compatible communication  supported  communication functions / PROFINET CBA (with set target communication functions / PROFINET CBA)	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Yes Yes Yes; via integrated PROFINET interface and loadable FB or via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)  Yes; via CP and loadable FC communication load) / header
User data per job, max.  User data per job (of which consistent), max.  S7 communication  supported  as server  as client  User data per job, max.  S5 compatible communication  supported  communication functions / PROFINET CBA (with set target of Setpoint for the CPU communication load	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Yes Yes Yes; via integrated PROFINET interface and loadable FB or via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)  Yes; via CP and loadable FC communication load) / header 50 %
User data per job, max.  User data per job (of which consistent), max.  S7 communication  supported  as server  as client  User data per job, max.  S5 compatible communication  supported  communication functions / PROFINET CBA (with set target of Setpoint for the CPU communication load  Number of remote interconnection partners	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Yes Yes Yes; via integrated PROFINET interface and loadable FB or via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)  Yes; via CP and loadable FC communication load) / header 50 % 32
User data per job, max.  User data per job (of which consistent), max.  S7 communication  supported  as server  as client  User data per job, max.  S5 compatible communication  supported  communication functions / PROFINET CBA (with set target of Setpoint for the CPU communication load  Number of remote interconnection partners  Number of functions, master/slave	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Yes Yes Yes; via integrated PROFINET interface and loadable FB or via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)  Yes; via CP and loadable FC communication load) / header 50 % 32 30
User data per job, max.  User data per job (of which consistent), max.  S7 communication  supported  as server  as client  User data per job, max.  S5 compatible communication  supported  communication functions / PROFINET CBA (with set target of Setpoint for the CPU communication load  Number of remote interconnection partners  Number of functions, master/slave  Total of all master/slave connections	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Yes Yes Yes; via integrated PROFINET interface and loadable FB or via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)  Yes; via CP and loadable FC communication load) / header 50 % 32 30 1 000
User data per job, max.  User data per job (of which consistent), max.  S7 communication  supported  as server  as client  User data per job, max.  S5 compatible communication  supported  communication functions / PROFINET CBA (with set target of the communication functions of the communication load  Number of remote interconnection partners  Number of functions, master/slave  Total of all master/slave connections  Data length of all incoming connections master/slave, max.	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Yes Yes Yes; via integrated PROFINET interface and loadable FB or via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)  Yes; via CP and loadable FC communication load) / header 50 % 32 30 1 000 4 000 byte
User data per job, max.  User data per job (of which consistent), max.  S7 communication  supported  as server  as client  User data per job, max.  S5 compatible communication  supported  communication functions / PROFINET CBA (with set target of the communication functions / PROFINET CBA (with set target of the communication functions / PROFINET CBA (with set target of the communication functions / PROFINET CBA (with set target of the communication functions / PROFINET CBA (with set target of the communication for the co	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Yes Yes Yes; via integrated PROFINET interface and loadable FB or via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)  Yes; via CP and loadable FC communication load) / header 50 % 32 30 1 000 4 000 byte 4 000 byte
User data per job, max.  User data per job (of which consistent), max.  S7 communication  supported  as server  as client  User data per job, max.  S5 compatible communication  supported  communication functions / PROFINET CBA (with set target of the CPU communication load  Number of remote interconnection partners  Number of functions, master/slave  Total of all master/slave connections  Data length of all incoming connections master/slave, max.  Data length of all outgoing connections master/slave, max.  Number of device-internal and PROFIBUS interconnections	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Yes Yes Yes; via integrated PROFINET interface and loadable FB or via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)  Yes; via CP and loadable FC communication load) / header  50 % 32 30 1 000 4 000 byte 4 000 byte
User data per job, max.  User data per job (of which consistent), max.  S7 communication  supported  as server  as client  User data per job, max.  S5 compatible communication  supported  communication functions / PROFINET CBA (with set target of the CPU communication load  Number of remote interconnection partners  Number of functions, master/slave  Total of all master/slave connections  Data length of all incoming connections master/slave, max.  Data length of all outgoing connections master/slave, max.  Number of device-internal and PROFIBUS interconnections  Data length of device-internal und PROFIBUS interconnections, max.	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Yes Yes Yes; via integrated PROFINET interface and loadable FB or via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)  Yes; via CP and loadable FC communication load) / header 50 % 32 30 1 000 4 000 byte 4 000 byte
User data per job, max.  User data per job (of which consistent), max.  S7 communication  supported  as server  as client  User data per job, max.  S5 compatible communication  supported  communication functions / PROFINET CBA (with set target of set point for the CPU communication load  Number of remote interconnection partners  Number of functions, master/slave  Total of all master/slave connections  Data length of all incoming connections master/slave, max.  Data length of all outgoing connections master/slave, max.  Number of device-internal and PROFIBUS interconnections  Data length of device-internal und PROFIBUS interconnections, max.  Data length per connection, max.	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Yes Yes Yes; via integrated PROFINET interface and loadable FB or via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)  Yes; via CP and loadable FC communication load) / header  50 % 32 30 1 000 4 000 byte  4 000 byte  1 400 byte
<ul> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> </ul> S7 communication <ul> <li>supported</li> <li>as server</li> <li>as client</li> </ul> User data per job, max. S5 compatible communication <ul> <li>supported</li> </ul> communication functions / PROFINET CBA (with set target of the communication functions / PROFINET CBA (with set target of the communication functions / PROFINET CBA (with set target of the communication functions / PROFINET CBA (with set target of the communication functions / PROFINET CBA (with set target of the communication functions / PROFINET CBA (with set target of the communication functions / PROFINET CBA (with set target of the communication functions / PROFINED CBA (with set target of target of communication functions / PROFINED CBA (with set target of target of communication functions / PROFINED CBA (with set target of target of communication functions / PROFINED CBA (with set target of communication functions / PROFINED CBA (with set target of communication functions / PROFINED CBA (with set target of communication functions / PROFINED CBA (with set target of communication functions / PROFINED CBA (with set target of communication functions / PROFINED CBA (with set target of communication functions / PROFINED CBA (with set target of communication functions / PROFINED CBA (with set target of communication functions / PROFINED CBA (with set target of carget	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Yes Yes Yes; via integrated PROFINET interface and loadable FB or via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)  Yes; via CP and loadable FC communication load) / header  50 % 32 30 1 000 4 000 byte 4 000 byte  500 4 000 byte  1 400 byte ction / with acyclic transfer / header
User data per job, max.  User data per job (of which consistent), max.  S7 communication  supported  as server  as client  User data per job, max.  S5 compatible communication  supported  communication functions / PROFINET CBA (with set target of set point for the CPU communication load  Number of remote interconnection partners  Number of functions, master/slave  Total of all master/slave connections  Data length of all incoming connections master/slave, max.  Data length of all outgoing connections master/slave, max.  Number of device-internal and PROFIBUS interconnections  Data length of device-internal und PROFIBUS interconnections, max.  Data length per connection, max.	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Yes Yes Yes; via integrated PROFINET interface and loadable FB or via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)  Yes; via CP and loadable FC communication load) / header  50 % 32 30 1 000 4 000 byte  4 000 byte  1 400 byte

<ul> <li>Number of outgoing interconnections</li> </ul>	100
<ul> <li>Data length of all incoming interconnections, max.</li> </ul>	2 000 byte
<ul> <li>Data length of all outgoing interconnections, max.</li> </ul>	2 000 byte
<ul> <li>Data length per connection, max.</li> </ul>	1 400 byte
performance data / PROFINET CBA / remote interconne	
Transmission frequency: Transmission interval, min.	10 ms
Number of incoming interconnections	200
Number of outgoing interconnections	200
Data length of all incoming interconnections, max.	2 000 byte
Data length of all outgoing interconnections, max.	2 000 byte
Data length per connection, max.	450 byte
performance data / PROFINET CBA / HMI variables via I	•
Number of stations that can log on for HMI	3; 2x PN OPC/1x iMap
variables (PN OPC/iMap)	,
<ul> <li>HMI variable updating</li> </ul>	500 ms
— Number of HMI variables	200
<ul> <li>Data length of all HMI variables, max.</li> </ul>	2 000 byte
performance data / PROFINET CBA / PROFIBUS proxy	
— supported	Yes
Number of linked PROFIBUS devices	16
Data length per connection, max.	240 byte; Slave-dependent
Number of connections	,
• overall	16
usable for PG communication	15
reserved for PG communication	1
	1
<ul><li>— adjustable for PG communication, min.</li><li>— adjustable for PG communication, max.</li></ul>	15
adjustable for PG communication, max.      usable for OP communication	15
— reserved for OP communication	1
— adjustable for OP communication, min.	1
— adjustable for OP communication, max.	15
usable for S7 basic communication	14
<ul> <li>reserved for S7 basic communication</li> </ul>	0
— adjustable for S7 basic communication, min.	0
<ul> <li>adjustable for S7 basic communication, max.</li> </ul>	14
<ul> <li>usable for S7 communication</li> </ul>	14
<ul> <li>reserved for S7 communication</li> </ul>	0
<ul> <li>adjustable for S7 communication, min.</li> </ul>	0
<ul> <li>adjustable for S7 communication, max.</li> </ul>	14
<ul> <li>total number of instances, max.</li> </ul>	32
usable for routing	X1 as MPI: max. 10; X1 as DP master: max. 24; X1 as DP slave (active): max. 14; X2 as PROFINET: 24 max.
S7 message functions	
Number of login stations for message functions, max.	16; 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	1
	Voc
Status/control variable     Variables	Yes
Variables     Number of variables, may	Inputs, outputs, memory bits, DB, times, counters
<ul> <li>Number of variables, max.</li> </ul>	30
·	
— of which status variables, max.  — of which control variables, max.	30 14

Forcing	
• Forcing	Yes
Forcing, variables	Inputs, outputs
Number of variables, max.	10
Diagnostic buffer	10
• present	Yes
Number of entries, max.	500
— adjustable	No
of which powerfail-proof	100
Number of entries readable in RUN, max.	499
— adjustable	Yes
— preset	10
Service data	10
• can be read out	Yes
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	60 °C
configuration / header	
Configuration software	
• STEP 7	Yes; V5.5 or higher
configuration / programming / header	100, 100, 100
Command set	see instruction list
Nesting levels	8
System functions (SFC)	see instruction list
System function blocks (SFB)	see instruction list
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	Yes
— GRAPH	Yes
— HiGraph®	Yes
Know-how protection	
User program protection/password protection	Yes
Block encryption	Yes; With S7 block Privacy
Dimensions	
Width	40 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	340 g
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