## SIEMENS

## Data sheet

## 6ES7317-2FK14-0AB0



SIMATIC S7-300 CPU317F-2 PN/DP, Central processing unit with 1.5 MB work memory, 1st interface MPI/DP 12 Mbit/s, 2nd interface Ethernet PROFINET, with 2-port switch, Micro Memory Card required

General information	
HW functional status	01
Firmware version	V3.2
Product function	
Isochronous mode	Yes; Via PROFIBUS DP or PROFINET interface
Engineering with	
<ul> <li>Programming package</li> </ul>	STEP 7 V5.5 or higher, Distributed Safety V5.4 SP4
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
external protection for power supply lines (recommendation)	2 A min.
Mains buffering	
<ul> <li>Mains/voltage failure stored energy time</li> </ul>	5 ms
• 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
l²t	1 A <sup>2</sup> ·s
Power loss	
Power loss, typ.	4.65 W
Memory	
Work memory	
integrated	1 536 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
CPU processing times	
for bit operations, typ.	0.025 µs
for word operations, typ.	0.03 µs
for fixed point arithmetic, typ.	0.04 µs
for floating point arithmetic, typ.	0.16 µs
CPU-blocks	

Number of blocks (total)	2.040 (DDs. FCs. FDs); the maximum number of leadable blacks can be
Number of blocks (total)	2 048; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.
DB	
Number, max.	2 048; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	очкоус
Number, max.	2 048; Number range: 0 to 7999
• Size, max.	-
FC	64 kbyte
	2.049: Number reases: 0 to 7000
Number, max.	2 048; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	04.14.44
• Size, max.	64 kbyte
Number of free cycle OBs	1; OB 1
Number of time alarm OBs	1; OB 10
Number of delay alarm OBs	2; OB 20, 21
Number of cyclic interrupt OBs	4; OB 32, 33, 34, 35
Number of process alarm OBs	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 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously)
Number of startup OBs	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)
<ul> <li>Number of synchronous error OBs</li> </ul>	2; OB 121, 122
Nesting depth	
<ul> <li>per priority class</li> </ul>	16
<ul> <li>additional within an error OB</li> </ul>	4
Counters, timers and their retentivity	
S7 counter	
• Number	512
Retentivity	
— adjustable	Yes
— preset	Z 0 to Z 7
Counting range	
— adjustable	Yes
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Туре	SFB
Number	Unlimited (limited only by RAM capacity)
S7 times	Orimitited (infinited only by IN-INI capacity)
	F10
Number     Retentivity	512
Retentivity	Vee
— adjustable	Yes
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
• Туре	
- Number	SFB
Number	SFB Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
Data areas and their retentivity	Unlimited (limited only by RAM capacity)
Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max.	Unlimited (limited only by RAM capacity)
Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag	Unlimited (limited only by RAM capacity) 256 kbyte
Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag • Size, max.	Unlimited (limited only by RAM capacity) 256 kbyte 4 096 byte
Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag • Size, max. • Retentivity available	Unlimited (limited only by RAM capacity) 256 kbyte 4 096 byte Yes; From MB 0 to MB 4 095

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	8 192 byte
Outputs	8 192 byte
of which distributed	
— Inputs	8 192 byte
— Outputs	8 192 byte
Process image	· ··· · · · · · · · · · · · · · · · ·
• Inputs	8 192 byte
Outputs	8 192 byte
Inputs, adjustable	8 192 byte
• Outputs, adjustable	8 192 byte
Inputs, default	256 byte
Outputs, default	256 byte
Subprocess images	
Number of subprocess images, max.	1; With PROFINET IO, the length of the user data is limited to 1600 bytes
Digital channels	
Inputs	65 536
— of which central	1 024
• Outputs	65 536
— of which central	1 024
Analog channels	1021
Inputs	4 096
— of which central	256
Outputs	4 096
— of which central	256
Hardware configuration	
Number of expansion units, max.	3
Number of DP masters	•
integrated	1
-	4
• via CP	
via CP Number of operable FMs and CPs (recommended)	
Number of operable FMs and CPs (recommended)	
Number of operable FMs and CPs (recommended) • FM	8
Number of operable FMs and CPs (recommended) • FM • CP, PtP	8 8
Number of operable FMs and CPs (recommended) • FM • CP, PtP • CP, LAN	8
Number of operable FMs and CPs (recommended) • FM • CP, PtP • CP, LAN Rack	8 8 10
Number of operable FMs and CPs (recommended) • FM • CP, PtP • CP, LAN Rack • Racks, max.	8 8 10 4
Number of operable FMs and CPs (recommended) • FM • CP, PtP • CP, LAN Rack • Racks, max. • Modules per rack, max.	8 8 10
Number of operable FMs and CPs (recommended) • FM • CP, PtP • CP, LAN Rack • Racks, max. • Modules per rack, max. Time of day	8 8 10 4
Number of operable FMs and CPs (recommended) • FM • CP, PtP • CP, LAN Rack • Racks, max. • Modules per rack, max. Time of day Clock	8 8 10 4
Number of operable FMs and CPs (recommended) • FM • CP, PtP • CP, LAN Rack • Racks, max. • Modules per rack, max. Time of day Clock • Hardware clock (real-time)	8 8 10 4 8
Number of operable FMs and CPs (recommended) • FM • CP, PtP • CP, LAN Rack • Racks, max. • Modules per rack, max. Time of day Clock • Hardware clock (real-time) • retentive and synchronizable	8 8 10 4 8 8
Number of operable FMs and CPs (recommended)    FM  CP, PtP  CP, LAN  Rack  Racks, max.  Modules per rack, max.  Time of day  Clock  Hardware clock (real-time)  retentive and synchronizable Backup time	8 8 10 4 8 8 7 Yes Yes 6 wk; At 40 °C ambient temperature
Number of operable FMs and CPs (recommended)    FM  CP, PtP  CP, LAN  Rack  Racks, max.  Modules per rack, max.  Time of day  Clock  Hardware clock (real-time)  retentive and synchronizable Backup time Deviation per day, max.	8 8 10 4 8 Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s
Number of operable FMs and CPs (recommended)   FM  CP, PtP  CP, LAN  Rack  Racks, max. Modules per rack, max.  Modules per rack, max.  Time of day  Clock  Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max. Behavior of the clock following POWER-ON	8 8 10 4 8 Yes Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s Clock continues running after POWER OFF
Number of operable FMs and CPs (recommended)   FM  CP, PtP  CP, LAN  Rack  Racks, max. Modules per rack, max.  Modules per rack, max.  Time of day  Clock  Hardware clock (real-time)  retentive and synchronizable Backup time Deviation per day, max. Behavior of the clock following POWER-ON Behavior of the clock following expiry of backup period	8 8 10 4 8 Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s
Number of operable FMs and CPs (recommended)   FM  CP, PtP  CP, LAN  Rack  Racks, max. Modules per rack, max.  Modules per rack, max.  Time of day  Clock  Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max. Behavior of the clock following POWER-ON	8 8 10 4 8 Yes Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s Clock continues running after POWER OFF
Number of operable FMs and CPs (recommended)   FM  CP, PtP  CP, LAN  Rack  Racks, max.  Modules per rack, max.  Modules per rack, max.  Time of day  Clock  Hardware clock (real-time)  retentive and synchronizable  Backup time  Deviation per day, max.  Behavior of the clock following POWER-ON  Behavior of the clock following expiry of backup period  Operating hours counter  Number	8 8 10 4 8 7 4 8 Ves Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s Clock continues running after POWER OFF the clock continues at the time of day it had when power was switched off 4
Number of operable FMs and CPs (recommended)   FM  CP, PtP  CP, LAN  Rack  Racks, max.  Modules per rack, max.  Modules per rack, max.  Time of day  Clock  Hardware clock (real-time)  retentive and synchronizable  Backup time  Deviation per day, max.  Behavior of the clock following POWER-ON  Behavior of the clock following expiry of backup period  Operating hours counter  Number Number Number range	8 8 10 4 8 7 4 8 7 Ves 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s Clock continues running after POWER OFF the clock continues at the time of day it had when power was switched off 4 0 to 3
Number of operable FMs and CPs (recommended)   FM  CP, PtP  CP, LAN  Rack  Racks, max. Modules per rack, max. Modules per rack, max.  Time of day  Clock  Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max. Behavior of the clock following POWER-ON Behavior of the clock following expiry of backup period  Operating hours counter  Number Number Range of values	8 8 10 4 8 Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s Clock continues running after POWER OFF the clock continues at the time of day it had when power was switched off 4 0 to 3 0 to 2^31 hours (when using SFC 101)
Number of operable FMs and CPs (recommended)   FM  CP, PtP  CP, LAN  Rack  Racks, max. Modules per rack, max. Modules per rack, max.  Time of day  Clock  Hardware clock (real-time)  retentive and synchronizable  Backup time  Deviation per day, max. Behavior of the clock following POWER-ON Behavior of the clock following expiry of backup period  Operating hours counter  Number Number Range of values Granularity	<ul> <li>8</li> <li>8</li> <li>10</li> <li>4</li> <li>8</li> <li>Yes</li> <li>6 wk; At 40 °C ambient temperature</li> <li>10 s; Typ.: 2 s</li> <li>Clock continues running after POWER OFF</li> <li>the clock continues at the time of day it had when power was switched off</li> <li>4</li> <li>0 to 3</li> <li>0 to 2^31 hours (when using SFC 101)</li> <li>1 h</li> </ul>
Number of operable FMs and CPs (recommended)   FM  CP, PtP  CP, LAN  Rack  Racks, max. Modules per rack, max. Modules per rack, max.  Time of day  Clock  Hardware clock (real-time)  retentive and synchronizable Backup time Deviation per day, max. Behavior of the clock following POWER-ON Behavior of the clock following expiry of backup period  Operating hours counter  Number Number Range of values Granularity retentive	8 8 10 4 8 7 Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s Clock continues running after POWER OFF the clock continues at the time of day it had when power was switched off 4 0 to 3 0 to 2^31 hours (when using SFC 101)
Number of operable FMs and CPs (recommended)   FM  CP, PtP  CP, LAN  Rack  Racks, max.  Modules per rack, max.  Modules per rack, max.  Time of day  Clock  Hardware clock (real-time)  retentive and synchronizable  Backup time  Deviation per day, max.  Behavior of the clock following POWER-ON  Behavior of the clock following expiry of backup period  Operating hours counter  Number  Number  Range of values  Granularity retentive  Clock synchronization	<ul> <li>8</li> <li>8</li> <li>10</li> <li>4</li> <li>8</li> <li>Yes</li> <li>Yes</li> <li>6 wk; At 40 °C ambient temperature</li> <li>10 s; Typ.: 2 s</li> <li>Clock continues running after POWER OFF</li> <li>the clock continues at the time of day it had when power was switched off</li> <li>4</li> <li>0 to 3</li> <li>0 to 2^31 hours (when using SFC 101)</li> <li>1 h</li> <li>Yes; Must be restarted at each restart</li> </ul>
Number of operable FMs and CPs (recommended)   FM  CP, PtP  CP, LAN  Rack  Racks, max.  Modules per rack, max.  Modules per rack, max.  Time of day  Clock  Hardware clock (real-time)  retentive and synchronizable  Backup time  Deviation per day, max.  Behavior of the clock following POWER-ON  Behavior of the clock following expiry of backup period  Operating hours counter  Number  Number  Number  Range of values  Granularity retentive  supported	8 8 9 10 4 8 8 7 9 8 7 9 8 7 9 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s Clock continues running after POWER OFF the clock continues at the time of day it had when power was switched off 4 0 to 3 0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart Yes
Number of operable FMs and CPs (recommended)   FM  CP, PtP  CP, LAN  Rack  Racks, max.  Modules per rack, max.  Modules per rack, max.  Time of day  Clock  Hardware clock (real-time)  retentive and synchronizable  Backup time  Deviation per day, max.  Behavior of the clock following POWER-ON  Behavior of the clock following expiry of backup period  Operating hours counter  Number  Number  Range of values  Granularity retentive  Clock synchronization	<ul> <li>8</li> <li>8</li> <li>10</li> <li>4</li> <li>8</li> <li>Yes</li> <li>Yes</li> <li>6 wk; At 40 °C ambient temperature</li> <li>10 s; Typ.: 2 s</li> <li>Clock continues running after POWER OFF</li> <li>the clock continues at the time of day it had when power was switched off</li> <li>4</li> <li>0 to 3</li> <li>0 to 2^31 hours (when using SFC 101)</li> <li>1 h</li> <li>Yes; Must be restarted at each restart</li> </ul>

• to DP, master	Yes; With DP slave only slave clock
• on DP, device	Yes
• in AS, master	Yes
• in AS, device	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
PROFIBUS DP master	Yes
PROFIBUS DP device	Yes
<ul> <li>Point-to-point connection</li> </ul>	No
MPI	
• Transmission rate, max.	12 Mbit/s
	12 Mbit/s
• Transmission rate, max.	12 Mbit/s Yes
Transmission rate, max. Services	
Transmission rate, max.     Services     — PG/OP communication	Yes
Transmission rate, max.     Services     — PG/OP communication     — Routing	Yes Yes
<ul> <li>Transmission rate, max.</li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> </ul> </li> </ul>	Yes Yes Yes
Transmission rate, max.     Services         — PG/OP communication         — Routing         — Global data communication         — S7 basic communication	Yes Yes Yes Yes
Transmission rate, max.     Services         — PG/OP communication         — Routing         — Global data communication         — S7 basic communication         — S7 communication	Yes Yes Yes Yes
Transmission rate, max. Services         — PG/OP communication         — Routing         — Global data communication         — S7 basic communication         — S7 communication         — S7 communication, as client	Yes Yes Yes Yes No; but via CP and loadable FB
<ul> <li>Transmission rate, max.</li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> </ul> </li> </ul>	Yes Yes Yes Yes No; but via CP and loadable FB
Transmission rate, max.     Services         — PG/OP communication         — Routing         — Global data communication         — S7 basic communication         — S7 communication         — S7 communication, as client         — S7 communication, as server PROFIBUS DP master	Yes Yes Yes Yes No; but via CP and loadable FB Yes
Transmission rate, max.     Services         — PG/OP communication         — Routing         — Global data communication         — S7 basic communication         — S7 communication         — S7 communication, as client         — S7 communication, as server  PROFIBUS DP master      Transmission rate, max.	Yes Yes Yes Yes No; but via CP and loadable FB Yes 12 Mbit/s
<ul> <li>Transmission rate, max.</li> <li>Services <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> </ul> </li> <li>PROFIBUS DP master <ul> <li>Transmission rate, max.</li> <li>max. number of DP devices</li> </ul> </li> </ul>	Yes Yes Yes Yes No; but via CP and loadable FB Yes 12 Mbit/s
<ul> <li>Transmission rate, max.</li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> </ul> </li> <li>PROFIBUS DP master         <ul> <li>Transmission rate, max.</li> <li>max. number of DP devices</li> <li>Services</li> </ul> </li> </ul>	Yes Yes Yes Yes No; but via CP and loadable FB Yes 12 Mbit/s 124
<ul> <li>Transmission rate, max.</li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> </ul> </li> <li>PROFIBUS DP master         <ul> <li>Transmission rate, max.</li> <li>max. number of DP devices</li> <li>Services                 <ul> <li>PG/OP communication</li> </ul> </li> </ul> </li> </ul>	Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes 12 Mbit/s 124
<ul> <li>Transmission rate, max.</li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> </ul> </li> <li>PROFIBUS DP master         <ul> <li>Transmission rate, max.</li> <li>max. number of DP devices</li> <li>Services                 <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Routing</li> </ul> </li> </ul> </li> </ul>	Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes 12 Mbit/s 124 Yes
<ul> <li>Transmission rate, max.</li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> </ul> </li> <li>PROFIBUS DP master         <ul> <li>Transmission rate, max.</li> <li>max. number of DP devices</li> <li>Services                 <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>Global data communication</li> <li>Routing</li> <li>Global data communication</li> </ul> </li> </ul> </li> </ul>	Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes 12 Mbit/s 124 Yes Yes No
<ul> <li>Transmission rate, max.</li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> </ul> </li> <li>PROFIBUS DP master         <ul> <li>Transmission rate, max.</li> <li>max. number of DP devices</li> </ul> </li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 communication</li> </ul> </li> </ul>	Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes U 12 Mbit/s 124 Yes Yes No Yes; I blocks only
<ul> <li>Transmission rate, max.</li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> </ul> </li> <li>PROFIBUS DP master         <ul> <li>Transmission rate, max.</li> <li>max. number of DP devices</li> </ul> </li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> </ul> </li> </ul>	Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes U U 12 Mbit/s 124 Yes Yes No Yes No Yes No Yes; I blocks only Yes
<ul> <li>Transmission rate, max.</li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> </ul> </li> <li>PROFIBUS DP master         <ul> <li>Transmission rate, max.</li> <li>max. number of DP devices</li> </ul> </li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 communication</li> </ul> </li> </ul>	Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes I2 Mbit/s 124 Yes Yes No Yes, I blocks only Yes, I blocks only Yes No
<ul> <li>Transmission rate, max.</li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> </ul> </li> <li>PROFIBUS DP master         <ul> <li>Transmission rate, max.</li> <li>max. number of DP devices</li> </ul> </li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 basic communication</li> <li>S7 basic communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> </ul> </li> </ul>	Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes U U U U U U U U U U U U U U U U U U
<ul> <li>Transmission rate, max.</li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> </ul> </li> <li>PROFIBUS DP master         <ul> <li>Transmission rate, max.</li> <li>max. number of DP devices</li> </ul> </li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 basic communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> <li>Equidistance</li> </ul> </li> </ul>	Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes 12 Mbit/s 124 Yes Yes No Yes; I blocks only Yes; I blocks only Yes No Yes No Yes Solowing Yes Yes Yes
<ul> <li>Transmission rate, max.</li> <li>Services <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> </ul> </li> <li>PROFIBUS DP master <ul> <li>Transmission rate, max.</li> <li>max. number of DP devices</li> </ul> </li> <li>Services <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> <li>Equidistance</li> <li>Isochronous mode</li> </ul> </li> </ul>	Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes 12 Mbit/s 124 Yes Yes Yes No Yes; I blocks only Yes No Yes; I blocks only Yes No Yes No Yes Yes No
<ul> <li>Transmission rate, max.</li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> </ul> </li> <li>PROFIBUS DP master         <ul> <li>Transmission rate, max.</li> <li>max. number of DP devices</li> </ul> </li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 basic communication</li> <li>S7 basic communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> <li>Equidistance</li> <li>Isochronous mode</li> <li>SYNC/FREEZE</li> </ul> </li> </ul>	Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes 12 Mbit/s 124 Yes Yes Yes No Yes; 1 blocks only Yes No Yes; 1 blocks only Yes Yes No Yes Yes Yes Yes
<ul> <li>Transmission rate, max.</li> <li>Services <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> </ul> </li> <li>PROFIBUS DP master <ul> <li>Transmission rate, max.</li> <li>max. number of DP devices</li> </ul> </li> <li>Services <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 basic communication</li> <li>S7 basic communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> <li>Equidistance</li> <li>Isochronous mode</li> <li>SYNC/FREEZE</li> <li>activation/deactivation of DP devices</li> <li>max. number of DP devices that can be</li> </ul> </li> </ul>	Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes 12 Mbit/s 124 Yes Yes Yes Yes Yes No Yes; I blocks only Yes; I blocks only Yes No Yes; I blocks only Yes No Yes Yes No
<ul> <li>Transmission rate, max.</li> <li>Services <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 basic communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> </ul> </li> <li>PROFIBUS DP master <ul> <li>Transmission rate, max.</li> <li>max. number of DP devices</li> </ul> </li> <li>Services <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> <li>Equidistance</li> <li>Isochronous mode</li> <li>SYNC/FREEZE</li> <li>activation/deactivation of DP devices</li> <li>max. number of DP devices that can be activated/deactivated at the same time</li> <li>Direct data exchange (slave-to-slave</li> </ul> </li> </ul>	Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes 12 Mbit/s 124 Yes Yes Yes No Yes; I blocks only Yes No Yes; I blocks only Yes No Yes Yes No Yes No Yes S No Yes S No
<ul> <li>Transmission rate, max.</li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> </ul> </li> <li>PROFIBUS DP master</li> <li>Transmission rate, max.</li> <li>max. number of DP devices</li> <li>Services         <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> <li>Equidistance</li> <li>Isochronous mode</li> <li>SYNC/FREEZE</li> <li>activation/deactivation of DP devices</li> <li>max. number of DP devices that can be activated/deactivated at the same time</li> <li>Direct data exchange (slave-to-slave communication)</li> </ul> </li> </ul>	Yes Yes Yes No; but via CP and loadable FB Yes No; but via CP and loadable FB Yes Yes Yes Yes No Yes; I blocks only Yes No Yes No Yes Solo 61; isochronous mode can only be used alternatively on PROFIBUS DP or PROFINET IO Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes

1st interface: / DP nexter / payload data per DP Device / header         - Inputs, max.       244 byte         - Outputs, max.       244 byte         PROFIBUS DP slave         • Transmission rate, max.       12 Mult/s         • automatic baud rate search       Yes; only with passive interface         • Address area, max.       32         • User data per address area, max.       32 byte         Services       -         - Routing       Yes; Only with active interface         - Routing       Yes; Only with active interface         - Global data communication       No         - S7 communication       No         - Direct data acchange (slave-to-slave communication rule)       Yes; Connection configured on one side only         - Direct data suchange (slave-to-slave communication rule)       Yes; 10/100 Mbit/s         - Outputs       244 byte         2. Interface       Yes         Interface type       PROFINET         Isolated       Yes	
- Inputs, max.     244 byte       - Outputs, max.     244 byte       PROFIBUS DP size       • Transmission rate, max.     12 Mbl/s       • automatic boud 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       - Routing     Yes       - Soft optication, as client     No       - S7 communication, as server     Yes; Connection configured on one side only       - S7 communication, as server     Yes; Connection configured on one side only       - Drivit     No       - Drivit     No       - Drivit     No       - Druta     244 byte       - Outputs     244 byte       - Outputs     244 byte       - Outputs     244 byte       - Outputs     244 byte       2 Interface     Yes       automatic detection of transmission rate     Yes; 10/100 Mbl/s       Autorossing     Yes       - Rod 145 (Ethernet)     Yes       - Interface type     PROFINET       Interface type     Yes       - Interface type     Yes       - Rol 45 (Ethernet)     Yes <td></td>	
Outputs, max.     244 byte       PROFIBUS DP slave     12 Mbit/s       • Transmission rate, max.     12 Mbit/s       • automatic baud rate search     32       • Address area, max.     32       • Older data per address area, max.     32       Services     -       - PG/GOP communication     Yes; only with passive interface       - Routing     Yes; Only with active interface       - Global data communication     No       - S7 basic communication     Yes       - S7 communication, as client     No       - S7 communication, as server     Yes; Connection configured on one side only       - Direct data axchange (slave-to-slave communication)     No       - Direct data axchange (slave-to-slave communication)     Yes       - Direct data axchange (slave-to-slave communication)     No       - Direct data axchange (slave-to-slave communication)     Yes       - Direct data axchange (slave-to-slave communication)     Yes       Interface type     PROFINET       Isolated     Yes       21.10100 Mbit/s     Au	
PROFIBUS DP slave       • Transmission rate, max.     12 Mbit/s       • automatic baut rate search     Yes; only with passive interface       • Address area, max.     32       • User data per address area, max.     32       • User data per address area, max.     32       • PC/OP communication     Yes       - Routing     Yes; Only with active interface       - Clobal data communication     No       - S7 basic communication     Yes       - S7 communication, as server     Yes; Connection configured on one side only       - Direct data acknowle (slave-to-slave communication)     Yes       - Duptis     244 byte       - Outputs     244 byte       2 Jubréce     PROFINET       Interface type     PROFINET       Interface type     Yes       Change of IP address at runtime, supported     Yes       Interface types     Yes       Interface types     Yes       Interface types     Yes       PROFINET ID Controller     Yes; Also simultaneously with IO-Device functionality       • PROFINET ID Controller     Yes; Also simultaneousl	
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      — PGOP communication     Yes     — Routing     Yes; Only with active interface     Global data communication     No     — S7 communication     Yes     Somunication, as elient     No     — S7 communication     Yes     Somunication, as elient     No     — S7 communication     Yes     — Dired data exchange (slave-to-slave     communication)     Yes     — Dired data exchange (slave-to-slave     communication)     PV1     No     Transfer memory     — Inputs     Zinterface     Yes     Interface type     PROFINET     Isolated     Yes     Ves     Consection of framemission rate     Yes     No     Change of IPA address at runtime, supported     Yes     No     Change of PROFINET     Isolated     Yes     No     Change of PROFINET     Isolated     Yes     Interface type     PROFINET     Isolated     Yes     No     Change of IPA address at runtime, supported     Yes     Number of ports     Z     integrated switch     Yes     PROFINET IO Controller     Yes     PROFINET IO Controller     Yes     PROFINET IO Porteler     Yes     Yes     Yes     PROFINET IO Porteler     Yes     Yes     PROFINET IO Porteler     Ye	
Address area, max.     32     User data per address area, max.     32 byte Services	
• User data per address area, max.     32 byte      Services          - PGOP communication         - PGOP communication         - Routing         - Global data communication         - S7 basic communication         - S7 basic communication         - S7 basic communication         - S7 communication         - Direct data exchange (slave-to-slave         communication         - Direct data exchange (slave-to-slave         communication         - Linputs         - Linputs         - Unputs         - Linputs         - Unputs         - Linputs         - Unputs         - Linputs         - Linputs         - Unputs         - Unputs         - Linput         - Linput         - Linputs         - Unputs         - Linput         - Linputs         - Linput         - Linpu	
Services       Yes         — PG/OP communication       Yes         — Routing       Yes; Only with active interface         — Global data communication       No         — S7 basis communication       No         — S7 communication, as client       No         — S7 communication, as client       No         — S7 communication, as server       Yes; Connection configured on one side only         — Direct data exchange (slave-to-slave communication)       Yes         — Direct data exchange (slave-to-slave communication)       Yes         — DPV1       No       Transfer memory         — Inputs       244 byte         — Outputs       244 byte         2. Interface       PROFINET         Isolated       Yes         Autonegotiation       Yes         Autoregotiation       Yes         Autoregotiation       Yes         Autoregotiation       Yes         Interface bype       PROFINET         Interface bype       Yes         Interface bype       Yes         Change of IP address at runtime, supported       Yes         Interface bype       Yes         Interface bype       Yes         Protocols       Yes	
— PG/OP communication     Yes       — Routing     Yes; Only with active interface       — Global data communication     No       — S7 basic communication     No       — S7 communication, as client     No       — S7 communication, as scient     No       — Direct data exchange (slave-to-slave communication)     Yes       — DPV1     No       — Transfer memory	
- RoutingYes: Only with active interface- Global data communicationNo- S7 basic communicationNo- S7 communication, as clientNo- S7 communication, as a clientNo- S7 communication, as a serverYes: Connection configured on one side only- Dired data exchange (slave-to-slave communication)Yes- Dred data exchange (slave-to-slave communication)Yes- DrutNoTransfer memory Inputs244 byte- Outputs244 byte2 InterfacePROFINETIsolatedYesautomatic detection of transmission rateYes- RJ 45 (Ethemet)Yes- RJ 45 (Ethemet)Yes- Number of ports2- Number of ports2- NUME of portsYes- NPOFINET I DeviceYes- NPOFINET I DeviceYes- ROFINET I ControllerYes- PROFINET I DeviceYes- NPOFINET I DeviceYes- PROFINET DEVICeYes- PROFINET DEVICeYes- PROFINET DEVICeYes- PROFINET DEVICeYes- PROFINET DEVICeYes- PROFINET DEVICENo- PROFINET DEVICEYes- PROFINET DEVICENo- PROFINET DEVICENo- PROFINET DEVICEYes- PROFINET DE	
Global data communication       No	
Direct data exchange (slave-to-slave communication)       Yes         DPV1       No         Transfer memory       -         Inputs       244 byte         Outputs       244 byte         2. Interface       PROFINET         Isolated       Yes         automatic detection of transmission rate       Yes; 10/100 Mbit/s         Autocrossing       Yes         Change of IP address at runtime, supported       Yes         Interface type       Yes         Interface types       2         extromstring       Yes         Autocrossing       Yes         Interface types       Yes         • RJ 45 (Ethernet)       Yes         • Interface types       2         • Number of ports       2         • Interface types       2         • PROFINET IO Controller       Yes; Also simultaneously with IO-Device functionality         • PROFINET IO Controller       Yes         • PR	
communication)       No         Interface memory       244 byte         - Inputs       244 byte         2. Interface type       PROFINET         Interface type       PROFINET         Isolated       Yes         automatic detection of transmission rate       Yes; 10/100 Mbit/s         Autonegotiation       Yes         Autonegotiation       Yes         Autonegotiation       Yes         Change of IP address at runtime, supported       Yes         Interface types	
Transfer memory       244 byte         Inputs       244 byte         Outputs       244 byte         2. Interface       PROFINET         Isolated       Yes         automatic detection of transmission rate       Yes; 10/100 Mbit/s         Autorcossing       Yes         Autocrossing       Yes         Interface types       Yes         PROFINET IO Controller       Yes         Interface types       Yes         PROFINET IO Controller       Yes, Also simultaneously with IO- Controller functionality         PROFINET OP Device       No         PROFIBUS DP device       No         PROFIBUS DP device       No	
Inputs       244 byte         Outputs       244 byte         2. Interface       PROFINET         Interface type       PROFINET         Isolated       Yes         automatic detection of transmission rate       Yes; 10/100 Mbit/s         Autoregotiation       Yes         Autorgotiation       Yes         Autoregotiation       Yes         Autocrossing       Yes         Interface types       Yes         • RJ 45 (Ethernet)       Yes         • Number of ports       2         • integrated switch       Yes         Protocols       Yes; Also simultaneously with IO-Device functionality         • PROFINET IO Controller       Yes; Also simultaneously with IO-Controller functionality         • PROFINET IO Controller       Yes; Also simultaneously with IO Controller functionality         • PROFINET IO Device       Yes         • PROFIBUS DP master       No         • Open IE communication       Yes; Via TCP/IP, ISO on TCP, and UDP         • Web server       Yes         • Media redundancy       Yes	
Outputs       244 byte         2. Interface       PROFINET         Isolated       Yes         automatic detection of transmission rate       Yes; 10/100 Mbit/s         Autorossing       Yes         Change of IP address at runtime, supported       Yes         Interface types      Outputs         • RJ 45 (Ethernet)       Yes         • Number of ports       2         • integrated switch       Yes; Also simultaneously with IO-Device functionality         • PROFINET IO Controller       Yes; Also simultaneously with IO-Device functionality         • PROFINET IO Device       Yes; Also simultaneously with IO Controller functionality         • PROFINET Device       Yes; Via TCP/IP, ISO on TCP, and UDP         • Web server       Yes         • Media redundancy       Yes	
2. Interface         Interface type       PROFINET         Isolated       Yes         automatic detection of transmission rate       Yes; 10/100 Mbit/s         Autonegotiation       Yes         Autorossing       Yes         Autorossing       Yes         Change of IP address at runtime, supported       Yes         Interface types       *         • RJ 45 (Ethernet)       Yes         • Number of ports       2         • integrated switch       Yes         Protocols       *         • MPI       No         • PROFINET IO Controller       Yes; Also simultaneously with IO-Device functionality         • PROFINET ID Device       Yes; Also simultaneously with IO Controller functionality         • PROFINET Device       Yes; Via simultaneously with IO Controller functionality         • PROFINED DP master       No         • Open IE communication       Yes; Via TCP/IP, ISO on TCP, and UDP         • Web server       Yes         • Media redundancy       Yes         PROFINET IO Controller       Yes         • Media redundancy       Yes         PROFINET IO Controller       Yes         • Media redundancy       Yes         PROFINET IO Controller	
Interface type       PROFINET         Isolated       Yes         automatic detection of transmission rate       Yes; 10/100 Mbit/s         Autorogotiation       Yes         Autocrossing       Yes         Change of IP address at runtime, supported       Yes         Interface types       Yes         • RJ 45 (Ethernet)       Yes         • Number of ports       2         • integrated switch       Yes         Protocols       No         • MPI       No         • PROFINET IO Controller       Yes; Also simultaneously with IO-Device functionality         • PROFINET Device       Yes; Also simultaneously with IO Controller functionality         • PROFIBUS DP master       No         • PROFIBUS DP device       No         • Open IE communication       Yes; Via TCP/IP, ISO on TCP, and UDP         • Web server       Yes         • Media redundancy       Yes         PROFINET IO Controller       Yes	
Isolated       Yes         automatic detection of transmission rate       Yes; 10/100 Mbit/s         Autoregotiation       Yes         Autocrossing       Yes         Change of IP address at runtime, supported       Yes         Interface types       Yes         • RJ 45 (Ethernet)       Yes         • Number of ports       2         • integrated switch       Yes         Protocols       Yes; Also simultaneously with IO-Device functionality         • PROFINET IO Controller       Yes; Also simultaneously with IO-Device functionality         • PROFINET IO Device       Yes; Also simultaneously with IO Controller functionality         • PROFIBUS DP master       No         • PROFIBUS DP device       No         • Open IE communication       Yes; Via TCP/IP, ISO on TCP, and UDP         • Web server       Yes         • Media redundancy       Yes	
automatic detection of transmission rate       Yes; 10/100 Mbit/s         Autorogotiation       Yes         Autocrossing       Yes         Change of IP address at runtime, supported       Yes         Interface types       *         • RJ 45 (Ethernet)       Yes         • Number of ports       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         • Open IE communication       Yes; Via TCP/IP, ISO on TCP, and UDP         • Web server       Yes         • Media redundancy       Yes	
Autonegotiation       Yes         Autocrossing       Yes         Change of IP address at runtime, supported       Yes         Interface types       Interface types         • RJ 45 (Ethernet)       Yes         • Number of ports       2         • integrated switch       Yes         Protocols       Yes         • MPI       No         • PROFINET IO Controller       Yes; Also simultaneously with IO-Device functionality         • PROFINET IO Device       Yes; Also simultaneously with IO Controller functionality         • PROFIBUS DP master       No         • PROFIBUS DP device       No         • Open IE communication       Yes; Via TCP/IP, ISO on TCP, and UDP         • Web server       Yes         • Media redundancy       Yes         • PROFINET IO Controller       Yes	
Autocrossing       Yes         Change of IP address at runtime, supported       Yes         Interface types       Interface types         • RJ 45 (Ethernet)       Yes         • Number of ports       2         • integrated switch       Yes         Protocols       Yes         • 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 device       No         • Open IE communication       Yes; Via TCP/IP, ISO on TCP, and UDP         • Web server       Yes         • Media redundancy       Yes         • PROFINET IO Controller       Yes	
Change of IP address at runtime, supported       Yes         Interface types	
Interface types         • RJ 45 (Ethernet)       Yes         • Number of ports       2         • integrated switch       Yes         Protocols       Yes         • 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 device       No         • Open IE communication       Yes; Via TCP/IP, ISO on TCP, and UDP         • Web server       Yes         • Media redundancy       Yes         • PROFINET IO Controller       Yes         • Transmission rate, max.       100 Mbit/s	
RJ 45 (Ethernet)YesNumber of ports2integrated switchYesProtocolsNo• MPINo• PROFINET IO ControllerYes; Also simultaneously with IO-Device functionality• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET CBAYes• PROFIBUS DP masterNo• PROFIBUS DP deviceNo• Open IE communicationYes; Via TCP/IP, ISO on TCP, and UDP• Web serverYes• Media redundancyYes• Transmission rate, max.100 Mbit/s	
RJ 45 (Ethernet)YesNumber of ports2integrated switchYesProtocolsNo• MPINo• PROFINET IO ControllerYes; Also simultaneously with IO-Device functionality• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET CBAYes• PROFIBUS DP masterNo• PROFIBUS DP deviceNo• Open IE communicationYes; Via TCP/IP, ISO on TCP, and UDP• Web serverYes• Media redundancyYes• Transmission rate, max.100 Mbit/s	
Number of ports2integrated switchYesProtocols• MPINo• PROFINET IO ControllerYes; Also simultaneously with IO-Device functionality• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET CBAYes• PROFIBUS DP masterNo• PROFIBUS DP deviceNo• Open IE communicationYes; Via TCP/IP, ISO on TCP, and UDP• Web serverYes• Media redundancyYes• Transmission rate, max.100 Mbit/s	
• integrated switchYesProtocols• MPINo• PROFINET IO ControllerYes; Also simultaneously with IO-Device functionality• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET CBAYes• PROFIBUS DP masterNo• PROFIBUS DP deviceNo• Open IE communicationYes; Via TCP/IP, ISO on TCP, and UDP• Web serverYes• Media redundancyYes• Transmission rate, max.100 Mbit/s	
Protocols       No         • 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 device       No         • Open IE communication       Yes; Via TCP/IP, ISO on TCP, and UDP         • Web server       Yes         • Media redundancy       Yes         PROFINET IO Controller       100 Mbit/s	
• MPINo• PROFINET IO ControllerYes; Also simultaneously with IO-Device functionality• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET CBAYes• PROFIBUS DP masterNo• PROFIBUS DP deviceNo• Open IE communicationYes; Via TCP/IP, ISO on TCP, and UDP• Web serverYes• Media redundancyYesPROFINET IO Controller100 Mbit/s	
• PROFINET IO ControllerYes; Also simultaneously with IO-Device functionality• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET CBAYes• PROFIBUS DP masterNo• PROFIBUS DP deviceNo• Open IE communicationYes; Via TCP/IP, ISO on TCP, and UDP• Web serverYes• Media redundancyYes• PROFINET IO ControllerYes• Transmission rate, max.100 Mbit/s	
• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET CBAYes• PROFIBUS DP masterNo• PROFIBUS DP deviceNo• Open IE communicationYes; Via TCP/IP, ISO on TCP, and UDP• Web serverYes• Media redundancyYes• PROFINET IO ControllerYes• Transmission rate, max.100 Mbit/s	
• PROFINET CBA     Yes       • PROFIBUS DP master     No       • PROFIBUS DP device     No       • Open IE communication     Yes; Via TCP/IP, ISO on TCP, and UDP       • Web server     Yes       • Media redundancy     Yes       • PROFINET IO Controller     100 Mbit/s	
• PROFIBUS DP masterNo• PROFIBUS DP deviceNo• Open IE communicationYes; Via TCP/IP, ISO on TCP, and UDP• Web serverYes• Media redundancyYes• PROFINET IO ControllerYes• Transmission rate, max.100 Mbit/s	
• PROFIBUS DP device     No       • Open IE communication     Yes; Via TCP/IP, ISO on TCP, and UDP       • Web server     Yes       • Media redundancy     Yes       • PROFINET IO Controller     Yes       • Transmission rate, max.     100 Mbit/s	
• Open IE communication     Yes; Via TCP/IP, ISO on TCP, and UDP       • Web server     Yes       • Media redundancy     Yes       • PROFINET IO Controller     Yes       • Transmission rate, max.     100 Mbit/s	
• Web server     Yes       • Media redundancy     Yes       • PROFINET IO Controller     100 Mbit/s	
Media redundancy Yes PROFINET IO Controller     Transmission rate, max. 100 Mbit/s	
PROFINET IO Controller       • Transmission rate, max.       100 Mbit/s	
• Transmission rate, max. 100 Mbit/s	
Services	
- PG/OP communication Yes	
- Routing Yes	
- S7 communication Yes; with loadable FBs, max. configurable connections: 16, max. number instances: 32	
<ul> <li>— Isochronous mode</li> <li>Yes; OB 61; isochronous mode can only be used alternatively on PROFI</li> <li>DP or PROFINET IO</li> </ul>	FIBUS
- IRT Yes	
- Shared device Yes	
- Prioritized startup Yes	
- Number of IO devices with prioritized startup, max. 32	
- Number of connectable IO Devices, max. 128	
— Of which IO devices with IRT, max. 64	
— of which in line, max. 64	
— Number of IO Devices with IRT and the option "high 128	

flexibility"	
— of which in line, max.	61
— Number of connectable IO Devices for RT, max.	128
— of which in line, max.	128
<ul> <li>Activation/deactivation of IO Devices</li> </ul>	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 $\mu s,$ 500 $\mu s,1$ ms; 2 ms, 4 ms (not in the case of IRT with "high flexibility" option)
— Updating time	$250~\mu s$ to $512~ms$ (depending on the operating mode, see Manual "S7-300 CPU 31xC and CPU 31x, technical Data" for more details)
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
— User data consistency, max.	1 024 byte
PROFINET IO Device	
Services	
— PG/OP communication	Yes
— Routing	Yes
— S7 communication	Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32
— Isochronous mode	No
— IRT	Yes
- PROFlenergy	Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device
— Shared device	Yes
<ul> <li>— Number of IO Controllers with shared device, max.</li> </ul>	2
Transfer memory	
— Inputs, max.	1 440 byte; Per IO Controller with shared device
— Outputs, max.	1 440 byte; Per IO Controller with shared device
Submodules	
— Number, max.	64
— User data per submodule, max.	1 024 byte
PROFINET CBA	
acyclic transmission	Yes
• cyclic transmission	Yes
Open IE communication	
Number of connections, max.	16
Local port numbers used at the system end	0, 20, 21, 23, 25, 80, 102, 135, 161, 443, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535
Keep-alive function, supported  Protocols	Yes
Protocols	Vac
PROFIsafe	Yes
Redundancy mode	
Media redundancy	
— Switchover time on line break, typ.	200 ms; PROFINET MRP
— Number of stations in the ring, max.	50
Open IE communication  • TCP/IP	Very via integrated DDOEINET interface and leadable FDs
	Yes; via integrated PROFINET interface and loadable FBs
— Number of connections, max.	16 1.460 http://www.accounter.com/accounter.com
— Data length for connection type 01H, max.	1 460 byte
— Data length for connection type 11H, max.	32 768 byte
— several passive connections per port, supported	Yes
ISO-on-TCP (RFC1006)	Yes; via integrated PROFINET interface and loadable FBs
- Number of connections, max.	16
— Data length, max.	32 768 byte
• UDP	Yes; via integrated PROFINET interface and loadable FBs
<ul> <li>Number of connections, max.</li> </ul>	
— Data length, max.	16 1 472 byte

Web server	
supported	Yes
User-defined websites	Yes
Number of HTTP clients	5
communication functions / header	5
PG/OP communication	Yes
Data record routing	Yes
Global data communication	
• supported	Yes
Number of GD loops, max.	8
Number of GD packets, max.	8
Number of GD packets, transmitter, max.	8
Number of GD packets, receiver, max.	8
Size of GD packets, max.	22 byte
<ul> <li>Size of GD packet (of which consistent), max.</li> </ul>	22 byte 22 byte
S7 basic communication	22 byte
	Yes
supported	
<ul> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> </ul>	76 byte
• Oser data per job (or which consistent), max.	76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)
S7 communication	
• supported	Yes
• as server	Yes
• as client	Yes; via integrated PROFINET interface and loadable FB or via CP and loadable FB
• User data per job, max.	See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)
S5 compatible communication	
supported	Yes; via CP and loadable FC
communication functions / PROFINET CBA (with set target commu	nication load) / header
<ul> <li>Setpoint for the CPU communication load</li> </ul>	50 %
<ul> <li>Number of remote interconnection partners</li> </ul>	32
<ul> <li>number of master/device functions</li> </ul>	30
<ul> <li>total of all master/device connections</li> </ul>	1 000
<ul> <li>data length of all incoming master/device connections, max.</li> </ul>	4 000 byte
<ul> <li>data length of all outgoing master/device connections, max.</li> </ul>	4 000 byte
<ul> <li>Number of device-internal and PROFIBUS interconnections</li> </ul>	500
<ul> <li>Data length of device-internal und PROFIBUS interconnections, max.</li> </ul>	4 000 byte
<ul> <li>Data length per connection, max.</li> </ul>	1 400 byte
performance data / PROFINET CBA / remote interconnection /	with acyclic transfer / header
— Sampling interval, min.	500 ms
<ul> <li>— Number of incoming interconnections</li> </ul>	100
<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 volume / as user data for remote interconnections / in the case of acyclic transmission / with PROFINET CBA / per connection / maximum</li> </ul>	1 400 byte
performance data / PROFINET CBA / remote interconnection /	with cyclic transfer / header
— Transmission frequency: Transmission interval, min.	10 ms
- Number of incoming interconnections	200
<ul> <li>Number of outgoing interconnections</li> </ul>	200
<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
— data volume / as user data for remote	450 byte
interconnections / with cyclical transfer / with PROFINET CBA / per connection / maximum	
performance data / PROFINET CBA / HMI variables via PROF	INET / acyclic / header
<ul> <li>— Number of stations that can log on for HMI variables (PN OPC/iMap)</li> </ul>	3; 2x PN OPC/1x iMap

LIMI veriable undefine	500 mg
— HMI variable updating	500 ms
Number of HMI variables	200
— Data length of all HMI variables, max.	2 000 byte
performance data / PROFINET CBA / PROFIBUS proxy functi	
— supported	Yes
— Number of linked PROFIBUS devices	
— Data length per connection, max.	240 byte; Slave-dependent
Number of connections	20
• overall	32
usable for PG communication	31
- reserved for PG communication	1
— adjustable for PG communication, min.	1
— adjustable for PG communication, max.	31
usable for OP communication	31
- reserved for OP communication	1
— adjustable for OP communication, min.	1
— adjustable for OP communication, max.	31
usable for S7 basic communication	30
— reserved for S7 basic communication	0
— adjustable for S7 basic communication, min.	0
<ul> <li>adjustable for S7 basic communication, max.</li> </ul>	30
<ul> <li>usable for S7 communication</li> </ul>	16
<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>	16
<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	14, 72 as FROFINET. 24 max.
Number of login stations for message functions, max.	32; Depending on the configured connections for PG/OP and S7 basic
Number of login stations for message functions, max.	
	communication
Process diagnostic messages	Yes
Process diagnostic messages simultaneously active Alarm-S blocks, max.	
· · · · · · · · · · · · · · · · · · ·	Yes
simultaneously active Alarm-S blocks, max.	Yes
simultaneously active Alarm-S blocks, max. Test commissioning functions	Yes 300
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block	Yes 300 Yes; Up to 2 simultaneously
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step	Yes 300 Yes; Up to 2 simultaneously Yes
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints	Yes 300 Yes; Up to 2 simultaneously Yes
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control	Yes 300 Yes; Up to 2 simultaneously Yes 4
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max.	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max.	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max.	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max.	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. Forcing • Forcing • Forcing, variables	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes Inputs, outputs
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing • Forcing • Forcing, variables • Number of variables, max.	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes Inputs, outputs
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. — of which control variables, max. Forcing • Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes Inputs, outputs 10
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. Forcing • Forcing • Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes Inputs, outputs 10 Yes
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. <b>Forcing</b> • Forcing • Forcing, variables • Number of variables, max. <b>Diagnostic buffer</b> • present • Number of entries, max.	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes Inputs, outputs 10 Yes 500
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. Forcing • Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • Number of entries, max. — adjustable	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 30 14 Yes Inputs, outputs 10 Yes S00 No
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. Forcing • Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • Number of entries, max. — adjustable — of which powerfail-proof	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes Inputs, outputs 10 Yes 500 No 100; Only the last 100 entries are retained
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. Forcing • Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max.	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes Inputs, outputs 10 Yes 500 No 100; Only the last 100 entries are retained 499
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which status variables, max. — of which control variables, max. Forcing • Forcing • Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes Inputs, outputs 10 Yes 500 No 100; Only the last 100 entries are retained 499 Yes; From 10 to 499
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. — of which control variables, max. <b>Forcing</b> • Forcing • Forcing, variables • Number of variables, max. <b>Diagnostic buffer</b> • present • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — preset	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes Inputs, outputs 10 Yes 500 No 100; Only the last 100 entries are retained 499 Yes; From 10 to 499
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. Forcing • Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — preset Service data	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes Inputs, outputs 10 Yes 500 No 100; Only the last 100 entries are retained 499 Yes; From 10 to 499 10
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. - of which status variables, max. - of which control variables, max. - of which control variables, max. Forcing • Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • Number of entries, max. - adjustable - of which powerfail-proof • Number of entries readable in RUN, max. - adjustable - preset Service data • can be read out	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes Inputs, outputs 10 Yes 500 No 100; Only the last 100 entries are retained 499 Yes; From 10 to 499 10
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. <b>Forcing</b> • Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — preset Service data • can be read out Ambient conditions	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes Inputs, outputs 10 Yes 500 No 100; Only the last 100 entries are retained 499 Yes; From 10 to 499 10
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. of which status variables, max. of which control variables, max. of which control variables, max. of which control variables, max. Forcing • Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • Number of entries, max. adjustable of which powerfail-proof • Number of entries readable in RUN, max. adjustable preset Service data • can be read out Ambient conditions Ambient temperature during operation	Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes Inputs, outputs 10 Yes 500 No 100; Only the last 100 entries are retained 499 Yes; From 10 to 499 10 Yes

configuration / header	
Configuration software	
• STEP 7	Yes; V5.5 or higher
configuration / programming / header	
Command set	see instruction list
Nesting levels	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
Block encryption	Yes; With S7 block Privacy
Dimensions	
Width	40 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	340 g

last modified:

Ø