SIEMENS

Data sheet

6ES7315-6FF04-0AB0



SIMATIC S7-300, CPU 315F-2DP Fail-safe module with MPI Integr. power supply 24 V DC, Work memory 384 KB, 40 mm width, 2nd interface DP master/slave Micro Memory Card required

Figure similar

Figure similar	
General information	
HW functional status	01
Firmware version	V3.3
Product function	
Isochronous mode	Yes
Engineering with	
Programming package	STEP 7 V5.5 + SP1 or higher or STEP 7 V5.2 + SP1 or higher with HSP 218 + Distributed Safety
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
external protection for power supply lines (recommendation)	2 A min.
Mains buffering	
 Mains/voltage failure stored energy time 	5 ms
 Repeat rate, min. 	1 s
Input current	
Current consumption (rated value)	850 mA
Current consumption (in no-load operation), typ.	150 mA
Inrush current, typ.	3.5 A
l²t	1 A ² ·s
Power loss	
Power loss, typ.	4.5 W
Memory	
Work memory	
• integrated	384 kbyte
expandable	No
Load memory	
Plug-in (MMC)	Yes
Plug-in (MMC), max.	8 Mbyte
 Data management on MMC (after last programming), min. 	10 a
Backup	
• present	Yes; Guaranteed by MMC (maintenance-free)
without battery	Yes; Program and data
CPU processing times	
for bit operations, typ.	0.05 µs
for word operations, typ.	0.09 µs
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	
Number, max.	1 024; Number range: 1 to 16000
Size, max.	64 kbyte
FB	
Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	4004 N. J. 2000
Number, max. Size may.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
Number, max.	see instruction list
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 delay alarm OBs Number of cyclic interrupt OBs	4; OB 32, 33, 34, 35
Number of cyclic interrupt OBs Number of process alarm OBs	4, OB 32, 33, 34, 33 1; OB 40
Number of DPV1 alarm OBs	3; OB 55, 56, 57
Number of isochronous mode OBs	1; OB 61
Number of startup OBs	1; OB 100
Number of asynchronous error OBs	5; OB 80, 82, 85, 86, 87
Number of asynchronous error OBs Number of synchronous error OBs	2; OB 121, 122
Nesting depth	2, 00 121, 122
per priority class	16
additional within an error OB	4
Counters, timers and their retentivity	-
S7 counter	
• Number	256
Retentivity	200
— adjustable	Yes
— preset	Z 0 to Z 7
Counting range	20021
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
S7 times	, , , , ,, , , , ,, , , , ,
Number	256
Retentivity	
— adjustable	Yes
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	128 kbyte
Flag	
• Size, max.	2 048 byte
Retentivity available	Yes; MB 0 to MB 2 047
Retentivity preset	MB 0 to MB 15
Number of clock memories	8; 1 memory byte

• Retentivity adjustable Yes; via non-retain property on DB • Retentivity preset Yes Local data 32 kbyte; Max. 2 KB per block • per priority class, max. 32 kbyte; Max. 2 KB per block Address area I/O address area I/O address area • Inputs 2 048 byte • Outputs 2 048 byte of which distributed — Inputs — Inputs 2 048 byte — Outputs 2 048 byte • Inputs 2 048 byte • Outputs, adjustable 2 048 byte • Inputs, default 384 byte • Inputs, default 384 byte • Outputs, default 384 byte • Number of subprocess images, max. 1 • Number of subprocess images, max. 1 • Inputs 16 384 — of which central 1 024 • Outputs 1 034 — of which central 1 024 • Inputs 1 024 — of which central 2 56 • Outputs 1 024 — of which c	Data blocks	
		Voc. via non ratain proporty on DD
Poper priority class, max	· ·	res
Martines area Martines are		00 librator Marco O VD grandelando
Floating		32 kbyte; Max. 2 KB per block
• Outputs		
• Outputs		
Imputs	·	
— Inputs		2 048 byte
Frocess image	·	
• inputs 2 048 byte 3 04		2 048 byte
Outputs Inputs, adjustable Outputs, default Outputs, default Outputs, default Outputs, default Outputs O	•	
Inputs, adjustable Outputs, adjustable Outputs, default Outputs O	• Inputs	2 048 byte
Outputs, adjustable Inputs, default Outputs, default Outputs, default Outputs, default Outputs O	Outputs	2 048 byte
• Injunts, default 394 byte	Inputs, adjustable	
• Outputs, default Subprocess images, max. • Number of subprocess images, max. • Inputs • Inputs • Outputs • Outputs • Of which central • Outputs	 Outputs, adjustable 	2 048 byte
Number of subprocess images, max. 1 16.384		
Number of subprocess images, max. 1 Digital channels	Outputs, default	384 byte
Digital channels	Subprocess images	
• Inputs	Number of subprocess images, max.	1
Outputs	Digital channels	
• Outputs	• Inputs	16 384
— of which central 1024 Analog channels Inputs 1024 — of which central 256 Outputs 1024 — of which central 256 Hardware coffiguration Rack — Racks, max. — Racks whodules per rack, max. Intend of day Citock I Hardware clock (real-time) — Reackuptime — Deviation per day, max. — Backuptime — Deviation per day, max. — Behavior of the clock following POWER-ON — Behavior of the clock following POWER-ON — Behavior of the clock following expiry of backup period — Range of values — Rang	— of which central	1 024
Analog channels	Outputs	16 384
• Inputs	— of which central	1 024
- of which central 256	Analog channels	
● Outputs — of which central 256 — of which central 256 Hardware configuration Number of expansion units, max. Number of DP masters ● integrated 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	• Inputs	1 024
Hardware configuration Number of expansion units, max. Number of DP masters integrated via CP 4 Number of operable FMs and CPs (recommended) FM CP, PtP Racks Racks, max. Modules per rack, max. Modules per rack, max. Hardware clock (real-time) retentive and synchronizable Devaition per day, max. Behavior of the clock following expiry of backup period Poperating hours counter Number Number Number Number Range of values Racks in	— of which central	256
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• via CP Number of operable FMs and CPs (recommended) • FM • CP, PtP • CP, PtP • CP, LAN 10 Rack • Racks, max. • Modules per rack, max. • Modules per rack, max. • Modules per rack, max. • Modules per rack, max. • Hardware clock (real-time) • retentive and synchronizable • Deviation per day, max. • Behavior of the clock following POWER-ON • Behavior of the clock following expiry of backup period Poperating hours counter • Number • Number • Number of Number range • Range of values • Granularity • retentive Clock synchronization • supported • Suppor	Number of DP masters	
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Racks, max. • Racks, max. • Modules per rack, max. • Modules per rack, max. 8 **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 • Number • Number • Number • Range of values • Range of values • Clock synchronization • supported • supported **Yes **A 4 40 °C ambient temperature • 6 wk; At 40 °C ambient temperature • 6 wk; At 40 °C ambient temperature • 10 s; Typ.: 2 s • Behavior of the clock following expiry of backup period **December 10 s; Typ.: 2 s • Behavior of the clock following expiry of backup period **Operating hours counter** • Number • Number • Number • Number • Number • Number trange • Range of values • O to 2^31 hours (when using SFC 101) • Granularity • Yes; Must be restarted at each restart **Clock synchronization • supported		10
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Behavior of the clock following expiry of backup period Operating hours counter Number Number Number/Number range Range of values Granularity retentive Oto 2^31 hours (when using SFC 101) The retentive Yes; Must be restarted at each restart Clock synchronization Yes		
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 Number Number/Number range Range of values Granularity retentive Yes; Must be restarted at each restart Clock synchronization supported Yes 		and about contained at the time of day it had when power was switched off
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 Range of values Granularity retentive Clock synchronization supported 0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart Yes		
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◆ retentive Yes; Must be restarted at each restart Clock synchronization ◆ supported Yes		
Clock synchronization ◆ supported Yes	•	
• supported Yes		res, iviusi de resianeu al each restart
		V
to IMPI, master Yes		
	● to MPI, master	res

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	No
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	0
Number of PROFINET interfaces	0
Number of RS 485 interfaces	2
Number of RS 422 interfaces	0
1. Interface	
Interface type	Integrated RS 485 interface
Isolated	No
	NO
Interface types • RS 485	Yes
Output current of the interface, max.	200 mA
Protocols	200 IIIA
• MPI	Yes
PROFIBUS DP master	No
	No
PROFIBUS DP slave Point to projection	
Point-to-point connection	No
MPI	
Tong and a long sets of the se	407.5 14.37
Transmission rate, max.	187.5 kbit/s
Services	
Services — PG/OP communication	Yes
Services — PG/OP communication — Routing	Yes Yes
Services — PG/OP communication — Routing — Global data communication	Yes Yes Yes
Services — PG/OP communication — Routing — Global data communication — S7 basic communication	Yes Yes Yes
Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication	Yes Yes Yes Yes Yes Yes; Only server, configured on one side
Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client	Yes Yes Yes Yes Yes Yes Yes; Only server, configured on one side No
Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server	Yes Yes Yes Yes Yes Yes; Only server, configured on one side
Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client	Yes Yes Yes Yes Yes; Only server, configured on one side No Yes
Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server 2. Interface Interface type	Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface
Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server 2. Interface Interface type Isolated	Yes Yes Yes Yes Yes; Only server, configured on one side No Yes
Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server 2. Interface Interface type Isolated Interface types	Yes Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes
Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server 2. Interface Interface type Isolated Interface types • RS 485	Yes Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes Yes
Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server 2. Interface Interface type Isolated Interface types	Yes Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes
Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols	Yes Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes Yes
Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max.	Yes Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes Yes
Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols	Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes Yes 200 mA
Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI	Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes Yes 200 mA No
Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master	Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes Yes 200 mA No Yes
Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave	Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes Yes 200 mA No Yes Yes
Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection	Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes Yes 200 mA No Yes Yes
Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection PROFIBUS DP master	Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes Yes 200 mA No Yes Yes Yes No
Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server 2. Interface Interface type Isolated Interface types - RS 485 - Output current of the interface, max. Protocols - MPI - PROFIBUS DP master - PROFIBUS DP slave - Point-to-point connection PROFIBUS DP master - Transmission rate, max.	Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes Yes 200 mA No Yes Yes Yes Yes Yes
Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server 2. Interface Interface type Isolated Interface types - RS 485 - Output current of the interface, max. Protocols - MPI - PROFIBUS DP master - PROFIBUS DP slave - Point-to-point connection PROFIBUS DP master - Transmission rate, max Number of DP slaves, max.	Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes Yes 200 mA No Yes Yes Yes Yes Yes
Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server 2. Interface Interface type Isolated Interface types - RS 485 - Output current of the interface, max. Protocols - MPI - PROFIBUS DP master - PROFIBUS DP slave - Point-to-point connection PROFIBUS DP master - Transmission rate, max Number of DP slaves, max. Services	Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes Yes 200 mA No Yes
Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server 2. Interface Interface type Isolated Interface types - RS 485 - Output current of the interface, max. Protocols - MPI - PROFIBUS DP master - PROFIBUS DP slave - Point-to-point connection PROFIBUS DP master - Transmission rate, max Number of DP slaves, max. Services - PG/OP communication	Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes Yes 200 mA No Yes
Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server 2. Interface Interface type Isolated Interface types - RS 485 - Output current of the interface, max. Protocols - MPI - PROFIBUS DP master - PROFIBUS DP slave - Point-to-point connection PROFIBUS DP master - Transmission rate, max Number of DP slaves, max. Services - PG/OP communication - Routing	Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes Yes 200 mA No Yes
Services	Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes Yes 200 mA No Yes Yes Yes Yes Yes No 12 Mbit/s 124; Per station Yes Yes No
Services	Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes Yes 200 mA No Yes Yes Yes Yes No 12 Mbit/s 124; Per station Yes Yes Yes No Yes; I blocks only

 S7 communication, as server 	Yes
— Equidistance	Yes
 Isochronous mode 	Yes; OB 61
— SYNC/FREEZE	Yes
 Activation/deactivation of DP slaves 	Yes
 Number of DP slaves that can be simultaneously activated/deactivated, max. 	8
— DPV1	Yes
Address area	
— Inputs, max.	2 048 byte
— Outputs, max.	2 048 byte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	
GSD file	The latest GSD file is available at: http://www.siemens.com/profibus-gsd
Transmission rate, max.	12 Mbit/s
automatic baud rate search	Yes; only with passive interface
Address area, max.	32
User data per address area, max.	32 byte
Services	
— PG/OP communication	Yes
— Routing	Yes; Only with active interface
Global data communication	No
S7 basic communication	No
— S7 basic communication — S7 communication	
	Yes; Only server, configured on one side
— S7 communication, as client	No
— S7 communication, as server	Yes
 Direct data exchange (slave-to-slave communication) 	Yes
— DPV1	No
DI VI	140
Transfer memory	
Transfer memory	244 hyta
— Inputs	244 byte
— Inputs — Outputs	244 byte 244 byte
— Inputs — Outputs Protocols	244 byte
Inputs Outputs Protocols PROFIsafe	
- Inputs - Outputs Protocols PROFIsafe communication functions / header	Yes
— Inputs — Outputs Protocols PROFIsafe communication functions / header PG/OP communication	Yes Yes
- Inputs - Outputs Protocols PROFIsafe communication functions / header	Yes
— Inputs — Outputs Protocols PROFIsafe communication functions / header PG/OP communication	Yes Yes
— Inputs — Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing	Yes Yes
- Inputs - Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication	Yes Yes Yes
— Inputs — Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported	Yes Yes Yes Yes
- Inputs - Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max.	Yes Yes Yes Yes Yes 8
- Inputs - Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max.	Yes Yes Yes Yes 8 8
— Inputs — Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max.	Yes Yes Yes Yes 8 8 8
- Inputs - Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max.	Yes Yes Yes Yes 8 8 8 8
- Inputs - Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Size of GD packets, max.	Yes Yes Yes Yes 8 8 8 8 22 byte
— Inputs — Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max.	Yes Yes Yes Yes 8 8 8 8 22 byte
— Inputs — Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. S7 basic communication	Yes Yes Yes Yes 8 8 8 8 22 byte 22 byte
— Inputs — Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. S7 basic communication • communication function / S7 basic communication	Yes Yes Yes Yes Yes 8 8 8 8 8 22 byte 22 byte Yes 76 byte
— Inputs — Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. S7 basic communication • communication function / S7 basic communication • User data per job, max.	Yes Yes Yes Yes 8 8 8 8 8 22 byte 22 byte
— Inputs — Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. S7 basic communication • communication function / S7 basic communication • User data per job, max.	Yes Yes Yes Yes Yes 8 8 8 8 22 byte 22 byte Yes Yes 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET
— Inputs — Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. S7 basic communication • communication function / S7 basic communication • User data per job, max. • User data per job (of which consistent), max.	Yes Yes Yes Yes Yes 8 8 8 8 22 byte 22 byte Yes Yes 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET
- Inputs - Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Size of GD packets, receiver, max. • Size of GD packet (of which consistent), max. S7 basic communication • communication function / S7 basic communication • User data per job, max. • User data per job (of which consistent), max.	Yes Yes Yes Yes Yes 8 8 8 8 22 byte 22 byte Yes 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)
— Inputs — Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. S7 basic communication • communication function / S7 basic communication • User data per job, max. • User data per job (of which consistent), max. S7 communication • supported	Yes Yes Yes Yes Yes 8 8 8 8 22 byte 22 byte Yes 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes
— Inputs — Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. S7 basic communication • communication function / S7 basic communication • User data per job, max. • User data per job (of which consistent), max. S7 communication • supported • as server	Yes Yes Yes Yes Yes Yes 8 8 8 8 8 22 byte 22 byte Yes 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes Yes
— Inputs — Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. S7 basic communication • communication function / S7 basic communication • User data per job, max. • User data per job (of which consistent), max. S7 communication • supported • as server • as client	Yes Yes Yes Yes Yes 8 8 8 22 byte 22 byte Yes 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes Yes Yes Yes
— Inputs — Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packets, of which consistent, max. S7 basic communication • communication function / S7 basic communication • 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.	Yes Yes Yes Yes Yes 8 8 8 22 byte 22 byte Yes 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes Yes Yes Yes Yes Yes Yes Ye
— Inputs — Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. S7 basic communication • communication function / S7 basic communication • 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. • User data per job (of which consistent), max. S5 compatible communication	Yes Yes Yes Yes Yes Yes 8 8 8 8 22 byte 22 byte Yes 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes Yes Yes Yes Yes Yes Yes Ye
— Inputs — Outputs Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. S7 basic communication • communication function / S7 basic communication • 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. • User data per job (of which consistent), max.	Yes Yes Yes Yes Yes 8 8 8 22 byte 22 byte Yes 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes Yes Yes Yes Yes Yes Yes Ye

overall	16
 usable for PG communication 	15
 reserved for PG communication 	1
 adjustable for PG communication, min. 	1
 adjustable for PG communication, max. 	15
 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 	12
 reserved for S7 basic communication 	0
 adjustable for S7 basic communication, min. 	0
 adjustable for S7 basic communication, max. 	12
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	
Status/control variable	Yes
 Variables 	Inputs, outputs, memory bits, DB, times, counters
 Number of variables, max. 	30
of which status variables, max.	30
— of which control variables, max.	14
Forcing	
• Forcing	Yes
 Forcing, variables 	Inputs, outputs
Number of variables, max.	10
Diagnostic buffer	
• present	Yes
 Number of entries, max. 	500
— adjustable	No
of which powerfail-proof	100; Only the last 100 entries are retained
 Number of entries readable in RUN, max. 	
— adjustable	Yes; From 10 to 499
— preset	10
Service data	
can be read out	Yes
Ambient conditions	
Ambient temperature during operation	
min.	0 °C
• max.	0° °C
configuration / header	
Configuration software	
• STEP 7	Yes; V5.2 SP1 or higher with HW update
configuration / programming / header	
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.	290 g

last modified:

9/7/2023