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

Contract Information CPU 315F-2 DP Product type designation 01 Firmware version V3.3 Product function • Isochronous mode • 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, lower limit (DC) 28.8 V extenal protection for power supply lines (recommendation) 24 Min. Mains buffering - • Mains/voltage failure stored energy time 5 ms • Repeat rate, min. 1 s Input current 1 s Current consumption (rated value) 850 mA Current consumption (rated value) 35 A N Power loss - Power loss, typ. 4.5 W Memory - • Plug-in (MMC), max. 8 Mbyte • expandable No Load memory - • Plug-in (MMC), max. 8 Mbyte		
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, lower 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 1 s Current consumption (rated value) 850 mA Current consumption (in no-load operation), typ. 150 mA Inrush current, typ. 3.5 A P 1 A*s Power loss, typ. 4.5 W Memory • • integrated 384 kbyte • expandable No Load memory • • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup • • present Yes; Cuaranteed by MMC (maintenance-free)	General information	
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• 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 24 V 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 buffaring • • Mains/voltage failure stored energy time 5 ms • Repeat rate, min. 1 s Input current Current consumption (rated value) Current consumption (in no-load operation), typ. 150 mA Inrush current, typ. 3.5 A P Power loss, typ. Power loss, typ. 4.5 W Memory • • Integrated 384 kbyte • expandable No Lead memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min, management on MMC (after last programming), min, management on MMC (after last programming), min, management on MMC (after last programming),	Firmware version	V3.3
Engineering with 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) 28 8 V external protection for power supply lines (recommendation) 2 A min. Mains buffering • Meins/voltage failure stored energy time 5 ms • Repeat rate, min. 1 s Input current Current consumption (rated value) 850 mA Current consumption (rated value) 3.5 A P 1.50 mA Inrush current, typ. 1.50 mA Inrush current, typ. 4.5 W Memory 4.5 W Memory • Nigrated 384 kbyte • expandable No Laad memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Forgar and data CPU processing times Yes; Program and data	Product function	
• 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, lower limit (DC) 28.8 V external protection for power supply lines (recommendation) 2.4 min. Mains/voltage failure stored energy time 5 ms • Repeat rate, min. 1 s Input current 2.4 min. Current consumption (rated value) 850 mA Current consumption (in ne-load operation), typ. 150 mA Inrush current, typ. 3.5 A P 1A²-s Power loss, typ. 4.5 W Memory Vork memory • integrated 384 kbyte • expandable No Load memory Ves • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Ves; Forgara and data • Vrey in that battery Yes; Forgara and data CPU processing times 6.05 µs	Isochronous mode	Yes
Distributed Safety Supply voltage Rated value (DC) 24 V permissible range, lower 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 (in no-load operation), typ. 150 mA Inrush current, typ. 3.5 A Pt 1 A²-s Power loss, typ. 4.5 W Memory - • integrated 384 kbyte • expandable No Load memory - • 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	Engineering with	
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 5 ms • Repeat rate, min. 1 s Input current Current consumption (rated value) @ Current consumption (rated value) 850 mA Current consumption (in no-load operation), typ. 150 mA Inrush current, typ. 3.5 A Pt 1 A*s Power loss Power loss, typ. Power loss, typ. 4.5 W Memory • • integrated 384 kbyte • expandable No Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Cuaranteed by MMC (maintenance-free) • present Yes; Program and data CPU processing times 0.05 µs	 Programming package 	
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/voltage failure stored energy time 5 ms • Repeat rate, min. 1 s Input current 1 s Current consumption (rated value) 850 mA Current consumption (in no-load operation), typ. 150 mA Inrush current, typ. 3 5 A Pt 1 A*s Power loss, typ. 4.5 W Memory	Supply voltage	
permissible range, upper limit (DC) 28.8 V external protection for power supply lines (recommendation) 2 A min. Mains buffering 5 ms • Mains/voltage failure stored energy time 5 ms • Repeat rate, min. 1 s Input current 200 mA Current consumption (rated value) 850 mA Current consumption (in no-load operation), typ. 150 mA Inrush current, typ. 3.5 A Power loss 1 A²-s Power loss, typ. 4.5 W Memory	Rated value (DC)	24 V
external protection for power supply lines (recommendation) 2 A min. Mains buffering 5 ms • Mains/voltage failure stored energy time 5 ms • Repeat rate, min. 1 s Input current Current consumption (rated value) 850 mA Current consumption (rated value) 850 mA Current consumption (in no-load operation), typ. 150 mA Inrush current, typ. 3.5 A Pt 1 A²-s Power loss 4.5 W Memory 4.5 W Work memory 4.5 W • integrated 384 kbyte • expandable No Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Guaranteed by MMC (maintenance-free) • present Yes; Program and data CPU processing times 0.05 μs	permissible range, lower limit (DC)	19.2 V
Mains buffering 5 ms • Mains/voltage failure stored energy time 5 ms • Repeat rate, min. 1 s Input current 50 mA Current consumption (rated value) 850 mA Current consumption (in no-load operation), typ. 150 mA Inrush current, typ. 3.5 A Power loss 1 A²-s Power loss, typ. 4.5 W Memory Work memory • integrated 384 kbyte • expandable No Load memory 90 veri (MMC) • Plug-in (MMC) Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.05 µs	permissible range, upper limit (DC)	28.8 V
• Mains/voltage failure stored energy time 5 ms • Repeat rate, min. 1 s Input current 2 Current consumption (rated value) 850 mA Current consumption (in no-load operation), typ. 150 mA Inrush current, typ. 3.5 A Pt 1 A²-s Power loss 2 Power loss, typ. 4.5 W Memory 384 kbyte • expandable No Load memory 384 kbyte • expandable No Load memory 10 a Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.05 µs	external protection for power supply lines (recommendation)	2 A min.
• Repeat rate, min. 1 s Input current 850 mA Current consumption (rated value) 850 mA Current consumption (in no-load operation), typ. 150 mA Inrush current, typ. 3.5 A Pt 1 A*s Power loss 9000000000000000000000000000000000000	Mains buffering	
Input current Current consumption (rated value) 850 mA Current consumption (in no-load operation), typ. 150 mA Inrush current, typ. 3.5 A Pt 1 A²-s Power loss, typ. 4.5 W Memory Work memory • integrated 384 kbyte • expandable No Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.05 µs	 Mains/voltage failure stored energy time 	5 ms
Current consumption (rated value) 850 mA Current consumption (in no-load operation), typ. 150 mA Inrush current, typ. 3.5 A Pt 1 A*s Power loss 4.5 W Memory 4.5 W Work memory integrated • integrated 384 kbyte • expandable No Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Guaranteed by MMC (maintenance-free) • present Yes; Program and data CPU processing times 0.05 µs	Repeat rate, min.	1 s
Current consumption (in no-load operation), typ. 150 mA Inrush current, typ. 3.5 A I*t 1 A*s Power loss 4.5 W Memory 4.5 W Work memory 6 • integrated 384 kbyte • expandable No Load memory 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	Input current	
Inrush current, typ. 3.5 A I*t 1 A²-s Power loss 4.5 W Memory 4.5 W Werk memory 4.5 W • integrated 384 kbyte • expandable No Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.05 µs	Current consumption (rated value)	850 mA
Pt 1 A²-s Power loss 4.5 W Memory 4.5 W Work memory integrated • integrated 384 kbyte • expandable No Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.05 μs	Current consumption (in no-load operation), typ.	150 mA
Power loss Power loss, typ. 4.5 W Memory Vork memory • integrated 384 kbyte • expandable No Load memory • • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup • present • present Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.05 μs	Inrush current, typ.	3.5 A
Power loss, typ. 4.5 W Memory	l²t	1 A ² ·s
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 Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.05 µs	Power loss	
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 0.05 μs	Power loss, typ.	4.5 W
• integrated384 kbyte• expandableNoLoad memory• Plug-in (MMC)Yes• Plug-in (MMC), max.8 Mbyte• Data management on MMC (after last programming), min.10 aBackup• presentYes; Guaranteed by MMC (maintenance-free)• without batteryYes; Program and dataCPU processing times0.05 μs	Memory	
• 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 Yes; Guaranteed by MMC (maintenance-free) • present Yes; Program and data CPU processing times 0.05 μs	Work memory	
Load memory Plug-in (MMC) Plug-in (MMC), max. Data management on MMC (after last programming), min. Backup present vithout battery Yes; Guaranteed by MMC (maintenance-free) Yes; Program and data CPU processing times for bit operations, typ. 0.05 μs 	integrated	384 kbyte
• Plug-in (MMC) Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup ves; Guaranteed by MMC (maintenance-free) • present Yes; Program and data CPU processing times 0.05 μs	• expandable	No
• Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup 10 a • present Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.05 μs	Load memory	
• Data management on MMC (after last programming), min. 10 a Backup • present • present Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.05 μs	Plug-in (MMC)	Yes
min. Backup • present Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.05 μs	• Plug-in (MMC), max.	8 Mbyte
• present Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.05 μs		10 a
• without battery Yes; Program and data CPU processing times for bit operations, typ. 0.05 µs	Backup	
CPU processing times for bit operations, typ. 0.05 μs	• present	Yes; Guaranteed by MMC (maintenance-free)
for bit operations, typ. 0.05 µs	without battery	Yes; Program and data
	CPU processing times	
	for bit operations, typ.	0.05 µs
		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	
Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	
Number, max.	see instruction list
• Size, max.	64 kbyte
Number of free cycle OBs	1; OB 1
 Number of time alarm OBs 	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
 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 synchronous error OBs	2; OB 121, 122
Nesting depth	
• per priority class	16
 additional within an error OB 	4
Counters, timers and their retentivity	
S7 counter	
Number	256
Retentivity	
— adjustable	Yes
— preset	Z 0 to Z 7
Counting range	
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
S7 times	
• Number	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)
• Number	
	100 khuta
Retentive data area (incl. timers, counters, flags), max.	128 kbyte
Flag	2.040 http
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
Data blocks	
Retentivity adjustable	Yes; via non-retain property on DB
Retentivity preset	Yes
Local data	
 per priority class, max. 	32 kbyte; Max. 2 KB per block
Address area	
I/O address area	
Inputs	2 048 byte
Outputs	2 048 byte
of which distributed	
— Inputs	2 048 byte
— Outputs	2 048 byte
Process image	
Inputs	2 048 byte
Outputs	2 048 byte
 Inputs, adjustable 	2 048 byte
 Outputs, adjustable 	2 048 byte
 Inputs, default 	384 byte
Outputs, default	384 byte
Subprocess images	
 Number of subprocess images, max. 	1
Digital channels	
Inputs	16 384
— of which central	1 024
Outputs	16 384
— of which central	1 024
Analog channels	
Inputs	1 024
— of which central	256
Outputs	1 024
— of which central	256
Hardware configuration	
Number of expansion units, max.	3
Number of DP masters	
 integrated 	1
• via CP	4
Number of operable FMs and CPs (recommended)	
• FM	8
• CP, PtP	8
• CP, LAN	10
Rack	
Racks, max.	4
 Modules per rack, max. 	8
Time of day	
Clock	
Hardware clock (real-time)	Yes
 retentive and synchronizable 	Yes
Backup time	6 wk; At 40 °C ambient temperature
Deviation per day, max.	10 s; Typ.: 2 s
 Behavior of the clock following POWER-ON 	Clock continues running after POWER OFF
 Behavior of the clock following expiry of backup period 	the clock continues at the time of day it had when power was switched off
Operating hours counter	
Number	1
Number/Number range	0
Range of values	0 to 2^31 hours (when using SFC 101)
Granularity	1 h
retentive	Yes; Must be restarted at each restart
Clock synchronization	
supported	Yes

• to MPI, master	Yes
• on MPI, device	Yes
• to DP, master	Yes; With DP slave only slave clock
• on DP, device	Yes
• in AS, master	Yes
• in AS, device	No
Digital inputs	
Number of digital inputs	0
Digital outputs	
Number of digital outputs	0
Analog inputs	
Number of analog inputs	0
Interfaces	
Number of PROFINET interfaces	0
Number of RS 485 interfaces	2
Number of RS 422 interfaces	0
1. Interface	0
	Integrated DS 495 interface
Interface type Isolated	Integrated RS 485 interface No
Interface types	
RS 485	Yes
 RS 485 Output current of the interface, max. 	200 mA
Protocols • MPI	Vec
	Yes
PROFIBUS DP master	No
PROFIBUS DP device	No
Point-to-point connection	No
MPI	
• Transmission rate, max.	187.5 kbit/s
Services	
— PG/OP communication	Yes
— Routing	Yes
— Global data communication	Yes
— S7 basic communication	Yes
- S7 communication	Yes; Only server, configured on one side
— S7 communication, as client	No
- S7 communication, as server	Yes
2. Interface	
Interface type	Integrated RS 485 interface
Isolated	Yes
Interface types	
• RS 485	Yes
 Output current of the interface, max. 	200 mA
Protocols	
• MPI	No
PROFIBUS DP master	Yes
PROFIBUS DP device	Yes
Point-to-point connection	No
PROFIBUS DP master	
 Transmission rate, max. 	12 Mbit/s
max. number of DP devices	124; Per station
Services	
— PG/OP communication	Yes
— Routing	Yes
 — Global data communication 	No
 — S7 basic communication 	Yes; I blocks only
— S7 communication	Yes; Only server, configured on one side
- S7 communication, as client	
	No
 — S7 communication, as server 	No Yes
 — S7 communication, as server — Equidistance 	

— Isochronous mode	Yes; OB 61
— SYNC/FREEZE	Yes
 activation/deactivation of DP devices 	Yes
— max. number of DP devices that can be	8
activated/deactivated at the same time	
— DPV1	Yes
Address area	
— Inputs, max.	2 048 byte
— Outputs, max.	2 048 byte
User data per DP device	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
2nd interface / PROFIBUS DP device / header	
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 communication	Yes; Only server, configured on one side
— S7 communication, as client	No
— S7 communication, as server	Yes
 — Direct data exchange (slave-to-slave 	Yes
communication)	
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
- Outputs Protocols	244 byte
	244 byte Yes
Protocols	
Protocols PROFIsafe	
Protocols PROFIsafe communication functions / header	Yes
Protocols PROFIsafe communication functions / header PG/OP communication	Yes
Protocols PROFIsafe communication functions / header PG/OP communication Data record routing	Yes
Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication	Yes Yes Yes
Protocols PROFIsafe communication functions / header PG/OP communication Data record routing Global data communication • supported	Yes Yes Yes Yes
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
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
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 8 8 8 8 8
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, receiver, max. • Number of GD packets, receiver, max. • Size of GD packets, max.	Yes Yes Yes Xes Xes Xes Xes Xes Xes Xes Xes Xes X
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 8 8 8 8 8
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. \$7 basic communication	Yes Yes Yes 8 8 8 8 8 8 8 8 8 8 22 byte 22 byte
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, max. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. S7 basic communication • supported	Yes Yes Yes Yes 8 8 8 8 8 8 8 8 8 22 byte 22 byte
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, 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 • supported • User data per job, max.	Yes Yes Yes Yes 8 8 8 8 8 8 8 8 8 8 8 8 22 byte 22 byte 22 byte 76 byte
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, max. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. S7 basic communication • supported	Yes Yes Yes Yes 8 8 8 8 8 8 8 8 8 22 byte 22 byte
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, 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 • supported • User data per job, max.	Yes Yes Yes Yes 8 8 8 8 8 8 8 22 byte 22 byte 22 byte Yes 76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET
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, max. • Number of GD packets, receiver, 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 • Supported • User data per job, max. • User data per job (of which consistent), max.	Yes Yes Yes Yes 8 8 8 8 8 8 8 22 byte 22 byte 22 byte Yes 76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET
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, 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 • supported • User data per job, max. • User data per job (of which consistent), max. S7 communication	Yes Yes Yes Yes 8 8 8 8 8 8 22 byte 22 byte 22 byte Yes 76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)
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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, max. • Number of GD packets, receiver, 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 • supported • User data per job, max. • User data per job (of which consistent), max. S7 communication • supported • 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 Xes Xes Xes Xes Yes Yes Yes Yes Yes Yes Yes Yia CP and loadable FB 180 byte; With PUT/GET
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, 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 • supported • User data per job, max. • User data per job (of which consistent), max. S7 communication • supported • 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 8 8 8 8 8 8 22 byte 22 byte 22 byte 76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes Yes Yes; Via CP and loadable FB
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, 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 packets, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. S7 basic communication • supported • 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, max. • User data per job (of which consistent), max. S5 compatible communication	Yes Yes Yes Yes Yes 8 8 8 8 8 8 22 byte 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; Via CP and loadable FB 180 byte; With PUT/GET 240 byte; as server
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, 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 • supported • 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 • supported	Yes Yes Yes Yes Yes Xes Xes Xes Xes Yes Yes Yes Yes Yes Yes Yes Yia CP and loadable FB 180 byte; With PUT/GET
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- 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 status variables, max. — of which control variables, max.	14
	17
Forcing	Yes
Forcing Forcing	
Forcing, variables	Inputs, outputs
Number of variables, max.	10
Diagnostic buffer	Vee
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.	60 °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
— 30L — CFC	Yes
— GRAPH	Yes
	Yes
— HiGraph® Know-how protection	
NIOW-NOW DIOLECTION	

User program protection/password protection	Yes
Block encryption Dimensions	Yes; With S7 block Privacy
Dimensions	
Width	40 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	290 g

last modified:

12/8/2024 🖸