SIEMENS

Data sheet

6AG1312-5BF04-7AB0



SIPLUS S7-300 CPU 312C based on 6ES7312-5BF04-0AB0 with conformal coating, -25...+70 °C, compact CPU with MPI, 10 DI/6 DQ, 2 high-speed counters (10 kHz) integrated power supply 24 V DC, work memory 64 KB, front connector (1x 40-pole) and Micro Memory Card required

Figure similar

1 % 1100.00	
General information	
Product type designation	CPU 312C
based on	<u>6ES7312-5BF04-0AB0</u>
Engineering with	
Programming package	STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
external protection for power supply lines (recommendation)	Miniature circuit breaker, type C; min. 2 A; miniature circuit breaker type B, min. 4 A
Mains buffering	
 Mains/voltage failure stored energy time 	5 ms
Repeat rate, min.	1 s
Load voltage L+	
Digital outputs	
— Rated value (DC)	24 V
 Reverse polarity protection 	No
Input current	
Current consumption (rated value)	570 mA
Current consumption (in no-load operation), typ.	90 mA
Inrush current, typ.	5 A
l²t	0.7 A²-s
Digital outputs	
 from load voltage L+, max. 	25 mA
Power loss	
Power loss, typ.	8 W
Memory	
Work memory	
integrated	64 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.	0.1 μs
for word operations, typ.	0.24 μs
for fixed point arithmetic, typ.	0.32 µs
for floating point arithmetic, typ.	1.1 µs
CPU-blocks	40
Number of blocks (total)	1 024; (DBs, FCs, FBs); the maximum number of loadable blocks can be
	reduced by the MMC used.
DB	4.004 N
Number, max.	1 024; Number range: 1 to 16000
• Size, max.	64 kbyte
◆ Number, max.	1.024: Number range: 0 to 7000
• Size, max.	1 024; Number range: 0 to 7999 64 kbyte
FC	64 kDyte
Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	o- naye
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 startup OBs	1; OB 100
Number of asynchronous error OBs	4; OB 80, 82, 85, 87
Number of asynchronous 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	230
•	Vee
— adjustable	Yes
— preset	Z 0 to Z 7
Counting range	0
— lower limit	0
— upper limit	999
IEC counter	Vac
• present	Yes
• Type	SFB Liplimited (limited only by PAM congeity)
Number S7 times	Unlimited (limited only by RAM capacity)
S7 times	256
Number Potontivity	256
Retentivity	Voc
— adjustable	Yes
— preset	No retentivity
Time range	40
— 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	
Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max.	64 kbyte
Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag	
Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max.	64 kbyte 256 byte Yes; MB 0 to MB 255

Number of Glock memories Number of Glock memories No address area No address area Per priority plass, max, Address area I propus Outputs I propus I	Retentivity preset	MB 0 to MB 15
Beat blocks Ves, vision on-retain property on DB Ves, vision on-retain property on DB Ves Reactivity preset Ves	* *	
Rederfielty adjustable Yes, via non-retain property on DB		-,
Redeminkly present		Yes: via non-retain property on DB
September Sept		
Per priority class, max		
No address area		32 kbyte: Max. 2048 bytes per block
Doadfress area		
Inputs		
Outputs		1 024 byte
Of which distributed		·
Inputs Cutputs Coupts Co	·	- 1-1-1-1
Process image		none
Injust	· · · · · · · · · · · · · · · · · · ·	none
Outputs Inputs, adjustable Inputs, adjustable Inputs, default Inputs, default Inputs, default Inputs, default Inputs, default Inputs, default Inputs Inp	Process image	
Outputs Inputs, adjustable Inputs, adjustable Inputs, default Inputs, default Inputs, default Inputs, default Inputs, default Inputs, default Inputs Inp	• Inputs	1 024 byte
		1 024 byte
	·	
inputs, default 128 byte		·
Outputs, default Default addresses of the integrated channels		
Digital inputs 124.0 to 125.1 Digital outputs 124.0 to 124.5		
Digital channels	Default addresses of the integrated channels	
Inputs	— Digital inputs	124.0 to 125.1
Inputs	— Digital outputs	124.0 to 124.5
of which central 266 • Outputs 262 of which central 262 Analog channels • Inputs 64 of which central 64 • Outputs 64 of which central 64 Hardware configuration Number of DP masters • Integrated none • via CP 4 Number of operable FMs and CPs (recommended) • FM 8 • CP, PtP 8 • CP, LAN 4 Rack • Racks, max. 1 • Modules per rack, max. 1 • Modules per rack, max. 1 • Software clock 100 merch	Digital channels	
Outputs	• Inputs	266
Analog channels Inputs Outputs Output	— of which central	266
Inputs 64 - of which central 64 - Outputs 64 - of which central 64 - outputs 64 - of which central 64 - outputs 64 - of which central 64 Hardware configuration Number of DP masters	Outputs	262
Inputs	— of which central	262
- of which central 64 • Outputs 64 - of which central 64 Hardware configuration Number of expansion units, max. 0 Number of DP masters • integrated	Analog channels	
Outputs Of which central Hardware configuration Number of expansion units, max. O Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PIP CP, LAN Rack Racks, max. Modules per rack, max. Modules per rack, max. Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON Operating hours counter Number Number Number Racks of day Clock Software solock Recks, max. Behavior of the clock following POWER-ON Operating hours counter Number Range of values O to 2^31 hours (when using SFC 101) Granularity Fest Must be restarted at each restart Clock synchronization	Inputs	64
Hardware configuration Number of expansion units, max. 0 Number of DP masters • integrated • via CP Number of operable FMs and CPs (recommended) • FM • CP, PtP • CP, LAN Rack • Racks, max. • Modules per rack, max. • Modules per rack, max. • Software clock • retentive and synchronizable • Deviation per day, max. • Behavior of the clock following POWER-ON Operating hours counter • Number • Number • Number range • Range of values • Granularity • retentive • Yes; Must be restarted at each restart Clock synchronization	— of which central	64
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP 8 CP, LAN Rack Rack Situate of day Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON Departing hours counter Number Range Oranularity Range Oranularity Reference Oranularity Pes; Must be restarted at each restart None One	Outputs	64
Number of expansion units, max. Number of DP masters integrated via CP 4 Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Modules per rack, max. Noguer of day Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON Operating hours counter Number Range of values Range of values Clock on the units of the units	— of which central	64
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Number of operable FMs and CPs (recommended) • FM • CP, PtP • CP, LAN Rack • Racks, max. • Modules per rack, max. • Modules per rack, max. • Software clock • Software clock • retentive and synchronizable • Deviation per day, max. • Behavior of the clock following POWER-ON Operating hours counter • Number • Number • Number • Number • Range of values • Granularity • Granularity • retentive • Testing and CPs (recommended) 8 8 **Behavior of the clock following POWER-ON Oberating hours counter • Number • Number • Number • Range of values • Granularity • Retentive Clock synchronization	-	none
FM CP, PtP 8 CP, LAN 4 Rack Rack Rack, max. Modules per rack, max. No bodies per rack, max. No bodies per rack, max. No; Buffered: No, Can be synchronized: Yes Deviation per day, max. Behavior of the clock following POWER-ON Operating hours counter Number Number Number Range of values Range of values Granularity Granularity Fes; Must be restarted at each restart Clock synchronization		4
CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Modules per rack, max. Software clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON Deprating hours counter Number Number Number Number 1 Number 1 Number/Number range Range of values Range of values Granularity Fes; Must be restarted at each restart Clock synchronization		
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Rack Packs, max. P		
 Racks, max. Modules per rack, max. Time of day Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON Operating hours counter Number/Number range Range of values Range of values Granularity retentive Yes Nust be restarted at each restart Clock synchronization 		4
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Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON Operating hours counter Number Number Range of values Granularity retentive Software clock Yes Yes Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off Operating hours counter 1 Output Outp		8
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 Number/Number range Range of values Granularity retentive Yes; Must be restarted at each restart 		,
 Range of values Granularity retentive Clock synchronization 0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart 		
● Granularity 1 h • retentive Yes; Must be restarted at each restart Clock synchronization	_	
• retentive Yes; Must be restarted at each restart Clock synchronization		
Clock synchronization	•	
		Yes; Must be restarted at each restart
● supported Yes		V
	• ѕиррогтеа	Yes

	· ·
• to MPI, master	Yes
• on MPI, device	Yes
• in AS, master	Yes
• in AS, device	No
Digital inputs	
Number of digital inputs	10
of which inputs usable for technological functions	8
integrated channels (DI)	10
Input characteristic curve in accordance with IEC 61131, type 1	Yes
Number of simultaneously controllable inputs	
horizontal installation	
— up to 40 °C, max.	10
— up to 60 °C, max.	5; up to 70 °C
vertical installation	
— up to 40 °C, max.	5
Input voltage	
 Rated value (DC) 	24 V
• for signal "0"	-3 to +5V
• for signal "1"	+15 to +30 V
Input current	
■ for signal "1", typ.	8 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	Yes; 0.1 / 0.3 / 3 / 15 ms (You can reconfigure the input delay of the standard inputs during program runtime. Please note that under certain circumstances your newly set filter time may not be effective until the next filter cycle.)
— Rated value	3 ms
for technological functions	
— at "0" to "1", max.	48 µs; Minimum pulse width/minimum pause between pulses at maximum
	counting frequency
Cable length	4000 400 6 4 4 5 16 16
• shielded, max.	1 000 m; 100 m for technological functions
• unshielded, max.	600 m; for technological functions: No
for technological functions	
	100
— shielded, max.	100 m; at maximum count frequency
— unshielded, max.	100 m; at maximum count frequency not allowed
— unshielded, max. Digital outputs	not allowed
— unshielded, max. Digital outputs Number of digital outputs	not allowed 6
— unshielded, max. Digital outputs Number of digital outputs • of which high-speed outputs	not allowed 6 2; Notice: You cannot connect the fast outputs of your CPU in parallel
— unshielded, max. Digital outputs Number of digital outputs ● of which high-speed outputs integrated channels (DO)	not allowed 6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6
— unshielded, max. Digital outputs Number of digital outputs • of which high-speed outputs integrated channels (DO) Short-circuit protection	not allowed 6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6 Yes; Clocked electronically
— unshielded, max. Digital outputs Number of digital outputs • of which high-speed outputs integrated channels (DO) Short-circuit protection • Response threshold, typ.	6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6 Yes; Clocked electronically 1 A
— unshielded, max. Digital outputs Number of digital outputs • of which high-speed outputs integrated channels (DO) Short-circuit protection • Response threshold, typ. Limitation of inductive shutdown voltage to	not allowed 6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6 Yes; Clocked electronically 1 A L+ (-48 V)
— unshielded, max. Digital outputs Number of digital outputs of which high-speed outputs integrated channels (DO) Short-circuit protection Response threshold, typ. Limitation of inductive shutdown voltage to Controlling a digital input	6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6 Yes; Clocked electronically 1 A
— unshielded, max. Digital outputs Number of digital outputs • of which high-speed outputs integrated channels (DO) Short-circuit protection • Response threshold, typ. Limitation of inductive shutdown voltage to Controlling a digital input Switching capacity of the outputs	not allowed 6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6 Yes; Clocked electronically 1 A L+ (-48 V) Yes
— unshielded, max. Digital outputs Number of digital outputs • of which high-speed outputs integrated channels (DO) Short-circuit protection • Response threshold, typ. Limitation of inductive shutdown voltage to Controlling a digital input Switching capacity of the outputs • on lamp load, max.	not allowed 6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6 Yes; Clocked electronically 1 A L+ (-48 V)
— unshielded, max. Digital outputs Number of digital outputs of which high-speed outputs integrated channels (DO) Short-circuit protection Response threshold, typ. Limitation of inductive shutdown voltage to Controlling a digital input Switching capacity of the outputs on lamp load, max. Load resistance range	not allowed 6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6 Yes; Clocked electronically 1 A L+ (-48 V) Yes 5 W
— unshielded, max. Digital outputs Number of digital outputs of which high-speed outputs integrated channels (DO) Short-circuit protection Response threshold, typ. Limitation of inductive shutdown voltage to Controlling a digital input Switching capacity of the outputs on lamp load, max. Load resistance range lower limit	not allowed 6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6 Yes; Clocked electronically 1 A L+ (-48 V) Yes 5 W
— unshielded, max. Digital outputs Number of digital outputs of which high-speed outputs integrated channels (DO) Short-circuit protection Response threshold, typ. Limitation of inductive shutdown voltage to Controlling a digital input Switching capacity of the outputs on lamp load, max. Load resistance range I lower limit upper limit	not allowed 6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6 Yes; Clocked electronically 1 A L+ (-48 V) Yes 5 W
— unshielded, max. Digital outputs Number of digital outputs of which high-speed outputs integrated channels (DO) Short-circuit protection Response threshold, typ. Limitation of inductive shutdown voltage to Controlling a digital input Switching capacity of the outputs on lamp load, max. Load resistance range I lower limit upper limit Output voltage	not allowed
— unshielded, max. Digital outputs Number of digital outputs of which high-speed outputs integrated channels (DO) Short-circuit protection Response threshold, typ. Limitation of inductive shutdown voltage to Controlling a digital input Switching capacity of the outputs on lamp load, max. Load resistance range lower limit upper limit Output voltage of r signal "1", min.	not allowed 6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6 Yes; Clocked electronically 1 A L+ (-48 V) Yes 5 W
— unshielded, max. Digital outputs Number of digital outputs of which high-speed outputs integrated channels (DO) Short-circuit protection Response threshold, typ. Limitation of inductive shutdown voltage to Controlling a digital input Switching capacity of the outputs on lamp load, max. Load resistance range I lower limit upper limit Output voltage of r signal "1", min. Output current	not allowed 6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6 Yes; Clocked electronically 1 A L+ (-48 V) Yes 5 W 48 Ω 4 kΩ L+ (-0.8 V)
— unshielded, max. Digital outputs Number of digital outputs of which high-speed outputs integrated channels (DO) Short-circuit protection Response threshold, typ. Limitation of inductive shutdown voltage to Controlling a digital input Switching capacity of the outputs on lamp load, max. Load resistance range I lower limit upper limit Output voltage of or signal "1", min. Output current of or signal "1" rated value	not allowed 6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6 Yes; Clocked electronically 1 A L+ (-48 V) Yes 5 W 48 Ω 4 kΩ L+ (-0.8 V)
— unshielded, max. Digital outputs Number of digital outputs of which high-speed outputs integrated channels (DO) Short-circuit protection Response threshold, typ. Limitation of inductive shutdown voltage to Controlling a digital input Switching capacity of the outputs on lamp load, max. Load resistance range lower limit upper limit Output voltage for signal "1" rated value for signal "1" rated value for signal "1" permissible range, min.	not allowed 6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6 Yes; Clocked electronically 1 A L+ (-48 V) Yes 5 W 48 Ω 4 kΩ L+ (-0.8 V)
— unshielded, max. Digital outputs Number of digital outputs of which high-speed outputs integrated channels (DO) Short-circuit protection Response threshold, typ. Limitation of inductive shutdown voltage to Controlling a digital input Switching capacity of the outputs on lamp load, max. Load resistance range I lower limit upper limit Output voltage for signal "1", min. Output current for signal "1" rated value for signal "1" permissible range, min. for signal "1" permissible range, max.	not allowed 6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6 Yes; Clocked electronically 1 A L+ (-48 V) Yes 5 W 48 Ω 4 kΩ L+ (-0.8 V) 500 mA 5 mA 0.6 A
— unshielded, max. Digital outputs Number of digital outputs of which high-speed outputs integrated channels (DO) Short-circuit protection Response threshold, typ. Limitation of inductive shutdown voltage to Controlling a digital input Switching capacity of the outputs on lamp load, max. Load resistance range lower limit upper limit Output voltage of r signal "1", min. Output current for signal "1" rated value of or signal "1" permissible range, min. of or signal "1" permissible range, max. of or signal "1" minimum load current	not allowed 6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6 Yes; Clocked electronically 1 A L+ (-48 V) Yes 5 W 48 Ω 4 kΩ L+ (-0.8 V) 500 mA 5 mA 0.6 A 5 mA
— unshielded, max. Digital outputs • of which high-speed outputs integrated channels (DO) Short-circuit protection • Response threshold, typ. Limitation of inductive shutdown voltage to Controlling a digital input Switching capacity of the outputs • on lamp load, max. Load resistance range • lower limit • upper limit Output voltage • for signal "1", min. Output current • for signal "1" rated value • for signal "1" permissible range, min. • for signal "1" permissible range, max. • for signal "1" minimum load current • for signal "0" residual current, max.	not allowed 6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6 Yes; Clocked electronically 1 A L+ (-48 V) Yes 5 W 48 Ω 4 kΩ L+ (-0.8 V) 500 mA 5 mA 0.6 A
— unshielded, max. Digital outputs of which high-speed outputs integrated channels (DO) Short-circuit protection Response threshold, typ. Limitation of inductive shutdown voltage to Controlling a digital input Switching capacity of the outputs on lamp load, max. Load resistance range Iower limit upper limit Output voltage for signal "1", min. Output current for signal "1" rated value for signal "1" permissible range, min. for signal "1" permissible range, max. for signal "1" minimum load current for signal "0" residual current, max. Parallel switching of two outputs	not allowed 6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6 Yes; Clocked electronically 1 A L+ (-48 V) Yes 5 W 48 Ω 4 kΩ L+ (-0.8 V) 500 mA 5 mA 0.6 A 5 mA 0.5 mA
— unshielded, max. Digital outputs of which high-speed outputs integrated channels (DO) Short-circuit protection Response threshold, typ. Limitation of inductive shutdown voltage to Controlling a digital input Switching capacity of the outputs on lamp load, max. Load resistance range lower limit upper limit Output voltage for signal "1", min. Output current for signal "1" rated value for signal "1" permissible range, min. for signal "1" permissible range, max. for signal "1" minimum load current for signal "0" residual current, max. Parallel switching of two outputs for uprating	not allowed 6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6 Yes; Clocked electronically 1 A L+ (-48 V) Yes 5 W 48 Ω 4 kΩ L+ (-0.8 V) 500 mA 5 mA 0.6 A 5 mA 0.5 mA
— unshielded, max. Digital outputs of which high-speed outputs integrated channels (DO) Short-circuit protection Response threshold, typ. Limitation of inductive shutdown voltage to Controlling a digital input Switching capacity of the outputs on lamp load, max. Load resistance range Iower limit upper limit Output voltage for signal "1", min. Output current for signal "1" rated value for signal "1" permissible range, min. for signal "1" permissible range, max. for signal "1" minimum load current for signal "0" residual current, max. Parallel switching of two outputs	not allowed 6 2; Notice: You cannot connect the fast outputs of your CPU in parallel 6 Yes; Clocked electronically 1 A L+ (-48 V) Yes 5 W 48 Ω 4 kΩ L+ (-0.8 V) 500 mA 5 mA 0.6 A 5 mA 0.5 mA

with resistive load, max.	100 Hz
with inductive load, max.	0.5 Hz
on lamp load, max.	100 Hz
of the pulse outputs, with resistive load, max.	2.5 kHz
Total current of the outputs (per group)	
horizontal installation	
— up to 40 °C, max.	2 A
— up to 60 °C, max.	1.5 A; up to 70 °C
vertical installation	
— up to 40 °C, max.	1.5 A
Cable length	
shielded, max.	1 000 m
unshielded, max.	600 m
Analog inputs	
Number of analog inputs	0
integrated channels (AI)	0
Analog outputs	
integrated channels (AO)	0
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
permissible quiescent current (2-wire sensor), max.	1.5 mA
Interfaces	
Number of PROFINET interfaces	0
Number of RS 485 interfaces	1; MPI
Number of RS 422 interfaces	0
1. Interface	
	Integrated RS 485 interface
Interface type Isolated	No
	NU
Interface types	Von
• RS 485	Yes
Output current of the interface, max. Protocols	200 mA
Protocols	V
• MPI	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	No
 Global data communication 	Yes
 S7 basic communication 	Yes
— S7 communication	Yes; Only server, configured on one side
 S7 communication, as client 	No; but via CP and loadable FB
— S7 communication, as server	Yes
Protocols	
PROFIsafe	No
communication functions / header	
PG/OP communication	Yes
Data record routing	No
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, transmitter, max. Number of GD packets, receiver, max.	8
Size of GD packets, max.	22 byte
Size of GD packets, flax. Size of GD packet (of which consistent), max.	22 byte
■ Size of GD packet (of willoff consistent), Illax.	ZZ Dyto

S7 basic communication	
basic communication supported	Yes
SupportedUser data per job, max.	76 byte
User data per job (of which consistent), max.	76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET
• Oser data per job (of which consistent), max.	as server)
S7 communication	
• supported	Yes
• as server	Yes
• as client	Yes; Via CP and loadable FB
 User data per job, max. 	180 byte; (with PUT/GET)
User data per job (of which consistent), max.	240 byte; as server
S5 compatible communication	
• supported	Yes; via CP and loadable FC
Number of connections	
• overall	6
 usable for PG communication 	5
 reserved for PG communication 	1
— adjustable for PG communication, min.	1
— adjustable for PG communication, max.	5
usable for OP communication	5
— reserved for OP communication	1
— adjustable for OP communication, min.	1
— adjustable for OP communication, max.	5
usable for S7 basic communication	2
reserved for S7 basic communication	0
— adjustable for S7 basic communication, min.	0
— adjustable for S7 basic communication, max.	2
S7 message functions	
Number of login stations for message functions, max.	6; 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	V
• Forcing	Yes
Forcing, variables	Inputs, outputs
Number of variables, max. Plansaction buffers	10
Diagnostic buffer	
Diagnostic buffer • present	Yes
Diagnostic buffer • present • Number of entries, max.	Yes 500
Diagnostic buffer present Number of entries, max. adjustable	Yes 500 No
Diagnostic buffer ● present • Number of entries, max. — adjustable — of which powerfail-proof	Yes 500 No 100; Only the last 100 entries are retained
Diagnostic buffer present Number of entries, max. adjustable of which powerfail-proof Number of entries readable in RUN, max.	Yes 500 No 100; Only the last 100 entries are retained 499
Diagnostic buffer ● present ● Number of entries, max. — adjustable — of which powerfail-proof ● Number of entries readable in RUN, max. — adjustable	Yes 500 No 100; Only the last 100 entries are retained 499 Yes; From 10 to 499
Diagnostic buffer • present • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — preset	Yes 500 No 100; Only the last 100 entries are retained 499
Diagnostic buffer • present • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — preset Service data	Yes 500 No 100; Only the last 100 entries are retained 499 Yes; From 10 to 499 10
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 500 No 100; Only the last 100 entries are retained 499 Yes; From 10 to 499
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 Interrupts/diagnostics/status information	Yes 500 No 100; Only the last 100 entries are retained 499 Yes; From 10 to 499 10
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 Interrupts/diagnostics/status information Diagnostics indication LED	Yes 500 No 100; Only the last 100 entries are retained 499 Yes; From 10 to 499 10 Yes
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 Interrupts/diagnostics/status information Diagnostics indication LED • Status indicator digital input (green)	Yes 500 No 100; Only the last 100 entries are retained 499 Yes; From 10 to 499 10 Yes
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 Interrupts/diagnostics/status information Diagnostics indication LED	Yes 500 No 100; Only the last 100 entries are retained 499 Yes; From 10 to 499 10 Yes

Counter	
 Number of counters 	2; See "Technological Functions" manual
Counting frequency, max.	10 kHz
Frequency measurement	Yes
Number of frequency meters	2; up to 10 kHz (see "Technological Functions" manual)
controlled positioning	No
integrated function blocks (closed-loop control)	No
PID controller	No
Number of pulse outputs	2; Pulse width modulation up to 2.5 kHz (see "Technological Functions" Manual)
Limit frequency (pulse)	2.5 kHz
Potential separation	
Potential separation digital inputs	
 Potential separation digital inputs 	Yes
 between the channels 	No
 between the channels and backplane bus 	Yes
Potential separation digital outputs	
Potential separation digital outputs	Yes
between the channels	No
 between the channels and backplane bus 	Yes
Isolation	
Isolation tested with	600 V DC
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
Use in hazardous areas	165
ATEX	Yes
Ambient conditions	165
Ambient temperature during operation	
min.	-25 °C; = Tmin
• max.	70 °C; = Tmax; 60 °C @ UL/cUL, ATEX and FM use
Ambient temperature during storage/transportation	70 C, - Illiax, 00 C & OLCOL, ATEX and I Wildse
	-40 °C
• min.	
• max.	70 °C
Altitude during operation relating to sea level	
lantallation altitude also and land, and	5.000
 Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude 	5 000 m Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax -10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K)
Ambient air temperature-barometric pressure-altitude	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax
Ambient air temperature-barometric pressure-altitude Relative humidity	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)
Ambient air temperature-barometric pressure-altitude Relative humidity With condensation, tested in accordance with IEC 60068-2-38, max.	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K)
Ambient air temperature-barometric pressure-altitude Relative humidity With condensation, tested in accordance with IEC 60068-2-38, max. Resistance	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)
Ambient air temperature-barometric pressure-altitude Relative humidity With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems — to biologically active substances according to EN	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna);
Ambient air temperature-barometric pressure-altitude Relative humidity With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems to biologically active substances according to EN 60721-3-3 to chemically active substances according to EN	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax -10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity
Ambient air temperature-barometric pressure-altitude Relative humidity With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems — to biologically active substances according to EN 60721-3-3	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax -10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
Ambient air temperature-barometric pressure-altitude Relative humidity With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems to biologically active substances according to EN 60721-3-3 to chemically active substances according to EN 60721-3-3	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax -10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
Ambient air temperature-barometric pressure-altitude Relative humidity With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems to biologically active substances according to EN 60721-3-3 to chemically active substances according to EN 60721-3-3 to mechanically active substances according to EN	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
Ambient air temperature-barometric pressure-altitude Relative humidity With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems to biologically active substances according to EN 60721-3-3 to chemically active substances according to EN 60721-3-3 to mechanically active substances according to EN 60721-3-3	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
Ambient air temperature-barometric pressure-altitude Relative humidity With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems to biologically active substances according to EN 60721-3-3 to chemically active substances according to EN 60721-3-3 to mechanically active substances according to EN 60721-3-3 Use on ships/at sea to biologically active substances according to EN	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 3S4 incl. sand, dust, *
Ambient air temperature-barometric pressure-altitude Relative humidity With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems to biologically active substances according to EN 60721-3-3 to chemically active substances according to EN 60721-3-3 to mechanically active substances according to EN 60721-3-3 Use on ships/at sea to biologically active substances according to EN 60721-3-6 to chemically active substances according to EN 60721-3-6 to chemically active substances according to EN	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax -10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 3S4 incl. sand, dust, * Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity
Ambient air temperature-barometric pressure-altitude Relative humidity With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems — to biologically active substances according to EN 60721-3-3 — to chemically active substances according to EN 60721-3-3 — to mechanically active substances according to EN 60721-3-3 Use on ships/at sea — to biologically active substances according to EN 60721-3-6 — to chemically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax -10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
Ambient air temperature-barometric pressure-altitude Relative humidity With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems — to biologically active substances according to EN 60721-3-3 — to chemically active substances according to EN 60721-3-3 Use on ships/at sea — to biologically active substances according to EN 60721-3-6 — to chemically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax -10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *

and control systems acc. to ANSI/ISA-71.04	concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)
Remark	
 Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 	* The supplied plug covers must remain in place over the unused interfaces during operation!
configuration / header	
Configuration software	
• STEP 7	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203
STEP 7 Lite	No
configuration / programming / header	
 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
— GRAPH	Yes
— HiGraph®	Yes
Know-how protection	
 User program protection/password protection 	Yes
Block encryption	Yes; With S7 block Privacy
Dimensions	
Width	80 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	410 g

last modified:

5/29/2024