SIEMENS

Data sheet

6ES7312-5BF04-0AB0

	SIMATIC S7-300, CPU 312C Compact CPU with MPI, 10 DI/6 DQ, 2 high-speed counters (10 kHz) Integr. power supply 24 V DC, work memory 64 KB, Front connector (1x 40-pole) and Micro Memory Card required
General information	
Product type designation	CPU 312C
HW functional status	01
Firmware version	V3.3
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 ∨
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 A ² ·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	
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	4.004 Number many 0.45 7000	
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 startup OBs 	1; OB 100	
 Number of asynchronous error OBs 	4; OB 80, 82, 85, 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	250	
Number	256	
Retentivity		
— adjustable	Yes	
— preset	No retentivity	
Time range		
— lower limit	10 ms	
— upper limit	9 990 s	
IEC timer		
• present	Yes	
•Туре	SFB	
Number	Unlimited (limited only by RAM capacity)	
Data areas and their retentivity		
Retentive data area (incl. timers, counters, flags), max.	64 kbyte	
Flag		
• Size, max.	256 byte	
Retentivity available	Yes; MB 0 to MB 255	
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. 2048 bytes per block	
Address area		
I/O address area		
Inputs	1 024 byte	
- inputs	I OLT DYIC	

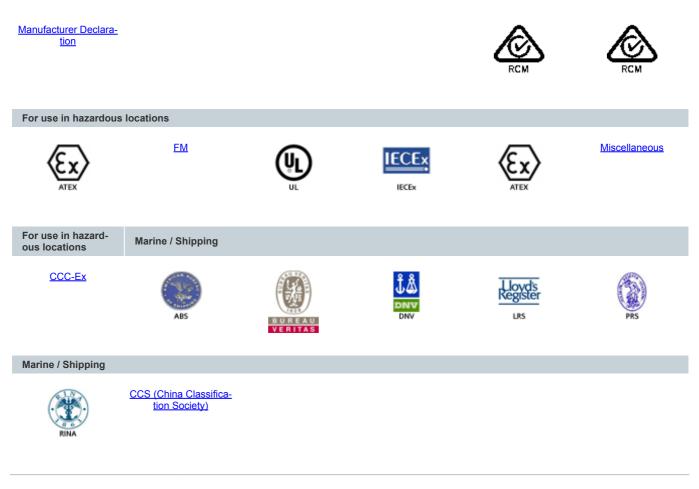
	1.024 bute		
Outputs of which distributed	1 024 byte		
— Inputs	none		
— Outputs	none		
Process image	1.004 h.te		
Inputs	1 024 byte		
• Outputs	1 024 byte		
Inputs, adjustable	1 024 byte		
Outputs, adjustable	1 024 byte		
Inputs, default	128 byte		
Outputs, default	128 byte		
Default addresses of the integrated channels			
— Digital inputs	124.0 to 125.1		
— Digital outputs	124.0 to 124.5		
Digital channels			
Inputs	266		
— 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 expansion units, max.	0		
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. 	8		
Time of day			
Clock			
Software clock	Yes		
 retentive and synchronizable 	No; Buffered: No, Can be synchronized: Yes		
 Deviation per day, max. 	10 s; Typ.: 2 s		
 Behavior of the clock following POWER-ON 	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		
• 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			

Indicated installation 10					
		horizontal installation			
evelowing 6 evelowing 6 evelowing 24 V evelowing 30 eSV evelowing 8 mA Input density 6 mission 1*1*, typ. evelowing 8 mA Input density the rated value of tiput valuage) 100 mission	websiteup to 40°C, max.Input voltageup to 40°C, maxup to 40°C, max. <t< td=""><td>— up to 40 °C, max.</td><td>10</td></t<>	— up to 40 °C, max.	10		
		— up to 60 °C, max.	5		
Input voltage 24 V • A tade value (DC) 24 V • for signal '0' -3 b +5V • for signal '1' +5 to -30 V Input current - • for signal '1', typ. 8 mA Input delay (for rade value of input voltage) 8 mA • for signal '1', typ. 8 mA Input delay (for rade value of input voltage) 3 m 5 • or signal '1', typ. 8 mA • name the track value 3 m 5 • - market value 4 m 5 • - market value 100 m; in on for technological functions • - market value 100 m; in on for technological functions • - market value 100 m; in on for technological functions • unrishelded, max. 100 m; in on any maximum count flequency - unrishelded, max. 100 m; in on any i	Implicitly 2 • Retel value (DC) -3 br +5V • for signal "1" -3 br +5V • for signal "1", sp. 8 mA Implicit derret - • for signal "1", sp. 8 mA Implicit derret - • for signal "1", sp. 8 mA Implicit derret - • or signal "1", sp. 8 mA Implicit derret - • or signal "1", sp. 8 mA • or signal "1", sp. 8 mA • or signal "1", sp. 9 ma • or signal "1", max. 9 ma • or signal functions - • or signal functions 4 max. • or signal functions 600 m; for technological functions • unabledide, max. 100 m; to maximum count frequency • unabledide, max. 100 m; to maximum count frequency • unabledide, max. 100 m; to maximum count frequency • unabledide, max. 100 m; to maximum count frequency • unabledide, max. 100 m; to maximum count frequency • or which hip-spead outputs 2; Notice: You count councet t	vertical installation			
• Read value (OC)24 V• for signal "1"-3 to +5V• for signal "1"-3 to +5V• for signal "1", top.8 mAInput delay (for tasked value of input values)8 mA• for signal "1", top.8 mA• for signal "1", top.8 mA• and tables (for tasked value of input values)	44V• A brack value (IOC)24 V• A brack value (IOC)- A brack value• A brack value- A brack value• A brack value- A brack value• A brack value- A brack value parameterizableVas. 0.1/0.3/3/15 ms (Vou can recording the input delay of the standarde input delay of the standarde value (IDC) (ID	— up to 40 °C, max.	5		
 • for signal 1° • for signal 1° • for signal 1° • for signal 1° • for signal 1°, typ. 8 mA • for signal 1°, typ. 8 mA • for signal 1°, typ. • for signal 1°, typ. • for signal 1°, typ. • parameterizable • parameterizable • parameterizable • Parameterizable • - Rated value 3 m8 • For technological functions • - alt 0° to 1°, max. • alt signal for technological functions • - alt 0° to 1°, max. • 000 m; 100 m for technological functions • - alt 0° to 1°, max. • 000 m; 100 m for technological functions • - alt 0° to 1°, max. • 000 m; 100 m for technological functions • - alt 0° to 1°, max. • 000 m; 100 m for technological functions • - alt 0° to 1°, max. • 000 m; 100 m for technological functions • - alt 0° to 1°, max. • 000 m; 100 m for technological functions • - alt 0° to 1°, max. • 000 m; 100 m for technological functions • - alt 0° to 1°, max. • 000 m; 100 m for technological functions • 0 mobile high-speed outputs • 0 mobile high speed outputs • 0 mobile high speed	• lo signal '1' > 3 to + 4V • lo signal '1', bp. > 8 mA • los signal '1', bp. > 10 m; 10 m for the mological functions • unabledied, max. 100 m; 10 m for the mological functions	Input voltage			
• for signal "1," typ.+15 to 430 Vinput control6 mAinput doi: / for stand value of input voltage)6 mAinput doi: / for stand value of input voltage)8 mAin standard inputsVest 0.1 / 0.3 / 1.5 ms (You can reconfigure the input doi: you for standard inputs)- parameterizableVest 0.1 / 0.3 / 3 / 15 ms (You can reconfigure the input doi: you newly set filter time may not be effective until the next filter cycle.)- Rated value3 msfor technological functions48 µs; Minimum pulse width/minimum pause between pulses at maximum counting frequency- art "Or to "1", max.6000 m; for technological functions• sinslielded, max.1000 m; 100 m for technological functions• unshielded, max.no al allowedOption of precisions2; Notice: You cannot connect the fast outputs of your CPU in parallel• of which high-spaced outputs6• of which high-spaced outputs2; Notice: You cannot connect the fast outputs of your CPU in parallelinegrated channels (DO)6Short-circuit protectionYes; Clocked electronically• notangle adapt of the outputs2; Notice: You cannot connect the fast outputs of your CPU in parallel• notangle adapt of the outputs40 AOutput untert40 AControlling a digital linput50 mA• or ing and "1", min.50 mA <t< td=""><td>• for signal *1*• 150 s 30 Vinput current5 m Ainput diny for rated value of input voltage)5 m A- parameterizableVes. 0.1 / 0.3 / 31 ms (You can reconfigure the input diay of the standards you revely set filter time may not be effective until the next filter cycle.)- Rated value3 ms- Instelled, max.100 m; 100 m for technological functions so 00 m; for technological functions no- unstelled, max.not 100 m; of technological functions so 00 m; for technological functions so 00 m; for technological functions noNomber of digital outputs6- or value fully speed outputs2. Notice: You cannot connect the fast outputs of your CPU in parallel integrated channels (DO)- or value fully speed outputs5 ms- or value fully show outputs5 ms- or value fully show outputs5 ms- or value shudown voltage to to and max.5 mA- or value shudown voltage to to and max.5 mA- or value shudown voltage to to and max.5 mA- or value shudown voltage to to and max.5 mA<</td><td>Rated value (DC)</td><td>24 V</td></t<>	• for signal *1*• 150 s 30 Vinput current5 m Ainput diny for rated value of input voltage)5 m A- parameterizableVes. 0.1 / 0.3 / 31 ms (You can reconfigure the input diay of the standards you revely set filter time may not be effective until the next filter cycle.)- Rated value3 ms- Instelled, max.100 m; 100 m for technological functions so 00 m; for technological functions no- unstelled, max.not 100 m; of technological functions so 00 m; for technological functions so 00 m; for technological functions noNomber of digital outputs6- or value fully speed outputs2. Notice: You cannot connect the fast outputs of your CPU in parallel integrated channels (DO)- or value fully speed outputs5 ms- or value fully show outputs5 ms- or value fully show outputs5 ms- or value shudown voltage to to and max.5 mA- or value shudown voltage to to and max.5 mA- or value shudown voltage to to and max.5 mA- or value shudown voltage to to and max.5 mA<	Rated value (DC)	24 V		
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• for signal *1*, typ. 8 mA Input desay, the rated value of input voltage) Vest 0.1 / 0.3 / 3 / 15 ms (You can recording the the sharderd inputs during program runtime. Please note that under certain circumstances your newly, set titler time may not be effective until the next filter cycle.) - Rated value a ms for technological functions 4 yes; Minimum pulse width/minimum pulse between pulses at maximum counting frequency. Cable length 1000 m; 100 m for technological functions • wishelded, max. 6000 m; for technological functions • unshelded, max. 1000 m; 100 m for technological functions • unshelded, max. 000 m; 10 maximum count frequency • unshelded, max. 000 m; 10 maximum count frequency • unshelded, max. 00 m; 10 maximum count frequency • unshelded, max. 00 m; 10 maximum count frequency • unshelded, max. 100 m; 10 maximum count frequency • unshelded, max. 100 m; 10 maximum count frequency • unshelded, max. 100 m; 10 maximum count frequency • unshelded, max. 100 m; 10 maximum count frequency • unshelded, max. 100 m; 10 maximum count frequency • unshelded, max. 100 m; 10 maximaximum count frequency • Nu	• or signal "1", hp.8 mAInput desay (for rated value of input voltage)for standards inputs- parameterizableYes, 0.1 / 0.3 / 3 / 15 ms (You can reconfigure the input delay of the standards you' newly set litter inne may not be effective unit the next filter cycle.)- Rated value3 ms- Rated value3 msfor technological functions4 gis, Kinimum pulse width/minimum pause between pulses at maximum counting frequency.Cable length4 gis, Kinimum pulse width/minimum pause between pulses at maximum counting frequency.Cable length1 000 m; 100 m for technological functions. Noi- unshielded, max.1000 m; for technological functions. No- unshielded, max.100 m; at maximum count frequency unshielded, max.100 m; at maximum count frequency unshielded, max.6Storterbard2; Notice: You cannot connect the fast outputs of your CPU in parallelIntegrad channels (DO)6Storterbard protectionYes; Clocked electronically• el angle foad puls6• or lange foad, max.5 W• or signal "1" remins belor enge, max.5 Ma• or signal "1" remins belor enge, max.5 Ma• or signal "1" remins belor enge, max.5 Ma• or signal "1" reter value5 mA<	● for signal "1"	+15 to +30 V		
Imput delay for rated value of input voltage) For standard inputs	Impact delay (for rande value of input voltage) for standard inputs	Input current			
for standard inputs 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 circumsances you newly set filter time may not be effective until the next filter cycle.)	for standard inputs Yes 0.11.0.3 / 3 / 15 ms 'You can acconfigure the input delay the standard 'point delay program muthem. Please note that under out an dimensioned you and you and the technological functions — Raised value 3 ms — Raised value 3 ms — et 0 'to 't'', 'max. 4 jus, Minimum pubse width/minimum pause between publes at maximum counting frequency. Cable length — et 0 'to 't'', 'max. — et 0 'to 't'', 'max. 1000 m; 100 m for technological functions. No for technological functions 600 m; for technological functions. No — enshielded, max. not allowed Optical duriputs 6 — enshielded, max. not allowed District outputs 6 • of which high-speed outputs 2. Note: You cannot connect the fast outputs of your CPU in parallel Integrated channels (DO) 6 Short-Grate protection Yes, Clocked electronically • Response threshold, typ. 1 A Limitation of inductive struction votage to L + (48 V) Cottorius of algo laid input Yes Switching capacity of the outputs S W Lacar restance range 100 mA • oringinal '1' rated	• for signal "1", typ.	8 mA		
parameterizableYes. 0.1 0.3 / 3 / 15 ms (You can econfugue he input delay of the standards inputs during program nutime. Prosees note that under roten in dramshances you newly set filter time may not be effective until the next filter cycle.) a ms domain of the standard of the	- parameterizable vest 0.1 / 0.3 / 3 / 3 m S (You can econfigure the junch certain connumbances your newly set filter time may not be effective until the next filter cycle.) - Rated value 3 m 3 for technological functions 48 µs; Minimum pulse width/minimum pause between pulses at maximum counting frequency - all '0' fo '1', max. 48 µs; Minimum pulse width/minimum pause between pulses at maximum counting frequency - all '0' fo '1', max. 1000 m; 100 m for technological functions - all '0' fo '1', max. 000 m; for technological functions - all '1' for '1', max. 000 m; 100 m for technological functions - all '1' for '1', max. 000 m; for technological functions - all '1' for '1', max. 1000 m; 100 m for technological functions - all '1' for '1', max. 000 m; for technological functions - all '1' for '1', max. 1000 m; 100 m for technological functions - all '1' for '1', max. 1000 m; 100 m for technological functions - all '1' for '1', max. 1000 m; 100 m for technological functions - all '1' for '1', max. 1000 m; 100 m for technological functions - all '1' for '1', max. 1000 m; 100 m for technological functions - all '1' for '1', max. 1000 m; 100 m for technological functions	Input delay (for rated value of input voltage)			
inputs during program nurthme. Please note Hat under certain circumstances your newly set filter time may not be effective until the next filter cycle.) input exhibited in the max not be effective until the next filter cycle.) input exhibited in the max not be effective until the next filter cycle.) input exhibited in the max not be effective until the next filter cycle.) cable length exhibited in max. 1000 m; 100 m for technological functions. No for technological functions 100 m; at maximum count frequency - unshielded, max. 100 m; at maximum count frequency - unshielded, max. 100 m; at maximum count frequency - unshielded, max. 100 m; at maximum count frequency - unshielded, max. 100 m; at maximum count frequency - unshielded, max. 100 m; at maximum count frequency - unshielded, max. 100 m; at maximum count frequency of which high-speed outputs 6 - of which high-speed outputs 100 m; at maximum count frequency of which high-speed outputs 9 - of which high-speed outputs 9 - of which high-speed outputs 10 - of which high-speed outputs 9 - on signal ty frequency 10 <td>inputs during program runtime. Please noie that unit the next filter cycle.) - Rated value 3 ms ortexthological functions 48 µst. Minimum pulse width/minimum pause between pulses at maximum counting frequency Cable length 500 mm, for technological functions - al *0* to *1*, max. 1000 m; 100 m for technological functions - unsheleded, max. 000 m; or technological functions: No - unsheleded, max. 000 m; or technological functions: No al *00 to top toto 000 m; or technological functions: No al *00 top toto 000 m; or technological functions: No </td> <td>for standard inputs</td> <td></td>	inputs during program runtime. Please noie that unit the next filter cycle.) - Rated value 3 ms ortexthological functions 48 µst. Minimum pulse width/minimum pause between pulses at maximum counting frequency Cable length 500 mm, for technological functions - al *0* to *1*, max. 1000 m; 100 m for technological functions - unsheleded, max. 000 m; or technological functions: No - unsheleded, max. 000 m; or technological functions: No al *00 to top toto 000 m; or technological functions: No al *00 top toto 000 m; or technological functions: No	for standard inputs			
for technological functions 48 µs; Minimum pulse width/minimum pause between pulses at maximum counting frequency Cable length 1000 m; 100 m for technological functions • shielded, max. 600 m; for technological functions • unshielded, max. 600 m; n for technological functions • unshielded, max. 100 m; at maximum count frequency - unshielded, max. not allowed Object outputs 6 • of which high-speed outputs 2: Notice: You cannot connect the fast outputs of your CPU in parallel integrated channels (DO) 6 Shott-circuit protection Yes • of which high-speed outputs 5 W • Carboting a digital input Yes Switching capacity of the outputs 5 W • on anno load, max. 5 W Load resistance range 5 wA • or signal *1* raid value 5 mA • for signal *1* permissible range, min. 5 mA • for signal *1* permissible range, min. 5 mA • for signal *1* permissible range, min. 5 mA • for signal *1* permissible range, min. 5 mA • for signal *1* permissible range, min. <t< td=""><td>for technological functions 49 us; Minimum pulse width/minimum pause between pulses at maximum counting frequency Cable length 1000 m; 100 m for technological functions • unshielded, max. 600 m; for technological functions - unshielded, max. 600 m; for technological functions - unshielded, max. not allowed Digital outputs 6 Number of digital outputs 6 - of which high-speed outputs 2: Notice: You cannot connect the fast outputs of your CPU in parallel integrated shames (DO) 6 Short-circuit protection Yes; Clocked electronically - end which high-speed outputs 6 - functions outputs 6 Short-circuit protection Yes; Clocked electronically - end mp load, max. 5 W Controlling a digital input Yes - on lamp load, max. 5 W Ladd resistance range - - on ingital '1 primisable range, min. 5 mA - or signal '1'1 min. L + (-0.8 V) Output current - + for signal '1'1 permissible range, max. 0.6 A + for signal '1'1 pe</td><td></td><td>inputs during program runtime. Please note that under certain circumstances your newly set filter time may not be effective until the next filter cycle.)</td></t<>	for technological functions 49 us; Minimum pulse width/minimum pause between pulses at maximum counting frequency Cable length 1000 m; 100 m for technological functions • unshielded, max. 600 m; for technological functions - unshielded, max. 600 m; for technological functions - unshielded, max. not allowed Digital outputs 6 Number of digital outputs 6 - of which high-speed outputs 2: Notice: You cannot connect the fast outputs of your CPU in parallel integrated shames (DO) 6 Short-circuit protection Yes; Clocked electronically - end which high-speed outputs 6 - functions outputs 6 Short-circuit protection Yes; Clocked electronically - end mp load, max. 5 W Controlling a digital input Yes - on lamp load, max. 5 W Ladd resistance range - - on ingital '1 primisable range, min. 5 mA - or signal '1'1 min. L + (-0.8 V) Output current - + for signal '1'1 permissible range, max. 0.6 A + for signal '1'1 pe		inputs during program runtime. Please note that under certain circumstances your newly set filter time may not be effective until the next filter cycle.)		
- at '0' to '1', max.dis: Minimum pulse width/minimum pause between pulses at maximum counting frequency.Cable length- esheleded, max.100 m; 100 m for technological functions- esheleded, max.100 m; or technological functions: No- esheleded, max.100 m; at maximum count frequency- unshielded, max.100 m; at maximum count frequency- unshielded, max.0 at alowedDigital outputs6- of which high-speed outputs2; Notice: You cannot connect the fast outputs of your CPU in parallelIntegrated channels (DO)6Short-circuit protection4: Close Vo cannot connect the fast outputs of your CPU in parallel- on lang outputs10- on lang outputs10- on lang outputs10- on lang outputsVes: Clocek de electronically- on lang load, max.5 W- on lang load, max.5 W- on lang load, max.5 W- on lang load, max.500 mA- on signal '1', min.1- (-0.8 V)- Output voltage of rig signal '1' rated value500 mA- of rig signal '1' premissible range, min.5 mA- of rig signal '1' premissible range, min.5 mA- of rig signal '1' premissible range, min.5 mA- of rig signal '1' minimum load current5 mA- of rig signal '1' minimum load current5 mA- of rig signal '1' minimum load current5 mA- of rig outputs of rig outputs of rig outputs0.6 A-	- a' '0' to '1', max. 4β is: Minimum pulse width minimum pause between pulses at maximum counting frequency' Cable length 1000 m; 100 m for technological functions - winshielded, max. 600 m; for technological functions: No - winshielded, max. not allowed - winshielded, max. 8 - of which high-speed outputs 2: Notice: You cannot connet the fast outputs of your CPU in parallel - for signal '1' perised marks. 5 Wolched electronically - No signal capacity of the outputs 48 Ω - Lindiaton of inductive shutdown voltage to Li (+ 48 V) - Controlling a digital input 5 No - on ismp locad, max. Li (+ 0.8 V)		3 ms		
Cable length • shielded, max. 1 000 m; 100 m for technological functions • unshielded, max. 600 m; for technological functions: No • shielded, max. 100 m; at maximum count frequency - unshielded, max. not allowed Optial outputs 6 • of which high-speed outputs 2: Notice: You cannot connect the fast outputs of your CPU in parallel • of which high-speed outputs 6 • of which high-speed outputs 4: Colore: You cannot connect the fast outputs of your CPU in parallel • of which high-speed outputs 9: Solice: You cannot connect the fast outputs of your CPU in parallel • of which high-speed outputs 4: Colore: You cannot connect the fast outputs of your CPU in parallel • fort-circuit protection Yees: Clocked electronically • Response threshold, typ. 1A • Limitation of inductive shutdown voltage to 1+ (-48 V) • Controlling a digital input Yees • Controlling a digital input 48 0 • outputs 44 0 • output to tate - • for signal *1* rate value 5 0m A • for signal *1* permissible range, min. 5 mA	Cable lengthCable length• Inhelided, max.1000 m; 100 m for technological functions: No• Inshielded, max.1000 m; 00 m for technological functions: No• Inshielded, max.1000 m; at maximum count frequency• unshielded, max.1000 m; at maximum count frequency• unshielded, max.1000 m; at maximum count frequency• unshielded, max.8• Unshielded, max.6• Or which high-speed outputs2: Notice: You cannot connect the fast outputs of your CPU in parallelIntegrated chamels (PO)6Short-circuit protectionYes; Clocked electronically• Response threshold, typ.1ALinitation of inductive shutdown voltage toL+ (-48 V)Controlling a digital inputYes• On tamp lead, max.5 WLinitation of inductive shutdom voltage toSW• Output voltageSW• Output voltageSW• Output voltageSW• Output voltageSU• Output voltageSU• Output voltageSU• Or signal "1" mem lace man.S mA• Or signal "1" permissible range, min.S mA• Or signal "1" permissible range, min.So A• or				
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Digital outputs 6 • of which high-speed outputs 2; Notice: You cannot connect the fast outputs of your CPU in parallel integrated channels (DO) 6 Short-circuit protection Yes; Clocked electronically • Response threshold, typ. 1 A Limitation of inductive shutdown voltage to L+ (-48 V) Controlling a digital input Yes • on lamp load, max. 5 W Load resistance range • • lower limit 48 Ω • upper limit 4 kΩ Output voltage • • for signal "1", min. L+ (-0.8 V) Output voltage • • for signal "1" reid value 500 mA • for signal "1" reinsible range, min. 5 mA • for signal "1" reinsible range, max. 0.6 A • for signal "1" residual current, max. 0.5 mA • for signal "1" residual current, max. 0.5 mA • for signal "1" residual current, max. 0.5 mA • for signal "1" residual current, max. 0.5 mA Parallel switching of two outputs Yes • for uprating i	Digital outputs 6 Number of digital outputs 6 of which high-speed outputs 2, Notice: You cannot connect the fast outputs of your CPU in parallel integrated channels (DO) 6 Short-circuit protection Yes; Clocked electronically o Response threshold, typ. 1 A Limitation of inductive shutdown voltage to L + (-48 V) Controlling a digital input Yes Switching capacity of the outputs 5W on lamp load, max. 5W Load resistance range - of or signal *1", min. 4 kQ Output current - of or signal *1" permissible range, min. 5 mA of or signal *1" permissible range, mix. 0 A of or signal *1" permissible range, mix. 0.5 mA of or signal *1" permissible range, max. 0.5 mA of or signal *1" permissible range, max. 0.5 mA of or signal *1" permissible range, max. 0.5 mA of or signal *1" permissible range, max. 0.5 mA of or signal *1" permissible range, max. 0.5 mA of or signal *1" morin				
Number of digital outputs 6 • of which high-speed outputs 2; Notice: You cannot connect the fast outputs of your CPU in parallel integrated channels (DO) 6 Short-circuit protection Yes; Clocked electronically • Response threshold, typ. 1 A Limitation of inductive shutdown voltage to L+ (-48 V) Controlling a digital input Yes Switching capacity of the outputs 6 • on lamp load, max. 5 W Load resistance range 48 Ω • lower limit 48 Ω • lower limit 4 KΩ Output current 500 mA • for signal "1" permissible range, min. 5 mA • for signal "1" permissible range, max. 0.6 A • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA • for signal "1" peristual current, max. 0.5 mA • for signal "1" peristual current, max. 0.5 mA • for uprating No • for uprating No • for uprating No • for uprating Yes Switching frequency 0.5 Hz • with	Number of digital outputs 6 • of which high-speed outputs 2; Notice: You cannot connect the fast outputs of your CPU in parallel integrated channels (DO) 6 Short-circuit protection Yes; Clocked electronically • Response threshold, typ. 1 A Limitation of inductive shutdown voltage to L+ (48 V) Controlling a digital input Yes Switching capacity of the outputs 5 W Load resistance range - • lower limit 48 Ω • upper limit 4 kΩ Output voltage - • for signal *1* rated value 500 mA • for signal *1* rated value 500 mA • for signal *1* persistible range, min. 5 mA • for signal *1* persistible range, max. 0.6 A • for signal *1* persistible range, max. 0.5 mA • for signal *1* persistible range, max. 0.6 A • for signal *1* persistible range, max. 0.6 A • for signal *1* persistible range. 5 mA • for signal *1* persistible range. 0.6 A • for signal *1* persitival outrent. 5 mA • f	· · ·	not allowed		
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integrated channels (DO) 6 Short-circuit protection Yes; Clocked electronically • Response threshold, typ. 1 A Limitation of inductive shutdown voltage to L+ (+48 V) Controlling a digital input Yes Switching capacity of the outputs - • on lamp load, max. 5 W Load resistance range - • lower limit 48 Ω • upper limit 4 kΩ Output voltage - • for signal "1", min. L+ (-0.8 V) Output voltage - • for signal "1" permissible range, min. 5 mA • for signal "1" permissible range, min. 5 mA • for signal "1" permissible range, max. 0.6 A • for signal "1" permissible range, max. 0.6 A • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.6 A • for signal "1" permissible range, max. 0.6 A • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA • for rignal or the ubad, max.	integrated channels (DO) 6 Short-circuit protection Yes; Clocked electronically • Response threshold, typ. 1 A Limitation of inductive shutdown voltage to L+ (-48 V) Controlling a digital input Yes; Switching capacity of the outputs - • on lamp load, max. 5 W Load resistance range - • lower limit 48 Ω • upper limit 48 Ω • output voltage - • for signal "1", min. L+ (-0.8 V) Output voltage - • for signal "1" minissible range, min. 5 mA • for signal "1" permissible range, min. 5 mA • for signal "1" permissible range, min. 5 mA • for signal "1" permissible range, max. 0.6 A • for signal "1" permissible range, max. 0.6 F a • for signal "1" permissible range, max. 0.6 F a • for signal "1" permissible range, max. 0.6 F a • for signal "1" permissible range, max. 0.6 F a • for signal "1" permissible range, max. 0.6 F a • for signal "1" permissible range,	o			
Short-circuit protection Yes; Clocked electronically • Response threshold, typ. 1 A Limitation of inductive shutdown voltage to L + (-48 V) Controlling a digital input Yes Switching capacity of the outputs • on lamp load, max. • on lamp load, max. 5 W Load resistance range • • lower limit 48 Ω • upper limit 4k Ω Output voltage • • for signal "1", min. L+ (-0.8 V) Output voltage • • for signal "1" permissible range, min. 5 mA • for signal "1" permissible range, max. 0.6 A • for signal "1" permissible range, max. 0.6 A • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA Parallel switching of two outputs • • for upr	Short-circuit protection Yes; Clocked electronically • Response threshold, typ. 1 A Limitation of inductive shutdown voltage to L+ (48 V) Controlling a digital input Yes Switching capacity of the outputs - • on lamp load, max. 5 W Load resistance range - • lower limit 4 & Ω • ouper limit 4 & Ω • ouper limit 4 & Ω • ouper limit 5 W Output voltage - • for signal "1" min. L+ (-0.8 V) Output current - • for signal "1" permissible range, max. 0.6 A • for signal "1" permissible range, max. 0.6 A • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA • for signal "1" mininumu load current 5 mA <td></td> <td></td>				
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Limitation of inductive shutdown voltage to L+ (-48 V) Controlling a digital input Yes Switching capacity of the outputs • • on lamp load, max. 5 W Load resistance range • • lower limit 48 Ω • upper limit 4 kΩ Output voltage • • for signal "1", min. L+ (-0.8 V) Output current • • for signal "1" rated value 500 mA • for signal "1" permissible range, min. 5 mA • for signal "1" permissible range, max. 0.6 A • for signal "1" minimum load current 5 mA • for signal "1" minimum load current 5 mA • for signal "0" residual current, max. 0.5 mA Parallel switching of two outputs • • for regundant control of a load Yes Switching frequency • • with inductive load, max. 0.5 Hz • on lamp load, max. 0.5 Hz • on lamp load, max. 0.5 Hz • on lamp load, max. 0.5 Hz • of the pulse outputs, with resistive load, max. 2.5 kHz	Limitation of inductive shutdown voltage to L+ (48 V) Controlling a digital input Yes Switching capacity of the outputs 5 W Load resistance range 5 W Load resistance range 48 Ω • lower limit 4k Ω Output voltage L+ (-0.8 V) Output current L+ (-0.8 V) Output current 5 mA • for signal "1" permissible range, min. 5 mA • for signal "1" permissible range, min. 5 mA • for signal "1" permissible range, max. 0.6 A • for signal "1" permissible range, max. 0.6 A • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA • for signal "1" minimum load current 5 mA • for signal "1" minimum load current 5 mA • for regund score max. 0.5 mA Parallel switching of two outputs Ves • for uprating No • for redundant control of a load Yes Switching frequency Uo Hz • with inductive load, max. 0.5 Hz • on lamp load, max. 0.5 Hz <				
Controlling a digital input Yes Switching capacity of the outputs 5 W Load resistance range 5 W Load resistance range 48 Ω • lower limit 4k Ω Output voltage 5 W • for signal "1", min. L+ (-0.8 V) Output current 5 mA • for signal "1" ared value 500 mA • for signal "1" permissible range, min. 5 mA • for signal "1" permissible range, max. 0.6 A • for signal "1" permissible range, max. 0.5 mA • for signal "0" residual current, max. 0.5 mA • for outputs Yes Switching for two outputs Yes Switching frequency Ves • with inductive load, max. 100 Hz • with inductive load, max. 0.5 Hz • on lamp load, max. 0.5 Hz • on lamp load, max. 100 Hz • of the pulse outputs, with resistive load, max. 2.5 KHz	Controlling a digital input Yes Switching capacity of the outputs 5 W Load resistance range 5 W Load resistance range 48 Ω • lower limit 48 Ω • upper limit 48 Ω • output voltage - ottput voltage - • for signal "1", min. 500 mA • for signal "1" permissible range, min. 5 mA • for signal "1" permissible range, max. 0.6 A • for signal "1" minimum load current 5 mA • for signal "1" minimum load current 5 mA • for signal "0" residual current, max. 0.6 A • for rignal "1" minimum load current 5 mA • for rignal "1" minimum load current 5 mA • for rignal "1" minimum load current 5 mA • for rignal no" residual current, max. 0.6 A • for rignal no" residual current, max. 0.6 A • for rignal no" residual current, max. 0.6 M • for rignal no" residual current, max. 0.6 M • for uprating No • for uprating No •				
Switching capacity of the outputs 5 W • on lamp load, max. 5 W Load resistance range 48 Ω • lower limit 48 Ω • upper limit 4 kΩ Output voltage + (-0.8 V) Output current - (-0.8 V) Output current 500 mA • for signal "1" rated value 500 mA • for signal "1" permissible range, min. 5 mA • for signal "1" permissible range, max. 0.6 A • for signal "1" residual current, max. 0.5 mA • for signal "0" residual current, max. 0.5 mA Parallel switching of two outputs - • for uprating No • for residual current, max. 0.5 mA Parallel switching of two outputs - • with resistive load, max. 0.0 MZ • 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	Switching capacity of the outputs 5 W Load resistance range 5 W Load resistance range 4 8 Ω • upper limit 4 8 Ω output voltage 4 kΩ Output voltage 5 W of or signal *1*, min. L + (-0.8 V) Output current 5 MA of or signal *1* rated value 5 00 mA of or signal *1* permissible range, min. 5 mA of or signal *1* permissible range, max. 0.6 A of or signal *1* permissible range, max. 0.6 A of or signal *1* permissible range, max. 0.6 A of or signal *1* permissible range, max. 0.6 A of or signal *1* permissible range, max. 0.6 A of or signal *1* permissible range, max. 0.6 A of or signal *1* permissible range, max. 0.6 A of or signal *1* permissible range, max. 0.6 A of or signal *1* permissible range, max. 0.6 A of or signal *1* permissible range, max. 0.6 A of or signal *1* permissible range, max. 0.6 A of no signal *1* permissible range, max. 0.6 A or				
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Load resistance range • lower limit 48 Ω • upper limit 4 kΩ Output voltage • for signal "1", min. L+ (-0.8 V) Output current • for signal "1" rated value 500 mA • for signal "1" permissible range, min. 5 mA • for signal "1" permissible range, max. 0.6 A • for signal "1" minimum load current 5 mA • for signal "0" residual current, max. 0.5 mA • for signal "0" residual current, max. 0.5 mA • for uprating No • for redundant control of a load Yes Switching frequency • with resistive load, max. 0.5 Hz • with inductive load, max. 0.5 Hz • on lamp load, max. 0.5 Hz • on lamp load, max. 100 Hz • of the pulse outputs, with resistive load, max. 2.5 kHz	Load resistance range • lower limit 48 Ω • upper limit 4 kΩ Output voltage - • for signal "1", min. L + (-0.8 V) Output current 500 mA • for signal "1" permissible range, min. 5 mA • for signal "1" permissible range, max. 0.6 A • for signal "0" residual current, max. 0.5 mA • for signal "0" residual current, max. 0.5 mA • for redundant control of a load Soma • for redundant control of a load Yees Switching frequency 100 Hz • with resistive load, max. 0.5 Hz • on lamp load, max. 100 Hz • on lamp load, max. 0.5 Hz • not puts, with resistive load, max. 0.5 Hz • not puts (per group) - • not puts (per group) - • not pot 00 °C, max. 2 A - up to 40 °C, max. 2 A - up to 60 °C, max.<				
• lower limit48 Ω• upper limit4 kΩOutput ottageL • (-0.8 V)• for signal "1" nated value500 mA• for signal "1" permissible range, min.5 mA• for signal "1" permissible range, max.0.6 A• for signal "1" permissible range, max.0.5 mA• for signal "1" nninum load current5 mA• for signal "0" residual current, max.0.5 mA• for signal "0" residual current, max.0.5 mA• for upratingNo• for redundant control of a loadYes• for redundant control of a load100 Hz• with resistive load, max.0.5 Hz• with inductive load, max.0.5 Hz• on lamp load, max.100 Hz• on terp upter, with resistive load, max.2.5 KHz	• lower limit48 Ω• upper limit4 kΩOutput voltage• for signal "1" min.• (-0 k V)Output current500 mA• for signal "1" permissible range, min.5 mA• for signal "1" permissible range, max.0.6 A• for signal "1" minimum load current5 mA• for signal "0" residual current, max.0.5 mA• for signal "0" residual current, max.0.5 mA• for signal "0" residual current, max.0.5 mA• for upratingNo• for redundant control of a loadYes• with resistive load, max.100 Hz• with resistive load, max.0.5 Hz• on lamp load, max.0.5 Hz• on lamp load, max.100 Hz• of the pulse outputs, with resistive load, max.0.5 Hz• totaut the subter per group:Ito Hz• horizontal installation2 A• up to 40 "C, max.2 A• up to 60 "C, max.1.5 A	• • •	5 W		
• upper limit4 kΩOutput voltage• for signal "1", min.L + (0.8 V)Output current• for signal "1" rated value500 mA• for signal "1" permissible range, min.5 mA• for signal "1" permissible range, max.0.6 A• for signal "0" residual current5 mA• for signal "0" residual current, max.0.5 mA• for signal "0" residual current, max.No• for upratingNo• for upratingNo• for redundant control of a load100 Hz• with resistive load, max.0.5 Hz• with inductive lead, max.100 Hz• on lamp load, max.100 Hz• of the pulse outputs, with resistive load, max.2.5 KHz	• upper limit4 kΩOutput voltage• for signal "1", min.L + (-0.8 V)Output current500 mA• for signal "1" rated value500 mA• for signal "1" permissible range, min.5 mA• for signal "1" permissible range, max.0.6 A• for signal "1" minimum load current, max.0.5 mA• for signal "0" residual current, max.0.5 mA• for signal "0" residual current, max.0.5 mA• for upratingNo• for redundant control of a loadYes• with resistive load, max.0.5 HZ• with resistive load, max.0.5 HZ• on lamp load, max.0.5 HZ• of the pulse outputs, with resistive load, max.0.5 HZ• of the pulse outputs, with resistive load, max.0.5 HZ• of the pulse outputs, with resistive load, max.0.5 HZ• on lamp load, max.0.5 HZ• on lamp load, max.0.5 HZ• on lamp load, max.0.5 KHz• on to pulse group)• horizontal installation- up to 40 °C, max.2.4- up to 40 °C, max.2.4- up to 60 °C, max.2.4- up to 60 °C, max.1.5 A				
Output voltage • for signal "1", min. L+ (-0.8 V) Output current 500 mA • for signal "1" rated value 500 mA • for signal "1" permissible range, min. 5 mA • for signal "1" permissible range, max. 0.6 A • for signal "1" minimum load current 5 mA • for signal "0" residual current, max. 0.5 mA • for signal "0" residual current, max. 0.5 mA • for uprating No • for redundant control of a load Yes Switching frequency 100 Hz • with resistive load, max. 0.5 Hz • on lamp load, max. 100 Hz • on lamp load, max. 2.5 KHz	Output voitage • for signal "1", min. L+ (-0.8 V) Output current 500 mA • for signal "1" rated value 500 mA • for signal "1" permissible range, min. 5 mA • for signal "1" permissible range, max. 0.6 A • for signal "1" minimum load current 5 mA • for signal "0" residual current, max. 0.5 mA • for signal "0" residual current, max. 0.5 mA • for uprating No • for redundant control of a load Yes • Switching frequency 0.5 HZ • with resistive load, max. 0.5 HZ • on lamp load, max. 0.5 HZ • of the pulse outputs, with resistive load, max. 0.5 HZ • of the pulse outputs, with resistive load, max. 0.5 HZ • of the pulse outputs, with resistive load, max. 0.5 HZ • of the outputs (per group) Ion HZ • horizontal installation - up to 40 °C, max. - up to 60 °C, max. 2 A - up to 60 °C, max. 1.5 A				
for signal "1", min.L+ (-0.8 V)Output current500 mA• for signal "1" rated value500 mA• for signal "1" permissible range, min.5 mA• for signal "1" permissible range, max.0.6 A• for signal "1" minimum load current5 mA• for signal "0" residual current, max.0.5 mA• for uprating • for redundant control of a loadYes• for redundant control of a load0.5 Hz• with resistive load, max.0.5 Hz• on lamp load, max.100 Hz• of the pulse outputs, with resistive load, max.2.5 kHz	• for signal "1", min.L + (-0.8 V)Output current500 mA• for signal "1" permissible range, min.5 mA• for signal "1" permissible range, max.0.6 A• for signal "1" minimum load current5 mA• for signal "0" residual current, max.0.5 mA• for signal "0" residual current, max.0.5 mA• for upratingNo• for durdant control of a loadYes• with resistive load, max.100 Hz• with resistive load, max.0.5 Hz• on lamp load, max.0.5 Hz• of the pulse outputs, with resistive load, max.2.5 kHz• for to redurdant control of the outputs (per group)2.5 kHz• not pulse outputs, with resistive load, max.2.5 kHz• of the pulse outputs (per group)2.4 A• horizontal installation2.4 A- up to 40 °C, max.2.4 A- up to 60 °C, max.1.5 A• vertical installation2.4 A	•••	4 κΩ		
Output current 500 mA • for signal "1" rated value 500 mA • for signal "1" permissible range, min. 5 mA • for signal "1" permissible range, max. 0.6 A • for signal "1" minimum load current 5 mA • for signal "0" residual current, max. 0.5 mA Parallel switching of two outputs 0.5 mA • for uprating No • for redundant control of a load Yes Switching frequency 100 Hz • with resistive load, max. 0.5 Hz • on lamp load, max. 100 Hz • of the pulse outputs, with resistive load, max. 2.5 kHz	Output current 500 mA • for signal "1" permissible range, min. 5 mA • for signal "1" permissible range, max. 0.6 A • for signal "0" residual current 5 mA • for signal "0" residual current, max. 0.5 mA Parallel switching of two outputs 0.5 mA • for uprating No • for redundant control of a load Yes Switching frequency 100 Hz • with resistive load, max. 0.5 Hz • on lamp load, max. 0.5 Hz • of the pulse outputs, with resistive load, max. 2.5 kHz Total current of the outputs (per group) Jon Hz horizontal installation 2 A - up to 60 °C, max. 2 A - up to 60 °C, max. 1.5 A				
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oo• for signal "1" permissible range, min.5 mA• for signal "1" permissible range, max.0.6 A• for signal "1" minimum load current5 mA• for signal "0" residual current, max.0.5 mA• for signal "0" residual current, max.0.5 mA• for uprating of two outputs• for uprating• for redundant control of a loadYes• for redundant control of a load100 Hz• with resistive load, max.0.5 Hz• on lamp load, max.100 Hz• of the pulse outputs, with resistive load, max.2.5 kHz	oSfor signal "1" permissible range, max.5 mAfor signal "1" minimum load current5 mAfor signal "0" residual current, max.0.5 mAfor signal "0" residual current, max.0.5 mAParallel switching of two outputsFor upratingfor upratingNofor redundant control of a loadYesSwitching frequencywith resistive load, max.100 Hzwith inductive load, max.0.5 Hzon lamp load, max.0.0 Hzof the pulse outputs, with resistive load, max.2.5 kHzTotal current of the outputs (per group)Invizional installation- up to 40 °C, max.2 A2.5 kHz- up to 60 °C, max.105 Hz1.5 A- up to 60 °C, max.2 A1.5 Avertical installation	-			
• for signal "1" permissible range, max.0.6 A• for signal "1" minimum load current5 mA• for signal "0" residual current, max.0.5 mA• for signal "0" residual current, max.0.5 mA• parallel switching of two outputsVas• for upratingNo• for redundant control of a loadYes• Switching frequency100 Hz• with resistive load, max.0.5 Hz• on lamp load, max.100 Hz• of the pulse outputs, with resistive load, max.2.5 kHz	• for signal "1" permissible range, max.0.6 A• for signal "1" minimum load current5 mA• for signal "0" residual current, max.0.5 mA• for signal "0" residual current, max.0.5 mA• for upratingNo• for redundant control of a loadYes• for redundant control of a loadYes• with resistive load, max.100 Hz• with resistive load, max.0.5 Hz• on lamp load, max.0.5 Hz• of the pulse outputs, with resistive load, max.100 Hz• of the pulse outputs, with resistive load, max.2.5 kHz• of the pulse outputs (per group)100 Hz• horizontal installation2 A- up to 40 °C, max.2 A- up to 60 °C, max.1.5 A	-			
• for signal "1" minimum load current5 mA• for signal "0" residual current, max.0.5 mAParallel switching of two outputs• for upratingNo• for redundant control of a loadYesSwitching frequency• 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	• for signal "1" minimum load current5 mA• for signal "0" residual current, max.0.5 mAParallel switching of two outputs• for upratingNo• for redundant control of a loadYesSwitching frequency100 Hz• with resistive load, max.100 Hz• on lamp load, max.0.5 Hz• of the pulse outputs, with resistive load, max.100 Hz• of the pulse outputs, with resistive load, max.2.5 kHzTotal current of the outputs (per group)100 Hzhorizontal installation2 A- up to 40 °C, max.1.5 A- up to 60 °C, max.1.5 A	0 1 0 <i>i</i>			
• for signal "0" residual current, max.0.5 mAParallel switching of two outputs• for upratingNo• for redundant control of a loadYesSwitching frequency• 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	• for sidual current, max.0.5 mAParallel switching of two outputs• for upratingNo• for redundant control of a loadYesSwitching frequency• 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.100 Hz• of the pulse outputs, with resistive load, max.2.5 kHz• of the pulse outputs, with resistive load, max.2.5 kHz• of the outputs (per group)- up to 40 °C, max up to 60 °C, max.2.4 A• outputs and liation1.5 A				
Parallel switching of two outputs • for uprating No • for redundant control of a load Yes Switching frequency • 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	Parallel switching of two outputs No • for uprating No • for redundant control of a load Yes Switching frequency 100 Hz • 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) Anoreal installation - up to 40 °C, max. 2 A - up to 60 °C, max. 1.5 A	fee along at UAU painter on the adjustment of	EmA		
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• for redundant control of a load Yes Switching frequency 100 Hz • with resistive load, max. 0.5 Hz • on lamp load, max. 100 Hz • of the pulse outputs, with resistive load, max. 2.5 kHz	• for redundant control of a loadYesSwitching frequencyI00 Hz• 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• of the outputs (per group)Intervent of the outputs (per group)• horizontal installation2 A- up to 40 °C, max.2 A- up to 60 °C, max.1.5 A• vertical installationIntervent of the outputs	• for signal "0" residual current, max.			
Switching frequency • with resistive load, max. • with inductive load, max. • on lamp load, max. • of the pulse outputs, with resistive load, max. • of the pulse outputs, with resistive load, max.	Switching frequency• 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 kHzTotal current of the outputs (per group)Image: Stellar S	• for signal "0" residual current, max. Parallel switching of two outputs	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	• 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 kHzTotal current of the outputs (per group)2.5 kHz• horizontal installation2 A- up to 40 °C, max.2 A- up to 60 °C, max.1.5 Avertical installation	for signal "0" residual current, max. Parallel switching of two outputs for uprating	0.5 mA No		
• with inductive load, max.0.5 Hz• on lamp load, max.100 Hz• of the pulse outputs, with resistive load, max.2.5 kHz	• with inductive load, max.0.5 Hz• on lamp load, max.100 Hz• of the pulse outputs, with resistive load, max.2.5 kHzTotal current of the outputs (per group)2.5 kHz• horizontal installation2 A- up to 40 °C, max.2 A- up to 60 °C, max.1.5 Avertical installation1.5 A	 for signal "0" residual current, max. Parallel switching of two outputs for uprating for redundant control of a load 	0.5 mA No		
• on lamp load, max. 100 Hz • of the pulse outputs, with resistive load, max. 2.5 kHz	• on lamp load, max.100 Hz• of the pulse outputs, with resistive load, max.2.5 kHzTotal current of the outputs (per group)• horizontal installation- up to 40 °C, max.2 A- up to 60 °C, max.1.5 Avertical installation	for signal "0" residual current, max. Parallel switching of two outputs for uprating for redundant control of a load Switching frequency	0.5 mA No Yes		
• of the pulse outputs, with resistive load, max. 2.5 kHz	of the pulse outputs, with resistive load, max. 2.5 kHz Total current of the outputs (per group) horizontal installation	 for signal "0" residual current, max. Parallel switching of two outputs for uprating for redundant control of a load Switching frequency with resistive load, max. 	0.5 mA No Yes 100 Hz		
	Total current of the outputs (per group) horizontal installation - up to 40 °C, max. 2 A - up to 60 °C, max. 1.5 A vertical installation	 for signal "0" residual current, max. Parallel switching of two outputs for uprating for redundant control of a load Switching frequency with resistive load, max. with inductive load, max. 	0.5 mA No Yes 100 Hz 0.5 Hz		
lotal current of the outputs (per group)	horizontal installation 2 A — up to 40 °C, max. 2 A — up to 60 °C, max. 1.5 A vertical installation 2 A	 for signal "0" residual current, max. Parallel switching of two outputs for uprating for redundant control of a load Switching frequency with resistive load, max. with inductive load, max. on lamp load, max. 	0.5 mA No Yes 100 Hz 0.5 Hz 100 Hz		
	up to 40 °C, max. 2 A up to 60 °C, max. 1.5 A vertical installation 1.5 A	 for signal "0" residual current, max. Parallel switching of two outputs for uprating for redundant control of a load Switching frequency with resistive load, max. with inductive load, max. on lamp load, max. of the pulse outputs, with resistive load, max. 	0.5 mA No Yes 100 Hz 0.5 Hz 100 Hz		
		 for signal "0" residual current, max. Parallel switching of two outputs for uprating for redundant control of a load Switching frequency with resistive load, max. with inductive load, max. on lamp load, max. of the pulse outputs, with resistive load, max. Total current of the outputs (per group) 	0.5 mA No Yes 100 Hz 0.5 Hz 100 Hz		
	vertical installation	 for signal "0" residual current, max. Parallel switching of two outputs for uprating for redundant control of a load Switching frequency with resistive load, max. with inductive load, max. on lamp load, max. of the pulse outputs, with resistive load, max. Total current of the outputs (per group) horizontal installation 	0.5 mA No Yes 100 Hz 0.5 Hz 100 Hz 2.5 kHz		
		 for signal "0" residual current, max. Parallel switching of two outputs for uprating for redundant control of a load Switching frequency with resistive load, max. with inductive load, max. on lamp load, max. of the pulse outputs, with resistive load, max. Total current of the outputs (per group) horizontal installation up to 40 °C, max. 	0.5 mA No Yes 100 Hz 0.5 Hz 100 Hz 2.5 kHz 2 A		
	$-100 \text{ to } 40^{\circ}\text{C}$ max	 for signal "0" residual current, max. Parallel switching of two outputs for uprating for redundant control of a load Switching frequency with resistive load, max. with inductive load, max. on lamp load, max. of the pulse outputs, with resistive load, max. Total current of the outputs (per group) horizontal installation up to 40 °C, max. up to 60 °C, max. 	0.5 mA No Yes 100 Hz 0.5 Hz 100 Hz 2.5 kHz 2 A		
	Cable length	 for signal "0" residual current, max. Parallel switching of two outputs for uprating for redundant control of a load Switching frequency with resistive load, max. with inductive load, max. on lamp load, max. of the pulse outputs, with resistive load, max. Total current of the outputs (per group) horizontal installation up to 40 °C, max. up to 60 °C, max. 	0.5 mA No Yes 100 Hz 0.5 Hz 100 Hz 2.5 kHz 2 A 1.5 A		

a abialded may	1 000 m		
shielded, max.	600 m		
unshielded, max. Analog inputs	600 m		
Number of analog inputs	0		
	0		
Analog outputs			
integrated channels (AO)	0		
Connectable encoders • 2-wire sensor	Yes		
 permissible quiescent current (2-wire sensor), max. 	1.5 mA		
Interfaces	1.5 IIA		
Number of PROFINET interfaces	0		
Number of RS 485 interfaces	1; MPI		
Number of RS 422 interfaces	0		
1. Interface	0		
Interface type	Integrated RS 485 interface		
Isolated	No		
Interface types	INU .		
• RS 485	Yes		
Output current of the interface, max.	200 mA		
Protocols	200 mA		
• 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, receiver, max.	8		
Size of GD packets, max.	22 byte		
 Size of GD packet (of which consistent), max. 	22 byte		
S7 basic communication			
supported	Yes		
• User 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		
S7 communication	as server)		
supported	Yes		
as server			
as client	Yes 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		
-	5		
 — adjustable for PG communication, max. • usable for OP communication 	5		
reserved for OP communication	1		
•	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			
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.	499		
— adjustable	Yes; From 10 to 499		
— preset	10		
Service data			
• can be read out	Yes		
Interrupts/diagnostics/status information			
Diagnostics indication LED			
Status indicator digital input (green)	Yes		
Status indicator digital input (green) Status indicator digital output (green)	Yes		
	103		
Integrated Functions			
Counter	2: Saa "Taabaalagigal Europiess" manual		
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				
between the channels and backplane bus	Yes	No		
Potential separation digital outputs	103			
Potential separation digital outputs	Yes			
between the channels	No			
between the channels and backplane bus	Yes			
solation	165			
Isolation tested with	600 V DC			
mbient conditions	800 V DC			
Ambient temperature during operation	0.00			
• min.	0 °C			
• max.	60 °C			
onfiguration / header				
Configuration software				
• STEP 7	Yes; STEP 7 V5.5 + SP1 or hi 203	gher or STEP 7 V5.3 + S	SP2 or higher with HSP	
STEP 7 Lite	No			
	NO			
 configuration / programming / header Command set 	see instruction list			
	8			
Nesting levels System functions (SEC)	see instruction list			
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			
imensions				
Width	80 mm			
Height	125 mm			
Depth	130 mm			
/eights				
Weight, approx.	410 g			
lassifications				
		Version	Classification	
	eClass	14	27-24-22-07	
	eClass	12	27-24-22-07	
	eClass	9.1		
			27-24-22-07	
	eClass	9	27-24-22-07	
	eClass	8	27-24-22-07	
	eClass	7.1	27-24-22-07	
	eClass	6	27-24-22-07	
	ETIM	9	EC000236	
	ETIM	8	EC000236	
	ETIM	7	EC000236	
	IDEA	4	3565	
	UNSPSC	15	32-15-17-05	
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pprovals / Certificates				



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