6ES7314-6CH04-0AB0

## **Data sheet**



SIMATIC S7-300, CPU 314C-2 DP Compact CPU with MPI, 24 DI/16 DO, 4 AI, 2 AO, 1 Pt100, 4 high-speed counters (60 kHz), integrated DP interface, Integr. power supply 24 V DC, work memory 192 KB, Front connector (2x 40-pole) and Micro Memory Card required

General information	
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 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	
<ul> <li>Mains/voltage failure stored energy time</li> </ul>	5 ms
Repeat rate, min.	1 s
Load voltage L+	
Digital inputs	
— Rated value (DC)	24 V
<ul> <li>Reverse polarity protection</li> </ul>	Yes
Digital outputs	
— Rated value (DC)	24 V
<ul> <li>Reverse polarity protection</li> </ul>	No
Input current	
Current consumption (rated value)	880 mA
Current consumption (in no-load operation), typ.	150 mA
Inrush current, typ.	5 A
l²t	0.7 A <sup>2</sup> ·s
Digital inputs	
<ul> <li>from load voltage L+ (without load), max.</li> </ul>	80 mA
Digital outputs	
<ul> <li>from load voltage L+, max.</li> </ul>	50 mA
Power loss	
Power loss, typ.	13 W
Memory	
Work memory	
<ul><li>integrated</li></ul>	192 kbyte
expandable	No
Load memory	
• Plug-in (MMC)	Yes
<ul><li>Plug-in (MMC), max.</li></ul>	8 Mbyte
<ul> <li>Data management on MMC (after last programming), min.</li> </ul>	10 a

Backup	
• present	Yes; Guaranteed by MMC (maintenance-free)
without battery	Yes; Program and data
CPU processing times	
for bit operations, typ.	0.06 µs
for word operations, typ.	0.12 μs
for fixed point arithmetic, typ.	0.16 µs
for floating point arithmetic, typ.	0.59 µs
CPU-blocks	
Number of blocks (total)	1 024; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.
DB	
Number, max.	1 024; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	
Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	
Number, max.	see instruction list
• Size, max.	64 kbyte
Number of free cycle OBs	1; OB 1
<ul> <li>Number of time alarm OBs</li> </ul>	1; OB 10
<ul> <li>Number of delay alarm OBs</li> </ul>	2; OB 20, 21
<ul> <li>Number of cyclic interrupt OBs</li> </ul>	4; OB 32, 33, 34, 35
<ul> <li>Number of process alarm OBs</li> </ul>	1; OB 40
<ul> <li>Number of DPV1 alarm OBs</li> </ul>	3; OB 55, 56, 57
<ul> <li>Number of startup OBs</li> </ul>	1; OB 100
<ul> <li>Number of asynchronous error OBs</li> </ul>	5; OB 80, 82, 85, 86, 87
Number of synchronous error OBs	2; OB 121, 122
Nesting depth	
<ul> <li>per priority class</li> </ul>	16
additional within an error OB	4
Counters, timers and their retentivity	
S7 counter	
Number	256
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	255
— preset	Z 0 to Z 7
Counting range	
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	256
Retentivity	
— adjustable	Yes
— adjustable — lower limit	Yes 0
•	
— lower limit	0
<ul><li>— lower limit</li><li>— upper limit</li></ul>	0 255
<ul><li>— lower limit</li><li>— upper limit</li><li>— preset</li></ul>	0 255
lower limit upper limit preset Time range	0 255 No retentivity

- areaant	Ven
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	C4 lb. 4.
Retentive data area (incl. timers, counters, flags), max.	64 kbyte
Flag	OFC hite
• 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	V · · · · · · · · · · · · · · · · · · ·
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	2 048 byte
• Outputs	2 048 byte
of which distributed	
— Inputs	2 003 byte
— Outputs	2 010 byte
Process image	
• Inputs	2 048 byte
<ul><li>Outputs</li></ul>	2 048 byte
<ul><li>Inputs, adjustable</li></ul>	2 048 byte
<ul> <li>Outputs, adjustable</li> </ul>	2 048 byte
<ul><li>Inputs, default</li></ul>	128 byte
Outputs, default	128 byte
Default addresses of the integrated channels	
— Digital inputs	124.0 to 126.7
<ul><li>— Digital outputs</li></ul>	124.0 to 125.7
<ul> <li>Analog inputs</li> </ul>	752 to 761
— Analog outputs	752 to 755
Digital channels	
• Inputs	16 048
— of which central	1 016
<ul><li>Outputs</li></ul>	16 096
— of which central	1 008
Analog channels	
• Inputs	1 006
— of which central	253
<ul> <li>Outputs</li> </ul>	1 007
— of which central	250
Hardware configuration	
Number of expansion units, max.	3
Number of DP masters	
• integrated	1
• via CP	4
Number of operable FMs and CPs (recommended)	
• FM	8
• CP, PtP	8
• CP, LAN	10
Rack	
• Racks, max.	4
Modules per rack, max.	8; In rack 3 max. 7
Time of day	
Clock	
Hardware clock (real-time)	Yes
retentive and synchronizable	Yes

Non-back or the clock following POMER-ON     Shehward of the clock following POMER-ON     Shehward of the clock following exply of backup period     Shehward of the clock following exply of backup period     Shehward of the clock following exply of backup period     Shehward of the clock following exply of backup period     Shehward of the clock following exply of backup period     Shehward of the clock continues at the time of day, it had when power was switched off     Shehward of visues     S	5	
Rehavor of the clock following POWER ON Behavor of the clock following cyply of beckup period  Representing hours occurried:  * (number   1 * (number   1 * (number narge   0 * (Parage of values   0 to 2*31 hours (when using SFC 101)  * (Parage o	Backup time	6 wk; At 40 °C ambient temperature
Behavior of the clock following expiry of backup period Coperating hours counter  Number  Number  Number of values  Or of values  Or or or values  Or values  Or values  Or values  Or values  Or or values		**
Operation house counter  Number Number 1 Number Number range 0 No 2931 hours (when using SFC 101) Performance of values 0 No 2931 hours (when using SFC 101) Performance of values 0 No 2931 hours (when using SFC 101) Performance of values 0 No 2931 hours (when using SFC 101) Performance of values 0 No 2931 hours (when using SFC 101) Performance of values 0 No 2931 hours (when using SFC 101) Performance of values 0 No 2931 hours (when using SFC 101) Performance of values 0 No 2931 hours 0 No	-	•
Number of Values Note of Values On to 2*31 hours (when using SFC 101) Clock synchronization Vest Must be restarted at each restart Ocks synchronization Supported On MPI, master On MPI, master On MPI, salve On DP, master On MPI, salve On DP, master On MPI, salve On DP, salve On SP, salve On		the clock continues at the time of day it had when power was switched off
NumberNumber range Range of values Granularity Range of values Granularity Range of values Ra	. •	
Range of values Granularity 1 h In 1 h In 1 h In 1 h In 1 h Internative Ves. What be restarted at each restart Cloke kynchronization Supported In April 1 h In 2 supported In April 1 h In 3 supported In April 1 h In 2 supported In April 1 h In 3 supported In April 1 h In 4 supported In 5 supported In 5 supported In 5 supported In 5 supported I		
e-retentive Yes Must be restarted at each restart  Clock synchronization  • upported  • to IMP, stave  • to IMP, stave  • to IDP, stave  • to IDP, stave  • to IDP, stave  • in IAS, master  • in AS, stave  Dipital inputs  • of which inputs usable for technological functions  • of signal inputs  • of or signal inputs  • of signal inputs  • shelded, max  • of which inputs usable for technological functions  • shelded, max  • of which inputs usable for technological functions  • shelded, max  • of which inputs usable for technological functions  • shelded, max  • of which inputs usable for technological functions  • shelded, max  • of which inputs usable for technological functions  • shelded, max  • of which inputs even the standard inputs out	_	
Clock synchronization  - supported - to MPI, master - to MPI, sieve - to DP, master - to DP, sieve - to Spinal inputs - of which hips susuable for technological functions - up to DP, sieve - to Spinal inputs - up to 60 °C, max up to 40 °C, max u	-	
Cock synchronization  • supported  • to IMPI, stave  • to IMPI, stave  • to IDP, stave  • to IDP, stave  • to IDP, stave  • in AS, master  • in AS, stave    No   Dipital ripputs   No   Stave   No   Dipital ripputs   Or which inputs usable for technological functions   16	•	
Supported		Yes; Must be restarted at each restart
to MPI, salve     to In MPI, salve     to IDP, salve     to I	-	
• to MPI, slave • to DP, master • to DP, slave • to DP, slave • to DP, slave • to DP, slave • to AS, master • in AS, slave  No  Digital inputs  Number of digital inputs • of which inputs usable for technological functions integrated channels (DI)   24		
• to DP, slave • to NP, slave • in AS, master • in AS, slave  No  Signal inputs  Number of digital inputs • of which inputs usable for technological functions • of the OPC, max • o		
• to DP, slave • in AS, slave • in AS, slave • or in AS, slave  No  Digital inputs  Number of digital inputs  • of which inputs usable for technological functions  Integrated channels (DI)  24  • of which inputs usable for technological functions  Integrated channels (DI)  24  Input characteristic curve in accordance with IEC 61131, type 1  Number of simultaneously controllable inputs  horizontal installation  — up to 40 °C, max.  — up to 60 °C, max.  — up to 40 °C, max.  12  Input voltage  • Rated value (DC) • for signal °C* • of signal °C* • of signal °C* • for signal °C* • f		Yes
In AS, save In AS		· · · · · · · · · · · · · · · · · · ·
Injury   Section   Sect	<ul><li>to DP, slave</li></ul>	Yes
Digital Inputs   Number of digital inputs   24	,	Yes
Number of digital inputs  of which inputs usable for technological functions integrated channels (DI) Input characteristic curve in accordance with IEC 61131, type 1 Number of simultaneously controllable inputs horizontal installation  — up to 40 °C, max. — up to 60 °C, max. — up to 60 °C, max. — up to 60 °C, max. — up to 40 °C, max. — 12 Input clause  • Rated value (DC) • for signal °0 • -3 to +5V • for signal °1", type. Input delay (for rated value of input voltage)  for standard inputs — parameterizable — parameterizable — parameterizable — 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 liter time may not be effective until the next filter cycle.)  3 ms  for technological functions — at °0' to "1", max.  2able length • shielded, max. • unshielded, max. • unshielded, max. • unshielded, max. — unshielded, max.  • of which high-speed outputs integrated channels (DO)  5 of "4". Notice: You cannot connect the fast outputs of your CPU in parallel integrated channels (DO)  5 of "4". Notice: You cannot connect the fast outputs of your CPU in parallel integrated channels (DO)  5 of which high-speed outputs integrated channels (DO)  5 of which high-speed outputs integrated channels (DO)  5 of which high-speed outputs integrated channels (DO)  6 Response threshold, typ.  Limitation of inductive shutdown voltage to  Le (48 V)  Controlling a digital input  9 ves	,	No
• of which inputs usable for technological functions integrated channels (DI) [Input characteristic curve in accordance with IEC 61131, typ 1  Number of simultaneously controllable inputs horizontal installation  — up to 40 °C, max.  — up to 60 °C, max.  24  — up to 60 °C, max.  12  Input voltage  • Rated value (DC) • for signal °C • for standard inputs  — parameterizable  — parameterizable  — parameterizable  — Rated value  3 ms  For technological functions — at °C to °T', max.  8 µs; Minimum pulse width/minimum pause between pulses at maximum counting frequency counting frequency  Cable length  • shielded, max. • unshielded, max. • unshielded, max. • unshielded, max. • of which high-speed outputs  • Response threshold, typ.  Indicators  — Response threshold, typ.  Indicators  — steppidal functions — shielded chanax. • of which high-speed outputs  • Response threshold, typ.  Indicators  — Response threshold, typ.  Indicators  — steppidal functions — steppidal functions — steppidal functions — steppidal outputs • of which high-speed outputs • of which high-speed outputs  • Response threshold, typ.  Indicator of inductive shutdown voltage to  Let (48 V)  Controlling a digital input  • of inamp load, max.  • on lamp load, max.  • on lamp load, max.  • on lamp load, max.  5 W	Digital inputs	
Integrated channels (DI) Input characteristic curve in accordance with IEC 61131, type 1 Number of Simultaneously controllable inputs  horizontal installation  — up to 40 °C, max. 24 — up to 60 °C, max. 12  vertical installation — up to 40 °C, max. 12  Input voltage  • Rated value (DC) 24 V • for signal "1" +15 to +30 V  Input current • for signal "1", typ.  Input delay (for rated value of input voltage)  for standard inputs — parameterizable — parameterizable — Rated value  • Rated value  • Rated value • for signal "1", typ.  Input delay (for rated value of input voltage)  for standard inputs — parameterizable — Parameterizable — Rated value  • To "1", max. 28 µs; Minimum pulse width/minimum pause between pulses at maximum counting frequency  Cable length • shielded, max. 1000 m; 50 m for technological functions — shielded, max. 50 m; at maximum count frequency — shielded, max. 1000 m; 50 m; to m for technological functions — shielded, max. 50 m; at maximum count frequency — unshielded, max. 50 m; at maximum count frequency — unshielded, max. 1000 m; for technological functions No  Digital outputs  Number of digital outputs • for technological functions — shielded, max. 50 m; at maximum count frequency — unshielded, max. 50 m; at maximum count frequency — or digital outputs • for technological functions — shielded, max. 50 m; at maximum count frequency — unshielded, max. 70 m; for technological functions No  Digital outputs  Number of digital outputs • for digital outputs • for denoticities outputs • for denoticies outputs • for deno	Number of digital inputs	24
Input characteristic curve in accordance with IEC 61131, type 1 Number of simultaneously controllable inputs horizontal installation  — up to 40 °C, max. — up to 60 °C, max. — up to 60 °C, max.  — up to 40 °C, max.  — up to 40 °C, max.  12  Input voltage  Rated value (ICC) • for signal "0" • 7 at the value of input voltage  For signal "1" • for signal "1" • for signal "1" • for signal "1" • for signal "1", typ.  8 mA  Input delay (for rated value of input voltage)  for standard inputs  — parameterizable  — parameterizable  — Rated value  For technological functions — at "0" to "1", max.  — unshielded, max. — unshielded, max. — unshielded, max. — unshielded, max. — unshielded, max. — unshielded, max. — unshielded, max. — unshielded, max. — unshielded, max. — 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  Limitation of inductive shutdown voltage to  Limitation of inductive shutdown voltage to  • of unknih high-speed outputs  • of lamp load, max.  • on lamp load,	of which inputs usable for technological functions	16
Number of simultaneously controllable inputs horizontal Installation  — up to 40 °C, max.  — up to 60 °C, max.  12  vertical Installation  — up to 40 °C, max.  12  Input voltage  • Rated value (DC) • for signal °0" • for signal *1" • for signal *1" • for signal *1", typ. Input delay (for rated value of input voltage)  for standard inputs  — parameterizable  Frequency  Frequency  — Rated value  • for signal *1", typ. Input delay (for rated value of input voltage)  for standard inputs  — parameterizable  — Rated value  • for technological functions  — at °0' to *1", max.  S µs; Minimum pulse width/minimum pause between pulses at maximum counting frequency  Cable length  • shielded, max. • unshielded, max.  — vinich ingh-speed outputs  • of which high-speed outputs  • Response threshold, typ.  Integrated channels (DO)  Shot-circuit protection  • Response threshold, typ.  Limitation of inductive shutdown voltage to  L+ (-48 V)  Controlling a digital input  Yes  Switching gaspatry of the outputs  • on lamp load, max.  5 W	integrated channels (DI)	24
horizontal installation  - up to 40 °C, max. 24  - up to 60 °C, max. 12  vertical installation  - up to 40 °C, max. 12  Input voltage  • Rated value (DC) • for signal "0" • for signal "1" • for signal "1", typ. 8 mA  Input delay (for rated value of input voltage)  for standard inputs  - parameterizable  - Rated value  for standard inputs  - parameterizable  - Rated value  for technological functions  - at "0" to "1", max. 8 js. Minimum pulse width/minimum pause between pulses at maximum counting frequency  Cable length  • shielded, max 600 m; for technological functions  - shielded, max 50 m; at maximum count frequency  not sallowed  Digital outputs  Number of digital outputs  • Response threshold, typ. 16  Limitation of inductive shutdown voltage to  - Response threshold, typ. 1A  Limitation of inductive shutdown voltage to  - controlling a digital input  Yes  Switching apactive of the outputs  • on lamp load, max. 50 W  Switching apactive of the outputs  • on lamp load, max. 50 W  Switching apactive of the outputs  • on lamp load, max. 50 W	Input characteristic curve in accordance with IEC 61131, type 1	Yes
up to 40 °C, max up to 60 °C, max.  up to 40 °C, max.  12  Input voltage  • Rated value (DC) • for signal "0" • for signal "1" • for signal "1" • for signal "1", typ.  • for signal "1", ty	Number of simultaneously controllable inputs	
- up to 60 °C, max.  vertical installation - up to 40 °C, max.  Input voltage  • Rated value (DC) • for signal "0" • for signal "1" + 15 to +30 V  Input current • for signal "1", typ.  • for signal "1", typ.  Input delay (for rated value of input voltage) for standard inputs - parameterizable  - parameterizable  - Rated value - parameterizable  - Rated value - a "0" to "1", max.  Cable length  • shielded, max. • on shielded, max. • on shielded, max.  - shielded, max wushielded, max unshielded, max unshielded, max unshielded, max unshielded, max unshielded, max unshielded, max vushielded, ma	horizontal installation	
vertical installation  — up to 40 °C, max.  Input voltage  • Rated value (DC) • for signal "0" • for signal "1" • for signal "1" • for signal "1", typ.  Input delay (for rated value of input voltage)  for standard inputs  — parameterizable  • Rated value  3 ms  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.)  3 ms  For technological functions  — at "0" to "1", max.  8 µs; Minimum pulse width/minimum pause between pulses at maximum counting frequency  Cable length  • shielded, max. • unshielded, max.  for technological functions  — shielded, max.  — unshielded, max.  — unshielded, max.  — shielded, max.  — unshielded, max.  — of which high-speed outputs  • of which high-speed outputs  • of which high-speed outputs  • Response threshold, typ.  1 A  Limitation of inductive shutdown voltage to  Controlling a digital input  • Response threshold, typ.  1 A  Limitation of inductive shutdown voltage to  Controlling a digital input  • on lamp load, max.  5 W	— up to 40 °C, max.	24
Input voltage   Rated value (DC)	— up to 60 °C, max.	12
Input voltage  • Rated value (DC) • for signal "0" • for signal "1" • 15 to +30 V  Input current • for signal "1", typ.  Input delay (for rated value of input voltage)  for standard inputs  — parameterizable  — parameterizable  — Rated value  • Rated value  • Rated value  3 ms  for technological functions  — at "0" to "1", max.  Cable length  • shielded, max. • unshielded, max. • unshielded, max.  — unshielded, max.  — shielded, max.  — unshielded, max.  — unshielded, max.  — on allowed  Digital outputs  Number of digital outputs  Number of digital outputs  • Response threshold, typ.  I may be subtown voltage to Controlling a digital input  • Response threshold, typ.  I may be subtown voltage to Controlling a digital input  • Response threshold, typ.  I may be subtown voltage to Controlling a digital input  • Response threshold, typ.  I may be subtown voltage to Controlling a digital input  • Response threshold, typ.  I may be subtown voltage to Let (48 V)  Controlling a digital input  • on lamp load, max.	vertical installation	
• Rated value (DC) • for signal "0" • for signal "1" Input current • for signal "1", typ.  Input delay (for rated value of input voltage) for standard inputs  — parameterizable  — parameterizable  — Parameterizable  — Parameterizable  — Rated value  — To" to "1", max.  — Wes; 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  — Rated value  — Rated value  — To" to "1", max.  — B µs; Minimum pulse width/minimum pause between pulses at maximum counting frequency  Cable length  • shielded, max.  — unshielded, max.  Digital outputs  Number of digital outputs  Number of digital outputs  • of which high-speed outputs  — (4 Notice: You cannot connect the fast outputs of your CPU in parallel integrated channels (DO)  — Response threshold, typ.  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	— up to 40 °C, max.	12
• for signal "0" • for signal "1"  Input current  • for signal "1", typ.  Input delay (for rated value of input voltage)  for standard inputs  — parameterizable  — parameterizable  — Rated value  — Rated value  — Rated value  for technological functions  — at "0" to "1", max.   Cable length  • shielded, max. • unshielded, max.  — unshielded, max.  — unshielded, max.  — unshielded, max.  — on tallowed  Digital outputs  Number of digital outputs  Number of digital outputs  Number of digital outputs  • Response threshold, typ.  Response threshold, typ.  Response threshold, typ.  Response threshold, typ.  Response threshold, max.  • on lamp load, max.	Input voltage	
• 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. 8 μs; Minimum pulse width/minimum pause between pulses at maximum counting frequency  Cable length  • shielded, max. 1000 m; 50 m for technological functions  • unshielded, max. 600 m; for technological functions  — shielded, max. 50 m; at maximum count frequency  not allowed  Digital outputs  Number of digital outputs  • of which high-speed outputs  16  • of which high-speed outputs  17  18  Short-circuit protection Yes; Clocked electronically  • Response threshold, typ. 1 A  Limitation of inductive shutdown voltage to L+ (-48 V)  Controlling a digital input  • on lamp load, max. 5 W	<ul> <li>Rated value (DC)</li> </ul>	24 V
Input current  • for signal "1", typ. Input delay (for rated value of input voltage)  for standard inputs  — parameterizable  Pated value  Rated value  3 ms  for technological functions  — at "0" to "1", max.  Supsilided, max.  • shielded, max.  • unshielded, max.  — shielded, max.  — shielded, max.  — shielded, max.  — ounshielded, max.  ounshielded, max.  — ounshielded, max.  — ounshielded, max.  — ounshielded, max.  — ounshielded, max.  ounshielded, max.  ounshielded, max.  ounshielded, max.  ounshielded, max.  ounshielded, m	• for signal "0"	-3 to +5V
• for signal "1", typ. 8 mA  Input delay (for rated value of input voltage)  for standard inputs      — parameterizable      — parameterizable      — Rated value      — Rated value      — at "0" to "1", max.  Cable length      • shielded, max.      • unshielded, max.      • unshielded, max.      — shielded, max.      — shielded, max.      — shielded, max.      — while ded, max.      — shielded, max.      — of trechnological functions      — shielded, max.      — of trechnological functions      — shielded, max.      • unshielded, max.      • unshielded, max.      — of this high-speed 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  • on lamp load, max.  • on lamp load, max.       • on lamp load, max.      • on lamp load, max.      • on lamp load, max.      • on lamp load, max.      • on lamp load, max.      • on lamp load, max.      • on lamp load, max.      • on lamp load, max.      • on lamp load, max.      • of which sigh-speed outputs      • on lamp load, max.      • of which lamps and the standard input shall sea filter time may not be effective until the next filter circumstances your newly set filter time may not be effective until the next filter circumstances pour newly set filter time may not be effective until the next filter circumstances pour newly set filter time may not be effective until the next filter circumstances pour newly set filter time may not be effective until the next filter circumstances pour newly set filter time may not be effective until the next filter circumstances pour newly set filter time may not be effective until the next filter circumstances pour newly set interest pour set interest pour set interest pour set interest pour set interest.      **Substance**      **C	• for signal "1"	+15 to +30 V
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  for technological functions  - at "0" to "1", max.  8 µs; Minimum pulse width/minimum pause between pulses at maximum counting frequency  Cable length  • shielded, max.  • unshielded, max.  - ont allowed  Digital outputs  Number of digital outputs  • of which high-speed outputs  integrated channels (DO)  16  Short-circuit protection  • Response threshold, typ.  1 A  Limitation of inductive shutdown voltage to  Controlling a digital input  Yes  Switching capacity of the outputs  • on lamp load, max.  5 W	Input current	
for standard inputs	• for signal "1", typ.	8 mA
— 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.  8 μs; Minimum pulse width/minimum pause between pulses at maximum counting frequency  Cable length  • shielded, max.  • unshielded, max.  50 m; for technological functions: No  for technological functions  — shielded, max.  — unshielded, max.  50 m; at maximum count frequency  not allowed  Digital outputs  Number of digital outputs  16  • of which high-speed outputs  16  • of which high-speed outputs  17  Short-circuit protection  • Response threshold, typ.  18  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	Input delay (for rated value of input voltage)	
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  for technological functions  — at "0" to "1", max.  8 μs; Minimum pulse width/minimum pause between pulses at maximum counting frequency  Cable length  • shielded, max.  • unshielded, max.  for technological functions  — shielded, max.  — shielded, max.  — unshielded, max.  1000 m; 50 m for technological functions: No  for technological functions: No  1000 m; for technological functions  1000 m; for technological function	for standard inputs	
for technological functions  — at "0" to "1", max.  8 μs; Minimum pulse width/minimum pause between pulses at maximum counting frequency  Cable length  • shielded, max.  • unshielded, max.  600 m; for technological functions: No  for technological functions: No  for technological functions: No  50 m; at maximum count frequency — unshielded, max. — unshielded, max.  160  • of m; at maximum count frequency not allowed  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  L+ (-48 V)  Controlling a digital input  Yes  Switching capacity of the outputs • on lamp load, max.  5 W	— parameterizable	inputs during program runtime. Please note that under certain circumstances
- at "0" to "1", max.  8 μs; Minimum pulse width/minimum pause between pulses at maximum counting frequency  Cable length  • shielded, max. • unshielded, max. for technological functions  - shielded, max unshielded, max.  - unshielded, max.  16  • of which high-speed outputs  Number of digital outputs  4; Notice: You cannot connect the fast outputs of your CPU in parallel integrated channels (DO)  Short-circuit protection • Response threshold, typ.  Limitation of inductive shutdown voltage to  Controlling a digital input  Yes  Switching capacity of the outputs • on lamp load, max.  5 W	— Rated value	3 ms
Cable length  • shielded, max. • unshielded, max.  - unshielded, max.  - shielded, max.  - shielded, max.  - shielded, max.  - shielded, max.  - unshielded, max.  - of 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  Yes  Switching capacity of the outputs  • on lamp load, max.  1 000 m; 50 m for technological functions  600 m; for technological functions: No  1 000 m; 50 m for technological functions: No  1 000 m; 50 m for technological functions: No  1 000 m; 50 m for technological functions: No  1 000 m; 50 m for technological functions: No  1 000 m; 50 m for technological functions: No  1 000 m; 50 m for technological functions: No  1 000 m; 50 m for technological functions: No  1 000 m; 50 m for technological functions: No  1 000 m; 50 m for technological functions: No  1 000 m; 50 m for technological functions: No  1 000 m; 50 m for technological functions: No  1 000 m; 50 m for technological functions: No  1 000 m; 50 m for technological functions: No  1 000 m; 50 m for technological functions: No  1 000 m; 50 m for technological functions: No  1 000 m; 50 m for technological functions: No  1 000 m; 50 m for technological functions: No  1 000 m; 600 m; 6	for technological functions	
<ul> <li>shielded, max.</li> <li>unshielded, max.</li> <li>for technological functions: No</li> <li>for technological functions: No</li> <li>— shielded, max.</li> <li>— shielded, max.</li> <li>— unshielded, max.</li> <li>— unshielded, max.</li> <li>— unshielded, max.</li> <li>Digital outputs</li> <li>Number of digital outputs</li> <li>• of which high-speed outputs</li> <li>integrated channels (DO)</li> <li>Short-circuit protection</li> <li>• Response threshold, typ.</li> <li>Limitation of inductive shutdown voltage to</li> <li>L+ (-48 V)</li> <li>Controlling a digital input</li> <li>Switching capacity of the outputs</li> <li>• on lamp load, max.</li> <li>5 W</li> </ul>	— at "0" to "1", max.	
<ul> <li>unshielded, max.</li> <li>for technological functions: No</li> <li>— shielded, max.</li> <li>— unshielded, max.</li> <li>— ot allowed</li> <li>— unshielded, max.</li> <li>— ot allowed</li> <li>— ot allowed</li> <li>— integrated digital outputs</li> <li>— integrated channels (DO)</li> <li>— integrated channel</li></ul>	Cable length	
for technological functions  — shielded, max. — 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.  50 m; at maximum count frequency  not allowed  16  4; Notice: You cannot connect the fast outputs of your CPU in parallel  integrated channels (DO)  16  Short-circuit protection  Yes; Clocked electronically  L+ (-48 V)  Yes  Switching capacity of the outputs  on lamp load, max.  5 W	• shielded, max.	1 000 m; 50 m for technological functions
— shielded, max. — unshielded, max.	• unshielded, max.	600 m; for technological functions: No
— unshielded, max.  Digital outputs  Number of digital outputs  of which high-speed outputs integrated channels (DO)  Short-circuit protection Pesponse threshold, typ.  Limitation of inductive shutdown voltage to  Controlling a digital input  Switching capacity of the outputs  on lamp load, max.  not allowed  not allowed  not allowed  16  4; Notice: You cannot connect the fast outputs of your CPU in parallel  16  Yes; Clocked electronically  1 A  Li+ (-48 V)  Yes  Switching capacity of the outputs  on lamp load, max.  5 W	for technological functions	
Digital outputs         Number of digital outputs       16         ● of which high-speed outputs       4; Notice: You cannot connect the fast outputs of your CPU in parallel integrated channels (DO)         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	— shielded, max.	50 m; at maximum count frequency
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.  16  4; Notice: You cannot connect the fast outputs of your CPU in parallel  16  Yes; Clocked electronically  1 A  L+ (-48 V)  Yes  Switching capacity of the outputs	— unshielded, max.	not allowed
of which high-speed outputs     4; Notice: You cannot connect the fast outputs of your CPU in parallel integrated channels (DO)     16     Short-circuit protection     Response threshold, typ.     1 A     Limitation of inductive shutdown voltage to     Controlling a digital input     Switching capacity of the outputs     on lamp load, max.     5 W	Digital 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.  16  Yes; Clocked electronically  1 A  L+ (-48 V)  Yes  Switching capacity of the outputs	Number of digital outputs	16
Short-circuit protection  Response threshold, typ.  1 A  Limitation of inductive shutdown voltage to  Controlling a digital input  Yes  Switching capacity of the outputs  on lamp load, max.  Yes; Clocked electronically  1 A  L+ (-48 V)  Yes  Switching capacity of the outputs	of which high-speed outputs	4; Notice: You cannot connect the fast outputs of your CPU in parallel
<ul> <li>Response threshold, typ.</li> <li>Limitation of inductive shutdown voltage to</li> <li>Controlling a digital input</li> <li>Switching capacity of the outputs</li> <li>on lamp load, max.</li> <li>5 W</li> </ul>	integrated channels (DO)	16
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	Short-circuit protection	Yes; Clocked electronically
Controlling a digital input  Yes  Switching capacity of the outputs  on lamp load, max.  5 W		1 A
Switching capacity of the outputs  • on lamp load, max.  5 W	Limitation of inductive shutdown voltage to	L+ (-48 V)
• on lamp load, max. 5 W	Controlling a digital input	Yes
	Switching capacity of the outputs	
Load resistance range	• 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
<ul> <li>for signal "0" residual current, max.</li> </ul>	0.5 mA
Parallel switching of two outputs	
• for uprating	No
for redundant control of a load	Yes
Switching frequency	
<ul><li>with resistive load, max.</li></ul>	100 Hz
<ul> <li>with inductive load, max.</li> </ul>	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.	3 A
— up to 60 °C, max.	2 A
vertical installation	
— up to 40 °C, max.	2 A
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Analog inputs	
Number of analog inputs	5
<ul> <li>For voltage/current measurement</li> </ul>	4
For resistance/resistance thermometer measurement	1
integrated channels (AI)	5; 4x current/voltage, 1x resistance
permissible input voltage for current input (destruction limit), max.	5 V; Permanent
permissible input voltage for voltage input (destruction limit), max.	30 V; Permanent
permissible input current for voltage input (destruction limit), max.	0.5 mA; Permanent
permissible input current for current input (destruction limit), max.	50 mA; Permanent
Electrical input frequency, max.	400 Hz
No-load voltage for resistance-type transmitter, typ.	3.3 V
Constant measurement current for resistance-type transmitter, typ.	1.25 mA
Technical unit for temperature measurement adjustable	Yes; Degrees Celsius / degrees Fahrenheit / Kelvin
Input ranges	Voc: 140 V / 400 kO: 0 V to 40 V / 400 kO
Voltage	Yes; ±10 V / 100 kΩ; 0 V to 10 V / 100 kΩ
Current	Yes; $\pm 20$ mA / $100 \Omega$ ; 0 mA to 20 mA / $100 \Omega$ ; 4 mA to 20 mA / $100 \Omega$
Resistance thermometer	Yes; Pt 100 / 10 MΩ
Resistance  Input ranges (rated values) voltages	Yes; 0 $\Omega$ to 600 $\Omega$ / 10 M $\Omega$
Input ranges (rated values), voltages  • 0 to +10 V	Yes
— Input resistance (0 to 10 V)	res 100 kΩ
Input ranges (rated values), currents	100 132
• 0 to 20 mA	Yes
— Input resistance (0 to 20 mA)	100 Ω
-20 mA to +20 mA	Yes
— Input resistance (-20 mA to +20 mA)	100 Ω
• 4 mA to 20 mA	Yes
— Input resistance (4 mA to 20 mA)	100 Ω
Input ranges (rated values), resistance thermometer	
• Pt 100	Yes

Input registance (Pt 100)	10 ΜΩ
— Input resistance (Pt 100)	10 MIZ
Input ranges (rated values), resistors	Van
• 0 to 600 ohms	Yes 10 MO
— Input resistance (0 to 600 ohms)	10 MIZ
Thermocouple (TC)	
Temperature compensation	NI-
— parameterizable	No
Characteristic linearization	Vasi hij aaffijara
parameterizable  for registance thermometer.	Yes; by software
— for resistance thermometer  Cable length	Pt 100
	100 m
shielded, max.  Analog outputs	100 111
	2
Number of analog outputs	2
integrated channels (AO)	
Voltage output, short-circuit protection	Yes
Voltage output, short-circuit current, max.	55 mA
Current output, no-load voltage, max.	14 V
Output ranges, voltage	Voc
• 0 to 10 V	Yes
• -10 V to +10 V	Yes
Output ranges, current	Voc
<ul><li>0 to 20 mA</li><li>-20 mA to +20 mA</li></ul>	Yes Yes
4 mA to 20 mA  Connection of actuators	Yes
	Vac: Without componentian of the line registered
for voltage output two-wire connection     for voltage output four wire connection	Yes; Without compensation of the line resistances No
<ul> <li>for voltage output four-wire connection</li> <li>for current output two-wire connection</li> </ul>	Yes
Load impedance (in rated range of output)	Tes
	1 kΩ
with voltage outputs, min.      with voltage outputs, expecitive lead, may	0.1 μF
with voltage outputs, capacitive load, max.      with current cutouts, may.	
<ul> <li>with current outputs, max.</li> <li>with current outputs, inductive load, max.</li> </ul>	300 Ω 0.1 mH
Destruction limits against externally applied voltages and currents	0.1 IIII
	16 V; Permanent
Voltages at the outputs towards MANA     Current may	50 mA; Permanent
Current, max.  Cable length	50 IIIA, Fermanent
shielded, max.	200 m
Analog value generation for the inputs	200 111
	Actual value energetion (augeocaive engreyimation)
Measurement principle	Actual value encryption (successive approximation)
Integration and conversion time/resolution per channel	12 bit
<ul> <li>Resolution with overrange (bit including sign), max.</li> <li>Integration time, parameterizable</li> </ul>	12 bit
	Yes; 16.6 / 20 ms 50 / 60 Hz
<ul> <li>Interference voltage suppression for interference frequency f1 in Hz</li> </ul>	30 / 00 FIZ
Time constant of the input filter	0.38 ms
Basic execution time of the module (all channels	1 ms
released)	
Analog value generation for the outputs	
Integration and conversion time/resolution per channel	
<ul> <li>Resolution with overrange (bit including sign), max.</li> </ul>	12 bit
Conversion time (per channel)	1 ms
Settling time	
for resistive load	0.6 ms
for capacitive load	1 ms
for inductive load	0.5 ms
Encoder	
Connection of signal encoders	
<ul> <li>for voltage measurement</li> </ul>	Yes
<ul> <li>for current measurement as 2-wire transducer</li> </ul>	Yes; with external supply

for a compart on a compart of the formation of the format	V
for current measurement as 4-wire transducer	Yes
for resistance measurement with two-wire connection     for resistance measurement with three wire connection	Yes; Without compensation of the line resistances
for resistance measurement with three-wire connection     for resistance measurement with four wire connection	No No
for resistance measurement with four-wire connection  Connectable encoders	NO
2-wire sensor	Yes
permissible quiescent current (2-wire sensor), max.	1.5 mA
Errors/accuracies	1.5 IIIA
Temperature error (relative to input range), (+/-)	0.006 %/K
Crosstalk between the inputs, min.	60 dB
Repeat accuracy in steady state at 25 °C (relative to input	0.06 %
range), (+/-)	****
Output ripple (relative to output range, bandwidth 0 to 50 kHz), (+/-)	0.1 %
Linearity error (relative to output range), (+/-)	0.15 %
Temperature error (relative to output range), (+/-)	0.01 %/K
Crosstalk between the outputs, min.	60 dB
Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)	0.06 %
Operational error limit in overall temperature range	
Voltage, relative to input range, (+/-)	1 %
• Current, relative to input range, (+/-)	1 %
Resistance, relative to input range, (+/-)	1 %
Voltage, relative to output range, (+/-)	1 %
Current, relative to output range, (+/-)  Paris area limit (as another at limit at 95 °C)	1 %
Basic error limit (operational limit at 25 °C)	0.9.9/ : Lincarity array 10.06.9/
Voltage, relative to input range, (+/-)      Current relative to input range (+/-)	0.8 %; Linearity error ±0.06 %
Current, relative to input range, (+/-)      Peristance, relative to input range, (+/-)	0.8 %; Linearity error ±0.06 % 0.8 %; Linearity error ±0.2 %
<ul> <li>Resistance, relative to input range, (+/-)</li> <li>Resistance thermometer, relative to input range, (+/-)</li> </ul>	0.8 %
Voltage, relative to output range, (+/-)	0.8 %
Current, relative to output range, (+/-)	0.8 %
Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference	
Series mode interference (peak value of interference <	30 dB
rated value of input range), min.	
Common mode interference, min.	40 dB
Interfaces	
Number of industrial Ethernet interfaces	0
Number of PROFINET interfaces	0
Number of RS 485 interfaces	2; MPI and PROFIBUS DP
Number of RS 422 interfaces	0
1. Interface	
Interface type	Integrated RS 485 interface
Isolated	No
Interface types	Voo
RS 485      Output current of the interface, may	Yes 200 mA
Output current of the interface, max.  Protocols	200 IIIA
Protocols  • MPI	Yes
PROFIBUS DP master	No
PROFIBUS DP master      PROFIBUS DP slave	No
Point-to-point connection	No
MPI	
Transmission rate, max.	187.5 kbit/s
Services	
— PG/OP communication	Yes
— Routing	Yes
Global data communication	Yes
— S7 basic communication	Yes
— S7 communication	Yes; Only server, configured on one side
— S7 communication, as client	No; but via CP and loadable FB
<ul> <li>S7 communication, as server</li> </ul>	Yes

2. Interface	
Interface type	Integrated RS 485 interface
Isolated	Yes
Interface types	
• RS 485	Yes
Output current of the interface, max.	200 mA
Protocols	200 1111
• MPI	No
PROFINET IO Controller	No
PROFINET IO Device	No
PROFINET CBA	No
PROFIBUS DP master      PROFIBUS DP clave	Yes
PROFIBUS DP slave  Print to print a properties.	Yes
Point-to-point connection	No
PROFIBUS DP master	40 M %/
Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	124
Services	
— PG/OP communication	Yes
— Routing	Yes
<ul> <li>Global data communication</li> </ul>	No
<ul> <li>S7 basic communication</li> </ul>	Yes; I blocks only
— S7 communication	Yes; Only server, configured on one side
<ul> <li>S7 communication, as client</li> </ul>	No
<ul> <li>S7 communication, as server</li> </ul>	Yes
— Equidistance	Yes
<ul> <li>Isochronous mode</li> </ul>	No
— SYNC/FREEZE	Yes
<ul> <li>Activation/deactivation of DP slaves</li> </ul>	Yes
<ul> <li>Number of DP slaves that can be simultaneously activated/deactivated, max.</li> </ul>	8
<ul><li>— Direct data exchange (slave-to-slave communication)</li><li>— DPV1</li></ul>	Yes; as subscriber Yes
Address area	165
	2 kbyta
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
User data per DP slave	0441.4
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	
• GSD file	The latest GSD file is available on the Internet (http://www.siemens.com/profibus-gsd)
Transmission rate, max.	12 Mbit/s
automatic baud rate search	Yes; only with passive interface
Address area, max.	32
User data per address area, max.	32 byte
Services	, , . <del>.</del>
— PG/OP communication	Yes
— Routing	Yes; Only with active interface
Global data communication	No
Global data communication  S7 basic communication	No
— S7 basic communication  — S7 communication	
	Yes; Only server, configured on one side
— S7 communication, as client	No Voc
— S7 communication, as server	Yes
Direct data exchange (slave-to-slave communication)	Yes
— DPV1	No
Transfer memory	044
— Inputs	244 byte
— Outputs	244 byte
Protocols	

PROFIsafe	No
communication functions / header	
PG/OP communication	Yes
Data record routing	Yes
Global data communication	100
supported	Yes
Number of GD loops, max.	8
Number of GD packets, max.	8
Number of GD packets, transmitter, max.	8
Number of GD packets, receiver, max.	8
Size of GD packets, max.	22 byte
<ul> <li>Size of GD packet (of which consistent), max.</li> </ul>	22 byte
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
<b>07</b>	as server)
S7 communication	Vac
• supported	Yes
as server	Yes
• as client	Yes; Via CP and loadable FB
User data per job, max.  User data per job (of which consistent) read.	180 kbyte; With PUT/GET
User data per job (of which consistent), max.  SE compatible communication.	240 byte; as server
S5 compatible communication	Vocavia CD and leadable EC
supported  Number of connections	Yes; via CP and loadable FC
overall	12
usable for PG communication	11
reserved for PG communication	1
adjustable for PG communication, min.	1
adjustable for PG communication, max.	11
usable for OP communication	11
reserved for OP communication	1
adjustable for OP communication, min.	1
adjustable for OP communication, max.	11
usable for S7 basic communication	8
reserved for S7 basic communication	0
adjustable for S7 basic communication, min.	0
adjustable for S7 basic communication, max.	8
usable for routing	4; max.
S7 message functions	T, Hux.
Number of login stations for message functions, max.	12; 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
<ul><li>Variables</li><li>Number of variables, max.</li></ul>	Inputs, outputs, memory bits, DB, times, counters 30
<ul><li>number of variables, max.</li><li>— of which status variables, max.</li></ul>	30
of which control variables, max.	14
— of which control variables, max.  Forcing	17
• Forcing	Yes
Forcing, variables	Inputs, outputs
Number of variables, max.	10
Diagnostic buffer	
• present	Yes
r	

<ul> <li>Number of entries, max.</li> </ul>	500
— adjustable	No
<ul><li>— of which powerfail-proof</li></ul>	100; Only the last 100 entries are retained
<ul> <li>Number of entries readable in RUN, max.</li> </ul>	499
— adjustable	Yes; From 10 to 499
— preset	10
Service data	
can be read out	Yes
Interrupts/diagnostics/status information	
Diagnostics indication LED	
<ul> <li>Status indicator digital input (green)</li> </ul>	Yes
Status indicator digital output (green)	Yes
Integrated Functions	
Frequency measurement	Yes
Number of frequency meters	4; up to 60 kHz (see "Technological Functions" manual)
controlled positioning	Yes
integrated function blocks (closed-loop control)	Yes; PID controller (see "Technological Functions" manual)
PID controller	Yes
Number of pulse outputs	4; Pulse width modulation up to 2.5 kHz (see "Technological Functions" Manual)
Limit frequency (pulse)	2.5 kHz
Potential separation	
Potential separation digital inputs	
<ul> <li>Potential separation digital inputs</li> </ul>	Yes
<ul> <li>between the channels</li> </ul>	No
between the channels and backplane bus	Yes
Potential separation digital outputs	
<ul> <li>Potential separation digital outputs</li> </ul>	Yes
<ul> <li>between the channels</li> </ul>	Yes
<ul> <li>between the channels, in groups of</li> </ul>	8
<ul> <li>between the channels and backplane bus</li> </ul>	Yes
Potential separation analog inputs	
<ul> <li>Potential separation analog inputs</li> </ul>	Yes; common for analog I/O
<ul> <li>between the channels</li> </ul>	No
<ul> <li>between the channels and backplane bus</li> </ul>	Yes
Potential separation analog outputs	
<ul> <li>Potential separation analog outputs</li> </ul>	Yes; common for analog I/O
<ul> <li>between the channels</li> </ul>	No
<ul> <li>between the channels and backplane bus</li> </ul>	Yes
Isolation	
Isolation tested with	600 V DC
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	60 °C
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
<ul> <li>Nesting levels</li> </ul>	8
System functions (SFC)	see instruction list
System function blocks (SFB)	see instruction list
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	Yes

— GRAPH	Yes
	res
— HiGraph®	Yes
Know-how protection	
<ul> <li>User program protection/password protection</li> </ul>	Yes
Block encryption	Yes; With S7 block Privacy
Dimensions	
Width	120 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	680 g

last modified: 8/24/2021 🖸