

OFFICIAL MANUFACTURER DOCUMENT PACKAGE

Installation Instructions

6ES7317-6FF03-0AB0

Siemens official documentation for the exact article number.

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Selected official Siemens pages follow this cover.

SIMATIC S7-300

Introduction

S7-300/S7-300F/SIPLUS S7-300

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Technical specifications

General technical specifications S7-300, S7-300F

Degree of protection	Degree of protection IP20 to IEC 60 529
Ambient temperature	
• With horizontal mounting	0 to 60 °C
• With vertical mounting	0 to 40 °C
Relative humidity	5 to 95%, no condensation (RH severity level 2 in accordance with IEC 61131-2)
Atmospheric	795 to 1080 hPa
Isolation	
• 24 V DC circuits	Test voltage 500 V DC
• 230 V AC circuits	Test voltage 1460 V AC
Electromagnetic compatibility	Requirements of EMC law; Noise immunity according to IEC 61000-6-2, tested according to: IEC 61000-4-2, 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6 Emitted interference according to EN 50081-2, tested according to EN 55011, class A, group 1
Mechanical rating	
• Vibrations, tested according to/tested with	IEC 60068, Part 2-6/10 up 58 Hz; constant amplitude 0.075 mm; 58 to 150 Hz; constant acceleration 1 g; oscillation period: 10 frequency cycles per axis in each direction of the 3 mutually perpendicular axes
• Shock, tested according to/tested with	IEC 60068, Part 2-27/half-sine: strength of impact 15 g (peak value), duration 11 ms

General technical specifications SIPLUS S7-300

Climatic environmental conditions	
Temperature	Horizontal mounting: -25 °C to 60 °C Vertical mounting: -25 °C to 40 °C
Relative humidity	5 to 95%; transient condensation permissible, corresponding to relative humidity (RH-), stress grade 2 according to IEC 1131-2 and IEC 721 3-3 class 3K5
Transient icing	-25 °C to 0 °C IEC 721 3-3 class 3K5
Atmospheric pressure	1080 to 795 hPa corresponding to a height of -1000 to 2000 m
Pollutant concentration	SO ₂ : < 0,5 ppm; relative humidity <60%, test: 10 ppm, 4 days H ₂ S: < 0,1 ppm; relative humidity <60%, test: 1 ppm, 4 days (according to IEC 721 3-3; class 3C3)
Mechanical environmental conditions	
Vibrations	Type of vibration: frequency progressions changing at 1 octave per minute. 2 Hz ≤ f ≤ 9 Hz, constant amplitude 3,0 mm, 9 Hz ≤ f ≤ 150 Hz, constant acceleration 1 g, duration of vibration: 10 frequency progressions per axis in each direction of the three mutually perpendicular axes Vibration testing according to IEC 68 section 2-6 (sinus) and IEC 721 3-3, class 3M4
Shock	Type of shock: semisinusoidal, shock strength: 15 g peak value, duration 11 ms, shock direction: 3 shocks each in +/- direction on each of the mutually perpendicular axes Shock testing according to IEC 68 section 2-27
Conformity with standard for electronic devices on rail vehicles (EN 50155, temperature T1, category 1)	Yes ¹⁾

1) Not valid for:
6AG1314-6CF02-2AB0, 6AG1315-6EG10-2AB0,
6AG1317-6EJ10-2AB0, 6AG1336-1HE00-2AB0,
6AG1314-6CF02-2AB0, 6AG1331-7KF02-2AB0,
6AG1331-7PF02-2AB0, 6AG1332-5HF00-2AB0,
6AG1334-0KE00-2AB0, 6AG1331-7TB00-4AB0

SIMATIC S7-300

Central processing units

Compact CPUs

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Technical specifications (continued)

	6ES7 312-5BE03-0AB0	6ES7 313-5BF03-0AB0	6ES7 313-6BF03-0AB0	6ES7 313-6CF03-0AB0	6ES7 314-6BG03-0AB0	6ES7 314-6CG03-0AB0
Digital inputs						
Number of digital inputs	10	24	16	16	24	24
• of which, inputs usable for technological functions	8	12	12	12	16	16
Number of simultaneously controllable inputs						
• vertical installation - up to 40 °C, max.	5	12	8	8	12	12
• horizontal installation - up to 40 °C, max. - up to 60 °C, max.	10 5	24 12	16 8	16 8	24 12	24 12
Cable length						
• Cable length, shielded, max.	1,000 m; 100 m for technological functions	1,000 m; 100 m for technological functions	1,000 m; 100 m for technological functions	1,000 m; 100 m for technological functions	1,000 m; 100 m for technological functions	1,000 m; 100 m for technological functions
• Cable length unshielded, max.	600 m; For technological functions: No	600 m; For technological functions: No	600 m; For technological functions: No	600 m; For technological functions: No	600 m; For technological functions: No	600 m; For technological functions: No
• Technological functions - shielded, max. - unshielded, max.	100 m not allowed	100 m not allowed	100 m not allowed	100 m not allowed	50 m not allowed	50 m not allowed
• Standard-DI - shielded, max. - unshielded, max.	1,000 m 600 m	1,000 m 600 m	1,000 m 600 m	1,000 m 600 m	1,000 m 600 m	1,000 m 600 m
Input characteristic curve to IEC 1131, type 1	Yes	Yes	Yes	Yes	Yes	Yes
Input voltage						
• Rated value, DC	24 V	24 V	24 V	24 V	24 V	24 V
• for signal "0"	-3 to 5 V	-3 to 5 V	-3 to 5 V	-3 to 5 V	-3 to 5 V	-3 to 5 V
• for signal "1"	15 to 30 V	15 to 30 V	15 to 30 V	15 to 30 V	15 to 30 V	15 to 30 V
Input current						
• for signal "1", typ.	9 mA	9 mA	9 mA	9 mA	9 mA	9 mA
Input delay (for rated value of input voltage)						
• for standard inputs - programmable - Rated value	Yes; 0.1 / 0.3 / 3 / 15 ms 3 ms	Yes; 0.1 / 0.3 / 3 / 15 ms 3 ms	Yes; 0.1 / 0.3 / 3 / 15 ms 3 ms	Yes; 0.1 / 0.3 / 3 / 15 ms 3 ms	Yes; 0.1 / 0.3 / 3 / 15 ms 3 ms	Yes; 0.1 / 0.3 / 3 / 15 ms 3 ms
• for counter/technological functions - at "0" to "1", max.	48 µs	16 µs	16 µs	16 µs	8 µs	8 µs
Digital outputs						
Number of digital outputs	6	16	16	16	16	16
• of which, high-speed outputs	2	4	4	4	4	4
Cable length, shielded, max.	1,000 m	1,000 m	1,000 m	1,000 m	1,000 m	1,000 m
Cable length unshielded, max.	600 m	600 m	600 m	600 m	600 m	600 m
Short-circuit protection of the output	Yes; clocked electronically	Yes; clocked electronically	Yes; clocked electronically	Yes; clocked electronically	Yes; clocked electronically	Yes; clocked electronically
• Response threshold, typ.	1 A	1 A	1 A	1 A	1 A	1 A
Limitation of inductive shutdown voltage to	L+ (-48 V)	L+ (-48 V)	L+ (-48 V)	L+ (-48 V)	L+ (-48 V)	L+ (-48 V)
Lamp load, max.	5 W	5 W	5 W	5 W	5 W	5 W
Controlling a digital input	Yes	Yes	Yes	Yes	Yes	Yes

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Technical specifications (continued)

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Output voltage						
• for signal "1", min.	L+ (-0.8 V)	L+ (-0.8 V)	L+ (-0.8 V)	L+ (-0.8 V)	L+ (-0.8 V)	L+ (-0.8 V)
Output current						
• for signal "1" rated value	500 mA	500 mA	500 mA	500 mA	500 mA	500 mA
• for signal "1" permissible range, min.	5 mA	5 mA	5 mA	5 mA	5 mA	5 mA
• for signal "1" permissible range, max.	0.6 A	0.6 A	0.6 A	0.6 A	0.6 A	0.6 A
• for signal "1" minimum load current	5 mA	5 mA	5 mA	5 mA	5 mA	5 mA
• for signal "0" residual current, max.	0.5 mA	0.5 mA	0.5 mA	0.5 mA	0.5 mA	0.5 mA
Parallel switching of 2 outputs						
• for increased power	No	No	No	No	No	No
• for redundant control of a load	Yes	Yes	Yes	Yes	Yes	Yes
Switching frequency						
• with resistive load, max.	100 Hz	100 Hz	100 Hz	100 Hz	100 Hz	100 Hz
• with inductive load, max.	0.5 Hz	0.5 Hz	0.5 Hz	0.5 Hz	0.5 Hz	0.5 Hz
• on lamp load, max.	100 Hz	100 Hz	100 Hz	100 Hz	100 Hz	100 Hz
• of the pulse outputs, with resistive load, max.	2.5 kHz	2.5 kHz	2.5 kHz	2.5 kHz	2.5 kHz	2.5 kHz
Aggregate current of the outputs (per group)						
• vertical installation - up to 40 °C, max.	1.5 A	2 A	2 A	2 A	2 A	2 A
• horizontal installation - up to 40 °C, max. - up to 60 °C, max.	2 A 1.5 A	3 A 2 A	3 A 2 A	3 A 2 A	3 A 2 A	3 A 2 A
Load impedance range						
• lower limit	48 Ω	48 Ω	48 Ω	48 Ω	48 Ω	48 Ω
• upper limit	4 kΩ	4 kΩ	4 kΩ	4 kΩ	4 kΩ	4 kΩ
Analog inputs						
Number of analog inputs for voltage/current measurement		4			4	4
Number of analog inputs for resistance/temperature measurement		1			1	1
Cable length, shielded, max.		100 m			100 m	100 m
permissible input frequency for voltage input (destruction limit), max.		30 V; permanent			30 V; permanent	30 V; permanent
permissible input frequency for current input (destruction limit), max.		2.5 V; permanent			2.5 V; permanent	2.5 V; permanent
permissible input frequency for voltage input (destruction limit), max.		0.5 mA; permanent			0.5 mA; permanent	0.5 mA; permanent
permissible input current for current input (destruction limit), max.		50 mA; permanent			50 mA; permanent	50 mA; permanent
technical unit for temperature measurement, adjustable		Yes; Degrees Celsius / degrees Fahrenheit / Kelvin			Yes; Degrees Celsius / degrees Fahrenheit / Kelvin	Yes; Degrees Celsius / degrees Fahrenheit / Kelvin

SIMATIC S7-300

Central processing units

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Ordering data (continued)

Order No.

S7 SmartLabel

Software for automatic labeling of modules based on data of the STEP 7 project

2XV9 450-1SL01-0YX0

Labeling sheets for machine inscription

For 16-channel signal modules, DIN A4, for printing with laser printer;

10 units

petrol

light-beige

yellow

red

6ES7 392-2AX00-0AA0

6ES7 392-2BX00-0AA0

6ES7 392-2CX00-0AA0

6ES7 392-2DX00-0AA0

For 32-channel signal modules, DIN A4, for printing with laser printer;

10 units

petrol

light-beige

yellow

red

6ES7 392-2AX10-0AA0

6ES7 392-2BX10-0AA0

6ES7 392-2CX10-0AA0

6ES7 392-2DX10-0AA0

PROFIBUS DP bus connector RS 485

- With 90° cable outlet, max. transmission rate 12 Mbit/s

- without PG interface

- with PG interface

6ES7 972-0BA12-0XA0

6ES7 972-0BB12-0XA0

- With 90° cable outlet for FastConnect connection system, max. transmission rate 12 Mbit/s

- without PG interface

- with PG interface

6ES7 972-0BA50-0XA0

6ES7 972-0BB50-0XA0

- With axial cable outlet for SIMATIC OP, for connecting to PPI, MPI, PROFIBUS

6GK1 500-0EA02

PROFIBUS Fast Connect bus cable

Standard type with special design for quick mounting, 2-core, shielded, sold by the meter, max. delivery unit 1000 m, minimum ordering quantity 20 m

6XV1 830-0EH10

RS 485 repeater for PROFIBUS

Data transfer rate up to 12 Mbit/s; 24 V DC; IP20 housing

6ES7 972-0AA01-0XA0

PROFIBUS bus components

For establishing MPI/PROFIBUS communication

see Catalogs IK PI, CA 01