

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

S7-300

6ES7305-1BA80-0AA0

PS 305 REGULATED POWER SUPPLY

Used with the applicable 1-phase, 24 V DC (for S7-300 and ET 200M) configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens official manufacturer documentation

SIMATIC S7-300

Power supplies

Power supplies

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Overview

4



- Load current supplies for S7-300/ET 200M
- To convert the line voltage to the required operating voltage (24V DC)
- Output current 2 A, 5 A or 10 A

Technical specifications

Power supply, type	2 A	2 A	5 A	5 A	10 A
Order No.	6ES7 307-1BA00-0AA0	6ES7 305-1BA80-0AA0	6ES7 307-1EA00-0AA0	6ES7 307-1EA80-0AA0	6ES7 307-1KA01-0AA0
Order No. SIPLUS		6AG1 305-1BA80-2AA0 ¹⁾		6AG1 307-1EA80-2AA0 ¹⁾	
Input	Single-phase AC	DC voltage	Single-phase AC	Single-phase AC	Single-phase AC
Rated voltage V_{in} rated	120/230 V AC Set via switch on device	24 V ... 110 V DC Wide-range input	120/230 V AC Set via switch on device	120/230 V AC Set via switch on device	120/230 V AC Set via switch on device
Voltage range	85 ... 132 V AC/ 170 ... 264 V AC	16.8 ... 138 V DC	85 ... 132 V AC/ 170 ... 264 V AC	93 ... 132 V AC/ 187 ... 264 V AC	85 ... 132 V AC/ 170 ... 264 V AC
Overvoltage resistance	$2.3 \times V_{in \text{ rated}}$, 1.3 ms	154 V; 0.1 s	$2.3 \times V_{in \text{ rated}}$, 1.3 ms	$2.3 \times V_{in \text{ rated}}$, 1.3 ms	$2.3 \times V_{in \text{ rated}}$, 1.3 ms
Line buffering at $I_{out \text{ rated}}$	> 20 ms at $V_{in} = 93/187 \text{ V}$	> 10 ms at $V_{in \text{ rated}}$	> 20 ms at $V_{in} = 93/187 \text{ V}$	> 20 ms at $V_{in} = 93/187 \text{ V}$	> 20 ms at $V_{in} = 93/187 \text{ V}$
Rated line frequency; rated line-frequency range	50/60 Hz; 47 to 63 Hz	-	50/60 Hz; 47 Hz to 63 Hz	50/60 Hz; 47 Hz to 63 Hz	50/60 Hz; 47 Hz to 63 Hz
Rated current $I_{in \text{ rated}}$	0.9/0.6 A	2.7 ... 0.6 A (4 ... 0.9 A)	2.1/1.3 A	2.1/1.2 A	4.1/1.8 A
Switch-on current limit (+25 °C)	< 20 A, < 3 ms	< 20 A, < 10 ms	< 45 A, < 3 ms	< 45 A, < 3 ms	< 55 A, < 3 ms
I^2t	< 1.0 A ² s	< 5 A ² s	< 1.2 A ² s	< 1.8 A ² s (typ. 1.2 A ² s)	< 3.3 A ² s
Built-in line-side fuse	T 1.6 A/250 V (inaccessible)	T 6.3 A/250 V (inaccessible)	F 4 A/250 V (inaccessible)	T 3.15 A/250 V (inaccessible)	T 6.3 A/250 V (inaccessible)
Recommended miniature circuit-breaker (IEC 898) in the supply line	3 A, Characteristic C	At and above 10 A, C characteristic, suitable for DC	At and above 6 A, C characteristic	at and above 10 A, Characteristic C or at and above 6 A, Characteristic D	At and above 10 A, C characteristic
Output	Controlled, isolated DC voltage	Controlled, isolated DC voltage	Controlled, isolated DC voltage	Controlled, isolated DC voltage	Controlled, isolated DC voltage
Rated voltage $V_{out \text{ rated}}$	24 V DC	24 V DC	24 V DC	24 V DC	24 V DC
Total tolerance	± 3 %	± 3 %	± 3 %	± 3 %	± 3 %
• Static line smoothing	approx. 0.1 %	approx. 0.2 %	approx. 0.1 %	approx. ± 0.2 %	approx. 0.1 %
• Static load smoothing	approx. 0.2 %	approx. 0.4 %	approx. 0.2 %	approx. ± 0.4 %	approx. 0.5 %
Ripple content (clock frequency: approx. 50 kHz; approx. 70 kHz with 6ES7 307-1BA00-0AA0)	< 150 mV _{pp} (typ. < 20 mV _{pp})	< 150 mV _{pp} (typ. < 30 mV _{pp})	< 150 mV _{pp} (typ. 40 mV _{pp})	< 150 mV _{pp} (typ. 40 mV _{pp})	< 150 mV _{pp} (typ. 40 mV _{pp})
Spikes (bandwidth: 20 MHz)	< 240 mV _{pp} (typ. < 150 mV _{pp})	< 240 mV _{pp} (typ. < 150 mV _{pp})	< 240 mV _{pp} (typ. 90 mV _{pp})	< 240 mV _{pp} (typ. 90 mV _{pp})	< 240 mV _{pp} (typ. 100 mV _{pp})
Adjustment range	-	-	-	-	-

1) SIPLUS module for temperature range -25 ... +60°C and use under medial load (e.g. sulphur chloride atmosphere).

This SIPLUS power supply conforms with standards for electronic equipment used on rolling stock (EN 50155, temperature T1, category 1).

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