

SIEMENS

SIMATIC

S7-300

Product Information on SIMATIC S7-300 Automation

System Module Data

Product Information

Introduction

Scope of validity of the product information

This product information applies to the following power supply modules:

- Power supply module PS 307; 2A (6ES7307-1BA01-0AA0)
- Power supply module PS 307; 5A (6ES7307-1EA01-0AA0)
- Power supply module PS 307; 10A (6ES7307-1KA02-0AA0)

The power supply modules are characterized by their compact design and automatic voltage switching capacity. They replace the modules with the order numbers 6ES7307-1BA00-0AA0, 6ES7307-1EA00-0AA0 and 6ES7307-1KA01-0AA0.

Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

For additional information on industrial security measures that may be implemented, please visit (<https://www.siemens.com/industrialsecurity>).

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customers' exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed visit (<https://www.siemens.com/industrialsecurity>).

General technical data

Standards and approvals

EN 61131

The S7-300 automation system fulfills the requirements and criteria of the European standard EN 61131-2 (Programmable Controllers, Part 2: Equipment requirements and tests).

Power supply modules

Power supply module PS 307; 2 A; (6ES7307-1BA01-0AA0)

Order number

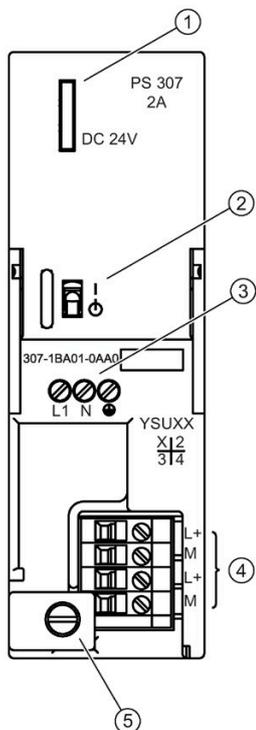
6ES7307-1BA01-0AA0

Properties

Properties of the PS 307; 2 A power supply module:

- Output current 2 A
- Output voltage 24 VDC; short circuit-proof, open circuit-proof
- Connection to singlephase AC mains (rated input voltage 120/230 VAC, 50/60 Hz)
- Safety isolation to EN 60 950
- May be used as load power supply

Wiring diagram of PS 307; 2 A



- ① Display for "Output voltage DC 24 V present"
- ② 24 VDC On/Off switch
- ③ Mains and protective conductor terminals
- ④ Terminals for 24 VDC output voltage
- ⑤ Strain-relief

Block diagram PS 307; 2 A

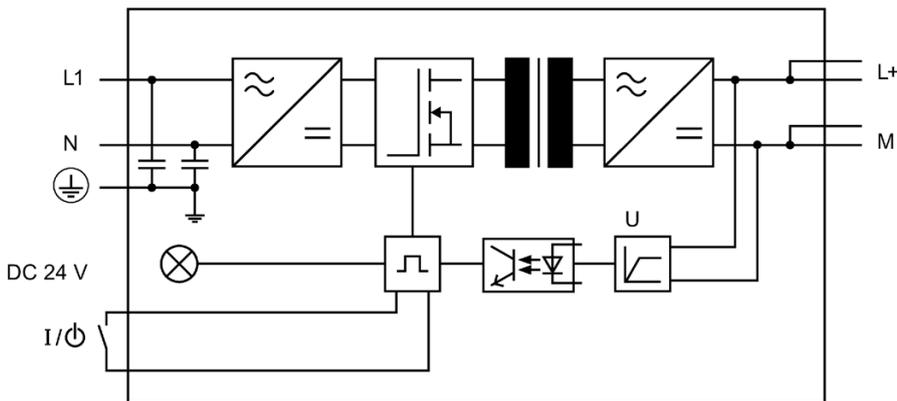


Figure 1 Block diagram of the PS 307; 2 A power supply module

Line protection

The mains supply of the PS 307; 2 A power supply module should be protected with a miniature circuit-breaker (for example Siemens 5SN1 series) of the following rating:

- Rated current at 230 VAC: 3 A
- Tripping characteristics (type): C.

Reaction to atypical operating conditions

Table 1 Reaction to atypical operating conditions of the PS 307; 2 A power supply module

If then ...	Display DC 24 V
the output circuit is overloaded: • $I > 2.6 \text{ A}$ (dynamic) • $2 \text{ A} < I \leq 2.6 \text{ A}$ (static)	Voltage dip, automatic voltage recovery Voltage drop, reduction of service life	flashes
short-circuit at the output	Output voltage 0 V; automatic voltage recovery after short-circuit is eliminated	off
overvoltage on primary side	risk of destruction	-
undervoltage on primary side	Automatic shutdown; automatic voltage recovery	off

Technical specifications of PS 307; 2 A (6ES7307-1BA01-0AA0)

Technical specifications	
Dimensions and weight	
Dimensions W x H x D (mm)	40 x 125 x 120
Weight	ca. 400 g
Input parameters	
Input voltage • Rated value	120/230 VAC (automatic switching)
Mains frequency • Rated value • Permitted range	50 Hz or 60 Hz 47 Hz to 63 Hz
Rated input current • at 230 V • at 120 V	0.5 A 0.9 A
Inrush current (at 25 °C)	22 A
I^2t (at inrush current)	1 A ² s

Technical specifications	
Output parameters	
Output voltage • Rated value • Permitted range • Rampup time	24 VDC 24 V \pm 3 %, open circuit-proof max. 2.5 s
Output current • Rated value	2 A, parallel wiring is available
Short-circuit protection	electronic, non-latching 1.1 to 1.3 x I _N
Residual ripple	max. 150 mV _{pp}
Characteristics	
Safety class to IEC 536 (DIN VDE 0106, Part 1)	I, with protective conductor
Isolation rating • Rated isolation voltage (24 V to L1) • Test voltage	AC 250 V DC 4200 V
Safety isolation	SELV circuit
Buffering of power supply failure (at 93 V or 187 V) • Repeat rate	Min. 20 ms min 1 s
Efficiency	84 %
Power consumption	57 W
Power loss	typ. 9 W
Diagnostics	
"Output voltage present" display	yes, green LED

Power supply module PS 307; 5 A; (6ES7307-1EA01-0AA0)

Order number

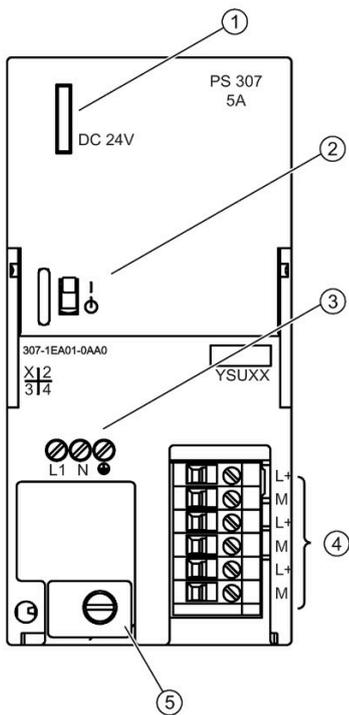
6ES7307-1EA01-0AA0

Properties

Properties of the PS 307; 5 A power supply module:

- Output current 5 A
- Output voltage 24 VDC; short circuit-proof, open circuit-proof
- Connection to singlephase AC mains
(rated input voltage 120/230 VAC, 50/60 Hz)
- Safety isolation to EN 60 950
- May be used as load power supply

Block diagram of PS 307; 5 A



- ① Display for "Output voltage DC 24 V present"
- ② Terminals for 24 VDC output voltage
- ③ Strain-relief
- ④ Mains and protective conductor terminals
- ⑤ 24 VDC On/Off switch

Block diagram PS 307; 5 A

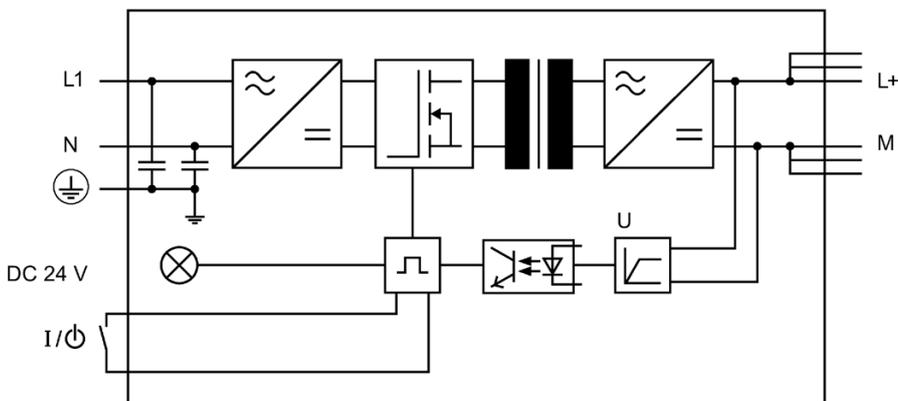


Figure 2 Block diagram of the PS 307; 5 A power supply module

Line protection

The mains supplies of the PS 307; 5 A power supply module should be protected with a miniature circuit-breaker (for example Siemens 5SN1 series) of the following rating:

- Rated current at 230 VAC: 6 A
- Tripping characteristics (type): C.

Reaction to atypical operating conditions

Table 2 Reaction to atypical operating conditions of the PS 307; 5 A power supply module

If then ...	DisplayDC 24 V
the output circuit is overloaded: <ul style="list-style-type: none"> $I > 6.5 \text{ A}$ (dynamic) $5 \text{ A} < I \leq 6.5 \text{ A}$ (static) 	Voltage dip, automatic voltage recovery Voltage drop, reduction of service life	flashes
short-circuit at the output	Output voltage 0 V; automatic voltage recovery after short-circuit is eliminated	off
overvoltage on primary side	risk of destruction	-
undervoltage on primary side	Automatic shutdown; automatic voltage recovery	off

Technical specifications of PS 307; 5 A (6ES7307-1EA01-0AA0)

Technical specifications	
Dimensions and weight	
Dimensions W x H x D (mm)	60 x 125 x 120
Weight	ca. 600 g
Input parameters	
Input voltage <ul style="list-style-type: none"> Rated value 	120/230 VAC (automatic switching)
Mains frequency <ul style="list-style-type: none"> Rated value Permitted range 	50 Hz or 60 Hz 47 Hz to 63 Hz
Rated input current <ul style="list-style-type: none"> at 120 V at 230 V 	2.3 A 1.2 A
Inrush current (at 25 °C)	20 A
I^2t (at inrush current)	1.2 A ² s
Output parameters	
Output voltage <ul style="list-style-type: none"> Rated value Permitted range 	24 VDC 24 V \pm 3 %, open circuit-proof
<ul style="list-style-type: none"> Rampup time 	max. 2.5 s
Output current <ul style="list-style-type: none"> Rated value 	5 A, parallel wiring is available
Short-circuit protection	electronic, non-latching 1.1 to 1.3 $\times I_N$
Residual ripple	max. 150 mV _{pp}
Characteristics	
Safety class to IEC 536 (DIN VDE 0106, Part 1)	I, with protective conductor
Isolation rating <ul style="list-style-type: none"> Rated isolation voltage (24 V to L1) Test voltage 	250 VAC 4200 VDC
Safety isolation	SELV circuit
Buffering of power supply failure (at 93 V or 187 V) <ul style="list-style-type: none"> Repeat rate 	Min. 20 ms min 1 s
Efficiency	87 %
Power consumption	138 W
Power loss	typ. 18 W
Diagnostics	
"Output voltage present" display	yes, green LED

Power supply module PS 307; 10 A; (6ES7307-1KA02-0AA0)

Order number

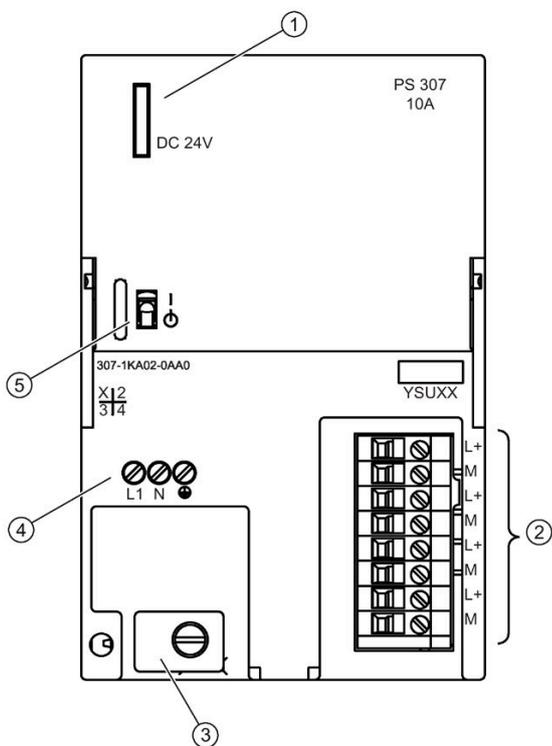
6ES7307-1KA02-0AA0

Properties

Properties of the PS 307; 10 A power supply module:

- Output current 10 A
- Output voltage 24 VDC; short circuit-proof, open circuit-proof
- Connection to singlephase AC mains (rated input voltage 120/230 VAC, 50/60 Hz)
- Safety isolation to EN 60 950
- May be used as load power supply

Block diagram of PS 307; 10 A



- ① Display for "Output voltage DC 24 V present"
- ② Terminals for 24 VDC output voltage
- ③ Strain-relief
- ④ Mains and protective conductor terminals
- ⑤ 24 VDC On/Off switch

Technical specifications	
Output parameters	
Output voltage <ul style="list-style-type: none"> • Rated value • Permitted range • Rampup time 	24 VDC 24 V \pm 3 %, open circuit-proof max. 2.5 s
Output current <ul style="list-style-type: none"> • Rated value 	10 A, parallel wiring is available
Short-circuit protection	electronic, non-latching 1.1 to 1.3 x I _N
Residual ripple	max. 150 mV _{pp}
Characteristics	
Safety class to IEC 536 (DIN VDE 0106, Part 1)	I, with protective conductor
Isolation rating <ul style="list-style-type: none"> • Rated isolation voltage (24 V to L1) • Test voltage 	AC 250 V DC 4200 V
Safety isolation	SELV circuit
Buffering of power supply failure (at 93 V or 187 V) <ul style="list-style-type: none"> • Repeat rate 	Min. 20 ms min 1 s
Efficiency	90 %
Power consumption	267 W
Power loss	typ. 27 W
Diagnostics	
"Output voltage present" display	yes, green LED

Dimensional drawings

Dimensional drawings of the power supply modules

Introduction

This appendix contains the dimensional drawings of the most important components of an S7-300. The specified dimensions are required to determine the dimensions of an S7-300 configuration. You need to take the dimensions of an S7-300 configuration into account when installing an S7-300 in cabinets, contact chambers, etc.

PS 307; 2 A (6ES7307-1BA01-0AA0)

The figure below shows the dimensional drawing of the PS 307; 2 A power supply module.

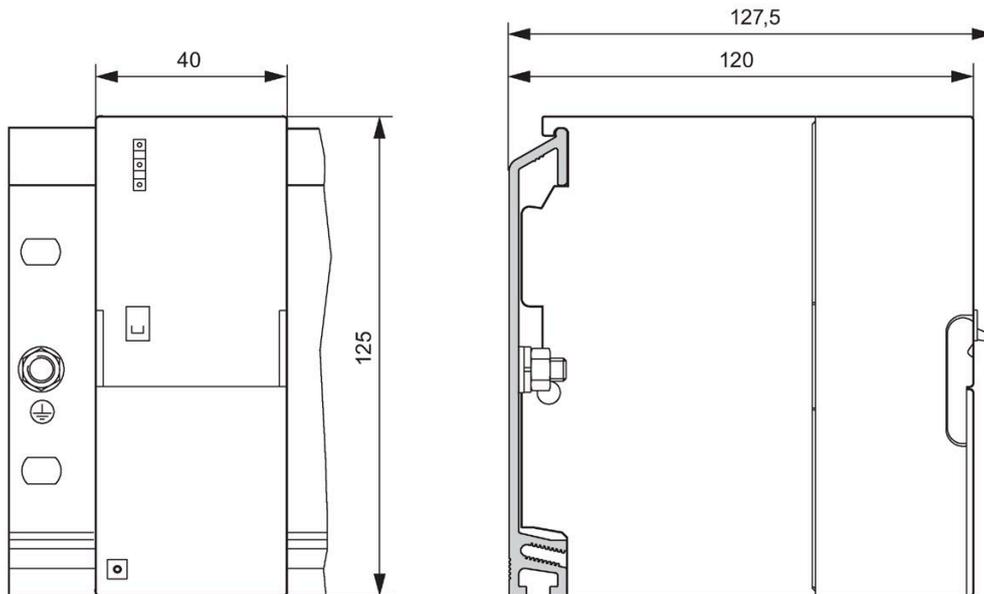


Figure 4 Power supply module PS 307; 2 A

PS 307; 5 A (6ES7307-1EA01-0AA0)

The figure below shows the dimensional drawing of the PS 307; 5 A power supply module.

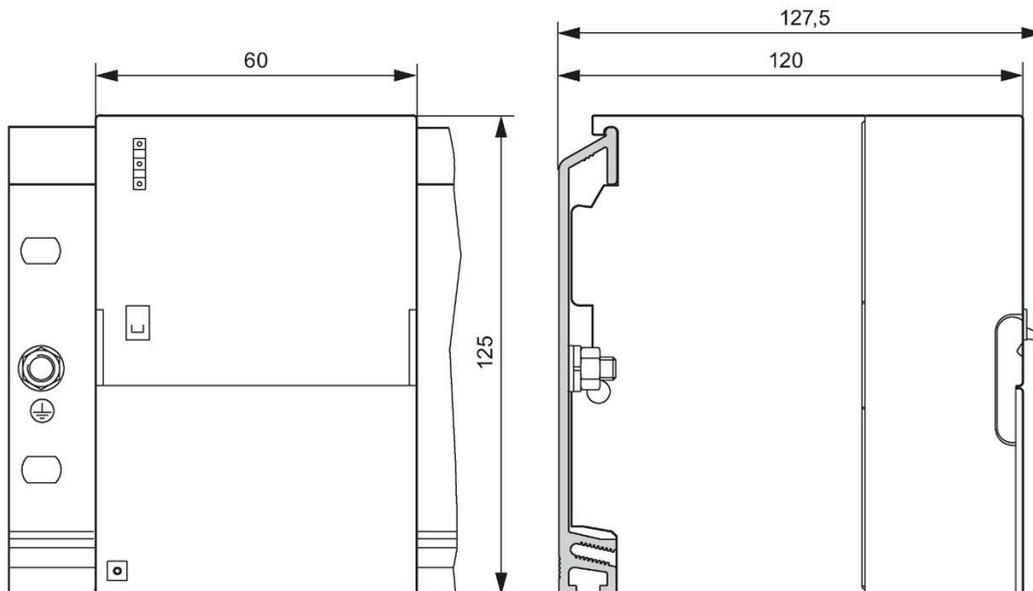


Figure 5 Power supply module PS 307; 5 A

PS 307; 10A (6ES7307-1KA02-0AA0)

The figure below shows the dimensional drawing of the PS 307; 10 A power supply module.

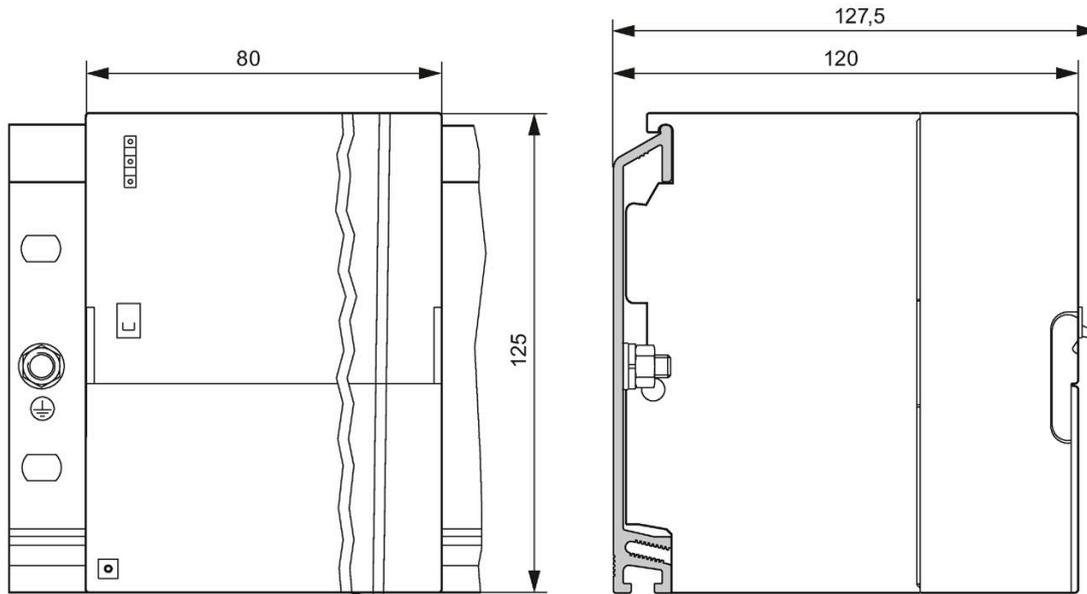


Figure 6 Power supply module PS 307; 10 A

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