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Data sheet 6ES7305-1BA80-0AA0

SIMATIC PS305/DC24-110V/24V/2A/OUTDOOR
SIMATIC S7-300 with Regulated power supply PS305 input: 24-110 V DC output: 24 V DC/2 A



Figure similar

Input	
Input	DC voltage
supply voltage	
• at DC	24 ... 110 V
input voltage	
• at DC	16.8 ... 138 V
Wide-range input	Yes
Overvoltage resistance	154 V; 0.1 s
Mains buffering	at Vin rated
Mains buffering at Iout rated, min.	10 ms; at Vin rated
input current	
• at rated input voltage 24 V	2.4 A
• at rated input voltage 110 V	0.6 A
Switch-on current limiting (+25 °C), max.	20 A
duration of inrush current limiting at 25 °C	
• maximum	10 ms
I^2t, max.	5 $A^2 \cdot s$

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Built-in incoming fuse	T 6.3 A/250 V (not accessible)
Protection in the mains power input (IEC 898)	Recommended miniature circuit breaker: from 10 A characteristic C, suitable for DC

Output

Output	Controlled, isolated DC voltage
Rated voltage Vout DC	24 V
Total tolerance, static ±	3 %
Static mains compensation, approx.	0.2 %
Static load balancing, approx.	0.4 %
Residual ripple peak-peak, max.	150 mV
Residual ripple peak-peak, typ.	30 mV
Spikes peak-peak, max. (bandwidth: 20 MHz)	240 mV
Spikes peak-peak, typ. (bandwidth: 20 MHz)	150 mV
product function output voltage adjustable	No
Output voltage setting	-
Status display	Green LED for 24 V OK
On/off behavior	No overshoot of Vout (soft start)
Startup delay, max.	3 s
Voltage rise, typ.	5 ms
Rated current value Iout rated	2 A
Current range	0 ... 3 A
• Note	3 A up to +60°C at Vin > 24 V
supplied active power typical	48 W
short-term overload current	
• on short-circuiting during the start-up typical	9 A
• at short-circuit during operation typical	9 A
duration of overloading capability for excess current	
• on short-circuiting during the start-up	270 ms
• at short-circuit during operation	270 ms
Parallel switching for enhanced performance	Yes
Numbers of parallel switchable units for enhanced performance	2

Efficiency

Efficiency at Vout rated, Iout rated, approx.	75 %
Power loss at Vout rated, Iout rated, approx.	16 W

Closed-loop control

Dynamic mains compensation (Vin rated ±15 %), max.	0.3 %
Dynamic load smoothing (Iout: 50/100/50 %), Uout ± typ.	2.5 %
Load step setting time 50 to 100%, typ.	2.5 ms
Load step setting time 100 to 50%, typ.	2.5 ms

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setting time maximum	5 ms
Protection and monitoring	
Output overvoltage protection	Additional control loop, shutdown at approx. 30 V, automatic restart
Current limitation	3.3 ... 3.9 A
property of the output short-circuit proof	Yes
Short-circuit protection	Electronic shutdown, automatic restart
enduring short circuit current RMS value	
• maximum	2 A
Overload/short-circuit indicator	-
Safety	
Primary/secondary isolation	Yes
galvanic isolation	Safety extra low output voltage Vout according to EN 60950-1 and EN 50178, creepage distances and clearances > 5 mm
Protection class	Class I
Degree of protection (EN 60529)	IP20
Approvals	
CE mark	Yes
UL/cUL (CSA) approval	UL-Listed (UL 508), File E143289, CSA (CSA C22.2 No. 142)
Explosion protection	-
certificate of suitability NEC Class 2	No
FM approval	-
CB approval	No
Marine approval	-
EMC	
Emitted interference	EN 55011 Class A
Supply harmonics limitation	not applicable
Noise immunity	EN 61000-6-2
environmental conditions	
ambient temperature	
• during operation	-25 ... +70 °C
— Note	with natural convection
• during transport	-40 ... +85 °C
• during storage	-40 ... +85 °C
Humidity class according to EN 60721	Climate class 3K5, transient condensation permitted
Mechanics	
Connection technology	screw-type terminals
Connections	
• Supply input	L+1, M1, PE: 1 screw terminal each for 0.5 ... 2.5 mm² single-core/finely stranded
• Output	L+, M: 3 screw terminals each for 0.5 ... 2.5 mm²

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• Auxiliary	-
width of the enclosure	80 mm
height of the enclosure	125 mm
depth of the enclosure	120 mm
required spacing	
• top	50 mm
• bottom	50 mm
• left	0 mm
• right	0 mm
Weight, approx.	0.57 kg
product feature of the enclosure housing can be lined up	Yes
Installation	Can be mounted onto S7 rail
mechanical accessories	Mounting adapter for standard mounting rail (6ES7390-6BA00-0AA0)
MTBF at 40 °C	964 506 h
other information	Specifications at rated input voltage and ambient temperature +25 °C (unless otherwise specified)

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