

B&R Power Supply PS340

1. General Information

Features of the B&R power supply PS340:

- Input: 3 x 400 - 500 VAC
- Output: 24 - 28 VDC / 960 W
- Power boost up to 1080 W
- No switch-off when there is an overload
- Ideal for parallel operation
- Simple over-current protection
- Robust mechanics and EMC
- DIN rail mounting, unit holds even with vibrations or lateral pressure
- Clearly arranged and user-friendly
- Large, robust screw terminals
- Closed metal housing
- Fine ventilation grid

2. Order Data

Model Number	Short Description	Image
0PS340.1	24VDC power supply, 3 phases, 40 A, Input 400..500VAC (3 phases), wide range, DIN rail mounting	

Table 1: PS340 - Order data

3. Technical Data

See also data sheet "Technical data", which is delivered with the power supply.

Name	PS340
General Information	
C-UL-US Listed	Yes
Input	
Input Voltage, Nominal	3 x 400 - 500 VAC, $\pm 15\%$, 47 - 63 Hz, suitable for IT power systems
Admissible Limits Continuous operation Short-term (1 min) at 24 V / 40 A	340 - 575 VAC 300 - 620 VAC
Nominal Input Current	3 x 3.0 A
Starting Current	<30 A
Starting current limitation	using a fixed resistor (23 Ω , no NTC), which is bypassed in operation; Limitation is also effective immediately with warm devices.
Fuse Protection Internal External	No internal fusing External fuse protection using three standard thermomagnetic circuit breakers (3 x 10 A, B-type), which are also used to protect the supply lines to the device.
Fuse Loading	3 A ² s (fused integrally)
Harmonic Current Emissions	According to EN 61000-3-2
Transient Immunity	Active transient filter incorporated. Therefore resistant to transients acc. to VDE 0160 / W2 (1300 V / 1.3 ms), over <i>entire</i> load range.
Hold-Up Time	>15 ms at 400 VAC, 24 VDV / 40 A
Output	
Output Voltage	24 - 28 VDC adjustable by (covered) front potentiometer Preset: 24,5 V $\pm 0.5\%$ Adjustable range guaranteed
Voltage Regulation	<2% overall
Residual Ripple	<50 mV _{pp} (20 MHz bandwidth, 50 Ω measurement)
Over-Voltage Protection	32 V $\pm 10\%$: Switches to hiccup mode
Output Noise Suppression	Radiated EMI values below EN 61000-6-3 (Class B) even with long, unshielded output cables
Continuous loading $T_{amb}=0^{\circ}\text{C} - 60^{\circ}\text{C}$ $T_{amb}=0^{\circ}\text{C} - 45^{\circ}\text{C}$	With convection cooling 24 V / 40 A (960 W) respectively 28 V / 35 A (980 W) 24 V / 45 A (1080 W) respectively 28 V / 38 A (1064 W) Short-term (<1 min.) also at 60°C
Protection Functions	Output is protected against short-circuit, open circuit and overload
Derating	24 W/K (at $T_{amb}=+60^{\circ}\text{C}$ to $+70^{\circ}\text{C}$)
Parallel Operation	Yes <ul style="list-style-type: none"> Using a jumper, toggling between single and parallel operation is possible, without having to open the device. In parallel operation, uniform current distribution is achieved using a "soft" characteristic curve (passive balancing).

Table 2: PS340 - Technical data

Name	PS340
Power Back Immunity	35 V
Operation Indicator	<ul style="list-style-type: none"> The green LED is lit if $U_A > U_S$, whereby U_S approx. 2 V is under the configured output voltage (24 - 28 V). Red LED is lit, if $U_A < U_S$
Efficiency, Reliability	
Efficiency	Typ. 92.5% (400 VAC, 24 VDC / 40 A)
Loss	Typ. 78 W (400 VAC, 24 VDC / 40 A)
MTBF (Reliability)	305,000 h (24 VDC / 40 A, 400 VAC, $T_U = +40^\circ\text{C}$)
Life cycle (electrolytic capacitors)	The unit exclusively uses long-life electrolytic capacitors, specified for $+105^\circ\text{C}$. High reliability and lifespan because there are only six aluminum electrolytic capacitors and no small aluminum electrolytic capacitors used.
Start / overload behavior	
Startup delay	Typ. 500 ms
Startup time	<100 ms (40 A, 20,000 μF)
Overload Behavior	Overload design: No switch-off when there is an overload, no hiccup (see "Output characteristics" on Page 6)
Advantages	<ul style="list-style-type: none"> Higher short-circuit current through straight characteristic curve: Power supply starts securely even with heavy or demanding loads (capacitors, DC/DC converters, motors). No "sticking" as can occur with fold-back characteristics. No switch-off, therefore longer overload is also possible.
Connection	
Terminals	Robust screw terminals
Connection Cross Section Input Output	Solid: 1.5 - 6 mm ² / flexible: 1.5 - 4 mm ² Solid: 0.5 - 16 mm ² / flexible: 0.5 - 10 mm ²
Load Capacity	40 A for each terminal (max. according to UL) and/or 56 A (max. according to VDE)
Grid Input Output	Distance between adjacent connectors: 9.52 mm 10.16 mm (minus terminal doubled)
Special Features	<ul style="list-style-type: none"> All terminals are easy to reach on the front panel of the device. Inputs and outputs are separated from each other and therefore should not be mixed up. PVC insulated cables can be used for all connections; heat protection is not necessary.
Operational Conditions	
Environmental Temperature During Operation	0°C to +70°C (starting at 60 °C derating)
Relative Humidity During Operation	Max. 95%, non-condensing
Storage and Transport Conditions	
Storage Temperature	-25°C to +85°C
Relative Humidity During Storage	Max. 95%, non-condensing
Transport Temperature	-25°C to +85°C
Relative Humidity During Transport	Max. 95%, non-condensing

Table 2: PS340 - Technical data (cont.)

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Name	PS340
Mechanical Characteristics	
Dimensions (W x H x D [mm])	275 x 124 x 117 (+ rail)
Weight	3300 g
Housing	Robust sealed metal housing with fine ventilation grid (◇ 3.5 mm, IP20)
Installation	Mounting on DIN rail (TS35/7.5 or TS35/15, 1 to 1.5 mm thick), therefore: <ul style="list-style-type: none">• Simple snap-on system• Sits safely and firmly on the DIN rail• No tools required for removal
Ventilation / Cooling	Above/below 70 mm recommended Left/right 25 mm recommended
High Power Density	203 W for each liter of housing volumes

Table 2: PS340 - Technical data (cont.)

Specifications are valid for 3 x 400 VAC input voltage, +25°C ambient temperature, and 5 min run-in time unless otherwise stated. They are subject to change without prior notice.

4. Dimensions

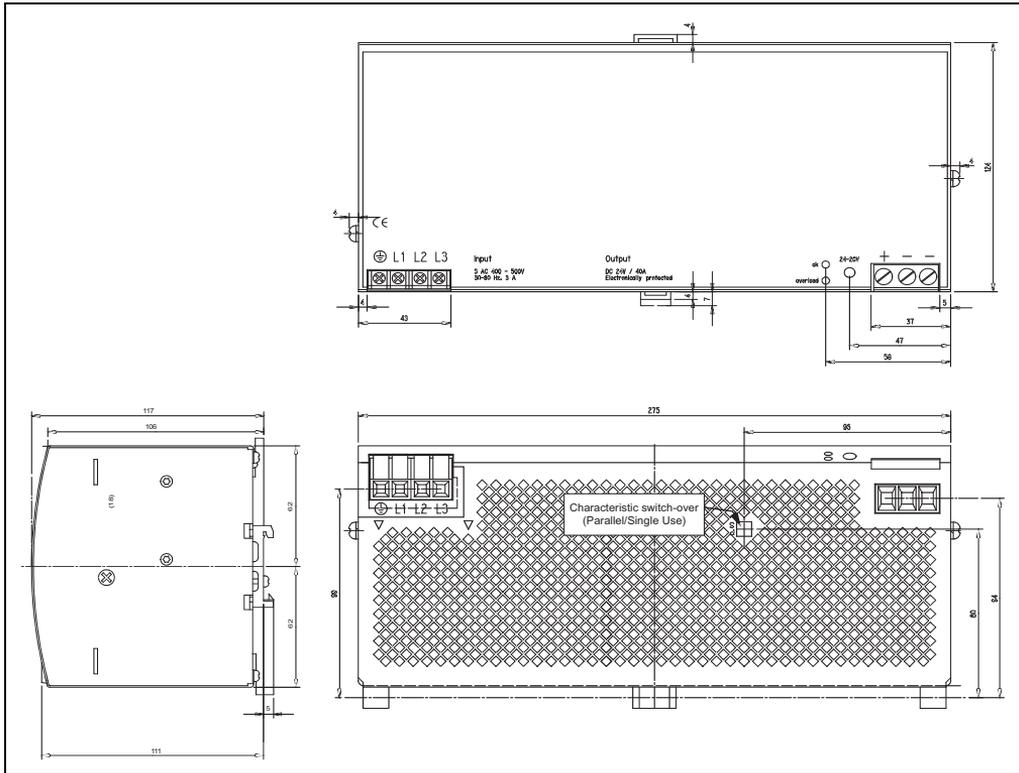


Figure 1: PS340 - Dimensions

5. Installation

See also the basic installation manual "Installation and Operation". The basic installation manual is delivered with each power supply.

6. Diagrams

6.1 Output characteristics

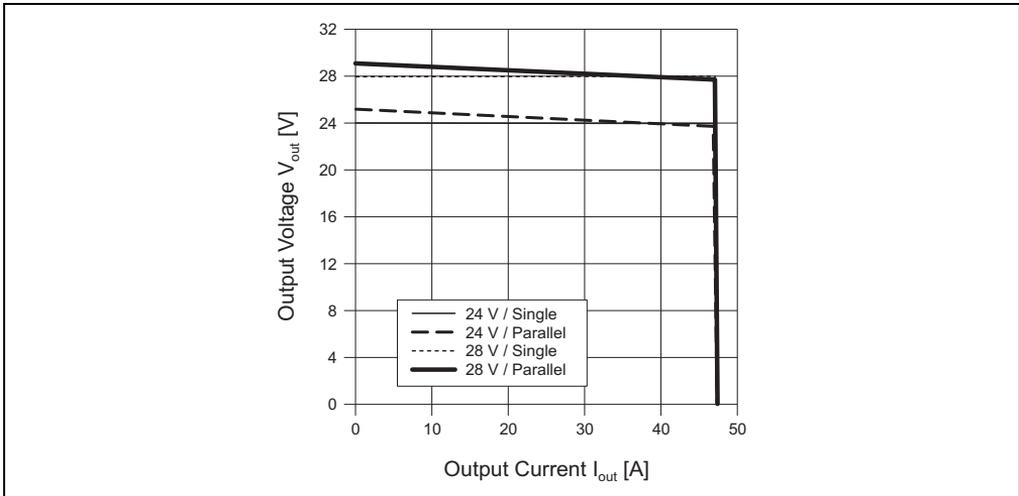


Figure 2: PS340 - Output characteristics (typ.)

6.2 Efficiency

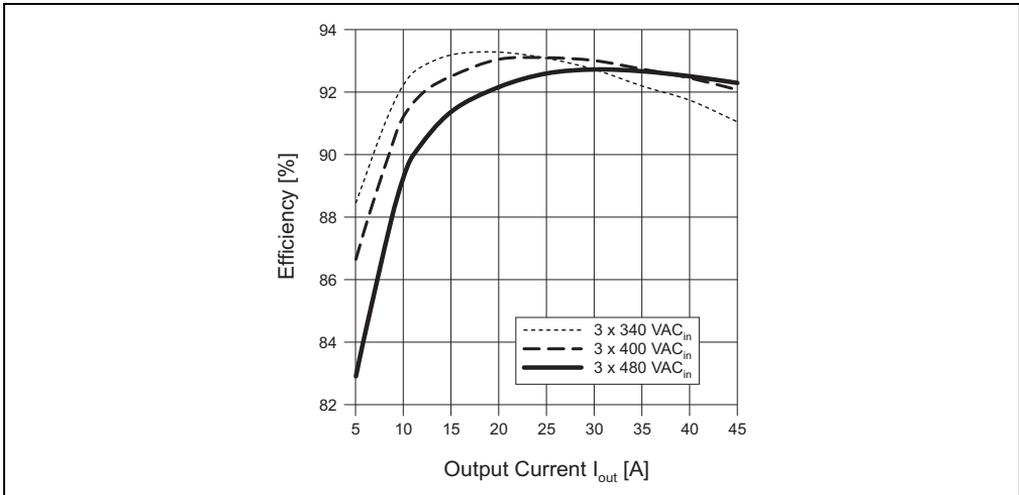


Figure 3: PS340 - Efficiency (typ.)

6.3 Hold-up time

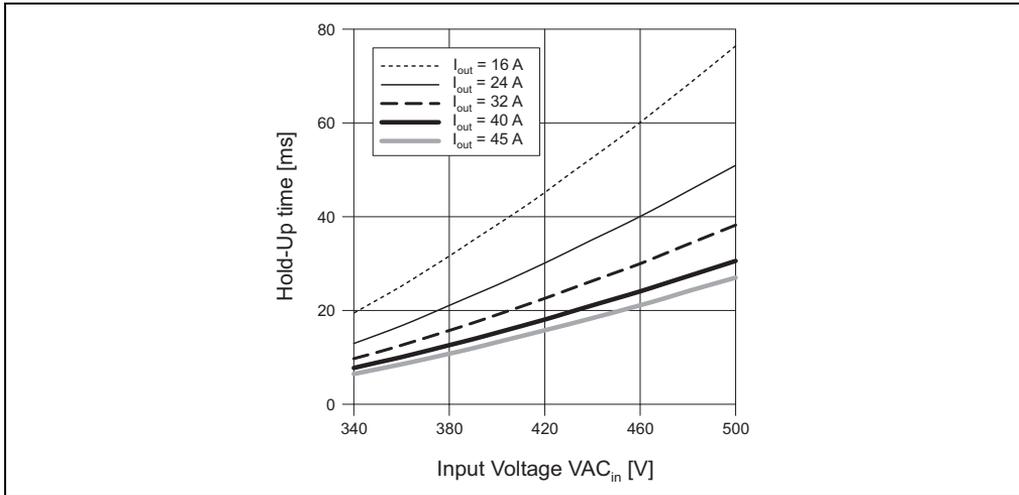


Figure 4: PS340 - Hold-up time (min., at $V_{out} = 24\text{ V}$)

7. Standards and Certifications

Electromagnetic emissions (EME)	EN 61000-6-3 (also includes EN 61000-6-4) Class B (EN 55011, EN 55022) incl. Annex A through noise suppression
Immunity to disturbances Static discharge (ESD) Electromagnetic radiated fields Burst, coupled to: AC _{in} lines DC _{out} lines Surge transients Differential (L ₁ ->PE) Common mode (L ₁ ->L ₂ /N) Conducted noise immunity Mains breaks Transient immunity	EN 61000-6-2 (also includes EN 61000-6-1) EN 61000-4-2, Level 4 (withstands 8 kV direct discharge, 15 kV air discharge) EN 61000-4-3, Level 3 (10 V/m), ENV 50204 (10 V/m) EN 61000-4-4, Level 4 (4 kV) EN 61000-4-4, Level 3 (2 kV) EN 61000-4-5, Installation class 4 (4 kV) (SLD2.5: class 3 (2 kV)) EN 61000-4-5, Installation class 4 (2 kV) (SLD2.5: class 3 (1 kV)) EN 61000-4-6, Level 3 (10 V, 150 kHz - 80 MHz) EN 61000-4-11 Transient resistance according to VDE 0160 / W2 over entire load range
Safe low voltage	SELV (EN 60950, VDE0100/T.410), PELV (EN 50178)
Protection class/degree	Class I (EN 60950) / IP20 (EN 60529)
The power supply PS340 complies with all major safety certifications for EU (EN 60950, EN 60204-1), USA (UL 1950, UL508 LISTED), Canada (CUL/CSA-C22.2 No 60950), CB Scheme (IEC 60950), and meets the European Standard for electronic equipment in electrical power installations EN 50178.	
    	

Table 3: PS340 - Standards and certifications