

# POWER 1AC 24-20 ECO

## Single Phase DIN Rail Power Supply 24V DC / 20A - Eco Series



### Basic Function DIN rail Power Supply with Ultra Slim Dimensions

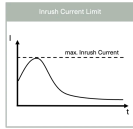
POWER 1AC 24-20 ECO is a switched-mode power supply from the SALZ Automation ECO series are ideally suited for most applications in industry as well as in commercial and residential buildings. The product can be used for simple machines and applications where extreme compactness is required. POWER 1AC 24-20 ECO stands out with its compact design. This single-phase power supply with a rated power of 480 W has an input voltage of 100 ... 240 V AC ( $\pm 10\%$ )/ 140 ... 340V DC ( $\pm 10\%$ ) and an output voltage of 24V DC/20A. The input is located at the bottom of the device and the outputs at the top. The output of the power supply can be regulated using the potentiometer situated at the front of the product. The product has a power boost of 150% for the first 5 seconds as well as integrated overload, short circuit, overvoltage, and undervoltage protection. The metal housing is mounted by snapping onto a DIN rail. Access to additional documentation is made easy via a QR code on the device. Due to the multitude of existing product standards and certifications, it is suitable for international use.

ORDER DETAILS

**Function:** Primary-switched/Regulated power supply, Input: 1-phase 100 ... 240 V AC ( $\pm 10\%$ )/ 140 ... 340V DC ( $\pm 10\%$ ), Output: 24 V DC/20 A, 480W, Power Boost: 150% for 5 sec.  
**SKU/Order No.:** SA-PE1A-24-20-00

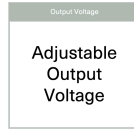


# Features



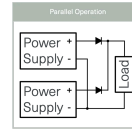
## Built-in Inrush Current Limiting

Thermistor (POWER 1AC 24-5), thyristor technique (POWER 1AC 24-10) or active power relay circuit (POWER 1AC 24-20 / 48-10) is used in the inrush current limiting circuit.



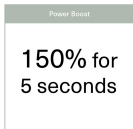
## Adjustable Output Voltage with Potentiometer

To increase an output voltage, turn a built-in potentiometer clockwise. To decrease the output voltage, turn it counterclockwise.



## Parallel Operation

To increase availability you can use the Power Supply in parallel operation mode. Please use our POWER DIODE modules in this application.



## Power Boost 150%

A power boost of 150% for 5 seconds means that the power supply can temporarily deliver 150% of its rated output power for a short duration, specifically for 5 seconds. This feature is useful in applications where the connected load occasionally requires more power than the normal operating conditions.



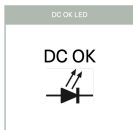
## Ultra Slim Dimensions

To save space in your control cabinet, our power supplies are designed to reduce size.



## Cost Effective

Perfect price-performance ratio with long lifetime

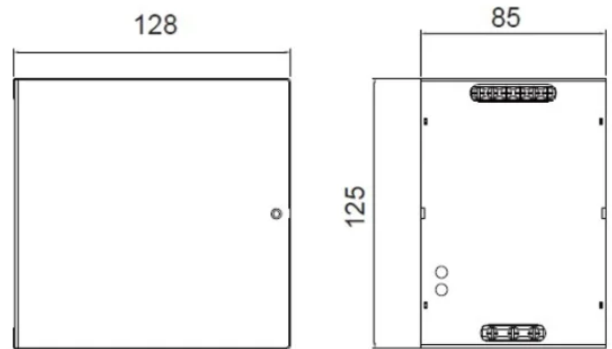


## DC OK LED

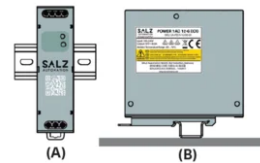
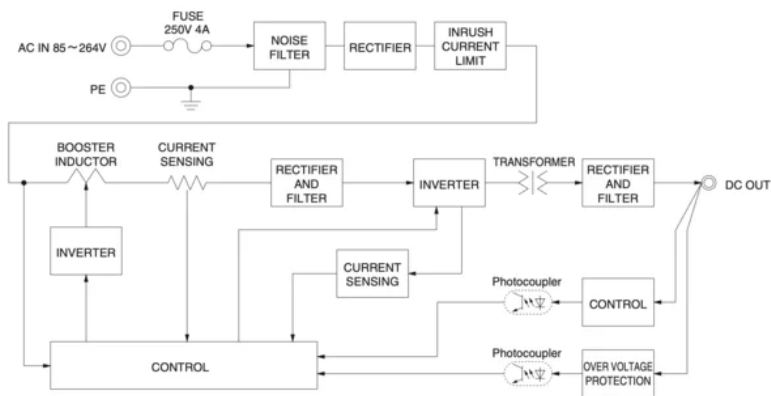
If output voltage is decreasing the DC OK LED turns off. In "normal" output voltage condition the LED is on.

# Mechanical Dimensions

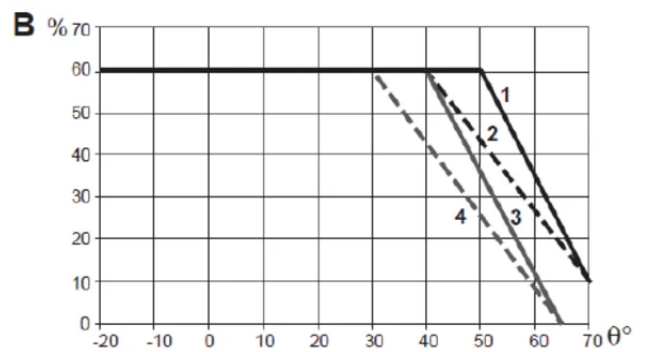
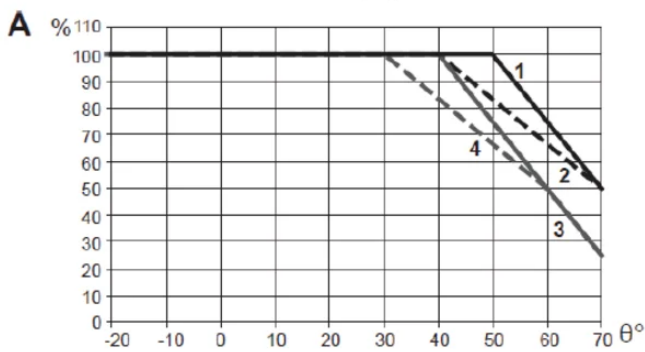
• POWER 1AC 24-20 ECO x 1

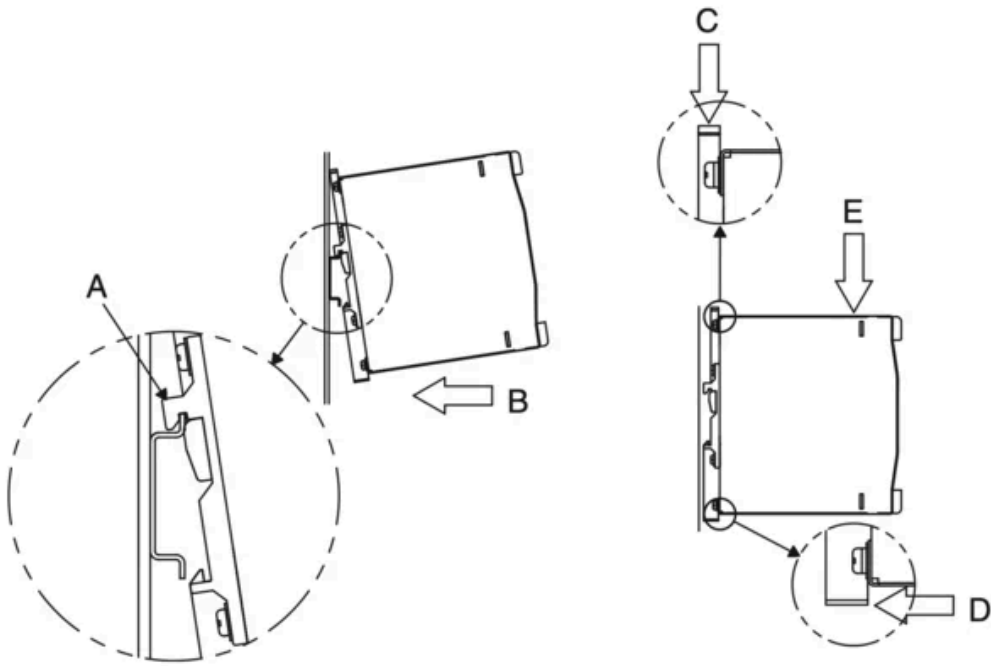


# Drawings



$\theta^{\circ}$ : Surrounding air temperature  
 %: Percentage of maximum load  
 1:  $\triangle$   $\leq$  2000 m (6561 ft),  $\approx$  230 V /  $\approx$  325 V  
 2:  $\triangle$   $\leq$  2000 m (6561 ft),  $\approx$  115 V /  $\approx$  162 V  
 4:  $\triangle$   $\leq$  5000 m (16404 ft),  $\approx$  230 V /  $\approx$  325 V (IEC/UL 62368-1)  
 5:  $\triangle$   $\leq$  5000 m (16404 ft),  $\approx$  115 V /  $\approx$  162 V (IEC/UL 62368-1)





DIN-rail mounting of POWER SUPPLIES

## Technical Data

### Input Data

Input Voltage Range AC	100 ... 240 V AC ( $\pm 10\%$ )
Input Voltage Range DC	140 ... 340V DC ( $\pm 10\%$ )
Input Current (typ.)	2.4 A (230 V AC), 4.85 A (115 V AC)
Frequency	47 ... 63 Hz
Efficiency (typ.)	92 %
Power Factor (cos $\varphi$ )	PF>0.98 (115VAC), PF>0.94 (230VAC)
Inrush Current (typ.)	35 A (230 V AC), 20 A (115 V AC)

### Output Data

Output Voltage	24 V DC
Output Voltage Range	21.6 ... 27.6 V DC
Output Current	20 A
Line Regulation	$\pm 0.5\%$
Load Regulation	$\pm 1\%$
Ripple (typ.)	150mVp-p
Ripple Noise (typ.)	150mVp-p
Power Output	480W
Power Boost	150% for 5 sec.

### Protection Circuit

Overcurrent Protection	Works over 105 ... 160% of rated current and recovers automatically
Overvoltage protection	29 ... 33 V
DC OK Signalling	LED (Green)
Over Temperature Protection	Shut Down, Auto Recovery

### Isolation

Input/Output Isolation (at room temperature)	AC 3,000 V 1 minute, Cutoff current = 10 mA, DC 500 V 50 M $\Omega$ min
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Input/PE Isolation (at room temperature)	AC 2,000 V 1 minute, Cutoff current = 10 mA, DC 500 V 50 MΩ min
Output/PE Isolation (at room temperature)	AC 500 V 1 minute, Cutoff current = 100 mA, DC 500 V 50 MΩ min
Output/RC, DC OK Isolation (at room temperature)	AC 500 V 1 minute, Cutoff current = 100 mA, DC 500 V 50 MΩ min

### Ambient Condition

Ambient Temperature (operating)	Operating -20°C ... 70°C, > 50°C de-rating, 50% at 70°C
Ambient Temperature (start-up type tested)	-40 °C
Ambient Temperature (storage/transport)	-40°C ... +85°C
Operating Humidity (non-condensing)	20 ... 95 % RH
Storage Humidity (non-condensing)	10 ... 95 % RH
Vibration	10 ... 55 Hz, 19.6 m/s <sup>2</sup> (2G), 3 minutes period, 60 minutes along Z axis (Non operating, mounted on DIN Rail)
Impact / Shock	147m/s <sup>2</sup> , 11ms, test in operating mode. Testing number of shock: 3 shocks per direction, ±x,y,z in totally it is 18 shocks.(IEC 60068-2-27)
Degree of Protection	IP20
Operating Altitude (max. above sea level)	up to 5000 meters, (derating form 2000 to 5000 meters), 3.5°C/per kilometer without fan

### Mechanical Data

Tightening Moment (min. / max.)	max. 1 Nm
Housing	Metal
Mounting DIN Rail according EN 60715	TH35
Weight (typ.)	450 g
Cooling Method	Convection

### Lifetime

MTBF (Telcordia) at 25°C	1,041,600 h (100 % Load)
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### Dimensions

Width (mm)	85.5 mm
Depth (mm)	128.5 mm

Height (mm)	125.2 mm
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**Commercial Data**

Customs Tariff Number	85044030
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**Standards and Regulations**

Degree of Pollution	2
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**Characteristics**

Earth Leakage Current	<2 mA / 240 V AC
Max. Rise Time	100 ms (230 V AC), 100 ms (115 V AC)
Start-up with Capacitive loads	2200 µf (75/120 W), 5000 µf (240/480 W) , 8000 uF (960 W)