



RZI240-24-P

power supplies



- Direct mounting on 35 mm rail mount acc. to EN 60715
- Wide range of ambient temperature: from -25 °C up to +80 °C
- Cover - industrial, compact aluminum • Conformal coating PCBA
- Indicator of output voltage presence - green LED (DC OK)
- Cooled by free air flow (convection)
- Applications: in residential environment, in industrial automation, for supplying packing, construction, weaving machines etc.
- Recognitions, certifications, directives: RoHS,  

Output circuit

Rated output voltage	24 V DC
Output voltage tolerance	± 2% (initial set point tolerance from factory)
Output voltage adjustment range	24...28 V DC
Output current	10 A
Rated output power	240 W
Line regulation (typical value)	< 0,5% 85...264 V AC, 100% load
Load regulation (typical value)	< 1% 85...264 V AC, 0...100% load
PARD (20 MHz) ❶	< 150 mVpp 25 °C
Rise time	< 100 ms rated voltage, 100% load, 25 °C
Start-up time	< 1 000 ms rated voltage, 100% load, 25 °C
Hold-up time	> 20 ms 115 V AC, 230 V AC, 100% load, 25 °C
Dynamic response	± 5% 10...100% load
Start-up with capacitive loads	max. 10 000 µF

Input circuit

Rated input voltage	100...240 V AC	125...250 V DC
Input voltage range	85...264 V AC	120...375 V DC
Rated input frequency	50...60 Hz	
Input frequency range	47...63 Hz	
Input current	< 2,5 A 115 V AC	< 1,3 A 230 V AC
Efficiency at 100% load	> 90% 115 V AC	> 92% 230 V AC
Max. inrush current (cold start from -40 °C)	< 35 A 115 V AC, 230 V AC	
Power factor	conform to EN 61000-3-2	
Leakage current	< 1 mA 240 V AC	

General data

Dimensions (L x W x H)	121 x 85 x 124,1 mm
Weight	1 100 g
Ambient temperature	<ul style="list-style-type: none"> • storage -40...+85 °C • operating -25...+80 °C (cold start at -40 °C)
Power de-rating	<ul style="list-style-type: none"> > 50 °C de-rate power by 2,5% / °C, vertical mounting > 40 °C de-rate power by 2,5% / °C, horizontal mounting
Relative humidity	5...95% (non-condensation and/or icing)
Operating altitude	0...2 500 m
Shock resistance (non-operating)	IEC 60068-2-27, 30G (300 m/s ²) for a duration of 18 ms
Vibration resistance (non-operating)	IEC 60068-2-6, 10...500 Hz at 30 m/s ² (peak: 3G), 60 min. per axis for all directions (X, Y, Z)
Bump	IEC 60068-2-29, 11 ms / 10 gn
Insulation pollution degree	2
Galvanic isolation	<ul style="list-style-type: none"> • input - output 4 000 V AC • input - ground 1 500 V AC • output - ground 1 500 V AC

Protections

Overvoltage	< 32 V ±10% SELV output, Hiccup mode ❷
Overload / overcurrent	> 150% of rated load current, Hiccup mode ❷
Overtemperature	< 80 °C ambient temperature, 100% load, Hiccup mode ❷
Short circuit	Hiccup mode ❷
Cover protection category	IP 20 EN 60529
Protection against shock	Class I ❸

❶ PARD (20 MHz): Periodic and Random Deviation from the power supply's output DC voltage measured at 20 MHz bandwidth. ❷ Hiccup mode: non-latching, auto-recovery when the fault is removed. ❸ Connection of PE protective wire is not required.

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Reliability data

MTBF (mean time between failures)	> 500 000 h Telcordia SR-332, I/P: 115 V AC, O/P: 100% load, Ta: 25 °C
Expected lifetime of capacitors	10 years 115 V AC, 230 V AC, 50% load, 40 °C
Safety standards, directives	
Electrical safety	EN 60950-1, EN 60204-1, IEC 62103
CE	EMC Directive 2014/30/EU Low Voltage Directive 2014/35/EU
Material and parts	RoHS Directive 2011/65/EU
EMC according to Directive 2014/30/EU	
EMC (emissions)	CISPR 32, EN 55032, EN 55011, FCC Title 47: Class B ⑥
Immunity to:	EN 55024
• electrostatic discharge (IEC 61000-4-2)	level 4, criteria A ④ air discharge: 15 kV, contact discharge: 8 kV
• radiated field (IEC 61000-4-3)	level 3, criteria A ④ 80 MHz...1 GHz, 10 V/M with 1 kHz tone / 80% modulation
• electrical fast transient / burst (IEC 61000-4-4)	level 3, criteria A ④ 2 kV
• surge (IEC 61000-4-5)	level 3, criteria A ④ common mode: 2 kV, differential mode: 1 kV ⑤
• conducted (IEC 61000-4-6)	level 3, criteria A ④ 150 kHz...80 MHz, 10 Vrms
• power frequency magnetic fields (IEC 61000-4-8)	level 3, criteria A ④ 30 A/m
• voltage dips (IEC 61000-4-11)	level 3, criteria A ④ 100% dip, 1 cycle (20 ms), self recoverable
• low energy pulse test (ring wave) (IEC 61000-4-12)	level 3, criteria A ④ common mode: 2 kV, differential mode: 1 kV ⑤
Harmonic current emission	IEC/EN 61000-3-2, Class A
Voltage fluctuation and flicker	IEC/EN 61000-3-3
Low voltage power supplies, DC output	EN 61204-3

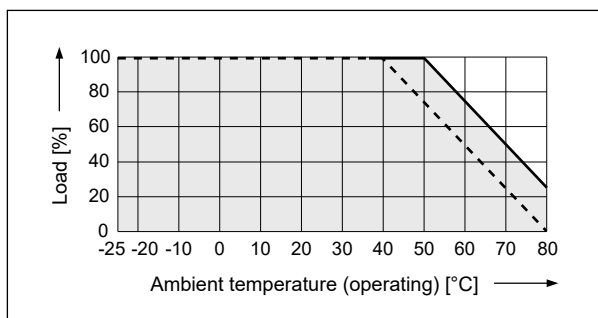
④ Criteria A: normal performance within the specification limits. ⑤ Common mode: asymmetrical (line to earth); differential mode: symmetrical (line to line). ⑥ This is a Class B product. This product meets a strict regulations about the limits of EMC interferences required in a residential environment, regardless of its use in a commercial and light industrial environment.

Mounting

Power supplies **RZI240-24-P** ⑦ are designed for direct mounting on 35 mm rail mount acc. to EN 60715 - they are delivered ready to install. Operational position - input terminals downwards. **Connections:** conductor cross section: 1,5...4,0 mm² (16...12 AWG), input terminals: plugable connector, 3 screws M4 (15 A / 300 V), output terminals: plugable connector, 4 screws M4 (15 A / 300 V).

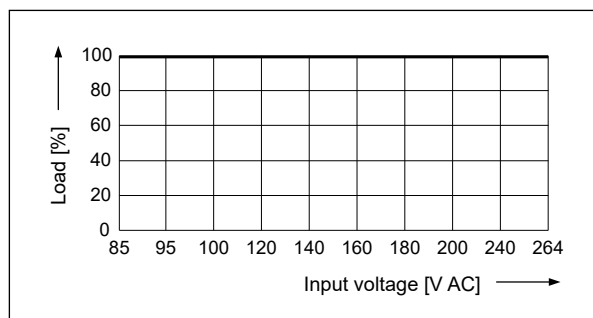
⑦ Safety instruction for mounting: to guarantee sufficient convection cooling, keep a distance of 50 mm above and below the device as well as a lateral distance of 20 mm to other units.

De-rating for vertical mounting orientation.
> 50 °C de-rate power by 2,5% / °C [—]
De-rating for horizontal mounting orientation.
> 40 °C de-rate power by 2,5% / °C [---] Fig. 1



Output de-rating depending on input voltage

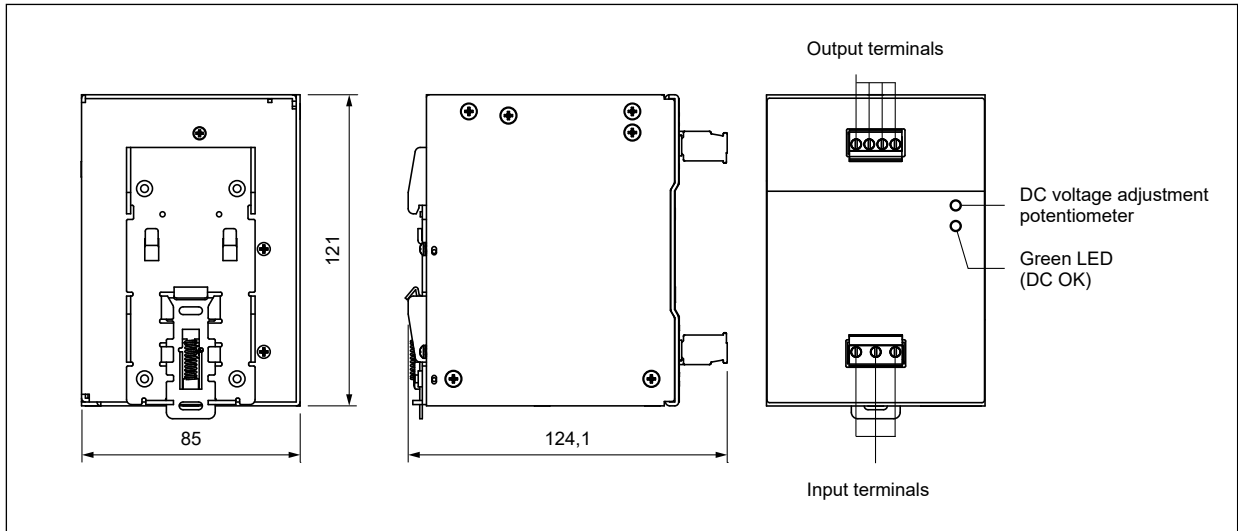
Fig. 2



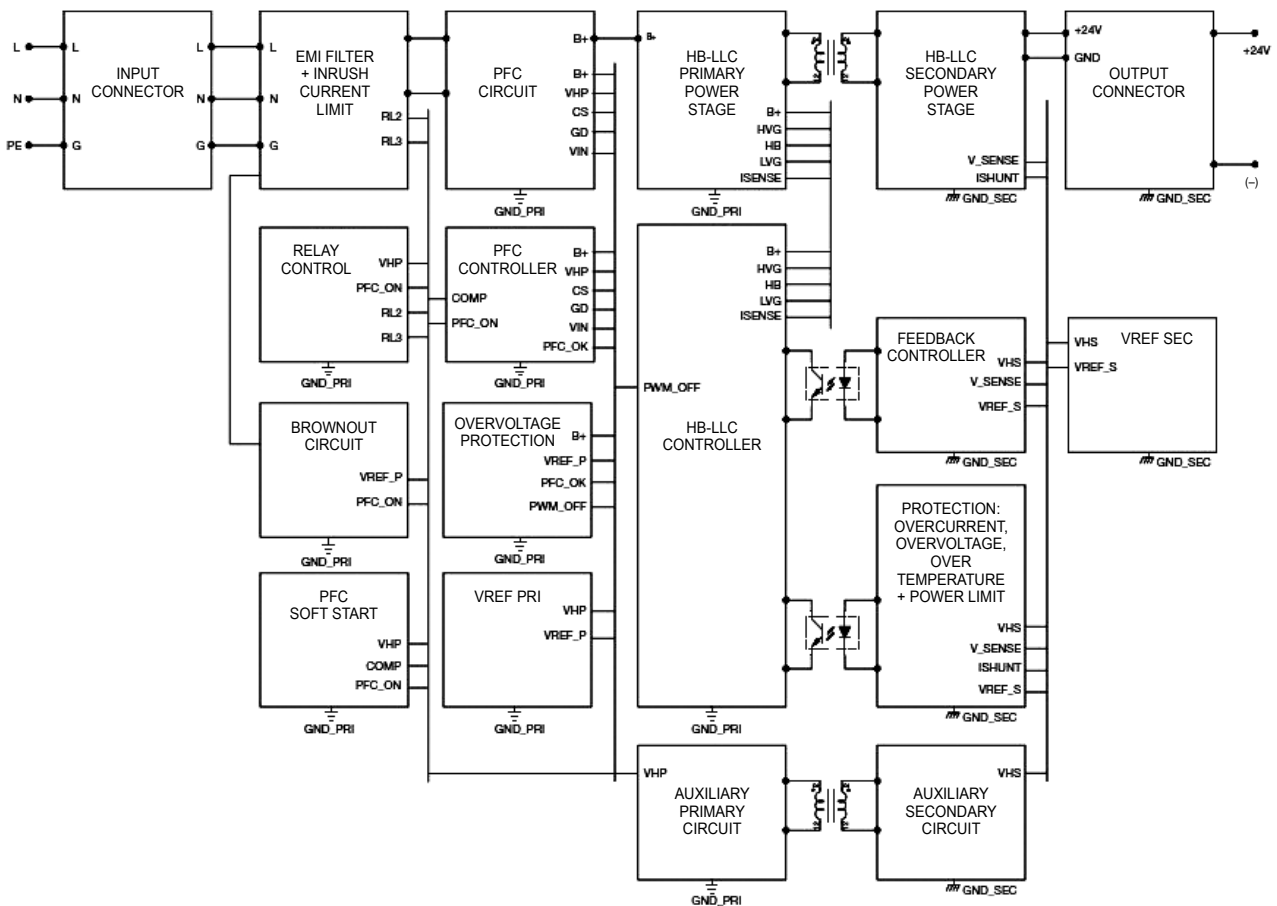
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Dimensions



Block diagram



ATTENTION:

All parameters are specified at 25 °C ambient unless otherwise indicated.
Data sheet to be used only together with "Power supplies - basic information" available at www.repol.com.pl

PRECAUTIONS:

1. Ensure that the parameters of the product described in its specification provide a safety margin for the appropriate operation of the device or system and never use the product in circumstances which exceed the parameters of the product. 2. Never touch any live parts of the device. 3. Ensure that the product has been connected correctly. An incorrect connection may cause malfunction, excessive heating or risk of fire. 4. In case of any risk of any serious material loss or death or injuries of humans or animals, the devices or systems shall be designed so to equip them with double safety system to guarantee their reliable operation.