

RZI480-24-PN

power supplies



- Direct mounting on 35 mm rail mount acc. to EN 60715
- DC O/P voltage adjustable
- Universal input 90...264 V AC
- Free air convection design
- With build-in active PFC function
- Protection: short circuit, overload, overvoltage, overtemperature
- 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	20 A
Rated output power	480 W
Line regulation (typical value)	< 0,5% 90...264 V AC, 100% load
Load regulation (typical value)	< 1% 90...264 V AC, 100% load
PARD (20 MHz)	< 150 mVpp 25 °C
Rise time	< 100 ms rated voltage, 100% load, 25 °C
Start-up time	< 3 000 ms rated voltage, 100% load, 25 °C
Hold-up time	> 16 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	90...264 V AC	120...375 V DC
Rated input frequency	50...60 Hz	
Input frequency range	47...63 Hz	
Input current	< 4,8 A 115 V AC	< 2,4 A 230 V AC
Efficiency at 100% load	> 92% 230 V AC	
Max. make current (cold start from -40 °C)	< 20 A 115 V AC	< 35A 230 V AC
Power factor	conform to EN 61000-3-2	
Leakage current	< 2 mA 240 V AC	

General data

Dimensions (L x W x H)	125 x 85,5 x 129 mm
Weight	1 500 g
Ambient temperature	<ul style="list-style-type: none"> • storage -40...+85 °C • operating -20...+70 °C (cold start at -40 °C)
Power de-rating	> 50 °C de-rate power by 2,5% / °C, vertical and horizontal mounting
Relative humidity	10...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)
Insulation pollution degree	2
Galvanic isolation	<ul style="list-style-type: none"> • input - output 3 000 V AC • input - ground 2 000 V AC • output - ground 500 V AC

Protections

Overvoltage	29...33 V shut down O/P voltage, re-power on to recover
Overload / overcurrent	105...130% constant current limiting, unit will shut down after 3 s., re-power on to recover
Overtemperature	shut down O/P voltage, recovers automatically after temperature goes down
Short circuit	constant current limiting, unit will shut down after 3 s., re-power on to recover
Cover protection category	IP 20 EN 60529
Protection against shock	Class I

PARD (20 MHz): Periodic and Random Deviation from the power supply's output DC voltage measured at 20 MHz bandwidth.

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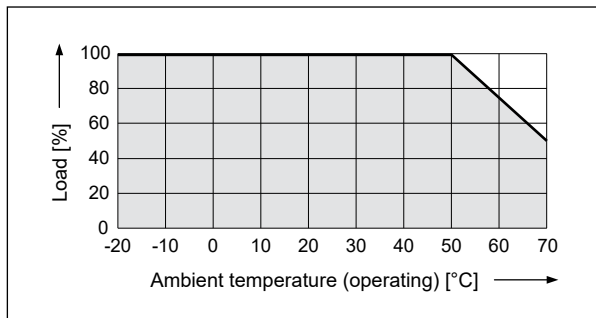
Reliability data

MTBF (mean time between failures)	> 855 400 h Telcordia SR-332, I/P: 115 V AC, 230 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	IEC 62368-1:2020 / A11:2020
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
Immunity to:	EN 55035
• electrostatic discharge (IEC 61000-4-2)	criteria B air discharge: 8 kV, contact discharge: 4 kV
• radiated field (IEC 61000-4-3)	criteria A 80 MHz...1 GHz, 3 V/M with 1 kHz tone / 80% modulation
• electrical fast transient / burst (IEC 61000-4-4)	criteria B 1 kV
• surge (IEC 61000-4-5)	criteria B line to line: 1 kV, line to earth: 2 kV
• conducted (IEC 61000-4-6)	criteria A 0,15...80 MHz, 3 Vrms
• power frequency magnetic fields (IEC 61000-4-8)	criteria A 1 A/m
• voltage dips (IEC 61000-4-11)	criteria B&C
• low energy pulse test (ring wave) (IEC 61000-4-12)	N/A
Harmonic current emission	IEC/EN 61000-3-2
Voltage fluctuation and flicker	IEC/EN 61000-3-3
Low voltage power supplies, DC output	N/A

De-rating for vertical and horizontal mounting orientation

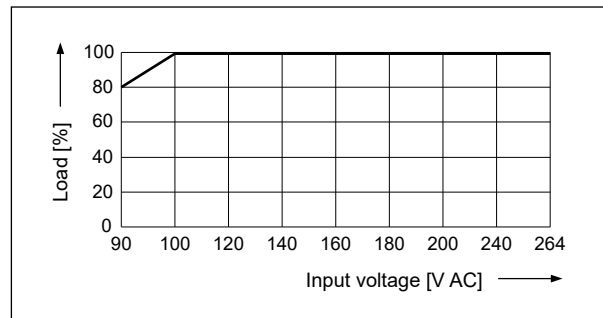
> 50 °C de-rate power by 2,5% / °C

Fig. 1



Output de-rating depending on input voltage

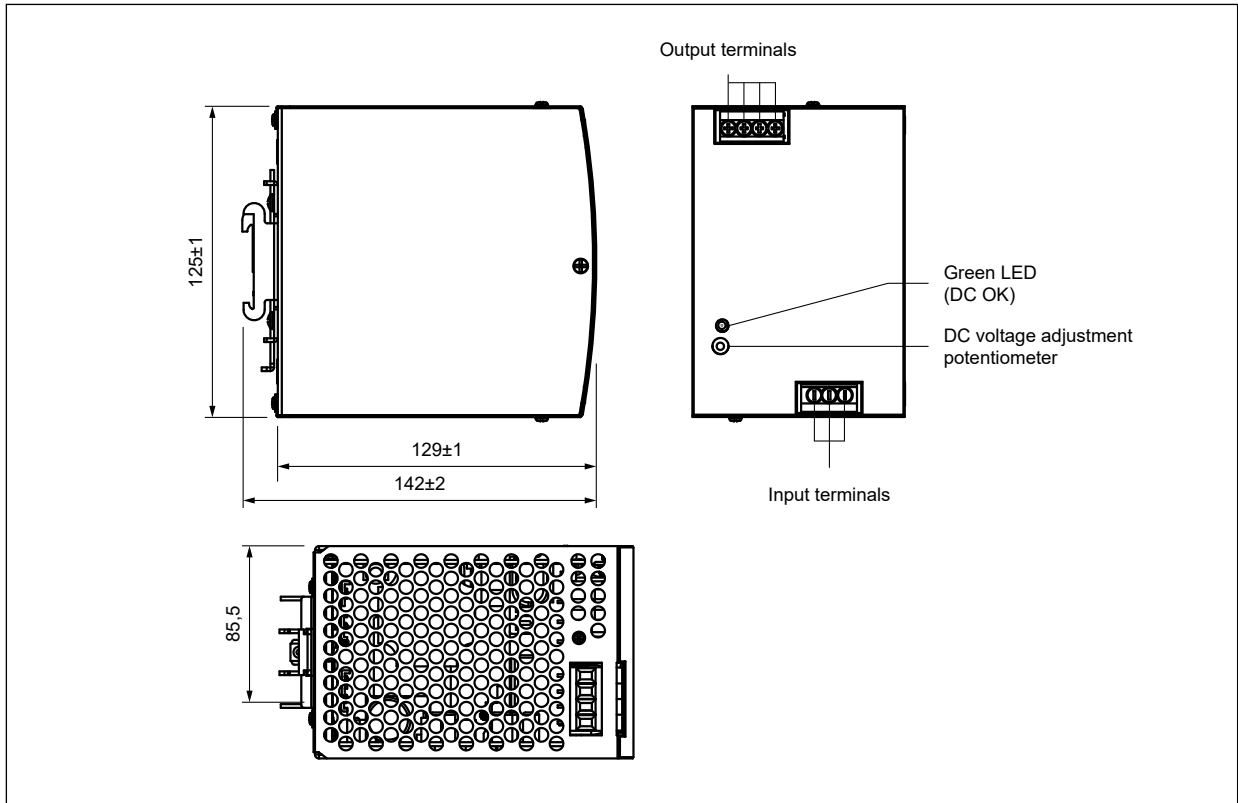
Fig. 2



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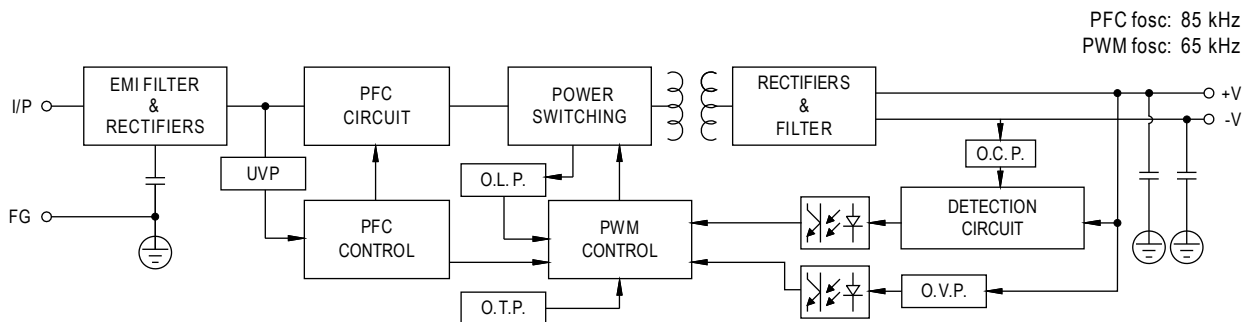
Dimensions



Mounting

Power supplies **RZI480-24-PN** are designed for direct mounting on 35 mm rail mount acc. to EN 60715. Operational position - vertical with input terminals on the bottom of the device. **Connections:** conductor cross section: 0,8...3,3 mm² (18...12 AWG), input terminals: screw connector, 3 screws M3 (30 A / 300 V), output terminals: screw connector, 4 screws M3 (30 A / 300 V).

Block diagram



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.