

# RZI30-12-M, RZI30-24-M

## power supplies



- Direct mounting on 35 mm rail mount acc. to EN 60715 or on panel mounting
- Wide range of ambient temperature: from -25 °C up to +71 °C • Cover - plastic, modular - width 53 mm; for distribution boards and distribution boxes
- Indicator of output voltage presence - green LED (DC OK)
- Cooled by free air flow (convection) • Applications: in industrial automation, for supplying commercial and industrial appliances and building automation
- Recognitions, certifications, directives: RoHS,

Output circuit	RZI30-12-M	RZI30-24-M
Rated output voltage	12 V DC	24 V DC
Output voltage tolerance	± 2% (initial set point tolerance from factory)	
Output voltage adjustment range	11,5...14,5 V DC	23,52...24,48 V DC
Output current	2,1 A	1,25 A
Rated output power	25 W	30 W
Line regulation	< 0,5% 90...264 V AC, 100% load	
Load regulation	< 1% 90...264 V AC, 0...100% load	
PARD (20 MHz) ❶	< 100 mVpp	
Rise time	< 70 ms rated voltage, 100% load	
Start-up time	< 2 000 ms rated voltage, 100% load	
Hold-up time	> 25 ms 115 V AC > 60 ms 230 V AC, 100% load	
Dynamic response	± 5% 10...100% load	
Start-up with capacitive loads	max. 3 000 µF	
Input circuit		
Rated input voltage	100...240 V AC	125...375 V DC
Input voltage range	90...264 V AC	
Rated input frequency	50...60 Hz	
Input frequency range	47...63 Hz	
Input current	< 0,8 A 115 V AC < 0,6 A 230 V AC	
Efficiency at 100% load	> 85% 115 V AC, 230 V AC > 87% 115 V AC, 230 V AC	
Max. inrush current	< 25 A 115 V AC < 50 A 230 V AC	
Power factor	conform to EN 61000-3-2	
Leakage current	< 0,25 mA 240 V AC	
General data		
Dimensions (L x W x H)	91 x 53 x 55,6 mm	
Weight	140 g	
Ambient temperature	• storage	-25...+85 °C
	• operating	-25...+71 °C
Power de-rating	> 55 °C de-rate power by 2,5% / °C	
Relative humidity	5...95% (non-condensation and/or icing)	
Operating altitude	0...2 000 m	
Shock resistance	IEC 60068-2-27, half sine wave: 4G for a duration of 22 ms, 3 shocks for each 3 directions, 9 times in total	
Vibration resistance	IEC 60068-2-6, sine wave: 10...500 Hz at 19,6 m/s² (peak: 2G), 10 min. per cycle, 60 min. for all directions (X, Y, Z)	
Overvoltage category	II	
Insulation pollution degree	2	
Galvanic isolation	• input - output	3 000 V AC
Protections		
Overvoltage	< 17,4 V SELV output, Latch-off mode ❷	< 34,8 V SELV output, Latch-off mode ❷
Overload / overcurrent	> 130% of rated load current, Fold Forward mode ❸	> 130% of rated load current, Hiccup mode ❹
Overtemperature	> 75 °C ambient temperature, 100% load, Latch-off mode ❷	
Short circuit	Hiccup mode ❹	
Cover protection category	IP 20 EN 60529	
Protection against shock	Class II (double insulation) ❺	

❶ PARD (20 MHz): Periodic and Random Deviation from the power supply's output DC voltage measured at 20 MHz bandwidth. ❷ Latch-off mode: disconnecting the output voltage, restore correct operation after restarting. ❸ Hiccup mode: non-latching, auto-recovery when the fault is removed. ❹ Fold Forward mode: current rises, voltage drops. ❺ 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: 100 V AC, O/P: 100% load, Ta: 35 °C
Expected lifetime of capacitors	10 years 115 V AC, 230 V AC, 50% load, 40 °C
<b>Safety standards, directives</b>	
Electrical safety	EN 60950-1, Limited Power Source (LPS)
CE	EMC Directive 2014/30/EU Low Voltage Directive 2014/35/EU
Material and parts	RoHS Directive 2011/65/EU
<b>EMC according to Directive 2014/30/EU</b>	
EMC (emissions)	CISPR 32, EN 55032, FCC Title 47: Class A ③
Immunity to:	EN 55024
• electrostatic discharge (IEC 61000-4-3)	level 3, criteria A ③ air discharge: 8 kV, contact discharge: 4 kV
• radiated field (IEC 61000-4-3)	level 2, criteria A ③ 80 MHz...1 GHz, 3 V/M with 1 kHz tone / 80% modulation
• electrical fast transient / burst (IEC 61000-4-4)	level 3, criteria A ③ 1 kV
• surge (IEC 61000-4-5)	level 3, criteria A ③ common mode: 2 kV, differential mode: 1 kV ⑦
• conducted (IEC 61000-4-6)	level 2, criteria A ③ 150 kHz...80 MHz, 3 Vrms
• power frequency magnetic fields (IEC 61000-4-8)	criteria A ③ 1 A/m
• voltage dips (IEC 61000-4-11)	> 95% dip, 0,5 cycle (10 ms)
Voltage fluctuation and flicker	IEC/EN 61000-3-3

③ Criteria A: normal performance within the specification limits. ⑦ Common mode: asymmetrical (line to earth); differential mode: symmetrical (line to line). ③ Warning: this is a Class A product. In a residential, commercial or light industrial environment it may cause radio interference. This product is not intended to be installed in a residential environment; in a commercial and light industrial environment with connection to the public mains supply, the user may be required to take adequate measures to reduce interference.

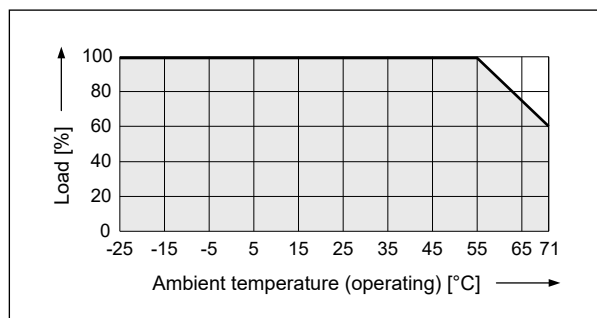
### Mounting

Power supplies **RZI30-12-M, RZI30-24-M** ③ are designed for direct mounting on 35 mm rail mount acc. to EN 60715 or on panel mounting with two M3 screws - they are delivered ready to install. Operational position - input terminals downwards. **Connections:** conductor cross section: 0,25...4,0 mm<sup>2</sup> (24...12 AWG), input terminals: 2 screws M4 (25 A / 300 V), output terminals: 4 screws M4 (25 A / 300 V).

③ 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 25 mm to other units.

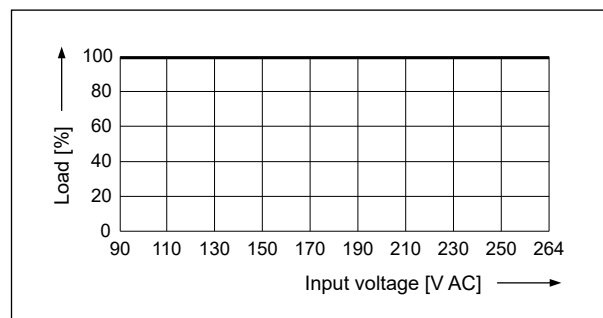
**De-rating for vertical mounting orientation.**  
**> 55 °C de-rate power by 2,5% / °C**

Fig. 1



**Output de-rating depending on input voltage**

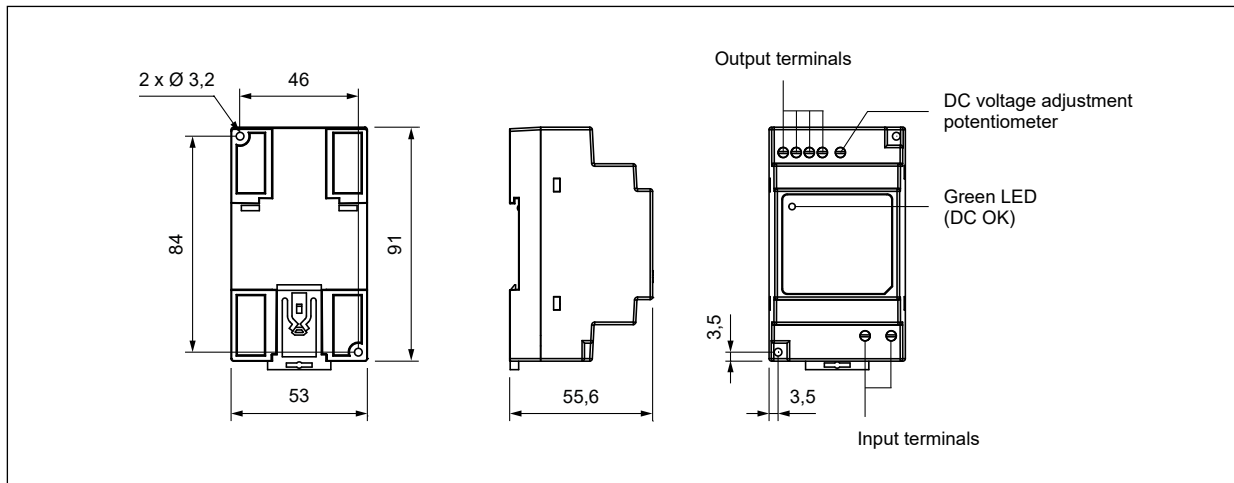
Fig. 2



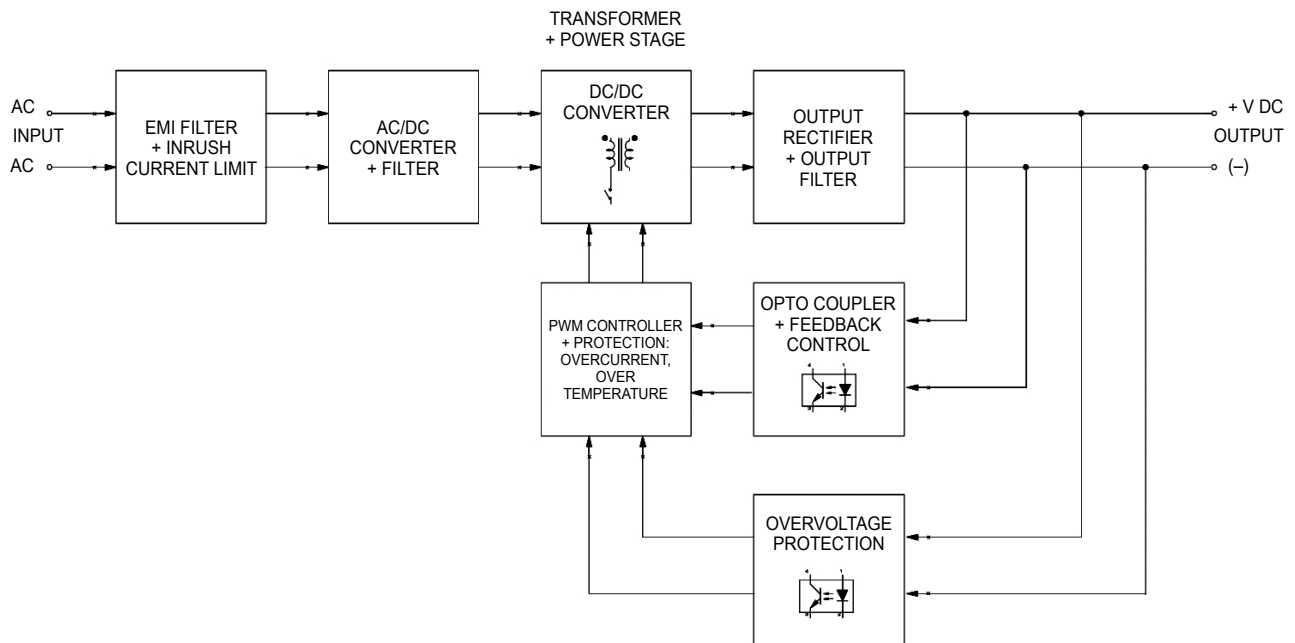
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## power supplies

### 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.relpol.com.pl](http://www.relpol.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.