

# RZI15-12-MN, RZI15-24-MN

## power supplies



- Direct mounting on 35 mm rail mount acc. to EN 60715
- DC O/P voltage adjustable
- Universal input 90...264 V AC
- Class II power supply • Ultra slim stap shape
- Protection: short circuit, overload, overvoltage
- Applications: in industrial automation, for supplying household appliances and building automation
- Recognitions, certifications, directives: RoHS,  

### Output circuit

|                                 | RZI15-12-MN                                     | RZI15-24-MN  |
|---------------------------------|-------------------------------------------------|--------------|
| Rated output voltage            | 12 V DC                                         | 24 V DC      |
| Output voltage tolerance        | ± 5% (initial set point tolerance from factory) |              |
| Output voltage adjustment range | 11...13 V DC                                    | 23...25 V DC |
| Output current                  | 1,25 A                                          | 0,63 A       |
| Rated output power              | 15 W                                            |              |
| Line regulation                 | < 1% 90...264 V AC, 100% load                   |              |
| Load regulation                 | < 1% 90...264 V AC, 0...100% load               |              |
| PARD (20 MHz) ❶                 | < 150 mVpp                                      |              |
| Rise time                       | < 80 ms rated voltage, 100% load                |              |
| Start-up time                   | < 2 000 ms rated voltage, 100% load             |              |
| Hold-up time                    | > 12 ms 115 V AC > 30 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                               | 120...370 V DC |
| Rated input frequency          | 50...60 Hz                                  |                |
| Input frequency range          | 47...63 Hz                                  |                |
| Input current                  | < 0,6 A 115 V AC < 0,25 A 230 V AC          |                |
| Efficiency at 100% load        | > 88% 230 V AC > 89% 230 V AC               |                |
| Max. make current (cold start) | < 25 A 115 V AC < 45 A 230 V AC, cold start |                |
| Power factor                   | conform to EN 61000-3-2                     |                |
| Leakage current                | < 0,25 mA 240 V AC                          |                |

### General data

|                             |                                                                                                                                    |              |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Dimensions (L x W x H)      | 90,1 x 17,9 x 58,45 mm                                                                                                             |              |
| Weight                      | 78 g                                                                                                                               |              |
| Ambient temperature         | • storage                                                                                                                          | -40...+80 °C |
|                             | • operating                                                                                                                        | -20...+50 °C |
| Power de-rating             | > 50 °C de-rate power by 2,5% / °C                                                                                                 |              |
| Relative humidity           | 20...90% (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/s <sup>2</sup> (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               | 110...145% clamp by Zener diode                                                                      |
| Overload / overcurrent    | > 130...200% rated output power<br>Hiccup mode: recovers automatically after fault condition removed |
| Short circuit             | Hiccup mode                                                                                          |
| Cover protection category | IP 20 EN 60529                                                                                       |
| Protection against shock  | Class II (double insulation)                                                                         |

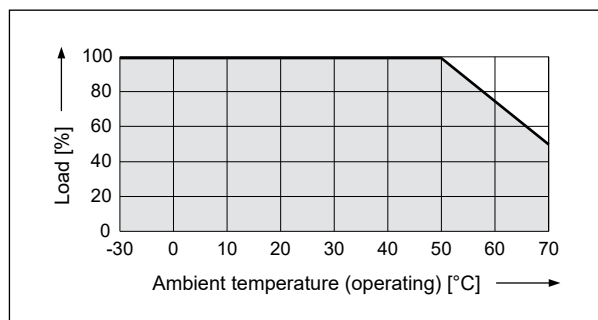
❶ PARD (20 MHz): Periodic and Random Deviation from the power supply's output DC voltage measured at 20 MHz bandwidth.

### Reliability data

|                                                      |                                                                             |
|------------------------------------------------------|-----------------------------------------------------------------------------|
| MTBF (mean time between failures)                    | > 3 166 000 h<br>Telcordia SR-332, I/P: 100 V AC, O/P: 100% load, Ta: 35 °C |
| Expected lifetime of capacitors                      | 10 years<br>115 V AC, 230 V AC, 50% load, 40 °C                             |
| <b>Safety standards, directives</b>                  |                                                                             |
| Electrical safety                                    | EN 62368-1:2014+A11, Limited Power Source (LPS)                             |
| CE                                                   | EMC Directive 2014/30/EU<br>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                                                          |
| Immunity to:                                         | EN 55035                                                                    |
| • electrostatic discharge (IEC 61000-4-2)            | criteria B<br>air discharge: 8 kV, contact discharge: 4 kV                  |
| • radiated field (IEC 61000-4-3)                     | criteria A<br>80 MHz...1 GHz, 3 V/M<br>with 1 kHz tone / 80% modulation     |
| • electrical fast transient / burst (IEC 61000-4-4)  | criteria B<br>1 kV                                                          |
| • surge (IEC 61000-4-5)                              | criteria B<br>line to line: 1 kV                                            |
| • conducted (IEC 61000-4-6)                          | criteria A<br>150 kHz...80 MHz, 3 Vrms                                      |
| • power frequency magnetic fields (IEC 61000-4-8)    | criteria A<br>1 A/m                                                         |
| • voltage dips (IEC 61000-4-11)                      | criteria B&C<br>voltage dip > 95% / 30%<br>interruption > 95%               |
| • low energy pulse test (ring wave) (IEC 61000-4-12) | N/A                                                                         |
| Voltage fluctuation and flicker                      | IEC/EN 61000-3-3                                                            |

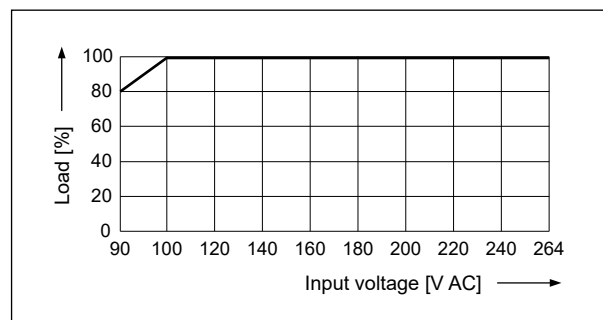
**De-rating for vertical mounting orientation.**  
**> 55 °C de-rate power by 2,5% / °C**

Fig. 1



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

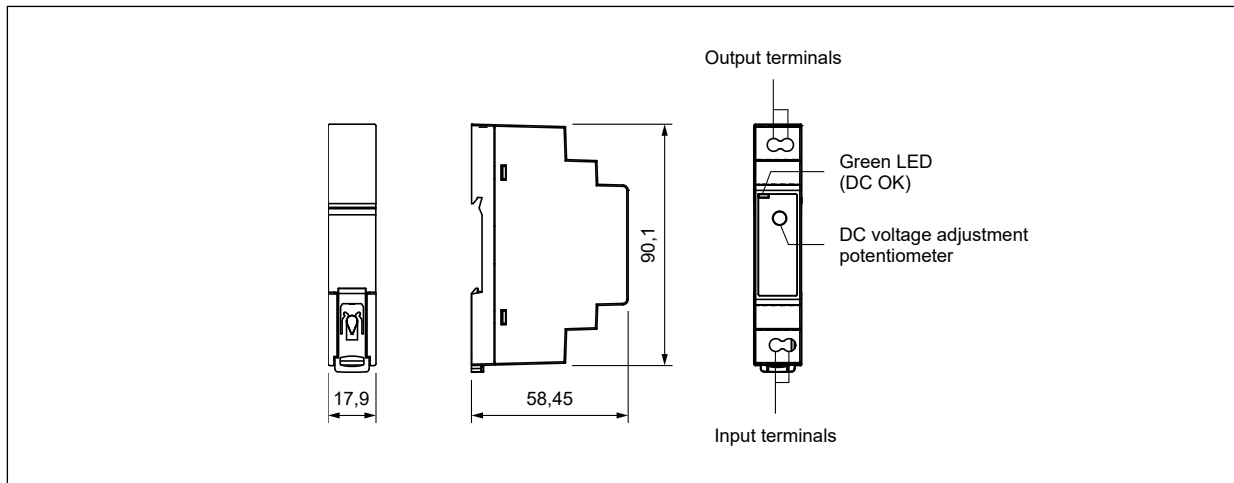
Fig. 2



# RZI15-12-MN, RZI15-24-MN

## power supplies

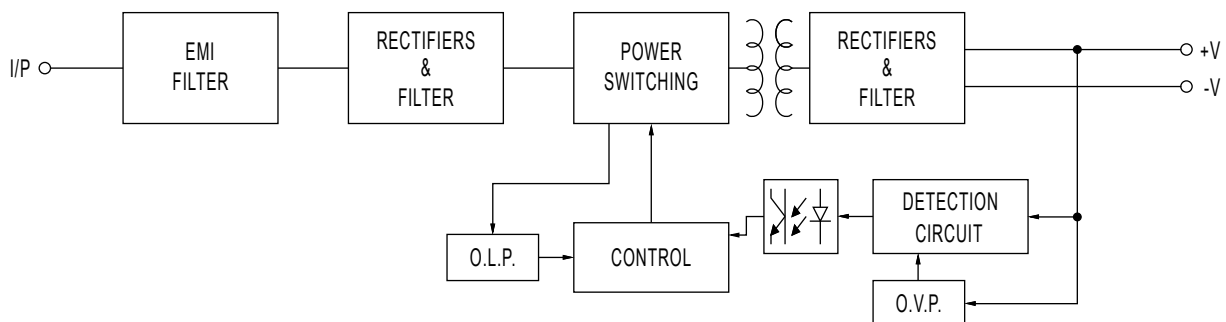
### Dimensions



### Mounting

Power supplies **RZI15-12-MN**, **RZI15-24-MN** 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 mm<sup>2</sup> (18...12 AWG), input terminals: screw connector, 2 screws M2,5 (20 A / 300 V), output terminals: screw connector, 2 screws M2,5 (20 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.

# RZI30-12-MN, RZI30-24-MN

## power supplies



- Direct mounting on 35 mm rail mount acc. to EN 60715
- DC O/P voltage adjustable
- Universal input 90...264 V AC
- Class II power supply • Ultra slim stap shape
- Protection: short circuit, overload, overvoltage
- Applications: in industrial automation, for supplying household appliances and building automation
- Recognitions, certifications, directives: RoHS,  

### Output circuit

|                                 | RZI30-12-MN                                     | RZI30-24-MN  |
|---------------------------------|-------------------------------------------------|--------------|
| Rated output voltage            | 12 V DC                                         | 24 V DC      |
| Output voltage tolerance        | ± 5% (initial set point tolerance from factory) |              |
| Output voltage adjustment range | 11...13 V DC                                    | 23...25 V DC |
| Output current                  | 2 A                                             | 1,25 A       |
| Rated output power              | 24 W                                            | 30 W         |
| Line regulation                 | < 1% 90...264 V AC, 100% load                   |              |
| Load regulation                 | < 1% 90...264 V AC, 0...100% load               |              |
| PARD (20 MHz) ❶                 | < 150 mVpp                                      |              |
| Rise time                       | < 50 ms rated voltage, 100% load                |              |
| Start-up time                   | < 500 ms rated voltage, 100% load               |              |
| Hold-up time                    | > 12 ms 115 V AC > 30 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                               | 120...370 V DC |
| Rated input frequency   | 50...60 Hz                                  |                |
| Input frequency range   | 47...63 Hz                                  |                |
| Input current           | < 1,2 A 115 V AC < 0,68 A 230 V AC          |                |
| Efficiency at 100% load | > 88% 230 V AC > 89% 230 V AC               |                |
| Max. make current       | < 25 A 115 V AC < 45 A 230 V AC, cold start |                |
| Power factor            | conform to EN 61000-3-2                     |                |
| Leakage current         | < 0,25 mA 240 V AC                          |                |

### General data

|                             |                                                                                                                                    |              |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Dimensions (L x W x H)      | 90 x 35,2 x 58,4 mm                                                                                                                |              |
| Weight                      | 120 g                                                                                                                              |              |
| Ambient temperature         | • storage                                                                                                                          | -40...+80 °C |
|                             | • operating                                                                                                                        | -20...+50 °C |
| Power de-rating             | > 50 °C de-rate power by 2,5% / °C                                                                                                 |              |
| Relative humidity           | 20...90% (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/s <sup>2</sup> (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               | 110...145% clamp by Zener diode                                                                      |
| Overload / overcurrent    | > 130...200% rated output power<br>Hiccup mode: recovers automatically after fault condition removed |
| Short circuit             | Hiccup mode                                                                                          |
| Cover protection category | IP 20 EN 60529                                                                                       |
| Protection against shock  | Class II (double insulation)                                                                         |

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

# RZI30-12-MN, RZI30-24-MN

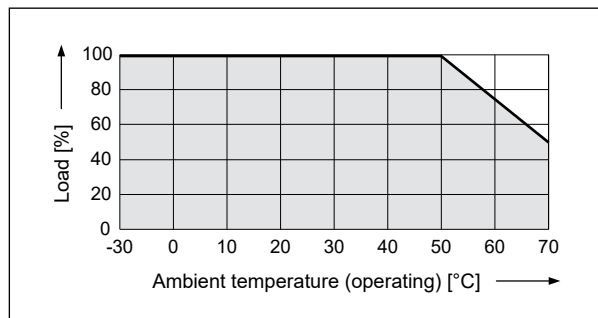
## power supplies

### Reliability data

|                                                      |                                                                             |
|------------------------------------------------------|-----------------------------------------------------------------------------|
| MTBF (mean time between failures)                    | > 3 120 000 h<br>Telcordia SR-332, I/P: 100 V AC, O/P: 100% load, Ta: 35 °C |
| Expected lifetime of capacitors                      | 10 years<br>115 V AC, 230 V AC, 50% load, 40 °C                             |
| <b>Safety standards, directives</b>                  |                                                                             |
| Electrical safety                                    | EN 62368-1:2014+A11, Limited Power Source (LPS)                             |
| CE                                                   | EMC Directive 2014/30/EU<br>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                                                          |
| Immunity to:                                         | EN 55035                                                                    |
| • electrostatic discharge (IEC 61000-4-2)            | criteria B<br>air discharge: 8 kV, contact discharge: 4 kV                  |
| • radiated field (IEC 61000-4-3)                     | criteria A<br>80 MHz...1 GHz, 3 V/M<br>with 1 kHz tone / 80% modulation     |
| • electrical fast transient / burst (IEC 61000-4-4)  | criteria B<br>1 kV                                                          |
| • surge (IEC 61000-4-5)                              | criteria B<br>line to line: 1 kV                                            |
| • conducted (IEC 61000-4-6)                          | criteria A<br>150 kHz...80 MHz, 3 Vrms                                      |
| • power frequency magnetic fields (IEC 61000-4-8)    | criteria A<br>1 A/m                                                         |
| • voltage dips (IEC 61000-4-11)                      | criteria B&C                                                                |
| • low energy pulse test (ring wave) (IEC 61000-4-12) | N/A                                                                         |
| Voltage fluctuation and flicker                      | IEC/EN 61000-3-3                                                            |

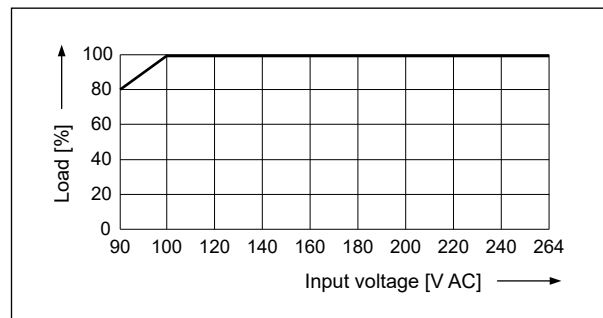
**De-rating for vertical mounting orientation.**  
**> 55 °C de-rate power by 2,5% / °C**

Fig. 1



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

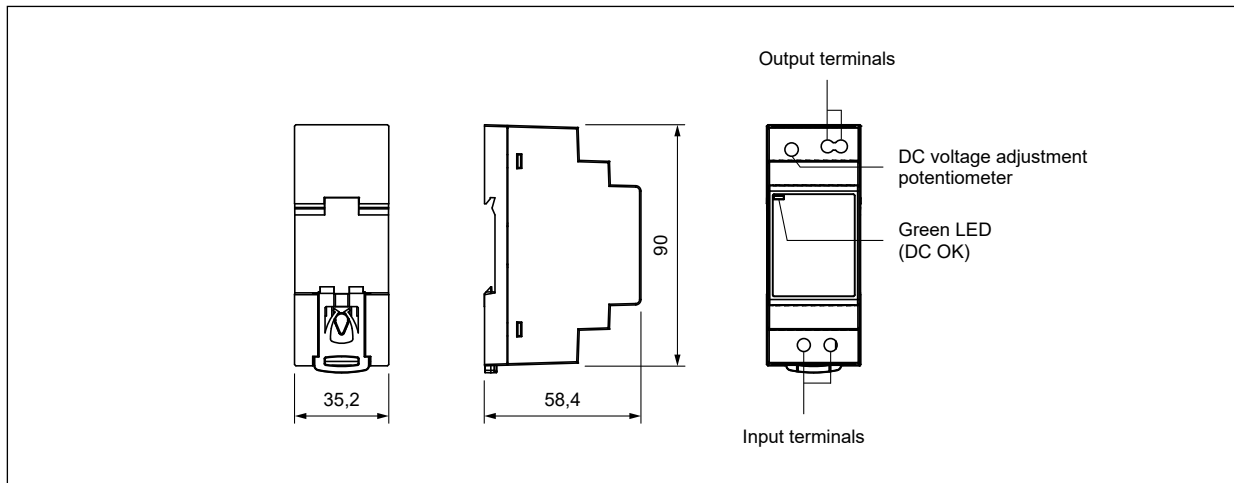
Fig. 2



# RZI30-12-MN, RZI30-24-MN

## power supplies

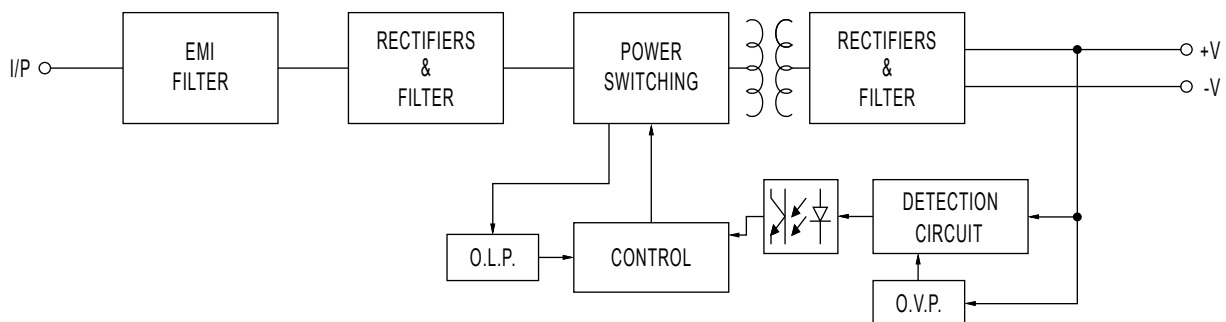
### Dimensions



### Mounting

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### 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.

# RZI60-12-MN, RZI60-24-MN

## power supplies



- Direct mounting on 35 mm rail mount acc. to EN 60715
- DC O/P voltage adjustable
- Universal input 90...264 V AC
- Class II power supply • Ultra slim stap shape
- Protection: short circuit, overload, overvoltage
- Applications: in industrial automation, for supplying household appliances and building automation
- Recognitions, certifications, directives: RoHS,  

### Output circuit

|                                 | RZI60-12-MN                                     | RZI60-24-MN  |
|---------------------------------|-------------------------------------------------|--------------|
| Rated output voltage            | 12 V DC                                         | 24 V DC      |
| Output voltage tolerance        | ± 5% (initial set point tolerance from factory) |              |
| Output voltage adjustment range | 11...13 V DC                                    | 23...25 V DC |
| Output current                  | 4,5 A                                           | 2,5 A        |
| Rated output power              | 54 W                                            | 60 W         |
| Line regulation                 | < 1% 90...264 V AC, 100% load                   |              |
| Load regulation                 | < 1% 90...264 V AC, 0...100% load               |              |
| PARD (20 MHz) ❶                 | < 150 mVpp                                      |              |
| Rise time                       | < 80 ms rated voltage, 100% load                |              |
| Start-up time                   | < 500 ms rated voltage, 100% load               |              |
| Hold-up time                    | > 12 ms 115 V AC > 30 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                   | 120...370 V DC |
| Rated input frequency   | 50...60 Hz                      |                |
| Input frequency range   | 47...63 Hz                      |                |
| Input current           | < 1,5 A 115 V AC < 1 A 230 V AC |                |
| Efficiency at 100% load | > 88% 230 V AC > 90% 230 V AC   |                |
| Max. make current       | < 30 A 115 V AC < 60 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)      | 90 x 52,5 x 58,4 mm                                                                                                                |              |
| Weight                      | 190 g                                                                                                                              |              |
| Ambient temperature         | • storage                                                                                                                          | -40...+80 °C |
|                             | • operating                                                                                                                        | -20...+50 °C |
| Power de-rating             | > 50 °C de-rate power by 2,5% / °C                                                                                                 |              |
| Relative humidity           | 20...90% (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/s <sup>2</sup> (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               | 110...145% clamp by Zener diode                                                                      |
| Overload / overcurrent    | > 130...200% rated output power<br>Hiccup mode: recovers automatically after fault condition removed |
| Short circuit             | Hiccup mode                                                                                          |
| Cover protection category | IP 20 EN 60529                                                                                       |
| Protection against shock  | Class II (double insulation)                                                                         |

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

# RZI60-12-MN, RZI60-24-MN

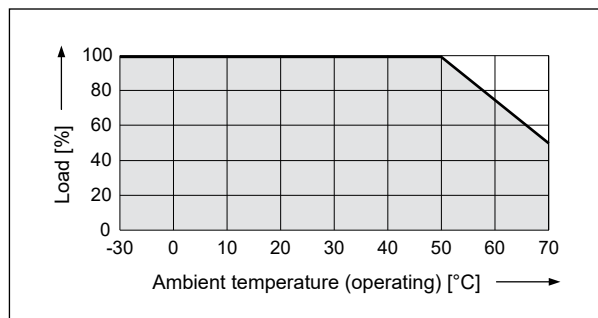
## power supplies

### Reliability data

|                                                      |                                                                             |
|------------------------------------------------------|-----------------------------------------------------------------------------|
| MTBF (mean time between failures)                    | > 2 996 000 h<br>Telcordia SR-332, I/P: 100 V AC, O/P: 100% load, Ta: 35 °C |
| Expected lifetime of capacitors                      | 10 years<br>115 V AC, 230 V AC, 50% load, 40 °C                             |
| <b>Safety standards, directives</b>                  |                                                                             |
| Electrical safety                                    | EN 62368-1:2014+A11, Limited Power Source (LPS)                             |
| CE                                                   | EMC Directive 2014/30/EU<br>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                                                          |
| Immunity to:                                         | EN 55035                                                                    |
| • electrostatic discharge (IEC 61000-4-2)            | criteria A<br>air discharge: 8 kV, contact discharge: 4 kV                  |
| • radiated field (IEC 61000-4-3)                     | criteria A<br>80 MHz...1 GHz, 3 V/M<br>with 1 kHz tone / 80% modulation     |
| • electrical fast transient / burst (IEC 61000-4-4)  | criteria B<br>1 kV                                                          |
| • surge (IEC 61000-4-5)                              | criteria B<br>line to line: 1 kV                                            |
| • conducted (IEC 61000-4-6)                          | criteria A<br>150 kHz...80 MHz, 3 Vrms                                      |
| • power frequency magnetic fields (IEC 61000-4-8)    | criteria A<br>1 A/m                                                         |
| • voltage dips (IEC 61000-4-11)                      | criteria B&C                                                                |
| • low energy pulse test (ring wave) (IEC 61000-4-12) | N/A                                                                         |
| Voltage fluctuation and flicker                      | IEC/EN 61000-3-3                                                            |

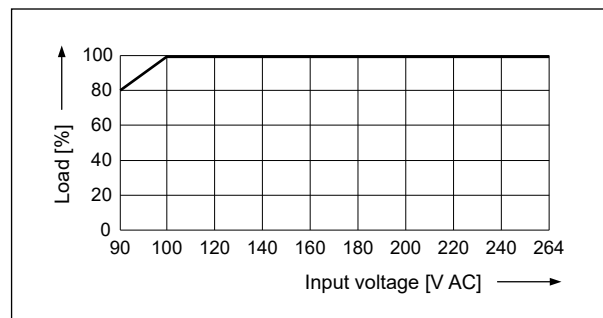
**De-rating for vertical mounting orientation.**  
**> 55 °C de-rate power by 2,5% / °C**

Fig. 1



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

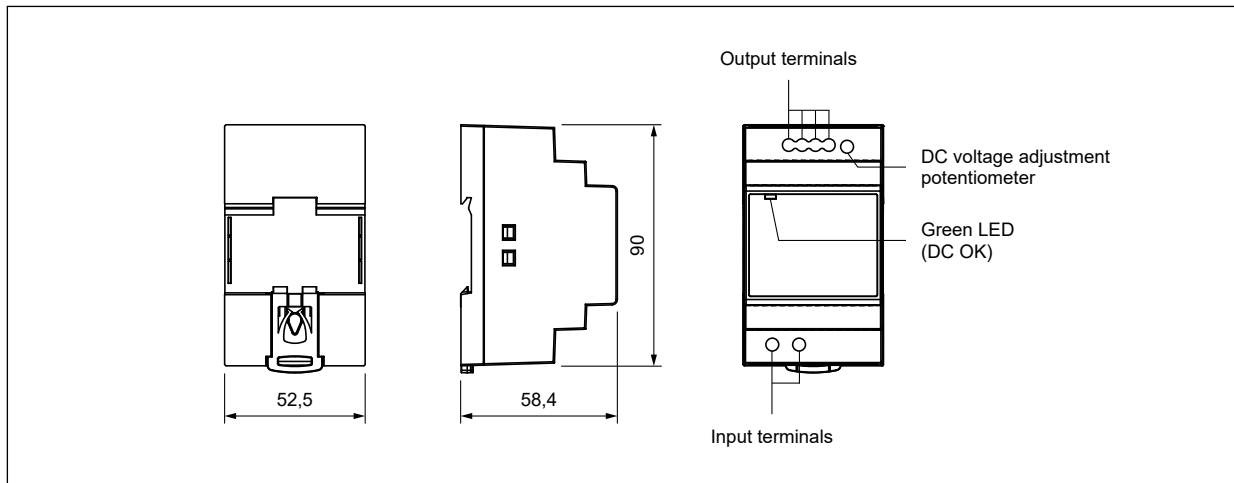
Fig. 2



# RZI60-12-MN, RZI60-24-MN

## power supplies

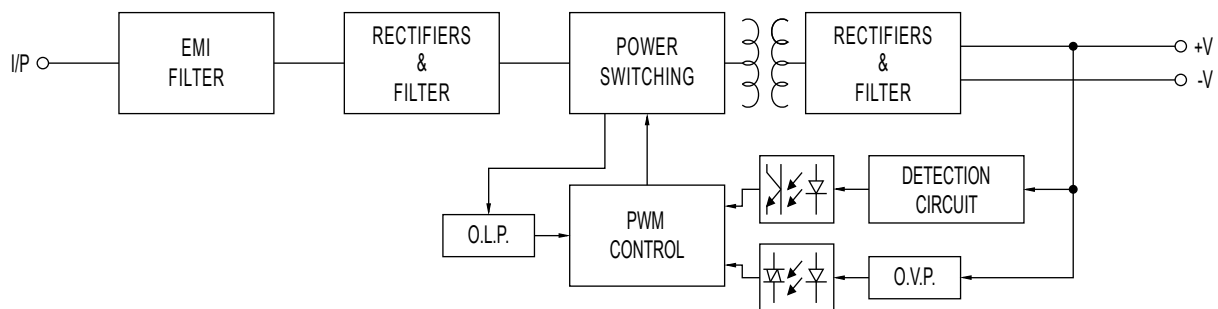
### Dimensions



### Mounting

Power supplies **RZI60-12-MN**, **RZI60-24-MN** 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 mm<sup>2</sup> (18...12 AWG), input terminals: screw connector, 2 screws M2,5 (20 A / 300 V), output terminals: screw connector, 4 screws M2,5 (20 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.

# RZI100-24-MN

## power supplies



- Direct mounting on 35 mm rail mount acc. to EN 60715
- DC O/P voltage adjustable
- Universal input 90...264 V AC
- Class II power supply • Ultra slim stap shape
- Protection: short circuit, overload, overvoltage
- Applications: in industrial automation, for supplying household appliances and building automation
- Recognitions, certifications, directives: RoHS,  

### Output circuit

|                                 |                                                 |
|---------------------------------|-------------------------------------------------|
| Rated output voltage            | 24 V DC                                         |
| Output voltage tolerance        | ± 5% (initial set point tolerance from factory) |
| Output voltage adjustment range | 23...25 V DC                                    |
| Output current                  | 3,83 A                                          |
| Rated output power              | 92 W                                            |
| Line regulation                 | < 1% 90...264 V AC, 100% load                   |
| Load regulation                 | < 1% 90...264 V AC, 0...100% load               |
| PARD (20 MHz) ❶                 | < 160 mVpp                                      |
| Rise time                       | < 80 ms rated voltage, 100% load                |
| Start-up time                   | < 500 ms rated voltage, 100% load               |
| Hold-up time                    | > 12 ms 115 V AC > 30 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                   | 120...370 V DC |
| Rated input frequency   | 50...60 Hz                      |                |
| Input frequency range   | 47...63 Hz                      |                |
| Input current           | < 3 A 115 V AC < 1,6 A 230 V AC |                |
| Efficiency at 100% load | > 90% 230 V AC                  |                |
| Max. make current       | < 35 A 115 V AC < 70 A 230 V AC |                |
| Power factor            | conform to EN 61000-3-2         |                |
| Leakage current         | < 0,25 mA 240 V AC              |                |

### General data

|                             |                                                                               |                                                                                                                                       |
|-----------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| General data                |                                                                               |                                                                                                                                       |
| Dimensions (L x W x H)      |                                                                               | 90 x 70,2 x 58,4 mm                                                                                                                   |
| Weight                      |                                                                               | 270 g                                                                                                                                 |
| Ambient temperature         | <ul style="list-style-type: none"><li>• storage</li><li>• operating</li></ul> | -40...+80 °C<br>-20...+50 °C                                                                                                          |
| Power de-rating             |                                                                               | > 50 °C de-rate power by 2,5% / °C, 115 V AC<br>> 45 °C de-rate power by 2% / °C, 230 V AC                                            |
| Relative humidity           |                                                                               | 20...90% (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,<br>3 shocks for each 3 directions,<br>9 times in total                    |
| Vibration resistance        |                                                                               | IEC 60068-2-6, sine wave: 10...500 Hz at 19,6 m/s <sup>2</sup> (peak: 2G),<br>10 min. per cycle, 60 min. for all directions (X, Y, Z) |
| Overvoltage category        |                                                                               | II                                                                                                                                    |
| Insulation pollution degree |                                                                               | 2                                                                                                                                     |
| Galvanic isolation          | <ul style="list-style-type: none"><li>• input - output</li></ul>              | 3 000 V AC                                                                                                                            |

### Protections

|                           |                                                                                                      |
|---------------------------|------------------------------------------------------------------------------------------------------|
| Overvoltage               | 100...145% clamp by Zener diode                                                                      |
| Overload / overcurrent    | > 130...200% rated output power<br>Hiccup mode: recovers automatically after fault condition removed |
| Short circuit             | Hiccup mode                                                                                          |
| Cover protection category | IP 20 EN 60529                                                                                       |
| Protection against shock  | Class II (double insulation)                                                                         |

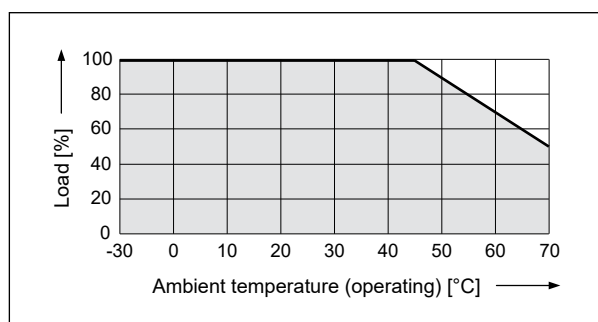
❶ PARD (20 MHz): Periodic and Random Deviation from the power supply's output DC voltage measured at 20 MHz bandwidth.

## Reliability data

|                                                      |                                                                             |
|------------------------------------------------------|-----------------------------------------------------------------------------|
| MTBF (mean time between failures)                    | > 2 781 000 h<br>Telcordia SR-332, I/P: 100 V AC, O/P: 100% load, Ta: 35 °C |
| Expected lifetime of capacitors                      | 10 years<br>115 V AC, 230 V AC, 50% load, 40 °C                             |
| <b>Safety standards, directives</b>                  |                                                                             |
| Electrical safety                                    | EN 62368-1:2014+A11, Limited Power Source (LPS)                             |
| CE                                                   | EMC Directive 2014/30/EU<br>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                                                          |
| Immunity to:                                         | EN 55035                                                                    |
| • electrostatic discharge (IEC 61000-4-2)            | criteria B<br>air discharge: 8 kV, contact discharge: 4 kV                  |
| • radiated field (IEC 61000-4-3)                     | criteria A<br>80 MHz...1 GHz, 3 V/M<br>with 1 kHz tone / 80% modulation     |
| • electrical fast transient / burst (IEC 61000-4-4)  | criteria B<br>1 kV                                                          |
| • surge (IEC 61000-4-5)                              | criteria A<br>line to line: 1 kV                                            |
| • conducted (IEC 61000-4-6)                          | criteria A<br>150 kHz...80 MHz, 3 Vrms                                      |
| • power frequency magnetic fields (IEC 61000-4-8)    | criteria A<br>1 A/m                                                         |
| • voltage dips (IEC 61000-4-11)                      | criteria B&C                                                                |
| • low energy pulse test (ring wave) (IEC 61000-4-12) | N/A                                                                         |
| Voltage fluctuation and flicker                      | IEC/EN 61000-3-3                                                            |

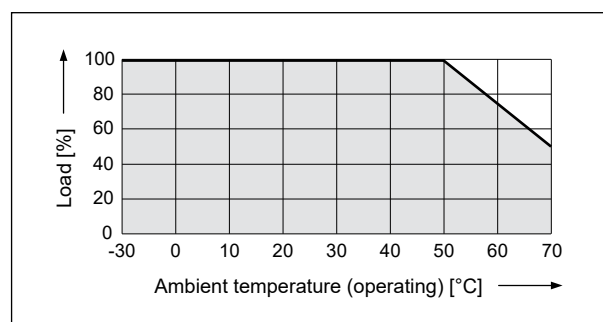
**De-rating for vertical mounting orientation  
(115 V AC)**  
> 50 °C de-rate power by 2,5% / °C

Fig. 1



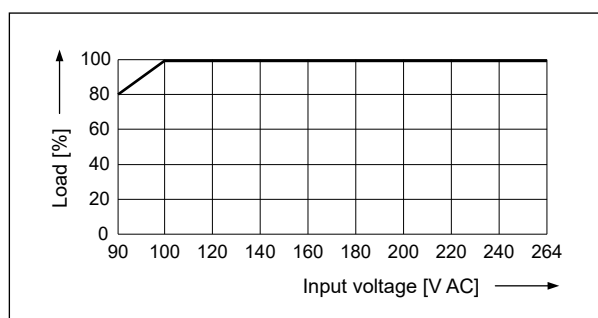
**De-rating for vertical mounting orientation  
(230 V AC)**  
> 45 °C de-rate power by 2% / °C

Fig. 2

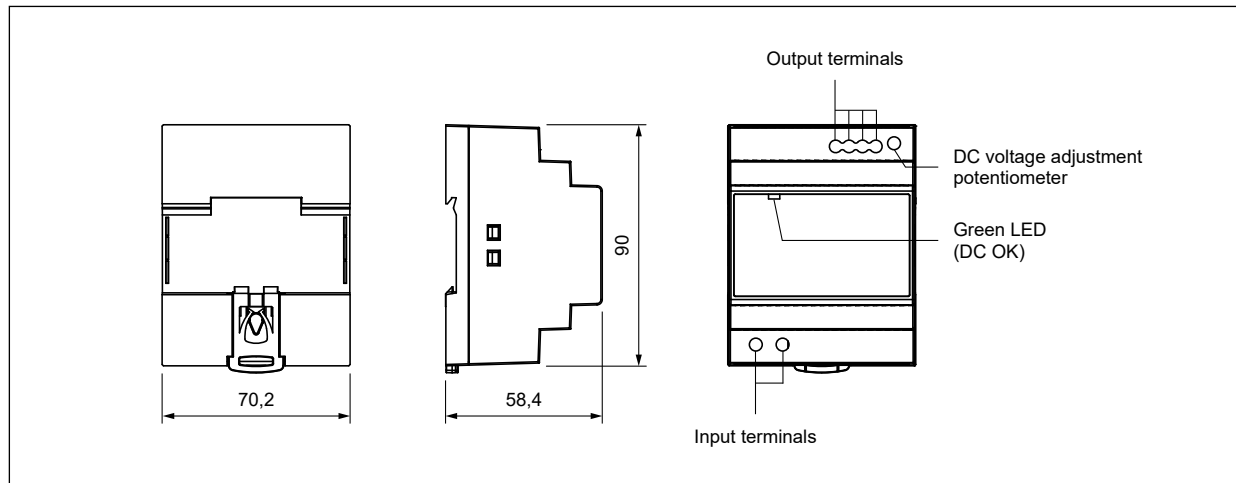


**Output de-rating depending on input voltage**

Fig. 3



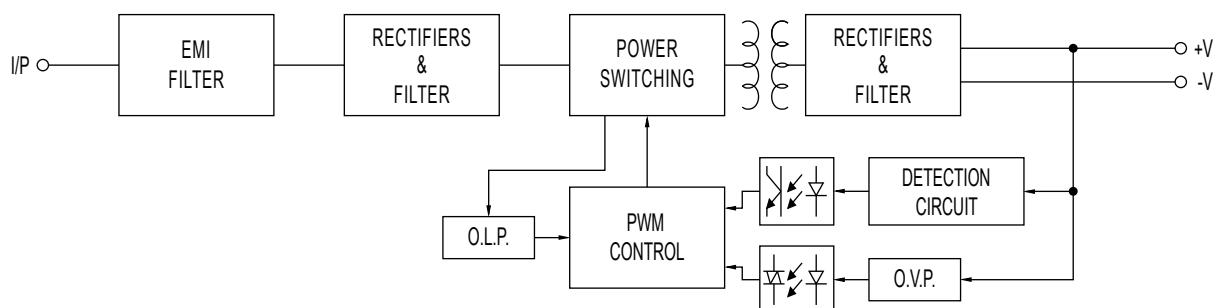
## Dimensions



## Mounting

Power supplies **RZI100-24-MN** 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 mm<sup>2</sup> (18...12 AWG), input terminals: screw connector, 2 screws M2,5 (20 A / 300 V), output terminals: screw connector, 4 screws M2,5 (20 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.

# RZI75-24-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
- 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                  | 3,2 A                                           |
| Rated output power              | 76,8 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) ❶                 | < 120 mVpp 25 °C                                |
| Rise time                       | < 60 ms rated voltage, 100% load, 25 °C         |
| Start-up time                   | < 2 000 ms rated voltage, 100% load, 25 °C      |
| Hold-up time                    | > 10 ms 115 V AC > 60 ms 230 V AC, 100% load    |
| 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                              | < 1,45 A 115 V AC       | < 0,9 A 230 V AC |
| Efficiency at 100% load                    | > 88% 230 V AC          |                  |
| Max. make current (cold start from -40 °C) | < 41 A 115 V AC         | < 80 A 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)               | 125 x 32 x 100,5 mm                                                                                                                                    |
| Weight                               | 510 g                                                                                                                                                  |
| Ambient temperature                  | <ul style="list-style-type: none"> <li>• storage -40...+85 °C</li> <li>• operating -20...+70 °C (cold start at -40 °C)</li> </ul>                      |
| 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/s²) for a duration of 18 ms                                                                                                 |
| Vibration resistance (non-operating) | IEC 60068-2-6, 10...500 Hz at 30 m/s² (peak: 3G), 60 min. per axis for all directions (X, Y, Z)                                                        |
| Insulation pollution degree          | 2                                                                                                                                                      |
| Galvanic isolation                   | <ul style="list-style-type: none"> <li>• input - output 3 000 V AC</li> <li>• input - ground 2 000 V AC</li> <li>• output - ground 500 V AC</li> </ul> |

### Protections

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| Overvoltage               | 29...33 V shut down O/P voltage, re-power on to recover                               |
| Overload / overcurrent    | 105...130% rated output power<br>recovers automatically after fault condition removed |
| Overtemperature           | shut down O/P voltage, re-power on to recover                                         |
| Short circuit             | Hiccup mode, recovers automatically after fault condition removed                     |
| Cover protection category | IP 20 EN 60529                                                                        |
| Protection against shock  | Class I                                                                               |

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

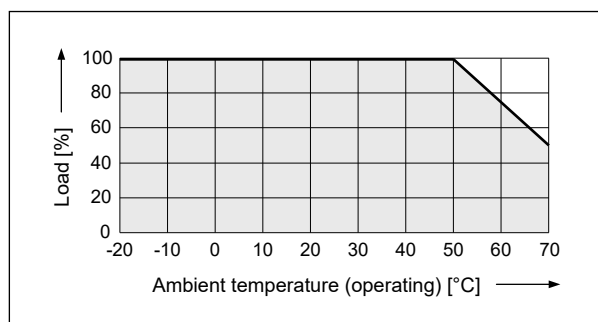
09.02.2023

## Reliability data

|                                                     |                                                                                  |
|-----------------------------------------------------|----------------------------------------------------------------------------------|
| MTBF (mean time between failures)                   | > 200 000 h<br>Telcordia SR-332, I/P: 115 V AC, O/P: 100% load, Ta: 25 °C        |
| Expected lifetime of capacitors                     | 10 years<br>115 V AC, 230 V AC, 50% load, 40 °C                                  |
| <b>Safety standards, directives</b>                 |                                                                                  |
| Electrical safety                                   | IEC 62368-1:2014 ED2, EN 62368-1:2014+A11:2017                                   |
| CE                                                  | EMC Directive 2014/30/EU<br>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                                                               |
| Immunity to:                                        | EN 55035                                                                         |
| • electrostatic discharge (IEC 61000-4-2)           | level 3, criteria B<br>air discharge: ±8 kV, contact discharge: ±4 kV            |
| • radiated field (IEC 61000-4-3)                    | level 2, criteria A<br>80 MHz...1 GHz, 3 V/M<br>with 1 kHz tone / 80% modulation |
| • electrical fast transient / burst (IEC 61000-4-4) | level 2, criteria B<br>1 kV                                                      |
| • surge (IEC 61000-4-5)                             | level 2, criteria A<br>line to line: 1 kV, line to earth: 2 kV                   |
| • conducted (IEC 61000-4-6)                         | level 3, criteria B<br>0,15...80 MHz, 3 Vrms                                     |
| • power frequency magnetic fields (IEC 61000-4-8)   | level 1, criteria A<br>1 A/m                                                     |
| • voltage dips (IEC 61000-4-11)                     | level 3, criteria B&C                                                            |
| Harmonic current emission                           | IEC/EN 61000-3-2, Class A                                                        |
| Voltage fluctuation and flicker                     | IEC/EN 61000-3-3                                                                 |

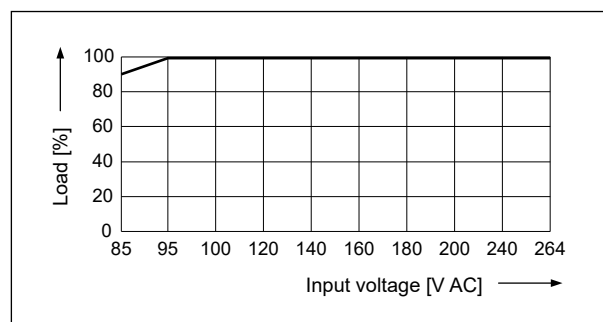
**De-rating for vertical and horizontal mounting orientation**  
**> 50 °C de-rate power by 2,5% / °C**

Fig. 1

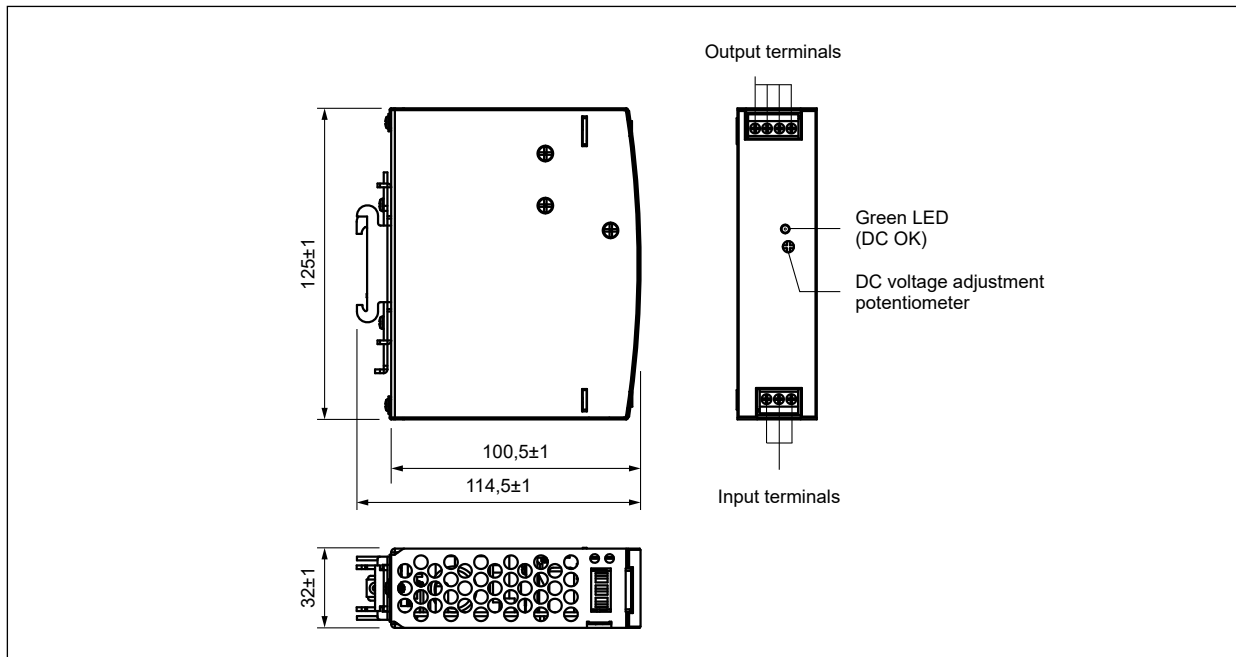


**Output de-rating depending on input voltage**

Fig. 2



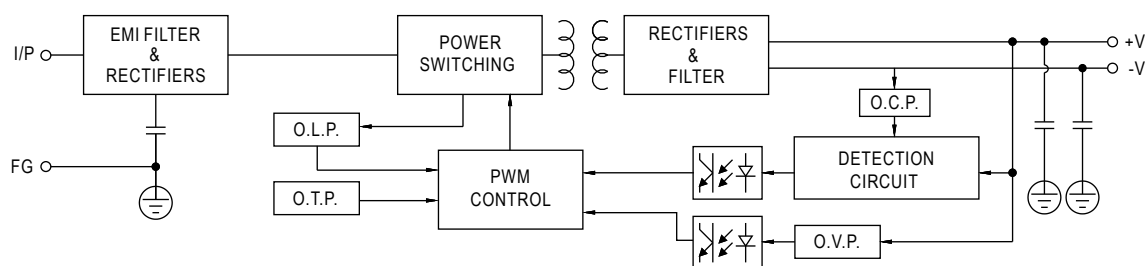
## Dimensions



## Mounting

Power supplies **RZI75-24-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:  $0,8 \dots 3,3 \text{ mm}^2$  (18...12 AWG), input terminals: screw connector, 3 screws M2,5 (20 A / 300 V), output terminals: screw connector, 4 screws M2,5 (20 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.

# RZI120-24-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
- 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                  | 5 A                                             |
| Rated output power              | 120 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) ❶                 | < 120 mVpp 25 °C                                |
| Rise time                       | < 60 ms rated voltage, 100% load, 25 °C         |
| Start-up time                   | < 2 500 ms rated voltage, 100% load, 25 °C      |
| Hold-up time                    | > 20 ms 115 V AC > 60 ms 230 V AC, 100% load    |
| 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                              | < 2,25 A 115 V AC       | < 1,3 A 230 V AC |
| Efficiency at 100% load                    | > 88% 230 V AC          |                  |
| Max. make current (cold start from -40 °C) | < 48 A 115 V AC         | < 90 A 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)               | 125 x 40 x 113 mm                                                                                                                                      |
| Weight                               | 600 g                                                                                                                                                  |
| Ambient temperature                  | <ul style="list-style-type: none"> <li>• storage -40...+85 °C</li> <li>• operating -20...+70 °C (cold start at -40 °C)</li> </ul>                      |
| Power de-rating                      | > 50 °C de-rate power by 2,5% / °C, vertical and horizontal mounting                                                                                   |
| Relative humidity                    | 20...95% (non-condensation and/or icing)                                                                                                               |
| Operating altitude                   | 0...2 500 m                                                                                                                                            |
| Shock resistance (non-operating)     | IEC 60068-2-27, 30G (300 m/s²) for a duration of 18 ms                                                                                                 |
| Vibration resistance (non-operating) | IEC 60068-2-6, 10...500 Hz at 30 m/s² (peak: 3G), 60 min. per axis for all directions (X, Y, Z)                                                        |
| Insulation pollution degree          | 2                                                                                                                                                      |
| Galvanic isolation                   | <ul style="list-style-type: none"> <li>• input - output 3 000 V AC</li> <li>• input - ground 2 000 V AC</li> <li>• output - ground 500 V AC</li> </ul> |

### Protections

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| Overvoltage               | 29...33 V shut down O/P voltage, re-power on to recover                               |
| Overload / overcurrent    | 105...130% rated output power<br>recovers automatically after fault condition removed |
| Overtemperature           | shut down O/P voltage, re-power on to recover                                         |
| Short circuit             | Hiccup mode, recovers automatically after fault condition removed                     |
| Cover protection category | IP 20 EN 60529                                                                        |
| Protection against shock  | Class I                                                                               |

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

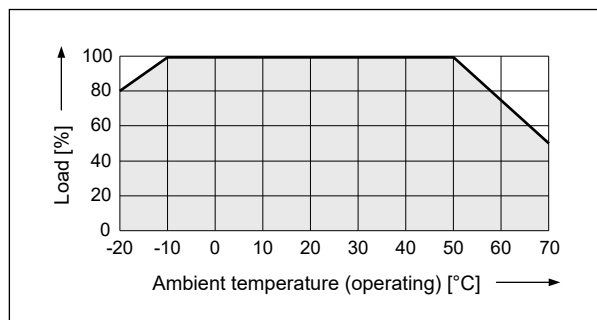
09.02.2023

## Reliability data

|                                                     |                                                                                     |
|-----------------------------------------------------|-------------------------------------------------------------------------------------|
| MTBF (mean time between failures)                   | > 200 000 h<br>Telcordia SR-332, I/P: 115 V AC, 230 V AC, O/P: 100% load, Ta: 25 °C |
| Expected lifetime of capacitors                     | 10 years<br>115 V AC, 230 V AC, 50% load, 40 °C                                     |
| <b>Safety standards, directives</b>                 |                                                                                     |
| Electrical safety                                   | IEC 62368-1:2014 ED2, EN 62368-1:2014+A11:2017                                      |
| CE                                                  | EMC Directive 2014/30/EU<br>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                                                                  |
| Immunity to:                                        | EN 55035                                                                            |
| • electrostatic discharge (IEC 61000-4-2)           | level 3, criteria B<br>air discharge: ±8 kV, contact discharge: ±4 kV               |
| • radiated field (IEC 61000-4-3)                    | level 2, criteria A<br>80 MHz...1 GHz, 3 V/M<br>with 1 kHz tone / 80% modulation    |
| • electrical fast transient / burst (IEC 61000-4-4) | level 2, criteria B<br>1 kV                                                         |
| • surge (IEC 61000-4-5)                             | level 2, criteria B<br>line to line: 1 kV, line to earth: 2 kV                      |
| • conducted (IEC 61000-4-6)                         | level 2, criteria A<br>0,15...80 MHz, 3 Vrms                                        |
| • power frequency magnetic fields (IEC 61000-4-8)   | level 1, criteria A<br>1 A/m                                                        |
| • voltage dips (IEC 61000-4-11)                     | level 3, criteria B&C                                                               |
| Harmonic current emission                           | IEC/EN 61000-3-2, Class A                                                           |
| Voltage fluctuation and flicker                     | IEC/EN 61000-3-3                                                                    |

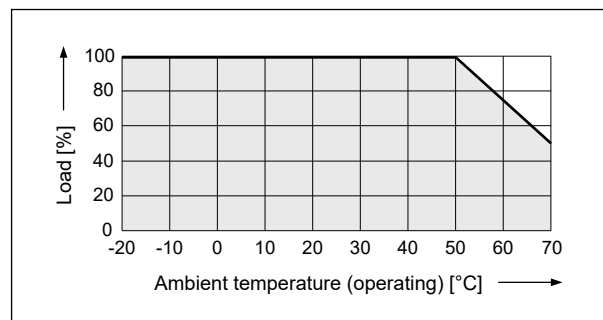
**De-rating for vertical and horizontal mounting orientation (115 V AC)**  
> 50 °C de-rate power by 2,5% / °C

Fig. 1



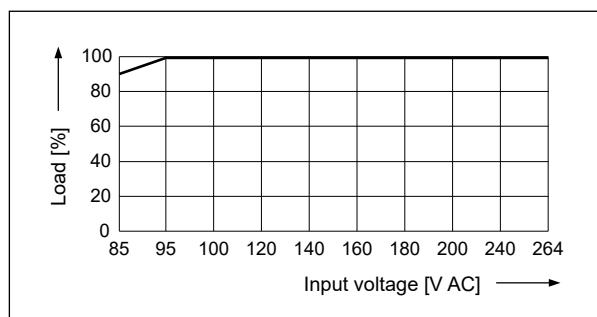
**De-rating for vertical and horizontal mounting orientation (230 V AC)**  
> 50 °C de-rate power by 2,5% / °C

Fig. 2

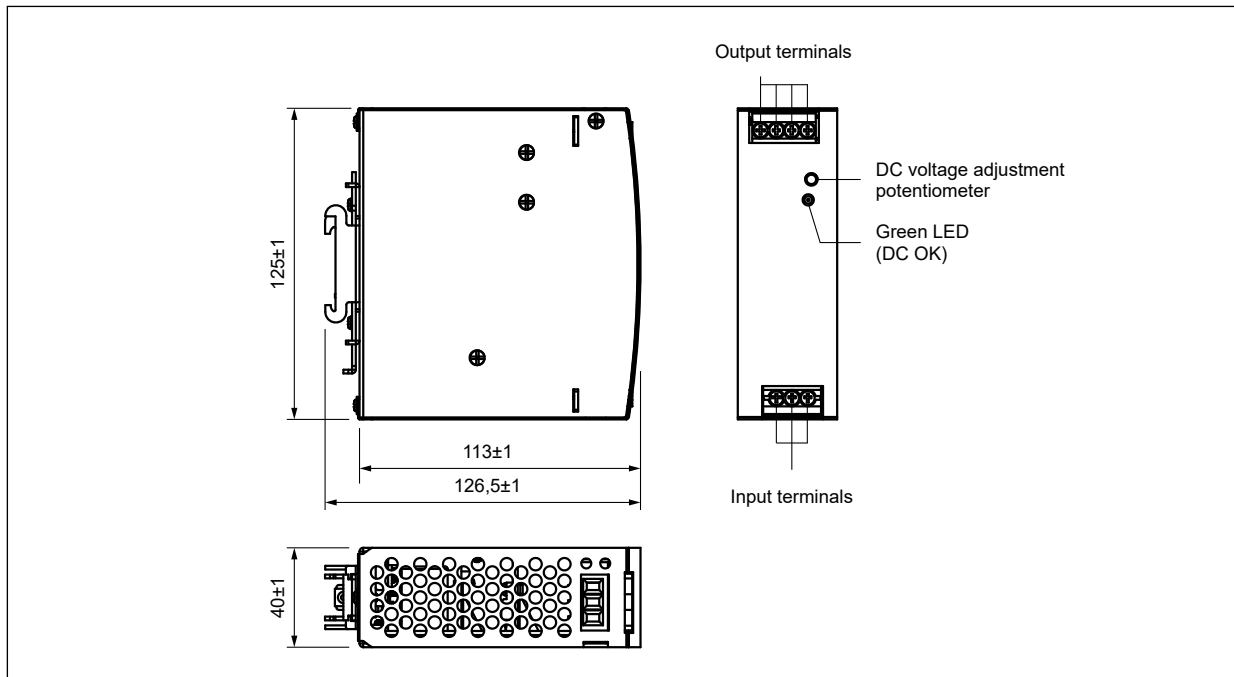


**Output de-rating depending on input voltage**

Fig. 3



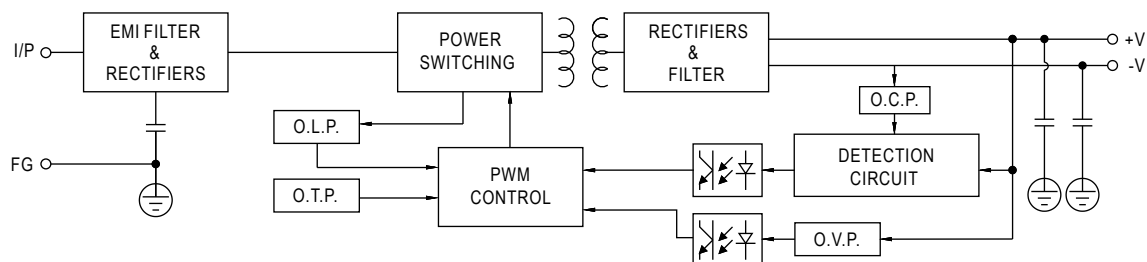
## Dimensions



## Mounting

Power supplies **RZI120-24-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:  $0,8 \dots 3,3 \text{ mm}^2$  (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.

# RZI240-24-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
- 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                  | 10 A                                            |
| Rated output power              | 240 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) ❶                 | < 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                    | > 22 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                              | < 2,5 A 115 V AC        | < 1,3 A 230 V AC |
| Efficiency at 100% load                    | > 88% 230 V AC          |                  |
| Max. make current (cold start from -40 °C) | < 37,2 A 115 V AC       | < 70 A 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)               | 125 x 63 x 113,5 mm                                                                                                                                    |
| Weight                               | 1 000 g                                                                                                                                                |
| Ambient temperature                  | <ul style="list-style-type: none"> <li>• storage -40...+85 °C</li> <li>• operating -20...+70 °C (cold start at -40 °C)</li> </ul>                      |
| 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/s²) for a duration of 18 ms                                                                                                 |
| Vibration resistance (non-operating) | IEC 60068-2-6, 10...500 Hz at 30 m/s² (peak: 3G), 60 min. per axis for all directions (X, Y, Z)                                                        |
| Insulation pollution degree          | 2                                                                                                                                                      |
| Galvanic isolation                   | <ul style="list-style-type: none"> <li>• input - output 3 000 V AC</li> <li>• input - ground 2 000 V AC</li> <li>• output - ground 500 V AC</li> </ul> |

### Protections

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| Overvoltage               | 29...33 V shut down O/P voltage, re-power on to recover                               |
| Overload / overcurrent    | 105...130% rated output power<br>recovers automatically after fault condition removed |
| Overtemperature           | shut down O/P voltage, recovers automatically after temperature goes down             |
| Short circuit             | constant current limiting, recovers automatically after fault condition removed       |
| Cover protection category | IP 20 EN 60529                                                                        |
| Protection against shock  | Class I                                                                               |

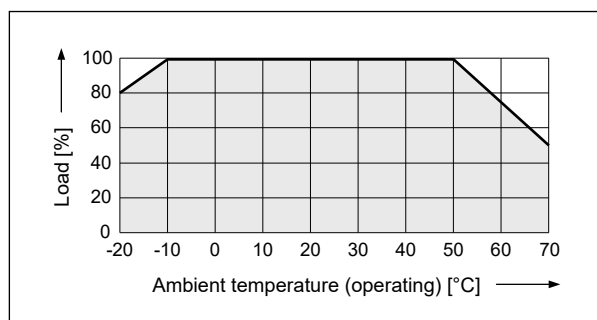
❶ PARD (20 MHz): Periodic and Random Deviation from the power supply's output DC voltage measured at 20 MHz bandwidth.

## Reliability data

|                                                     |                                                                                     |
|-----------------------------------------------------|-------------------------------------------------------------------------------------|
| MTBF (mean time between failures)                   | > 200 000 h<br>Telcordia SR-332, I/P: 115 V AC, 230 V AC, O/P: 100% load, Ta: 25 °C |
| Expected lifetime of capacitors                     | 10 years<br>115 V AC, 230 V AC, 50% load, 40 °C                                     |
| <b>Safety standards, directives</b>                 |                                                                                     |
| Electrical safety                                   | IEC 62368-1:2014 ED2, EN 62368-1:2014+A11:2017                                      |
| CE                                                  | EMC Directive 2014/30/EU<br>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                                                                  |
| Immunity to:                                        | EN 55035                                                                            |
| • electrostatic discharge (IEC 61000-4-2)           | level 3, criteria B<br>air discharge: $\pm 8$ kV, contact discharge: $\pm 4$ kV     |
| • radiated field (IEC 61000-4-3)                    | level 2, criteria A<br>80 MHz...1 GHz, 3 V/M<br>with 1 kHz tone / 80% modulation    |
| • electrical fast transient / burst (IEC 61000-4-4) | level 2, criteria B<br>1 kV                                                         |
| • surge (IEC 61000-4-5)                             | level 2, criteria B<br>line to line: 1 kV, line to earth: 2 kV                      |
| • conducted (IEC 61000-4-6)                         | level 2, criteria A<br>0,15...80 MHz, 3 Vrms                                        |
| • power frequency magnetic fields (IEC 61000-4-8)   | level 1, criteria A<br>1 A/m                                                        |
| • voltage dips (IEC 61000-4-11)                     | level 3, criteria B&C                                                               |
| Harmonic current emission                           | IEC/EN 61000-3-2, Class A                                                           |
| Voltage fluctuation and flicker                     | IEC/EN 61000-3-3                                                                    |

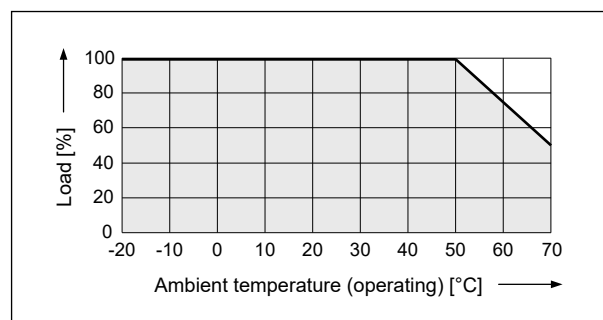
**De-rating for vertical and horizontal mounting orientation (115 V AC)**  
> 50 °C de-rate power by 2,5% / °C

Fig. 1



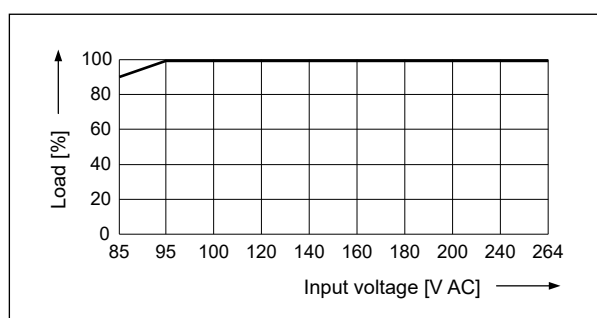
**De-rating for vertical and horizontal mounting orientation (230 V AC)**  
> 50 °C de-rate power by 2,5% / °C

Fig. 2



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

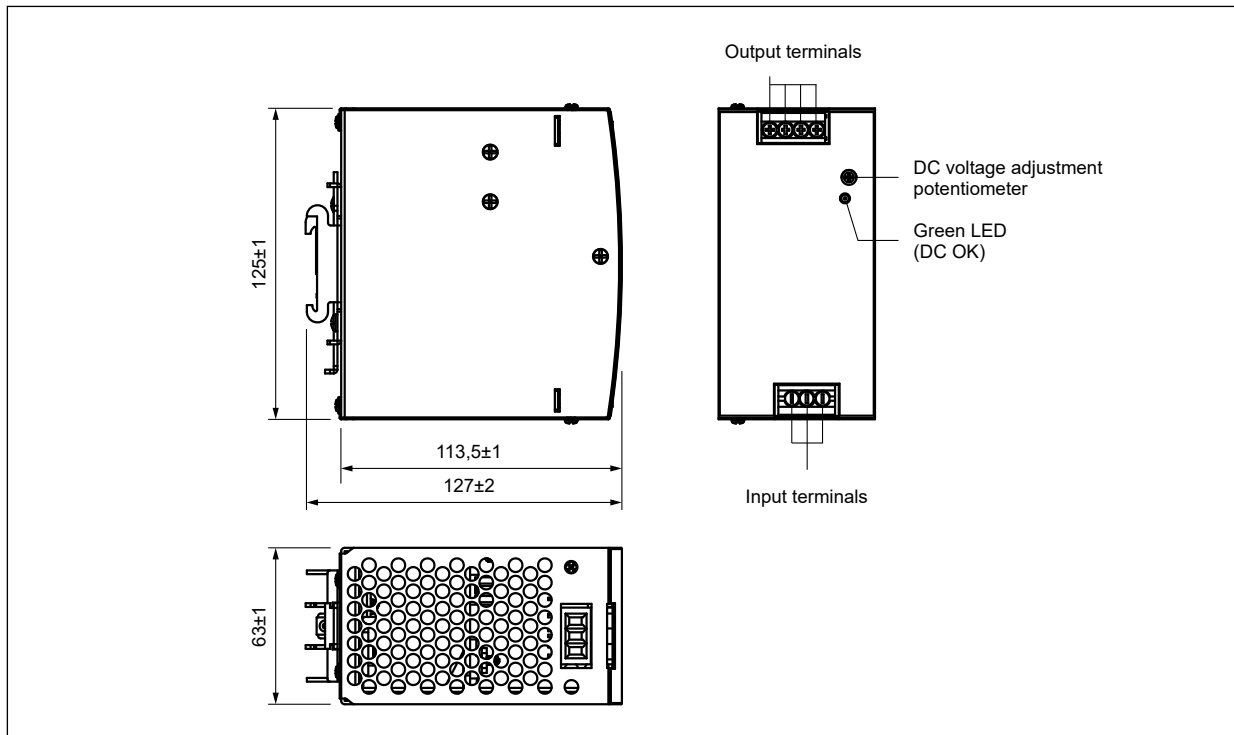
Fig. 3



# RZI240-24-PN

## power supplies

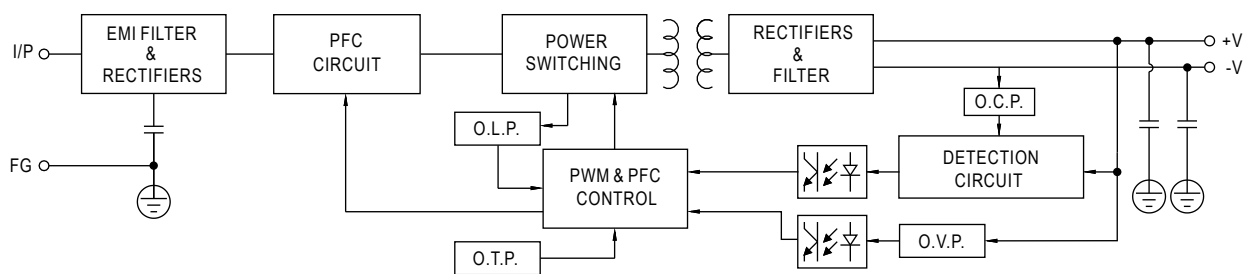
### Dimensions



### Mounting

Power supplies **RZI240-24-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 mm<sup>2</sup> (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.

# RZI480-24-PN

## power supplies



**NEW**

- 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) ❶                 | < 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                  | <div> <div>• storage</div> <div>• operating</div> </div> -40...+85 °C<br>-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/s²) for a duration of 18 ms                                                                                 |
| Vibration resistance (non-operating) | IEC 60068-2-6, 10...500 Hz at 30 m/s² (peak: 3G), 60 min. per axis for all directions (X, Y, Z)                                        |
| Insulation pollution degree          | 2                                                                                                                                      |
| Galvanic isolation                   | <div> <div>• input - output</div> <div>• input - ground</div> <div>• output - ground</div> </div> 3 000 V AC<br>2 000 V AC<br>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                                                                                      |

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

13.06.2023

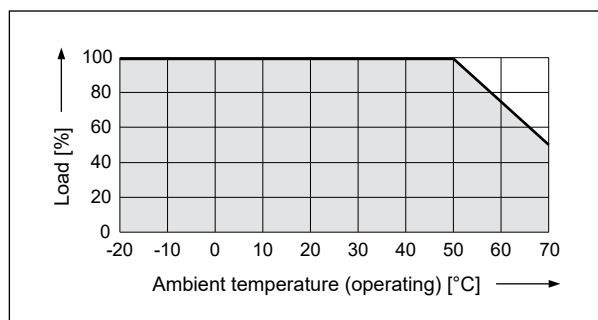
## Reliability data

|                                                      |                                                                                     |
|------------------------------------------------------|-------------------------------------------------------------------------------------|
| MTBF (mean time between failures)                    | > 855 400 h<br>Telcordia SR-332, I/P: 115 V AC, 230 V AC, O/P: 100% load, Ta: 25 °C |
| Expected lifetime of capacitors                      | 10 years<br>115 V AC, 230 V AC, 50% load, 40 °C                                     |
| <b>Safety standards, directives</b>                  |                                                                                     |
| Electrical safety                                    | IEC 62368-1:2020 / A11:2020                                                         |
| CE                                                   | EMC Directive 2014/30/EU<br>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                                                                  |
| Immunity to:                                         | EN 55035                                                                            |
| • electrostatic discharge (IEC 61000-4-2)            | criteria B<br>air discharge: 8 kV, contact discharge: 4 kV                          |
| • radiated field (IEC 61000-4-3)                     | criteria A<br>80 MHz...1 GHz, 3 V/M<br>with 1 kHz tone / 80% modulation             |
| • electrical fast transient / burst (IEC 61000-4-4)  | criteria B<br>1 kV                                                                  |
| • surge (IEC 61000-4-5)                              | criteria B<br>line to line: 1 kV, line to earth: 2 kV                               |
| • conducted (IEC 61000-4-6)                          | criteria A<br>0,15...80 MHz, 3 Vrms                                                 |
| • power frequency magnetic fields (IEC 61000-4-8)    | criteria A<br>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

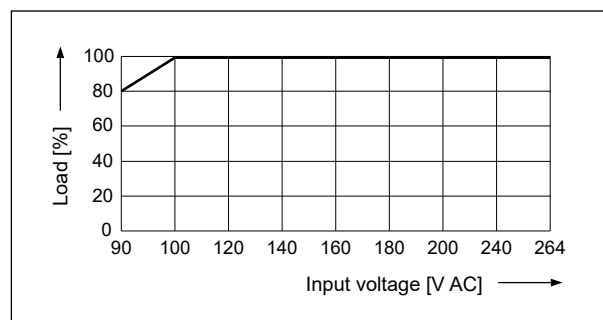
> 50 °C de-rate power by 2,5% / °C

Fig. 1

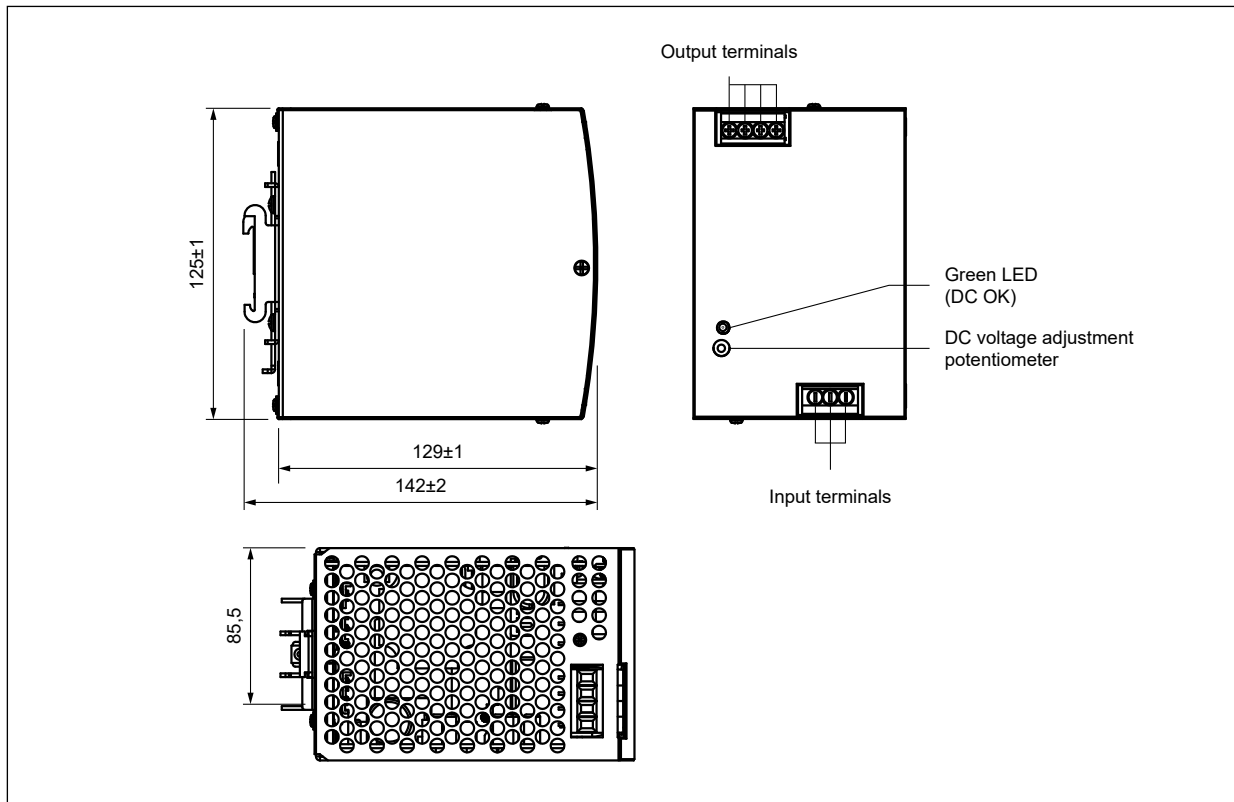


## Output de-rating depending on input voltage

Fig. 2



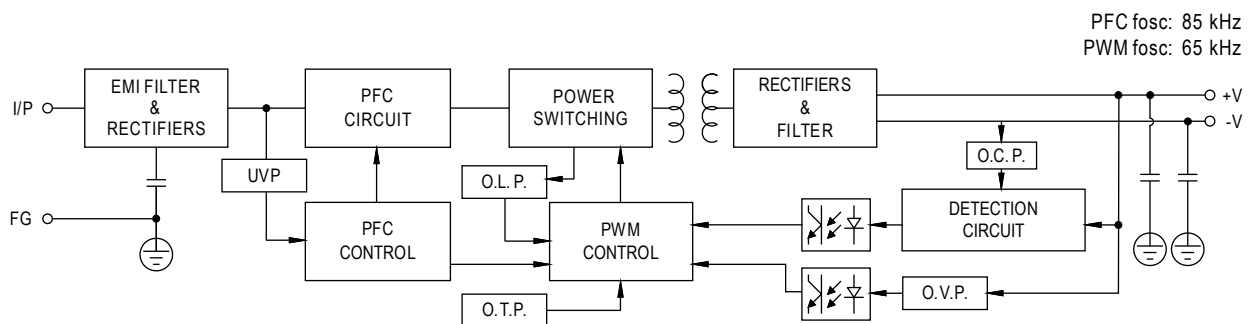
## Dimensions



## Mounting

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## Block diagram



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