

IDR240 Series

240 Watts

- Slim design
- 90% efficient
- Output adjust
- DC OK LED and DC Low LED
- Operating temperature -25 to 70°C
- TS35/7.5 and TS35/15 DIN rail
- 5 Year warranty



The IDR240 series of DIN rail power supplies provide 240W of power in a slim 60mm package. The units are fully featured with built in EMI filter and over voltage, over current and short circuit protections. Outputs available; 24 or 48V and every unit comes with a FiDUS 5 year warranty.

Dimensions:

2.36 x 5.12 x 4.92" (60 x 130 x 125mm)

Models & Ratings

[INSTALLATION ADVICE PG4](#)

| Model Number | Output Power | Output Voltage | Output Current | Efficiency ⁽¹⁾ |
|--------------|--------------|----------------|----------------|---------------------------|
| IDR24024 | 240W | 24V | 10A | 90% |
| IDR24048 | 240W | 48V | 5A | 91% |

Notes

1. Efficiency at 100% load, 25°C, 230VAC input.

Key specifications

| Parameter | Minimum | Typical | Maximum | Units | Notes & Conditions |
|-----------------------|--|---------|---------|-------|---|
| AC Input range | 90 | | 264 | VAC | Derates from 110VAC to 90VAC at 1% per Vac |
| Operating temperature | -25 | | 70 | °C | Derate linearly 2.6% per °C from 55 to 70°C 240Vac. Derate linearly 2% per °C from 50 to 70°C 110Vac |
| Efficiency | >90% typical at full load, 115/230VAC | | | | |
| Dimensions | 2.36 x 5.12 x 4.92" (60 x 130 x 125mm) | | | | |
| EMC | EN55032 Level A conducted and radiated. EN61000-3 and EN61000-4, harmonics, flicker, Surge, EFT, ESD, conducted and radiated EN55024 | | | | |
| Safety | IEC60950-1, UL60950-1, CSA-C22.2 No.60950-1, CE | | | | |

Input

| Parameter | Minimum | Typical | Maximum | Units | Notes & Conditions |
|-------------------------------|---------|---------|---------|-------|--|
| AC Input range | 90 | | 264 | VAC | Derates from 110VAC to 90VAC at 1% per Vac |
| AC Input Frequency | 47 | | 63 | Hz | |
| Power factor | 0.96 | | 0.99 | | EN61000-3-2 class A compliant, minimum at 115VAC |
| On delay | | | 3.6 | s | Full load 115VAC |
| No load power consumption | | | 7 | W | At 230VAC |
| Input current (rms) | | 2.6 | | A | At 115VAC |
| | | 1.3 | | | At 230VAC max |
| Inrush current ⁽²⁾ | | 35 | | A | 115VAC cold start at 25°C. Inrush limiting circuit (2) |
| | | 65 | | | 230VAC cold start at 25°C. Inrush limiting circuit (2) |

Notes

2. Malfunction may occur if the input voltage is cycled repeatedly due to the inrush limiting circuit. Please avoid rapid, repeated power cycling.

Output

| Parameter | Minimum | Typical | Maximum | Units | Notes & Conditions |
|---------------------------|---|-------------|---------|-------|--|
| Output voltage adjustment | 24V: 21.5-29.5V, 48V: 36-59V | | | V | Power output not to be exceeded |
| Setpoint accuracy | | | ±2 | % | |
| Line regulation | | | ±2 | % | 100VAC-240VAC |
| Load regulation | | | ±3 | % | Min to max load |
| Minimum load | 0 | | | % | |
| Ripple & Noise | | | 1% | % | All models measured with 0.1uF ceramic and 47uF electrolytic capacitor and 20 MHz bandwidth. mV for 24V unit |
| Hold up time | | 20 | | ms | At full load, 115VAC |
| Overload protection | | 11A / 5.5 A | | A | Hiccup mode. 11A for 24V and 5.5A for 48V |
| Short circuit protection | | | | | Trip and restart. Automatic recovery |
| Overvoltage protection | | 33 / 66 | | V | Automatic recovery. 33V for 24V and 66V for 48V |
| Over Temp protection | | 110 ±10 | | °C | Trip and restart. Automatic recovery |
| DC LOW LED | DC LOW LED light will be ON when output voltage is below 85%(±2.5%), over voltage, over current, over temp and short circuit. | | | | |

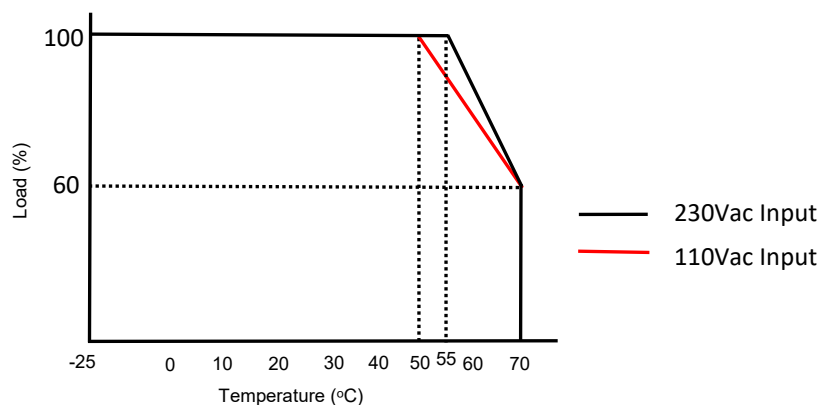
General

| Parameter | Minimum | Typical | Maximum | Units | Notes & Conditions |
|----------------------------|---------|---------|---------|-------------------|------------------------------------|
| Efficiency | | 90 | | % | |
| Isolation: Input to Output | 3000 | | | VAC | |
| Input to Ground | 1500 | | | VAC | |
| Output to Ground | 500 | | | VAC | |
| Isolation resistance | | | 100 | MΩ | 500VDC |
| Power density | | 4 | | W/In ³ | |
| MTBF | | 230 | | KHrs | As per MIL-HDBK-217F, 25°C, 220VAC |
| Weight | | 1000 | | g | |

Environmental

| Parameter | Minimum | Typical | Maximum | Units | Notes & Conditions |
|-----------------------|---------------|---------|---------|-------|---|
| Operating temperature | -25 | | 70 | °C | Derate linearly 2.6% per °C from 55 to 70°C 240Vac. Derate linearly 2% per °C from 50 to 70°C 110Vac |
| Storage temperature | -40 | | 85 | °C | Humidity 5-95% RH |
| Cooling | | | | | Natural convection |
| Humidity | 20 | | 95 | % RH | Non condensing |
| Mounting orientation | Vertical only | | | | |

Derating curve



IDR240 Series

EMC: Emissions

| | Standard | Test level | Criteria | Notes & Conditions |
|------------------|-------------|------------|----------|-------------------------|
| Conducted | EN55032 | A | | |
| Radiated | EN55032 | A | | |
| Harmonic current | EN61000-3-2 | Class A | | Also, Class D compliant |
| Voltage flicker | EN61000-3-3 | | | |

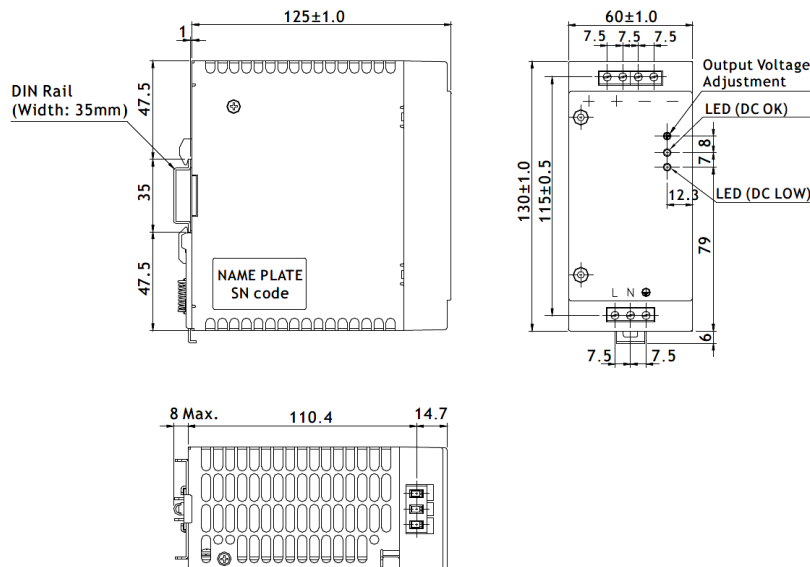
EMC: Immunity

| | Standard | Test level | Criteria | Notes & Conditions |
|------------------------|--------------|----------------------|----------|--------------------------------------|
| ESD | EN61000-4-2 | 2/3 | A | Contact 4KV, Air 8KV |
| Radiated | EN61000-4-3 | 2 | A | 3V/M 80-1000MHz 80%AM 1KHz |
| EFT | EN61000-4-4 | 3 | A | 2KV at 5KHz 120sec |
| Surges | EN61000-4-5 | Installation Class 3 | A | Line to line 1KV, Line to PE 2KV |
| Conducted | EN61000-4-6 | 3 | A | 10V 0.15-80MHz, 80%AM 1KHz |
| Dips and Interruptions | EN61000-4-11 | | AAB | >100% dip, 30% dip and interruptions |

Safety Approvals

| | Safety standard | Notes & Conditions |
|----------------------------|-----------------|--|
| UL | UL60950-1 | |
| CB | IEC60950-1 | |
| CE | | 2011/65/EU RoHS Directive and 2006/95/EC Low voltage directive |
| Equipment protection class | | Class I |

Mechanical Details



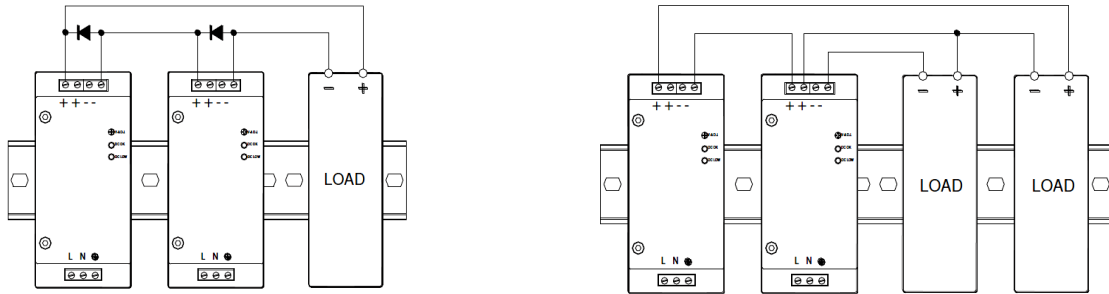
Notes

1. All dimensions shown in millimetres (mm)
2. Tolerance: ± 1 mm

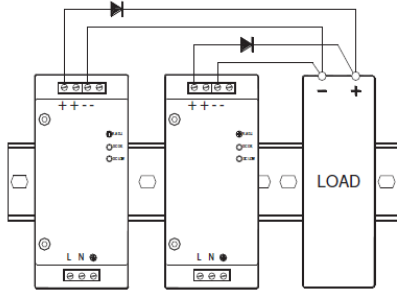
Installation Advice

Series Operation

Series connection is possible as per below diagrams. Current draw should be no higher than the lowest power unit



Parallel Operation

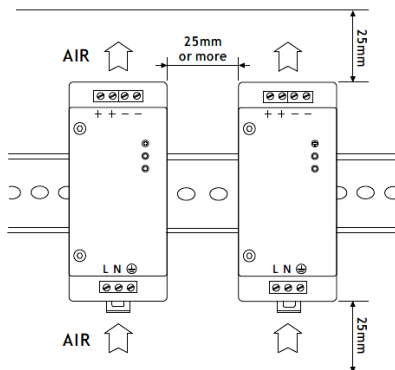


Parallel operation is possible as per drawing. Only identical units can be used in this way. Do not mix powers or voltages.

Parallel operation is for redundancy only, not for increased load capability.

Select diodes with appropriate voltage drop (V_f), output voltage (V_o) and current capacity (I_o)

Thermal Consideration

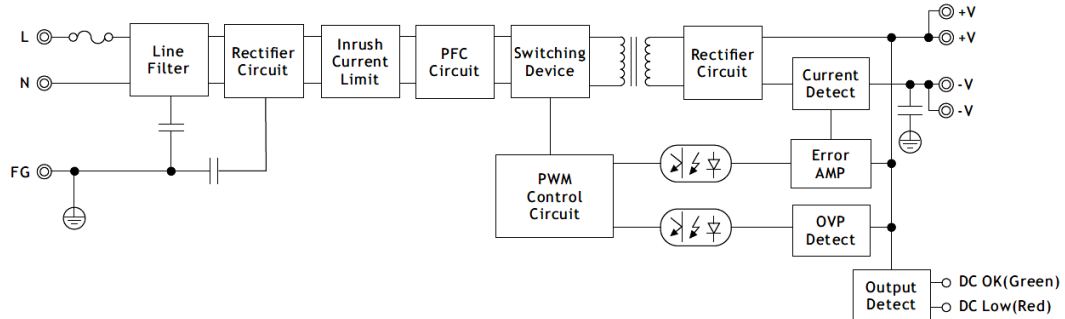


For best thermal performance allow for ventilation either side of the unit to neighbouring power supply units and above and below the unit as per diagram. Spacing can be reduced with forced air cooling.

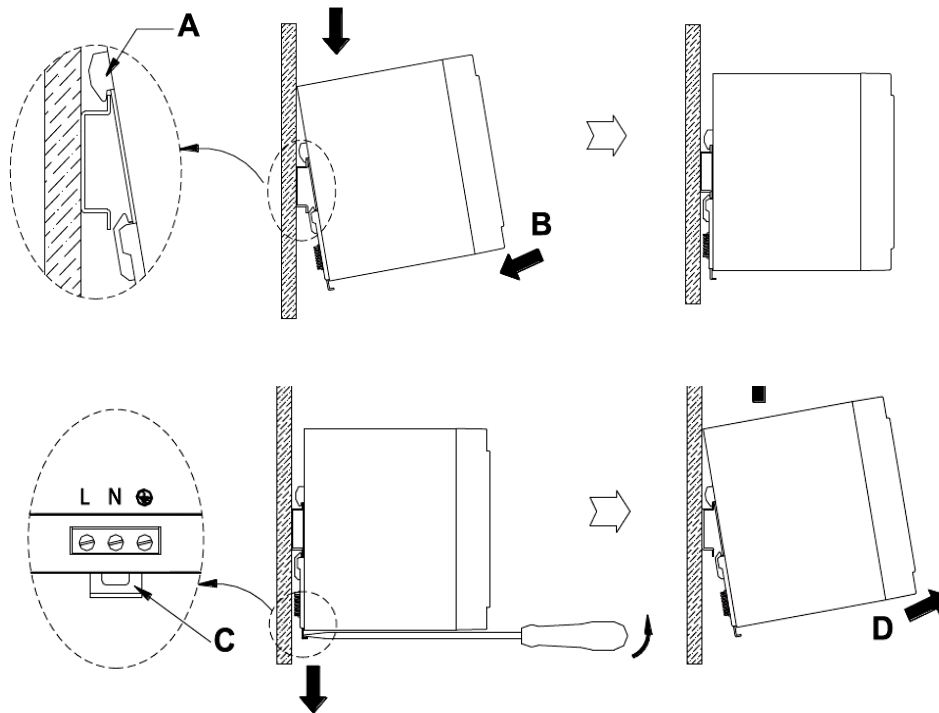
Notes

1. When using multiple units, be aware that the cumulative affect of EMC filter drain will increase earth leakage currents

Block Diagram



DIN Rail mounting /removal



Notes

1. The earth terminal must always be connected prior to use for electrical safety and EMC compliance.
2. Be cautious of falling debris –wire strands / swarf, as this will cause serious damage to the unit.
3. Suitable for TS35/7.5 and TS35/15 DIN rail.
4. Wire size accepted by terminals <math>< 2.5\text{mm}^2</math> (AWG12).