

SERIES: PDRB-45 | **DESCRIPTION:** AC-DC DIN RAIL POWER SUPPLY

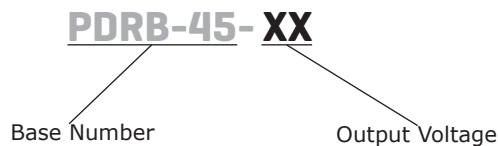
FEATURES

- universal AC input
- over current, over voltage, short circuit protection
- TUV certified
- EN55032 Class B



| MODEL | output voltage | output current | output power | ripple and noise ¹ | efficiency ² |
|------------|----------------|----------------|--------------|-------------------------------|-------------------------|
| | (Vdc) | max (A) | max (W) | max (mVp-p) | typ (%) |
| PDRB-45-12 | 12 | 4 | 48 | 100 | 87 |
| PDRB-45-24 | 24 | 2 | 48 | 100 | 88 |
| PDRB-45-48 | 48 | 1 | 48 | 150 | 89 |

Notes: 1. At full load, nominal input, 20 MHz bandwidth oscilloscope, with 0.1 μ F ceramic and 47 μ F electrolytic capacitors on the output.
 2. At 230 Vac, 50 Hz, full load.
 3. All specifications are measured at Ta=25°C, nominal input voltage, and rated output load unless otherwise specified.

PART NUMBER KEY


INPUT

| parameter | conditions/description | min | typ | max | units |
|-----------------|-----------------------------------|-----|-----|-----|-------|
| voltage | | 90 | | 264 | Vac |
| | | 127 | | 370 | Vdc |
| frequency | | 47 | | 63 | Hz |
| current | at 115 Vac, full load | | | 1.2 | A |
| | at 230 Vac, full load | | | 0.6 | A |
| inrush current | at 110 Vac, full load, cold start | | | 20 | A |
| | at 220 Vac, full load, cold start | | | 35 | A |
| leakage current | input to output | | | 3.5 | mA |
| | input to FG | | | 3.5 | mA |
| input fuse | 2A/250 Vac | | | | |

OUTPUT

| parameter | conditions/description | min | typ | max | units |
|----------------------------|---|-----|-----|-------|-------|
| capacitive load | | | | 5,000 | μF |
| initial set point accuracy | | | | ±1 | % |
| line regulation | at full load, 100~264 Vac | | | ±1 | % |
| load regulation | at 230 Vac, 100~0% load | | | ±1 | % |
| adjustability | via built in trim pot | | | | |
| | 12 Vdc output model | 12 | | 14 | Vdc |
| | 24 Vdc output model | 24 | | 28 | Vdc |
| | 48 Vdc output model | 48 | | 55 | Vdc |
| start-up time | at 115/230 Vac, full load | | | 2.0 | s |
| rise time | output voltage rise from 10~90% of output voltage | | | 60 | ms |
| hold-up time | at 115 Vac, full load | 10 | | | ms |
| | at 230 Vac, full load | 20 | | | ms |
| switching frequency | at Vi nom, full load | | 65 | | kHz |
| LED indicator | when LED is on, the power supply is operating and DC output is good | | | | |

PROTECTIONS

| parameter | conditions/description | min | typ | max | units |
|--------------------------|--|-----|-----|-----|-------|
| over voltage protection | output shutdown, must recycle power to recover | 120 | | 150 | % |
| over current protection | hiccup, auto recovery | 110 | | 150 | % |
| short circuit protection | hiccup, auto recovery | | | | |

SAFETY & COMPLIANCE

| parameter | conditions/description | min | typ | max | units |
|----------------------|---|---------|-----|-----|-------|
| isolation voltage | input to output for 1 minute at 10 mA | 3,000 | | | Vac |
| | input to FG for 1 minute at 10 mA | 1,500 | | | Vac |
| | output to FG for 1 minute at 10 mA | 500 | | | Vac |
| isolation resistance | input to output at 500 Vdc | 5 | | | MΩ |
| safety approvals | EN 60950-1 | | | | |
| safety class | class I | | | | |
| conducted emissions | EN55032, Class B | | | | |
| radiated emissions | EN55032, Class B | | | | |
| ESD | EN61000-4-2, Level 4, Criteria B, Air Discharge: ±8 kV; Contact Discharge: ± 4 kV | | | | |
| radiated immunity | EN61000-4-3, Level 3, Criteria A, 80-1000 MHz, 3 V/M, 80% modulation (1 kHz) | | | | |
| EFT/burst | EN61000-4-4, Level 4, Criteria B, ±1 kV | | | | |
| surge | EN61000-4-5, Level 4, Criteria B, Common Mode: 2 kV; Differential Mode: 1 kV | | | | |
| pollution degree | 2 | | | | |
| degree of protection | IP20 | | | | |
| MTBF | as per MIL-HDBK-217F, at 220 Vac, full load, 25°C | 500,000 | | | hours |
| RoHS | yes | | | | |

Notes: 4. The power supply is considered a component which will be installed into final equipment. The final equipment still must be tested to meet the necessary EMC directives.

ENVIRONMENTAL


| parameter | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-------|-------|
| operating temperature | see derating curves | -25 | | 70 | °C |
| storage temperature | | -40 | | 85 | °C |
| operating humidity | non-condensing | 5 | | 90 | % |
| storage humidity | non-condensing | 5 | | 95 | % |
| altitude | | | | 2,000 | m |

MECHANICAL

| parameter | conditions/description | min | typ | max | units |
|------------------------|---|-----|------|-----|-------|
| dimensions | 126.00 x 102.50 x 34.50 (4.960 x 4.035 x 1.35 inches) | | | | mm |
| weight | | | 0.31 | | kg |
| cooling | natural convection | | | | |
| input/output connector | accepts 24~12 AWG wire | | | | |

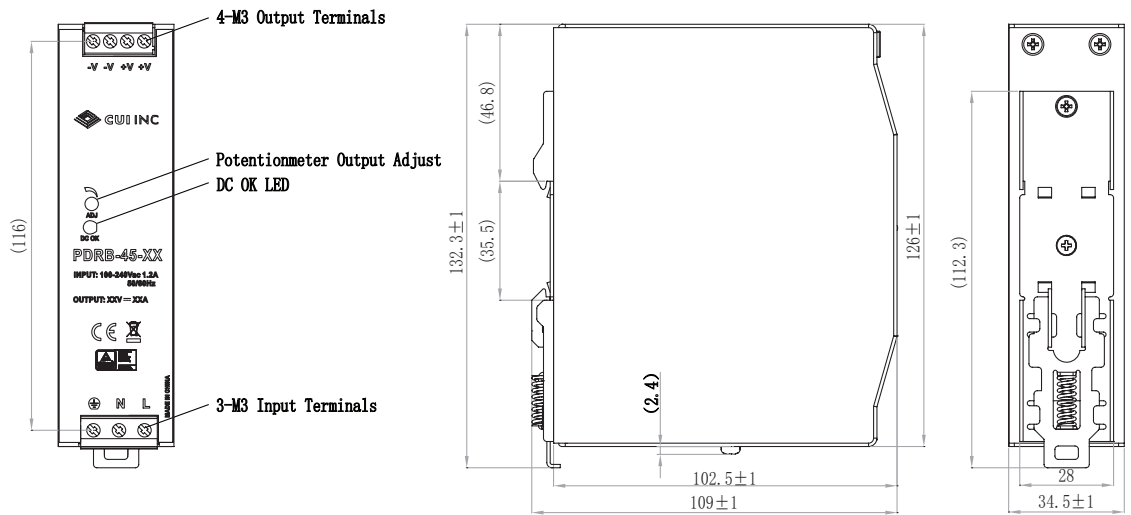
MECHANICAL DRAWING

units: mm
tolerance: ±0.3
unless otherwise noted

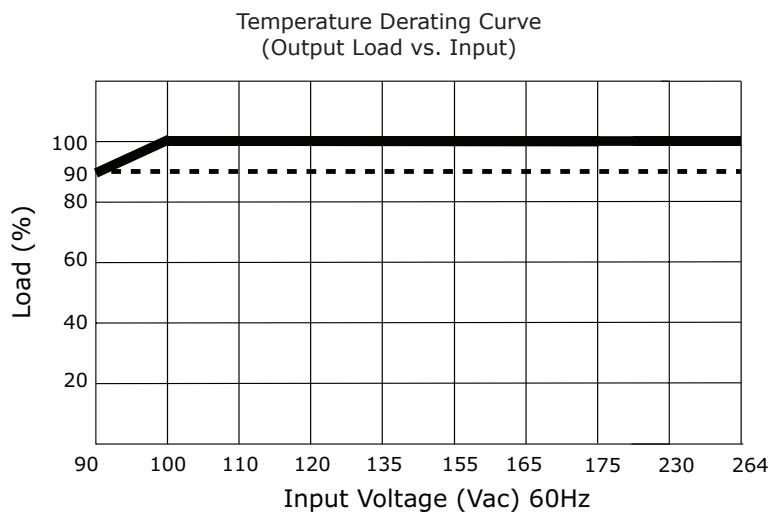
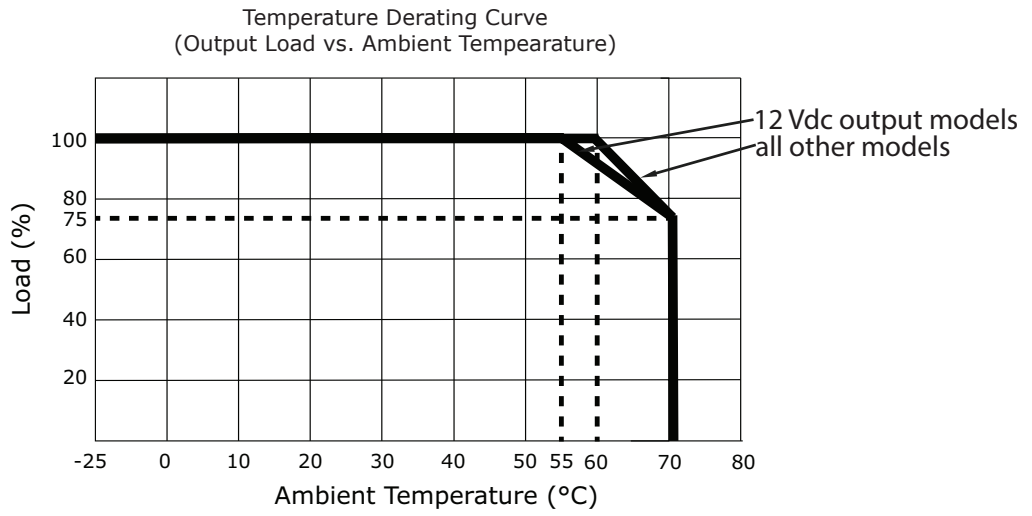
| TERMINAL 1 CONNECTIONS | |
|------------------------|---|
| TERMINAL | Function |
| 1 | L |
| 2 | N |
| 3 |  |

| TERMINAL 2 CONNECTIONS | |
|------------------------|----------|
| TERMINAL | Function |
| 1 | +V |
| 2 | +V |
| 3 | -V |
| 4 | -V |

| INSTALLATION | |
|--------------|-------------------------------------|
| DIN RAIL | TS35/7.5 or TS35/15 |
| Wire Range | 24~12 AWG (4.0 mm ²) |
| Strip Length | 7 mm |
| Screw Torque | 0.5 N·m |



DERATING CURVES



REVISION HISTORY

| rev. | description | date |
|------|-----------------|------------|
| 1.0 | initial release | 05/08/2019 |

The revision history provided is for informational purposes only and is believed to be accurate.

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