# **SERIES:** PDRB-30 | **DESCRIPTION:** AC-DC DIN RAIL POWER SUPPLY

## FEATURES

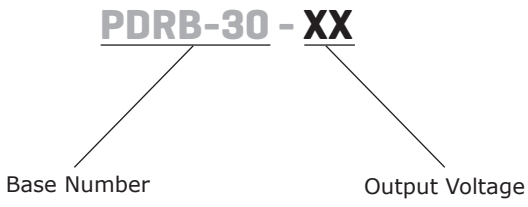
- universal input range (85 ~ 264 Vac)
- IEC/EN/UL 62368 certified
- designed to meet 61558 system requirements
- over Voltage Category (OVC) III design
- over voltage, over current, and short circuit protections
- 4kVac isolation input to output
- withstand up to 300 Vac input surge events
- Class B emissions

## MODEL

| MODEL | output[1] voltage | | output current | output power | ripple and noise[2] | efficiency[3] |
|---|---|---|---|---|---|---|
| | | range | max | max | max | typ |
| | (Vdc) | (Vdc) | (A) | (W) | (mVp-p) | (%) |
| PDRB-30-5 | 5 | 4.9 ~ 5.5 | 3.0 | 15 | 80 | 82 |
| PDRB-30-12 | 12 | 10.8 ~ 13.8 | 2.0 | 24 | 120 | 88 |
| PDRB-30-15 | 15 | 13.5 ~ 18.0 | 2.0 | 30 | 120 | 89 |
| PDRB-30-24 | 24 | 21.6 ~ 29.0 | 1.5 | 36 | 150 | 88 |
| PDRB-30-48 | 48 | 43.2 ~ 55.2 | 0.75 | 36 | 240 | 90 |

Notes:
1. Output adjustable via built-in trimpot. The actual adjustment range may extend beyond the values listed and care should be taken to ensure the output voltage and output power do not exceed stated limits.
2. At full load, nominal input, 20 MHz bandwidth oscilloscope.
3. At 230 Vac input.

## PART NUMBER KEY



## INPUT

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| input voltage | ac input<br>dc input | 85<br>120 | | 264<br>370 | Vac<br>Vdc |
| frequency | | 47 | | 63 | Hz |
| current | at 115 Vac<br>at 230 Vac | | | 0.9<br>0.5 | A<br>A |
| inrush current | at 115 Vac<br>at 230 Vac | | 25<br>45 | | A<br>A |
| leakage current | at 264 Vac | | | 0.25 | mA |

## OUTPUT

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| capacitive load | 5 Vdc output model<br>12 Vdc output model<br>15 Vdc output model<br>24 Vdc output model<br>48 Vdc output model | | | 12,000<br>6,000<br>5,000<br>1,400<br>600 | µF<br>µF<br>µF<br>µF<br>µF |
| initial set point accuracy | 0% ~ 100% load | | ±2 | | % |
| line regulation | at rated load | | ±0.5 | | % |
| load regulation | at 230 Vac | | ±1.5 | | % |
| start-up time | | | | 3 | s |
| hold-up time | at 115 Vac<br>at 230 Vac | | 12<br>60 | | ms<br>ms |
| switching frequency | | | 65 | | kHz |
| temperature coefficient | | | ±0.02 | | %/°C |
| no load power consumption | at 230 Vac<br>5 Vdc, 12 Vdc, 15 Vdc output models<br>24 Vdc output model<br>48 Vdc output model | | | <br>0.3<br>0.8<br>0.4 | <br>W<br>W<br>W |

## PROTECTIONS

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| over voltage protection | clamp or hiccup<br>5 Vdc output model<br>12 Vdc output model<br>15 Vdc output model<br>24 Vdc output model<br>48 Vdc output model | | | <br>7.5<br>16<br>20<br>36<br>60 | <br>Vdc<br>Vdc<br>Vdc<br>Vdc<br>Vdc |
| over current protection | auto recovery | 120 | | | % |
| short circuit protection | continuous, auto recovery, hiccup | | | | |

## SAFETY & COMPLIANCE

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| isolation voltage | input to output 5 mA for 1 minute | 4,000 | | | Vac |
| safety approvals | certified to 62368: IEC, EN, UL/cUL | | | | |
| safety class | Class II | | | | |
| conducted emissions | CISPR32/EN55032 CLASS B | | | | |
| radiated emissions | CISPR32/EN55032 CLASS B | | | | |
| ESD | IEC/EN61000-4-2 Contact ±6KV/Air ±8KV perf. Criteria A | | | | |
| radiated immunity | IEC/EN61000-4-3 10V/m perf. Criteria A | | | | |
| EFT/burst | IEC/EN61000-4-4 ±2KV perf. Criteria A | | | | |
| surge | IEC/EN61000-4-5 line to line ±2KV perf. Criteria A | | | | |
| conducted immunity | IEC/EN61000-4-6 10Vr.m.s perf. Criteria A | | | | |
| voltage dips and interruption | IEC/EN61000-4-11 0%, 70% perf. Criteria A | | | | |
| MTBF | as per MIL-HDBK-217F at 25°C | 300,000 | | | hours |
| RoHS | yes | | | | |

## ENVIRONMENTAL

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| operating temperature | see derating curve | -40 | | 70 | °C |
| storage temperature | | -40 | | 85 | °C |
| storage humidity | non-condensing | 0 | | 95 | % |
| altitude | | | | 2,000 | m |

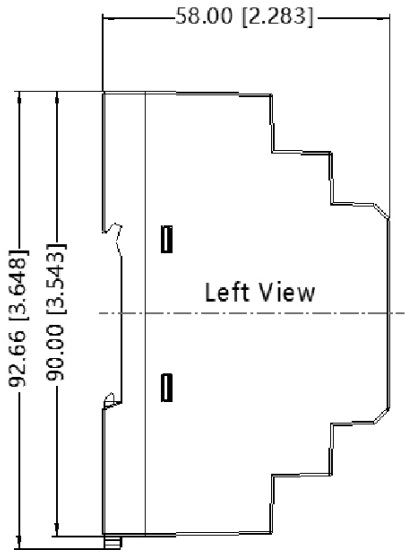
## MECHANICAL

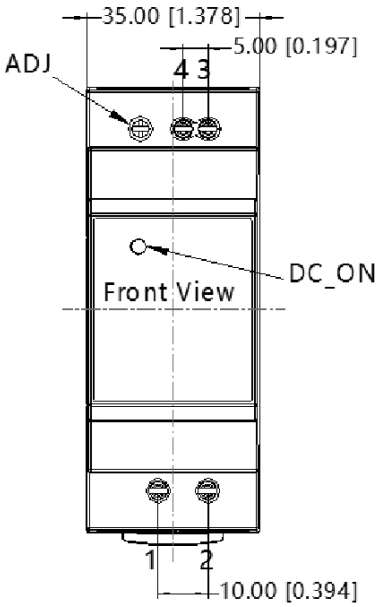
| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| dimensions | 92.66 x 35.00 x 58.00 | | | | mm |
| material | plastic, heat-resistant (UL94V-0) | | | | |
| weight | | | 115 | | g |
| cooling | natural convection | | | | |

## MECHANICAL DRAWING

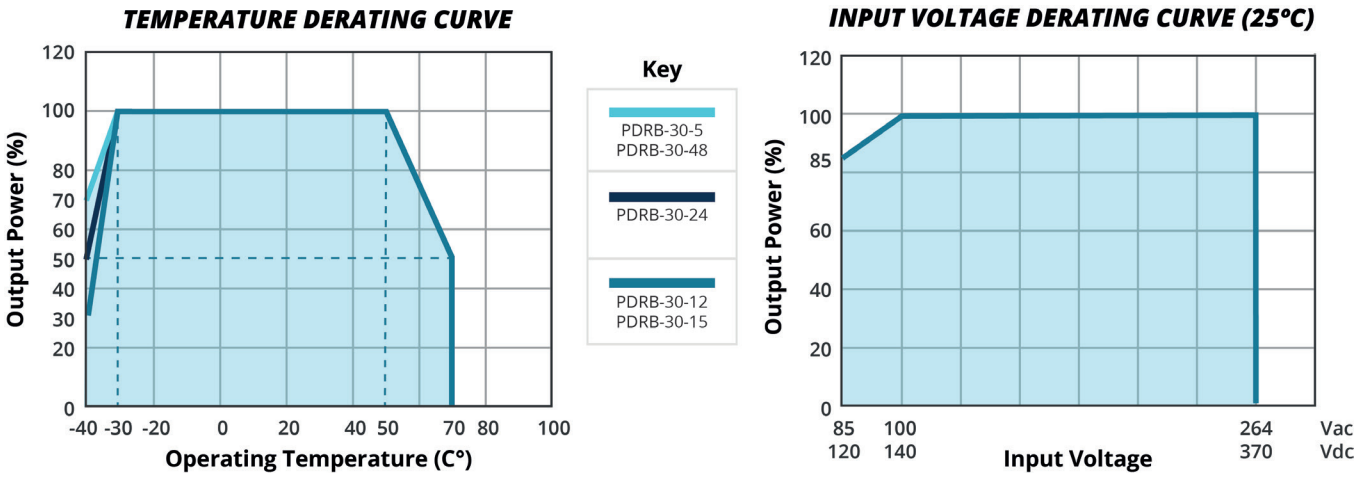
units: mm [inch]
ADJ: built-in trimpot
wire range: 24-12 AWG
tightening torque: Max 0.4 N·m
mounting rail: TS35
general tolerances: ±1.0 [±0.039]

| TERMINAL CONNECTIONS | |
|---|---|
| TERMINAL | Function |
| 1 | AC (N) |
| 2 | AC (L) |
| 3 | -Vo |
| 4 | +Vo |

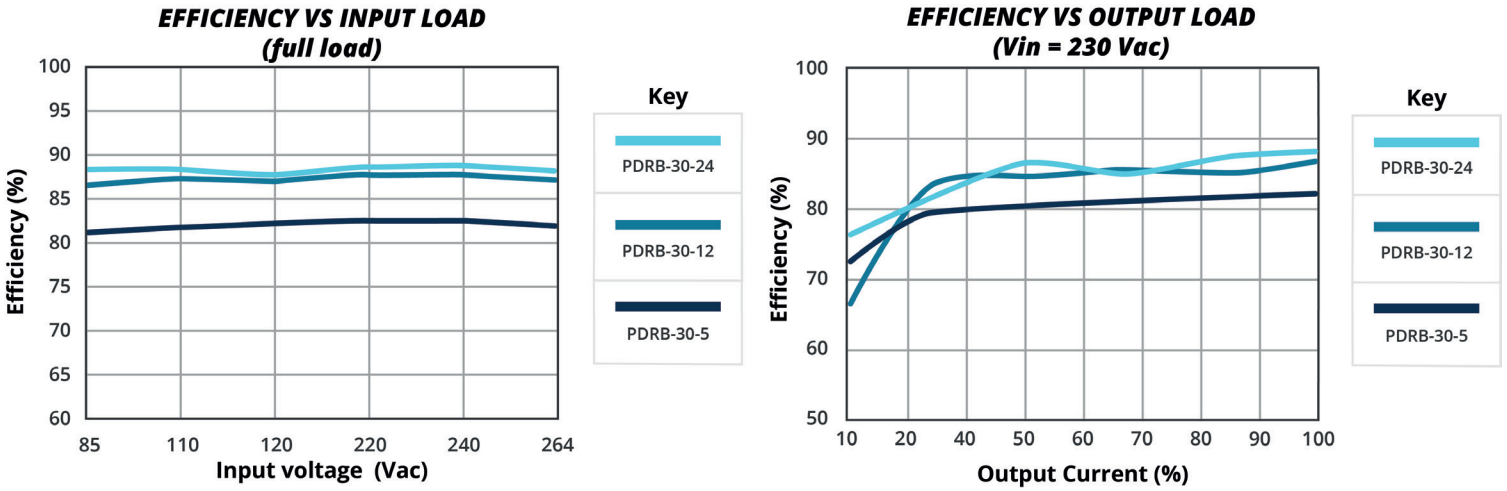


## DERATING CURVE




## EFFICIENCY CURVES



## REVISION HISTORY

| rev. | description | date |
|---|---|---|
| 1.0 | initial release | 11/25/2020 |
| 1.01 | correction to 24 Vdc efficiency and no-load power consumption | 06/23/2021 |
| 1.02 | derating curves updated | 02/22/2022 |
| 1.03 | UKCA mark added | 05/26/2022 |

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

CUI INC
a bel group

**Headquarters**
20050 SW 112th Ave.
Tualatin, OR 97062
**800.275.4899**

Fax 503.612.2383
**cui**.com
techsupport@cui.com