

SERIES: PDRB-300 | **DESCRIPTION:** AC-DC DIN RAIL POWER SUPPLY

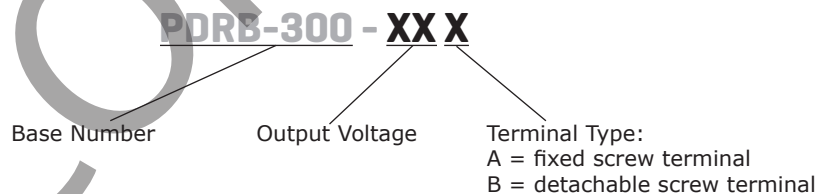
FEATURES

- integrated fuse and surge protection
- 3,000 Vac input/output isolation voltage
- DC on/low LED indicators
- over-voltage/current protection
- detachable and fixed screw terminal options
- adjustable output via trim POT
- power good relay (24 Vdc model)
- parallel up to three units
- UL/cUL, TUV, CE certified



| MODEL | output voltage | output current max | output power max | ripple and noise ¹ max | efficiency ² typ |
|-------------|----------------|--------------------|------------------|-----------------------------------|-----------------------------|
| | (Vdc) | (A) | (W) | (mVp-p) | (%) |
| PDRB-300-24 | 24 | 12.5 | 300 | 100 | 89 |
| PDRB-300-48 | 48 | 6.25 | 300 | 100 | 90 |

Notes: 1. At full load, nominal input, 20 MHz bandwidth oscilloscope.
 2. At nominal input.
 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 | | 132 | Vac |
| | | 180 | | 264 | Vac |
| | | 210 | | 375 | Vdc |
| frequency | | 47 | | 63 | Hz |
| current | at 90 Vac | | | 6.0 | A |
| | at 180 Vac | | | 3.0 | A |
| inrush current | at 115 Vac | | | 35 | A |
| | at 230 Vac | | | 65 | A |
| leakage current | input to output | | | 0.25 | mA |
| | input to FG | | | 3.5 | mA |
| power factor (passive) | at 230 Vac, full load | | 0.75 | | |

OUTPUT

| parameter | conditions/description | min | typ | max | units |
|-------------------------------------------------|---------------------------------------------------------|------|-----|-------|---------|
| capacitive load | | | | 7,000 | μF |
| initial set point accuracy | | | | ±1 | % |
| line regulation | at full load, V in min to V in max | | | ±0.5 | % |
| load regulation | at Vi nom, 0~100% load single mode | | | ±1 | % |
| | parallel mode | | | ±5 | % |
| adjustability | via built in trim pot, 80% load 24 Vdc output models | 22.5 | | 28.5 | Vdc |
| | 48 Vdc output models | 47 | | 56 | Vdc |
| rated continuous loading at max trim voltage | 24 Vdc output models (28.5 Vdc) | | | 10.5 | A |
| | 48 Vdc output models (56 Vdc) | | | 5.35 | A |
| start-up time | at Vi nom, full load | | | 2.5 | s |
| | at Vi nom, full load with max capacitive load | | | 2.5 | s |
| rise time | at Vi nom, full load | | | 150 | ms |
| | at Vi nom, full load with max capacitive load | | | 500 | ms |
| hold-up time | at 115 Vac, full load | 25 | | | ms |
| | at 230 Vac, full load | 30 | | | ms |
| fall time | at Vi nom, full load | | | 150 | ms |
| transient recovery time | at Vi nom, 100~50% load | | | 2 | ms |
| switching frequency | at Vi nom, full load | | 40 | | kHz |
| temperature coefficient | | | | ±0.03 | %/°C |
| DC ON indicator threshold at start-up (GREEN) | 24 Vdc output models | 17.6 | | 19.4 | Vdc |
| | 48 Vdc output models | 37.0 | | 43.0 | Vdc |
| DC LOW indicator threshold after start-up (RED) | 24 Vdc output models | 17.6 | | 19.4 | Vdc |
| | 48 Vdc output models | 37.0 | | 43.0 | Vdc |
| parallel operation ⁴ | at 10~90% load | | | 3 | modules |
| power ready ⁵ | threshold voltage of contact closed (at start-up) | 17.6 | | 19.4 | Vdc |
| | electrical isolation | 500 | | | Vdc |
| | contact rating at 60 Vdc | | | 0.3 | A |

Notes: 4. Single/Parallel mode operation selectable via S/P switch.
5. For 24 Vdc output models only

PROTECTIONS

| parameter | conditions/description | min | typ | max | units |
|--------------------------|------------------------------------|-----|-----|-----|-------|
| over voltage protection | at Vi nom, 80% load, auto recovery | | | | |
| | 24 Vdc output models | 30 | | 33 | Vdc |
| | 48 Vdc output models | 60 | | 66 | Vdc |
| over current protection | fold forward (see curve) | 120 | | 145 | % |
| short circuit protection | fold forward | | | | |

SAFETY & COMPLIANCE

| parameter | conditions/description | min | typ | max | units |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------|-----|----------------|
| isolation voltage | input to output for 1 minute | 3,000 | | | Vac |
| | | 4,242 | | | Vdc |
| isolation voltage | input to FG for 1 minute | 1,500 | | | Vac |
| | | 2,121 | | | Vdc |
| isolation voltage | output to FG for 1 minute | 500 | | | Vac |
| | | 710 | | | Vdc |
| isolation resistance | input to output at 500 Vdc | 100 | | | MΩ |
| safety approvals | UL 508, UL/EN 62368-1 ISA 12.12.01 (Class I, Div 2, Groups A~D) | | | | |
| safety class | class I | | | | |
| EMI/EMC | EN 55032 Class B, EN 55024, ENV 50204, EN 61204-3, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 61000-6-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11 | | | | |
| pollution degree | 2 | | | | |
| degree of protection | IP20 | | | | |
| MTBF | as per Bellcore Issue 6 at 40 °C, GB 24 Vdc output models 48 Vdc output models | | 437,000 468,000 | | hours hours |
| RoHS | yes | | | | |

Notes: 6. 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 | -30 | | 71 | °C |
| storage temperature | | -40 | | 85 | °C |
| humidity | non-condensing | 20 | | 95 | % |
| altitude | | | | 5,000 | m |
| vibration | meets IEC 60068-2-6 (Mounting on rail: 10~500 Hz, 2 G, along X,Y,Z axis, for 60 minutes on each axis) | | | | |
| shock | meets IEC 60068-2-27 (15 G, 11 ms, 3 axis, 6 faces, 3 times for each face) | | | | |

MECHANICAL

| parameter | conditions/description | min | typ | max | units |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|----------|
| dimensions | fixed screw terminal: 124.50 x 83.5 x 123.6 (4.90 x 3.29 x 4.87 inches) detachable screw terminal: 143.5 x 83.5 x 123.6 (5.65 x 3.29 x 4.87 inches) | | | | mm mm |
| material | metal | | | | |
| weight | | | 1.4 | | kg |
| cooling | natural convection | | | | |
| input/output connector | fixed screw terminal: accepts 24~10 AWG wire detachable screw terminal: accepts 24~12 AWG wire | | | | |

MECHANICAL DRAWING

units: mm [inch]

tolerance:

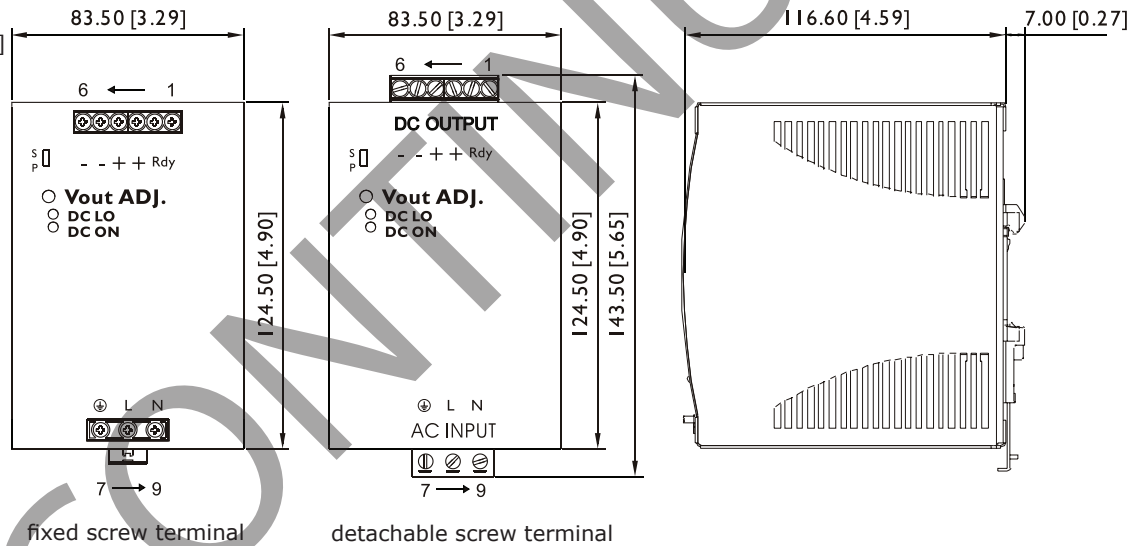
$X \leq 30.00$: ± 0.30 [± 0.01]

$30.00 < X \leq 120.00$: ± 0.50 [± 0.02]

$120.00 < X \leq 400.00$: ± 0.80 [± 0.03]

unless otherwise noted

| TERMINAL CONNECTIONS | |
|----------------------|----------|
| TERMINAL | Function |
| 1 | RDY* |
| 2 | RDY* |
| 3 | V+ |
| 4 | V+ |
| 5 | V- |
| 6 | V- |
| 7 | |
| 8 | L |
| 9 | N |

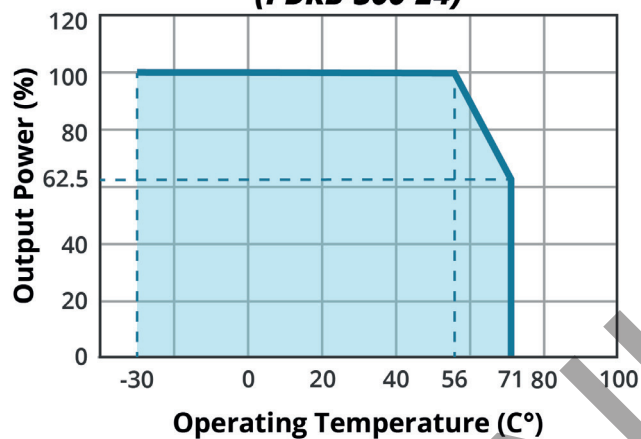


Note: *RDY on 24 Vdc model only

| INSTALLATION | | |
|--------------|--------------------------------------------------|--------------------------------------|
| | Fixed Screw Terminal | Detachable Screw Terminal |
| DIN RAIL | TS35/7.5 or TS35/15 | |
| Cable | flexible/solid, copper conductors only, 60/75°C | |
| Wire Range | 24~10 AWG (0.2~4 mm ²) | 24~12 AWG (0.2~2.5 mm ²) |
| Strip Length | 8 mm | 4~5 mm |
| Screw Torque | input: 9 lb·in output: 5.5 lb·in | input: 4.5 lb·in output: 7 lb·in |
| Position | Vertical | |
| Cooling | Natural convection, 25 mm clearance on all sides | |

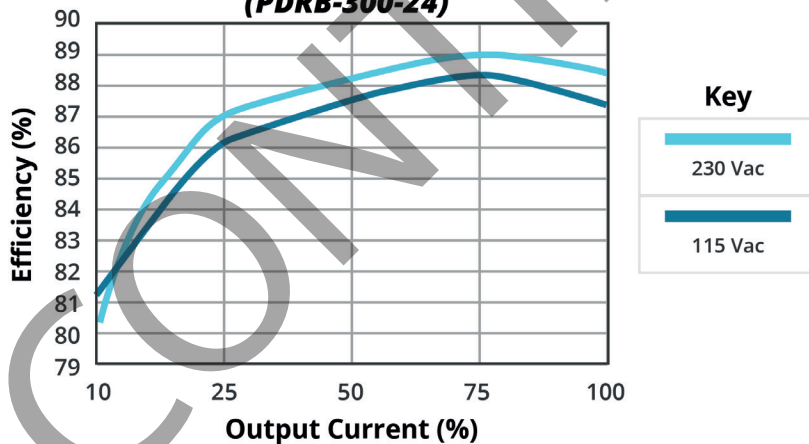
DERATING CURVES

**TEMPERATURE DERATING CURVE
(PDRB-300-24)**



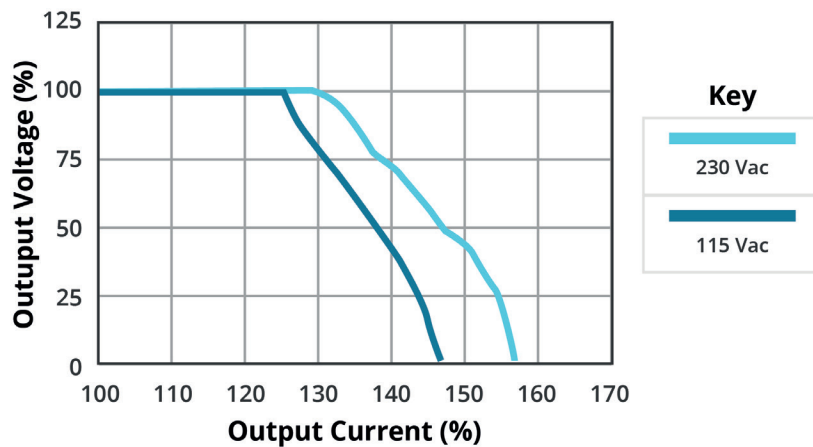
EFFICIENCY CURVES

**EFFICIENCY VS OUTPUT LOAD
(PDRB-300-24)**



CURRENT LIMITED CURVE

TIME VS OUTPUT LOAD



REVISION HISTORY

| rev. | description | date |
|------|----------------------------------------|------------|
| 1.0 | initial release | 06/13/2019 |
| 1.01 | updated safety certification | 08/04/2020 |
| 1.02 | derating and efficiency curves updated | 02/14/2022 |

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

DISCONTINUED



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

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