

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

FEATURES

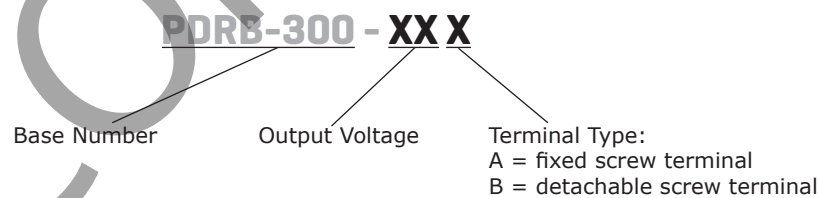
- integrated fuse and surge protection
- 3,000 Vac input/output isolation voltage
- DC on/low LED indicators
- over-voltage/current protection
- detachable and fixed screw terminal options
- adjustable output via trim POT
- power good relay (24 Vdc model)
- parallel up to three units
- UL/cUL, TUV, CE 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			±1	%
	single 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 4,242			Vac Vdc
	input to FG for 1 minute	1,500 2,121			Vac Vdc
	output to FG for 1 minute	500 710			Vac 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)				mm
	detachable screw terminal: 143.5 x 83.5 x 123.6 (5.65 x 3.29 x 4.87 inches)				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]

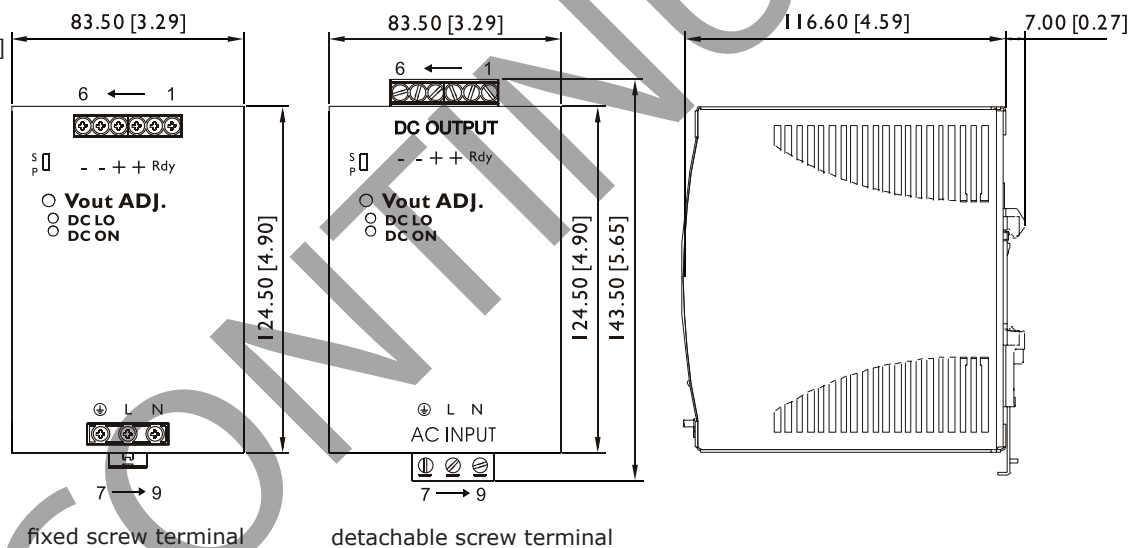
tolerance:

 $X \leq 30.00$: ± 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

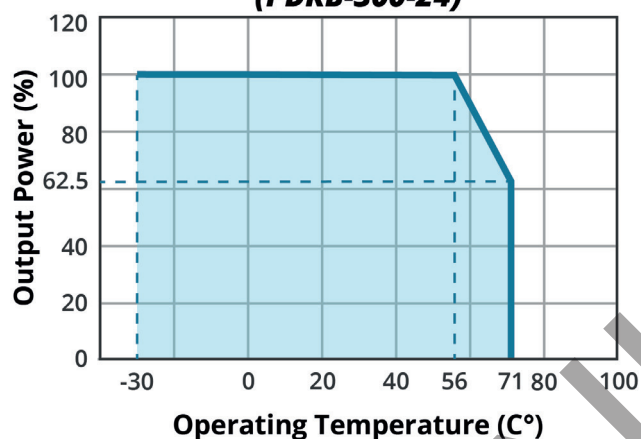
Note: *RDY on 24 Vdc model only



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	

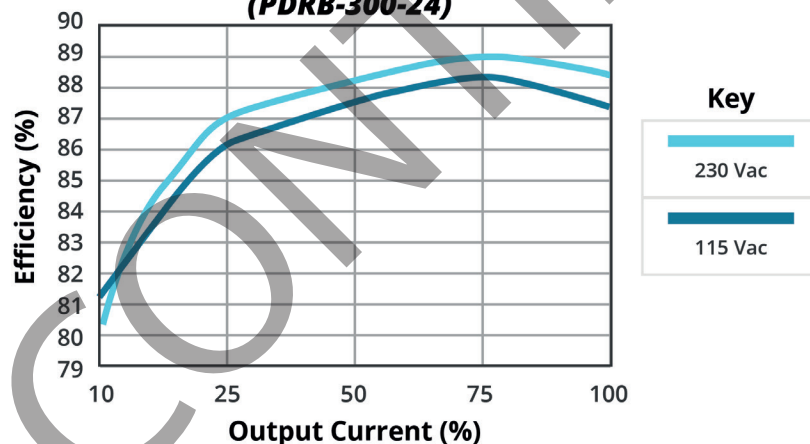
DERATING CURVES

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



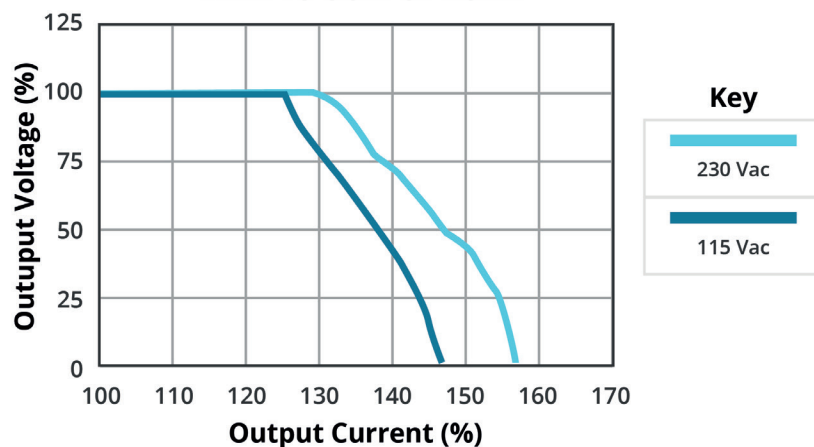
EFFICIENCY CURVES

**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.



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