CUI INC
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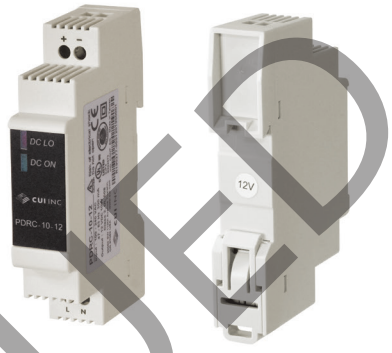
SERIES: PDRC-10 | DESCRIPTION: AC-DC DIN RAIL POWER SUPPLY

FEATURES

- low profile for building automation
- universal input (90~264 Vac)
- integrated fuse and surge protection
- 3,000 Vac input/output isolation voltage
- DC On/Low LED indicators
- over-voltage/current protection
- UL/cUL, TUV, CE certified



MODEL

MODEL	output voltage (Vdc)	output current max (A)	output power max (W)	ripple and noise[1] max (mVp-p)	efficiency[2] typ (%)
PDRC-10-5	5	1.5	7.5	50	75
PDRC-10-12	12	0.83	10	50	79
PDRC-10-15	15	0.67	10	50	80
PDRC-10-24	24	0.42	10	50	80

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

PDRC-10 - XX

Base Number — Output Voltage

INPUT

parameter	conditions/description	min	typ	max	units
voltage		90 120		264 375	Vac Vdc
frequency		47		63	Hz
current	at 90 Vac, full load			300	mA
inrush current	at 115 Vac, full load at 230 Vac, full load			16 32	A A
leakage current	input to output			0.25	mA

OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	5 Vdc output model 12 Vdc output model 15 Vdc output model 24 Vdc output model			3,500 1,800 1,500 560	µF µF µF µF
initial set point accuracy				±1	%
line regulation	at full load, V in min to V in max			±1	%
load regulation	at Vi nom, 0~100% load			±1	%
start-up time	at Vi nom, full load at Vi nom, full load with max capacitive load			1.0 1.5	s s
rise time	at Vi nom, full load at Vi nom, full load with max capacitive load			150 500	ms ms
hold-up time	at 115 Vac, full load at 230 Vac, full load	10 30			ms 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		132		kHz
temperature coefficient				±0.03	%/°C
power back immunity	at Vi nom, full load, for 1 second 5 Vdc output model 12 Vdc output model 15 Vdc output model 24 Vdc output model	 7.5 18 22 35			 Vdc Vdc Vdc Vdc
DC ON indicator threshold at start-up (GREEN)	5 Vdc output model 12 Vdc output model 15 Vdc output model 24 Vdc output model	3.5 9.0 11.0 19.2		4.5 10.8 13.5 21.6	Vdc Vdc Vdc Vdc
DC LOW indicator threshold after start-up (RED)	5 Vdc output model 12 Vdc output model 15 Vdc output model 24 Vdc output model	3.5 9.0 11.0 19.2		4.5 10.8 13.5 21.6	Vdc Vdc Vdc Vdc

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	at Vi nom, full load, auto recovery 5 Vdc output model 12 Vdc output model 15 Vdc output model 24 Vdc output model	 5.75 15 18 30		 6.5 16.5 20 33	 Vdc Vdc Vdc Vdc
over current protection	hiccup, auto recovery (see curve)	125		185	%
short circuit protection	hiccup, auto recovery				

SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output for 1 minute	3,000 4,242			Vac Vdc
isolation resistance	input to output at 500 Vdc	100			MΩ
safety approvals	UL 508, UL 1310, UL/EN 62368-1 ISA 12.12.01 (Class I, Div 2, Groups A~D)				
safety class	class I				
EMI/EMC	EN 55022 Class B, 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 5 Vdc output model 12 Vdc output model 15 Vdc output model 24 Vdc output model		901,000 888,000 893,000 910,000		hours hours hours 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

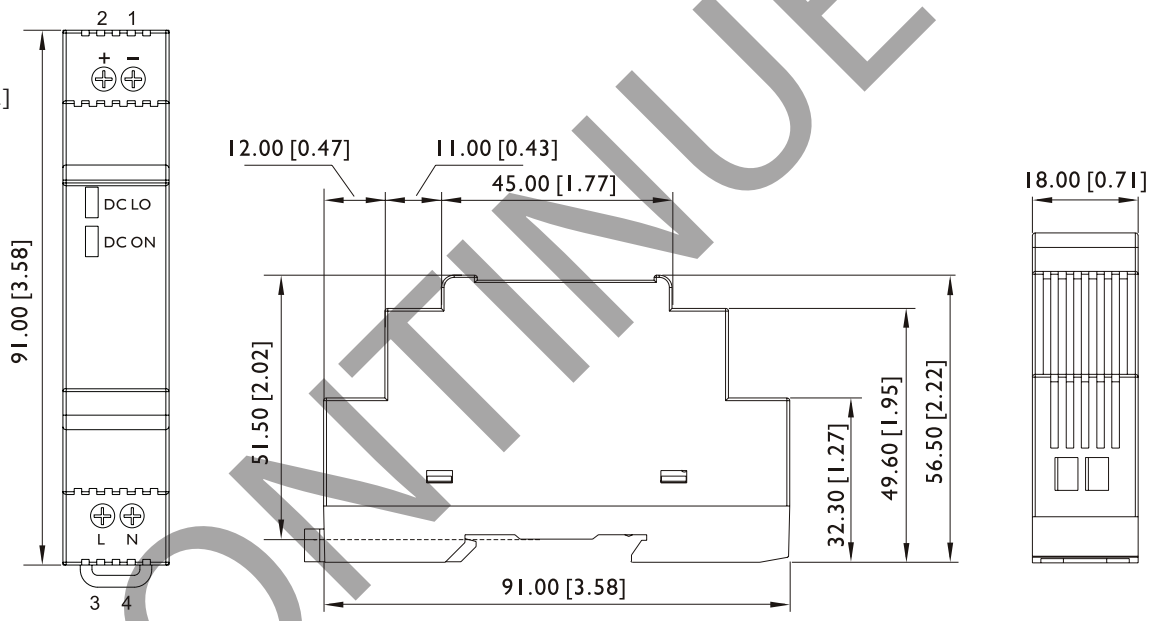
parameter	conditions/description	min	typ	max	units
operating temperature	see derating curves	-40		71	°C
storage temperature		-40		85	°C
humidity	non-condensing	20		95	%
altitude	IEC 60068-2-13			4,850	m
vibration	meets IEC 60068-2-6 (Mounting on rail: 10~500 Hz, 2 G, along X,Y,Z axis, for 60 minutes 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	91.00 x 18.00 x 56.50 (3.58 x 0.71 x 2.22 inches)				mm
material	plastic				
weight			65		g
cooling	natural convection				
input/output connector	accepts 26~12 AWG wire				

MECHANICAL DRAWING

units: mm [inch]
tolerance:
X≤30.00: ±0.30 [±0.01]
30.00<X≤120.00: ±0.50 [±0.02]
unless otherwise noted

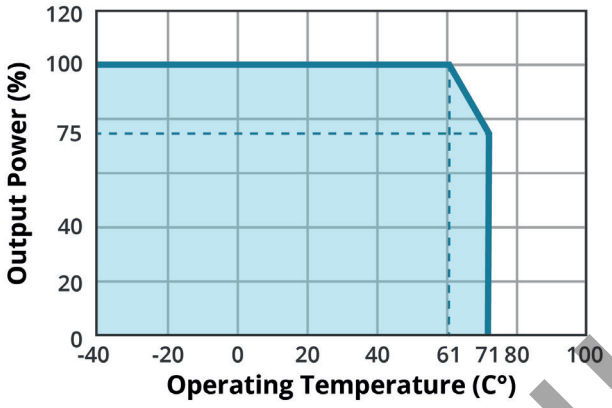


TERMINAL CONNECTIONS	
TERMINAL	Function
1	V-
2	V+
3	L
4	N

INSTALLATION	
DIN RAIL	TS35/7.5 or TS35/15
Cable	flexible/solid, copper conductors only, 60/75°C
Wire Range	26~12 AWG (0.2~2.5 mm²)
Strip Length	4~5 mm
Screw Torque	5 lb·in
Position	Vertical
Cooling	Natural convection, 25 mm clearance on all sides

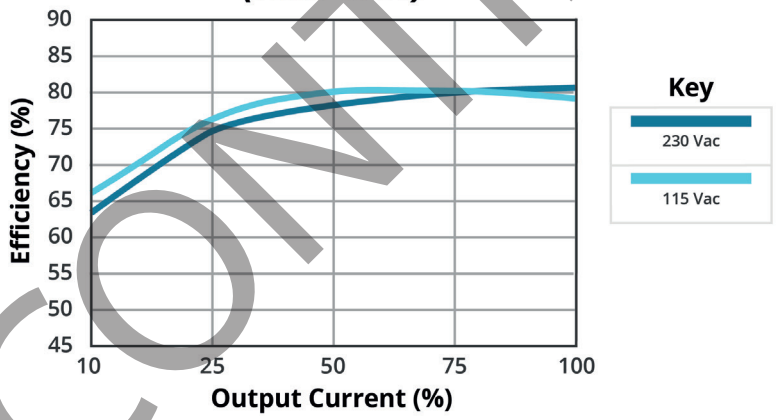
DERATING CURVES

TEMPERATURE DERATING CURVE



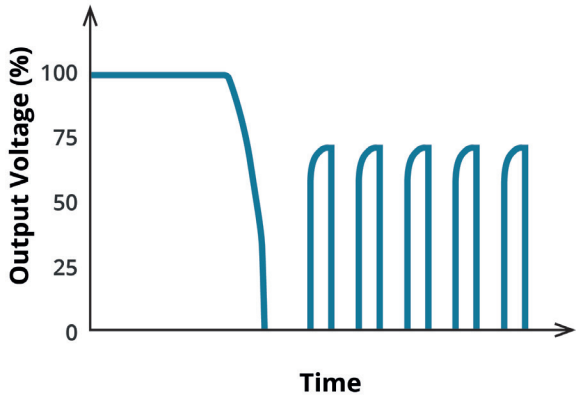
EFFICIENCY CURVES

EFFICIENCY VS OUTPUT LOAD (PDRC-10-24)



CURRENT LIMITED CURVE

OUTPUT VOLTAGE VS TIME HICCUP MODE



REVISION HISTORY

rev.	description	date
1.0	initial release	06/13/2019
1.01	updated safety certifications	08/04/2020
1.02	safety marks updated	04/27/2021
1.03	derating and efficiency curves updated	02/28/2022

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

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